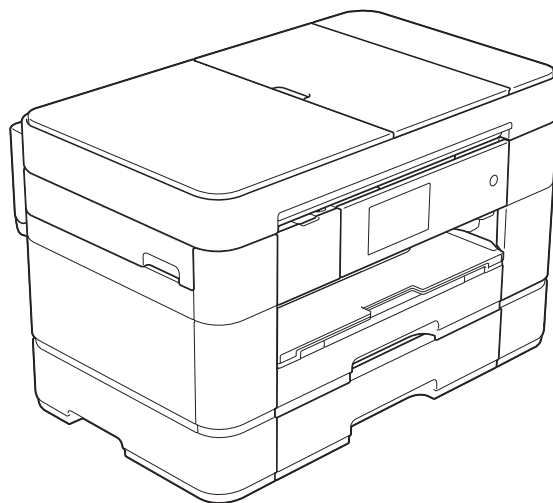




# Brother Inkjet DCP/MFC **SERVICE MANUAL**

**MODELS: MFC-J2320/J2720  
MFC-J5320DW/J5520DW  
MFC-J5620DW/J5625DW  
MFC-J5720DW/J5920DW**



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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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May 2014  
SM-FAX158  
8CAU\*(4)

*Confidential*

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

|             | MFC-J2320    | MFC-J2720    | MFC-J5320DW  | MFC-J5520DW/<br>MFC-J5620DW/<br>MFC-J5625DW | MFC-J5720DW/<br>MFC-J5920DW |
|-------------|--------------|--------------|--------------|---|-----------------------------|
| LCD         | 2.7 inch TFT | 3.7 inch TFT | 2.7 inch TFT | 3.7 inch TFT                                |                             |
| Lower Tray  | ---          | √            | ---          | ---   | √                           |
| MP Tray     | ---          | √            | ---          | √   | √                           |
| Duplex scan | ---          | √            | ---          | ---   | √                           |

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## REGULATION

### ■ Standard telephone and FCC notices

**These notices are in effect on models sold and used in the United States only. When programming emergency numbers or making test calls to emergency numbers:**

- Remain on the line and briefly explain to the dispatcher the reason for the call before hanging up.
- Perform these activities in the off-peak hours, such as early morning or late evening.

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the backside of this equipment is a label that contains, among other information, a product identifier in the format US: AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

You may safely connect this equipment to the telephone line by means of a standard modular jack, USOC RJ11C.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 06 is a REN of 0.6). For earlier products, the REN is separately shown on the label.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact Brother Customer Service. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, call your telephone company or a qualified installer.

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

Responsible Party: Brother International Corporation  
200 Crossing Boulevard  
Bridgewater, NJ 08807-0911 USA  
TEL: (908) 704-1700

declares, that the products

Product Name: MFC-J2320/J2720/J5320DW/J5520DW/J5620DW/J5625DW/J5720DW/J5920DW

comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

### **IMPORTANT**

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

## ■ **RF Exposure Notice(USA or Canada only)**

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65 and RSS-102 of the IC radio frequency(RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body (excluding extremities: hands, wrists, feet and ankles).

Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles des radioélectriques (RF) de la FCC lignes directrices d'exposition dans le Supplément C à OET65 et d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC. Cet équipement doit être installé et utilisé en gardant une distance de 20 cm ou plus entre le dispositif rayonnant et le corps (à l'exception des extrémités: mains poignets, pieds et chevilles).

## ■ **Wireless connection(Mexico only)**

The operation of this equipment is subject to the following two conditions:

It is possible that this equipment or device may not cause harmful interference, and  
(1) This equipment or device must accept any interference, including interference that may cause undesired operation.

La operacion de este equipo está sujeta a las siguientes dos condiciones:

(1) Es posible que este equipo o dispositivo no cause interferencia perjudicial y  
(2) Este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operacion no deseada.

## ■ **Industry Canada Compliance Statement (Canada only)**

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même, si le brouillage est susceptible d'en compromettre le fonctionnement.

## ■ **EQUIPMENT ATTACHMENT LIMITATIONS (Canada only)**

### **NOTICE**

This product meets the applicable Industry Canada technical specifications.

Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

### **NOTICE**

The Ringer Equivalence Number is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

## ■ **For use in the USA or Canada only**

These machines are made for use in the USA and Canada only. We cannot recommend using them overseas because it may violate the Telecommunications Regulations (MFC models only) of that country and the power requirements of your machine may not be compatible with the power available in foreign countries. Using USA or Canada models overseas is at your own risk and may void your warranty.

## ■ **LAN connection (Models with Wired LAN function only)**

### **IMPORTANT**

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

■ **Declaration of Conformity (Europe only)**

We, Brother Industries Ltd, 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan, declare that this product is in conformity with the essential requirements of all relevant directives and regulations applied within the European Community.

The Declaration of Conformity (DoC) can be downloaded from our website.

Visit <http://solutions.brother.com/>

- > select "Europe".
- > select your country
- > select your model
- > select "Manuals" and your language, then click "Search"
- > select Declaration of Conformity
- > click download.

Your Declaration will be downloaded as a PDF file.

■ **Declaration of Conformity for R&TTE (Radio and Telecommunications) Directive 1999/5/EC(Europe only)**  
**(Applicable to models with telecommunications and/or radio interfaces)**

We, Brother Industries Ltd.  
15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan,  
declare that these machines are in conformity with the provisions of the R&TTE Directive 1999/5/EC. A copy of the Declaration of Conformity can be downloaded by following the instructions in the Declaration of Conformity (Europe only) section.

■ **Radio interference**

This product complies with EN55022 (CISPR Publication 22)/Class B. When connecting the machine to a computer, ensure that you use a USB cable which does not exceed 2 metres in length.

■ **Recycling information in accordance with the WEEE and Battery Directive.**



Product mark



Battery mark

European Union only

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

## ■ International ENERGY STAR® Qualification Statement

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

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





## SAFETY INFORMATION

### **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 product 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.

Follow all warnings and instructions marked on the machine.

### **NOTE**

The illustrations in this section show the MFC-J5720DW.

## To use the machine safely

### **WARNING**

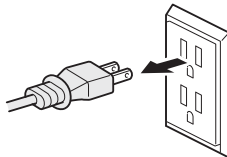
#### ELECTRICAL HAZARDS

*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.*

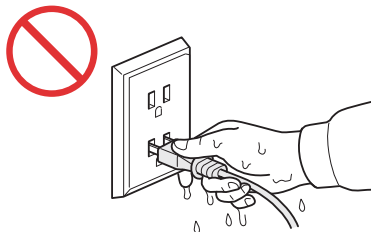


There are high-voltage electrodes inside the machine. Before you access the inside of the machine, including for routine maintenance such as cleaning, make sure you have unplugged the power cord from the AC power outlet, as well as any telephone (RJ-11) or Ethernet (RJ-45) (Models with Wired LAN function only) 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 convert the machine. This may create a cause of fire or electric shock. Such conduct may be punished by the law.



DO NOT place the following objects on the machine.

If these objects contact the electrical parts inside the machine, it may cause a fire or electric shock.

- Metal object such as a clip or a staple
- Precious metal such as a necklace or a ring
- Container holding water or liquid such as a glass, a flower vase or a flower pot



If the machine has been dropped or the casing has been damaged, there may be the possibility of an electrical shock. Unplug the product 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 product during an electrical storm.



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 that contains 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 product near any medical electrical equipment. The radio wave emitted from the product may affect medical electrical equipment and cause a malfunction, which may result in a medical accident.

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 product from the AC power outlet.

## CAUTION

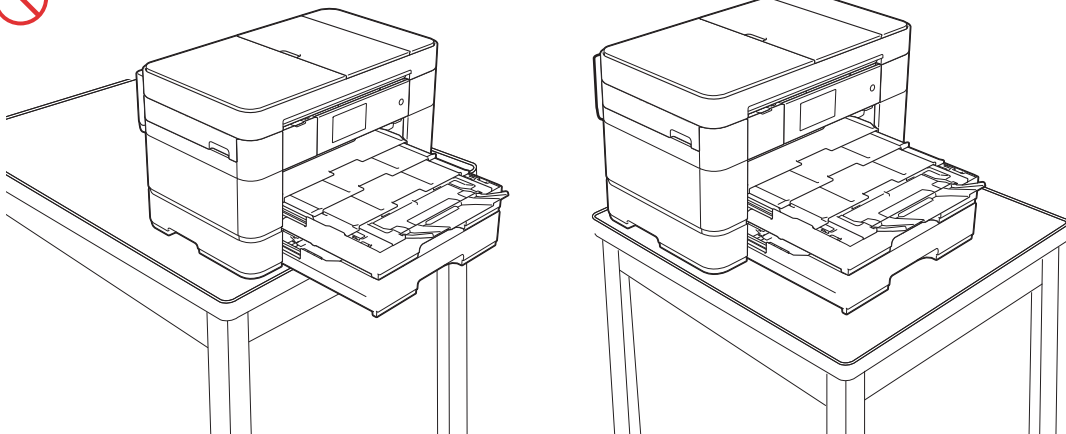
Wait until pages have exited the machine before picking them up. Failure to do this may cause injury to your fingers by trapping them in a roller.

DO NOT eat the silica gel pack. Please throw away. If ingested seek medical attention immediately.

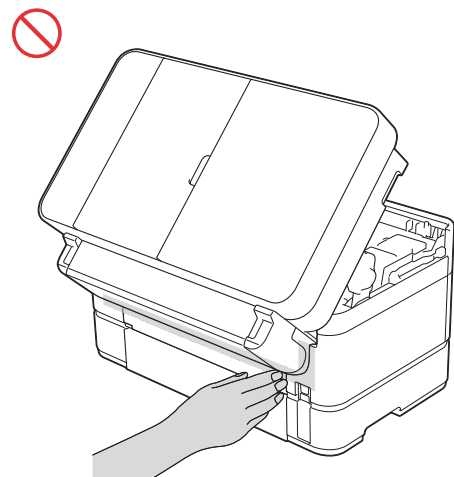
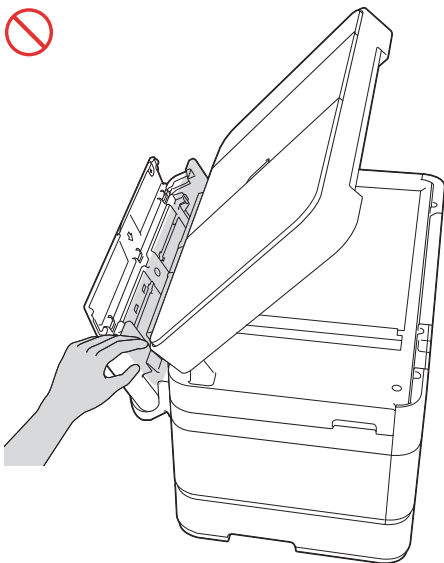
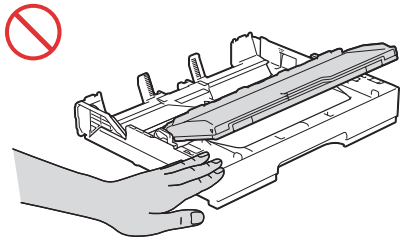
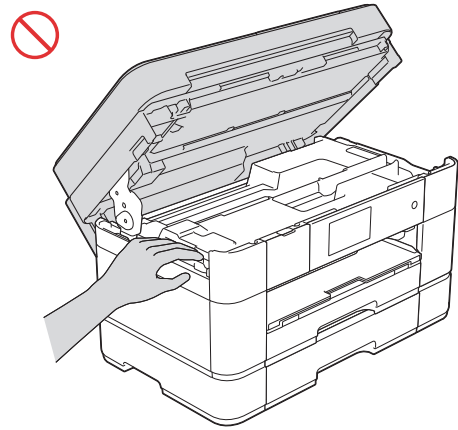
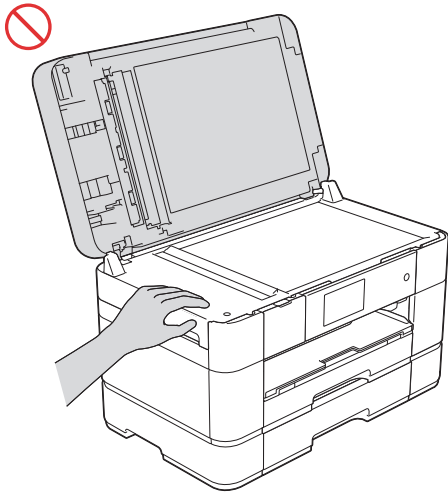
DO NOT put your hand or any foreign objects into the ink insertion slot. Doing this may cause injury.

(MFC-J5620DW, MFC-J5720DW and MFC-J5920DW)

If the tray has been expanded to hold large paper such as Ledger, A3 or Legal size paper, place the product on a flat surface that can support both the product and the tray. When the tray is expanded, it will protrude from the product. Therefore, if someone hits the tray, the product could fall and cause injury.

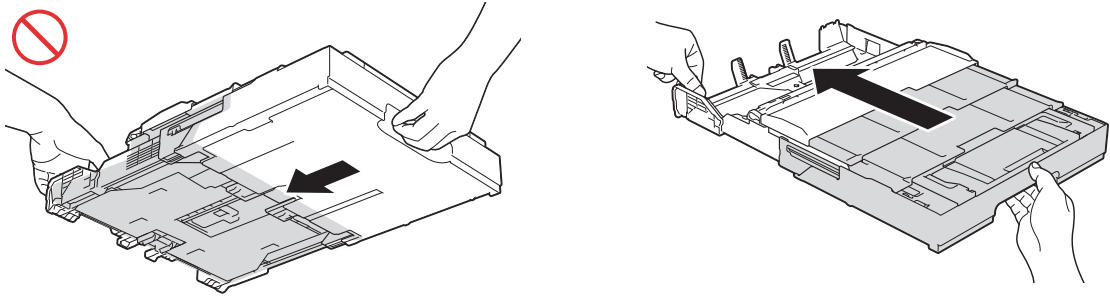


To prevent injuries, be careful not to put your fingers in the areas shown in the illustrations.

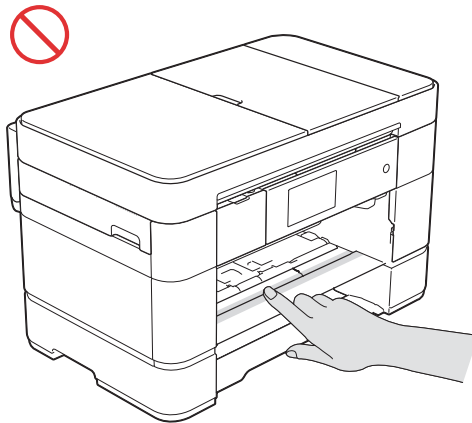


(MFC-J5620DW, MFC-J5720DW and MFC-J5920DW)

When changing the tray size from the Ledger, A3 or Legal 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.

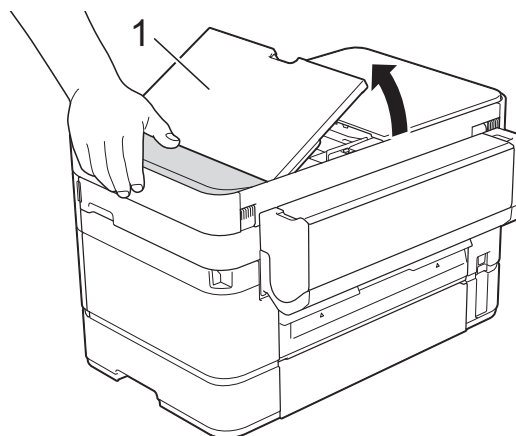


DO NOT touch the area shaded in the illustration. Doing this may cause injury to your fingers by cutting them on the edge of the machine.

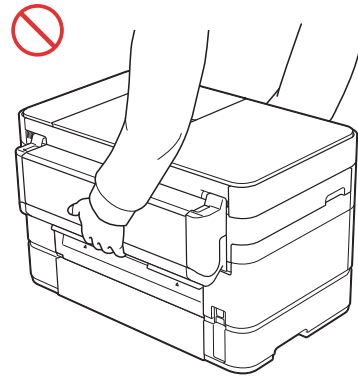
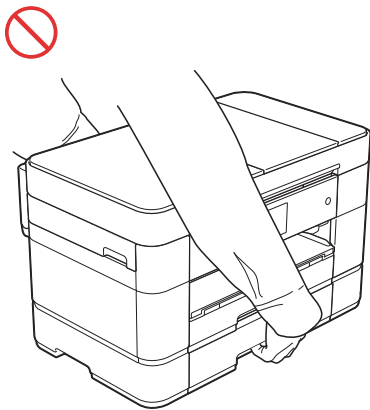
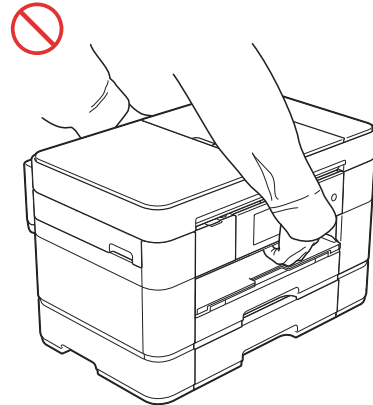


(MFC-J5620DW, MFC-J5720DW and MFC-J5920DW)

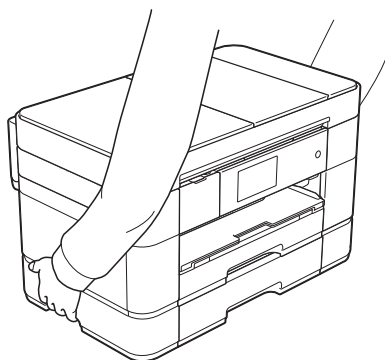
Be careful not to place your hand or your elbow strongly in the areas shown in the illustrations. It may cause the ADF document support (1) to bounce to open.



DO NOT carry the machine by holding the scanner cover or the Jam Clear Cover or the manual feed slot or the control panel. Doing this may cause the machine to slip out of your hands and may result in injury.

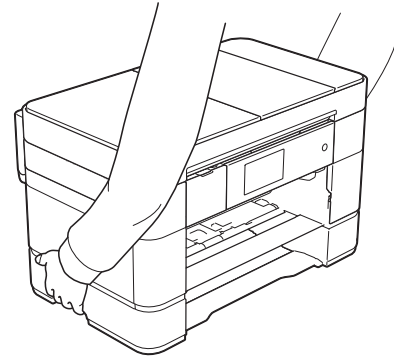


Carry the product by sliding your hands into the handhold indentations located on each side of the product.



(MFC-J5620DW, MFC-J5720DW and MFC-J5920DW)

When carrying the product, remove the tray if it has been expanded to hold large such as Ledger, A3 or Legal size paper. The weight of the paper could cause the tray 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 the ink attaches to your skin, wash it away with water and soap immediately.
- If the ink gets into your eye, rinse it with water immediately. If left as it is, it may cause a red eye or mild inflammation. 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.
- Keep the ink cartridge out of the reach of children.
- DO NOT shake the ink cartridge hard. The ink may leak out if the cartridge is shaken or twirled hard.
- 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 while you take apart the cartridge.

## **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.



## 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 codes 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.

# CHAPTER 1 SPECIFICATIONS

## 1 GENERAL

### 1.1 General

|                      |  |
|----------------------|--|
| Model                | All models                             |
| Print Head           | BH15 BK/C/M/Y: 420/420/420/420 nozzles |
| Minimum Droplet Size | BK: 3 pl<br>CMY: 1.5 pl                |
| Scanning Method      | CIS                                    |
| CPU Speed            | 288 MHz                                |
| Backup Clock         | Yes (Up to 1 hour)                     |

### 1.2 Media Specification

| Model          | MFC-J2320                       | MFC-J2720   | MFC-J5320DW   | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW   |
|----------------|---------------------------------|---|---|-------------------------------------|---|
| Media<br>Sizes | Standard Tray                   | <Landscape>A4, LTR, EXE, B5 <sup>*1</sup><br><Portrait>A3 <sup>*2</sup> , LGR <sup>*2</sup> , LGL <sup>*2</sup> , B4 <sup>*1</sup> , A5, A6, Photo(102 x 152 mm/4 x 6"),<br>Indexcard(127 x 203 mm/5 x 8"), Photo-L(89x127 mm/3.5 x 5"),<br>Photo-2L(127x178 mm/5 x 7"), Com-10, DL Envelope, Monarch, C5 |   |                                     |   |
|                | Lower Tray                      | N/A   | <Landscape><br>A4, LTR<br><Portrait><br>A3, LGR, B4 <sup>*1</sup> ,<br>LGL  | N/A                                 | <Landscape><br>A4, LTR<br><Portrait><br>A3, LGR, B4 <sup>*1</sup> ,<br>LGL  |
|                | Manual Feed Slot                | <Landscape>A4, LTR, EXE, B5 <sup>*1</sup><br><Portrait>A3, B4 <sup>*1</sup> , LGR, LGL, Folio, A5, A6, Photo(102 x 152 mm/4 x 6"),<br>Indexcard(127 x 203 mm/5 x 8"), Photo-L(89 x 127 mm/3.5 x 5"),<br>Photo-2L(127 x 178 mm/5 x 7"), C5, Com-10, DL Envelope, Monarch                                   |   |                                     |   |
|                | MP Tray                         | N/A   | <Landscape>A4,<br>LTR, EXE, B5 <sup>*1</sup><br><Portrait>A3, LGR,<br>LGL, Folio, A5, A6,<br>Photo(102x152 mm<br>/4x6"),<br>Indexcard(127x203<br>mm/5x8"), Photo-<br>L(89x127 mm/<br>3.5x5"), Photo-<br>2L(127x178 mm/<br>5x7"), Com-10, DL<br>Envelope, Monarch,<br>C5 | N/A                                 | <Landscape>A4, LTR, EXE, B5 <sup>*1</sup><br><Portrait>A3, LGR, LGL, Folio, A5, A6,<br>Photo(102x152 mm/4x6"),<br>Indexcard(127x203 mm/5x8"), Photo-<br>L(89x127 mm/3.5x5"), Photo-<br>2L(127x178 mm/5x7"), Com-10, DL<br>Envelope, Monarch, C5 |
|                | Duplex Print                    | <PC Print>A4/LTR/EXE/A5/B5 <sup>*1</sup> <Copy>A4/LTR/EXE <sup>*1</sup> /A5   |   |                                     |   |
|                | ADF (width/length)              | 148/148 mm to 215.9/355.6 mm (5.8/5.8" to 8.5/14.0")  |   |                                     |   |
|                | Scanner Glass<br>(width/length) | up to 215.9/297 mm (up to 8.5/11.7")  |   |                                     |   |

| Model         |                  | MFC-J2320  | MFC-J2720                              | MFC-J5320DW | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW                |
|---------------|------------------|--|--|-------------|-------------------------------------|--|
| 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><br>(17-32 lb.) | N/A         |                                     | 64-120 g/m <sup>2</sup><br>(17-32 lb.) |
|               | Manual Feed Slot | 64-220 g/m <sup>2</sup> (17-58 lb.)              |  |             |                                     |  |
|               | MP Tray          | N/A  | 64-220 g/m <sup>2</sup><br>(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 <sup>*3</sup> (cast/resin) |  |             |                                     |  |
|               | Lower Tray       | N/A  | Plain                                  | N/A         |                                     | Plain                                  |
|               | Manual Feed Slot | Plain, Inkjet, Glossy(cast/resin)                |  |             |                                     |  |
|               | MP Tray          | N/A  | Plain, Inkjet,<br>Glossy(cast/resin)   | N/A         | Plain, Inkjet, Glossy(cast/resin)   |  |
|               | Duplex Print     | Plain  |  |             |                                     |  |
|               | ADF              | Plain  |  |             |                                     |  |

\*1 Only for Hong Kong/Taiwan/Korea

\*2 Photo paper is not available.

\*3 A3/LGR/LGL Glossy aren't available.

### 1.3 Paper Handling

| Model                             |                  | MFC-J2320                  | MFC-J2720                              | MFC-J5320DW               | MFC-J5520DW/<br>J5620DW/<br>J5625DW    | MFC-J5720DW/<br>J5920DW    |
|-----------------------------------|------------------|----------------------------|--|---------------------------|--|----------------------------|
| Paper Input<br>(sheets)           | Standard Tray    | 250 (80 g/m <sup>2</sup> ) |  |                           |  |                            |
|                                   | Lower Tray       | N/A                        | 250 (80 g/m <sup>2</sup> )             | N/A                       |  | 250 (80 g/m <sup>2</sup> ) |
|                                   | Manual Feed Slot | 1                          |  |                           |  |                            |
|                                   | MP Tray          | N/A                        | 80 <sup>1</sup> (80 g/m <sup>2</sup> ) | N/A                       | 80 <sup>1</sup> (80 g/m <sup>2</sup> ) |                            |
|                                   | ADF              | 35 (80 g/m <sup>2</sup> )  | 50 (80 g/m <sup>2</sup> )              | 35 (80 g/m <sup>2</sup> ) |  | 50 (80 g/m <sup>2</sup> )  |
| Output Paper Capacity<br>(sheets) |                  | 50 (80 g/m <sup>2</sup> )  |  |                           |  |                            |

<sup>1</sup> A3/LGR/LGL/Folio are 5 sheets.

### 1.4 LCD Panel

| Model |             | MFC-J2320    | MFC-J2720    | MFC-J5320DW  | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW |
|-------|-------------|--------------|--------------|--------------|-------------------------------------|-------------------------|
| LCD   | Type & Size | 2.7 inch TFT | 3.7 inch TFT | 2.7 inch TFT | 3.7 inch TFT                        |                         |
|       | Touch-Panel | Yes          |              |              |                                     |                         |

## 1.5 Memory

| Model                                 | MFC-J2320 | MFC-J2720 | MFC-J5320DW | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW |
|---------------------------------------|-----------|-----------|-------------|-------------------------------------|-------------------------|
| Memory Capacity<br>(physical: Mbytes) | 128 MB    | 256 MB    | 128 MB      |                                     | 256 MB                  |
| Memory Backup<br>(with Flash memory)  | Yes       |           |             |                                     |                         |

## 1.6 Interface

| Model  | MFC-J2320  | MFC-J2720 | MFC-J5320DW  | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW |
|--|--|-----------|--------------|-------------------------------------|-------------------------|
| Host Interface   | Hi-Speed USB 2.0   |           |              |                                     |                         |
| LAN  | Yes  |           |              |                                     |                         |
| Wireless LAN   | Yes  |           |              |                                     |                         |
| PictBridge   | Yes  |           |              |                                     |                         |
| USB Memory   | Yes  |           |              |                                     |                         |
| Acceptable<br>Media Cards<br>(Type & Size)<br>Media Card | Memory Stick Duo   | N/A       | 16 MB-128 MB | N/A                                 | 16 MB-128 MB            |
|  | Memory Stick Micro<br>(MagicGate: YES if<br>not use MG function) | N/A       | 256 MB-32 GB | N/A                                 | 256 MB-32 GB            |
|  | SD Memory Card<br>(miniSD, microSD<br>with Adapter)              | N/A       | 16 MB-2 GB   | N/A                                 | 16 MB-2 GB              |
|  | SDHC Memory Card<br>(miniSDHC,<br>microSDHC<br>with Adapter)     | N/A       | 4 GB-32 GB   | N/A                                 | 4 GB-32 GB              |
|  | SDXC Memory Card   | N/A       | 48 GB-128 GB | N/A                                 | 48 GB-128 GB            |
|  | MultiMedia Card  | N/A       | 32 MB-2 GB   | N/A                                 | 32 MB-2 GB              |
|  | MultiMedia Card plus   | N/A       | 128 MB-4 GB  | N/A                                 | 128 MB-4 GB             |
|  | MultiMedia Card<br>mobile<br>(with Adapter)                      | N/A       | 64 MB-1 GB   | N/A                                 | 64 MB-1 GB              |

## 1.7 Others

| Model  | MFC-J2320                        | MFC-J2720               | MFC-J5320DW           | MFC-J5520DW/<br>J5620DW/<br>J5625DW                                 | MFC-J5720DW/<br>J5920DW   |
|--|----------------------------------|-------------------------|-----------------------|---|---|
| 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)   | U.S.A                            | N/A                     |                       | 31 w/5.0 w/1.7 w/0.04 w   |   |
|  | Europe                           | 32 w/5.5 w/1.8 w/0.04 w |                       |   |   |
|  | Asia/Oceania                     | 32 w/5.5 w/1.8 w/0.04 w |                       |   |   |
|  | China                            | 32 w/5.5 w/1.8 w/0.04 w | N/A                   |   |   |
| Machine Noise (Operating)                              | 50 dBA                           |                         |                       |   |   |
| Machine Dimensions                                     | W490 x D290 x H240 mm            | W490 x D345 x H308 mm   | W490 x D290 x H240 mm | W490 x D345 x H240 mm   | W490 x D345 x H308 mm   |
| Machine Weight   | 10.8/23.8 (kg/lbs)               | 14.5/31.9 (kg/lbs)      | 10.8/23.8 (kg/lbs)    | For US<br>11.6/25.5 (kg/lbs)<br>Except for US<br>11.7/25.7 (kg/lbs) | For US<br>14.4/31.7 (kg/lbs)<br>Except for US<br>14.5/31.9 (kg/lbs) |

## 2 FAX

| Model              | MFC-J2320                              | MFC-J2720                              | MFC-J5320DW                            | MFC-J5520DW/<br>J5620DW/<br>J5625DW    | MFC-J5720DW/<br>J5920DW |
|--------------------|--|--|--|--|-------------------------|
| Modem Speed (bps)  | 14,400(FAX)                            | 33,600 (FAX)                           | 14,400(FAX)                            | 33,600 (FAX)                           |                         |
| Transmission Speed | Approx.7 sec (ITU-T Test Chart #1,MMR) | Approx.3 sec (ITU-T Test Chart #1,MMR) | Approx.7 sec (ITU-T Test Chart #1,MMR) | Approx.3 sec (ITU-T Test Chart #1,MMR) |                         |
| ITU-T Group        | G3                                     | Super G3                               | G3                                     | Super G3                               |                         |
| COLOR FAX          | Document (Send/Receive)                | Yes/Yes (ITU-T color FAX)              |  |  |                         |
|                    | Memory (Send/Receive)                  | No/No (ITU-T color FAX)                |  |  |                         |

### 3 PRINTER

| Model  | MFC-J2320               | MFC-J2720 | MFC-J5320DW | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW |
|--|-------------------------|-----------|-------------|-------------------------------------|-------------------------|
| Print Speed ESAT<br>(mono/color)<br>(based on ISO/IEC 24734)                     | 22/20 ipm               |           |             |                                     |                         |
| Draft Print Speed<br>(mono/color)<br>*time calculated including<br>paper feeding | 35/27 ppm               |           |             |                                     |                         |
| Resolution<br>(horizontal x vertical)  | up to 1,200 x 6,000 dpi |           |             |                                     |                         |
| Auto Duplex Print  | Yes (up to A4/LTR)      |           |             |                                     |                         |

### 4 COPY

| Model   | MFC-J2320 | MFC-J2720   | MFC-J5320DW | MFC-J5520DW/<br>J5620DW/<br>J5625DW | MFC-J5720DW/<br>J5920DW |
|---|-----------|---|-------------|-------------------------------------|-------------------------|
| COPY SPEED ESAT<br>(based on ISO/IEC 24735)<br>(mono/color) | 12/9 ipm  |   |             |                                     |                         |
| COPY SPEED FCOT<br>(based on ISO/IEC 24735<br>Anex D)       | 18 sec    |   |             |                                     |                         |
| Resolution<br>(horizontal x<br>vertical)                    | Mono      | Print: Max. 1,200 x 2,400 dpi<br>Scan: Max. 1,200 x 1,200 dpi |             |                                     |                         |
|   | Color     | Print: Max. 1,200 x 2,400 dpi<br>Scan: Max. 1,200 x 1,200 dpi |             |                                     |                         |
| Duplex Copy   | Yes       |   |             |                                     |                         |

## 5 SCANNER

| Model   |              | MFC-J2320  | MFC-J2720   | MFC-J5320DW  | MFC-J5520DW/<br>J5620DW/<br>J5625DW                  | MFC-J5720DW/<br>J5920DW   |
|---|--------------|--|---|--|--|---|
| Scan speed<br>(Mono/Color) *@100 dpi          |              | A4: 3.37 sec/3.37 sec<br>LTR: 3.17 sec/3.17 sec                                  |   |  |  |   |
| Scan speed (Duplex)<br>(Mono/Color) *@100 dpi |              | N/A  | A4: 3.37 sec/<br>3.37 sec<br>LTR: 3.17 sec/<br>3.17 sec   | N/A  |  | A4: 3.37 sec/<br>3.37 sec<br>LTR: 3.17 sec/<br>3.17 sec   |
| Resolution<br>(horizontal x<br>vertical)      | Optical      | FB: 1,200 x<br>2,400 dpi<br>ADF:1,200 x<br>1,200 dpi                             | FB: 2,400 x<br>2,400 dpi<br><First Side><br>ADF:2,400 x<br>1,200 dpi<br><Second Side><br>ADF:1,200 x<br>1,200 dpi | FB: 1,200 x<br>2,400 dpi<br>ADF:1,200 x<br>1,200 dpi | FB: 2,400 x<br>2,400 dpi<br>ADF:2,400 x<br>1,200 dpi | FB: 2,400 x<br>2,400 dpi<br><First Side><br>ADF:2,400 x<br>1,200 dpi<br><Second Side><br>ADF:1,200 x<br>1,200 dpi |
|   | Interpolated | For XP/Vista/Windows 7/Windows 8, up to 19,200 x 19,200 dpi with Scanner Utility |   |  |  |   |

## 6 SOFTWARE

| Model                        |           | All models  |
|------------------------------|-----------|---|
| Driver Support<br>OS Version | Windows   | Windows XP/XP x64/Vista/7/8/8.1<br>Windows Server 2003/2003 x64/2008/2008 R2/2012/2012 R2 |
|                              | Macintosh | OS X v10.7.5/10.8.x/ 10.9.x   |

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## 7 NETWORK

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### 7.1 Network

|   |                |
|---|----------------|
| Model                                   | All models     |
| Internet FAX (Firmware)<br>(versionT37) | Yes (Download) |

### 7.2 Wired

|                               |   |
|-------------------------------|---|
| Model                         | All models                              |
| Model Name (Ethernet)         | Embedded (NC-350w)                      |
| Network Connection (Ethernet) | Ethernet 10/100BASE-TX Auto Negotiation |

### 7.3 Wireless

|                                  |  |     |
|----------------------------------|--|-----|
| Model                            | All models   |     |
| Model Name (Wireless)            | Embedded (NC-350h)   |     |
| Network Connection<br>(Wireless) | IEEE 802.11 b/g/n  |     |
| Wireless Security                | SSID (32 chr), WEP 64/128bit, WPA-PSK(TKIP/AES), WPA2-PSK(AES) |     |
| Setup Support<br>Utility         | AOSS   | Yes |
|                                  | WPS (Wi-Fi<br>Protected<br>Setup)                              | Yes |



## 8 SUPPLIES/OPTIONS

| Model                                     |                                    | MFC-J2320/J2720/J5320DW/J5520DW/J5620DW/J5625DW/J5720DW   | MFC-J5920DW     |
|---|------------------------------------|---|-----------------|
| Ink Cartridge Yield @ ISO pattern (Pages) | Bundled Cartridges                 | BK: 357 CL: 357   | BK:2,160 CL:540 |
|   | Supply High Yield Cartridges       | BK: 550 CL: 550*  | N/A             |
|   | Supply Super High Yield Cartridges | BK: 2,400 CL: 1,200   |                 |
| Storage Condition of Ink Cartridge        |                                    | (Temperature) Normal condition : -20 to 40°C<br>(Humidity) Normal condition : 20 to 80%<br>*Storage condition at the temperature of 40 to 50°C and the humidity of 80 to 95% : Up to 5 days<br>*Storage condition at the temperature of 40 to 60°C and the humidity of Non control condition : Up to 5 days |                 |

\* Except for China

## 9 SERVICE INFORMATION

| Model                             | All models              |
|-----------------------------------|-------------------------|
| Monthly Volume                    | 26,000 pages            |
| Machine Life                      | 60,000 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 | Photo Capture | Printer |
| Cut-Sheet  | Ledger                       | 11 x 17 in. (279.4 x 431.8 mm)    | Yes   | Yes  | Yes           | Yes     |
|            | Letter                       | 8 1/2 x 11 in. (215.9 x 279.4 mm) | Yes   | Yes  | Yes           | Yes     |
|            | A3                           | 11.7 x 16.5 in. (297 x 420 mm)    | Yes   | Yes  | Yes           | Yes     |
|            | A4                           | 8.3 x 11.7 in. (210 x 297 mm)     | Yes   | Yes  | Yes           | Yes     |
|            | Legal                        | 8 1/2 x 14 in. (215.9 x 355.6 mm) | Yes   | Yes  | --            | Yes     |
|            | Folio <sup>*1</sup>          | 8 1/2 x 13 in. (215.9 x 330.2 mm) | Yes   | Yes  | --            | Yes     |
|            | Executive                    | 7 1/4 x 10 1/2 in. (184 x 267 mm) | --    | 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     |
|            | A5                           | 5.8 x 8.3 in. (148 x 210 mm)      | --    | Yes  | --            | Yes     |
| A6         | 4.1 x 5.8 in. (105 x 148 mm) | --                                | --    | --   | Yes           |         |
| Cards      | Photo                        | 4 x 6 in. (10 x 15 cm)            | --    | Yes  | Yes           | Yes     |
|            | Photo L                      | 3 1/2 x 5 in. (89 x 127 mm)       | --    | --   | --            | Yes     |
|            | Photo 2L                     | 5 x 7 in. (13 x 18 cm)            | --    | --   | Yes           | Yes     |
|            | Index Card                   | 5 x 8 in. (127 x 203 mm)          | --    | --   | --            | Yes     |
| Envelopes  | C5 Envelope <sup>*1</sup>    | 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. (105 x 241 mm)  | --    | --   | --            | Yes     |
|            | Monarch                      | 3 7/8 x 7 1/2 in. (98 x 191 mm)   | --    | --   | --            | Yes     |

<sup>\*1</sup> Except for Lower Tray

<sup>\*2</sup> Only available for some countries

#### Paper weight and thickness

| Paper Type |                              | Weight                                    | Thickness                     |
|------------|------------------------------|---|-------------------------------|
| Cut-Sheet  | Plain 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</sup>   | Up to 58 lb (Up to 220 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 especially designed for Brother inkjet machines.

<sup>\*2</sup> MFC-J2720/J5720DW/J5920DW:Up to 0.3 mm 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><br><Portrait> A5, A6, Photo, Photo L, Photo 2L, Index card, Envelopes (Com-10, DL, Monarch)   | Plain Paper  | 250 <sup>2</sup>  |
|  |  | Inkjet Paper   | 20                |
|  |  | Glossy Paper, Photo  | 20 <sup>3</sup>   |
|  |  | Index Card   | 30                |
|  |  | Envelopes  | 10                |
| Lower Tray (MFC-J2720/J5720DW/J5920DW)                   | <Landscape> Letter, A4<br><Portrait> Ledger, A3, JIS B4 <sup>1</sup> , Legal   | Plain Paper  | 250 <sup>2</sup>  |
| MP Tray <sup>4</sup> (MFC-J2720/J5620DW/J5720DW/J5920DW) | <Landscape> Letter, Executive, A4, JIS B5 <sup>1</sup><br><Portrait> Ledger, A3, JIS B4 <sup>1</sup> , Legal, Folio, A5, A6<br>Photo, Photo L, Photo 2L, Index card, Envelopes (Com-10, DL, Monarch)   | Plain Paper  | 80 <sup>2,5</sup> |
|  |  | Inkjet Paper   | 20 <sup>5</sup>   |
|  |  | Glossy Paper, Photo  | 20 <sup>5</sup>   |
|  |  | Index Card   | 50                |
|  |  | Envelopes  | 20                |
| Manual Feed Slot   | <Landscape> Letter, Executive, A4, JIS B5 <sup>1</sup><br><Portrait> Ledger, A3, JIS B4 <sup>1</sup> , Legal, Folio, A5, A6, Photo, Photo L, Photo 2L, Index card, Envelopes (C5, Com-10, DL, Monarch) | Plain Paper, Inkjet Paper, Glossy Paper, Photo and Envelopes | 1                 |

<sup>1</sup> Only available for some countries

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

<sup>3</sup> Ledger, A3, JIS B4 and Legal size paper are not available.

<sup>4</sup> We recommended using MP tray for glossy paper.

<sup>5</sup> Up to 5 sheets for A3, Ledger, JIS B4, Legal and Folio size.

## Recommended print media

### Brother paper

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

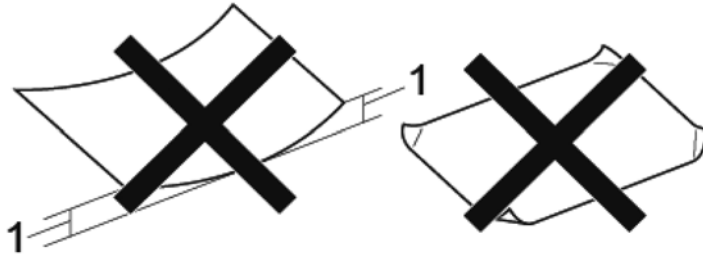
## Handle and Use Print Media

- 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

## Paper capacity of the output paper tray cover

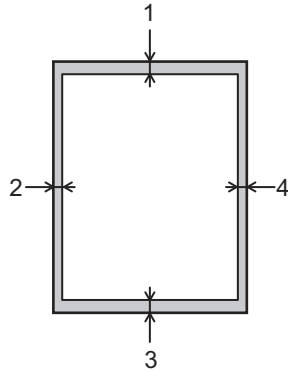
Up to 50 sheets of Letter, Legal or A4 20 lb (80 g/m<sup>2</sup>) paper.

- Photo paper must be picked up from the output the output paper tray cover one page at a time to avoid smudging.

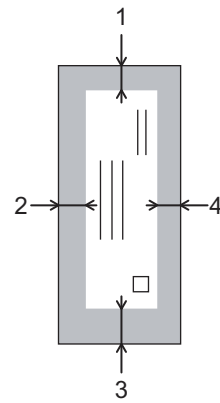
## 10.2 Printable Area

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 | 0.87 in. (22 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

---

### 1 INTRODUCTION

---

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: xxii](#))

#### 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.

### **Head/carriage unit**

- (1) Repeat purge action (maintenance code 76) for a couple of times. (Refer to [Chapter 5, Section 1.3.29.](#))

### **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**

Use a soft dry lint-free cloth.

#### **WARNING**

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



---

## 2 OVERVIEW

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### 2.1 Cross-section Drawings

#### 2.1.1 Document scanning

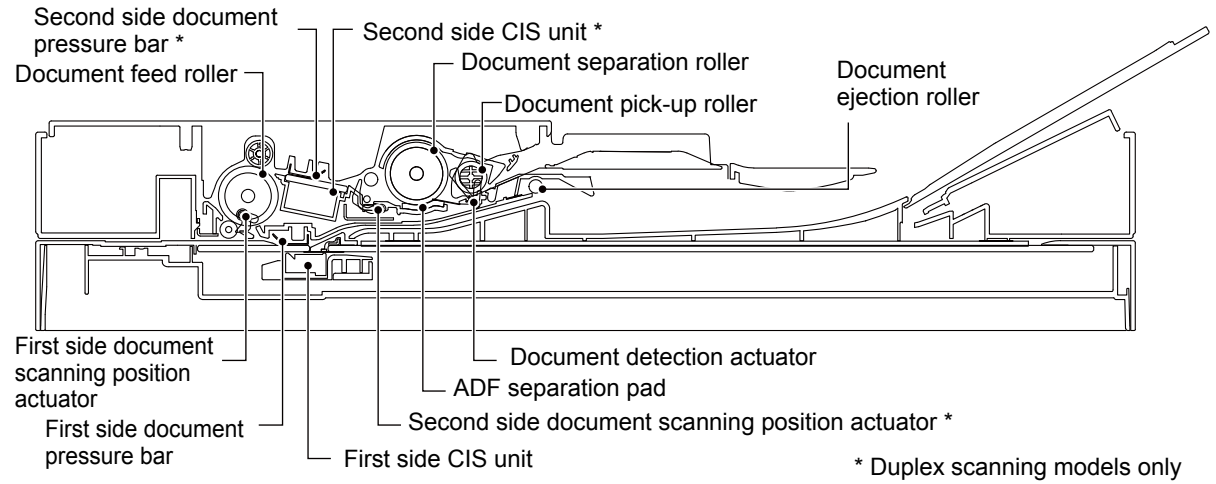


Fig. 2-1



## 2.1.2 Printer part

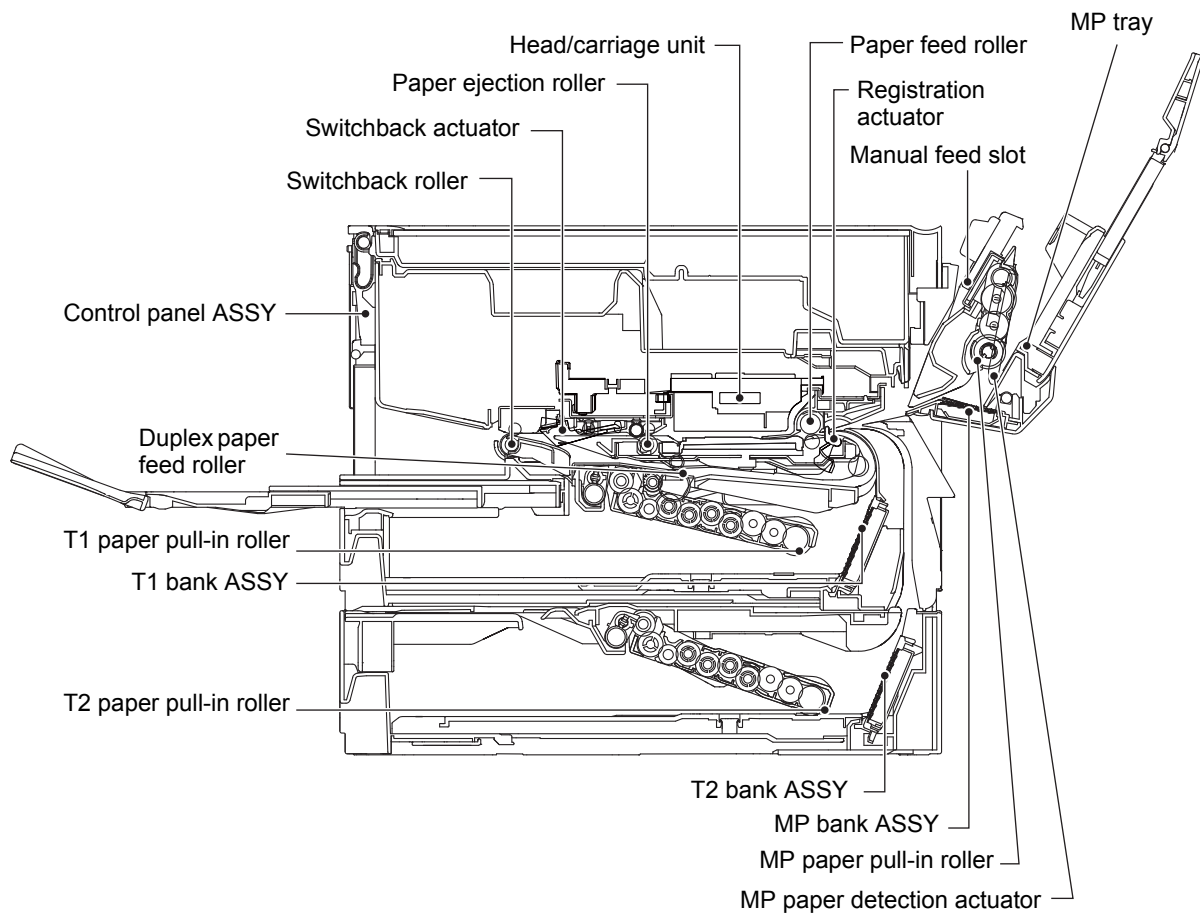


Fig. 2-2

## 2.2 Document Feeding Path/Recording Paper Feeding Path

### 2.2.1 Document Feeding Path

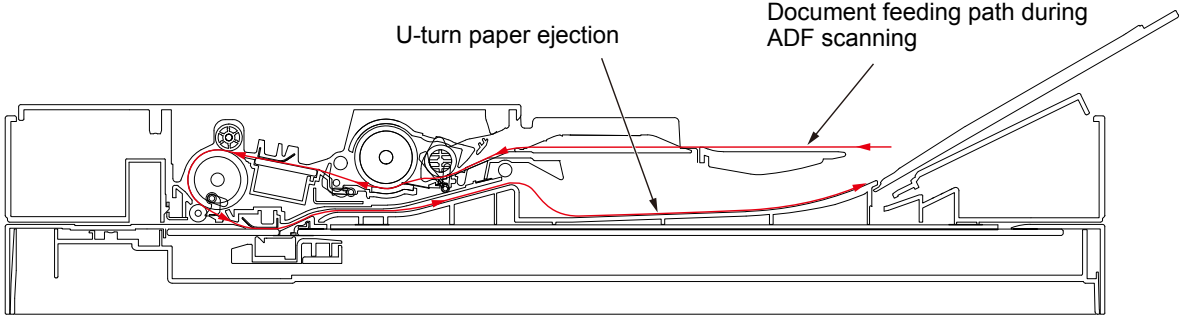


Fig. 2-3

### 2.2.2 Recording Paper Feeding Path

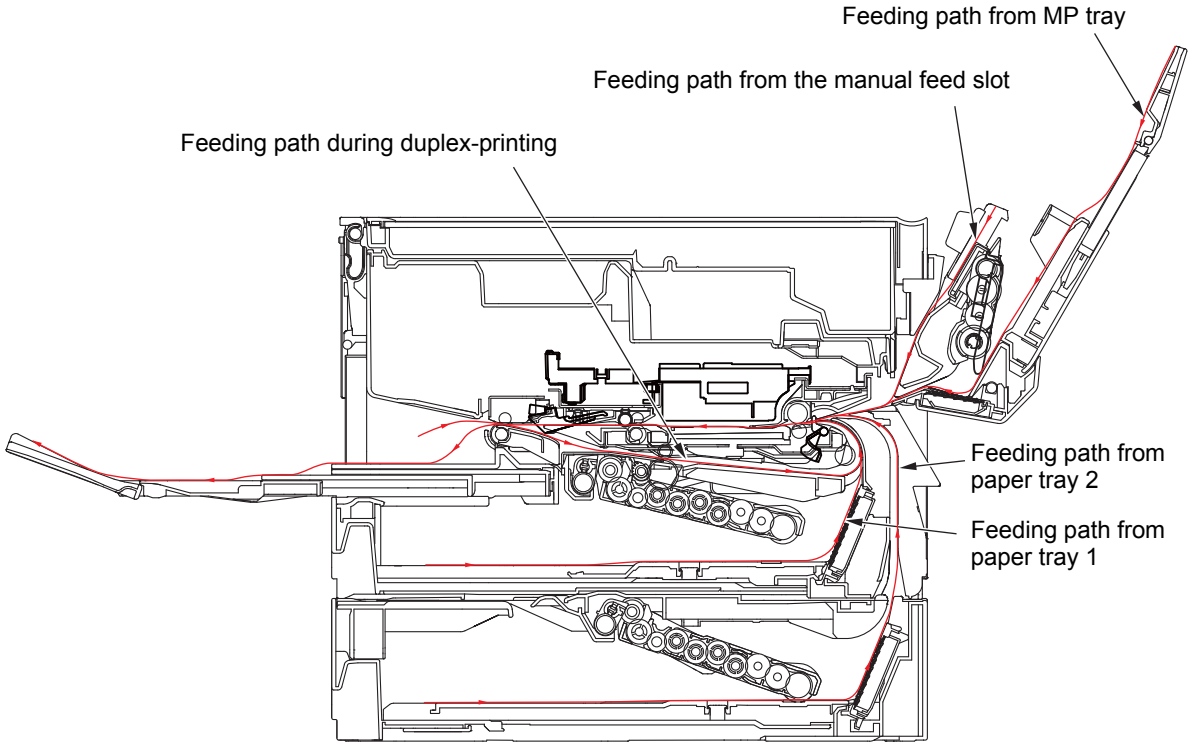


Fig. 2-4

## 2.3 Parts Names and Functions

### ■ Document scanning and feeding

| Parts Names  | Functions  |
|--|--|
| Document detection actuator                        | This detects whether documents are set on the document tray.   |
| Document pick-up roller                            | This pulls documents loaded in the document tray into the ADF.   |
| Document separation roller,<br>ADF separation pad  | This separates documents sent by the document pick-up roller in single sheet.  |
| Document feed roller                               | This feeds a document to the CIS unit.   |
| Second side document<br>scanning position actuator | This detects the leading edge and the ending edge of the document, adjusting the scanning position on the second side.<br>This detects paper jamming in the ADF. |
| First side document<br>scanning position actuator  | This detects the leading edge and the ending edge of the document, adjusting the scanning position on the first side.<br>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  |
|-----------------------------|--|
| Paper pull-in roller        | This feeds the recording paper from the paper tray to the paper feed roller.<br>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating paper feed roller, and correct inclination of the paper.   |
| Registration actuator       | This detect the leading edge of recording paper, controlling the printing start position.<br>This detect the leading edge/ending edge of recording paper, identifying the recording paper size.<br>This detects paper jamming in the rear.   |
| Paper feed roller           | This reverses the rotation when correcting inclination of the paper with the paper feed roller and the duplex paper feed roller.<br>It feeds the recording paper to the printing start position after correction.  |
| Paper ejection roller       | This feeds printed recording paper to the switchback roller.   |
| Switchback actuator         | This detects whether the printed recording papers are ejected.<br>This detects the ending edge of recording paper after printing the first side when duplex-printing, adjusting timing to reverse the switchback roller rotation.<br>This detects paper jamming in the ejector.<br>Detect if paper tray is set.      |
| Switchback roller           | This ejects the recording paper to the ejected paper tray.<br>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.   |
| Duplex paper feed roller    | During duplex-printing, this feeds the recording paper that are fed in the duplex paper path to the paper feed roller.<br>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating paper feed roller, and correct inclination of the paper. |
| MP paper pull-in roller     | This feeds the recording paper from the MP tray to the paper feed roller.<br>After the registration actuator detects the leading edge of the paper, it pushes the recording paper against the reverse-rotating paper feed roller, and correct inclination of the paper.  |
| MP paper detection actuator | This detects whether the recording paper are set on the MP tray.   |

## 2.4 Block Diagram

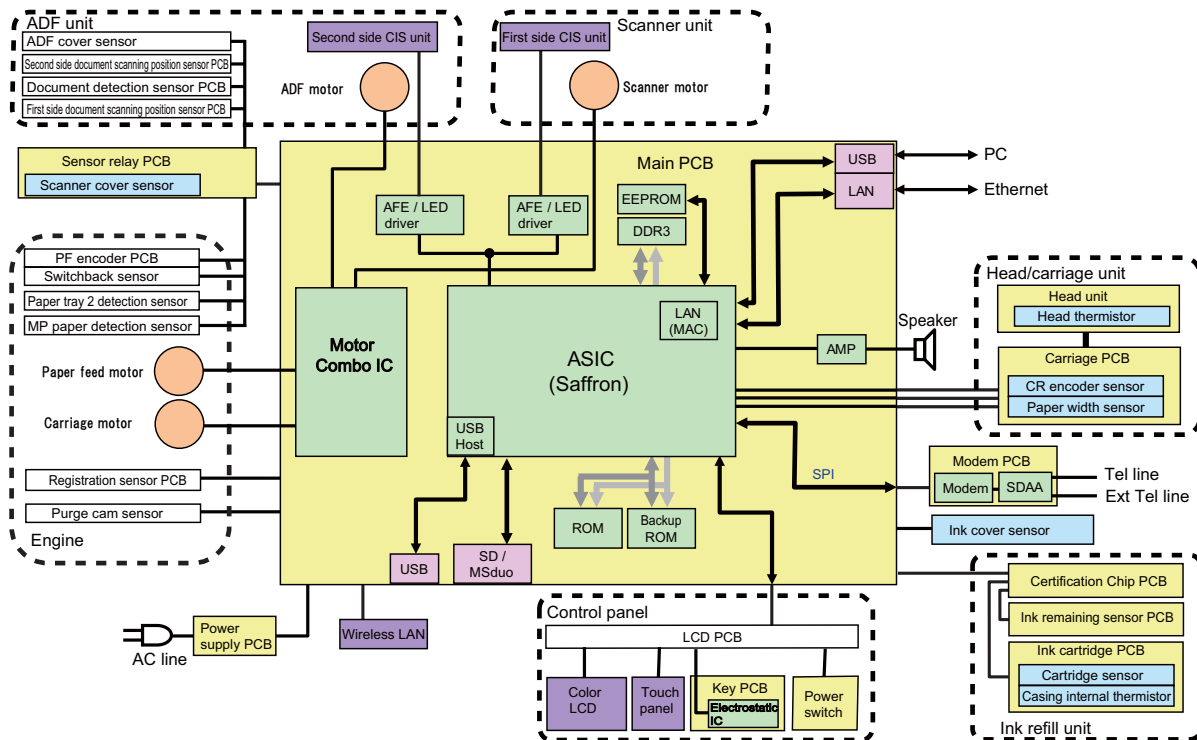


Fig. 2-5

## 2.5 Components

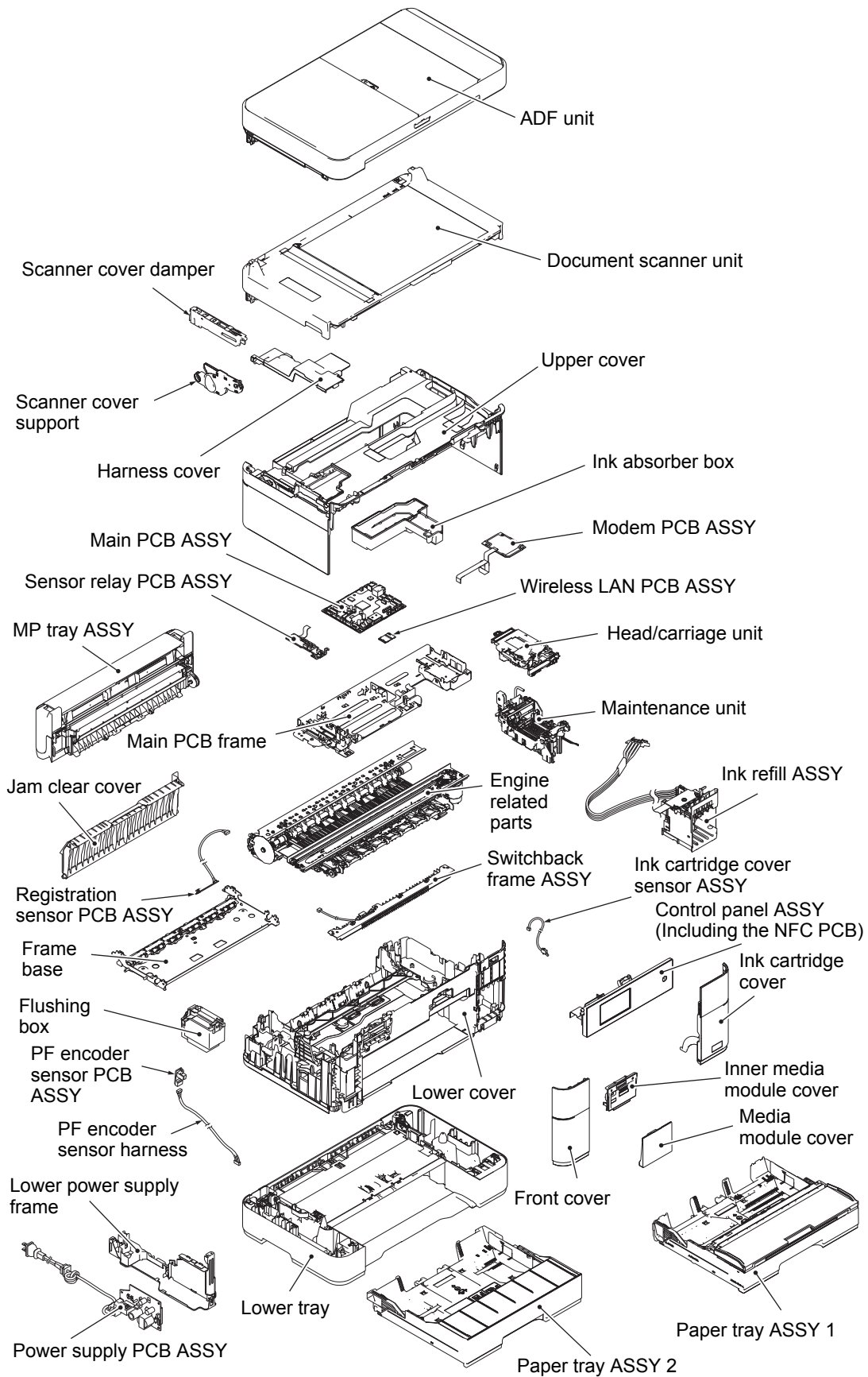


Fig. 2-6

### 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: |
|------------|--|----------------|
| 0D         | Paper jam during duplex-printing<br>The recording papers are fed in reverse on the platen when switchback drive is started, triggering switchback sensor as paper feeding condition.   | 2-20           |
| 0E         | Defective during duplex-printing<br>Switchback sensor detects paper feed condition at out of specified timing during switchback.   | 2-20           |
| 13         | Defective during duplex-printing<br>Registration sensor detects paper feed condition at out of specified timing during switchback.   | 2-21           |
| 15         | Paper jam during duplex ejecting<br>Recording paper is not able to be ejected since it is longer than 840 mm when ejecting the paper.  | 2-21           |
| 17         | Recording paper size error (duplex-printing/duplex-copying)<br>- Paper width is wider than 301.5 mm (detection by paper width sensor)<br>- Paper width is narrower than 95.5 mm (detection by paper width sensor)<br>- Paper length is longer than 245.9 mm (detection by registration sensor)<br>- Paper length is shorter than 143.5 mm (detection by registration sensor) | 2-22           |
| 18         | Paper jam during duplex-printing<br>Registration sensor does not detect paper feed within specified pulse numbers in the second side paper re-feed.  | 2-23           |
| 20         | Cannot identify a black ink cartridge.<br>The ink cartridge detection sensor and the ink remaining sensor are detecting.   | 2-24           |
| 21         | Cannot identify a yellow ink cartridge.<br>The ink cartridge detection sensor and the ink remaining sensor are detecting.  | 2-24           |
| 22         | Cannot identify a cyan ink cartridge.<br>The ink cartridge detection sensor and the ink remaining sensor are detecting.  | 2-24           |
| 23         | Cannot identify a magenta ink cartridge.<br>The ink cartridge detection sensor and the ink remaining sensor are detecting.   | 2-24           |
| 24         | Ink cartridge side IC chip relation defective<br>- Identification no match<br>- Judging as incompatible cartridge<br>- Detecting setting wrong color   | 2-25           |
| 25         | Cannot communicate with ink cartridge IC chip (ink cartridge side.)  | 2-25           |

| Error Code | Contents   | Refer to page: |
|------------|--|----------------|
| 26         | Black ink cartridge reaches service life time.<br>After judging as no ink by the ink remaining sensor, ink discharged for specified times.   | 2-26           |
| 27         | Yellow ink cartridge reaches service life time.<br>After judging as no ink by the ink remaining sensor, ink discharged for specified times.  | 2-26           |
| 28         | Cyan ink cartridge reaches service life time.<br>After judging as no ink by the ink remaining sensor, ink discharged for specified times.    | 2-26           |
| 29         | Magenta ink cartridge reaches service life time.<br>After judging as no ink by the ink remaining sensor, ink discharged for specified times. | 2-26           |
| 2A         | No black ink cartridge loaded.<br>Detected by the ink cartridge detection sensor.  | 2-27           |
| 2B         | No yellow ink cartridge loaded.<br>Detected by the ink cartridge detection sensor.   | 2-27           |
| 2C         | No cyan ink cartridge loaded.<br>Detected by the ink cartridge detection sensor.   | 2-27           |
| 2D         | No magenta ink cartridge loaded.<br>Detected by the ink cartridge detection sensor.  | 2-27           |
| 2E         | Cannot communicate with ink cartridge IC chip (machine body side.)   | 2-28           |
| 2F         | Ink cartridge cover sensor detects opened cover state.   | 2-28           |
| 30         | Carriage does not move.<br>Detected by the CR encoder sensor.  | 2-29           |
| 31         | Carriage cannot returned to origin.<br>Detected by the CR encoder sensor.  | 2-30           |
| 32         | Head capping is unable.  | 2-30           |
| 35         | Abnormal stop of head/carriage unit being driven<br>Causes other than paper jam when ink is not discharging                                  | 2-31           |
| 38         | Abnormal stop of head/carriage unit being driven<br>Cause by paper jam when ink is not discharging   | 2-31           |
| 3B         | Abnormal stop of head/carriage unit being driven<br>Causes other than paper jam when ink is discharging                                      | 2-32           |
| 3C         | Abnormal stop of head/carriage unit being driven<br>Cause by paper jam when ink is discharging   | 2-32           |
| 3E         | Defective occurs in the carriage motor, paper feed motor.  | 2-33           |
| 3F         | Carriage motor cannot stop.  | 2-34           |
| 40         | Casing internal thermistor defective<br>Machine internal thermistor detects -20 degree-C or less and 80 degree-C or more when power is on.   | 2-34           |



| Error Code | Contents  | Refer to page: |
|------------|---|----------------|
| 42         | Head voltage does not turn OFF.   | 2-35           |
| 43         | Head thermistor defective<br>Head thermistor detects -20 degree-C or less and 80 degree-C or more when power is on.   | 2-35           |
| 44         | Head driver IC detects abnormal temperature during operation or stand-by.   | 2-36           |
| 46         | Purge count or flushing count overflow.   | 2-36           |
| 48         | Head flat cable detected to be not correctly inserted.  | 2-36           |
| 49         | Head voltage does not raise.  | 2-37           |
| 4F         | Head voltage drops too quick.   | 2-37           |
| 50         | The purge cam switch is not switching ON/OFF.   | 2-38           |
| 52         | Failed to detect the origin of the purge cam.   | 2-38           |
| 5A         | Abnormal stop of purge cam being driven   | 2-39           |
| 5B         | Pump of maintenance unit stopped abnormally during exhaustion/suction.  | 2-39           |
| 5D         | Excessive current protection activated for the head driver IC during purge cam operation.   | 2-39           |
| 5E         | Excessive current protection activated for the head driver IC during pump operation.  | 2-39           |
| 66         | Paper tray 2 detection sensor detects no paper tray 2 state.  | 2-40           |
| 67         | Switchback sensor detects no paper tray 1 state.  | 2-40           |
| 75         | Head/carriage unit cannot shift to head capping position.   | 2-41           |
| 76         | Head/carriage unit cannot shift to head uncapping position.   | 2-41           |
| 7E         | Head property information not input.  | 2-41           |
| 80         | Recording paper size error (during FAX/list printing)<br>Registration sensor, recording paper width sensor detect unspecified papers.                                   | 2-42           |
| 81         | Recording paper size error (other than FAX/list printing)<br>The registration sensor and paper width sensor detected a recording paper smaller than the specified size. | 2-43           |
| 82         | Paper jam<br>Recording paper width sensor cannot detect leading edge of recording papers.   | 2-44           |
| 84         | Paper jam<br>Registration sensor stays in paper feeding state even after completion of paper ejection action.   | 2-44           |
| 87         | Paper jam<br>Switchback sensor stays in paper feeding state even after completion of paper ejection action.   | 2-45           |
| 88         | Paper jam<br>Switchback sensor cannot detect paper feeding state even papers are fed during printing.   | 2-45           |

| Error Code | Contents   | Refer to page: |
|------------|--|----------------|
| 89         | Recording paper width sensor cannot detect origin specified on the recording paper feed roller.  | 2-46           |
| 8A         | PF encoder sensor cannot detect rotation of the recording paper feed motor.  | 2-47           |
| 8C         | Excessive current protection activated for the head driver IC during recording paper feed motor operation.   | 2-47           |
| 8F         | Paper feed motor cannot stop.<br>Or, PF encoder sensor cannot detect rotation of the paper feed motor.   | 2-48           |
| 9F         | Recording papers set in MP tray slide into the slot<br>Abnormal current value in the Paper feed motor is detected.   | 2-48           |
| A1         | Document scanner sensor detects that document scanner is open.   | 2-49           |
| A2         | First side document scanning position sensor detects length of document 90 cm or more.   | 2-49           |
| A3         | Document detection sensor detects that document is pulled out during document scanning. Or, the first side document scanning position sensor cannot detect document within specified time. | 2-50           |
| A5         | Level of CIS scan result is detected as abnormal during FAX transmission (first transmission.)   | 2-51           |
| A6         | Level of CIS scan result is detected as abnormal during FAX transmission (after re-try.)   | 2-51           |
| A7         | Type of CIS unit and CIS type input value does not match.  | 2-51           |
| A8         | Matching of color parameter fails (for development debugging.)   | 2-52           |
| AC         | Level of second side CIS scan result is detected as abnormal during FAX transmission (first transmission.)   | 2-52           |
| AF         | CIS positioning abnormal (Home position cannot be found)   | 2-53           |
| BC         | Level of second side CIS scan result is detected as abnormal during FAX transmission (after re-try.)   | 2-53           |
| BD         | Black level value abnormal at scanning   | 2-53           |
| BF         | First side document scanning position sensor detects size that its length does not fit duplex scanning.  | 2-54           |
| DF         | SDAA communication failure   | 2-54           |
| E0         | Modem does not start normally even after resetting the modem.  | 2-54           |
| E2         | Wired LAN MAC address not registered.  | 2-55           |
| E3         | Wireless LAN MAC address not registered.   | 2-55           |
| E6         | Main PCB ASSY EEPROM write error   | 2-55           |
| EC         | LCD disconnection detected.  | 2-56           |
| ED         | Touch panel initialization failed.   | 2-56           |
| F0         | Flash file system error  | 2-56           |
| FE         | ROM data acquisition error   | 2-56           |

### 3.2 Error Messages

| Error Message                         | State   | Error Code            | Reference         |
|---------------------------------------|---|-----------------------|-------------------|
| B&W 1-sided Print Only<br>Replace Ink | After judging getting close to ink replacing timing by the ink remaining sensor, ink discharged for specified times. Printing is possible for black only documents. | 26,27,28,29           |                   |
| Cannot Detect                         | Cannot identify a ink cartridge.  | 20,21,22,<br>23,24,25 |                   |
| Cannot detect ink volume              | Ink remaining counter in the ink cartridge IC chip becomes 0.   | 26,27,28,29           |                   |
| Cannot Print<br>Replace Ink           | Ink ejection has reached the specified number of times when the ink remaining sensor detects that the ink replacement period is approaching.                        | 26,27,28,29           |                   |
| Comm. error                           | Communications error occurs.  |                       | 4.9.3             |
| Cover is Open.                        | Detect document scanner open state.   | A1                    |                   |
|                                       | Detect ink cartridge cover open state.  | 2F                    |                   |
| Document Jam                          | Document scanning position sensor detects paper jam inside ADF.   | A2,A3                 |                   |
| High Temperature                      | Machine interior thermistor detects that room temperature is too high.  | 40                    |                   |
| Ink Absorber Full                     | Purge count or flushing count reach upper threshold.  | 46                    |                   |
| Ink Absorber Near Full                | Purge count or flushing count are near upper threshold.   |                       | 4.10.7            |
| Ink low                               | Ink remaining sensor detects near ink replacing timing.   |                       | 4.10.6            |
| Install Starter Ink                   | The ink cartridge which does not contain required ink volume for the initial installation has been set at the initial installation.                                 | 24                    | 4.10.6            |
| Low Temperature                       | Machine interior thermistor detects that room temperature is too low.   | 40                    |                   |
| Media Error                           | Detect defective in memory card.  |                       | 4.10.2,<br>4.10.3 |
| No Ink Cartridge                      | Ink cartridge detection sensor detects no cartridge.  | 2A,2B,2C,<br>2D       |                   |

| Error Message              | State   | Error Code                                      | Reference           |
|----------------------------|---|---|---------------------|
| No Paper Fed               | Registration sensor detects no recording paper in the paper tray 1 or 2.<br>Paper width sensor detects that papers are not loaded correctly in the manual feed slot.<br>Registration sensor and MP paper detection sensor detect no recording paper in the MP tray. |   | 4.2.1, 4.2.2, 4.2.3 |
| Other Error                | Unsupported device is detected.   | -   | 4.10.3              |
| Out of Memory              | The memory becomes full.  | -   | 4.10.4              |
| Paper Jam                  | Registration sensor, switchback sensor, paper width sensor, and CR encoder sensor detect paper jam.<br>Paper feed motor detects paper jam.  | 0D,0E,13, 15,18 31,38,3C, 82,84,87,88, 8A,8C,9F |                     |
| Paper tray #2 not detected | Paper tray 2 detection sensor detects no paper tray 2.  | 66  |                     |
| Paper tray #1 not detected | Switchback sensor detects no paper tray 1.  | 67  |                     |
| Printer Locked.            | Printing function locked by Secure Function Lock, etc.  | -   | 4.10.5              |
| Unable to Print **         | Detects some problem in printing. (Refer to the error code **.)   | -   | -                   |
| Unable to Scan **          | Detects some problem in scanning. (Refer to the error code **.)   | -   | -                   |
| Wrong Ink Color            | A ink cartridge is set in position not matching its specified color.  | 24  |                     |
| Wrong Paper                | Registration sensor, recording paper width sensor detect unspecified papers.  | 17,80,81  |                     |

### 3.3 Communications Error

| Code 1 | Code 2 | Cause  | Refer to page:                                   |
|--------|--------|--|--|
| 10     | 07     | No paper when document transmission is called  | Section 4.9.3<br>"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     | EORCommand received  |  |

| Code 1 | Code 2 | Cause  | Refer to page:                                |
|--------|--------|--|---|
| 32     | 01     | Remote terminal only with V.29 capability in 2,400 or 4,800 bps transmission.  | Section 4.9.3 "A communications error occurs" |
| 32     | 02     | Remote terminal not ready for polling.   |   |
| 32     | 10     | Remote terminal not equipped with password function, or password function switch is OFF.   |   |
| 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.   |   |

| Code 1 | Code 2 | Cause   | Refer to page:                                |
|--------|--------|---|---|
| 50     | 01     | Vertical resolution capability changed after compensation of background color.              | Section 4.9.3 "A communications error occurs" |
| 63     | 01     | Password plus "lower 4 digits of telephone number" not coincident.                          |   |
| 63     | 02     | Password not coincident.  |   |
| 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 ColorFAX receiving impossible (ink remaining low.)                                 |   |

| Code 1 | Code 2 | Cause   | Refer to page:                                |
|--------|--------|---|---|
| A8     | 01     | Receive RTN or PIN or ERR (sending side.)   | Section 4.9.3 "A communications error occurs" |
| A9     | 01     | Send RTN or PIN or ERR (receiving side.)  |   |
| AA     | 18     | Receive buffer full during receiving into memory.                                       |   |
| 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 cancelled by depressing stop key before confirming FAX communication.     |   |
| BF     | 02     | Communication cancelled 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

### 4.1 Error Cause and Solutions

#### ■ Error Code 0D

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

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 paper tray.

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

#### ■ Error Code 0E

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

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.

| Step | Cause   | Solution                                  |
|------|---|---|
| 1    | Switchback actuator caught on the surrounding parts   | Set the switchback frame ASSY into place. |
| 2    | Registration actuator caught on the surrounding parts | Set the registration actuator into place. |
| 3    | Registration sensor defective                         | Replace the registration sensor PCB ASSY. |
| 4    | Sensor relay PCB defective                            | Replace the sensor relay PCB ASSY.        |
| 5    | Main PCB defective                                    | Replace the main PCB ASSY.                |

■ **Error Code 13**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Defective during duplex-printing

Registration 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.

| Step | Cause   | Solution                                  |
|------|---|---|
| 1    | Registration actuator caught on the surrounding parts | Set the registration actuator into place. |
| 2    | Registration sensor defective                         | Replace the registration sensor PCB ASSY. |
| 3    | Switchback actuator caught on the surrounding parts   | Set the switchback frame ASSY into place. |
| 4    | Drive frame ASSY defective                            | Replace the maintenance unit ASSY.        |
| 5    | Sensor relay PCB defective                            | Replace the sensor relay PCB ASSY.        |
| 6    | Main PCB defective                                    | Replace the main PCB ASSY.                |

■ **Error Code 15**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Eject jam during printing

Recording paper is not able to be ejected since it is longer than 840 mm when ejecting the paper after occurrence of the error 17.

**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    | Main PCB defective                            | Replace the main PCB ASSY. |

■ **Error Code 17**

|                    |     |
|--------------------|-----|
| <b>Wrong Paper</b> | LCD |
|--------------------|-----|

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

- Paper width is wider than 301.5 mm (detection by paper width sensor.)
- Paper width is narrower than 95.5 mm (detection by paper width sensor.)
- Paper length is longer than 245.9 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    | Registration actuator caught on the surrounding parts | Set the registration actuator into place.  |
| 3    | PF encoder disk stained                               | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</a> ) |
| 4    | CR encoder strip defective                            | Replace the CR encoder strip.  |
| 5    | PF encoder disk defective                             | Replace the PF encoder disk.   |
| 6    | Registration sensor defective                         | Replace the registration sensor PCB ASSY.  |
| 7    | Switchback actuator caught on the surrounding parts   | Set the switchback frame ASSY into place.  |
| 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 ASSY.   |

■ **Error Code 18**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Paper jam during duplex-printing

Registration sensor does not detect paper feed within specified pulse numbers in the second side paper re-feed  
(recording paper was pulled out, or very likely to have been pulled out.)

**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.

| 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    | Registration sensor defective                         | Replace the registration sensor PCB ASSY. |
| 4    | Inner chute ASSY defective                            | Replace the inner chute ASSY.             |
| 5    | Drive frame ASSY defective                            | Replace the maintenance unit ASSY.        |
| 6    | Main PCB defective                                    | Replace the main PCB ASSY.                |

■ **Error Code 20**

|                      |     |
|----------------------|-----|
| <b>Cannot Detect</b> | LCD |
|----------------------|-----|

Cannot identify a black ink cartridge.  
The ink cartridge detection sensor and the ink remaining sensor are detecting.

**Error Code 21**

|                      |     |
|----------------------|-----|
| <b>Cannot Detect</b> | LCD |
|----------------------|-----|

Cannot identify a yellow ink cartridge.  
The ink cartridge detection sensor and the ink remaining sensor are detecting.

**Error Code 22**

|                      |     |
|----------------------|-----|
| <b>Cannot Detect</b> | LCD |
|----------------------|-----|

Cannot identify a cyan ink cartridge.  
The ink cartridge detection sensor and the ink remaining sensor are detecting.

**Error Code 23**

|                      |     |
|----------------------|-----|
| <b>Cannot Detect</b> | LCD |
|----------------------|-----|

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.
- Check if ink cartridge has been already set before instruction for ink cartridge setting during initial installation.

| Step | Cause                               | Solution                     |
|------|-------------------------------------|------------------------------|
| 1    | Each ink cartridge sensor defective | Replace the ink refill ASSY. |
| 2    | Main PCB defective                  | Replace the main PCB ASSY.   |

■ **Error Code 24**

|  |     |
|--|-----|
| <b>Cannot Detect / Wrong Color Ink</b> | LCD |
|--|-----|

Ink cartridge side IC chip relation defective  
 -Identification no match/judge as incompatible cartridge/detecting setting wrong color

|                            |     |
|----------------------------|-----|
| <b>Install Starter Ink</b> | LCD |
|----------------------------|-----|

The Ink cartridge which does not contain required ink volume for the initial installation has been set at the initial installation.

**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.
- Set the starter ink cartridge.

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 25**

|                      |     |
|----------------------|-----|
| <b>Cannot Detect</b> | LCD |
|----------------------|-----|

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

**User Check**

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

■ **Error Code 26**

|   |     |
|---|-----|
| <b>B&amp;W 1-sided Print Only/Cannot Print Replace Ink<br/>Cannot detect ink volume</b> | LCD |
|---|-----|

Black ink cartridge reaches service life time.  
After judging as no ink by the ink remaining sensor, ink discharged for specified times.

**Error Code 27**

|   |     |
|---|-----|
| <b>B&amp;W 1-sided Print Only/Cannot Print Replace Ink<br/>Cannot detect ink volume</b> | LCD |
|---|-----|

Yellow ink cartridge reaches service life time.  
After judging as no ink by the ink remaining sensor, ink discharged for specified times.

**Error Code 28**

|   |     |
|---|-----|
| <b>B&amp;W 1-sided Print Only/Cannot Print Replace Ink<br/>Cannot detect ink volume</b> | LCD |
|---|-----|

Cyan ink cartridge reaches service life time.  
After judging as no ink by the ink remaining sensor, ink discharged for specified times.

**Error Code 29**

|   |     |
|---|-----|
| <b>B&amp;W 1-sided Print Only/Cannot Print Replace Ink<br/>Cannot detect ink volume</b> | LCD |
|---|-----|

Magenta ink cartridge reaches service life time.  
After judging as no ink by the ink remaining sensor, ink discharged for specified times.

**User Check**

- Replace the ink cartridge.

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

■ **Error Code 2A**

|                         |     |
|-------------------------|-----|
| <b>No Ink Cartridge</b> | LCD |
|-------------------------|-----|

No black ink cartridge loaded, detected by the ink cartridge detection sensor.

**Error Code 2B**

|                         |     |
|-------------------------|-----|
| <b>No Ink Cartridge</b> | LCD |
|-------------------------|-----|

No yellow ink cartridge loaded, detected by the ink cartridge detection sensor.

**Error Code 2C**

|                         |     |
|-------------------------|-----|
| <b>No Ink Cartridge</b> | LCD |
|-------------------------|-----|

No cyan ink cartridge loaded, detected by the ink cartridge detection sensor.

**Error Code 2D**

|                         |     |
|-------------------------|-----|
| <b>No Ink Cartridge</b> | LCD |
|-------------------------|-----|

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 defective | Replace the ink refill ASSY. |
| 2    | Main PCB defective                       | Replace the main PCB ASSY.   |



■ **Error Code 2E**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR 2E</b> | LCD |
|-------------------------|-----|

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

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 2F**

|                      |     |
|----------------------|-----|
| <b>Cover is Open</b> | LCD |
|----------------------|-----|

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 ASSY.                        |

■ **Error Code 30**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 30</b> | LCD |
|---------------------------|-----|

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 ASSY.      |
| 11   | Main PCB defective                        | Replace the main PCB ASSY.            |

■ **Error Code 31**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Carriage cannot return to 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    | CR encoder sensor defective                                   | Replace the carriage PCB ASSY.            |
| 10   | Switching lever guide defective<br>Maintenance unit defective | Replace the maintenance unit.             |
| 11   | Main PCB defective  | Replace the main PCB ASSY.                |

■ **Error Code 32**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 32</b> | LCD |
|---------------------------|-----|

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    | Switching lever guide defective<br>Maintenance unit defective | Replace the maintenance unit.             |
| 4    | Main PCB defective  | Replace the main PCB ASSY.                |

■ **Error Code 35**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 35</b> | LCD |
|---------------------------|-----|

Abnormal stop of head/carriage unit. Causes due to recording 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    | Main PCB defective                   | Replace the main PCB ASSY.                |

■ **Error Code 38**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Abnormal stop of head/carriage unit. Causes due to recording 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    | 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 ASSY.     |

■ **Error Code 3B**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 3B</b> | LCD |
|---------------------------|-----|

Abnormal stop of head/carriage unit. Causes other than recording 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    | 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    | Main PCB defective                   | Replace the main PCB ASSY.                |

■ **Error Code 3C**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Abnormal stop of head/carriage unit. Causes due to recording 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 ASSY.     |

■ Error Code 3E

|                    |     |
|--------------------|-----|
| Unable to Print 3E | LCD |
|--------------------|-----|

Defective occurs in the carriage motor, 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   | PF encoder sensor defective                         | Replace the PF encoder sensor.       |
| 11   | CR encoder sensor defective                         | Replace the carriage PCB ASSY.       |
| 12   | Carriage motor defective                            | Replace the carriage motor ASSY.     |
| 13   | Paper feed motor defective                          | Replace the paper feed motor.        |
| 14   | Main PCB defective                                  | Replace the main PCB ASSY.           |

■ **Error Code 3F**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 3F</b> | LCD |
|---------------------------|-----|

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 ASSY.      |
| 6    | Main PCB defective                        | Replace the main PCB ASSY.            |

■ **Error Code 40**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 40</b> | LCD |
|---------------------------|-----|

Casing internal thermistor defective

Machine internal thermistor detects -20 degree-C or less and 80 degree-C or more when power is on.

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

■ **Error Code 42**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 42</b> | LCD |
|---------------------------|-----|

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 ASSY.         |

■ **Error Code 43**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 43</b> | LCD |
|---------------------------|-----|

Head thermistor defective

Head thermistor detects -20 degree-C or less and 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 ASSY.         |



■ **Error Code 44**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 44</b> | LCD |
|---------------------------|-----|

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 <a href="#">Chapter 5, Section 1.3.25.</a> ) |
| 3    | Head thermistor defective<br>Head defective | Replace the head/carriage unit.  |
| 4    | Main PCB defective                          | Replace the main PCB ASSY.   |

■ **Error Code 46**

|   |     |
|---|-----|
| <b>Unable to Print 46 / Ink Absorber Full</b> | LCD |
|---|-----|

Purge count or flushing count overflown.

| 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 ASSY.   |

■ **Error Code 48**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 48</b> | LCD |
|---------------------------|-----|

Head flat cable detected to be not correctly inserted.

| 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    | Main PCB defective                     | Replace the main PCB ASSY.         |

■ **Error Code 49**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 49</b> | LCD |
|---------------------------|-----|

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 ASSY. |
| 6    | Main PCB defective                     | Replace the main PCB ASSY.         |

■ **Error Code 4F**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 4F</b> | LCD |
|---------------------------|-----|

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 ASSY. |
| 6    | Main PCB defective                     | Replace the main PCB ASSY.         |

■ **Error Code 50**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 50</b> | LCD |
|---------------------------|-----|

The purge cam switch is not switching ON/OFF.

**Error Code 52**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 52</b> | LCD |
|---------------------------|-----|

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    | Paper feed motor defective                  | Replace the paper feed motor.           |
| 4    | PF encoder sensor defective                 | Replace the PF encoder PCB ASSY.        |
| 5    | Maintenance unit defective                  | Replace the maintenance unit.           |
| 6    | Main PCB defective                          | Replace the main PCB ASSY.              |

■ **Error Code 5A**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 5A</b> | LCD |
|---------------------------|-----|

Abnormal stop of purge cam being driven.

**Error Code 5B**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 5B</b> | LCD |
|---------------------------|-----|

Pump of maintenance unit stopped abnormally during exhaustion/suction.

**Error Code 5D**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 5D</b> | LCD |
|---------------------------|-----|

Excessive current protection activated for the driver IC during purge cam operation.

**Error Code 5E**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 5E</b> | LCD |
|---------------------------|-----|

Excessive current protection activated for the driver IC during pump operation.

| Step | Cause                                     | Solution   |
|------|---|--|
| 1    | Foreign materials in the maintenance unit | Remove foreign materials.  |
| 2    | PF encoder disk stained                   | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</a> ) |
| 3    | PF encoder disk defective                 | Replace the PF encoder disk.   |
| 4    | PF encoder sensor defective               | Replace the PF encoder PCB ASSY.   |
| 5    | Ink supply tubes bent                     | Replace the ink refill ASSY.   |
| 6    | Paper feed motor defective                | Replace the paper feed motor.  |
| 7    | Maintenance unit defective                | Replace the maintenance unit.  |
| 8    | Main PCB defective                        | Replace the main PCB ASSY.   |

■ **Error Code 66**

|                                   |     |
|-----------------------------------|-----|
| <b>Paper Tray #2 not detected</b> | LCD |
|-----------------------------------|-----|

Paper tray 2 detection sensor detects no paper tray 2 state.

**User Check**

- Set paper tray 2.

| Step | Cause  | Solution   |
|------|--|--|
| 1    | Paper tray 2 detection sensor harness connection failure | Reconnect the paper tray 2 detection sensor harness. |
| 2    | Sensor relay PCB harness connection failure              | Reconnect the sensor relay PCB harness.              |
| 3    | Paper tray 2 detection sensor defective                  | Replace the paper tray 2 detection sensor.           |
| 4    | Sensor relay PCB defective                               | Replace the sensor relay PCB ASSY.                   |
| 5    | Paper tray 2 defective                                   | Replace the paper tray 2.                            |
| 6    | Main PCB defective                                       | Replace the main PCB ASSY.                           |

■ **Error Code 67**

|                                   |     |
|-----------------------------------|-----|
| <b>Paper tray #1 not detected</b> | LCD |
|-----------------------------------|-----|

Switchback sensor detects no paper tray 1 state.

**User Check**

- Set paper tray 1.

| Step | Cause   | Solution                                 |
|------|---|--|
| 1    | Switchback actuator caught on the surrounding parts | Set the switchback actuator into place.  |
| 2    | Switchback sensor harness connection failure        | Reconnect the switchback sensor harness. |
| 3    | Sensor relay PCB harness connection failure         | Reconnect the sensor relay PCB harness.  |
| 4    | Outer paper guide wear/ defective                   | Replace the outer paper guide.           |
| 5    | Sensor relay PCB defective                          | Replace the sensor relay PCB ASSY.       |
| 6    | Paper tray 1 defective                              | Replace the paper tray 1.                |
| 7    | Main PCB defective                                  | Replace the main PCB ASSY.               |

■ **Error Code 75**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 75</b> | LCD |
|---------------------------|-----|

Head/carriage unit cannot shift to head capping position.

**Error Code 76**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 76</b> | LCD |
|---------------------------|-----|

Head/carriage unit cannot shift to head uncapping position.

| Step | Cause   | Solution                             |
|------|---|--------------------------------------|
| 1    | CR encoder strip out of place                                 | Set the CR encoder strip into place. |
| 2    | Foreign materials in the maintenance unit                     | Remove foreign materials.            |
| 3    | Foreign materials in the engine unit                          | Remove foreign materials.            |
| 4    | Carriage motor defective                                      | Replace the carriage motor ASSY.     |
| 5    | Switching lever guide defective<br>Maintenance unit defective | Replace the maintenance unit.        |
| 6    | Main PCB defective  | Replace the main PCB ASSY.           |

■ **Error Code 7E**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR 7E</b> | LCD |
|-------------------------|-----|

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 1.3.25.</a> ) |
| 2    | Main PCB defective                  | Replace the main PCB ASSY.   |

■ **Error Code 80**

|                    |     |
|--------------------|-----|
| <b>Wrong Paper</b> | LCD |
|--------------------|-----|

Recording paper size error (during FAX/list printing)  
 Registration sensor, recording paper width sensor detect unspecified 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.
- Check that recording paper is loaded in correct direction in the Paper tray.

| 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 <a href="#">Chapter 3, Section 1.</a> ) |
| 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 PCB ASSY.   |
| 8    | Registration sensor defective                         | Replace the registration sensor PCB ASSY.  |
| 9    | Carriage motor defective                              | Replace the carriage motor ASSY.   |
| 10   | Paper feed motor defective                            | Replace the paper feed motor.  |
| 11   | Main PCB defective                                    | Replace the main PCB ASSY.   |

■ **Error Code 81**

|                    |     |
|--------------------|-----|
| <b>Wrong Paper</b> | LCD |
|--------------------|-----|

Recording paper size error (other than FAX/list printing)

Registration sensor and paper width sensor detects papers smaller than specified size.

**User Check**

- Check whether the recording paper being used is within the specification.
- Check that recording paper is loaded in correct direction in the paper 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 <a href="#">Chapter 3, Section 1.</a> ) |
| 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 PCB ASSY.  |
| 8    | Registration sensor defective                         | Replace the registration sensor PCB ASSY.   |
| 9    | Carriage motor defective                              | Replace the carriage motor ASSY.  |
| 10   | Paper feed motor defective                            | Replace the paper feed motor.   |
| 11   | Main PCB defective                                    | Replace the main PCB ASSY.  |



■ **Error Code 82**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Recording paper jam, recording paper width sensor cannot detect leading edge 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 ASSY.                   |

■ **Error Code 84**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Recording 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 eject roller, switchback roller stained   | Clean the related rollers.                |
| 5    | Paper feed roller, paper eject roller, switchback roller defective | Replace related rollers.                  |
| 6    | Main PCB defective   | Replace the main PCB ASSY.                |

■ **Error Code 87**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Recording 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 ejection roller, switchback roller stained    | Clean the related rollers.                       |
| 5    | Paper ejection roller, switchback roller defective  | Replace related rollers.                         |
| 6    | Main PCB defective                                  | Replace the main PCB ASSY.                       |

■ **Error Code 88**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Recording 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 out of place                   | Set the switchback frame ASSY into place. |
| 3    | Switchback sensor harness connection failure       | Reconnect the switchback sensor harness.  |
| 4    | Sensor relay PCB harness connection failure        | Reconnect the sensor relay PCB harness.   |
| 5    | Paper feed roller, paper ejection roller stained   | Clean the related rollers.                |
| 6    | Paper feed roller, paper ejection roller defective | Replace related rollers.                  |
| 7    | Sensor relay PCB defective                         | Replace the sensor relay PCB ASSY.        |
| 8    | Main PCB defective                                 | Replace the main PCB ASSY.                |

■ Error Code 89

|                    |     |
|--------------------|-----|
| Unable to Print 89 | LCD |
|--------------------|-----|

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 <a href="#">Chapter 3, Section 1.</a> ) |
| 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 ASSY.   |

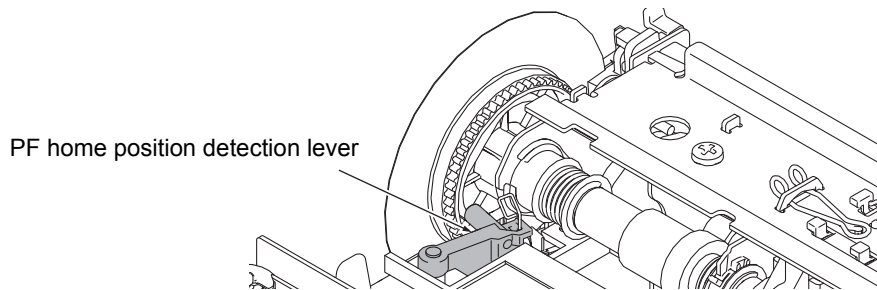


Fig. 2-7

■ **Error Code 8A**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

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

**User Check**

- Remove the jammed paper in jam clear cover part, platen part and front part.

| Step | Cause  | Solution                                   |
|------|--|--|
| 1    | Foreign materials in the feeding path          | Remove foreign materials.                  |
| 2    | Paper feed motor harness connection failure    | Reconnect the paper feed motor harness.    |
| 3    | PF encoder sensor harness connection defective | Reconnect the PF encoder sensor harness.   |
| 4    | Sensor relay PCB harness connection failure    | Reconnect the sensor relay PCB harness.    |
| 5    | Paper feed roller belt out of place            | Set the paper feed roller belt into place. |
| 6    | PF encoder sensor defective                    | Replace the PF encoder sensor.             |
| 7    | Sensor relay PCB defective                     | Replace the sensor relay PCB ASSY.         |
| 8    | PF encoder disk defective                      | Replace the PF encoder disk.               |
| 9    | Paper feed motor defective                     | Replace the paper feed motor.              |
| 10   | Main PCB defective                             | Replace the main PCB ASSY.                 |

■ **Error Code 8C**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Excessive current protection activated for the driver IC during paper feed motor operation.

**User Check**

- Remove the jammed paper in jam clear cover part, platen part and front part.

| Step | Cause                                 | Solution                       |
|------|---------------------------------------|--------------------------------|
| 1    | Foreign materials in the feeding path | Remove foreign materials.      |
| 2    | PF encoder sensor defective           | Replace the PF encoder sensor. |
| 3    | Paper feed motor defective            | Replace the paper feed motor.  |
| 4    | Main PCB defective                    | Replace the main PCB ASSY.     |

■ **Error Code 8F**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print 8F</b> | LCD |
|---------------------------|-----|

Paper feed motor cannot stop.

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

| Step | Cause  | Solution                                   |
|------|--|--|
| 1    | Foreign materials in the feeding path          | Remove foreign materials.                  |
| 2    | Paper feed motor harness connection failure    | Reconnect the paper feed motor harness.    |
| 3    | PF encoder sensor harness connection defective | Reconnect the PF encoder sensor harness.   |
| 4    | Sensor relay PCB harness connection failure    | Reconnect the sensor relay PCB harness.    |
| 5    | Paper feed roller belt out of place            | Set the paper feed roller belt into place. |
| 6    | PF encoder sensor defective                    | Replace the PF encoder sensor.             |
| 7    | Sensor relay PCB defective                     | Replace the sensor relay PCB ASSY.         |
| 8    | PF encoder disk defective                      | Replace the PF encoder disk.               |
| 9    | Paper feed motor defective                     | Replace the paper feed motor.              |
| 10   | Main PCB defective                             | Replace the main PCB ASSY.                 |

■ **Error Code 9F**

|                  |     |
|------------------|-----|
| <b>Paper Jam</b> | LCD |
|------------------|-----|

Recording papers set in MP tray slide into the slot.

Abnormal current value in the Paper feed motor is detected.

**User Check**

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

| Step | Cause                            | Solution                      |
|------|----------------------------------|-------------------------------|
| 1    | Foreign materials in the MP tray | Remove foreign materials.     |
| 2    | MP tray not mounted in place     | Set the MP tray into place.   |
| 3    | MP tray defective                | Replace the MP tray.          |
| 4    | Paper feed motor defective       | Replace the paper feed motor. |
| 5    | Main PCB defective               | Replace the main PCB ASSY.    |

■ **Error Code A1**

|                      |     |
|----------------------|-----|
| <b>Cover is Open</b> | LCD |
|----------------------|-----|

Document scanner sensor detects that document scanner is open.

**User Check**

- Close the document scanner.

| Step | Cause                                       | Solution                                |
|------|---|---|
| 1    | Sensor relay PCB harness connection failure | Reconnect the sensor relay PCB harness. |
| 2    | Document scanner sensor defective           | Replace the sensor relay PCB ASSY.      |
| 3    | Document scanner unit boss broken           | Replace the document scanner unit.      |
| 4    | Main PCB defective                          | Replace the main PCB ASSY.              |

■ **Error Code A2**

|                     |     |
|---------------------|-----|
| <b>Document Jam</b> | LCD |
|---------------------|-----|

First side document scanning position sensor detects length of document 90 cm or more.

**User Check**

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

| Step | Cause  | Solution   |
|------|--|--|
| 1    | First side document scanning position actuator caught on the surrounding parts | Set the first side document scanning position actuator into place. |
| 2    | First side document scanning position sensor defective                         | Replace the first side document scanning position sensor PCB.      |
| 3    | ADF motor defective<br>Document feed roller worn out                           | Replace the ADF unit.  |
| 4    | Sensor relay PCB defective   | Replace sensor relay PCB.  |
| 5    | Main PCB defective   | Replace the main PCB ASSY.   |

■ **Error Code A3**

|                     |     |
|---------------------|-----|
| <b>Document Jam</b> | LCD |
|---------------------|-----|

Document detection sensor detects that document is pulled out during document scanning. Or, the first side 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    | First side document scanning position actuator out of place             | Set the first side document scanning position actuator into place.  |
| 4    | First side document scanning position sensor harness connection failure | Reconnect the first side document scanning position sensor harness. |
| 5    | First side document scanning position sensor defective                  | Replace the first side document scanning position sensor PCB ASSY.  |
| 6    | Document pick-up roller worn out  | Replace the document separate roller ASSY.                          |
| 7    | ADF motor defective   | Replace the ADF unit.   |
| 8    | Sensor relay PCB defective  | Replace sensor relay PCB.   |
| 9    | Main PCB defective  | Replace the main PCB ASSY.  |

■ **Error Code A5**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan A5</b> | LCD |
|--------------------------|-----|

Level of first side CIS scan result is detected as abnormal during FAX transmission (first transmission.)

**Error Code A6**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan A6</b> | LCD |
|--------------------------|-----|

Level of first side CIS scan result is detected as abnormal during FAX transmission (after re-try.)

| Step | Cause                                | Solution   |
|------|--------------------------------------|--|
| 1    | White level data failure             | Carry out maintenance 55 to obtain white/black label data. |
| 2    | White reference film stained         | Clean document cover glass at white reference film.        |
| 3    | First side CIS unit defective        | Replace the first side CIS unit.                           |
| 4    | White reference film damaged, broken | Replace the document scanner unit.                         |
| 5    | Main PCB defective                   | Replace the main PCB ASSY.                                 |

■ **Error Code A7**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan A7</b> | LCD |
|--------------------------|-----|

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 1.3.20.</a> ) |
| 2    | Main PCB defective                                   | Replace the main PCB ASSY.   |



■ **Error Code A8**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan A8</b> | LCD |
|--------------------------|-----|

Matching of color parameter fails.

**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 ASSY. |

■ **Error Code AC**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan AC</b> | LCD |
|--------------------------|-----|

Level of second side CIS scan result is detected as abnormal during FAX transmission (first transmission.)

| Step | Cause                                | Solution  |
|------|--------------------------------------|---|
| 1    | White level data failure             | Carry out maintenance 55 to obtain white label data.                                  |
| 2    | White reference film stained         | Clean the white reference film of document pressure bar of the document scanner unit. |
| 3    | Second side CIS unit defective       | Replace the second side CIS unit.   |
| 4    | White reference film damaged, broken | Replace the document scanner unit.  |
| 5    | Main PCB defective                   | Replace the main PCB ASSY.  |

■ **Error Code AF**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan AF</b> | LCD |
|--------------------------|-----|

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 ASSY.                          |

■ **Error Code BC**

|                          |     |
|--------------------------|-----|
| <b>Unable to Scan BC</b> | LCD |
|--------------------------|-----|

Level of second side CIS scan result is detected as abnormal during FAX transmission (after re-try.)

| Step | Cause                          | Solution   |
|------|--------------------------------|--|
| 1    | White level data failure       | Carry out maintenance 55 to obtain white label data. |
| 2    | Second side CIS unit defective | Replace the second side CIS unit.                    |
| 3    | Main PCB defective             | Replace the main PCB ASSY.                           |

■ **Error Code BD**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR BD</b> | LCD |
|-------------------------|-----|

Black level value abnormal at scanning.

| Step | Cause  | Solution   |
|------|--|--|
| 1    | Black level data failure                     | Carry out maintenance 55 to obtain white/black label data. |
| 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 ASSY.                                 |

■ **Error Code BF**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR BF</b> | LCD |
|-------------------------|-----|

First side document scanning position sensor detects size that its 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    | First side document scanning position actuator caught on the surrounding parts | Set the first side document scanning position actuator into place. |
| 2    | First side document scanning position sensor defective                         | Replace the first side document scanning position sensor PCB.      |
| 3    | ADF motor defective<br>Document feed roller worn out                           | Replace the ADF unit.  |
| 4    | Main PCB defective   | Replace the main PCB ASSY.   |

■ **Error Code DF**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR DF</b> | LCD |
|-------------------------|-----|

SDAA communication failure

**Error Code E0**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print E0</b> | LCD |
|---------------------------|-----|

Modem does not start normally even after resetting the modem.

| Step | Cause               | Solution                    |
|------|---------------------|-----------------------------|
| 1    | Modem PCB defective | Replace the modem PCB ASSY. |
| 2    | Main PCB defective  | Replace the main PCB ASSY.  |

■ **Error Code E2**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR E2</b> | LCD |
|-------------------------|-----|

Wired LAN MAC address not registered.

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code E3**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR E3</b> | LCD |
|-------------------------|-----|

Wireless LAN MAC address acquisition error

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

■ **Error Code E6**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR E6</b> | LCD |
|-------------------------|-----|

Main PCB ASSY EEPROM write error

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code E9**

|                           |     |
|---------------------------|-----|
| <b>Unable to Print E9</b> | LCD |
|---------------------------|-----|

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 ASSY defective             | Replace the LCD PCB ASSY.      |
| 4    | Main PCB defective                 | Replace the main PCB ASSY.     |

■ **Error Code EC**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR EC</b> | LCD |
|-------------------------|-----|

LCD disconnection detected.

| Step | Cause                             | Solution                        |
|------|-----------------------------------|---------------------------------|
| 1    | LCD flat cable connection failure | Reconnect the LCD flat cable.   |
| 2    | LCD PCB defective                 | Replace the control panel ASSY. |
| 3    | Main PCB defective                | Replace the main PCB ASSY.      |

■ **Error Code ED**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR ED</b> | LCD |
|-------------------------|-----|

Touch panel initialization failed.

**User Check**

- Check foreign materials between touch panel and touch panel frame, and remove if any.

| Step | Cause                 | Solution                        |
|------|-----------------------|---------------------------------|
| 1    | Touch panel defective | Replace the control panel ASSY. |
| 2    | Main PCB defective    | Replace the main PCB ASSY.      |

■ **Error Code F0**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR F0</b> | LCD |
|-------------------------|-----|

Flash file system error

**Error Code FE**

|                         |     |
|-------------------------|-----|
| <b>MACHINE ERROR FE</b> | LCD |
|-------------------------|-----|

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 ASSY. |

## 4.2 Recording Paper Feeding Problems

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

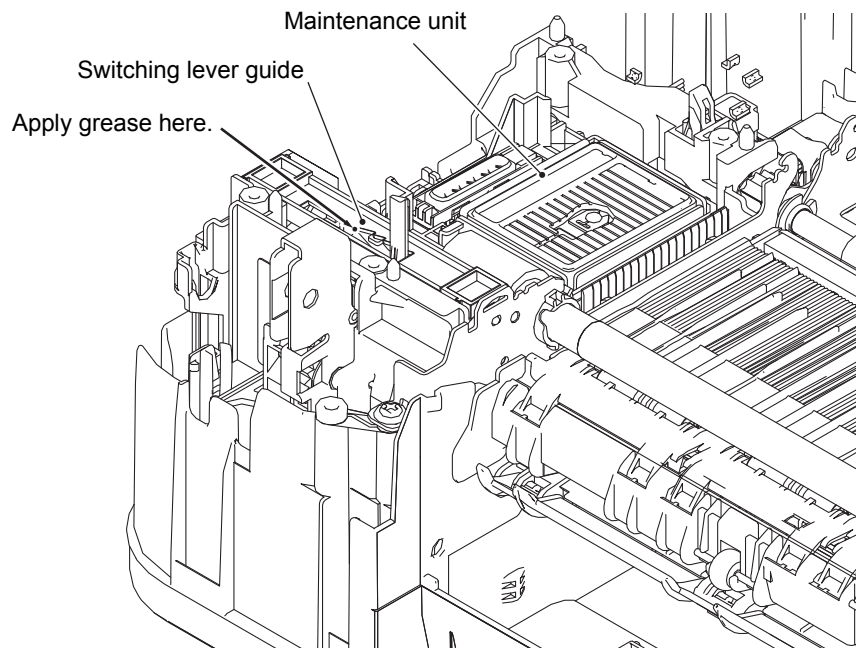
If the same problem occurs, follow each procedure in the order of the number described in the Step column in the tables below.

### 4.2.1 Paper is not fed from paper tray

#### User Check

- Check that setting of tray selection is not fix to MP Tray.
- 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 recording 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 recording 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 <a href="#">Chapter 3, Section 1.</a> ) |
| 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.                        |
| 6    | Paper feed motor harness connection failure                                   | Reconnect the paper feed motor harness.  |
| 7    | Registration actuator out of place  | Set the registration actuator into place.  |
| 8    | Paper feeding path parts out of place   | Set the feeding path parts into place.   |
| 9    | Paper pull-in roller worn out   | Replace the paper pull-in roller.  |
| 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   | Replace the maintenance unit.  |
| 13   | Registration sensor defective   | Replace the registration sensor PCB ASSY.  |
| 14   | Paper feed motor defective  | Replace the paper feed motor.  |
| 15   | Main PCB defective  | Replace the main PCB ASSY.   |



**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    | Registration sensor defective               | Replace the registration sensor PCB ASSY. |
| 4    | Paper feed motor defective                  | Replace the paper feed motor.             |
| 5    | Main PCB defective                          | Replace the main PCB ASSY.                |

#### 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 pull-in roller.

| 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    | Sensor relay PCB harness connection failure          | Reconnect the sensor relay PCB harness.          |
| 4    | MP paper detection actuator out of place             | Set the MP paper detection actuator into place.  |
| 5    | MP paper detection sensor defective                  | Replace the MP paper detection sensor PCB ASSY.  |
| 6    | Sensor relay PCB defective                           | Replace the sensor relay PCB.                    |
| 7    | Paper feed motor defective                           | Replace the paper feed motor.                    |
| 8    | MP drive gear broken<br>MP pull-in roller worn out   | Replace the MP unit.                             |
| 9    | Main PCB defective                                   | Replace the main PCB ASSY.                       |



#### 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 set number of recording paper loaded in each recording paper tray is within specified volume.
- Try reversing the recording paper in each recording 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 recording paper tray.

| Step | Cause              | Solution               |
|------|--------------------|------------------------|
| 1    | Bank ASSY worn out | Replace the bank ASSY. |
| 2    | Base pad worn out  | Replace the base pad.  |

#### 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 set 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 paper tray.

| Step | Cause  | Solution              |
|------|--|-----------------------|
| 1    | Base pad worn out<br>Bank ASSY worn out<br>Friction pad worn out | Replace MP tray ASSY. |

#### 4.2.6 Paper feeding at an angle

##### User Check

- Check that recording paper is loaded correctly in the paper 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    | Paper pull-in roller not mounted in place | Set the paper pull-in roller into place. |
| 2    | Bank ASSY out of place                    | Set the bank ASSY into place.            |
| 3    | Paper feeding path parts out of place     | Set the feeding path parts into place.   |
| 4    | Main PCB defective                        | Replace the main PCB ASSY.               |

## 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.
- Adjust the paper guide to match the recording paper size.
- Check that the paper shorter 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 recording 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   | Recording paper tray defective                | Replace the recording paper tray.         |
| 12   | Main PCB defective                            | Replace the main PCB ASSY.                |

■ **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 shorter 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.

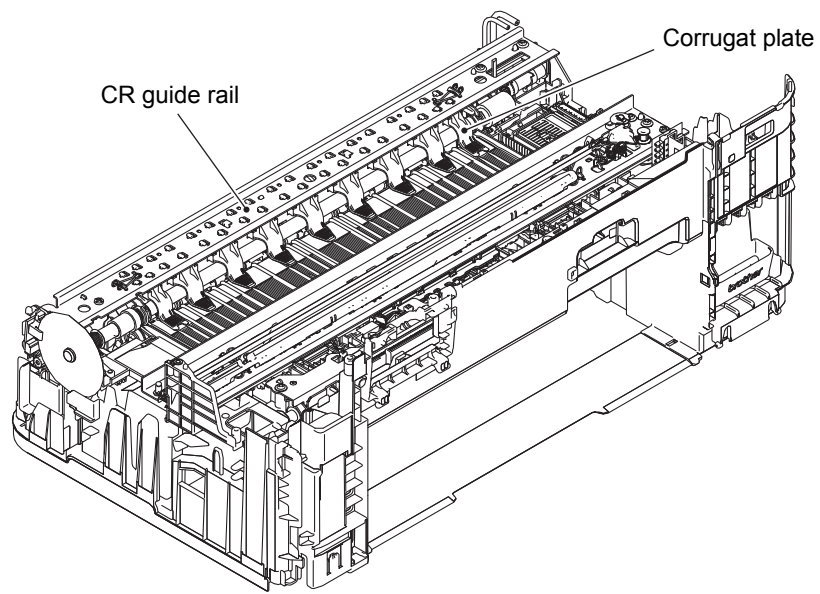
| Step | Cause                                       | Solution  |
|------|---|---|
| 1    | Foreign materials in the MP tray paper path | Remove foreign materials.                       |
| 2    | Platen foam drift                           | Set the platen foam into place.                 |
| 3    | 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 defective                           | Replace the MP tray ASSY.                       |
| 10   | Main PCB defective                          | Replace the main PCB ASSY.                      |

■ **Paper jam around the platen**

**User Check**

- Check that recording paper is loaded correctly in the paper tray.
- Adjust the paper guide to match the recording paper size.
- Check that the paper shorter 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    | CR encoder strip out of place                     | Set the CR encoder strip into place.             |
| 4    | Platen foam drift                                 | Set the platen foam into place.                  |
| 5    | Bank ASSY out of place                            | Set the bank ASSY into place.                    |
| 6    | Head/carriage unit head unlocked                  | Set the head lock in lock position.              |
| 7    | Switchback inner paper guide not mounted in place | Set the switchback inner paper guide into place. |
| 8    | Switchback outer paper guide not mounted in place | Set the switchback outer paper guide into place. |
| 9    | Switchback roller belt out of place               | Set the switchback roller belt into place.       |
| 10   | Paper ejection roller belt out of place           | Set the paper ejection roller belt into place.   |
| 11   | CR guide rail not mounted in place                | Set the CR guide rail into place.                |
| 12   | Corrugat plate not mounted in place               | Set the corrugat plate into place.               |
| 13   | Platen ASSY not mounted in place                  | Set the platen ASSY into place.                  |
| 14   | Platen spring not mounted in place                | Set the platen spring into place.                |
| 15   | Inner chute ASSY not mounted in place             | Set the inner chute ASSY into place.             |
| 16   | Inner chute ASSY broken                           | Replace the inner chute ASSY.                    |
| 17   | DX paper guide ASSY not mounted in place          | Set the DX paper guide ASSY into place.          |
| 18   | Platen ASSY damaged, broken                       | Replace the platen ASSY.                         |
| 19   | Registration sensor PCB defective                 | Replace the registration sensor PCB ASSY.        |
| 20   | Main PCB defective                                | Replace the main PCB ASSY.                       |



**Fig. 2-9**

■ **Paper jam around paper ejection parts**

**User Check**

- Clean the related rollers.
- Check that the number of recording paper on the paper ejecting tray is within the maximum ejecting paper volume.

| 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    | Paper ejection roller belt out of place           | Set the paper ejection roller belt into place.   |
| 5    | Main PCB defective                                | Replace the main PCB ASSY.                       |

■ **Paper jam during duplex printing**

**User Check**

- Adjust the paper guide to match the recording paper size.
- Check that the paper shorter 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    | 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    | Main PCB defective                                | Replace the main PCB ASSY.                       |

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

##### User Check

- Set the driver settings to duplex-printing.
- Use recording papers in letter size or A4 size.
- 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 ASSY.    |

### 4.3 Print-image Problems

#### 4.3.1 Defective images

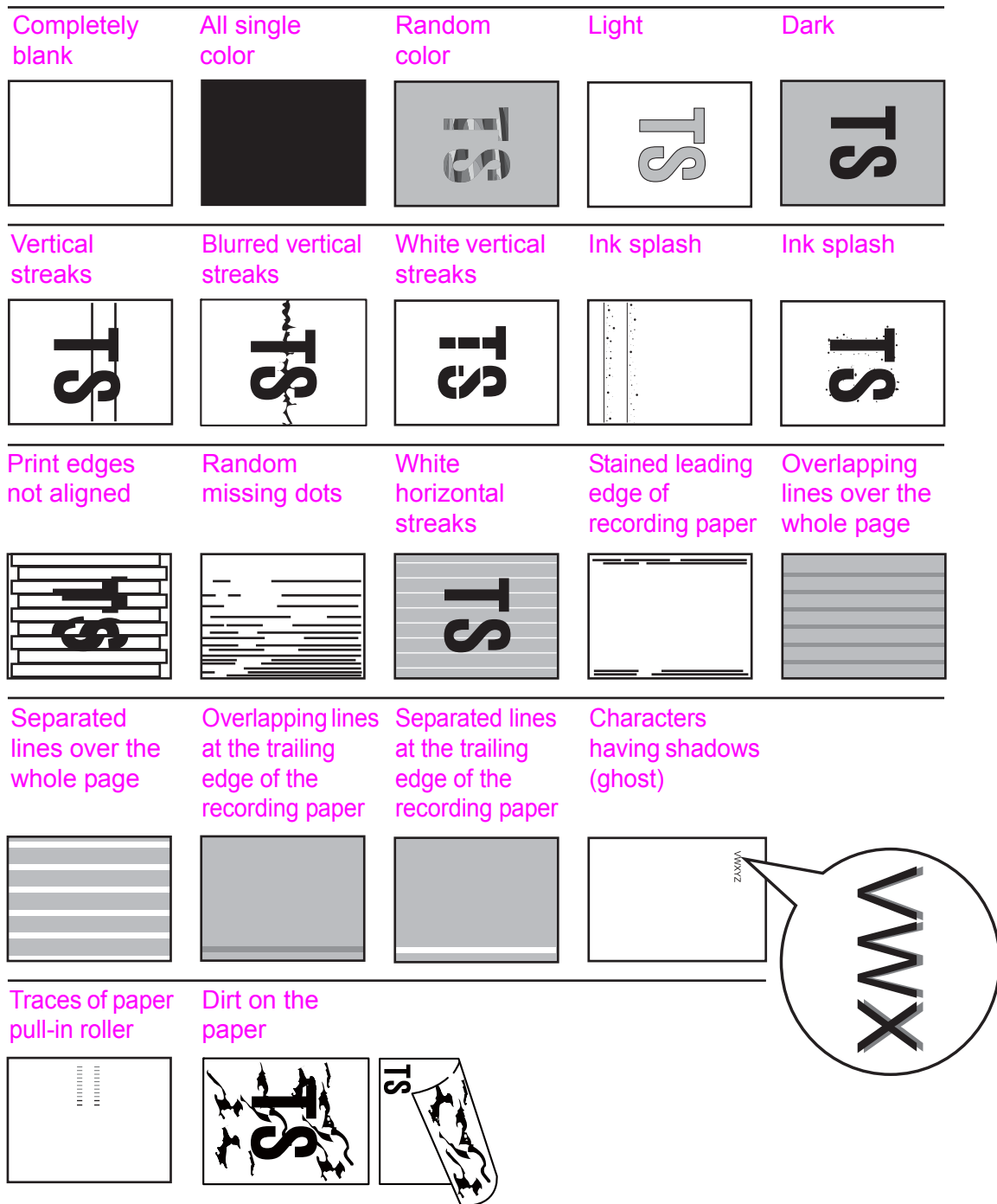


Fig. 2-10



### 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

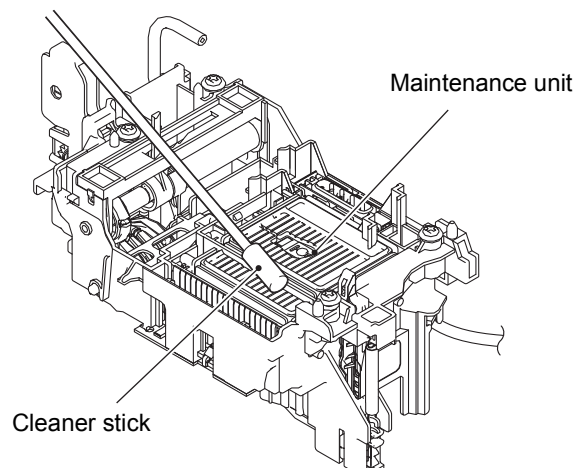


#### User Check

- Check if there is enough remaining ink.
- Carry out head cleaning.

| Step | Cause                                  | Solution  |
|------|--|---|
| 1    | Maintenance unit stained               | Clean the maintenance unit (refer to the figure below.)   |
| 2    | Wrong head property value              | Input the head property value (refer to <a href="#">Chapter 5, Section 1.3.25.</a> )  |
| 3    | Head flat cable connection failure     | Reconnect the head flat cable.  |
| 4    | Carriage flat cable connection failure | Reconnect the Carriage flat cable.  |
| 5    | Non-discharge of ink from head         | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)"</a> .) |
| 6    | Ink supply tubes bent                  | Replace the ink refill ASSY.  |
| 7    | Carriage PCB defective                 | Replace the carriage PCB ASSY.  |
| 8    | Maintenance unit defective             | Replace the maintenance unit.   |
| 9    | Head defective                         | Replace the head/carriage unit.   |
| 10   | Main PCB defective                     | Replace the main PCB ASSY.  |

<Cleaning of the maintenance unit>



**Fig. 2-11**

■ All single color

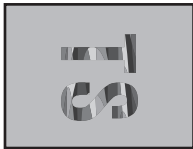


**User Check**

- Check that ink cartridge is loaded 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 ASSY.      |

■ Random color

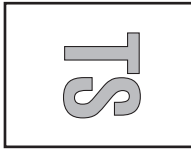


**User Check**

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

| Step | Cause                          | Solution  |
|------|--------------------------------|---|
| 1    | Maintenance unit stained       | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.)  |
| 2    | Wrong head property value      | Input the head property value (refer to <a href="#">Chapter 5, Section 1.3.25.</a> )  |
| 3    | Head calibration uncompleted   | Write the head calibration data. (refer to <a href="#">Chapter 5, Section 1.3.2.</a> )  |
| 4    | Non-discharge of ink from head | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)".</a> ) |
| 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 ASSY.  |

■ 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.

| Step | Cause                          | Solution  |
|------|--------------------------------|---|
| 1    | Maintenance unit stained       | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.)  |
| 2    | Wrong head property value      | Input the head property value (refer to <a href="#">Chapter 5, Section 1.3.25.</a> )  |
| 3    | Head calibration uncompleted   | Input the head calibration data (refer to <a href="#">Chapter 5, Section 1.3.2.</a> )   |
| 4    | Non-discharge of ink from head | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)"</a> .) |
| 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 ASSY.  |

■ Dark

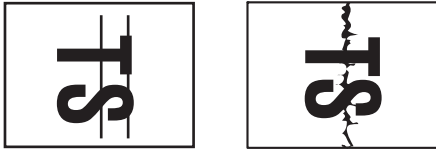


**User Check**

- Check whether the paper type setting is correct.

| Step | Cause                        | Solution  |
|------|------------------------------|---|
| 1    | Maintenance unit stained     | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.)  |
| 2    | Wrong head property value    | Input the head property value (refer to <a href="#">Chapter 5, Section 1.3.25.</a> )  |
| 3    | Head calibration uncompleted | Input the head calibration data (refer to <a href="#">Chapter 5, Section 1.3.2.</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 ASSY.  |

■ **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 guide into place. |
| 6    | CR encoder strip defective               | Replace the CR encoder strip.              |

■ **White vertical streaks**

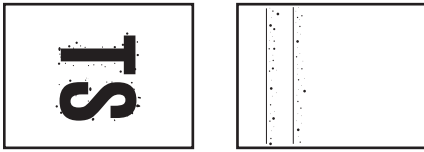


**User Check**

- 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         | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)"</a> .) |
| 4    | CR encoder strip defective             | Replace CR encoder strip  |
| 5    | Carriage motor defective               | Replace the carriage motor ASSY.  |
| 6    | Head defective                         | Replace the head/carriage unit.   |

■ Ink splash

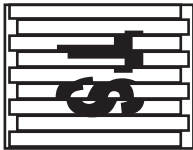


**User Check**

- Replace the ink cartridge.

| Step | Cause                      | Solution   |
|------|----------------------------|--|
| 1    | Maintenance unit stained   | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.) |
| 2    | Wrong head property value  | Input the head property value (refer to <a href="#">Chapter 5, Section 1.3.25.</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 ASSY.   |

■ 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 1.3.23.</a> ) |
| 2    | Head inclination is not correctly adjusted. | Adjust the head inclination (refer to <a href="#">Chapter 4, Section 2.4.</a> )             |
| 3    | CR encoder strip stained                    | Clean the CR encoder strip.   |
| 4    | CR encoder strip defective                  | Replace CR encoder strip  |
| 5    | Head defective                              | Replace the head/carriage unit.   |
| 6    | Main PCB defective                          | Replace the main PCB ASSY.  |

■ **Random missing dots**

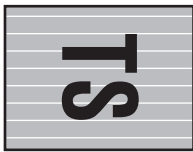


**User Check**

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

| Step | Cause                          | Solution  |
|------|--------------------------------|---|
| 1    | Maintenance unit stained       | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.)  |
| 2    | Non-discharge of ink from head | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "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 ASSY.  |

■ **White horizontal streaks**



**User Check**

- Check if it is not in draft mode.
- Carry out head cleaning.

| Step | Cause                                       | Solution  |
|------|---|---|
| 1    | Maintenance unit stained                    | Clean the maintenance unit (refer to <a href="#">Section 4.3.2</a> in this Chapter.)  |
| 2    | Paper feeding correction not updated        | Update paper feed correction (refer to <a href="#">Chapter 5, Section 1.3.19</a> .)   |
| 3    | Head inclination is not correctly adjusted. | Adjust the head inclination (refer to <a href="#">Chapter 4, Section 2.4</a> .)   |
| 4    | PF encoder disk stained                     | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1</a> .)  |
| 5    | Non-discharge of ink from head              | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)"</a> .) |
| 6    | PF encoder disk defective                   | Replace the PF encoder disk.  |
| 7    | Carriage PCB defective                      | Replace the carriage PCB ASSY.  |
| 8    | Maintenance unit defective                  | Replace the maintenance unit.   |
| 9    | Head defective                              | Replace the head/carriage unit.   |
| 10   | Main PCB defective                          | Replace the main PCB ASSY.  |

■ **Stained leading edge of recording paper**

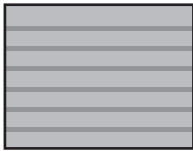


**User Check**

- 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="#">Section 4.3.2</a> in this Chapter.)             |
| 2    | Paper feeding correction value not updated | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> ) |
| 3    | 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.</a> )                  |
| 2    | Head calibration uncompleted                | Input the head calibration data (refer to <a href="#">Chapter 5, Section 1.3.2.</a> )            |
| 3    | Paper feeding correction value not updated  | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> ) |
| 4    | PF encoder disk stained                     | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</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 ASSY.   |

■ Separated lines over the whole page

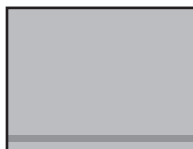


**User Check**

- 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.</a> )   |
| 2    | Head calibration uncompleted                | Input the head calibration data (refer to <a href="#">Chapter 5, Section 1.3.2.</a> )   |
| 3    | Paper feeding correction value not updated  | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> )  |
| 4    | PF encoder disk stained                     | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</a> )  |
| 5    | Non-discharge of ink from head              | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "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 ASSY.  |

■ Overlapping lines at the trailing edge of the recording paper



**User Check**

- Carry out head cleaning.

| Step | Cause                                      | Solution   |
|------|--|--|
| 1    | Paper feeding correction value not updated | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> ) |
| 2    | PF encoder disk stained                    | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</a> )   |
| 3    | PF encoder disk defective                  | Replace the PF encoder disk.   |
| 4    | Main PCB defective                         | Replace the main PCB ASSY.   |



■ Separated lines at the trailing edge of the recording paper

**User Check**

- Carry out head cleaning.

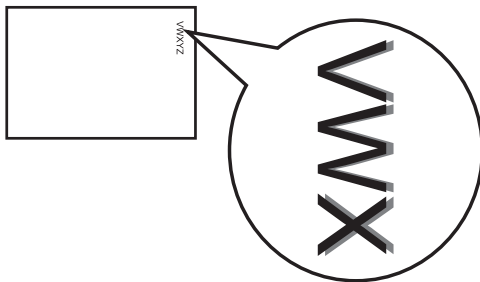


| Step | Cause                                      | Solution  |
|------|--|---|
| 1    | Paper feeding correction value not updated | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> )  |
| 2    | PF encoder disk stained                    | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</a> )  |
| 3    | Non-discharge of ink from head             | Carry out the recommended purge procedures (refer to the recommended procedures in <a href="#">Chapter 5, Section 1.3.29 "Purge Operation (Maintenance mode 76)".</a> ) |
| 4    | PF encoder disk defective                  | Replace the PF encoder disk.  |
| 5    | Main PCB defective                         | Replace the main PCB ASSY.  |

■ Characters having shadows (ghost)

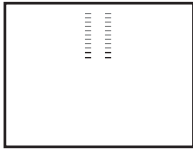
**User Check**

- Carry out head cleaning.



| Step | Cause                                      | Solution   |
|------|--|--|
| 1    | Paper feeding correction value not updated | Adjust the paper feeding correction value (refer to <a href="#">Chapter 5, Section 1.3.19.</a> ) |
| 2    | Vertical print lines not aligned           | Adjust vertical print line alignment (refer to <a href="#">Chapter 5, Section 1.3.23.</a> )      |
| 3    | PF encoder disk stained                    | Clean the PF encoder disk and flushing guide (refer to <a href="#">Chapter 3, Section 1.</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 ASSY.   |

■ **Traces of paper pull-in roller**

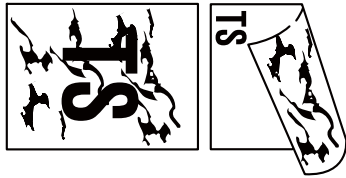


**User Check**

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

| Step | Cause                             | Solution                          |
|------|-----------------------------------|-----------------------------------|
| 1    | Paper pull-in roller defective    | Replace the paper pull-in roller. |
| 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.        |
| 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    | 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 ASSY. |

## 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 ASSY.           |

## 4.6 Control Panel Problems

### 4.6.1 No display on LCD

| Step | Cause                               | Solution   |
|------|-------------------------------------|--|
| 1    | Panel flat cable connection failure | Check connection of the panel flat cable and re-connect. |
| 2    | Control panel ASSY defective        | Replace the control panel ASSY.                          |
| 3    | Power supply PCB defective          | Replace the power supply PCB ASSY.                       |
| 4    | Main PCB defective                  | Replace the main PCB ASSY.                               |

### 4.6.2 No display on LED

| Step | Cause                               | Solution   |
|------|-------------------------------------|--|
| 1    | AC cord defective                   | Replace the AC cord.                                     |
| 2    | Panel flat cable connection failure | Check connection of the panel flat cable and re-connect. |
| 3    | Control panel ASSY defective        | Replace the control panel ASSY.                          |
| 4    | Power supply PCB defective          | Replace the power supply PCB ASSY.                       |
| 5    | Main PCB defective                  | Replace the main PCB ASSY.                               |

### 4.6.3 The control panel does not work

| Step | Cause                               | Solution   |
|------|-------------------------------------|--|
| 1    | Panel flat cable connection failure | Check connection of the panel flat cable and re-connect. |
| 2    | Control panel ASSY defective        | Replace the control panel ASSY.                          |
| 3    | Main PCB defective                  | Replace the main PCB ASSY.                               |

### 4.6.4 Touch panel inoperative

| Step | Cause                                  | Solution   |
|------|--|--|
| 1    | Panel flat cable connection failure    | Check connection of the panel flat cable and re-connect.                                   |
| 2    | Adjustment slippage of the touch panel | Perform the touch panel adjustment. (refer to <a href="#">Chapter 5, Section 1.3.31.</a> ) |
| 3    | Control panel ASSY defective           | Replace the control panel ASSY.  |
| 4    | Main PCB defective                     | Replace the main PCB ASSY.   |

## 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    | Document detection sensor harness connection failure                                 | Reconnect the document detection sensor harness. |
| 6    | Document nip piece not mounted in place  | Set the document nip piece into place.           |
| 7    | Document pick-up roller worn out   | Replace the document separate roller ASSY.       |
| 8    | Document detection sensor defective  | Replace the document detection sensor PCB ASSY.  |
| 9    | ADF motor defective<br>Document feed gear,<br>document separation roller gear broken | Replace the ADF unit.                            |
| 10   | Sensor relay PCB defective   | Replace the sensor relay PCB.                    |
| 11   | Main PCB defective   | Replace the main PCB ASSY.                       |

### 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. |

### 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    | Sensor relay PCB harness connection failure   | Reconnect the sensor relay PCB harness.             |
| 4    | ADF cover ASSY not mounted in place   | Set the ADF cover ASSY into place.                  |
| 5    | Upper ADF chute not mounted in place  | Set the upper ADF chute into place.                 |
| 6    | Separation pad holder ASSY not mounted in place   | Set the separation pad holder ASSY into place.      |
| 7    | Separation pad spring not mounted in place  | Set the separation pad spring into place.           |
| 8    | Ejection film not mounted in place  | Set the ejection film into place.                   |
| 9    | Document scan position actuator not mounted in place  | Set the document scan position actuator into place. |
| 10   | ADF cover ASSY damaged, broken  | Replace the ADF cover ASSY.                         |
| 11   | ADF cover sensor defective  | Replace the ADF cover sensor.                       |
| 12   | Sensor relay PCB defective  | Replace the sensor relay PCB ASSY.                  |
| 13   | ADF separation pad holder ASSY defective  | Replace the ADF separation pad holder ASSY.         |
| 14   | Upper ADF chute damaged, broken<br>ADF separation pad spring defective<br>Ejection film damaged, broken | Replace the ADF unit.                               |
| 15   | Main PCB defective  | Replace the main PCB ASSY.                          |

## ■ 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    | Upper ADF chute not mounted in place                                     | Set the upper ADF chute into place.                                  |
| 4    | First side document scanning position sensor harness connection failure  | Reconnect the first side document scanning position sensor harness.  |
| 5    | Second side document scanning position sensor harness connection failure | Reconnect the second side document scanning position sensor harness. |
| 6    | First side document scan position actuator not mounted in place          | Set the first side document scan position actuator into place.       |
| 7    | Second side document scan position actuator not mounted in place         | Set the second side document scan position actuator into place.      |
| 8    | Upper ADF chute, document guide damaged, broken                          | Replace the upper ADF chute.   |
| 9    | First side document scanning position sensor defective                   | Replace the first side document scanning position sensor PCB ASSY.   |
| 10   | Second side document scanning position sensor defective                  | Replace the second side document scanning position sensor PCB ASSY.  |
| 11   | Feeding path in ADF unit damaged, broken                                 | Replace the ADF unit.  |
| 12   | Feeding path inside document scanner unit damaged, broken                | Replace the document scanner unit.                                   |
| 13   | Sensor relay PCB defective   | Replace the sensor relay PCB.  |
| 14   | Main PCB defective   | Replace the main PCB ASSY.   |



#### 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 separate 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    | First side document scanning position actuator caught on the surrounding parts | Set the first side document scanning position actuator into place.  |
| 2    | First side document scanning position sensor harness connection failure        | Reconnect the first side document scanning position sensor harness. |
| 3    | First side document scanning position sensor defective                         | Replace the first side document scanning position sensor PCB.       |
| 4    | Main PCB defective   | Replace the main PCB ASSY.  |

## 4.8 Scanned-image Problems

### 4.8.1 Defective images

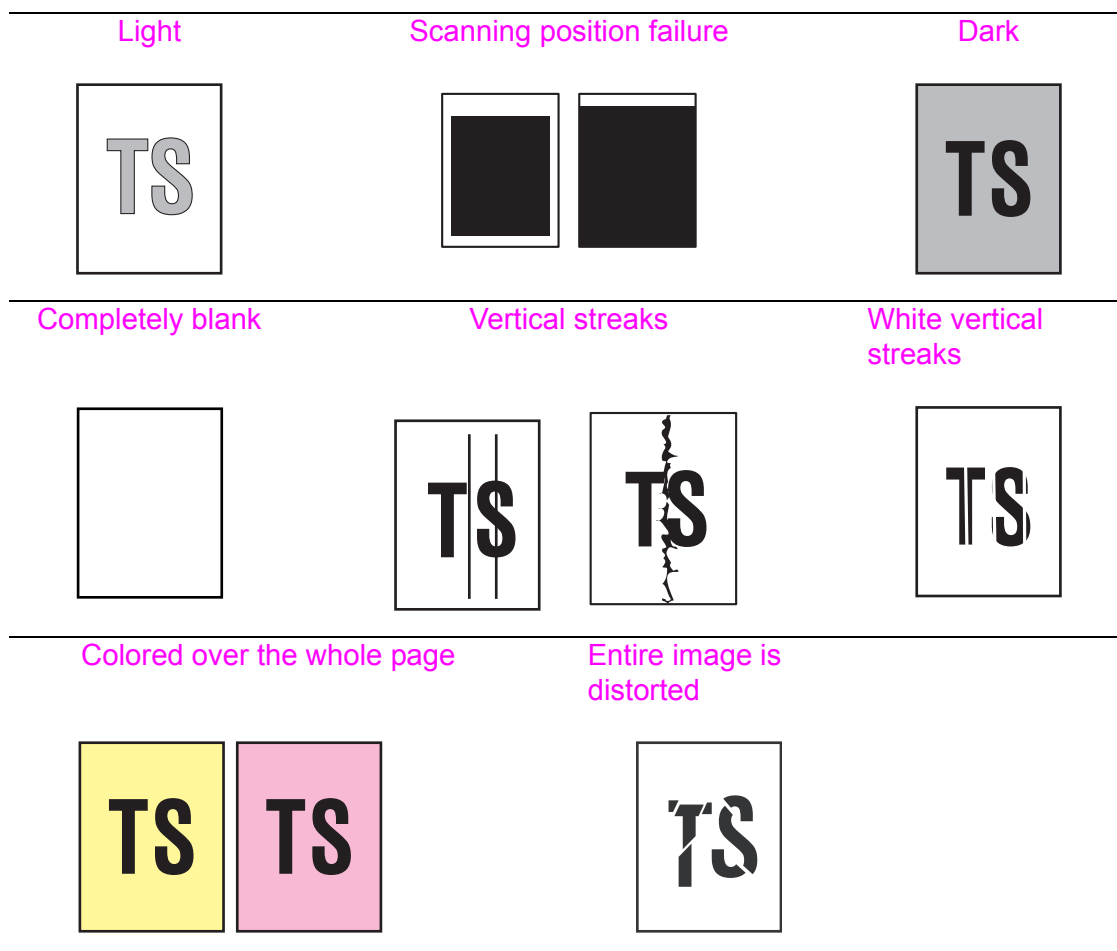
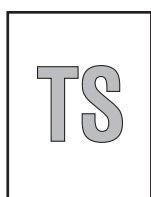


Fig. 2-12

### 4.8.2 Troubleshooting from image defect

#### ■ Light

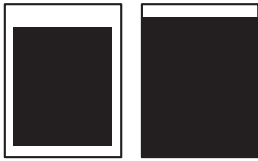


#### **User Check**

- 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/black 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 ASSY.                      |

■ **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    | First side or second side document scanning position actuator caught on the surrounding parts | Set the first side or second side document scanning position actuator into place. |

(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/black 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 ASSY.                      |

■ **Completely blank**

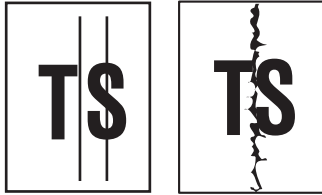


**User Check**

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

| Step | Cause   | Solution  |
|------|---|---|
| 1    | White/black 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 ASSY.                              |

■ **Vertical streaks**



**User Check**

- Clean document cover glass or ADF glass.
- Clean the document pressure bar.

| Step | Cause  | Solution  |
|------|--|---|
| 1    | CIS lens foreign materials                   | Remove foreign materials.                       |
| 2    | First side or second side CIS unit defective | Replace the first side or second side CIS unit. |

■ **White vertical streaks**



**User Check**

- Clean document cover glass or ADF 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 document scanner unit glass at white reference film.            |
| 2    | White reference film of document pressure bar of ADF cover stained (in the case of problem in second side)         | Clean the white reference film of document pressure bar of ADF cover. |
| 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 cover damaged, broken (in the case of problem in second side) | Replace the ADF cover.  |

■ **Colored over the whole page**



**User Check**

- Clean document cover glass or ADF glass.
- Clean the document pressure bar.

| Step | Cause  | Solution  |
|------|--|---|
| 1    | White/black 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 ASSY.                      |

■ Entire image is distorted



| Step | Cause               | Solution   |
|------|---------------------|--|
| 1    | CIS type mismatches | Carry out maintenance code 59 to rewrite firmware. |

## 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 ASSY.                      |

### 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 ASSY.       |

### 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 ASSY.       |



## 4.10 Other Problems

### 4.10.1 The machine cannot be powered on

#### User Check

- Insert the AC cord securely.

| Step | Cause                               | Solution                           |
|------|-------------------------------------|------------------------------------|
| 1    | Panel flat cable connection failure | Reconnect the panel flat cable.    |
| 2    | LCD defective                       | Replace the control panel ASSY.    |
| 3    | Power supply PCB defective          | Replace the power supply PCB ASSY. |
| 4    | Main PCB defective                  | Replace the main PCB ASSY.         |

### 4.10.2 Memory card/PictBridge does not function (no response)

#### User Check

- Check if the memory card is inserted correctly.
- Replace the USB cable.
- Check that memory card is compatible.
- Check that data form is compatible.
- Format the memory card.
- Load the latest firmware.
- Disconnect and insert again the AC cord.

| Step | Cause   | Solution  |
|------|---|---|
| 1    | Inner media module cover not mounted in place | Set the inner media module cover into place in the case the memory card won't be inserted smoothly. |
| 2    | Main PCB defective                            | Replace the main PCB ASSY.  |

### 4.10.3 Data of memory card/PictBridge does not read

#### User Check

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

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

#### 4.10.4 Internal memory errors

##### User Check

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

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

#### 4.10.5 Security Function Lock related problems

##### User Check

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

| Step | Cause              | Solution                   |
|------|--------------------|----------------------------|
| 1    | Main PCB defective | Replace the main PCB ASSY. |

#### 4.10.6 Remaining ink related problems

##### User Check

- Replace the ink cartridge with a new one.

| Step | Cause                               | Solution                     |
|------|-------------------------------------|------------------------------|
| 1    | Each ink cartridge sensor defective | Replace the ink refill ASSY. |
| 2    | Main PCB defective                  | Replace the main PCB ASSY.   |

#### 4.10.7 Ink absorber box related problems

| Step | Cause   | Solution   |
|------|---|--|
| 1    | After replacing the ink absorber box, the purge counter or the flushing counter has not been reset. | Reset the purge counter or the flushing counter. |
| 2    | Main PCB defective  | Replace the main PCB ASSY.                       |

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## CHAPTER 3 DISASSEMBLY AND ASSEMBLY

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### 1 PRECAUTIONS BEFORE PROCEEDING

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To prevent the creation of secondary problems by mishandling, observe the following warnings and precautions during disassembly/assembly work.



#### WARNING

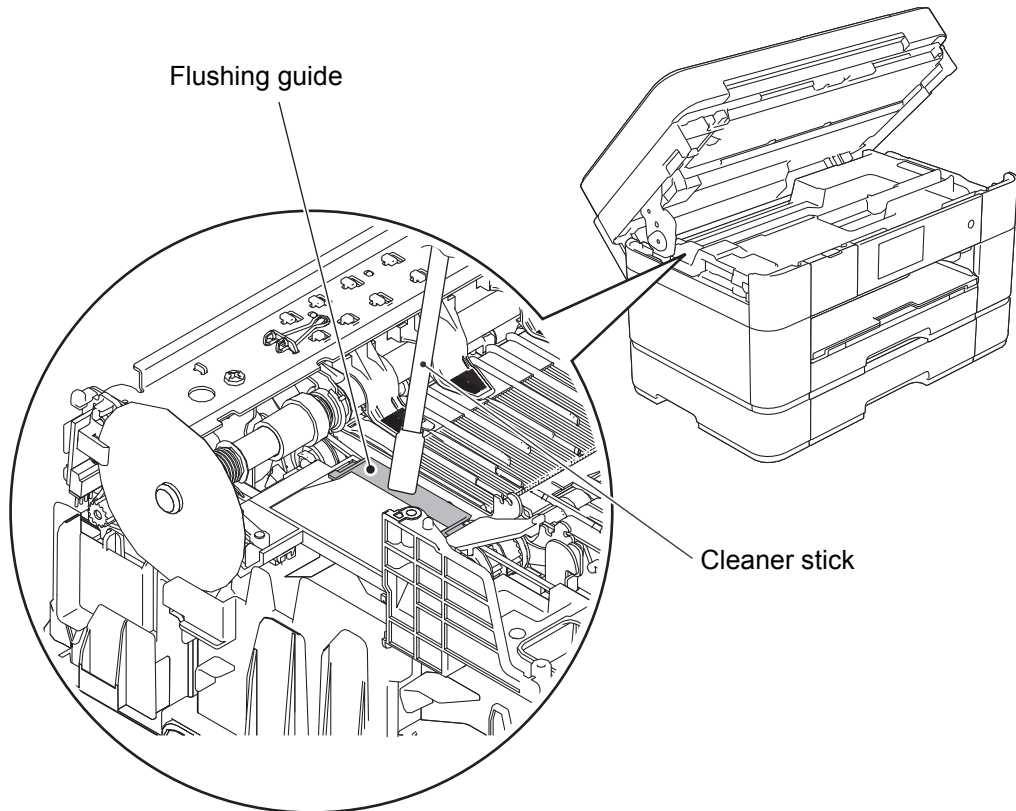
Before replacing parts or units, unplug the power cord and the telephone line. Do not use switches but unplug the power cord itself.

In particular, when having access to the power supply inside the machine, make sure that the power cord is unplugged from the electrical outlet; when having access to the main PCB or modem PCB, make sure that both the power cord and telephone line are unplugged from the electrical outlet.

- (1) Be careful not to lose screws, washers, or other parts.
- (2) Apply grease to the points specified in this chapter.
- (3) When using soldering irons and other heat-generating tools, take care not to damage the plastic parts such as wires, PCBs, and covers.
- (4) Static electricity charged in your body may damage electronic parts. When transporting PCBs, be sure to wrap them in conductive sheets. When replacing the PCBs and components including PCBs, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on flat cables or wire harnesses.
- (5) After disconnecting flat cables, check that each cable is not damaged at its end or short-circuited.
- (6) When connecting flat cables, do not insert them at an angle. After insertion, check again that the cables are not at an angle.
- (7) When connecting or disconnecting harnesses, hold the connector bodies not the cables. If the connector has a lock, always unlock it.
- (8) 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.
- (9) 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 5 to 10 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.
- (10) 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.

- (11) After completion of reassembly, it is recommended that the dielectric voltage withstand test and continuity test be conducted.
- (12) 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.

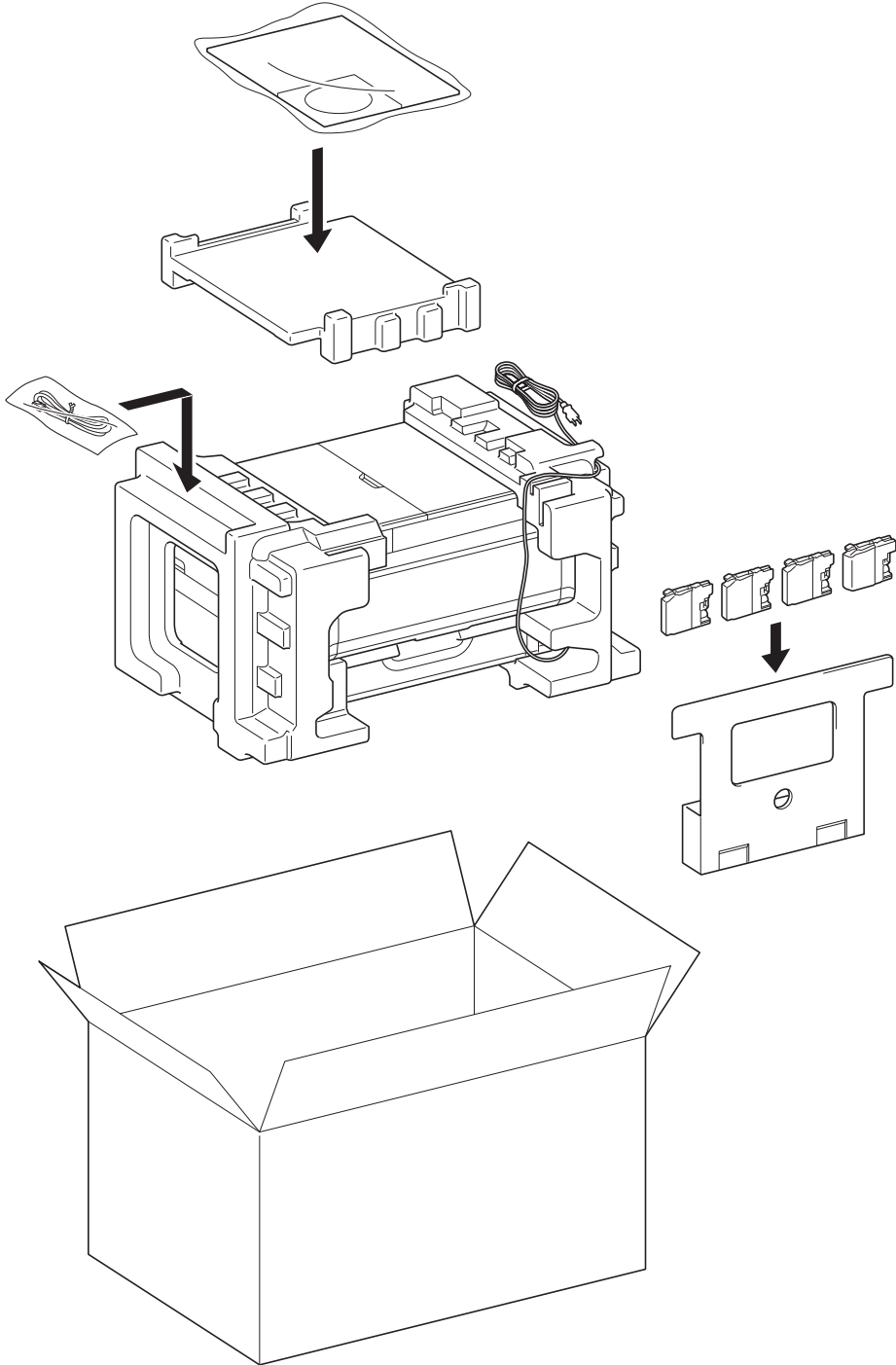


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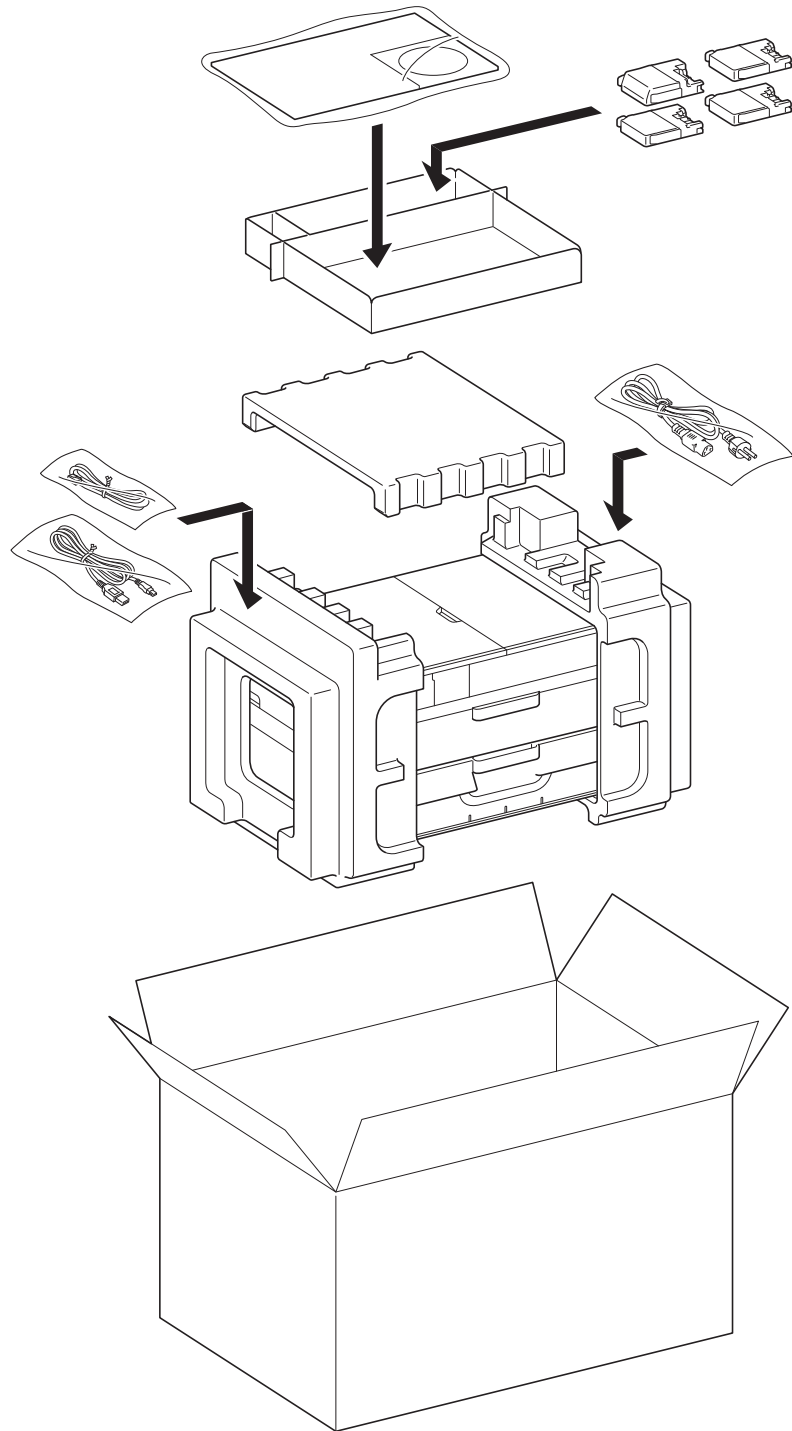
## 2 PACKING

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For 100 V



For 200 V





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### 3 SCREW CATALOGUE

---

#### Taptite cup B

|                        |   |
|------------------------|---|
| Taptite cup B<br>M3x10 |  |
| Taptite cup B<br>M4x12 |  |


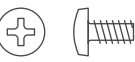
#### Taptite cup S

|                       |   |
|-----------------------|---|
| Taptite cup S<br>M3x6 |  |
|-----------------------|---|

#### Taptite bind B

|                         |   |
|-------------------------|---|
| Taptite bind B<br>M4x12 |  |
|-------------------------|---|

#### Screw bind

|                     |   |
|---------------------|---|
| Screw bind<br>M2x12 |  |
| Screw bind<br>M3x6  |  |

## 4 SCREW TORQUE LIST

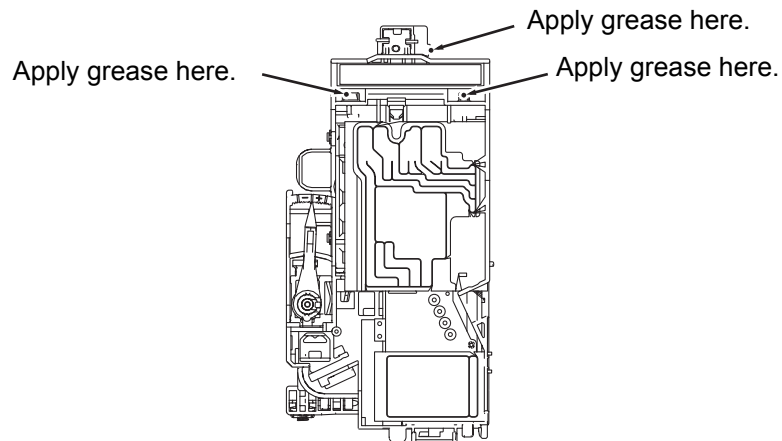
| Location of screw             | Screw type  | Q'ty | Tightening torque<br>N•m (kgf•cm) |
|-------------------------------|---|------|-----------------------------------|
| MP tray ASSY                  | TAPTITE CUP B M4x12   | 2    | 0.70±0.10 (7±1)                   |
| ADF motor grounding wire      | TAPTITE CUP S M3x6  | 1    | 0.40±0.10 (4±1)                   |
| Upper document chute          | TAPTITE CUP B M3x10   | 4    | 0.50±0.10 (5±1)                   |
| Document scanner top cover    | TAPTITE CUP B M3x10   | 6    | 0.50±0.10 (5±1)                   |
| Upper cover                   | TAPTITE BIND B M4x12  | 6    | 0.70±0.10 (7±1)                   |
| Panel grounding wire          | TAPTITE CUP S M3x6  | 1    | 0.40±0.10 (4±1)                   |
| Main PCB shield               | TAPTITE CUP S M3x6  | 2    | 0.40±0.10 (4±1)                   |
| Main PCB ASSY                 | TAPTITE CUP S M3x6  | 2    | 0.40±0.10 (4±1)                   |
| Sensor relay PCB ASSY         | TAPTITE CUP S M3x6  | 1    | 0.40±0.10 (4±1)                   |
| Modem shield                  | TAPTITE CUP S M3x6  | 1    | 0.40±0.10 (4±1)                   |
| Modem PCB ASSY                | TAPTITE CUP S M3x6  | 1    | 0.40±0.10 (4±1)                   |
| Main PCB frame                | TAPTITE CUP B M3x10<br>(Together with lower cover and tube support plate) | 2    | 0.40±0.10 (4±1)                   |
|                               | TAPTITE CUP S M3x6<br>(Together with lower power supply frame)            | 1    | 0.40±0.10 (4±1)                   |
| Lower cover                   | TAPTITE BIND B M4x12<br>(Together with lower tray unit)                   | 4    | 0.70±0.10 (7±1)                   |
| Lower tray frame              | TAPTITE CUP B M3x10   | 2    | 0.40±0.10 (4±1)                   |
| Lower cover                   | TAPTITE CUP S M3x6<br>(Together with lower power supply frame)            | 1    | 0.40±0.10 (4±1)                   |
| Power supply PCB ASSY         | TAPTITE CUP S M3x6  | 3    | 0.40±0.10 (4±1)                   |
| Tube support plate            | TAPTITE CUP B M3x10   | 3    | 0.40±0.10 (4±1)                   |
| Switchback frame ASSY         | TAPTITE CUP B M3x10   | 2    | 0.40±0.10 (4±1)                   |
| CR frame ASSY                 | TAPTITE CUP B M3x10<br>(Together with maintenance unit)                   | 2    | 0.60±0.10 (6±1)                   |
|                               | SCREW BIND M3x6<br>(Together with motor bracket)                          | 2    | 0.65±0.10 (6.5±1)                 |
|                               | TAPTITE CUP S M3x6<br>(Together with motor bracket)                       | 1    | 0.65±0.10 (6.5±1)                 |
| Carriage motor ASSY           | SCREW BIND M3x6   | 2    | 0.65±0.10 (6.5±1)                 |
| PF encoder sensor holder ASSY | SCREW BIND M2x12  | 1    | 0.15±0.05 (1.5±0.5)               |
| CR guide rail                 | TAPTITE CUP B M3x10<br>(Together with maintenance unit)                   | 2    | 0.60±0.10 (6±1)                   |
|                               | SCREW BIND M3x6<br>(Together with paper feed motor frame)                 | 2    | 0.60±0.10 (6±1)                   |
| Paper feed motor              | SCREW BIND M3x6   | 2    | 0.60±0.10 (6±1)                   |
| Frame base                    | TAPTITE CUP B M3x10   | 1    | 0.40±0.10 (4±1)                   |
|                               | TAPTITE BIND B M3x10  | 2    | 0.40±0.10 (4±1)                   |



## 5 LUBRICATION

| Lubricant type<br>(manufacturer) | Lubrication points  |    | Lubricant amount<br>per point |
|----------------------------------|---|----|-------------------------------|
| Permalub BAN-5                   | Head/carriage unit  | 1  | 1.5 mm diameter ball          |
| FLOIL BG-1319<br>(Kanto Kasei)   | Head/carriage unit  | 2  | 1.0 mm diameter ball          |
| FLOIL BG-1319<br>(Kanto Kasei)   | CR guide rail (top face)  | 24 | 2.0 mm diameter ball          |
|                                  | CR frame (top face)   | 24 | 2.0 mm diameter ball          |
|                                  | CR frame<br>(inner side of the rear upright edge)<br>(inner side of the front upright edge) | 30 | 2.0 mm diameter ball          |
|                                  |   | 30 | 2.0 mm diameter ball          |
|                                  | CR frame (bottom face)  | 2  | 1.0 mm diameter ball          |
| FLOIL BG-10KS<br>(Kanto Kasei)   | Platen/paper ejection roller  | 4  | 1.0 mm diameter ball          |
| Permalub BAN-5                   | Paper feed roller   | 2  | 3.0 mm diameter ball          |
| FLOIL BG-10KS<br>(Kanto Kasei)   | Paper pull-in rollers (T1/T2)   | 2  | 2.0 mm diameter ball          |

### ■ Head/carriage unit

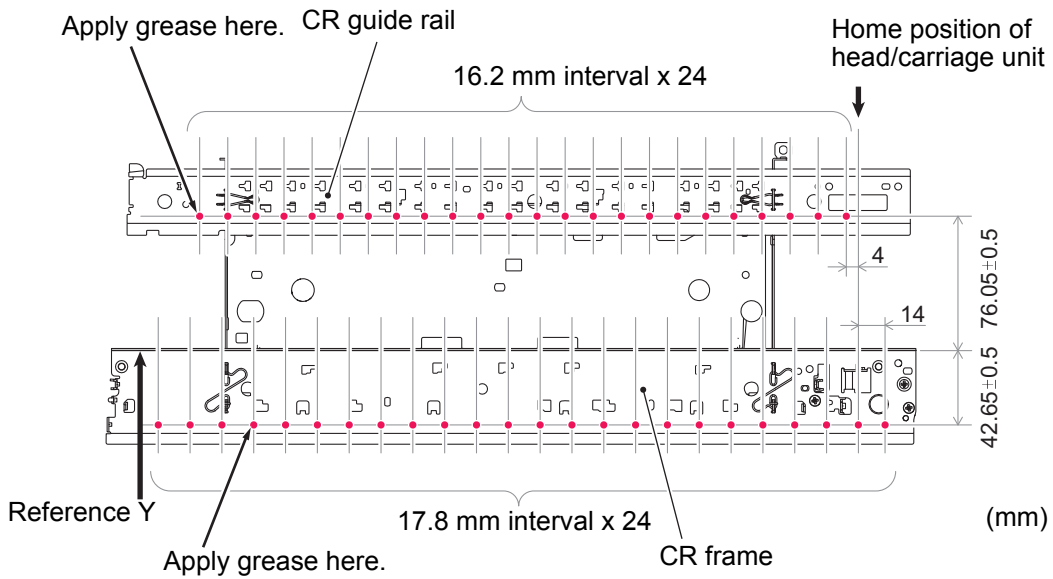


■ CR guide rail and CR frame (top face)

Apply a 2 mm diameter ball of grease (FLOIL BG1319) to each of the 48 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.

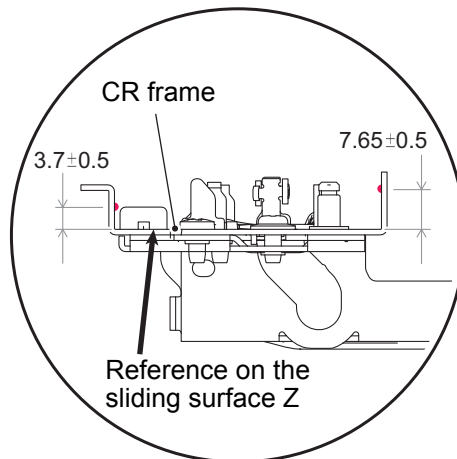
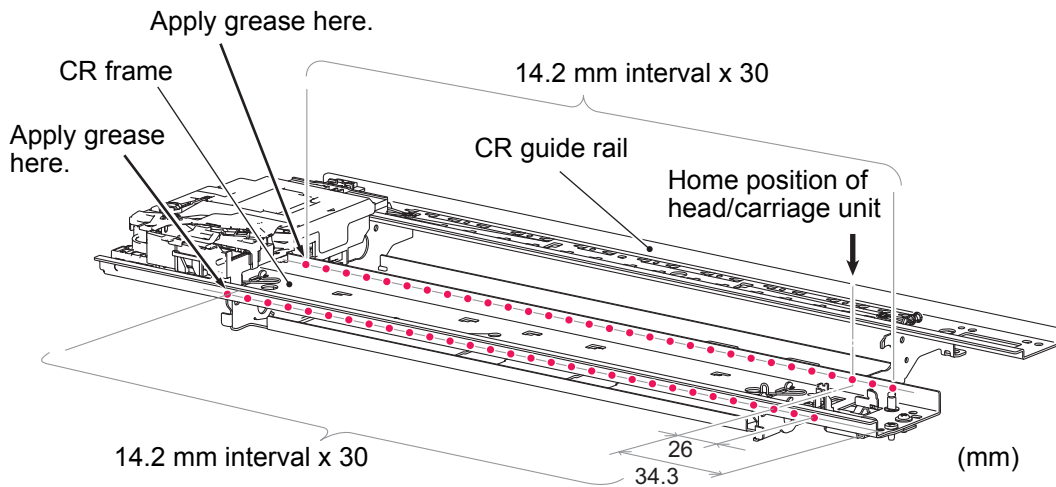


■ **CR frame (inner sides of the front and rear upright edges)**

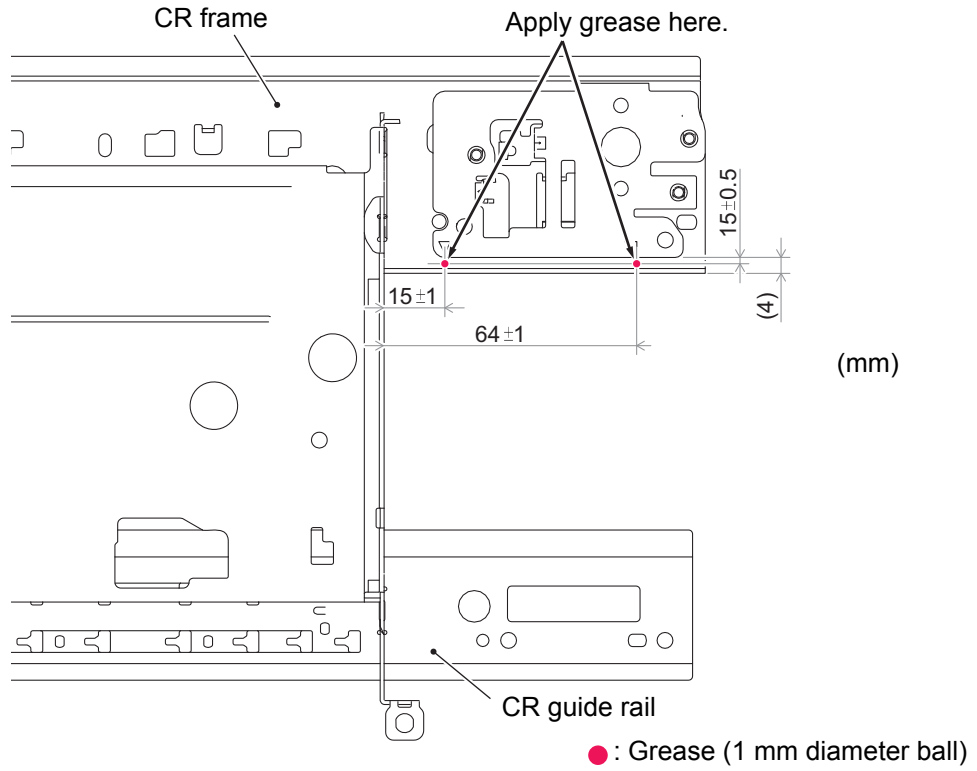
Apply a 2 mm diameter ball of grease (FLOIL BG1319) to each of the 60 lubrication points below.

Lubrication procedure

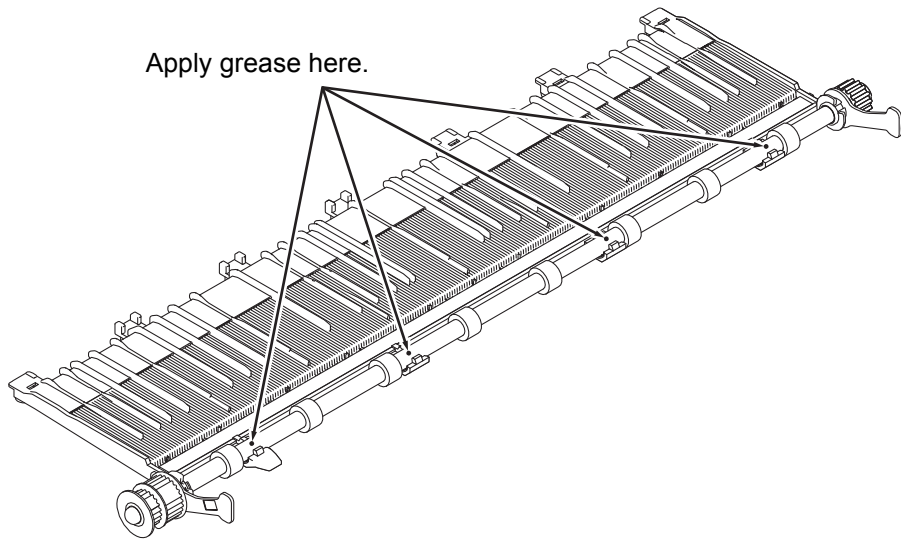
- (1) Move the head/carriage unit to the left end of its travel.
- (2) Before applying grease, wipe dust or dirt off the lubrication area with an alcohol soaked cloth.
- (3) Move the head/carriage unit from the left to the right ends of its travel to spread the applied grease on the CR guide rail and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



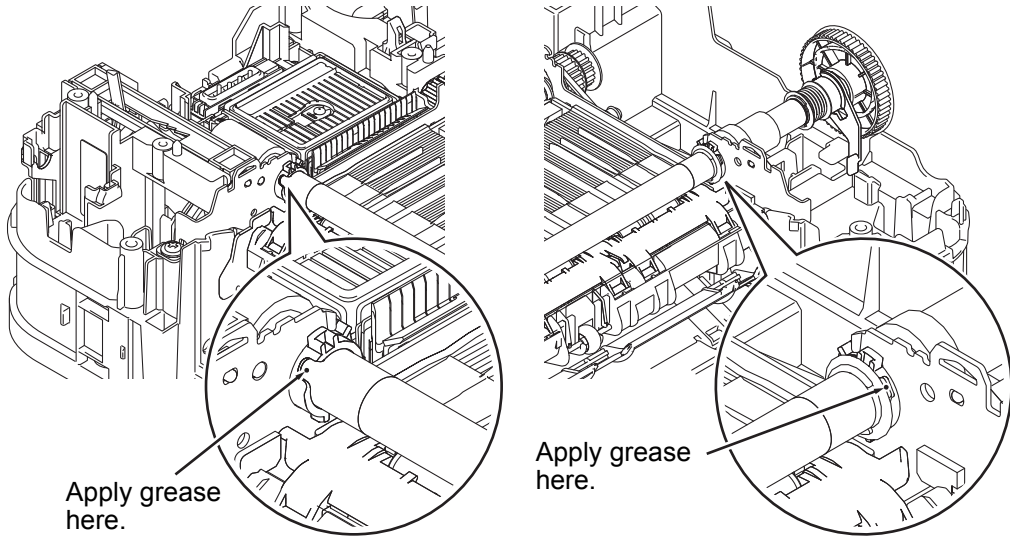
■ CR frame (bottom face)



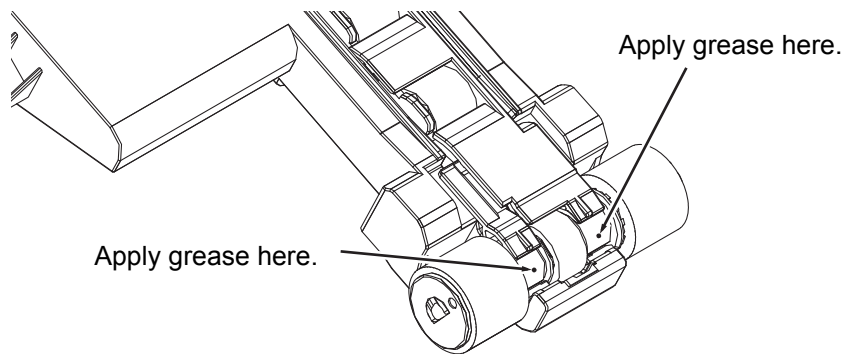
■ Paper ejection roller



■ Paper feed roller



■ Paper pull-in rollers (T1/T2)

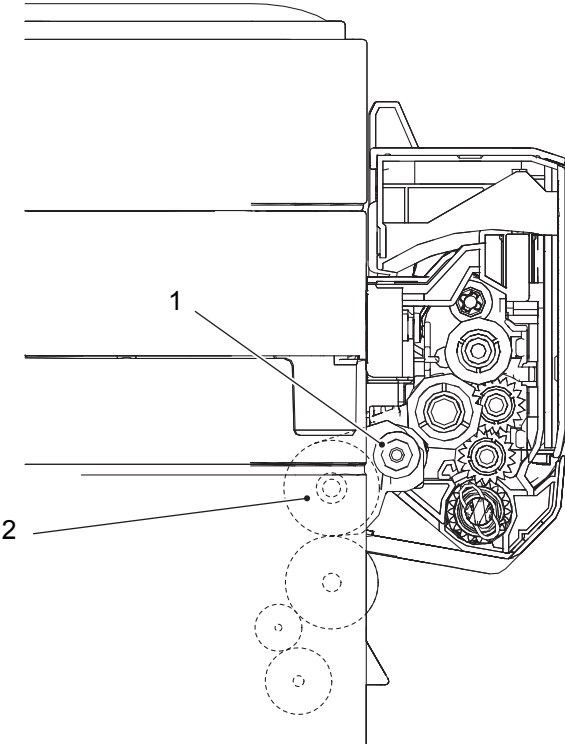


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## 6 OVERVIEW OF GEARS

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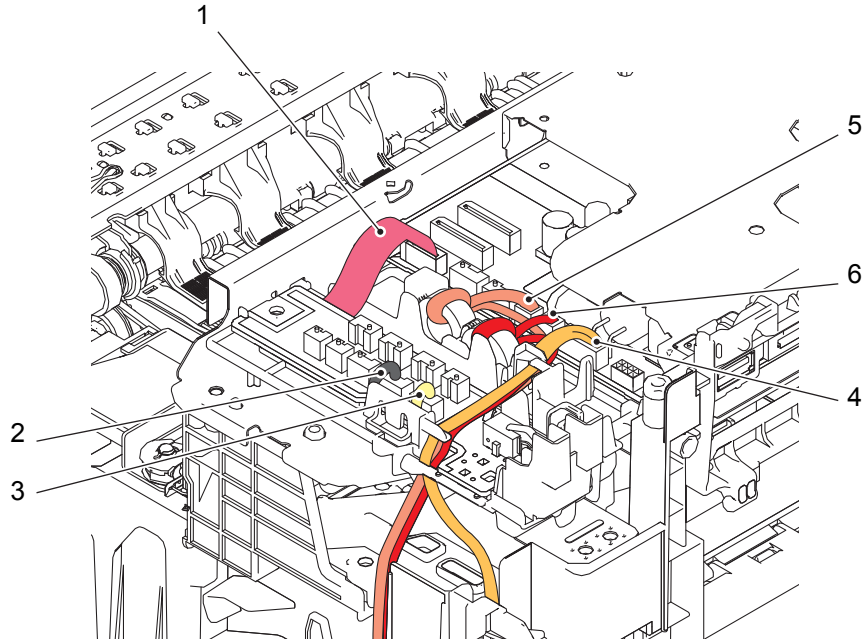
■ MP tray



|   |           |            |
|---|-----------|------------|
| 1 | LET221001 | MP GEAR 19 |
| 2 | LER417001 | MP GEAR 31 |

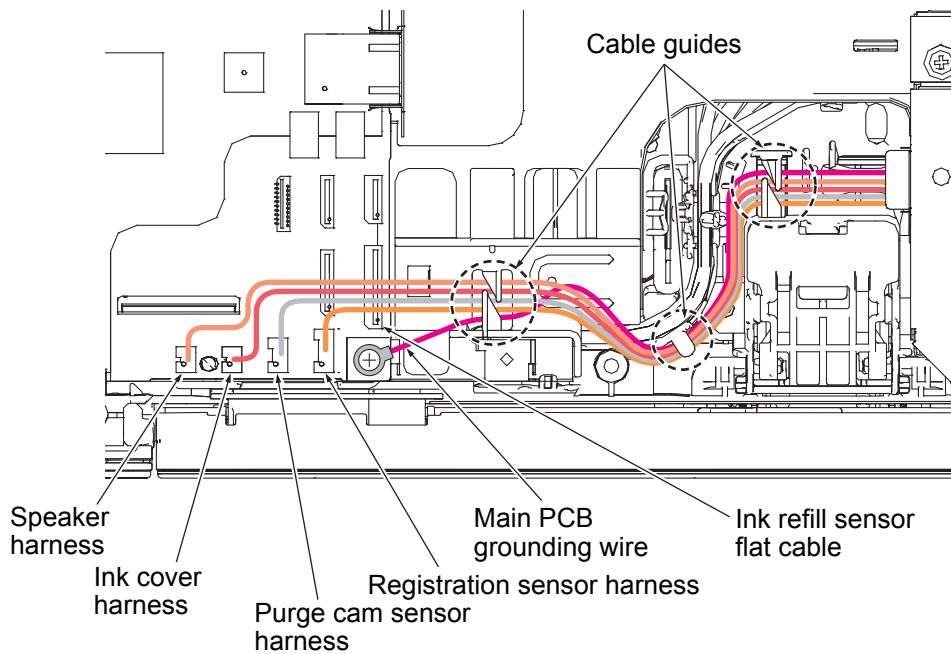
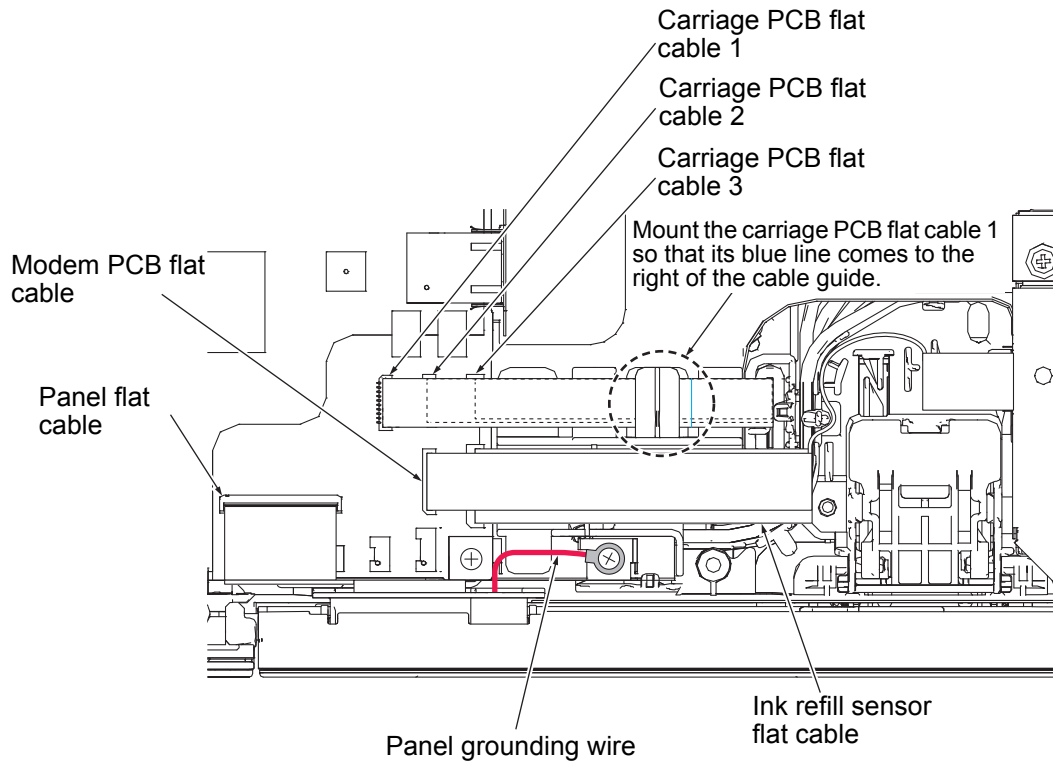
## 7 ROUTING OF HARNESSES

### 1 Sensor relay PCB ASSY/Main PCB ASSY



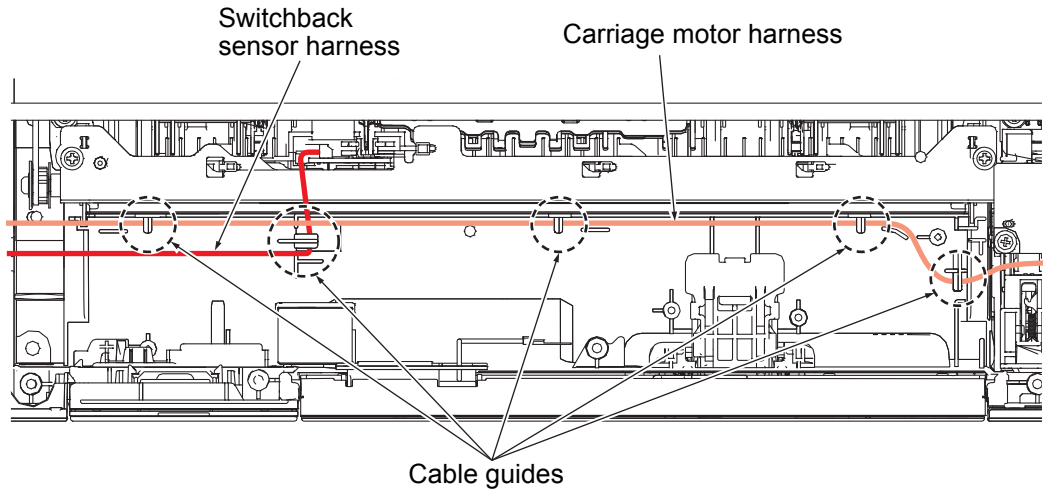
| No. | Harness name                |
|-----|-----------------------------|
| 1   | Sensor relay PCB flat cable |
| 2   | PF encoder harness          |
| 3   | Switchback sensor harness   |
| 4   | Power supply PCB harness    |
| 5   | Carriage motor harness      |
| 6   | Paper feed motor harness    |

**2** Main PCB ASSY/Modem PCB ASSY

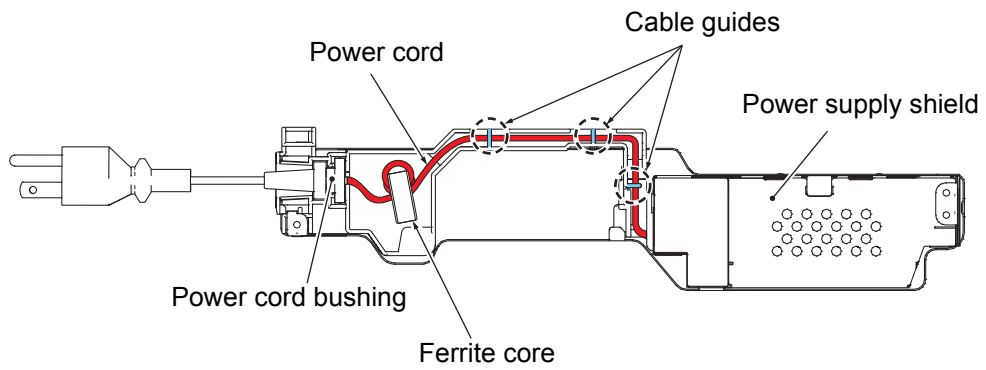




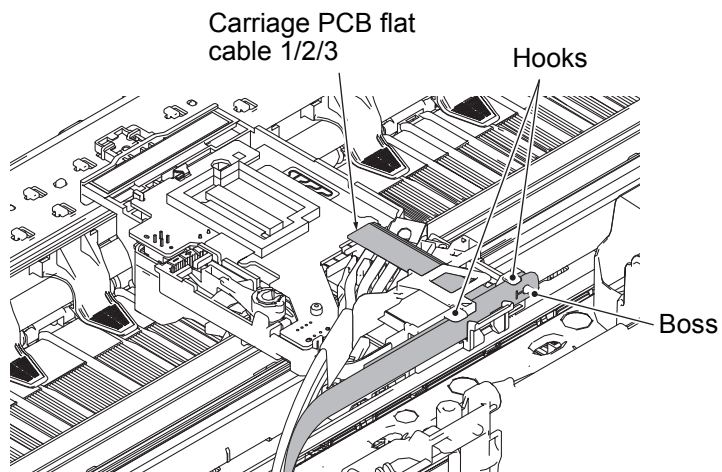
### 3 Switchback sensor



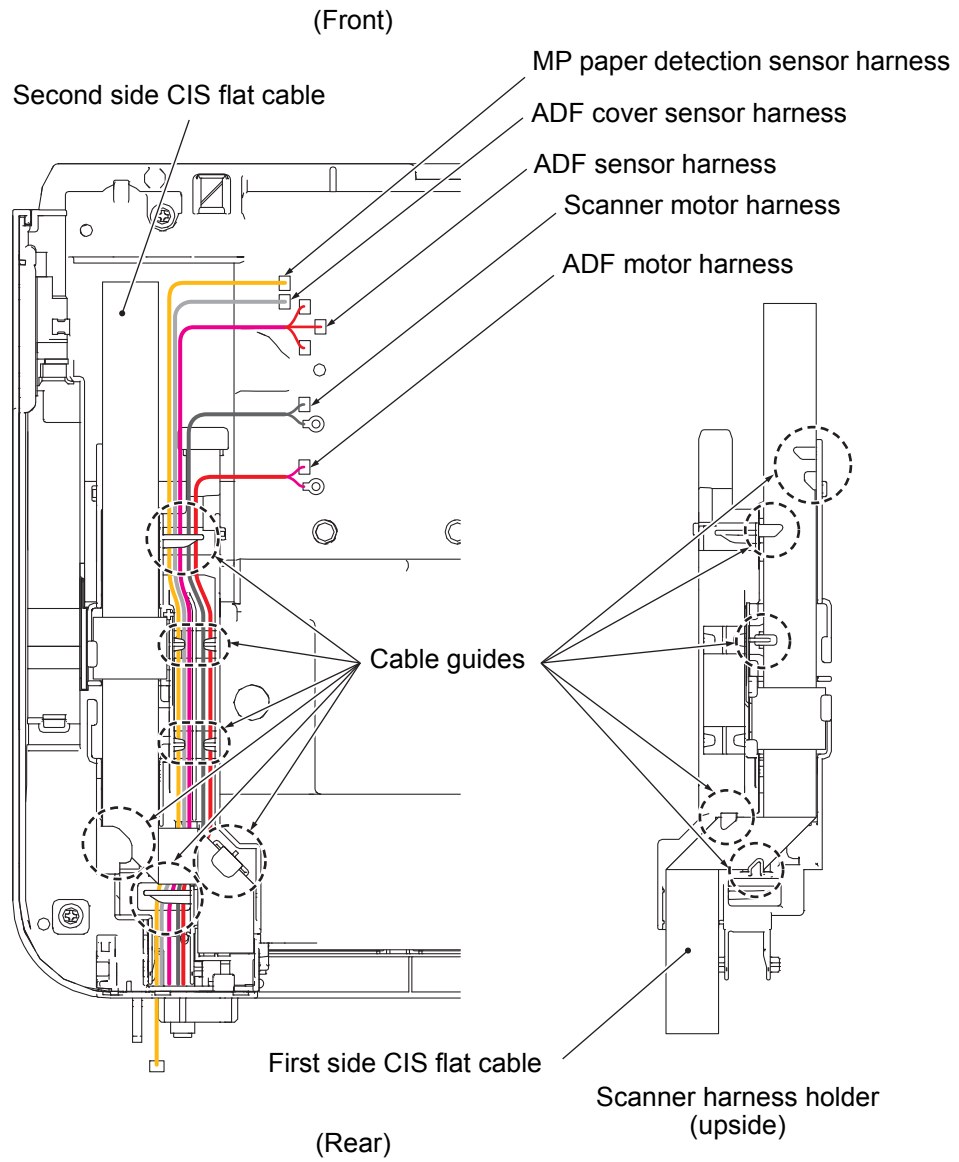
### 4 Power supply PCB ASSY



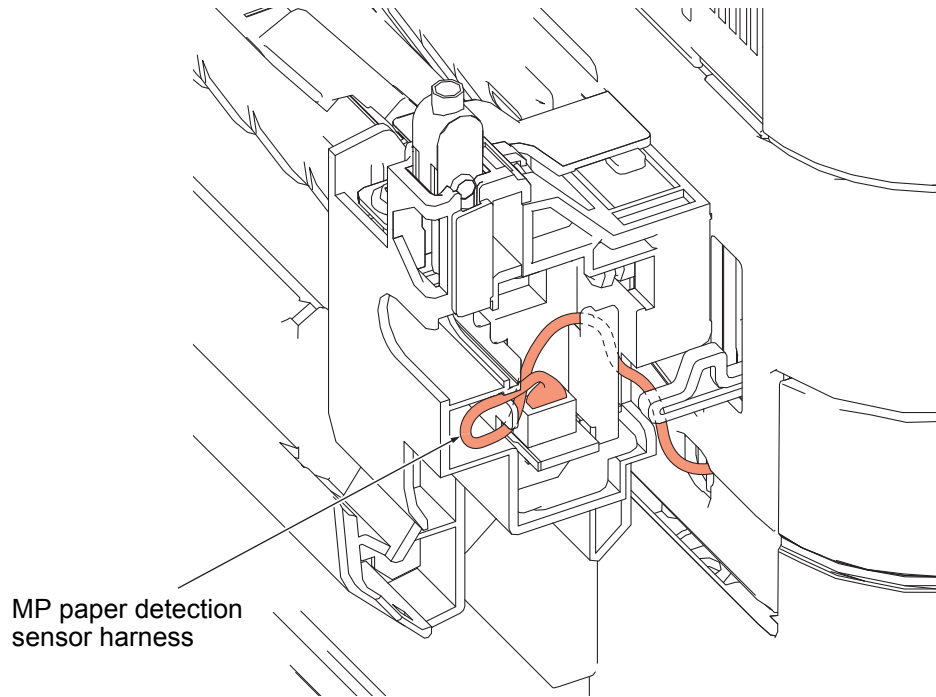
5 Head/carriage unit



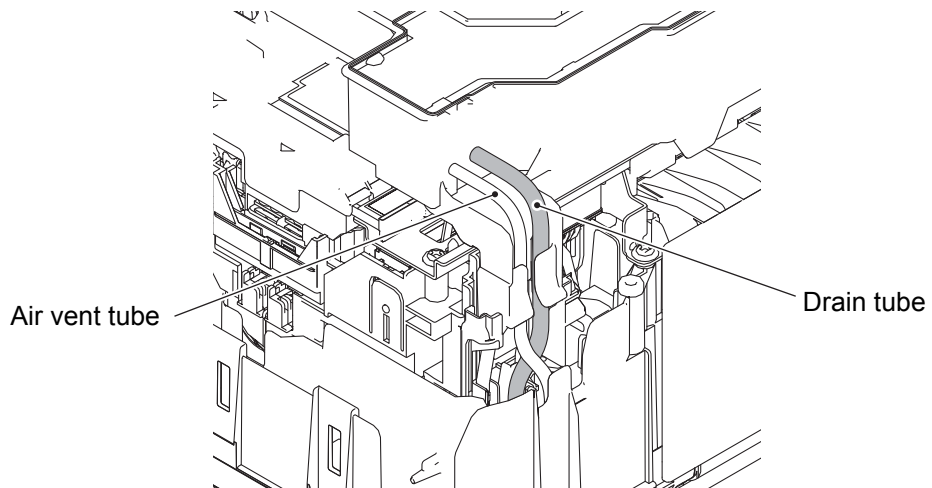
**6** ADF unit/Document scanner unit (downside)

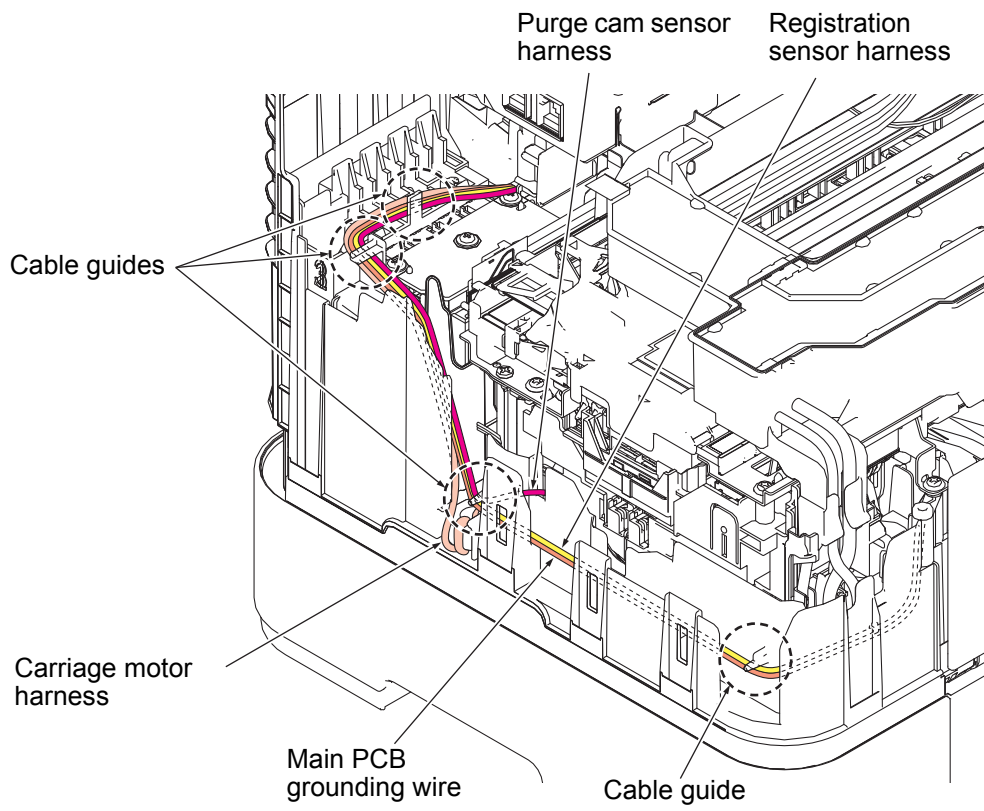


**7** MP paper detection sensor harness

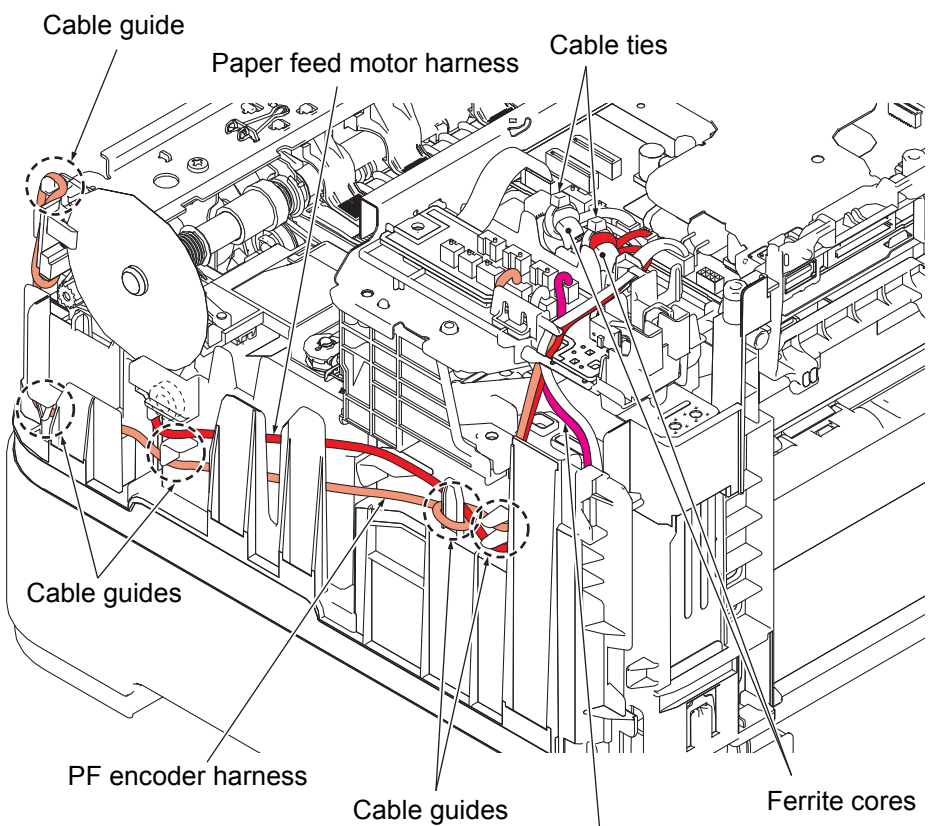


**8** Drain tube





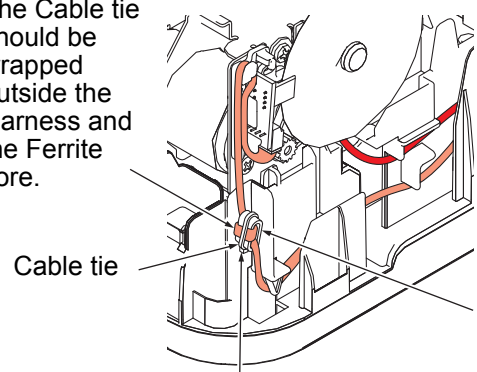
**10** Lower cover (left side)



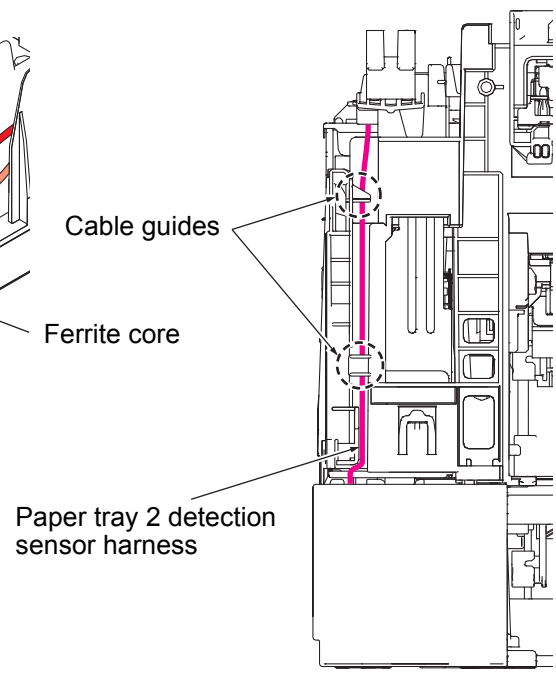
<Except for US/CAN>

Paper tray 2 detection sensor harness

The Cable tie should be wrapped outside the Harness and the Ferrite core.



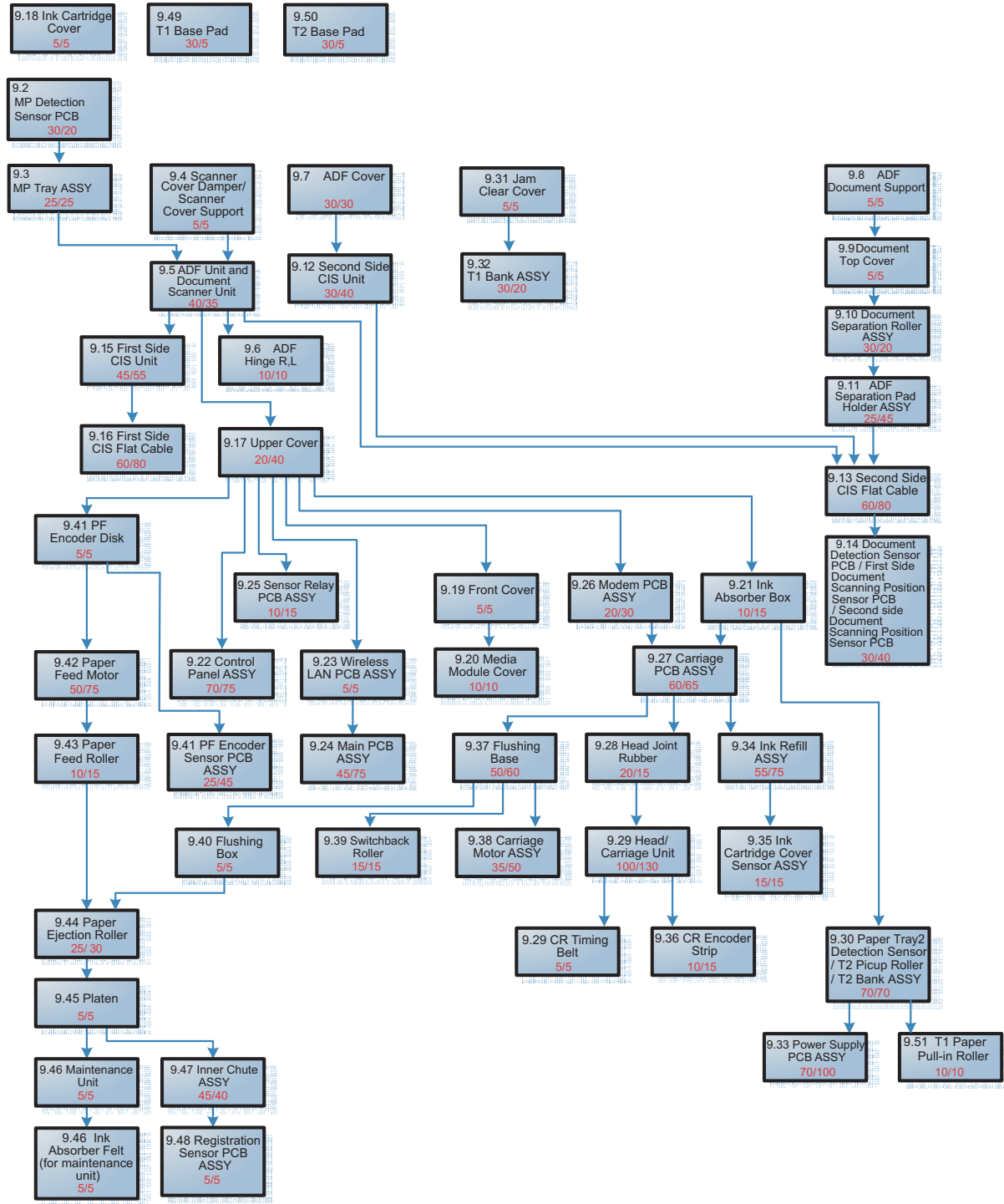
The knot of the Cable tie should face downward.



# 8 DISASSEMBLY FLOW

## ■ Disassembly flowchart

Disassembly/reassembly time (seconds)



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## 9 DISASSEMBLY PROCEDURE

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### 9.1 Preparation

#### [ 1 ] 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 **Fax** or **Fax/Tel**.
- (4) Press **Setup Receive**.
- (5) Press **Memory Receive**.
- (6) 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.


- (7) Press the **OK** 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) Press . Press **ALL settings**.
- (3) Press **Fax**.
- (4) Press **Setup Receive**.
- (5) Press **Memory Receive**.
- (6) Press **PC-Fax Receive**.
- (7) If the "Run PC-Fax on your computer." appears on the LCD, press **OK**.
- (8) Click **Start | All Programs (program) | Brother | (Model name) MFC-XXXX | PC-FAX Receiving | Receive**.

Wait for the **PC-Fax Receiving** dialog box to appear. Confirm the message and click **OK**.

The PC-FAX icon appears in your PC task tray.



- (9) Select "**<USB>**" or the PC you run in step (8), then press **OK**.
- (10) Press **Backup Print:On** or **Backup Print:Off**.  
**Note:** Choosing **Backup Print:On** prints the received fax file.
- (11) Press the **X** key.

## [ 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 an external memory (memory card or 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 1.3.13 "Backup of Machine Information \(Maintenance mode 46\)"](#) and [Chapter 5, Section 1.3.25 "Updating of Head Property Data 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
  - External memory card, if connected
- (2) Remove the following:
  - Paper tray ASSY 1 / 2
  - Ink cartridge
  - LAN port cap
  - EXT cap

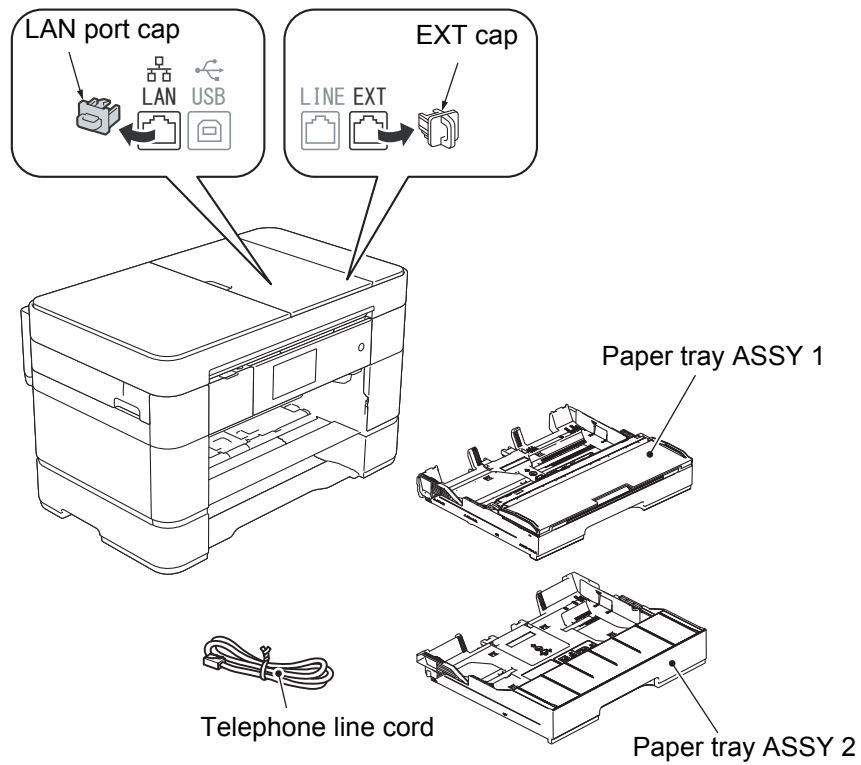


Fig. 3-1

- (3) Set the Protective part.

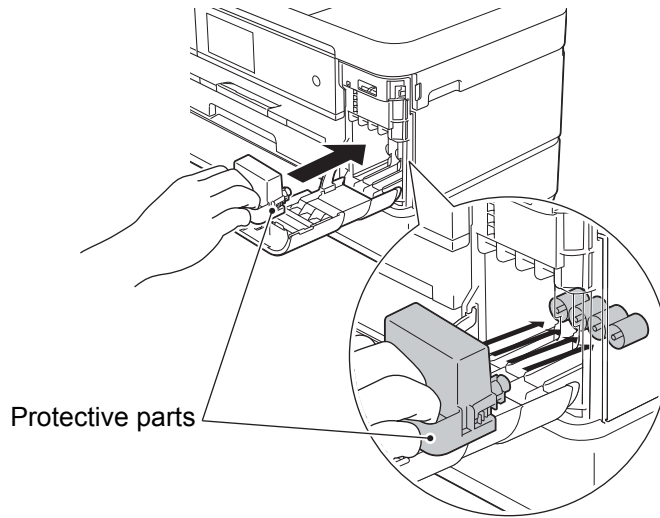


Fig. 3-2

## 9.2 MP Paper Detection Sensor PCB ASSY

- (1) Open the MP tray.
- (2) Use a flat screwdriver to release three Hooks and remove the MP side upper cover L/R.
- (3) Use a flat screwdriver to release three Hooks to remove the MP side cover L/R.

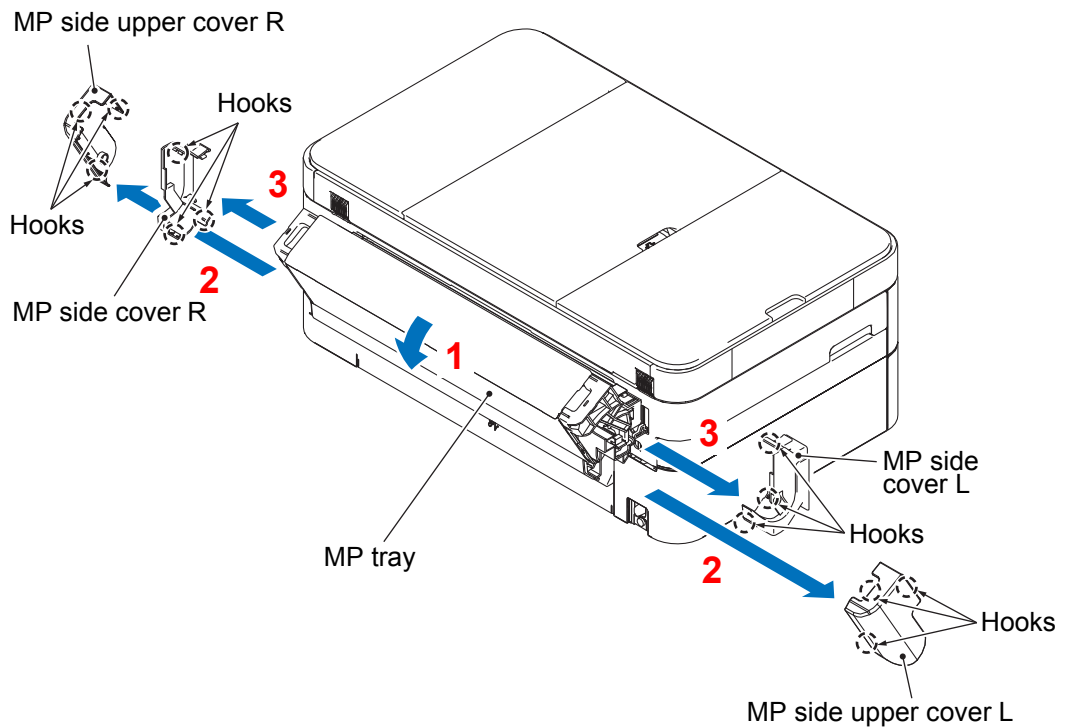


Fig. 3-3

- (4) Open the MP top cover.
- (5) Use a flat screwdriver to press the Release lever on the right side of the MP tray, and remove the MP tray.

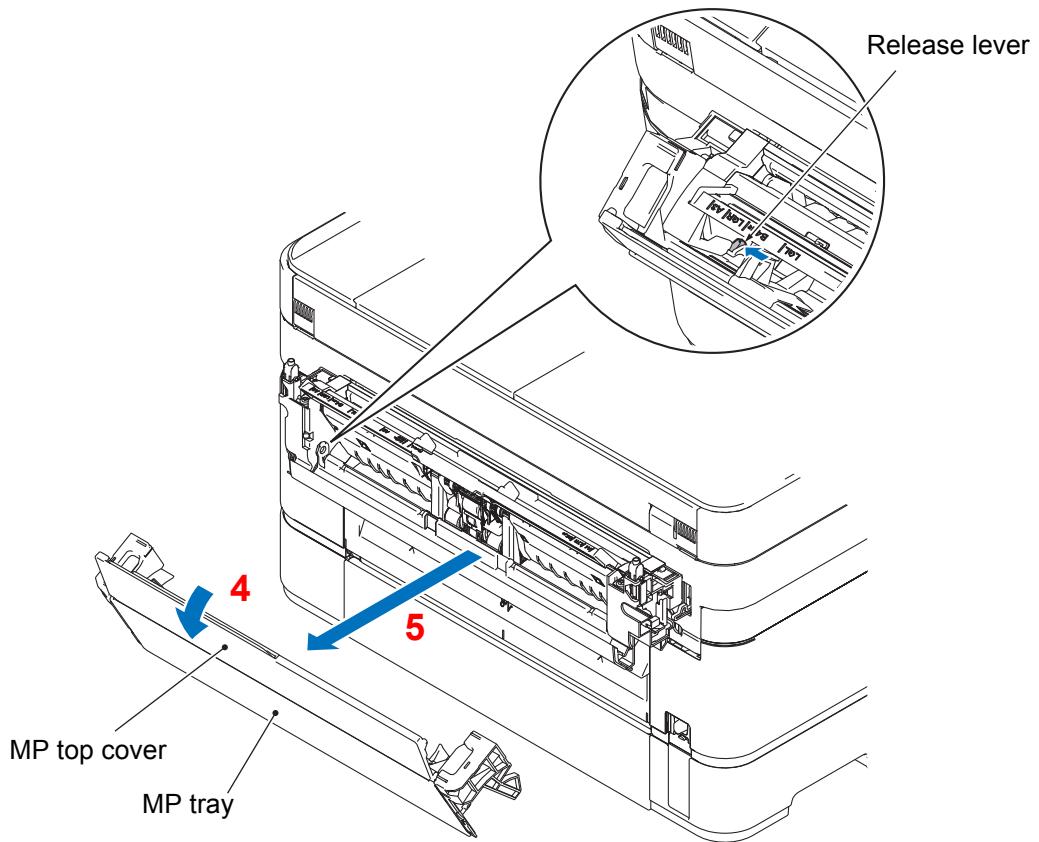


Fig. 3-4

- (6) Release the Hook and slightly remove the MP paper detection sensor PCB ASSY.

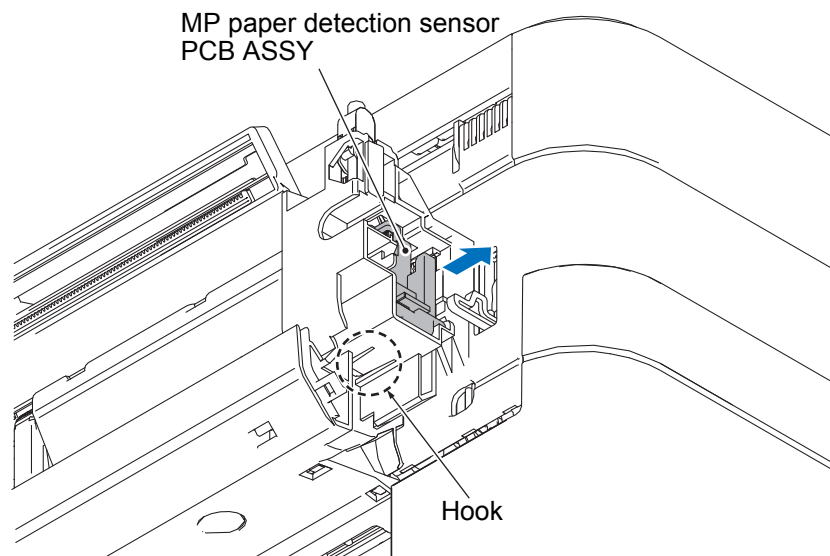


Fig. 3-5

- (7) While pressing the actuator, remove the MP paper detection sensor PCB and MP paper detection sensor holder.
- (8) Remove the MP paper detection sensor harness off the MP paper detection sensor PCB.
- (9) Remove the MP paper detection sensor PCB off the MP paper detection sensor holder.

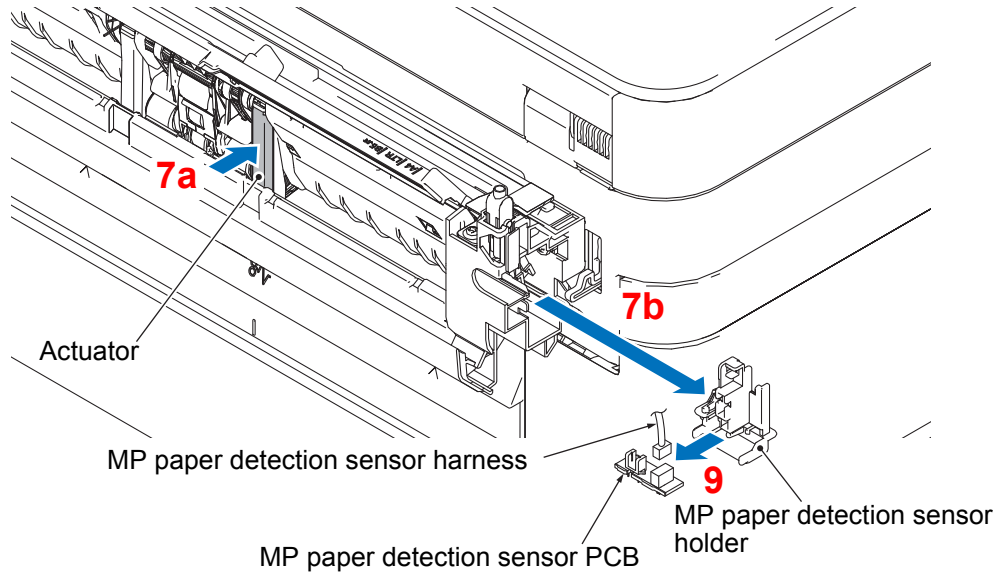


Fig. 3-6

### 9.3 MP Tray ASSY

- (1) Remove the Shaft.
- (2) Remove the two screws (TAPTITE CUP B M4x12), and remove the MP tray ASSY upwards while pulling it to the front.

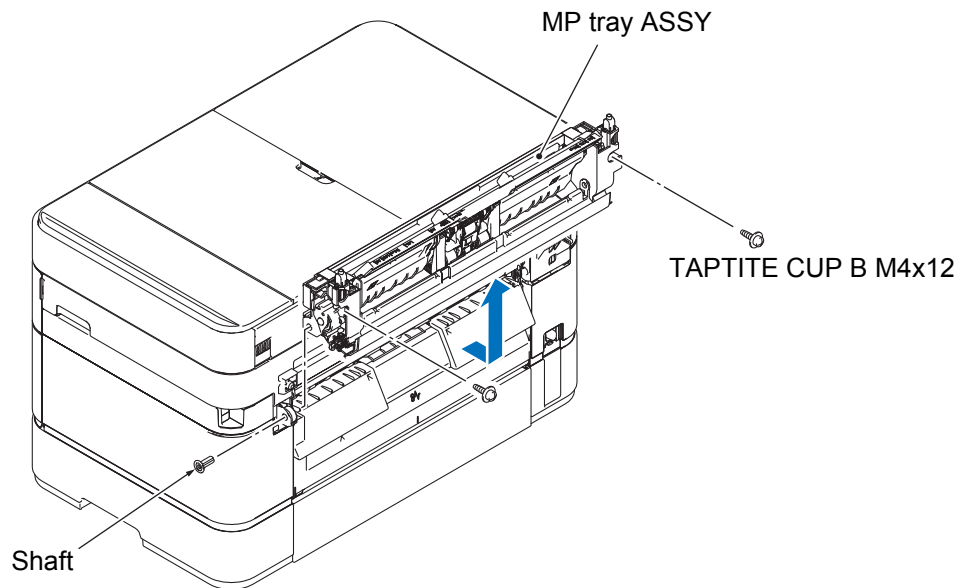


Fig. 3-7

**Note:** Put the MP tray ASSY with its back down.

## 9.4 Scanner Cover Damper/Scanner Cover Support

- (1) Open the Scanner cover until it locks.
- (2) Pull the Hook at the rear end of the Scanner cover damper to the front, and remove the damper from the Scanner cover.

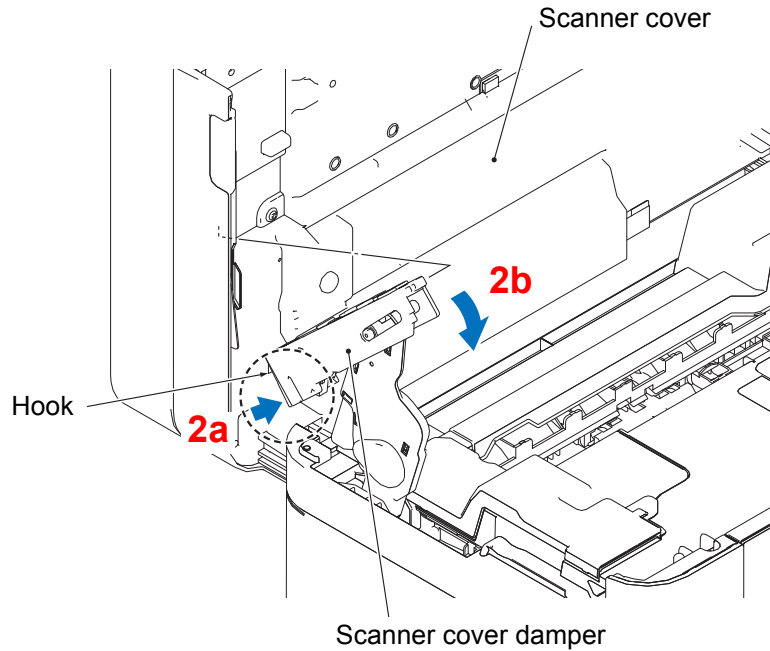


Fig. 3-8

- (3) Turn the Scanner cover support upright, and pull it up and out of the Upper cover together with the Scanner cover damper.
- (4) Remove the Scanner cover damper from the Scanner cover support.

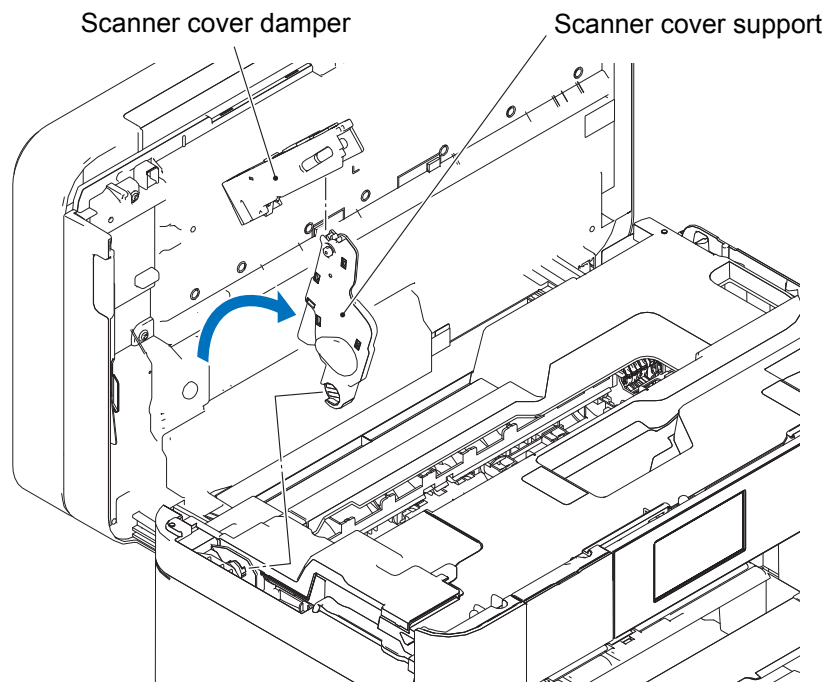


Fig. 3-9

## 9.5 ADF Unit/Document Scanner Unit

- (1) Remove the MP gear 19.
- (2) Remove the Shaft and take off the MP gear holder and MP gear 31.

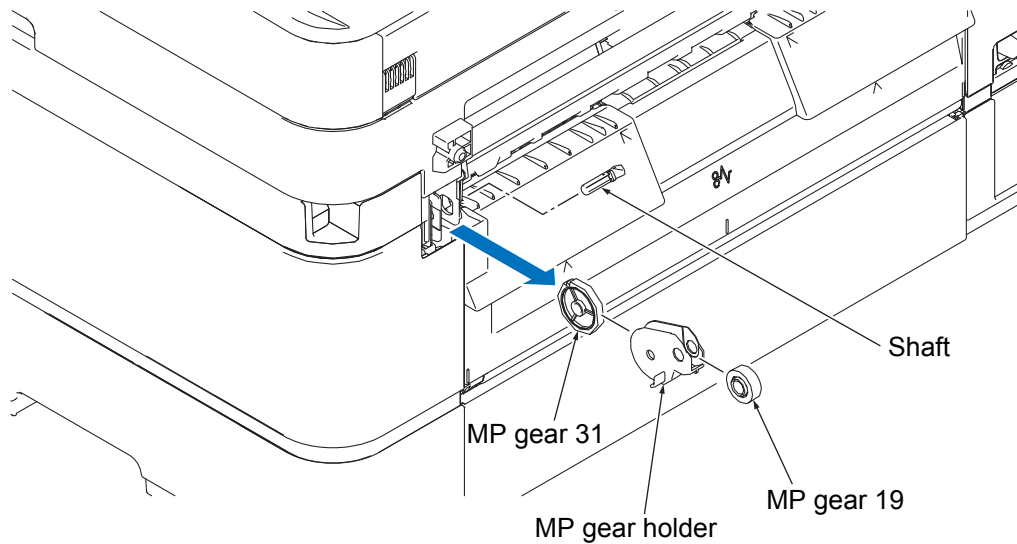


Fig. 3-10

- (3) Raise the Lifter and pull off to the front.

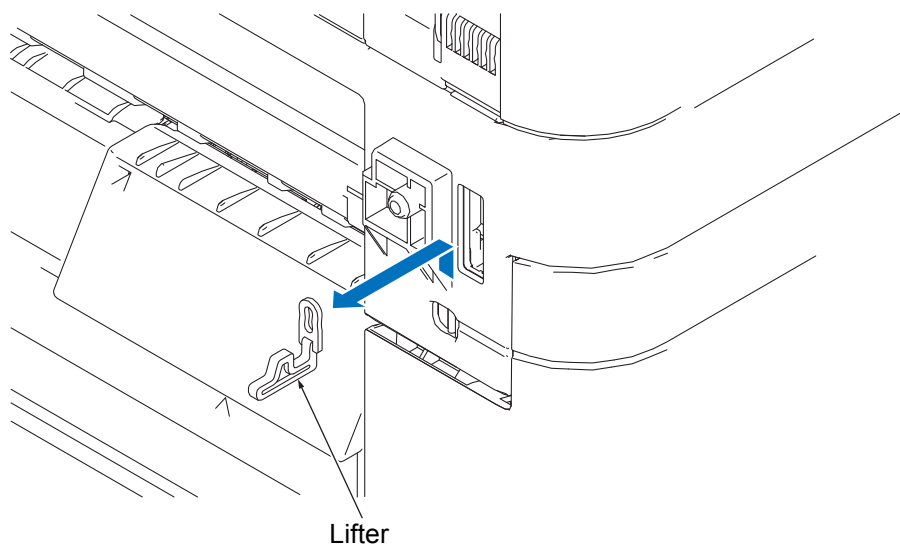


Fig. 3-11



- (4) Release the five Hooks and remove the Harness cover from the Upper cover.
- (5) Remove the screw (TAPTITE CUP S M3x6) from the Scanner motor grounding wire and ADF motor grounding wire.
- (6) Remove the Harnesses of the Document scanner unit and the ADF unit.  
**<Duplex scanning models only>** Also remove the Second side CIS flat cable.

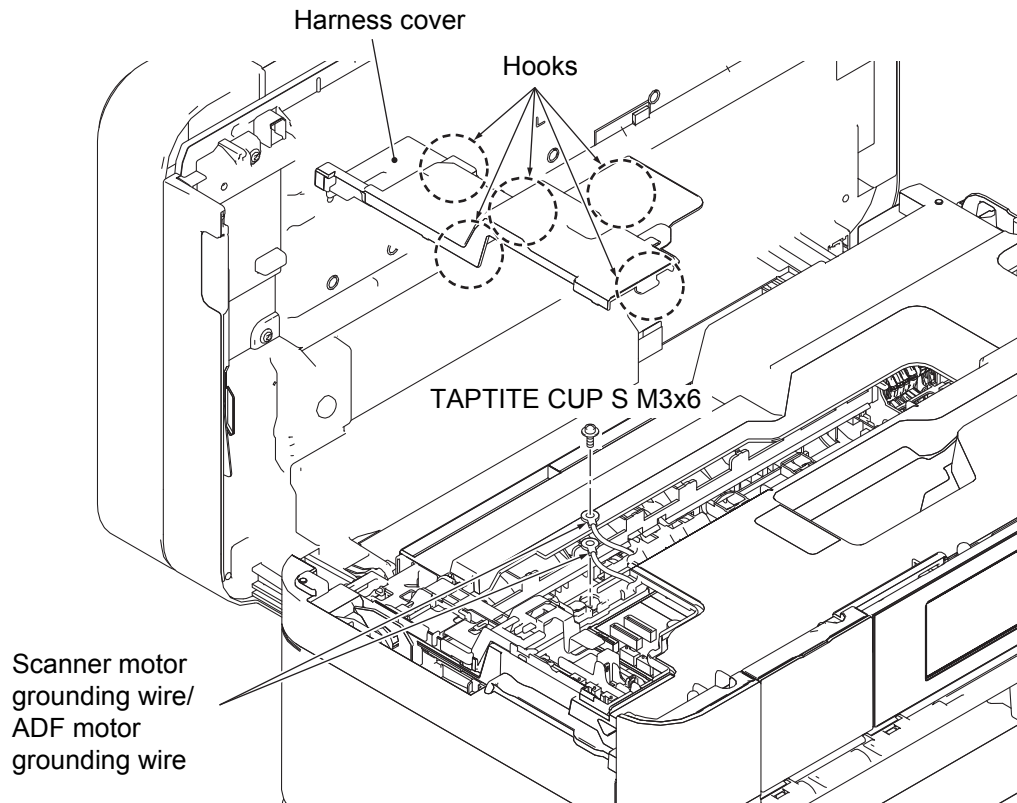


Fig. 3-12

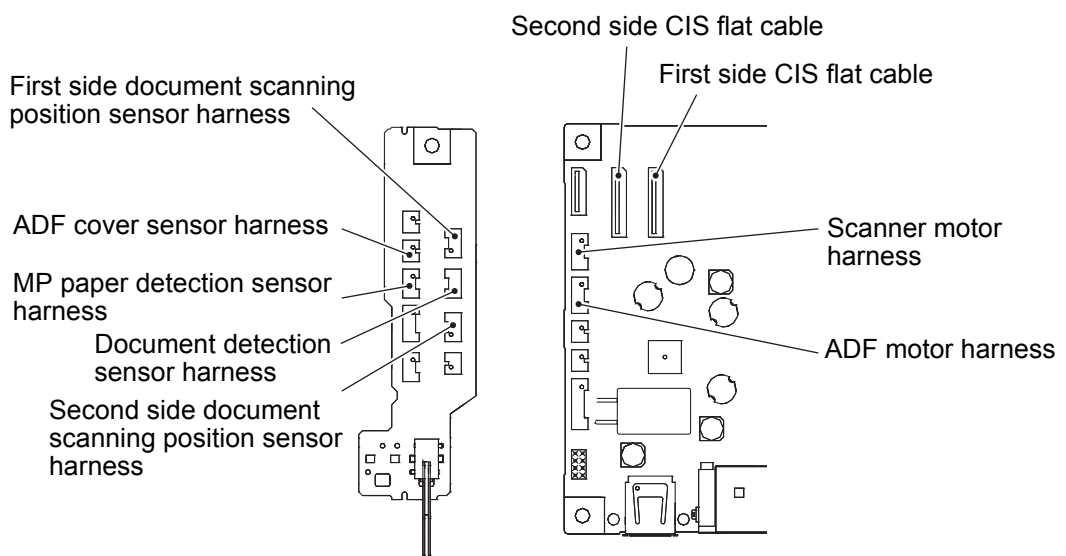
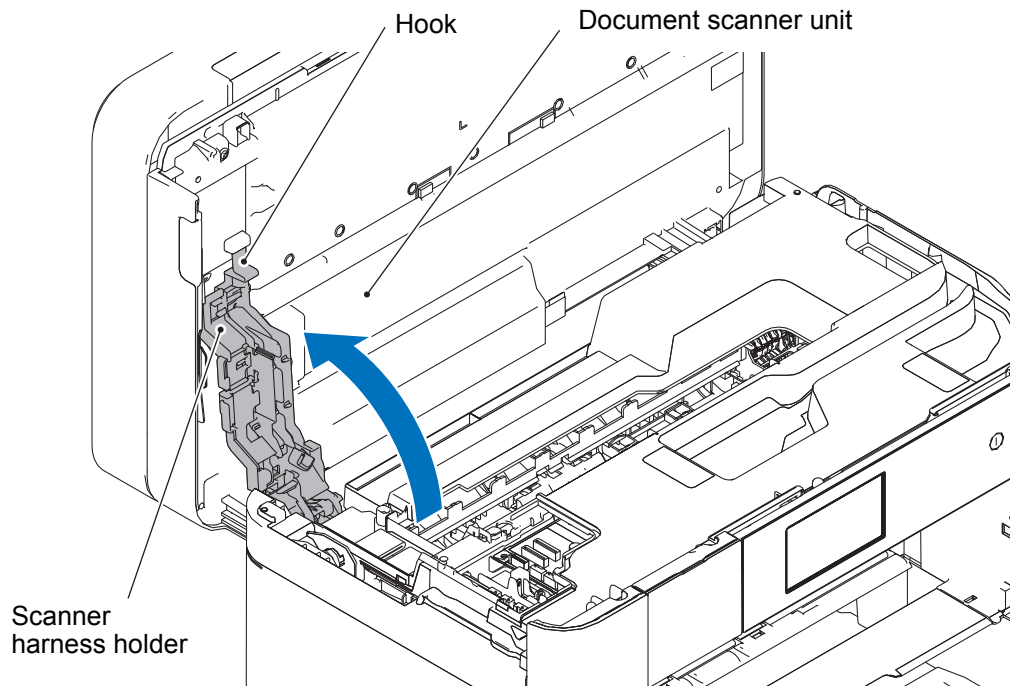


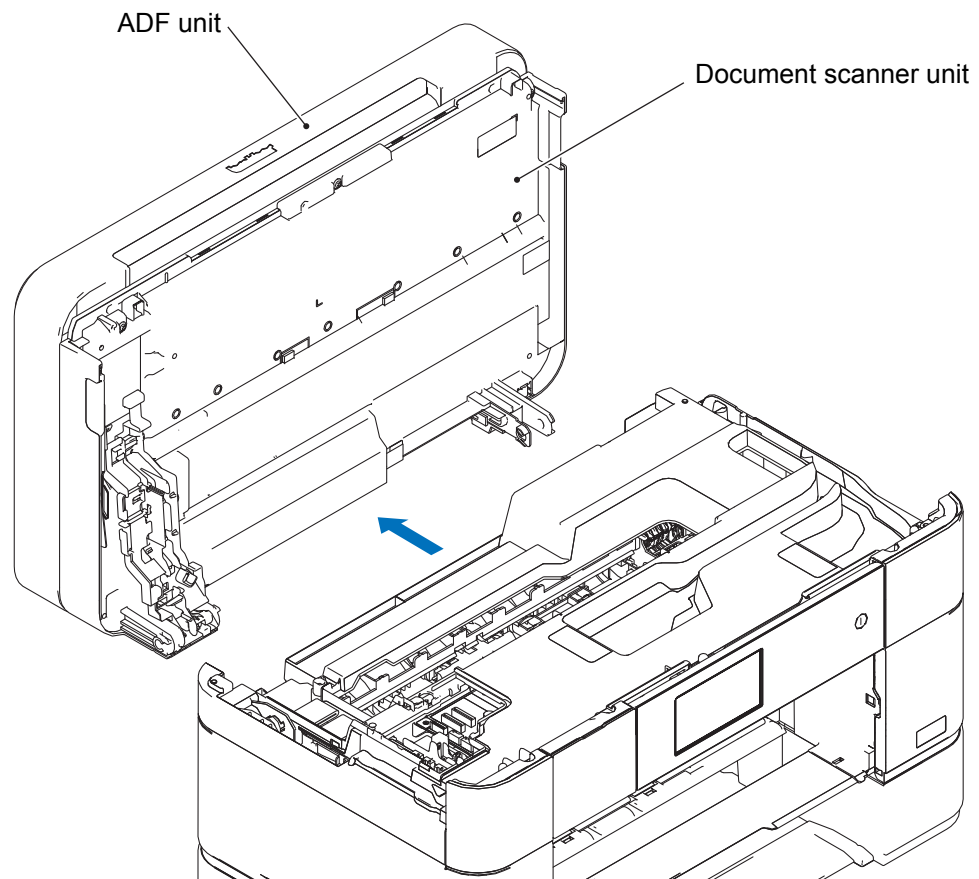
Fig. 3-13

- (7) Open the Scanner harness holder and fix the Hook of the Scanner harness holder to the slot on the Document scanner unit.



**Fig. 3-14**

(8) Slide off the Document scanner unit and the ADF unit to the rear.

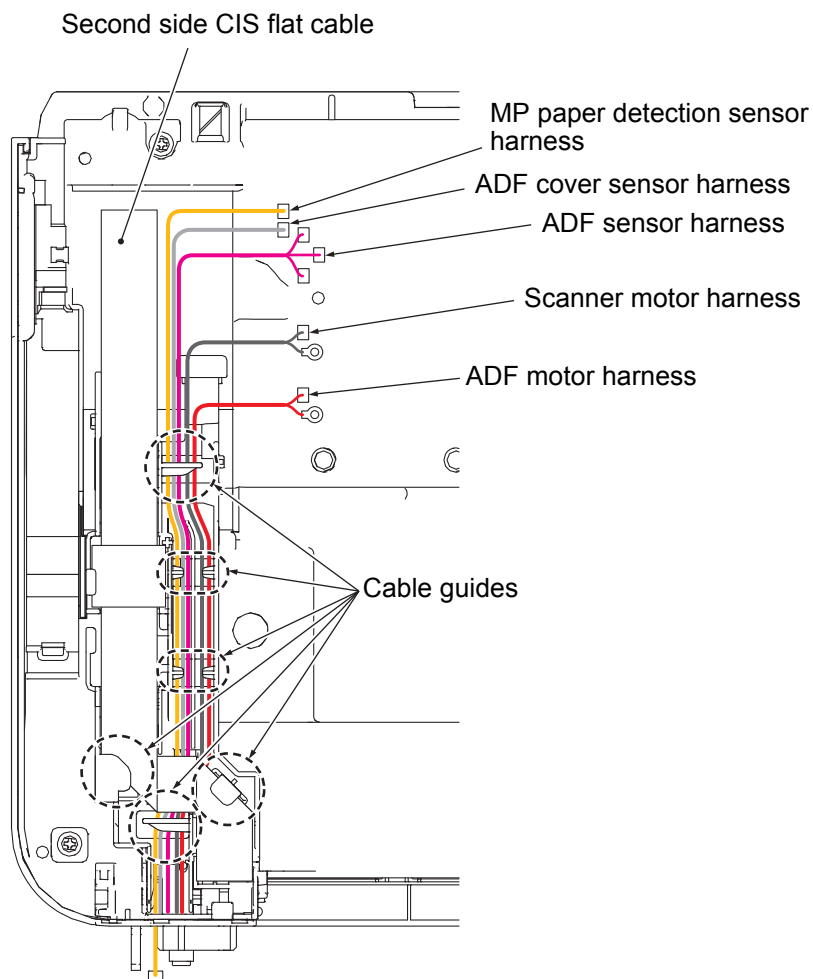


**Fig. 3-15**

- (9) Leave the Scanner motor harness and the First side CIS flat cable as they are, and remove the Harness off the Scanner harness holder.

**<Duplex scanning models only>**

- Remove the Second side CIS flat cable from the Scanner harness holder.
- Remove the Flat core that is attached to the Second side CIS flat cable.



**Fig. 3-16**

(10) Open the ADF unit, and raise it slightly avoiding the Stopper of the Document scanner unit.

(11) From the front side of the ADF hinge L/R fitting hole, put in a cable tie-like tool with its edge bent, and pull out the ADF unit.

(12) Pull the ADF unit harness off the Document scanner unit.

**Assembling Note:** Before wiring the harnesses of the ADF unit through the Harness holder, put a 20-mm-thick pad on the Scanner glass of the Document scanner cover. Otherwise, when you scan a thick book on the Scanner glass, the ADF unit cannot be closed due to those tense harnesses.

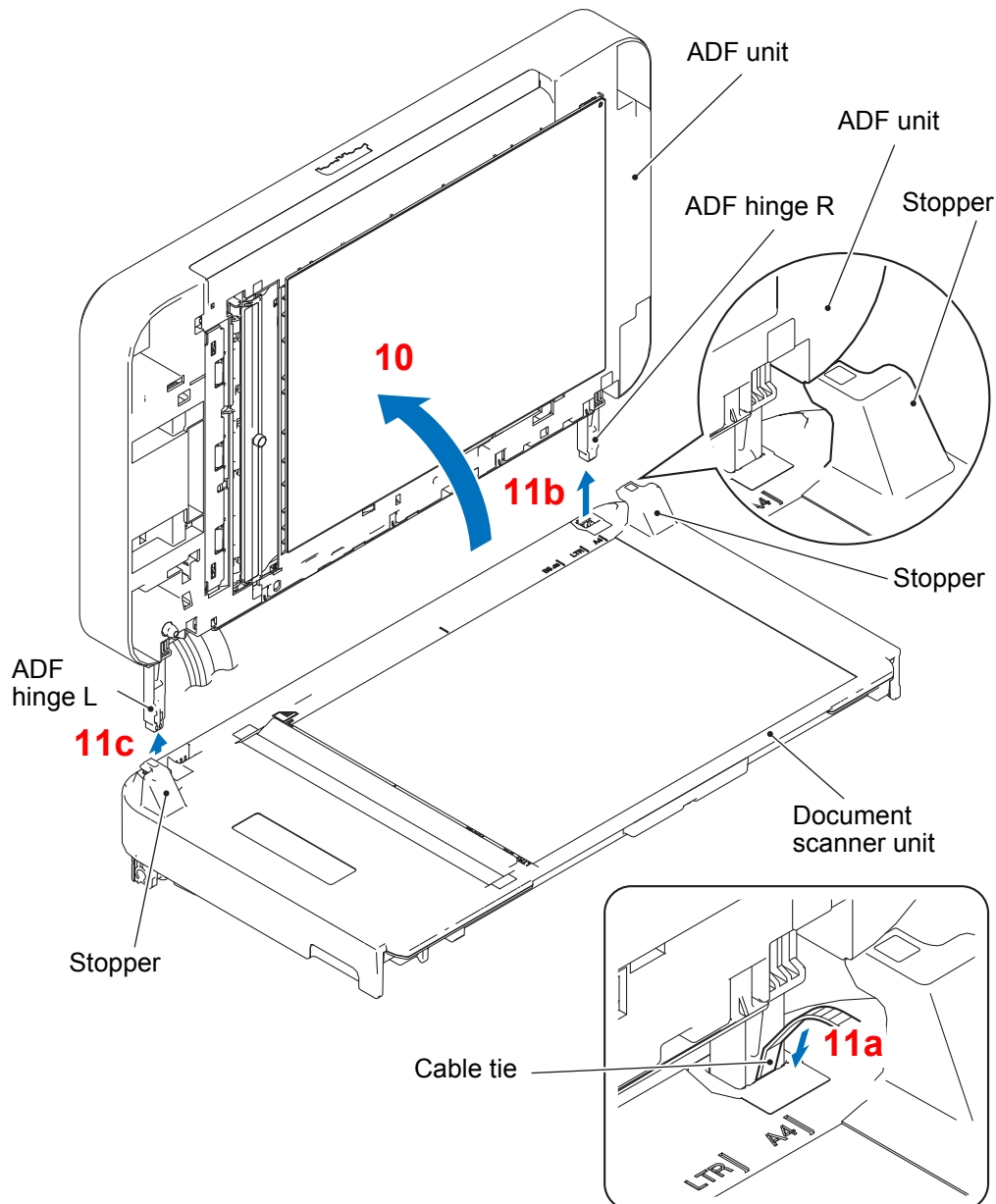


Fig. 3-17

## 9.6 ADF Hinge L/R

- (1) Fully turn the ADF hinge L/R to the front and pull it out to the rear.

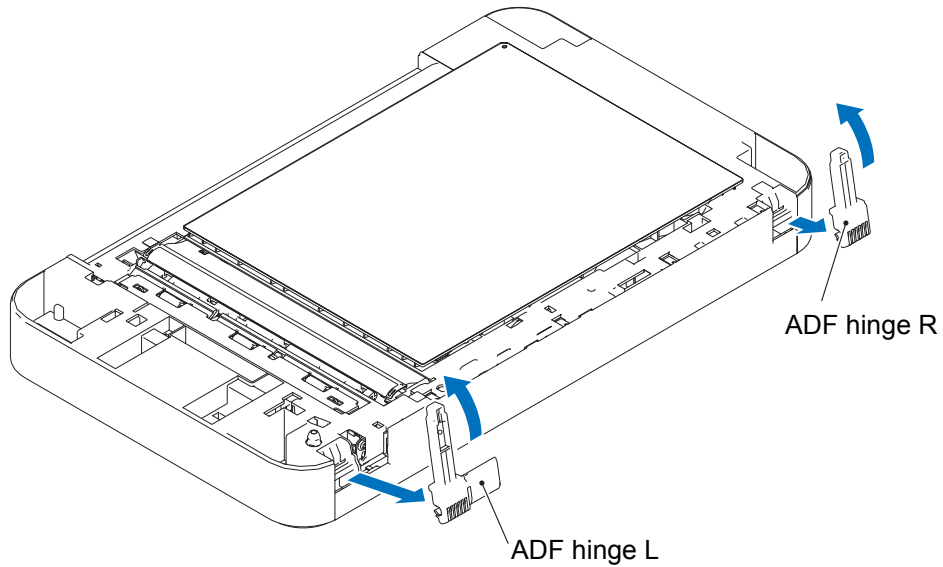


Fig. 3-18

## 9.7 ADF Cover

- (1) Open the ADF document support.
- (2) Open the ADF cover.
- (3) Using a flat screwdriver, release the two Bosses of the ADF unit, and remove the ADF cover.

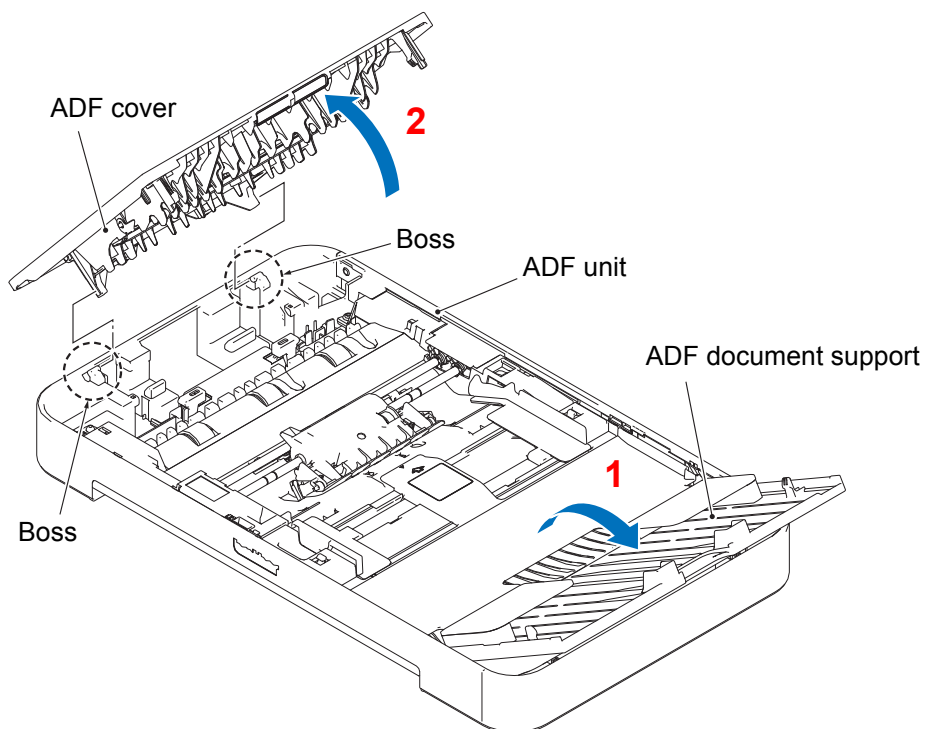
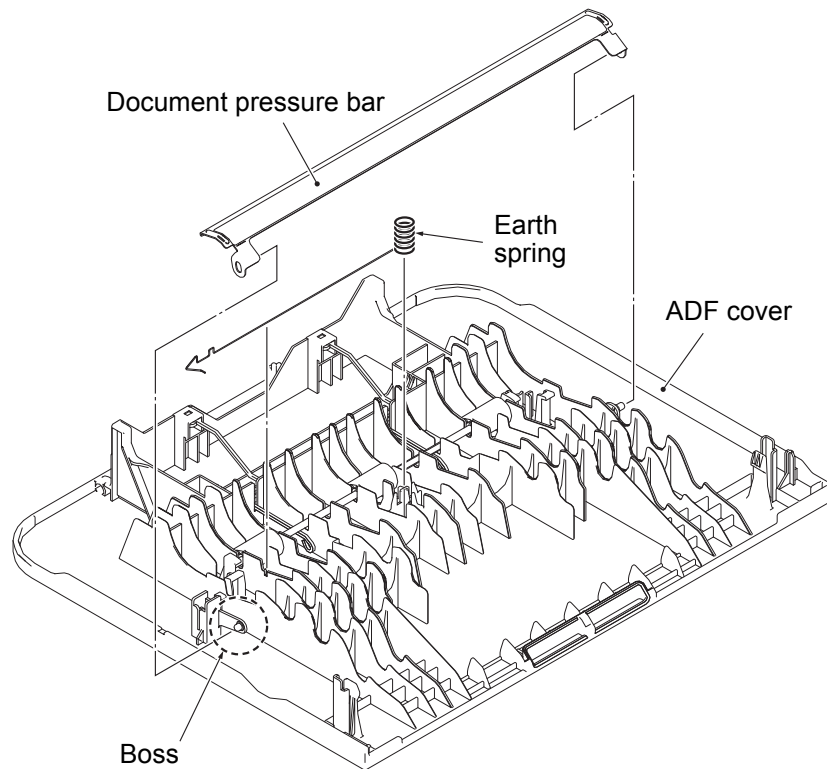


Fig. 3-19

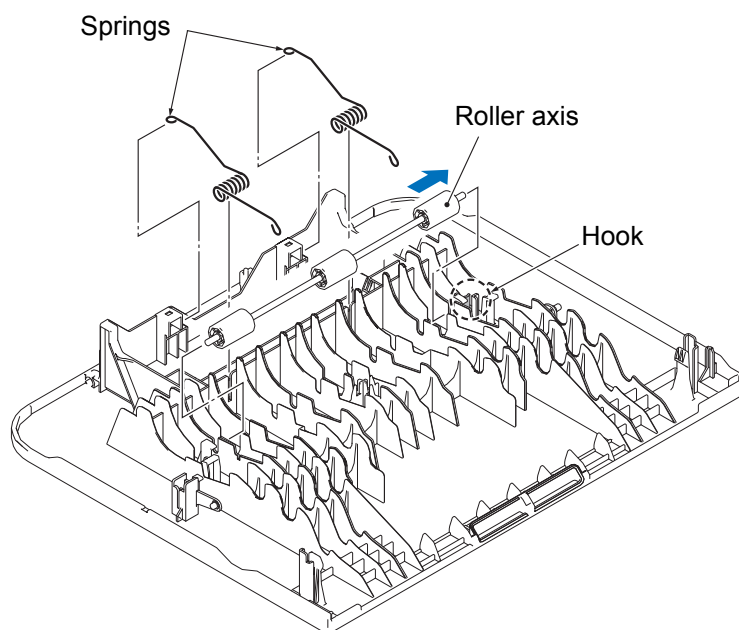
**<Duplex scanning models only>**

- (4) Release the Boss of the ADF cover, and remove the Document pressure bar.
- (5) Remove the Earth spring.



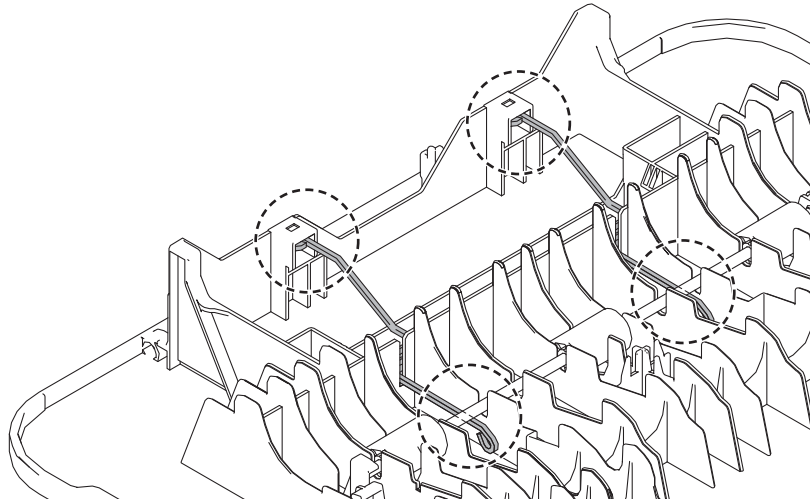
**Fig. 3-20**

- (6) Release and remove the two Springs through the cutout of the Hook.
- (7) Hold down the Hook, and move the Roller axis in the direction of the arrow to remove it.



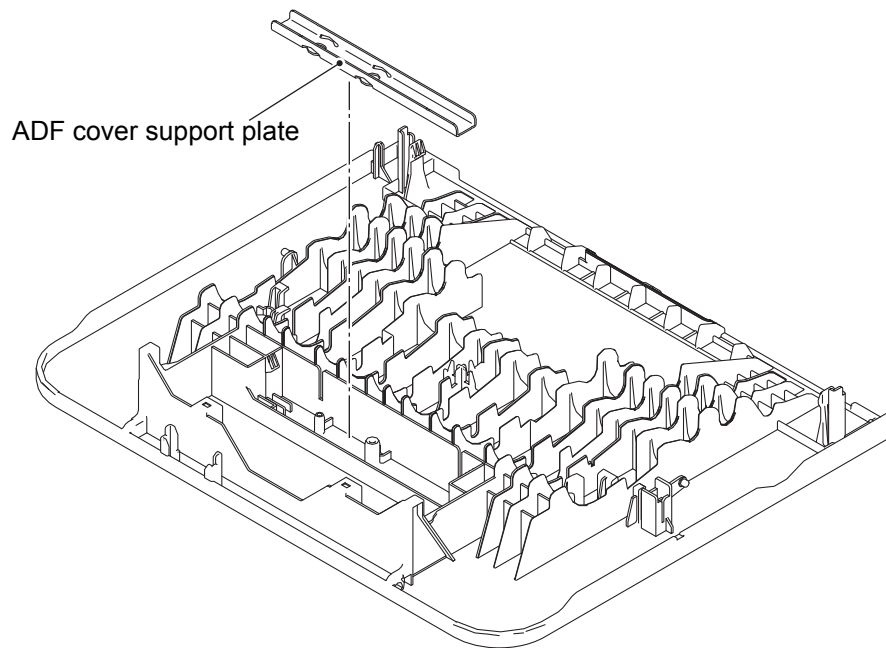
**Fig. 3-21**

**Assembling Note:** When mounting the Springs, take care that the Springs are placed below the Roller axis.



**Fig. 3-22**

(8) Remove the ADF cover support plate.

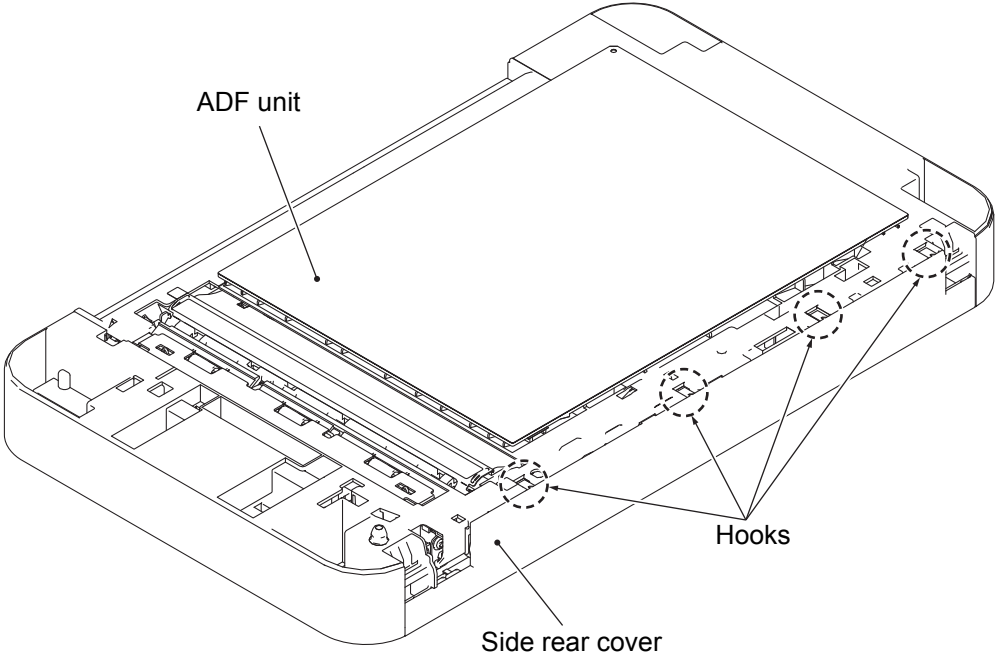


**Fig. 3-23**



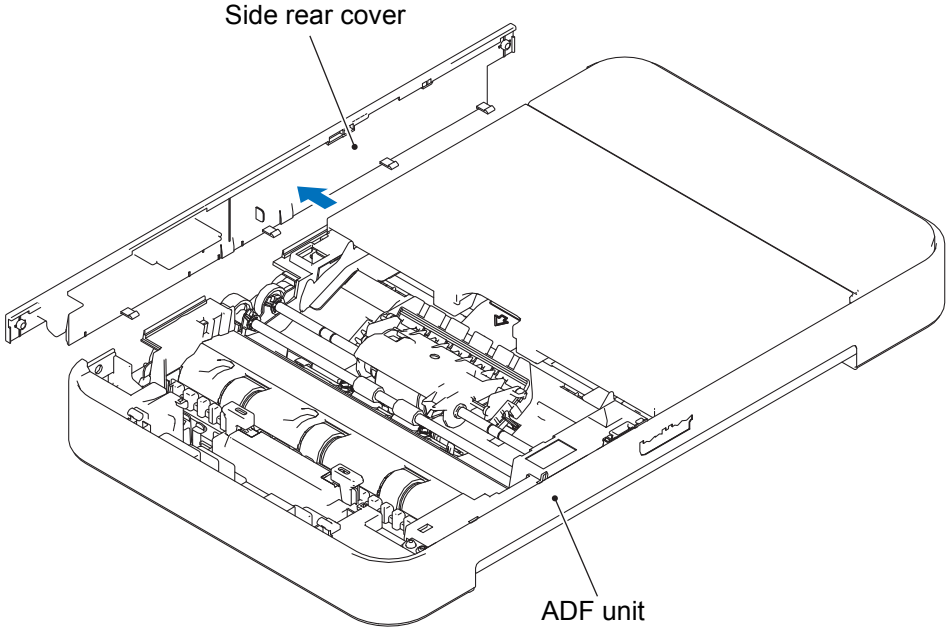
**9.8 ADF Document Support**

(1) Use a flat screwdriver to release the four Hooks of the Side rear cover.



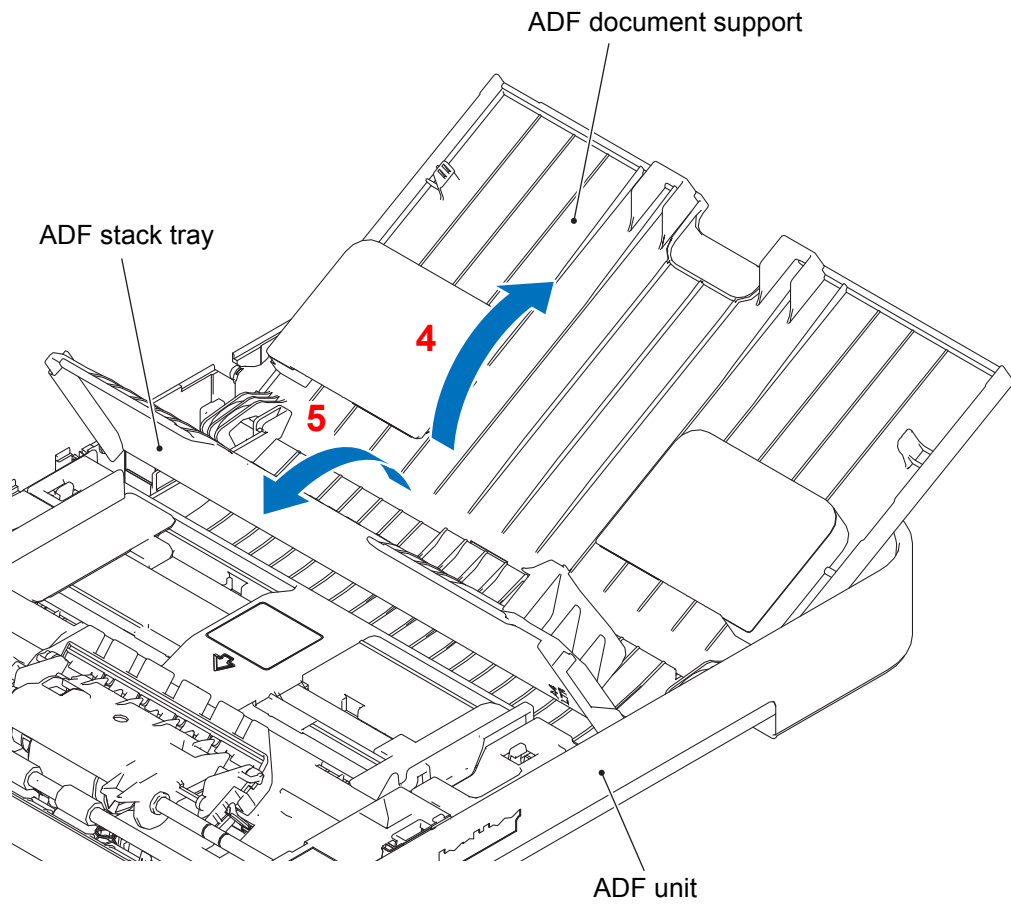
**Fig. 3-24**

(2) Turn the ADF unit right side up.  
(3) Remove the Side rear cover.



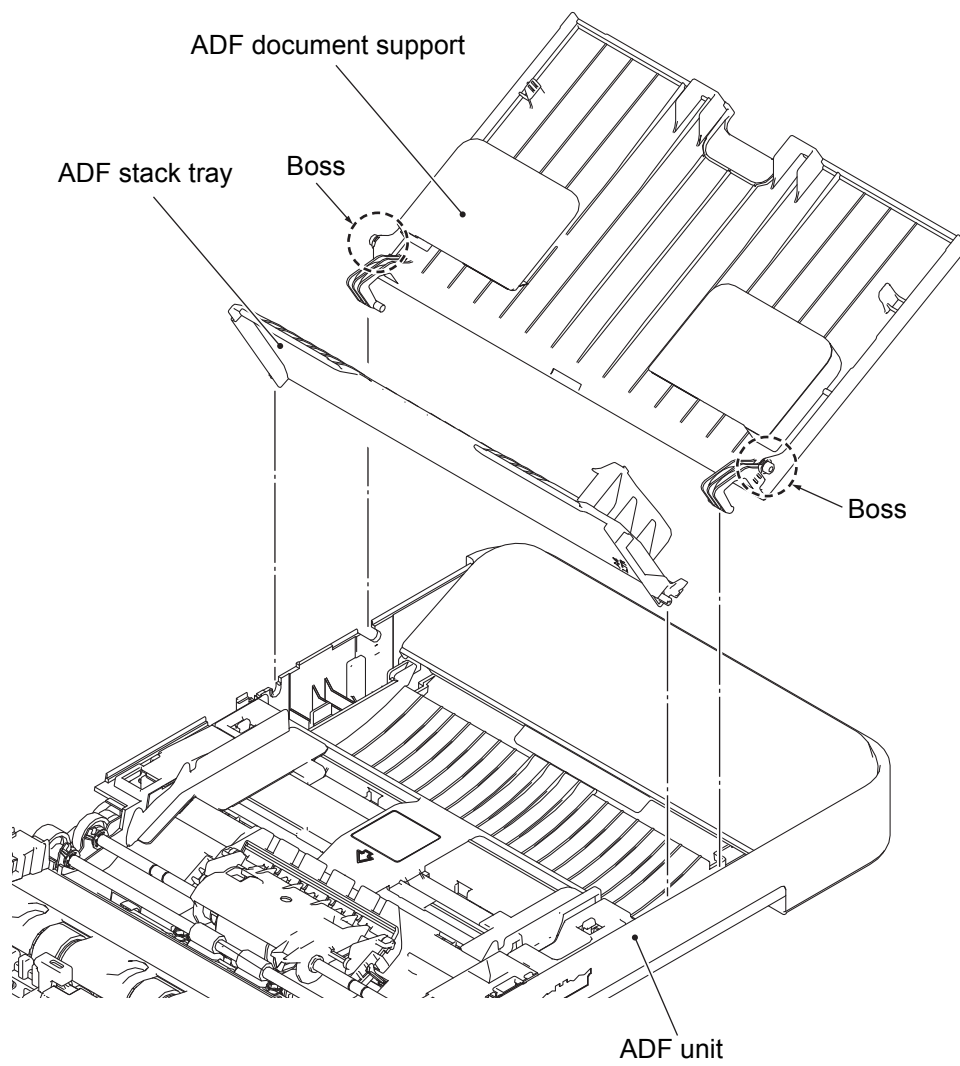
**Fig. 3-25**

- (4) Open the ADF document support.
- (5) Open the ADF stack tray.



**Fig. 3-26**

- (6) Remove the ADF stack tray.
- (7) Release the two Bosses on the rear, and remove the ADF document support.



**Fig. 3-27**

## 9.9 Document Top Cover

- (1) Using a flat screwdriver, hold down the two Hooks to inside, and remove the Document top cover.

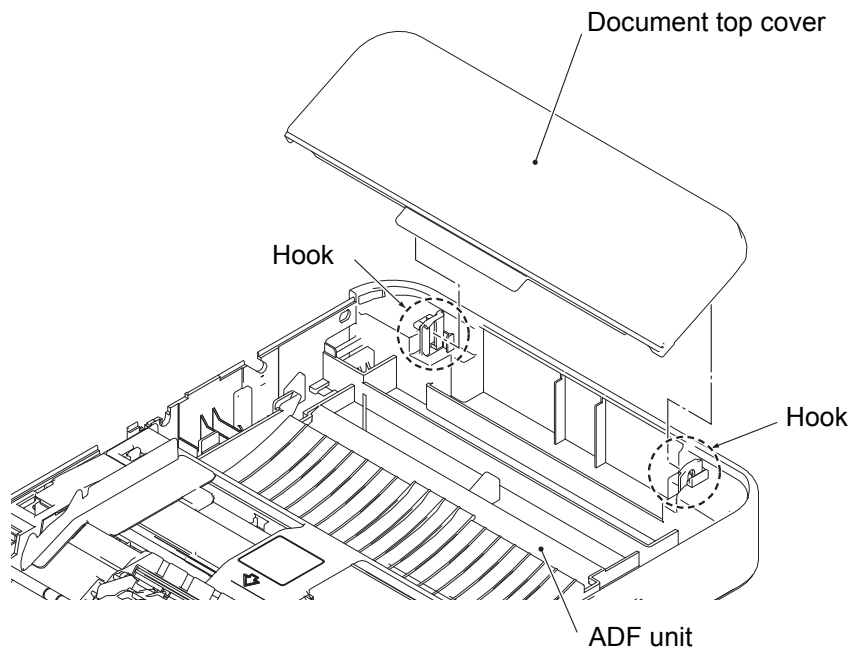


Fig. 3-28

## 9.10 Document Separation Roller ASSY

- (1) Rotate the Bushing of the Document separation roller ASSY and release the lock.
- (2) Remove the Document separation roller ASSY.

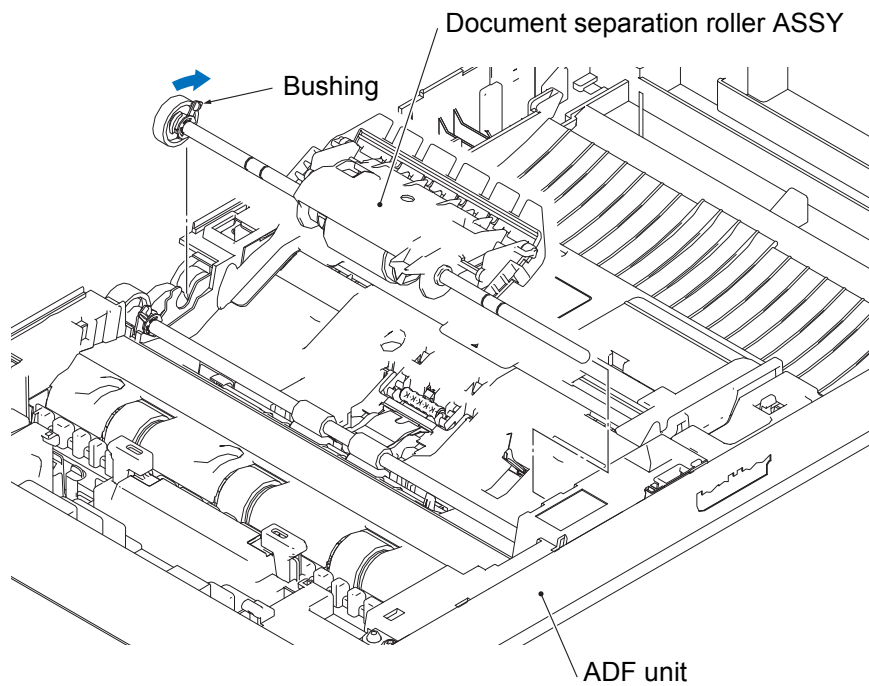


Fig. 3-29

## 9.11 ADF Separation Pad Holder ASSY

- (1) Release the Hook of the Gear and remove the Gear.
- (2) Rotate the Bushing of the LF roller to release the lock.
- (3) Remove the LF roller.

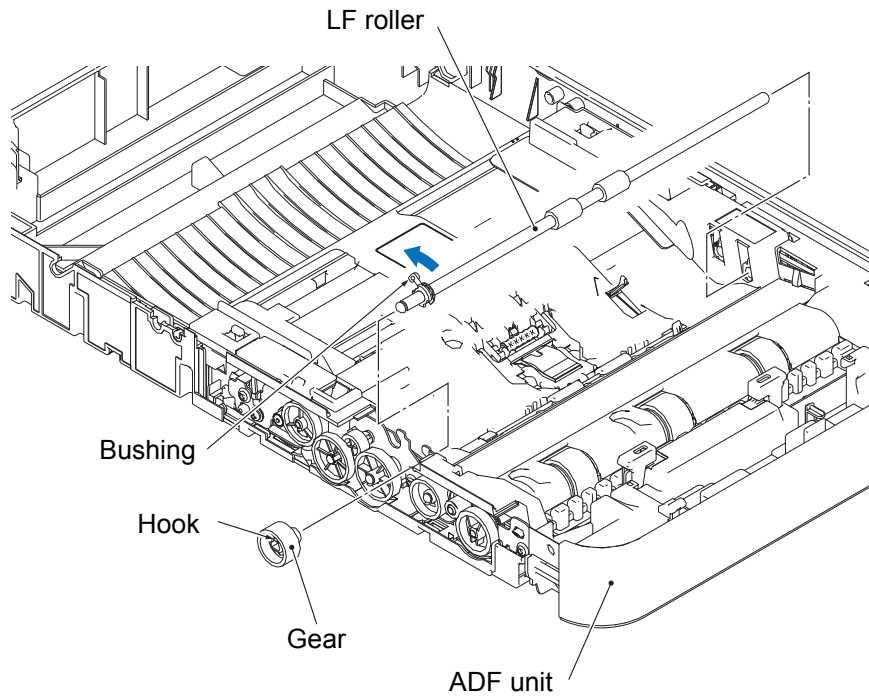


Fig. 3-30

- (4) Release the Hook, and remove the LF roller S.
- (5) Remove the two LF roller S springs.

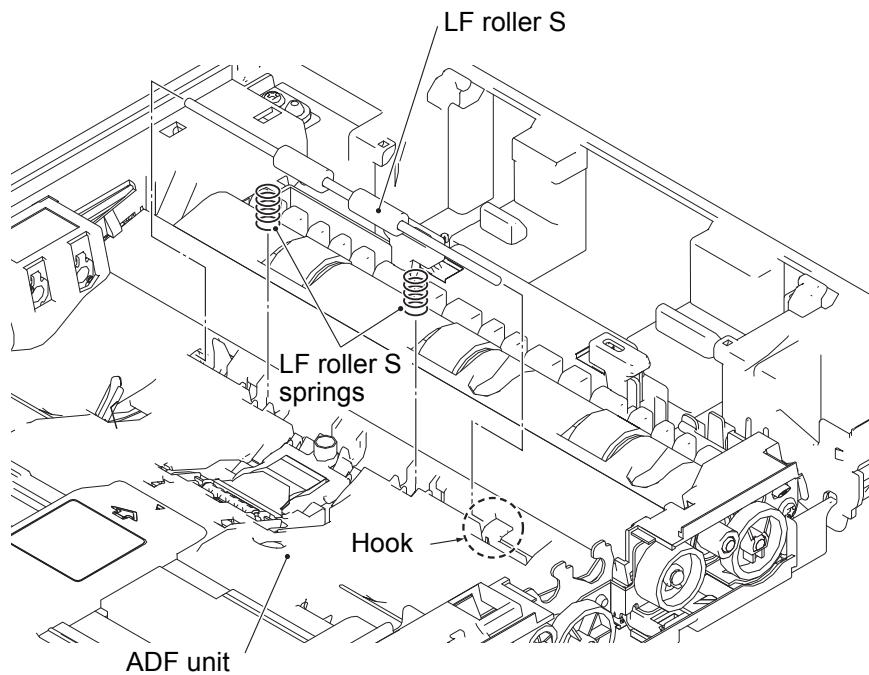


Fig. 3-31

- (6) Using a flat screwdriver, release the two Hooks and the two Bosses, and remove the ADF separation pad holder ASSY.

**Note:** Take care not to lose the ADF separation pad holder ASSY spring.

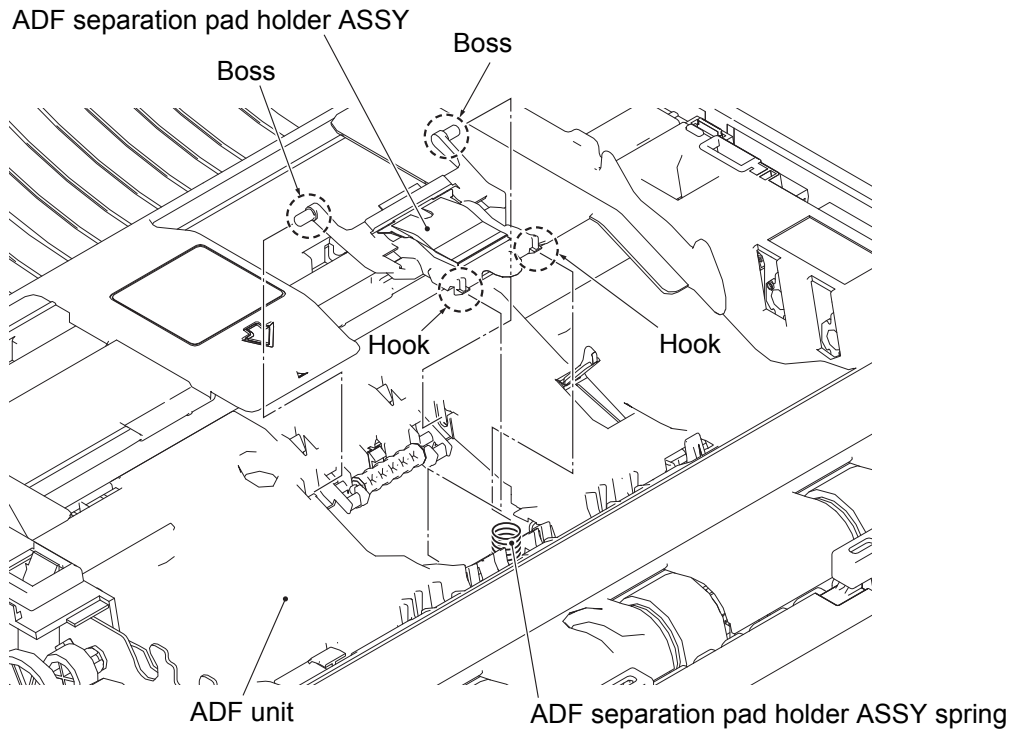


Fig. 3-32

## 9.12 Second Side CIS Unit (Duplex scanning models only)

- (1) Release the Hook and remove the CIS glass.

**Note:** When removing the CIS glass, take care not to stain it with dust or fingerprints. If it is stained, wipe it off with a soft, dry cloth.

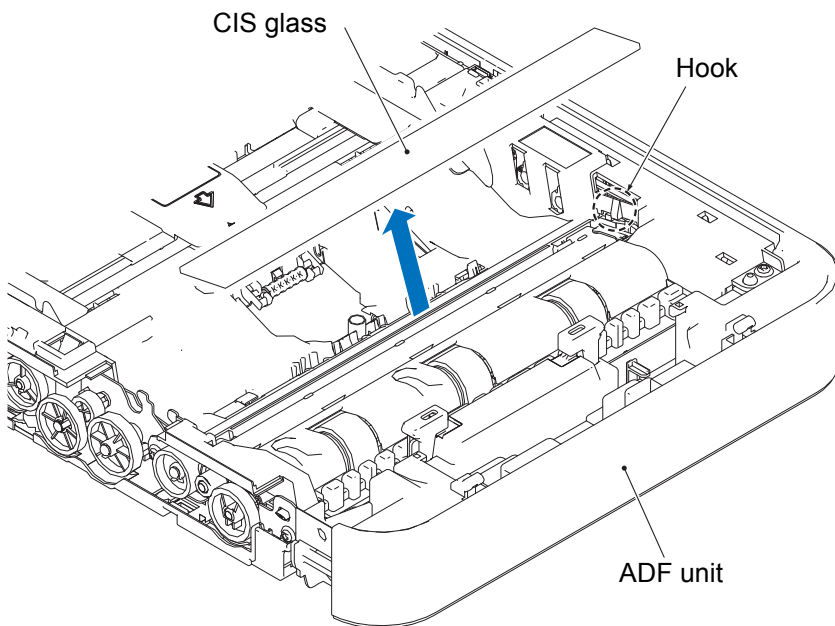
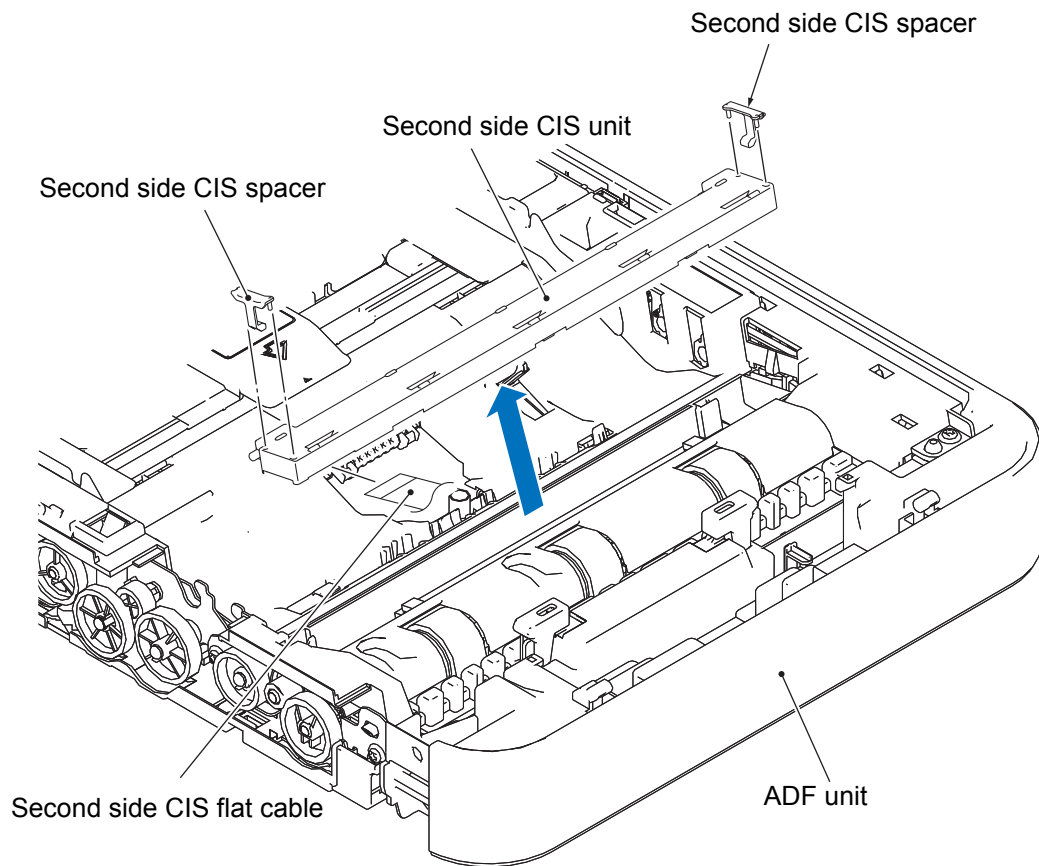


Fig. 3-33

(2) Remove the Second side CIS unit and disconnect the Second side CIS flat cable from the CIS unit.

**Note:** Do not touch the lens of the Second side CIS unit with your hands.

(3) Remove the two Second side CIS spacers from the Second side CIS unit.



**Fig. 3-34**

### 9.13 Second Side CIS Flat Cable (Duplex scanning models only)

- (1) Open the Feed tray.
- (2) Remove the Feed tray.

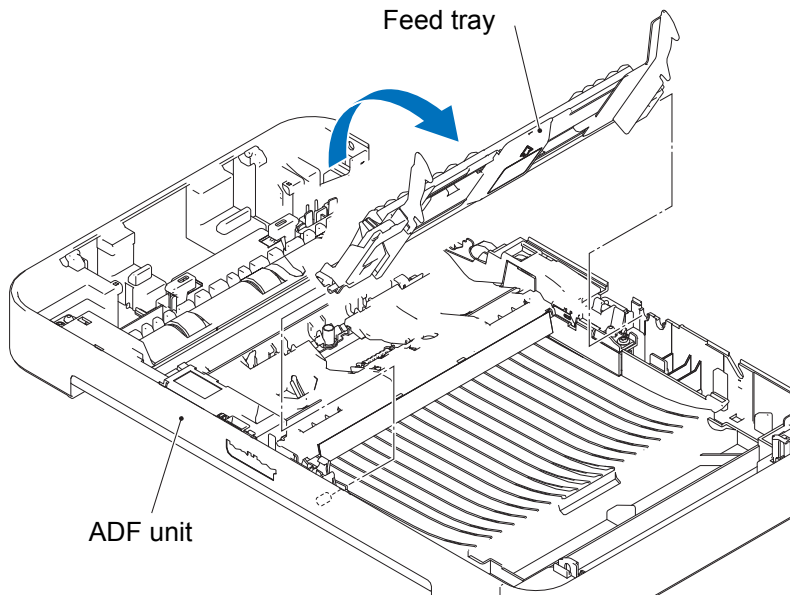


Fig. 3-35

- (3) Remove the four screws (TAPTITE CUP B M3x10), take off the Upper document chute, and temporarily put it in place.

**Note:** Do not remove the harness of the Upper document chute.

**Assembling Note:** When attaching the four screws (TAPTITE CUP B M3x10), observe the order indicated below.

- (4) Pull out the Second side CIS flat cable from the Upper document chute.

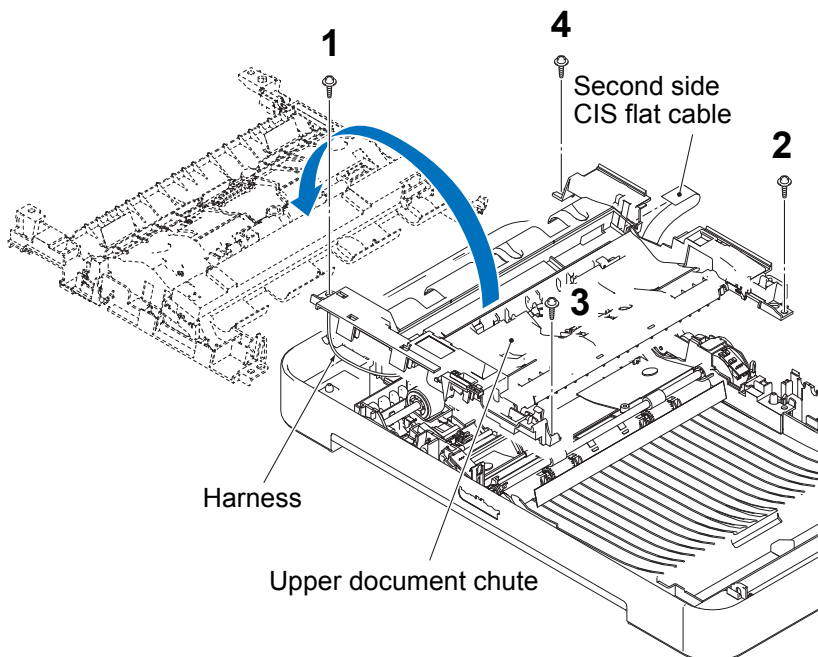
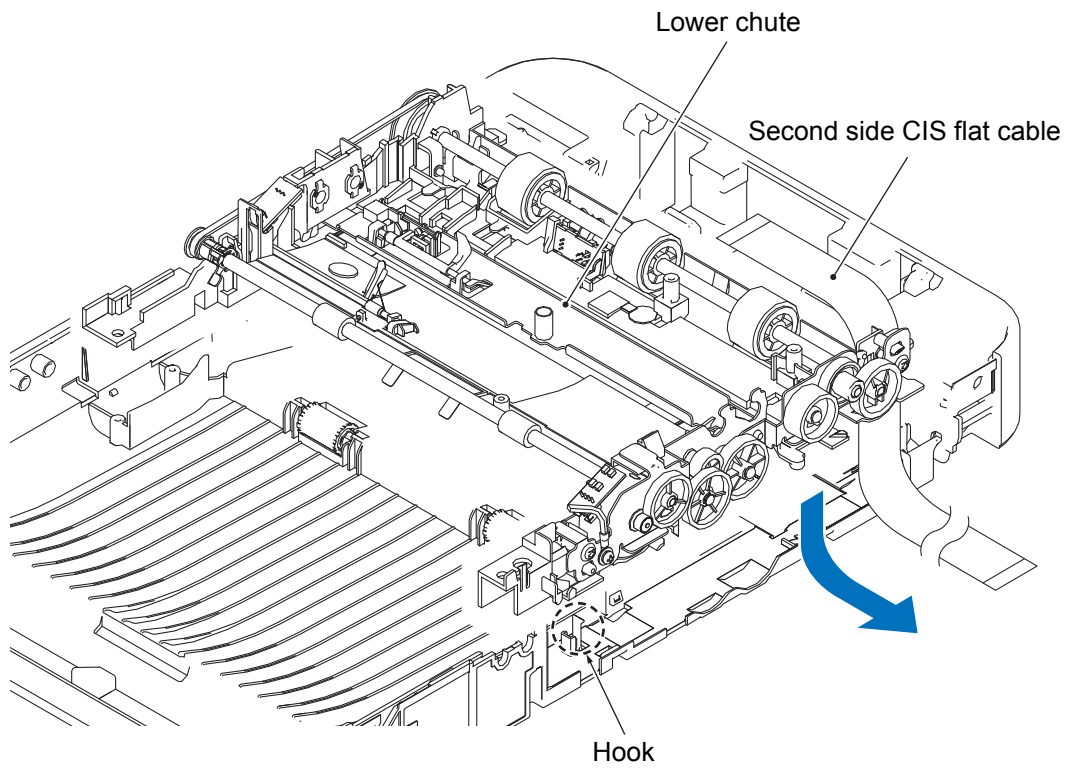


Fig. 3-36

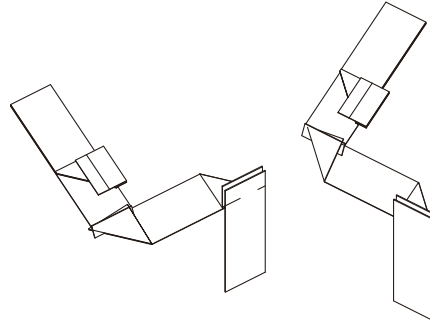


- (5) Release the Hook, and remove the Second side CIS flat cable while holding up the Lower chute.



**Fig. 3-37**

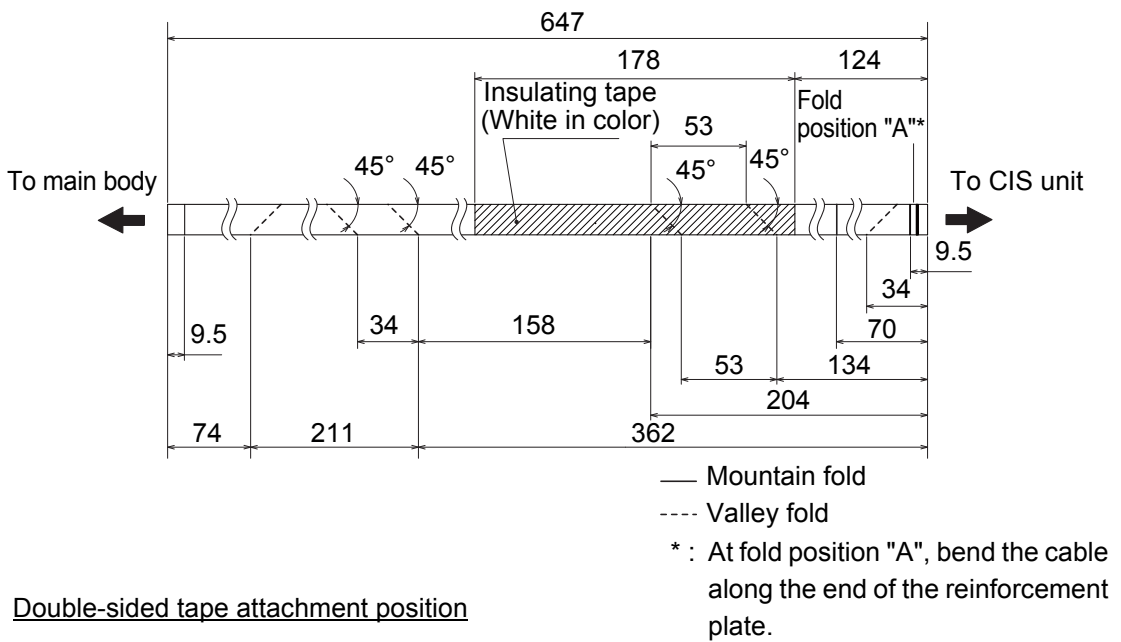
**Assembling Note:** Assemble new Second side CIS flat cable as shown below.



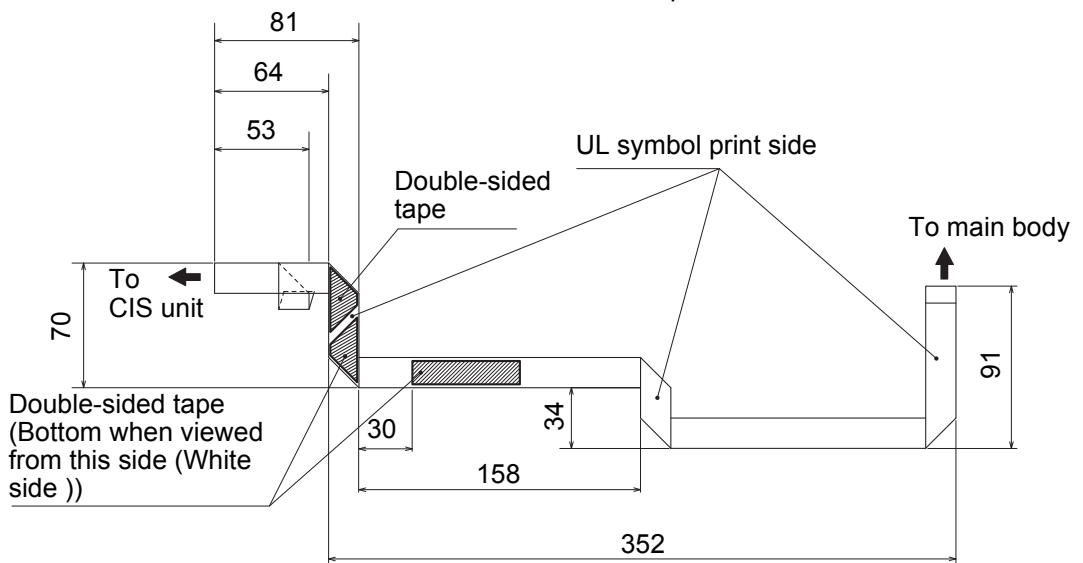
Folding instructions

Top: White side  
Bottom: UL symbol print side

(Unit: mm)



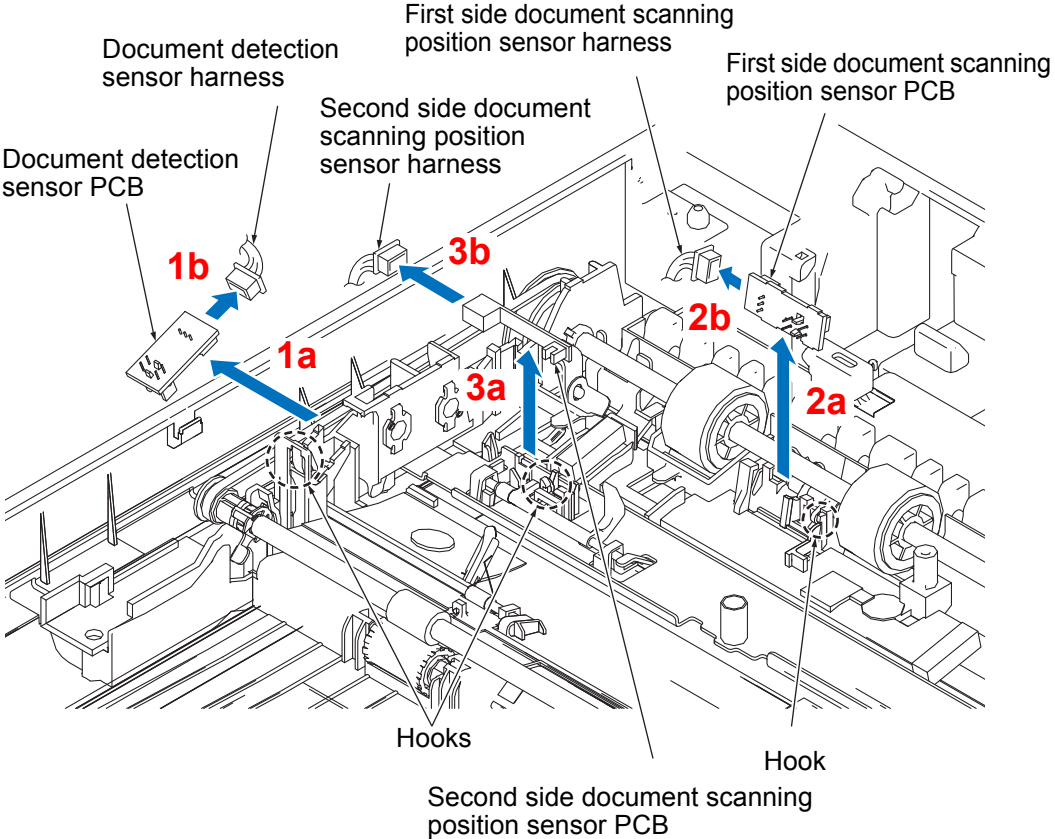
Double-sided tape attachment position



**Fig. 3-38**

**9.14 Document Detection Sensor PCB/First Side Document Scanning Position Sensor PCB/Second Side Document Scanning Position Sensor PCB**

- (1) Release the Hook, remove the Document detection sensor PCB, and disconnect the Document detection sensor harness.
- (2) Release the Hook, remove the First side document scanning position sensor PCB, and disconnect the First side document scanning position sensor harness.
- (3) Release the Hook, remove the Second side document scanning position sensor PCB, and disconnect the Second side document scanning position sensor harness.



**Fig. 3-39**

### 9.15 First Side CIS Unit

- (1) Remove the six screws (TAPTITE CUP B M3x10).
- (2) Turn the Document scanner unit right side up.
- (3) Remove the Document scanner top cover.

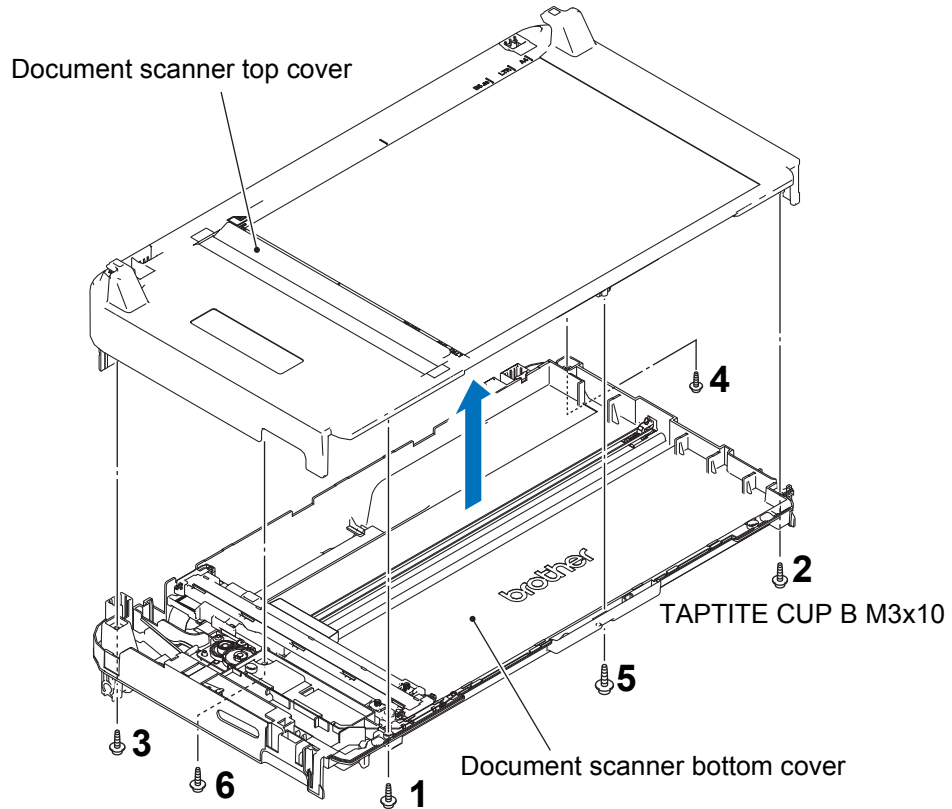


Fig. 3-40

**Assembling Note:** When attaching the six screws (TAPTITE CUP B M3x10), observe the order indicated above.

(4) Remove the CIS roller holder L/R.

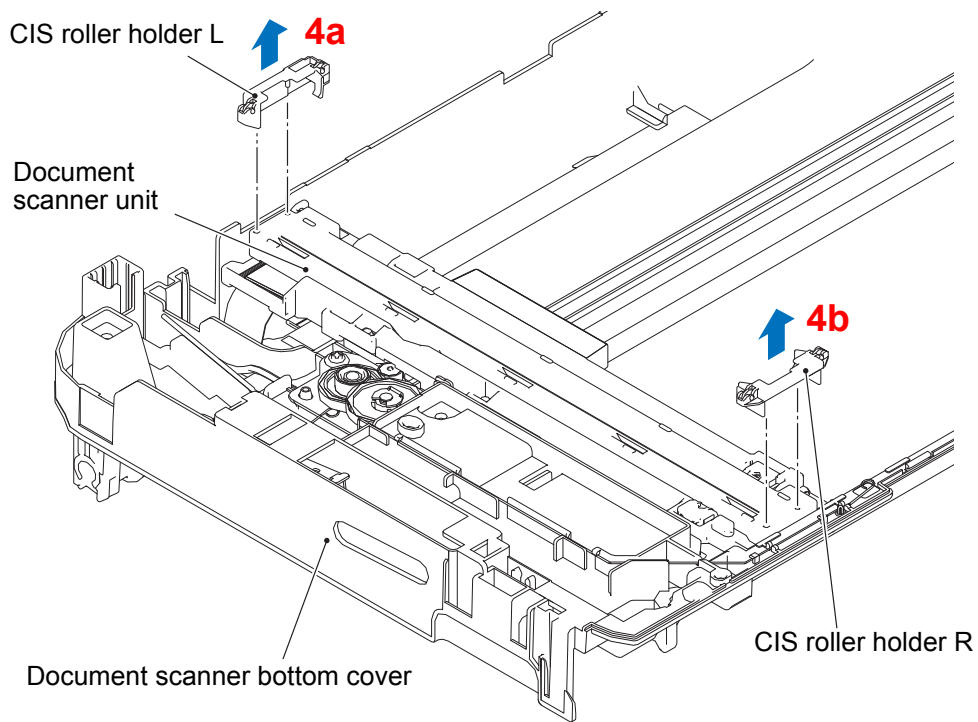


Fig. 3-41

(5) Set the First side CIS unit upright, slide it to the front to remove it, then disconnect the First side CIS flat cable.

**Note:** Do not touch the lens of the First side CIS unit with your hands.

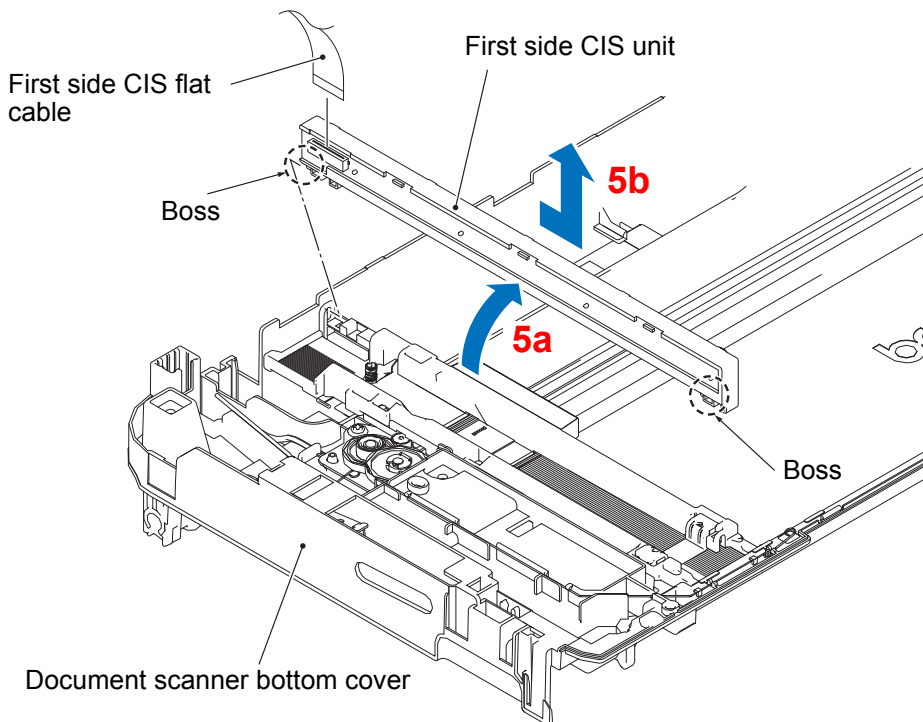


Fig. 3-42

## 9.16 First Side CIS Flat Cable

- (1) Release the wiring of the First side CIS flat cable from the Scanner harness holder.
- (2) Detach the tape on two points of the First side CIS flat cable, and remove it from the Document scanner bottom cover.
- (3) Detach the FFC tension film from the First side CIS flat cable.

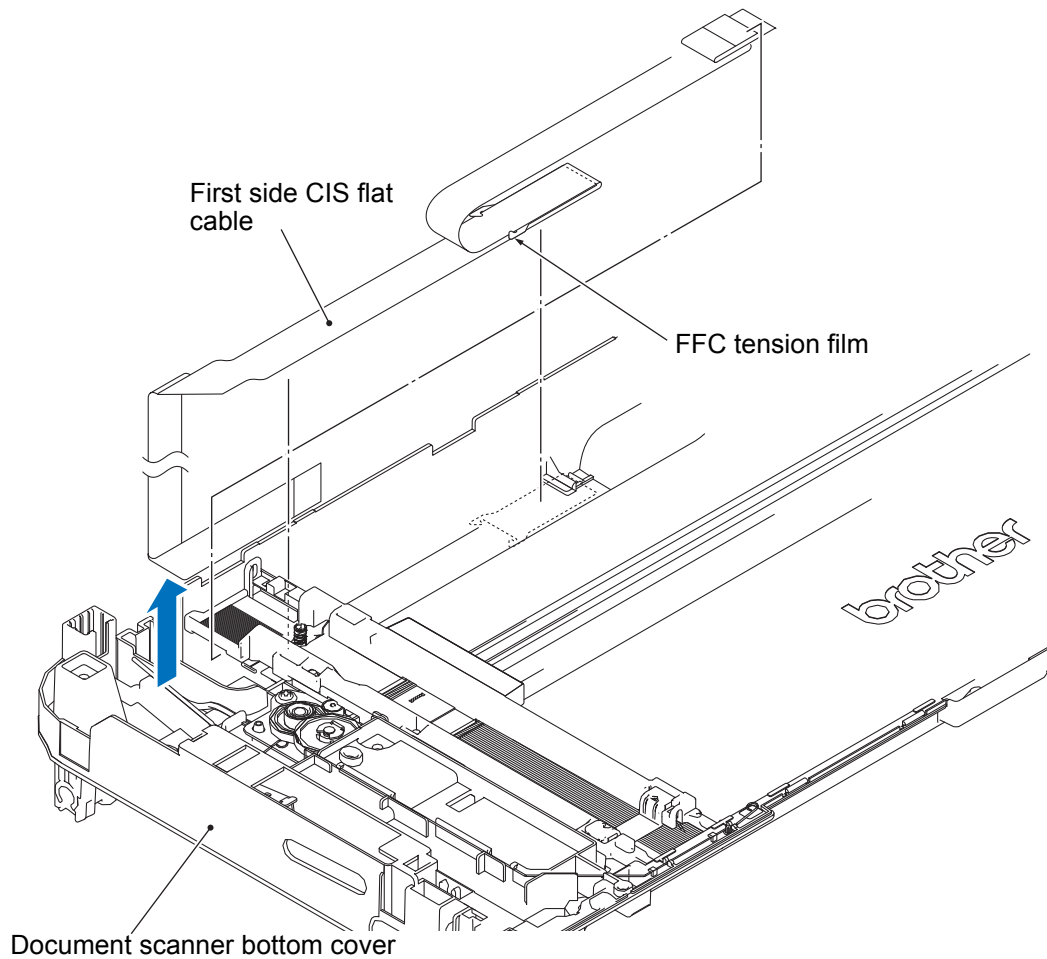
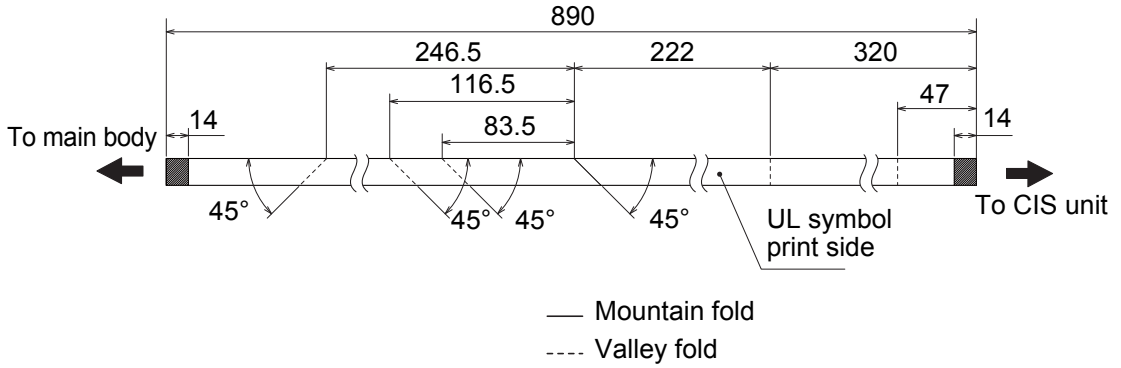


Fig. 3-43

**Assembling Note:** Assemble new First side CIS flat cable and FFC tension film as shown below.

Folding instructions

(Unit: mm)



Double-sided tape attachment position

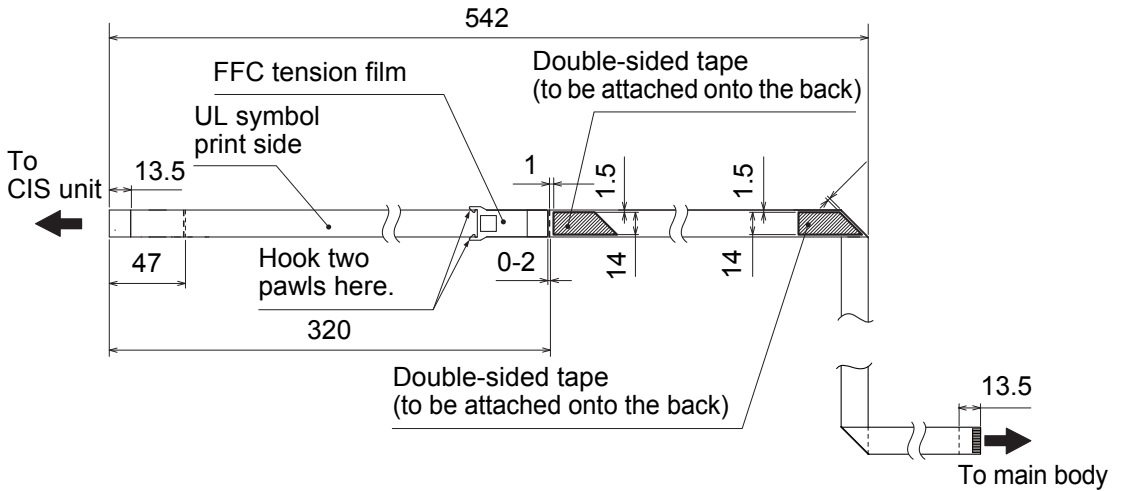
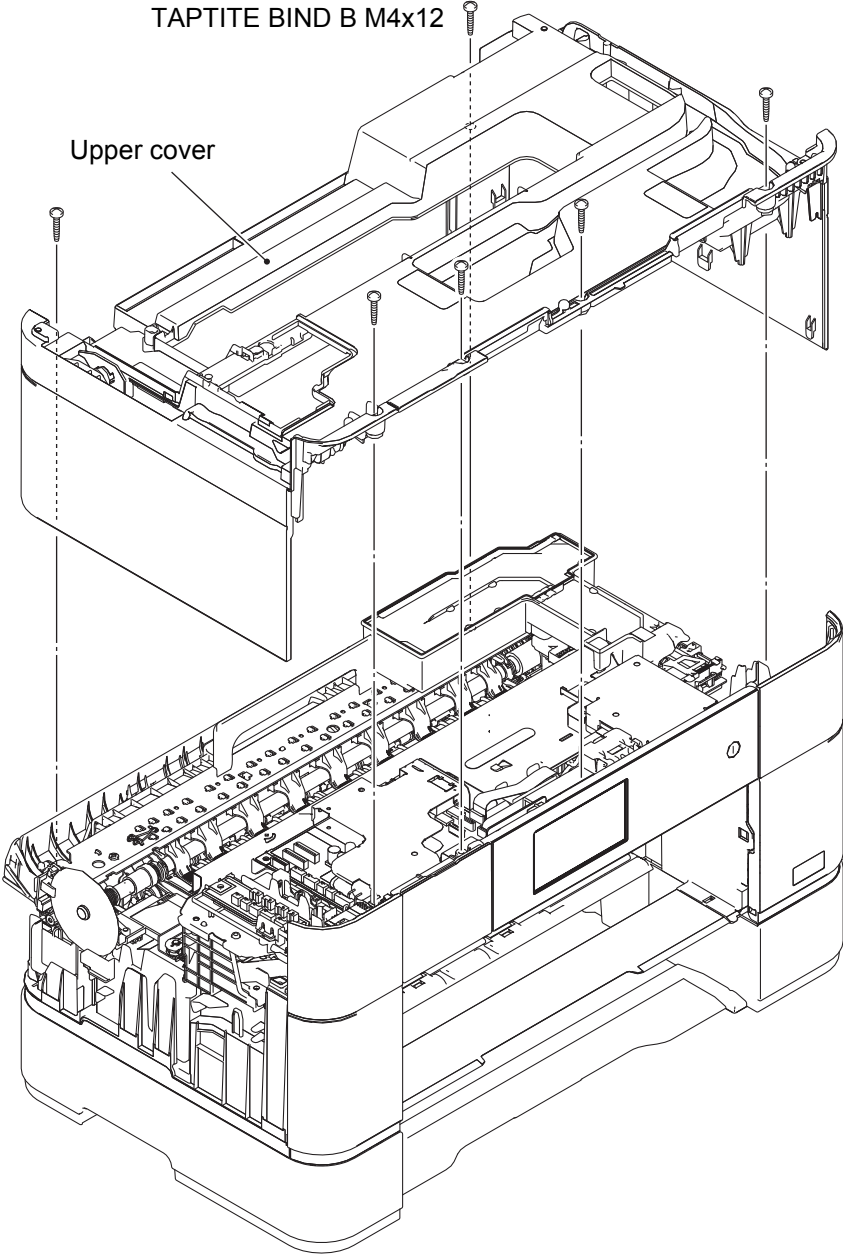


Fig. 3-44

**9.17 Upper Cover**

(1) Remove the six screws (TAPTITE BIND B M4x12) and take off the Upper cover.

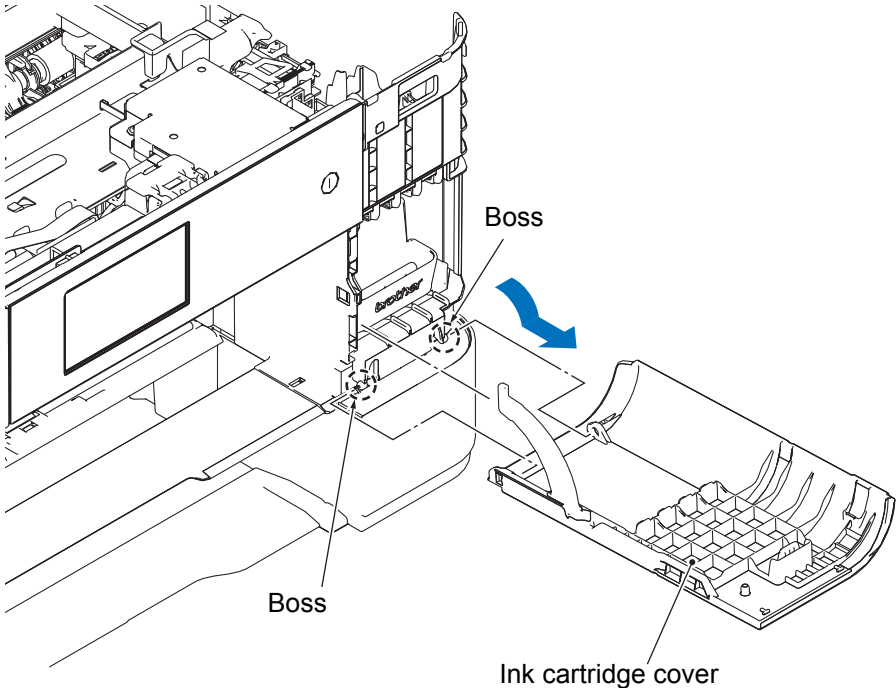


**Fig. 3-45**



**9.18 Ink Cartridge Cover**

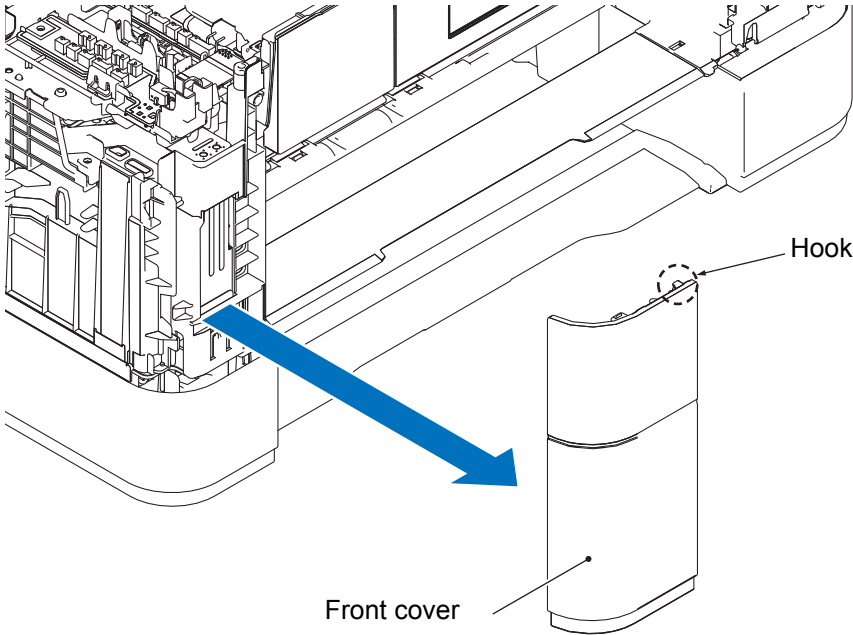
- (1) Open the Ink cartridge cover, release the Boss on its right side, and remove the cover.



**Fig. 3-46**

**9.19 Front Cover**

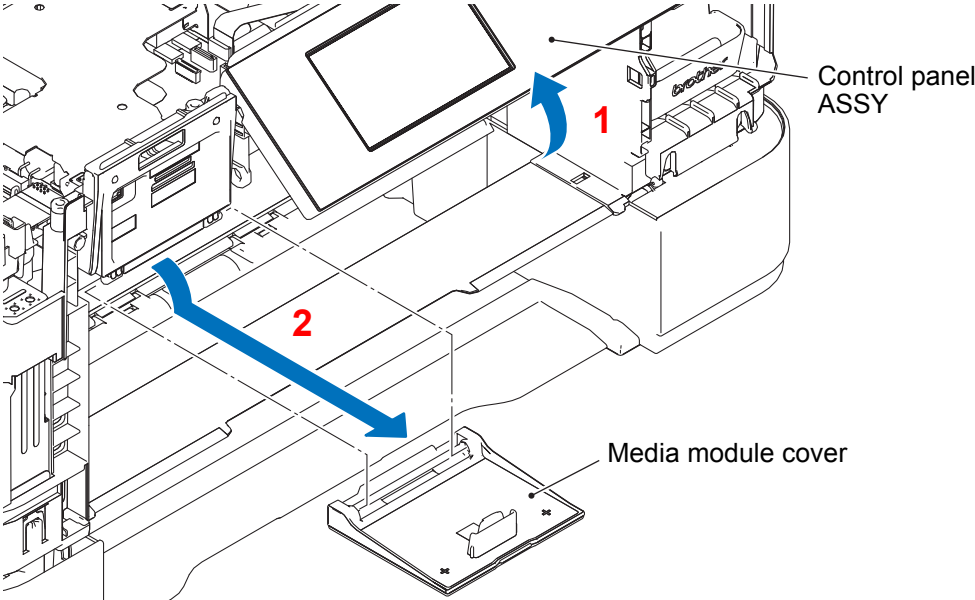
- (1) Release the upper Hook on the Front cover and remove the Front cover.



**Fig. 3-47**

**9.20 Media Module Cover**

- (1) Lift up the Control panel ASSY to the front.
- (2) Open the Media module cover, release Bosses on either side, and remove the cover to the front.

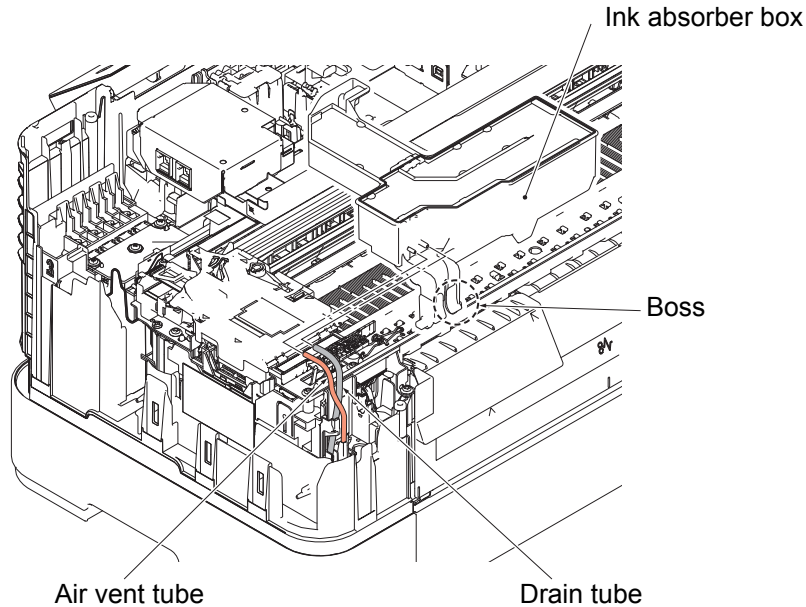


**Fig. 3-48**

## 9.21 Ink Absorber Box

**Note:** Do not remove the Ink absorber box unless it needs to be replaced.

- (1) Pull out the Drain tube and Air vent tube from the Ink absorber box.
- (2) Release the Boss on the right side of the Ink absorber box, and remove the box to the rear.

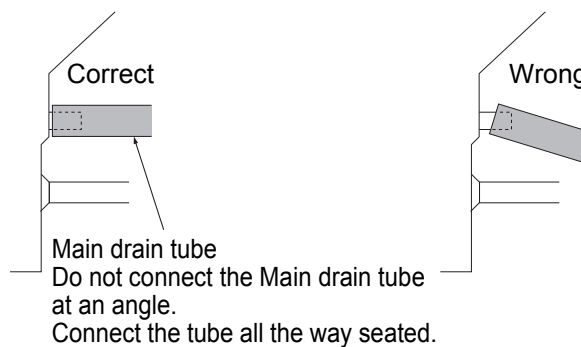


**Fig. 3-49**

**Note:** Take care not to contaminate the machine with leaked ink, by pinching the Drain tube end with a clip, etc.

### Assembling Note

- It is not necessary to trim the ends of the Drain tube and Air vent tube when reconnecting those tubes to the Ink absorber box.
- Take care not to connect the Drain tube or Air vent tube to the Ink absorber box at an angle. Tubes connected at an angle come off easily, resulting in ink leakage. After connection, check that there is no ink leakage.
- If you replace the Ink absorber box (without replacing the Main PCB ASSY), reset the purge count, using the procedure given in [Chapter 4, Section 1.14](#). It is also recommended that the Flushing box be replaced and the flushing count be reset as necessary since the flushing count may approach the upper limit.



**Fig. 3-50**

## 9.22 Control Panel ASSY

- (1) Release the two Hooks on the Inner media module cover and remove the cover to the front.

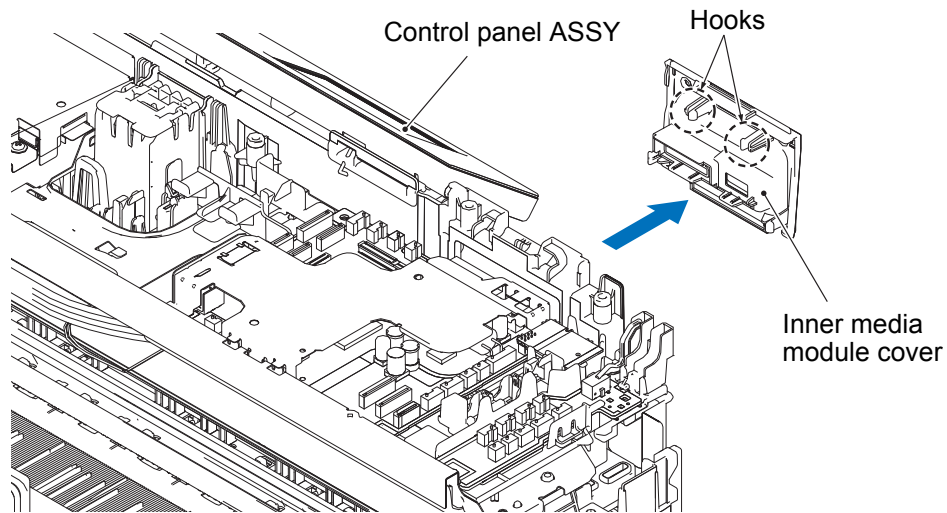


Fig. 3-51

- (2) Release the three Hooks on the Tilt hook stopper and remove the stopper.
- (3) Remove the screw (TAPTITE CUP S M3x6) to release the Panel grounding wire.
- (4) Release the Lock of the connector and remove the Panel flat cable.

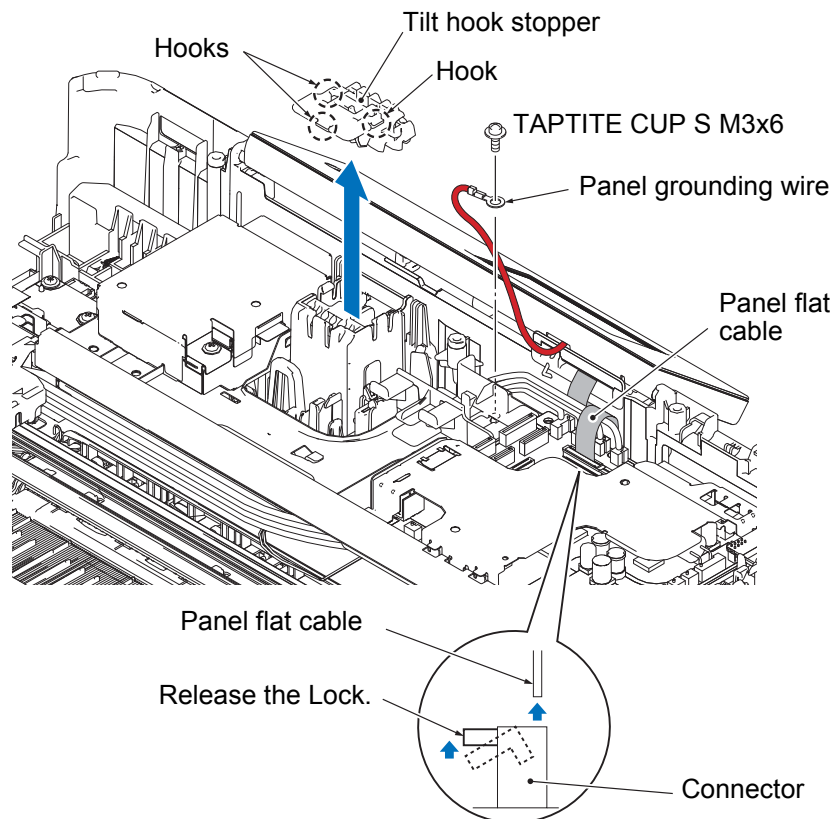
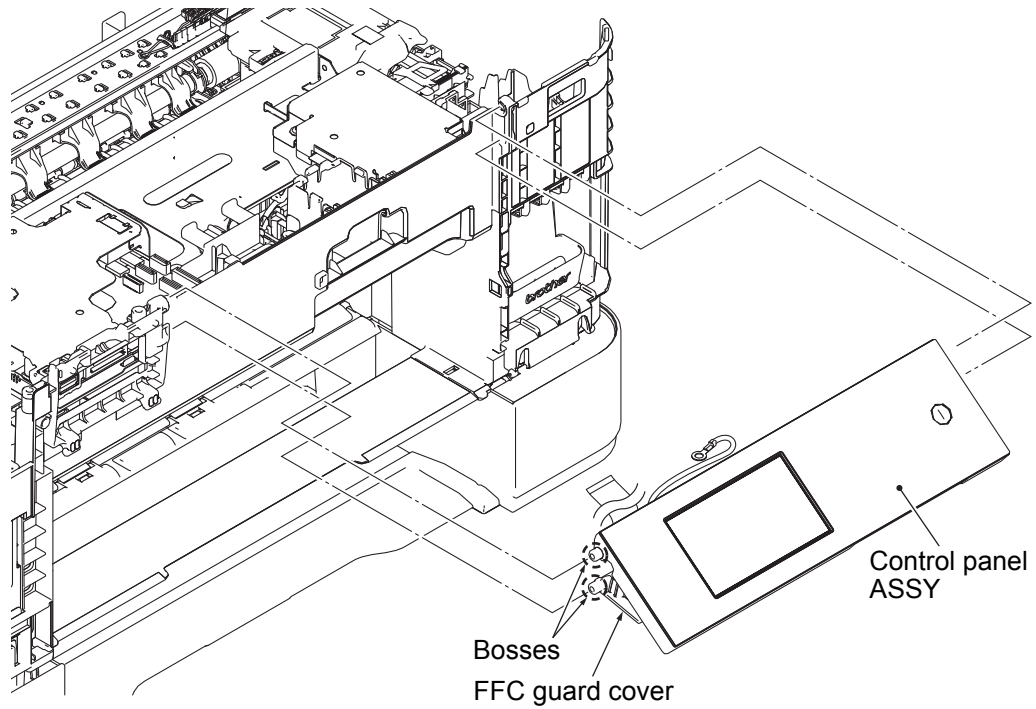


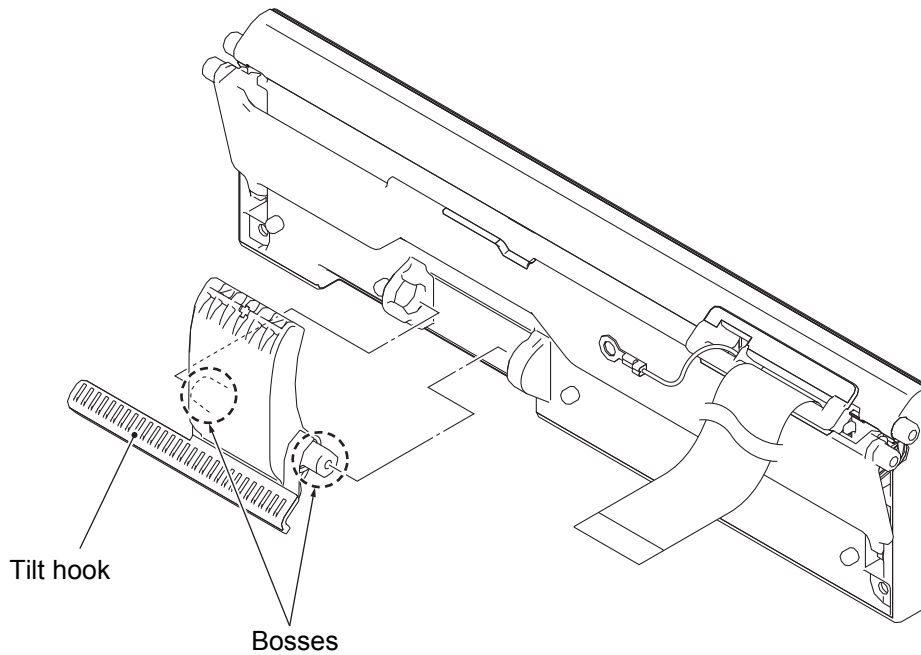
Fig. 3-52

- (5) Release the upper left Boss on the Control panel ASSY and the left-side Boss on the FFC guard cover, then remove the Control panel ASSY.



**Fig. 3-53**

- (6) Release the two Bosses of the Tilt hook, and remove the Tilt hook.



**Fig. 3-54**

### 9.23 Wireless LAN PCB ASSY

(1) Remove the Wireless LAN PCB ASSY from the Main PCB ASSY.

**Note:** When removing the Wireless LAN PCB ASSY, do not hold the tape put on the top of the ASSY.

(2) Remove the Gasket from the Wireless LAN PCB ASSY.

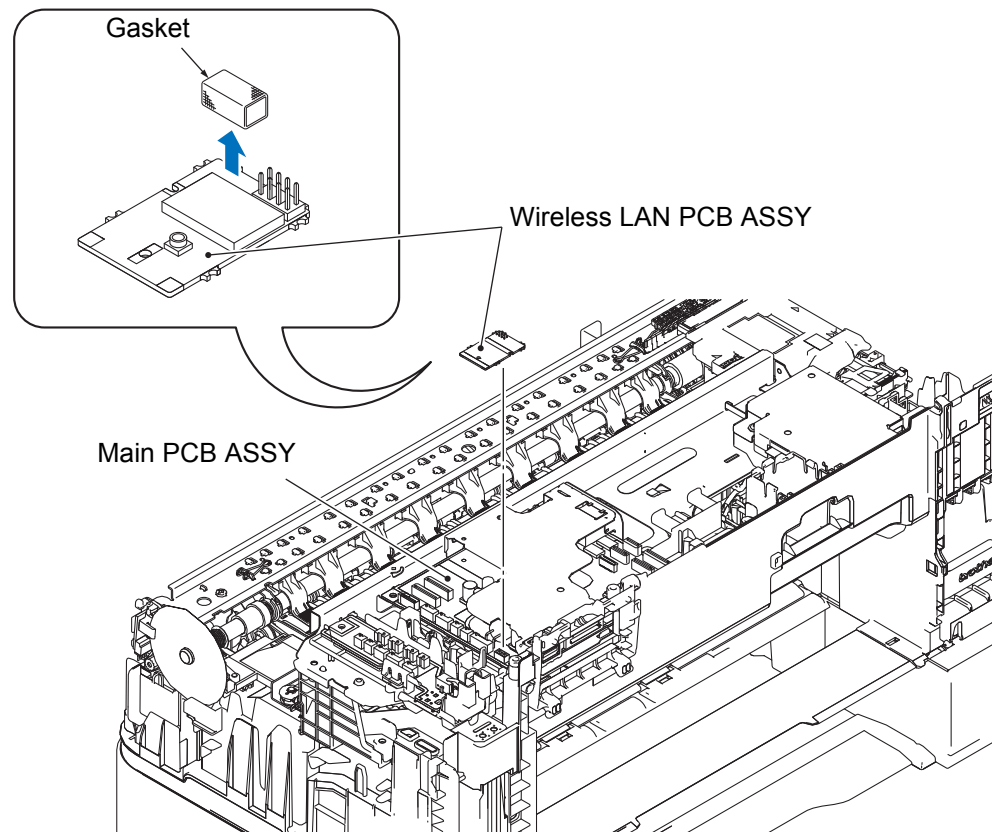


Fig. 3-55

**Assembling Note:** When attaching the Gasket to the Wireless LAN PCB ASSY, align it to the left end and the upper end of the Wireless LAN PCB ASSY.

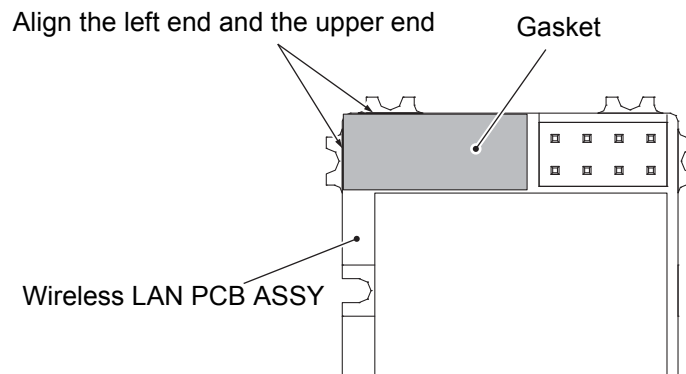


Fig. 3-56

## 9.24 Main PCB ASSY

- (1) Remove the two screws (TAPTITE CUP S M3x6) and lift up the Main PCB shield.

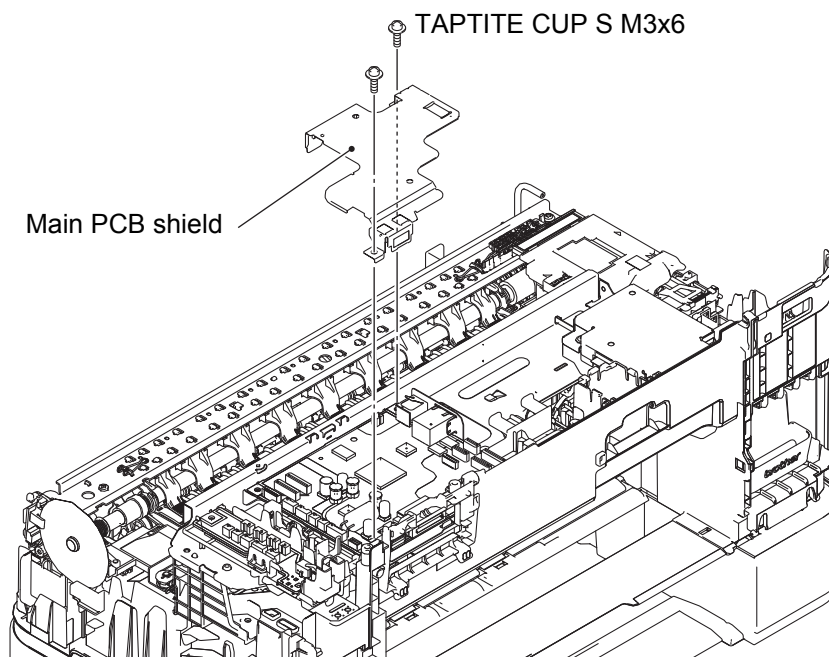


Fig. 3-57

- (2) Disconnect all harnesses connected to the Main PCB ASSY.

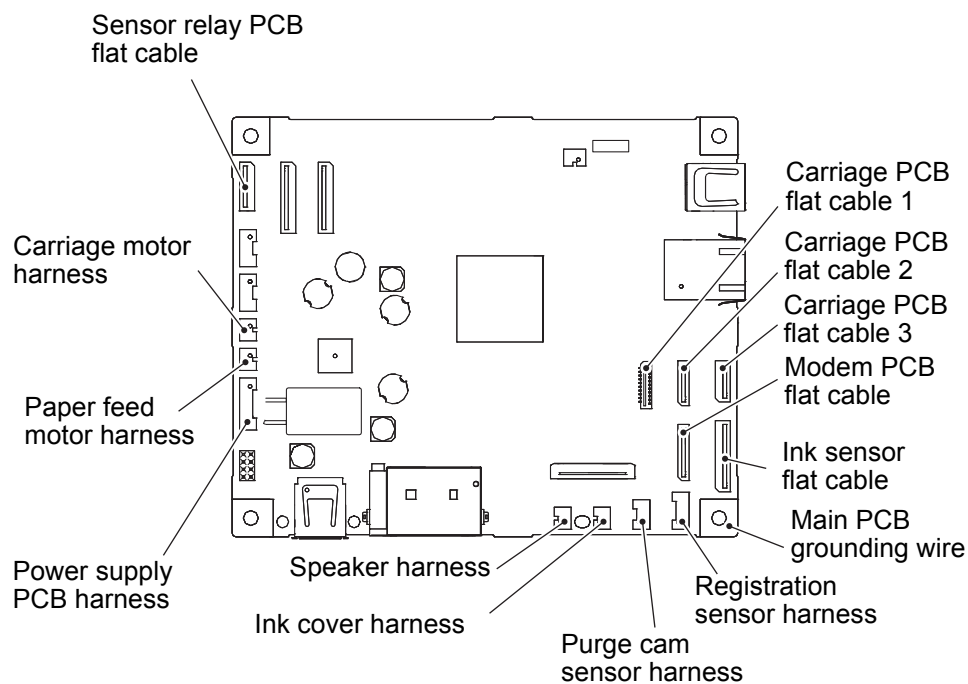


Fig. 3-58

- (3) Remove the two screws (TAPTITE CUP S M3x6) and remove the Main PCB ASSY.

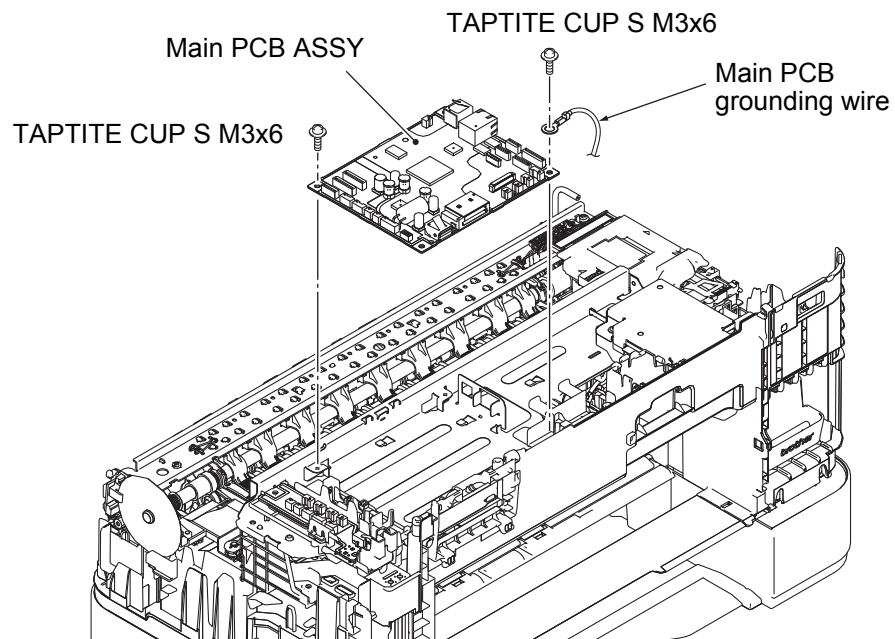


Fig. 3-59

**Assembling Note:** When tightening the right lower screw on the Main PCB ASSY, secure the Main PCB grounding wire together.

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



## 9.25 Sensor Relay PCB ASSY

- (1) Disconnect all harnesses connected to the Sensor relay PCB ASSY.
- (2) Release the wiring above the Sensor relay PCB ASSY.

**Assembling Note:** When wiring the CR motor harness and the Paper feed motor harness, set the Ferrite core with the cable tie positioned on the top of the Ferrite core. See "[10 Lower cover \(left side\)](#)" of this chapter.

- (3) Remove the screw (TAPTITE CUP S M3x6) and take off the Sensor relay PCB ASSY.

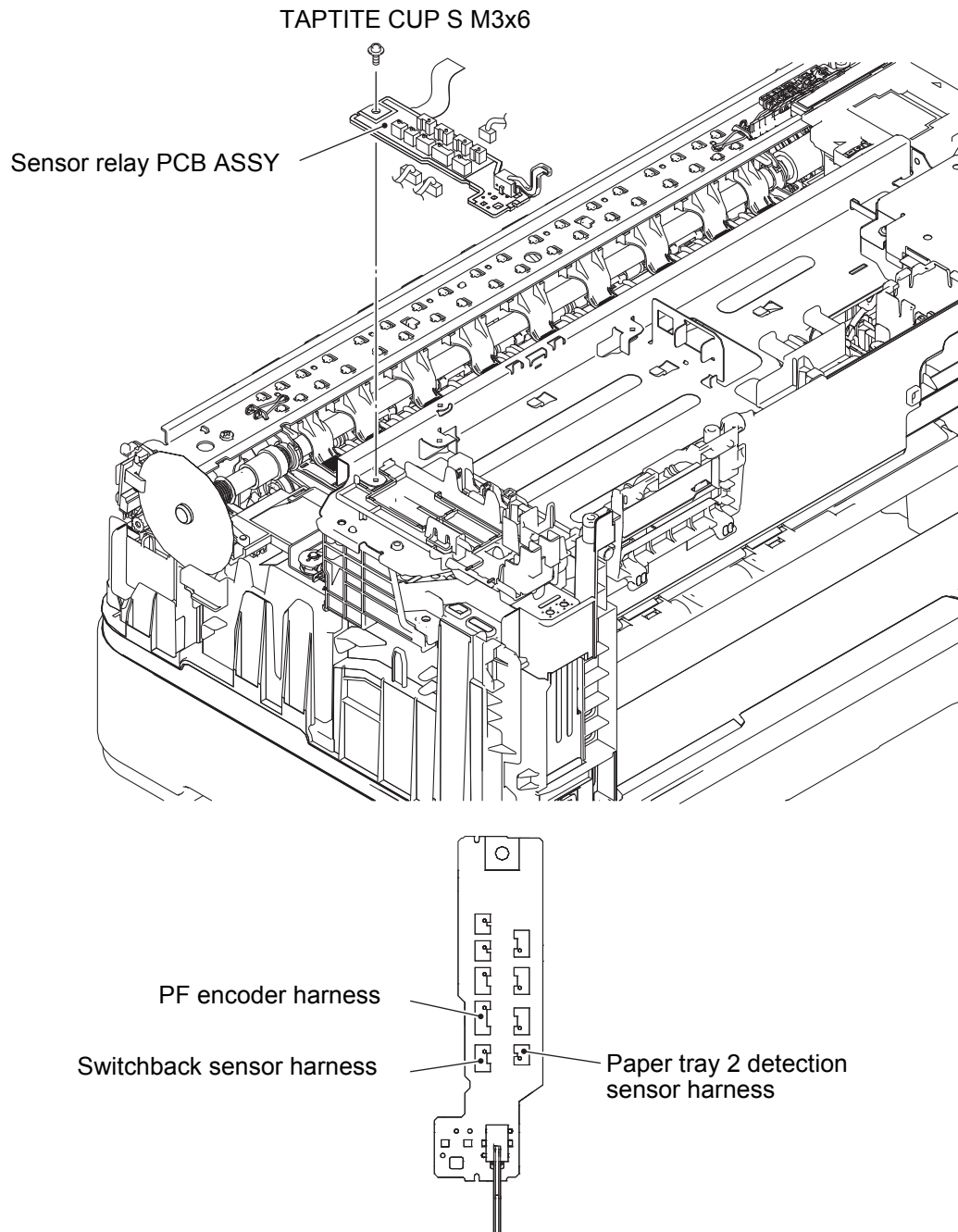
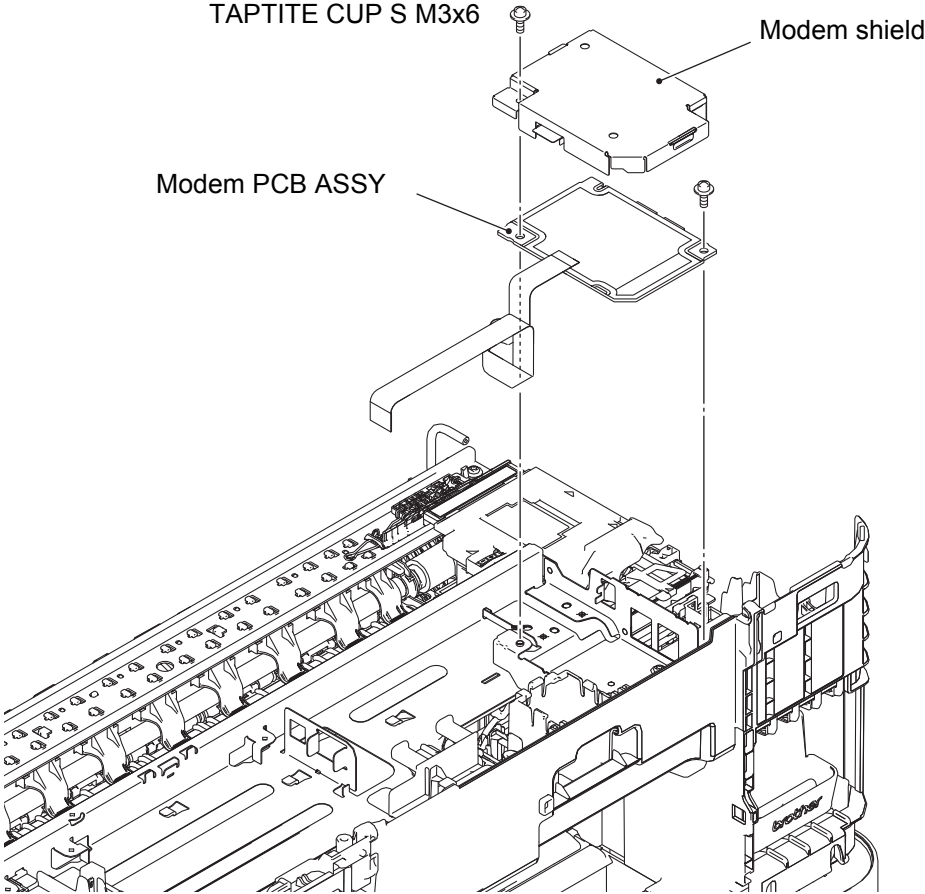


Fig. 3-60

**9.26 Modem PCB ASSY**

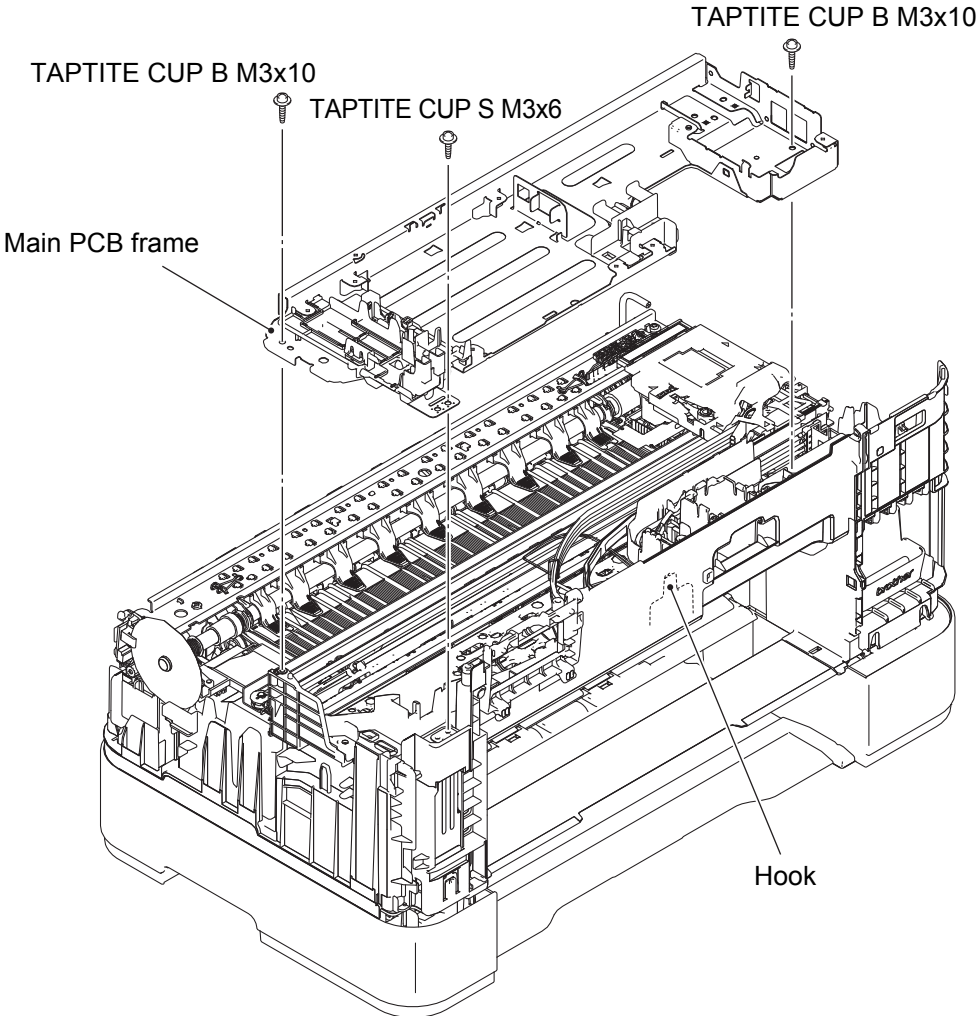
- (1) Release the wiring of the Modem PCB flat cable.
- (2) Remove the screw (TAPTITE CUP S M3x6) and take off the Modem shield.
- (3) Remove the screw (TAPTITE CUP S M3x6) and take off the Modem PCB ASSY.



**Fig. 3-61**

**9.27 Carriage PCB ASSY**

- (1) Remove two screws (TAPTITE CUP B M3x10) and one screw (TAPTITE CUP S M3x6), release the hook at the front center, and take off the Main PCB frame.



**Fig. 3-62**

- (2) Turn the PF roller gear in the direction of the arrow until the Head stopper of the Maintenance unit clicks.
- (3) Move the Head/carrriage unit to the center of its travel.

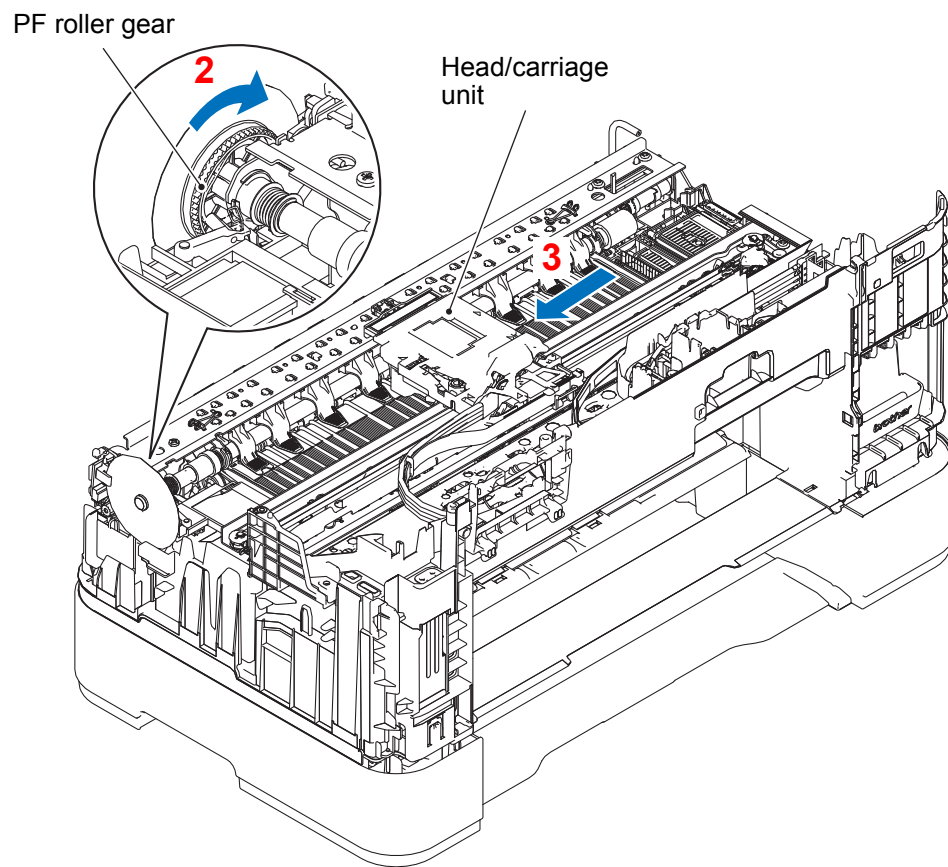


Fig. 3-63

- (4) Release the five Hooks marked with ▲ on the Head cover to remove it.  
**Note:** When removing the Head cover, do not touch the Inclination adjuster ring.

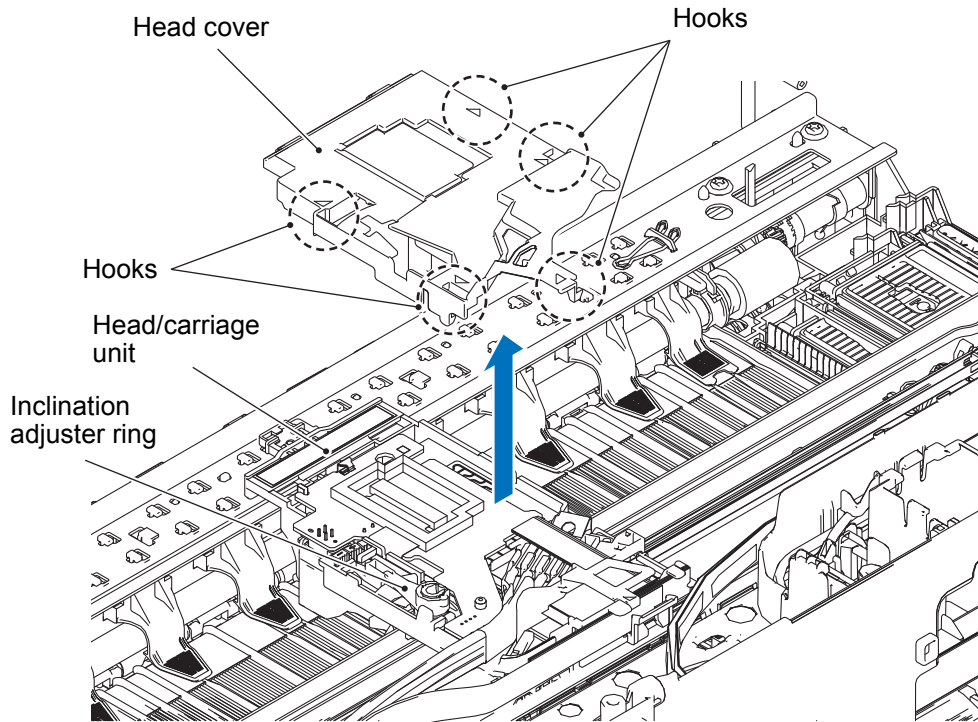


Fig. 3-64

- (5) Unlock the Connector on the Carriage PCB ASSY and disconnect the Head flat cable.

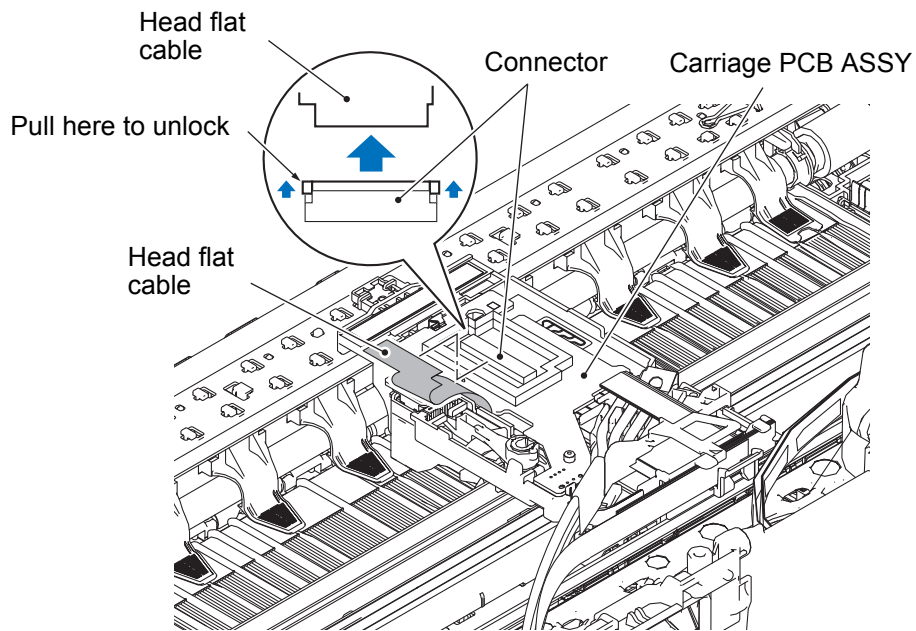


Fig. 3-65

- (6) Release two Hooks of the Tube binder securing the Carriage flat cables.
- (7) Release the wiring of the three Carriage flat cables and remove the Flat core. Release the Carriage flat cables from the tube clamp.

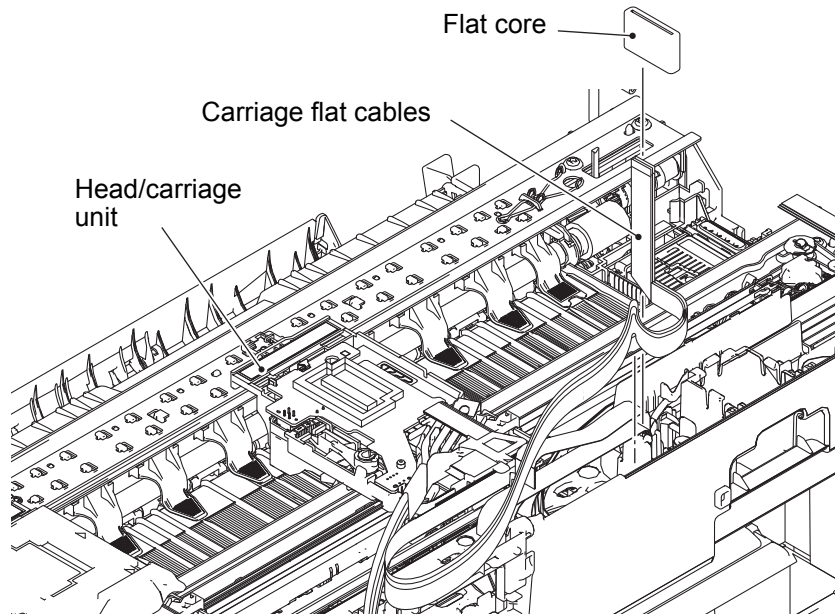


Fig. 3-66

- (8) Release the Lock spring and Hook to remove the Carriage PCB ASSY.

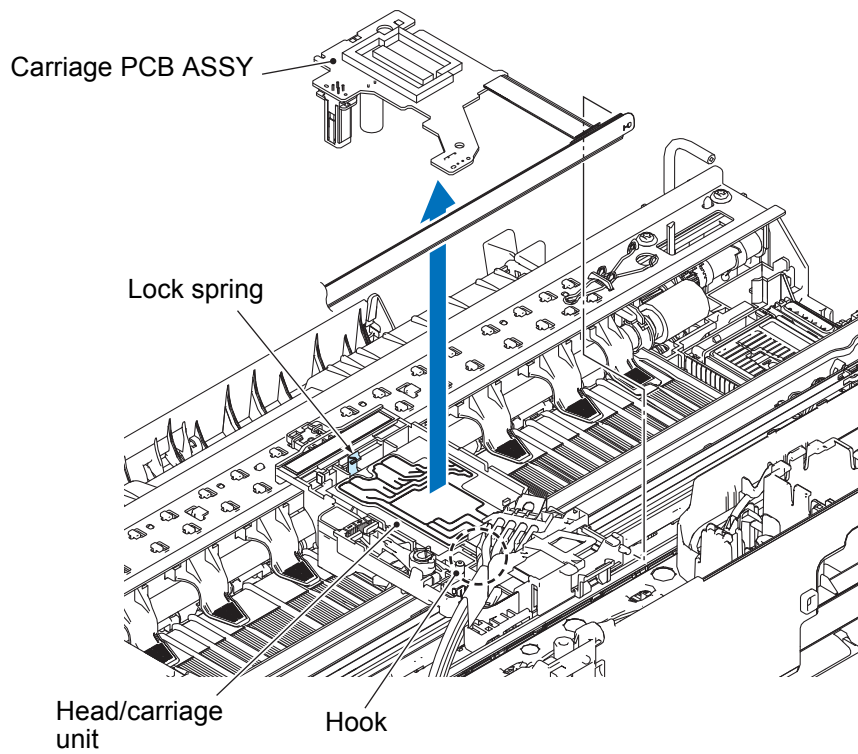


Fig. 3-67

## 9.28 Head Joint Rubber

- (1) Remove the Head joint spring.
- (2) Release the two Hooks on the Tube binder, hold up the right side of the Tube binder and slide it in the direction of the arrow, then remove it from the Head/carriage unit. At the same time, remove the Head joint.

**Note:** After removal of the Head joint, immediately wrap the Head joint in a clean, lint-free 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 L-shaped section of the Tube binder beneath the CR encoder strip to prevent it from coming into contact with the CR encoder strip.

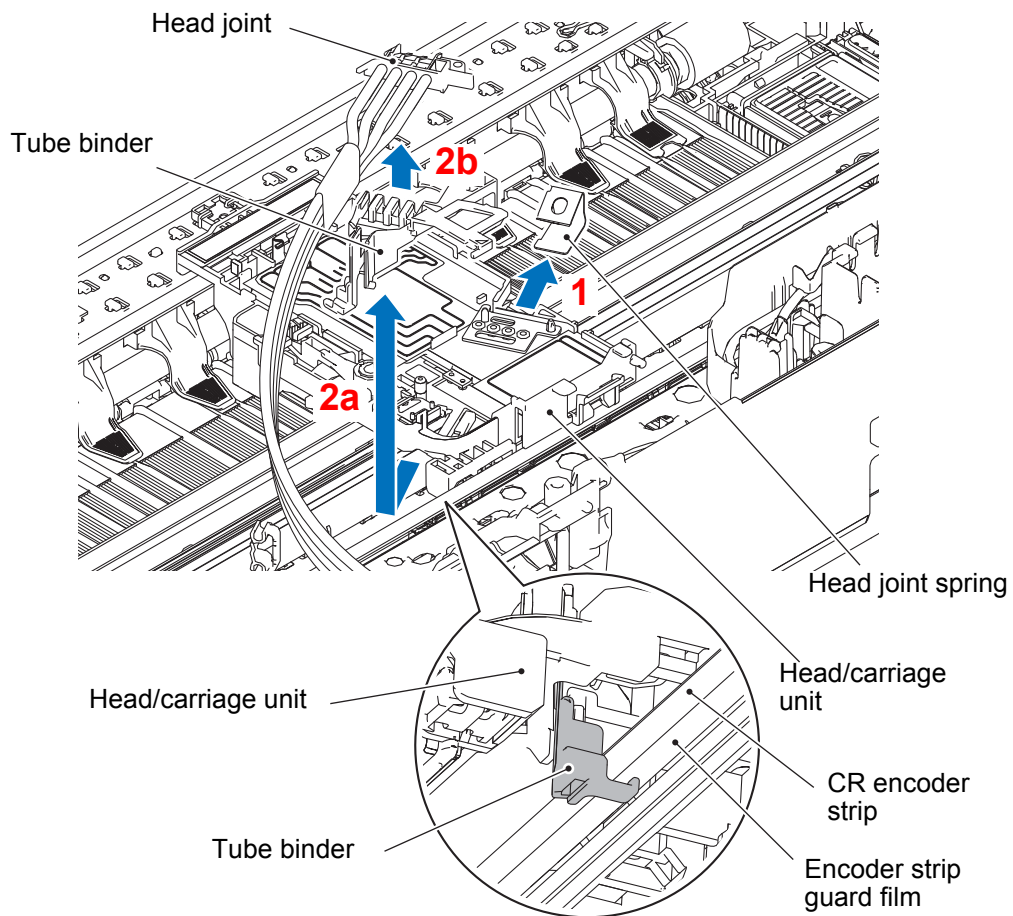
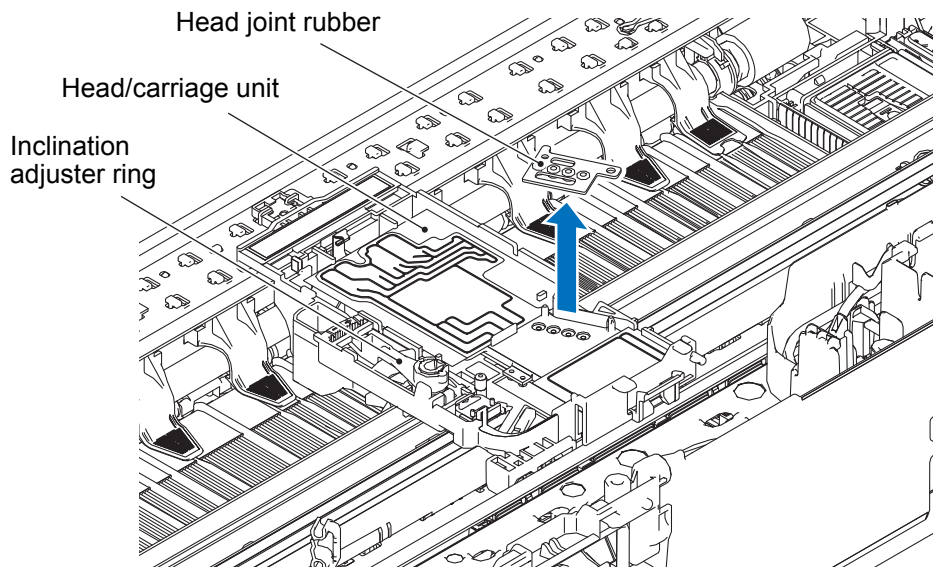


Fig. 3-68

(3) Remove the Head joint rubber.

**Note:** Put the Head joint rubber on a clean vinyl sheet and take care not to contaminate it. Do not touch the Inclination adjuster ring.



**Fig. 3-69**



## 9.29 Head/carriage Unit and CR Timing Belt

- (1) Remove the Resin retaining ring and the Idle pulley.

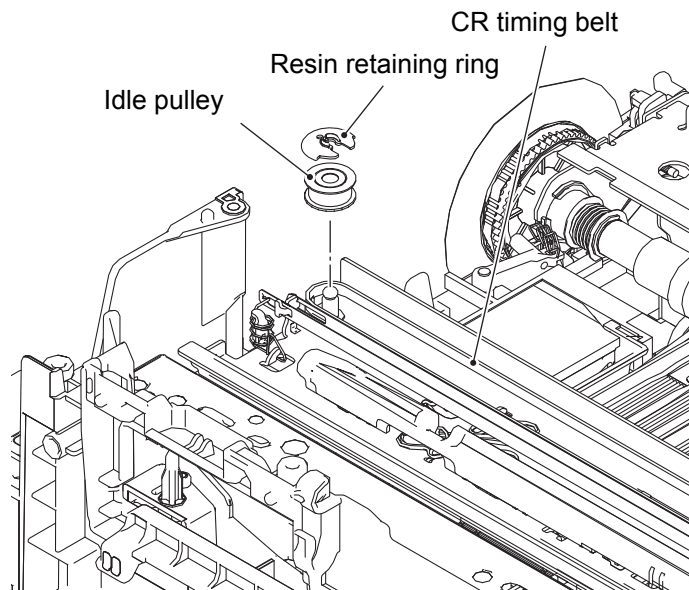
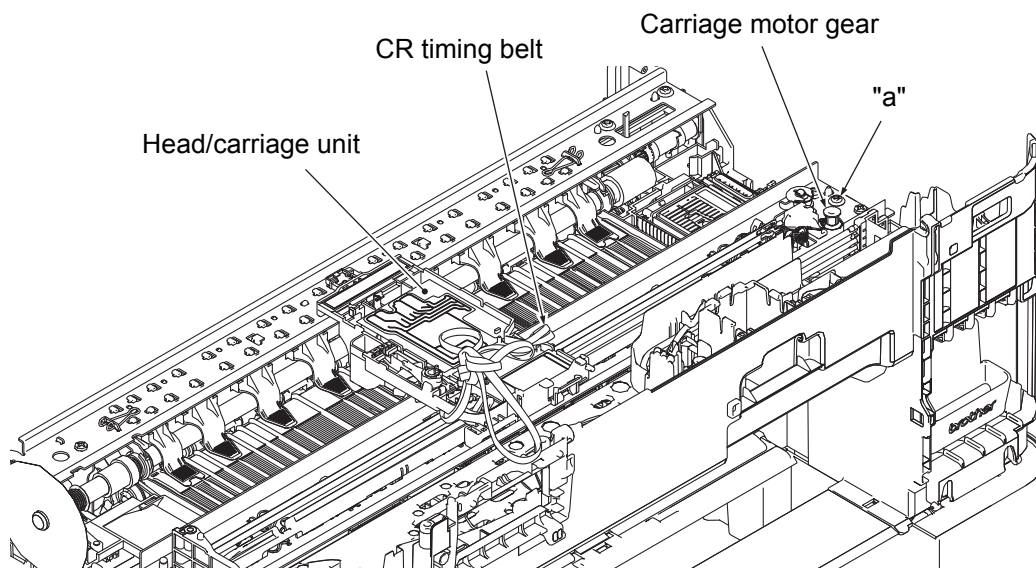


Fig. 3-70

- (2) Remove the CR timing belt from the Carriage motor gear.  
As shown below, loosely tie the CR timing belt in a bundle on the Head/carriage unit.

**Note:** When removing the CR timing belt, do not touch the CR encoder strip or the lubrication area on the Engine unit with your hands or with the CR timing belt.

**Note:** Do not loosen screw "a" shown below. Doing so may decrease the tension of the CR timing belt.



"a": TAPTITE CUP S M3x6

Fig. 3-71

- (3) Pull the two Head locks in the direction of the arrow to release the Locks.

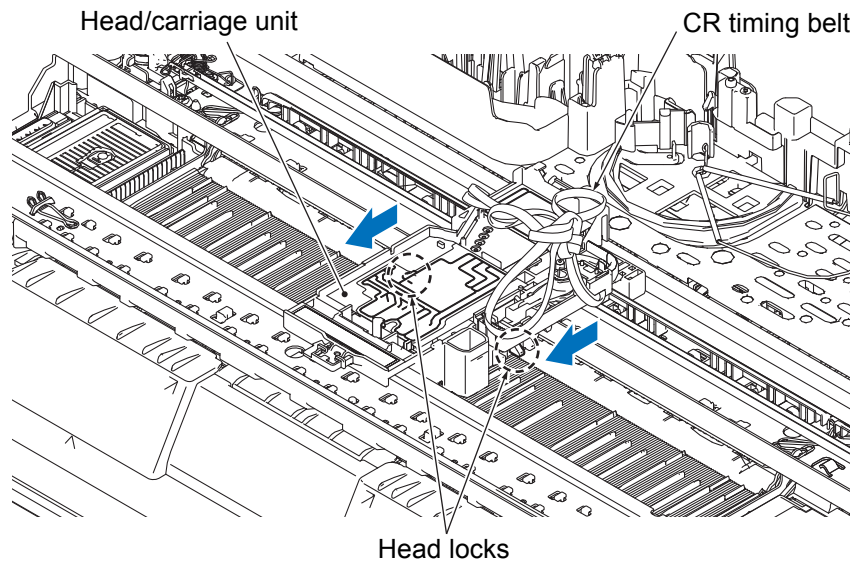


Fig. 3-72

- (4) Move the Head/carryage unit to the left until the pawls on the unit are aligned with the cutouts in the Carriage rail.

- (5) Remove the Head/carryage unit from the CR guide rail.

**Note:** Do not touch the head nozzles (the printing ends) or ink supply ports (to which Ink supply tubes are connected) of the Head/carryage unit; doing so will not only stain your hands with ink but also cause defects of ink discharge/supply. If you do touch them though, perform a head cleaning operation.

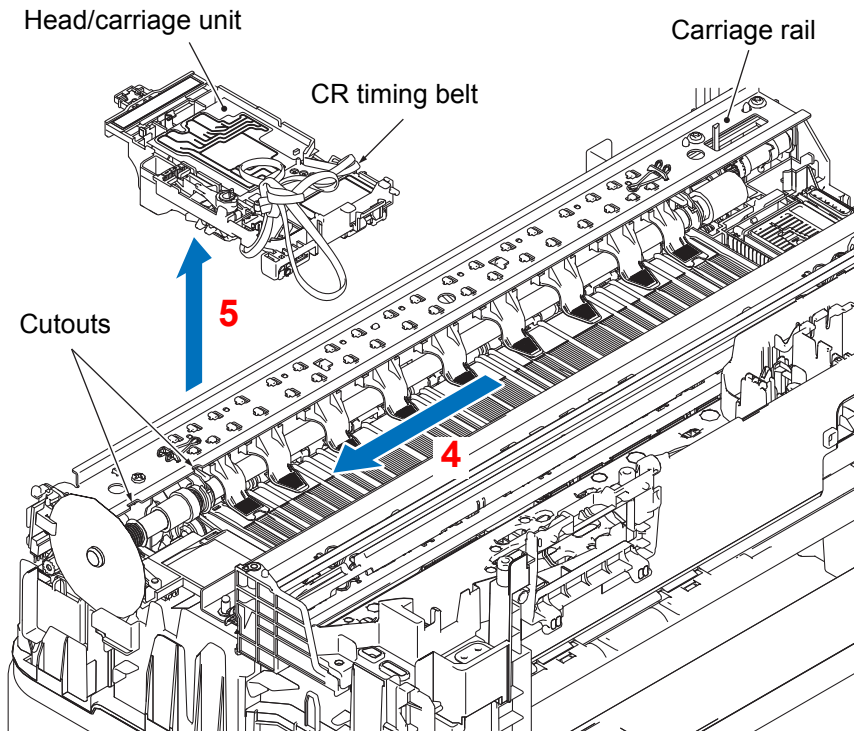


Fig. 3-73

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

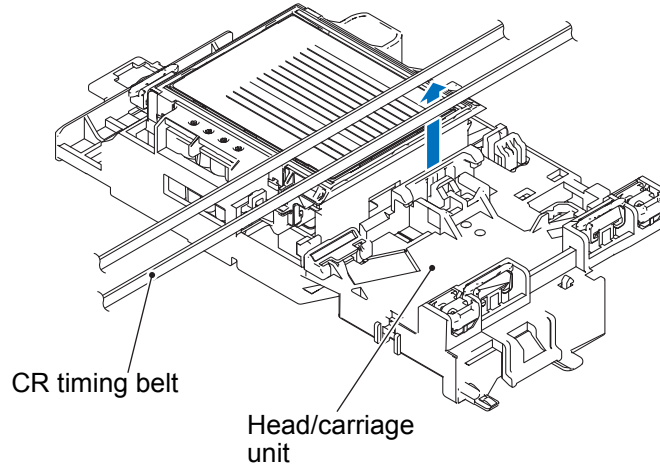


Fig. 3-74

**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.

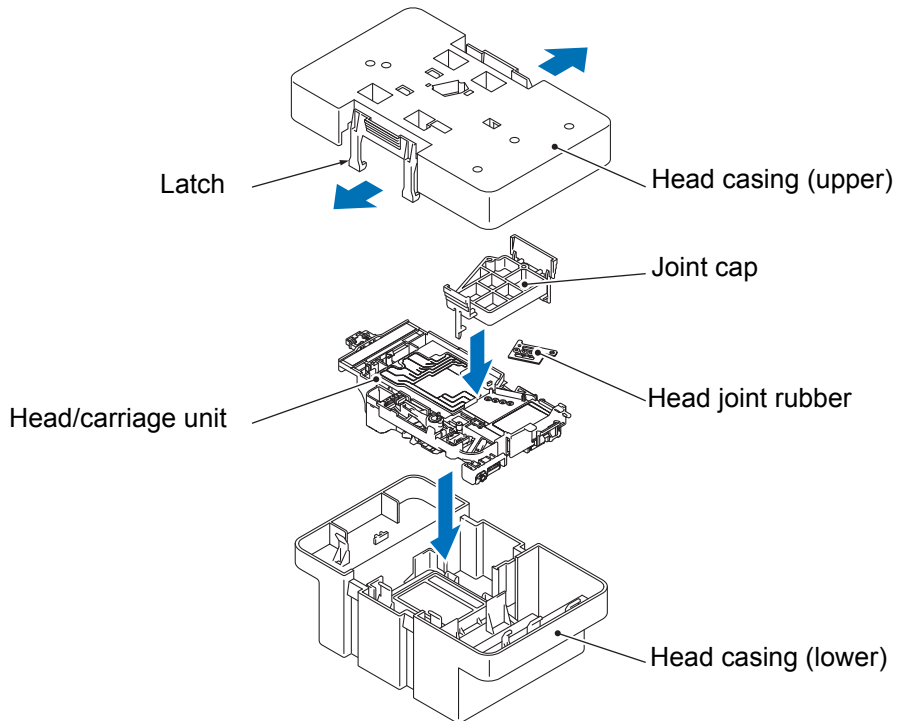
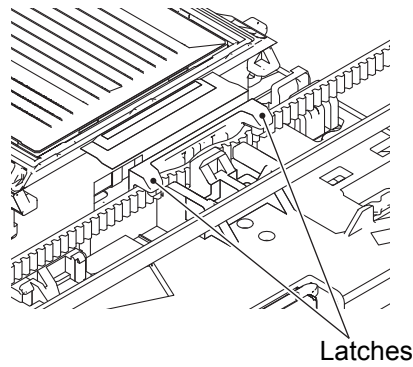


Fig. 3-75

**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 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. 3-76**

### 9.30 Paper Tray 2 Detection Sensor/T2 Paper Pull-in Roller/T2 Bank ASSY

- (1) Release the wiring of the Paper tray 2 detection sensor harness.
- (2) Pull out the Registration sensor harness and the Main PCB grounding wire out of the Lower cover.
- (3) Remove four screws (TAPTITE BIND B M4x12) and take out the Lower tray unit.

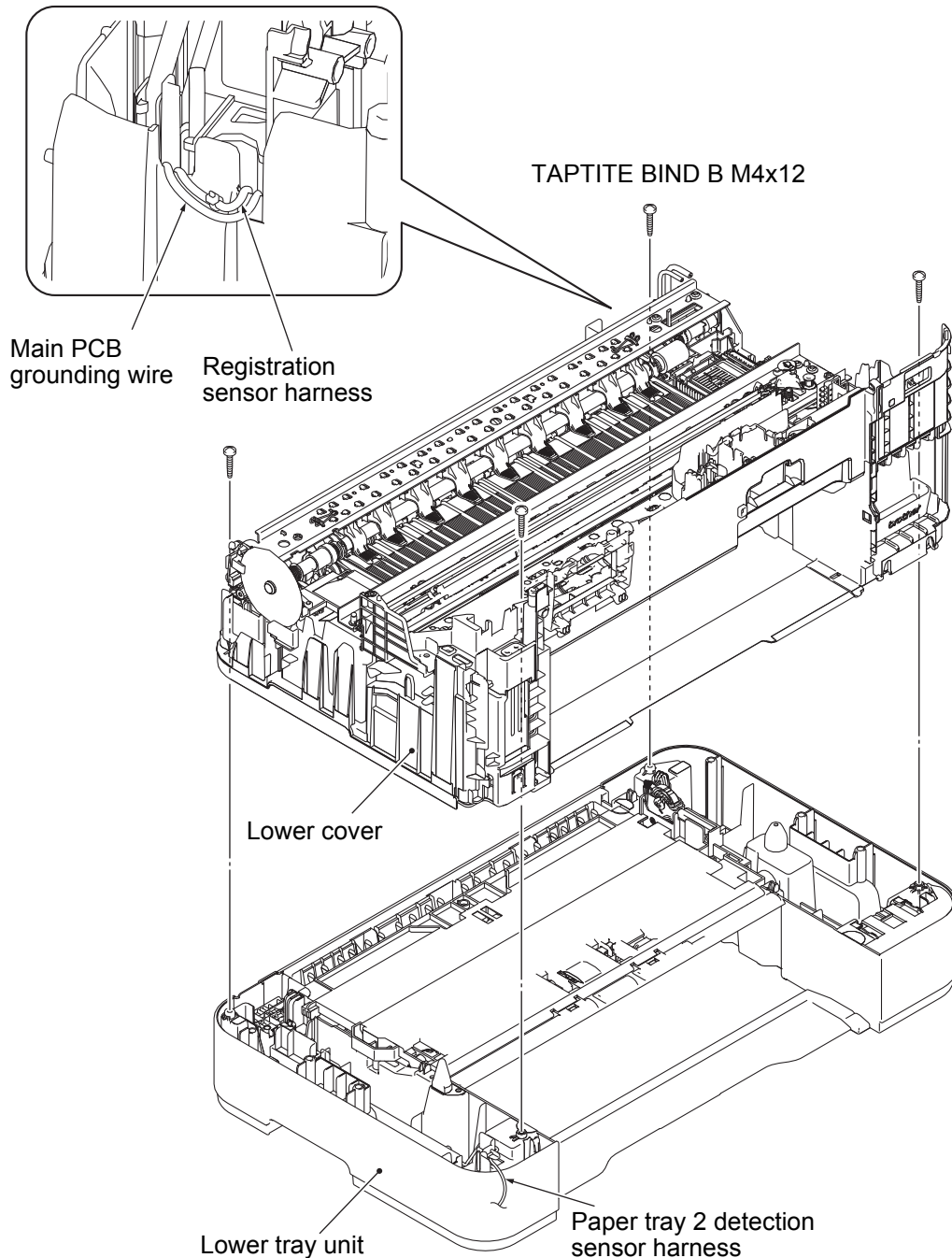
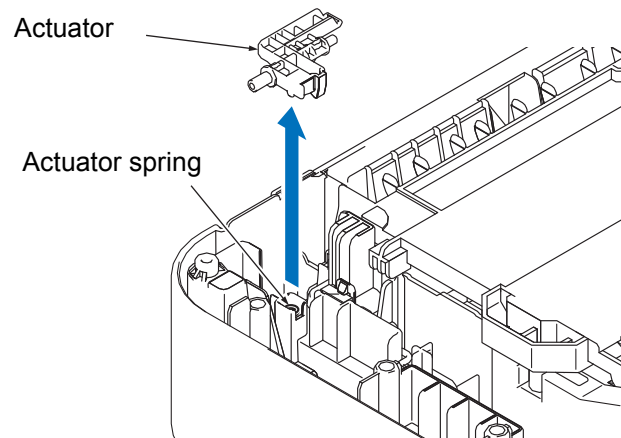


Fig. 3-77

**Assembling Note:** After attaching the screws on the right back side, return the harness to inside of the Lower cover. See "[9 Lower cover \(right side\)](#)" of this chapter.

(4) Remove the Actuator.

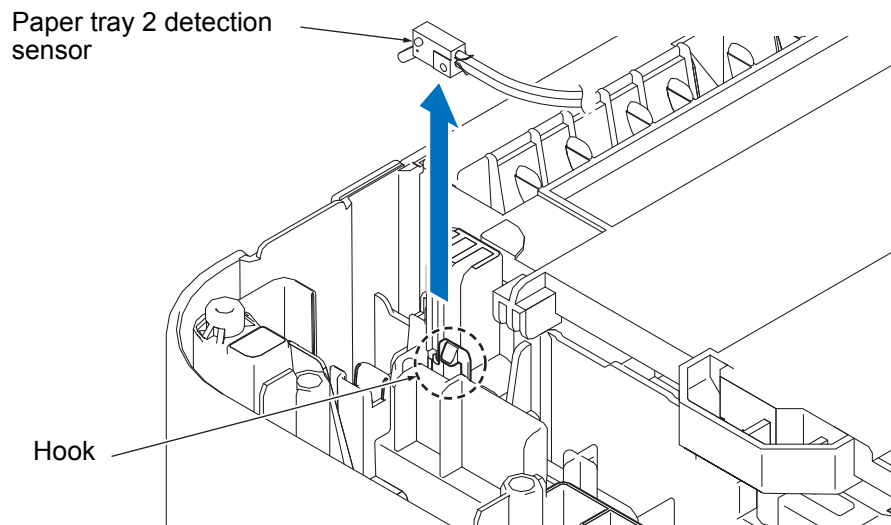
**Note:** Take care not to lose the Actuator spring.



**Fig. 3-78**

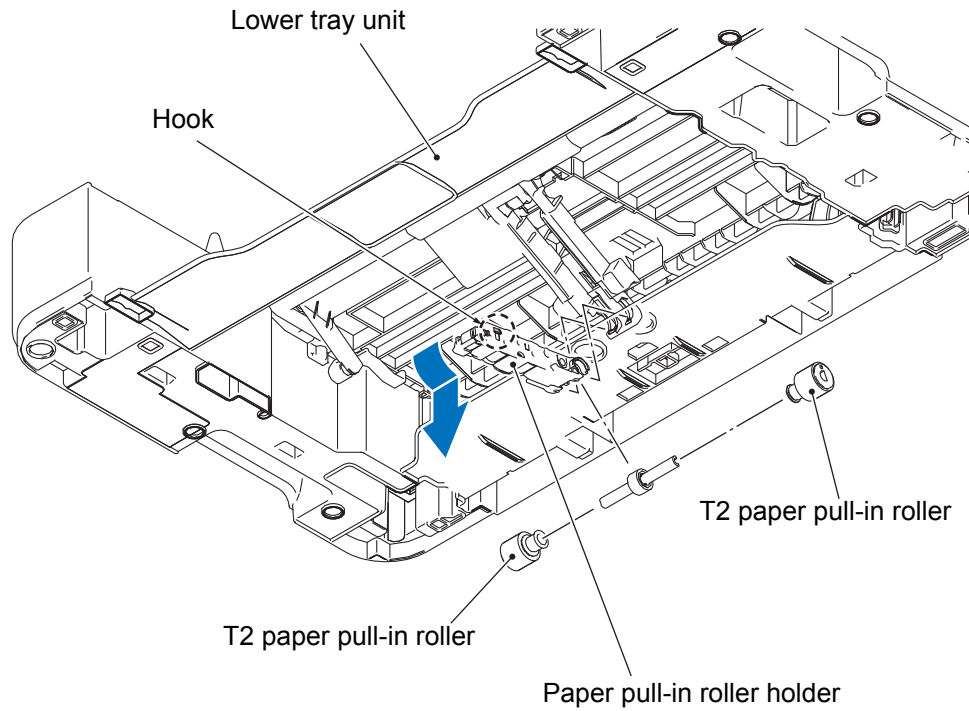
(5) Release the wiring of the Paper tray 2 detection sensor.

(6) Release the Hook, and remove the Paper tray 2 detection sensor.



**Fig. 3-79**

- (7) Release the two Hooks of the Paper pull-in roller holder and remove the T2 paper pull-in rollers and their holder from the Gear holder ASSY.
- (8) Remove the T2 paper pull-in rollers from their holder and separate those rollers to the right and left.



**Fig. 3-80**

(9) Remove two screws (TAPTITE CUP B M3x10) and remove the Lower tray frame.

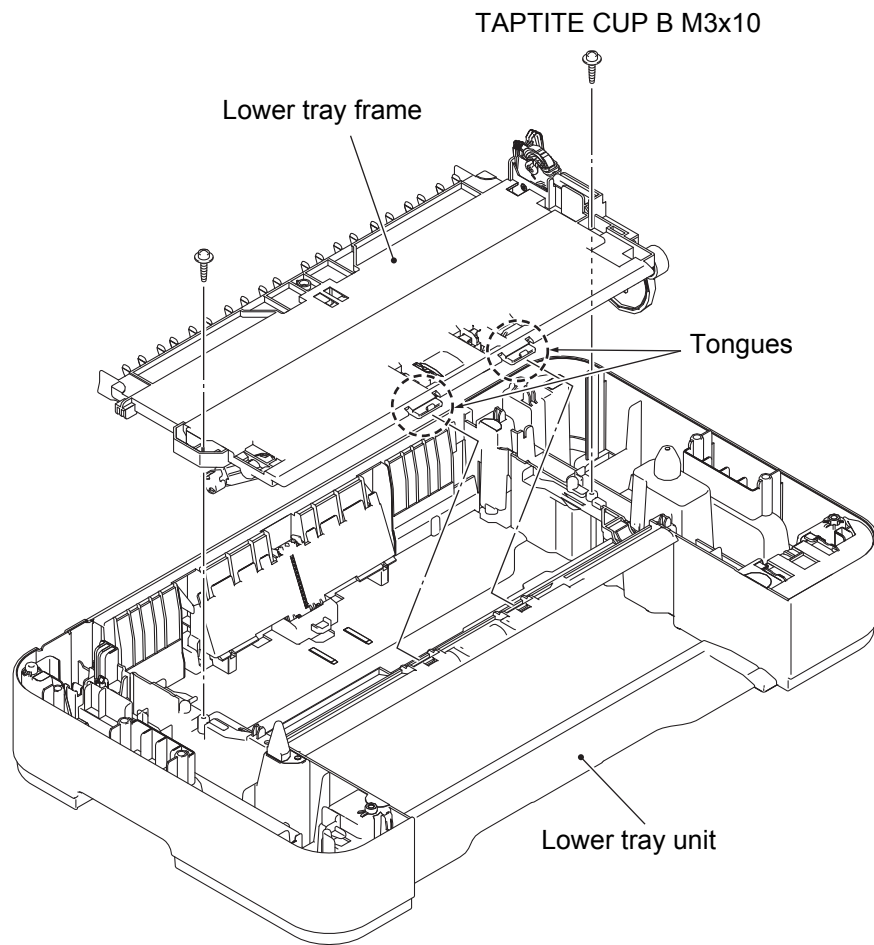


Fig. 3-81

**Assembling Note:** When mounting the Lower tray frame, hang the two Tongues onto the holes on the Lower tray unit.



(10) Release the three Hooks and remove the T2 bank ASSY.

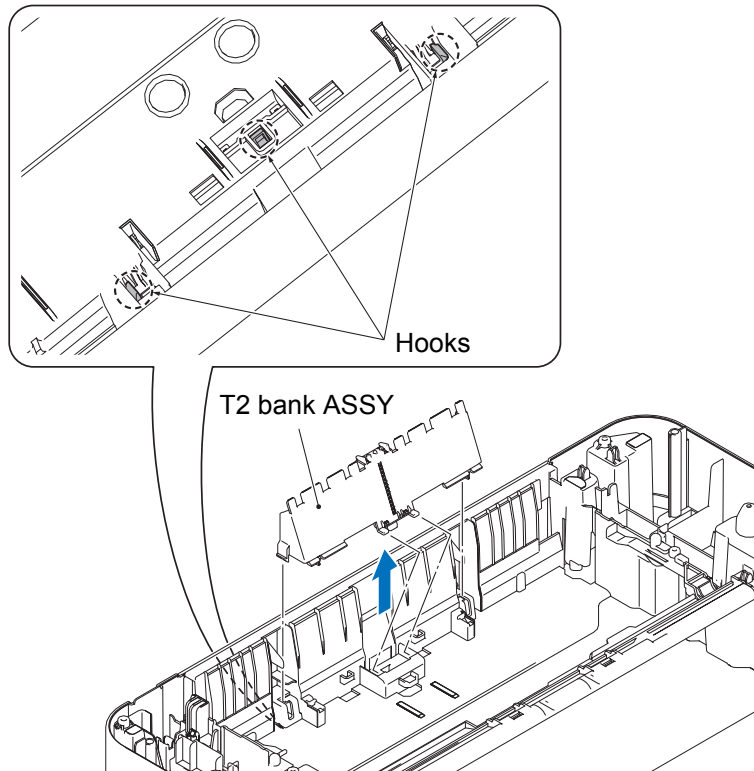


Fig. 3-82

### 9.31 Jam Clear Cover

(1) Release either one of the Bosses provided on the ends of the Jam clear cover and remove the Jam clear cover.

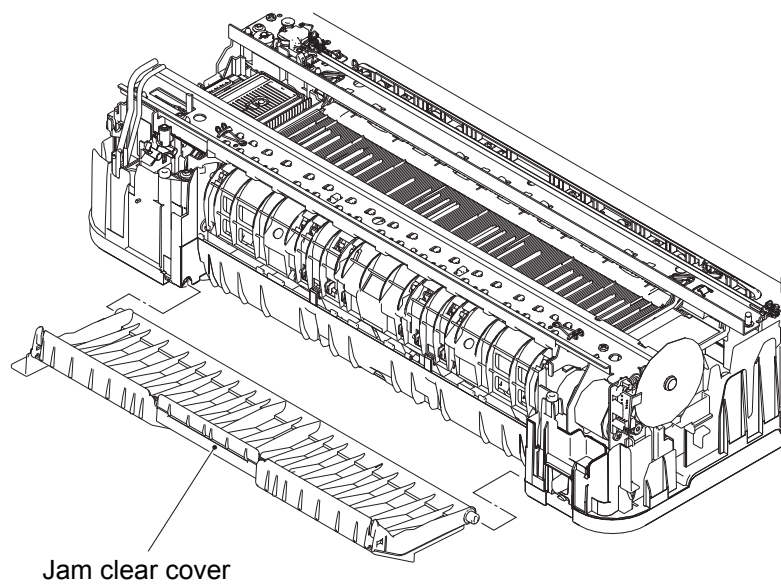


Fig. 3-83

### 9.32 T1 Bank ASSY

- (1) Slightly hold down the Inside cover ASSY to release the Bosses and remove the Inside cover ASSY.
- (2) Release the seven Hooks and remove the T1 bank ASSY.

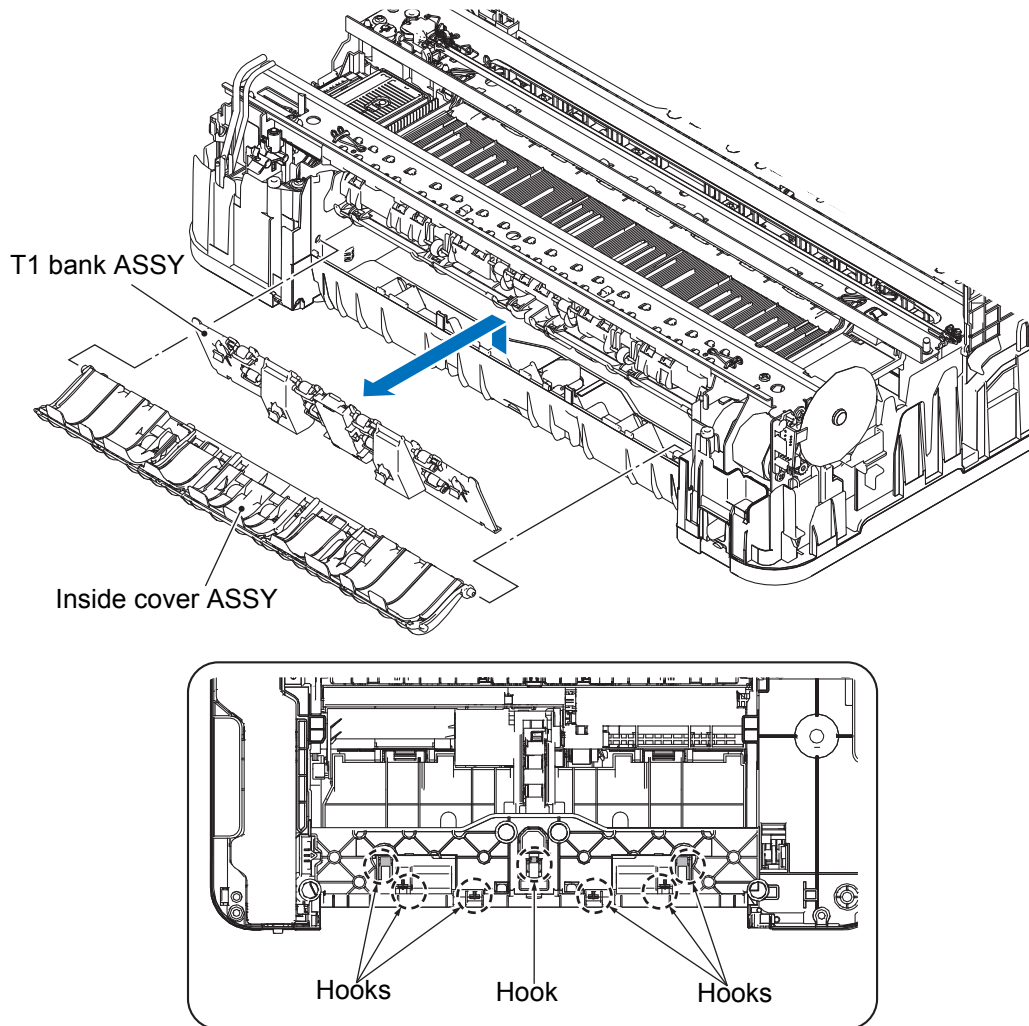
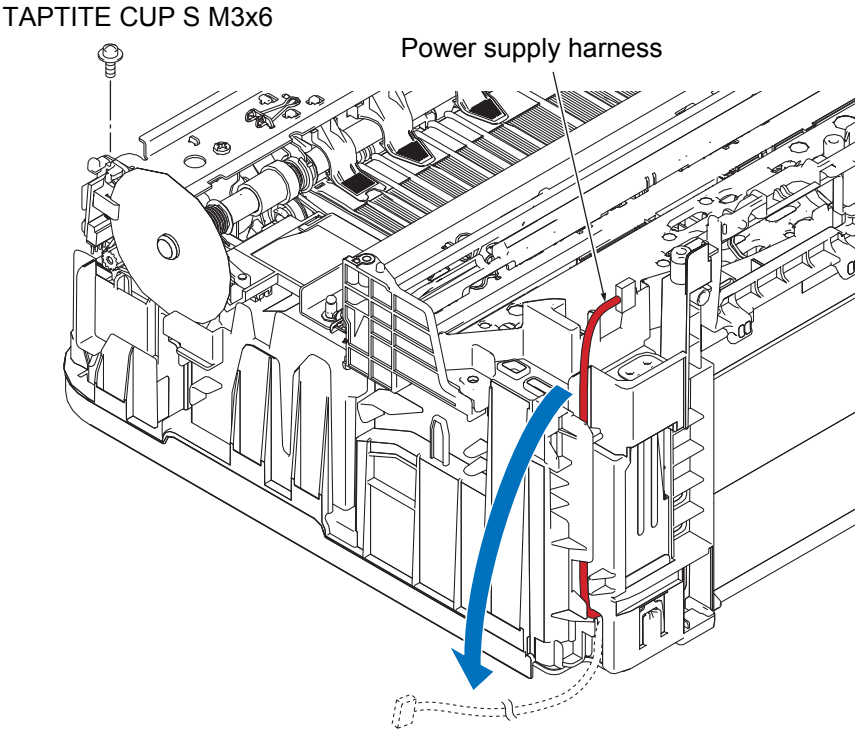


Fig. 3-84

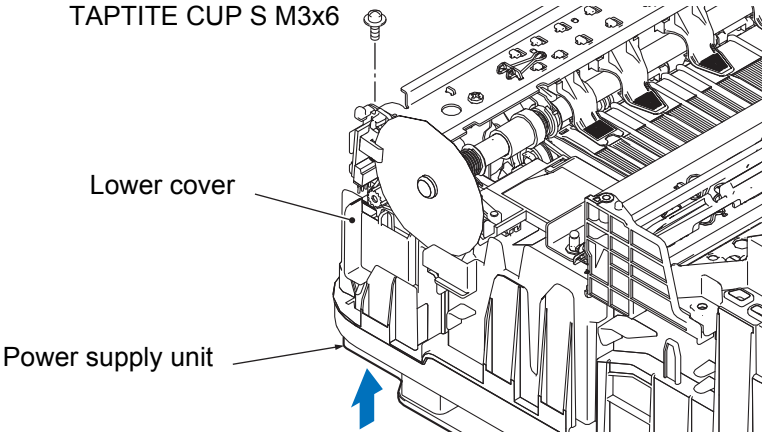
**9.33 Power Supply PCB ASSY**

- (1) Release the wiring of the Power supply harness.
- (2) Remove the screw (TAPTITE CUP S M3x6).



**Fig. 3-85**

**Assembling Note:** When attaching a Power supply unit, hold up the rear section of the unit and tighten the screw.



**Fig. 3-86**

- (3) Release the Hook and remove the Power supply unit from the bottom of the Lower cover.

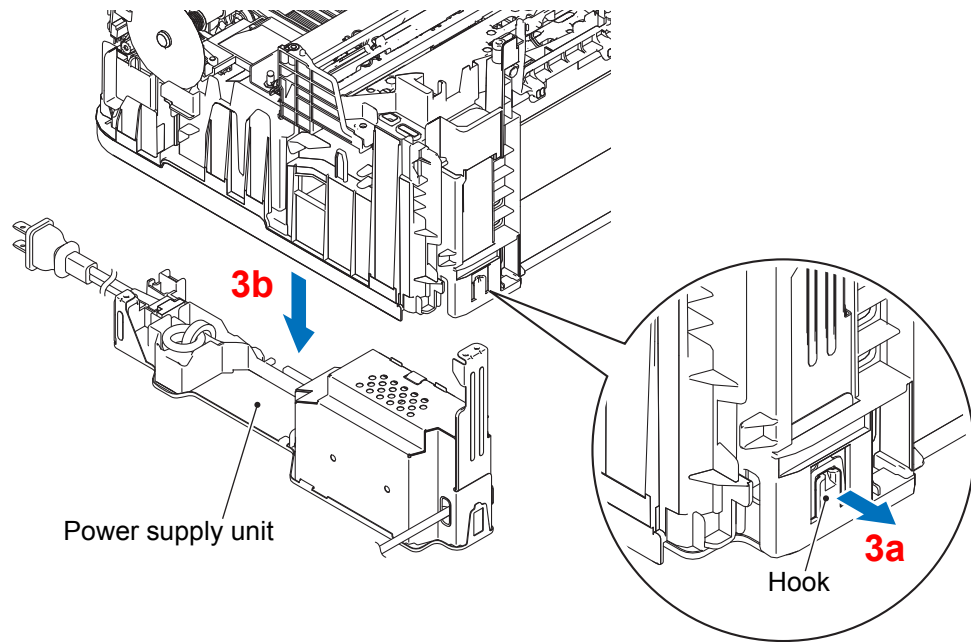


Fig. 3-87

- (4) Release the Lock and Hook, and remove the Power supply shield.

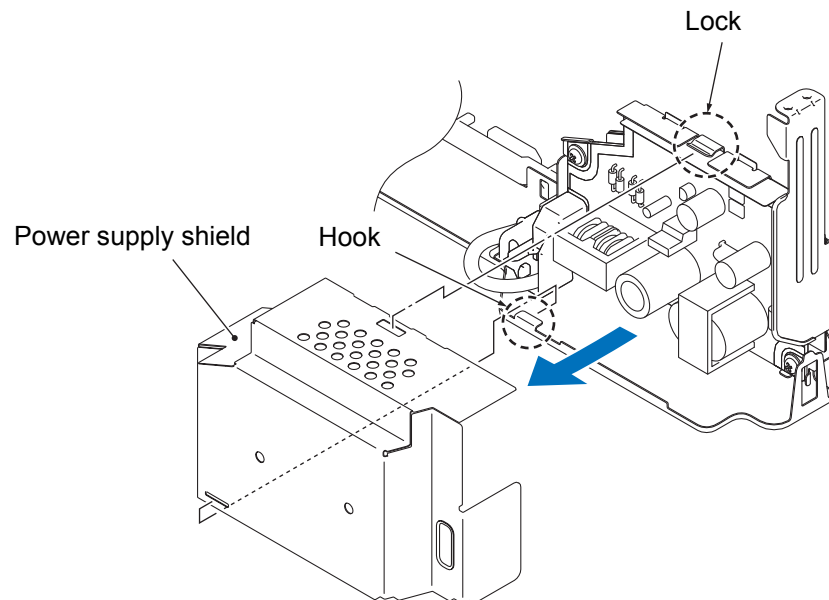
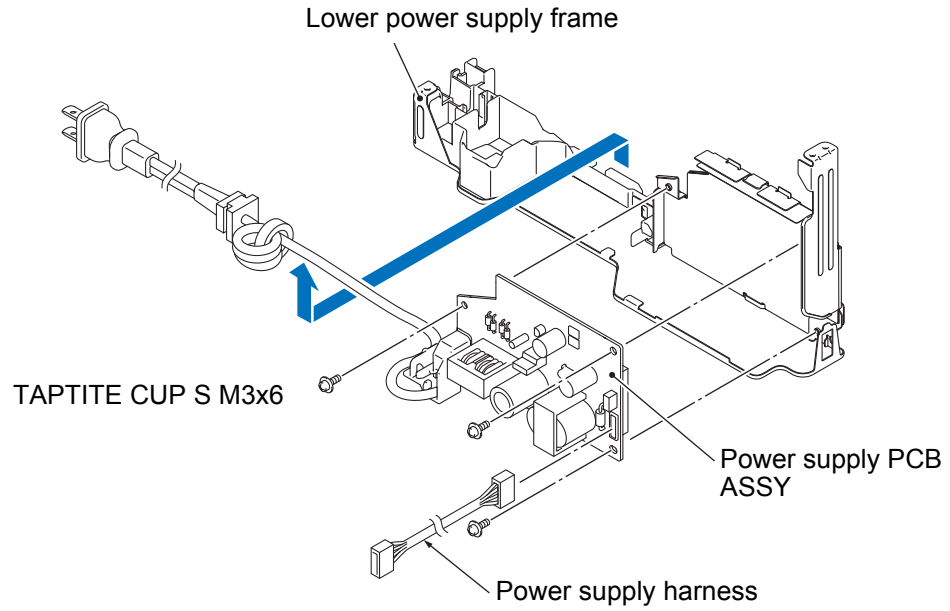


Fig. 3-88

- (5) Release the wiring of the Power cord.
- (6) Disconnect the Power supply harness from the Power supply PCB ASSY.
- (7) Remove the three screws (TAPTITE CUP S M3x6) and take the Power supply PCB ASSY out of the Lower power supply frame.



**Fig. 3-89**

### 9.34 Ink Refill ASSY/Ink Absorber Felt (for Ink Refill ASSY)

- (1) Release the wiring of the Ink supply tubes from the Tube support wire and Tube support plate.
- (2) Release the wiring of the Ink sensor flat cable.
- (3) Release the wiring of the harnesses.

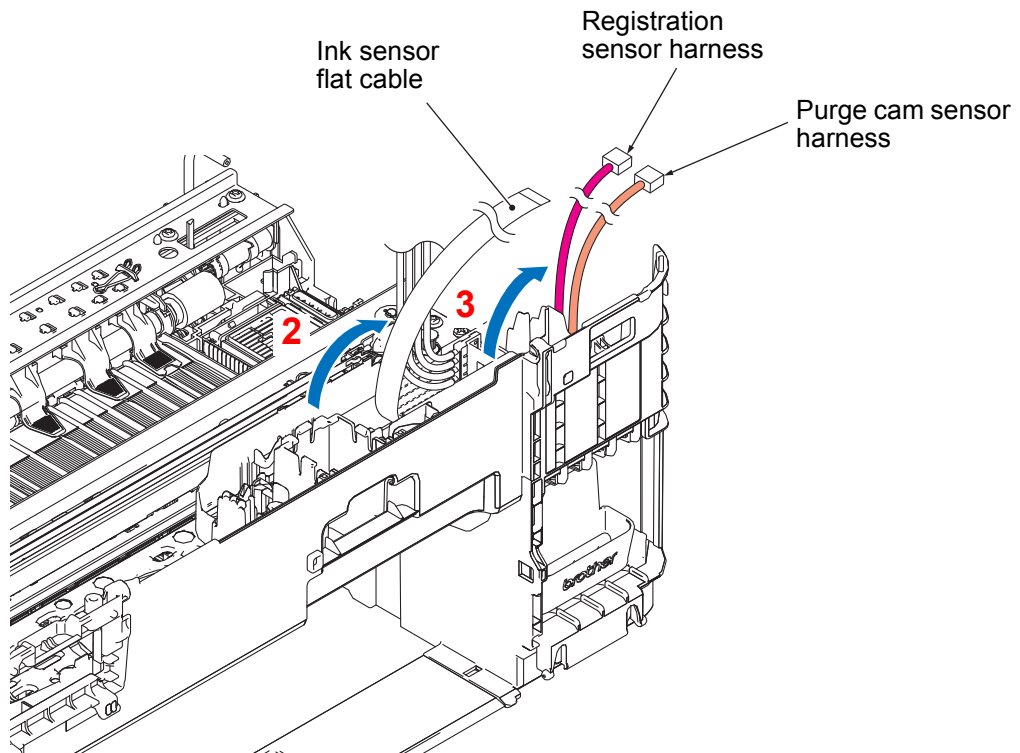


Fig. 3-90

- (4) Remove the three screws (TAPTITE CUP B M3x10), release one Hook, and remove the Tube support plate.

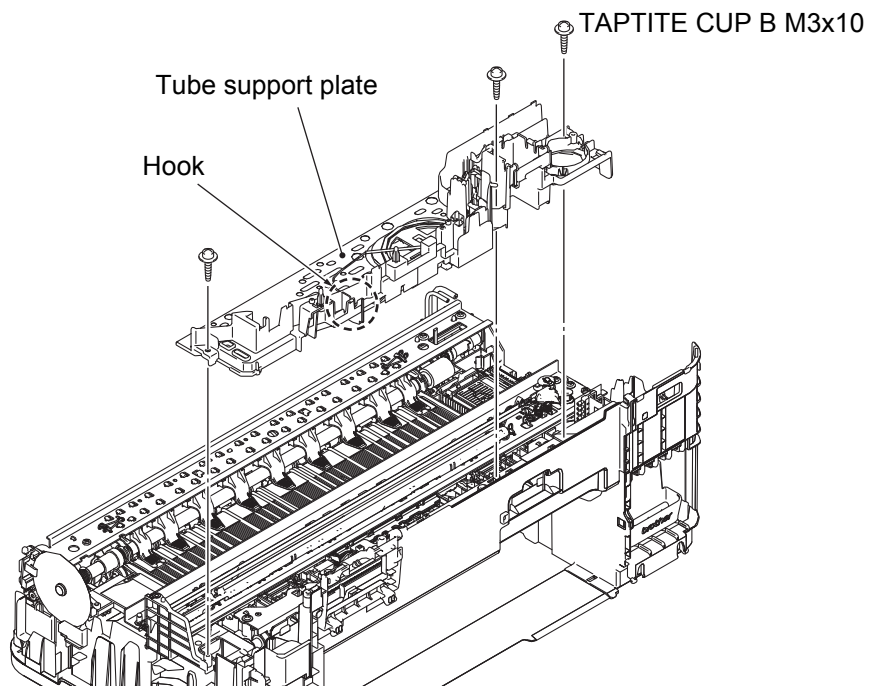


Fig. 3-91

- (5) Release the wiring of the CR motor harness.  
(6) Remove the Ink refill ASSY.  
(7) Remove the Ink absorber felt (for Ink refill ASSY).

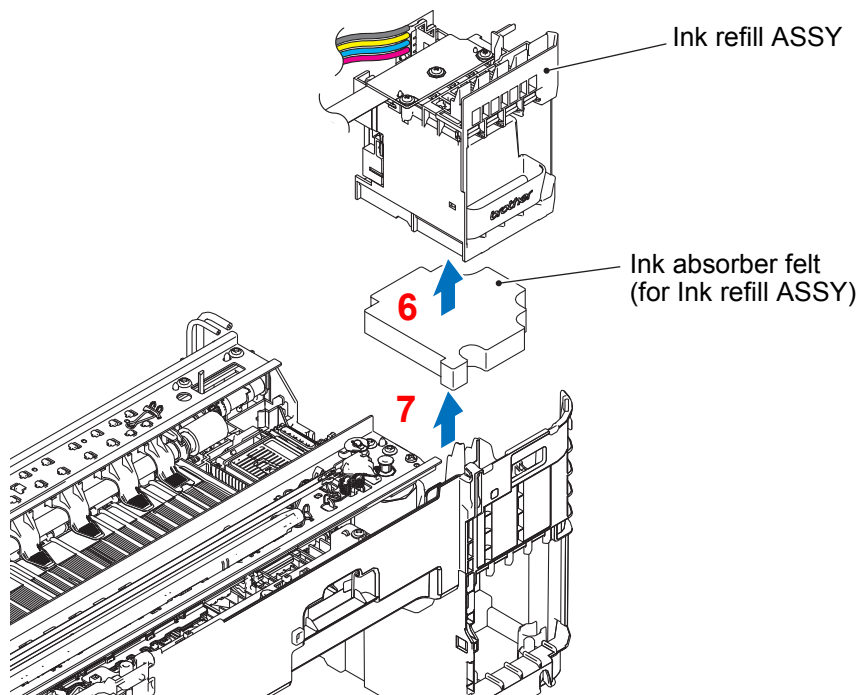


Fig. 3-92

### 9.35 Ink Cartridge Cover Sensor ASSY

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

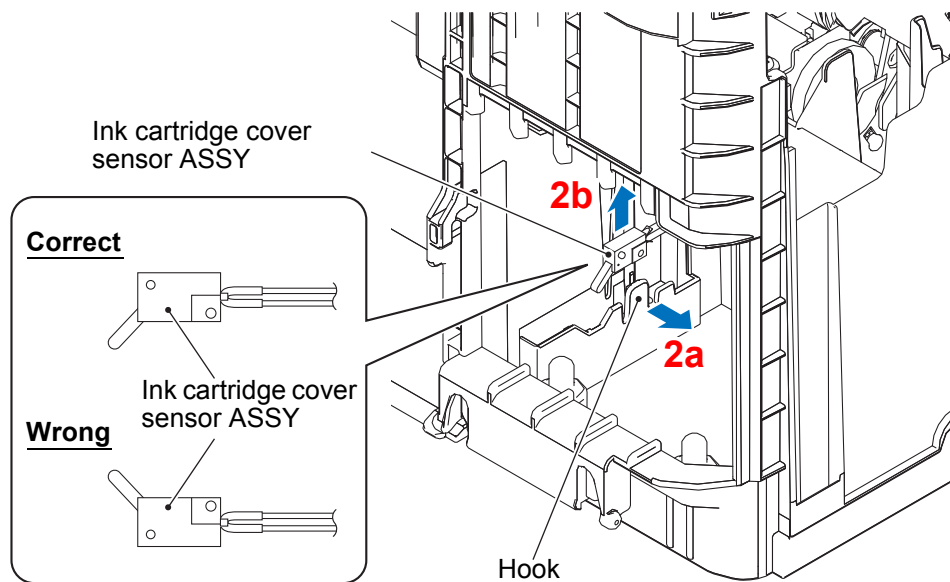


Fig. 3-93

**Assembling Note:** When mounting the Ink cartridge cover sensor ASSY, be careful with the mounting direction.



### 9.36 CR Encoder Strip

- (1) Release the Lock of the Encoder strip spring and remove the CR encoder strip and the spring.

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

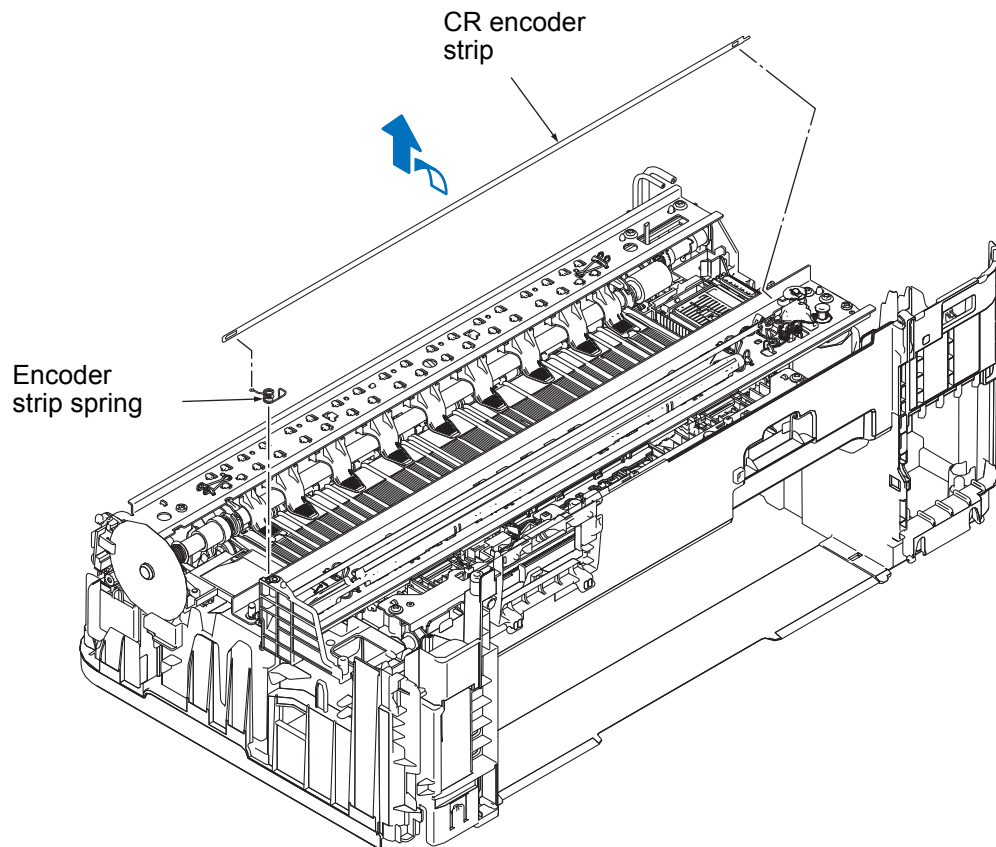


Fig. 3-94

**Assembling Note:** Set the CR encoder strip so that the ▲-marked end is to the right (Carriage motor side) and the mark points upwards.

### 9.37 Flushing Base

- (1) Release the wiring of the Switchback sensor PCB.
- (2) Remove the two screws (TAPTITE CUP B M3x10) and remove the Switchback frame ASSY.

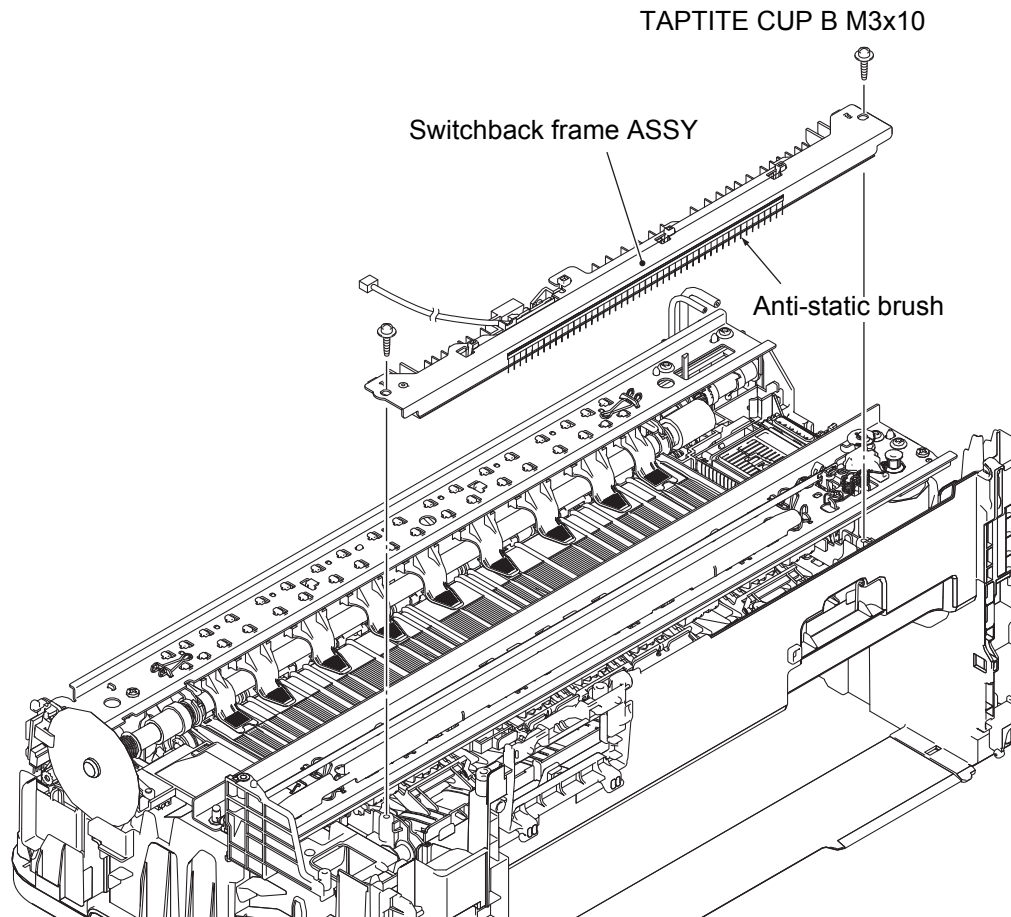


Fig. 3-95

**Assembling Note:** When mounting the Switchback frame, take care not to wind in the Anti-static brush.

- (3) Remove the two CR frame springs and two screws (TAPTITE CUP B M3x10) and remove the CR frame.

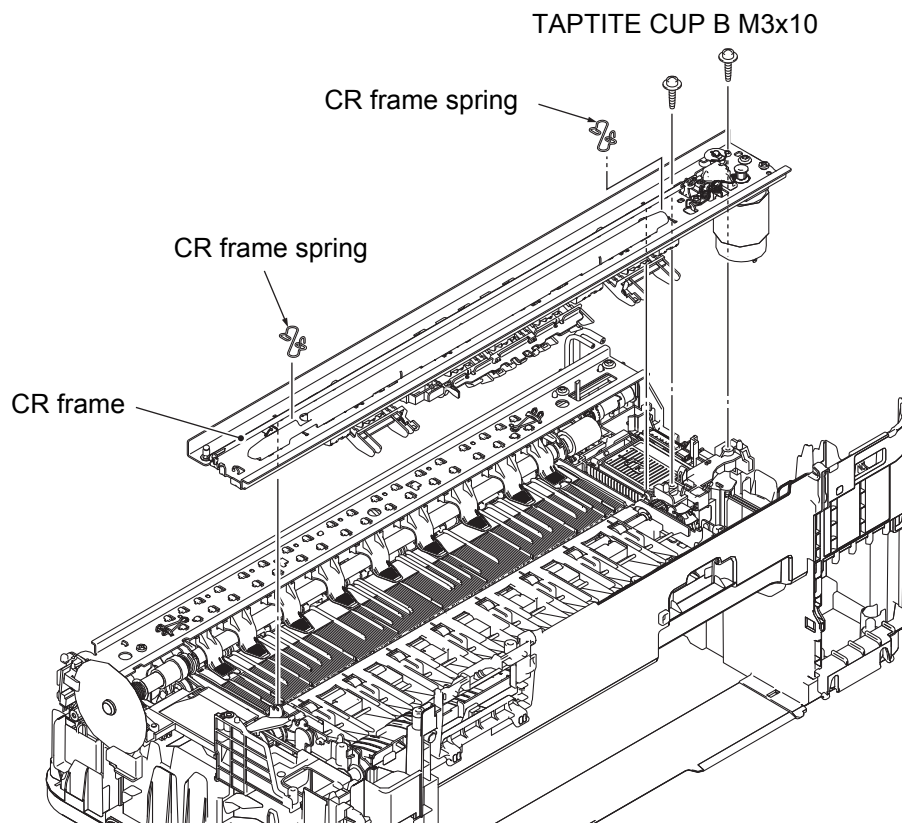


Fig. 3-96

- (4) Remove the Flushing base.

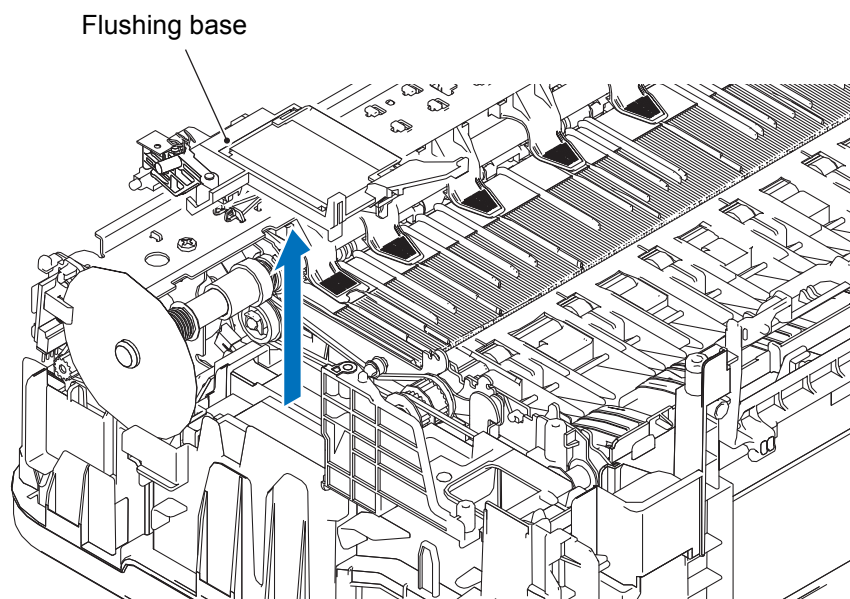


Fig. 3-97

### 9.38 Carriage Motor ASSY

- (1) Release the lock of the Guard film spring and remove the Encoder strip guard film.

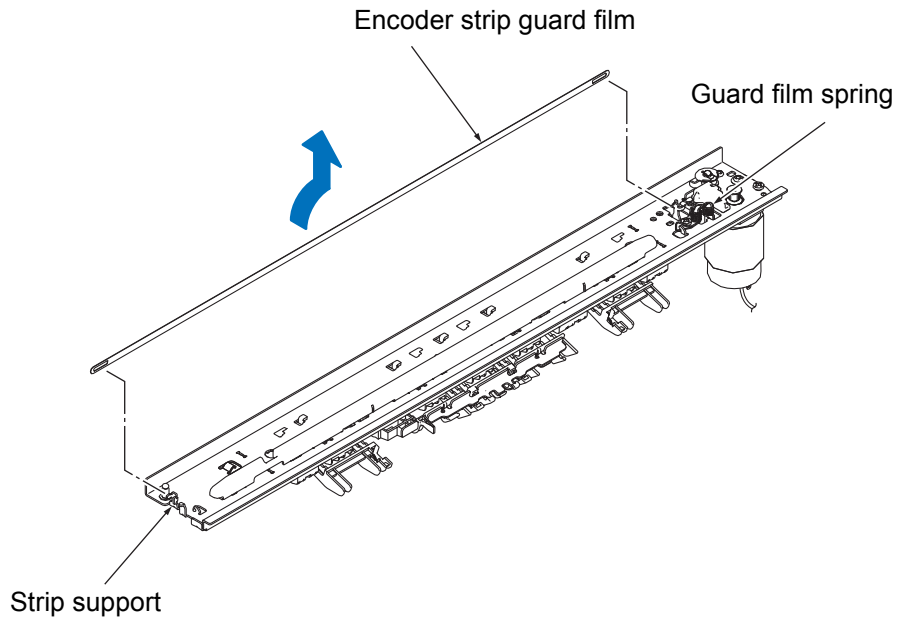


Fig. 3-98

- (2) Remove the Belt tension spring and the Guard film spring.
- (3) Remove the two screws (SCREW BIND M3x6) and the screw (TAPTITE CUP S M3x6) and take the Carriage motor ASSY off the CR frame ASSY.
- (4) Remove the two screws (SCREW BIND M3x6) and take the Carriage motor ASSY off the Motor bracket.

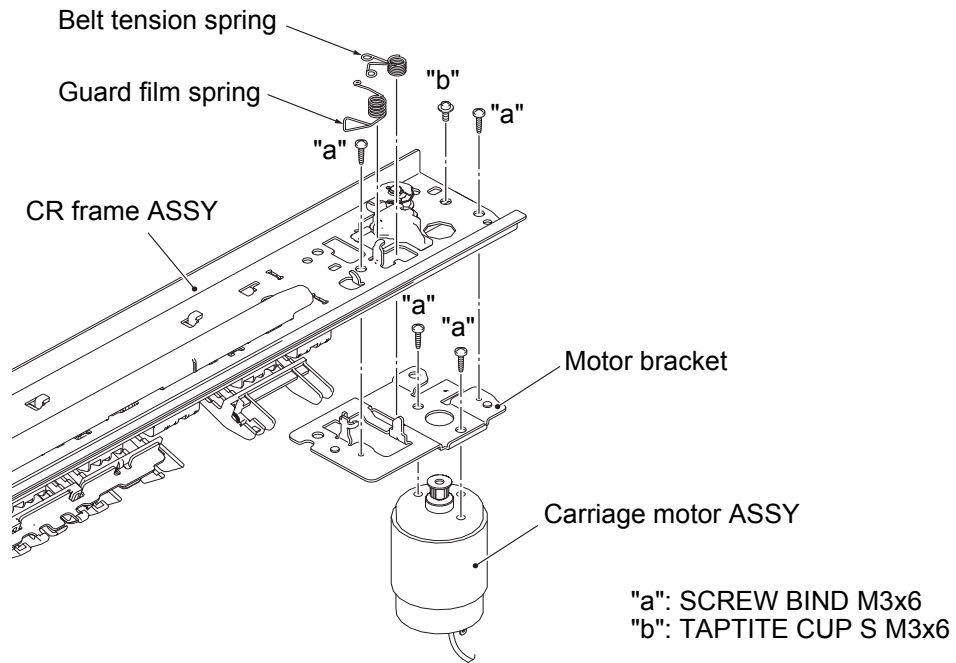
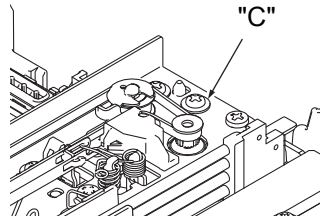


Fig. 3-99

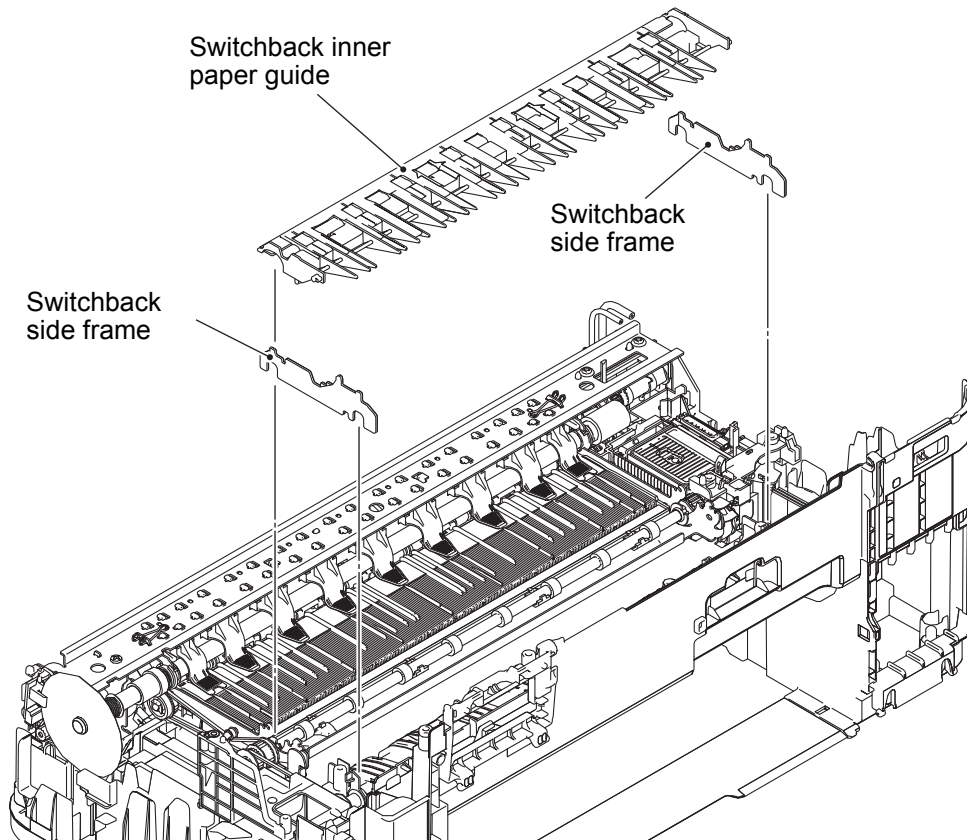
**Assembling Note:** Tighten screw "C" (TAPTITE CUP S M3x6) temporarily. After setting the Head/carriage unit and the CR timing belt, tighten screw "C" firmly.



**Fig. 3-100**

### 9.39 Switchback Roller

- (1) Remove the Switchback inner paper guide.
- (2) Remove the two Switchback side frames.



**Fig. 3-101**

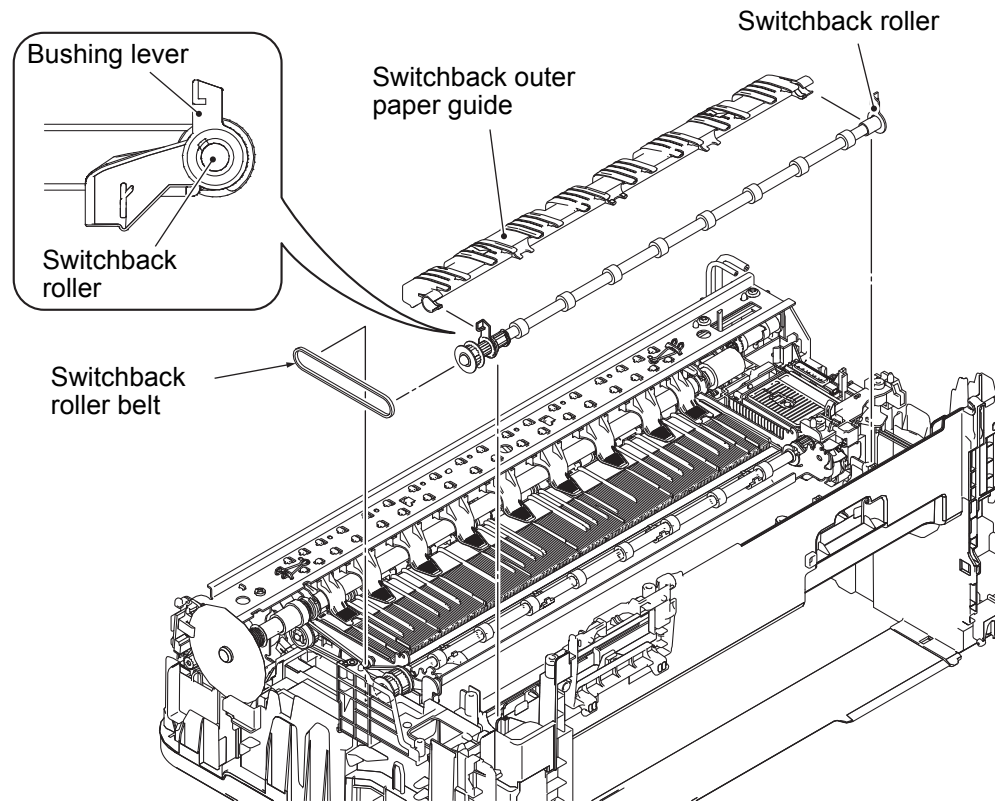
(3) Remove the Switchback roller belt.

(4) Remove the Switchback roller.

**Assembling Note**

- Do not touch the Platen foam by hand.
- Mount the Switchback roller with its Bushing lever upward.

(5) Remove the Switchback outer paper guide from the Switchback roller.



**Fig. 3-102**

## 9.40 Flushing Box

- (1) Release the two Hooks, lift up the front end of the Flushing box, and remove the Flushing box.

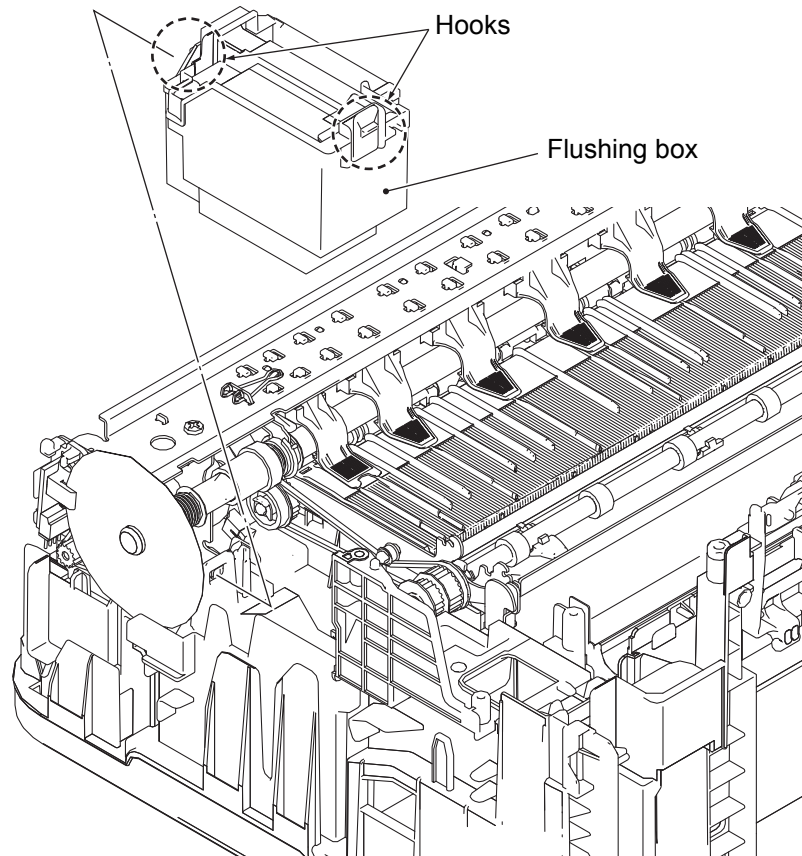


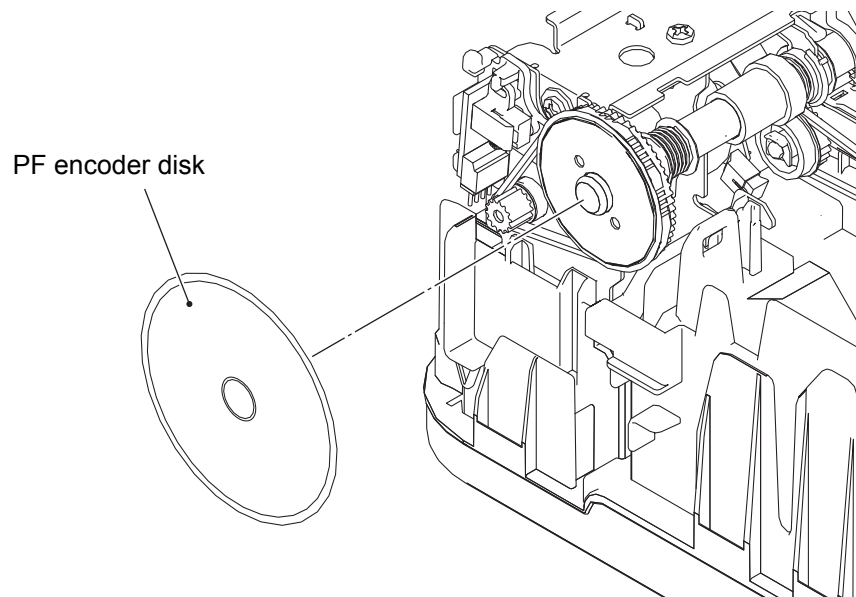
Fig. 3-103

**Assembling Note:** If you replace the Flushing box (without replacing the Main PCB ASSY), reset the flushing count, using the procedure given in [Chapter 4, Section 1.14 "Reset purge and flushing counts"](#).

It is also recommended that the Ink absorber box be replaced and the purge count be reset as necessary since the purge count may approach the upper limit.

## 9.41 PF Encoder Disk/PF Encoder PCB ASSY

- (1) Remove the PF encoder disk.



**Fig. 3-104**

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

**Assembling Note:** When attaching the PF encoder disk, using a spatular tool makes the job easier. Put on clean gloves to protect the disk surface from dust or fingerprints.



(2) Remove the Paper feed roller belt.

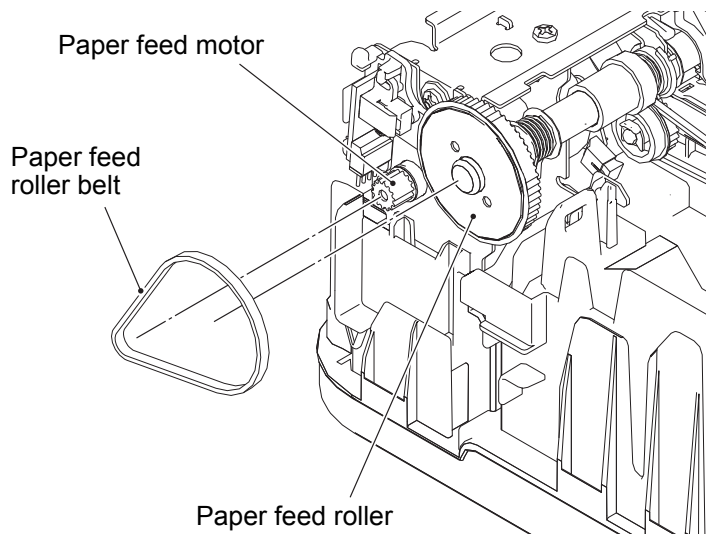


Fig. 3-105

**Assembling Note:** When attaching the Paper feed roller belt, first fit it over the paper feed motor side and then over the paper feed roller side.

(3) Release the wiring of the PF encoder harness.

<Except for US/CAN>

**Assembling Note:** When wiring the PF encoder harness, set the Ferrite core, referring to "[10 Lower cover \(left side\)](#)" of this chapter.

(4) Remove the screw (SCREW BIND M2x12) and remove the PF encoder sensor holder and the PF encoder PCB ASSY.

(5) Disconnect the PF encoder harness.

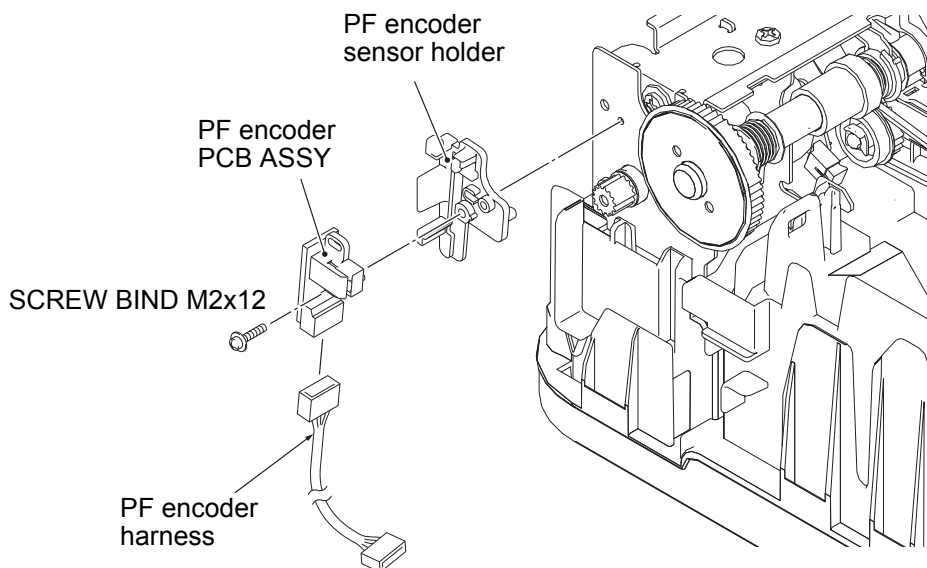
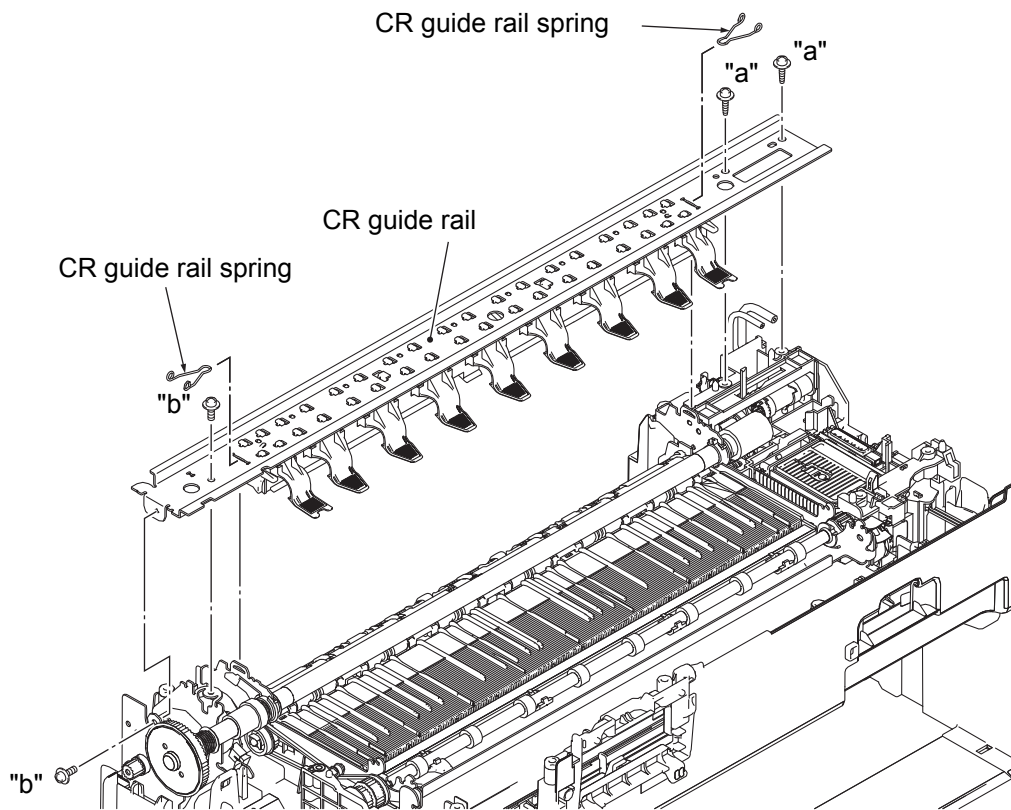


Fig. 3-106

## 9.42 Paper Feed Motor

- (1) Remove the two screws (TAPTITE CUP B M3x10) and two screws (SCREW BIND M3x6), remove the two CR guide rail springs, and remove the CR guide rail.



"a": TAPTITE CUP B M3x10  
"b": SCREW BIND M3x6

Fig. 3-107

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

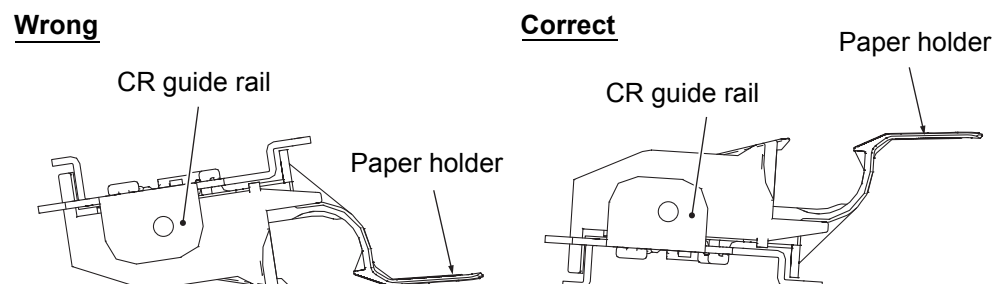
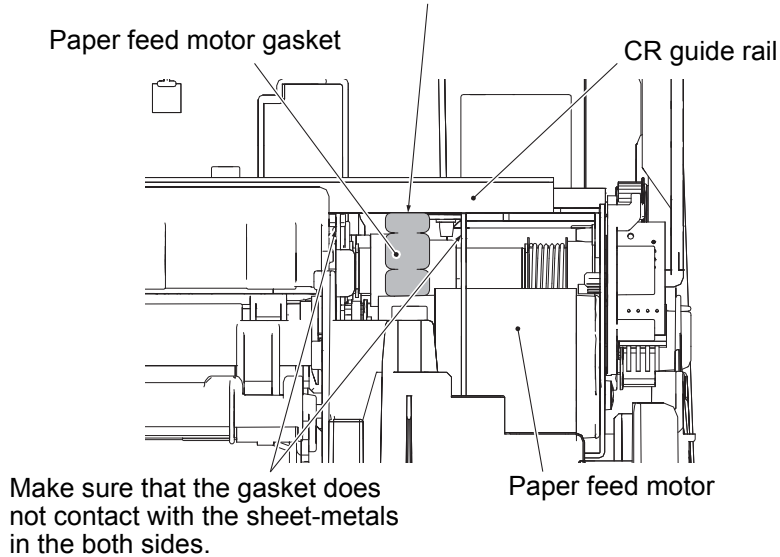


Fig. 3-108

<Except for US/CAN>

**Assembling Note:** When attaching the CR guide rail, set the Paper feed motor gasket as shown below.

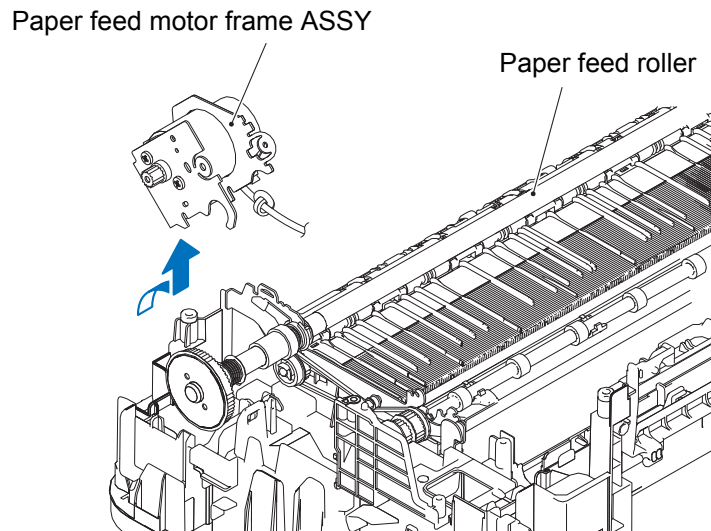
Make sure that the upper surface of the Paper feed motor gasket is in contact with the lower surface of the CR guide rail.



**Fig. 3-109**

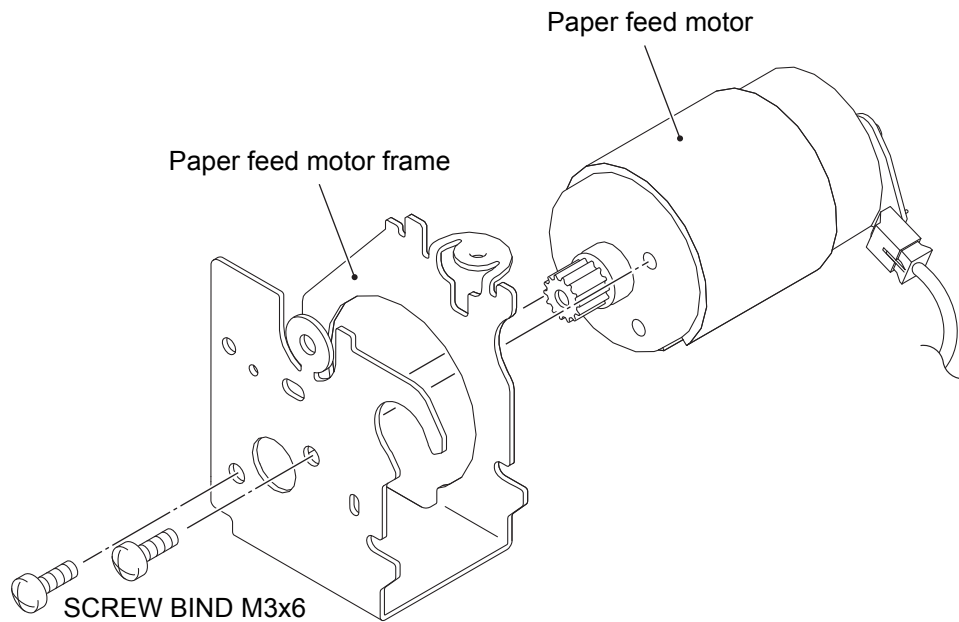
- (2) Release the wiring of the Paper feed motor harness.
- (3) Turn the Paper feed motor frame ASSY 45 degrees in the direction of the arrow and pull it straight up.

It may not be pulled straight up depending upon the position of the black bushing. Rotate the bushing to the proper position and pull it out.



**Fig. 3-110**

- (4) Remove the two screws (SCREW BIND M3x6) and take the Paper feed motor off the Paper feed motor frame.



**Fig. 3-111**

**Assembling Note:** When attaching the Paper feed motor to the Paper feed motor frame, align it in the position indicated above.

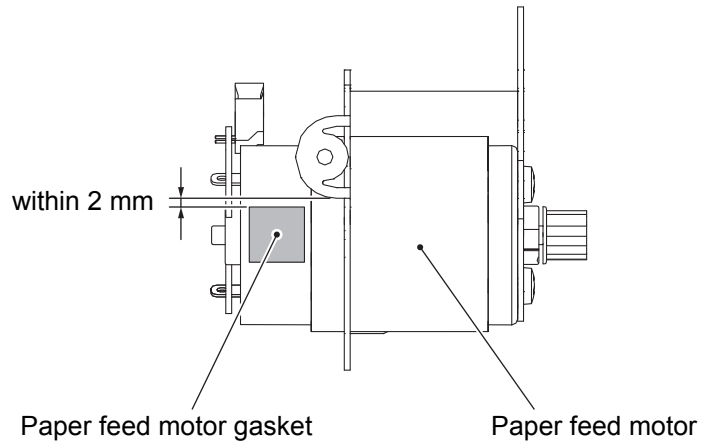
<Except for US/CAN>

- (5) Remove the Paper feed motor gasket from the Paper feed motor.

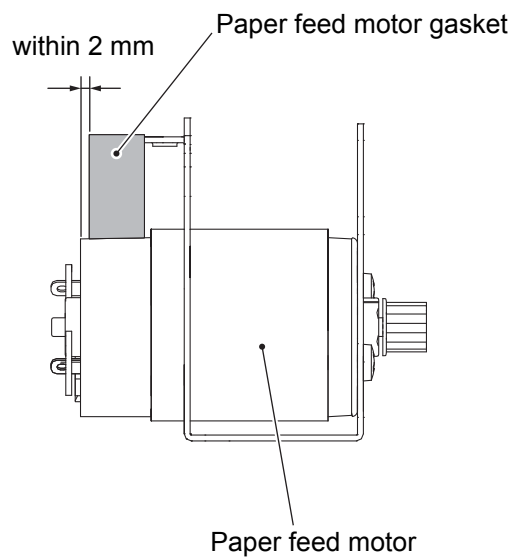
**Note:** If you replace the Paper feed motor, you also need to replace the Paper feed motor gasket with a new one.

**Assembling Note:** When attaching the Paper feed motor gasket, align it in the position indicated below.

(Upside)



(Side)



**Fig. 3-112**

### 9.43 Paper Feed Roller

- (1) Turn the right and left bushings in the direction of the arrow to unlock them.
- (2) Remove the Paper feed roller.

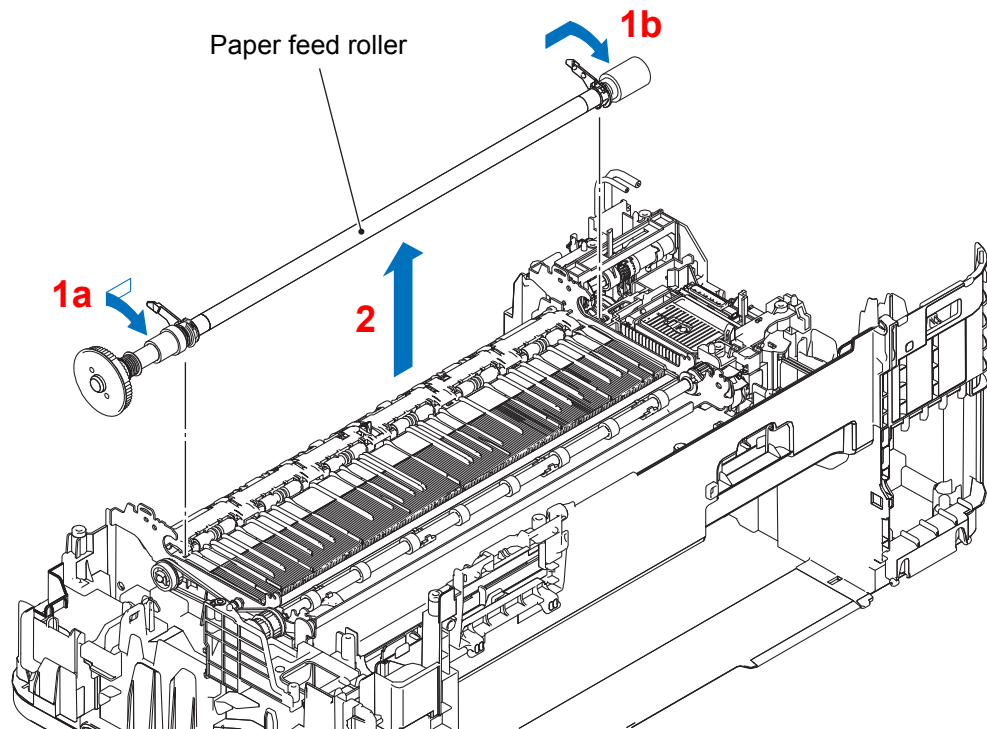
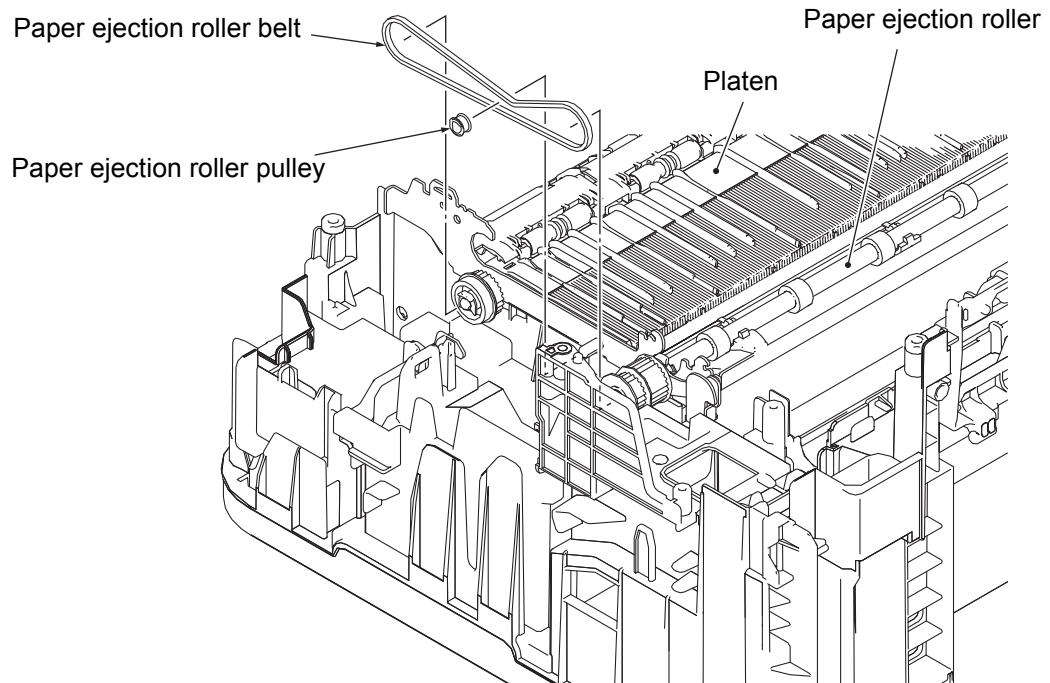


Fig. 3-113

**Assembling Note:** When mounting the Paper feed roller, hold the left and right bushing without touching the roller part.

## 9.44 Paper Ejection Roller

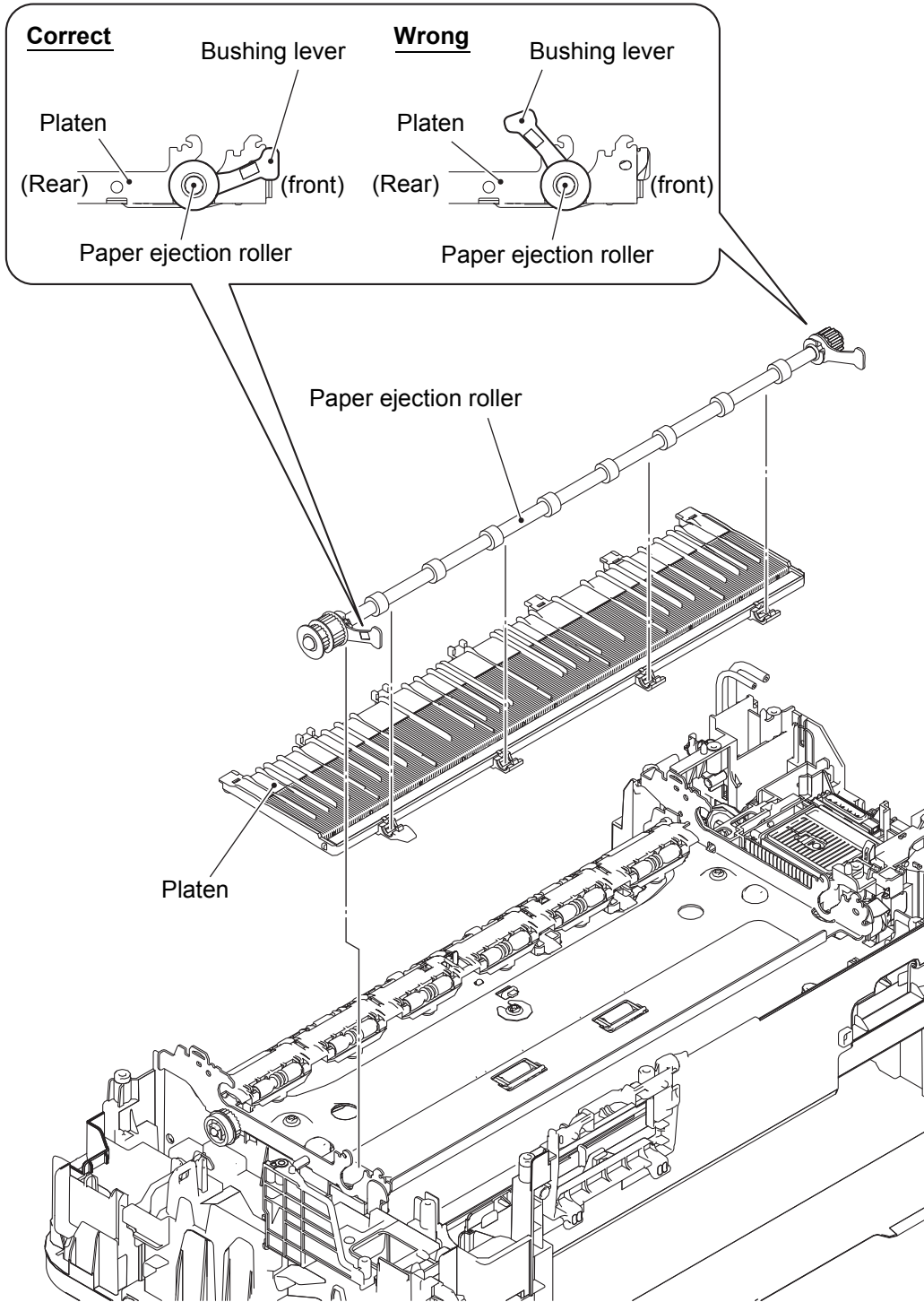
- (1) Remove the Paper ejection roller pulley.
- (2) Remove the Paper ejection roller belt.



**Fig. 3-114**

- (3) Rotate the Bushing lever to upward.
- (4) Remove the Platen and the Paper ejection roller.
- (5) Remove the Paper ejection roller from the Platen.

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



**Fig. 3-115**



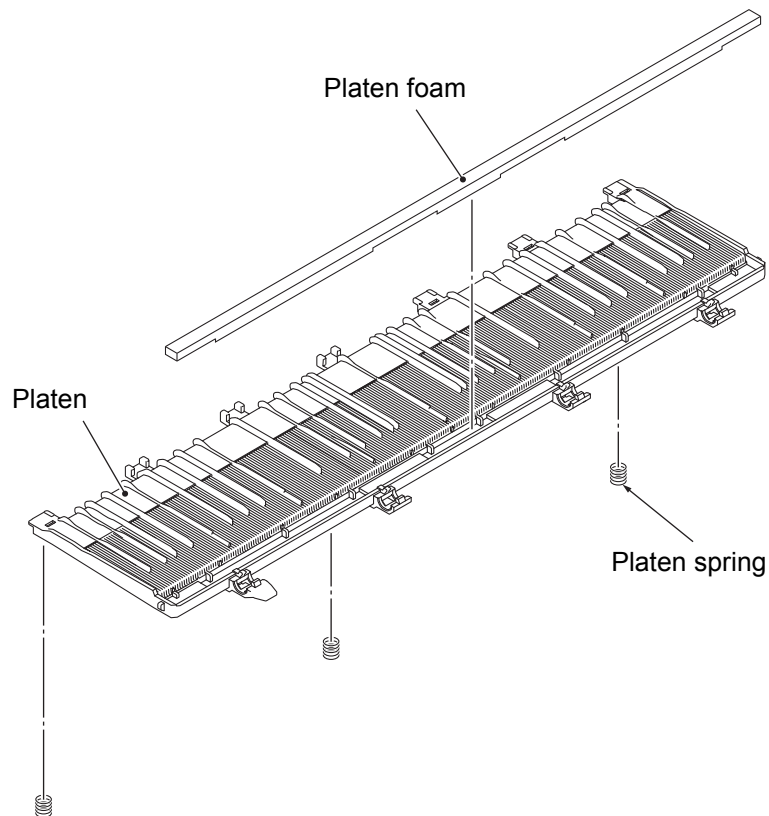
**Assembling Note:** Platen springs should not be bent or turned over.



**Fig. 3-116**

### 9.45 Platen

- (1) Remove the Platen foam from the Platen.
- (2) Remove the three Platen springs from the Platen.

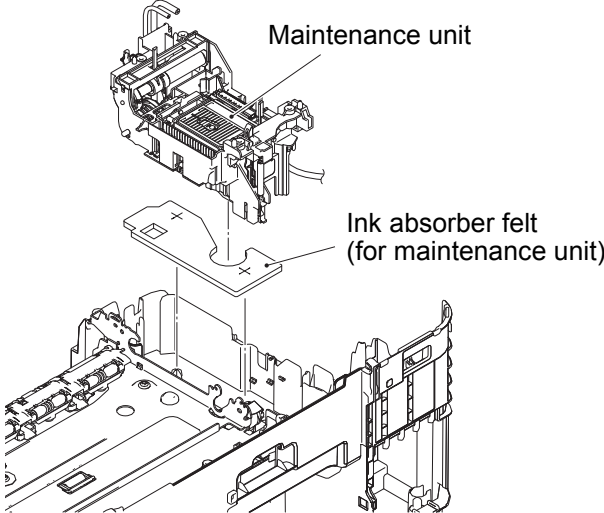


**Fig. 3-117**

**Assembling Note:** When mounting the Platen foam to the Platen, take care not to put it over the Platen rib.

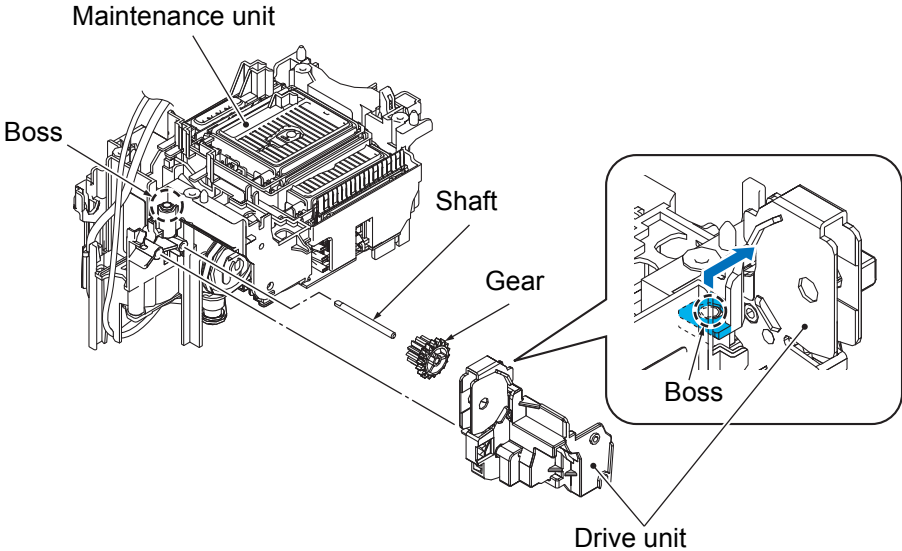
**9.46 Maintenance Unit/Ink Absorber Felt (for Maintenance Unit)**

- (1) Release the wiring of the harnesses.
- (2) Remove the Maintenance unit.
- (3) Remove the Ink absorber felt (for maintenance unit).



**Fig. 3-118**

- (4) Release the Maintenance unit boss and remove the Drive unit.
- (5) Remove the Gear and Shaft.



**Fig. 3-119**

**Assembling Note:** Attach the Drive unit, using the following steps.

- 1) Attach the Shaft and Gear to the Drive unit.
- 2) After aligning the two Shafts with the D cutouts in the Maintenance unit, attach the Drive unit to the Maintenance unit.

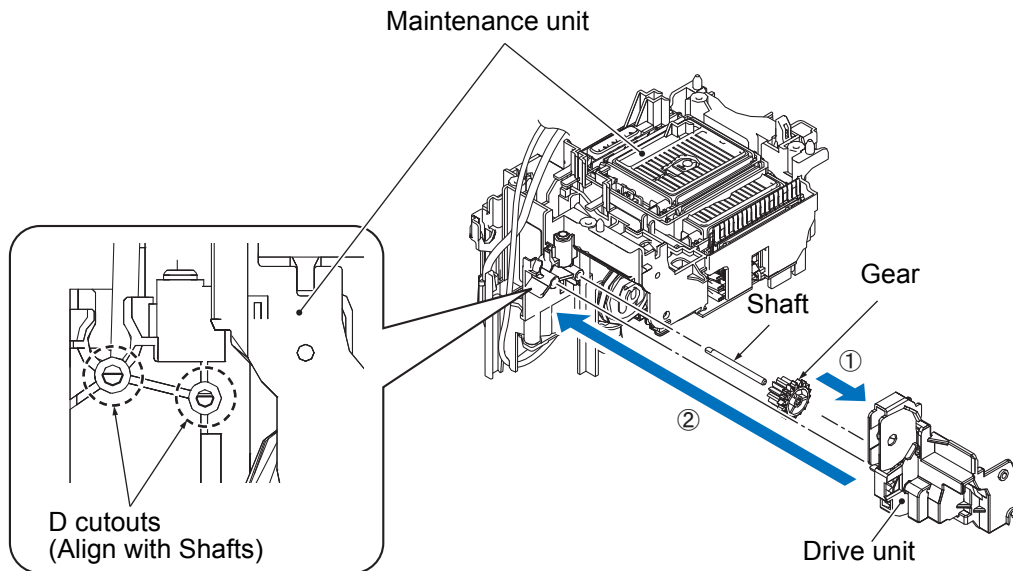


Fig. 3-120

### 9.47 Inner Chute ASSY

- (1) Release the wiring of the Registration sensor PCB ASSY.
- (2) Remove the screw (TAPTITE CUP B M3x10) and the two screws (TAPTITE BIND B M3x10).
- (3) Remove the Frame base stopper ring, lift up the rear end of the Frame base, and take it off the Lower cover.

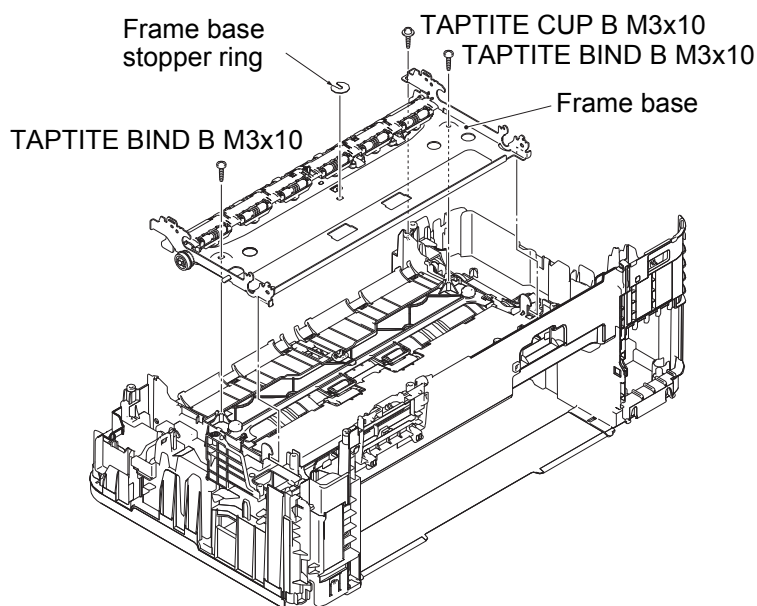


Fig. 3-121

- (4) Release the Hooks and the Boss on the DX paper guide ASSY, slide it in the direction of the arrow, and remove the DX paper guide ASSY and the Inner chute ASSY from the Frame base.

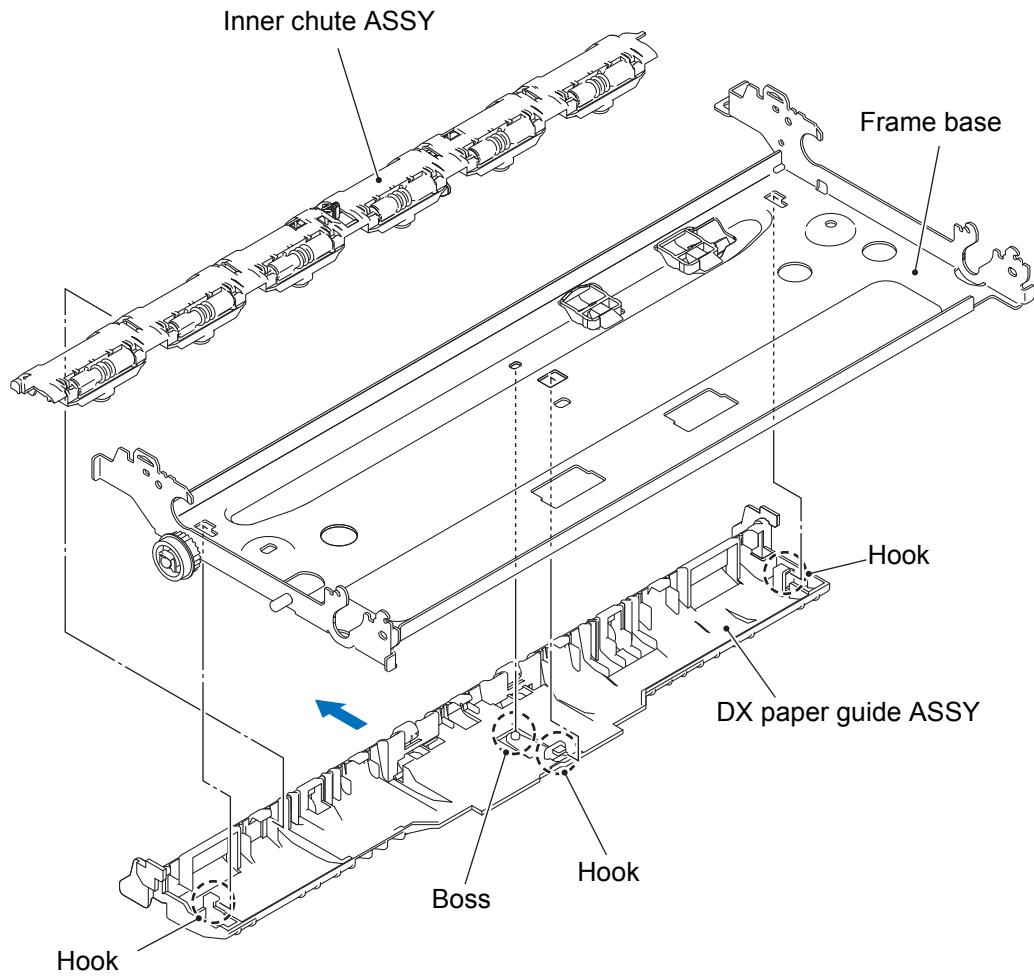


Fig. 3-122

**Assembling Note:** After mounting the Inner chute ASSY and the DX paper guide ASSY to the Frame base, confirm that the Registration actuator operates normally.

## 9.48 Registration Sensor PCB ASSY

- (1) Release the Hook on the Registration sensor holder and remove the Registration sensor holder from the Frame base.
- (2) Warp the Registration sensor inwards to release it from the guide, then slide off the Registration sensor PCB ASSY in the direction of the arrow.

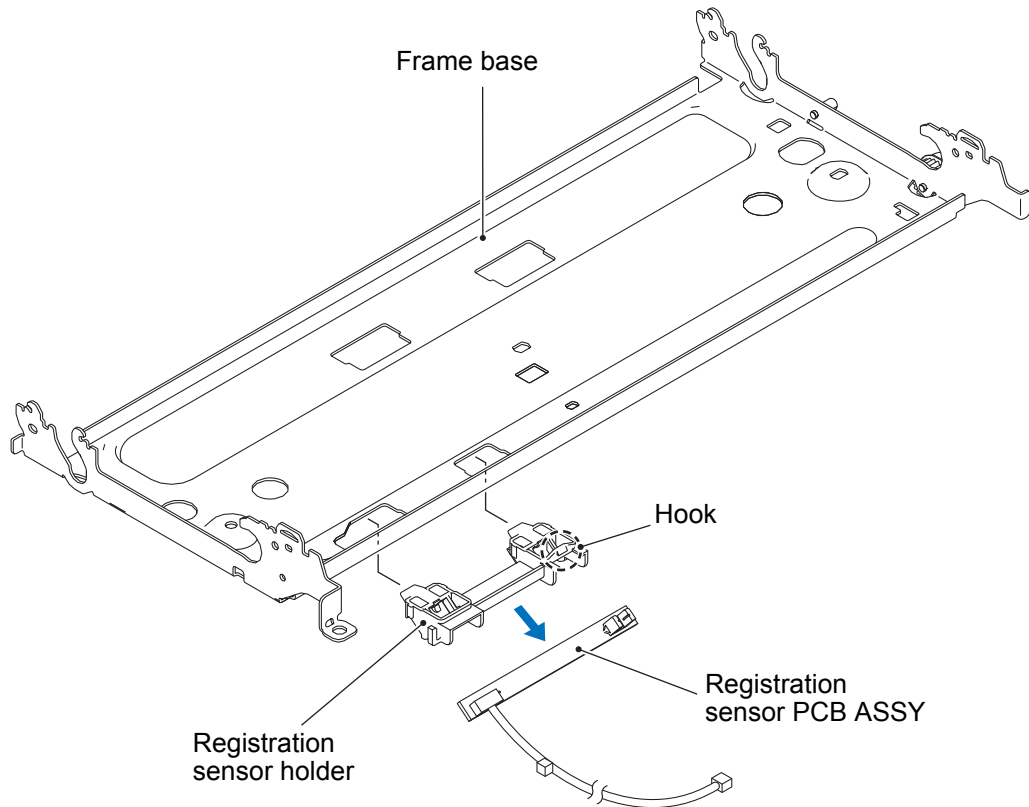


Fig. 3-123

**Assembling Note:** When attaching the Registration sensor PCB ASSY to the Registration sensor holder, press the sensor section of the Registration sensor PCB ASSY to assemble.

## 9.49 T1 Base Pad

- (1) If the T1 base pad needs to be replaced, peel it off the bottom of the Paper tray ASSY 1.

**Note:** Once removed, the T1 base pad will become unusable and a new pad will have to be put back in.

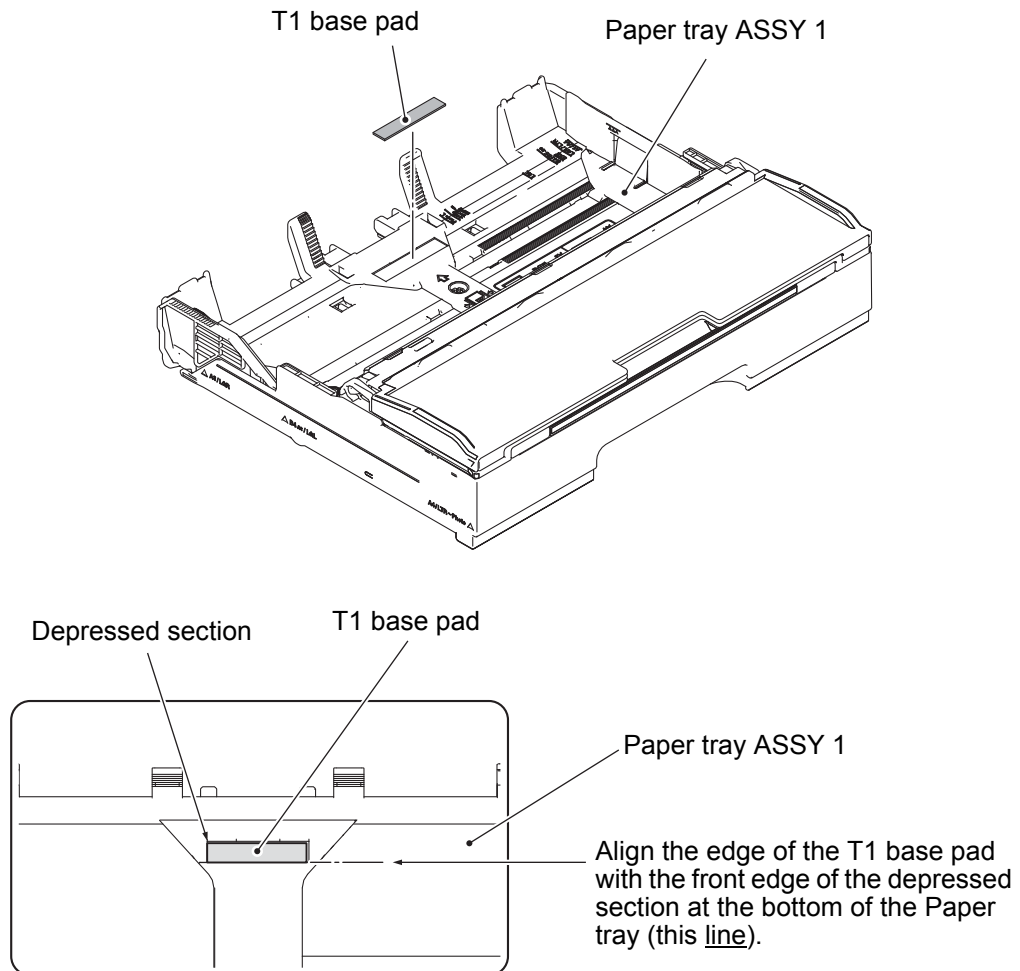


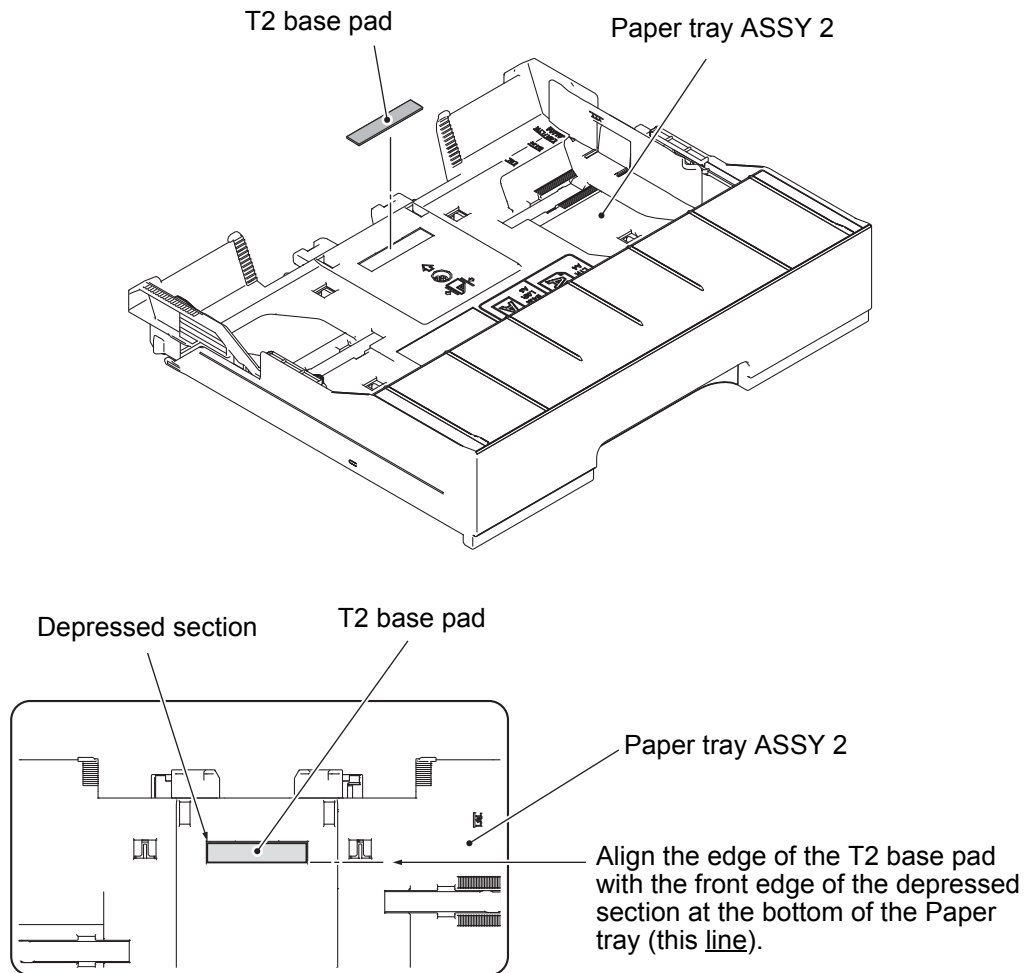
Fig. 3-124

**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.

## 9.50 T2 Base Pad

- (1) If the T2 base pad needs to be replaced, peel it off the bottom of the Paper tray ASSY 2.

**Note:** Once removed, the T2 base pad will become unusable and a new pad will have to be put back in.



**Fig. 3-125**

**Assembling Note:** When attaching a new T2 base pad to the Paper tray ASSY 2, align the front edge of the pad with that of the Depressed section on the Paper tray ASSY 2 and center the pad widthways as shown above.

### 9.51 T1 Paper Pull-in Roller

- (1) Release the two Hooks of the Paper pull-in roller holder and remove the T1 paper pull-in rollers and their holder from the Gear holder ASSY.
- (2) Remove the T1 paper pull-in rollers from their holder and separate those rollers to the right and left.

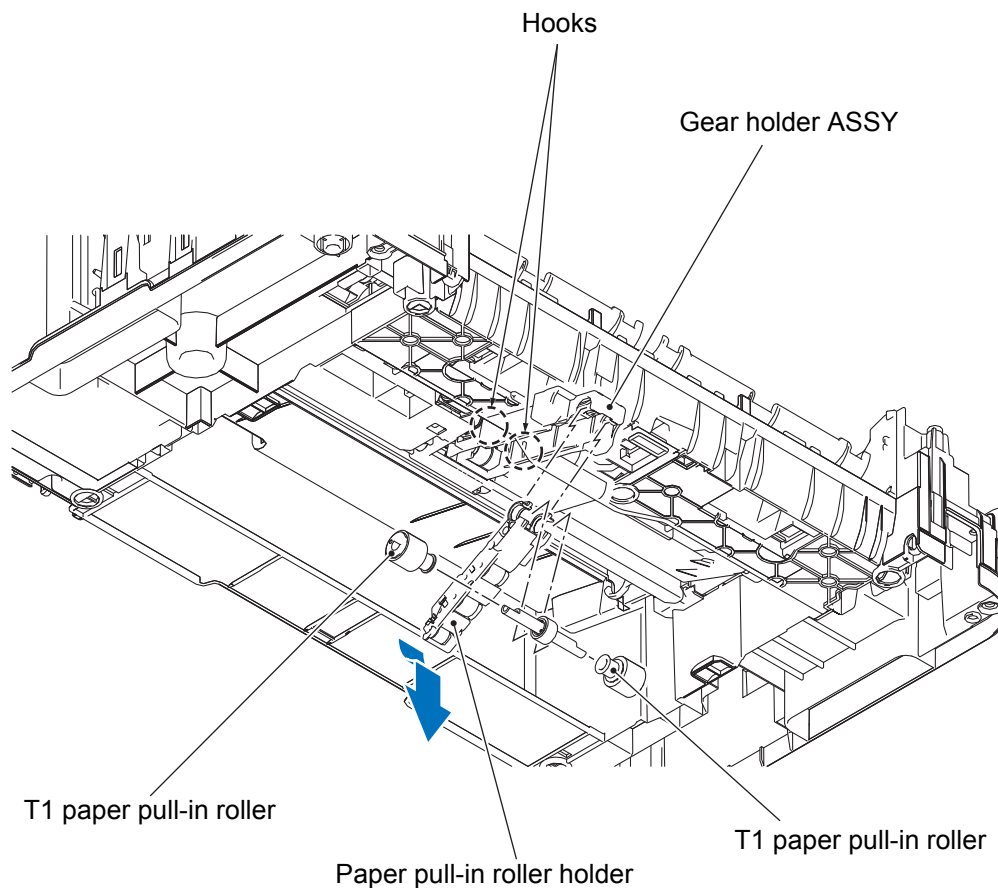


Fig. 3-126



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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 an external 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 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 data and backup/restoration of head calibration data (Maintenance mode 68)
- 1.8 Restore machine information (Maintenance mode 46)
- 1.9 Adjust the touch panel (Maintenance mode 78)
- 1.10 Acquire white/black level data (Maintenance mode 55)
- 1.11 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65)
- 1.12 Updating of paper feeding correction values (Maintenance mode 58)
- 1.13 Adjustment of margins in borderless printing (Maintenance mode 66)
- 1.14 Reset purge and flushing counts
- 1.15 Write head calibration data (Maintenance mode 02)
- 1.16 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) 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.
- (4) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (5) 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."
- (6) Firmware  
LZXXXX\_\$.pjl (For installing firmware using an external memory or PC)  
LZXXXX\_\$.upd (For installing firmware using a PC)
- (7) USB flash memory or SD card
- (8) Stylus
- (9) Data files of print patterns
- (10) Color test chart CTC-001

## 1.1 Customize destinations (Maintenance mode 74)

Customize destinations, referring to [Chapter 5, Section 1.3.27](#).

If "PLS UPDATE PROG" appears on the LCD, install the firmware using the procedure in [Section 1.3](#).

## 1.2 Set the CIS type (Maintenance mode 59)

Set the CIS type, referring to [Chapter 5, Section 1.3.20](#).

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 firmware, referring to [Chapter 5, Section 1.3.10](#).

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., lz00001\_a.pjl) onto the Brother Maintenance USB Printer driver icon in the filedg32 window.





**Note:** To use a firmware file, extract it beforehand by double-clicking. It is a compression format file having the extension .zip.

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.

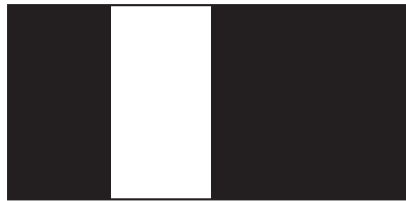
- 1) While holding down , plug the power cord into an electrical outlet. When the  key lights, release  and immediately press  once to display the following pattern.




- 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](#).

#### 1.5 Restore the head calibration data (Maintenance mode 68)

Restore head calibration data that has been backed up in an external memory, referring to [Chapter 5, Section 1.3.25](#).

If the restoration is successfully completed, the procedure given in [Section 1.15](#) is not required.

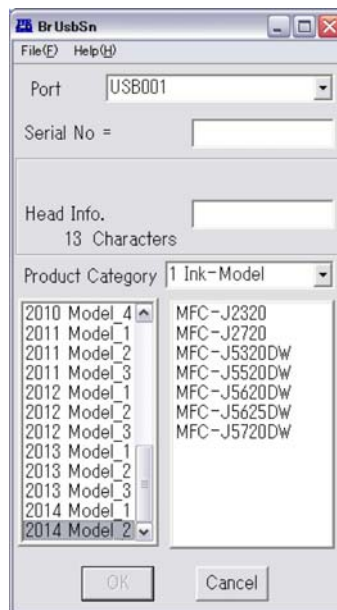
#### 1.6 Set the serial number (Maintenance mode 80)

Set the serial number, referring to [Chapter 5, Section 1.3.32](#).

The serial number can also be set with the service setting tool (BrUsbSn.exe) that enables the head property information to be updated ([Section 1.7](#)) 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) On the PC, run the service setting tool (BrUsbSn.exe) to display the following window.



- (4) In **Product Category**, select **1. Ink-Model**.
- (5) Select **2014 Model\_2**.

- (6) 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.
- (7) 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.
  - (8) In the **Head Info.** box, type the 13-digit head property code. The head property info is printed on the bar code label attached to the head/carriage unit.



**Tip:** Opening the scanner cover when the machine is on standby and holding down the **X** key for at least 5 seconds moves the head/carriage unit to the center of its travel. This makes it possible to check the property label through the opening.

- (9) Click the **OK** key.
- (10) Wait for the confirmation screen of the serial number entered and the head property code to appear, then click **Yes**.
- (11) Use Maintenance mode 80 to display the serial number and head property info and check that the entered data is correct.

## 1.7 Updating of head property data and backup/restoration of head calibration data (Maintenance mode 68)

Update the head property data, referring to [Chapter 5, Section 1.3.25](#).

The head property data can also be updated with the service setting tool (BrUsbSn.exe). For details, refer to [Section 1.6](#).

## 1.8 Restore machine information (Maintenance mode 46)

Restore the machine information and user setting information that have been backed up in an external memory, referring to [Chapter 5, Section 1.3.13](#).

If the machine information is successfully restored, it is not necessary to perform operations given in Sections [1.9](#) to [1.14](#).

If the machine has failed to restore the machine information from the external 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 1.3.31](#).

### **1.10 Acquire white/black level data (Maintenance mode 55)**

Acquire white/black level data, referring to [Chapter 5, Section 1.3.17](#).

### **1.11 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65)**

Refer to [Chapter 5, Section 1.3.23](#).

### **1.12 Updating of paper feeding correction values (Maintenance mode 58)**

Refer to [Chapter 5, Section 1.3.19](#).

### **1.13 Adjustment of margins in borderless printing (Maintenance mode 66)**

Refer to [Chapter 5, Section 1.3.24](#).

### **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 (or flushing) count appears on the LCD.
- (4) Press the **2**, **7**, **8** and **3** keys in this order to reset the purge (or flushing) count.
- (5) When the count is reset, the machine automatically returns to the initial stage of the maintenance mode.

Once the purge count reaches 12,200, and the flushing count reaches Black: 406,653,747 and Colors: 507,105,943, a message "Unable to Print 46" is displayed, and the execution of both the purge operation and the flushing operation is prohibited. 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.

### **1.15 Write head calibration data (Maintenance mode 02)**

Write head calibration data, referring to [Chapter 5, Section 1.3.2](#).

## 1.16 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 1.3.19](#).

### **Adjustment of software correction for inclination/corrugation/ruled lines**

Check the test patterns, referring to [Chapter 5, Section 1.3.23](#).

### **Adjustment of margins in borderless printing**

Check the test patterns, referring to [Chapter 5, Section 1.3.24](#).

### **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

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### <Operations>

- 2.1 Update the head property data (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)
- 2.6 Updating of paper feeding correction values (Maintenance mode 58)
- 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) 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.
- (4) Download utility (FILEDG32.EXE)  
Make a copy of the download utility in the temporary folder in the C drive.
- (5) 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."](#)
- (6) USB flash memory or SD card
- (7) Data files of print patterns

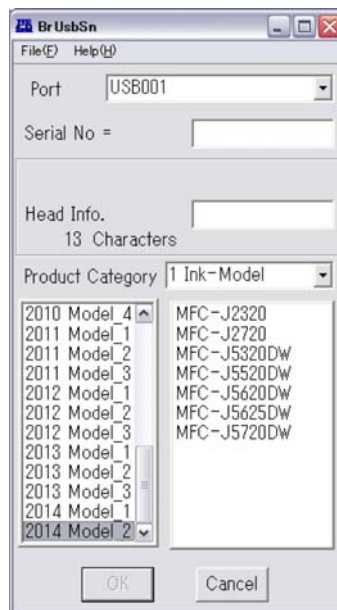
## 2.1 Update the head property data (Maintenance mode 68)

Update the head property data, referring to [Chapter 5, Section 1.3.25](#).

The head property data can also be updated with the service setting tool (BrUsbSn.exe).

The head property data 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) On the PC, run the service setting tool (BrUsbSn.exe) to display the following window.



- (4) In **Product Category**, select **1. Ink-Model**.
- (5) Select **2014 Model\_2**.
- (6) 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.
- (7) In the **Head Info.** box, type the 13-digit head property code. The head property info is printed on the bar code label attached to the head/carriage unit.
- (8) Click the **OK** key.

- (9) Wait for the confirmation screen of the serial number entered and the head property code to appear, then click **Yes**.



**Tip:** Opening the scanner cover when the machine is on standby and holding down the **X** key for at least 5 seconds moves the head/carriage unit to the center of its travel. This makes it possible to check the property label through the opening.

- (10) Use Maintenance mode 80 to display the head property data and check that the entered data is correct.

## 2.2 Perform ink supply purge (Maintenance mode 76)

- (1) Open the ink cartridge cover, set comparatively-new ink cartridges (having sufficient ink) into the ink refill ASSY, and close the ink cartridge cover.
- (2) Carry out a purge operation (with maintenance code 76) using the steps below.
  - 1) Press the **7** and **6** keys in this order.

The machine displays "CLEANING ALL" on the LCD and enters the purge mode.
  - 2) Press the **4** and **Mono** keys in this order to start an initial purge.

The machine starts an initial purge that refills the ink supply tubes and the print head with fresh ink.

## 2.3 Check head nozzles (Maintenance mode 09)

To check that the head/carriage unit normally sprays ink droplets from *all* head nozzles, print out a nozzle test pattern with Maintenance mode 09 with the following steps.

- (1) Press the **0** and **9** keys in this order.
- (2) If dot missing or any other print quality problem is found, use Maintenance mode 76 to perform an appropriate purge operation (refer to [Chapter 5, Section 1.3.29](#)).

## 2.4 Adjust head inclination

- (1) In Maintenance mode 65 (refer to [Chapter 5, Section 1.3.23](#)), print and correct the adjustment patterns.
- (2) Re-print the adjustment patterns. If the sum of the selected values for Pattern C and Pattern D is between 8 and 12 inclusive, then the correction steps have been completed. If the sum of the selected values is 7 or smaller, or 13 or larger, then adjust the inclination of the head/carriage unit.

### ■ Head inclination adjustment procedure

- 1) Switch the machine to the maintenance mode and press the **6, 3, Mono Start,** and **\*** keys in this order to move the head/carriage unit to the adjustment position.

- 2) If the sum of the selected values is 7 or smaller, turn the external ring to the positive 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 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.

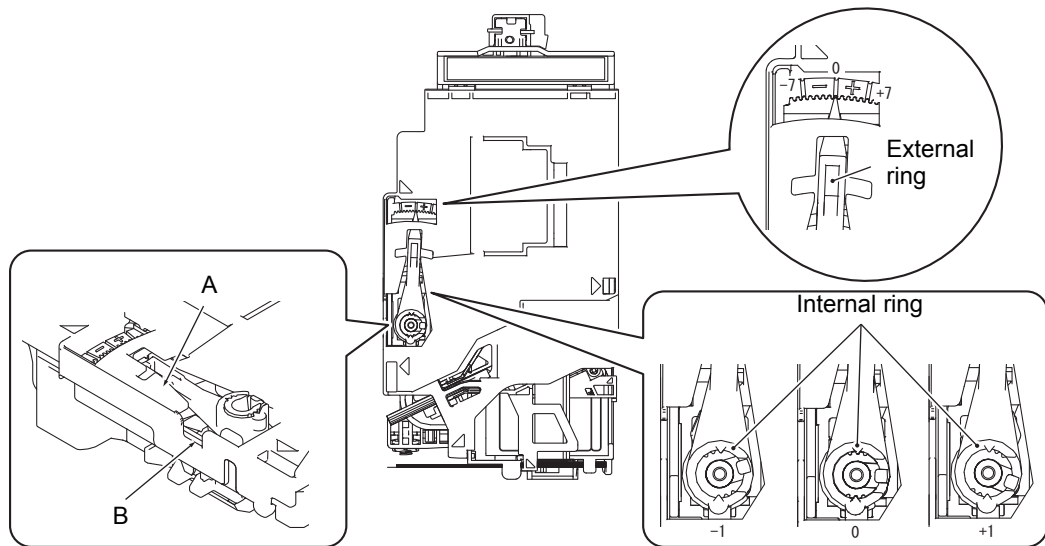


Fig. 4-1

#### ■ 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)

Refer to [Chapter 5, Section 1.3.23](#).

## 2.6 Updating of paper feeding correction values (Maintenance mode 58)

Refer to [Chapter 5, Section 1.3.19](#).

## 2.7 Adjustment of margins in borderless printing (Maintenance mode 66)

Refer to [Chapter 5, Section 1.3.24](#).

## 2.8 Write head calibration data (Maintenance mode 02)

Refer to [Chapter 5, Section 1.3.2](#).

## 2.9 Check printing

Under [Section 1.16](#) "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<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 or SD card
- (6) 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 1.3.20](#).

If "PLS UPDATE PROG" appears on the LCD, install the firmware using the procedure in [Section 1.3](#).

**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 1.3.17](#).

**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 [Section 1.16](#).



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## 4 IF YOU REPLACE THE CONTROL PANEL ASSY

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### <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 1.3.31](#).

#### **4.2 Check LCD operation (Maintenance mode 12)**

Check the LCD operation, referring to [Chapter 5, Section 1.3.7](#).

#### **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 1.3.8](#).

---

## 5 IF YOU REPLACE THE INK ABSORBER BOX OR FLUSHING BOX

---

### <Operations>

#### 5.1 Reset purge and flushing counts

### <Requirements>

None

#### 5.1 Reset purge and flushing counts

Reset purge and flushing counts, referring to [Section 1.14](#).

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## 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 ASSY
- CR timing belt
- Registration sensor PCB ASSY
- Carriage PCB ASSY
- Platen
- Flushing box
- Flushing base
- Maintenance unit

### <Operations>

- 6.1 Check head nozzles (Maintenance mode 09)
- 6.2 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65)
- 6.3 Updating of paper feeding correction values (Maintenance mode 58)
- 6.4 Adjustment of margins in borderless printing (Maintenance mode 66)
- 6.5 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 or SD card
- (6) Data files of print patterns

## **6.1 Check head nozzles (Maintenance mode 09)**

Check head nozzles, referring to [Section 2.3](#).

## **6.2 Adjustment of software correction for inclination/corrugation/ruled lines (Maintenance mode 65)**

Refer to [Chapter 5, Section 1.3.23](#).

## **6.3 Updating of paper feeding correction values (Maintenance mode 58)**

Refer to [Chapter 5, Section 1.3.19](#).

## **6.4 Adjustment of margins in borderless printing (Maintenance mode 66)**

Refer to [Chapter 5, Section 1.3.24](#).

## **6.5 Check printing**

Under [Section 1.16](#) "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.

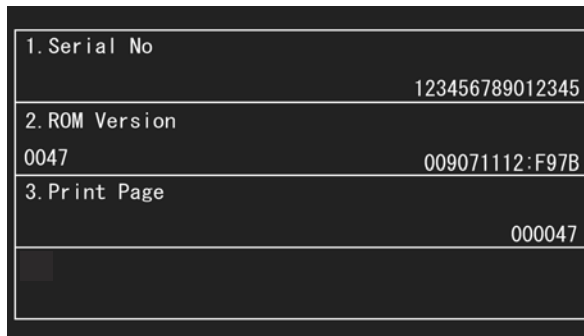
In the maintenance mode, you can perform operational checks of sensors, perform a print test, display the log information or error codes, and configure worker switches (WSW).

#### 1.1 Entry to the Maintenance Mode

##### 1.1.1 How to Enter the Maintenance Mode for Service Personnel

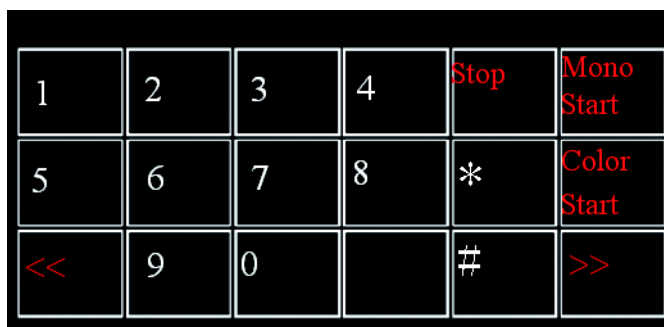
< Operating Procedure >

- (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) Hold down the blank area at the bottom of the LCD for approx. 2 seconds 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.



- (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, 17, 28, 37, 46, 52, 53, 54, 58, 65, 66, 75, 76, 77, 78, 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) Hold down the blank area at the bottom of the LCD for approx. 2 seconds 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)              |
| 05               | Printout of Scanning Compensation White/Black Level Data                       | 1.3.3 (5-11)             |
| 08               | ADF Performance Test   | 1.3.4 (5-14)             |
| 09               | Printout of Test Pattern   | 1.3.5 (5-14)             |
| 10               | Worker Switch (WSW) Setting  | 1.3.6 (5-16)             |
| 11               | Printout of Worker Switch (WSW) Data   | 1.3.6 (5-16)             |
| 12               | Operational Check of LCD   | 1.3.7 (5-19)             |
| 13               | Operational Check of Keys on Control Panel                                     | 1.3.8 (5-21)             |
| 17 *             | EEPROM Dump and Log Information Saving   | 1.3.9 (5-22)             |
| 28               | Updating of Firmware Using an External Memory                                  | 1.3.10 (5-23)            |
| 32               | Sensor Operational Check   | 1.3.11 (5-24)            |
| 37 *             | Printout of Dial Log   | 1.3.12 (5-26)            |
| 46               | Backup of Machine Information  | 1.3.13 (5-27)            |
| 52               | Setting of Country/Language  | 1.3.14 (5-29)            |
| 53               | Transfer of Received FAX Data and/or Equipment's Log                           | 1.3.15 (5-30)            |
| 54               | Fine Adjustment of Scanning Position   | 1.3.16 (5-32)            |
| 55               | Acquisition of White/Black Level Data and CIS Scanner Area Setting             | 1.3.17 (5-34)            |
| 57               | Cartridge IC Communication Check   | 1.3.18 (5-35)            |
| 58               | Updating of Paper Feeding Correction Values                                    | 1.3.19 (5-36)            |
| 59               | Checking of CIS Travel and Setting of CIS Type                                 | 1.3.20 (5-41)            |
| 61               | Print of PRN/JPEG Files in Memory Card   | 1.3.21 (5-43)            |
| 63               | Move of the Head/Carriage Unit to the Adjustment Position                      | 1.3.22 (5-44)            |
| 65               | Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines      | 1.3.23 (5-45)            |
| 66               | Adjustment of Margins in Borderless Printing                                   | 1.3.24 (5-47)            |
| 68               | Updating of Head Property Data and Backup/Restoration of Head Calibration Data | 1.3.25 (5-49)            |
| 69               | Traveling Speed Check of Head/Carriage Unit                                    | 1.3.26 (5-51)            |
| 74               | Customizing Destinations   | 1.3.27 (5-52)            |
| 75               | Move of the Head/Carriage Unit to the Flushing Position                        | 1.3.28 (5-55)            |
| 76               | Purge Operation  | 1.3.29 (5-56)            |
| 77               | Print of the Maintenance Information   | 1.3.30 (5-60)            |
| 78               | Adjustment of Touch Panel  | 1.3.31 (5-63)            |
| 80               | Display of the Equipment's Log   | 1.3.32 (5-64)            |
| 82               | Equipment Error Code Indication  | 1.3.33 (5-67)            |
| 87               | Output of Transmission Log to the Telephone Line                               | 1.3.34 (5-67)            |
| 88               | Assurance Mode Switch Setting (AMS)  | 1.3.35 (5-68)            |
| 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<br>Data item  | 01  | 91                                      |
|--|---|---|
| Maintenance-mode functions<br>User switches<br>Firmware switches<br>Remote activation code<br>Assurance mode switch settings                         | } All of these will be initialized.   | } These will be initialized.            |
| Activity report<br>Station ID data<br>Outside line number<br>Telephone function registration<br>Speed dialing<br>Group dialing<br>Call transfer data |   | } These will <u>not</u> be initialized. |
| EEPROM customizing code<br>(4-digit)   | This will <u>not</u> be initialized.<br>(Note that the first digit of the 4-digit code will be initialized to "0." If the code is <u>1</u> 001, for example, it will be initialized to <u>0</u> 001.) |   |

##### < 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 [page 5-9](#)) placed on the scanner 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.

### < Operating Procedure >

**Notes**• Before proceeding to the procedure given below, use [Section 1.3.5 "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 [Section 1.3.35 "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.

[Section 1.3.17 "Acquisition of White/Black Level Data and CIS Scanner Area Setting \(Maintenance mode 55\)"](#)

- 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

- (1) Save copies of "head\_calib1\_BHS15.prn" and "head\_calib2\_BHS15.prn" to a USB memory or SD card.
- (2) Use [Section 1.3.21 "Printout of PRN/JPEG Files in Memory Card \(Maintenance mode 61\)"](#) to print two file patterns (2 sheets).
- (3) Fold the printed patterns for creating head calibration data along the folding line. (See [page 5-9](#).)
- (4) Set the pattern printed with "1\_page" on the scanner glass of the document cover so that the ▲ mark fits on the left rear of the document cover.
- (5) 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.

- (6) 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 scanner glass.

- (7) If "No. 2 Sheet Set" appears on the LCD, remove the pattern printed with "1\_page" from the scanner glass and set the pattern printed with "2\_page."

(8) 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 scanner glass.

(9) 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.

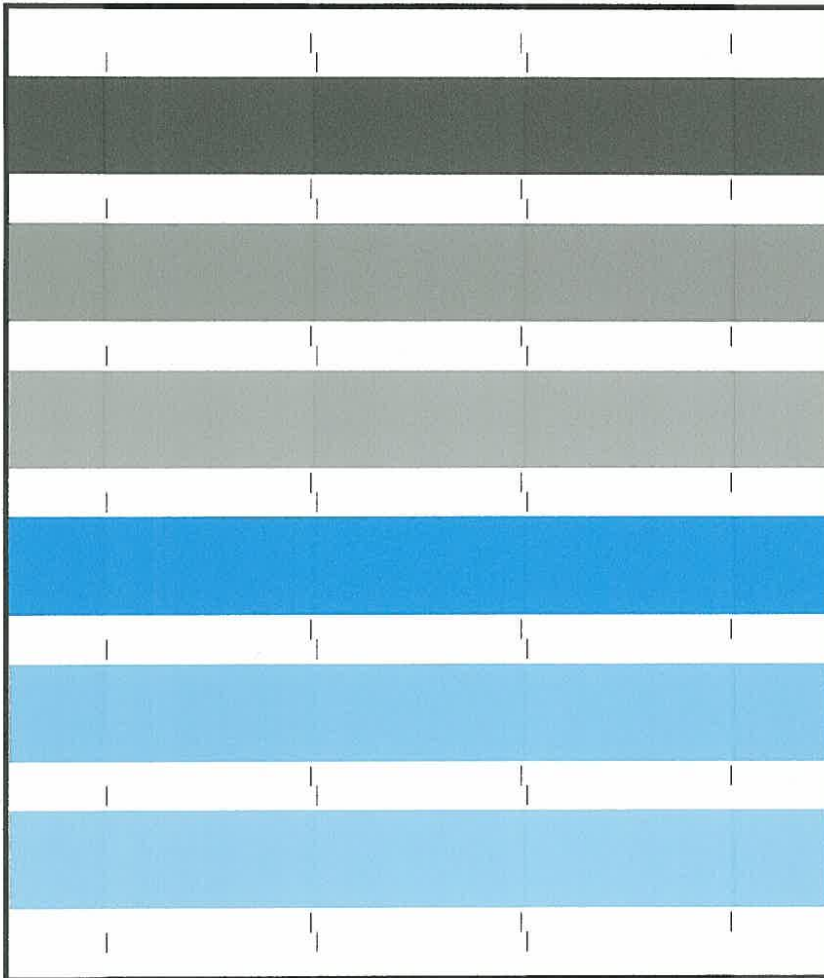
Upon completion of writing, the "Complete" appears. Press the **Stop** key to return to the initial stage of the maintenance mode.

**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 (4).

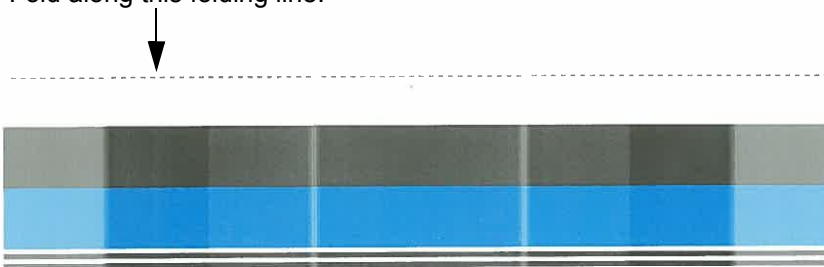
| Error code | The following error has occurred.   | Do the following:  |
|------------|---|--|
| 01         | Failed to detect the external frame.  | <ul style="list-style-type: none"> <li>• Clean the document cover glass.</li> <li>• Reset the print pattern so that the ▲ mark is aligned with the left 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 <a href="#">Section 1.3.35 "Assurance Mode Switch Setting (Maintenance mode 88)"</a> 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 ASSY.</li> </ul>   |

| Error code | The following error has occurred.                                     | Do the following:  |
|------------|---|--|
| 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 sensor.</li> <li>• Replace the document scanner if the boss that presses the document scanner sensor is broken.</li> <li>• Replace the main PCB ASSY.</li> </ul> |
| 09         | Scanning errors other than the above.                                 | <ul style="list-style-type: none"> <li>• Use <a href="#">Section 1.3.17 "Acquisition of White/Black Level Data and CIS Scanner Area Setting (Maintenance mode 55)"</a> 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>   |

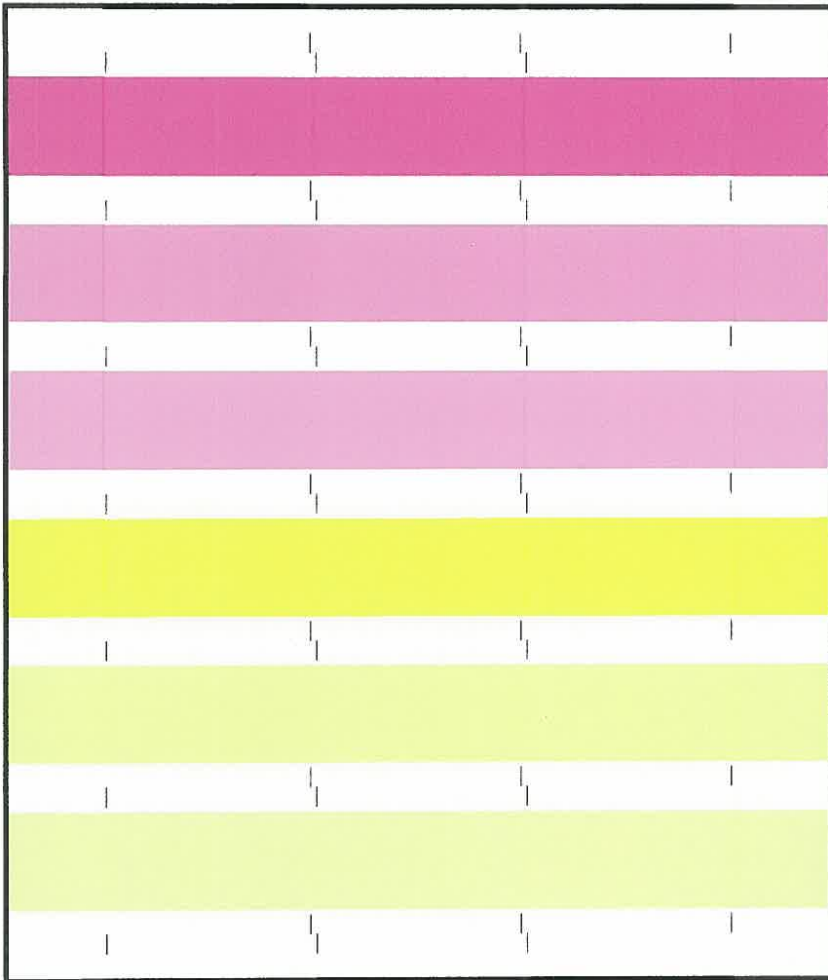
Fit this mark  
on the left rear of  
the document cover.



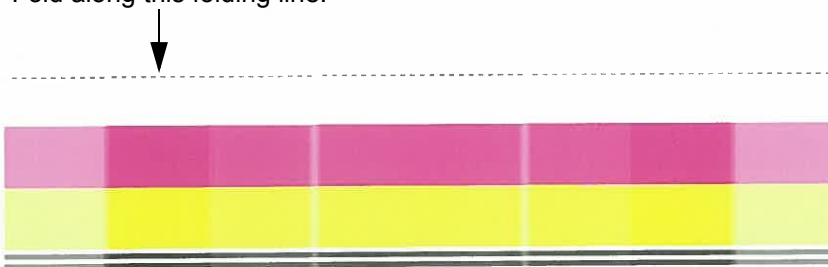
Fold along this folding line.



**Print Pattern for Creating Head Calibration Data**



Fold along this folding line.



Fit this mark  
on the left rear of  
the document cover.



**Print Pattern for Creating Head Calibration Data**

### 1.3.3 Printout of Scanning Compensation White/Black Level Data (Maintenance mode 05)

#### < Function >

This function prints out the light and dark level data for scanning compensation.

#### < Operating Procedure >

**Note** Perform this procedure after carrying out document scanning operation at least once, not immediately after powering on the machine. Do not start this procedure without carrying out document scanning operation. This is because at the start of scanning operation, the machine initializes light and dark level data and takes in the scanning compensation reference data.

The print result differs depending upon whether color or monochrome scanning is performed preceding this procedure. Check the light and dark level data to be output before performing this procedure.

#### Simplex scanning models

(1) For monochrome scanning, make a monochrome copy; for color scanning, make a color copy.

(2) Press the **0** and **5** keys in this order in the initial stage of the maintenance mode.

The "DUMP 0:GRA 1:ALL" appears on the LCD.

(3) To print only the light and dark data graph for each color, LED data, AFE parameters and background color compensation data, press the **0** key. To print all data, press the **1** key.

If no error has occurred in the machine, the machine displays "PRINTING" on the LCD and starts printing.

If any error has occurred in the machine, "ME STATE STOP" appears on the LCD.

The machine displays "PRINTING" on the LCD and starts printing.

**Note** If no recording paper is loaded in the paper tray, printing will be canceled.

(4) Upon completion of printing, the machine returns to the initial stage of the maintenance mode.

#### Duplex scanning models

(1) For monochrome scanning, make a monochrome copy; for color scanning, make a color copy.

(2) Press the **0** and **5** keys in this order in the initial stage of the maintenance mode.

The "CIS 0:FB 1:ADF" appears on the LCD.

(3) To print data scanned by the first side scanning CIS, press the **0** key; to print data scanned by the second side scanning CIS, press the **1** key.

The "DUMP 0:GRA 1:ALL" appears on the LCD.

(4) To print only the light and dark data graph for each color, LED data, AFE parameters and background color compensation data, press the **0** key. To print all data, press the **1** key.

If no error has occurred in the machine, the machine displays "PRINTING" on the LCD and starts printing.

If any error has occurred in the machine, "ME STATE STOP" appears on the LCD.

The machine displays "PRINTING" on the LCD and starts printing.

**Note** If no recording paper is loaded in the paper tray, printing will be canceled.

(5) Upon completion of printing, the machine returns to the initial stage of the maintenance mode.

■ Output data (common to monochrome and color)

a) Light and dark data graph<sup>\*1</sup>

(If monochrome scanning is performed preceding execution of maintenance 05, only G data is valid and RB data is indefinite.)

b) LED light intensity PWM data for color image (1 byte)

c) LED light intensity PWM data for monochrome image (1 byte)

d) LED light intensity pulse data for green image (2 bytes)

e) LED light intensity pulse data for blue image (2 bytes)

f) LED light intensity pulse data for red image (2 bytes)

g) LED light intensity pulse data for monochrome image (2 bytes)

h) RLCV (AFE parameter) (1 byte)

i) OFFSET (AFE parameter) (1 byte)

j) GAIN (AFE parameter) (1 byte)

k) Background color compensation data (SCAN1) (1 byte)

l) Background color compensation data (SCAN2) (1 byte) (Duplex scanning models only)

m) Background color compensation data (PRC1) (1 byte) (Duplex scanning models only)

n) Background color compensation data (PRC2) (1 byte) (Duplex scanning models only)

o) Black level data

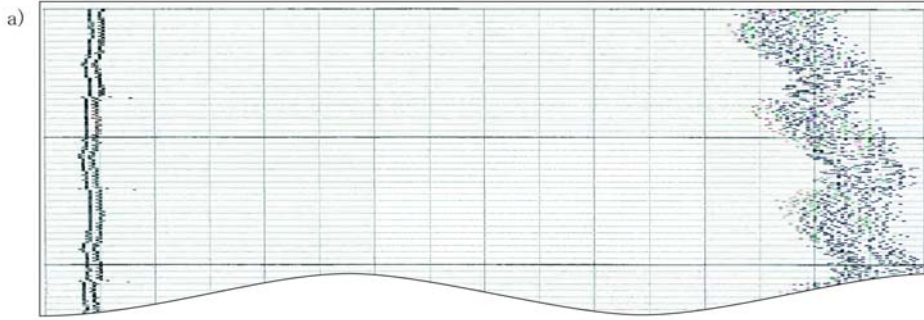
p) White level data for red image

q) White level data for green image

r) White level data for blue image

<sup>\*1</sup> For the CIS whose resolution is 2400 dpi, the machine prints out three sheets of light and dark data graph and for others, two sheets.





- b) 42c8399c : 05
- c) 42c8399d : 00
- d) 42c83992 : 02c4
- e) 42c83994 : 01f4
- f) 42c83996 : 0314
- g) 42c83986 : 0f
- h) 42c83987 : c9
- i) 42c83988 : b0
- j) 42c839a2 : ff
- k) 42c83990 : 0f
- l) 42c83986 : 0f
- m) 42c83987 : c9
- n)

o) ~ r)

```

47ceb400 : 0d 11 0d 11 0d 11 0d 10 0d 10 0d 10 0d 10 0d 10
47ceb420 : 0d 10 0d 10 0d 11 0d 10 0d 11 0d 11 0d 11 0d 10
47ceb440 : 0d 11 0e 11 0e 11 0d 10 0e 11 0d 11 0d 11 0e 10
47ceb460 : 0e 11 0e 11 0e 11 0e 10 0e 11 0d 11 0e 11 0e 10
47ceb480 : 0e 11 0e 11 0e 11 0d 10 0d 11 0d 10 0d 10 0d 11
47ceb4a0 : 0d 11 0d 10 0d 11 0d 10 0d 10 0d 10 0d 10 0d 10
47ceb4c0 : 0d 11 0d 10 0d 11 0d 0f 0d 10 0d 10 0d 10 0d 10
47ceb4e0 : 0d 10 0d 10 0c 10 0c 0f 0c 0f 0c 0f 0c 0f 0c 0f
47ceb500 : 0c 0f 0b 0e 0b 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0f
47ceb520 : 0c 0f 0c 0f 0c 10 0c 0f 0c 10 0c 10 0c 10 0c 0f
47ceb540 : 0c 10 0d 10 0d 10 0d 10 0d 10 0d 10 0d 10 0d 10
47ceb560 : 0d 10 0d 11 0d 10 0d 10 0d 11 0d 11 0d 11 0d 10
47ceb580 : 0d 11 0d 10 0d 11 0d 10 0d 11 0d 10 0d 10 0d 10
47ceb5a0 : 19 0f 0c 0f 0c 10 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb5c0 : 0c 0f 0c 0f 0c 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb5e0 : 0c 0f 0c 10 0c 10 0c 0f 0c 0f 0c 0f 0c 10 0c 0f
47ceb600 : 0c 10 0c 0f 0c 0f 0c 0f 0c 10 0c 0f 0c 10 0c 0f
47ceb620 : 0c 0f 0c 10 0c 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb640 : 0c 0f 0b 0e 0b 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb660 : 0c 0f 0c 0f 0b 0f 0c 0e 0c 0f 0b 0f 0b 0e 0b 0d
47ceb680 : 0b 0e 0b 0e 0a 0e 0a 0d 0b 0e 0a 0d 0a 0d 0b 0d
47ceb6a0 : 0b 0e 0b 0e 0b 0e 0b 0d 0b 0e 0b 0e 0b 0e 0b 0d
47ceb6c0 : 0b 0e 0b 0e 0b 0e 0b 0d 0b 0f 0b 0f 0c 0f 0c 0e
47ceb6e0 : 0b 0e 0b 0e 0b 0f 0b 0d 0b 0f 0b 0f 0c 0f 0c 0e
47ceb700 : 0c 0f 0c 0f 0b 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb720 : 0b 0f 0c 0f 0c 0f 0c 0e 0c 0f 0c 0f 0c 0f 0c 0e
47ceb740 : 0c 10 0c 0f 0c 12 0a 0c 1a 10 0d 10 0d 10 0d 0f
47ceb760 : 0d 10 0d 10 0d 10 0d 0f 0d 10 0d 10 0d 10 0d 0f
47ceb780 : 0d 10 0d 10 0d 10 0d 0f 0d 10 0d 10 0d 10 0d 0f
47ceb7a0 : 0d 10 0d 10 0d 10 0d 0f 0d 10 0d 11 0d 11 0d 10
47ceb7c0 : 0d 10 0d 10 0d 11 0d 10 0d 10 0d 10 0d 10 0d 10
47ceb7e0 : 0d 10 0d 10 0d 10 0d 10 0d 10 0d 10 0d 10 0d 10
47ceb800 : 0d 10 0d 10 0d 10 0c 0f 0b 0e 0b 0f 0b 0e 0b 0f
47ceb820 : 0d 10 0c 10 0c 0f 0b 0e 0b 0f 0b 0e 0b 0f 0b 0e
47ceb840 : 0d 10 0c 10 0c 0f 0b 0e 0b 0f 0b 0e 0b 0f 0b 0e
47ceb860 : 0b 0e 0b 0e 0a 0e 0b 0e 0b 0f 0b 0f 0c 0f 0c 0e

```

Scanning Compensation Data List

### 1.3.4 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 "ADF. 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.

### 1.3.5 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 [Section 1.3.29 "Purge Operation \(Maintenance mode 76\)"](#) to perform head cleaning.

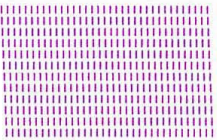
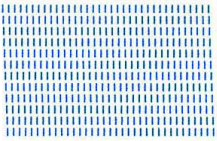
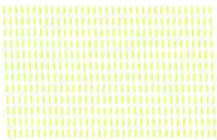
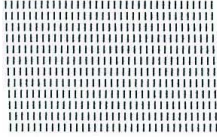
#### < Operating Procedure >

- (1) Press the **0** and **9** keys in this order in the initial stage of the maintenance mode.

The machine displays "PRINTING" on the LCD and prints out a test pattern.

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.



S/N: U63769B4F000146

Test Pattern

**1.3.6 Worker Switch Setting and Printout** (Maintenance modes 10 and 11)

**[ 1 ] Worker switch setting** (Maintenance mode 10)

**< Function >**

The worker switch functions (listed below) 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.

**List of Worker Switches**

| WSW No. | Function  |
|---------|---|
| WSW01   | Dial pulse setting  |
| WSW02   | Tone signal setting   |
| WSW03   | PABX mode setting   |
| WSW04   | TRANSFER facility setting                                   |
| WSW05   | 1st dial tone and busy tone detection                       |
| WSW06   | <b>Redial/Pause</b> key setting and 2nd dial tone detection |
| WSW07   | Dial tone setting 1   |
| WSW08   | Dial tone setting 2   |
| WSW09   | Protocol definition 1                                       |
| WSW10   | Protocol definition 2                                       |
| WSW11   | Busy tone setting   |
| WSW12   | Signal detection condition setting                          |
| WSW13   | Modem setting   |
| WSW14   | AUTO ANS facility setting                                   |
| WSW15   | REDIAL facility setting                                     |
| WSW16   | Function setting 1  |
| WSW17   | Function setting 2  |
| WSW18   | Function setting 3  |
| WSW19   | Transmission speed setting                                  |
| WSW20   | Overseas communications mode setting                        |
| WSW21   | TAD setting 1   |
| WSW22   | ECM and call waiting caller ID                              |
| WSW23   | Communications setting                                      |
| WSW24   | TAD setting 2   |
| WSW25   | TAD setting 3   |
| WSW26   | Function setting 4  |
| WSW27   | Function setting 5  |
| WSW28   | Function setting 6  |
| WSW29   | Function setting 7  |
| WSW30   | Function setting 8  |
| WSW31   | Function setting 9  |
| WSW32   | Function setting 10   |
| WSW33   | Function setting 11   |
| WSW34   | Function setting 12   |
| WSW35   | Function setting 13   |
| WSW36   | Function setting 14   |
| WSW37   | Function setting 15   |
| WSW38   | V.34 transmission setting                                   |
| WSW39   | V.34 transmission speed                                     |

| WSW No. | Function   |
|---------|--|
| WSW40   | V.34 modem settings  |
| WSW41   | ON-duration of the scanning light source                           |
| WSW42   | Internet mail settings   |
| WSW43   | Function setting 16  |
| WSW44   | Speeding up scanning-1   |
| WSW45   | Speeding up scanning-2   |
| WSW46   | Monitor of power ON/OFF state and parallel port kept at high       |
| WSW47   | Switching between high- and full-speed USB                         |
| WSW48   | USB setup latency  |
| WSW49   | End-of-copying beep  |
| WSW50   | SDAA settings  |
| WSW51   | Function setting 17  |
| WSW52   | Function setting 18  |
| WSW53   | Function setting 19  |
| WSW54   | Function setting 20  |
| WSW55   | Execution interval switching of developing bias voltage correction |
| WSW56   | Function setting 21  |
| WSW57   | Function setting 22  |
| WSW58   | Function setting 23  |
| WSW59   | Function setting 24  |
| WSW60   | Function setting 25  |
| WSW61   | Scanning light intensity stability judgement 1                     |
| WSW62   | Scanning light intensity stability judgement 2                     |
| WSW63   | Function setting 26  |

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

```

- (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) 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 firmware 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.

CONFIGURATION LIST

MODEL : 8CA-U17-001  
 TIME : 13/04/2012 10:31  
 REV. : U1284090950VER.U  
 PCI : 5.8B  
 SUM : BCFA  
 SER.# : U63310234567890

|  |  |  |  |
|--|--|--|--|
| WSW49<br>1-2.<br>3.<br>4-5.<br>6-7.<br>7-8.<br>WSW50<br>1-2.<br>3.<br>4-5.<br>6-7.<br>7-8.<br>WSW51<br>1.<br>2.<br>3-4.<br>5-6.<br>7-8.<br>WSW52<br>1-6.<br>7.<br>8.<br>WSW53<br>1-2.<br>3-4.<br>5-6.<br>7-8.<br>WSW54<br>1-2.<br>3.<br>4.<br>5-6.<br>7-8.<br>WSW55<br>1-8.<br>9.<br>10-15.<br>16.<br>17-8.<br>19.<br>20.<br>WSW56<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW57<br>1-2.<br>3-6.<br>7.<br>8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW58<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW59<br>1.<br>2-7.<br>3-7.<br>4-8.<br>5-8.<br>6-8.<br>7-8.<br>8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW60<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW61 = 00000000<br>1-8. NOT USED<br>WSW62 = 00000000<br>1-8. NOT USED | WSW37<br>1.<br>2.<br>3-8.<br>WSW38<br>1-2.<br>3.<br>4-5.<br>6-7.<br>8.<br>WSW39<br>1-4.<br>5-8.<br>WSW40<br>1-2.<br>3.<br>4-5.<br>6-7.<br>8.<br>WSW41<br>1-3.<br>4-5.<br>6-8.<br>WSW42<br>1-9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW43<br>1-3.<br>4-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW44<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW45<br>1-3.<br>4-6.<br>7.<br>8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW46<br>1-2.<br>3.<br>4-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW47<br>1-7.<br>8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW48 = 0000110<br>1-2. NOT USED<br>3-5. ENTRY NUMBER OF NETWORK PC SCANNER : AUTO<br>6-8. NOT USED<br>WSW49<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW50<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW51<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW52<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW53<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW54<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW55<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW56<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW57<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW58<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW59<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW60<br>1-5.<br>6-8.<br>9.<br>10-15.<br>16-7.<br>18.<br>19-7.<br>20.<br>WSW61 = 00000000<br>1-8. NOT USED<br>WSW62 = 00000000<br>1-8. NOT USED | WSW12<br>1-2.<br>3-4.<br>5-8.<br>WSW13<br>1-2.<br>3-4.<br>5-8.<br>WSW14<br>1-2.<br>3-4.<br>5-8.<br>WSW15<br>1-2.<br>3-4.<br>5-8.<br>WSW16<br>1-2.<br>3-4.<br>5-8.<br>WSW17<br>1-2.<br>3-4.<br>5-8.<br>WSW18<br>1-2.<br>3-4.<br>5-8.<br>WSW19<br>1-2.<br>3-4.<br>5-8.<br>WSW20<br>1-2.<br>3-4.<br>5-8.<br>WSW21<br>1-2.<br>3-4.<br>5-8.<br>WSW22<br>1-2.<br>3-4.<br>5-8.<br>WSW23 = 00001111<br>1-2.<br>3-4.<br>5-8.<br>WSW24<br>1-2.<br>3-4.<br>5-8.<br>WSW25<br>1-2.<br>3-4.<br>5-8.<br>WSW26<br>1-2.<br>3-4.<br>5-8.<br>WSW27<br>1-2.<br>3-4.<br>5-8.<br>WSW28<br>1-2.<br>3-4.<br>5-8.<br>WSW29<br>1-2.<br>3-4.<br>5-8.<br>WSW30<br>1-2.<br>3-4.<br>5-8.<br>WSW31<br>1-2.<br>3-4.<br>5-8.<br>WSW32<br>1-2.<br>3-4.<br>5-8.<br>WSW33<br>1-2.<br>3-4.<br>5-8.<br>WSW34<br>1-2.<br>3-4.<br>5-8.<br>WSW35<br>1-2.<br>3-4.<br>5-8.<br>WSW36<br>1-2.<br>3-4.<br>5-8.<br>WSW37<br>1-2.<br>3-4.<br>5-8.<br>WSW38<br>1-2.<br>3-4.<br>5-8.<br>WSW39<br>1-2.<br>3-4.<br>5-8.<br>WSW40<br>1-2.<br>3-4.<br>5-8.<br>WSW41<br>1-2.<br>3-4.<br>5-8.<br>WSW42<br>1-2.<br>3-4.<br>5-8.<br>WSW43<br>1-2.<br>3-4.<br>5-8.<br>WSW44<br>1-2.<br>3-4.<br>5-8.<br>WSW45<br>1-2.<br>3-4.<br>5-8.<br>WSW46<br>1-2.<br>3-4.<br>5-8.<br>WSW47<br>1-2.<br>3-4.<br>5-8.<br>WSW48 = 0000110<br>1-2. NOT USED<br>3-5. ENTRY NUMBER OF NETWORK PC SCANNER : AUTO<br>6-8. NOT USED<br>WSW49<br>1-2.<br>3-4.<br>5-8.<br>WSW50<br>1-2.<br>3-4.<br>5-8.<br>WSW51<br>1-2.<br>3-4.<br>5-8.<br>WSW52<br>1-2.<br>3-4.<br>5-8.<br>WSW53<br>1-2.<br>3-4.<br>5-8.<br>WSW54<br>1-2.<br>3-4.<br>5-8.<br>WSW55<br>1-2.<br>3-4.<br>5-8.<br>WSW56<br>1-2.<br>3-4.<br>5-8.<br>WSW57<br>1-2.<br>3-4.<br>5-8.<br>WSW58<br>1-2.<br>3-4.<br>5-8.<br>WSW59<br>1-2.<br>3-4.<br>5-8.<br>WSW60<br>1-2.<br>3-4.<br>5-8.<br>WSW61 = 00000000<br>1-8. NOT USED<br>WSW62 = 00000000<br>1-8. NOT USED | WSW01 = 00010000<br>1-2. DIAL FORMAT : NORMAL<br>3-4. BREAK TIME : 67 MS<br>5-6. INTERDIGIT PAUSE : 800 MS<br>7-8. DP/PB CHANGE IN USER SW : YES<br>9. DP/PB FIXING SELECTION : PB<br>WSW02 = 01011100<br>1-2. ON TIME : 80 MS<br>3-4. OFF TIME : 80 MS<br>5-8. LINE BEEP ATTENUATOR : 12 DB<br>WSW03 = 10110000<br>1. PARA. CNG DETECTION1 : B<br>4-4. PRX DT DETECTION TIME : 800 MS<br>PARA. CNG DETECTION2 : A<br>6-7. DT DETECTION OF PRX : 3.5 SEC WAITING<br>8. NOT USED<br>WSW04 = 10010001<br>1-4. NOT USED<br>5. ADDITIONAL DELAY OF CML ON-OGM : 0 SEC<br>6-8. FLASHING TIME : 100 MS<br>WSW05 = 00001110<br>1-3. DIAL TONE DETECTION : 3.5 SEC WAITING<br>4. REMOTE ID DETECTION TIMEOUT : 2 SEC<br>7-5. BUSY TONE DETECTION (CALLING) : AFTER DIALING<br>7-5. BUSY TONE DETECTION (CALLED) : OFF<br>8. NOT USED<br>WSW06 = 00101100<br>1-3. PAUSE KEY : 3.5 SEC WAITING<br>4. 2ND DT DETECTION TIME : 800 MS<br>7. 2ND DT DETECTION CYCLE : 1 CYCLE<br>8. 2ND DT INTERRUPT DETECTION TIME : 30 MS<br>WSW07 = 01010000<br>1. NOT USED : INITIAL DATA<br>3-2. FREQUENCY RANGE : -39 DBM<br>4-5. 2ND DT DETECTION LEVEL : 38 MS<br>7. 1ST DT INTERRUPT DETECTION TIME : 38 MS<br>8. NOT USED<br>WSW08 = 01100111<br>1-3. 1ST DT DETECTION TIME : 800 MS<br>4-5. 1ST/2ND DT TIME OUT : 18 SEC<br>6-8. 1ST DT DETECTION LEVEL : -42 DBM<br>WSW09 = 00000000<br>1. EOM FRAME : 256 OCTET<br>NON STANDARD FACILITIES : ON<br>3-4. TIMES OF FALL BACK : 4<br>T5 TIMER : 300 SEC<br>T1 TIMER : 35 SEC<br>7-8. CALLING TIMEOUT : 60 SEC<br>WSW10 = 00010100<br>1. NOT USED<br>2. TIMING OF LAST DIGIT-MODEM CHANGE : 100 MS<br>3. TIMING OF CML ON CNG TRANSMISSION : 2 SEC<br>4. TIMING OF CML ON CED TRANSMISSION : 2 SEC<br>5-5. TRAINING RETRIES : 2<br>6. CODING METHOD MR : ON<br>7. CODING METHOD MMR : ON<br>WSW11 = 01100000<br>1-2. FREQUENCY RANGE : INITIAL DATA<br>3-8. ON/OFF TIME : 250 - 750 / 250 - 750 MS<br>WSW12<br>1. EOM RX : ON<br>CALL WAITING CALLER ID : OFF<br>4-8. NOT USED<br>WSW23 = 00001111<br>1. FIX TOP CHECK : TOP<br>2-3. TCF ERROR LIMIT : 0%<br>4-5. RTN CRITERION : 14%<br>6-7. NOT USED<br>8. ATTENUATOR LIMIT : NO<br>MOVING TO PHASE-C BY RTC : YES<br>IGNORE CI COUNT : OFF<br>WSW48 = 0000110<br>1-2. NOT USED<br>3-5. ENTRY NUMBER OF NETWORK PC SCANNER : AUTO<br>6-8. NOT USED<br>CNG DETECTION POLARITY ACT REPORT : OFF<br>ENABLE REVERSE POLARITY INT DELAY TIME : 500 MSEC<br>WSW61 = 00000000<br>1-8. NOT USED<br>WSW62 = 00000000<br>1-8. NOT USED |
|--|--|--|--|

Configuration List

### 1.3.7 Operational Check of LCD (Maintenance mode 12)

#### < Function >

This function checks whether the LCD on the control panel works normally.

#### < Operating Procedure >








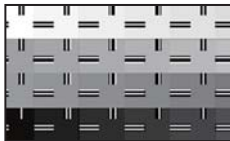




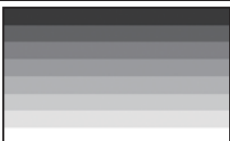
- (1) Press the **1** and **2** keys in this order in the initial stage of the maintenance mode.
- (2) Each time you press the **Home** key, the LCD cycles through the screens as shown below.

Pressing the **Back** key goes back to the immediately preceding screen.


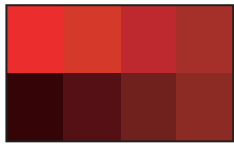

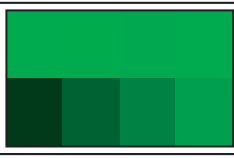

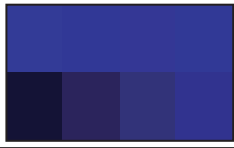

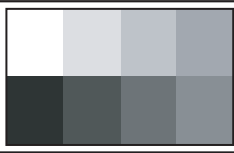



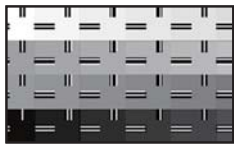
When Screen 13 displays, pressing the **Home** key switches to Screen 1.

- (3) Press the **X** key in any process of the screen cycle to return the machine to the initial stage of the maintenance mode.

#### ■ 3.7 inch LCD model

|                                     |   |                                      |   |
|-------------------------------------|---|--------------------------------------|---|
| <u>Screen 1</u><br>Completely blank |    | <u>Screen 8</u><br>Red stepwise      |    |
| <u>Screen 2</u><br>All black        |  | <u>Screen 9</u><br>Green stepwise    |  |
| <u>Screen 3</u><br>All gray         |  | <u>Screen 10</u><br>Blue stepwise    |  |
| <u>Screen 4</u><br>All red          |  | <u>Screen 11</u><br>Stroke detection |  |
| <u>Screen 5</u><br>All green        |  | <u>Screen 12</u><br>All gray         |  |
| <u>Screen 6</u><br>All blue         |  | <u>Screen 13</u><br>Image data       |  |
| <u>Screen 7</u><br>White stepwise   |  |                                      |   |

■ 2.7 inch LCD model

|   |   |  |   |
|---|---|--|---|
| <p><u>Screen 1</u><br/>Completely blank</p> |    | <p><u>Screen 7</u><br/>Red stepwise</p>      |    |
| <p><u>Screen 2</u><br/>All black</p>        |    | <p><u>Screen 8</u><br/>Green stepwise</p>    |    |
| <p><u>Screen 3</u><br/>All red</p>          |    | <p><u>Screen 9</u><br/>Blue stepwise</p>     |    |
| <p><u>Screen 4</u><br/>All green</p>        |    | <p><u>Screen 10</u><br/>Gray stepwise</p>    |    |
| <p><u>Screen 5</u><br/>All blue</p>         |   | <p><u>Screen 11</u><br/>Image data</p>       |   |
| <p><u>Screen 6</u><br/>All gray</p>         |  | <p><u>Screen 12</u><br/>Stroke detection</p> |  |



### 1.3.8 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.

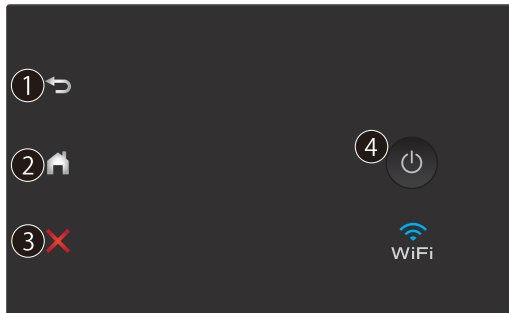
- (2) Press the keys on the control panel in the order designated in the illustration shown below.

Each time a key is pressed, the LCD shows the corresponding number in decimal notation. 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 the keys blink. Then, press any key to 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.



### 1.3.9 EEPROM Dump and Log Information Saving (Maintenance mode 17)

#### < Function >

The EEPROM dump function transfers the EEPROM settings made in the machine to another machine as fax data.

The log information transfer function outputs user's log information (e.g., panel operation) and machine's operation log information to a USB flash memory to save it as a CSV file.

#### < Operating Procedure >

##### EEPROM dumping

- (1) Let the end user make a call to the destination machine to which he/she should transfer the EEPROM settings as fax data.
- (2) If the line is connected, instruct the end user to:
  - 1) Switch his/her machine to the end user-accessible maintenance mode.
  - 2) Press the **1** and **7** keys in this order.
  - 3) Press the **1** key.

The machine starts transferring the EEPROM settings to the destination machine as fax data.

##### Log information saving

Instruct the end user to:

- (1) Switch his/her machine to the end user-accessible maintenance mode.
- (2) Press the **1** and **7** keys in this order.
- (3) Insert a USB flash memory to his/her machine and press the **1** key.

The machine saves the log information in the USB flash memory as a CSV file.

### 1.3.10 Updating of Firmware Using an External Memory (Maintenance mode 28)

#### < Function >

This function updates firmware stored in the flash ROM on the main PCB using an external memory (memory card or 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](#).

#### < Operating Procedure >

- (1) Switch your PC ON and insert an external memory.
- (2) Create a folder named "BROTHER" in the top layer of the external memory's directory and copy the firmware file having the extension ".pjl" into that folder.

**Note:** Before copying, check that the firmware file name having the extension ".pjl" matches your machine. The number of files having the extension ".pjl" 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 external memory from the PC and insert it into the machine in the initial stage of the maintenance mode.

**Note:** Do not insert more than one external memory at a time.

- (4) On the machine, press the **2** and **8** keys in this order.

The file name "\*\*\*\*\*.PJL" appears on the LCD.

- (5) Press the **▲** or **▼** key to select the target firmware file.

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

"Receiving Data" appears on the LCD, and after a while, it changes to "Program Updating."

**Note:** Never remove the external 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 external memory from the machine and store it in a safe place.

**Note 1:** 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 external memory is being used by another operation. |
| Insert Card   | No external memory is inserted.                         |
| No file       | Invalid file name or no "BROTHER" folder exists.        |
| Card Error    | External memory defective                               |

**Note 2:** After the completion of firmware updating, a file named "mfu-send.log" (which stores the execution log) is created in the layer right below the "BROTHER" folder.

### 1.3.11 Sensor Operational Check (Maintenance mode 32)

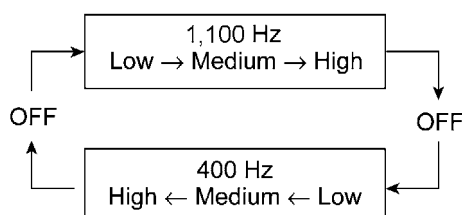
#### < Function >

This function checks whether sensors work normally.

#### < Operating Procedure >

- (1) 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.

If the sensing statuses are as defined below, the LCD shows the 1st sensor group "DFDRCVRS CCP1\*\*AC."

- (2) 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               | Document detection sensor                    | No document/Document present                    |
| DR               | First side 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                       |
| P1               | Purge cam sensor                             | Origin/Out of origin                            |
| AC <sup>*1</sup> | ADF cover sensor                             | Cover closed/Cover opened                       |
| IK               | Black ink cartridge detection sensor         | Cartridge present/No cartridge                  |
| IY               | Yellow ink cartridge detection sensor        | Cartridge present/No cartridge                  |
| IC               | Cyan ink cartridge detection sensor          | Cartridge present/No cartridge                  |
| IM               | Magenta ink cartridge detection sensor       | Cartridge present/No cartridge                  |
| EK               | Black ink remaining sensor                   | Ink present/No ink                              |
| EY               | Yellow ink remaining sensor                  | Ink present/No ink                              |
| EC               | Cyan ink remaining sensor                    | Ink present/No ink                              |
| EM               | Magenta ink remaining sensor                 | Ink present/No ink                              |
| LT <sup>*2</sup> | Paper tray 2 detection sensor                | Paper tray 2 present/No paper tray 2            |
| MP <sup>*3</sup> | MP paper detection sensor                    | No recording paper/Recording paper present      |
| PP               | Switchback sensor                            | No recording paper/Recording paper present      |

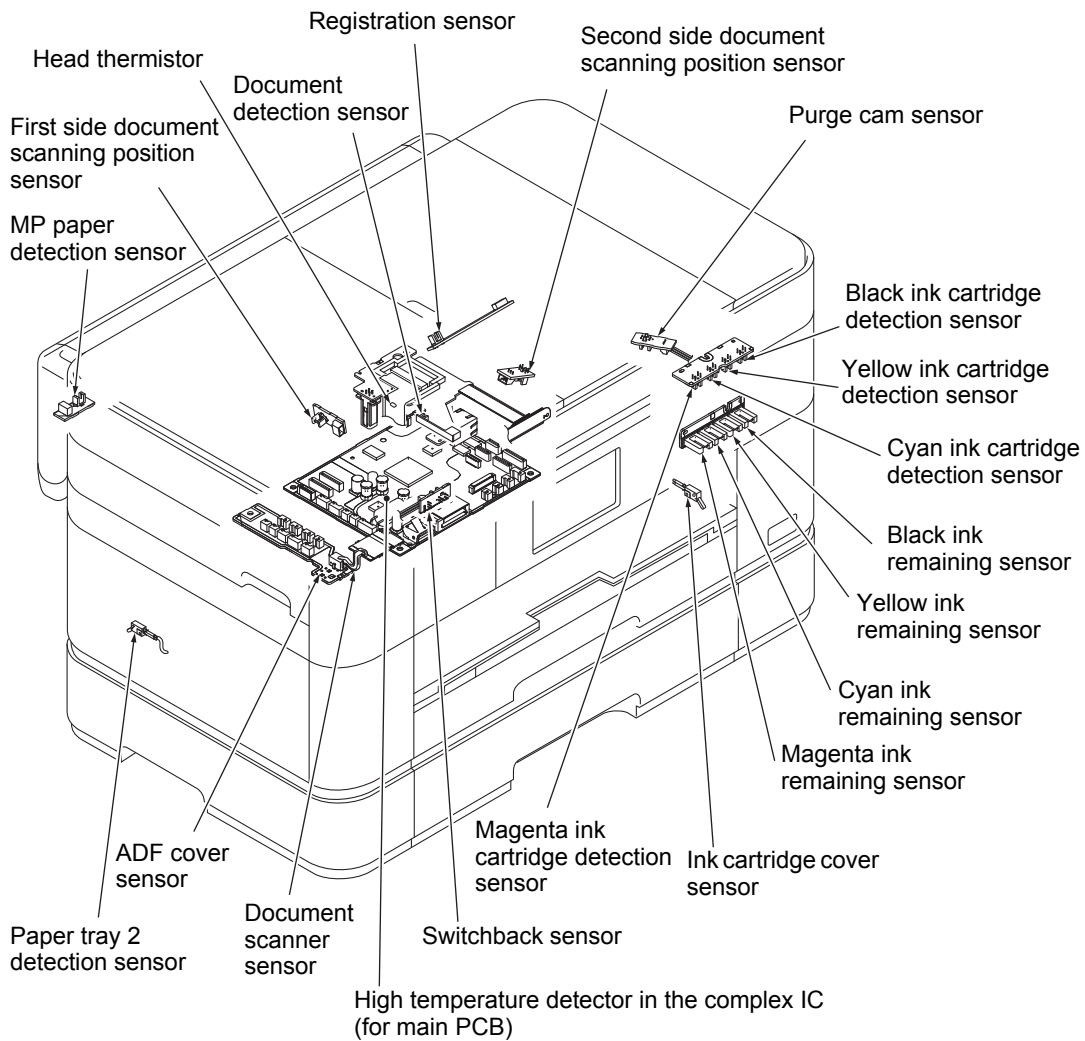
| LCD   | Sensors  | Sensing status (display/no display)     |
|-------|--|---|
| RB *1 | Second side document scanning position sensor              | No document/Document present            |
| VT    | Head thermistor  | Normal temperature/Abnormal temperature |
| T1    | High temperature detector in the complex IC (for main PCB) | Normal temperature/Abnormal temperature |

\*1 Duplex scanning models only

\*2 Paper tray 2 models only

\*3 MP tray models only

- (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.



**Locations of Sensors**

**Fig. 5-1**

### **1.3.12 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.

### 1.3.13 Backup of Machine Information (Maintenance mode 46)

#### < Function >

This procedure backs up the machine information and user setting information into an external memory (memory card or 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

**Note:** The user can use the backup and restoration (given on the next page) procedures, except "Import all" in the restoration procedure.

**Note:** An external memory (memory card or USB flash memory) for backup should have a free space larger than the RAM size of the machine.

**Note:** When performing this procedure for any other machine with the same external memory, delete the data previously stored in the external memory.

**Note:** Do not use a Memory Stick; using it may fail to transfer data correctly.

#### < Operating Procedure >

##### **Backup Procedure**

- (1) On the PC, create a "Brother" folder in an external memory to be used for saving backup data.
- (2) Insert the external memory into the slot of the machine in the initial stage of the maintenance mode.

The "\*\*\*\* Active" appears on the LCD. ("\*\*\*\*" shows the name of the external memory inserted.)

**Note:** Do not insert more than one external memory at a time.

**Note:** If the external 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.

**Note:** Never remove the external memory from the machine when exporting is in progress.

**Note:** 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) Wait for the machine to automatically return to the initial stage of the maintenance mode and show "\*\*\*\* Active" on the LCD. Remove the external memory from the machine 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 external memory is being used by another operation.  |
| Insert Card      | No external memory is inserted.  |
| No file          | File name is invalid or no "BROTHER" folder exists.  |
| Card Error       | External memory failure.   |
| 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 external memory.  |

### **Restoration Procedure**

- (1) Insert the external memory containing the backup data into the slot of the machine in the initial stage of the maintenance mode.

The "\*\*\*\* Active" appears on the LCD. ("\*\*\*\*" shows the name of the external memory inserted.)

**Note:** Do not insert more than one external memory at a time.

**Note:** If the serial number in the backup data stored in the external 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 external memory from the machine when importing is in progress.

- (7) Wait for the machine to automatically return to the initial stage of the maintenance mode and show "\*\*\*\* Active" on the LCD. Remove the external memory from the machine 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.

### 1.3.14 Setting of Country/Language (Maintenance mode 52)

#### < Function >

Machines have been customized for their destination countries with the corresponding EEPROM customizing codes (see [Section 1.3.27](#), Maintenance mode 74). However, some customizing codes are shared by two or more destination countries, so the machines customized by these codes require further specifying individual destination countries or languages.

**Note:** This function applies to "Pan-Nordic," "Oceania," "Italy and Iberia," and "Turkey and Gulf" only.

#### < Operating Procedure >

- (1) Press the **5** and **2** keys in this order in the initial stage of the maintenance mode.

Wait for the "Press OK key" to appear on the LCD, then press the **SET** key.

- (2) Select the country name of the user with the **▲** and **▼** keys and press the **SET** key to display "1.Yes 2.No."

- (3) If the choice is correct, press **1.Yes**.

The machine displays "ACCEPTED" on the LCD, saves the new setting, and returns to the standby state.

### 1.3.15 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**• 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.

- 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                            | :06/06/2010 22:21 | ← Transfer start date                           |
|                                 |                   |   |
| 8CA-U23                         |                   | ← Model code                                    |
| B0403261602                     |                   | ← Boot ROM info                                 |
| U0404221449 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 |   |

### 1.3.16 Fine Adjustment of Scanning Position (Maintenance mode 54)

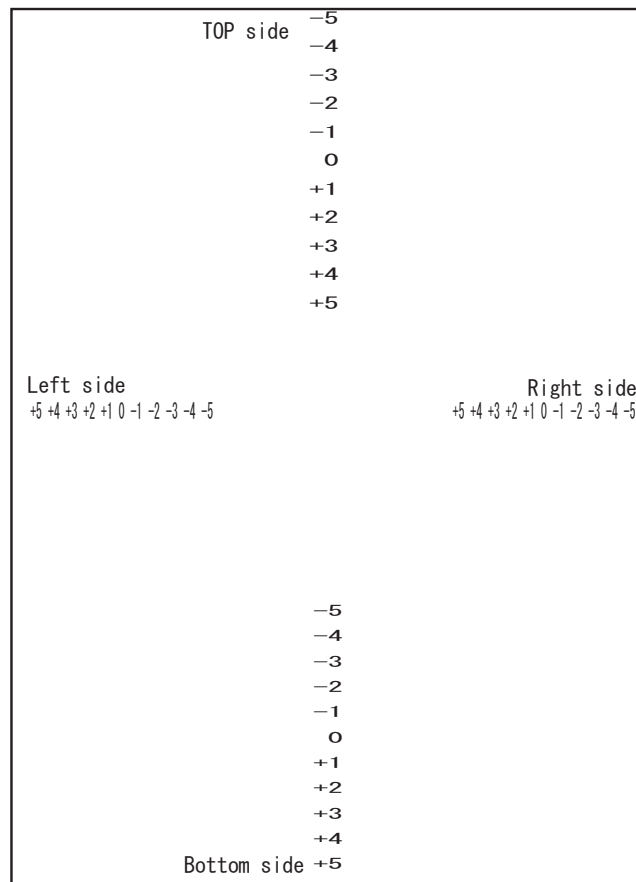
#### < Function >

This function adjusts the scanning start and end positions.

#### < Operating Procedure >

- (1) Press the **5** and **4** keys in this order in the initial stage of the maintenance mode.  
Simplex scanning models: The "SCAN ADJ SELECT" appears on the LCD. Go to step (3).  
Duplex scanning models: The "0: FRONT 1: BACK" appears on the LCD.
- (2) To adjust the first side scanning position, press the **0** key. The "SCAN START ADJ." appears on the LCD.  
To adjust the second side scanning position, press the **1** key. The "SCAN START ADJ." appears on the LCD.
- (3) To adjust the right and left edges, press the **0** key. The "RL EGDE \*\*\*" appears on the LCD.  
To adjust the top edge, press the **1** key. The "TOP EGDE \*\*\*" appears on the LCD.  
To adjust the bottom edge, press the **2** key. The "BOTM EGDE \*\*\*" appears on the LCD.
- (4) Enter the correction value (in units of 0.1 mm) multiplied by 10.  
To increase the value by 10 (1.0 mm), press the **▲** key; to decrease it, press the **▼** key. To increase the value by 1 (0.1 mm), press the **▶** key; to decrease it, press the **◀** key.  
**Note:**
  - Pressing the **CLR** key resets the correction 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.

- (5) 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.



### 1.3.17 Acquisition of White/Black Level Data and CIS Scanner Area Setting

(Maintenance mode 55)

#### < Function >

This procedure allows the machine to obtain white/black level data for the CIS scanner and save it together with the CIS scanner area 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 STATE 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 "SCANNER AREA SET" on the LCD and obtains white level data.
- (3) After a few seconds, the machine saves the white/black level data and scanning width correction into the EEPROM and returns to the initial stage of the maintenance mode.

If any error is detected during this operation, the LCD shows the following message.

Simplex scanning models "SCANNER ERROR"

Duplex scanning models "ERR FB:\*\*/ADF:\*\*"

Asterisks in "FB:\*\*" show an error code for the first side CIS unit and those in "ADF:\*\*" show an error code for the second side CIS unit.

| Error codes | Contents                                  |
|-------------|---|
| 90          | Abnormal digital conversion data detected |
| 91          | Abnormal digital conversion data detected |
| 92          | Abnormal light intensity data detected    |
| 93          | Abnormal white level data obtained        |
| 94          | Abnormal black level data obtained        |
| 95          | Scanner cover is open                     |
| 9A          | Failed to adjust the light intensity      |
| 9B          | Failed to obtain white/black level data   |

To return the machine to the initial stage of the maintenance mode, press the **X** key.

### 1.3.18 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 <ul style="list-style-type: none"><li>• Ink cartridge not loaded</li><li>• No IC in the ink cartridge</li><li>• IC contact defective</li></ul> |
| NG200 to NG299 | Wrong response result from the IC <ul style="list-style-type: none"><li>• Ink cartridge defective</li></ul>  |
| NG300 to NG399 | Succeeded in verifying IC, but the information judged as mismatching <ul style="list-style-type: none"><li>• Loading mistake</li></ul>                                 |

### 1.3.19 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 >

##### For printout of test patterns

- (1) On your PC, when using A4-sized paper, save copies of "pfadj1\_A4\_BHS15.prn" and "pfadj2\_A4\_BHS15.prn" to a USB flash memory or SD card. When using letter-sized paper, save copies of "pfadj1\_LTR\_BHS15.prn" and "pfadj2\_LTR\_BHS15.prn."
- (2) Use [Section 1.3.21 "Printout of PRN/JPEG Files in Memory Card \(Maintenance mode 61\)"](#) 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 pfadj1 pattern (see [page 5-39](#)), check the blocks of PF0 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 pfadj1 pattern (see [page 5-39](#)), 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, and then press the **SET** key.  
The "EXT NO. +0" appears on the LCD.
- (8) On the pfadj1 pattern (see [page 5-39](#)), check the blocks of EXIT 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 NO. +0" appears on the LCD.



- (9) On the pfadj2 pattern (see [page 5-40](#)), check the blocks of L300 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.

Press the **X** key to return the machine to the initial stage of the maintenance mode.

#### For the PF 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. EXIT" appears on the LCD.
- (4) Press the **1** key.  
The "PF1 NO. +0" appears on the LCD.
- (5) On the pfadj1 pattern (see [page 5-39](#)), 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. 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. EXIT" appears on the LCD.
- (4) Press the **2** key.  
The "EXT NO. +0" appears on the LCD.
- (5) On the pfadj1 pattern (see [page 5-39](#)), check the blocks of EXIT 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 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 NO. +0" appears on the LCD.
- (5) On the pfadj2 pattern (see [page 5-40](#)), check the blocks of L300 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 the PF 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 pfadj1 pattern (see [page 5-39](#)), check the blocks of PF0 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 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.

CS\_BHS15 PF1 adjust A4 -- Ver 001 003 \*

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF0 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF1 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF2 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF3 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF4 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF5 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|     |    |    |    |    |   |    |    |    |    |     |
|-----|----|----|----|----|---|----|----|----|----|-----|
| PF6 | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|-----|----|----|----|----|---|----|----|----|----|-----|

|      |    |    |    |    |   |    |    |    |    |     |
|------|----|----|----|----|---|----|----|----|----|-----|
| EXIT | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 | +10 |
|------|----|----|----|----|---|----|----|----|----|-----|

2015/01/02 06:10:49

pfadj1 Pattern

CS\_BHS15 PF2 adjust A4 - Ver 002 003 \*

600x2400dpi LEFT



1200dpi LEFT



600x2400dpi RIGHT



1200dpi RIGHT



2015/01/02 22:23:46

pfadj2 Pattern

### 1.3.20 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 white reference film position, 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 "WAIT SCAN INIT" on the LCD, if the scanning initialization is not completed.

Duplex scanning models: The "CIS 1:FB 2:ADF" appears on the LCD. Press the **1** key to display the "1:MO 2:CO 3:CHG?" on the LCD.

Simplex scanning models: The "1:MO 2:CO 3:CHG?" appears on the LCD.

- (2) Press the **1** key to display the "RESO TYPE SET \*" on the LCD.
- (3) Press the **SET** key to display the "LED PWM : \*\*\*" on the LCD.
- (4) Press the **SET** key to display the "G PULSE : \*\*\*\*" on the LCD.
- (5) Press the **SET** key to display the "1:WHT 2:FRT 3:MV" on the LCD.

Press the **1** key and then press the **SET** key to move the CIS unit to the white reference film.

Press the **2** key and then press the **SET** key to move the CIS unit to the scanning start position.

Press the **3** key and then press the **SET** key to move the CIS unit to the scanning end position.

- (6) Press the **X** key and then press the **SET** key to return the machine to the initial stage of the maintenance mode.

##### 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 "WAIT SCAN INIT" on the LCD, if the scanning initialization is not completed.

Duplex scanning models: The "CIS 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. The "1:MO 2:CO 3:CHG?" appears on the LCD.

Simplex scanning models: The "1:MO 2:CO 3:CHG?" appears on the LCD.

- (2) Press the **3** key.

The "1:AUTO 2:MANUAL" appears on the LCD.

- (3) 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.

### 1.3.21 Printout of PRN/JPEG Files in Memory Card (Maintenance mode 61)

#### < Function >

This procedure prints PRN files and JPEG files stored in a memory card supported by PhotoCapture Center.

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 name requirements

The target files are located in the root directory.

PRN file: Maximum of 16 characters consisting of alphanumerics, underline "\_" and parentheses "()", including the extension .prn

JPEG file: Maximum of 16 characters consisting of alphanumerics, underline "\_" and parentheses "()", including the extension .jpg

The maximum number of files is 999.

#### < Operating Procedure >

- (1) Insert a memory card.
- (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.  
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.

**Note:** This function is not available when Error Code A\* or B\* occurs.

### 1.3.22 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.

The head/carriage unit returns to the home position and locks itself, then the machine returns to the initial stage of the maintenance mode.



### 1.3.23 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, save a copy of "Corrugate\_BHS15.prn" into a USB flash memory or SD card.

Use [Section 1.3.21 "Printout of PRN/JPEG Files in Memory Card \(Maintenance mode 61\)"](#) to print a test pattern (see [page 5-43](#)) on A4- or letter-sized paper.

**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 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.

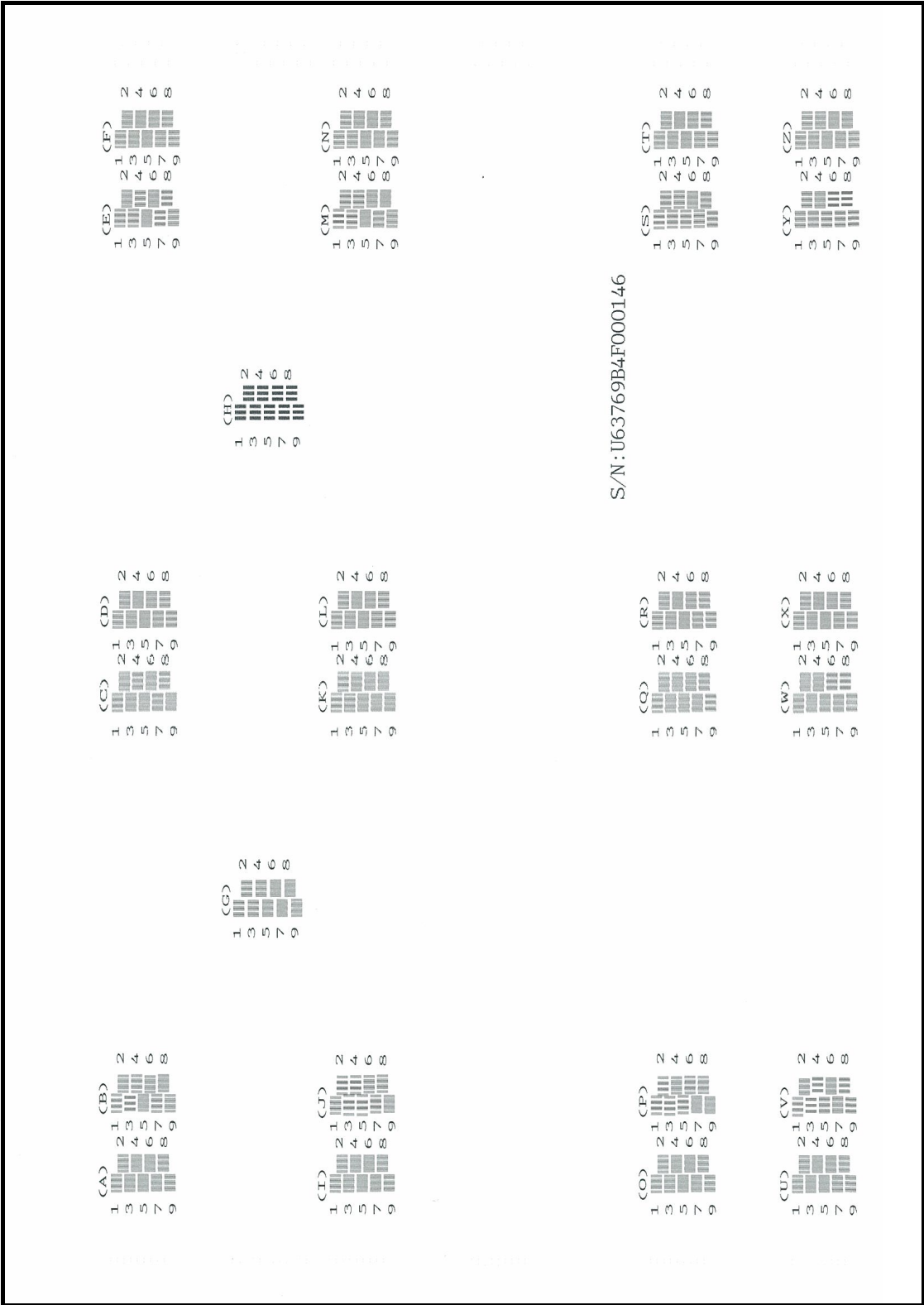
- (5) Wait for the block number to appear for confirmation in the same way. For each of the printed B to Z, enter the number of the block that shows the most indistinct vertical lines. Then press the **SET** key.

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.



S/N: U63769B4F000146

**Adjustment of Software Correction for Inclination/Corrugation/Ruled Lines Check Pattern**

### 1.3.24 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 "mediaadj\_A4\_BHS15.prn" to a USB flash memory or SD card. When using letter-sized paper, save a copy of "mediaadj\_LTR\_BHS15.prn."
- (2) Use [Section 1.3.21 "Printout of PRN/JPEG Files in Memory Card \(Maintenance mode 61\)"](#) 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 "SELECT66?" to appear and then press the **Mono Start** key.  
The "MEDIA SENSOR ADJ" 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** key  
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 "SELECT66?" to appear and then press the **Mono Start** key.  
The "MEDIA SENSOR ADJ" 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.

\* BHS15 CR Adjust - Ver 003 000 \*

600x2400dpi LEFT

600x2400dpi RIGHT

1200dpi LEFT

1200dpi RIGHT

**Margin Check Pattern**

### 1.3.25 Updating of Head Property Data 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 data and the other for backing up the head calibration data and restoring it.

#### Updating the head property data

To keep the print quality, the machine optimizes the drive conditions of individual head/carriage units according to the head property data.

The property data is stored in the EEPROM on the main PCB and its property code 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 code printed on the 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 an external memory (memory card or USB flash memory) and restores it to the machine.

#### < Operating Procedure >

##### Head Property Data 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 data stored in the EEPROM appears on the LCD and the machine is ready for entry.

- (3) Check the property label pasted on a new head/carriage unit and enter the property code.

The code to be entered is 10 digits excluding the heading "ALR."



**Tip:** Opening the scanner cover when the machine is on standby and holding down the **X** key for at least 5 seconds moves the head/carriage unit to the center of its travel. This makes it possible to check the property label through the opening.

- (4) After entry of 10-digit code, press the **SET** key.

The machine displays the "INPUT ACCEPTED" on the LCD, writes the entered property code 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 an external 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 beeps 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 and then press the **SET** key.
- (4) Insert the external 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 external 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.

### 1.3.26 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.

### 1.3.27 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", "PLS UPDATE PROG" then "Please DL ROM" appear on the LCD. Load the latest firmware (refer to [Chapter 4, Section 1.3](#)).

- (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 >

|             | U.S.A | Canada | Argentina | Chile | Brazil |
|-------------|-------|--------|-----------|-------|--------|
| MFC-J2320   | -     | -      | -         | -     | -      |
| MFC-J2720   | -     | -      | -         | -     | -      |
| MFC-J5320DW | -     | -      | -         | -     | -      |
| MFC-J5520DW | 0101  | 0102   | -         | -     | -      |
| MFC-J5620DW | 0001  | 0002   | 0036      | 0036  | 0042   |
| MFC-J5625DW | -     | -      | -         | -     | -      |
| MFC-J5720DW | 0001  | -      | -         | -     | 0042   |
| MFC-J5920DW | 0201  | -      | -         | -     | -      |



|             | Germany | UK   | France | Belgium | Italy/Iberia<br>(Italy/Spain/<br>Portugal) |
|-------------|---------|------|--------|---------|--|
| MFC-J2320   | -       | -    | -      | -       | -  |
| MFC-J2720   | -       | -    | -      | -       | -  |
| MFC-J5320DW | 0003    | 0004 | 0005   | 0008    | 0066<br>(0016/0015/<br>0018)               |
| MFC-J5520DW | -       | -    | -      | -       | -  |
| MFC-J5620DW | 0003    | 0004 | 0005   | 0008    | 0066<br>(0016/0015/<br>0018)               |
| MFC-J5625DW | 0203    | 0204 | 0205   | 0208    | 0266<br>(0216/0215/<br>0218)               |
| MFC-J5720DW | 0003    | 0004 | 0005   | 0008    | 0066<br>(0016/0015/<br>0018)               |
| MFC-J5920DW | 0203    | 0204 | 0205   | 0208    | 0266<br>(0216/0215/<br>0218)               |

|             | Netherlands | Switzerland | Pan-Nordic<br>(Norway/<br>Sweden/<br>Finland/<br>Denmark) | CEE-General | Russia |
|-------------|-------------|-------------|---|-------------|--------|
| MFC-J2320   | -           | -           | -   | -           | 0148   |
| MFC-J2720   | -           | -           | -   | -           | 0148   |
| MFC-J5320DW | 0009        | -           | 0057<br>(0007/0026/<br>0012/0013)                         | 0054        | -      |
| MFC-J5520DW | -           | -           | -   | -           | -      |
| MFC-J5620DW | 0009        | 0010        | 0057<br>(0007/0026/<br>0012/0013)                         | 0054        | -      |
| MFC-J5625DW | 0209        | 0210        | 0257<br>(0207/0226/<br>0212/0213)                         | 0254        | -      |
| MFC-J5720DW | 0009        | 0010        | 0057<br>(0007/0026/<br>0012/0013)                         | 0054        | -      |
| MFC-J5920DW | 0209        | 0210        | 0257<br>(0207/0226/<br>0212/0213)                         | -           | -      |

|             | Oceania<br>(Australia/<br>New<br>Zealand) | China | Taiwan | Turkey/Gulf         | South Africa |
|-------------|---|-------|--------|---------------------|--------------|
| MFC-J2320   | -   | 0120  | 0123   | 0174<br>(0125/0141) | 0124         |
| MFC-J2720   | -   | 0120  | 0123   | 0174<br>(0125/0141) | 0124         |
| MFC-J5320DW | 0056<br>(0006/0027)                       | -     | -      | -                   | -            |
| MFC-J5520DW | -   | -     | -      | -                   | -            |
| MFC-J5620DW | -   | -     | -      | -                   | -            |
| MFC-J5625DW | -   | -     | -      | -                   | -            |
| MFC-J5720DW | 0056<br>(0006/0027)                       | -     | -      | -                   | -            |
| MFC-J5920DW | 0256<br>(0206/0227)                       | -     | -      | -                   | -            |

|             | Hong Kong | Asia | Korea | India |
|-------------|-----------|------|-------|-------|
| MFC-J2320   | 0128      | 0140 | 0144  | 0145  |
| MFC-J2720   | -         | 0140 | 0144  | -     |
| MFC-J5320DW | -         | -    | -     | -     |
| MFC-J5520DW | -         | -    | -     | -     |
| MFC-J5620DW | -         | -    | -     | -     |
| MFC-J5625DW | -         | -    | -     | -     |
| MFC-J5720DW | -         | -    | -     | -     |
| MFC-J5920DW | -         | -    | -     | -     |

The above information is as of February 2015. Please confirm the latest firmware information which is available from your local Brother Customer Service.

### 1.3.28 Move of the Head/Carriage Unit to the Flushing Position (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 flushing position, 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 flushing position.

- (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.

**TIP:** Holding down the **X** key with the document scanner unit opened for at least five seconds can also move the head/carriage unit in the same manner as above.

### 1.3.29 Purge Operation (Maintenance mode 76)

#### < Function >

The machine can carry out several types of purge operations--normal purge, periodical reset purge, power purge, initial purge, user reset purge, and engine setup purge. This function allows you to select the desired purge type 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 "CLEANING ALL" appears on the LCD.
- (2) Press the **<** or **>** key to display the target color for purge on the LCD.  
"CLEANING ALL": Purge for all four color inks  
"CLEANING BLACK": Purge for black ink  
"CLEANING MAGENTA" / "CLEANING CYAN" / "CLEANING YELLOW": Any color choice performs purge for all three color inks.
- (3) Enter the purge code according to the table on the next page.
- (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.
  - 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. An initial purge, for example, advances by 832. 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. (Maintenance mode 80. Refer to [Section 1.3.32](#) in this chapter.)
- 2) Press the **Mono Start** key several times until the purge or flushing count appears on the LCD.
- 3) 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.

### **Purge types and purge codes**

| Purge Types                        | Description   | Purge Codes<br>(to be entered with<br>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  |
| Small reset purge (SRP)            | Purge to be performed periodically. The cycle varies due to the ambient temperature.  | 9  |
| Ink replacement purge              | (Not to be performed by service personnel)  | 0  |
| User super power reset purge (MPP) | Purge to be performed by user purge.  | *  |

## **Ink usage and purge counts**

| Purge Types                        | Ink Usage (ml)                |                              |                              | Purge Counts |            |            |
|------------------------------------|-------------------------------|------------------------------|------------------------------|--------------|------------|------------|
|                                    | ALL                           | BLACK only                   | COLOR only                   | ALL          | BLACK only | COLOR only |
| Normal purge (NP)                  | BLACK: 0.334<br>COLOR: 1.015  | BLACK: 0.334<br>COLOR: 0     | BLACK: 0<br>COLOR: 1.015     | 64           | 16         | 48         |
| Periodical reset purge (RP)        | BLACK: 0.369<br>COLOR: 1.189  | BLACK: 0.369<br>COLOR: 0.210 | BLACK: 0.186<br>COLOR: 1.189 | 74           | 26         | 65         |
| Power purge (PP)                   | BLACK: 0.580<br>COLOR: 2.264  | BLACK: 0.580<br>COLOR: 0.210 | BLACK: 0.186<br>COLOR: 2.264 | 132          | 36         | 113        |
| Initial purge (uIP)                | BLACK: 4.470<br>COLOR: 14.542 | -                            | -                            | 862          | -          | -          |
| User reset purge (RP3)             | BLACK: 0.520<br>COLOR: 2.015  | BLACK: 0.520<br>COLOR: 0.210 | BLACK: 0.186<br>COLOR: 2.015 | 117          | 33         | 101        |
| Engine setup purge (eIP)           | BLACK: 4.470<br>COLOR: 14.542 | -                            | -                            | 862          | -          | -          |
| Periodic expelling purge (RP2)     | BLACK: 0.186<br>COLOR: 0.210  | -                            | -                            | 17           | -          | -          |
| Periodic suction purge (SP)        | BLACK: 0.183<br>COLOR: 0.294  | -                            | -                            | 22           | -          | -          |
| Small reset purge (SRP)            | BLACK: 0.369<br>COLOR: 0.504  | BLACK: 0.369<br>COLOR: 0.210 | BLACK: 0.186<br>COLOR: 0.504 | 40           | 26         | 31         |
| Ink replacement purge              | BLACK: 4.470<br>COLOR: 0.210  | -                            | -                            | 211          | -          | -          |
| User super power reset purge (MPP) | BLACK: 0.914<br>COLOR: 3.279  | BLACK: 0.914<br>COLOR: 0.210 | BLACK: 0.196<br>COLOR: 3.030 | 197          | 52         | 150        |

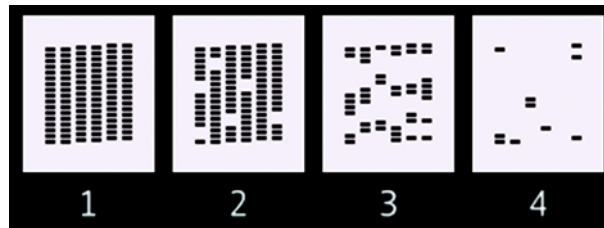
The ink usage of COLOR are total values of three colors.

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 non-discharge 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.

### 1.3.30 Print of the Maintenance Information (Maintenance mode 77)

#### < Function >

The machine prints out its log information or saves it into an external 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 an external memory

- (1) Insert an external 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 external 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.

```

① RTC 2015/01/01 02:55 OK
② 14:16 02:55 OK
③ MODEL 8CA-U29-001
④ COUNTRY 0101
⑤ SWITCH 0C
⑥ PICTRIDGE BROTHER/MFC-J5720DW/S_9/BR00207/1.0
⑦ DOT COUNT(BK/YL/CY/MZ) 0000291233715/0000000125840/0000000195335/000000145314
⑧ SENSOR DOT(BK/YL/CY/MZ) 000000000/000000000/000000000/000000000
⑨ PLATEN DOT(BK/YL/CY/MZ) 000000000/000000000/000000000/000000000
⑩ LIFE COUNT(BK/YL/CY/MZ) 000044579762/000052005625/000033400403/0000033518420
⑪ CLEANING DOT(BK/YL/CY/MZ) 0230500024/000024727/0000024727/0000024727
⑫ INK CHANGE(BK/YL/CY/MZ) 00000/00000/00000/00000
⑬ INK CHANGE MISS(BK/YL/CY/MZ) 00001/00001/00007/00005
⑭ INK CHANGE DOT(BK/YL/CY/MZ) 000000000000/0000361830425/000035565550/000035565550
⑮ INK CHANGE SENSOR DOT(BK/YL/CY/MZ) 0000000000/0361830425/035565550/035565550
⑯ INK CHANGE CLEANING DOT(BK/YL/CY/MZ) 0000000000/0361830425/035565550/035565550
⑰ INK INITIAL DOT(BK/YL/CY/MZ) 0000000000/000000000/000000000/000000000
⑱ PAPER FEED(NG) 00000
⑲ TOTAL PAGE/LM PAGE//PRINT JAM 0000000001/00000//00000
⑳ DARK PAGE(BK/YL/CY/MZ) 00000/00000/00000/00000
㉑ TOTAL SIZE//A3//OTHERS(BK/CL) 00000/00001//00000/00000//00000/00001
㉒ PAGE COUNT(PC//COPY//FAX&LIST(BK/CL/ALL)) 00000/00000/00000//00000/00000/00000//00000/00000/00000
㉓ PAPER SIZE(A3/A4/4x6/L) 00000-00000-00000/00001-00000-00000/00000-00000-00000/00000-00000-00000
㉔ DUPLEX PAGE/JAM 000000000/00000
㉕ DUPLEX PAGE COUNT(COPY/CL/BK//FC) 00000/00000//00000
㉖ DUPLEX PAPER SIZE(A3/A4/4x6) 00000/00000/00000-00000-00000
㉗ TRAY COUNT(TRAY1//TRAY2(PAGE/JAM)) 00001/00000//00000/00000
㉘ TRAY COUNT(LABEL//BYPASS//MP(PAGE/JAM)) 00000/00000//00000/00000//00000/00000
㉙ ROLL CLEAN(TRAY1/TRAY2/MP) 000/000/000
㉚ PAPERPIECE REMOVE 000
㉛ ADF/ADF/DX/FB PAGE/ADF JAM/FAX/SCANNER 0000000000/0000000000/0000000000/0000000000/00000/00000
㉜ HP ERR/ERR LOG E2/A5:BE:43:00:A7:C3:C0:C4:00:00:00:00:00:00:00:00
㉝ PURGE/SENSOR PURGE//WIPE//FLUSH(BK)/FLUSH(CL)/FLUSH 03005/00000//00003//000045826/0003677205/000
㉞ PURGE KIND(BK):AUTO/MANU eIP:000/001 uIP:000/003 RP:000/000 SRP:000/000 SP:000/000 RP2:000/000
㉟ PURGE KIND(CL):AUTO/MANU eIP:000/001 uIP:000/003 RP:000/000 SRP:000/000 SP:000/000 RP2:000/000
㊱ tFL:00004
㊲ 000000352
㊳ 22:1501010253:29 /24:1501010252:29 /22:1501010252:29
㊴ 24:1501010243:29 /24:1501010242:29 /22:1501010229:26
㊵ 23:1501010028:29 /22:1501010028:29 /24:1501010026:29
㊶ 00000000: /00000000: /00000000:
㊷ FF/0505/00/01/0A/7D/01/0505/00
0053/0061/0073/009C/009F/00E3/0101/0112/0126/0169
a
DF:1 DR:1 CV:1 RS:1 CC:1 P1:1 AC:1
IK:1 IY:1 IC:1 IM:1 EK:1 EY:1 EC:1 EM:1
LT:1 MP:1 PP:1
RB:1 VT:1 T1:1
K:2 Y:2 C:2 M:2 K?:0 Y?:0 C?:0 MP?:0
00 20 00 00 00 00 00 01 00 24 00 00 30
72 6E 33 70 30 35 35 63 33 35 34 38 35 0406
T:00 E:0053 0400 0000 0000 0000 R:0000 0000 0000 0000
㊸ 002/000000391
㊹ 20150101

```



|    |  |    |  |
|----|--|----|--|
| 1  | Real-time clock (RTC) check result *1  | 21 | Ink drop count by cleaning at the previous replacement of ink cartridge  |
| 2  | RTC backup check result *1<br>OK: Backup completed, NG: Backup failed  | 22 | Ink drop count at ink remaining failure  |
| 3  | Model code   | 23 | Total paper pull-in failure count ("No Paper Fed" count)   |
| 4  | Country code   | 24 | Total printed page count/Total printed page count in the previous month/Printed recording paper jam count  |
| 5  | Checksum of WSW, PSW, USW, and FSW *1  | 25 | High-level ink usage page count (count of pages that exceed a specified level of ink usage)  |
| 6  | Version of main firmware   | 26 | Printed page count for all paper sizes/<br>Printed page count for A3 and ledger/<br>Printed page count for other sizes   |
| 7  | Version of boot firmware *1  | 27 | Printed page count by printing method  |
| 8  | Serial number  | 28 | Printed page count by paper size and by paper type in duplex printing *2   |
| 9  | Head property information/Head voltage correction value/Head calibration data – calibration ratio – Presence of variation calibration data | 29 | Total printed page count in duplex printing/<br>Jam count in duplex printing   |
| 10 | First side CIS type/Second side CIS type/<br>Engine type/LCD type  | 30 | Page count in duplex printing by printing method   |
| 11 | PictBridge information *1  | 31 | Printed page count by paper size and by paper type in duplex printing *2   |
| 12 | Ink drop count after replacement of ink cartridge  | 32 | Tray 1 total printed page count/Tray 1 jam count/Tray 2 total printed page count/Tray 2 jam count  |
| 13 | Ink drop count after detection of "Ink Low"  | 33 | Total printed label count *3/Label jam count *3/<br>Total print count in printing via manual feed slot/Manual feed slot jam count/MP tray total printed page count/MP tray jam count |
| 14 | Ink drop count for droplets jetted out onto the platen *1  | 34 | Roller cleaning count (Tray 1/Tray 2/MP tray) *3   |
| 15 | Total ink drop count from a new head (including flushing)  | 35 | Paper piece removal count *3   |
| 16 | Ink drop count by cleaning from ink renewal  | 36 | ADF scanning count/ADF duplex scanning count *3/FB scanning count/ADF jam count/<br>FAX scanning count/Scanner count   |
| 17 | Ink cartridge change count (High-yield and super high-yield ink cartridges)  | 37 | Home positioning error code of the CIS unit/<br>Home positioning detection log data *1   |
| 18 | Ink cartridge detection failure count (Cannot Detect display count)  | 38 | Purge count/Sensor purge count *3/Wipe count/Black flushing count/Color flushing count/Flushing count error detection count  |
| 19 | Ink drop count at the previous replacement of ink cartridge  | 39 | Purge count (black) *4   |
| 20 | Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge   | 40 | Purge count (color) *4   |

|    |  |    |  |
|----|--|----|--|
| 41 | Periodic flushing count  | 48 | Sensor status *5   |
| 42 | Total power-ON time  | 49 | Ink cartridge type loaded in each slot *6<br>Ink remaining state (0: OK 1: NG)                                 |
| 43 | Power-ON count   | 50 | Executed maintenance modes *1  |
| 44 | Machine error history (Error code: Date of occurrence: Machine temperature degree-C at the time of occurrence) | 51 | Executed special maintenance modes *1  |
| 45 | Communications error history (Error code: Date of occurrence)  | 52 | LCD error *1   |
| 46 | Initial purge log *1 (FF: normal end)  | 53 | Reset count *7/Power-ON duration at the time of last reset (Total Power-ON time)                               |
| 47 | Machine information backup file version *1   | 54 | Operation start date of the machine<br>(Current date when the user operates the machine first after unpacking) |

\*1 Not required for servicing.

\*2 The paper type is printed in the order of "Plain paper - Inkjet paper - Glossy paper."

\*3 Not used.

\*4 For details about the purge type, refer to Maintenance mode 76 (refer to [Section 1.3.29 Purge Operation](#)).

\*5 For details about sensors, refer to Maintenance mode 32 (refer to [Section 1.3.11 Sensor Operational Check](#)).

\*6 0: No ink cartridge loaded

1: High-yield ink cartridge

2: Super high-yield ink cartridge

\*: Unidentifiable ink cartridge

\*7 Excluding the resets triggered by the following.

Maintenance modes 01 and 91

Maintenance mode 80 (Resetting the purge and flushing counts)

### 1.3.31 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.

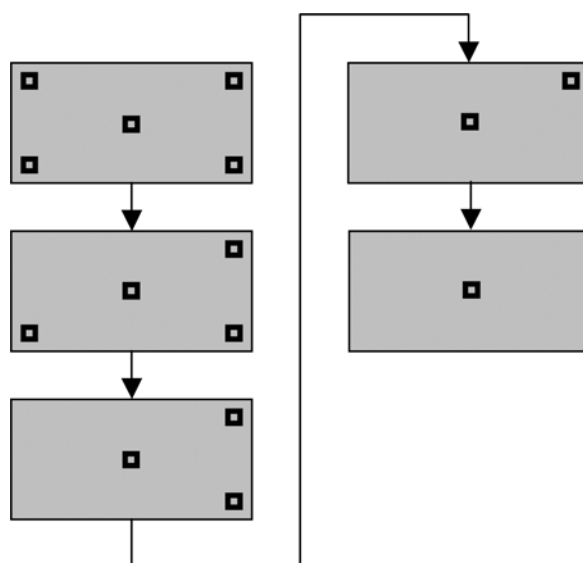
The adjustment screens shown below appear on the LCD.

- (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 control panel ASSY.



### 1.3.32 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 "00:00 22:36 OK" 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.

(3) Press the **X** key to return the machine to the initial stage of the maintenance mode.

Log information items

| Items shown on the LCD | Description   |
|------------------------|---|
| 00:00 22:36 OK         | RTC backup check, OK: Backup completed, NG: Backup failed *1  |
| 8CA-R65-001            | Model code  |
| COUNTRY:0001           | Country code  |
| SWITCH:82              | Checksum of WSW, PSW, USW, and FSW *1   |
| MAIN:0A307211213       | Main firmware version and ROM production date & time  |
| 3415 5314              | Main firmware checksum/ROM1 checksum  |
| B0306101054:34CD       | Boot ROM production date & time and checksum *1   |
| S/N:                   | Serial number *2  |
| ALR777FFFFFFF8         | Head property information   |
| HEAD_CALIB:1-1-1       | Head calibration data - Calibration ratio - Existence of mismatched calibration data (1: Exist, 0: Not exist) |
| CISF:00, CISA:00       | CIS type, CISF:First side CIS, CISA:Second side CIS   |
| ENGINE:00              | Engine type *1  |
| PICTBRIDGE             | PictBridge information *1   |
| DK:0000000001          | Ink drop count after replacement of ink cartridge *3  |
| SEN K:0000000001       | Ink drop count after detection of "Ink Low" *3  |
| PLA K:0000000001       | Ink drop count for droplets jetted out onto the platen *3   |
| LK:0000000000001       | Total dot count *3  |
| CLN K:0000000001       | Ink drop count via cleaning cycle after replacement of ink cartridge *3                                       |
| INK_CH BK:00001        | Ink cartridge change count (high-yield) *3  |
| INK_CH2 BK:00001       | Ink cartridge change count (super high-yield) *3  |
| CHGMISS_BK:00001       | Ink cartridge detection failure count *3  |
| INK CHG DOT            | Ink drop count of ink cartridge after previous replacement *3   |
| INK CHG SEN DOT        | Ink drop count after detection of "Ink Low" at the previous replacement of ink cartridge *3                   |
| INK CHG CLEAN          | Ink drop count due to cleaning of ink cartridge after previous replacement *3                                 |
| INV K:0000000001       | Ink drop count at ink remaining failure *3  |
| FEED NG:00001          | Total paper feed error count  |
| PAGE:0000000002        | Total printed page count *4   |
| LM PAGE:00002          | Printed page count for previous month   |
| JAM:00001              | Total jam count   |

| Items shown on the LCD | Description   |
|------------------------|---|
| DARK PAGE              | High-level ink usage page count *5  |
| PC:00001               | PC print page count *6  |
| COPY:00002             | Total number of copies *6   |
| FAX:00001              | Total number of fax/report/list prints *6   |
| MEDIA:00001            | Memory card/PictBridge print page count   |
| TEST PRINT:0000        | Total number of test prints   |
| A3P:00001              | Total page count for paper sizes and types *7   |
| DX P:0000000001        | Total page count in duplex printing   |
| DX JAM:00001           | Jam count in duplex printing  |
| DX PC:00001            | PC print page count in duplex printing  |
| DX CLCOPY:00001        | Color copy page count in duplex printing  |
| DX MNCOPY:00001        | Monochrome copy page count in duplex printing   |
| DX A3P:00001           | Total printed page count for paper sizes and types in duplex printing *8                                    |
| TRAY1 PAGE:00001       | Total paper tray 1 printed page count   |
| TRAY1 JAM:00001        | Paper tray 1 jam count  |
| TRAY2 PAGE:00001       | Total paper tray 2 printed page count   |
| TRAY2 JAM:00001        | Paper tray 2 jam count  |
| CD PAGE:00000          | Label print count (Not used)  |
| CD JAM:00000           | Jam count in label printing (Not used)  |
| BYPASS PAGE:00001      | Total print count in printing via manual feed slot  |
| BYPASS JAM:00001       | Jam count in printing via manual feed slot  |
| MP TRAY PAGE:00001     | Total MP tray printed page count  |
| MP TRAY JAM:00001      | MP tray jam count   |
| ROLLER CLEANING        | Roller cleaning count *9 (Not used)   |
| PP REMOVE:001          | Paper piece removal count (Not used)  |
| PURGE:00001            | Purge count *10   |
| SEN PURGE:00001        | Sensor purge count (Not used)   |
| eIP_BK:001/001         | Purge count for purge types Auto/Manual (black) *11   |
| eIP_CL:001/001         | Purge count for purge types Auto/Manual (color) *11   |
| WIPE:00001             | Wipe count  |
| FLSBK:0000000001       | Flushing count (black) *10  |
| FLSCL:0000000001       | Flushing count (color) *10  |
| FLUSHLOG:000           | Flushing count error detection count  |
| POWER:0000000353       | Total power-ON time   |
| PWCNT:0000000353       | Power-ON count  |
| ADF_JAM:00000          | Document jam count in ADF scanning  |
| FB:0000000006          | Scanning page count in ADF/document cover/FAX/SCANNER *13   |
| HP_ERR_CODE:XX         | CIS home positioning error in the document scanner unit *1  |
| HP_LOG1:XXXXXXXX       | CIS home positioning detection log data in the document scanner unit *1                                     |
| COMERR1:BF010000       | Communications error history (Last 3 errors) *12  |
| BACKUP VER:a           | Machine information backup file version *1  |
| RESET COUNT:001        | Reset count *14   |
| SET UP:20130101        | Operation start date of the machine (Current date when the user operates the machine first after unpacking) |

| Items shown on the LCD | Description                                |
|------------------------|--|
| MAC_ERR_1:50           | Machine error history (Last 20 errors) *12 |

- \*1 Not required for servicing.
- \*2 The serial number of the machine can be changed with the following procedure.
  - 1) Press the **SET** key to display the serial number, then press the **9, 4, 7** and **5** keys in this order. The cursor appears at the uppermost digit of the current serial number, indicating that the machine switches to the edit mode.
  - 2) Enter the uppermost digit of the desired serial number with numerical keys. The cursor moves to the next lower digit. In the same way, enter the remaining 14 digits.
  - 3) Press the **SET** key to save the newly entered setting and return the machine to the initial stage of the maintenance mode.  
 With each item being displayed, press the **SET** key to display the serial number.
- \*3 With each item being displayed, pressing the **SET** key cycles through black → yellow → cyan → magenta.
- \*4 With each item being displayed, pressing the **SET** key cycles through Total printed page count → Total printed monochrome page count → Total printed color page count → A3/Ledger printed monochrome page count → A3/Ledger printed color page count → Printed monochrome page count except A3/Ledger → Printed color page count except A3/Ledger.
- \*5 With each item being displayed, pressing the **SET** key cycles through total → black → yellow → cyan → magenta.
- \*6 With the item being displayed, pressing the **SET** key cycles through total → monochrome → color.
- \*7 With the item being displayed, pressing the **SET** key cycles through A3 plain paper → A3 inkjet paper → A3 glossy paper → A4 plain paper → A4 inkjet paper → A4 glossy paper → 4x6/postcard plain paper → 4x6/postcard inkjet paper → 4x6/postcard glossy paper → Photo L plain paper → Photo L inkjet paper → Photo L glossy paper.
- \*8 With the item being displayed, pressing the **SET** key cycles through A3 plain paper → A4 plain paper → 4x6 plain paper → 4x6 glossy paper.
- \*9 With the item being displayed, pressing the **SET** key cycles through total → paper tray 1 → paper tray 2 → MP tray.
- \*10 With the purge count or flushing count displayed, press the **2, 7, 8** and **3** keys in this order to reset the count.
- \*11 With the item being displayed, pressing the **SET** key cycles through purge types. For details about the purge types, refer to Maintenance mode 76 (1.3.29 "Purge Operation (Maintenance mode 76)" in this chapter).
- \*12 With the item being displayed, pressing the **SET** key switches back to the last errors, one by one. With an error code being displayed, pressing the ► key toggles between the date when the error occurred and the ambient temperature when the error occurred (only in the case of a machine error).
- \*13 With the item being displayed, pressing the **SET** key cycles through Flat-bed scanning → ADF simplex scanning → ADF duplex scanning → FAX scanning → Scanner scanning.
- \*14 With the item being displayed, pressing the **SET** key switches to the power-ON time at which the counter has been reset.

### 1.3.33 Equipment Error Code Indication (Maintenance mode 82)

#### < Function >

This function displays an error code of the last error 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 ERROR XX."

**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.

### 1.3.34 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) Hold down the lowermost blank field to switch the LCD screen.
- (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.

### 1.3.35 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 [Section 1.3.6](#) 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 following pages.

#### < 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 move the underline cursor to the selector position to be modified.
- (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            | Not used.  |  |
| 3<br>4       | Protection of platen from no-paper printing to prevent stains (Functional restriction on the paper width sensor) | No. 3 4<br>0 0 : Enable (Determine the sensor function depending upon the print resolution selected) (default)<br>0 1 : Enable (Detect the leading edge plus right and left edges of paper)<br>1 0 : Enable (Detect the leading edge of paper)<br>1 1 : Disable (No paper detection) |
| 5            | Assurance print 1 (Printing with black, magenta and cyan inks in monochrome copy)                                | 0: Disable (default)    1: Enable  |
| 6            | Assurance print 2 (Printing with black, magenta and cyan inks in monochrome FAX reception and in list output)    | 0: Disable (default)    1: Enable  |
| 7<br>8       | Workaround for false jam detection (Functional restriction on the paper width sensor)                            | No. 7 8<br>0 0 : Detect both the leading edge and width of paper (default)<br>0 1 : Detect both the leading edge and width of paper<br>1 0 : Detect only the leading edge of paper<br>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.

• **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 memory card, copying, and printing via PictBridge.

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 (pigment-based) and a little of cyan ink (dye-based) 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<br> <br>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 memory cards or via PictBridge   | Yes                  |
| Print memory card index or PictBridge 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 (Maintenance assurance 1)**

| Selector No. | Function   | Setting and Specifications   |
|--------------|--|--|
| 1            | Protection of head caps from drying  | 0: Disable (default)    1: Enable  |
| 2<br>3       | Auto capping start time  | No. 2 3<br>0 0 : 30 seconds (default)<br>0 1 : 5 seconds<br>1 0 : 15 seconds<br>1 1 : 300 seconds  |
| 4            | Purge more powerful than normal purge  | 0: Disable (default)    1: Enable  |
| 5<br>6       | Measure for black streaks at trailing edge of recording paper                              | No. 5 6<br>0 0 : Machine correction value (default)<br>0 1 : 1/2 of machine correction value<br>0 0 : 2/3 of machine correction value<br>1 0 : No correction |
| 7            | Automatic purging interval programmed for matching the ambient temperature (for color ink) | 0: Enable (default)    1: Disable  |
| 8            | Automatic purging interval programmed for matching the ambient temperature (for black ink) | 0: Enable (default)    1: Disable  |

- **Selector 1: Protection of head caps from drying**

If the protection function is enabled with this selector, the head/carriage unit automatically returns to the home position (head capping position) for flushing each time the machine prints the specified number of pages in order to protect the inside of the head caps from drying up. This function is useful in a dry environment or for heavy duty print per printing cycle.

- **Selectors 2 and 3: Auto capping start time**

If data transfer from the PC stops midway through printing for some reason in the PC, the head/carriage unit automatically returns to the home position (head capping position) after the specified auto capping start time (default: 30 seconds) to prevent the head surface from drying up. At the restart of printing after the auto capping operation, print image unevenness could occur. To avoid it, change the auto capping start time with these selectors.

- **Selector 4: Purge more powerful than normal purge**

Setting this selector to "1" automatically selects a purge more powerful than the normal purge from the first if the purge is initiated immediately after printing.

- **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.

- **Selectors 7 and 8: Automatic purging interval programmed for matching the ambient temperature**

The "automatic purging interval programmed for matching the ambient temperature" is enabled by default. If the machine is set in an excessively hot or cold place, therefore, the automatic purging interval becomes short, resulting in increased ink waste.

Disabling this interval enables the one programmed for the ordinary temperature. In the first printing after a long no-print period, however, the print quality may lower.

### AMS04 (Maintenance assurance 2)

| Selector No. | Function   | Setting and Specifications   |
|--------------|--|--|
| 1            | Not used.  |  |
| 2            | <b>Home</b> key switch in sleep mode                 | 0: Blink (default)      1: Turn off  |
| 3            | Black ink print mode                                 | 0: Disable (default)    1: Enable  |
| 4            | Automatic purging for color ink                      | 0: Enable (default)    1: Disable  |
| 5            | FAX plain paper monochrome printing direction switch | 0: Bidirectional (default) 1: Unidirectional   |
| 6<br>7       | Periodical purging interval                          | No. 6 7<br>0 0 : Prescribed purge intervals<br>0 1 : 30 days (black), 60 days (color)<br>1 0 : 30 days (black), no purge (color)<br>1 1 : No purge (black and color) |
| 8            | Automatic purging for black ink                      | 0: Enable (default)    1: Disable  |

- **Selector 2: Home key switch in sleep mode**

Select whether the **Home** key blinks or turns off when the machine is in sleep mode.

**Note** Update the firmware to the latest version before using this function.

- **Selector 3: Black ink print mode**

If any color ink runs out, printing is no longer possible by default. Setting this selector to "1" allows the machine to function as a monochrome printer, making it possible to print with black ink only even in a "Replace Ink" state as listed below.

|                               |  |
|-------------------------------|--|
| Printing FAX message received | Monochrome printing only possible. (A color FAX message will be printed in monochrome.)                  |
| Printing from a PC            | No printing possible.  |
| Copying                       | Monochrome printing only possible. The <b>Mono</b> key is enabled, but the <b>Color</b> key is disabled. |
| Printing from memory cards    | No printing possible.  |
| Printing via PictBridge       | No printing possible.  |
| Printing lists                | Monochrome printing only possible.   |
| Purge operation               | Purge operation possible for black ink only, not possible for all-color or any specific color.           |

**Tip:** Difference between selector 3 on AMS04 and selector 8 on WSW49 (For details, refer to the "Worker Switches (WSW)" document separately issued.)

Both selector 3 on AMS04 and selector 8 on WSW49 specify the similar black ink print mode that applies if any color ink runs out. The difference is that the former allows the machine to print all data received as a monochrome printer with black ink only; the latter to ignore the "Replace Ink" state, receive both color and black data, and print it, resulting in a printout missing color components.

- **Selectors 4 and 8: Automatic purging for color ink and for black ink**

The machine periodically performs an automatic purge by default. The automatic purge, however, wastes ink when no printing has occurred. To avoid it, disable the automatic purge with these selectors. In the first printing after a long no-print period, disabling it may lower the print quality.

Setting selector 4 or 8 to "1" disables the setting made by selectors 6 and 7.

- **Selector 5: FAX plain paper monochrome printing direction switch**

Switch between bidirectional and unidirectional printing for FAX plain paper monochrome printing.

- **Selectors 6 and 7: Periodical purging intervals**

These selectors allow you to select the periodical purge interval to reduce ink consumption.

Setting these selectors "0, 0" (Prescribed purge intervals) performs purging at the intervals.

Setting these selectors to "1, 0" (30 days (black), no purge (color)) disables the setting made by selector 4.

Setting these selectors to "1, 1" (No purge (black and color)) disables the settings made by selectors 4 and 8.

### AMS05 (Printing assurance 3)

| Selector No. | Function  | Setting and Specifications  |
|--------------|---|---|
| 1            | Uneven printing correction for upper and lower ends of the nozzle | 0: ON (default) 1: OFF  |
| 2            | ON/OFF switch for the corrugation value checking function         | 0: ON (default) 1: OFF  |
| 3<br> <br>5  | Not used.   |   |
| 6<br> <br>8  | Adjustment of print head drive voltage rank                       | No. 6 7 8<br>0 0 0: +0<br>1 0 0: -0<br>0 0 1: +1<br>0 1 0: +2<br>0 1 1: +3<br>1 0 1: -1<br>1 1 0: -2<br>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.

- **Selector 2: ON/OFF switch for the corrugation value checking function**

Turn on or off the function for changing the multiplication coefficient based on the corrugation value stored in EEPROM.

- **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 4)**

| Selector No. | Function   | Setting and Specifications   |
|--------------|--|--|
| 1<br>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<br>0 0 : Disable (default)<br>0 1 : Improve black horizontal streaks<br>1 0 : Improve white horizontal streaks<br>1 1 : Further improve black horizontal streaks |
| 3<br>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<br>0 0 : Disable (default)<br>0 1 : Improve black horizontal streaks<br>1 0 : Improve white horizontal streaks<br>1 1 : Further improve black horizontal streaks |
| 5<br>6       | Improvement of white and black horizontal streaks during print on glossy paper   | No. 5 6<br>0 0 : Disable (default)<br>0 1 : Improve black horizontal streaks<br>1 0 : Improve white horizontal streaks<br>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 5)**

| Selector No. | Function   | Setting and Specifications     |
|--------------|--|--------------------------------|
| 1            | Improvement of displaced ruled lines for A3/ledger/B4 size                             | 0: Disable (default) 1: Enable |
| 2            | Improvement of displaced ruled lines for A4/letter size                                | 0: Disable (default) 1: Enable |
| 3            | Improvement of displaced ruled lines for sizes other than A3/ ledger/B4/A4/letter size | 0: Disable (default) 1: Enable |
| 4            | Brother Paper mode   | 0: Disable (default) 1: Enable |
| 5            | Improvement of mist stains on the second side  | 0: Enable (default) 1: Disable |
| 6            | Ignore the sensor for paper tray 2   | 0: Disable (default) 1: Enable |
| 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: Improvement of displaced ruled lines for A3/ledger/B4 size**

Setting this selector to "1" switches to the unidirectional print mode with control enabled for improving displaced ruled lines, in normal printing of A3/ledger/B4 size plain paper.

- **Selector 2: Improvement of displaced ruled lines for A4/letter size**

Setting this selector to "1" switches to the unidirectional print mode with control enabled for improving displaced ruled lines, in normal printing of A4/letter size plain paper.

- **Selector 3: Improvement of displaced ruled lines for sizes other than A3/ledger/B4/A4/letter size**

Setting this selector to "1" switches to the unidirectional print mode with control enabled for improving displaced ruled lines, in normal printing of plain paper of sizes other than A3/ledger/B4/A4/letter size.



- **Selector 4: Brother Paper mode**

Setting this selector to "1" switches to print with control enabled for enhanced printing quality, as customized for Brother Paper.

- **Selector 5: Improvement of mist stains on the second side**

Setting this selector to "0" switches the minimum ink drip during printing from 1.5 pl to 3 pl under the following printing conditions, thereby improving mist stains on the second side.

- Printing mode: media print, JPEG PC printing, AirPrint, Cloud printing
- Resolution: 1,200 x 2,400 dpi
- Paper size: postcard, 4 x 6 in

Set this selector to "1" for high-quality printing. Mist stains may occur in this selection.

- **Selector 6: Ignore the sensor for paper tray 2**

In a machine with paper tray 2, "Paper tray #2 not detected" is displayed on the LCD when the paper tray 2 is not connected.

Setting this selector to "1" enables to use the machine without the caution message displayed, even if paper tray 2 is not connected.

- **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.

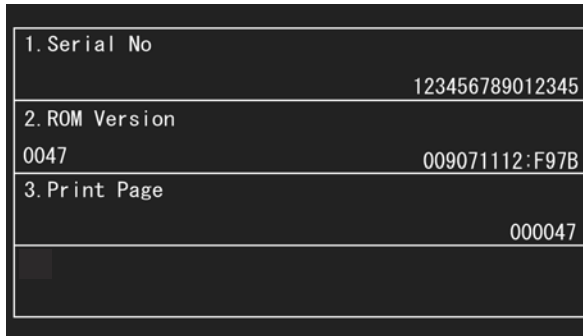
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## 2 OTHER SERVICE FUNCTIONS

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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.

A screenshot of a black LCD display with white text. The screen is divided into three horizontal sections by thin white lines. The first section contains '1. Serial No' on the left and '123456789012345' on the right. The second section contains '2. ROM Version' on the left, '0047' on the left, and '009071112:F97B' on the right. The third section contains '3. Print Page' on the left and '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.

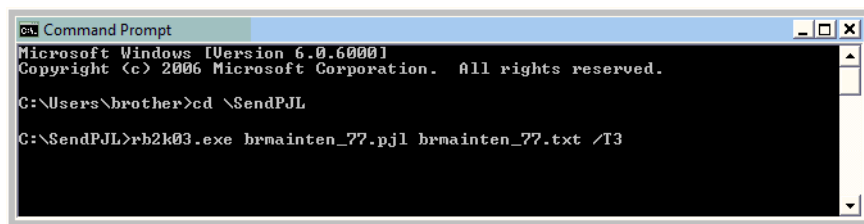
### ■ Operating Procedure

- (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 [Section 1.1](#) 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.)



```
Ca: Command Prompt
Microsoft Windows [Version 6.0.6000]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\brother>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
```

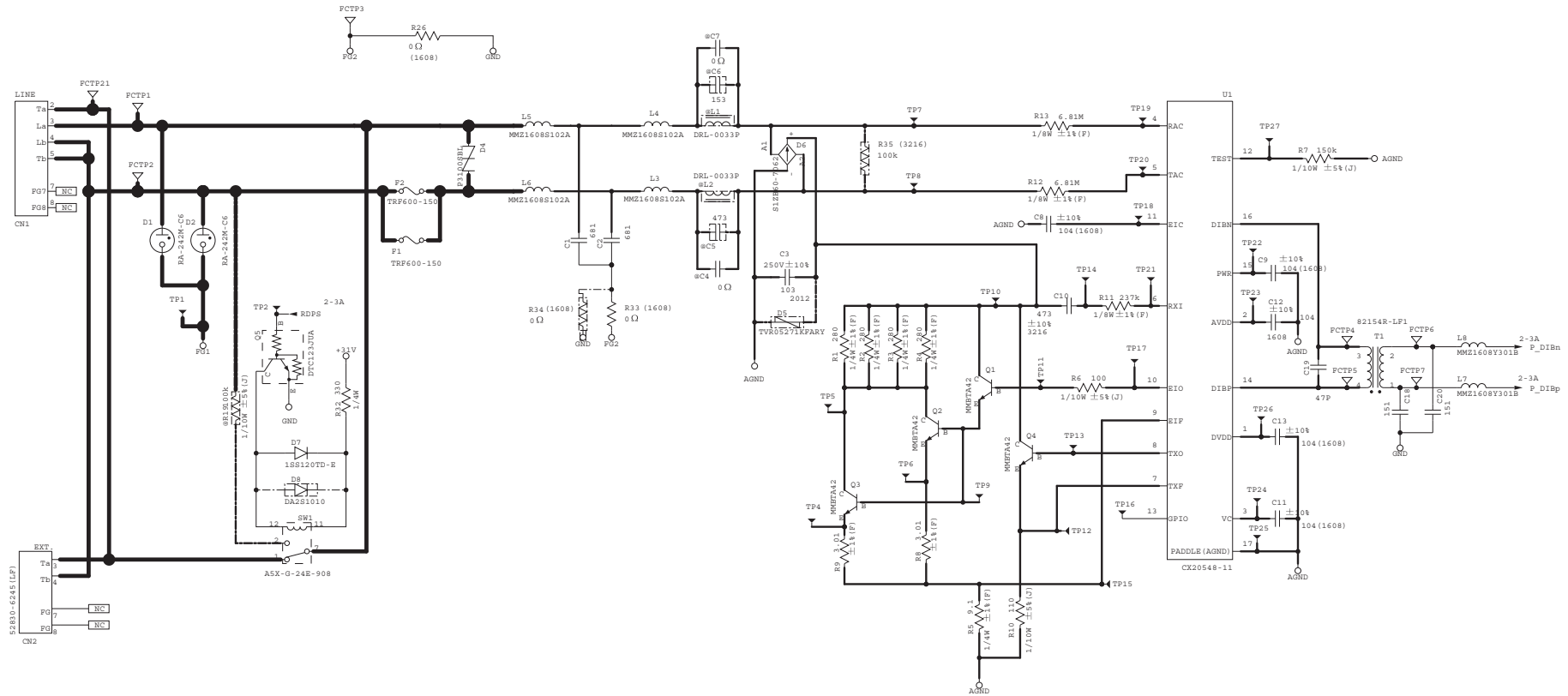
Otherwise, an error occurs.

brmainten\_77.txt is created in the arbitrary folder.

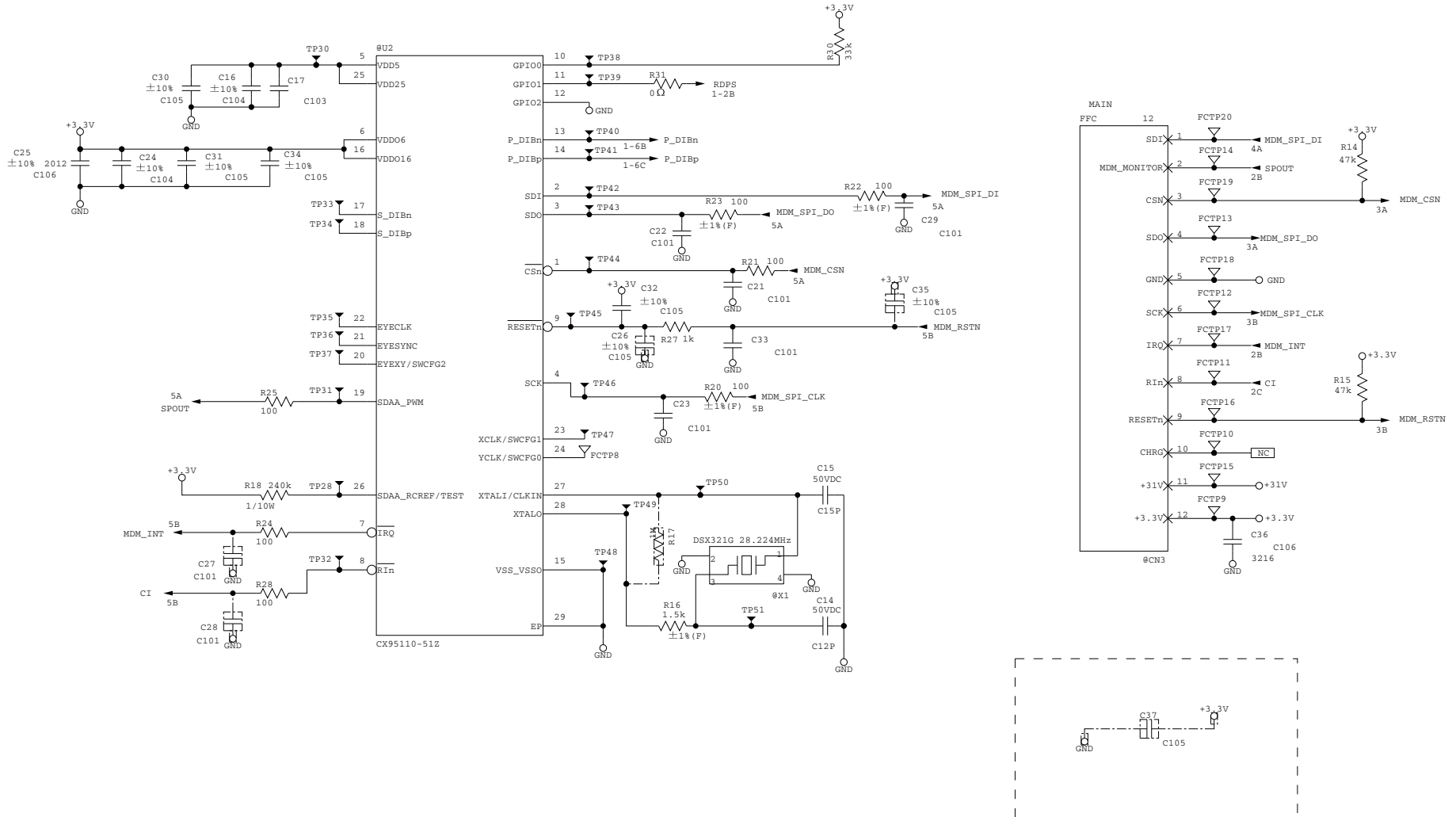
- (7) In Excel, open the created header/footer and delete texts added by the PJL stipulation.

# CHAPTER 6 CIRCUIT DIAGRAMS AND WIRING DIAGRAMS

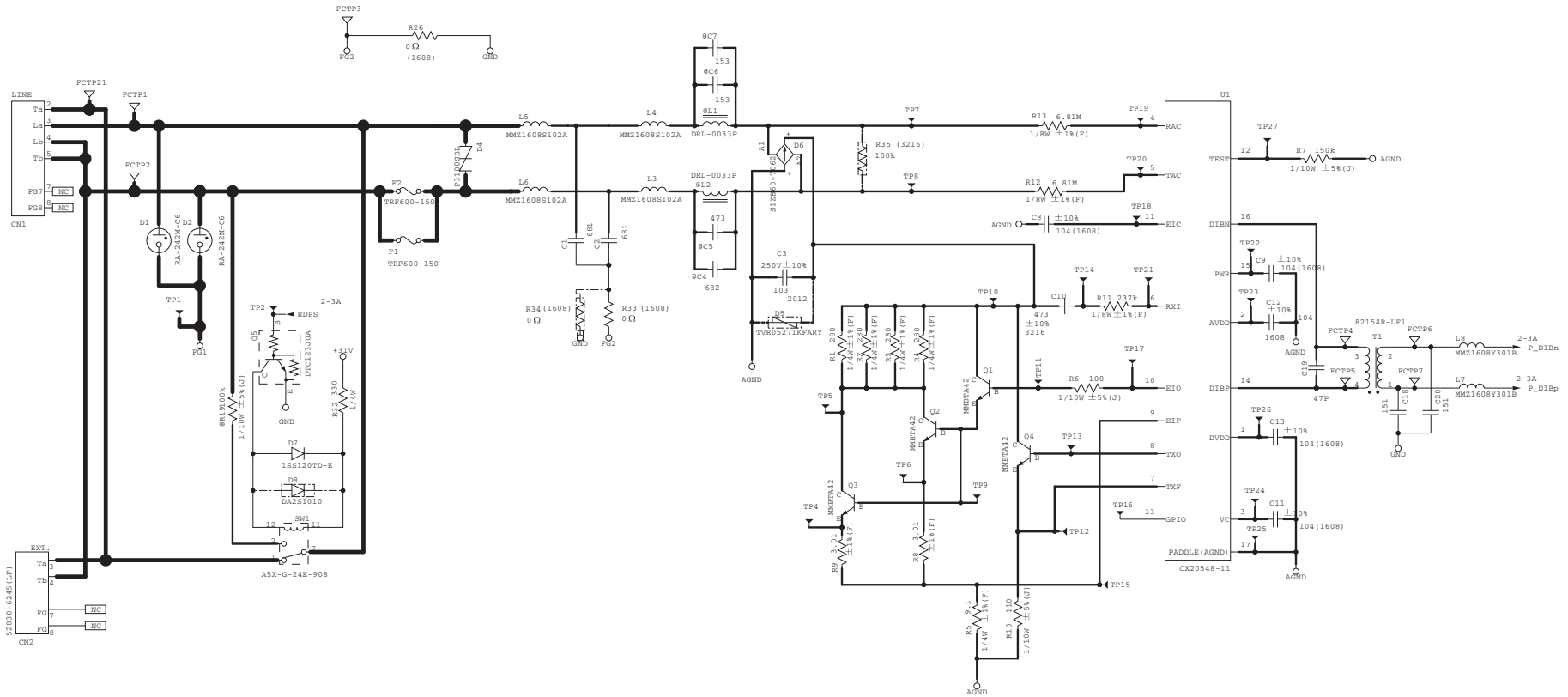
## ■ Modem PCB U.S.A., Canadian models (Page1)



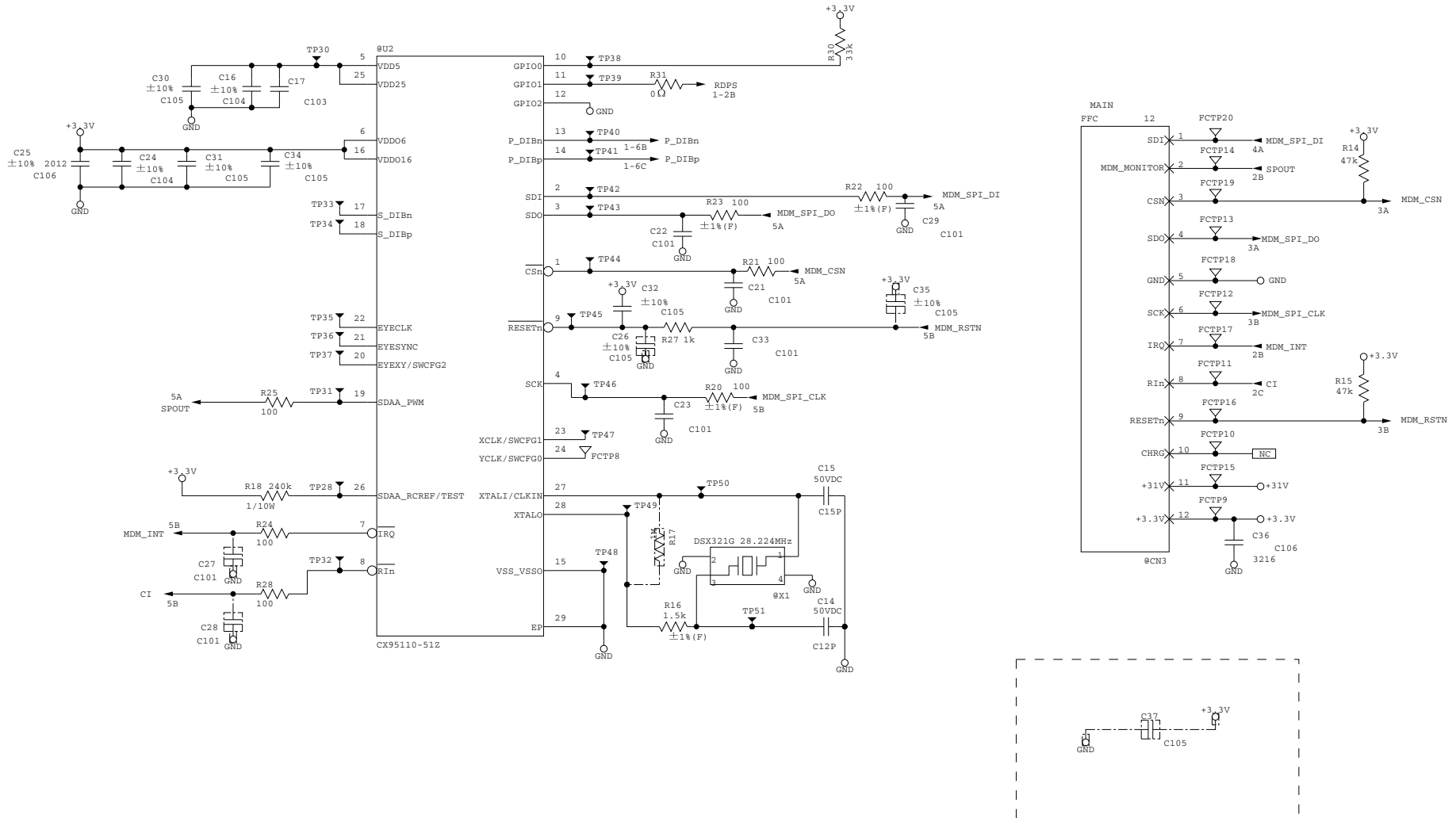
■ Modem PCB  
 U.S.A., Canadian models (Page2)



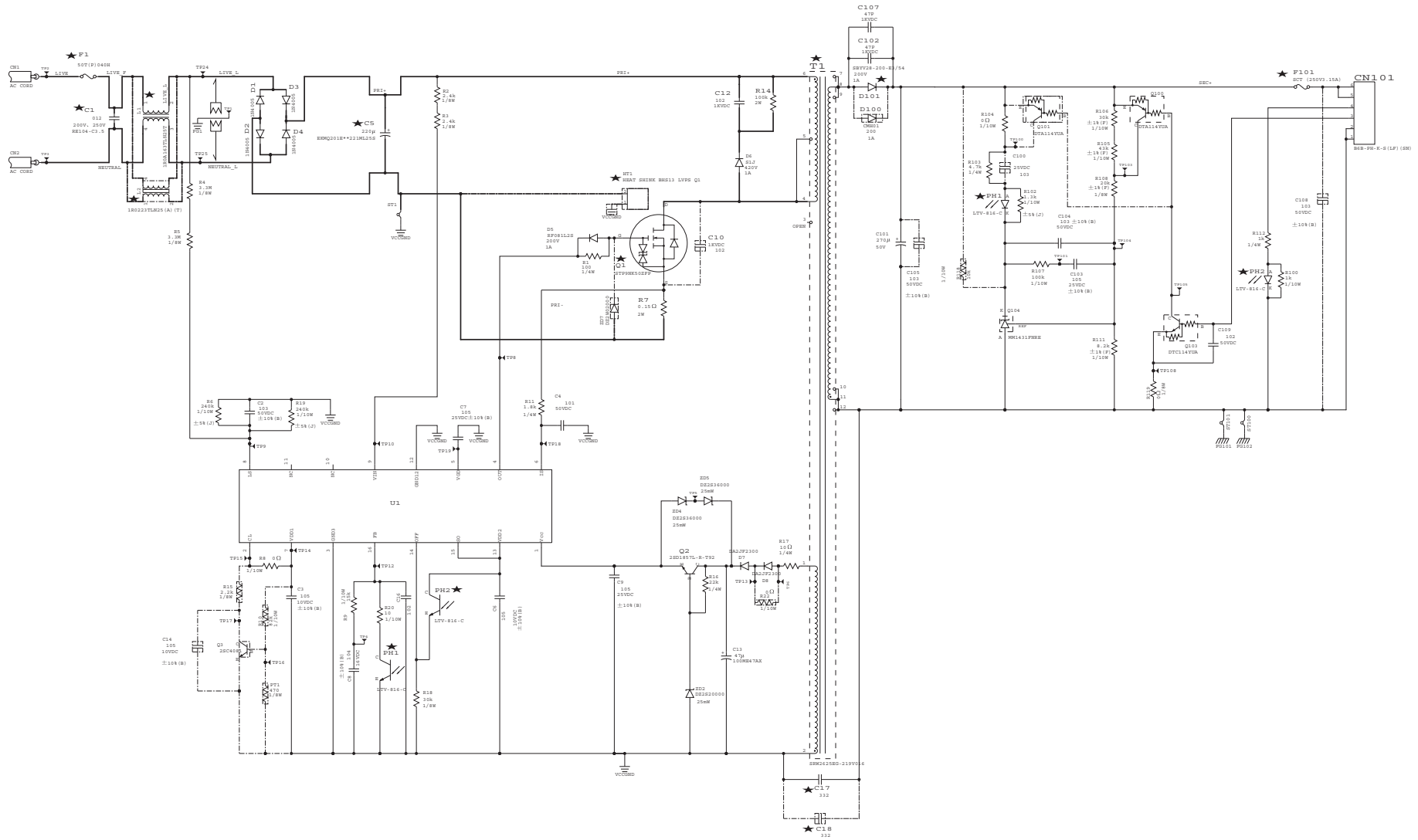
■ Modem PCB  
European models (Page1)



■ Modem PCB  
European models (Page2)

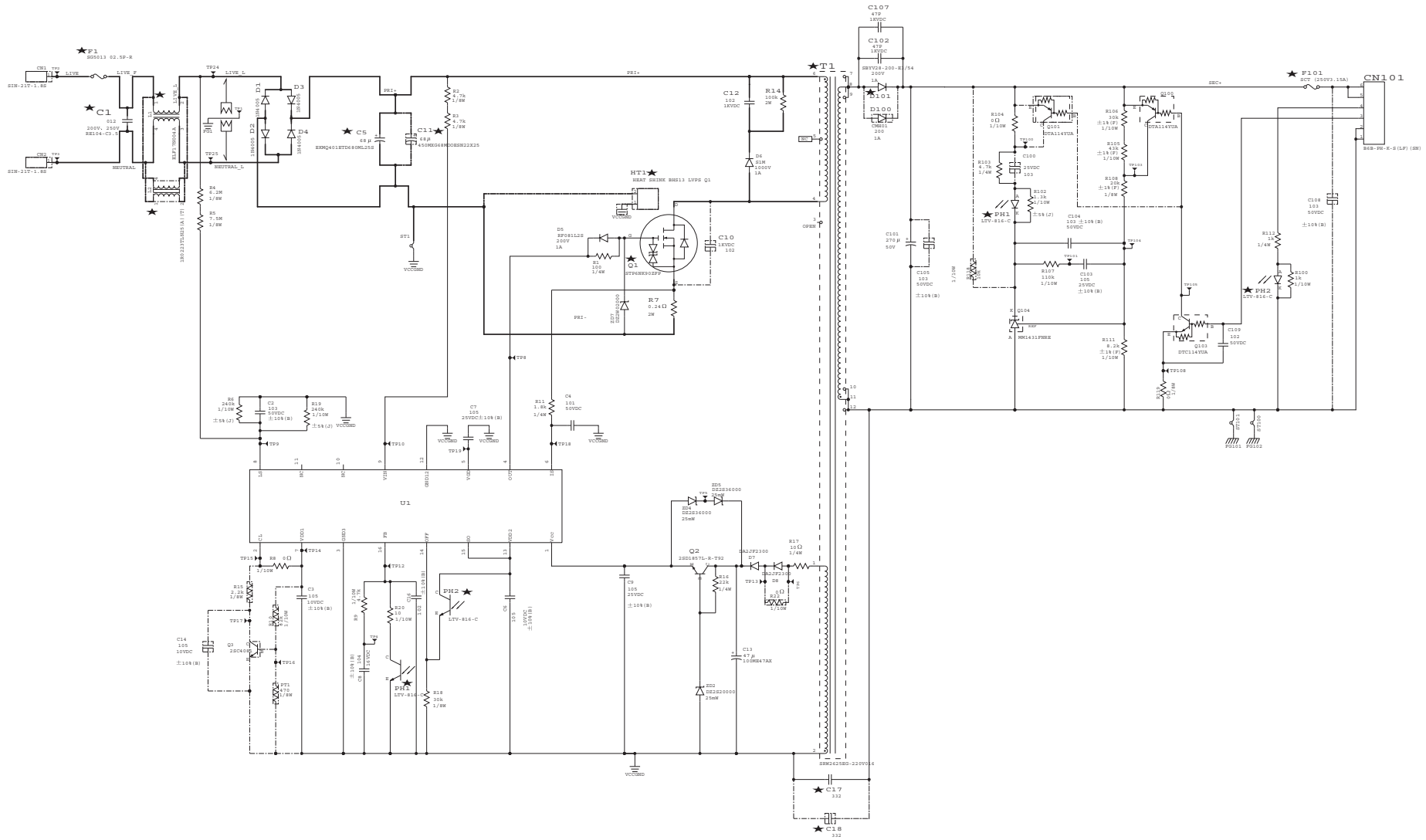


■ Power supply PCB, 100 V series

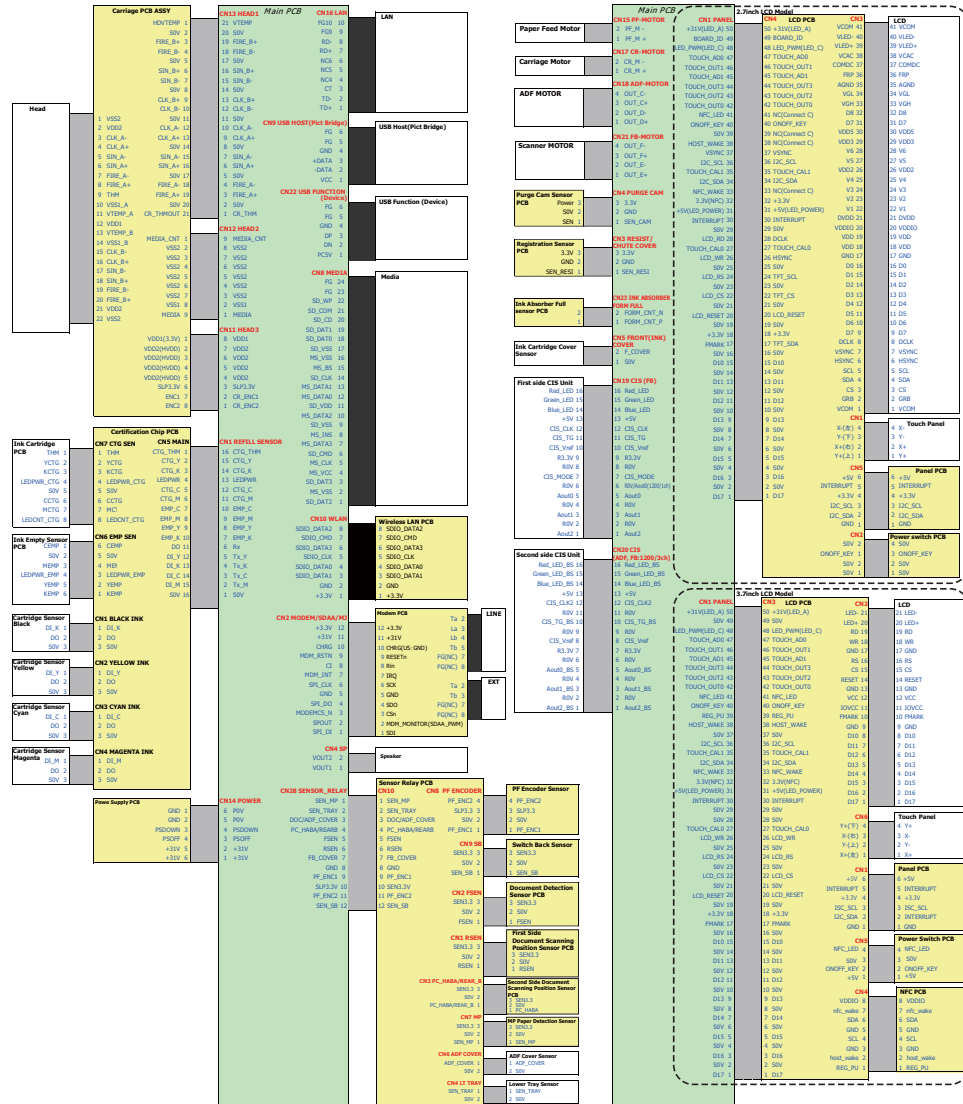




■ Power supply PCB, 200 V series



# Wiring Diagram



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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

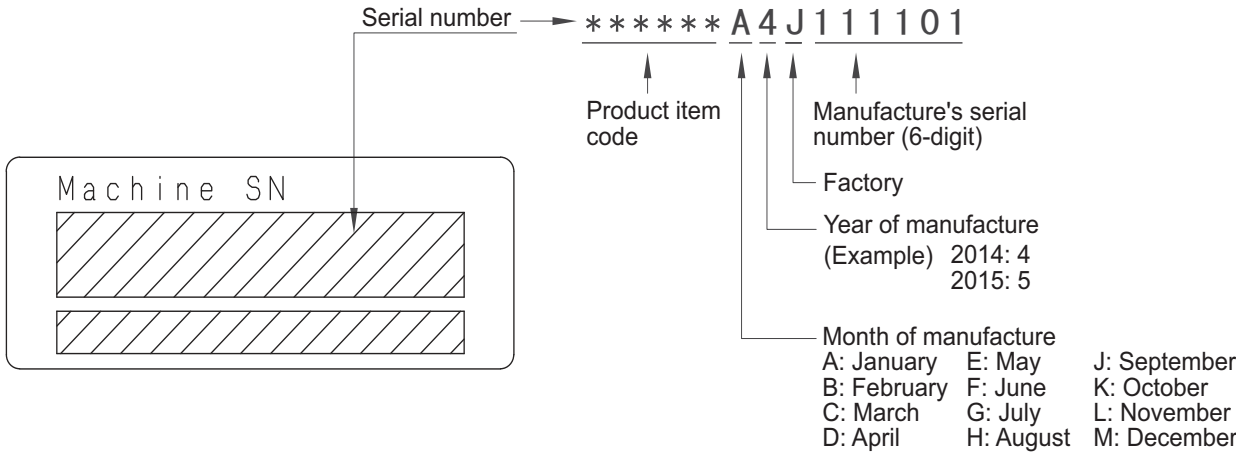
This appendix shows the location of labels put on some parts and describes the coding information for serial number and head property data.

### < 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 data.

### (1) Serial number label for the machine itself



### Location

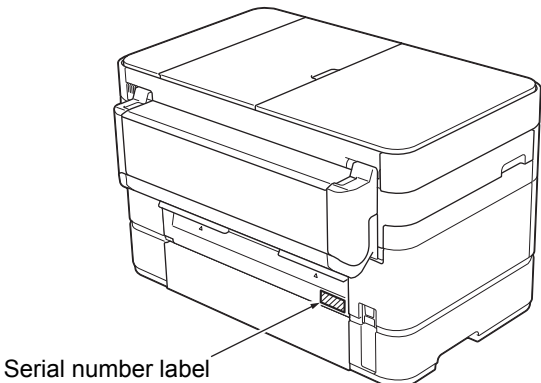


Fig. App 1-1

## (2) Head property label

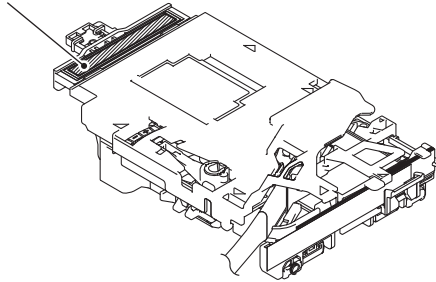
The property code of the head/carriage unit is printed on the head property label attached to the head/carriage unit.



### ■ Head property label on the head/carriage unit

#### Location

Head property label



**Fig. App 1-2**

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## APPENDIX 2. DELETION OF USER SETTING INFORMATION


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### Deleting User Setting Info from the machine

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
- Password assigned by the secure function lock (for models with secure function lock)
- 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 **Yes**.
- (4) Press **Yes** for 2 seconds or more.

---

## APPENDIX 3. INSTALLING THE MAINTENANCE PRINTER DRIVER

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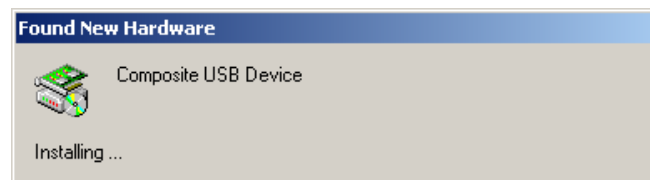
To identify machines connected via USB direct interface, the PC requires the corresponding driver for the virtual USB device. If you connect any number of machines to your PC, the same number of virtual USB devices will be automatically configured on your PC. To prevent many virtual USB devices from being configured, use the unique driver installation procedure described below that enables your PC to identify terminals via one single virtual USB device.

- NOTE:**
- 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.

### Windows 2000/Windows XP

- (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) Turn on the power switch of the machine.
- (4) Switch the machine to the maintenance mode. (Refer to [Chapter 5](#).)
- (5) Connect the machine to your PC using a USB cable.

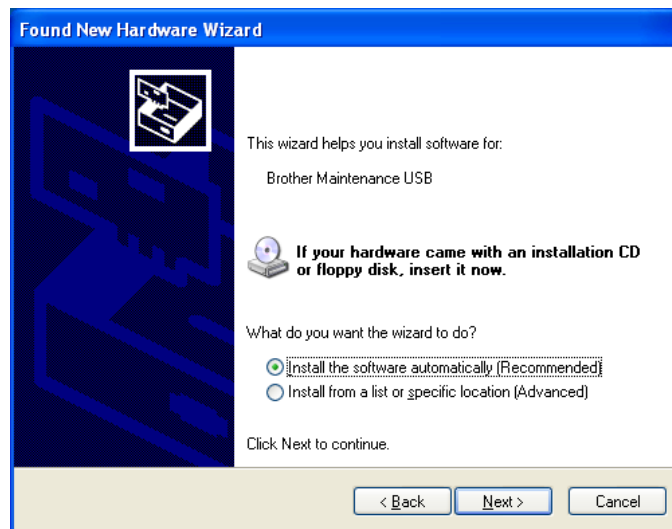
The following window appears.



- (6) The following screen appears, indicating the detection of new hardware device by the system. Select "No, not this time." And click **Next**.



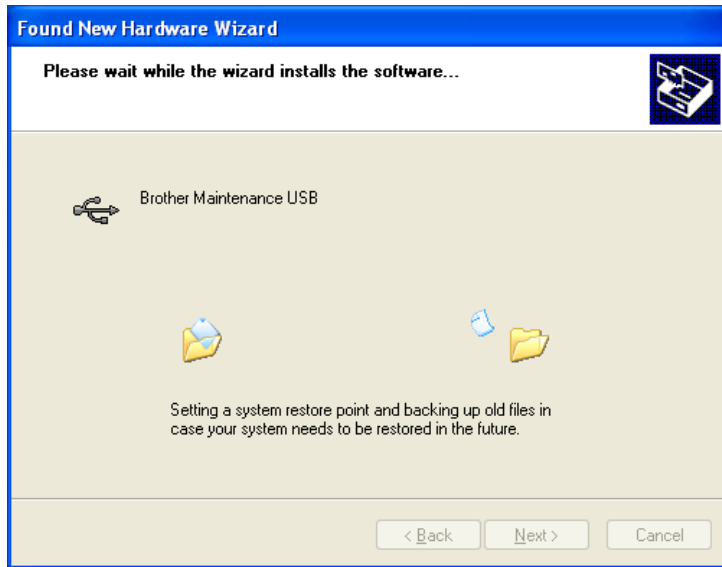
(7) Select "Install the software automatically (Recommended)" and click **Next**.



(8) Alert warning message of WHQL appears. Click **Continue Anyway** to proceed.





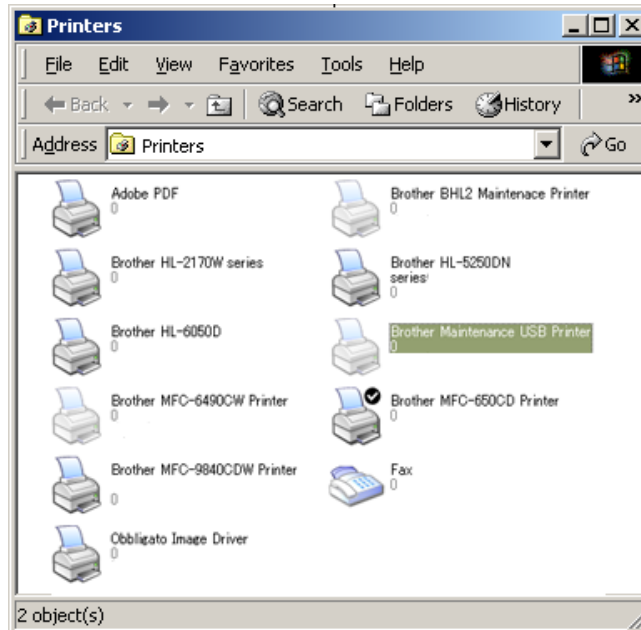


(9) Repeat steps (6) to (8) three times. Installation is completed.

(10) If the Brother Maintenance USB Printer driver is successfully installed, the following message screen appears. Click **Finish** to return.

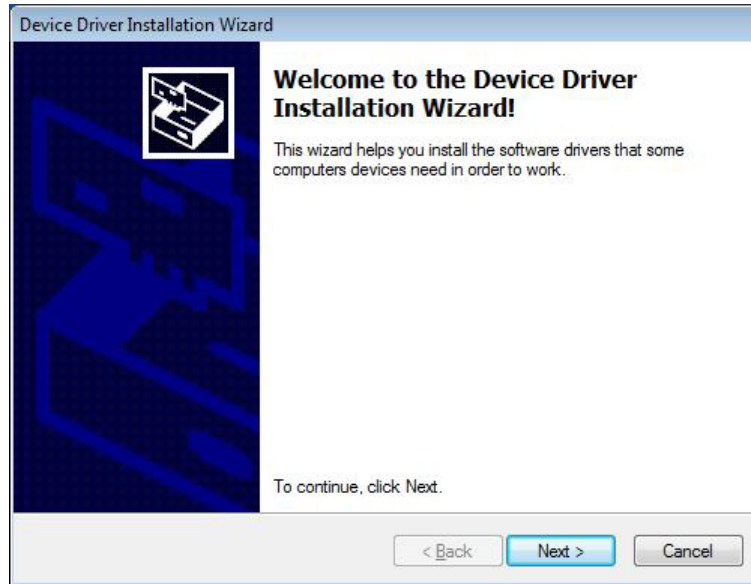


**NOTE:** In order to check whether the printer driver is successfully installed, click **Start | Settings | Printers** to select the Printers window. Then, check that the Brother Maintenance USB Printer icon is shown.

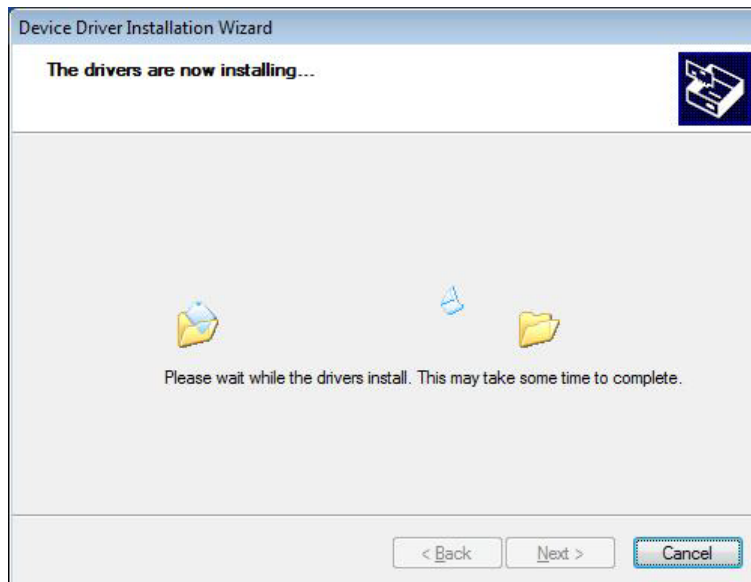


## Windows Vista / Windows 7 / Windows 8 / Windows 8.1

- (1) Check that the power cord of the machine is unplugged from the electrical outlet. Disconnect the USB cable that connects the machine with your PC.
- (2) Turn on your PC.
- (3) 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.