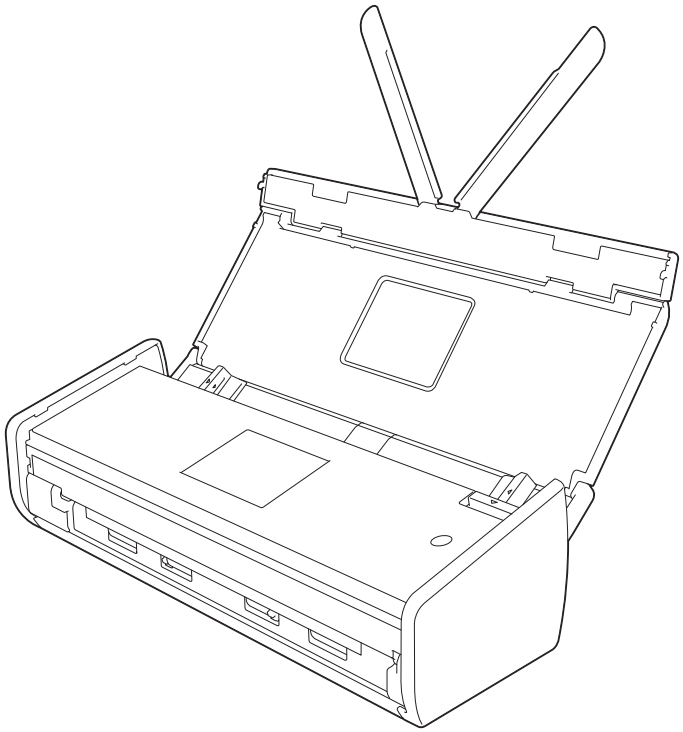
brother

Brother Advanced Document Scanner

SERVICE MANUAL

MODEL:
ADS-1000W/1100W



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

Jul., 2013
SM-PT060
(1)

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CONTENTS

CHAPTER 3 DISASSEMBLY/REASSEMBLY

PRODUCT WARRANTY & LIABILITY

Nothing in this guide shall affect any existing product warranty or be construed as granting any additional product warranty. Failure to follow the safety instructions in this guide may invalidate your product's warranty.

⚠ WARNING
Use only the power cord supplied with this machine.
This product must be installed near an electrical socket that is easily accessible. In case of an emergency, you must unplug the power cord from the electrical socket to shut off the power completely.

■ Wiring information (U.K. only)

If you need to replace the fuse in the plug, fit a fuse that is approved by ASTA to BS1362 with the same rating as the original fuse. Always replace the fuse cover. Never use a plug that does not have a cover. If in any doubt, call a qualified electrician.

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

- Blue: Neutral
- Brown: Live

■ 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 Brother Solutions Center. Visit http://solutions.brother.com/ and:

→ 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)

We, Brother Industries Ltd.
15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan
declare that this product is 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.

■ Wireless LAN

This product supports Wireless LAN.

■ 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 m in length.

■ Recycling information in accordance with the WEEE and Battery Directives

Product mark

Battery mark

European Union only

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

REGULATION

⚠ WARNING

This product must be installed near an AC power outlet that is easily accessible. In case of an emergency, you must unplug the power cord from the AC power outlet to shut off the power completely.

IMPORTANT

- Brother cannot accept any financial or other responsibilities that may be the result of your use of this information, including direct, special or consequential damages. There are no warranties extended or granted by this document.
- This machine has been certified to comply with FCC standards, which are applied to the USA only.

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

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

declares, that the product

Product Name: ADS-1000W

complies 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.

Wireless connection (Mexico only)

The operation of this equipment is subject to the following two conditions:
(1) it is possible that this equipment or device may not cause harmful interference, and (2) this equipment or device must accept any interference, including interference that may cause undesired operation.

■ 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 present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

■ 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 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.

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

Notes tell you how you should respond to a situation that may arise or give tips about how the operation works with other features.

Prohibition icons indicate actions that must not be performed.

This icon indicates that flammable sprays may not be used.

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

Electrical Hazard icons alert you to possible electrical shock.

Fire Hazard icons alert you to the possibility of fire.

Unplug icons indicate that you should unplug the machine.

Bold Bold typeface identifies specific keys on the machine's control panel or on the computer screen.

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

Follow all warnings and instructions marked on the machine.

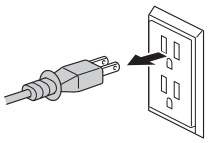
■ To use the Machine Safely

Please keep these instructions for later reference and read them before attempting any maintenance. If you do not follow these safety instructions, there is a possibility of a fire, electrical shock, burn or suffocation.

⚠ 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 unit. 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.
DO NOT push objects of any kind into the unit through slots or openings in the cabinet, as they may touch dangerous voltage points or short out parts.



DO NOT continue using the unit if it has been dropped or the cabinet has been damaged. Instead, unplug the unit from the power outlet and contact Brother Authorized Service Personnel.

The unit 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. Doing this might cause an electrical shock or a risk of fire. If you are not sure what kind of power source you have, contact a qualified electrician.

If water, other liquids, or metal objects get inside the unit, immediately unplug the unit from the AC power outlet and contact Brother Authorized Service Personnel.

Power Cord Safety:

- Use only the power cord supplied with this product.
- DO NOT allow anything to rest on the power cord.
- DO NOT place the unit where people can walk on the cord.
- DO NOT place the unit in a position where the cord is stretched or strain is otherwise put on the cord, as it may become worn or frayed.
- DO NOT use the unit or handle the cord if the cord has become worn or frayed. If unplugging the unit, DO NOT touch the damaged/frayed part.
- Brother strongly recommends that you DO NOT use any type of extension cord.

AC Adapter Safety

Only use the supplied AC adapter with the unit. Only plug the AC adapter into a power outlet with voltage that is within the range indicated on the AC adapter rating label located on the AC adapter block. Failure to do so may result in injury to yourself or others, or damage to the machine or other property. Brother does not assume any responsibility for any damage resulting from using an AC adapter other than the one specified.

DO NOT use a damaged AC adapter.

DO NOT place heavy objects on, damage, or modify the AC adapter.

DO NOT forcibly bend the cord of the AC adapter.

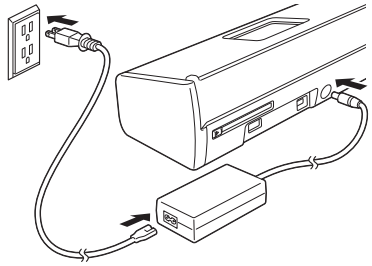
DO NOT forcibly pull the cord of the AC adapter.

DO NOT drop, hit, or otherwise damage the AC adapter.

DO NOT touch the unit during a thunderstorm when the AC adapter is plugged in. There may be a remote risk of electric shock from lightning when the machine is used during a thunderstorm.

When disconnecting the AC adapter from the machine or from the power outlet, always hold the connector, not the cable, and pull firmly. Failure to do so may result in exposed or broken power cord wires and/or create a risk of fire, or electric shock.

Make sure that one end of the power cord is firmly plugged into a standard power outlet and the other end is firmly plugged into the adapter block. Do not use an outlet that is loose. If the power cord is not completely plugged into the power outlet and adapter block, the adapter may become hot and/or catch fire.



DO NOT exceed the rated input or output of the AC adapter.

DO NOT connect the supplied AC adapter to other products.

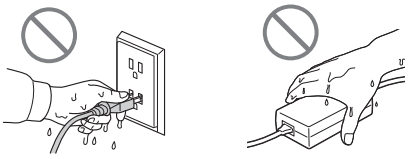
This product was packaged in a plastic bag. To avoid suffocation, keep this plastic bag away from babies and children. Do not use the bag in cribs, beds, carriages or play pens. The bag is not a toy.

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 unit. Doing this may cause a risk of fire or electrical shock.

DO NOT touch the AC adapter or handle the plug with wet hands.

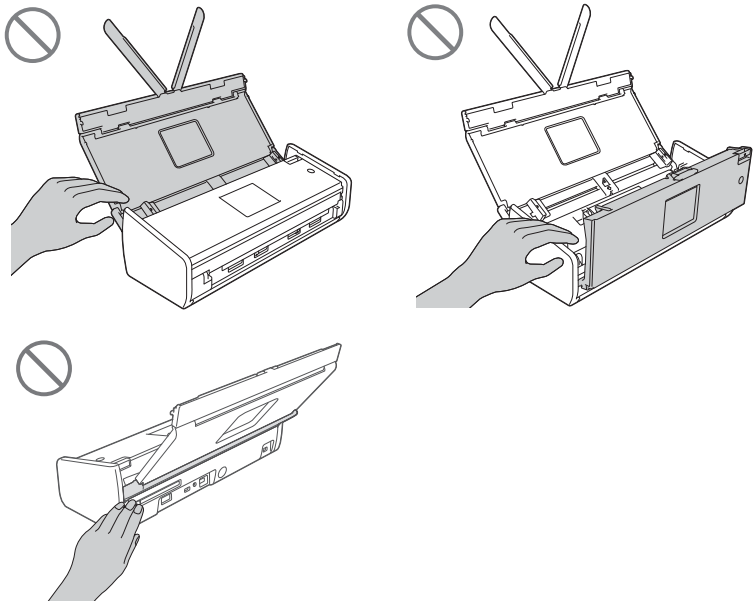


⚠ CAUTION

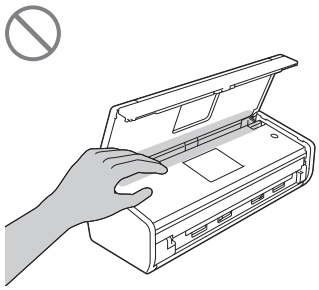
DO NOT sit or stand on the unit or use it for any purpose beyond its intended purpose.

Wait until pages have exited the machine before picking them out. Otherwise, you could cause injury to your fingers by trapping them in a roller.

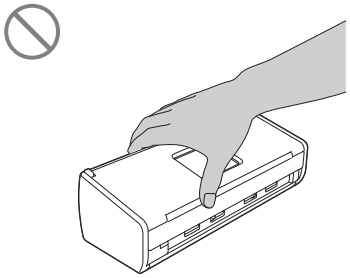
DO NOT put your hands on the edge of the machine. Doing this may cause injury to your fingers by pinching them.

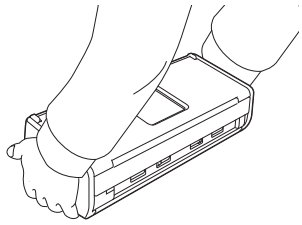


DO NOT touch the shaded area shown below when the top cover is open. Doing this may cause injury to your fingers by pinching them.

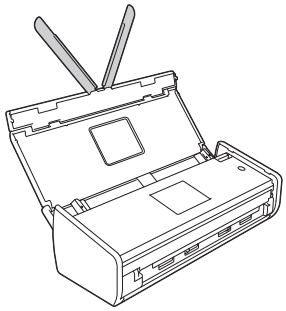


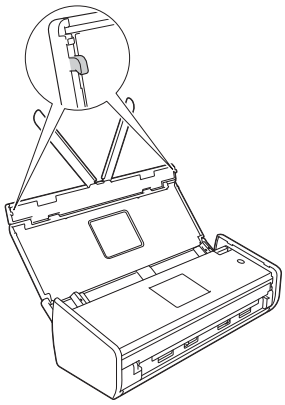
DO NOT carry the machine by holding the top cover. Doing this may cause the machine to slip out of your hands. Only carry the machine by placing your hands under the entire machine.





Be careful of the projections on the machine. Otherwise, injury could result.





If you do not intend to use the unit for an extended period of time, disconnect the AC adapter from the power outlet.

DO NOT swing the AC adapter around or play with it. Doing so may result in injury to yourself or others.

Use caution when operating the machine to prevent clothing (particularly sleeves, neckties, etc.), hair, or accessories from being drawn into the machine, otherwise injury may result. In the event that an object is drawn into the machine, immediately disconnect the unit from the power source.

■ Legal limitations for copying

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- Bonds or other certificates of indebtedness
- Certificates of Deposit
- Internal Revenue Stamps (canceled or uncanceled)
- Selective Service or draft papers
- Passports
- United States/Canadian Postage Stamps (canceled or uncanceled)
- Food Stamps
- Immigration Papers
- Checks or drafts drawn by Governmental agencies
- Identifying badges or insignias

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Works of art should be considered the equivalent of copyrighted works.

■ Troubleshooting/Disassembling/Assembling Notes

- Be sure to unplug the AC power cord before removing any covers or PCBs, adjusting the machine, or conducting continuity tests using a tester.
- Be sure to always observe all warnings.
- Be careful not to lose screws, washers, or other parts removed.
- Be sure to apply grease to applicable positions specified in this chapter.
- When using soldering irons or other heat-generating tools, take care not to accidentally damage parts such as wires, PCBs and covers.
- Static electricity charged in your body may damage electronic parts. When transporting PCBs, be sure to wrap them in conductive sheets.
- When replacing the PCB and all the other related parts, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables or on the wire harnesses.
- After disconnecting flat cables, check that each cable is not damaged at its end or short-circuited.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.
- When connecting or disconnecting harnesses, hold the connector body, not the cables. If the connector is locked, release it first.
- After a repair, check not only the repaired portion but also harness treatment. Also check that other related portions are functioning properly.
- After assembly, it is recommended to conduct dielectric strength test and continuity test.

CHAPTER 1 SPECIFICATIONS

1. SPECIFICATIONS LIST

1.1 General

Model			ADS-1000W/1100W
Scanning Method			Dual CIS
Resolution From ADF (Optical)			600 x 600 dpi
Resolution (Interpolated)			Max 1200 x 1200 dpi
Scanning Speed	One-sided Monochrome		16 ppm@300 dpi
	One-sided Color		16 ppm@300 dpi
	Two-sided Monochrome		16 ppm@300 dpi
	Two-sided Color		16 ppm@300 dpi
CPU			ARM946 288 MHz 32 k / 32 k
Memory			128 MB
Interface			USB Hi-Speed 2.0 / USB Host / WiFi
Power Consumption	Scanning		Approximately 14 W
	Ready		Approximately 4.0 W
	Sleep		Approximately 1.5 W
	Power Off		Approximately 0.25 W
Power Source			AC: 100 to 240 V, 50/60 Hz DC: 24 V, 1 A
Noise Level	Sound Pressure	Scanning	47 dB
	Sound Power	Scanning	59 dB
Environment	Temperature		Operating: 5 to 35°C Storage: 0 to 40°C
	Humidity		Operating: 20 to 80% Storage: 10 to 90% (without condensation)
Dimensions (WxDxH)	Carton Size		W 380 x D 170 x H 207 mm (14.7" x 6.7" x 8.1")
	Machine Size		W 285 x D 103 x H 84 mm (11.2" x 4.1" x 3.3")
Weights	without Carton		1.5 kg (3.3 lb)
	with Carton		2.5 kg (5.5 lb)
LCD Size			N/A

Specifications are subject to change without notice.

<Computer requirements>

Computer Platform & Operating System Version		Processor Minimum Speed	Minimum RAM	Recom-mended RAM	Hard Disk Space to Install		Supported PC Interface
					For Drivers	For Applications	
Windows® Operating System	Windows® XP *1 (32 bit)	Intel® Pentium® II or equivalent	128 MB	256 MB	150 MB	1 GB	USB/ 802.11 b/g/n (Wireless)
	Windows Vista® *1	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD 64) supported CPU	512 MB	1 GB	500 MB	1.5 GB	
	Windows® 7 *1		1 GB (32 bit) 2 GB (64 bit)	1 GB (32 bit) 2 GB (64 bit)	650 MB	1 GB	
	Windows® 8 *1						
Macintosh Operating System	OS X v10.6.8	Intel® Processor	1 GB	2 GB	80 MB	1 GB	
	OS X v10.7.x		2 GB				
	OS X v10.8.x						

*1 Paper port™ 12SE supports Windows® XP Home (SP3 or greater), XP Professional (SP3 or greater), Windows Vista® (SP2 or greater) and Windows® 7.

Specifications are subject to change without notice.

1.2 Network Connectivity

Model		ADS-1000W/1100W
Wired network	Network node type	N/A
	Network type	N/A
	Network security	N/A
Wireless network	Network node type	NC-03w
	Network type	IEEE 802.11 b/g/n
	Network security	SSID (32 characters), WEP 64/128 bit, WPA-PSK (TKIP/AES), WPA2-PSK (AES)

Specifications are subject to change without notice.

1.3 Service Information

Part	Approximate Life (pages)
Machine life	100,000 sheets (A4/LTR) or 5 years
MTBF	4,000 hours
MTTR	0.5 hours
Maximum monthly volume	10,000 sheets (A4/LTR)

Specifications are subject to change without notice.

1.4 Consumable Parts

Part	ADS-1000W/1100W
Separation pad ASSY	10,000 sheets (A4/LTR) or 1 year (User replacement parts)
Pick-up roller	50,000 sheets (A4/LTR) or 1 year (User replacement parts)

Specifications are subject to change without notice.

1.5 Paper

1.5.1 Paper handling

Model	ADS-1000W/1100W
ADF Input	20 sheets
ADF Output	N/A
Duplex (Scan)	Yes

Specifications are subject to change without notice.

1.5.2 Media specifications

Model		ADS-1000W/1100W
Media Type	ADF	Plain Paper, Thin Paper, Thick Paper, Thicker Paper, Recycled Paper, Business Card, Plastic Card
Media Weight	ADF (multiple paper)	52 to 110 g/m^2 (14 lb to 29 lb)
	ADF (single paper)	Plain paper: 52 to 110 g/m^2 (14 lb to 29 lb), Thick paper: 110 to 200 g/m^2 (29 lb to 53 lb), Long paper: 52 to 110 g/m^2 (14 lb to 29 lb)
Media Size	ADF (multiple paper)	Width: 51 to 215.9 mm (2.0" to 8.5"), Length: 70 to 297 mm (2.76" to 11.7")
	ADF (single paper)	Width: 51 to 215.9 mm (2.0" to 8.5"), Length: 70 to 863.0 mm (2.76" to 34")
Plastic Card Size	Card Slot	Length Min: 70 mm (2.76") Max: 95 mm (3.74"), Width Min: 51 mm (2.0") Max: 55 mm (2.17")
Plastic Card Thickness		Min: 0.4 mm (16 mil) Max: 0.76 mm (30 mil)

Specifications are subject to change without notice.

1.6 Scanner

Color/Black		Yes/Yes
TWAIN Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7 / Windows® 8
	Macintosh	OS X v10.6.8, 10.7.x, 10.8.x *2
WIA Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7 / Windows® 8
ICA Compliant	Macintosh	OS X v10.6.8, 10.7.x, 10.8.x *2
ISIS™ Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7 / Windows® 8
Color Depth	Input	30 bit color processing
	Output	24 bit color processing
Resolution	Interpolated	Up to 1200 x 1200 dpi
	Optical	Up to 600 x 600 dpi
Scanning Width		Up to 8.34 inch (212 mm)
Gray Scale		256 levels

*1 Windows® XP in this Service Manual includes Windows® XP Home Edition and Windows® XP Professional.

*2 For the latest driver updates for the Mac OS X you are using, visit us at http://solutions.brother.com/.

Specifications are subject to change without notice.

CHAPTER 2 ERROR INDICATIONS & TROUBLESHOOTING

1. CHECKS BEFORE COMMENCING TROUBLESHOOTING

Check the following items before commencing repairs on the machine.

■ Operating environment

(1) The machine is placed on a flat, stable surface.

(2) The machine is used in a clean environment where the temperature is between 5°C (41°F) and 35°C (95°F) and the relative humidity is maintained between 20% and 80%.

(3) The machine is not exposed to direct sunlight, excessive heat, moisture, or dust.

(4) Hold the machine level while moving it.

■ Power supply

(1) Power described on the rating label attached on the machine is supplied. Power fluctuation should be within ±10% of the rated voltage.

(2) The AC input power supply is within the regulated value.

(3) The cables and harnesses are connected correctly.

(4) The fuses are not blown.

(5) AC adapter and AC code included in the package are used.

■ Document

(1) The recommended paper is used for the document. (Refer to "1.5.2 Media specifications" in Chapter 1.)

(2) The document is not damp.

(3) Acid paper is not used.

(4) The document is not bent, torn, or wrinkled.

■ Others

(1) Condensation
When the machine is moved to a warm room from a cold location, condensation may occur inside the machine, causing various problems as listed below.

- Condensation on the surface of optical devices such as the CIS glass and CIS unit may result in poor quality of scanned images.
- Condensation on the pick-up roller or separation pad ASSY may cause document feed problems.
  If condensation has formed in the machine, leave the machine for about two hours until it reaches room temperature.

(2) Low temperature
The motor may not operate normally under a low temperature environment because too much load is applied to each drive. In this case, increase the room temperature.

■ Cleaning

Use a soft lint-free cloth.

WARNING

DO NOT use any flammable spray or flammable solvent such as alcohol, benzine, or thinner to clean the machine. **DO NOT** use these articles near the machine.

2. OVERVIEW

2.1 Cross-section Drawing

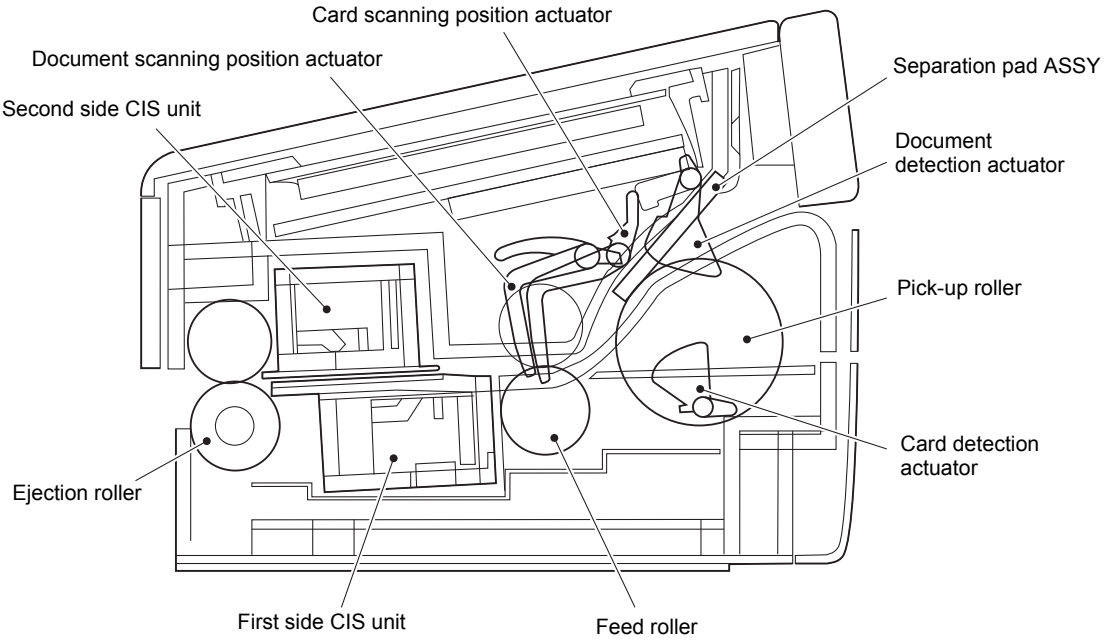


Fig.2-1

2.2 Paper Feeding

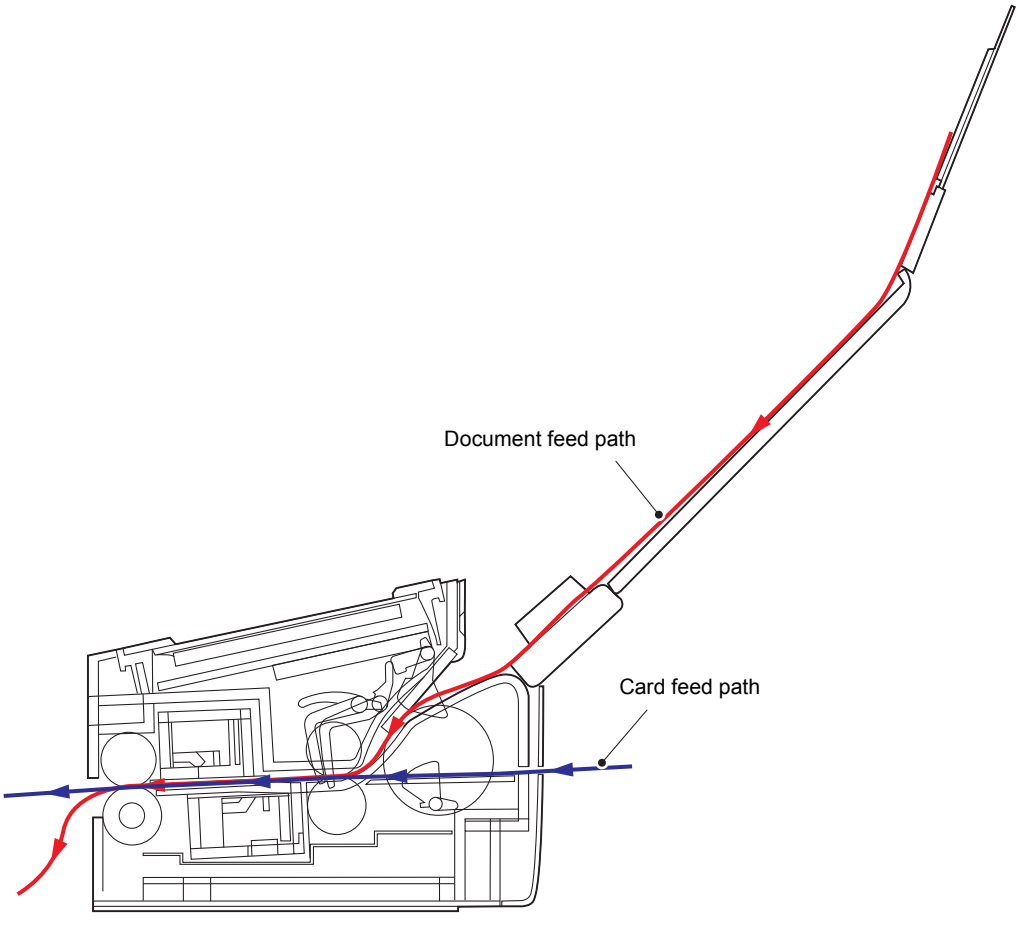


Fig.2-2

2.3 Operation of Each Part

Part name	Operation
Pick-up roller / Separation pad ASSY	Separates documents set in the document tray into single sheets, and feeds them into the machine.
Feed roller	Feeds documents and cards.
Ejection roller	Ejects documents and cards.
Document detection sensor	Detects the document set in the document tray. Detects document jams.
Document scanning position sensor	Detects the document scanning start position. Detects document jams.
Front cover sensor	Detects whether the front cover is open or closed.
Top cover sensor	Detects whether the top cover is open or closed.
Card detection sensor	Detects cards set in the card slot.
Card scanning position sensor	Detects card scanning start position.

2.4 Block Diagram

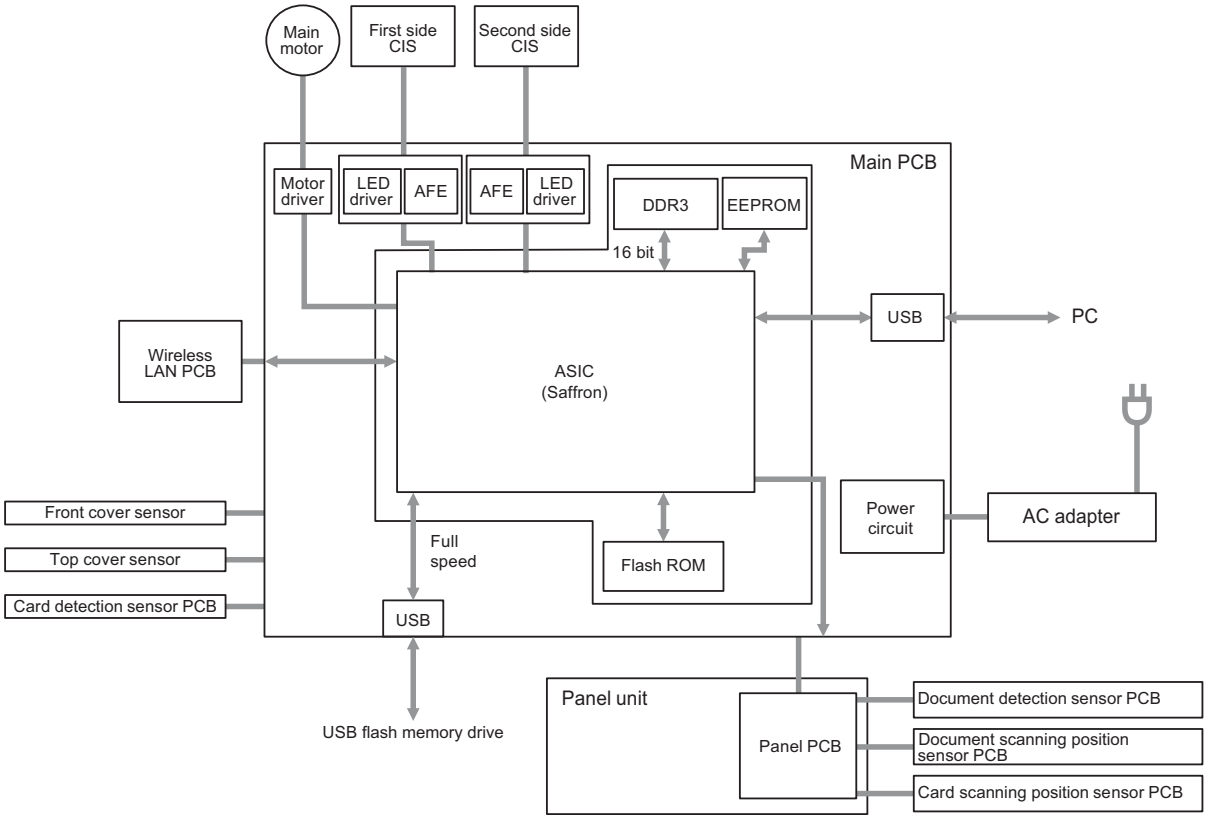


Fig.2-3

2.5 Main Components

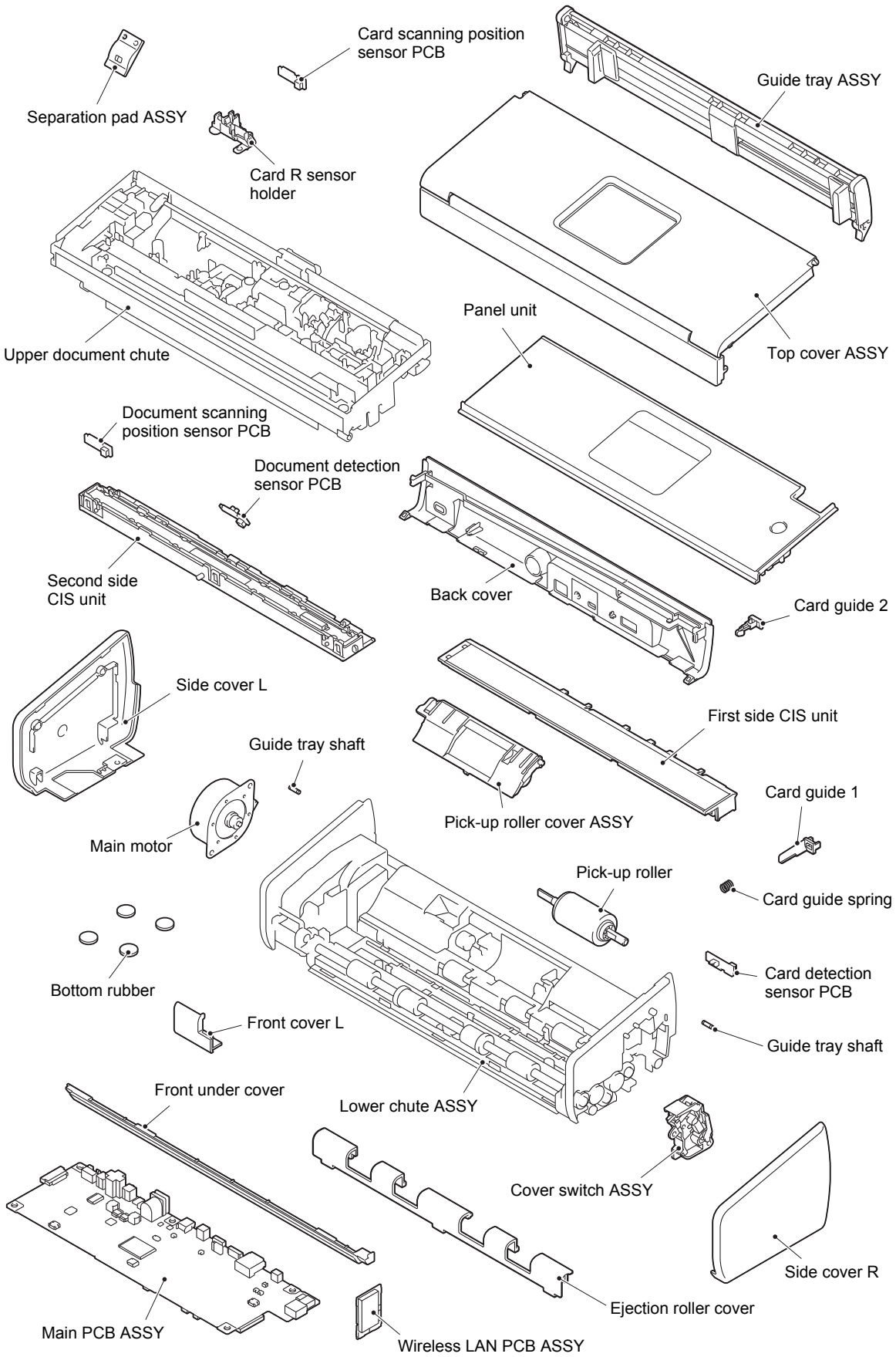


Fig.2-4

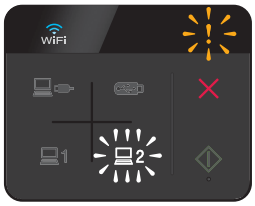
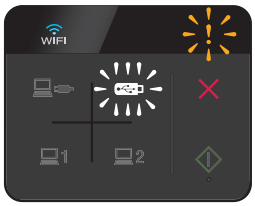
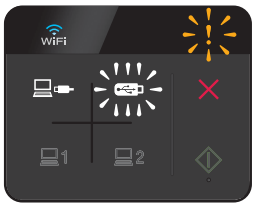
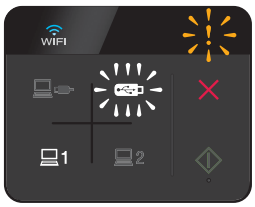
3. ERROR INDICATIONS

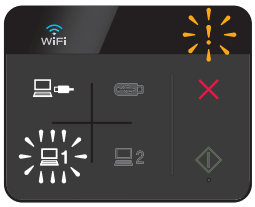
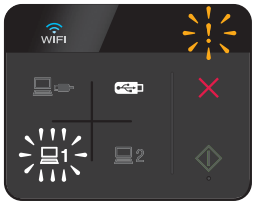
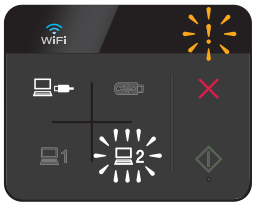
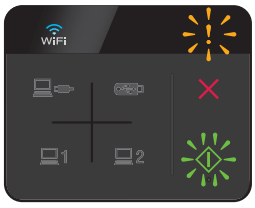
3.1 LED Display when an Error Occurs

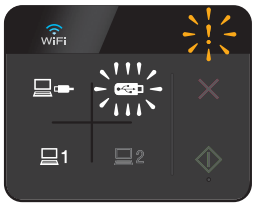
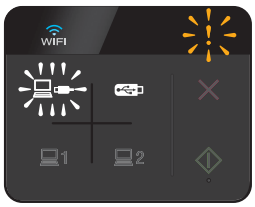
Determine the message details according to the LED display on the control panel. Refer to the page shown in the "Refer to:" column in the table below to take appropriate measures.

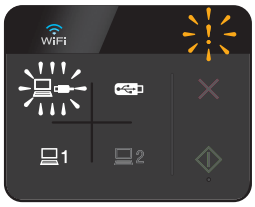
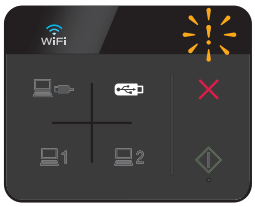
Most errors are automatically cleared after measures are taken. If not automatically cleared, press the ✕ key. If the error is still not cleared, turn OFF the machine.

LED status in the table below: Unlit Lit Flashing

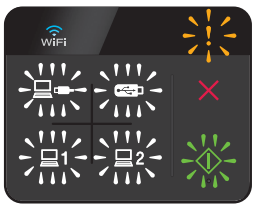
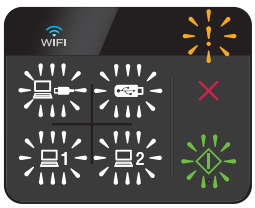
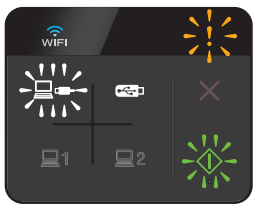
Error display	Type of problem	Refer to:
	All scanned data are printed as blank page.	4.1.1
	The machine and USB cable were not connected when "to PC" was executed. Or wireless LAN was not connected when "to PC", "to FTP", or "to WS SCAN" was executed.	4.1.2
	There was insufficient memory in the machine when "to PC" was executed.	4.1.3
	There was insufficient space in the connected USB flash memory drive when "to USB" was executed.	4.1.4
	Numbers of files and folders stored in the USB flash memory drive exceeded the upper limit when "to USB" was executed.	4.1.4
	Sequential number of files and folders stored in the USB flash memory drive exceeded the upper limit when "to USB" was executed.	4.1.4

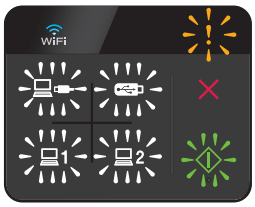
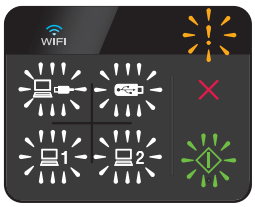
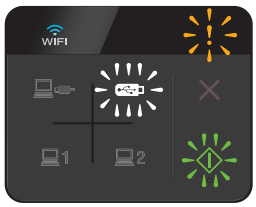
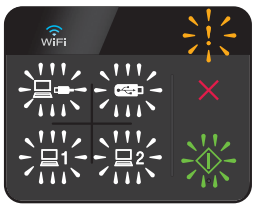
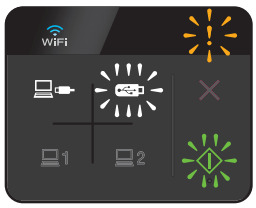
Error display	Type of problem	Refer to:
	Server authentication by user name and password failed when "to FTP" was executed.	4.1.5
	When "to FTP" was executed, link-down occurred in wireless LAN connection before scanning starts. Or no response from the remote station in the beginning of transmission (Server IP address identified).	4.1.5
	Failed to find Store Directory when "to FTP" was executed, no response from the remote station in the beginning of transmission (Server host identified), or communication was interrupted.	4.1.5
	There was insufficient memory in the machine when "to FTP" was executed.	4.1.3
	There was insufficient memory in the machine when "to WS SCAN" was executed.	4.1.3
	Paper jam occurred when the machine started or during document scanning, or card jam occurred during card scanning.	4.1.6
	Overcurrent has been detected in the device connected to the USB terminal.	4.1.7

Error display	Type of problem	Refer to:
	The USB device connected to the USB terminal is not supported.	4.1.7
	An USB hub is connected to the USB terminal.	4.1.7
	The front cover sensor detected an open front cover.	4.1.8
	Separation pad counter has exceeded the upper limit.	4.1.9
	Pick-up roller counter has exceeded the upper limit.	4.1.9
	Both of separation pad counter and pick-up roller counter have exceeded the upper limit.	4.1.9
	The top cover was opened when a card was set.	4.1.10

Error display	Type of problem	Refer to:
	A card was set when the top cover was open.	4.1.11
	No device with WPS or AOSS feature found on device search for wireless LAN setting.	4.1.12
	An error occurred in wireless LAN connection.	4.1.5
	Multiple devices with AP for WPS/PBC mode, or in AOSS mode found on wireless LAN connection.	4.1.13

When all LEDs except the ✕ LED are flashing, you can switch displays by pressing the ✕ key according to the error cause. See the table below for those displays.

Error display		Type of problem	Refer to:
	After pressing the ✕ key		
		First or second side CIS unit ID mounted on the machine does not match with the one on EEPROM.	4.1.14
		Color parameter in the EEPROM does not match the first side or second side CIS unit.	4.1.14

Error display		Type of problem	Refer to:
	After pressing the ✕ key		
		Wireless LAN MAC address has not been registered.	4.1.15
		Write error in the EEPROM of the main PCB	4.1.16
		ROM data acquisition error	4.1.16

3.2 Error Messages

The error messages displayed on the status monitor and their description are shown in the table below.

Error Message	Description	Refer to:
Cover is Open	The front cover sensor detected an open front cover.	4.1.8
Document Jam	The document scanning position sensor detected document jam or card jam.	4.1.6 4.3.3 4.3.4
Other Error	The USB device connected to the machine may be broken. The USB device connected to the machine is not supported. An USB hub is connected. Overcurrent has been detected in the USB terminal.	4.1.7
Out of Memory	There is insufficient memory.	4.1.3 4.1.4
Replace Pad	Use of the separation pad ASSY has reached the upper limit.	4.1.9
Replace Parts	Use of the separation pad ASSY and pick-up roller has reached the upper limit.	4.1.9
Replace Roller	Use of the pick-up roller has reached the upper limit.	4.1.9
Unable to Scan	An error occurred during scanning.	4.1.14
USB Access Error	USB flash memory drive was disconnected during accessing it. USB flash memory drive capacity has reached the limit during writing.	4.1.3 4.1.4 4.7.3
USB Write-protected	The USB flash memory drive connected to the machine is blocked from writing.	4.7.3

4. TROUBLESHOOTING

4.1 Troubleshooting for Error Display

4.1.1 All scanned data are printed as blank page.

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

4.1.2 The machine and USB cable were not connected when "to PC" was executed.

<User Check>

- Check that the USB cable is free from breakage.
- Check that the USB cable is connected to the machine correctly.
- Check that the computer is running.

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

4.1.3 There was insufficient memory in the machine when "to PC" was executed. There was insufficient memory in the machine when "to FTP" was executed. There was insufficient memory in the machine when "to WS SCAN" was executed.

<User Check>

- Reduce the number of documents and scan again.
- Reduce the resolution and scan again.

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

4.1.4 There was insufficient space in the connected USB flash memory drive when "to USB" was executed. Numbers of files and folders stored in the USB flash memory drive exceeded the upper limit when "to USB" was executed. Sequential number of files and folders stored in the USB flash memory drive exceeded the upper limit when "to USB" was executed.

<User Check>

- Delete some data in the USB flash memory drive.
- Change the USB flash memory drive.

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

4.1.5 Server authentication by user name and password failed when "to FTP" was executed.
When "to FTP" was executed, link-down occurred in wireless LAN connection before scanning starts. Or no response from the remote station in the beginning of transmission (Server IP address identified).
Failed to find Store Directory when "to FTP" was executed, no response from the remote station in the beginning of transmission (Server host identified), or communication was interrupted.
An error occurred in wireless LAN connection.

<User Check>

- Refer to the User's Guide and reconfigure the wireless LAN setting.
- Check that peripheral equipments (ex. wireless server) are turned ON.
- Check for distance and obstacles which interferes wireless LAN reception.

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

4.1.6 Paper jam occurred when the machine started or during document scanning, or card jam occurred during card scanning.

<User Check>

- Check that there is no paper or object jammed in the machine.

Step	Cause	Remedy
1	Document scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator.
2	Card scanning position actuator caught in sections of the machine	Reattach the card scanning position actuator.
3	Connection failure of the document scanning position sensor harness	Reconnect the document scanning position sensor harness.
4	Connection failure of the card scanning position sensor harness	Reconnect the card scanning position sensor harness.
5	Document scanning position sensor failure	Replace the document scanning position sensor PCB ASSY.
6	Card scanning position sensor failure	Replace the card scanning position sensor PCB ASSY.
7	Panel PCB failure	Replace the panel unit.
8	Main PCB failure	Replace the main PCB ASSY.

4.1.7 Overcurrent has been detected in the device connected to the USB terminal. The USB device connected to the USB terminal is not supported. An USB hub is connected to the USB terminal.

<User Check>

- Disconnect the device or USB hub connected to the USB terminal.

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

4.1.8 The front cover sensor detected an open front cover.

<User Check>

- Close the front cover correctly.

Step	Cause	Remedy
1	Front cover actuator coming off	Reattach the front cover actuator.
2	Front cover sensor coming off	Reattach the front cover sensor.
3	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
4	Front cover sensor failure	Replace the cover switch ASSY.
5	Panel PCB failure	Replace the panel unit.
6	Main PCB failure	Replace the main PCB ASSY.

4.1.9 Separation pad counter has exceeded the upper limit. Pick-up roller counter has exceeded the upper limit. Both of separation pad counter and pick-up roller counter have exceeded the upper limit.

<User Check>

- Replace the separation pad ASSY and reset the separation pad counter.
- Replace the pick-up roller and reset the pick-up roller counter.

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

4.1.10 The top cover was opened when a card was set.

<User Check>

- Close the top cover correctly.

Step	Cause	Remedy
1	Card detection actuator caught in sections of the machine	Reattach the card detection actuator.
2	Card detection sensor failure	Replace the card detection sensor PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.1.11 A card was set when the top cover was open.

<User Check>

- Close the top cover correctly.

Step	Cause	Remedy
1	Top cover actuator caught in some sections of the machine	Reattach the top cover actuator.
2	Front cover sensor coming off	Reattach the front cover sensor.
3	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
4	Top cover sensor failure	Replace the cover switch ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

4.1.12 No device with WPS or AOSS feature found on device search for wireless LAN setting.

<User Check>

- Refer to the User's Guide and reconfigure the wireless LAN setting.
- Check that peripheral equipments (ex. wireless server) are turned ON.
- Check for distance and obstacles which interferes wireless LAN reception.

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

4.1.13 Multiple devices with AP for WPS/PBC mode, or in AOSS mode found on wireless LAN connection.

<User Check>

- Refer to the User's Guide and reconfigure the wireless LAN setting.
- Check the setting of peripheral equipments again.

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

4.1.14 CIS identification data or parameter is not matched.

Step	Cause	Remedy
1	CIS type not set	Execute the CIS type setting. (Refer to "1.3.9" in Chapter 5.)
2	Program malfunction or the firmware is outdated	Reinstall the latest firmware.
3	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.1.15 Wireless LAN MAC address has not been connected.

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

4.1.16 Write error in the EEPROM of the main PCB, ROM data acquisition error

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

4.2 Troubleshooting for Image Defects

4.2.1 Defect examples

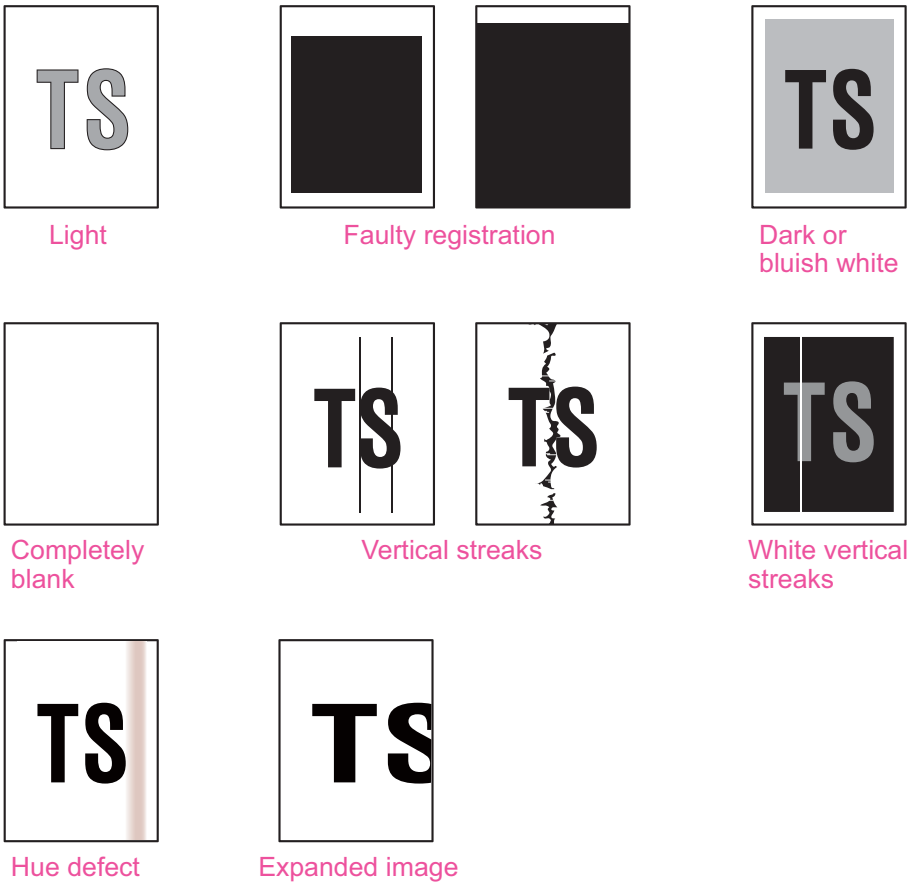
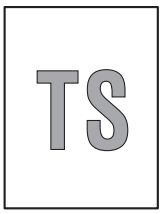


Fig.2-5

4.2.2 Troubleshooting according to image defect

■ **Light**

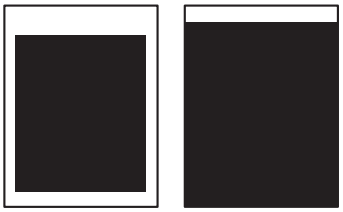


<User Check>

- Check that the contrast setting is not too light.
- Clean the CIS glass.

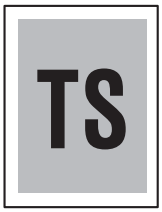
Step	Cause	Remedy
1	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
2	Main PCB failure	Replace the main PCB ASSY.

■ Faulty registration



Step	Cause	Remedy
1	Document scanning position actuator or card scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator or card scanning position actuator.

■ Dark or bluish white

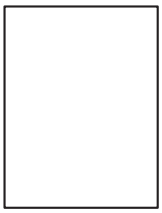


<User Check>

- Check that the contrast setting is not too dark.

Step	Cause	Remedy
1	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
2	Main PCB failure	Replace the main PCB ASSY.

■ Completely blank

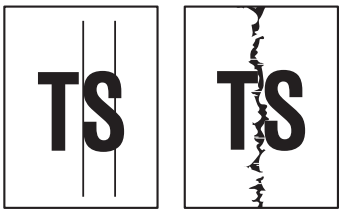


<User Check>

- Check that the document is not reversed.
- Check that the document is set in the document tray correctly.

Step	Cause	Remedy
1	Connection failure of the CIS flat cable	Reconnect the first side or second side CIS flat cable.
2	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Vertical streaks

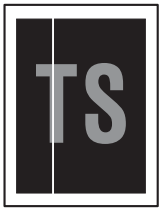


<User Check>

- Clean the CIS glass.
- Clean the document pressure bar.

Step	Cause	Remedy
1	First side or second side CIS unit failure	Replace the first side or second side CIS unit.

■ White vertical streaks

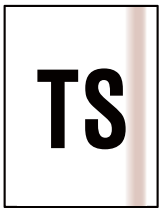


<User Check>

- Clean the CIS glass.
- Clean the document pressure bar.

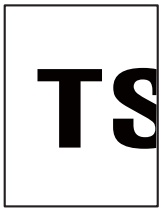
Step	Cause	Remedy
1	First side or second side CIS unit failure	Replace the first side or second side CIS unit.

■ Hue defect



Step	Cause	Remedy
1	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Expanded image**



Step	Cause	Remedy
1	CIS type not set	Execute the CIS type setting. (Refer to "1.3.9" in Chapter 5.)
2	The firmware is outdated	Install the latest version firmware. (Refer to "1.4" in Chapter 4.)
3	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.3 Troubleshooting for Document / Card Feeding Problems

4.3.1 Multiple documents are fed

<User Check>

- Check that the document is not bent, torn, or wrinkled.
- Check that paper used for the document is not thinner than the standard.
- Check that the document is not damp.
- Check that the machine is not scanning a glossy paper used in magazines and others.

Step	Cause	Remedy
1	Separation arm coming off	Reattach the separation arm.
2	Separation spring coming off	Reattach the separation spring.
3	Abrasion of the separation pad	Replace the separation pad ASSY.
4	Abrasion of the pick-up roller	Replace the pick-up roller ASSY.

4.3.2 Document becomes wrinkled

<User Check>

- Check that the document guide is adjusted to suit the document size.
- Check that the document is not curled.

Step	Cause	Remedy
1	Abrasion of the pick-up roller	Replace the pick-up roller ASSY.

4.3.3 Document becomes jammed

<User Check>

- Check that the document size is within the standard.
- Check that the document is not wrinkled.
- Check that the document is not torn.
- Check that the front cover is closed correctly.
- Check that the document is not damp.
- Check that paper used for the document is not thinner than the standard.

Step	Cause	Remedy
1	Document scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator.
2	First side or second side CIS unit attachment failure	Reattach the first side or second side CIS unit.
3	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
4	Separation pad failure	Replace the separation pad ASSY.
5	Misalignment or bending of the pick-up roller support film	Replace the pick-up roller cover ASSY.
6	Document scanning position sensor failure	Replace the document scanning position sensor PCB.
7	Main motor failure	Replace the main motor.

4.3.4 Card becomes jammed

<User Check>

- Check that the card guide is aligned with the card size.

Step	Cause	Remedy
1	Card scanning position actuator caught in sections of the machine	Reattach the card scanning position actuator.
2	Connection failure of the card scanning position sensor harness	Reconnect the card scanning position sensor harness.
3	First side or second side CIS unit attachment failure	Reattach the first side or second side CIS unit.
4	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
5	Front cover sensor failure	Replace the cover switch ASSY.
6	Card scanning position sensor failure	Replace the card scanning position sensor PCB.
7	Main motor failure	Replace the main motor.
8	Main PCB failure	Replace the main PCB ASSY.

4.3.5 Document is not picked up and fed

<User Check>

- Check that the paper used for the document is not thinner than the standard. Use the test chart sheets.
- Check that the front cover is closed correctly.
- Check that the document guide is adjusted well and the document is seated properly.

Step	Cause	Remedy
1	Document detection actuator coming off	Reattach the document detection actuator.
2	Connection failure of the document detection sensor harness	Reconnect the document detection sensor harness.
3	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
4	Connection failure of the main motor harness ASSY	Reconnect the main motor harness ASSY.
5	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
6	Top cover sensor or front cover sensor failure	Replace the cover switch ASSY.
7	Document detection sensor failure	Replace the document detection sensor PCB.
8	Main motor failure	Replace the main motor.
9	Main PCB failure	Replace the main PCB ASSY.

4.3.6 Card is not picked up and fed

<User Check>

- Check that the card is set correctly.
- Check that the card guide is adjusted well and the card is not stuck.

Step	Cause	Remedy
1	Card detection actuator caught in sections of the machine	Reattach the card detection actuator.
2	Connection failure of the card detection sensor harness	Reconnect the card detection sensor harness.
3	Connection failure of the main motor harness ASSY	Reconnect the main motor harness ASSY.
4	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
5	Front cover sensor or top cover sensor failure	Replace the cover switch ASSY.
6	Card detection sensor failure	Replace the card detection sensor PCB.
7	Main motor failure	Replace the main motor.
8	Main PCB failure	Replace the main PCB ASSY.

4.4 Troubleshooting for Software Problems

End users can solve problems related to software, for instance, scanning is not possible from a computer although scanning can be performed from the machine, as long as they follow the User Check items. If the problem still cannot be solved, follow each procedure according to the step number in the tables below.

4.4.1 Does not respond to operation from a computer

<User Check>

- Check that the USB cable is not damaged.
- When using an interface switch, check that the correct machine is selected.
- Check the relevant section in the User's Guide.
- Check the driver settings.
- Reset the machine to the default settings. (Refer to the User's Guide.)
- Check that the AC adapter is connected correctly.

Step	Cause	Remedy
1	Program malfunction	Reinstall the latest firmware.
2	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
3	Front cover sensor or top cover sensor failure	Replace the cover switch ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.4.2 Cannot read data

<User Check>

- Check the relevant section in the User's Guide.
- Check that the AC adapter is connected correctly.

Step	Cause	Remedy
1	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
2	Front cover sensor or top cover sensor failure	Replace the cover switch ASSY.
3	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.5 Troubleshooting for Control Panel Problems

4.5.1 Nothing is displayed on the LED

<User Check>

- Check that the AC adapter is connected correctly.

Step	Cause	Remedy
1	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
2	AC adapter failure	Replace the AC adapter.
3	Panel PCB failure	Replace the panel unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.5.2 Control panel is inoperable

<User Check>

- Check that the function lock is not set.

Step	Cause	Remedy
1	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
2	Panel PCB failure	Replace the panel unit.
3	Main PCB failure	Replace the main PCB ASSY.

4.5.3 Only specified buttons are inoperable

Step	Cause	Remedy
1	Panel PCB failure	Replace the panel unit.

4.6 Troubleshooting for Network Problems

4.6.1 Cannot scan via network connection

<User Check>

- Check the relevant section in the Network Setting Guide.
- Check the network connection.
- Reset the network. (refer to the User's Guide.)

Step	Cause	Remedy
1	Connection failure of the wireless LAN PCB connector	Reconnect the wireless LAN PCB ASSY.
2	Wireless LAN PCB failure	Replace the wireless LAN PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.7 Troubleshooting for Other Problems

4.7.1 Machine is not turned ON

<User Check>

• Connect the AC power cord correctly.

Step	Cause	Remedy
1	Connection failure of the panel PCB harness	Reconnect the panel PCB harness.
2	AC adapter failure	Replace the AC adapter.
3	Panel PCB failure	Replace the panel unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.7.2 Unusual noise is coming from the machine

<User Check>

• Check that the front cover is closed correctly.

Step	Cause	Remedy
1	Possible cause differs depending on the location. Identify the location with the problem.	When the location with the problem is identified, check for any foreign object around that location.
2	Insufficient grease on parts	Re-grease the parts.
3	Bent or defective part	Replace the part.

4.7.3 Cannot save data in USB flash memory drive

<User Check>

• Check that the USB flash memory drive is inserted into the USB host correctly.

• Replace the USB flash memory drive and try saving data again.

• Check that the USB flash memory drive is not write-protected.

Step	Cause	Remedy
1	Panel PCB failure	Replace the panel unit.
2	Main PCB failure	Replace the main PCB ASSY.

4.7.4 Cannot reset counters for periodic replacement parts

Step	Cause	Remedy
1	Counter reset failure	Reset counter again.
2	Main PCB failure	Replace the main PCB ASSY.

4.7.5 A non-supported USB device is connected to the USB terminal

<User Check>

• Remove the USB device that is not within the specifications.

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

CHAPTER 3 DISASSEMBLY/REASSEMBLY

1. PACKING

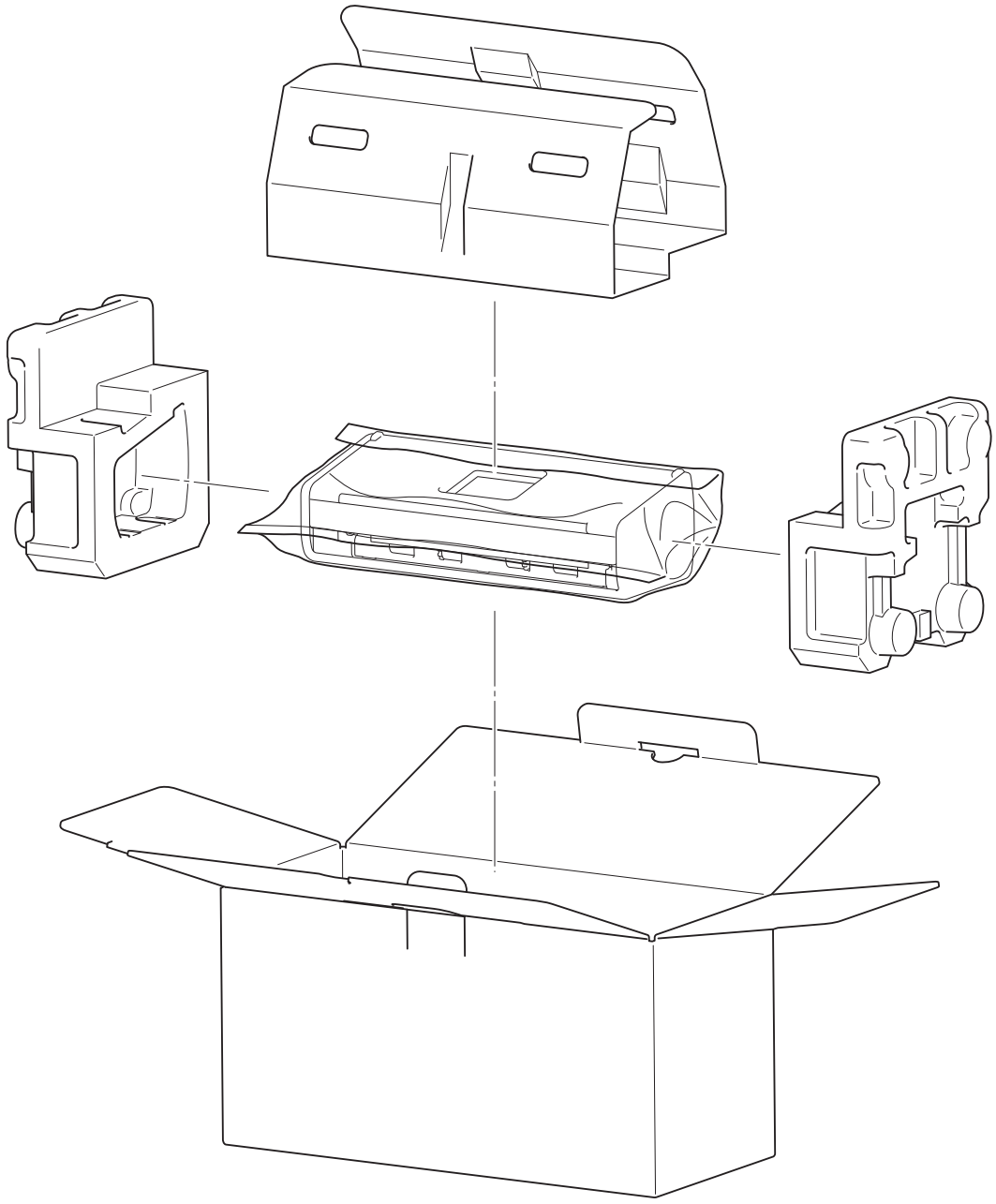
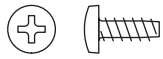


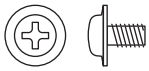
Fig.3-1

2. SCREW CATALOGUE

Taptite bind B

Taptite bind B M3x8	

Taptite cup S

Taptite cup S M3x5	

Screw pan (S/P washer)

Screw pan (S/P washer) M3x6 DA	

3. SCREW TORQUE LIST

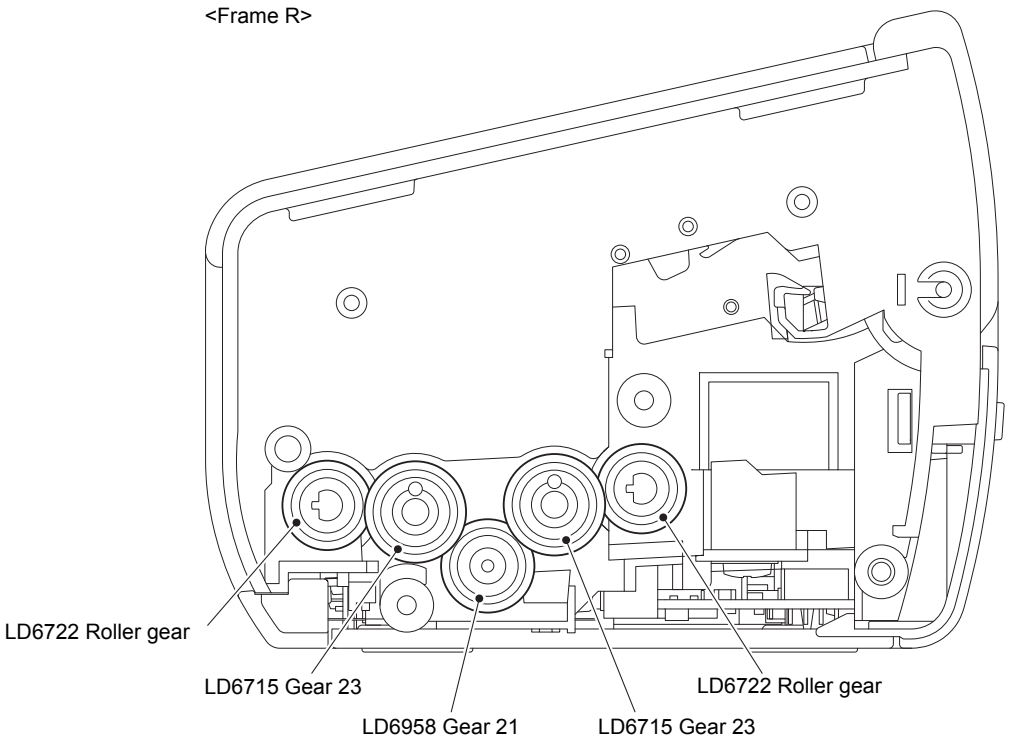
Note:
• For verifying the shape of each screw, refer to "2. SCREW CATALOGUE" in this chapter.

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Bottom plate	Taptite cup S M3x5	2	0.70±0.10 (7±1)
Side cover L	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Side cover R	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Main PCB ASSY	Taptite cup S M3x5	3	0.70±0.10 (7±1)
	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Panel FG harness		1	
Second side CIS FG harness	Taptite cup S M3x5	1	0.70±0.10 (7±1)
Panel unit	Taptite bind B M3x8	2	0.50±0.10 (5±1)
Pinch roller support plate	Taptite bind B M3x8	2	0.50±0.10 (5±1)
	Taptite cup S M3x5	2	0.70±0.10 (7±1)
Main motor	Screw pan (S/P washer) M3x6 DA	1	0.50±0.10 (5±1)
	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Gear hold plate	Taptite bind B M3x8	2	0.50±0.10 (5±1)
Cover switch ASSY	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Main motor earth plate	Taptite bind B M3x8	1	0.50±0.10 (5±1)
Main PCB holder	Taptite bind B M3x8	1	0.50±0.10 (5±1)

4. LUBRICATION

■ **There are no applicable parts for lubrication.**

5. OVERVIEW OF GEARS

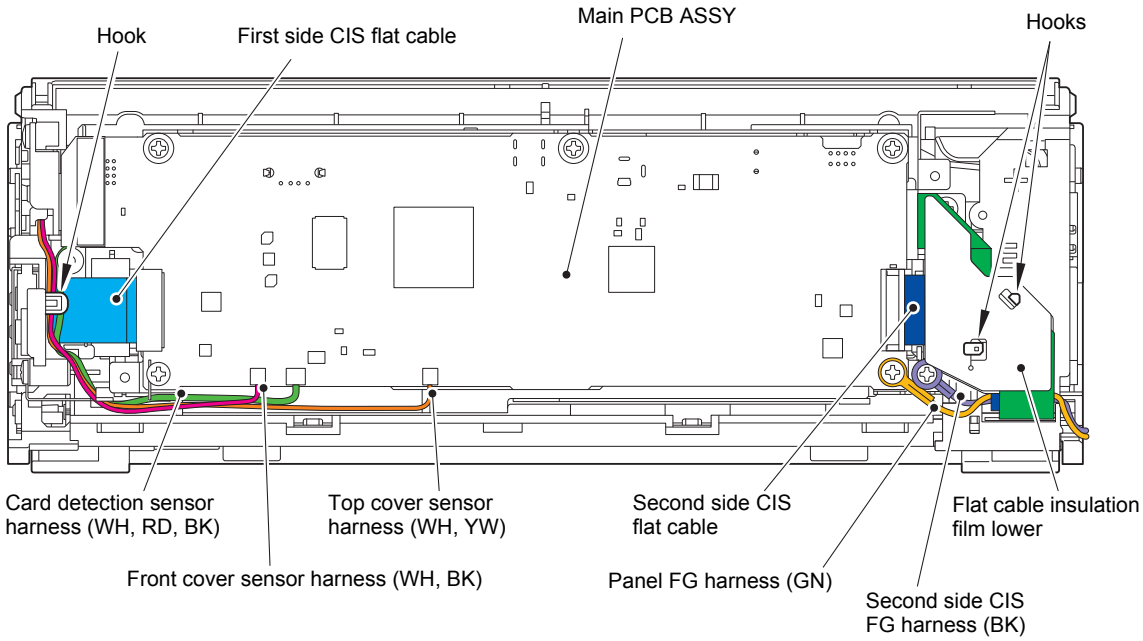


* These parts are subject to change without notice.

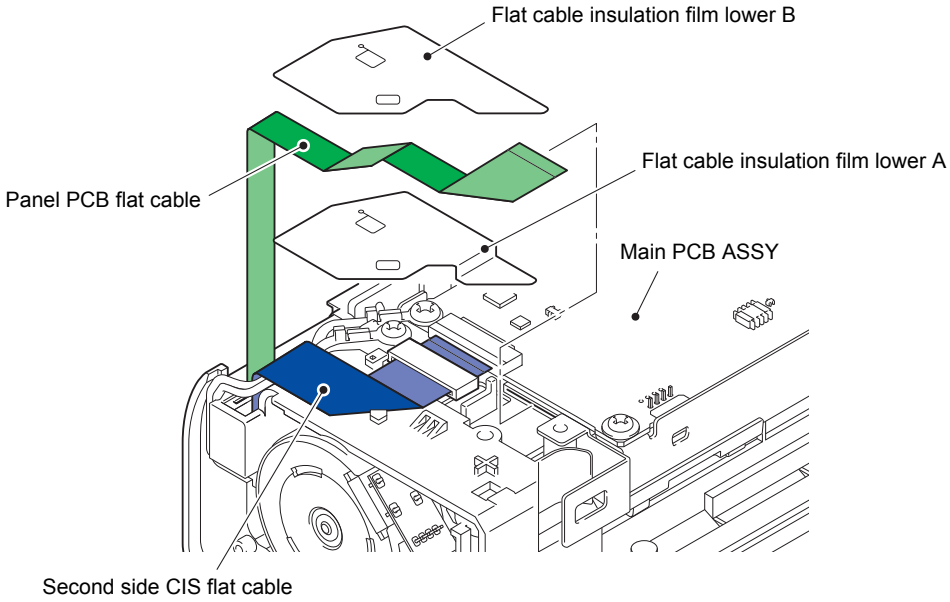
Fig.3-2

6. HARNESS ROUTING

1 Main PCB ASSY

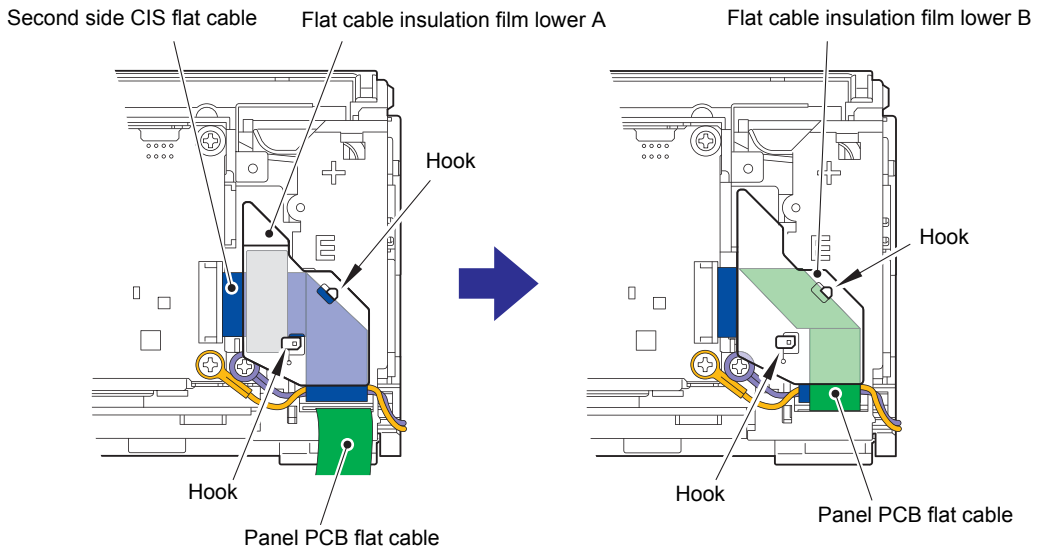


2 Main PCB ASSY right side flat cable overlap

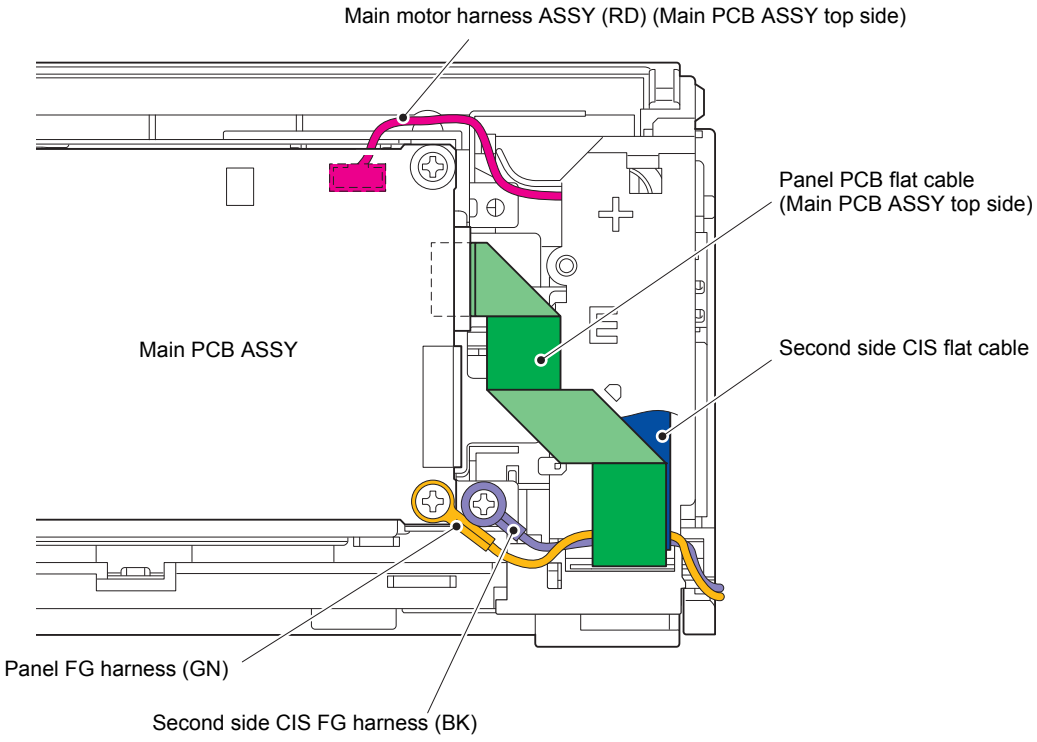


Harness colors are subject to change for some reason.

3 Flat cable insulation film lower attachment

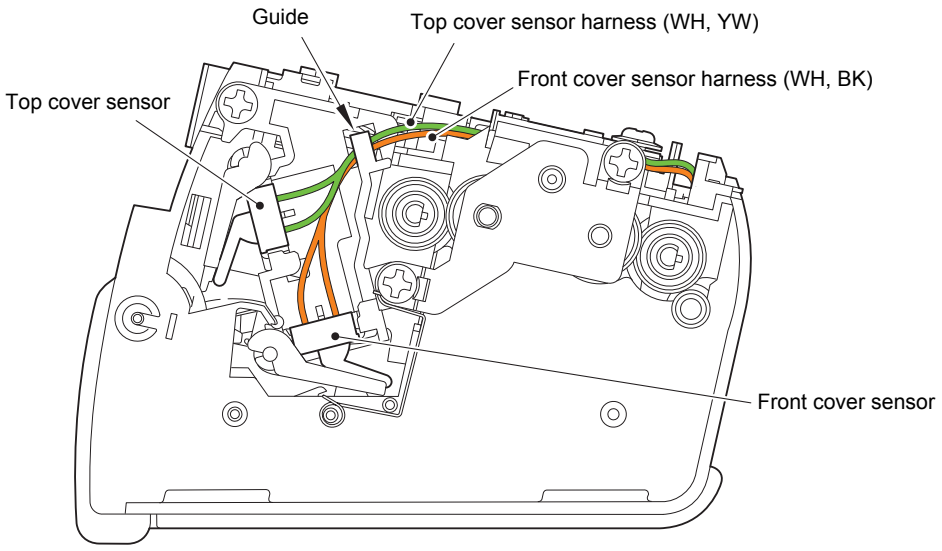


4 Main PCB ASSY top side

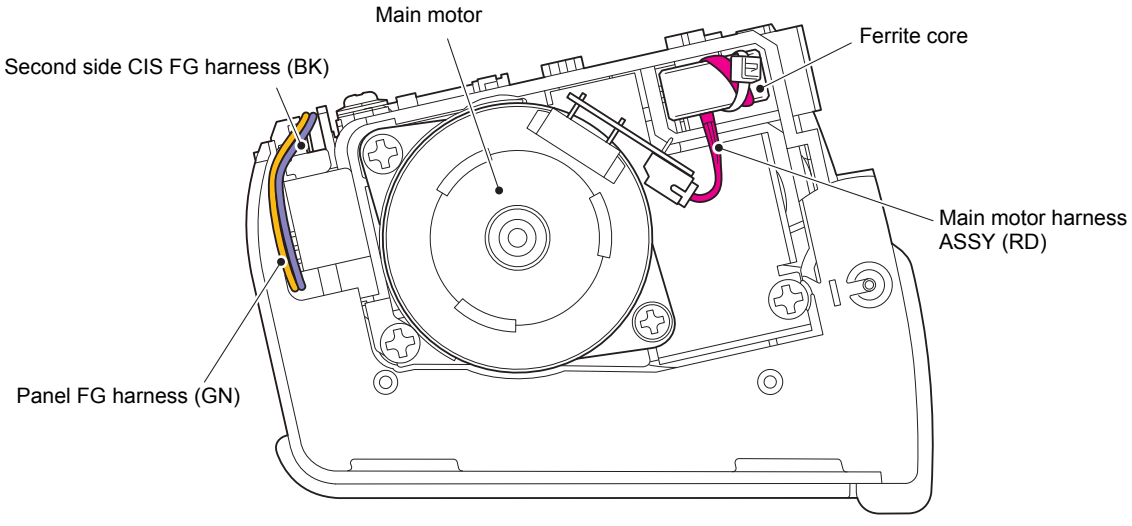


Harness colors are subject to change for some reason.

5 Frame R

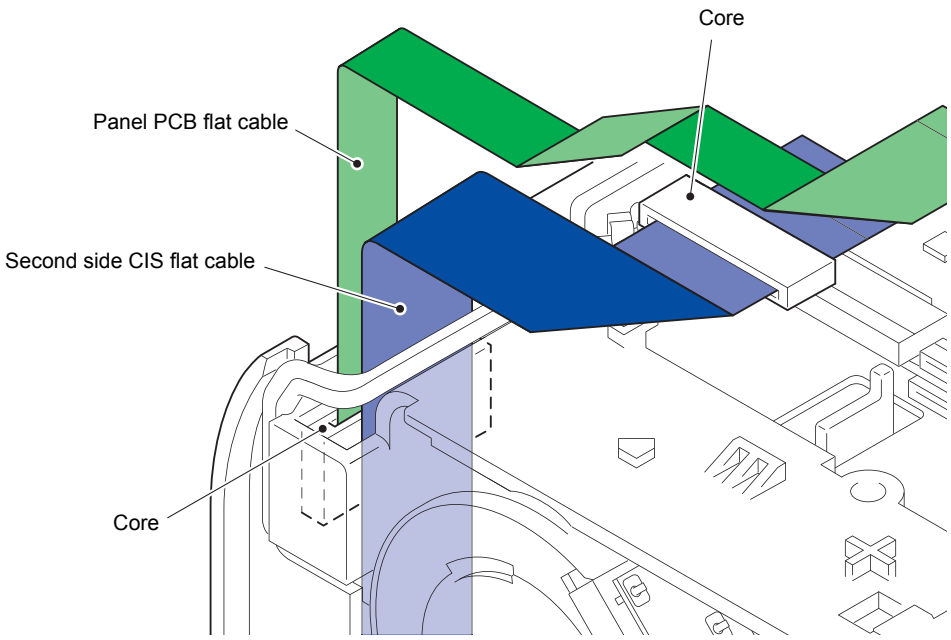


6 Frame L

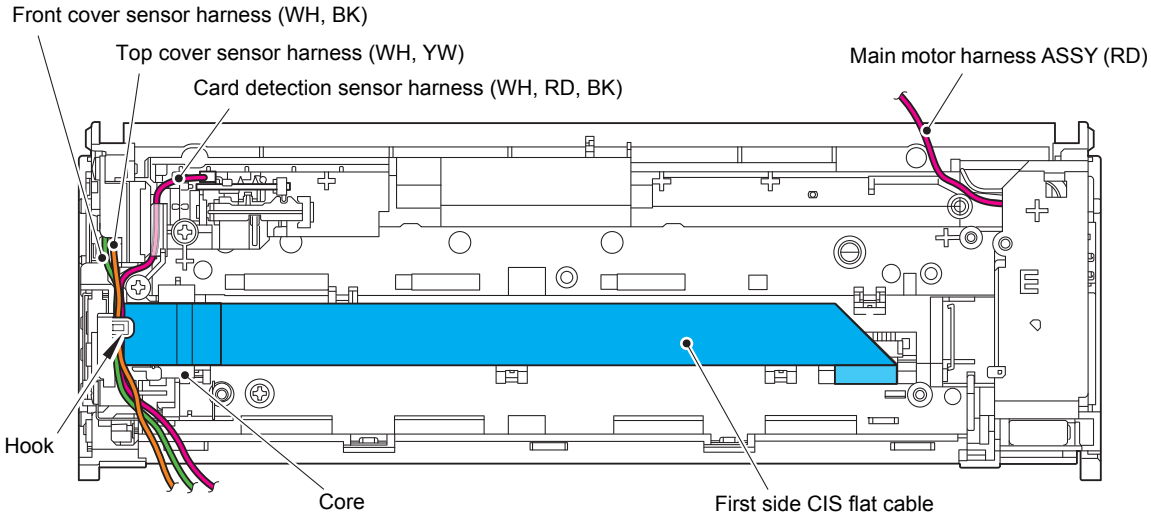


Harness colors are subject to change for some reason.

7 Flat cable on the left side at the bottom

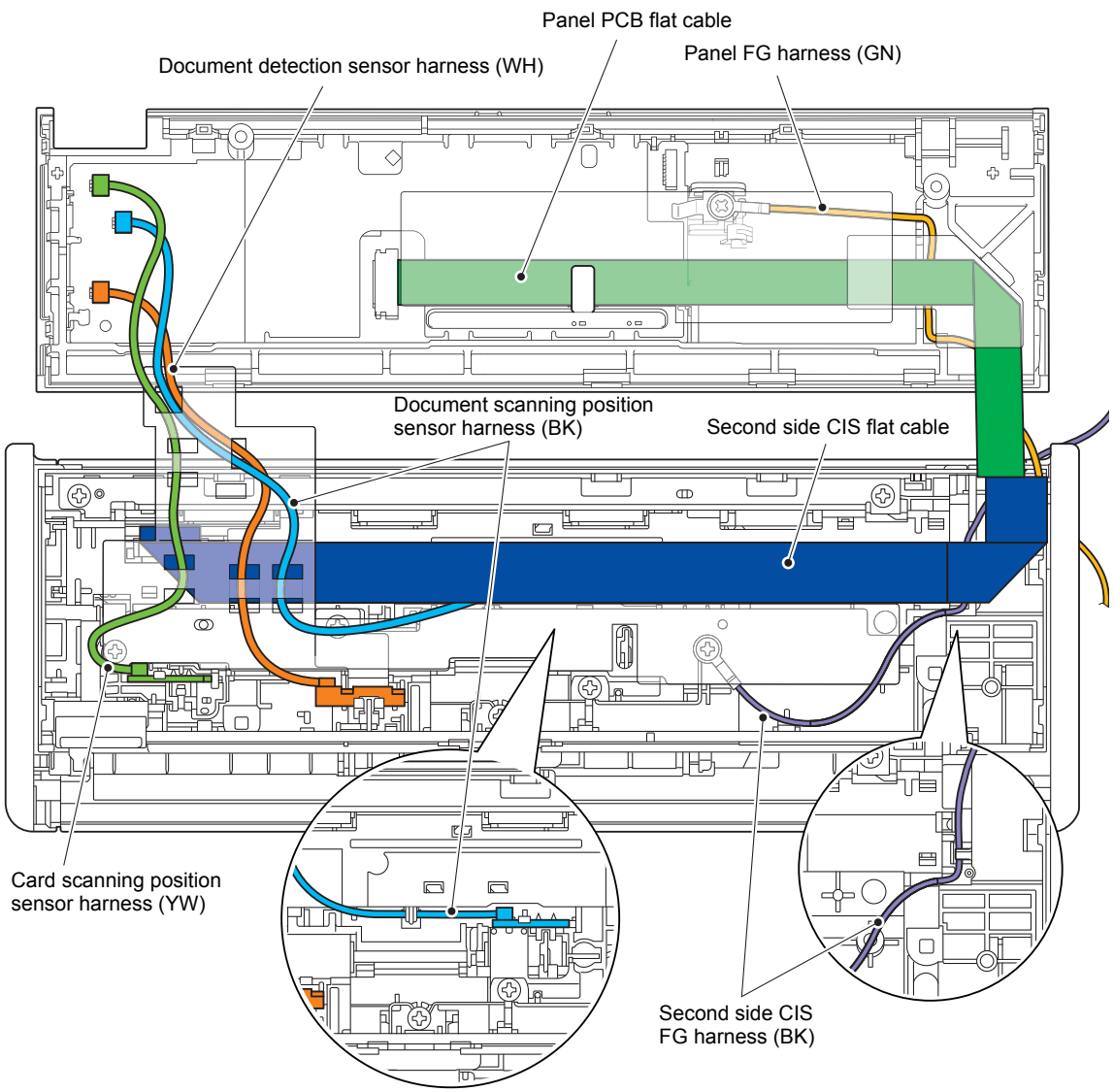


8 Lower chute



Harness colors are subject to change for some reason.

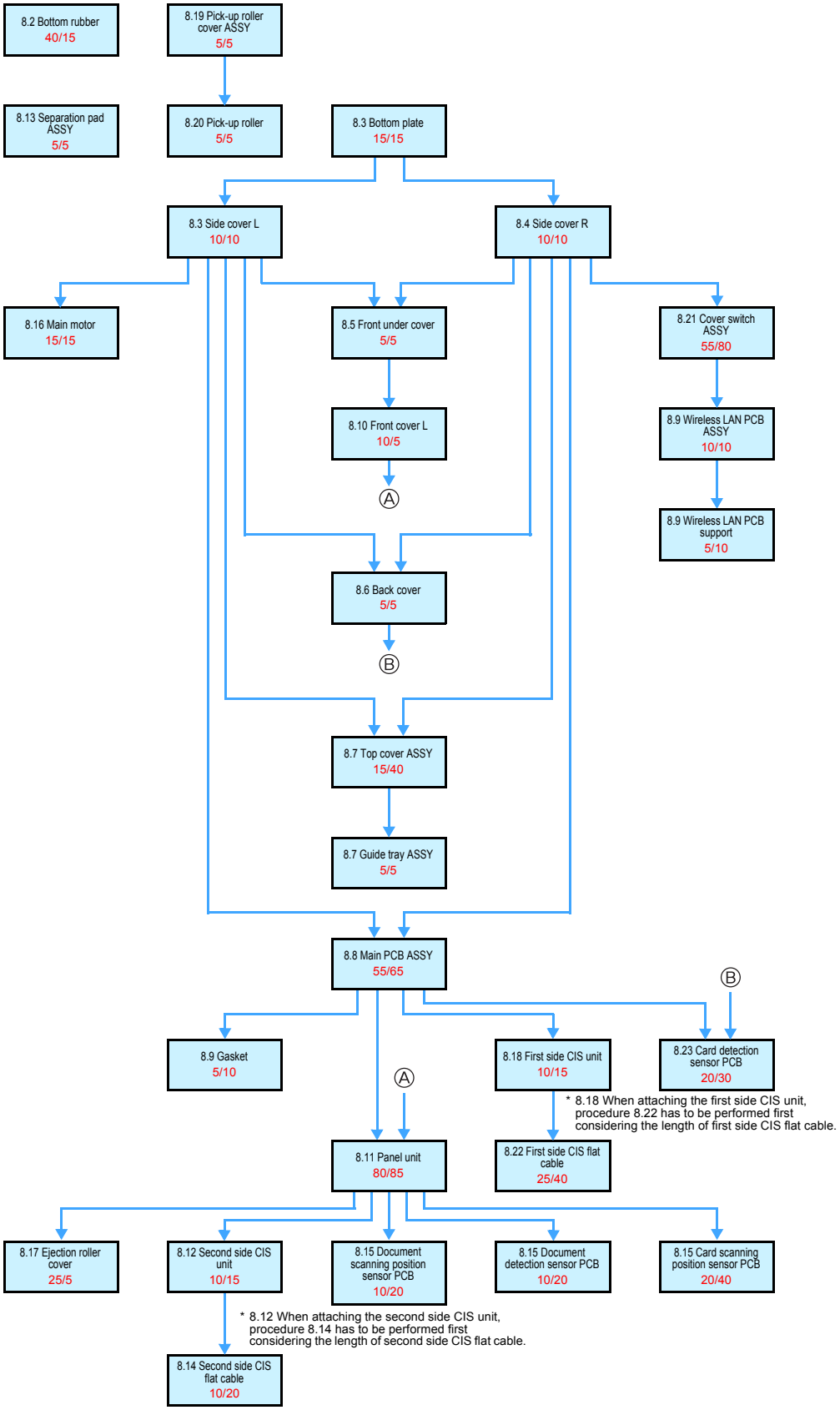
9 Upper chute ASSY



Harness colors are subject to change for some reason.

7. DISASSEMBLY FLOW CHART

Disassembly / Reassembly (second)



8. DISASSEMBLY PROCEDURE

8.1 Disconnecting cables

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:

- AC adapter (If connected)
- USB cable (if connected)
- USB flash memory drive (If connected)

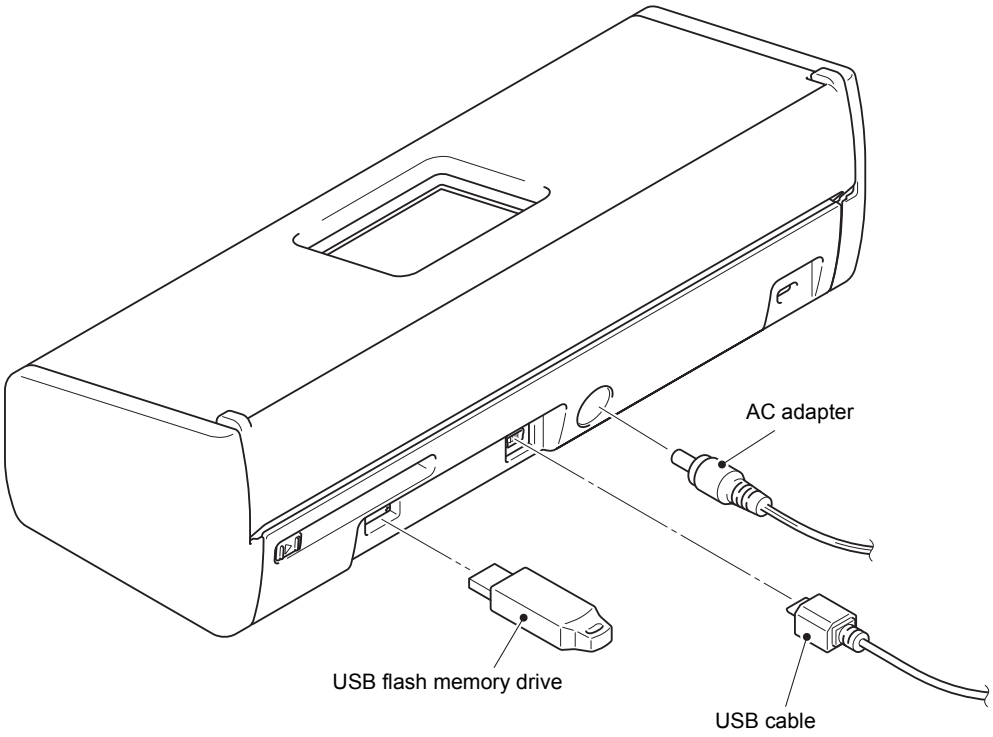


Fig.3-3

8.2 Bottom rubber

(1) Turn the machine upside down.

(2) Remove the two bottom rubbers from the side cover L.

(3) Remove the two bottom rubbers from the side cover R.

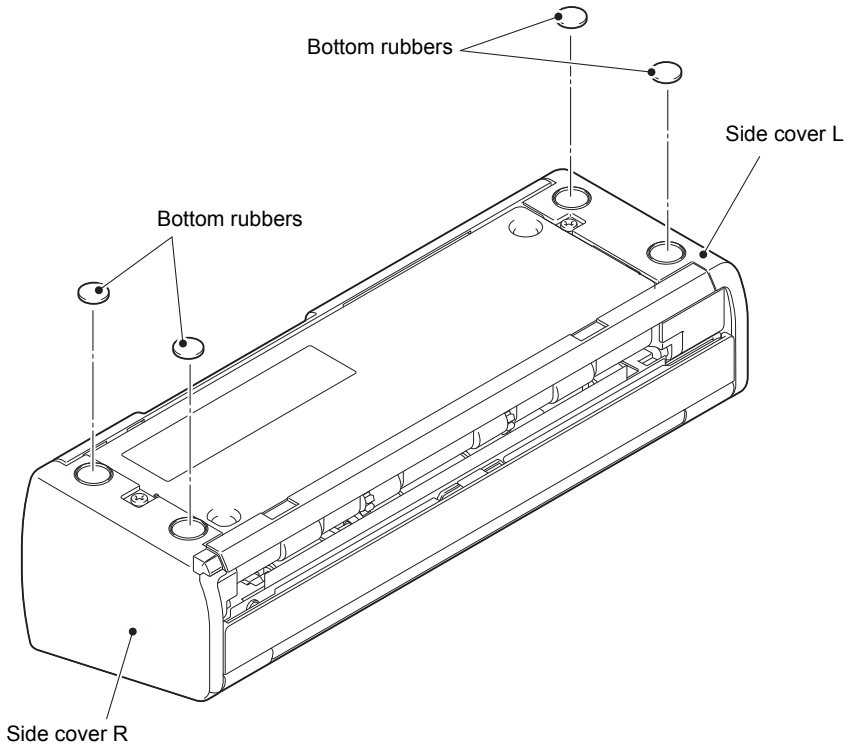


Fig.3-4

8.3 Side cover L

(1) Remove the two taptite cup S M3x5 screws to remove the bottom plate from the machine.

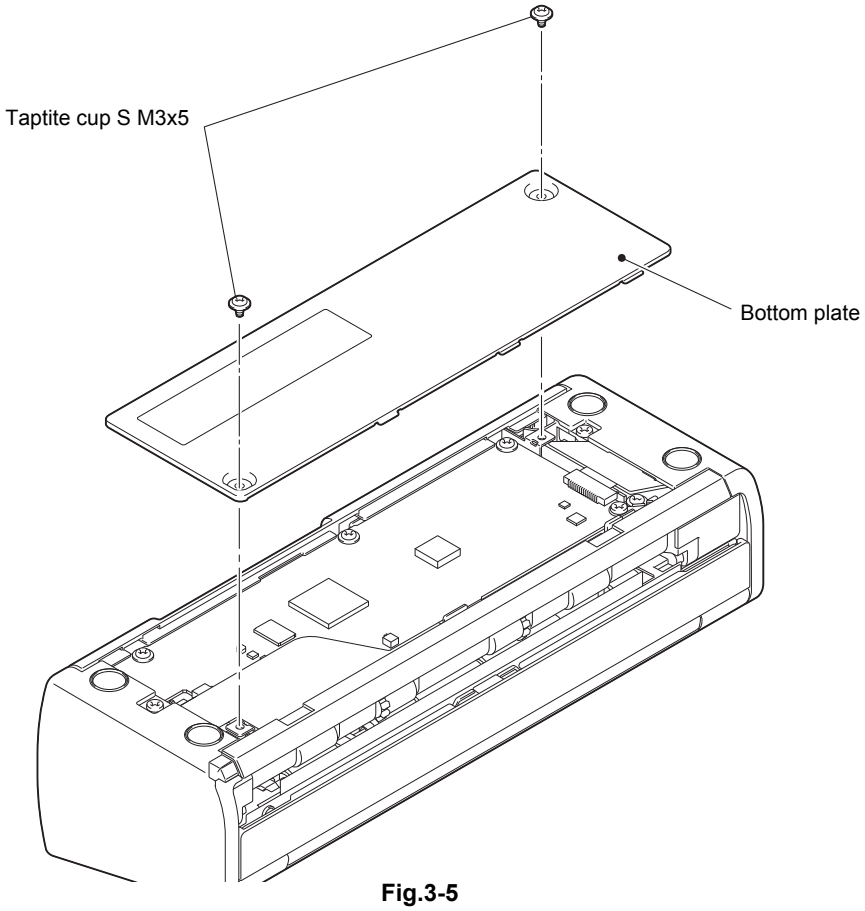


Fig.3-5

(2) Remove the taptite bind B M3x8 screw. Release the rib from the hook of the machine while lifting it, and remove the side cover L from the machine.

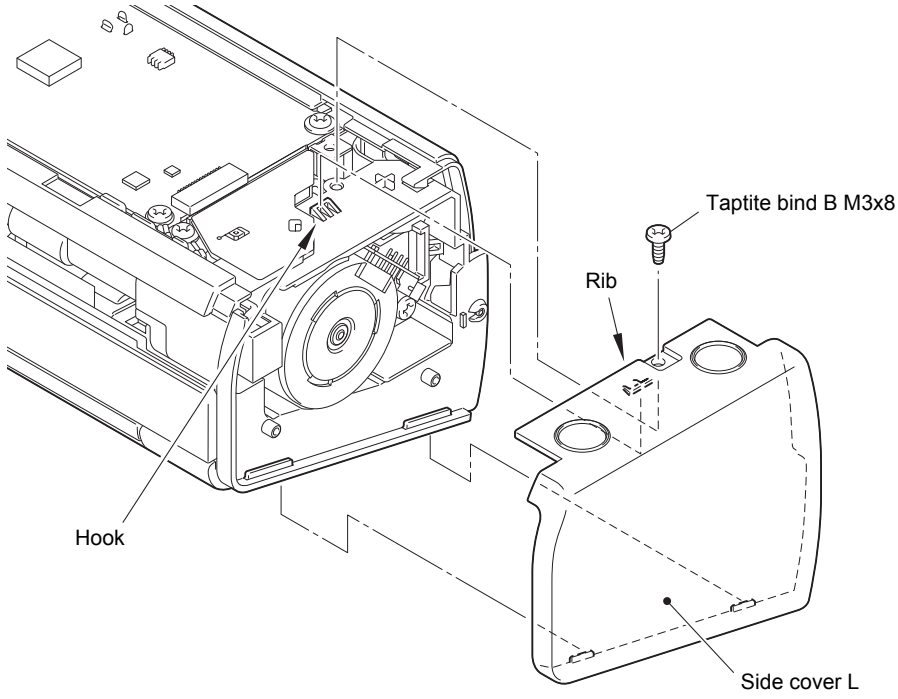


Fig.3-6

8.4 Side cover R

(1) Remove the taptite bind B M3x8 screw. Release the rib from the hook of the machine while lifting it, and remove the side cover R from the machine.

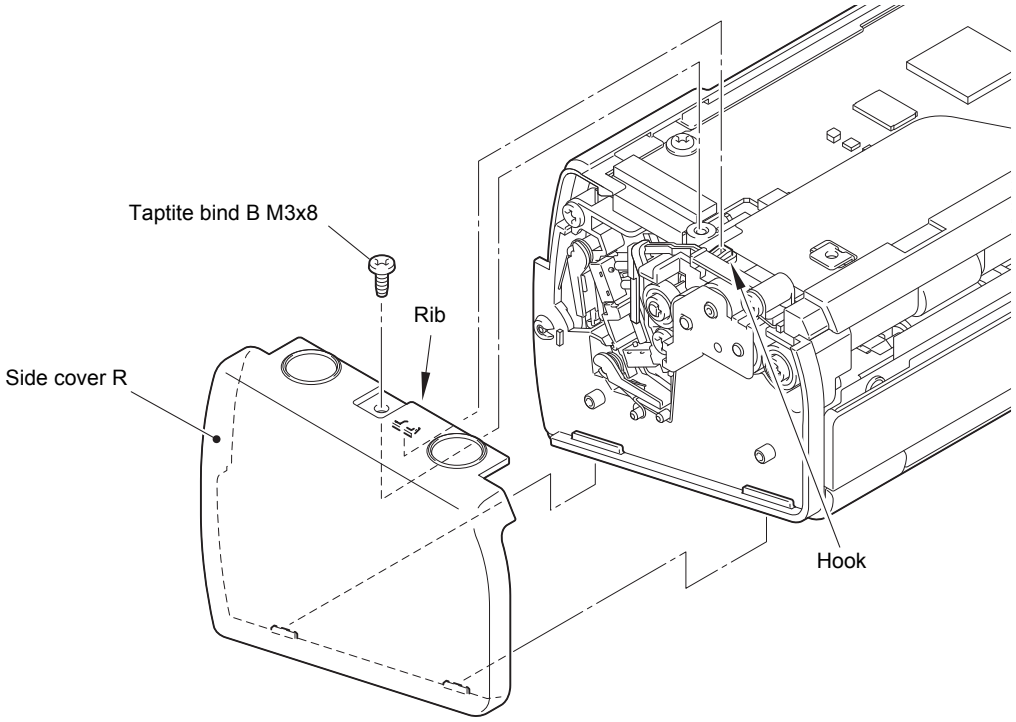


Fig.3-7

8.5 Front under cover

(1) Remove the front under cover from the machine.

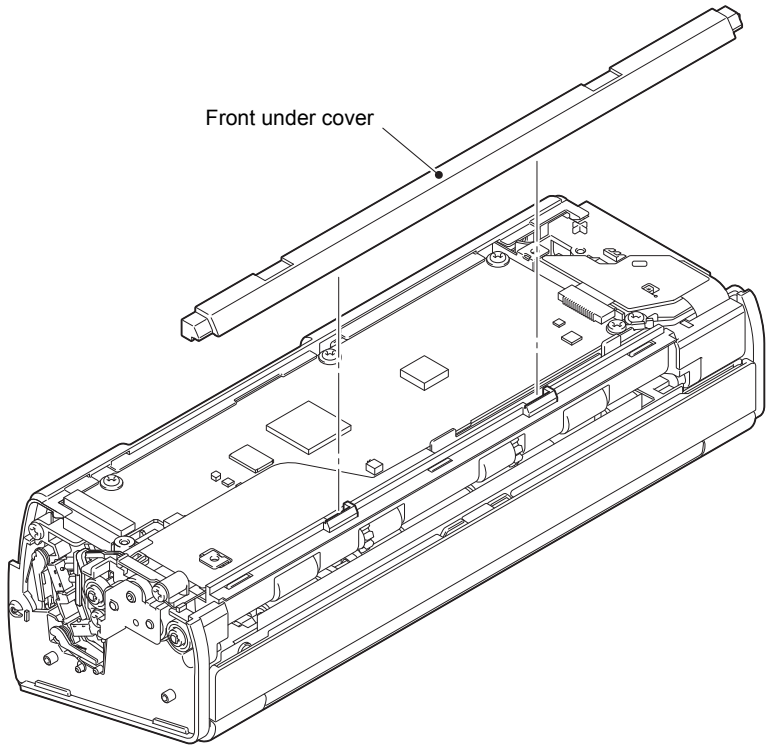


Fig.3-8

8.6 Back cover

(1) Release the three hooks to remove the back cover from the machine.

(2) Remove the card guide spring from the card guide 2. Remove the card guide 1 and 2 from the back cover.

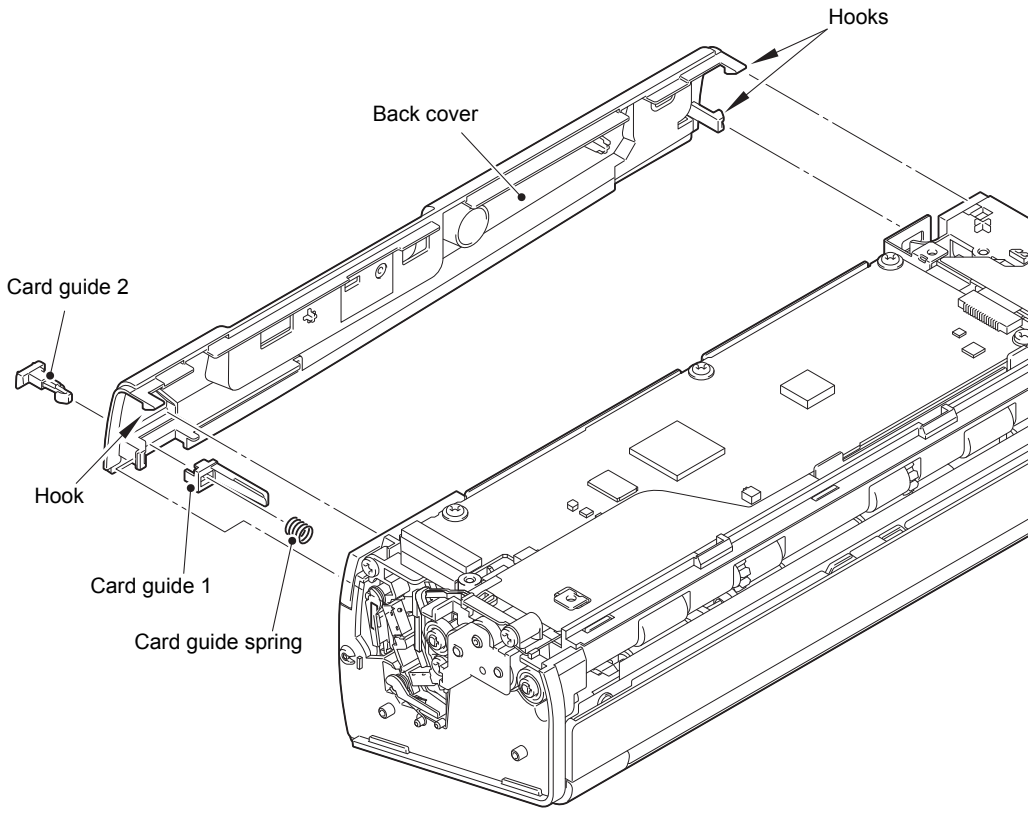


Fig.3-9

8.7 Top cover ASSY / Guide tray ASSY

(1) Turn the machine upside down. Open the top cover ASSY and guide tray ASSY.

(2) Remove the two guide tray shafts using a tweezer or equivalent tool, and remove the top cover ASSY and guide tray ASSY from the machine.

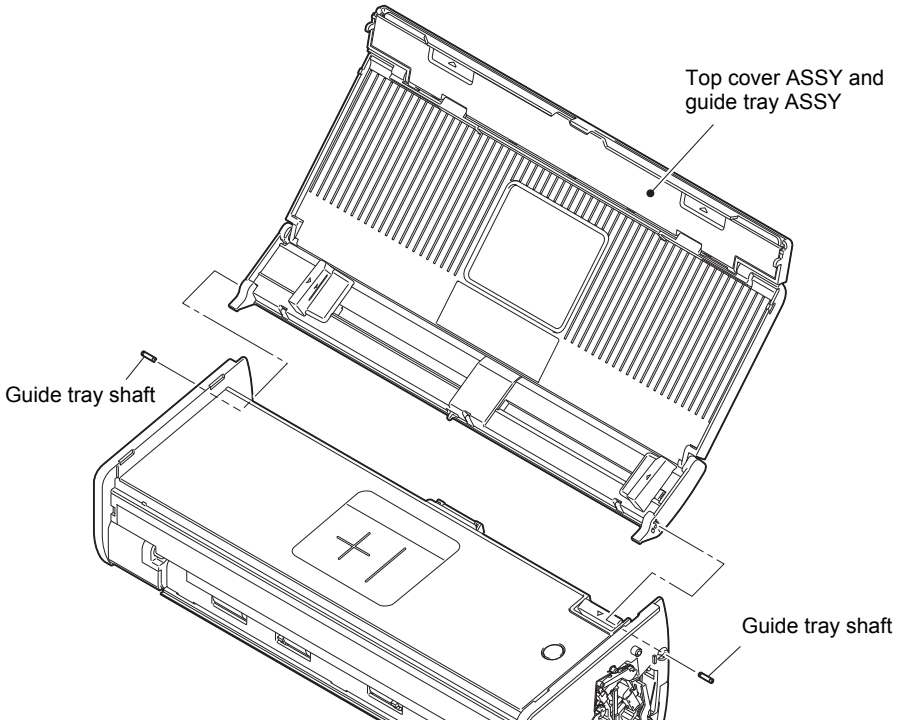


Fig.3-10

(3) Release the guide tray ASSY from the two bosses of the top cover ASSY by bending it inward.

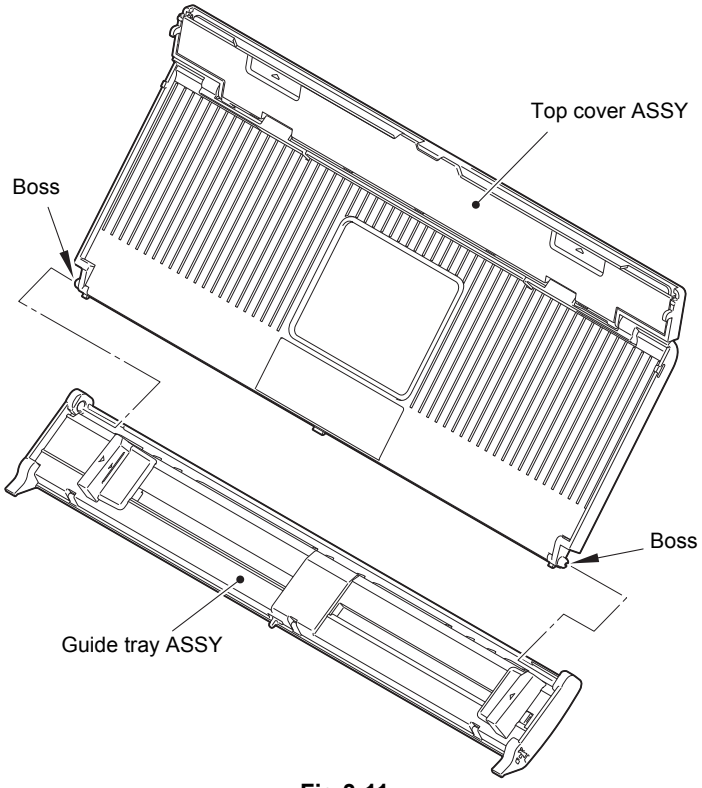


Fig.3-11

8.8 Main PCB ASSY

(1) Turn the machine upside down.

(2) Remove the harness protect film and two flat cable insulation film lowers from the machine.

(3) Release the two locks of the connector to disconnect the second side CIS flat cable and first side CIS flat cable from the main PCB ASSY. Disconnect the top cover sensor harness, card detection sensor harness, and front cover sensor harness from the main PCB ASSY.

Note:

- Make sure that the main PCB ASSY is secured by screws when connecting/ disconnecting harnesses and flat cables.
- After disconnecting flat cables, check that each cable is not damaged at its end or short-circuited. When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.

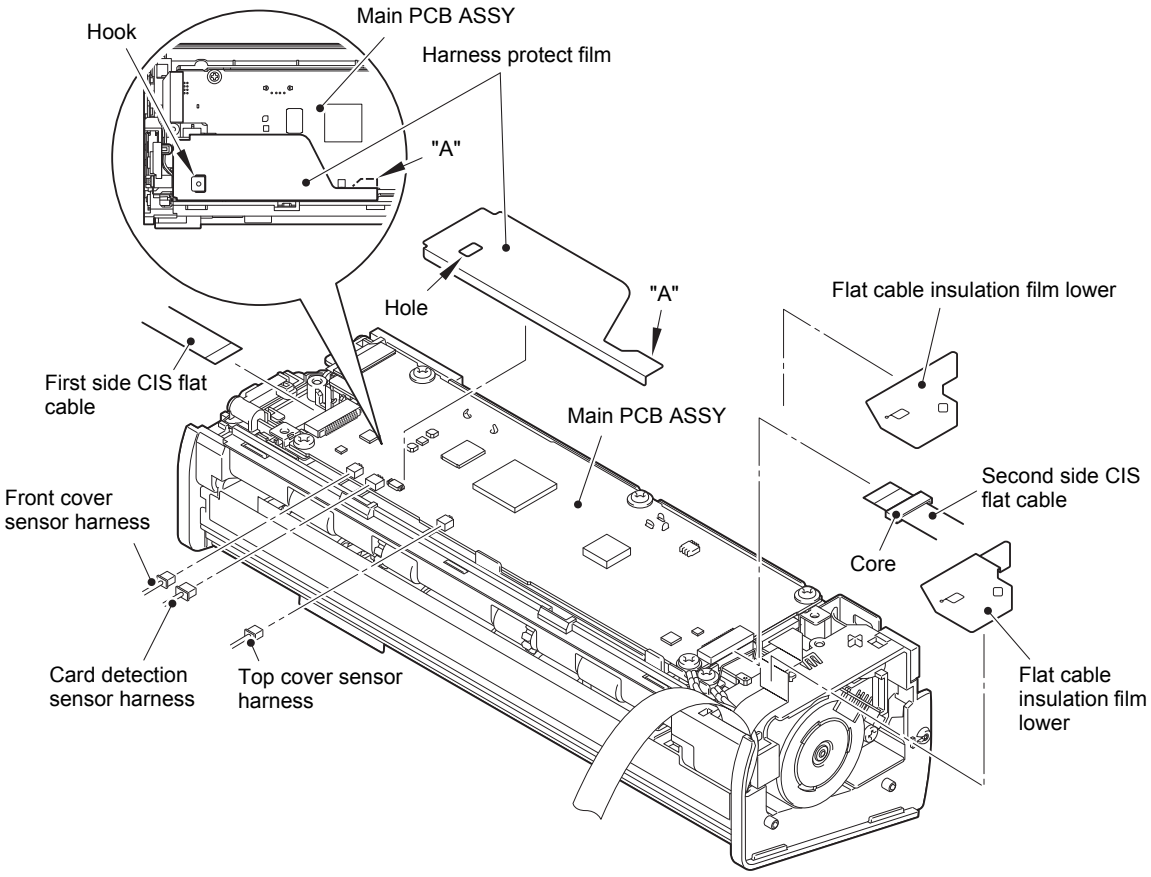


Fig.3-12

HARNESS ROUTING: Refer to “1. Main PCB ASSY”, “2. Main PCB ASSY right side flat cable overlap” and “3. Flat cable insulation film lower attachment”.

Assembling Note:

- Engage the hole on the left side of the harness protect film with the hook, and put the section A under the main PCB ASSY as described in the illustration above.
- Check that the core is attached to the second side CIS flat cable.

(4) Remove the taptite bind B M3x8 screw to remove the panel FG harness from the main PCB ASSY.

(5) Remove the three taptite cup S M3x5 screws and taptite bind B M3x8 screw from the main PCB ASSY.

(6) Push the gear hold plate earth wire aside and lift the main PCB ASSY. Disconnect the panel PCB flat cable from the main PCB ASSY by releasing the connector lock. Disconnect the main motor harness ASSY from the back side of the main PCB ASSY to remove it from the machine.

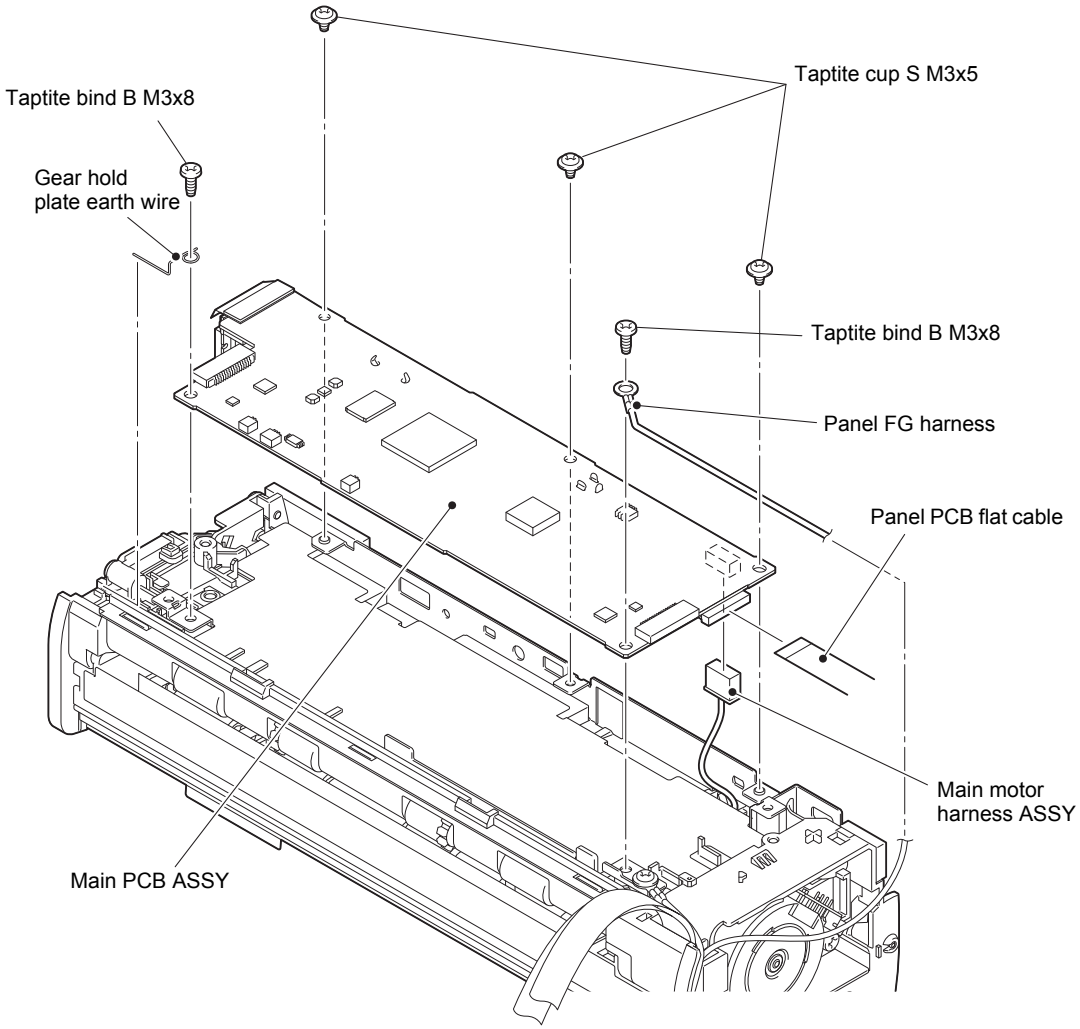


Fig.3-13

HARNESS ROUTING: Refer to “4. Main PCB ASSY top side”.

8.9 Wireless LAN PCB ASSY / Gasket / Wireless LAN PCB support

(1) Remove the wireless LAN PCB protect film / wireless LAN PCB protect pad from the main PCB ASSY.

(2) Disconnect the wireless LAN PCB ASSY from the main PCB ASSY.

(3) Remove the gasket from the main PCB ASSY.

Assembling Note:

- Check that the gasket is attached to the main PCB ASSY.

(4) Remove the wireless LAN PCB support from the wireless LAN PCB ASSY.

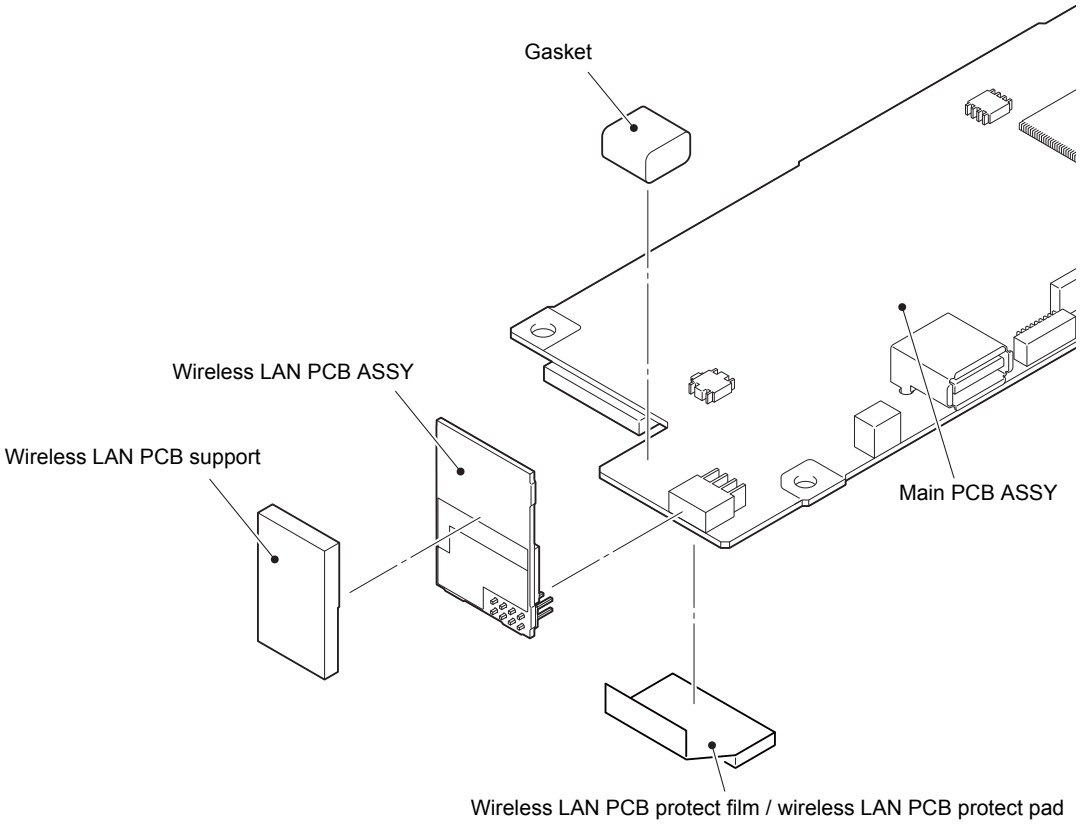


Fig.3-14

Assembling Note:

- Attach the wireless LAN PCB support as shown in the illustration below.

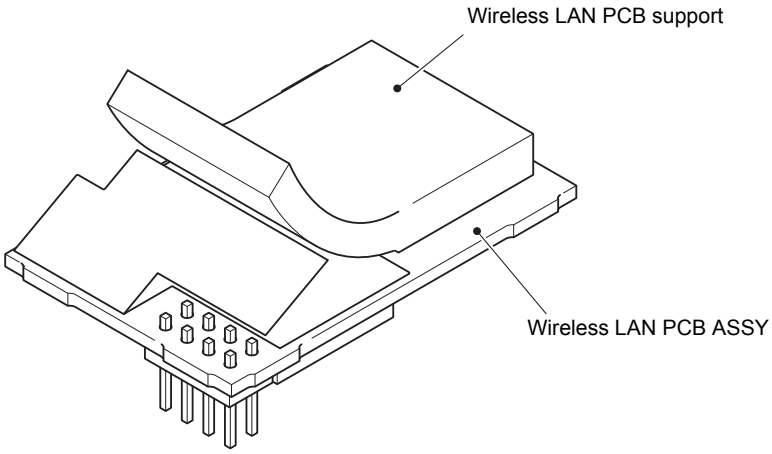


Fig.3-15

Assembling Note:

- Attach the wireless LAN PCB protect film / wireless LAN PCB protect pad after attaching the wireless LAN PCB ASSY to the main PCB ASSY.
- Attach the wireless LAN PCB protect film / wireless LAN PCB protect pad along the edge of the main PCB ASSY and the side of the connector foots for the wireless LAN PCB ASSY as shown in the figure below.

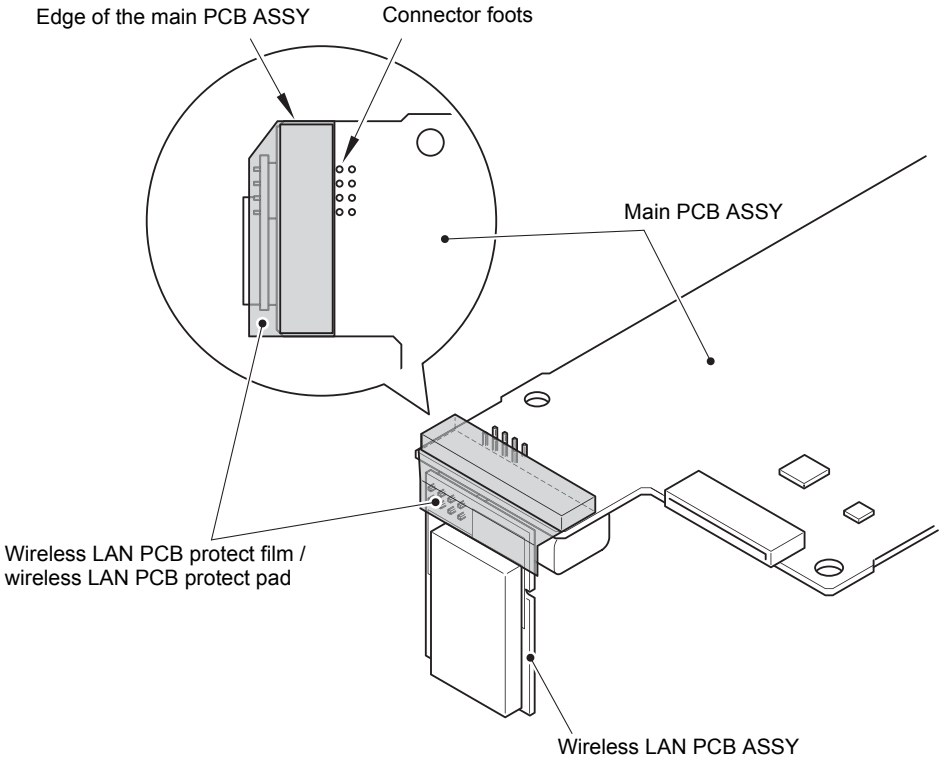


Fig.3-16

8.10 Front cover L

(1) Lift the front cover L in the direction of arrow a to release it from the hook, and open it in the direction of arrow b to remove it from the machine.

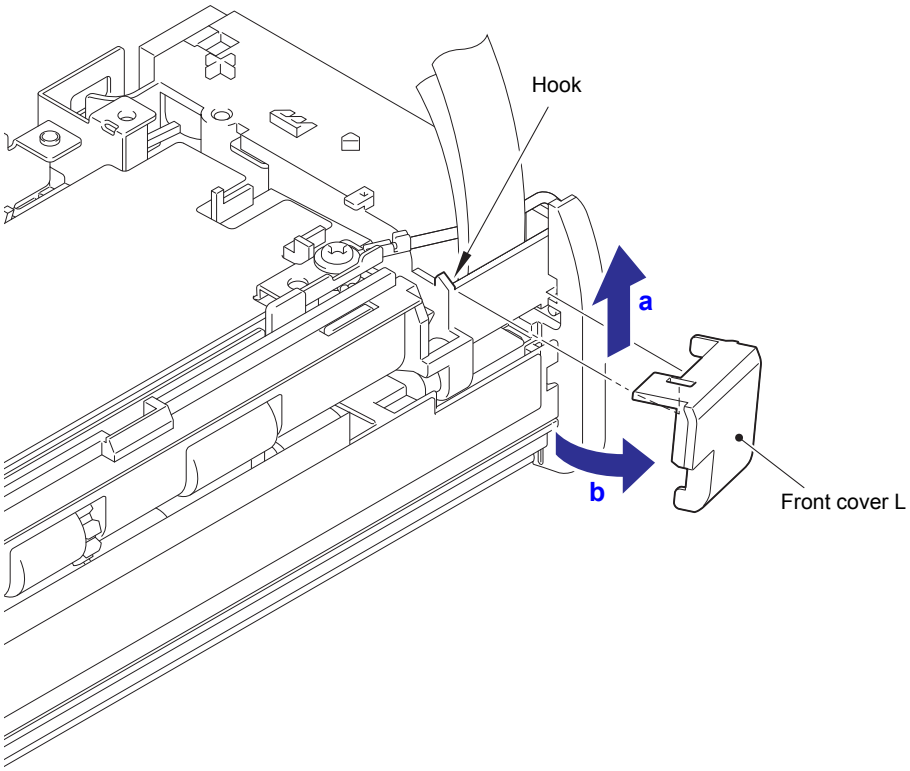


Fig.3-17

8.11 Panel unit

(1) Remove the taptite cup S M3x5 screw to disconnect the second side CIS FG harness from the machine.

(2) Press the lock lever R, open the panel unit and upper document chute. Bend the machine inward to remove the two bosses on the upper document chute, and remove the panel unit and upper document chute from the machine. Release the two FG harnesses and two flat cables from the securing fixtures.

(3) Remove the two taptite bind B M3x8 screws from the upper document chute.

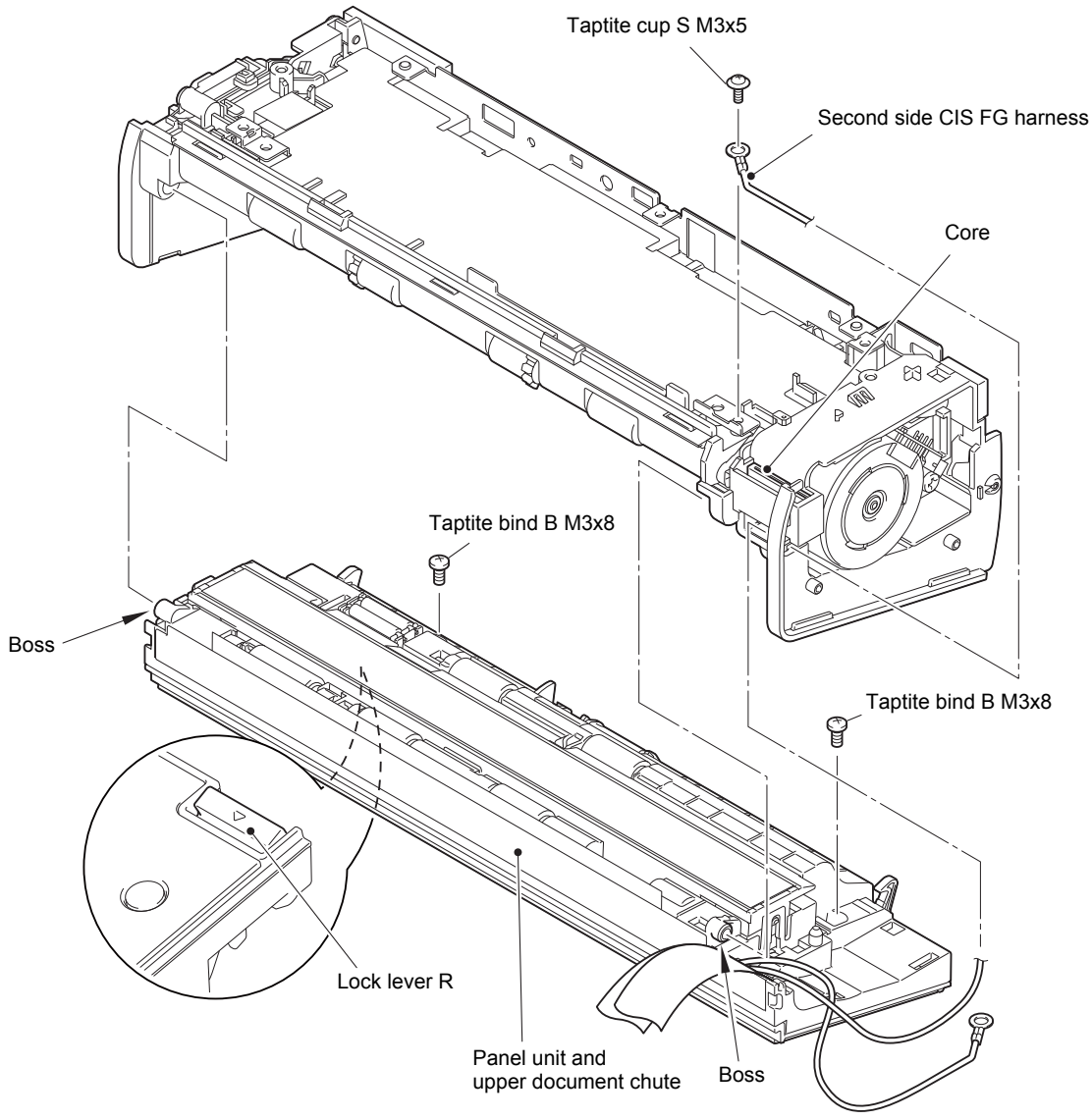


Fig.3-18

HARNESS ROUTING: Refer to "4. Main PCB ASSY top side", "6. Frame L" and "7. Flat cable on the left side at the bottom".

Note:

- Be careful not to lose the core.

(4) Release the three hooks A from the hole of the upper document chute. Release the four hooks on the left and right, slide the panel unit to diagonally backward to release the four hooks on the front, and remove the panel unit from the upper document chute.

(5) Disconnect the document detection sensor harness, document scanning position sensor harness, and card scanning position sensor harness from the panel PCB. Release the panel FG harness and panel PCB flat cable from the securing fixtures to remove the upper document chute from the panel unit.

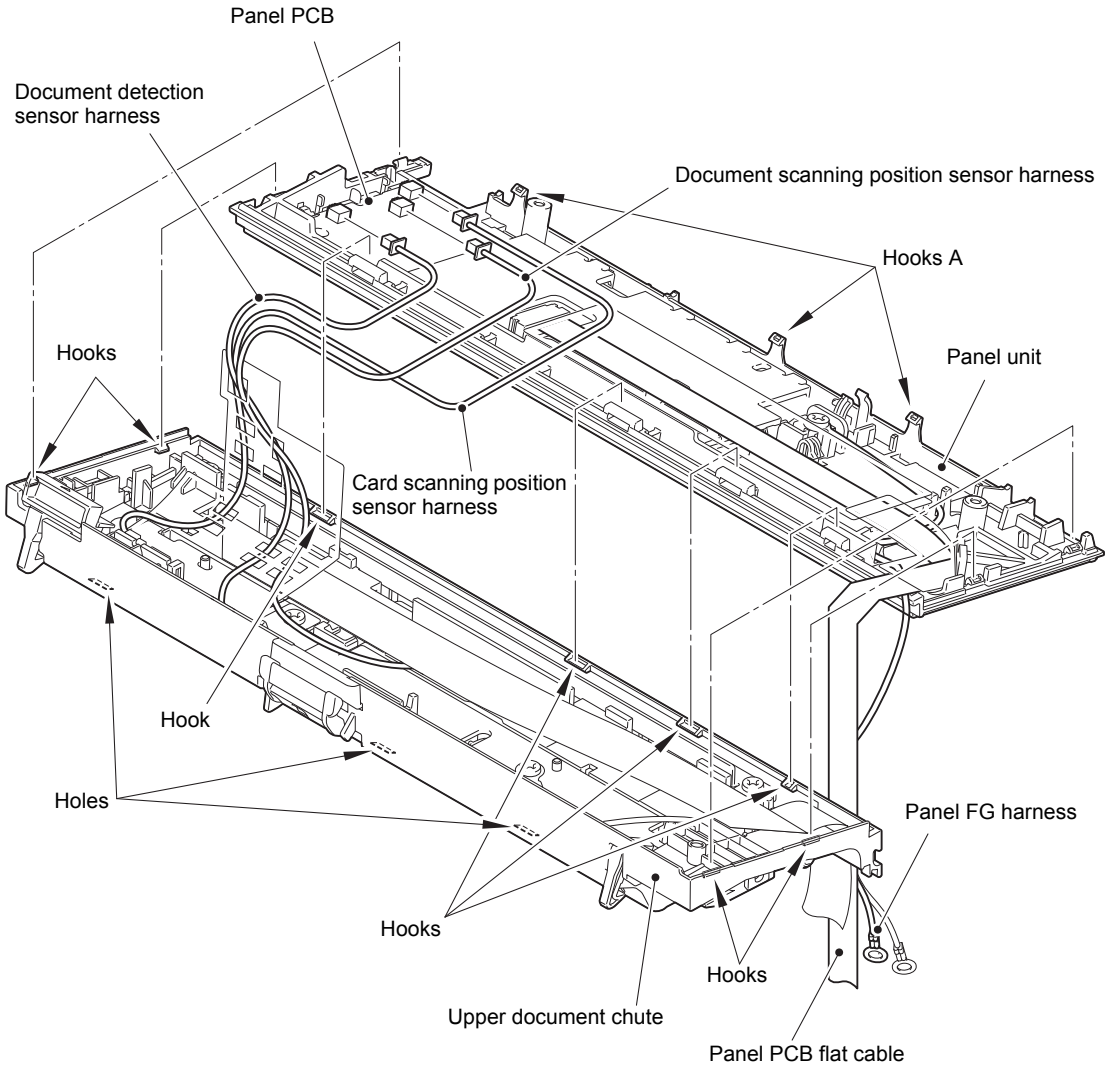


Fig.3-19

HARNESS ROUTING: Refer to “9. Upper chute ASSY”.

8.12 Second side CIS unit

(1) Turn over the upper document chute.

(2) Release the two hooks and lift the second side CIS unit slightly.

(3) Disconnect the second side CIS flat cable from the second side CIS unit, and remove the second side CIS unit from the upper document chute.

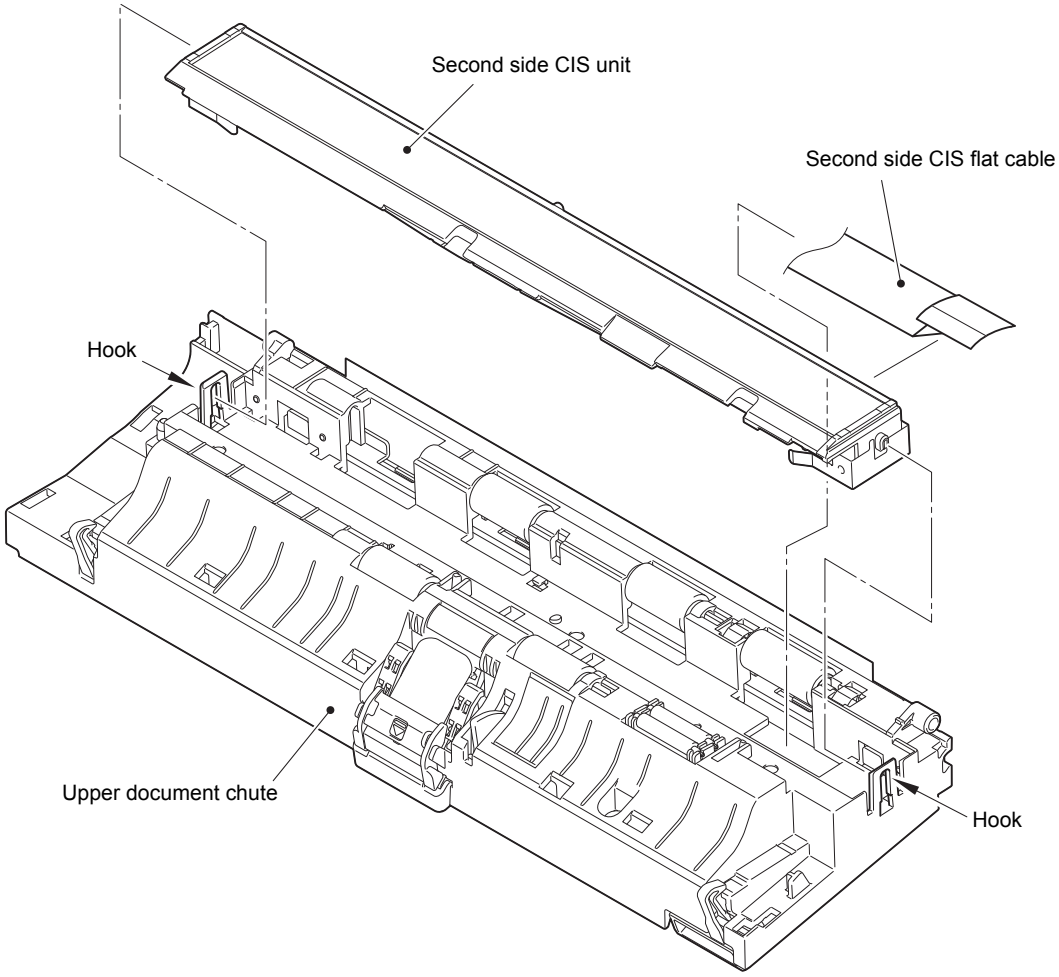


Fig.3-20

HARNESS ROUTING: Refer to “9. Upper chute ASSY”.

8.13 Separation pad ASSY

(1) Slide the separation arm in the direction of the arrow.

(2) Remove the separation pad ASSY from the upper document chute.

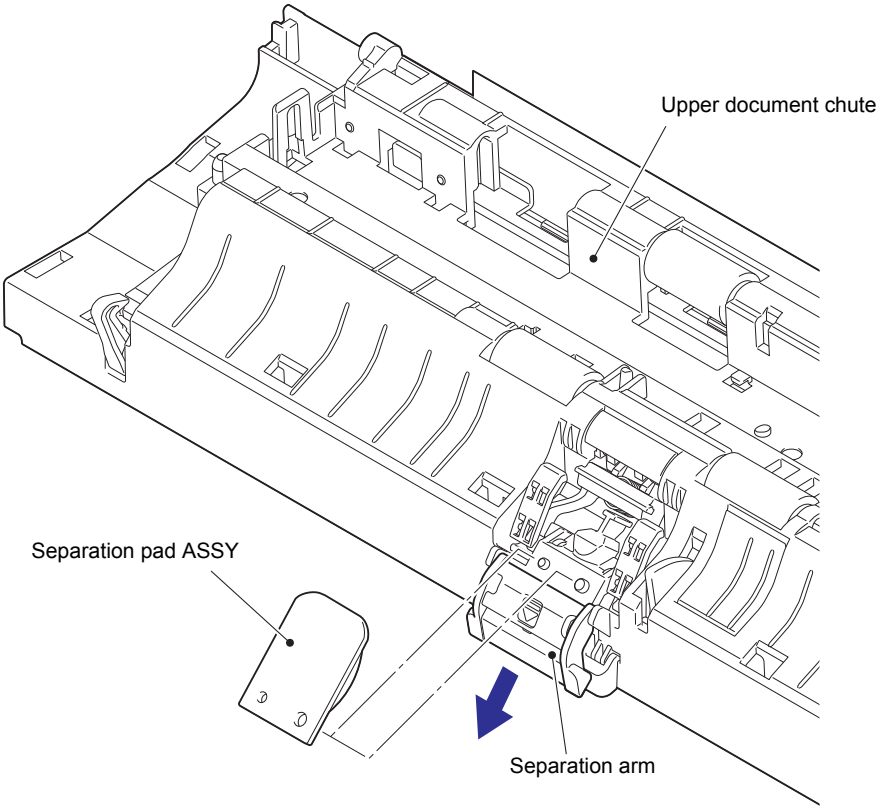


Fig.3-21

Note:

- When the separation pad ASSY has been replaced, refer to the operation manual and reset the separation pad counter.

8.14 Second side CIS flat cable

(1) Turn over the upper document chute.

(2) Remove the second side CIS flat cable from the upper document chute.

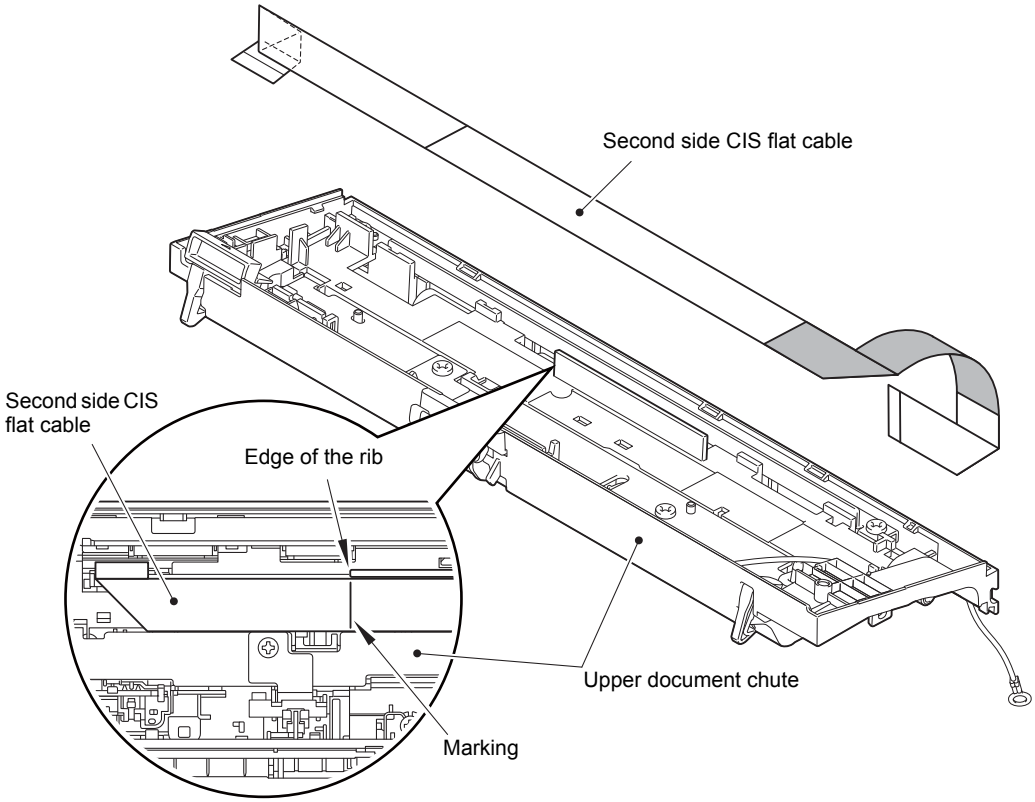


Fig.3-22

HARNESS ROUTING: Refer to “9. Upper chute ASSY”.

Assembling Note:

- Attach the second side CIS flat cable to the upper document chute by engaging the marking on the second side CIS flat cable with the edge of the rib on the upper document chute as shown in the figure above.
- Fold the second side CIS flat cable as shown in the illustration below.

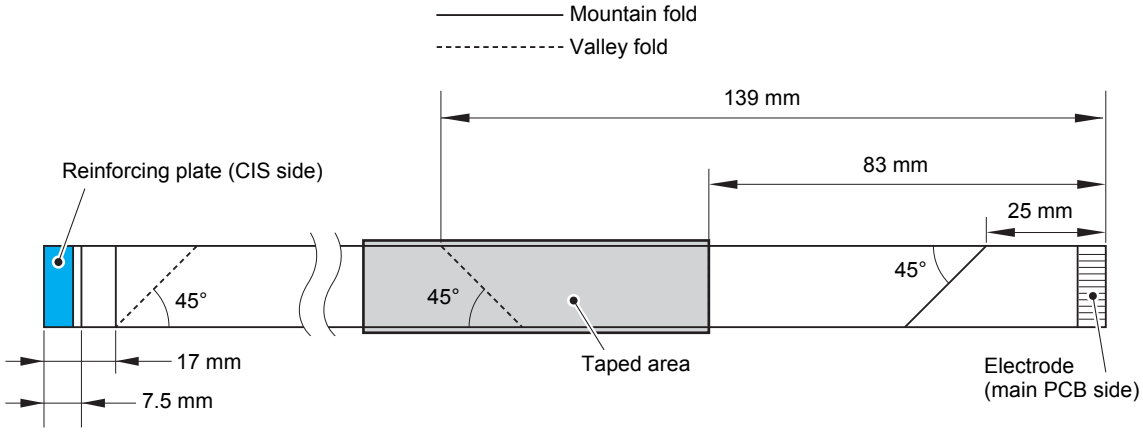


Fig.3-23

8.15 Document scanning position sensor PCB / Document detection sensor PCB / Card scanning position sensor PCB

(1) Release the hook to remove the card scanning position sensor PCB from the card R sensor holder. Disconnect the card scanning position sensor harness from the card scanning position sensor PCB.

(2) Remove the taptite cup S M3x5 screw while peeling the upper chute harness film. Remove the document detection actuator earth plate from the upper document chute.

(3) Remove the document detection sensor PCB from the upper document chute while pushing the rib in the direction of the arrow. Disconnect the document detection sensor harness from the document detection sensor PCB.

(4) Remove the taptite cup S M3x5 screw while peeling the upper chute harness film. Remove the second CIS FG harness from the pinch roller support plate. Remove the two taptite bind B M3x8 screws while peeling the upper chute harness film. Bend the separate earth wire inward to remove the pinch roller support plate from the upper document chute.

(5) Release the hook to remove the document scanning position sensor PCB from the upper document chute. Disconnect the document scanning position sensor harness from the document scanning position sensor PCB.

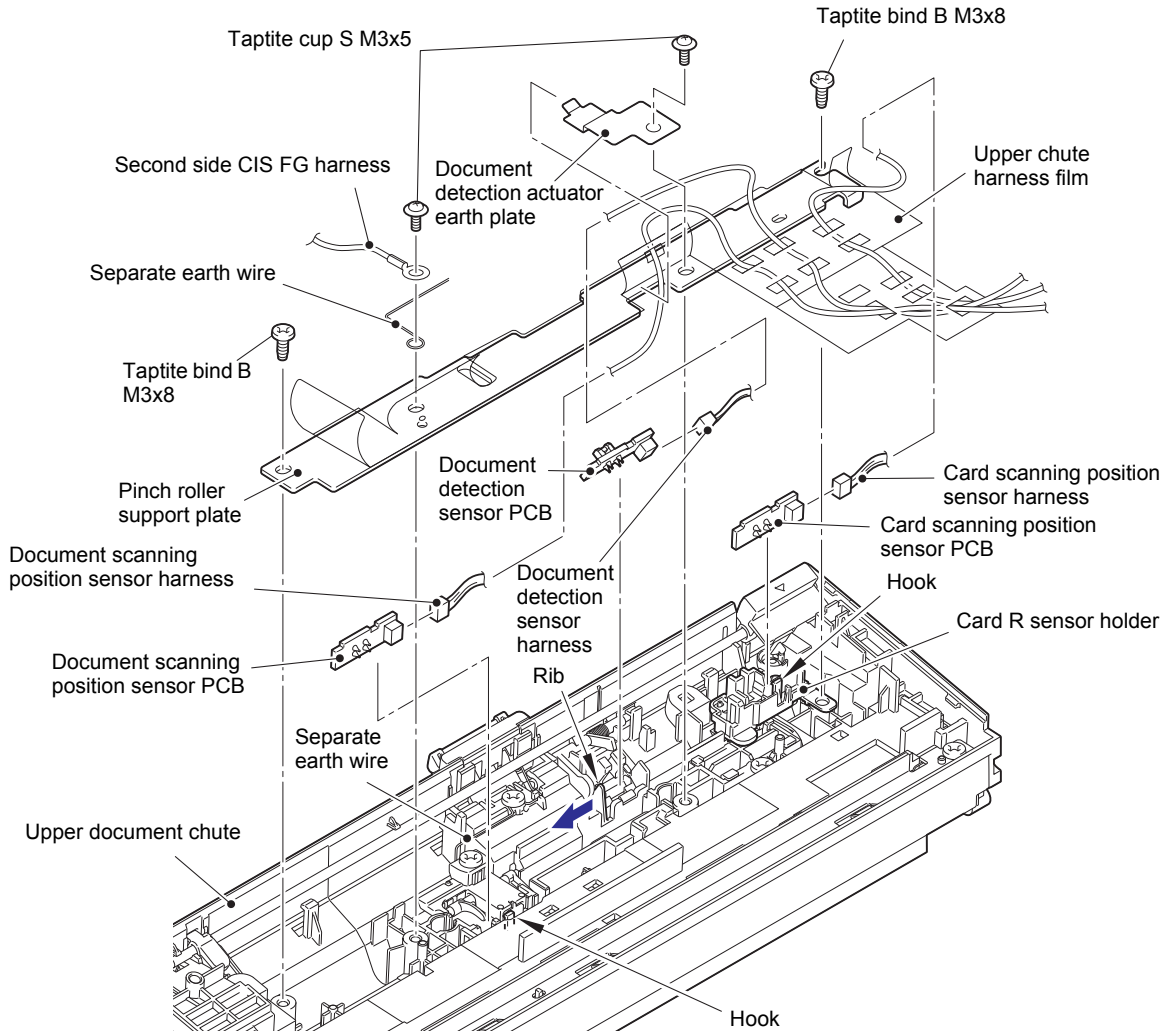


Fig.3-24

HARNESS ROUTING: Refer to "9. Upper chute ASSY".

Assembling Note:

- Secure the document scanning position sensor harness, the document detection sensor harness, and the card scanning position sensor harness in the securing fixtures as shown in the illustration below.
- Attach the document detection actuator earth plate as shown in the illustration below.

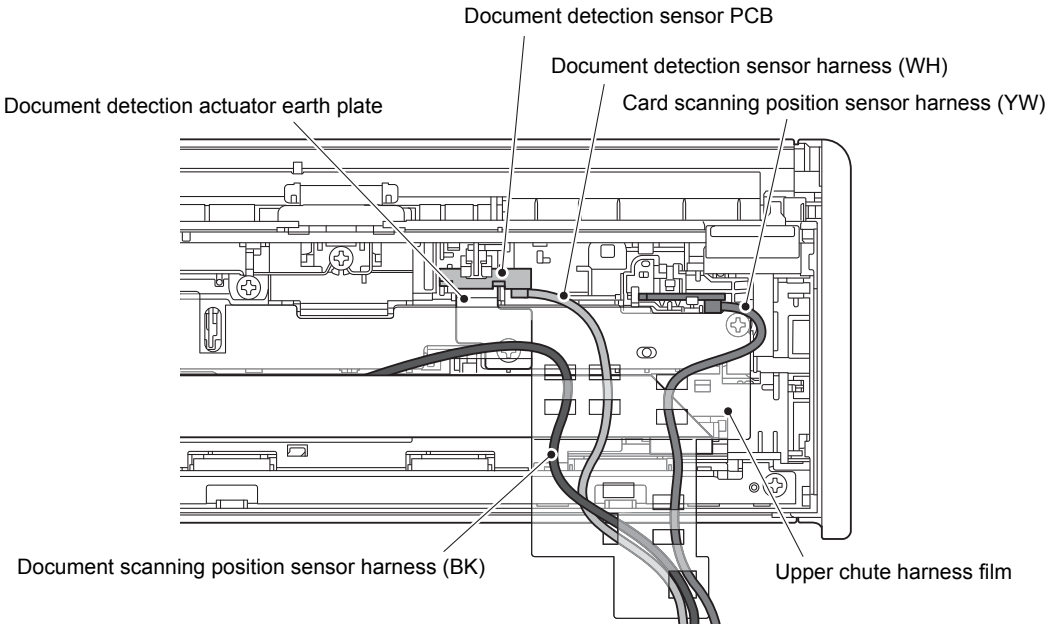


Fig.3-25

8.16 Main motor

(1) Disconnect the connector of main motor harness ASSY from the main motor.

(2) Remove the screw pan (S/P washer) M3x6 DA and the taptite bind B M3x8 screw to remove the main motor from the machine.

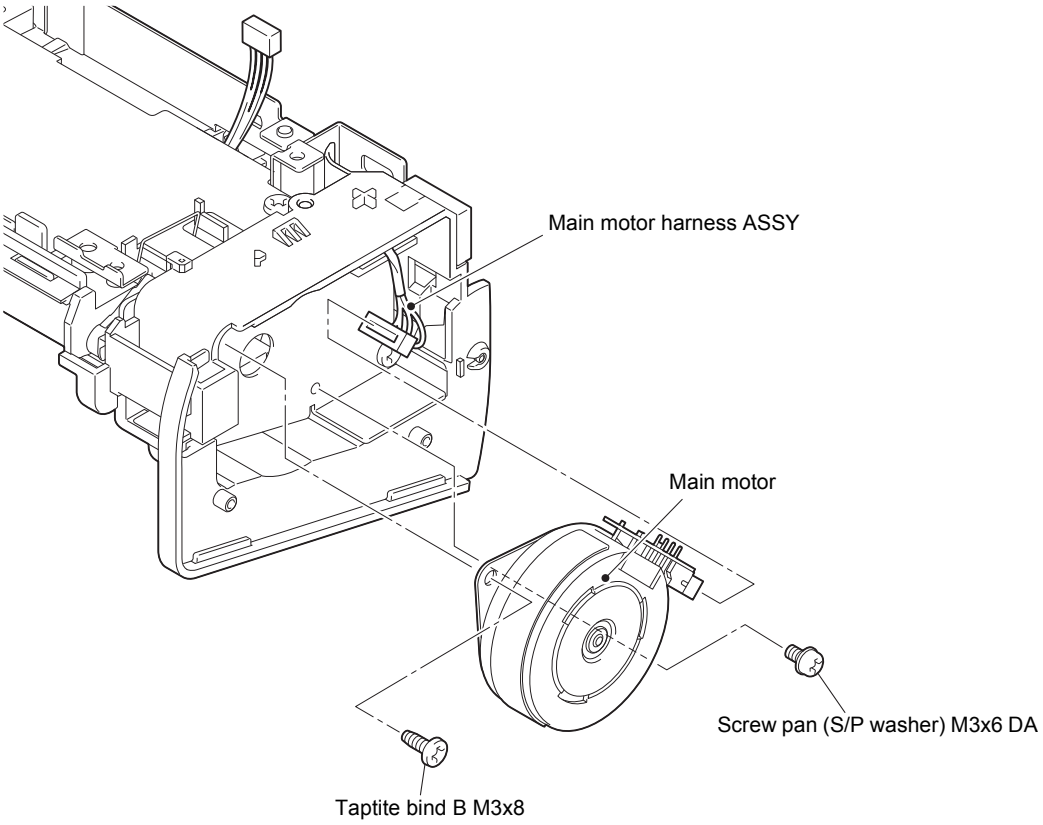


Fig.3-26

HARNESS ROUTING: Refer to “6. Frame L”.

8.17 Ejection roller cover

(1) Turn the machine upside down.

(2) Release the three hooks on the ejection roller cover from the machine.

(3) Remove the five tabs "A" on the ejection roller cover while lifting it with a screw driver or equivalent tools, and remove it from the machine.

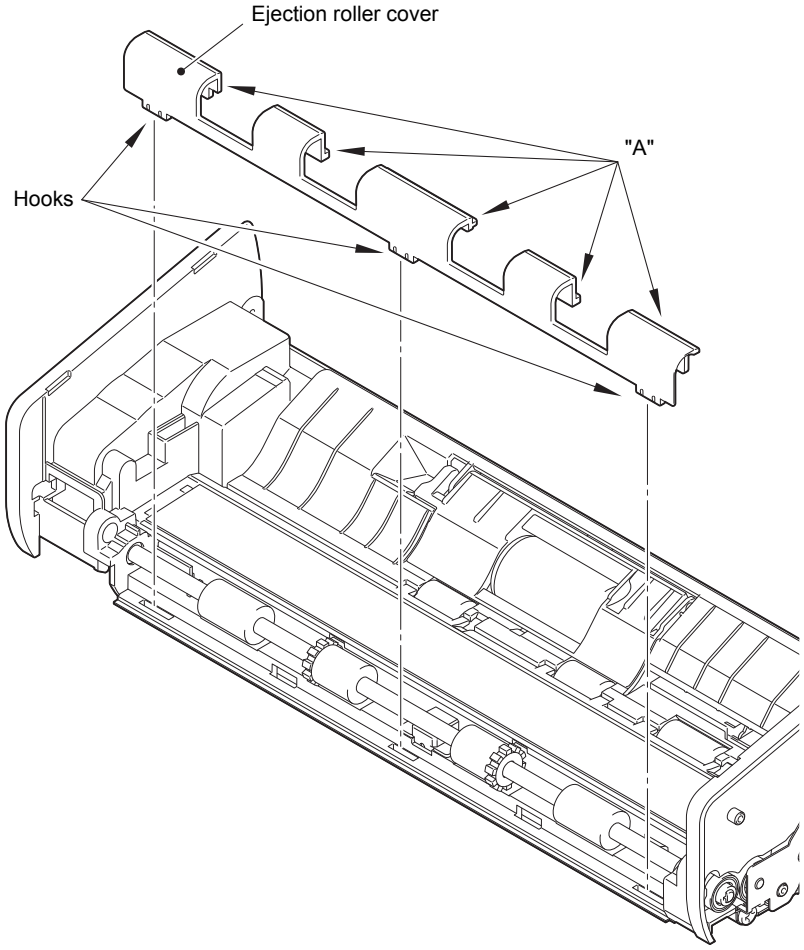


Fig.3-27

8.18 First side CIS unit

(1) Lift the first side CIS unit slightly, disconnect the first side CIS flat cable from the first side CIS unit, and remove the first side CIS unit from the machine.

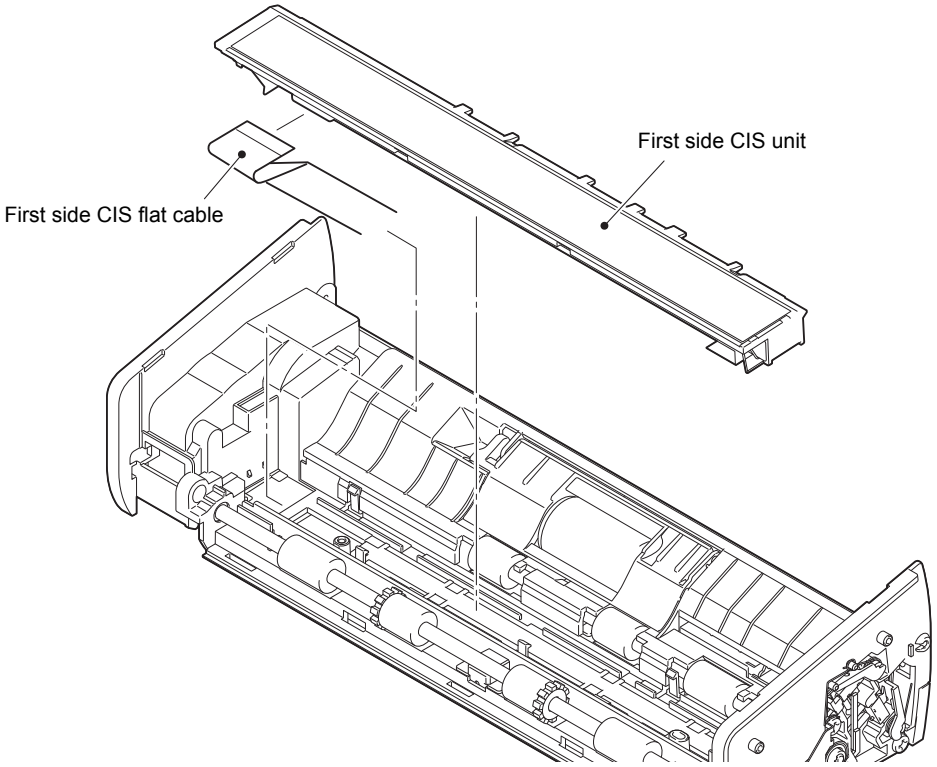


Fig.3-28

8.19 Pick-up roller cover ASSY

(1) Open the pick-up roller cover ASSY.

(2) Slide the pick-up roller cover ASSY in the direction of arrow a to remove the boss, and in the direction of arrow b to remove it from the machine.

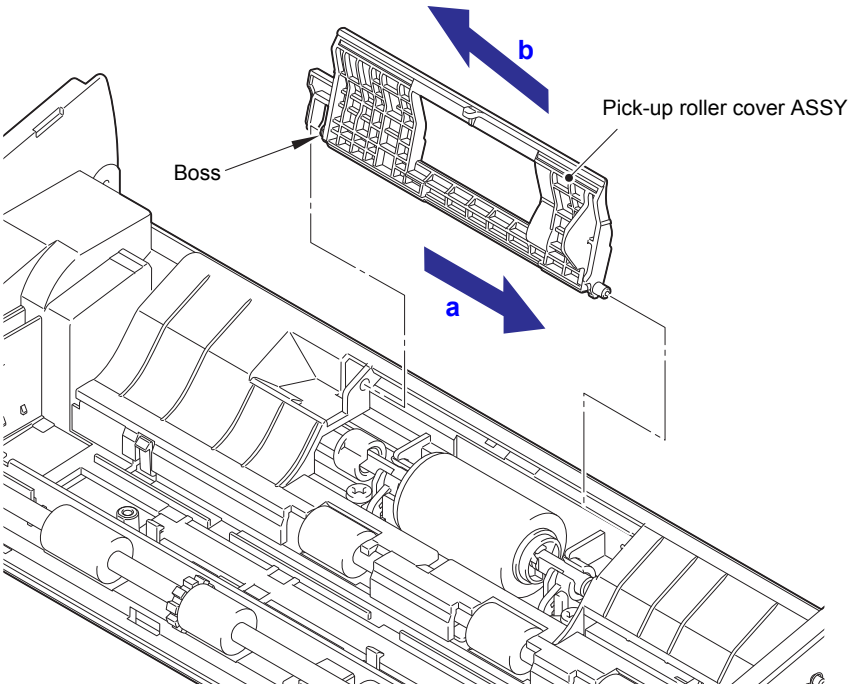


Fig.3-29

8.20 Pick-up roller

(1) Slide the pick-up roller in the direction of arrow a to align the cut surface of the roller shaft with the bushing, and in the direction of arrow b to remove it from the machine.

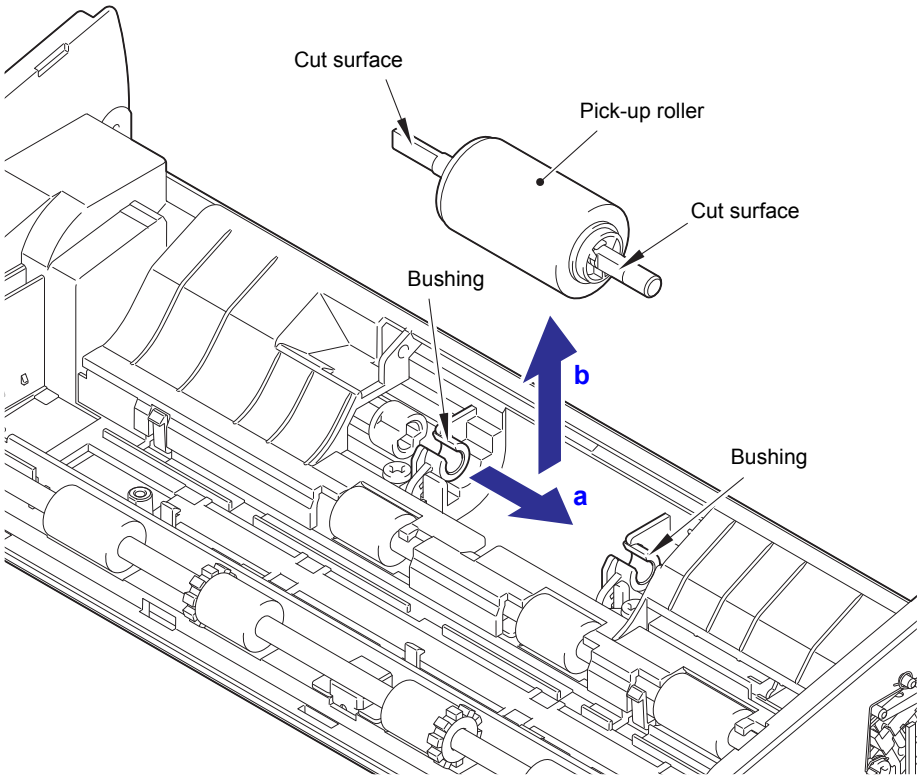


Fig.3-30

Note:

- When the pick-up roller had been replaced, refer to the operation manual and reset the pick-up roller counter.

8.21 Cover switch ASSY

(1) Remove the two taptite bind B M3x8 screws to remove the front cover sensor earth wire, gear hold plate earth wire, and gear hold plate from the machine.

Note:
- Be careful not to lose gears.

(2) Release the top cover sensor harness and front cover sensor harness from the securing fixtures.

(3) Remove the taptite bind B M3x8 screw to remove the cover switch ASSY from the machine.

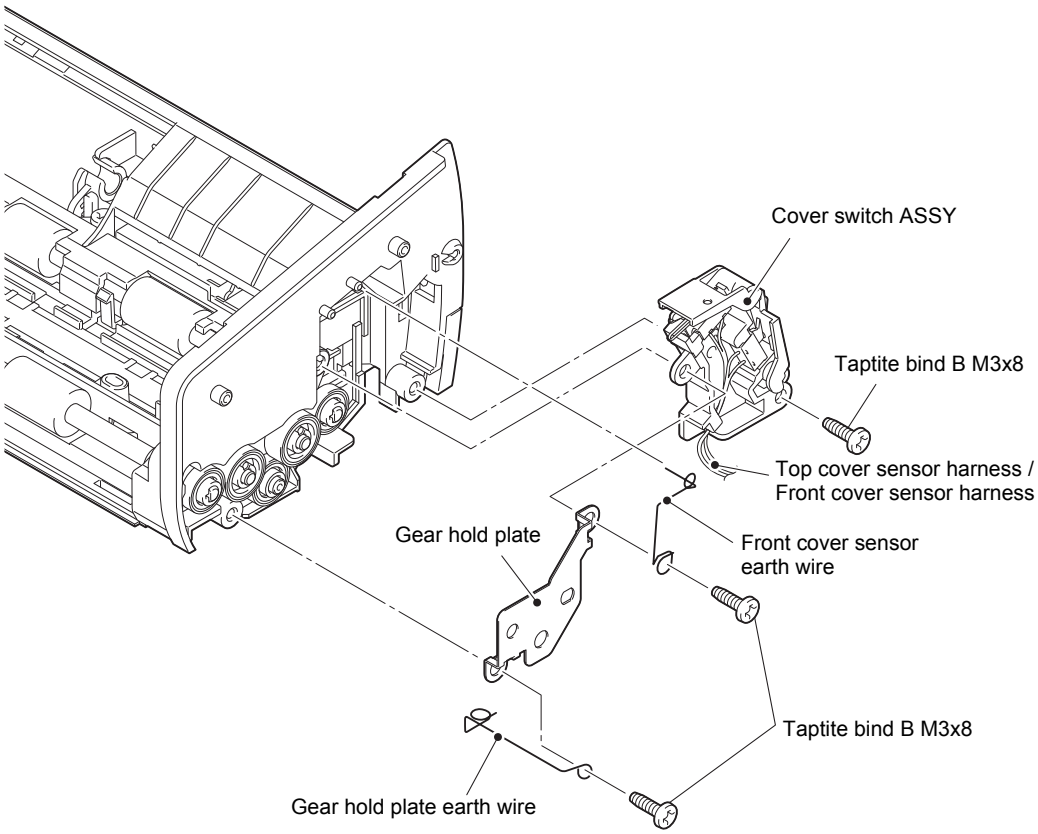


Fig.3-31

HARNESS ROUTING: Refer to “5. Frame R” and “8. Lower chute”.

8.22 First side CIS flat cable

(1) Turn the machine upside down.

(2) Remove the taptite bind B M3x8 screw while peeling the PCB upper insulation film F, and remove the main motor earth plate from the machine.

(3) Remove the taptite bind B M3x8 screw while peeling the PCB upper insulation film F, and remove the main PCB holder from the machine. Release the main motor harness ASSY from the guide of the harness protect cover.

(4) Disconnect the first side CIS flat cable from the machine.

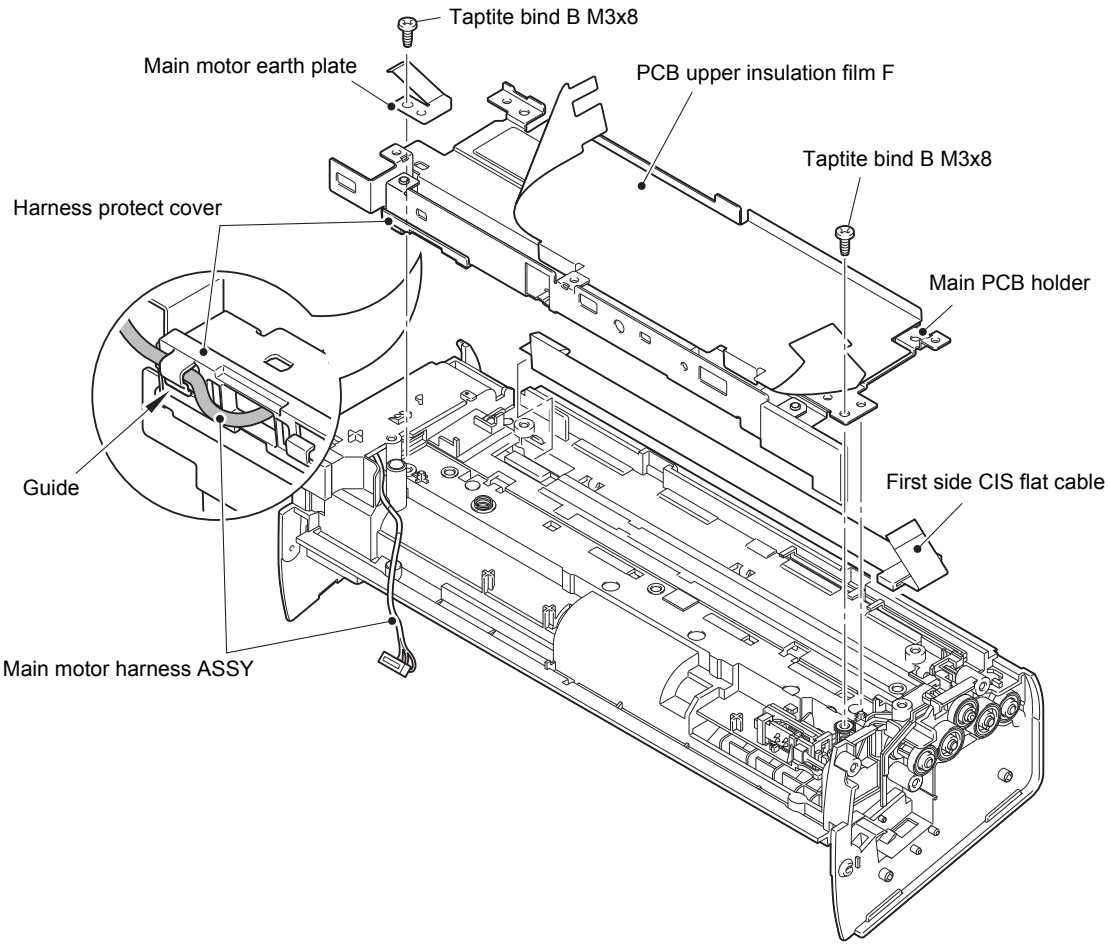


Fig.3-32

HARNESS ROUTING: Refer to “6. Frame L” and “8. Lower chute”.

Assembling Note:

- Fold the first side CIS flat cable as shown in the illustration below.
- Fold the first side CIS flat cable on the main PCB side at the position shown in the figure below.

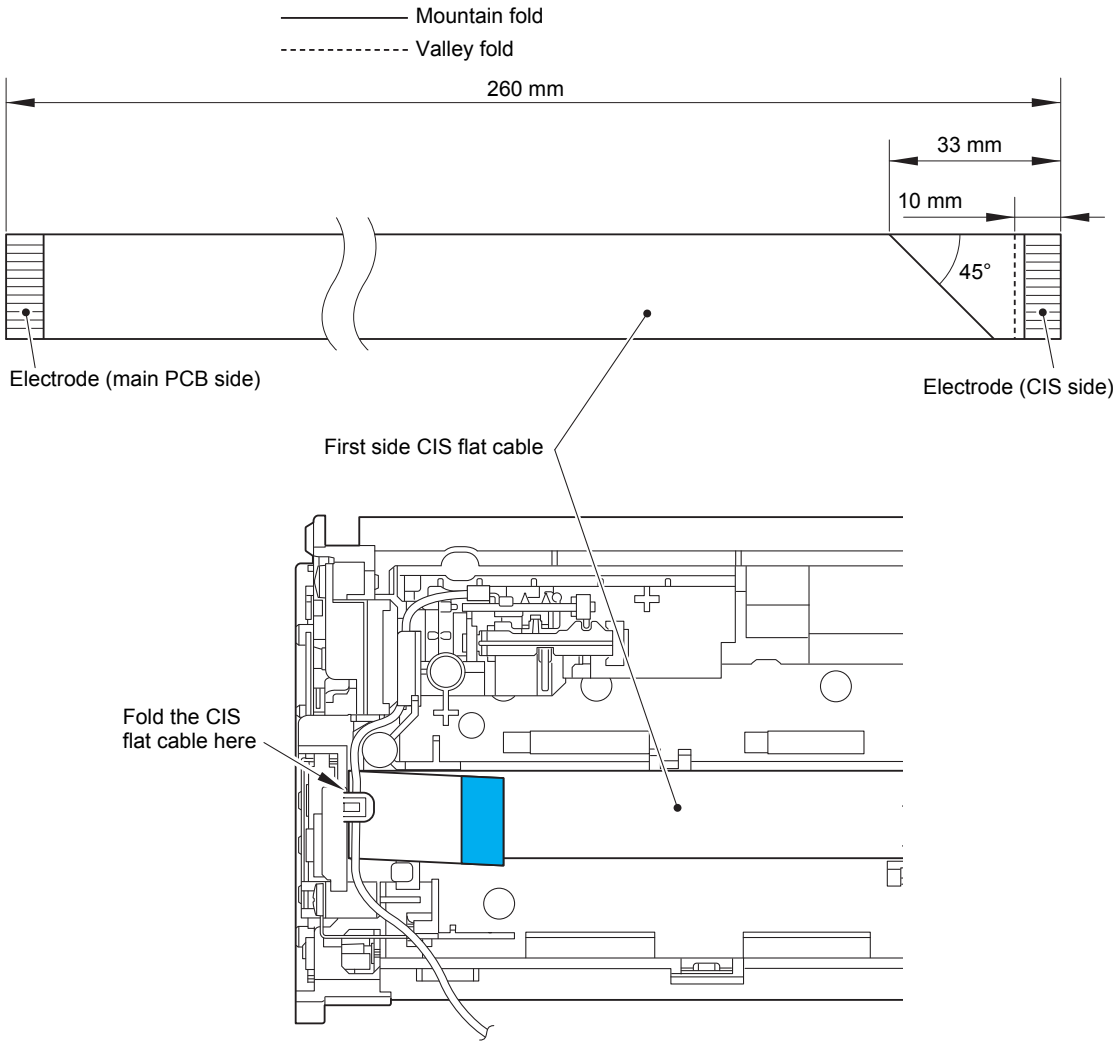


Fig.3-33

8.23 Card detection sensor PCB

(1) Release the hook to remove the card detection sensor PCB from the machine. Disconnect the card detection sensor harness from the card detection sensor PCB.

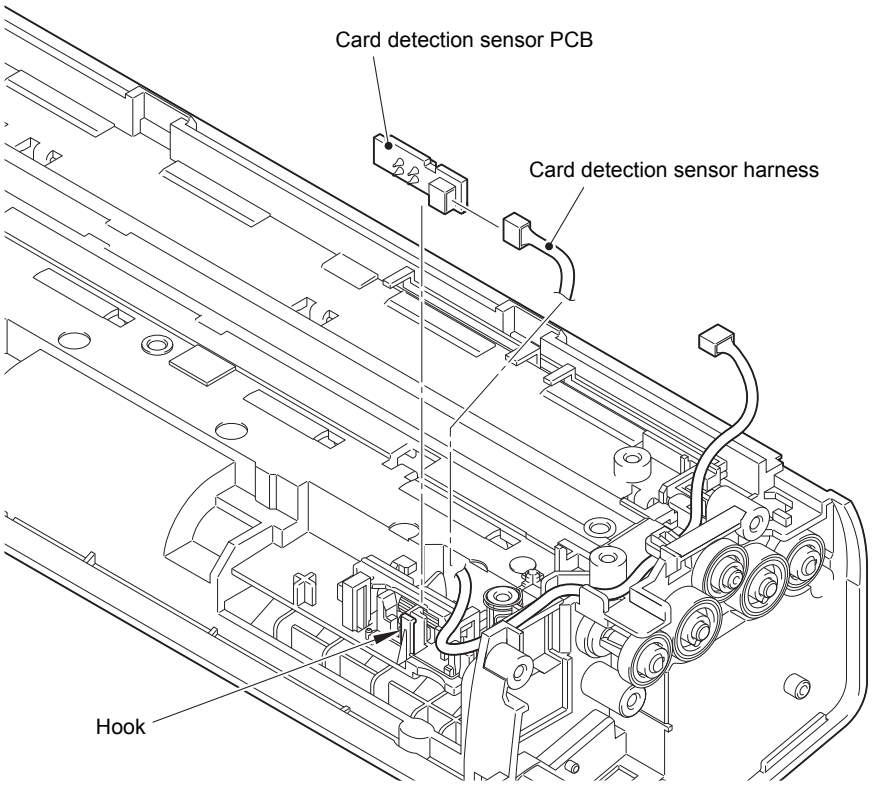


Fig.3-34

HARNESS ROUTING: Refer to "8. Lower chute".

Assembling Note:

- Secure the card detection sensor harness in the securing fixtures as shown in the illustration below.

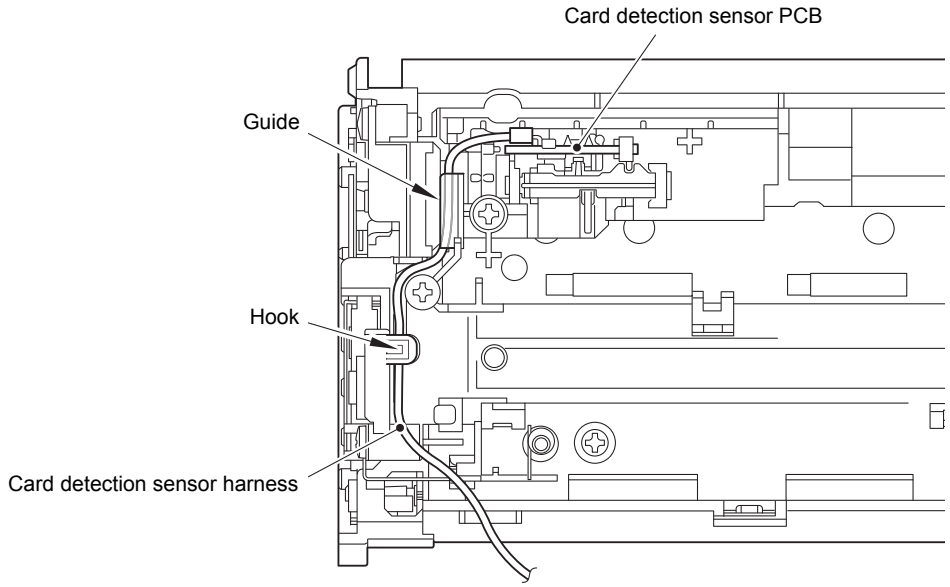


Fig.3-35

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

1. IF YOU REPLACE THE MAIN PCB ASSY

<What to do after replacement>

- Checking firmware version
- Setting by country
- CIS type setting
- Installing firmware
- Initializing the EEPROM of the main PCB ASSY
- Restoring machine information
- Setting serial number
- Acquiring white level data
- Checking operation after repair

■ What you need to prepare

(1) One USB cable

(2) Create a temporary folder on the C drive of the computer (Windows® XP or higher).

(3) Service setting tool (brusbsn.zip)
Copy this file into the temporary folder created on the C drive.

(4) Download utility (Filedg32.exe)
Copy this file into the temporary folder created on the C drive.

(5) Maintenance driver (MaintenanceDriver.zip)
When the maintenance printer driver is not installed on the computer to be used, copy this file into the temporary folder created on the C drive, and extract the copied file. Refer to "APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER" for the installation procedure.

(6) Firmware

Main firmware: (E.g.) LZXXXX_$.pjl	LZXXXX : First six digits of the part number of the firmware $: Alphabetic character representing the revision version of the firmware

(7) Country code setting PJL file
Copy this file into the temporary folder created on the C drive.

(8) Remote check mode file (brmfrmss.exe)
Copy this file into the temporary folder created on the C drive.

(9) CIS type setting PJL file (CDSM59-1-3-1_FS.pjl)

(10) USB flash memory drive

(11) Test chart

1.1 Checking Firmware Version

Check whether the firmware installed on the main PCB is the D version or later. If it is the D version or later, there is no need to install the firmware. If it is not, be sure to install the firmware to the main PCB as described in "1.4 Installing Firmware" in this chapter.

<How to check firmware version>

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key again. The to Network Device2 LED lights.

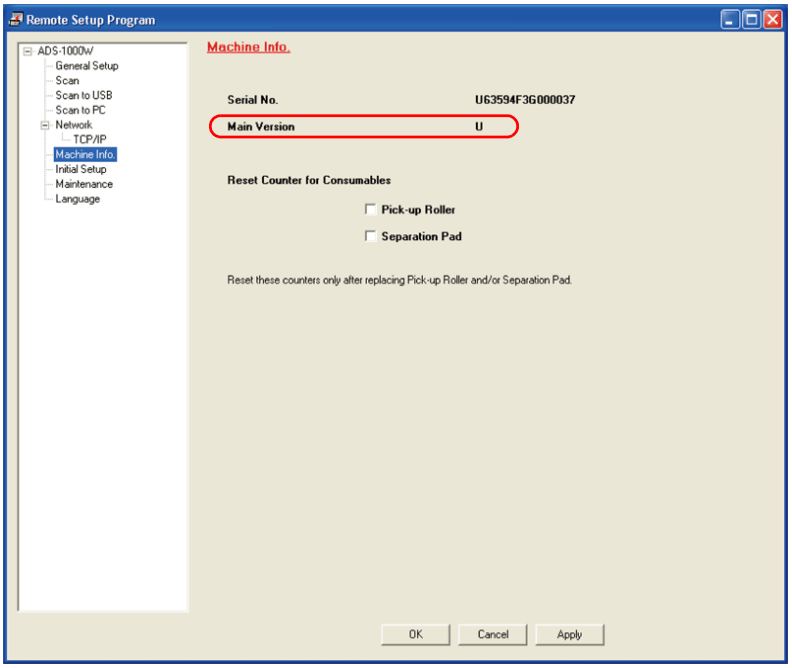
(5) Press the ◇ key.

(6) Turn ON the computer.

(7) Connect the computer to the machine with the USB cable.

(8) Double-click "brmfrmss.exe" that was copied into the temporary folder to start remote check mode. The screen shown below appears.

(9) Click the [Machine Info.] tab. The firmware version is displayed.



1.2 Setting by Country

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Connect the computer to the machine with the USB cable.

(4) Turn ON the computer.

(5) Open the temporary folder and double-click "Filedg32.exe" to start it, and select the "Brother Maintenance USB Printer".

(6) Drag and drop the Country code setting PJL file in the temporary folder onto the "Brother Maintenance USB Printer" icon. The country code information is loaded to the machine and written to the flash ROM.

(7) Wait for several seconds, and the country code that has been set is displayed on the computer screen.

(8) Unplug the AC adapter of the machine, and disconnect the USB cable.

1.3 CIS Type Setting

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Connect the computer to the machine with the USB cable.

(4) Turn ON the computer.

(5) Open the temporary folder and double-click "Filedg32.exe" to start it, and select the "Brother Maintenance USB Printer".

(6) Drag and drop the "CDSM59-1-3-1_FS.pjl" file in the temporary folder onto the "Brother maintenance USB Printer" icon. CIS type setting is completed. If the firmware is not the D version or later, after drag and drop, the CIS type is not be completed with a beep.

1.4 Installing Firmware

Note:
- Even if the latest firmware is installed as described in "1.1", install the firmware again. The parameters of the CIS type are set by installing the firmware after the CIS type setting.

(1) Create a folder in the top hierarchy of USB flash memory drive and name it "Brother".

(2) Save main firmware (LZ****.pjl) to the "Brother" folder created in USB flash memory drive.

Note:
- Before saving the firmware to the USB flash memory drive, check if the file name with extension ".pjl" is for the model to be installed with the firmware. If "Brother" folder has multiple firmware files, it fails to specify the execution file, resulting in install failure due to invalid operation.

(3) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(4) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(5) Connect the USB flash memory drive with firmware data to the machine.

(6) Press the [to Network Device1] key, and then [to Network Device2] key twice. The to PC and to USB LEDs light.

(7) Press the ⏻ key. All LEDs start flashing in turns, and the machine starts firmware installation.

(8) When the firmware is successfully installed, ⏻ LED flashes and the machine returns to the ready state.

1.5 Initializing the EEPROM of the Main PCB ASSY

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key again for three times. The to Network Device1, to Network Device2 LEDs light.

1.6 Restoring the Machine Information

This function is used to restore information including machine information and user settings backed up in USB flash memory drive before disassembly.

If you succeeded in restoring, procedure 1.5 to 1.7 are not required.

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(3) Connect the USB flash memory drive with back up data to the machine.

(4) Press the [to Network Device2] key eight times. The to PC LED lights.

(5) Press the ⏻ key. The to PC, to USB, to Network Device1, and ⏻ LEDs light.

(6) Press the [to Network Device1] key. The machine information is stored in EEPRPOM of the machine, then the to PC, to USB, to Network Device1, and ✕ LEDs light.

Note:
- Do not disconnect the USB flash memory drive until ✕ LED light. The machine may write faulty data when the USB flash memory drive is disconnected during the process.

(7) Press the ✕ key, and the machine returns to the initial state of maintenance mode. Disconnect the USB flash memory drive.

(8) Press the [to Network Device1] key, and then [to Network Device2] key three times. The to PC, to USB, and to Network Device2 LEDs light.

(9) Press the ⏻ key. The machine returns to the ready state.

Note:
- When the machine information is successfully restored, perform (8) and (9) to quit the maintenance mode, and restart the machine. If you don't restart the machine, we cannot ensure its normal operation.

1.7 Setting Serial Number

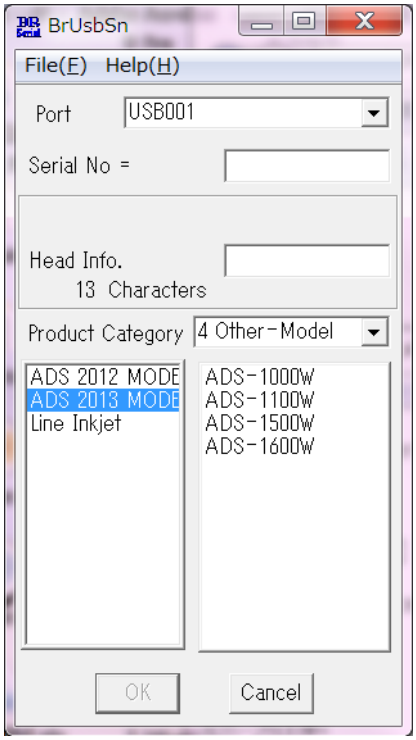
(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Connect the computer to the machine with the USB cable.

(4) Turn ON the computer.

(5) Extract the "brusbsn.zip" file that was copied into the temporary folder, and double-click "brusbsn.exe" to start it.



(6) In the [Product Category] field, select the [4 Other - Model].

(7) Choose "ADS 2013 MODEL" in the left box of the BrUsbSn window.

(8) In the [Port] field, select the port number assigned to the Brother Maintenance USB Printer. If the port number is unknown, follow the steps below to check it.

1) Click [Start], [Settings], and [Printers and Faxes]. The Printers and Faxes window appears.

2) Right-click the "Brother Maintenance USB Printer" icon.

3) Click [Properties]. The Brother Maintenance USB Printer Properties window appears.

4) Click the [Ports] tab. The Brother Maintenance USB Printer port number is displayed.

(9) Enter the serial number (15 digits) of the machine in the [Serial No] field, and click the [OK] button.

(10) Check that the CHECK window appeared on the screen, and click the [Yes] button. The serial number is written to the machine.

(11) Disconnect the USB cable.

1.8 Acquiring White Level Data

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key six times. The to USB and to Network Device1 LEDs light.

(5) Press the ◇ key. CIS scan area setting starts.

(6) When the CIS scan area setting is completed normally, the machine returns to the initial state of maintenance mode.

1.9 Checking Operation after Repair

Perform the steps below to check the machine's condition after repair or adjustment.

(1) Prepare some test chart sheets (Test chart TC-027, Color test chart CTC-001, Contrast chart TC-023), and set them in the document tray.

(2) Insert the USB flash memory drive into the USB host.

(3) Press the [to USB] key to begin scanning.
Check that sheets are picked up and fed one sheet at a time.
When an error occurs, refer to the troubleshooting procedure to repair the machine.

(4) When scanning is completed, remove the USB flash memory drive and connect it to the computer. Check the scanned data on the computer. If the image is distorted, refer to the troubleshooting procedure to repair the machine.

2. IF YOU REPLACE THE CIS UNIT

<What to do after replacement>

- Checking firmware version
- CIS type setting
- Installing firmware
- Acquiring white level data
- Checking operation after repair

2.1 Checking Firmware Version

Check whether the firmware installed on the main PCB is the D version or later. If it is the D version or later, there is no need to install the firmware. If it is not, be sure to install the firmware to the main PCB as described in "2.3 Installing Firmware" in this chapter.

<How to check firmware version>

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key again. The to Network Device2 LED lights.

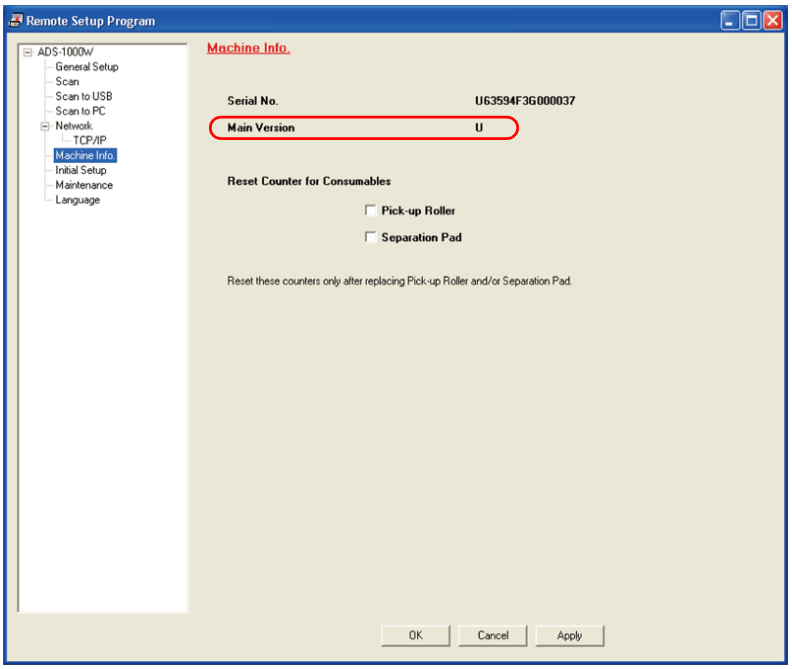
(5) Press the ⏻ key.

(6) Turn ON the computer.

(7) Connect the computer to the machine with the USB cable.

(8) Double-click "brmfrmss.exe" that was copied into the temporary folder to start remote check mode. The screen shown below appears.

(9) Click the [Machine Info.] tab. The firmware version is displayed.



2.2 CIS Type Setting

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(3) Connect the computer to the machine with the USB cable.

(4) Turn ON the computer.

(5) Open the temporary folder and double-click "Filedg32.exe" to start it, and select the "Brother Maintenance USB Printer".

(6) Drag and drop the "CDSM59-1-3-1_FS.pjl" file in the temporary folder onto the "Brother maintenance USB Printer" icon. CIS type setting is completed. If the firmware is not the D version or later, after drag and drop, the CIS type is not be completed with a beep.

2.3 Installing Firmware

Note:
- Even if the latest firmware is installed as described in "2.1", install the firmware again. The parameters of the CIS type are set by installing the firmware after the CIS type setting.

(1) Create a folder in the top hierarchy of USB flash memory drive and name it "Brother".

(2) Save main firmware (LZ****.pjl) to the "Brother" folder created in USB flash memory drive.

Note:
- Before saving the firmware to the USB flash memory drive, check if the file name with extension ".pjl" is for the model to be installed with the firmware. If "Brother" folder has multiple firmware files, it fails to specify the execution file, resulting in install failure due to invalid operation.

(3) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(4) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ⏻ LEDs light and the machine enters the maintenance mode.

(5) Connect the USB flash memory drive with firmware data to the machine.

(6) Press the [to Network Device1] key, and then [to Network Device2] key twice. The to PC and to USB LEDs light.

(7) Press the ⏻ key. All LEDs start flashing in turns, and the machine starts firmware installation.

(8) When the firmware is successfully installed, ⏻ LED flashes and the machine returns to the ready state.

2.4 Acquiring White Level Data

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key six times. The to USB and to Network Device1 LEDs light.

(5) Press the ◇ key. CIS scan area setting starts.

(6) When the CIS scan area setting is completed normally, the machine returns to the initial state of maintenance mode.

2.5 Checking Operation after Repair

Perform the steps below to check the machine's condition after repair or adjustment.

(1) Prepare some test chart sheets (Test chart TC-027, Color test chart CTC-001, Contrast chart TC-023), and set them in the document tray.

(2) Insert the USB flash memory drive into the USB host.

(3) Press the [to USB] key to begin scanning.
Check that sheets are picked up and fed one sheet at a time.
When an error occurs, refer to the troubleshooting procedure to repair the machine.

(4) When scanning is completed, remove the USB flash memory drive and connect it to the computer. Check the scanned data on the computer. If the image is distorted, refer to the troubleshooting procedure to repair the machine.

3. IF YOU REPLACE THE PICK-UP ROLLER / SEPARATION PAD ASSY

<What to do after replacement>

- Resetting pick-up roller / separation pad counters

3.1 Resetting Pick-up Roller / Separation Pad Counters

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key again. The to Network Device2 LED lights.

(5) Press the ◇ key.

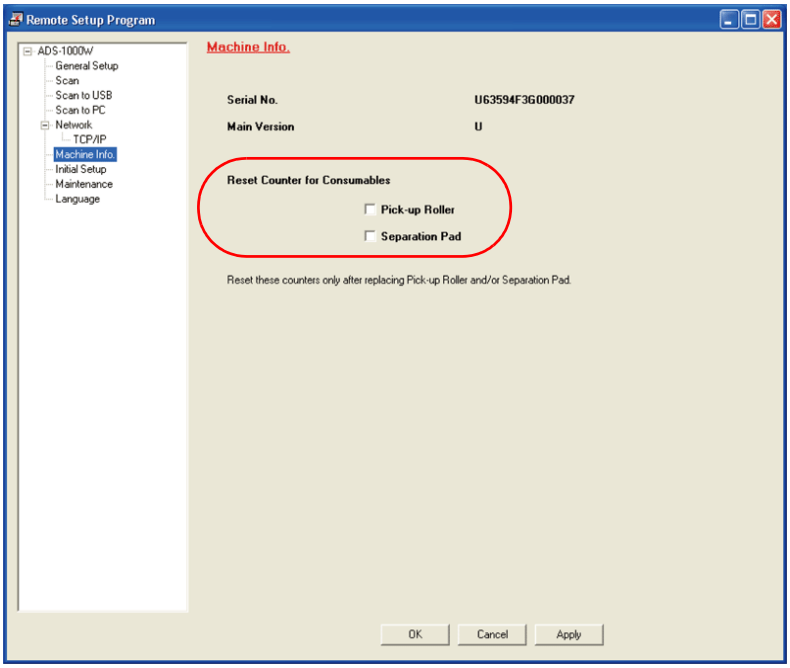
(6) Turn ON the computer.

(7) Connect the computer to the machine with the USB cable.

(8) Double-click "brmfrmss.exe" that was copied into the temporary folder to start remote check mode. The screen shown below appears.

(9) Click the [Machine Info.] tab. Check the check box related to the part to be changed in the Reset Counter for Consumables.

(10) Click the [OK] button to reset the counter for the selected part.



CHAPTER 5 SERVICE FUNCTIONS

1. MAINTENANCE MODE

Maintenance mode is exclusively designed for checking and setting the machine using the keys on the control panel.

1.1 How to Enter Maintenance Mode

1.1.1 Method of entering end-user accessible maintenance mode

Basically, the maintenance mode functions should only be accessed by service personnel. However, end users are allowed to use some of these functions under the guidance of service personnel over the phone. End users can only use the functions shaded in the table on the next page.

<Operating Procedure>

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to Network Device1] key, and then the [to PC(USB Connect)] key. The to Network Device1, Error, ✕, and ◇ LEDs light, and the machine enters the end-user accessible maintenance mode.

1.1.2 Method of entering maintenance mode for service personnel

<Operating Procedure>

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode for service personnel.
This state is the initial state of maintenance mode.

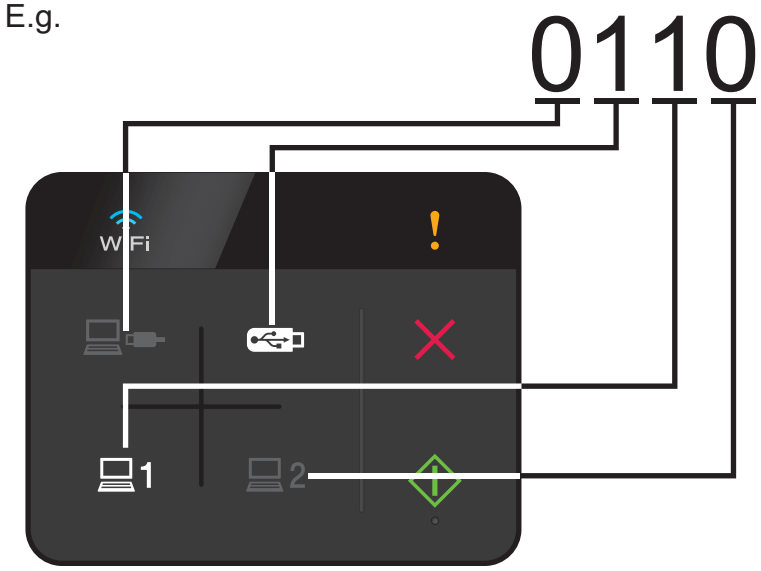
1.2 List of Maintenance Mode Functions

Function number (binary number)	Function	Refer to:
0001	Save maintenance information	1.3.1
0010	Save Net Config Print as text	1.3.2
0011	Initialize EEPROM parameters	1.3.3
0100	ADF performance test	1.3.4
0101	Check sensor operation	1.3.5
0110	Acquire white level data and set CIS scan area	1.3.6
0111	Check control panel key operation	1.3.7
1000	Backup machine information	1.3.8
1001	Not in use	—
1010	CIS type setting	1.3.9
1011	Not in use	—
1100	Install firmware from USB flash memory drive	1.3.10
1101	Quit maintenance mode	1.3.11

The maintenance mode functions shaded in the table can be used by end users.

The function numbers above are expressed by the ON/OFF status of the LEDs.

E.g.



0 = LED OFF
1 = LED ON

1.3 Details of Maintenance Mode Functions

1.3.1 Save maintenance information

<Function>

This function is used to save maintenance information to USB flash memory drive.

<Operating Procedure>

(1) Create a folder in the top hierarchy of USB flash memory drive and name it "Brother".

(2) Connect an USB flash memory drive to the machine in the initial state of maintenance mode.

(3) Press the [to Network Device2] key, and check that all LEDs go out.

(4) Press the [to Network Device2] key. The to Network Device2 LED lights.

(5) Press the ◇ key. The ◇ LED lights and the machine starts writing the maintenance information as CSV file into the "Brother" folder in the USB flash memory drive. (CSV file will be saved as <model name>+<serial number (last nine digits)> ex: ADS-1000WC3G000001.csv)

(6) When the maintenance information writing is completed, the ◇ LED starts flashing, and the machine returns to the ready state.

(7) Disconnect the USB flash memory drive.

Note:

- Do not connect or disconnect the USB flash memory drive during the machine is writing the maintenance information (◇ LED is lit).

1.3.2 Save Net Config Print as text

<Function>

This function is used to save Net Config Print to USB flash memory drive as a text file.

<Operating Procedure>

(1) Connect an USB flash memory drive to the machine in the initial state of maintenance mode.

(2) Press the [to Network Device2] key, and check that all LEDs go out.

(3) Press the [to Network Device2] key twice in the initial state of maintenance mode. The to Network Device1 LED lights.

(4) Press the ◇ key. The ✕ and ◇ LEDs light.

(5) Press the ◇ key again. The machine saves Net Config Print to USB flash memory drive as a text file, and returns to the initial state of maintenance mode.

1.3.3 Initialize EEPROM parameters

<Function>

This function is used to initialize setting values registered in EEPROM including operation parameter user switch.

<Operating Procedure>

(1) Press the [to Network Device2] key in the initial state of maintenance mode and check that all LEDs go out.

(2) Press the [to Network Device2] key three times. The to Network Device1 and to Network Device2 LEDs light.

(3) Press the ◇ key. Only the ◇ LED lights.

(4) Press the ◇ key again. The machine initializes EEPROM parameters, and returns to the initial state of maintenance mode.

1.3.4 ADF performance test

<Function>

This function is used to check if documents set in the ADF and cards set in the card slot are fed normally.

<Operating Procedure>

(1) Set documents in the ADF or cards in the card slot in the initial state of maintenance mode.

(2) Press the [to Network Device2] key and check that all LEDs go out.

(3) Press the [to Network Device2] key four times. The to USB LED lights.

(4) Press the ◇ key. The machine starts feeding documents or cards one by one.

(5) When all documents or cards are fed, press the ✕ key. The machine returns to the initial state of maintenance mode.

1.3.5 Check sensor operation

<Function>

This function is used to check normal operation of sensors.

<Operating Procedure>

(1) Press the [to Network Device2] key in the initial state of maintenance mode and check that all LEDs go out.

(2) Press the [to Network Device2] key five times. The to USB, and to Network Device2 LEDs light.

(3) Press the ◇ key. 100Hz and 400Hz tones ring continuously.

(4) The to USB LED flashes three times by turning ON and OFF the card detection sensor, card scanning position sensor, document detection sensor, document scanning position sensor, top cover sensor, front cover sensor, and WPS AOSS switch respectively.

(5) After turning ON and OFF all sensors, the to PC LED lights.

(6) Press the ✕ key, and the machine returns to the initial state of maintenance mode.

1.3.6 Acquire white level data and set CIS scan area

<Function>

This function is used to check the CIS flat cable connection, acquires the white/black level for the CIS unit, sets the scan area, and stores these data in the EEPROM of the main PCB.

<Operating Procedure>

(1) Press the [to Network Device2] key in the initial state of maintenance mode and check that all LEDs go out.

(2) Press the [to Network Device2] key six times. The to USB and to Network Device1 LEDs light.

(3) Press the ◇ key. After acquiring white level and setting the CIS scan area, the machine returns to the initial state of maintenance mode.

1.3.7 Check control panel key operation

<Function>

This function is used to check normal operation of keys on the control panel.

<Operating Procedure>

(1) Press the [to Network Device2] key in the initial state of maintenance mode and check that all LEDs go out.

(2) Press the [to Network Device2] key seven times. The to USB, to Network Device1, and to Network Device2 LEDs light.

(3) Press the ◇ key. LEDs except WiFi LED light.

(4) Press the keys on the control panel according to the numbers provided in the figure below.

(5) ALL LEDs flash if they operate normally.

(6) Press the ✕ key, and the machine returns to the initial state of maintenance mode.

1.3.8 Backup machine information

<Function>

This function is used to store backups including machine information and user setting to USB flash memory drive and restores those backup data later if necessary.

<Operating Procedure>

■ **Backup**

(1) Create a folder in the top hierarchy of USB flash memory drive and name it "Brother".

(2) Connect an USB flash memory drive to the machine at the initial state of maintenance mode.

(3) Press the [to Network Device2] key, and check that all LEDs go out.

(4) Press the [to Network Device2] key eight times. The to PC LED lights.

(5) Press the ◇ key. The to PC, to USB, to Network Device1, and ◇ LEDs light.

(6) Press the [to PC] key. The machine information and user setting are backed up to USB flash memory drive, and then the to PC, to USB, to Network Device1, and ✕ LEDs light.

(7) Press the ✕ key, and the machine returns to the initial state of maintenance mode. Disconnect the USB flash memory drive.

■ **Restoration**

(1) Connect the USB flash memory drive with back up data to the machine in the initial state of maintenance mode.

(2) Press the [to Network Device2] key eight times. The to PC LED lights.

(3) Press the ◇ key. The to PC, to USB, to Network Device1, and ◇ LEDs light.

(4) To restore all backup data, press the [to Network Device1] key.
To restore user setting only, Press the [to USB] key.
The backup data is stored in EEPROM of the machine, then the to PC, to USB, to Network Device1, and ✕ LEDs light.

Note:

- Do not disconnect the USB flash memory drive until ✕ LED lights. The machine may write faulty data when the USB flash memory drive is disconnected during the process.

(5) Press the ✕ key, and the machine returns to the initial state of maintenance mode. Disconnect the USB flash memory drive.

(6) Press the [to Network Device1] key, and then [to Network Device2] key three times. The to PC, to USB, and to Network Device2 LEDs light.

(7) Press the ◇ key. The machine returns to the ready state.

Note:

- When the machine information is successfully restored, perform (6) and (7) to quit the maintenance mode, and restart the machine. If you do not restart the machine, we cannot ensure its normal operation.

1.3.9 CIS type setting

<Function>

This function sets CIS type as EEPROM parameter of the main PCB.

Note:

- If the CIS type is set, be sure to install the firmware. The parameters of the CIS type are set by installing the firmware after the CIS type setting.

<Operating Procedure>

(1) Connect the machine to your computer using the USB cable in the initial state of maintenance mode.

(2) Turn ON the computer.

(3) Open the temporary folder and double-click "Filedg32.exe" to start it, and select the "Brother Maintenance USB Printer".

(4) Drag and drop the "CDSM59-1-3-1_FS.pjl" file in the temporary folder onto the "Brother maintenance USB Printer" icon. CIS type setting is completed. If the firmware is not the D version or later, after drag and drop, the CIS type is not be completed with a beep.

1.3.10 Install firmware from USB flash memory drive

<Function>

This function is used to install firmware stored in the flash ROM mounted on the main PCB using USB flash memory drive.

<Operating Procedure>

(1) Create a folder in the top hierarchy of USB flash memory drive and name it "Brother".

(2) Save main firmware (LZ****.pjl) to the "Brother" folder created in USB flash memory drive.

Note:

- Before saving the firmware to the USB flash memory drive, check if the file name with extension ".pjl" is for the model to be installed with the firmware. If "Brother" folder has multiple firmware files, it fails to specify the execution file, resulting in update failure due to invalid operation.

(3) Connect the USB flash memory drive with firmware file to the machine in the initial state of maintenance mode.

(4) Press the [to Network Device1] key, and then [to Network Device2] key twice. The to PC and to USB LEDs light.

(5) Press the ◇ key. All LEDs start flashing in turns, and the machine starts firmware installation.

(6) When the firmware is successfully installed, the ◇ LED flashes and the machine returns to the ready state.

Note:

- LEDs indicate errors as below. In case of error, press the ✕ key to return the machine to the initial state of maintenance mode.

LED	Description
	Media is used in other operation.
	USB flash memory drive is not connected.
	"Brother" folder cannot be found.

LED	Description
	File with extension "pjl" cannot be found.
	Multiple files with extension "pjl" found.
	Cannot open the file due to an error such as USB flash memory drive failure.

- When the firmware is installed, "mfu-send.log" file will be created in the "Brother" folder.

1.3.11 Quit maintenance mode

<Function>

This function is used to quit maintenance mode.

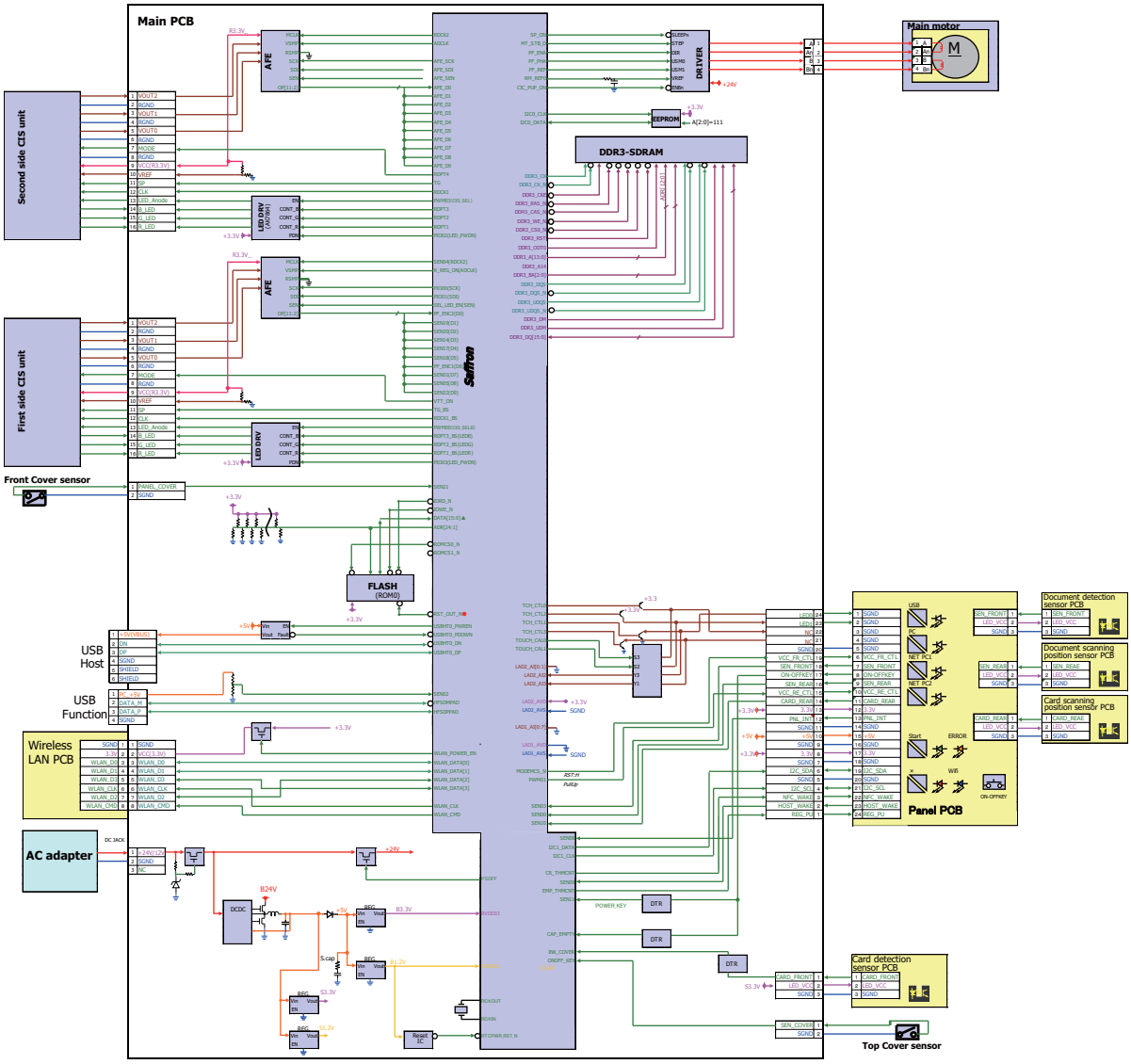
<Operating Procedure>

(1) Press the [to Network Device1] key, and then [to Network Device2] key three times in the initial state of maintenance mode. The to PC, to USB, and to Network Device2 LEDs light.

(2) Press the ◇ key. The ◇ LED flashes and the machine returns to the ready state.

CHAPTER 6 WIRING DIAGRAM

1. WIRING DIAGRAM



CHAPTER 7 PERIODICAL MAINTENANCE

1. PERIODICAL MAINTENANCE PARTS

There are no parts that must be replaced periodically.

APPENDIX 1 SERIAL NUMBERING SYSTEM

■ Serial number label (1 location)

<How to Read>

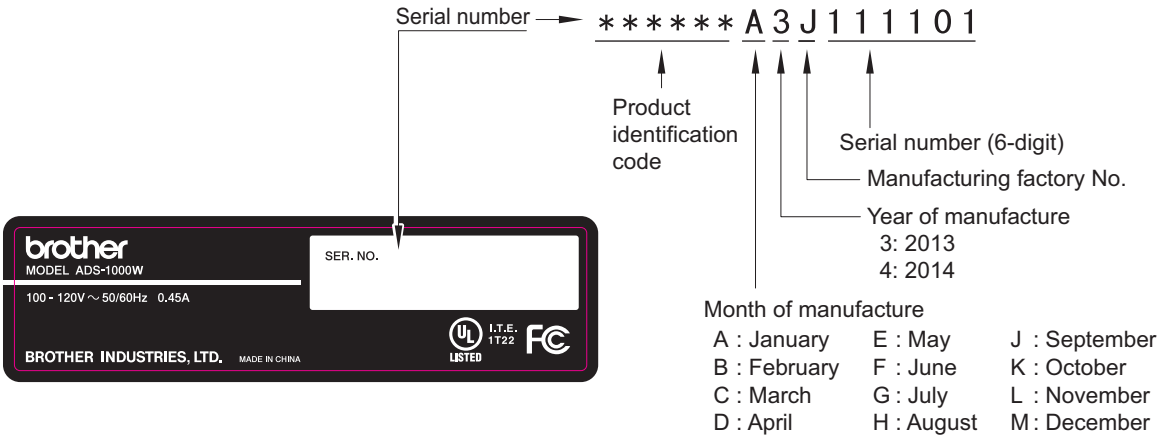


Fig. App.1-1

<Location>

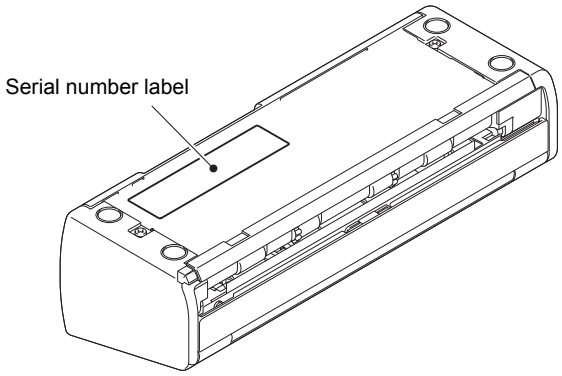


Fig. App.1-2

APPENDIX 2 DELETING USER SETTING INFORMATION

Initializes setting values registered in EEPROM including operation parameter and user switch.

<Operation Procedure>

(1) Press and hold the ✕ key for five seconds or longer when the machine is in the ready state. LEDs except WiFi LED light.

(2) Press the [to USB], [to Network Device2], and [to Network Device1] keys in this order. The to USB, Error, ✕, and ◇ LEDs light and the machine enters the maintenance mode.

(3) Press the [to Network Device2] key. All LEDs go out.

(4) Press the [to Network Device2] key three times. The to Network Device1 and to Network Device2 LEDs light.

(5) Press the ◇ key. Only the ◇ LED lights.

(6) Press the ◇ key again. The machine initializes EEPROM and returns to the initial state of maintenance mode.

(7) Press the [to Network Device2] key. All LEDs go out.

(8) Press the [to Network Device1] key, and then [to Network Device2] key three times. The to PC, to USB, and to Network Device2 LEDs light.

(9) Press the ◇ key. The machine returns to the ready state.

APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER

To identify machines connected via USB direct interface, the PC requires the corresponding driver for the virtual USB device. If you connect any number of machines to your PC, the same number of virtual USB devices will be automatically configured on your PC. To prevent many virtual USB devices from being configured, use the unique driver installation procedure described below that enables your PC to identify terminals via one single virtual USB device.

NOTES:

- Once this installation procedure is carried out for a PC, no more driver/software installation will be required for that PC to identify machines. If the Brother Maintenance USB Printer driver has been already installed to your PC according to this procedure, skip this section.
- Before proceeding to the procedure given below, make sure that the Brother Maintenance USB Printer driver is stored 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.

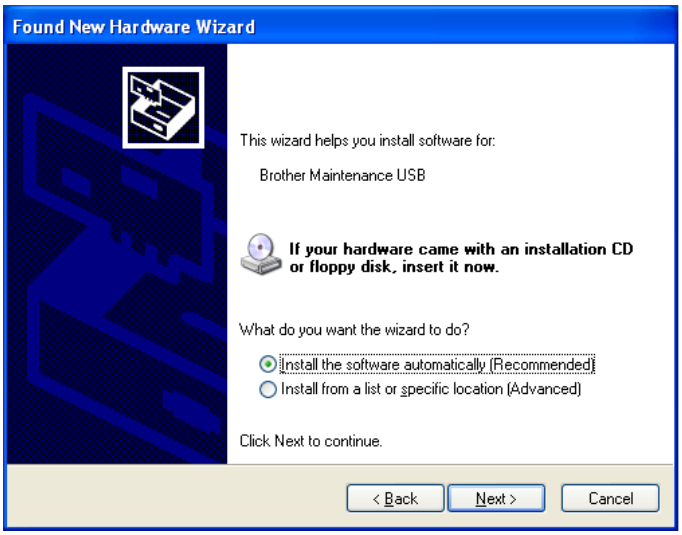
(3) Turn on the power switch of the machine.

(4) Switch the machine to the maintenance mode. (Refer to Chapter 5.)

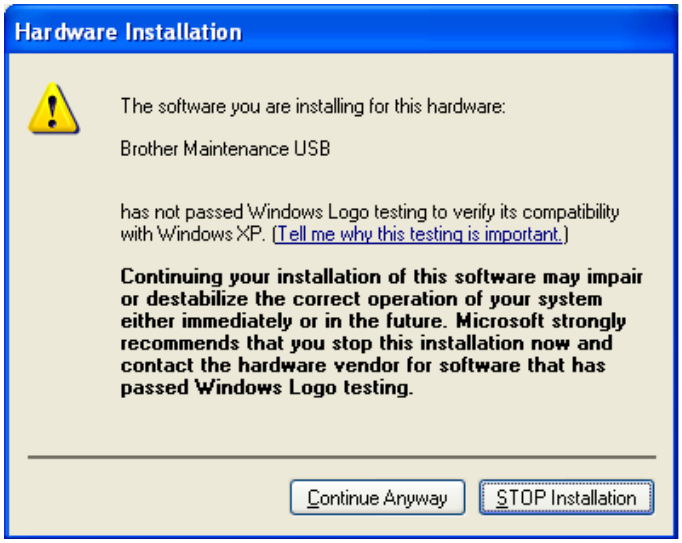
(5) Connect the machine to your PC using a USB cable.
The following window appears.

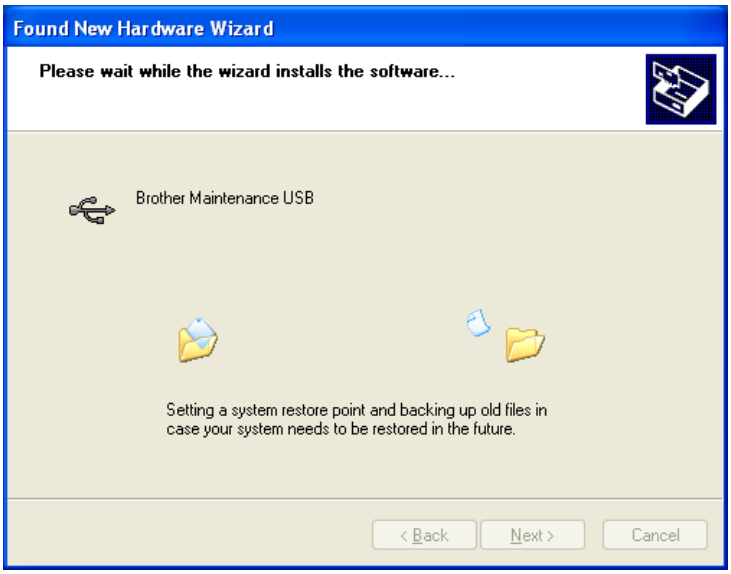
(6) The following screen appears, indicating the detection of new hardware device by the system. Select "No, not this time." And click [Next].

(7) Select "Install the software automatically (Recommended)" and click [Next].



(8) Alert warning message of WHQL appears. Click [Continue Anyway] to proceed.

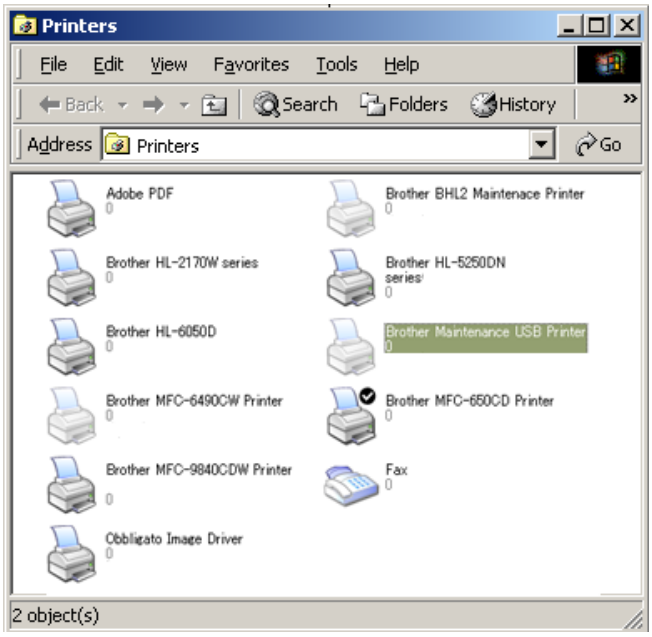




(9) Repeat steps (6) to (8) three times. Installation is completed.

(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.

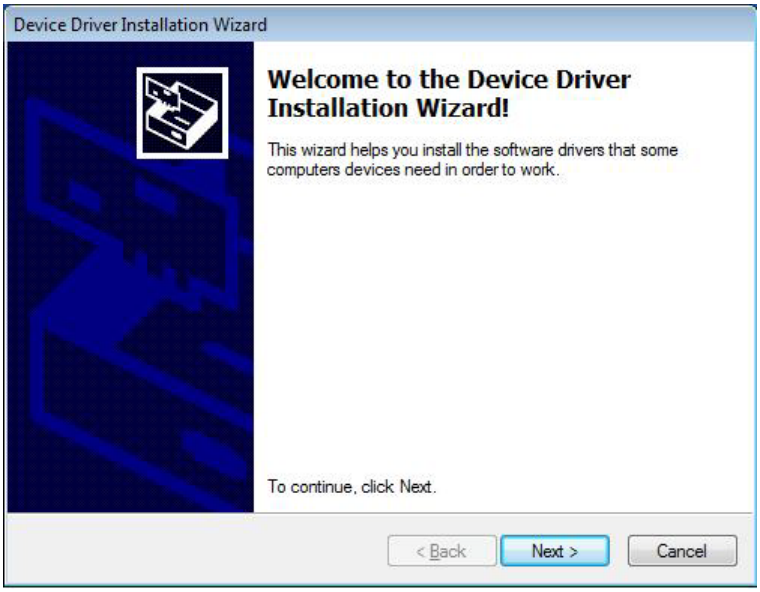


Windows Vista/Windows 7/Windows 8

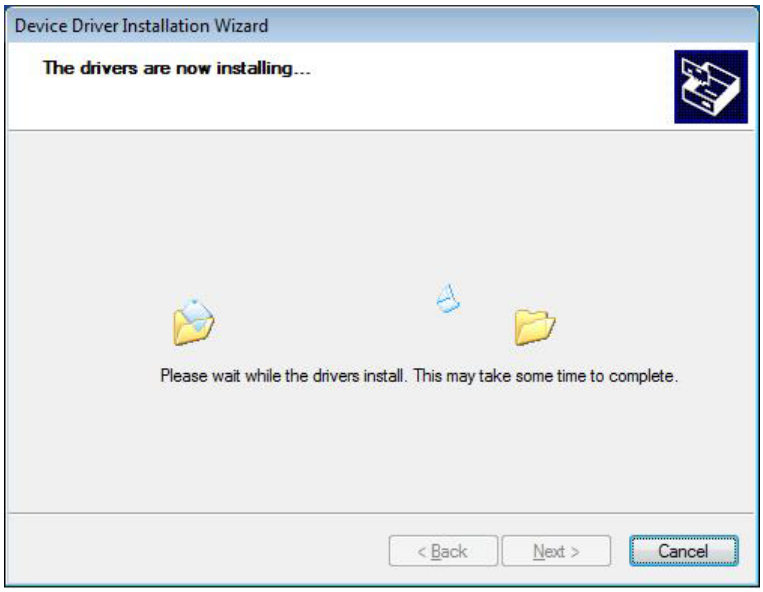
(1) Check that the power cord of the machine is unplugged from the electrical outlet. Disconnect the USB cable that connects the machine with your PC.

(2) Turn on your PC.

(3) Click Setup.exe inside the Brother Maintenance USB Printer folder that was saved in a temporary folder. The following screen appears. Click the [Next] button.



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.

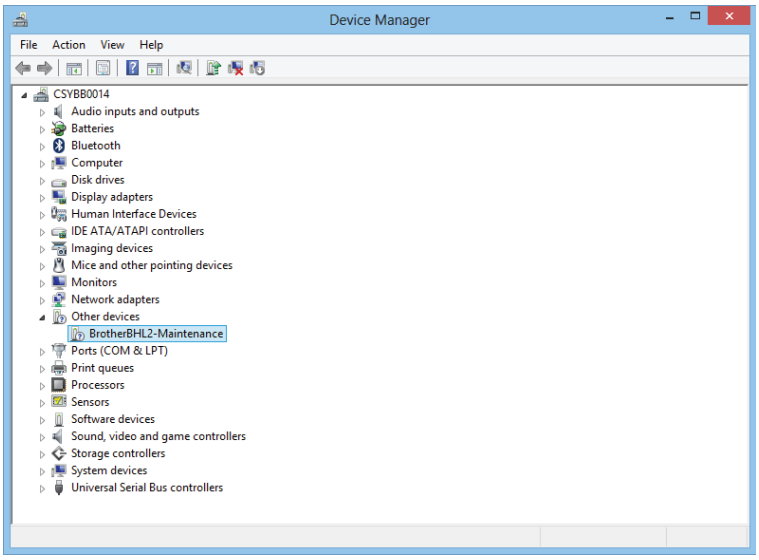
Windows Vista/Windows 7

The following window is displayed during installation.

If the following window appears, the installation is completed.

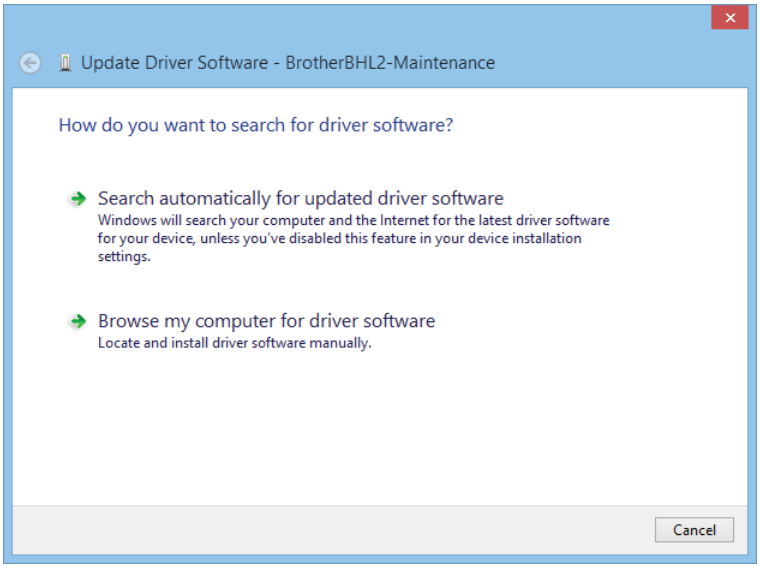
Windows 8

Open "Device Manager" from [Settings] → [Control Panel].



Select "Update Driver Software" from the pull-down menu of "Brother BHL2-Maintenance" in "Other devices".

When the following screen appears, click "Search automatically for updated driver software".



Select "Brother Maintenance USB Printer" and click [Next].

When the following screen appears, click [Close] to close the screen.