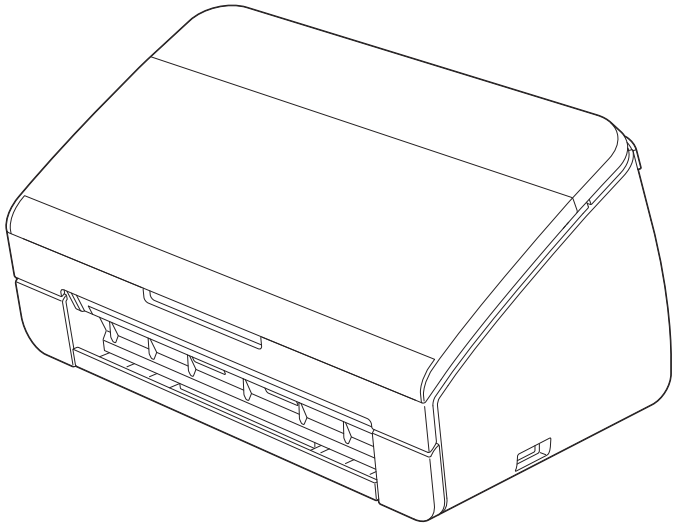
brother

Brother Advanced Document Scanner

SERVICE MANUAL

MODEL:
ADS-2000/2100



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

Mar., 2012
SM-PT045
(7)

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CONTENTS

CHAPTER 3 DISASSEMBLY/REASSEMBLY

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

REGULATION

■ Declaration of Conformity (Europe only)

We, Brother Industries, Ltd. of 15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that this product is in compliance with the essential requirements of Directives 2004/108/EC, 2006/95/EC and 2009/125/EC.

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

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

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

⚠ WARNING

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

■ Disconnect Device

⚠ CAUTION

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

■ Wiring Information (U.K. only)

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

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

Warning -This product must be earthed.

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

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

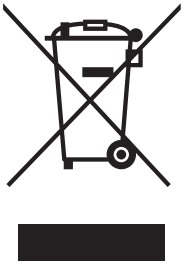
■ LAN Connection (Network models only)

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

■ Radio Interference

This product complies with EN55022 (CISPR Publication 22)/Class B.

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



Product mark

Battery mark

European Union only

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

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

Responsible Party: Brother International Corporation
100 Somerset Corporate Boulevard
Bridgewater, NJ 08807-0911 USA
Tel: (908) 704-1700

declares, that the product

Product name: ADS-2000

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.
- Call the dealer or an experienced radio/TV technician for help.

(Wireless network models only)
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 shielded interface cable should be used to ensure compliance with the limits for a Class B digital device.

■ Industry Canada Compliance Statement (Canada only)

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

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

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

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

■ For use in the USA or Canada only

These products are made for use in the USA and Canada only.

We cannot recommend using them overseas because the power requirements of your product 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.

Prohibition icons indicate actions that must not be performed.

Electrical Hazard icons alert you to possible electrical shock.

Fire Hazard icons alert you to the possibility of fire.

Hot Surface icons warn you not to touch product parts that are hot.

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.

■ 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.

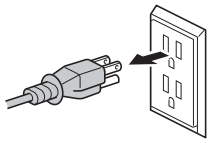
⚠ WARNING

⚠ ELECTRICAL HAZARDS

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

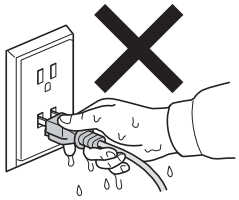
⚠

There are high voltage electrodes inside the product. Before you access the inside of the product, including for routine maintenance such as cleaning, make sure you have unplugged the AC power cord from the AC power outlet, as well as Ethernet (RJ-45) cables (Network models only) from the product. Never push objects of any kind into this product through cabinet slots, since they may touch dangerous voltage points or short out parts.



⚠

DO NOT handle the plug with wet hands.



⚠

DO NOT use this product during an electrical storm.

⚠

Always make sure the plug is fully inserted. DO NOT use the product or handle the cord if the cord has become worn or frayed.

⚠ ⚠

DO NOT allow this product to come into contact with water.

⚠ ⚠

This product should be connected to an AC power source within the range indicated on the rating label. DO NOT connect it to a DC power source or inverter.

AC Power Cord Safety:

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

CHAPTER 1
SPECIFICATIONS

CHAPTER 1 SPECIFICATIONS

This chapter lists the specifications of each model.

CONTENTS

1. SPECIFICATIONS LIST

1.1 General

Model		ADS-2000	ADS-2100
Scanning Method		Dual CIS	
Resolution From ADF (Optical)		Max 600 x 600 dpi	
Resolution (Interpolated)		Max 1200 x 1200 dpi	
Scanning Speed	One-sided Monochrome	24 ppm (2.5 seconds (A4/LTR))	
	One-sided Color	24 ppm (2.5 seconds (A4/LTR))	
	Two-sided Monochrome	24 ppm (48 images per min.) (2.5 seconds (A4/LTR))	
	Two-sided Color	24 ppm (48 images per min.) (2.5 seconds (A4/LTR))	
CPU		StarSapphire 400 MHz	
Memory		256 MB	
Interface		USB Hi-Speed 2.0	
Power consumption	Scanning	Approximately 18 W	
	Ready	Approximately 7 W	
	Deep Sleep	Approximately 1.5 W	
	Power OFF	Approximately 0.25 W Approximately 0.3 W for Chile, Argentina	Approximately 0.3 W
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	383 x 291 x 285 mm (15.1" x 11.5" x 11.2")	
	Machine Size	299 x 220 x 179 mm (11.8" x 8.7" x 7.1")	
Weights	without Carton	3.3 kg / 7.3 lb (without AC power cord)	
	with Carton	4.6 kg / 10.1 lb	
LCD Size		N/A	

Specifications are subject to change without notice.

<Computer requirements>

Computer Platform & Operating System Version		Processor Minimum Speed	Minimum RAM	Recommended RAM	Hard Disk Space to install		Supported PC Interface
					For Drivers	For Applications	
Windows® Operating System	Windows® XP Home (SP2 or greater) *2 Windows® XP Professional (SP2 or greater) *2	Intel® Pentium® II or equivalent	128 MB	256 MB	150 MB	1.5 GB	USB
	Windows Vista® *2	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 *2		1 GB (32-bit) 2 GB (64-bit)	1 GB (32-bit) 2 GB (64-bit)	650 MB	1.5 GB	
Macintosh Operating System	OS X 10.5.8	PowerPC® G4/G5 Intel® Processor	512 MB	1 GB	80 MB	580 MB	USB *1
	OS X 10.6.x	Intel® Processor	1 GB	2 GB			
	OS X 10.7.x	Intel® Processor	2 GB	2 GB			

*1 Third party USB ports are not supported.

*2 Nuance™ 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-2000	ADS-2100
Wired network	Network node type	N/A	
	Network type	N/A	
	Network security	N/A	
Wireless network	Network node type	N/A	
	Network type	N/A	
	Communication mode	N/A	
	Network security	N/A	

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 / 1,000 times Plastic card scan
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-2000/2100
Separation Pad	50,000 sheets (A4/LTR) (User replacement parts)
Pick-up Roller	50,000 sheets (A4/LTR) (User replacement parts)

Specifications are subject to change without notice.

1.5 Paper

1.5.1 Paper handling

Model	ADS-2000	ADS-2100
ADF Input	50 sheets	
ADF Output	50 sheets	
Duplex (Scan)	Yes	

Specifications are subject to change without notice.

1.5.2 Media specifications

Model		ADS-2000	ADS-2100
Paper Input	ADF	Plain Paper,Thin Paper, Thick Paper, Thicker Paper, Recycled Paper, Post Card (JPN), Business Card, Plastic Card	
Media Weight	ADF (multiple paper)	52 to 110 g/m^2	
	ADF (single paper)	52 to 200 g/m^2	
Media Size	ADF (multiple paper)	Width 51 to 215.9 mm, Length 70 to 297.0 mm	
	ADF (single paper)	Width 51 to 215.9 mm, Length 70 to 863.0 mm	

Specifications are subject to change without notice.

1.6 Scanner

Color/Black		Yes/Yes
TWAIN Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7
	Macintosh	OS X 10.5.8, 10.6.x, 10.7.x *2
WIA Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7
ICA Compliant	Macintosh	OS X 10.6.x, 10.7.x *2
ISIS™ Compliant	Windows®	Windows® XP *1 / Windows Vista® / Windows® 7
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
TROUBLESHOOTING

CHAPTER 2 TROUBLESHOOTING

This chapter details error messages and codes which the incorporated self-diagnostic function of the machine will display if any error or malfunction occurs. If any error message appears, refer to this chapter to find which parts should be checked or replaced.

The latter half of this chapter provides sample problems which could occur in the main sections of the machine and related troubleshooting procedures. These will help service personnel identify and repair other similar defective sections.

CONTENTS

1. INTRODUCTION

Troubleshooting is a collection of solution procedures that service personnel should follow if an error or malfunction occurs in the machine. It is difficult to determine troubleshooting procedures for all possible problems that may occur in the future. Therefore, this chapter describes typical problem cases and recovery procedures for these. These will help service personnel identify and repair other similar defective sections.

1.1 Precautions

Be sure to observe the following precautions to prevent any secondary problems occurring during troubleshooting:

(1) Be sure to unplug the AC power cord before removing any covers or PCBs, adjusting the machine, or conducting continuity tests using a tester.

(2) Do not hold the cable when connecting or disconnecting the cable. Be sure to hold the connector.

(3) Static electricity generated and stored on your body may damage electronic parts. Before handling the PCBs, touch a metal section of the machine to discharge static electricity.
When transporting PCBs, be sure to wrap them in conductive sheets.
When replacing PCBs, wear a grounding wrist band and perform replacement on a conductive mat. Also take care not to touch the conductor sections on the flat cables.

(4) Be sure to always observe all warnings.

(5) After repair is completed, check that the repaired sections operate normally.

1.2 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.

■ 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.

■ 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 may cause document feed problems.
  If condensation has formed in the machine, leave the machine for at least two hours until it reaches room temperature.

(2) Low temperature

The motor may not operate normally in a cold 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

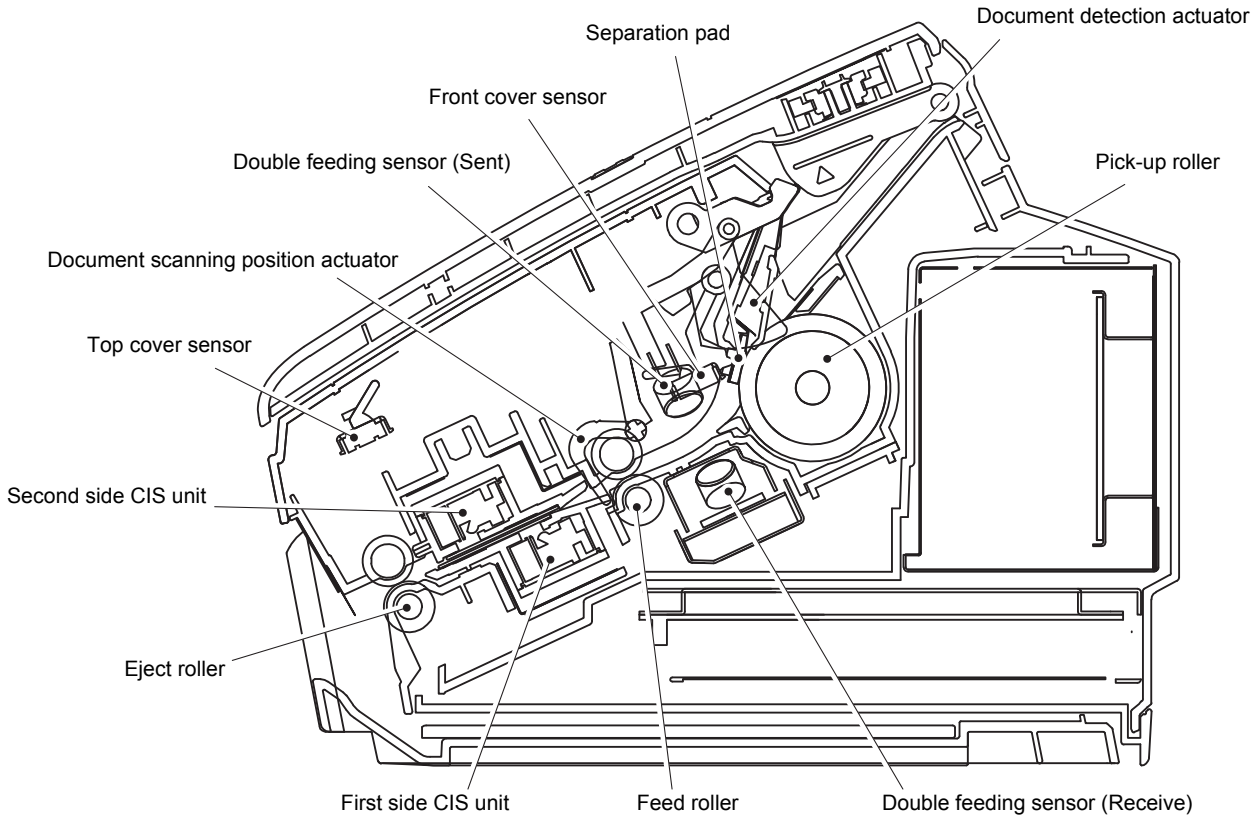


Fig. 2-1

2.2 Paper Feeding

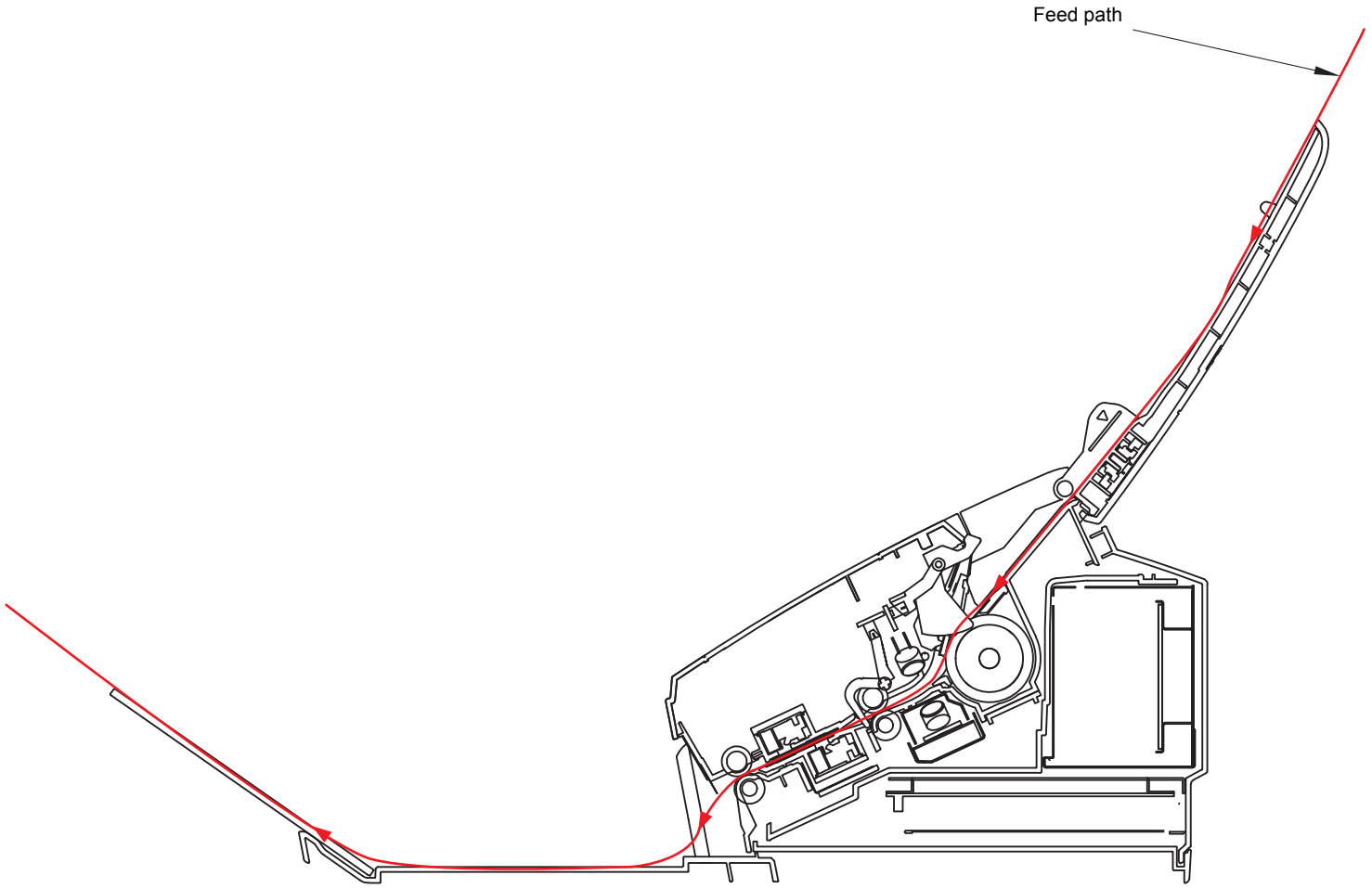


Fig. 2-2

2.3 Operation of Each Part

Part name	Operation
Pick-up roller / Separation pad	Separates documents set in the document tray into single sheets, and feeds them into the machine.
Double feeding sensor	Detects whether multiple documents are fed into the machine.
Feed roller	Feeds the document.
Eject roller	Feeds the document to the output tray.
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.

2.4 Block Diagram

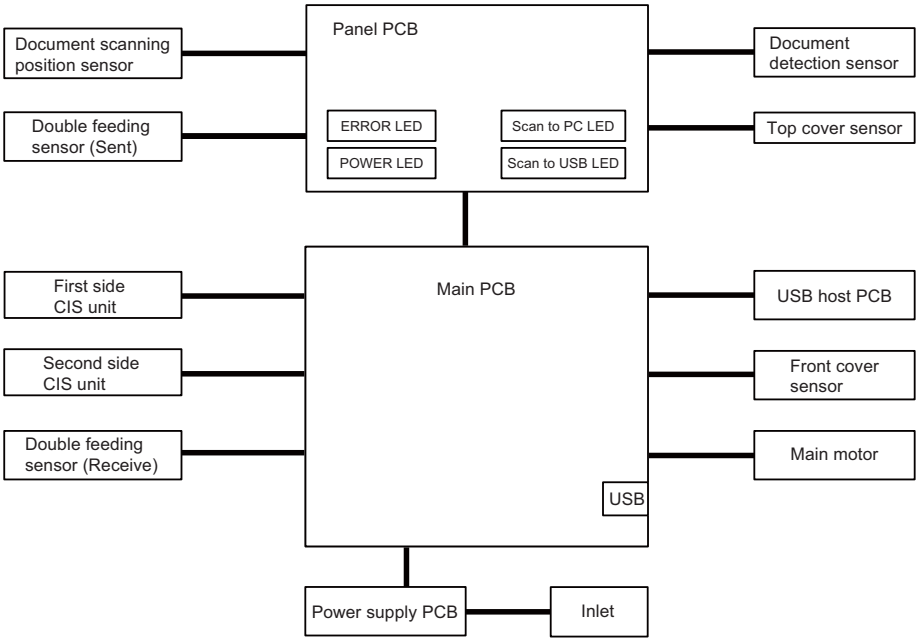


Fig. 2-3

2.5 Main Components

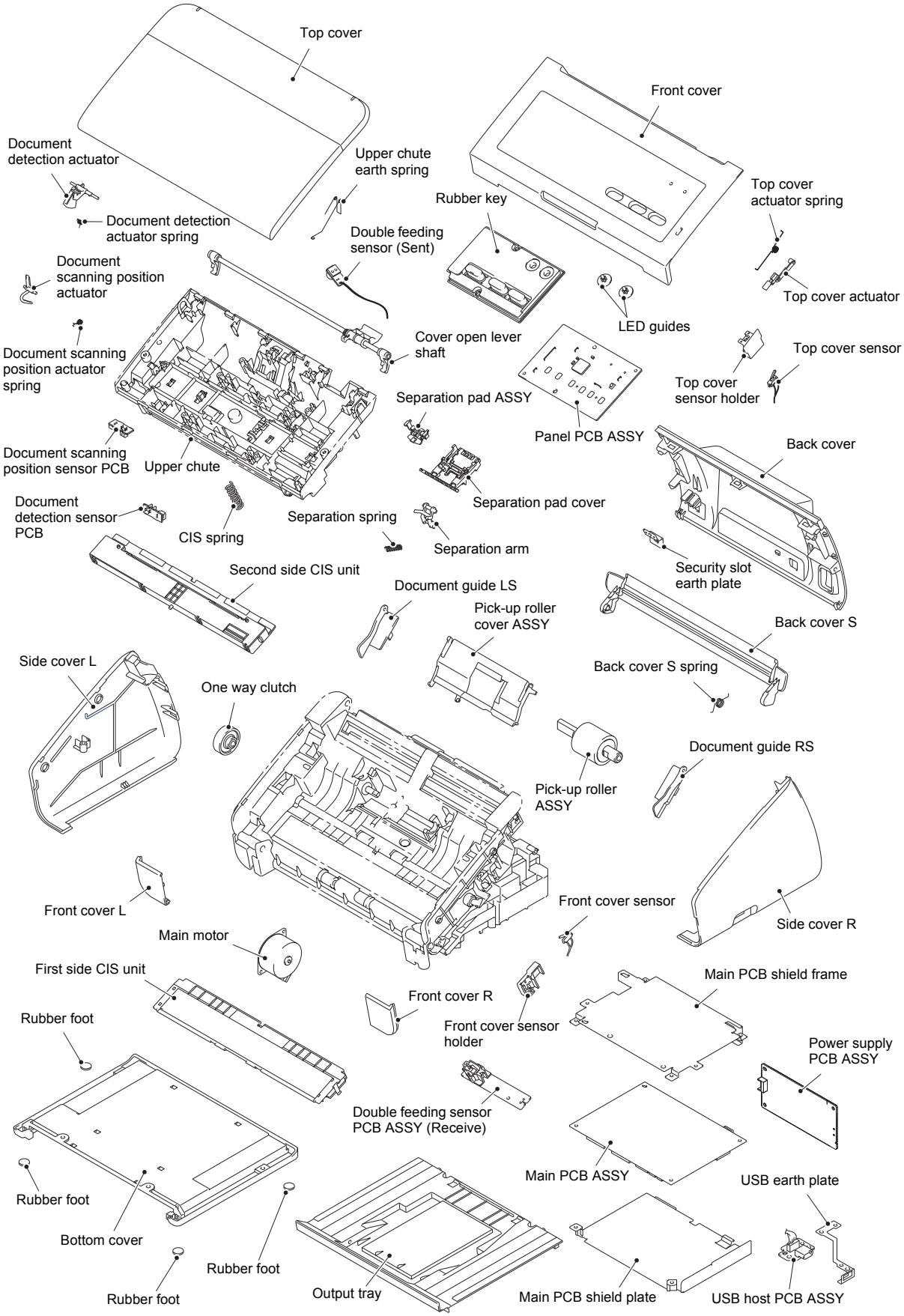


Fig. 2-4

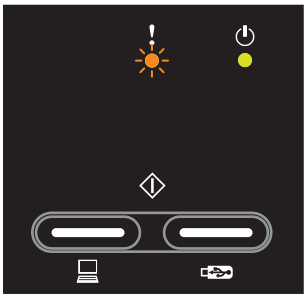
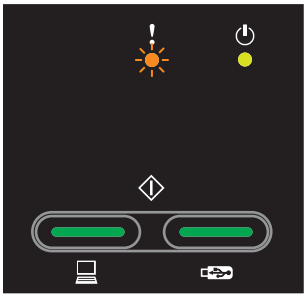
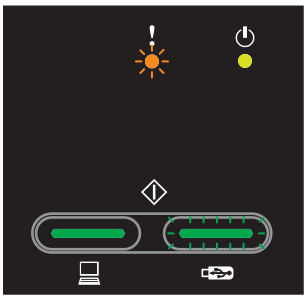
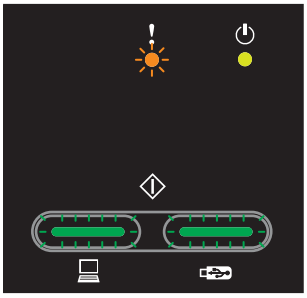
3. ERROR INDICATIONS

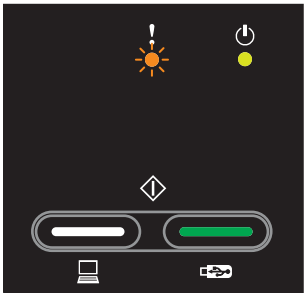
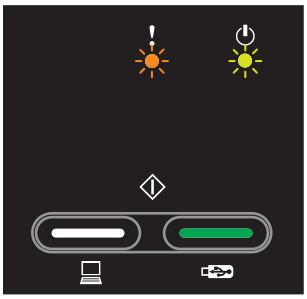
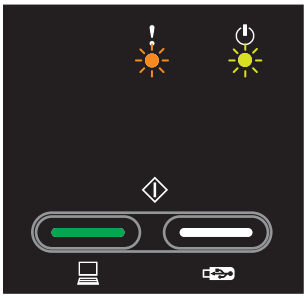
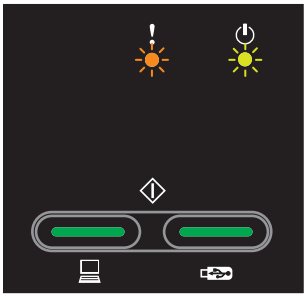
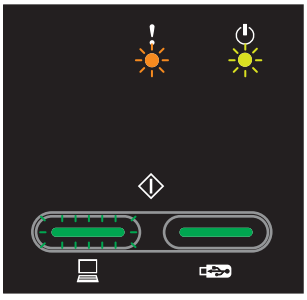
3.1 LED Display when an Error Occurs

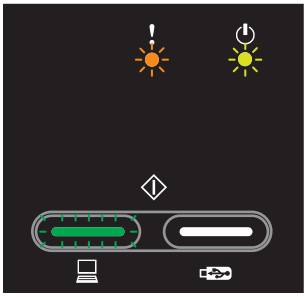
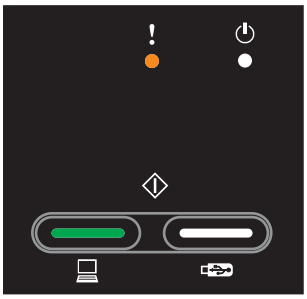
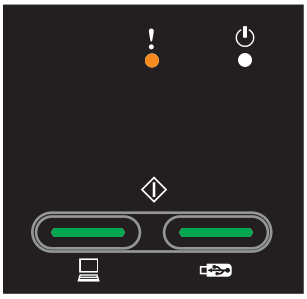
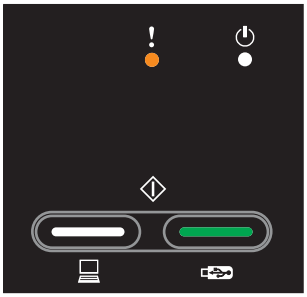
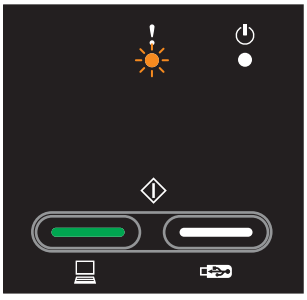
Determine the message details according to the LED display on the control panel. Refer to the page shown in the "Refer to:" column in the table below to take appropriate measures.

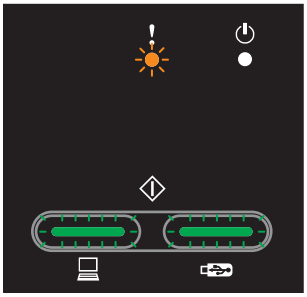
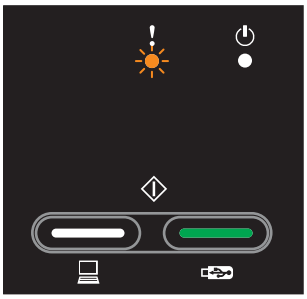
Most errors are automatically cleared after measures are taken. If not automatically cleared, press the [Stop] button. If the error is still not cleared, unplug the AC power cord to reset the machine.

LED status in the table below: ○ Unlit ● Lit ☀ Flashing

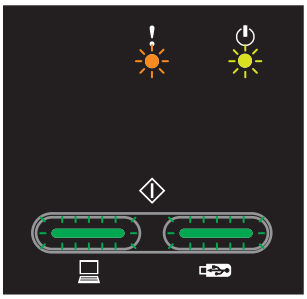
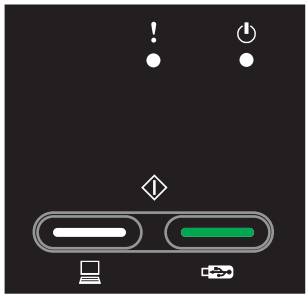
LED	Type of problem	Error codes	Refer to:
	The double feeding sensor detected multiple documents.	AB	2-14
	The document scanning position sensor detected that the document length was 40 cm or more.	A2	2-14
	The document scanning position sensor has not detected the top of the document even after the document has been fed for the specified distance.	A3	2-14
	A non-supported USB device is connected to the USB terminal.	—	2-15
	A USB device with a built-in hub is connected to the USB terminal.	—	2-15

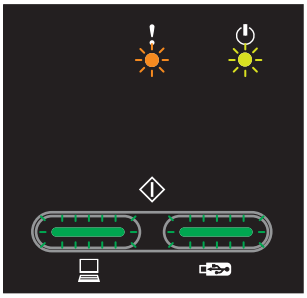
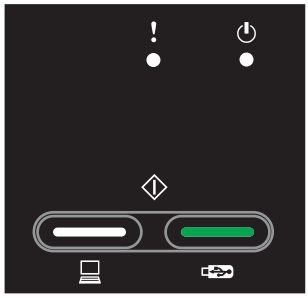
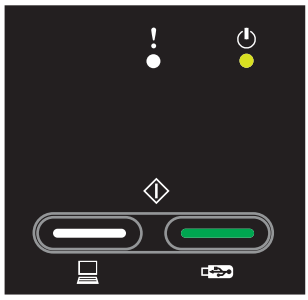
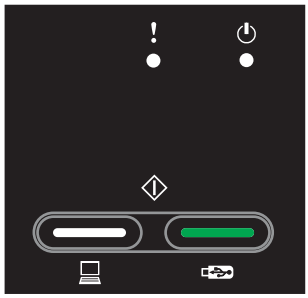
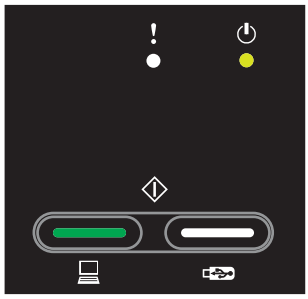
LED	Type of problem	Error codes	Refer to:
	The scanned data has exceeded the built-in memory capacity.	C7	2-15
	The first side or second side CIS flat cable is not connected correctly. (This problem occurs only in maintenance mode.)	B0	2-15
	An error occurred during access to the DRAM in the main PCB ASSY.	3B	2-15
	Program error	E1	2-15
	An error occurred in the ROM checksum.	E0	2-15

LED	Type of problem	Error codes	Refer to:
	The country code was not entered correctly.	F9	2-15
	The page counter for the separation pad has reached the limit.	—	2-16
	The page counters for both the separation pad and the pick-up roller have reached the limit.	—	2-16
	The page counter for the pick-up roller has reached the limit.	—	2-16
	The front cover sensor detected an open front cover in the ready state.	A4	2-16

LED	Type of problem	Error codes	Refer to:
	A USB device not within the specifications is connected to the USB terminal, resulting in overcurrent.	CA	2-15
	The front cover sensor detected an open front cover during scanning.	A4	2-16

When all LEDs are flashing, press either start button ([Scan to PC] or [Scan to USB]), and the LED display changes according to the error cause as described below.

LED		Type of problem	Error codes	Refer to:
	When the [Scan to PC] button is pressed  When the [Scan to USB] button is pressed 	Write error in the EEPROM of the main PCB	E6	2-15

LED		Type of problem	Error codes	Refer to:
	When the [Scan to PC] button is pressed  When the [Scan to USB] button is pressed 	Color parameter in the ROM does not match the first side or second side CIS unit.	A7	2-16
	When the [Scan to PC] button is pressed  When the [Scan to USB] button is pressed 	A scanning error occurred while scanning the image.	A9	2-16

3.2 Status Error Messages

Error message	Description	Error codes	Refer to:
Cover is Open	The front cover sensor detected an open front cover.	A4	2-16
Document Jam	The document scanning position sensor detected that the document length was 40 cm or more.	A2	2-14
	The document scanning position sensor has not detected the top of the document even after the document has been fed for the specified distance.	A3	2-14
Machine Error F9	The country code was not entered correctly.	F9	2-15
Multifeed	The double feeding sensor detected multiple documents.	AB	2-14
Out of Memory	The scanned data has exceeded the built-in memory capacity.	C7	2-15
Replace Pad	The page counter for the separation pad has reached the limit.	—	2-16
Replace Parts	The page counters for both the separation pad and the pick-up roller have reached the limit.	—	2-16
Replace Roller	The page counter for the pick-up roller has reached the limit.	—	2-16
Scan Unable 3B	An error occurred during access to the DRAM in the main PCB ASSY.	3B	2-15
Scan Unable A7	Color parameter in the ROM does not match the first side or second side CIS unit.	A7	2-16
Scan Unable A9	A scanning error occurred while scanning the image.	A9	2-16
Scan Unable E0	An error occurred in the ROM checksum.	E0	2-15
Scan Unable E1	Program error	E1	2-15
Scan Unable E6	Write error in the EEPROM of the main PCB	E6	2-15
Scanner Error B0	The first side or second side CIS flat cable is not connected correctly.(This problem occurs only in maintenance mode.)	B0	2-15
Scanner Error B8	The voltage value was below the lower limit during scanning.	B8	2-17
Scanner Error B9	The white level does not increase during scanning although the light intensity was increased.	B9	2-17
Scanner Error BB	A white level not within the standard was scanned when the maintenance mode function "Acquire white level data and set CIS scan area" was executed.	BB	2-17
Scanner Error BD	A black level not within the standard was scanned when the maintenance mode function "Acquire white level data and set CIS scan area" was executed.	BD	2-17
Unusable Device	A USB device not within the specifications is connected to the USB terminal, resulting in overcurrent.	CA	2-15

4. TROUBLESHOOTING

4.1 Troubleshooting for Error Display

4.1.1 The double feeding sensor detected multiple documents.

<User Check>

- Check that the paper used for the document is within the standard.

Step	Cause	Remedy
1	Incorrect double feeding sensor threshold setting	Reset the double feeding sensor threshold.
2	Double feeding sensor failure	Replace the double feeding sensor.
3	Panel PCB failure	Replace the panel PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.1.2 The document scanning position sensor detected that the document length was 40 cm or more. (Document jam)

<User Check>

- Check that the document guide is adjusted to suit the document size.

Step	Cause	Remedy
1	Document scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator.
2	Main PCB failure	Replace the main PCB ASSY.

4.1.3 The document scanning position sensor has not detected the top of the document even after the document has been fed for the specified distance. (Document jam)

<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.

Step	Cause	Remedy
1	Document scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator.
2	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
3	Separation pad failure	Replace the separation pad ASSY.
4	Abrasion of the pick-up roller ASSY	Replace the pick-up roller ASSY.
5	Misalignment or bending of the pick-up roller support film	Replace the pick-up roller cover ASSY.
6	Front cover sensor failure	Replace the front cover sensor.
7	One way clutch failure	Replace the one way clutch.
8	Main motor failure	Replace the main motor.
9	Main PCB failure	Replace the main PCB ASSY.

4.1.4 A non-supported USB device is connected to the USB terminal. A USB device with a built-in hub is connected to the USB terminal. A USB device not within the specifications is connected to the USB terminal, resulting in overcurrent.

<User Check>

- Disconnect the USB device.

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

4.1.5 The scanned data has exceeded the built-in memory capacity.

<User Check>

- Perform scanning by dividing the document.

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

4.1.6 The first side or second side CIS flat cable is not connected correctly.

Step	Cause	Remedy
1	Connection failure of the first side or second side 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.

4.1.7 An error occurred during access to the DRAM in the main PCB ASSY. Program error An error occurred in the ROM checksum. Write error in the EEPROM of the main PCB.

<User Check>

- Unplug the AC power cord and then plug the AC power cord into the outlet.

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

4.1.8 The country code was not entered correctly.

Step	Cause	Remedy
1	Incorrect country code	Enter the correct country code.
2	Main PCB failure	Replace the main PCB ASSY.

4.1.9 The page counter for the separation pad has reached the limit.
The page counters for both the separation pad and the pick-up roller have reached the limit.
The page counter for the pick-up roller has reached the limit.

<User Check>

- Replace the pick-up roller.

Step	Cause	Remedy
1	End of life of the separation pad or pick-up roller	Replace the separation pad or pick-up roller.
2	Main PCB failure	Replace the main PCB ASSY.

4.1.10 The front cover sensor detected an open front cover in the ready state.
The front cover sensor detected an open front cover during scanning.

<User Check>

- Close the front cover correctly.

Step	Cause	Remedy
1	Front cover release lever spring attachment failure	Reattach the front cover release lever spring.
2	Front cover release lever attachment failure	Reattach the front cover release lever.
3	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
4	Front cover sensor failure	Replace the front cover sensor.
5	Main PCB failure	Replace the main PCB ASSY.

4.1.11 Color parameter in the ROM does not match the first side or second side CIS unit.

Step	Cause	Remedy
1	The maintenance mode function "Acquire white level data and set CIS scan area" are not set.	Execute the maintenance mode function "Acquire white level data and set CIS scan area". (Refer to “1.3.5” in Chapter 5.)
2	The firmware is outdated	Install the latest version firmware. (Refer to “1.1” 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.

4.1.12 A scanning error occurred while scanning the image.

Step	Cause	Remedy
1	Program malfunction	Reinstall the firmware.
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.

4.1.13 The voltage value was below the lower limit during scanning.

The white level does not increase during scanning although the light intensity was increased.
A white level not within the standard was scanned when the maintenance mode function "Acquire white level data and set CIS scan area" was executed.
A black level not within the standard was scanned when the maintenance mode function "Acquire white level data and set CIS scan area" was executed.

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.

4.2 Troubleshooting for Image Defects

4.2.1 Defect examples

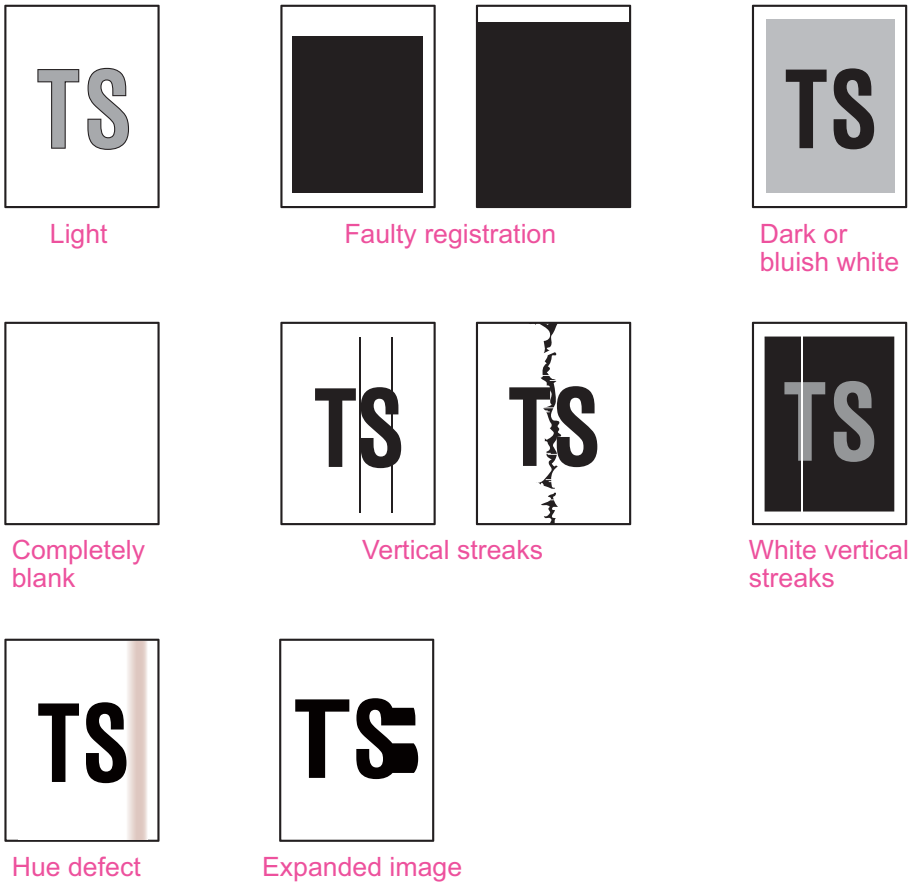
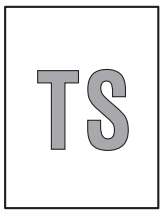


Fig. 2-5

4.2.2 Troubleshooting according to image defect

■ **Light**

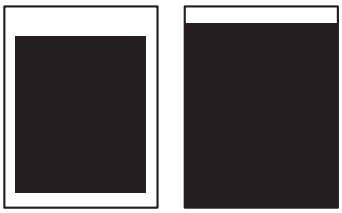


<User Check>

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

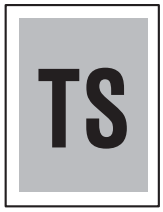
Step	Cause	Remedy
1	Incorrect white level correction data	Execute the maintenance mode function "Acquire white level data and set CIS scan area".
2	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Faulty registration



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

■ Dark or bluish white

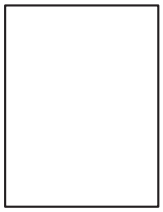


<User Check>

- Check that the contrast setting is not too dark.

Step	Cause	Remedy
1	Incorrect white level correction data	Execute the maintenance mode function "Acquire white level data and set CIS scan area".
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.

■ Completely blank

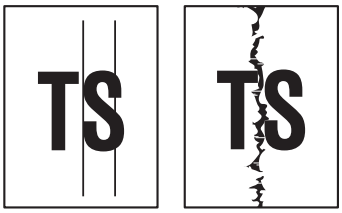


<User Check>

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

Step	Cause	Remedy
1	Incorrect white level correction data	Execute the maintenance mode function "Acquire white level data and set CIS scan area".
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

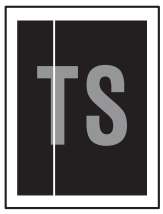


<User Check>

- 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

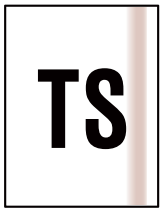


<User Check>

- 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	Color parameter failure	Execute the maintenance mode function "Acquire white level data and set CIS scan area".
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.

■ Expanded image

Step	Cause	Remedy
1	The maintenance mode function "Acquire white level data and set CIS scan area" are not set.	Execute the maintenance mode function "Acquire white level data and set CIS scan area". (Refer to “1.3.5” in Chapter 5.)
2	The firmware is outdated	Install the latest version firmware. (Refer to “1.1” 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 Paper Feeding Problems

4.3.1 Multiple documents are fed

<User Check>

- Check that paper used for the document is not thinner than the standard. If it is too thin, use a carrier sheet.
- Check that the document is not damp. If it is damp, dry it or use a carrier sheet.
- Check that the machine is not scanning a glossy paper used in magazines and others.

Step	Cause	Remedy
1	Incorrect double feeding sensor threshold setting	Reset the double feeding sensor threshold.
2	Connection failure of the double feeding sensor harness	Reconnect the double feeding sensor harness.
3	Separation spring coming off	Reattach the separation spring.
4	Separation arm coming off	Reattach the separation arm.
5	Abrasion of the separation pad	Replace the separation pad.
6	Abrasion of the pick-up roller	Replace the pick-up roller ASSY.
7	Deformed front plate spring	Replace the separation pad cover.
8	Bent or broken separation spring	Replace the separation spring.
9	Separation arm failure	Replace the separation arm.
10	Double feeding sensor failure	Replace the double feeding sensor.

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. If it is too small, use a carrier sheet.
- Check that the document is not wrinkled. If wrinkled, use a carrier sheet.
- Check that the document is not torn. If torn, use a carrier sheet.
- Check that the front cover is closed correctly.
- Check that the document is not damp. If it is damp, dry it or use a carrier sheet.
- Check that paper used for the document is not thinner than the standard. If it is too thin, use a carrier sheet.

Step	Cause	Remedy
1	Document scanning position actuator caught in sections of the machine	Reattach the document scanning position actuator.
2	Output tray attachment failure	Reattach the output tray.
3	Attachment failure of the two CIS units	Reattach the two CIS units.
4	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
5	Separation pad failure	Replace the separation pad ASSY.
6	Misalignment or bending of the pick-up roller support film	Replace the pick-up roller cover ASSY.
7	Deformation of, or burrs on the output tray	Replace the output tray.
8	One way clutch failure	Replace the one way clutch.
9	Main motor failure	Replace the main motor.

4.3.4 Document is not picked up and fed

<User Check>

- Check that paper used for the document is not thinner than the standard. If it is too thin, use a carrier sheet.
- Check that the front cover is closed correctly.
- Check that the separation pad cover is closed correctly.

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 front cover sensor harness	Reconnect the front cover sensor harness.
5	Connection failure of the main motor harness	Reconnect the main motor harness.
6	Attachment failure of the gears in the feeding system	Reattach the gears in the feeding system.
7	Top cover sensor failure	Replace the top cover sensor.
8	Front cover sensor failure	Replace the front cover sensor.
9	Document detection sensor failure	Replace the document detection sensor PCB.
10	One way clutch failure	Replace the one way clutch.
11	Deformed front plate spring	Replace the separation pad cover.
12	Main motor failure	Replace the main motor.
13	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.)
- Unplug the AC power cord and then plug the AC power cord again into the outlet.

Step	Cause	Remedy
1	Program malfunction	Reinstall the firmware.
2	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
3	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
4	Rubber key attachment failure	Reattach the rubber key.
5	Front cover sensor failure	Replace the front cover sensor ASSY.
6	Top cover sensor failure	Replace the top cover sensor ASSY.
7	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.
- Unplug the AC power cord and then plug the AC power cord again into the outlet.

Step	Cause	Remedy
1	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
2	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
3	Front cover sensor failure	Replace the front cover sensor ASSY.
4	Top cover sensor failure	Replace the top cover sensor ASSY.
5	First side or second side CIS unit failure	Replace the first side or second side CIS unit.
6	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 power cord is connected correctly.

Step	Cause	Remedy
1	AC power cord failure	Replace the AC power cord.
2	Connection failure of the panel PCB harness	Reconnect the panel PCB harness.
3	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
4	Top cover sensor failure	Replace the top cover sensor ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Power supply PCB failure	Replace the power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

4.5.2 Control panel is inoperable

<User Check>

- Check that the function lock is not set.

Step	Cause	Remedy
1	Panel ASSY attachment failure	Reattach the panel ASSY.
2	Connection failure of the panel PCB harness	Reconnect the panel PCB harness.
3	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
4	Front cover sensor failure	Replace the front cover sensor ASSY.
5	Rubber key failure	Replace the rubber key.
6	Panel PCB failure	Replace the panel PCB ASSY.
7	Power supply PCB failure	Replace the power supply PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

4.5.3 Only specified buttons are inoperable

Step	Cause	Remedy
1	Panel ASSY attachment failure	Reattach the panel ASSY.
2	Rubber key failure	Replace the rubber key.
3	Panel PCB failure	Replace the panel PCB ASSY.

4.6 Troubleshooting for Other Problems

4.6.1 Machine does not turn 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	Connection failure of the top cover sensor harness	Reconnect the top cover sensor harness.
3	Top cover sensor failure	Replace the top cover sensor ASSY.
4	Panel PCB failure	Replace the panel PCB ASSY.
5	Power supply PCB failure	Replace the power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.6.2 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 if there is a foreign object around that location.
2	Bent or defective part	Replace the part.

4.6.3 Data cannot be saved in the USB memory

<User Check>

- Check that the USB memory is inserted into the USB terminal correctly.
- Replace the USB memory and try saving data again.

Step	Cause	Remedy
1	Rubber key attachment failure	Reattach the rubber key.
2	Rubber key failure	Replace the rubber key.
3	Panel PCB failure	Replace the panel PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

CHAPTER 3
DISASSEMBLY/REASSEMBLY

CHAPTER 3 DISASSEMBLY/REASSEMBLY

This chapter describes procedures for disassembling and reassembling the machine with related notes. The provided disassembly order flow enables you to take in the disassembly procedure of related part at a glance.

At the start of disassembling, you can check the disassembly order flow which guides you through a shortcut to get to the part.

This chapter also covers screw tightening torques and lubrication points where the specified lubrication should be applied when the machine is assembled.

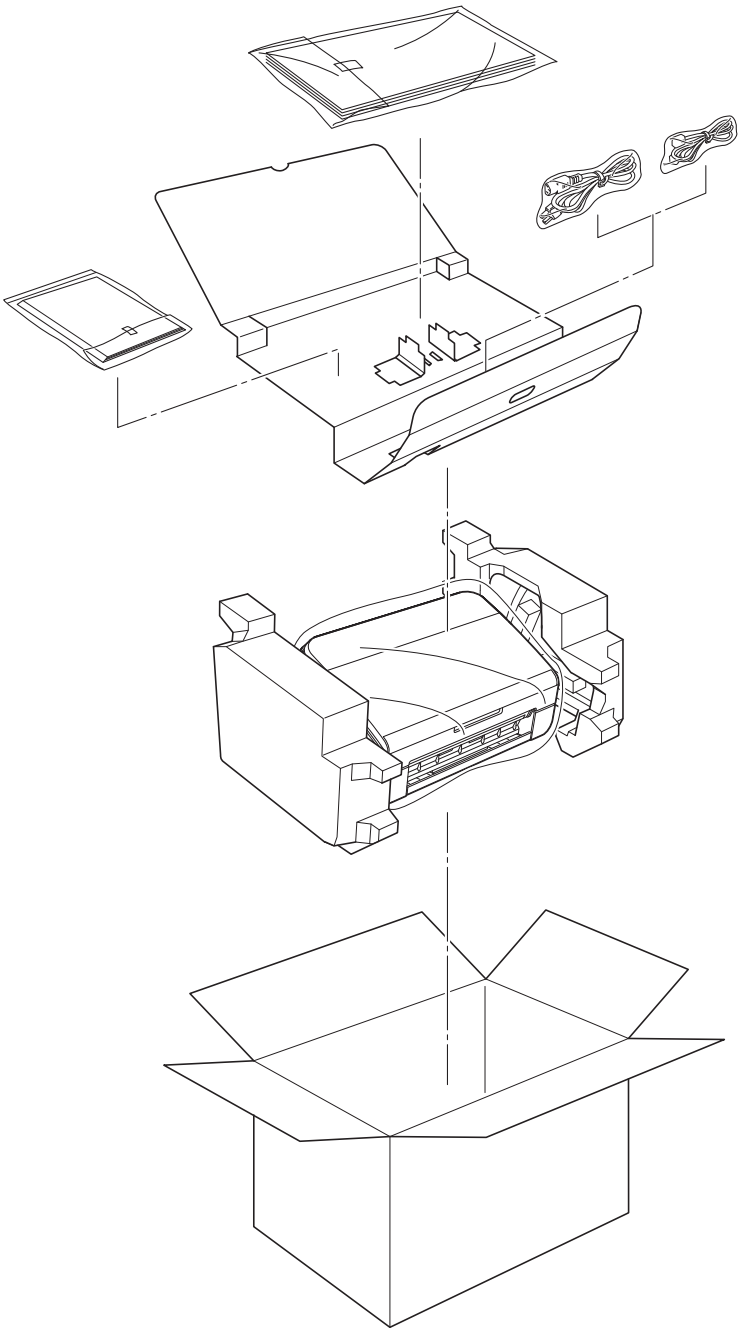
CONTENTS

1. SAFETY PRECAUTIONS

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

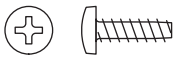
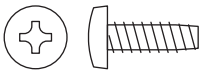
- Be careful not to lose screws, washers, or other parts removed.
- Be sure to apply grease to applicable positions specified in this chapter.
- When using soldering irons or other heat-generating tools, take care not to accidentally damage parts such as wires, PCBs and covers.
- Static electricity charged 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 test and continuity test.

2. PACKING



3. SCREW CATALOGUE

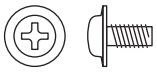
Taptite bind B

Taptite bind B M3x10	
Taptite bind B M4x12	

Taptite cup B

Taptite cup B M3x10	

Taptite cup S

Taptite cup S M3x6	

Screw pan (S/P washer)

Screw pan (S/P washer) M3x6DA	
Screw pan (S/P washer) M3.5x6	

4. SCREW TORQUE LIST

Note:
- To check the shape of each screw, refer to "3. SCREW CATALOGUE" in this chapter.

Location of screw		Screw type	Q'ty	Tightening torque N · m (kgf · cm)
Bottom cover		Taptite cup B M3x10	4	0.5±0.1 (5±1)
Side cover L		Taptite cup B M3x10	1	0.5±0.1 (5±1)
Side cover R		Taptite cup B M3x10	1	0.5±0.1 (5±1)
Main PCB shield plate		Taptite cup S M3x6	1	0.7±0.1 (7±1)
	Earth harness (GN)		1	0.7±0.1 (7±1)
Main PCB ASSY		Taptite cup S M3x6	2	0.7±0.1 (7±1)
USB host PCB ASSY		Taptite bind B M4x12	2	0.7±0.1 (7±1)
Earth harness (BK)	Main PCB shield frame	Taptite bind B M3x10	1	0.5±0.1 (5±1)
Earth harness (YW)		Taptite bind B M3x10	1	0.5±0.1 (5±1)
Panel ASSY		Taptite bind B M3x10	2	0.5±0.1 (5±1)
Top cover sensor holder		Taptite bind B M3x10	1	0.5±0.1 (5±1)
Upper chute earth spring		Taptite cup S M3x6	1	0.7±0.1 (7±1)
Double feeding sensor holder		Taptite bind B M3x10	2	0.5±0.1 (5±1)
Pinch roller support plate		Taptite bind B M3x10	2	0.5±0.1 (5±1)
Back cover		Taptite cup B M3x10	4	0.5±0.1 (5±1)
Security slot earth plate		Taptite cup B M3x10	1	0.5±0.1 (5±1)
Power supply unit		Taptite bind B M3x10	4	0.5±0.1 (5±1)
Power supply earth harness		Screw pan (S/P washer) M3.5x6	1	0.5±0.1 (5±1)
Power supply PCB ASSY		Taptite cup S M3x6	3	0.4±0.1 (4±1)
Earth harness (YW)		Taptite cup S M3x6	1	0.4±0.1 (4±1)
Lower frame		Taptite cup B M3x10	4	0.5±0.1 (5±1)
Main motor		Screw pan (S/P washer) M3x6 DA	1	0.5±0.1 (5±1)
Front cover sensor holder		Taptite cup B M3x10	1	0.5±0.1 (5±1)
Double feeding sensor upper shield		Taptite bind B M3x10	2	0.5±0.1 (5±1)

5. LUBRICATION

Lubrication oil type (Maker name)	Lubrication point		Quantity of lubrication
FLOIL GE-676 (Kanto Kasei)	One way clutch	1 place	1.5 mm dia. ball

■ **One way clutch**

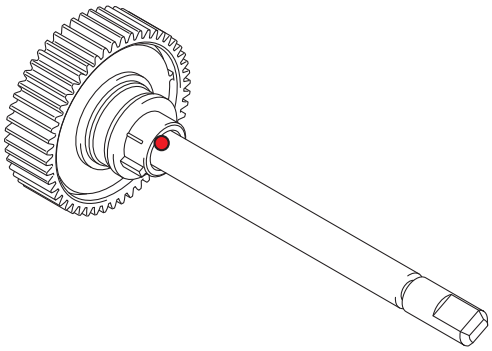
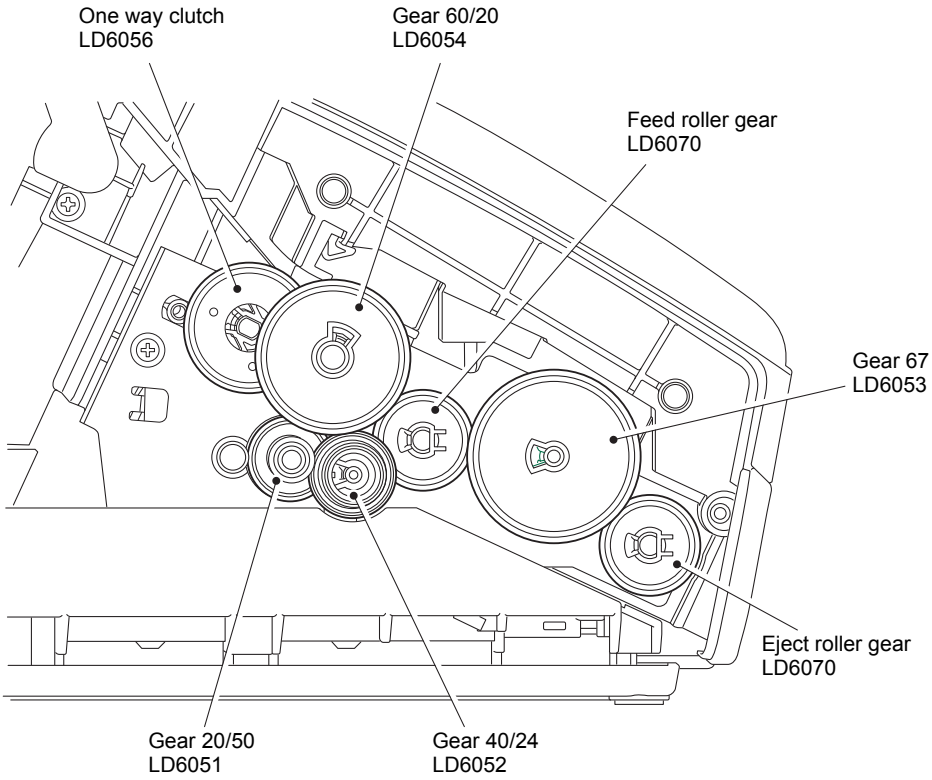


Fig. 3-1

6. OVERVIEW OF GEARS

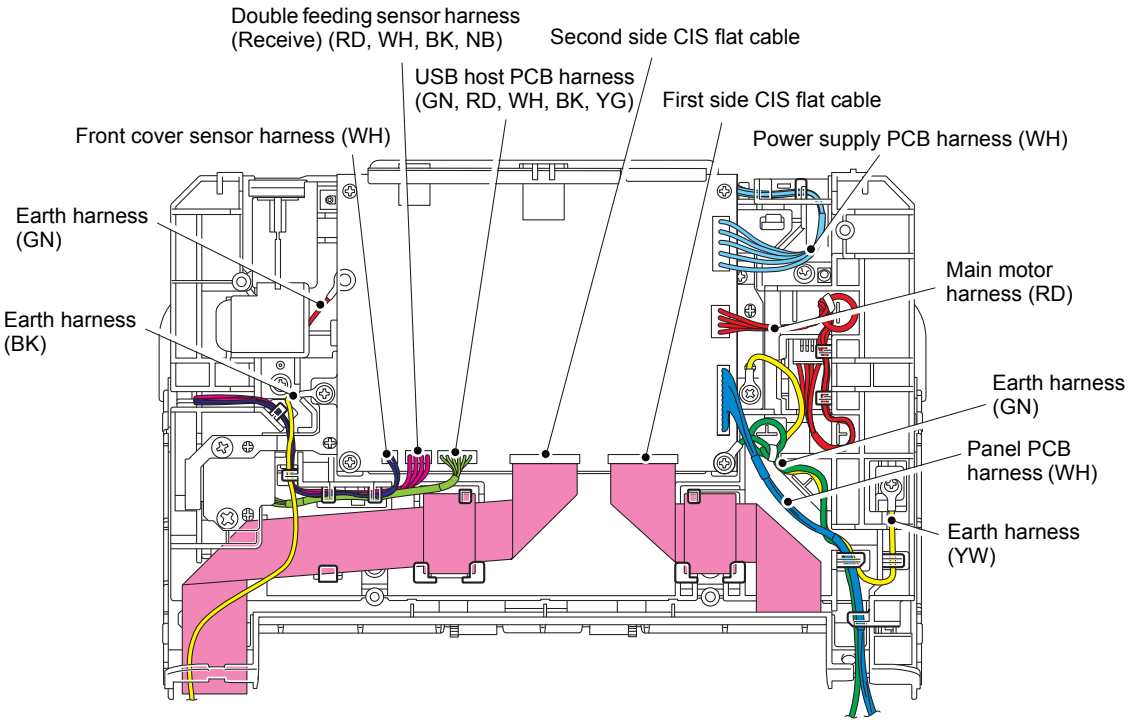


*** Part codes of these gears are subject to change without notice.**

Fig. 3-2

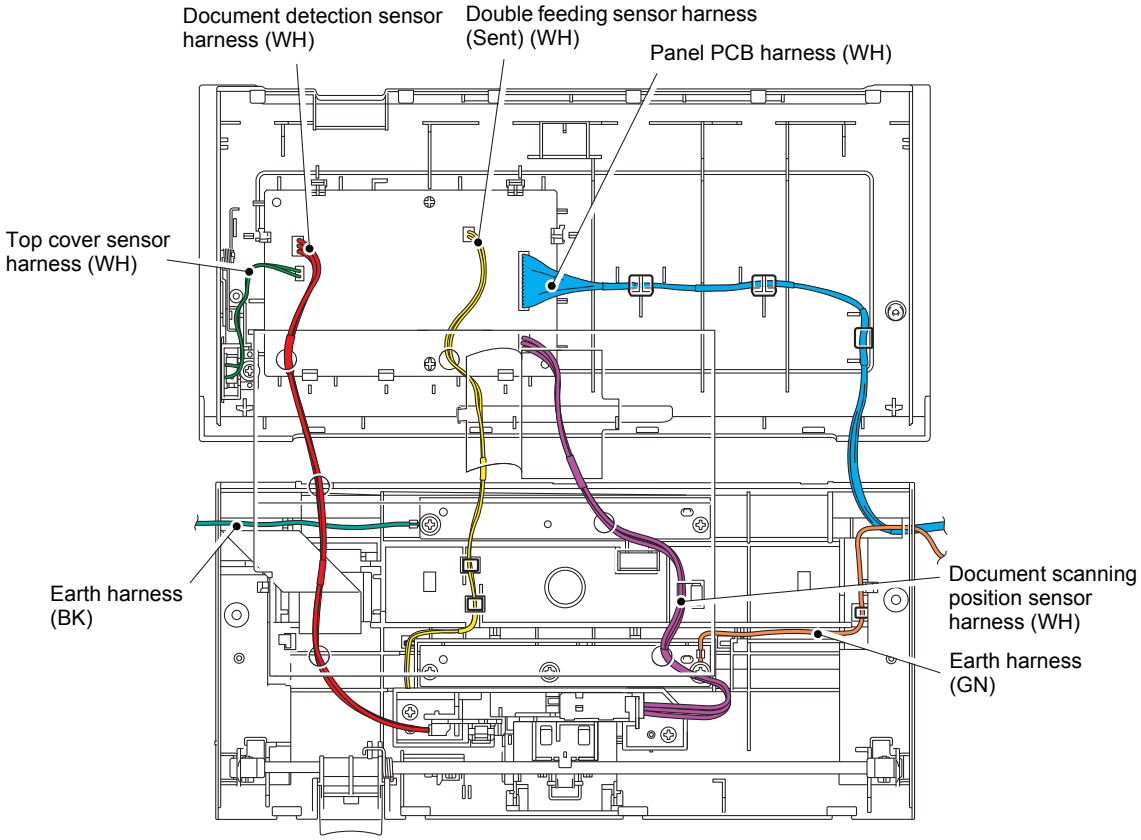
7. HARNESS ROUTING

1 Main PCB ASSY

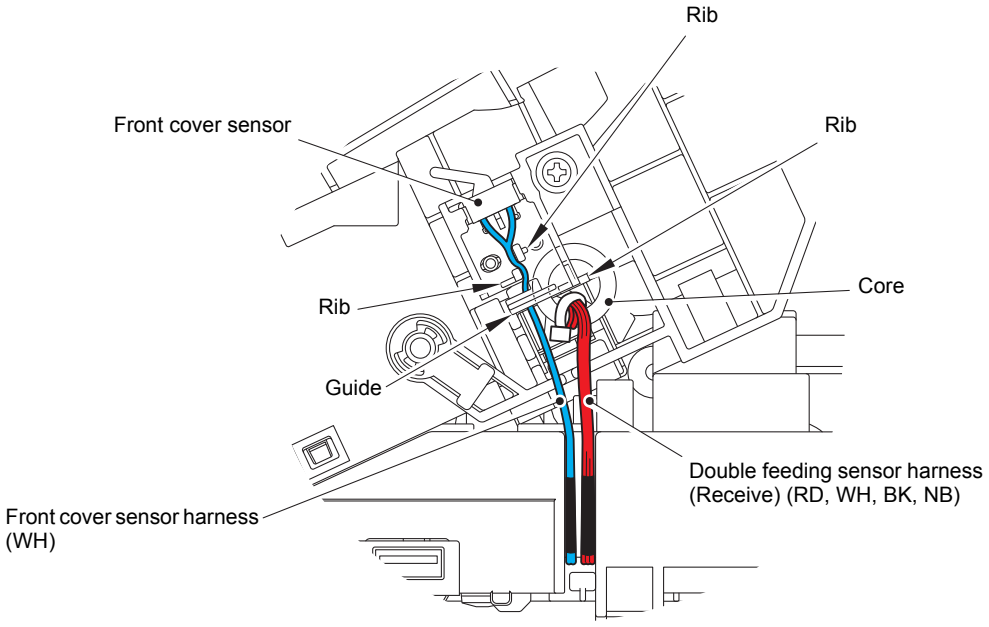


Harness colors are subject to change for some reason.

2 Panel PCB ASSY

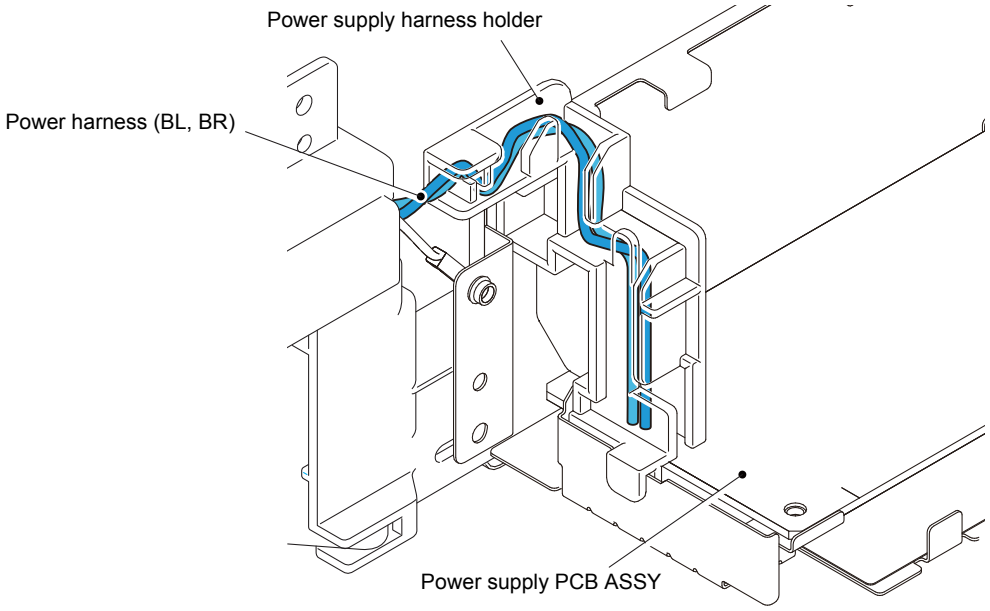


3 Frame R



Harness colors are subject to change for some reason.

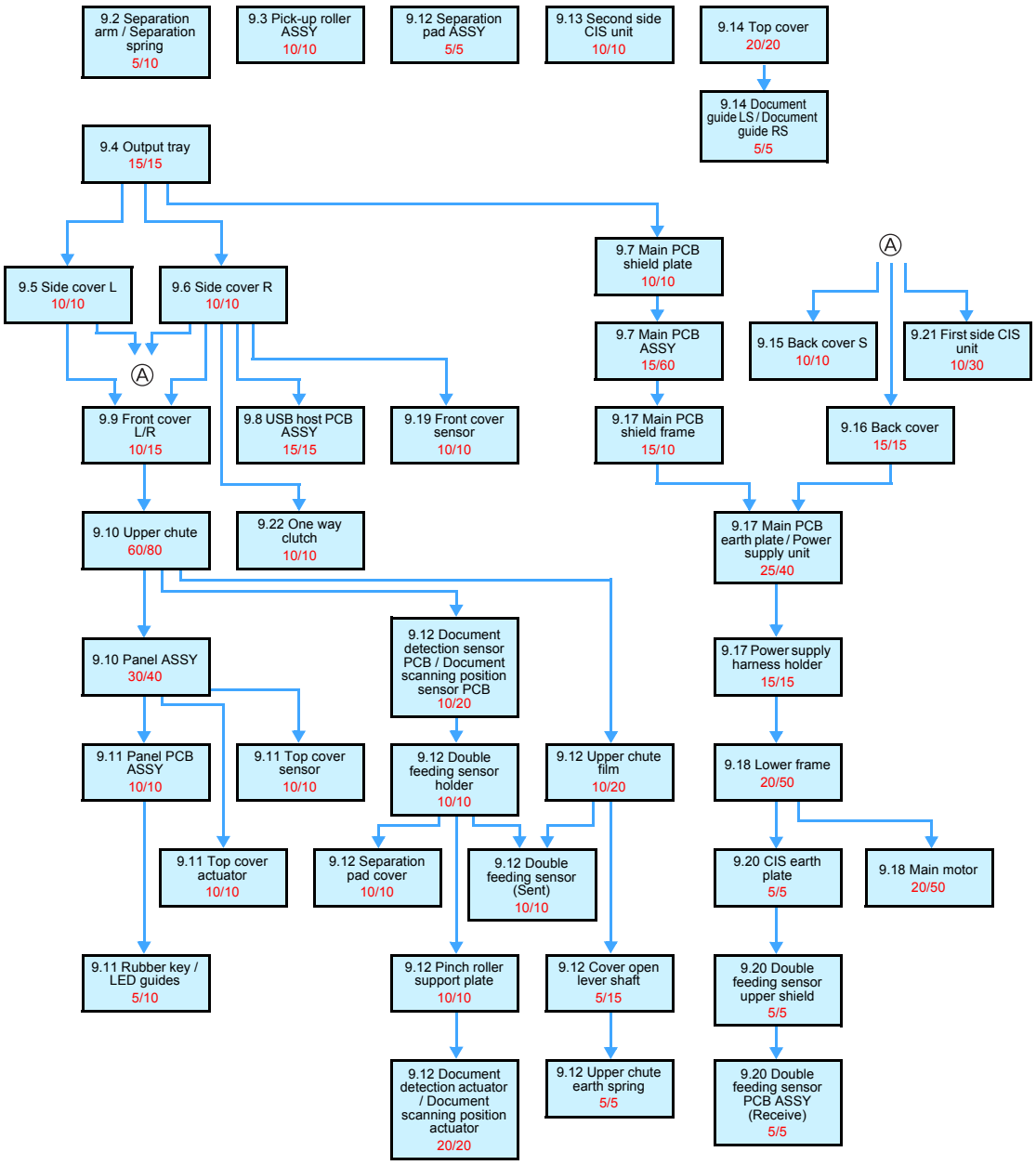
4 Power supply unit



Harness colors are subject to change for some reason.

8. DISASSEMBLY FLOW CHART

Disassembly / Re-Assembly (second)



9. DISASSEMBLY PROCEDURE

9.1 Preparation

■ Disconnecting Cables and Removing Accessories

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:

- AC power cord
- USB cable (if connected)

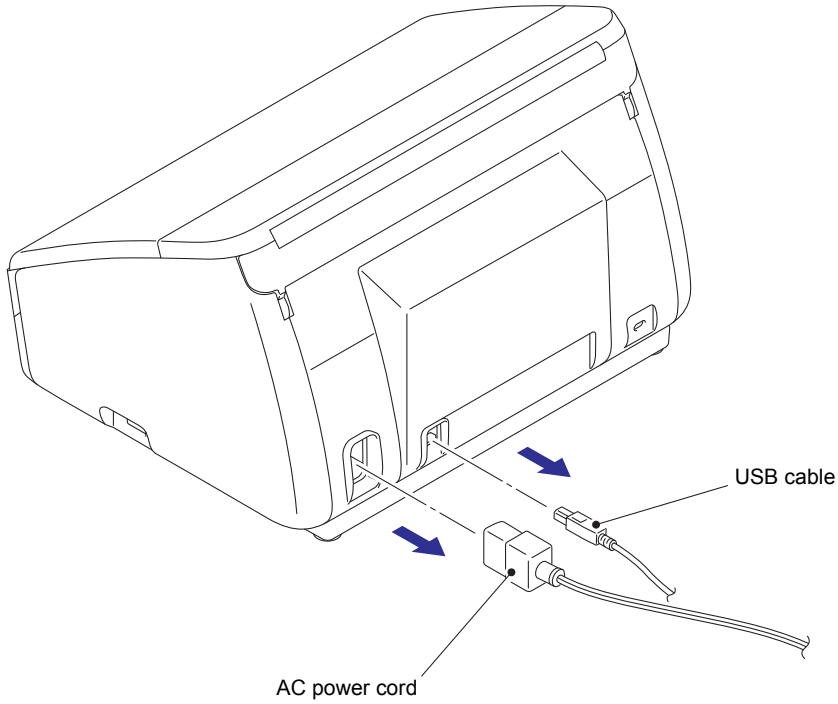


Fig. 3-3

9.2 Separation pad ASSY

(1) Open the top cover, and push the cover release lever to open the front cover.

(2) Push the two hooks on the separation pad cover inward to open it.

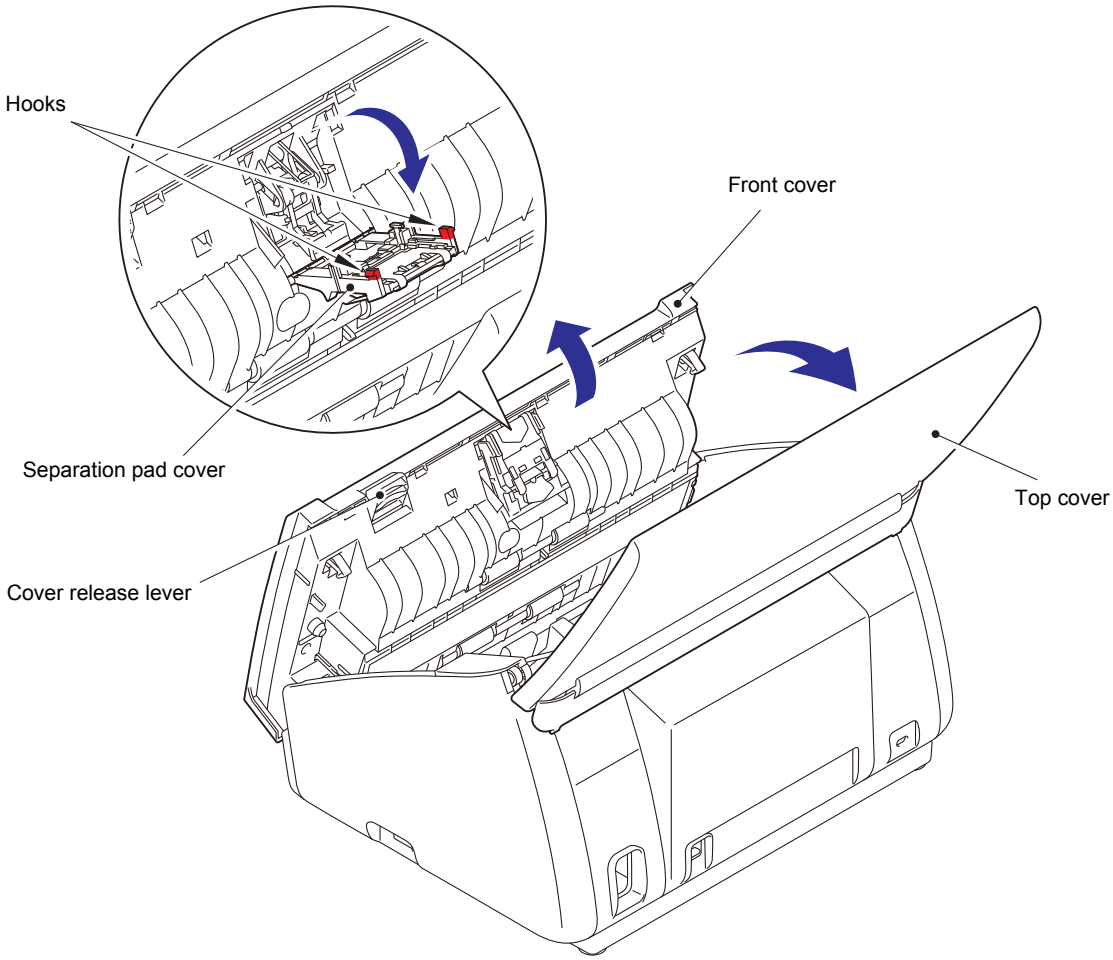


Fig. 3-4

(3) Push the two hooks on the separation arm inward to open the separation arm, and remove the separation spring from the front cover.

Note:

- Be careful not to damage the separation arm by opening it too much.
- Do not close the front cover when the separation arm is opened to prevent the separation arm to be damaged.

(4) Push the two hooks on the front cover outward. Remove the two bosses on the separation arm, and remove the separation arm from the front cover.

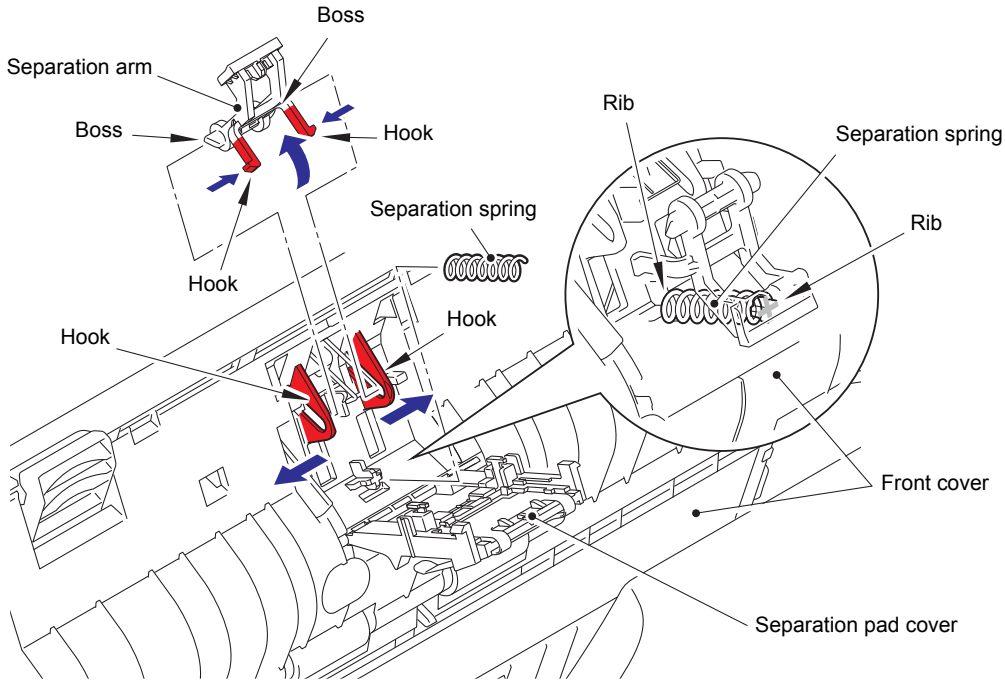


Fig. 3-5

(5) Close the separation pad cover.

Assembling Note:

- When assembling the separation spring, engage it with ribs on the front cover and separation pad cover.

9.3 Pick-up roller ASSY

(1) Slide the document guide L and R outward.

(2) Push the two hooks inward to open the pick-up roller cover ASSY. Slide the pick-up roller cover ASSY in the direction of arrow 2a to remove the boss A, and in the direction of arrow 2b to remove the boss B. Then remove the pick-up roller cover ASSY from the machine.

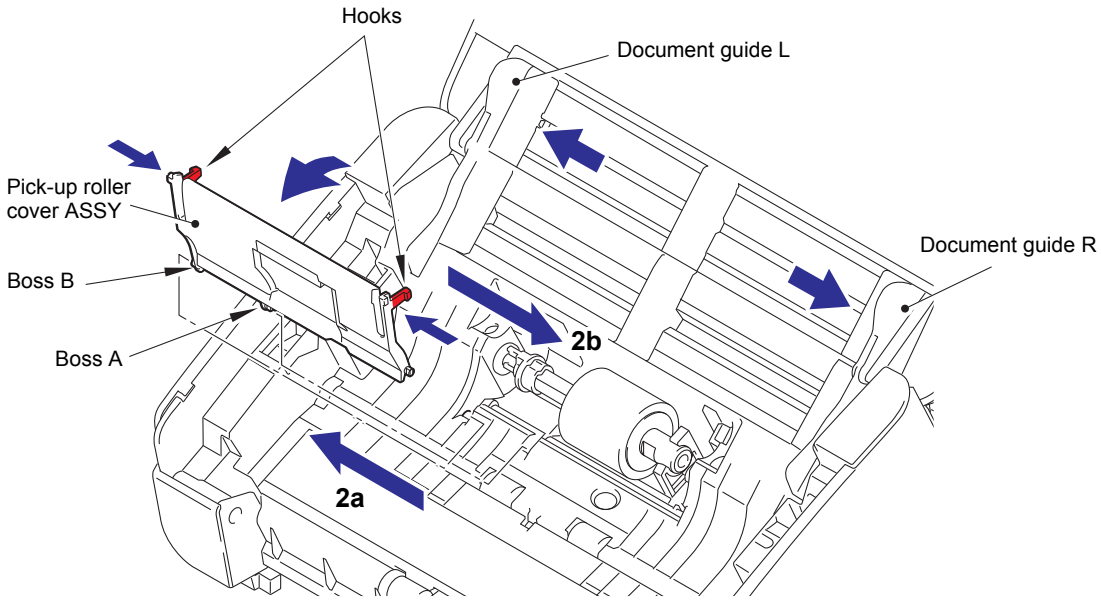


Fig. 3-6

(3) Slide the pick-up roller ASSY in the direction of the arrow, engage the two shaft cutout surfaces on the pick-up roller ASSY with the two notches on the pick-up roller bushing, and then remove the pick-up roller ASSY from the machine.

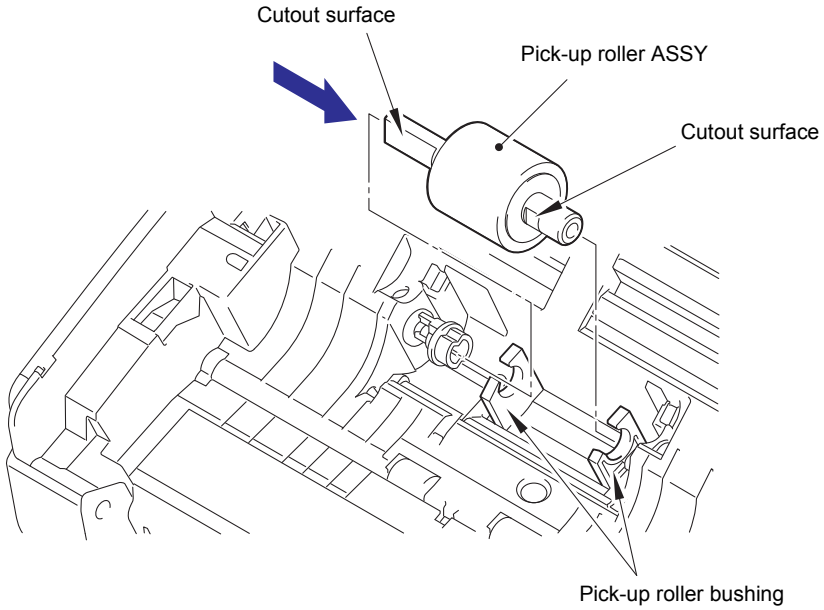


Fig. 3-7

(4) Close the front cover and the top cover.

9.4 Output tray

(1) Turn over the machine to pull out the output tray.

> **Note:**
> • When turning over the machine, spread a sheet to prevent the top cover to be scratched.

(2) Remove the four taptite cup B M3x10 screws, and remove the bottom cover from the machine.

(3) Remove the output tray from the bottom cover.

(4) Remove the four rubber foots from the bottom cover.

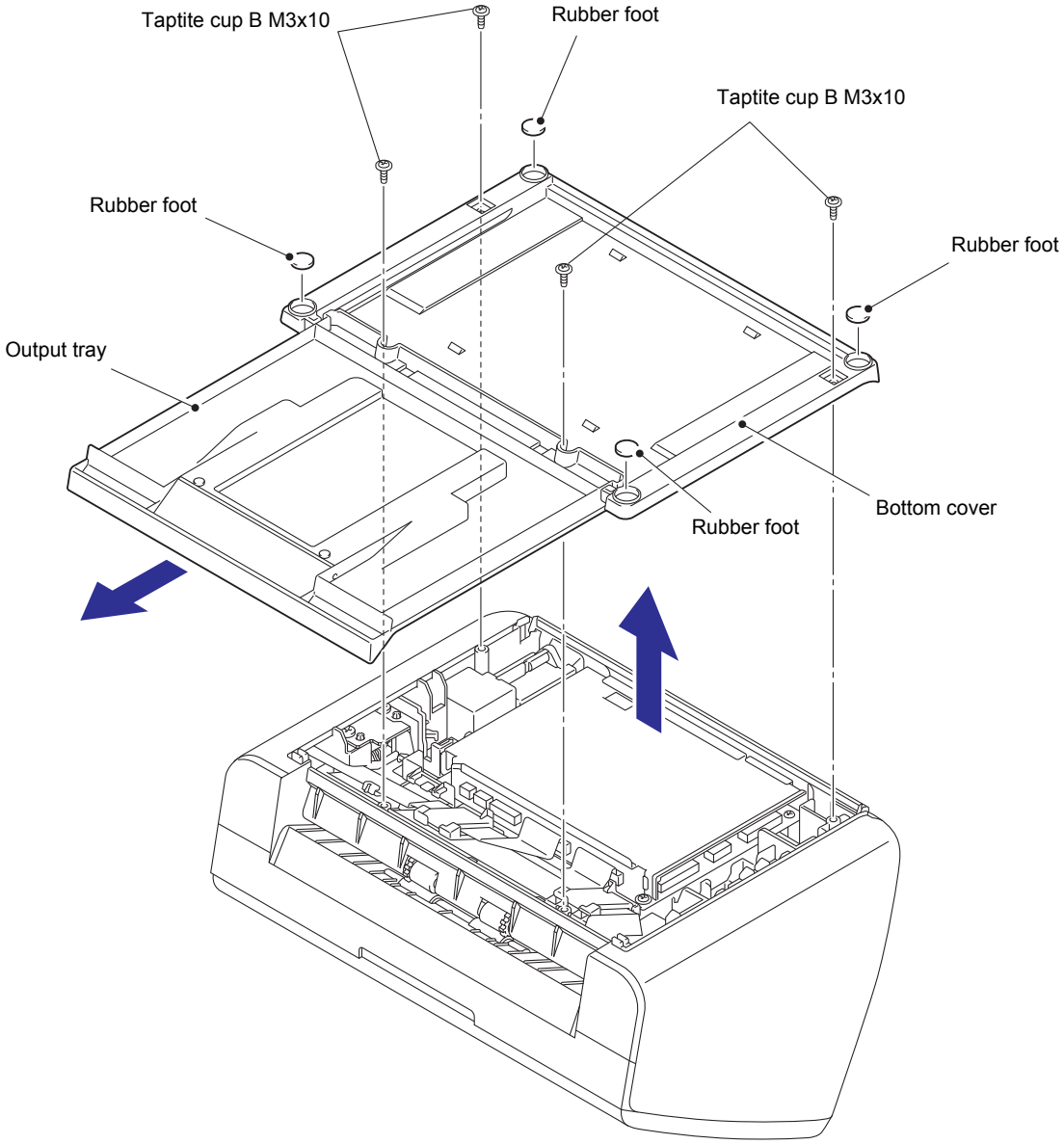


Fig. 3-8

9.5 Side cover L

(1) Turn over the machine and open the top cover. Push the cover release lever to open the front cover.

(2) Remove the taptite cup B M3x10 screw, and release the hook A to open the bottom. Release the remaining four hooks by swinging the side cover L in the direction of the arrow, and remove the side cover L from the machine.

(3) Remove the top cover shaft from the machine.

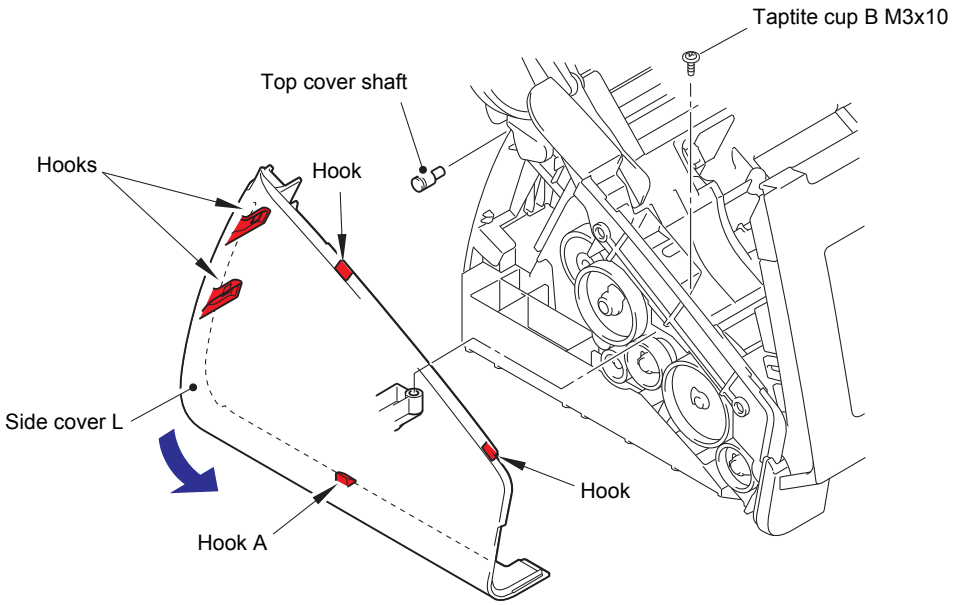


Fig. 3-9

9.6 Side cover R

(1) Remove the taptite cup B M3x10 screw, and release the hook A to open the bottom. Release the remaining four hooks by swinging the side cover R in the direction of the arrow, and remove the side cover R from the machine.

(2) Remove the top cover shaft from the machine.

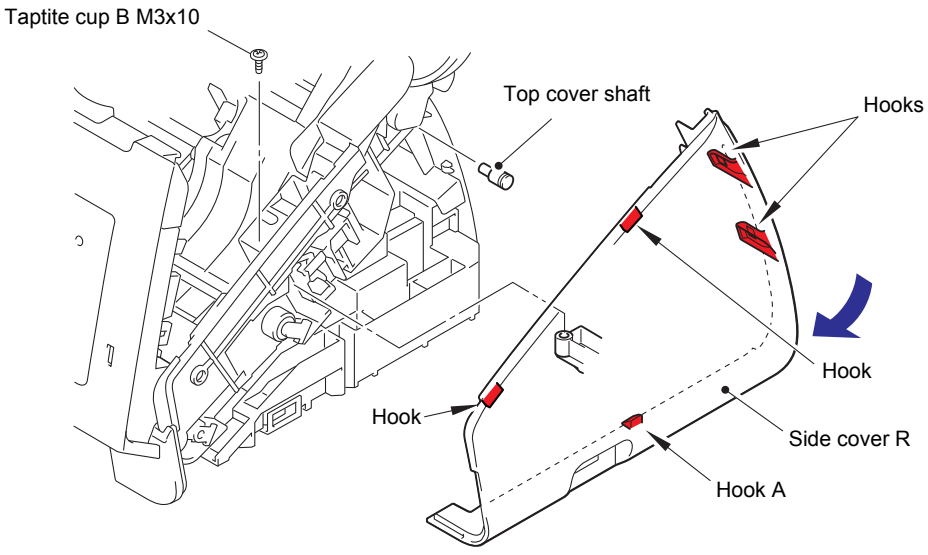


Fig. 3-10

(3) Close the front cover and the top cover.

9.7 Main PCB ASSY

(1) Turn over the machine. Remove the two taptite cup S M3x6 screws, and remove the earth harness (GN) and the main PCB shield plate.

Note:
- When turning over the machine, spread a sheet to prevent top cover to be scratched.

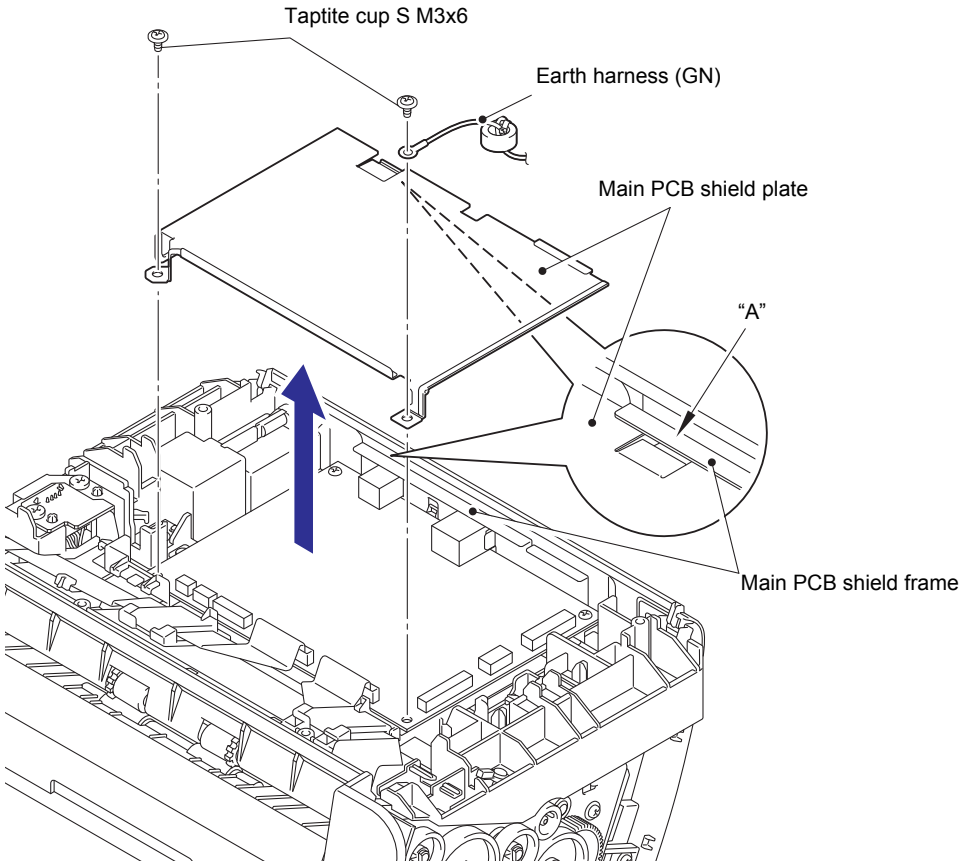


Fig. 3-11

HARNESS ROUTING: Refer to "1. Main PCB ASSY".

Assembling Note:
- Attach "A" on the main PCB shield plate to be under the main PCB shield frame.

(2) Disconnect all harnesses and flat cables connected to the main PCB ASSY.

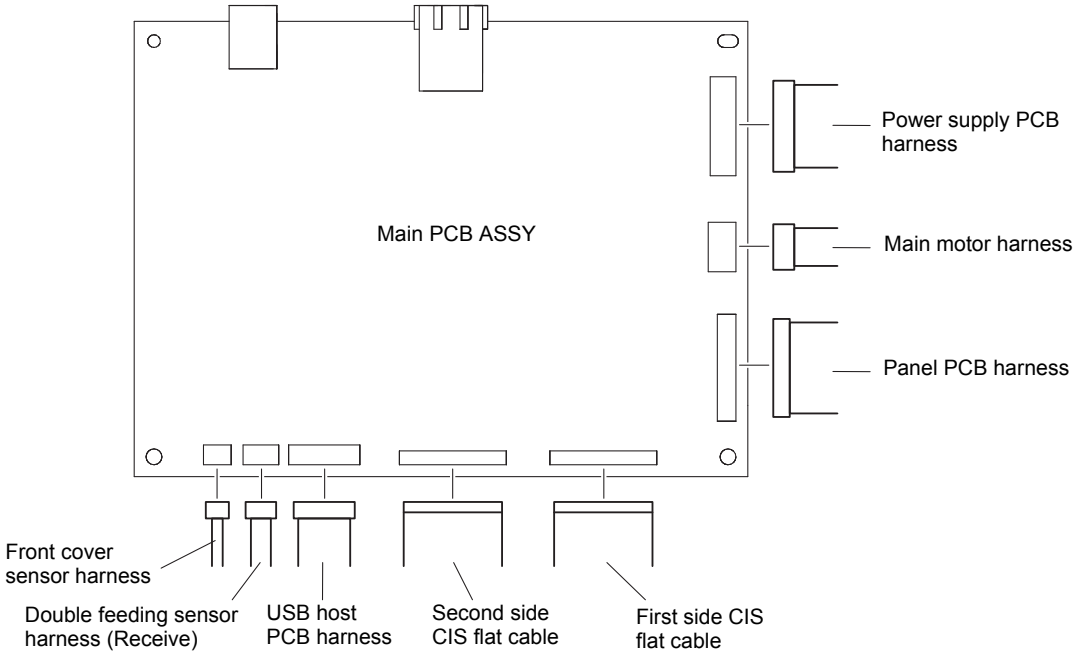


Fig. 3-12

HARNESS ROUTING: Refer to "1. Main PCB ASSY".

(3) Remove the two taptite cup S M3x6 screws to remove the main PCB ASSY from the machine.

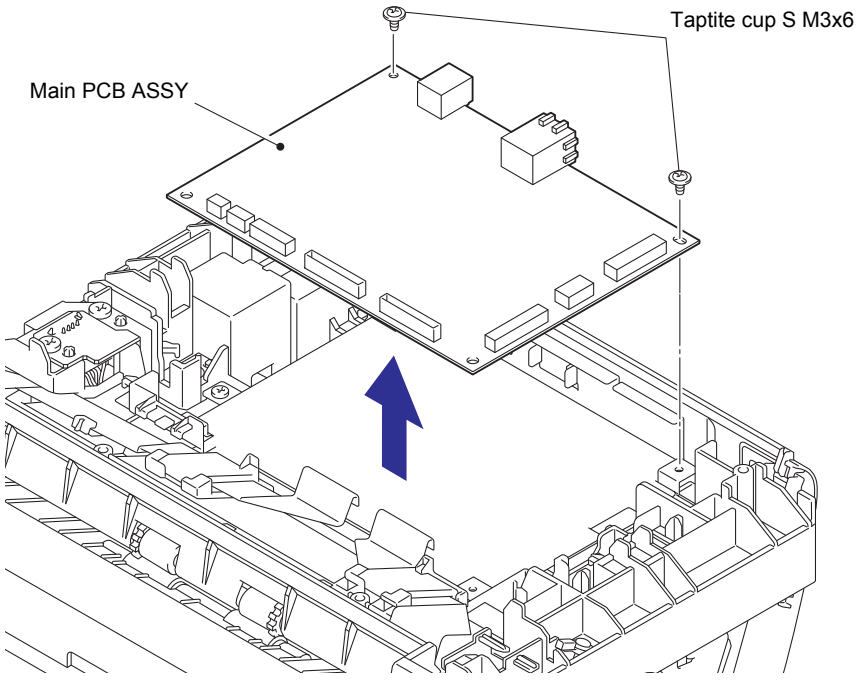


Fig. 3-13

9.8 USB host PCB ASSY

(1) Remove the taptite bind B M3x10 screw to remove the earth harness (BK).

(2) Release the USB host PCB harness, the earth harness (BK), the double feeding sensor harness (Receive), and the front cover sensor harness from the securing fixtures.

(3) Remove the two taptite bind B M4x12 screws. Lift the USB earth plate to remove the USB host PCB ASSY from the machine.

Note:
- Be careful not to deform the USB earth plate.

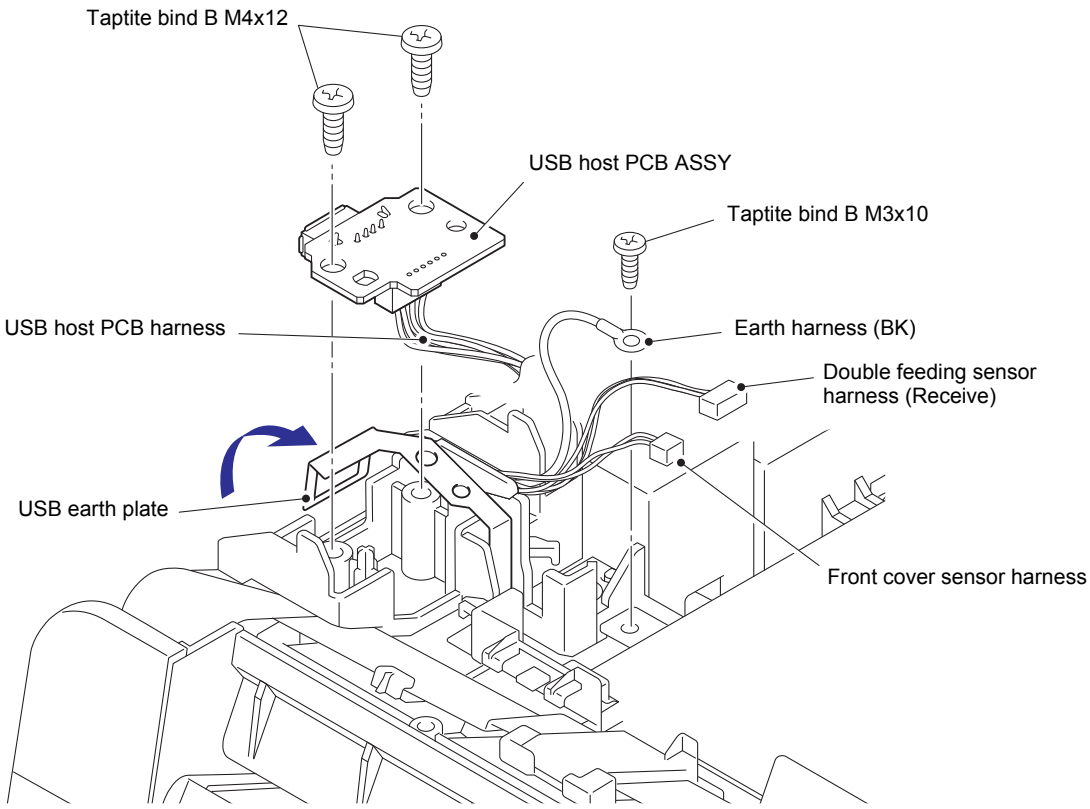


Fig. 3-14

HARNESS ROUTING: Refer to “1. Main PCB ASSY” and “3. Frame R”.

9.9 Front cover L/R

(1) Slide the front cover L in the direction of arrow 1a. Engage the rib on the front cover L with the notch on the machine to pull out and remove the front cover L from the machine in the direction of arrow 1b.

(2) Slide the front cover R in the direction of arrow 2a. Engage the rib on the front cover R with the notch on the machine to pull out and remove the front cover R from the machine in the direction of arrow 2b.

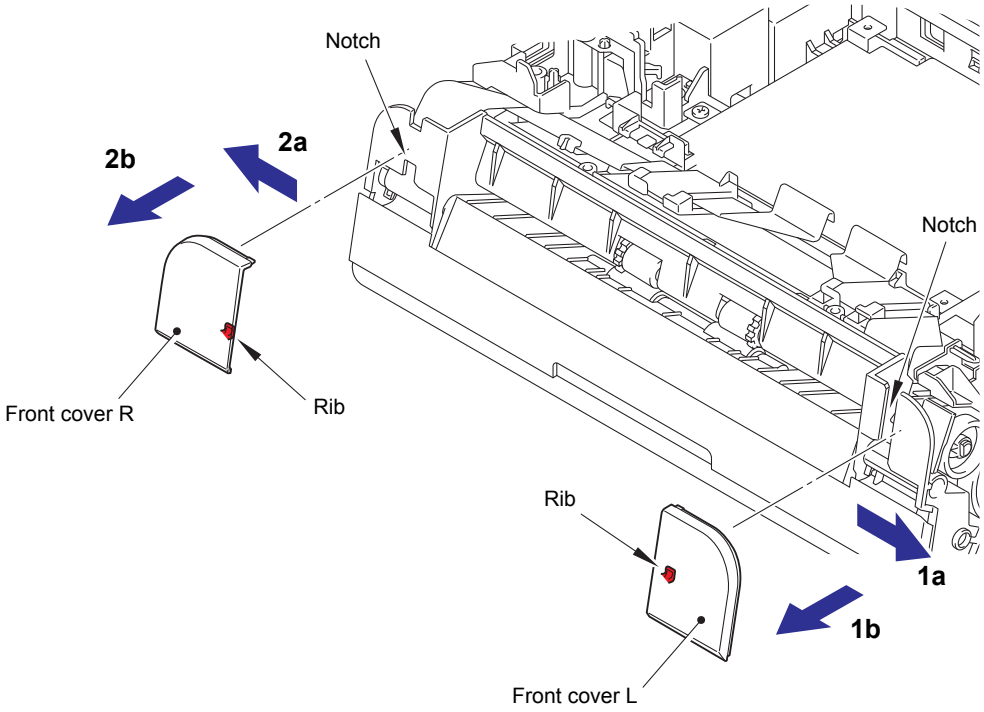


Fig. 3-15

9.10 Panel ASSY

(1) Remove the taptite bind B M3x10 screw, then remove the earth harness (YW).

(2) Release the hook to remove the core of the second side CIS flat cable from the machine, then release the second side CIS flat cable, the panel PCB harness, the earth harness (GN), and the earth harness (YW) from the securing fixtures.

(3) Pull out the core from the second side CIS flat cable. Then pull out the second side CIS flat cable and the earth harness (BK) from the hole on the machine.

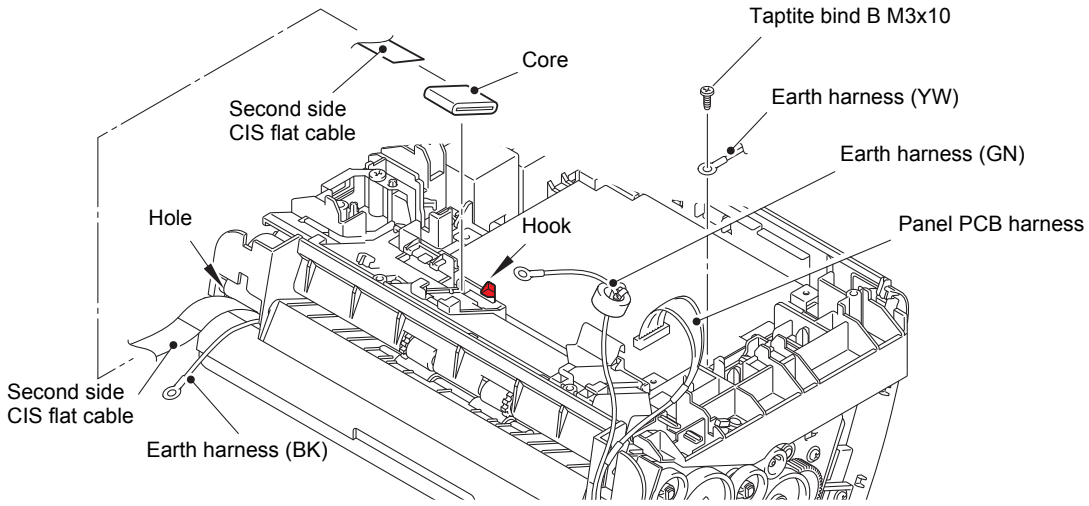


Fig. 3-16

HARNESS ROUTING: Refer to “1. Main PCB ASSY”.

(4) Turn over the machine and open the top cover. Push the cover release lever to open the front cover.

Note:
- Be careful not to drop the main PCB shield frame and the USB earth plate as they are not secured.

(5) Push the front cover in the direction of arrow 5a to remove the boss A, and in the direction of arrow 5b to remove the boss B. Then remove the front cover from the machine.

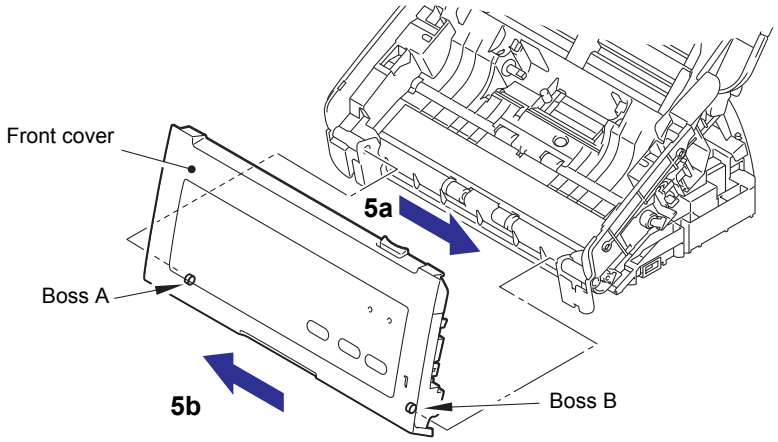


Fig. 3-17

(6) Remove the two taptite bind B M3x10 screws, and release the four hooks. Slide the upper chute in the direction of the arrow and release the six tabs from the upper chute.

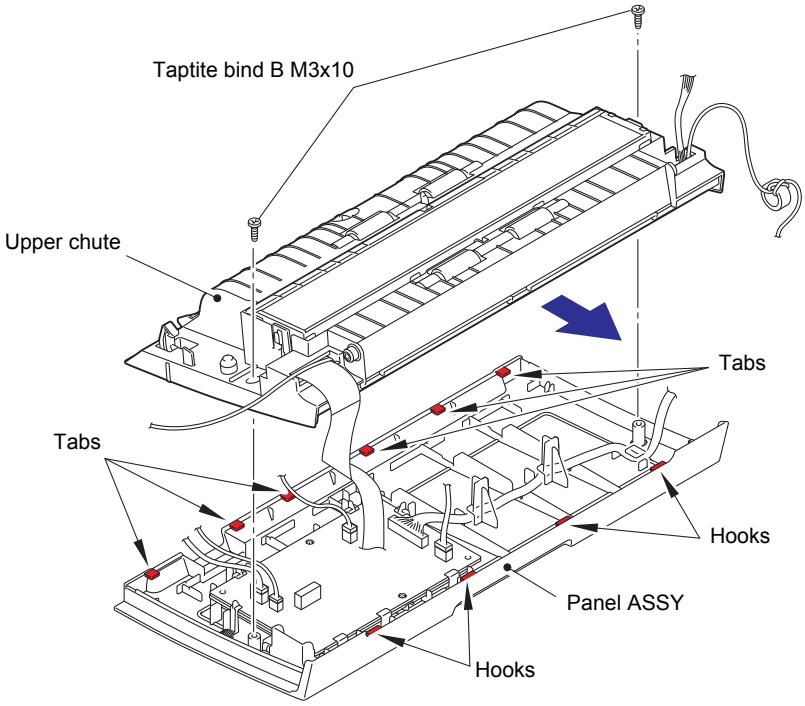


Fig. 3-18

Note:
- Be careful not to pull any harness.

(7) Open the upper chute from the panel ASSY.

(8) Disconnect the document detection sensor harness, the document scanning position sensor harness, the double feeding sensor harness (Sent), and the panel PCB harness from the panel PCB ASSY.

(9) Release the panel PCB harness from the securing fixture, then pull out the panel PCB harness from the hole on the upper chute.

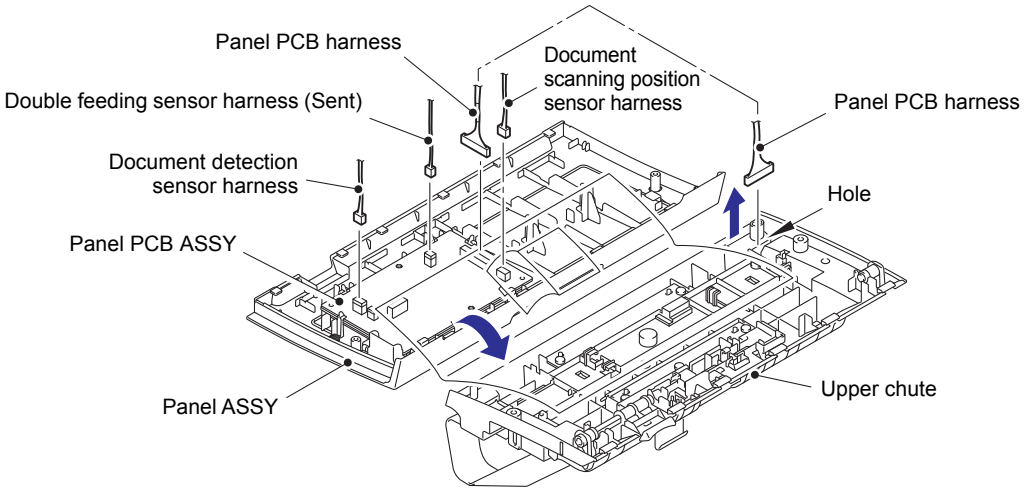


Fig. 3-19

HARNESS ROUTING: Refer to “2. Panel PCB ASSY”.

Assembling Note:
- Make sure that there is no slack in the panel PCB harness when reconnecting it.

9.11 Panel PCB ASSY / Rubber key / Top cover sensor / Top cover actuator

(1) Disconnect the top cover sensor harness from the panel PCB ASSY, and release it from the securing fixtures.

(2) Remove the taptite bind B M3x10 screw, and remove the top cover sensor holder from the panel ASSY.

(3) Release the two hooks, and remove the top cover sensor from the top cover sensor holder.

(4) Lift the top cover actuator and remove it from the boss on the panel ASSY along with the top cover actuator spring. Remove the top cover actuator spring from the top cover actuator.

(5) Release the four hooks. Lift the hook side of the panel PCB ASSY, and slide it in the direction of the arrow to remove the panel PCB ASSY from the panel ASSY.

(6) Remove the rubber key from the panel ASSY.

(7) Remove the two LED guides from the panel ASSY.

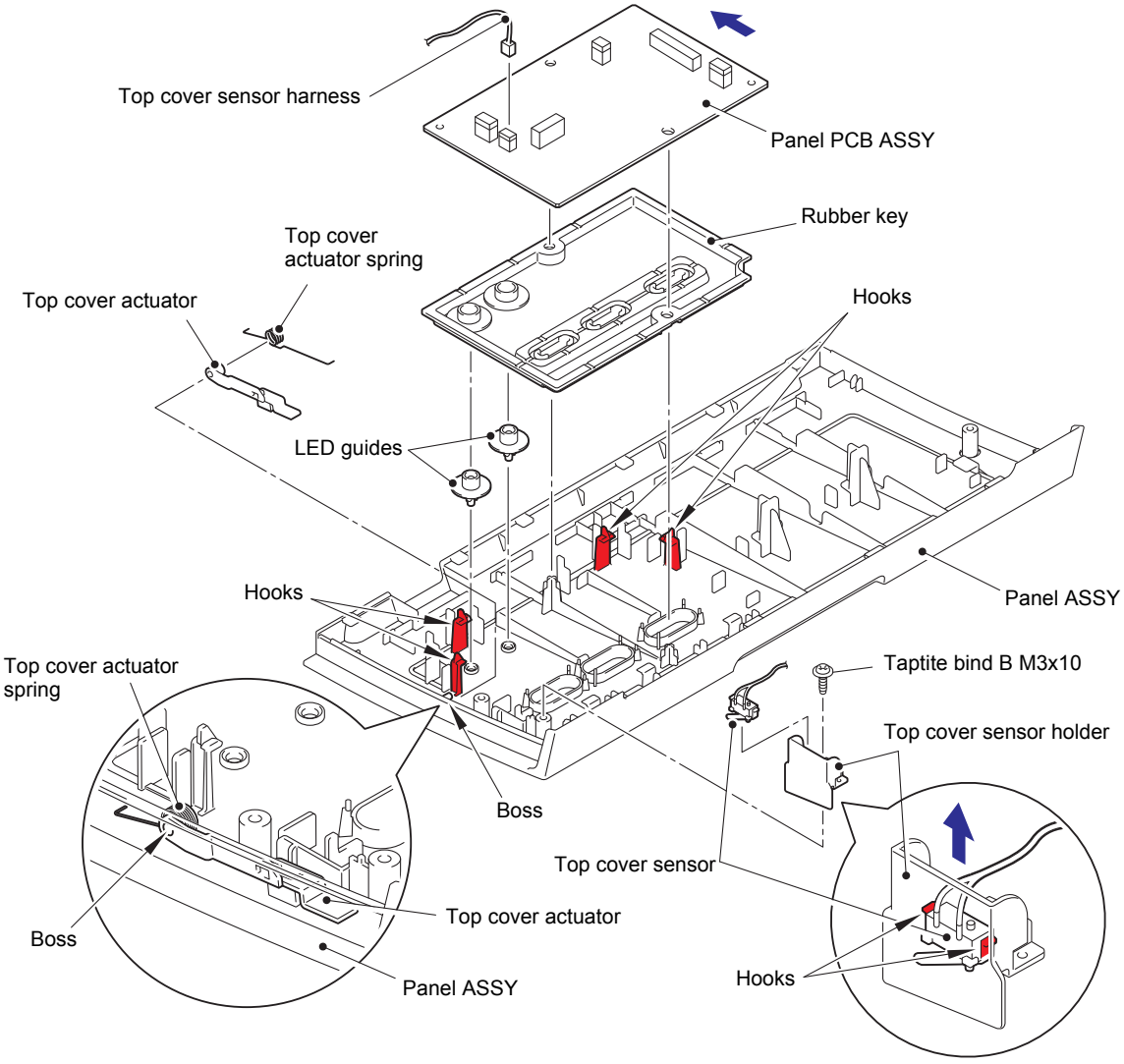


Fig. 3-20

HARNESS ROUTING: Refer to "2. Panel PCB ASSY".

Assembling Note:

- Attach the top cover actuator spring on the position described in the illustration above.

9.12 Document detection sensor PCB / Document detection actuator / Document scanning position sensor PCB / Document scanning position actuator / Double feeding sensor (Sent) / Separation pad ASSY

(1) Remove the document detection sensor harness, the document scanning position sensor harness, and the double feeding sensor harness (Sent) from the upper chute film, and release the upper chute film from the two hooks on the upper chute.

(2) Push the rib in the direction of the arrow to remove the document detection sensor PCB from the upper chute.

(3) Disconnect the document detection sensor harness from the document detection sensor PCB.

(4) Release the hook A, and remove the document scanning position sensor PCB from the upper chute.

(5) Disconnect the document scanning position sensor harness from the document scanning position sensor PCB.

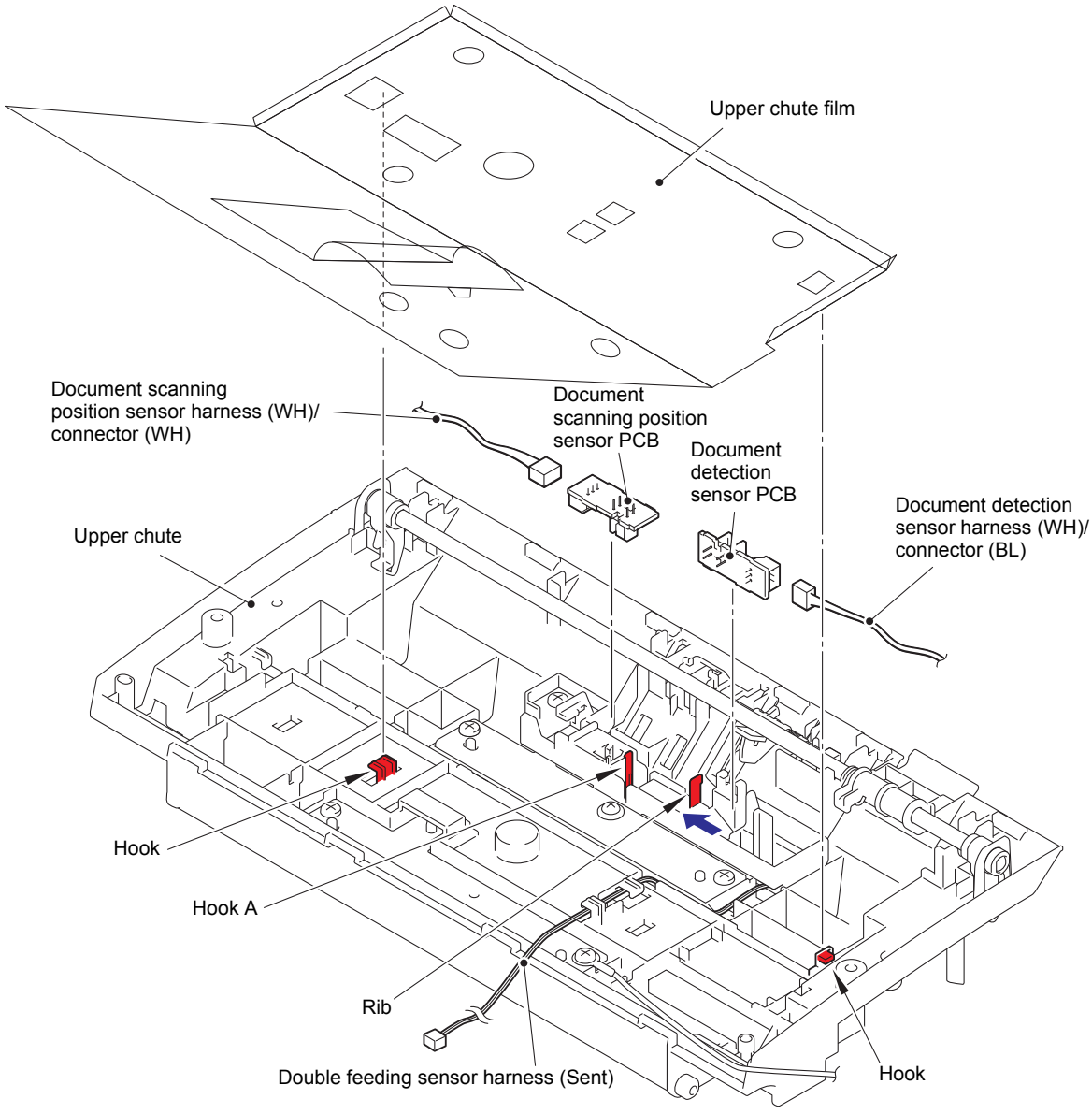


Fig. 3-21

HARNESS ROUTING: Refer to “2. Panel PCB ASSY”.

(6) Remove the taptite cup S M3x6 screw, and lift the upper chute earth spring.

(7) Push the two hooks on the upper chute outward, and remove the cover open lever shaft from the upper chute.

(8) Remove the upper chute earth spring from the upper chute.

(9) Remove the two taptite bind B M3x10 screws, and remove the double feeding sensor holder from the upper chute.

(10) Release the double feeding sensor harness (Sent) from the securing fixture, and remove the double feeding sensor (Sent) from the upper chute.

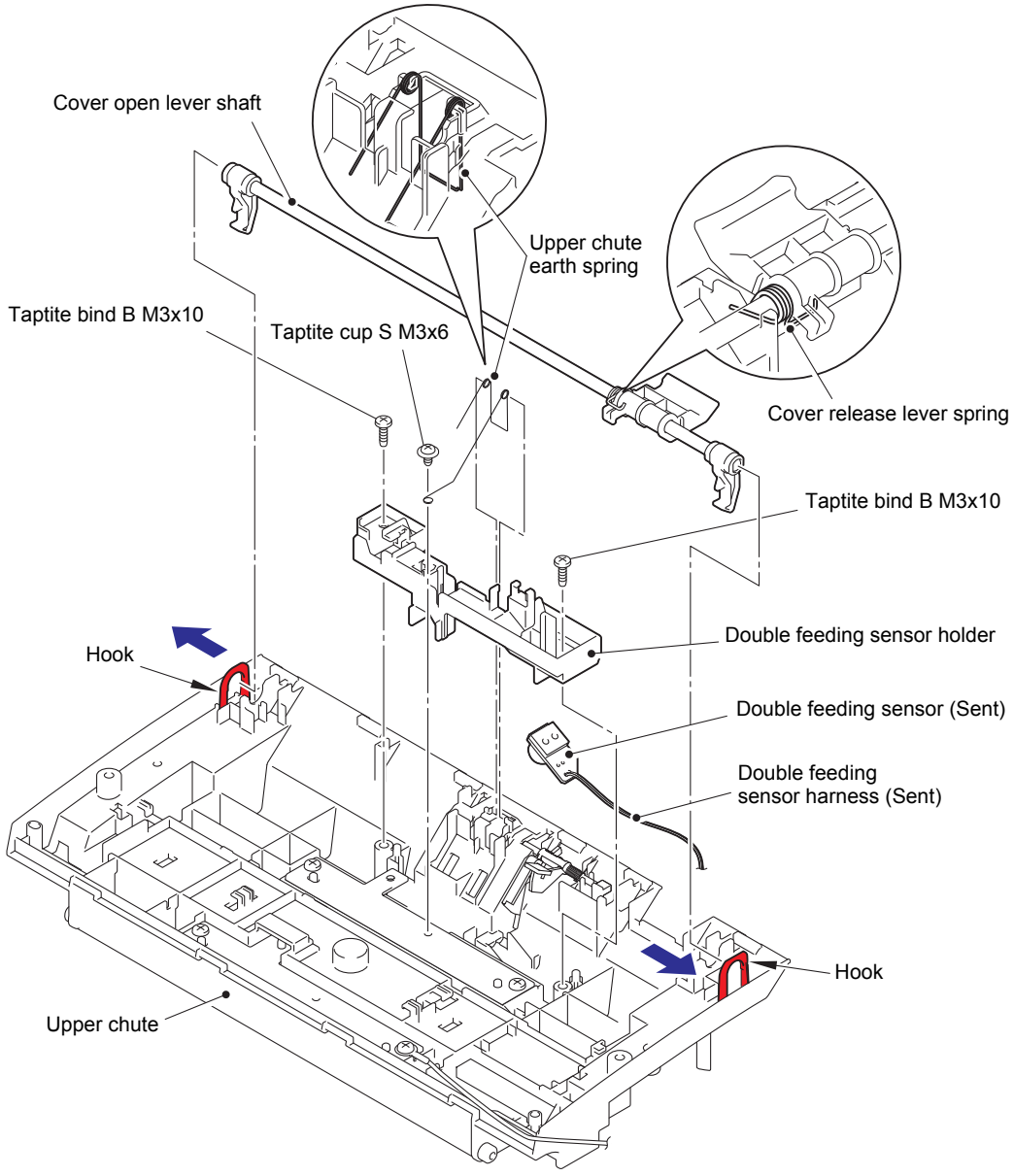


Fig. 3-22

HARNESS ROUTING: Refer to “2. Panel PCB ASSY”.

Assembling Note:

- Attach the upper chute earth spring and the cover release lever spring on the position described in the illustration above.
- Attach the upper chute earth spring under the cover open lever shaft.

(11) Push the two hooks on the separation pad cover inward to open the separation pad cover.

(12) Engage the separation pad cover with the groove on the upper chute, and slide it in the direction of arrow 12b while pulling its shaft in the direction of arrow 12a using spring peg or other tools. Remove the cutout surface on the separation pad cover shaft from the rib on the upper chute. Then remove the shaft on the left side of the separation pad cover to remove it from the upper chute in the direction of arrow 12c.

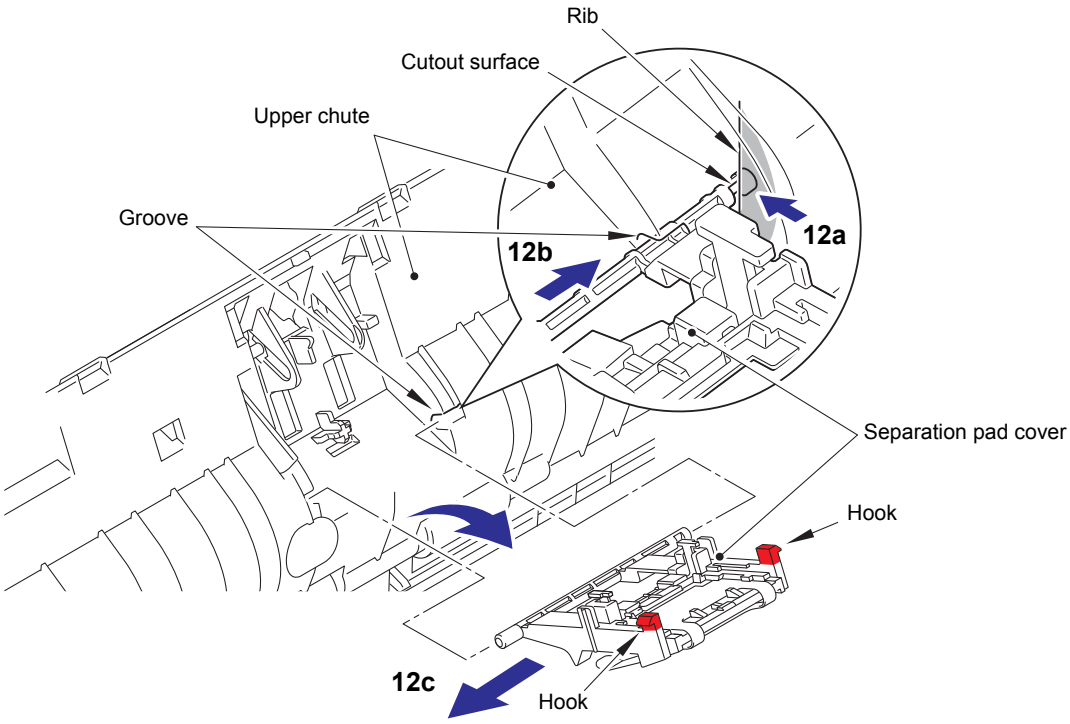


Fig. 3-23

(13) Push both of the two hooks on the separation pad ASSY inward, and remove the separation pad ASSY from the separation pad cover.

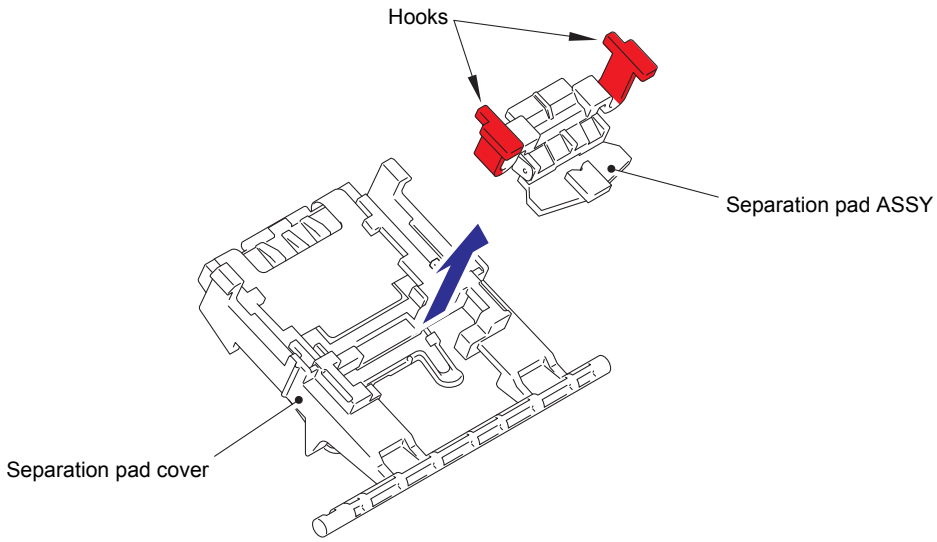


Fig. 3-24

(14) Release the hook, then remove the document detection actuator and the document detection actuator spring from the upper chute.

(15) Remove the document detection actuator spring from the document detection actuator.

(16) Remove the two taptite bind B M3x10 screws. Then remove the earth harness (GN) and the pinch roller support plate from the upper chute to release the earth harness (GN) from the securing fixtures.

(17) Remove the document scanning position actuator and the document scanning position actuator spring from the upper chute.

(18) Remove the document scanning position actuator spring from the document scanning position actuator.

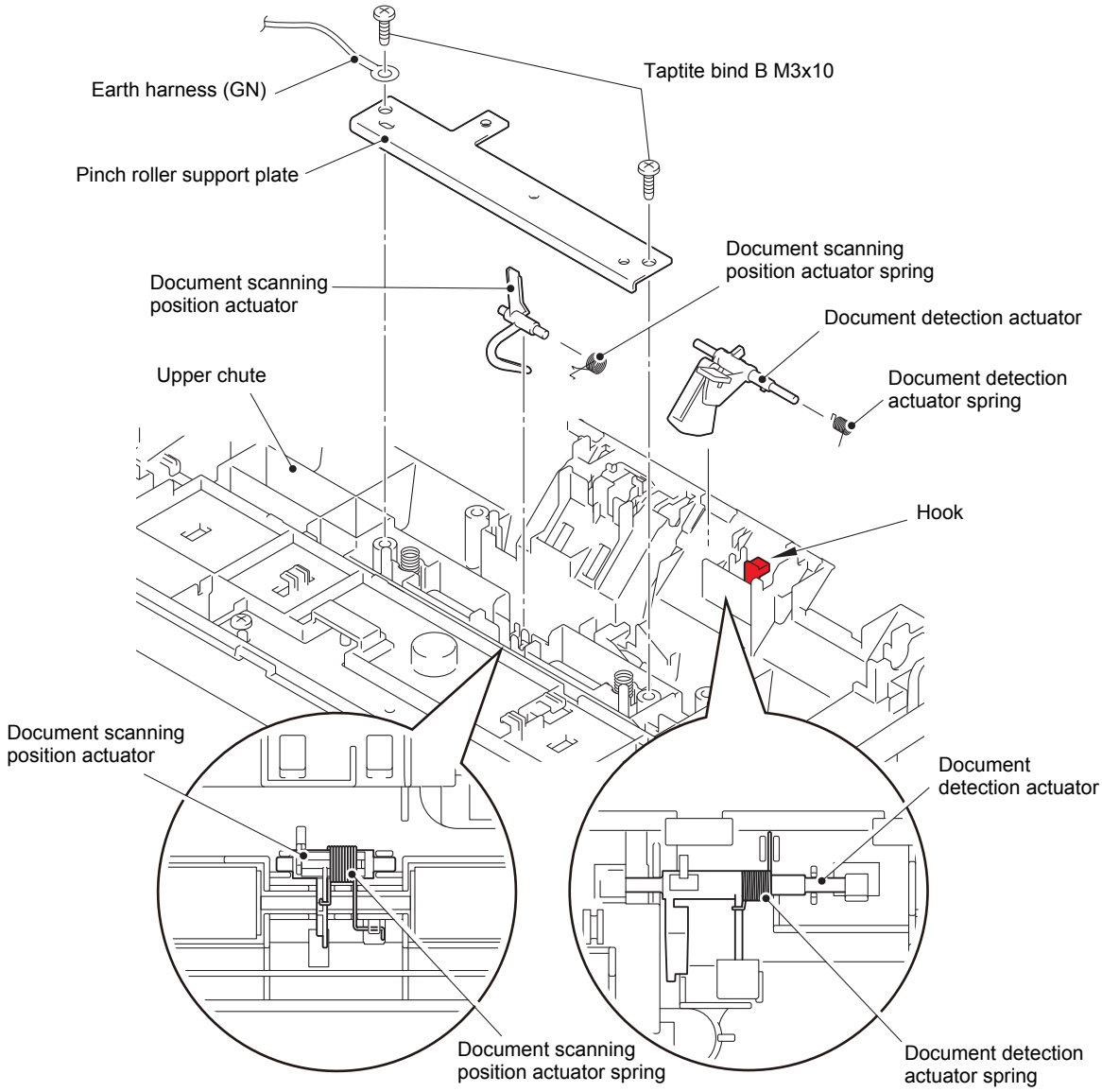


Fig. 3-25

HARNESS ROUTING: Refer to "2. Panel PCB ASSY".

Assembling Note:

- Attach the document detection actuator spring on the position described in the illustration above.
- Attach the document scanning position actuator spring on the position described in the illustration above.

(19) Remove the double feeding sensor earth spring from the upper chute.

(20) Remove the two pinch roller springs to remove the pinch roller shaft from the upper chute.

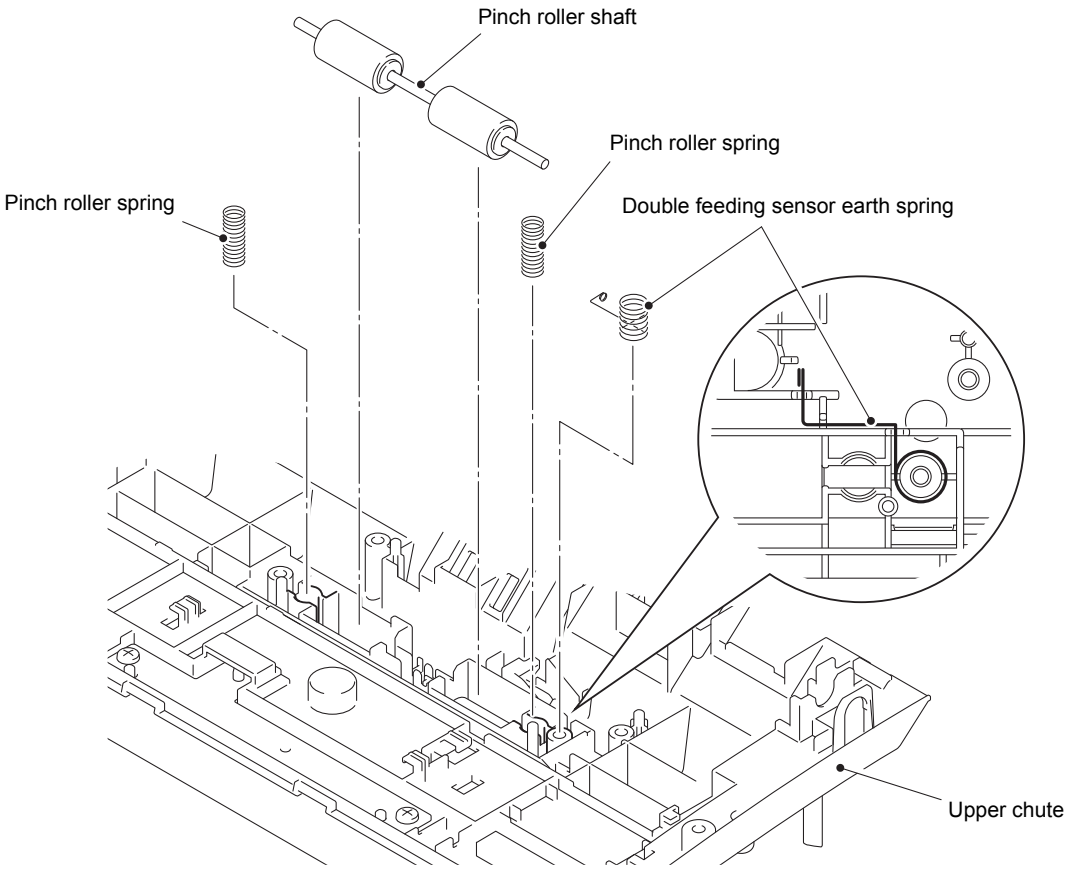


Fig. 3-26

Assembling Note:

- Attach the double feeding sensor earth spring on the position described in the illustration above.

9.13 Second side CIS unit

(1) Turn over the upper chute.

(2) Release the two hooks, lift the second side CIS unit, and disconnect the second side CIS flat cable from it.

(3) Pull out the second side CIS flat cable from the hole on the upper chute.

(4) Remove the CIS spring from the upper chute.

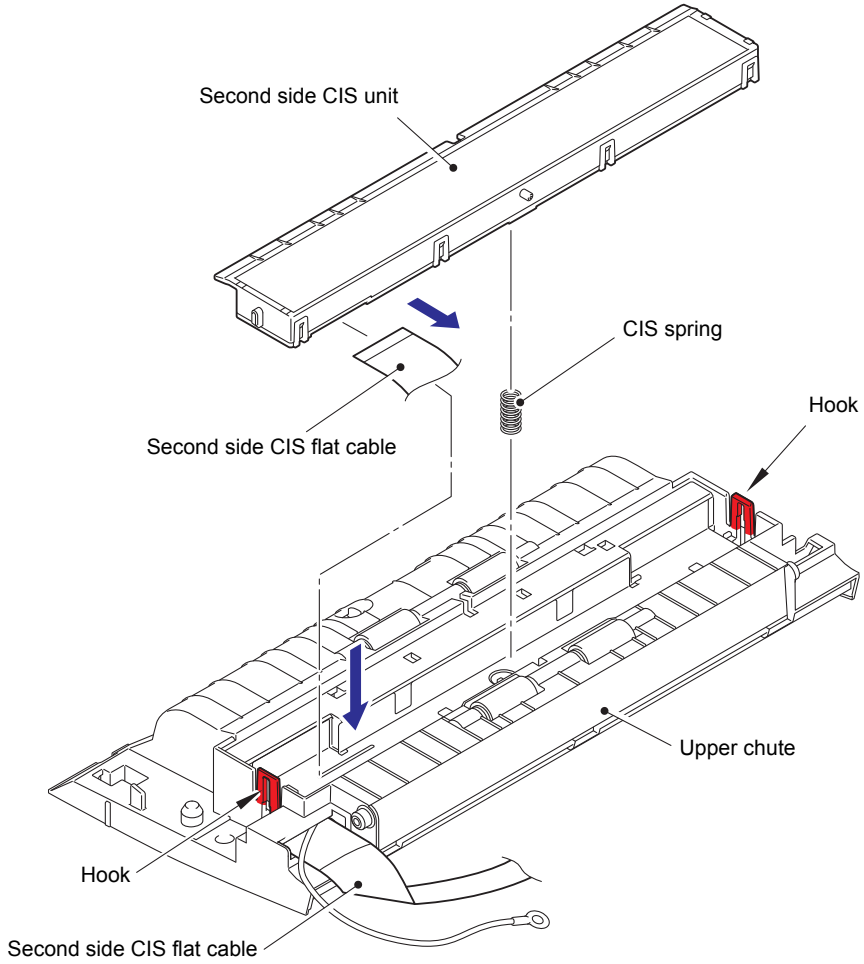


Fig. 3-27

9.14 Top cover / Document guide LS / Document guide RS

(1) Slide the document guide L and R inward.

(2) Remove the boss on the left side of the top cover, the hook on the document guide L, the hook on the document guide R, and the boss on the right side of the top cover in this order, then remove the top cover from the machine.

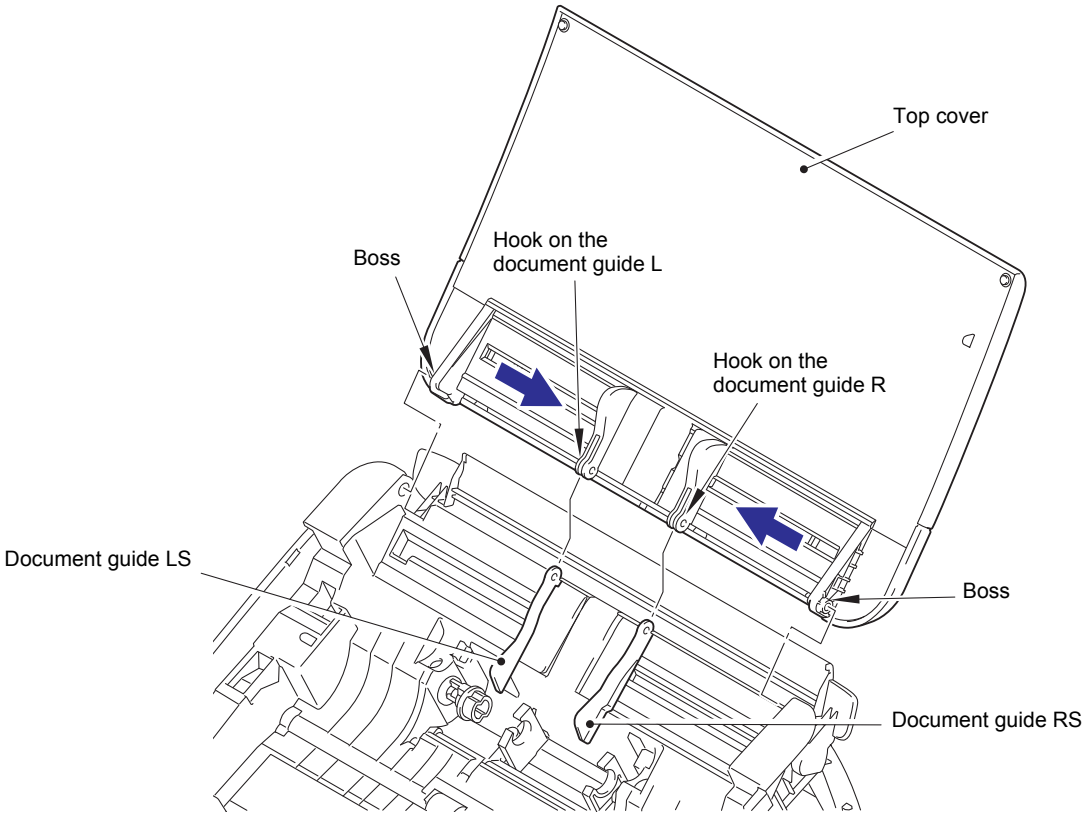


Fig. 3-28

(3) Slide the document guide LS to the left edge and RS to the right edge to remove them from the machine.

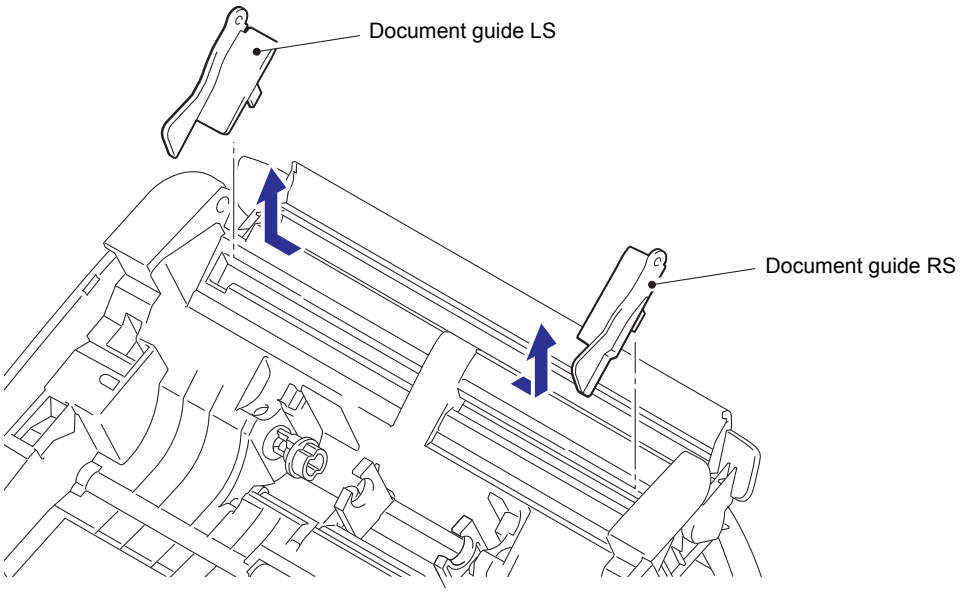


Fig. 3-29

9.15 Back cover S

(1) Push both arms of the back cover S outward to remove them from the both bosses, and remove the back cover S from the machine.

(2) Remove the back cover S spring from the back cover S.

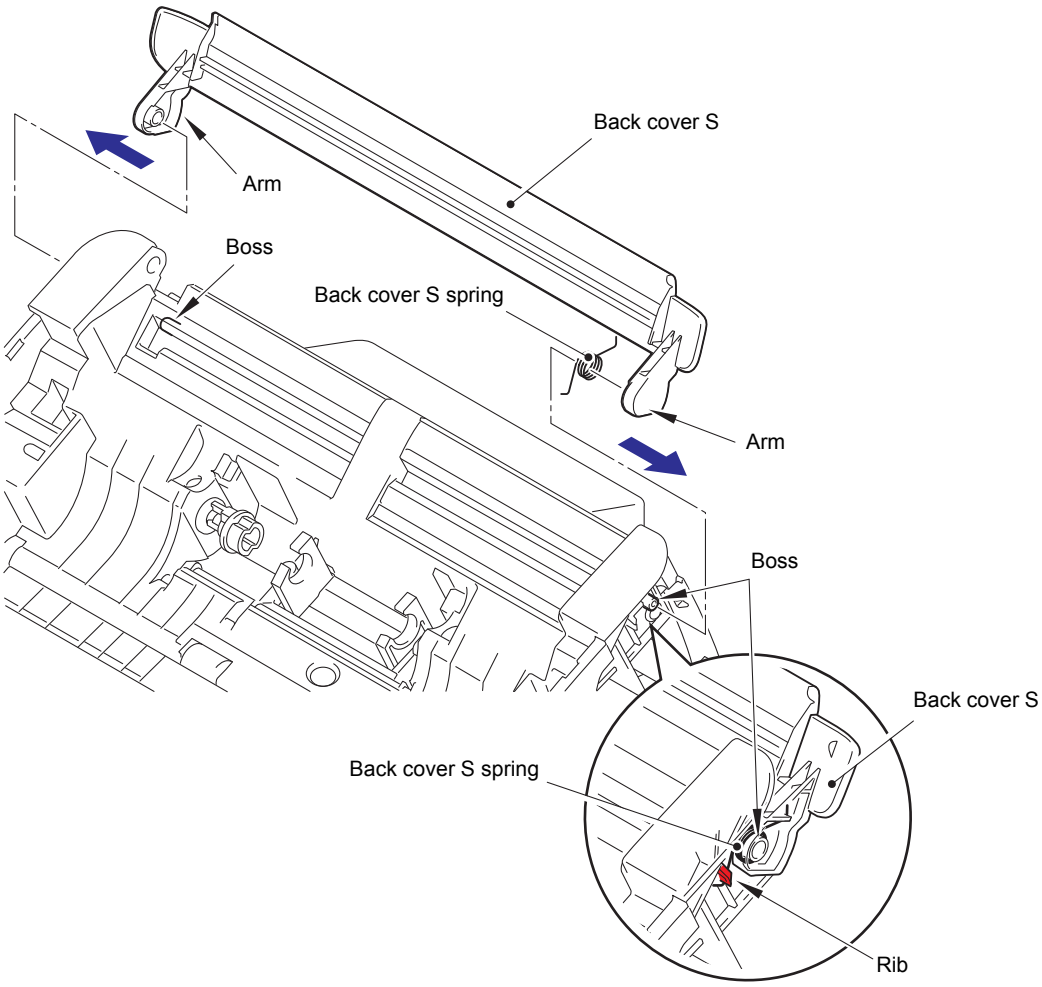


Fig. 3-30

Assembling Note:

- Attach the back cover S spring on the position described in the illustration above.

9.16 Back cover

(1) Remove the four taptite cup B M3x10 screws, and release the two hooks A to open the bottom. Then release the upper three hooks from the three ribs to remove the back cover from the machine.

(2) Remove the taptite cup B M3x10 screw, and remove the security slot earth plate from the back cover.

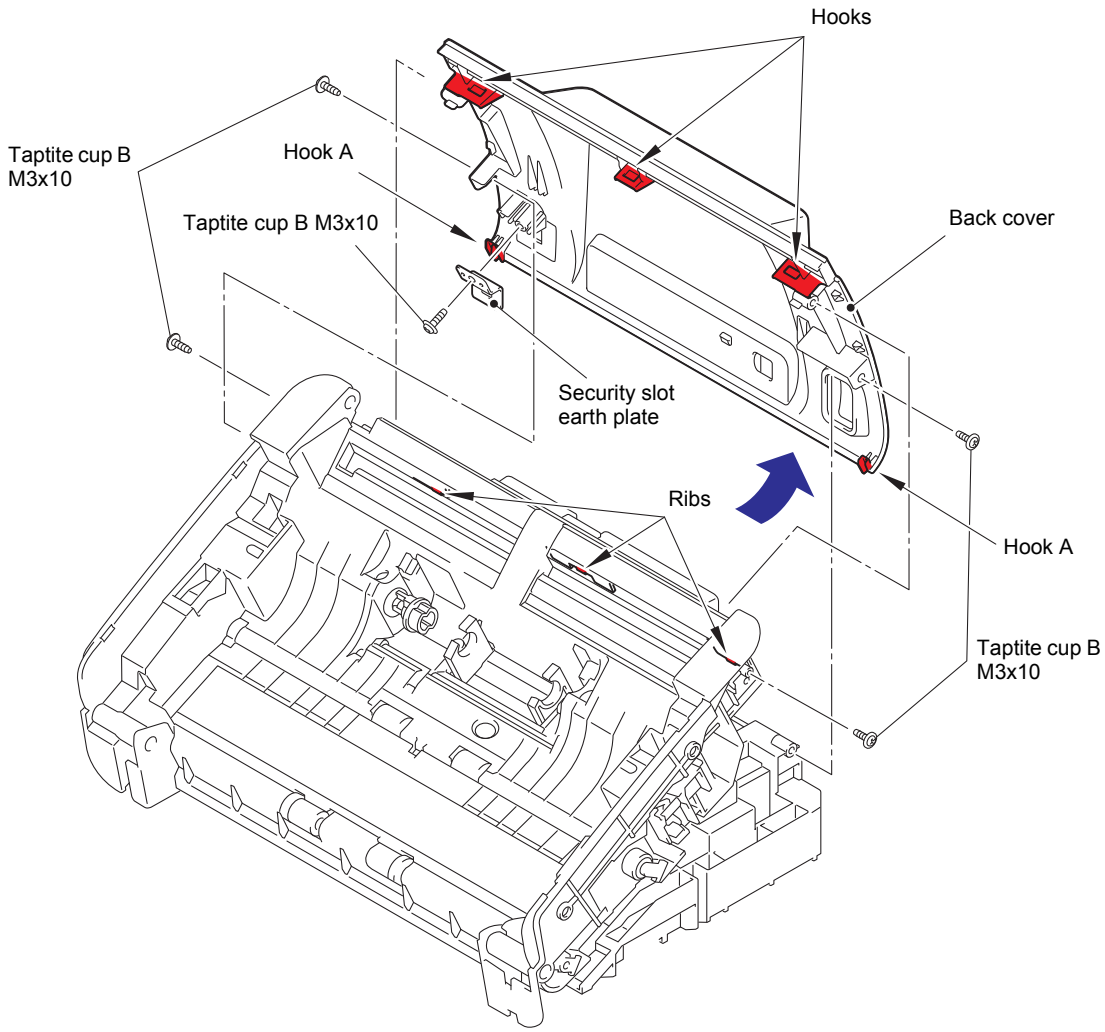


Fig. 3-31

9.17 Power supply PCB ASSY

(1) Turn over the machine to remove the main PCB shield frame and the USB earth plate from it.

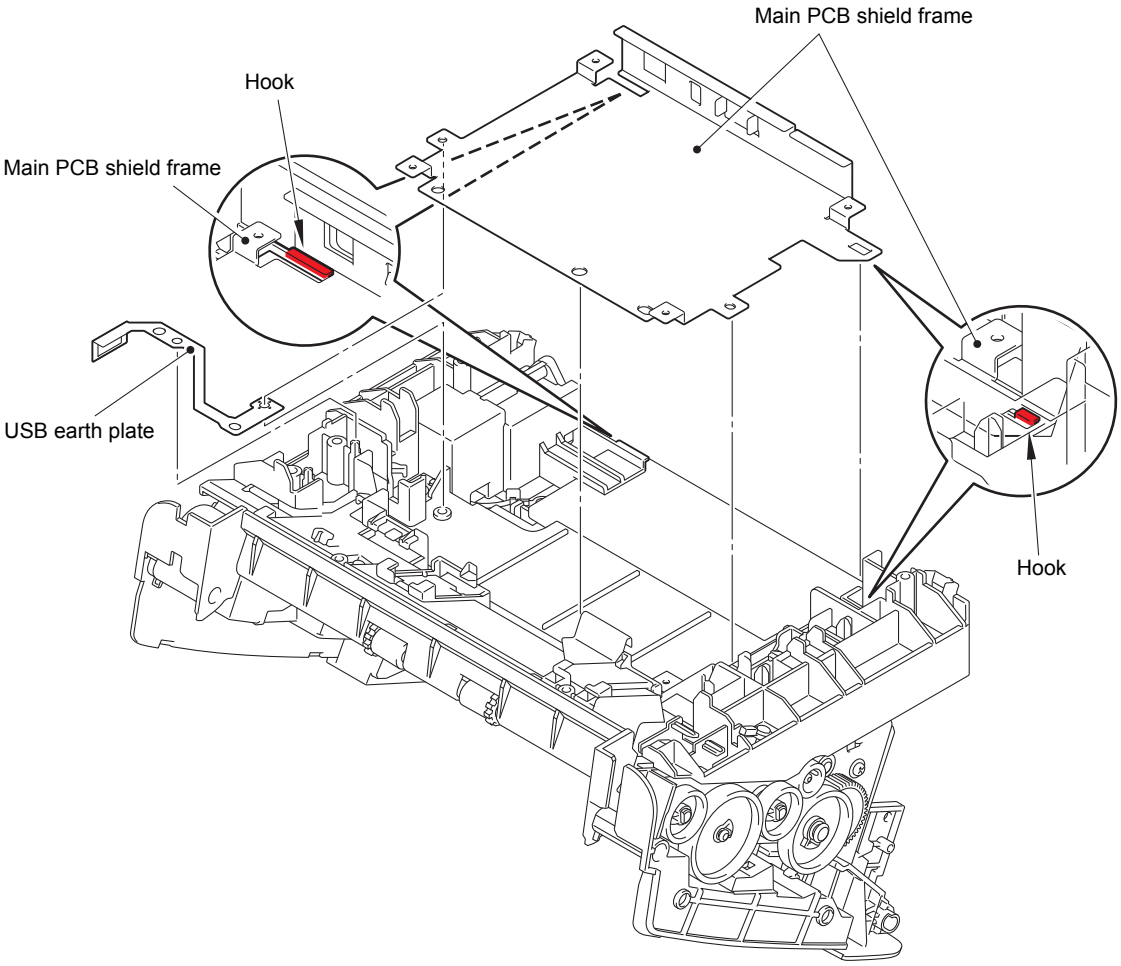


Fig. 3-32

Assembling Note:

- Engage the two hooks on the machine with the main PCB shield frame when attaching.

(2) Disconnect the power supply PCB harness from the guide behind the machine, and pull it out from the hole on the machine.

(3) Remove the screw pan (S/P washer) M3.5x6 screw and the four taptite bind B M3x10 screws to remove the power supply earth harness, the main PCB earth plate, and the power supply unit from the machine.

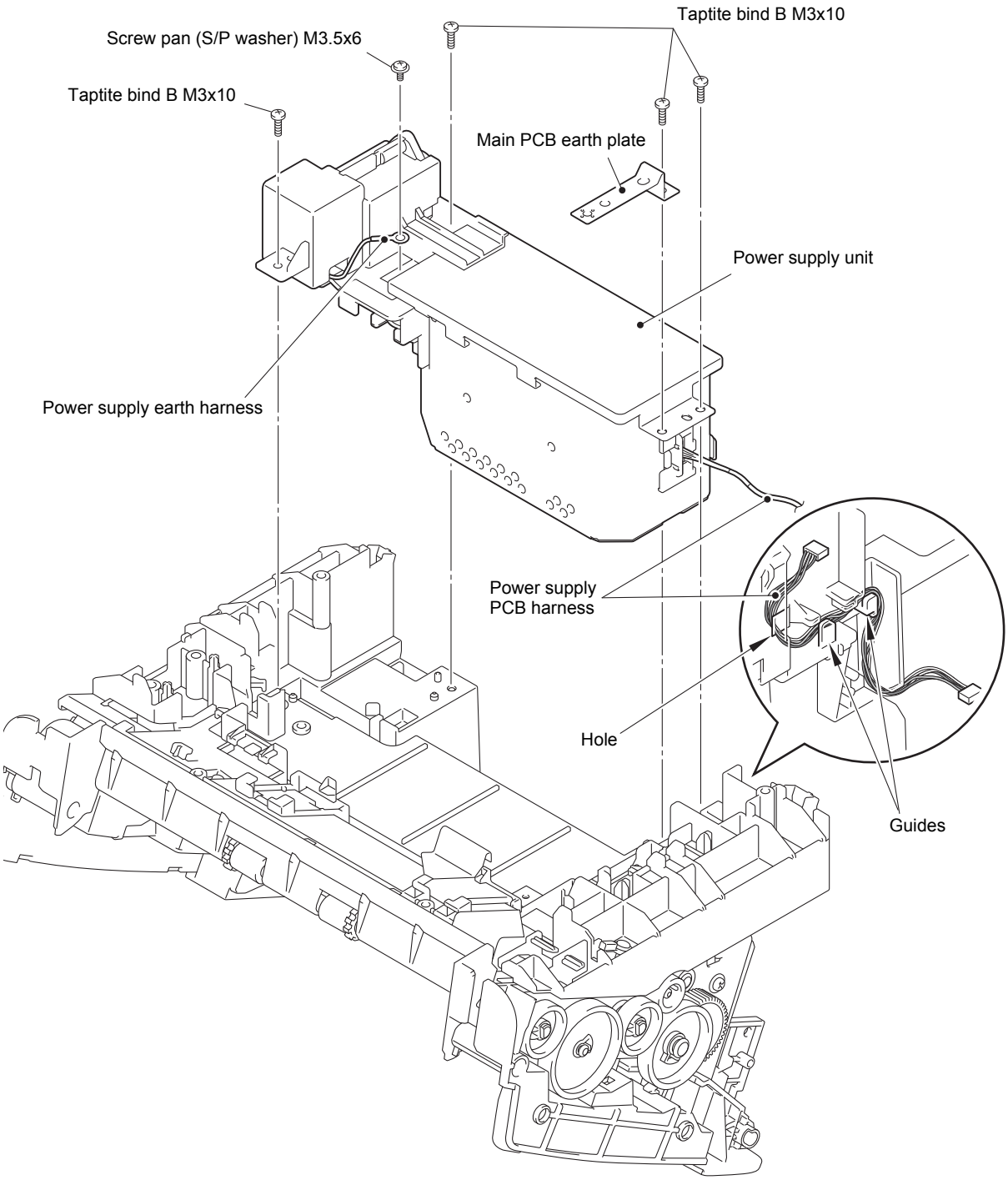


Fig. 3-33

(4) Remove the power supply harness guide while pushing the hook. Disconnect the power supply PCB harness from the power supply PCB ASSY, and remove the power supply upper frame from the power supply lower frame.

(5) Release the power harness from the securing fixture, and remove the power supply harness holder.

(6) Remove the three taptite cup S M3x6 screws to remove the power supply PCB ASSY from the power supply lower frame.

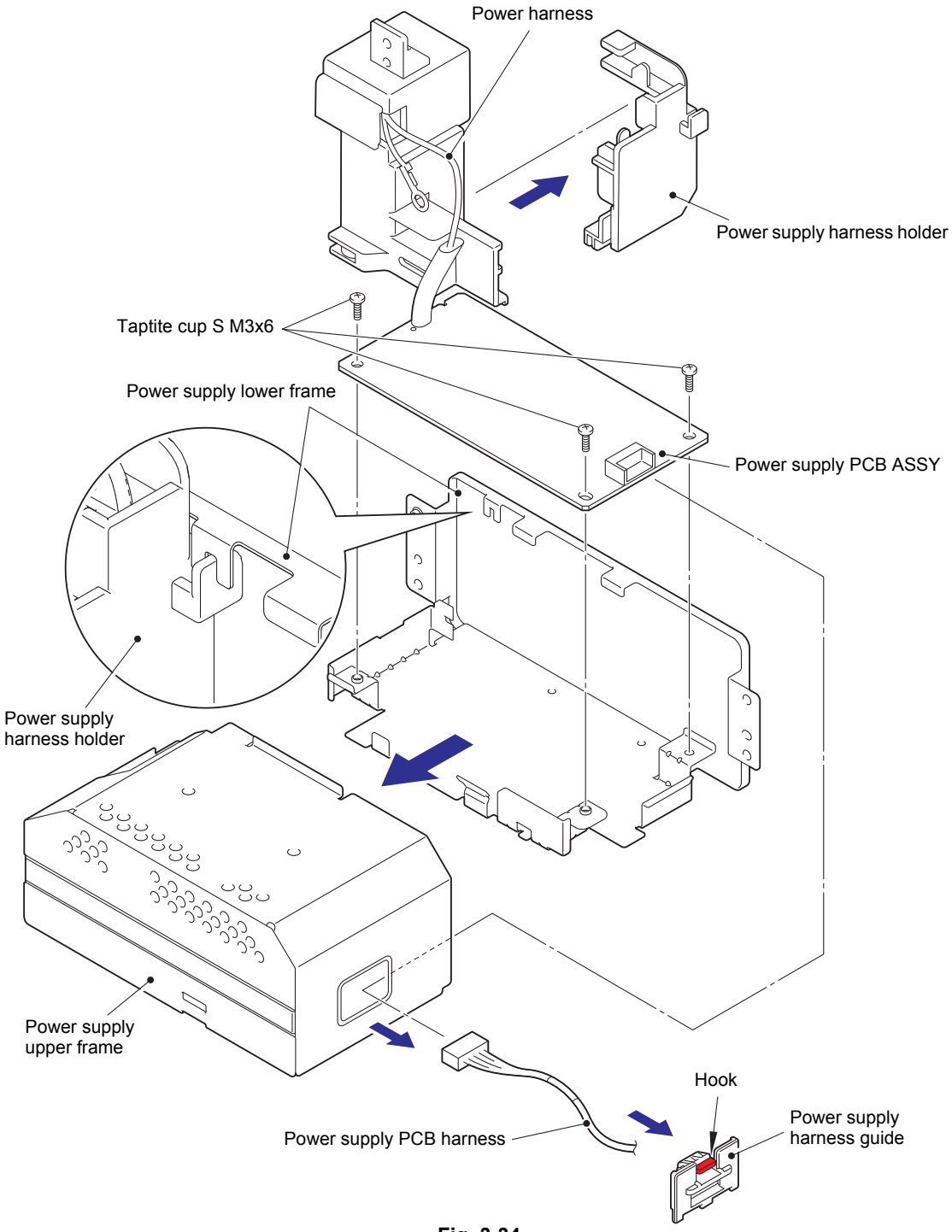


Fig. 3-34

HARNESS ROUTING: Refer to “4. Power supply unit”.

Assembling Note:

- Check that the harness was not flawed when the inlet holder edge was attached to the ferrite core.

9.18 Main motor

(1) Remove the taptite cup S M3x6 screw to remove the earth harness (YW).

(2) Release the main motor harness from the securing fixtures, and pull it out from the main motor.

(3) Release the hook to remove the core of the first side CIS flat cable from the lower frame.

(4) Remove the four taptite cup B M3x10 screws to remove the lower frame from the lower chute ASSY.

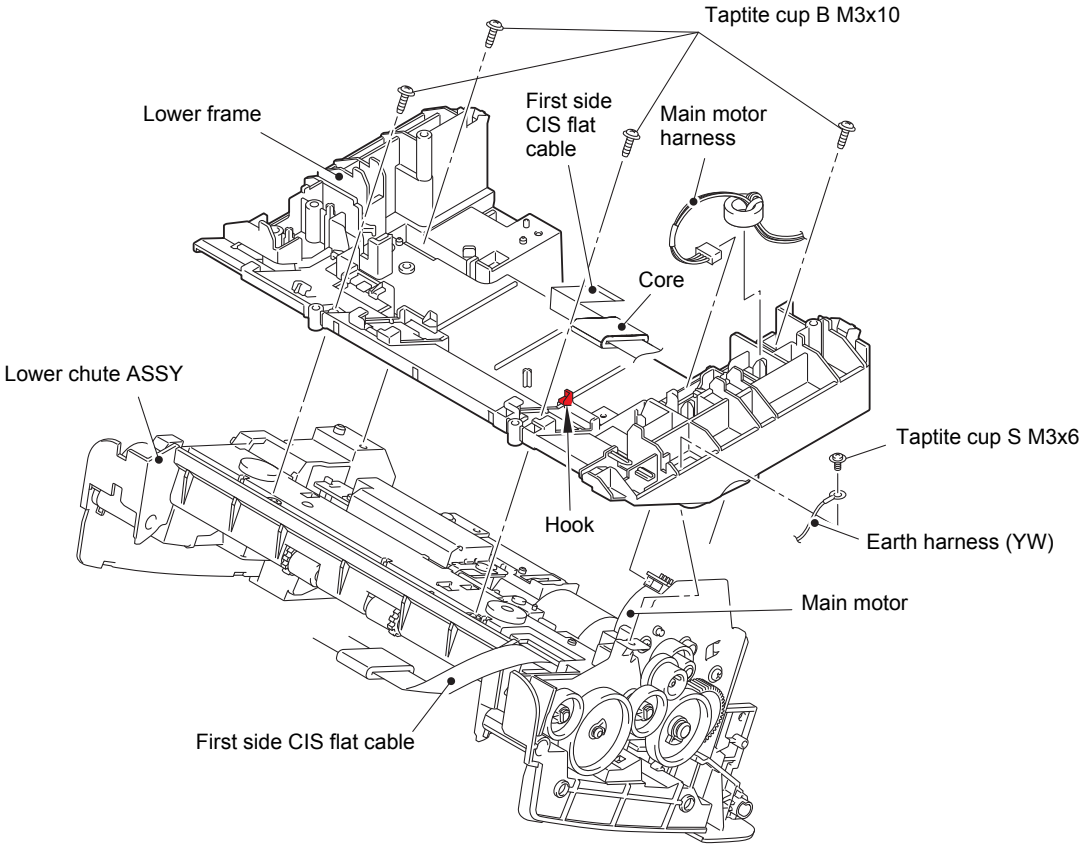


Fig. 3-35

HARNESS ROUTING: Refer to “1. Main PCB ASSY”.

(5) Remove the screw pan (S/P washer) M3x6 DA screw. Turn the main motor in the direction of the arrow to release it from the hook, and remove it from the lower chute ASSY.

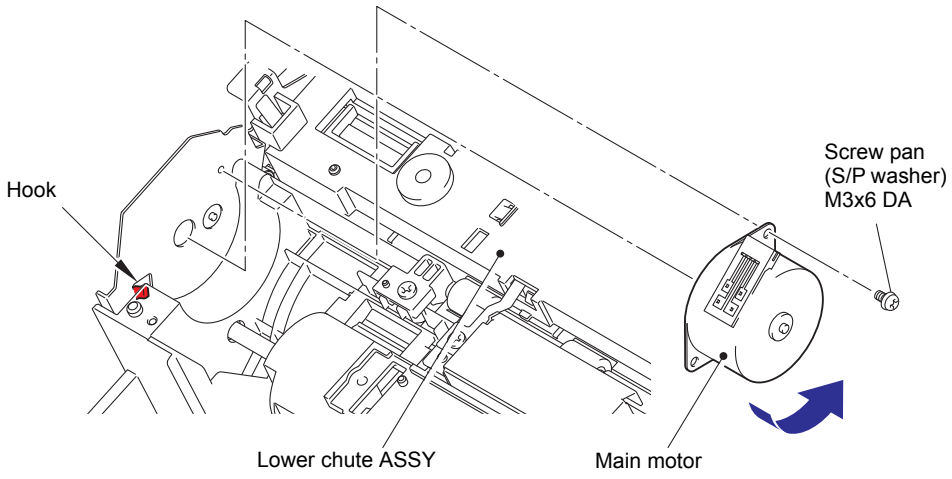


Fig. 3-36

9.19 Front cover sensor

(1) Remove the taptite cup B M3x10 screw to remove the front cover sensor holder from the lower chute ASSY.

(2) Release the two hooks to remove the front cover sensor from the front cover sensor holder.

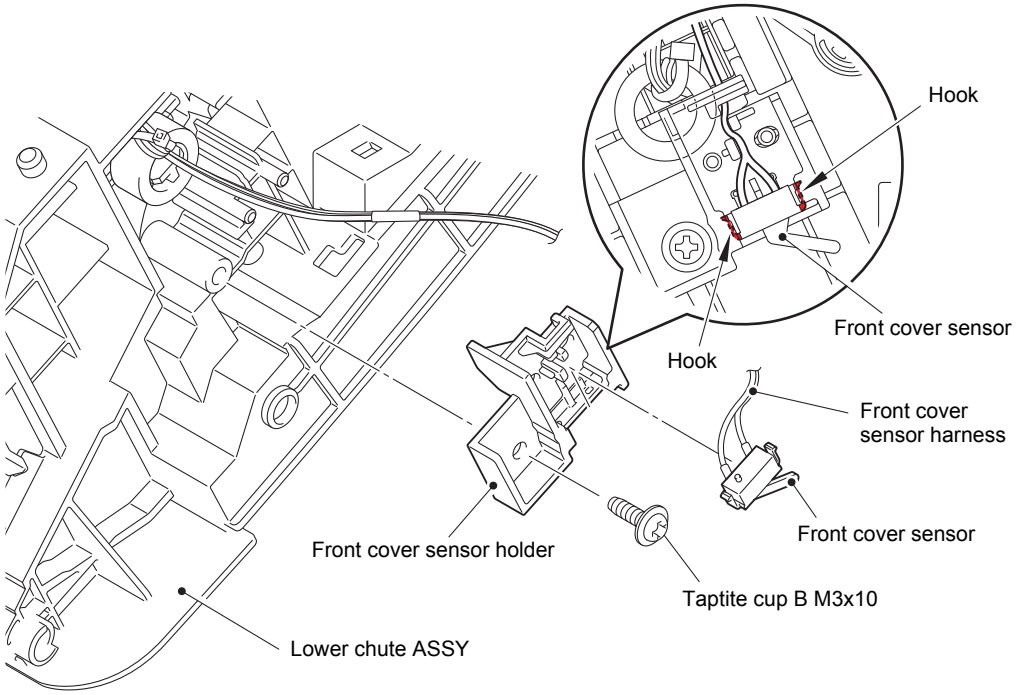


Fig. 3-37

9.20 Double feeding sensor PCB ASSY (Receive)

(1) Remove the two taptite bind B M3x10 screws to remove the CIS earth plate and the double feeding sensor upper shield from the lower chute ASSY.

(2) Remove the double feeding sensor PCB ASSY (Receive), and pull out the double feeding sensor harness (Receive) from the hole on the lower chute ASSY.

(3) Remove the double feeding sensor lower shield from the lower chute ASSY.

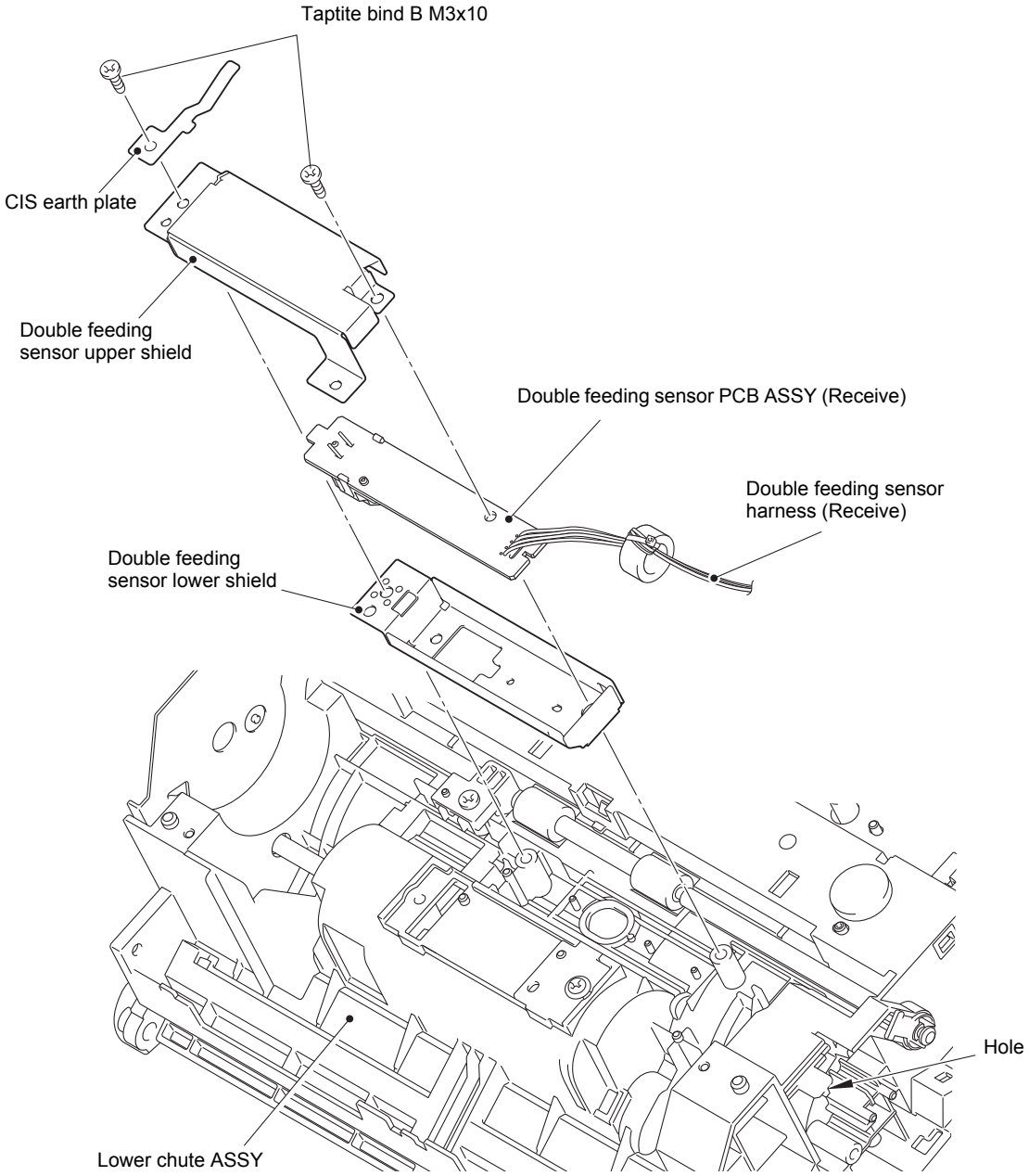


Fig. 3-38

9.21 First side CIS unit

(1) Turn over the lower chute ASSY. Release the hook from the hole on the lower chute ASSY, and remove the first side CIS unit from the lower chute ASSY while lifting and pulling it in the direction of the arrow. Then, pull out the first side CIS flat cable from the hole on the lower chute ASSY.

(2) Disconnect the first side CIS flat cable from the first side CIS unit.

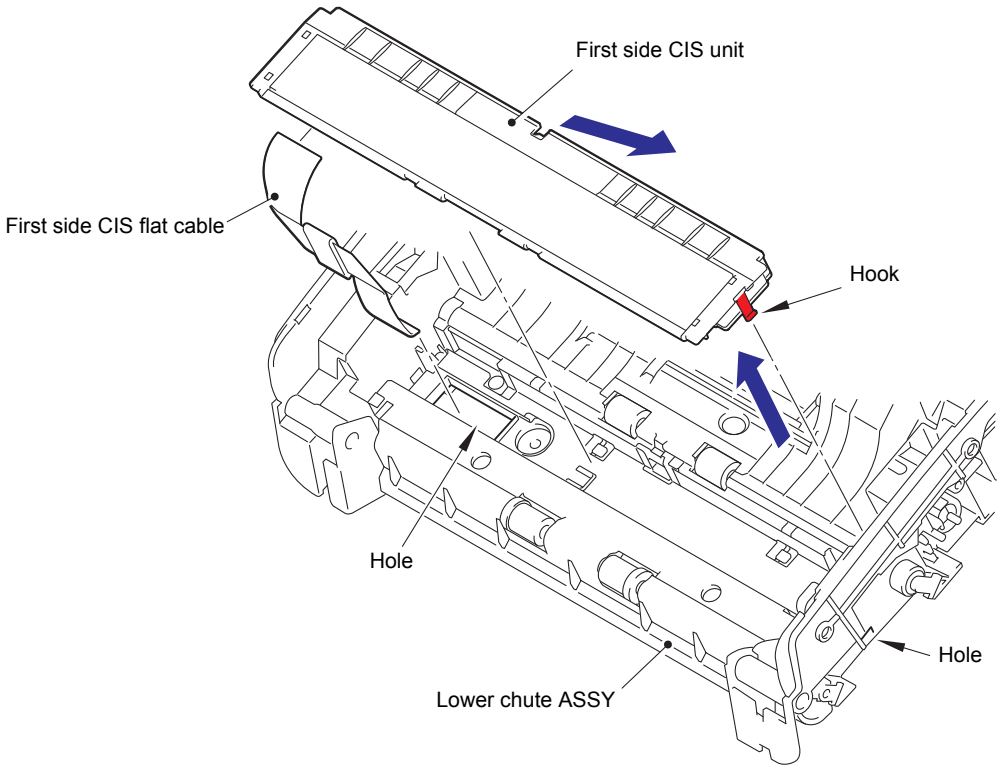


Fig. 3-39

9.22 One way clutch

(1) Release the hook to remove the gear 60/20 from the lower chute ASSY.

(2) Release the hook to remove the one way clutch from the lower chute ASSY.

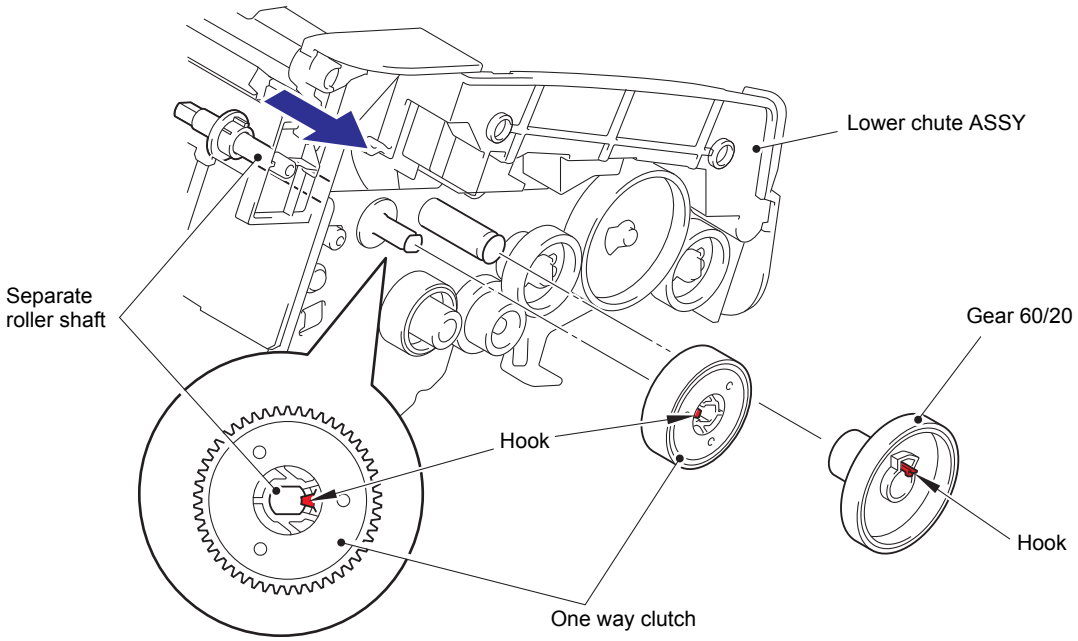


Fig. 3-40

Assembling Note:

- When attaching the one way clutch, engage the separate roller shaft with the hole on the gear, and push the shaft in the direction of the arrow.

CHAPTER 4

ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

This chapter describes adjustments and updating of settings, which are required if the main PCB ASSY and some other parts have been replaced.

CONTENTS

1. IF YOU REPLACE THE MAIN PCB ASSY

<What to do after replacement>

- Installing firmware
- Setting by country
- Initializing the EEPROM of the main PCB ASSY
- Setting serial number
- Acquiring white level data
- Setting double feeding sensor threshold
- 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 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 MAINTENANCE DRIVER" for the installation procedure.

(6) Firmware

Main firmware: (E.g.) LZXXXX_$.upd	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) Sheet for double feeding sensor threshold setting (LD6340001)

(10) Double feeding sensor threshold setting tool (BrADSmt1.exe)
Copy this file into the temporary folder created on the C drive.

(11) USB flash memory

(12) Test chart (Test chart TC-027, Color test chart CTC-001, Contrast chart TC-023)

1.1 Installing Firmware

1.1.1 Checking firmware version

Check whether the firmware installed on the main PCB is the latest version. If it is the latest version, 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 "1.1.2 Installing firmware" in this chapter.

<How to check firmware version>

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet.
Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to USB LED and the Scan to PC LED light.

(3) Press the [Scan to PC] button. The Scan to USB LED and the Scan to PC LED go out.

(4) Turn ON the power switch of the computer.

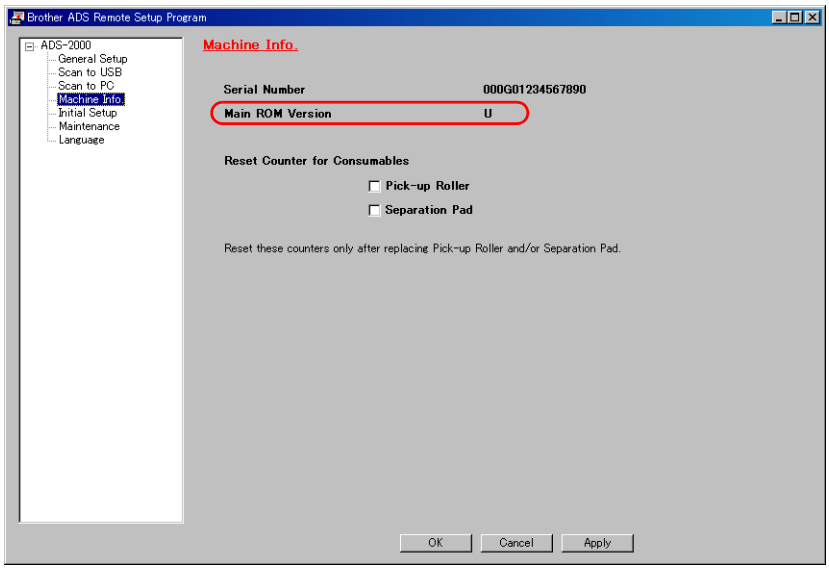
(5) Connect the computer to the machine with the USB cable.

Note:
- To use remote check mode, the computer needs to be connected to the machine with the USB cable and the power switch of the computer must be turned ON before proceeding to step 6.

(6) Press and hold the [Stop] button until the Power LED lights.

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

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



1.1.2 Installing firmware

(1) Press and hold the [Stop] and [Scan to PC] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Scan to PC] button, and then the [Stop] button. The Scan to PC LED light, and the machine enters firmware installing mode.

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

(4) Turn ON the power switch of 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 firmware (LZXXXX_$.upd) in the same folder onto the "Brother Maintenance USB Printer" icon. The firmware file is loaded to the machine, and installing to the flash ROM starts.

(7) The LED flashes randomly during installing. When installing is completed, the machine restarts and returns to the ready state automatically. Do not disconnect the USB cable or turn OFF the power switch of the computer until installing is completed.

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

1.2 Setting by Country

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order. The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out.

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

(5) Turn ON the power switch of the computer.

(6) Press and hold the [Stop] button until the Power LED lights.

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

(8) 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.

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

(10) Unplug the AC power cord of the machine, and disconnect the USB cable.

1.3 Initializing the EEPROM of the Main PCB ASSY

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order. The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out, and the machine enters maintenance mode for service personnel.

(4) Press the [Scan to USB] button three times. The Scan to PC LED and the Scan to USB LED light.

(5) Press the [Stop] button. The EEPROM of the main PCB ASSY is initialized.

(6) Unplug the AC power cord of the machine.

1.4 Setting Serial Number

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order. The Scan to PC LED and the Scan to USB LED light.

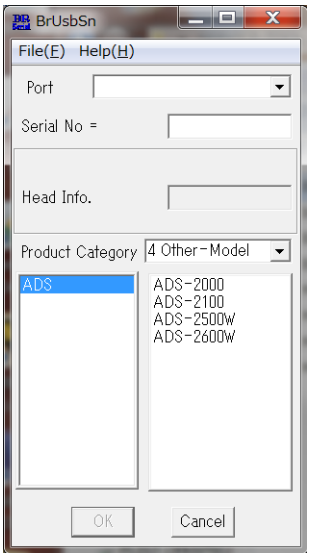
(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out, and the machine enters maintenance mode for service personnel.

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

(5) Turn ON the power switch of the computer.

(6) Press the [Stop] button. The Power LED and the Scan to USB LED light, and the machine enters function number selection mode.

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



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

(9) 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.

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

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

1.5 Acquiring White Level Data

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out, and the machine enters maintenance mode for service personnel.

(4) Press the [Scan to USB] button six times. The Scan to PC LED and the Power LED light.

(5) Press the [Stop] button. All LEDs go out, and CIS scan area setting starts.

(6) When CIS scan area setting is completed normally, the Scan to PC LED and the Power LED light. If any error is detected during setting, the Scan to USB LED, the Power LED, and the Error LED light.

(7) When completed normally, turn OFF the power of the machine.

1.6 Setting Double Feeding Sensor Threshold

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

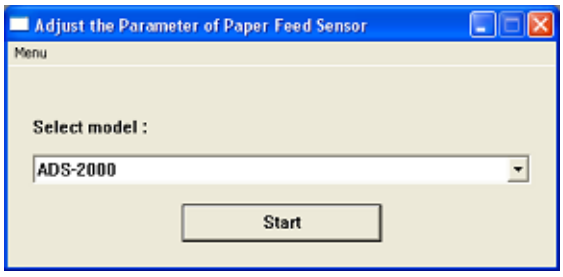
(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to USB LED and the Scan to PC LED light.

(3) Turn ON the power switch of the computer.

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

(5) Double-click "BrADSmt1.exe" that was copied into the temporary folder to start it.

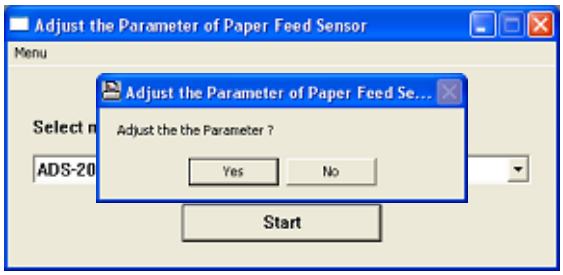
(6) Select the model name in the [Select model:] box, and click the [Start] button.
The double feeding sensor threshold is set.



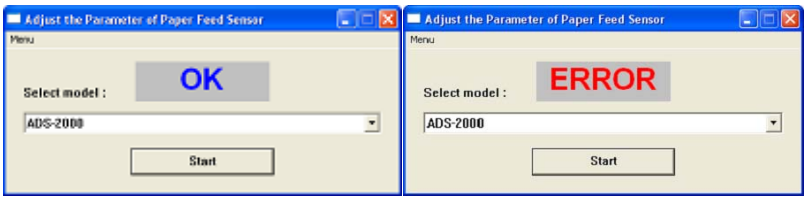
(7) Set the sheet for double feeding sensor threshold setting in the ADF, and execute the maintenance mode function "Check ADF".
Refer to "1.3.3 Check ADF" in Chapter 5.

(8) Execute the maintenance mode function "Acquire white level data and set CIS scan area".
Refer to "1.3.5 Acquire white level data and set CIS scan area" in Chapter 5.

(9) Click the [Yes] button. The double feeding sensor threshold is calculated and stored in the EEPROM of the main PCB.



When the setting is completed normally, "OK" is displayed on the screen.
If any error is detected during setting, "ERROR" is displayed on the screen.



(10) Unplug the AC power cord of the machine.

1.7 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 into the USB terminal.

(3) Press the [Scan to USB] button 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 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
- Acquiring white level data
- Checking operation after repair

2.1 Checking Firmware Version

Check whether the firmware installed on the main PCB is the F version or later. If it is the F 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 "1.1.2 Installing firmware" in this chapter.

<How to check firmware version>

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet.
Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to USB LED and the Scan to PC LED light.

(3) Press the [Scan to PC] button. The Scan to USB LED and the Scan to PC LED go out.

(4) Turn ON the power switch of the computer.

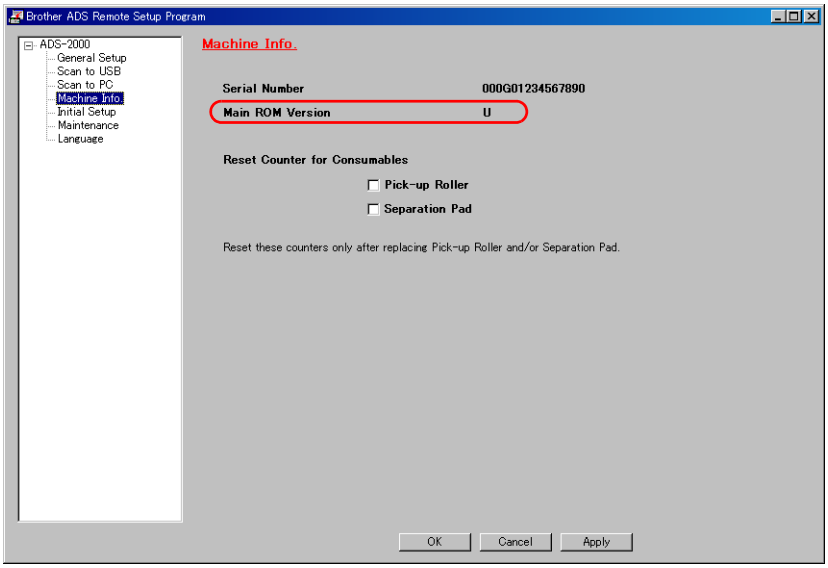
(5) Connect the computer to the machine with the USB cable.

Note:
- To use remote check mode, the computer needs to be connected to the machine with the USB cable and the power switch of the computer must be turned ON before proceeding to step 6.

(6) Press and hold the [Stop] button until the Power LED lights.

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

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



2.2 Acquiring White Level Data

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out, and the machine enters maintenance mode for service personnel.

(4) Press the [Scan to USB] button six times. The Scan to PC LED and the Power LED light.

(5) Press the [Stop] button. All LEDs go out, and CIS scan area setting starts.

(6) When CIS scan area setting is completed normally, the Scan to PC LED and the Power LED light. If any error is detected during setting, the Scan to USB LED, the Power LED, and the Error LED light.

(7) When completed normally, turn OFF the power of the machine.

2.3 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 into the USB terminal.

(3) Press the [Scan to USB] button 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 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 DOUBLE FEEDING SENSOR

<What to do after replacement>

- Setting double feeding sensor threshold
- Checking double feeding function

■ What you need to prepare

(1) Sheet for double feeding sensor threshold setting (LD6340001)

(2) Double feeding sensor threshold setting tool (BrADSmt1.exe)
Copy this file into the temporary folder created on the C drive.

3.1 Setting Double Feeding Sensor Threshold

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

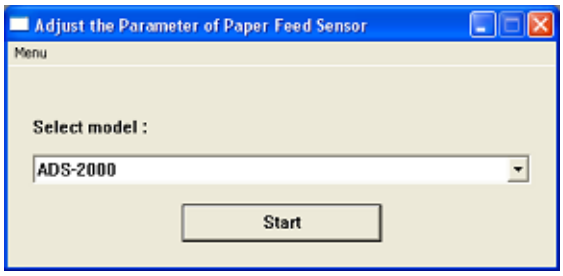
(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to USB LED and the Scan to PC LED light.

(3) Turn ON the power switch of the computer.

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

(5) Double-click "BrADSmt1.exe" that was copied into the temporary folder to start it.

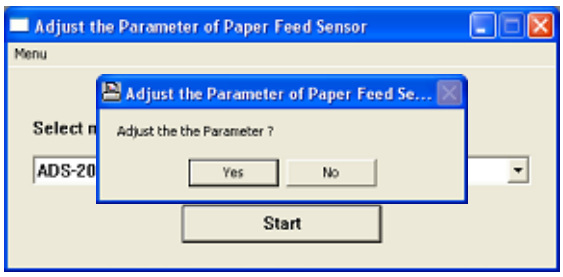
(6) Select the model name in the [Select model:] box, and click the [Start] button. The double feeding sensor threshold is set.



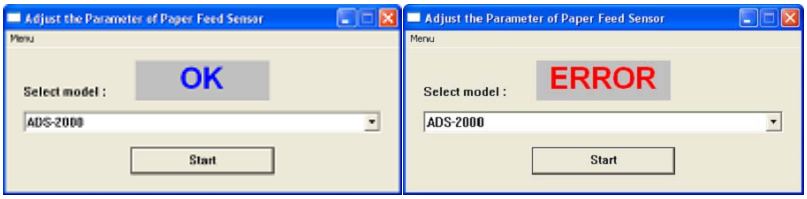
(7) Set the sheet for double feeding sensor threshold setting in the ADF, and execute the maintenance mode function "Check ADF".
Refer to "1.3.3 Check ADF" in Chapter 5.
(** of the double feeding sensor is read in "Check ADF" mode.)

(8) Execute the maintenance mode function "Acquire white level data and set CIS scan area".
Refer to "1.3.5 Acquire white level data and set CIS scan area" in Chapter 5.
(** of the double feeding sensor is read in "Acquire white level data and set CIS scan area" mode.)

(9) Click the [Yes] button. The double feeding sensor threshold is calculated and stored in the EEPROM of the main PCB.



When the setting is completed normally, "OK" is displayed on the screen.
If any error is detected during setting, "ERROR" is displayed on the screen.



(10) Unplug the AC power cord of the machine.

3.2 Checking Double Feeding Sensor Operation

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

(1) Set the sheet for double feeding sensor threshold setting in the ADF, and execute the maintenance mode function "Check ADF". (To check that a normal document is ejected correctly.)

4. IF YOU REPLACE THE PANEL ASSY

<What to do after replacement>

- Checking control panel operation

4.1 Acquiring White Level Data for Second Side CIS Unit

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order.
The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to PC LED and the Scan to USB LED go out, and the machine enters maintenance mode for service personnel.

(4) Press the [Scan to USB] button six times. The Scan to PC LED and the Power LED light.

(5) Press the [Stop] button. All LEDs go out, and CIS scan area setting starts.

(6) When CIS scan area setting is completed normally, the Scan to PC LED and the Power LED light. If any error is detected during setting, the Scan to USB LED, the Power LED, and the Error LED light.

(7) When completed normally, turn OFF the power of the machine.

4.2 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 into the USB terminal.

(3) Press the [Scan to USB] button 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 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.

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

<What to do after replacement>

- Resetting pick-up roller / separation pad counters

5.1 Resetting Pick-up Roller / Separation Pad Counters

Refer to the User's Guide to reset the pick-up roller and separation pad counters.

CHAPTER 5
SERVICE FUNCTIONS

CHAPTER 5 SERVICE FUNCTIONS

This chapter describes the maintenance mode which is exclusively designed for the purpose of checking the settings and adjustments using the buttons on the control panel. This chapter also covers not-disclosed-to-users function menus, which activate settings and functions or reset the parts life.

CONTENTS

1. MAINTENANCE MODE

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

1.1 How to Enter Maintenance Mode

1.1.1 Method of entering end-user accessible maintenance mode

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 [Scan to PC] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that all LEDs are lit, and release these two buttons.

(2) Press the [Scan to PC] button. All LEDs go out and the machine enters function number selection mode of the end-user accessible maintenance mode.

1.1.2 Method of entering maintenance mode for service personnel

<Operating Procedure>

(1) Press and hold the [Stop] and [Scan to USB] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(2) Press the [Stop], [Scan to USB], [Scan to PC], and [Stop] buttons in this order. The Scan to PC LED and the Scan to USB LED light.

(3) Press the [Scan to PC] button. The Scan to LED and the Scan to USB LED go out and the machine enters function number selection mode of the maintenance mode for service personnel.

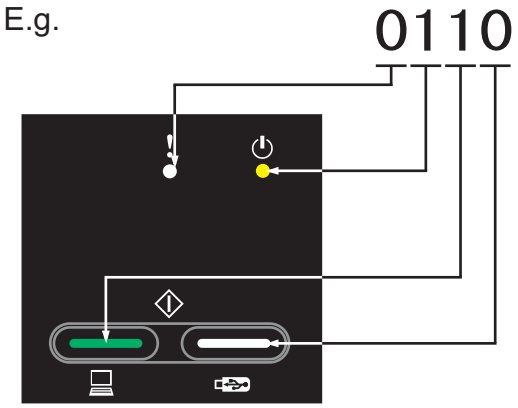
1.2 List of Maintenance Mode Functions

Function number (binary number)	Function	Refer to:
0001	Change USB No. return value	5-3
0010	Factory use (disabled)	—
0011	Initialize user setting	5-3
0100	Check ADF	5-4
0101	Check sensor operation	5-4
0110	Acquire white level data and set CIS scan area	5-4

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

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

E.g.



0=OFF
1=ON

1.3 Details of Maintenance Mode Functions

1.3.1 Change USB No. return value (End-user accessible maintenance mode only)

<Function>

When the operating system (OS) installed on the computer is Windows Vista®, and the machine is connected to this computer using USB2.0FULL, the OS may not be able to obtain the USB device serial number depending on the computer and the USB device. If the serial number cannot be obtained, the number of devices increases each time the device is connected to the computer. To avoid this problem, set this function to "USBNo.=ON" and fix the USB No. return value to "0".

<Operation Procedure>

(1) In function number selection mode of end-user accessible maintenance mode, press the [Scan to USB] button once. The Scan to USB LED lights.

(2) Press the [Stop] button.
When the Power LED lights for one second, it means that "return serial number of machine" is set.
When the Error LED lights for one second, it means that "return 0" is set.

(3) When setting is completed, the machine returns to the ready state.

1.3.2 Initialize user setting

<Function>

This function is used to initialize the setting values for operation parameters, user switches, and others registered in the EEPROM.

<Operation Procedure>

(1) In function number selection mode of maintenance mode, press the [Scan to USB] button three times. The Scan to PC LED and the Scan to USB LED light.

(2) Press the [Stop] button. The EEPROM is initialized, and the machine returns to the ready state.

1.3.3 Check ADF

<Function>

This function is used to check whether the document set in the ADF is fed correctly while counting the number of documents.

<Operation Procedure>

(1) In function number selection mode of maintenance mode, set the document in the ADF.

(2) Press the [Scan to USB] button four times. The Power LED lights.

(3) Press the [Stop] button. The document is picked up and fed one sheet at a time, and the Scan to USB LED lights each time.
Check that the number of times the LED lights matches the number of documents set.

(4) Press the [Stop] button. The machine returns to function number selection mode.

1.3.4 Check sensor operation

<Function>

This function is used to check whether the sensors are operating normally.

<Operation Procedure>

(1) In function number selection mode of maintenance mode, press the [Scan to USB] button five times. The Power LED and the Scan to USB LED light.

(2) Press the [Stop] button.

(3) The Scan to USB LED flashes one to three times when the ON/OFF status is changed for the document detection sensor, document scanning position sensor, top cover sensor and front cover sensor. When the ON/OFF status has been changed for all of the four sensors above, the Scan to PC LED remains lit.

(4) Press the [Stop] button. The machine returns to function number selection mode.

1.3.5 Acquire white level data and set CIS scan area

<Function>

This function is used to check the CIS flat cable connection, acquire the white level for the CIS scanner, set the scan area, and store these data in the EEPROM of the main PCB.

<Operation Procedure>

(1) In function number selection mode of maintenance mode, press the [Scan to USB] button six times. The Power LED and the Scan to PC LED light.

(2) Press the [Stop] button. All LEDs go out, and the machine enters standby mode.

(3) Press the [Scan to PC] button or the [Scan to USB] button. The machine begins the following operations: check CIS flat cable connection, acquire white level for CIS scanner, and set scan area.

(4) When these operations are completed correctly, the Power LED and the Scan to PC LED light.
If any error is detected, the Scan to USB LED lights, along with the Error LED and the Power LED flash.

(5) Unplug the AC power cord from the outlet to finish operation.

CHAPTER 6
WIRING DIAGRAM

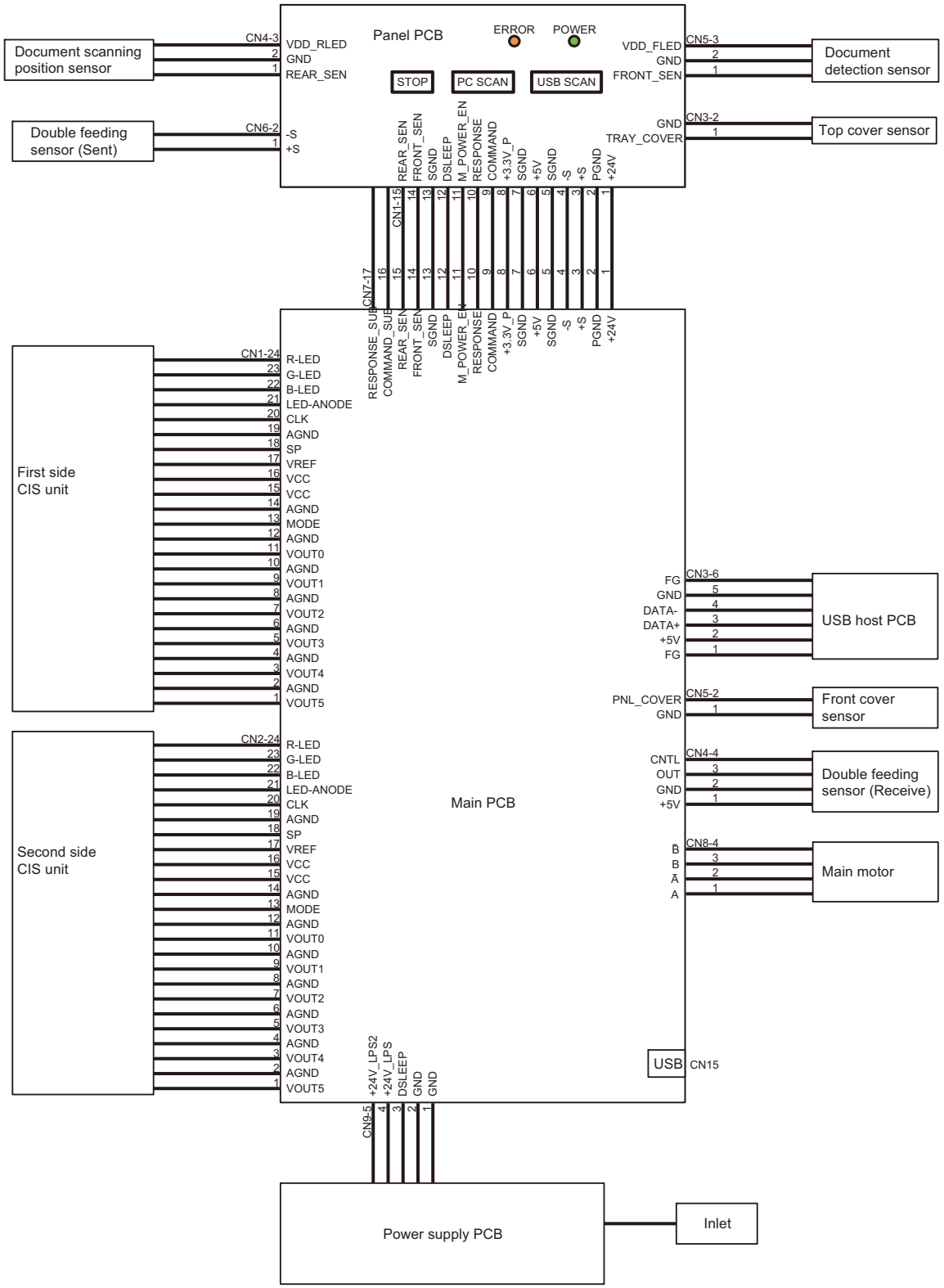
CHAPTER 6 WIRING DIAGRAM

This chapter provides the wiring diagram for the connections of the PCBs.

CONTENTS

1. WIRING DIAGRAM

■ LED Model



CHAPTER 7
PERIODICAL MAINTENANCE

CHAPTER 7 PERIODICAL MAINTENANCE

CONTENTS

1. PERIODICAL MAINTENANCE PARTS

There are no parts that must be replaced periodically.

APPENDIX 1
SERIAL NUMBERING SYSTEM

APPENDIX 1 SERIAL NUMBERING SYSTEM

■ Serial number label (1 location)

<How to Read>

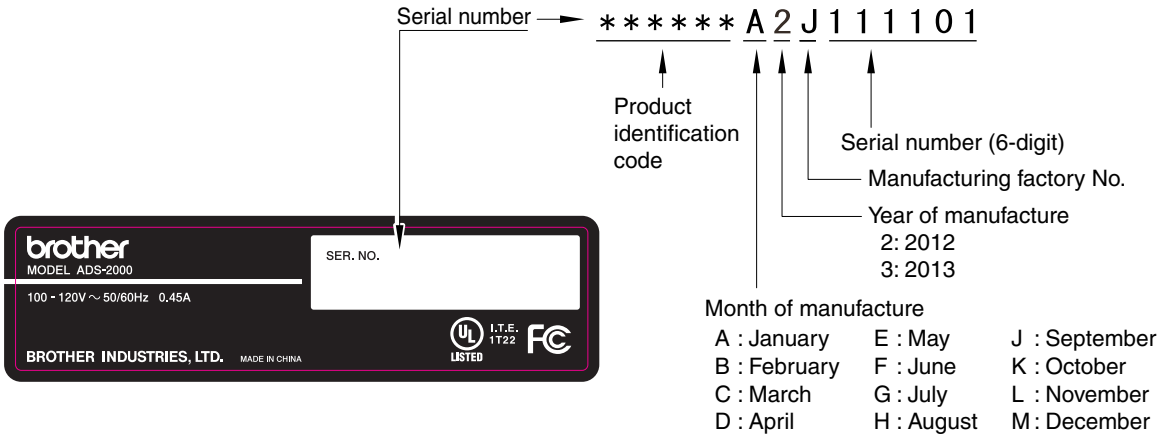


Fig. App. 1-1

<Location>

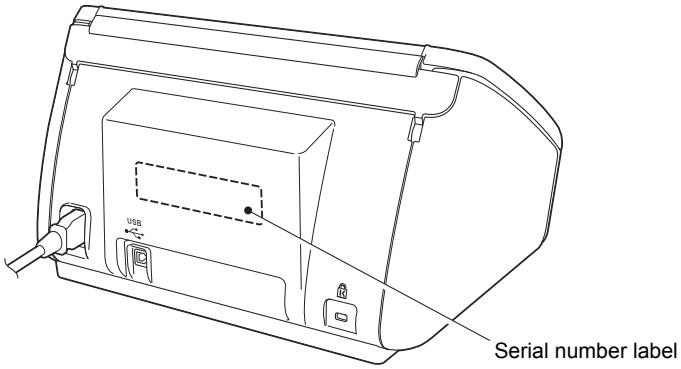


Fig. App. 1-2

APPENDIX 2
DELETING USER SETTING INFORMATION

This appendix provides instructions on how to delete user setting information recorded in the machine.

APPENDIX 2 DELETING USER SETTING INFORMATION

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

<Operation Procedure>

(1) In function number selection mode of maintenance mode, press the [Scan to USB] button three times. The Scan to PC LED and the Scan to USB LED light.

(2) Press the [Stop] button. The EEPROM is initialized, and the machine returns to the ready state.

APPENDIX 3
INSTALLING MAINTENANCE DRIVER

APPENDIX 3 INSTALLING MAINTENANCE DRIVER

To identify multiple terminals connected to the computer via USB, the computer needs to configure the corresponding number of virtual USB devices using a driver or software. If you connect multiple machines to your computer, the same number of virtual USB devices will be automatically configured on your computer. To prevent an unlimited number of virtual USB devices from being configured, use the unique driver installation procedure described below to enable your computer to identify multiple terminals via one single virtual USB device.

<Operating Procedure>

(1) Check that the AC power cord of the machine is unplugged. When the machine is connected to the computer, disconnect the USB cable.

(2) Turn ON the power switch of the computer.

(3) Press and hold the [Stop] and [Scan to PC] buttons simultaneously, and plug the AC power cord into the outlet. Check that the Power LED and the Error LED are lit, and release these two buttons.

(4) Press the [Scan to PC], [Stop] buttons in this order. The Scan to PC LED lights.

(5) Double-click "maintenance.exe" for the maintenance driver stored in the temporary folder to execute it.

(6) The Device Driver Installation Wizard startup window appears. Click [Next].

(7) The WHQL alert window appears three times. Click [Continue Anyway] on each window to continue installation.

(8) The Device Driver Installation Wizard completion window appears. Click [Finish].

(9) Connect the machine to your computer using the USB cable.

(10) The Found New Hardware Wizard startup window appears. Select "Install the software automatically" and click [Next].

(11) The WHQL alert window appears. Click [Continue Anyway].

(12) When the driver is installed successfully, the Found New Hardware Wizard completion window appears. Click [Finish].

(13) Repeat steps (10) to (12) three times to complete the unique driver installation procedure.

(14) Disconnect the USB cable, and unplug the AC power cord of the machine.