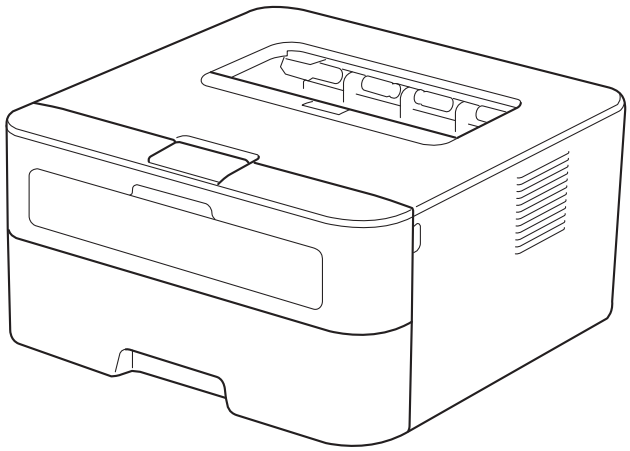
Brother Laser Printer

SERVICE MANUAL

MODEL:
HL-L2300D/L2305W/L2315DW/L2320D/ L2340DW/L2360DN/L2360DW/ L2365DW/2260/2260D/2560DN/ L2321D/L2361DN/L2366DW



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

April 2014
SM-PRN096
84UF*
(7)

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Other Information

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CHAPTER 3 DISASSEMBLY/REASSEMBLY

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

CHAPTER 5 SERVICE FUNCTIONS

SAFETY INFORMATION

■ Definitions of Warnings, Cautions, Notes and Memos

The following conventions are used in this manual:

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.

Memo Memo tells you bits of knowledge to help understand the machine.

■ To use the Machine Safely

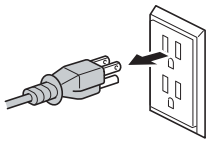
Please keep these instructions for later reference and read them before attempting any maintenance. If you do not follow these safety instructions, there is a possibility of a fire, electrical shock, burn or suffocation.

WARNING

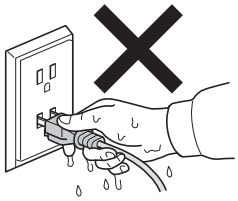
ELECTRICAL HAZARDS

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

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

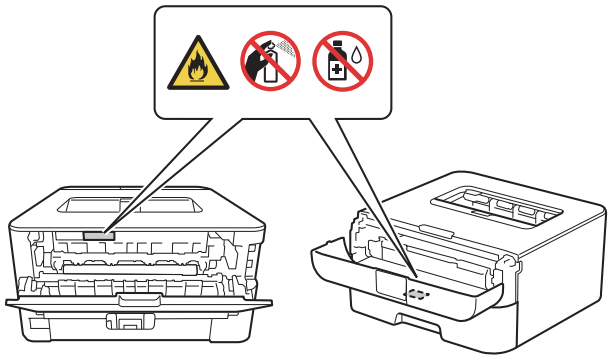
This product should be connected to an AC power source within the range indicated on the rating label. DO NOT connect it to a DC power source or inverter.

Power Cord Safety:

- This product is equipped with a 3-wire grounded plug. This plug will only fit into a grounded power outlet. This is a safety feature. DO NOT attempt to defeat the purpose of the grounded plug.
- DO NOT pull on the middle of the AC power cord; pulling on the middle may cause the cord to separate from the plug. Doing this might cause an electrical shock.
- Only use the power cord supplied with this product (for certain models only).
- DO NOT use any undesignated cables (or optional devices). It may cause a fire or injuries. Installation must be performed properly according to the user's guide.
- This product should be positioned so that nothing pinches or constricts the power cord.
- DO NOT allow anything to rest on the power cord.
- DO NOT place this product where people may step on the cord.
- DO NOT place this product in a position where the cord is stretched or strained, as it may become worn or frayed.
- DO NOT use the product if the power cord is frayed or damaged. Doing so may cause an electrical shock or fire.
- Brother strongly recommends that you DO NOT use any type of extension cord.
- DO NOT drop any metallic hardware or any type of liquid on the power plug of the product. It may cause an electrical shock or a fire.

DO NOT put a toner cartridge or a toner cartridge and drum unit assembly into a fire. It could explode, resulting in injuries.

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

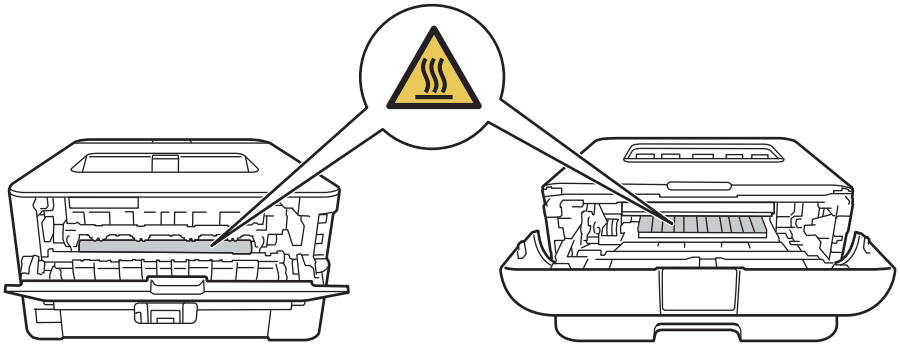


DO NOT attempt to operate this product when a paper jam or stray pieces of paper are inside the product. Prolonged contact of the paper with the fuser unit could cause a fire.

DO NOT use a vacuum cleaner to clean up scattered toner. Doing this might cause the toner dust to ignite inside the vacuum cleaner, potentially starting a fire. Please carefully clean the toner dust with a dry, lint-free soft cloth and dispose of it according to local regulations.

HOT SURFACE

After you have just used the product, some internal parts of the product will be extremely hot. Wait at least ten minutes for the product to cool down before you touch the internal parts of the product.

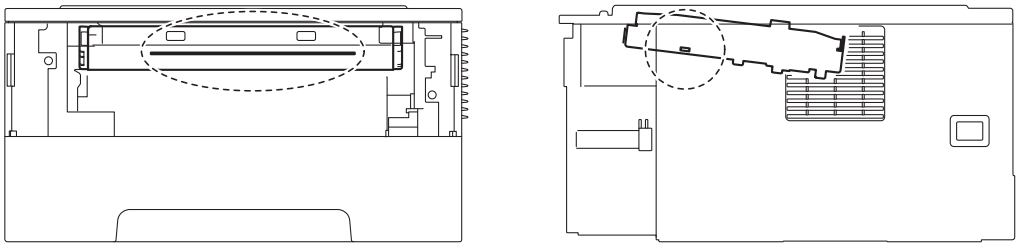


■ Caution for Laser Product (WARNHINWEIS für Laserdrucker)

CAUTION: In case of any trouble with the laser unit, replace the laser unit itself. To prevent direct exposure to the laser beam, do not try to open the enclosure of the laser unit.

ACHTUNG: Im Falle von Störungen der Lasereinheit muß diese ersetzt werden. Das Gehäuse der Lasereinheit darf nicht geöffnet werden, da sonst Laserstrahlen austreten können.

<Location of the laser beam window>



■ Additional Information

When servicing the optical system of the machine, be careful not to place a screwdriver or other reflective object in the path of the laser beam. Be sure to take off any personal accessories such as watches and rings before working on the machine. A reflected beam, though invisible, can permanently damage the eyes.

Since the beam is invisible, the following caution in print is attached on the laser unit.

In print

CHAPTER 1 SUPPLEMENTAL SPECIFICATIONS

1. GENERAL

The function comparative table for models as described in this Service Manual are shown below.

Model	HL-L2305W	HL-L2300D	HL-2260	HL-L2320D HL-2260D HL-L2321D	HL-L2315DW HL-L2340DW	HL-L2360DN HL-2560DN HL-L2361DN	HL-L2360DW HL-L2365DW HL-L2366DW
Wired/ Wireless LAN	Wired/ Wireless	N/A	N/A	N/A	Wireless	Wired	Wired/ Wireless
Duplex printing	N/A	✓	N/A	✓	✓	✓	✓
LCD	✓	N/A	N/A	N/A	✓	✓	✓

Model		HL-L2305W	HL-L2300D	HL-2260
Warm-up time	From Sleep mode	Less than 9 seconds at 73.4F (23°C)		
	From Power OFF → ON	Less than 26 seconds at 73.4F (23°C)		
First print time	From Ready mode	Less than 8.5 seconds at 73.4F (23°C)		
	From Sleep mode	Less than 17.5 seconds at 73.4F (23°C)		
CPU		ARM9 266 MHz		
Dimensions (W x D x H)	Carton size	441 x 286 x 504 mm (17.4 x 11.3 x 19.8 inch)		524 x 451 x 291 mm (20.6 x 17.8 x 11.5 inch)
	Machine size	356 x 360 x 183 mm (14.0 x 14.2 x 7.2 inch)		
Weights	with Carton	7.7 kg / 17.0 lb	7.9 kg / 17.4 lb (for the U.S.A.) 8.0 kg / 17.7 lb (for Europe)	7.8 kg / 17.3 lb
	without Carton with toner/drum	6.6 kg / 14.6 lb	6.8 kg / 15.0 lb (for the U.S.A.) 6.9 kg / 15.2 lb (for Europe)	6.5 kg / 14.3 lb
	without Carton nor toner/drum	5.7 kg / 12.6 lb	5.9 kg / 13.0 lb (Except for Europe) 5.7 kg / 12.6 lb (for Europe)	5.6 kg / 12.3 lb

Specifications are subject to change without notice.

Model		HL-L2320D HL-2260D HL-L2321D	HL-L2315DW HL-L2340DW	HL-L2360DN HL-2560DN HL-L2361DN	HL-L2360DW HL-L2365DW HL-L2366DW
Warm-up time	From Sleep mode	Less than 9 seconds at 73.4F (23°C)			
	From Power OFF → ON	Less than 26 seconds at 73.4F (23°C)			
First print time	From Ready mode	Less than 8.5 seconds at 73.4F (23°C)			
	From Sleep mode	Less than 17.5 seconds at 73.4F (23°C)			
CPU		ARM9 266 MHz			
Dimensions (W x D x H)	Carton size	441 x 286 x 504 mm (17.4 x 11.3 x 19.8 inch) (Except for China) 524 x 451 x 291 mm (20.6 x 17.8 x 11.5 inch) (for China)			
	Machine size	356 x 360 x 183 mm (14.0 x 14.2 x 7.2 inch)			
Weights	with Carton	7.9 kg / 17.4 lb (Except for China / Europe) 8.0 kg / 17.7 lb (for China / Europe)			
	without Carton with toner/drum	6.8 kg / 15.0 lb (Except for China / Europe) 6.7 kg / 14.8 lb (for China) 6.9 kg / 15.2 lb (for Europe)			
	without Carton nor toner/drum	5.9 kg / 13.0 lb (Except for China) 5.8 kg / 12.8 lb (for China)	5.9 kg / 13.0 lb (Except for Europe) 5.7kg / 12.6lb (for Europe)	5.9 kg / 13.0 lb (Except for China / Europe) 5.7 kg / 12.6 lb (for Europe) 5.8 kg / 12.8 lb (for China)	5.9 kg / 13.0 lb (Except for China / Europe) 5.7 kg / 12.6 lb (for Europe)

Specifications are subject to change without notice.

2. NETWORK CONNECTIVITY

Model		HL-L2305W	HL-L2300D	HL-2260
Wired network	Network node type	N/A		
Wireless network	Network node type	NC-8300w	N/A	

Model		HL-L2320D HL-2260D HL-L2321D	HL-L2315DW HL-L2340DW	HL-L2360DN HL-2560DN HL-L2361DN	HL-L2360DW HL-L2365DW HL-L2366DW
Wired network	Network node type	N/A		NC-8700h	
Wireless network	Network node type	N/A	NC-8300w	N/A	NC-8300w

Specifications are subject to change without notice.

3. SERVICE INFORMATION

Model		All models
Machine life		50,000 pages (A4 / LTR) or 5 years
MTBF		4,000 hours
MTTR		0.5 hours
Maximum monthly volume		Up to 10,000 pages
Parts life	Fuser Unit	Up to 50,000 pages
	Laser Unit	Up to 50,000 pages
	PF kit	Up to 50,000 pages

Specifications are subject to change without notice.

4. SUPPLIES

<table>
<tr><td colspan="2">Model</td><td colspan="2">HL-L2305W</td><td>HL-L2300D</td><td>HL-2260</td><td>HL-L2320D</td></tr>
<tr><td rowspan="3">Toner cartridge</td><td>Starter Toner *1</td><td colspan="2">Approximately 700 pages</td><td>Approximately 2,600 pages</td><td>Approximately 700 pages (Except for Asia/China) Approximately 2,600 pages (for Asia/China)</td></tr>
<tr><td>Standard Toner</td><td colspan="4">Approximately 1,200 pages</td></tr>
<tr><td>High Capacity Toner</td><td colspan="4">Approximately 2,600 pages</td></tr>
<tr><td colspan="6">When printing A4/Letter size one-sided pages in accordance with ISO/IEC 19752
Shelf life: 2 years without opening (6 months after opening)</td></tr>
<tr><td colspan="2">Drum unit</td><td colspan="4">Life expectancy: Approximately 12,000 pages (1 page/job)
The life expectancy varies according to the use condition.
Shelf life: 2 years</td></tr>
<tr><td colspan="6">The shelf life of toner cartridge and drum unit is guaranteed under the normal condition as below;
(Temperature) Normal condition: 0 to 40°C
* Storage condition at the temperature of 40 to 50°C: Up to 5 days
* Storage condition at the temperature of -20 to 0°C: Up to 5 days
(Humidity) Normal condition: 35 to 85% (without condensation)
* Storage condition at the humidity of 85 to 95%: Up to 5 days (without condensation)
* Storage condition at the humidity of 10 to 35%: Up to 5 days (without condensation)</td></tr>
</table>

*1 Toner supplied with the machine.

Specifications are subject to change without notice.

<table>
<tr><td colspan="2">Model</td><td>HL-2260D
HL-L2321D</td><td>HL-L2315DW
HL-L2340DW
HL-L2360DN</td><td>HL-2560DN
HL-L2361DN</td><td>HL-L2360DW
HL-L2365DW
HL-L2366DW</td></tr>
<tr><td rowspan="3">Toner cartridge</td><td>Starter Toner *1</td><td colspan="3">Approximately 700 pages
(Except for Asia/China)
Approximately 2,600 pages
(for Asia/China)</td><td>Approximately 700 pages
(for the U.S.A./ Oceania)
Approximately 1,200 pages
(for Europe)
Approximately 2,600 pages
(for Asia)</td></tr>
<tr><td>Standard Toner</td><td>Approximately 1,200 pages
(for China)
N/A (Except for China)</td><td>Approximately 1,200 pages</td><td>Approximately 1,200 pages
(for China)
N/A (Except for China)</td><td>Approximately 1,200 pages
(Except for Asia)
N/A (for Asia)</td></tr>
<tr><td>High Capacity Toner</td><td colspan="4">Approximately 2,600 pages</td></tr>
<tr><td colspan="6">When printing A4/Letter size one-sided pages in accordance with ISO/IEC 19752
Shelf life: 2 years without opening (6 months after opening)</td></tr>
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The life expectancy varies according to the use condition.
Shelf life: 2 years</td></tr>
<tr><td colspan="6">The shelf life of toner cartridge and drum unit is guaranteed under the normal condition as below;
(Temperature) Normal condition: 0 to 40°C
* Storage condition at the temperature of 40 to 50°C: Up to 5 days
* Storage condition at the temperature of -20 to 0°C: Up to 5 days
(Humidity) Normal condition: 35 to 85% (without condensation)
* Storage condition at the humidity of 85 to 95%: Up to 5 days (without condensation)
* Storage condition at the humidity of 10 to 35%: Up to 5 days (without condensation)</td></tr>
</table>

*1 Toner supplied with the machine.

Specifications are subject to change without notice.

CHAPTER 2 ERROR INDICATIONS & TROUBLESHOOTING

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 problems 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 power cord before removing any covers or PCBs, adjusting the machine, or conducting continuity tests using a tester.

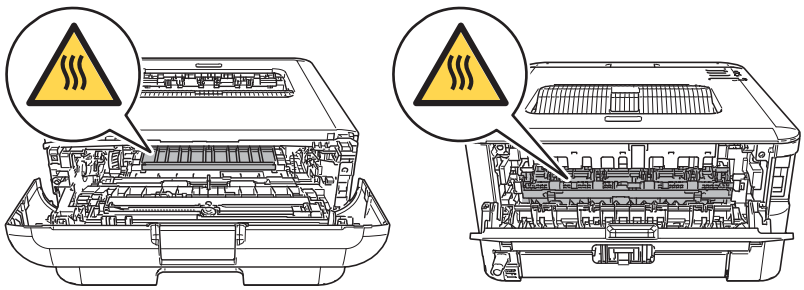
(2) Do not hold the cable when connecting or disconnecting the cable. Be sure to hold the connector.

(3) Static electricity charged in 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 the PCBs, wear a grounding wrist band and perform replacement on an antistatic mat.
Also take care not to touch the conductor sections on the flat cables.

(4) Be sure to always observe all warnings.

Warning

Hazard labels as shown below are attached to the machine. Fully understand the descriptions on the hazard labels and observe them during troubleshooting. Take extreme care not to remove or damage the hazard labels.



Warning

DO NOT use any flammable spray or flammable solvent such as alcohol, benzine, or thinner in or around the machine. Otherwise a fire or electric shock may result.

(5) After repair is completed, check that the repaired sections, including those removed once and then remounted, 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 10°C (50°F) to 32.5°C (90.5°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. Be sure to move or lift the machine with two or more people.

■ 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.

■ Paper

(1) The recommended type of paper is being used.
(2) The paper is not damp.
(3) Short-grained paper or acid paper is not used.

■ Consumable parts

(1) The drum unit (including toner cartridge) is set correctly.

■ 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 lens, reflecting mirror and protection glass may cause light print image.
- If the exposure drum is cold, the electrical resistance of the photosensitive layer is increased, making it impossible to obtain the correct print density.
- Condensation on the charge unit may cause corona charge leakage.
- Condensation on the plate or separation pad may cause paper feed problems.

If condensation has formed in the machine, leave the machine for at least two hours until it reaches room temperature.

If the drum unit is unpacked soon after it is moved to a warm room from a cold location, condensation may occur inside the unit which may cause printing failure. Leave the drum unit for one or two hours until it reaches room temperature, and then unpack it.

(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

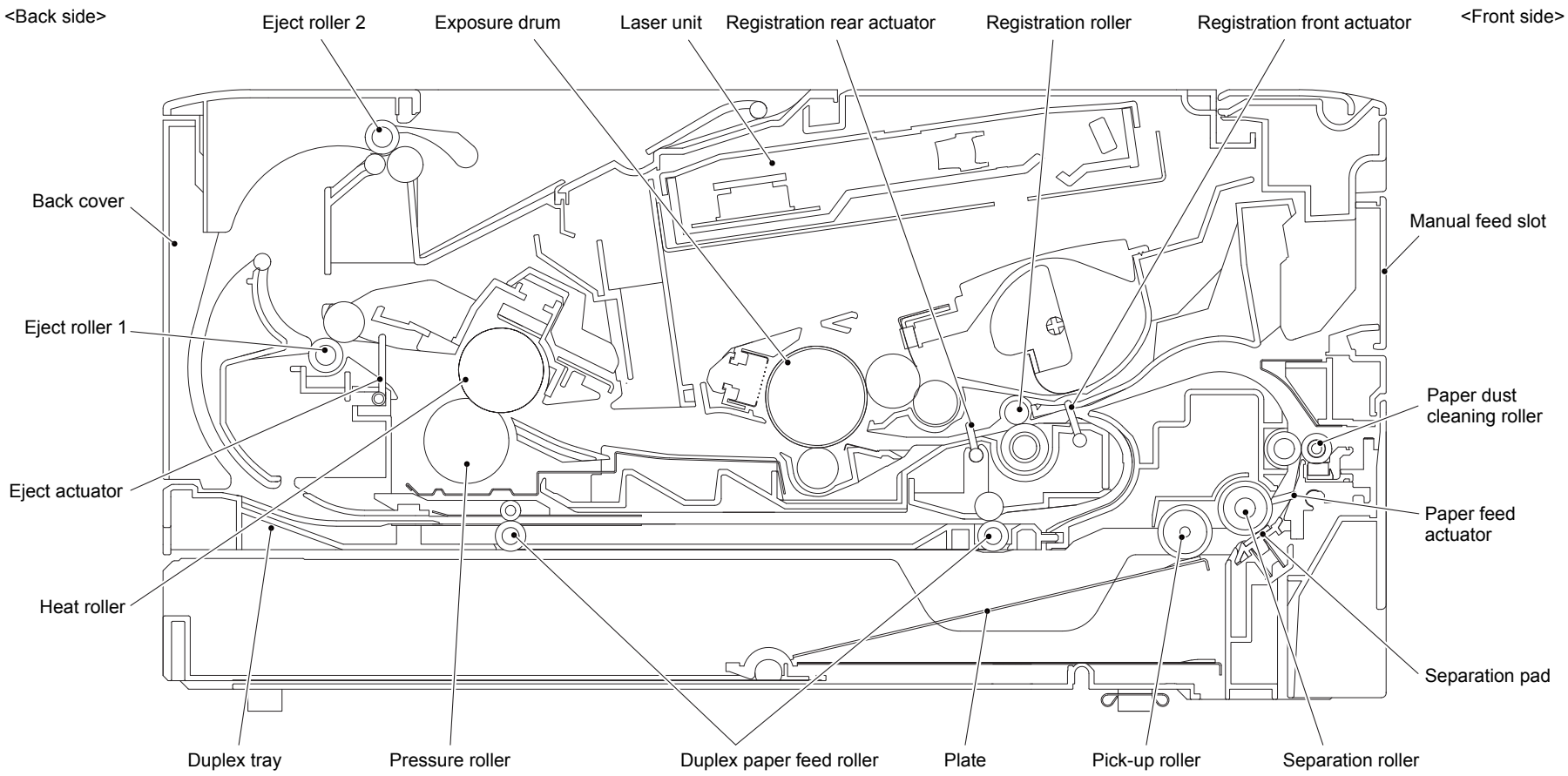


Fig. 2-1

2.2 Paper Feeding

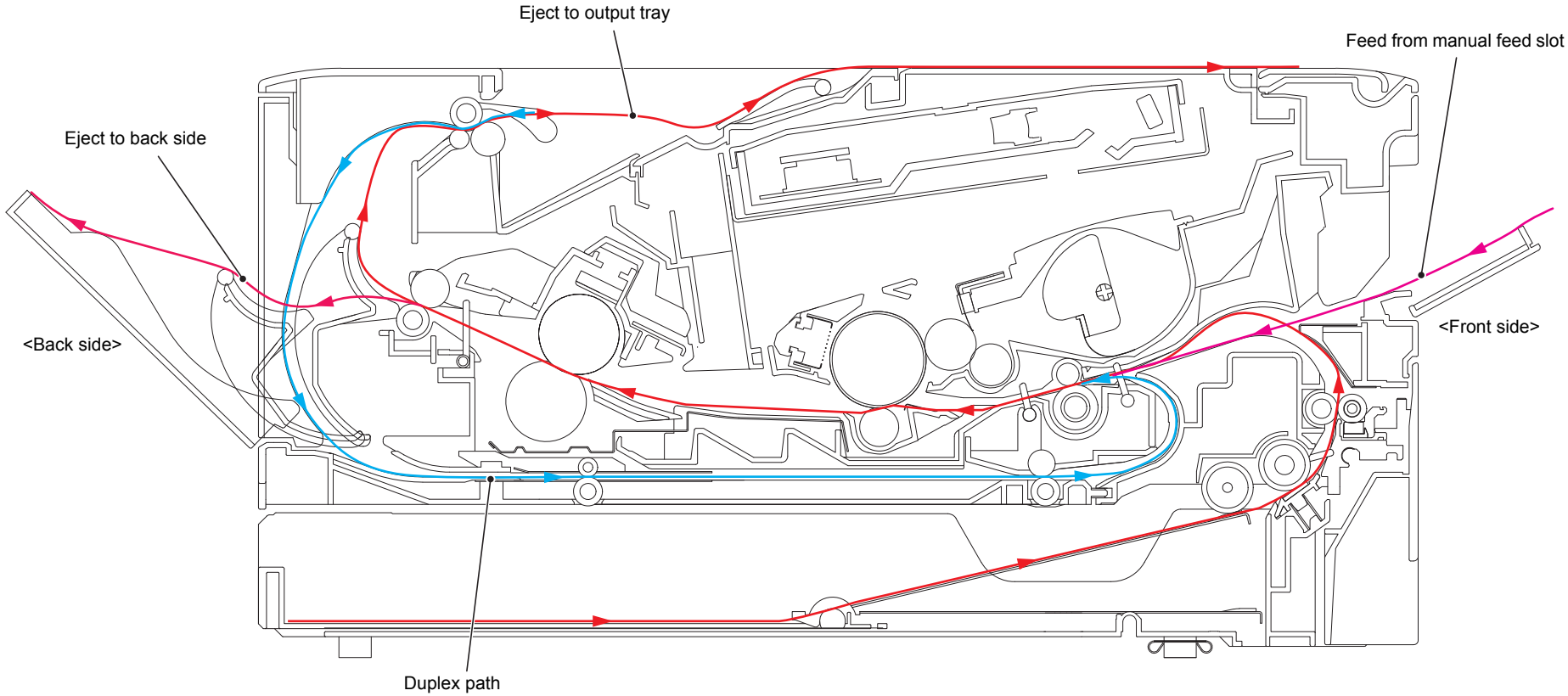


Fig. 2-2

2.3 Operation of Each Part

Part name	Operation
Pick-up roller	Feeds paper from the paper tray to the separation roller.
Separation roller Separation pad	Separates paper fed from the paper tray into single sheets.
Paper feed actuator (Paper feed sensor)	Detects the paper tray (open / closed). Detects paper in the paper tray. Detects paper jams in the front section of the machine.
Registration front actuator (Registration front sensor)	Detects the front edge of the paper to control the registration roller drive. Detects paper jams in the front section of the machine. Determines whether paper is fed from the paper tray.
Registration roller	Corrects the inclination of the paper when the paper makes contact with the stopped registration roller. After the correction, it rotates to feed the paper to the feeding path.
Registration rear actuator (Registration rear sensor)	Detects paper pass and adjusts the writing start position for the paper. Detects paper jams in the front or center section of the machine. Detects the rear edge of the paper to identify the paper size.
Heat roller Pressure roller	Fuses the toner transferred to paper by heat and pressure, and feeds paper to the eject roller 1.
Eject actuator (Eject sensor)	Determines whether paper is ejected from the fuser unit. Detects the rear edge of the paper in duplex printing mode to adjust the turn-over timing of the eject roller 2.
Eject roller 1	Feeds the paper ejected from the fuser unit to eject roller 2.
Eject roller 2	Ejects paper to the face-down output tray. During the duplex printing, the eject roller 2 rotates conversely and feeds paper to the duplex tray after the paper has been fed from the eject roller 2 with the second side printed.
Duplex paper feed roller	Feeds paper pass through the duplex tray to the registration roller.
Front cover sensor	Detects open front cover.
Back cover/duplex tray sensor	Detects open / closed back cover or the duplex tray is set.

2.4 Block Diagram

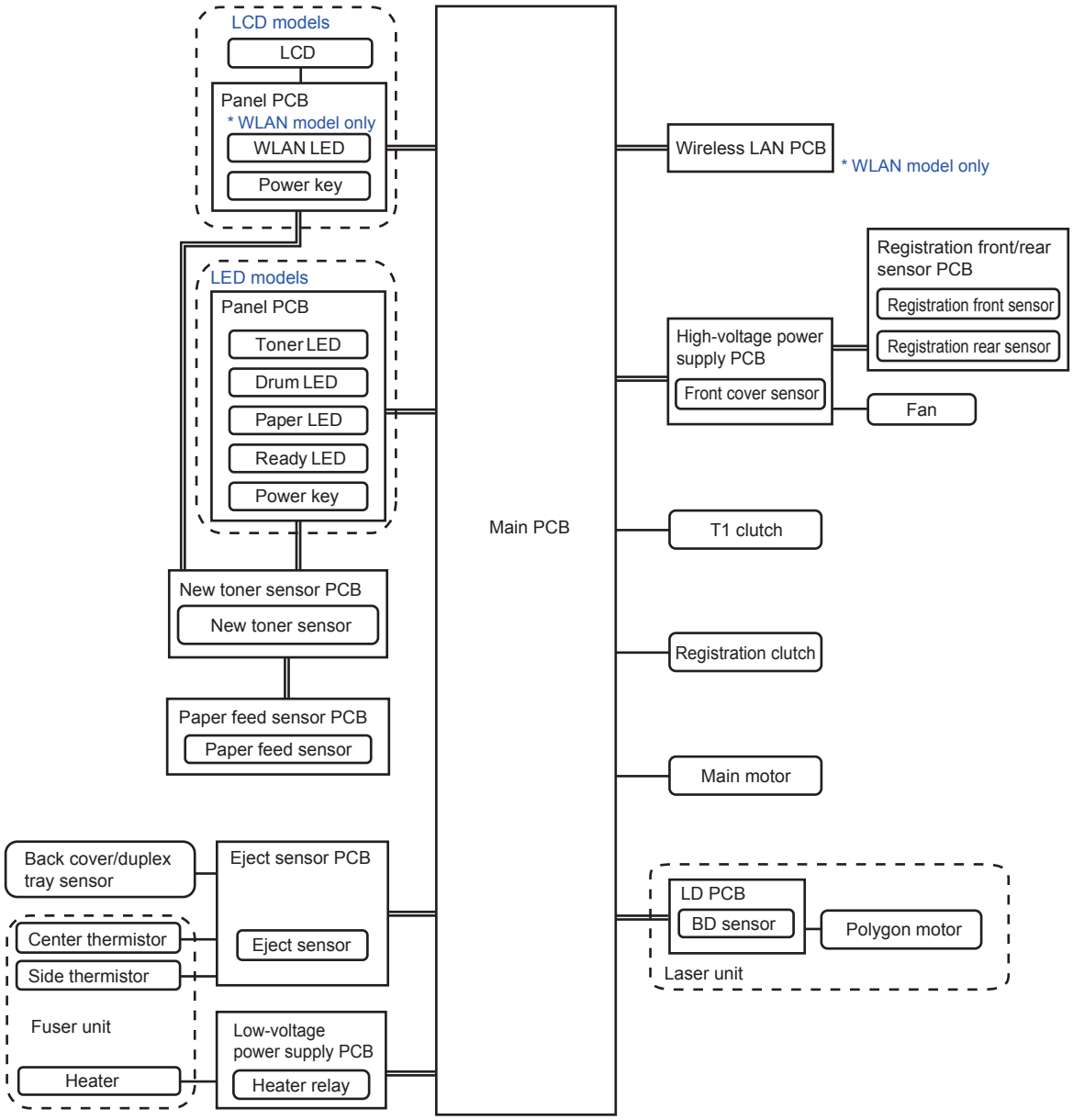


Fig. 2-3

2.5 Main Components

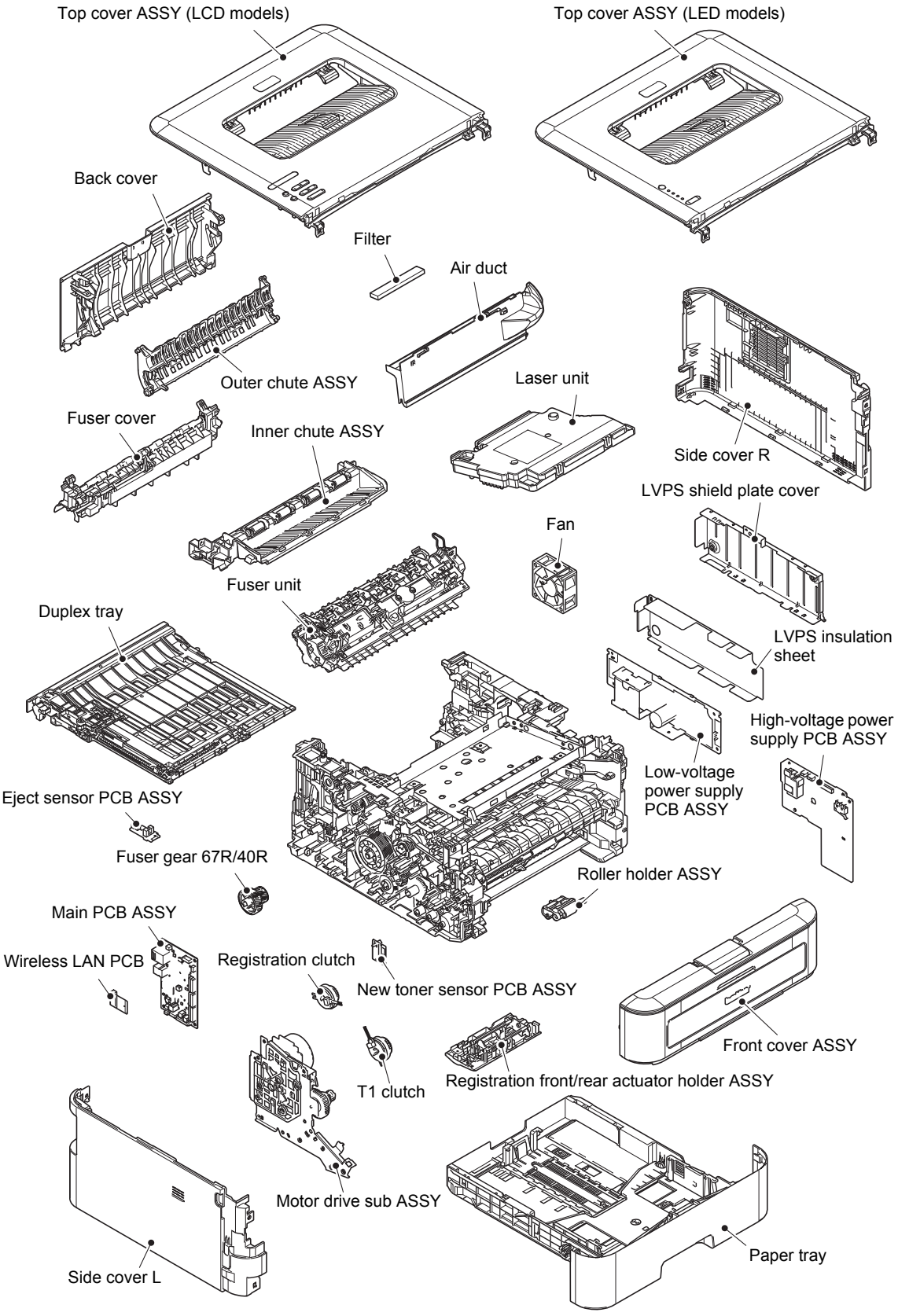


Fig. 2-4

3. ERROR INDICATIONS

This machine includes a self-diagnosis function. If the machine does not work normally it judges that an error has occurred, and indicates the corresponding error message on the LCD, which in turn helps the service personnel to quickly find out the problem.

3.1 Error Codes

Errors in shaded column do not usually occur during normal use. The possible causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

Error codes	Description	Refer to:	Error codes	Description	Refer to:
0100	—		0504	After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	2-28
0201	Cannot detect the synchronized signal of the main motor. The speed of the main motor does not stabilize within the specified time.	2-26	0505	The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	2-28
0202	—		0506	The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	2-29
0203	—		050A	The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.	2-30
0204	—		050B	When the center thermistor of the fuser unit was lower than the idle temperature, the side thermistor detected a temperature higher than the specified temperature.	2-30
0205	—		050C	When the center thermistor of the fuser unit was higher than the idle temperature, the side thermistor detected a temperature lower than the specified temperature.	2-30
0206	—		050D	—	
0207	—		050F	An error occurred in the fuser unit.	2-30
0208	—		0600	A communication error occurred between the ASIC controlled by engine and the motor driver.	2-31
0209	—		0700	—	
0300	Cannot detect the lock signal of the polygon motor for the laser unit (second time).	2-27	0800	—	
0305	Cannot detect the lock signal of the polygon motor for the laser unit (first time).	2-27	0900	Detected irregular power supply for more than 100 times.	2-31
0401	Cannot detect the synchronized signal of the polygon motor for the laser unit (second time).	2-27	0A01	—	
0402	—		0A02	Detected a fan failure.	2-32
0405	Cannot detect the synchronized signal of the polygon motor for the laser unit (first time).	2-27	0B01	An error occurred in the high-voltage power supply PCB ASSY while operating.	2-32
0501	The center thermistor of the fuser unit has not reached the specified temperature within the specified time.	2-28	0B02	An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	2-32
0502	The center thermistor of the fuser unit has not reached the specified temperature within the specified time after it was heated normally to the certain level.	2-28	0C00	—	
0503	The center thermistor of the fuser unit detected a temperature higher than the specified value.	2-28	0D01	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
0D02	—		2402	—	
0D03	—		2403	—	
0D04	—		2404	—	
0E00	—		2405	—	
1003	—		2408	—	
1004	—		2409	—	
1100	—		2501	—	
1200	—		2502	—	
1300	—		2503	—	
1400	—		2504	—	
1500	—		2601	—	
1C00	—		2602	—	
1D01	—		2603	—	
1D02	—		2604	—	
1D03	—		2605	—	
1D04	—		2701	—	
1E01	—		2702	—	
1E02	—		2703	—	
2001	—		2801	—	
2002	—		2802	—	
2003	—		2803	—	
2004	—		2804	—	
2005	—		2805	—	
2006	—		2806	—	
2101	—		2901	—	
2102	—		2902	—	
2103	—		2903	—	
2104	—		2904	—	
2105	—		2905	—	
2201	—		2906	—	
2202	—		2A01	—	
2203	—		2A02	—	
2204	—		2A03	—	
2205	—		2B01	—	
2206	—		2B02	—	
2207	—		2C01	—	
2301	—		2C02	—	
2302	—		2D01	—	
2401	—		2E01	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
2E02	—		3A00	—	
2E03	—		4000	The number of rotations of the drum unit is reaching the upper limit.	2-33
2E04	—		4001	—	
2E05	—		4002	—	
2E06	—		4003	—	
2E07	—		4004	—	
2E08	—		4200	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	2-33
2E0A	—		4201	—	
2F01	—		4202	—	
2F02	—		4203	—	
2F03	—		4204	—	
2F04	—		4208	—	
2F05	—		4300	—	
2F06	—		4400	—	
2F07	—		4408	—	
2F08	—		4500	—	
2F0A	—		4600	—	
3001	—		4700	—	
3002	—		4800	—	
3003	—		4900	—	
3102	—		4A00	—	
3202	—		4B01	Dot count or develop roller counter of the toner is reaching the upper limit.	2-33
3301	—		4B02	—	
3302	—		4B03	—	
3401	—		4B04	—	
3402	—		4C01	Dot count or develop roller counter of the toner has reached the upper limit in the toner stop mode.	2-34
3501	—		4C02	—	
3601	—		4C03	—	
3701	—		4C04	—	
3702	—		4C05	—	
3703	—		4D01	Dot count or develop roller counter of the toner has reached the upper limit in the toner continuous printing mode.	2-34
3801	—		4E01	The toner cartridge has reached the upper limit in the toner continuous printing mode.	2-34
3802	—		4F01	The new toner sensor could not detect the new toner cartridge correctly.	2-34
3900	—		4F02	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
4F03	—		6200	—	
4F04	—		6201	—	
5001	—		6202	—	
5002	—		6203	—	
5003	—		6204	—	
5004	—		6208	—	
5005	—		6209	—	
5100	—		620A	—	
5200	—		6300	—	
5301	—		6400	—	
5302	—		6602	—	
5401	—		6701	—	
5402	—		6801	The side thermistor of the fuser unit detected a temperature higher than the specified value.	2-36
5406	—		6802	—	
5502	—		6901	An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	2-37
5602	—		6902	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	2-37
5702	—		6A00	Detected discharge that may be attributable to dirty corona wire on the drum unit.	2-38
5801	—		6B01	—	
5802	—		6B02	—	
5902	—		6B03	—	
5A02	—		6B04	—	
5B02	—		6B0A	—	
5C02	—		6C01	—	
6001	The front cover sensor detected that the front cover was open.	2-35	6C02	—	
6002	—		6C03	—	
6003	—		6C04	—	
6004	The eject sensor detected that the fuser cover was open.	2-35	6D00	—	
6007	—		6E00	—	
6101	The new toner sensor detected that the toner cartridge was not set.	2-36	6F00	Detected irregular power supply for less than 100 times.	2-39
6102	—		7000	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	2-39
6103	—		7001	—	
6104	—		7002	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
7003	—		7D00	—	
7004	—		7E00	—	
7100	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	2-40	8000	First side printing started before finishing receiving the second side data in duplex printing mode due to the insufficient memory.	2-42
7101	—		8401	—	
7102	—		8402	—	
7103	—		8501	—	
7104	—		8502	—	
7105	—		8503	—	
7106	—		8504	—	
7200	—		8505	—	
7300	When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the paper feed sensor detected paper pass.	2-40	8506	—	
7301	—		8507	—	
7400	—		8508	—	
7401	—		8601	—	
7501	—		8602	—	
7502	—		8603	—	
7601	—		8604	—	
7602	—		8701	—	
7700	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	2-41	8702	—	
7701	—		8703	—	
7702	—		8801	—	
7703	—		8802	—	
7704	—		8901	—	
7705	—		8902	—	
7801	—		8903	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	2-42
7802	—		8904	The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	2-42
7900	—		8A01	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	2-43
7C00	The eject sensor was ON when the power switch was turned ON.	2-41	8A02	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
8C00	There is no paper set in the manual feed slot on the manual feed slot fix mode.	2-43	9601	—	
8D01	—		9608	—	
8D02	—		9701	A tray set to duplex printing-incompatible size was specified in duplex printing.	2-44
8E01	—		9702	—	
8E02	—		9703	—	
8E03	—		9704	—	
8F01	—		9705	—	
8F02	—		9801	—	
8F03	—		9802	—	
9001	—		9803	—	
9002	When printing from the paper tray, the size of paper set in the paper tray does not match the size specified by the driver.	2-44	9804	—	
9003	—		9901	—	
9004	—		9902	—	
9005	—		9903	—	
9102	—		9A01	—	
9103	—		9A02	—	
9104	—		9A03	—	
9105	—		9C01	—	
9200	—		9C02	—	
9301	—		9C03	—	
9302	When printing from the paper tray, the paper feed sensor detected that there was no paper set in the paper tray.	2-44	9C06	—	
9303	—		9C07	—	
9304	—		A000	—	
9305	—		A200	—	
9306	—		A300	—	
9307	—		A400	—	
9401	—		A500	—	
9402	—		A600	—	
9403	—		A700	—	
9404	—		A800	—	
9501	—		A900	—	
9502	—		AA00	—	
9503	—		AB00	—	
9504	—		AC00	—	
9505	—		AD00	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
AF00	—		E500	An error occurred during access to the DRAM in the main PCB ASSY.	2-45
B000	—		E600	Write error in the EEPROM of the main PCB ASSY	2-45
B300	—		E701	—	
B400	—		E702	Read error in the flash ROM on the main PCB	2-45
B700	—		E900	—	
B800	—		EC00	—	
B900	—		F900	The country code was not entered correctly.	2-46
BA00	—		FA01	—	
BB00	—		FA02	—	
BC00	—		FA03	—	
BD00	—		FB01	—	
BE00	—		FB02	—	
BF00	—		FB03	—	
C001	—		FB04	—	
C002	—		FB05	—	
C003	—		FB06	—	
C004	—		FB07	—	
C700	There is insufficient memory to expand PC print data.	2-45	FB08	—	
C800	—		FB09	—	
C900	—		FB0A	—	
CA00	—		FB0B	—	
D100	—		FB0C	—	
D200	—		FB0D	—	
D800	—		FB0F	—	
D900	—		FC01	—	
DA00	—		FC02	—	
DB00	—		FC03	—	
E000	An error occurred in the ROM check sum.	2-45	FC04	—	
E100	Program error	2-45	FC05	—	
E400	—				

3.2 Error Messages

First line	Second line	Description	Error codes	Refer to:
Cartridge Error	Put the Toner Cartridge back in.	The new toner sensor could not detect the new toner cartridge correctly.	4F01	2-34
Connection Error	—	Multiple access points were found as a result of the access point search.	---	4.5.2
Connection Fail	—	Connection failed although the access point was found as a result of the access point search.	---	4.5.2
Cooling Down	Wait for a while	The side thermistor of the fuser unit detected a temperature higher than the specified value.	6801	2-36
Cover is Open	Close the Front Cover.	The front cover sensor detected that the front cover was open.	6001	2-35
	Close the Fuser Cover which can be found behind the Back Cover of the machine.	The eject sensor detected that the fuser cover was open.	6004	2-35
	Make sure there is no paper jammed inside the machine and close the Back Cover, then press Go.	The eject sensor was ON when the power switch was turned ON.	7C00	2-41
Drum !	Slide the Green tab on Drum Unit.	Detected discharge that may be attributable to dirty corona wire on the drum unit.	6A00	2-38
Drum End Soon	—	The number of rotations of the drum unit is reaching the upper limit.	4000	2-33
Jam 2-sided	Pull out the Duplex Tray at the back of the machine and remove the jammed paper.	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	7700	2-41
Jam Inside	Open the Front Cover, pull out the Drum Unit completely and remove the jammed paper.	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	7000	2-39
Jam Rear	Open the Back Cover and remove the jammed paper, then press Go.	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	7100	2-40

First line	Second line	Description	Error codes	Refer to:
Jam Tray 1	Remove the jammed paper from Tray 1.	When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the paper feed sensor detected paper pass.	7300	2-40
Manual Feed	Load paper.	There is no paper set in the manual feed slot on the manual feed slot fix mode.	8C00	2-43
Machine Error **	—	A machine error occurred. Refer to error code “**”.	---	
No Access Point	—	Cannot find the connectable access point.	---	4.5.2
No Paper	Load paper.	When printing from the paper tray, the paper feed sensor detected that there was no paper set in the tray.	9302	2-44
No Toner	Open the Front Cover, then install the Toner Cartridge.	The new toner sensor detected that the toner cartridge was not set.	6101	2-36
Out of Memory	Press Go for 2 seconds.	There is insufficient memory to expand PC print data.	C700	2-45
Print Overrun	—	First side printing started before finishing receiving the second side data in duplex printing mode due to the insufficient memory.	8000	2-42
Print Unable **		Printing related error. Refer to error code “**”.	---	---
Replace Drum	—	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	4200	2-33
Replace Toner	Open the Front Cover, replace Toner Cartridge.	Dot count or develop roller counter of the toner has reached the upper limit in the toner stop mode.	4C01	2-34
	—	Dot count or develop roller counter of the toner has reached the upper limit in the toner continuous printing mode.	4D01	2-34

First line	Second line	Description	Error codes	Refer to:
Self-Diagnostic	Turn the power off, then on again. Leave the machine for 15 min.	An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	6901	2-37
	Will Automatically Restart within 15 minutes.	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	6902	2-37
Size Error DX	Press Go for 2 seconds. Specify the correct paper and load the same size paper as the Printer driver setting.	A tray set to duplex printing-incompatible size was specified in duplex printing.	9701	2-44
	Specify the correct paper.	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	8A01	2-43
Size Mismatch	Load paper and press Go.	When printing from the paper tray, the size of paper set in the paper tray does not match the size specified by the driver.	9002	2-44
Toner Ended	Open the Front Cover, replace Toner Cartridge.	The toner cartridge has reached the upper limit in the toner continuous printing mode.	4E01	2-34
Toner Low	—	Dot count or develop roller counter of the toner is reaching the upper limit.	4B01	2-33
2-sided Disabled	Close the Back Cover of the machine.	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	8903	2-42
		The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	8904	2-42

3.3 LED Display (LED Models)

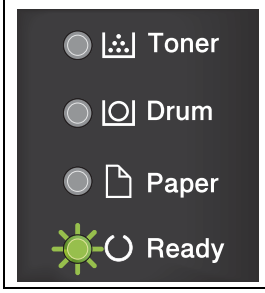
3.3.1 LED display when operator call occurs

Details of the message can be determined by the combination of the LEDs. 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 [Go] key to reset the machine.

LED status in the table below: : Unlit : Lit : Flashing

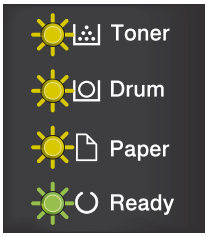
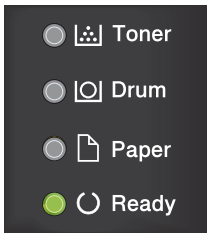
LED	Type of problem	Error codes	Refer to:
	The eject sensor detected that the fuser cover was open.	6004	2-35
	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	7000	2-39
	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	7100	2-40
	When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the paper feed sensor detected paper pass.	7300	2-40
	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	7700	2-41
	The eject sensor was ON when the power switch was turned ON.	7C00	2-41
	First side printing started before finishing receiving the second side data in duplex printing mode due to the insufficient memory.	8000	2-42
	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	8903	2-42
	The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	8904	2-42
	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	8A01	2-43
	When printing from the paper tray, the size of paper set in the paper tray does not match the size specified by the driver.	9002	2-44
	A tray set to duplex printing-incompatible size was specified in duplex printing.	9701	2-44
	There is insufficient memory to expand PC print data.	C700	2-45

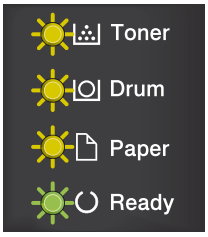
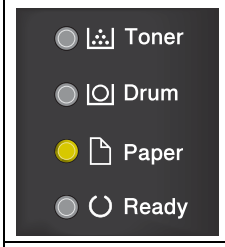
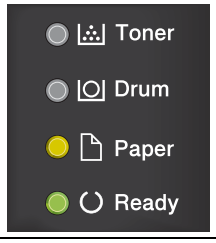
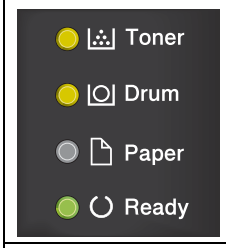
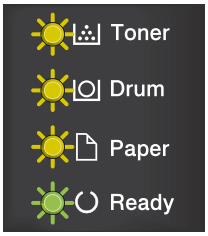
LED	Type of problem	Error codes	Refer to:
	Dot count or develop roller counter of the toner is reaching the upper limit.	4B01	2-33
	Dot count or develop roller counter of the toner has reached the upper limit in the toner continuous printing mode.	4D01	2-34
	Dot count or develop roller counter of the toner has reached the upper limit in the toner stop mode.	4C01	2-34
	The toner cartridge has reached the upper limit in the toner continuous printing mode.	4E01	2-34
	Detected discharge that may be attributable to dirty corona wire on the drum unit.	6A00	2-38
	The number of rotations of the drum unit is reaching the upper limit.	4000	2-33

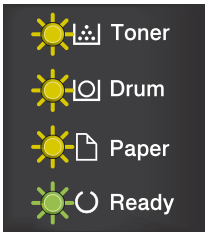
LED	Type of problem	Error codes	Refer to:
	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	4200	2-33
	There is no paper set in the manual feed slot on the manual feed slot fix mode.	8C00	2-43
	When printing from the paper tray, the paper feed sensor detected that there was no paper set in the paper tray.	9302	2-44
	The new toner sensor could not detect the new toner cartridge correctly.	4F01	2-34
	The new toner sensor detected that the toner cartridge was not set.	6101	2-36
	An error occurred in the ROM check sum.	E000	2-45
	Program error	E100	2-45
	An error occurred during access to the DRAM in the main PCB ASSY.	E500	2-45
	Read error in the flash ROM on the main PCB	E702	2-45
	The side thermistor of the fuser unit detected a temperature higher than the specified value.	6801	2-36

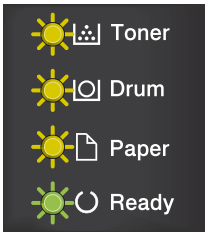
3.3.2 LED display when service call occurs

When a service call occurs, the four LEDs flash. Pressing the [Go] key allows you to identify the location of the problem based on the combination of the LED status: lit, flashing or unlit. Pressing the [Go] key again allows you to see detailed information. Follow the table below to identity the location of the problem and take appropriate measures.

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			Cannot detect the synchronized signal of the main motor. The speed of the main motor does not stabilize within the specified time.	0201	2-26
			An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	0B02	2-32
			A communication error occurred between the ASIC controlled by engine and the motor driver.	0600	2-31
			An error occurred in the high-voltage power supply PCB ASSY while operating.	0B01	2-32
			Cannot detect the lock signal of the polygon motor for the laser unit (second time).	0300	2-27
			Cannot detect the synchronized signal of the polygon motor for the laser unit (second time).	0401	2-27

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			Write error in the EEPROM of the main PCB ASSY	E600	2-45
			Detected a fan failure.	0A02	2-32
			Detected irregular power supply for more than 100 times.	0900	2-31
			Detected irregular power supply for less than 100 times.	6F00	2-39
			The center thermistor of the fuser unit has not reached the specified temperature within the specified time after it was heated normally to the certain level.	0502	2-28
			The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.	050A	2-30
			An error occurred in the fuser unit.	050F	2-30

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	6901	2-37
			Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	6902	2-37
			The center thermistor of the fuser unit detected a temperature higher than the specified value.	0503	2-28
			After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	0504	2-28

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	0505	2-28
			The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	0506	2-29
			When the center thermistor of the fuser unit was lower than the idle temperature, the side thermistor detected a temperature higher than the specified temperature.	050B	2-30
			When the center thermistor of the fuser unit was higher than the idle temperature, the side thermistor detected a temperature lower than the specified temperature.	050C	2-30
			The center thermistor of the fuser unit has not reached the specified temperature within the specified time.	0501	2-28

4. TROUBLESHOOTING

4.1 Error Cause and Remedy

■ Error code 0201

Print Unable 02
Turn the power off and then back on again.

Cannot detect the synchronized signal of the main motor. The speed of the main motor does not stabilize within the specified time.

Step	Cause	Remedy
1	Connection failure of the main motor flat cable	Reconnect the main motor flat cable.
2	Connection failure of the LVPS harness	Reconnect the LVPS harness.
3	Damaged fuser gear	Replace the fuser gear.
4	Main motor failure	Replace the main motor.
5	Damaged fuser unit	Replace the fuser unit.
6	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
7	Damaged part in motor drive sub ASSY	Replace the main frame L ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0300

Print Unable 03
Turn the power off and then back on again.

Cannot detect the lock signal of the polygon motor for the laser unit (second time).

Error code 0305

Print Unable 03
Turn the power off and then back on again.

Cannot detect the lock signal of the polygon motor for the laser unit (first time).

Error code 0401

Print Unable 04
Turn the power off and then back on again.

Cannot detect the synchronized signal of the polygon motor for the laser unit (second time).

Error code 0405

Print Unable 04
Turn the power off and then back on again.

Cannot detect the synchronized signal of the polygon motor for the laser unit (first time).

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

■ Error code 0501

Print Unable 05
Turn the power off and then back on again.

The center thermistor of the fuser unit has not reached the specified temperature within the specified time.

Error code 0502

Print Unable 05
Turn the power off and then back on again.

The center thermistor of the fuser unit has not reached the specified temperature within the specified time after it was heated normally to the certain level.

Error code 0503

Print Unable 05
Turn the power off and then back on again.

The center thermistor of the fuser unit detected a temperature higher than the specified value.

Error code 0504

Print Unable 05
Turn the power off and then back on again.

After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.

Error code 0505

Print Unable 05
Turn the power off and then back on again.

The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.

Error code 0506

Print Unable 05
Turn the power off and then back on again.

The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.

<User Check>

- Turn OFF the power switch. After several seconds, turn ON the power again and check that this error is reset.

Step	Cause	Remedy
1	Connection failure of the center or side thermistor harness of the fuser unit	Reconnect the center or side thermistor harness of the fuser unit.
2	Connection failure of the fuser unit heater harness	Reconnect the fuser unit heater harness.
3	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
4	Connection failure of the LVPS harness	Reconnect the LVPS harness.
5	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
6	Fuser unit failure	Replace the fuser unit.
7	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 050A

Print Unable 05
Turn the power off and then back on again.

The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.

Error code 050B

Print Unable 05
Turn the power off and then back on again.

When the center thermistor of the fuser unit was lower than the idle temperature, the side thermistor detected a temperature higher than the specified temperature.

Error code 050C

Print Unable 05
Turn the power off and then back on again.

When the center thermistor of the fuser unit was higher than the idle temperature, the side thermistor detected a temperature lower than the specified temperature.

Error code 050F

Print Unable 05
Turn the power off and then back on again.

An error occurred in the fuser unit.

<User Check>

- Turn OFF the power switch. After several seconds, turn ON the power again and check that this error is reset.

Step	Cause	Remedy
1	Connection failure of the center or side thermistor harness of the fuser unit	Reconnect the center or side thermistor harness of the fuser unit.
2	Connection failure of the fuser unit heater harness	Reconnect the fuser unit heater harness.
3	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
4	Connection failure of the LVPS harness	Reconnect the LVPS harness.
5	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
6	Fuser unit failure	Replace the fuser unit.
7	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0600

Print Unable 06
Turn the power off and then back on again.

A communication error occurred between the ASIC controlled by engine and the motor driver.

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

■ Error code 0900

Print Unable 09
Turn the power off and then back on again.

Detected irregular power supply for more than 100 times.

<User Check>

- Turn OFF the power switch. After several seconds, turn ON the power again and check that this error is reset.

Step	Cause	Remedy
1	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY. Refer to "1.3.20 Reset irregular power supply detection counter of low-voltage power supply PCB (function code: 88)" in Chapter 5 to reset the irregular power supply detection counter.
2	Main PCB failure	Replace the main PCB ASSY.

Note:

- The irregular power supply detection error of the low-voltage power supply PCB (error code: 0900) occurs when there is a large distortion in the power supply voltage supplied to the machine. In this case, if the same power supply is used, the same error may occur even when the low-voltage power supply PCB ASSY is replaced. Ask the user to review the installation environment.

■ Error code 0A02

Print Unable 0A
Turn the power off and then back on again.

Detected a fan failure.

Step	Cause	Remedy
1	Connection failure of the fan harness	Reconnect the fan harness.
2	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
3	Fan failure	Replace the fan.
4	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0B01

Print Unable 0B
Turn the power off and then back on again.

An error occurred in the high-voltage power supply PCB ASSY while operating.

Error code 0B02

Print Unable 0B
Turn the power off and then back on again.

An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.

<User Check>

• Replace the drum unit.

Step	Cause	Remedy
1	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
2	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 4000

Drum End Soon
-

The number of rotations of the drum unit is reaching the upper limit.

Error code 4200

Replace Drum
-

The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)

<User Check>

• Prepare a new drum unit.

Step	Cause	Remedy
1	Replace the drum unit with a new one and reset the drum counter. If the error display is not cleared, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 4B01

Toner Low
-

Dot count or develop roller counter of the toner is reaching the upper limit.

<User Check>

• Prepare a new toner cartridge.

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

■ Error code 4C01

Replace Toner **Open the Front Cover, replace Toner Cartridge.**

Dot count or develop roller counter of the toner has reached the upper limit in the toner stop mode.

Error code 4D01

Replace Toner **-**

Dot count or develop roller counter of the toner has reached the upper limit in the toner continuous printing mode.

Error code 4E01

Toner Ended **Open the Front Cover, replace Toner Cartridge.**

The toner cartridge has reached the upper limit in the toner continuous printing mode.

<User Check>

- Replace the toner cartridge which has reached the upper limit.

Step	Cause	Remedy
1	If the error display is not cleared after replacing the toner cartridge with a new one, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 4F01

Cartridge Error **Put the Toner Cartridge back in.**

The new toner sensor could not detect the new toner cartridge correctly.

<User Check>

- Replace the toner cartridge with a new one again.
- If the machine is on the uneven surface, place it on a level surface.

Step	Cause	Remedy
1	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
2	New toner actuator coming off or caught in sections of the machine	Reattach the new toner actuator.
3	Develop joint coming off or caught in sections of the machine	Reattach the develop joint.
4	New toner sensor failure	Replace the new toner sensor PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	If the error display is not cleared after replacing the toner cartridge with a new one, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 6001

Cover is Open
Close the Front Cover.

The front cover sensor detected that the front cover was open.

<User Check>

• Close the front cover.

Step	Cause	Remedy
1	Front cover failure	Replace the front cover.
2	Front cover sensor failure	Replace the high-voltage power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6004

Cover is Open
Close the Fuser Cover which can be found behind the Back Cover of the machine.

The eject sensor detected that the fuser cover was open.

<User Check>

• Close the fuser cover.

Step	Cause	Remedy
1	Eject actuator coming off or caught in sections of the machine	Reattach the eject actuator.
2	Fuser cover attachment failure	Reattach the fuser cover.
3	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
4	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6101

No Toner
Open the Front Cover, then install Toner Cartridge.

The new toner sensor detected that the toner cartridge was not set.

<User Check>

- Set the toner cartridge correctly.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
3	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
4	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6801

Cooling Down
Wait for a while

The side thermistor of the fuser unit detected a temperature higher than the specified value.

<User Check>

- Lower the room temperature.
- Keep the machine away from heating appliances.

Step	Cause	Remedy
1	Side thermistor failure	Replace the fuser unit.
2	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6901

Self-Diagnostic
Turn the power off, then on again. Leave the machine for 15 min.

An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.

Error code 6902

Self-Diagnostic
Will Automatically Restart within 15 minutes.

Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit.

(This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)

Step	Cause	Remedy
1	Connection failure of each fuser unit harness	Reconnect each harness of the fuser unit.
2	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
3	Fuser unit failure	Replace the fuser unit.
4	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
5	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

Note:

- Turn OFF the power switch. After the fuser unit has cooled sufficiently, turn ON the power switch again and leave the machine for 15 minutes. This problem may then be cleared.
- To release the fuser unit error after taking appropriate measures, enter the maintenance mode once and quit it with the maintenance code 99.

■ Error code 6A00

Drum ! **Slide the Green tab on Drum Unit.**

Detected discharge that may be attributable to dirty corona wire on the drum unit.

<User Check>

- Slide the green tab of the drum unit to left and right for two to three times to clean the corona wire.
- Clean the terminal of the drum unit.
- Replace the drum unit.

Step	Cause	Remedy
1	Dirt on the high-voltage power supply PCB terminal	Clean the electrodes of the machine.
2	High voltage electrodes attachment failure	Check if the problem disappears after pressing each electrode. If not, reattach the electrodes.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Electrodes location of the toner cartridge and drum unit

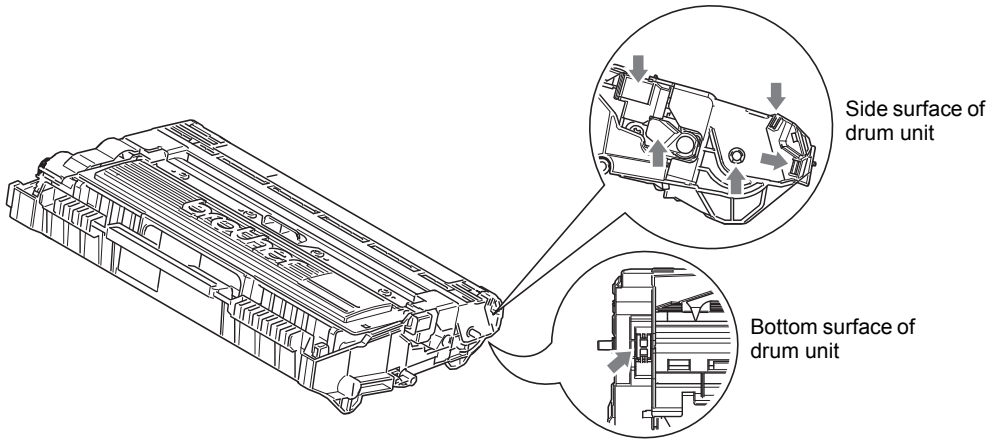


Fig. 2-5

■ Electrodes location of the machine

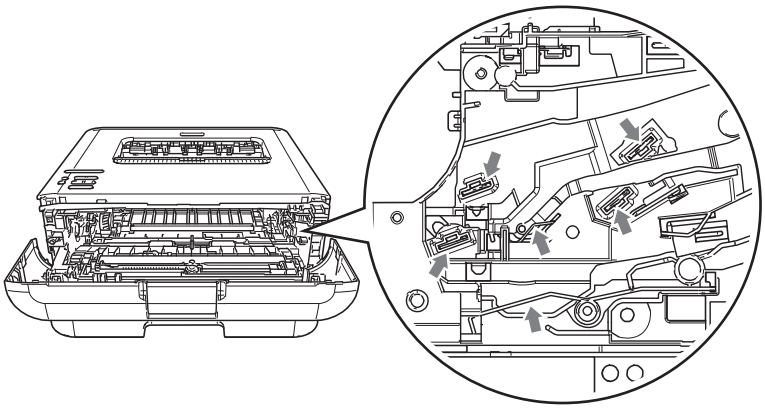


Fig. 2-6

■ Error code 6F00

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

Detected irregular power supply for less than 100 times.

<User Check>

- Turn the power switch OFF and then back ON again.
- Put a filter into the power supply.
- Install a voltage stabilizer to the power supply unit.

■ Error code 7000

Jam Inside
Open the Front Cover, pull out the Drum Unit completely and remove the jammed paper.

The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inside the machine	Remove the foreign object.
2	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
3	Eject actuator coming off or caught in sections of the machine	Reattach the eject actuator.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Eject sensor failure	Replace the eject sensor PCB ASSY.
6	Fuser unit failure	Replace the fuser unit.
7	Damaged gears in the feeding system	Replace the main frame L ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7100

Jam Rear
Open the Back Cover and remove the jammed paper, then press Go.

The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.

<User Check>

- Remove the jammed paper.
- Check if the back cover is open during duplex printing.

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	Eject actuator caught in sections of the machine	Reattach the eject actuator.
3	Fuser cover attachment failure	Reattach the fuser cover.
4	Eject sensor failure	Replace the eject sensor PCB ASSY.
5	Fuser unit failure	Replace the fuser unit.
6	Damaged gears in the feeding system	Replace the main frame L ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7300

Jam Tray 1
Remove the jammed paper from Tray 1.

When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Close the paper tray correctly.

Step	Cause	Remedy
1	Foreign object in the front section of the paper tray	Remove the foreign object.
2	Paper dust cleaning roller attachment failure	Reattach the paper dust cleaning roller.
3	Connection failure of the registration front/rear sensor PCB harness	Reconnect the registration front/rear sensor PCB harness.
4	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
5	Registration front actuator coming off or caught in some sections of the machine	Reattach the registration front actuator.
6	HVPS flat cable breakage	Replace the HVPS flat cable.
7	Registration front sensor failure	Replace the registration front/rear actuator holder ASSY.
8	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
9	Damaged gears in the feeding system	Replace the main frame L ASSY.
10	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7700

Jam 2-sided
Pull out the Duplex Tray at the back of the machine and remove the jammed paper.

The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.

<User Check>

- Remove the jammed paper.
- Close the back cover correctly.
- Close the paper tray correctly.

Step	Cause	Remedy
1	Foreign object in the duplex paper feed system	Remove the foreign object.
2	Foreign object in the duplex paper feed system of the paper tray	Remove the foreign object.
3	Back cover attachment failure	Reattach the back cover.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Duplex tray failure	Replace the duplex tray.
6	Damaged gears in the feeding system	Replace the main frame L ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7C00

Cover is Open
Make sure there is no paper jammed inside the machine and close the Back Cover, then press Go.

The eject sensor was ON when the power switch was turned ON.

<User Check>

- Close the back cover correctly.

Step	Cause	Remedy
1	Eject actuator caught in sections of the machine	Reattach the eject actuator.
2	Fuser cover attachment failure	Reattach the fuser cover.
3	Back cover attachment failure	Reattach the back cover.
4	Eject sensor failure	Replace the eject sensor PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8000

Print Overrun **-**

First side printing started before finishing receiving the second side data in duplex printing mode due to the insufficient memory.

<User Check>

- Print the print data stored in the memory.
- The size of printing data per page is too big. Change the printing contents to reduce the data size.
- Switch to single-side printing.

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

■ Error code 8903

2-sided Disabled **Close the Back Cover of the machine.**

The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)

Error code 8904

2-sided Disabled **Close the Back Cover of the machine.**

The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)

<User Check>

- Close the back cover correctly.

Step	Cause	Remedy
1	Back cover/duplex tray sensor attachment failure	Reattach the back cover/duplex tray sensor.
2	Boss to push the back cover/ duplex tray sensor is broken.	Replace the back cover.
3	Back cover/duplex tray sensor failure	Replace the eject sensor PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8A01

Size Error DX
Specify the correct paper.

The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.

<User Check>

• Use appropriate paper (Letter to Legal).

Step	Cause	Remedy
1	Registration rear actuator caught in some sections of the machine	Reattach the registration rear actuator.
2	Registration rear sensor failure	Replace the registration front/rear actuator holder ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8C00

Manual Feed
Load paper.

There is no paper set in the manual feed slot on the manual feed slot fix mode.

<User Check>

• Set paper in the manual feed slot.

Step	Cause	Remedy
1	Registration front actuator caught in some sections of the machine	Reattach the registration front actuator.
2	Connection failure of the registration rear sensor harness	Reconnect the registration front/rear sensor PCB harness.
3	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
4	HVPS flat cable breakage	Replace the HVPS flat cable.
5	Registration rear sensor failure	Replace the registration front/rear actuator holder ASSY.
6	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9002

Size Mismatch
Load paper and press Go.

When printing from the paper tray, the size of paper set in the paper tray does not match the size specified by the driver.

<User Check>

- Change the driver setting to be matched with the size of the paper set in the paper tray.

Step	Cause	Remedy
1	Registration rear actuator caught in some sections of the machine	Reattach the registration rear actuator.
2	Registration rear sensor failure	Replace the registration front/rear actuator holder ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9302

No Paper
Load paper.

When printing from the paper tray, the paper feed sensor detected that there was no paper set in the paper tray.

<User Check>

- Set paper in the paper tray.

Step	Cause	Remedy
1	Connection failure of the paper feed sensor harness	Reconnect the paper feed sensor harness ASSY.
2	Paper feed actuator caught in sections of the machine	Reattach the paper feed actuator.
3	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
4	Panel PCB failure	Replace the panel PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9701

Size Error DX
Press Go for 2 seconds. Specify the correct paper and load the same size paper as the Printer driver setting.

A tray set to duplex printing-incompatible size was specified in duplex printing.

<User Check>

- Specify A4 or Letter size paper in the driver and set paper with the same size to the specified paper tray.

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

■ Error code C700

Out of Memory **Press Go for 2 seconds.**

There is insufficient memory to expand PC print data.

<User Check>

- Print the print data stored in the memory.
- Divide the print data and print them separately.

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

■ Error code E000

Print Unable E0 **Turn off and on.**

An error occurred in the ROM check sum.

Error code E100

Print Unable E1 **Turn off and on.**

Program error

<User Check>

- Install the latest firmware.

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

■ Error code E500

Print Unable E5 **Turn the power off and then back on again.**

An error occurred during access to the DRAM in the main PCB ASSY.

Error code E600

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

Write error in the EEPROM of the main PCB ASSY

Error code E702

Machine Error E7 **Turn the power off and then back on again.**

Read error in the flash ROM on the main PCB

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

■ Error code F900

Machine Error F9 **-**

The country code was not entered correctly.

Step	Cause	Remedy
1	The power was turned OFF while function code 74 was running.	Reenter the country code.
2	Main PCB failure	Replace the main PCB ASSY.

4.2 Troubleshooting for Paper Feeding Problems

End users can solve problems related to paper feeding as long as they follow the User Check items. If the problem still cannot be solved, implement each procedure according to the step numbers in the tables below.

4.2.1 No paper is fed from paper tray

<User Check>

- Check that the paper is set in the paper tray correctly.
- Check that there is not too much paper set in the paper tray.
- Flip over the paper in the paper tray or rotate the paper 180°.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Check that the manual feed slot is not set as the pick-up tray.
- Flip through the paper and reset it in the paper tray.
- Clean the pick-up roller.

Step	Cause	Remedy
1	Accumulated paper dust	Remove the paper dust cleaning roller cover and get rid of the paper dust in the area described in the figure below.
2	Attachment failure of the roller holder ASSY	Reattach the roller holder ASSY correctly.
3	Connection failure of the main motor flat cable	Reconnect the main motor flat cable.
4	Connection failure of the paper feed sensor harness	Reconnect the paper feed sensor harness ASSY.
5	Paper feed actuator coming off	Reattach the paper feed actuator.
6	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
7	Connection failure of the T1 clutch harness	Reconnect the T1 clutch harness.
8	Abrasion of the pick-up roller	Replace the PF kit.
9	T1 clutch failure	Replace the T1 clutch.
10	Damaged P/P gear	Replace the paper tray.
11	Main motor failure	Replace the main motor.
12	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
13	Panel PCB failure	Replace the panel PCB ASSY.
14	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
15	Damaged fuser unit	Replace the fuser unit.
16	Main PCB failure	Replace the main PCB ASSY.

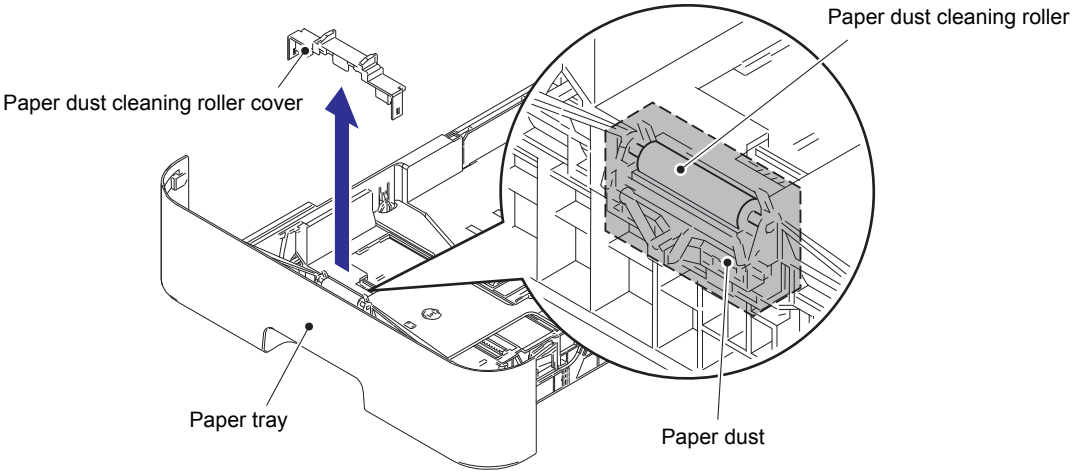


Fig. 2-7

4.2.2 No paper is fed from manual feed slot

<User Check>

- Check that the paper is set into the deepest part of the manual feed slot.
- Check that multiple sheets of paper are not set in the manual feed slot.
- Check that the thickness of the paper is 60 to 163 g/m^2.
- Check that the paper tray is not set as the pick-up tray.
- Check that the paper tray is closed correctly.

Step	Cause	Remedy
1	Connection failure of the main motor flat cable	Reconnect the main motor flat cable.
2	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
3	Registration front actuator coming off	Reattach the registration front actuator.
4	Connection failure of the registration front sensor PCB harness	Reconnect the registration front sensor PCB harness.
5	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
6	Registration clutch failure	Replace the registration clutch.
7	Registration front sensor failure	Replace the registration front/rear actuator holder ASSY.
8	HVPS flat cable breakage	Replace the HVPS flat cable.
9	Main motor failure	Replace the main motor.
10	Damaged fuser unit	Replace the fuser unit.
11	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
12	Main PCB failure	Replace the main PCB ASSY.

4.2.3 Multiple sheets of paper are fed

<User Check>

- Check that there is not too much paper set in the paper tray.
- Check that the paper is set in the paper tray correctly.
- Flip over the paper in the paper tray or rotate the paper 180°.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Flip through the paper and reset it in the paper tray.

Step	Cause	Remedy
1	Abrasion of the separation pad	Replace the PF kit.

4.2.4 Paper becomes wrinkled

<User Check>

- Check that the paper is set in paper tray correctly.
- Flip over the paper in paper tray or rotate the paper 180°.
- Adjust each paper guide according to the paper size.
- Check that the thickness of the paper is 60 to 105 g/m^2.
  (60 to 163 g/m^2 for manual feed slot)
- Check that the paper is not damp.
- Check that there is no dust stuck to the fuser unit.
- Check that the type of paper is appropriate.

Step	Cause	Remedy
1	Fuser unit failure	Replace the fuser unit.
2	Damaged gears in the ejecting system	Replace the main frame L ASSY.

4.2.5 Paper is fed at an angle

<User Check>

- Check that the paper is set in paper tray correctly.
- Flip over the paper in paper tray or rotate the paper 180°.
- Adjust each paper guide according to the paper size.
- Check that the thickness of the paper is 60 to 105 g/m^2.
  (60 to 163 g/m^2 for manual feed slot)
- Check that there is not too much paper set in the paper tray.
- Check that the type of paper is appropriate.
- Clean the pick-up roller.
- Check that the green envelope lever is not lowered on only one side.
- Replace the drum unit.
- Replace the toner cartridge.

Step	Cause	Remedy
1	Pinch spring of the paper tray coming off	Reattach the pinch spring of the paper tray.
2	Tray pinch spring of the machine side coming off	Reattach the tray pinch spring of the machine side. Refer to the figure below.
3	One-side abrasion of the pick-up rollers	Replace the PF kit.
4	Main PCB failure	Replace the main PCB ASSY.
5	Damaged gears in the feeding system	Replace the main frame L ASSY.

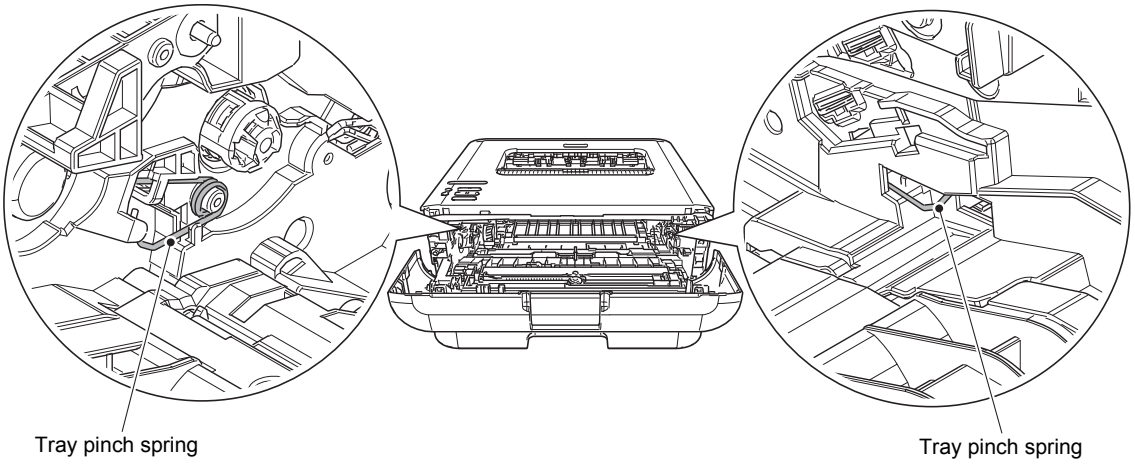


Fig. 2-8

4.2.6 Paper is curled

<User Check>

- Check that the paper specified in driver settings is matched to the paper set.
- Select "Reduce Paper Curl" in the driver.
- Check that the paper is set in paper tray correctly.
- Print while the green envelope levers are lowered.

Step	Cause	Remedy
1	Fuser unit failure	Replace the fuser unit.
2	Main PCB failure	Replace the main PCB ASSY.

4.2.7 Duplex printing is not possible

<User Check>

- Close the back cover completely.
- Set the duplex tray correctly.
- Set the driver setting to duplex printing.
- Use A4 or Letter paper specified by the manufacturer.

Step	Cause	Remedy
1	Eject actuator coming off	Reattach the eject actuator.
2	Back cover failure	Replace the back cover.
3	Back cover/duplex tray sensor or eject sensor failure	Replace the eject sensor PCB ASSY.
4	Duplex tray failure	Replace the duplex tray.
5	Main PCB failure	Replace the main PCB ASSY.
6	Damaged gears in the ejecting system	Replace the main frame L ASSY.

4.2.8 Paper jam

■ Paper jams in the paper tray

<User Check>

- Check that the paper is set in the paper tray correctly.
- Flip over the paper in the paper tray or rotate the paper 180°.
- Adjust the paper guide according to the paper size.
- Check that there is not too much paper set in the paper tray.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Flip through the paper and reset it in the paper tray.
- Replace the toner cartridge with a new one.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Foreign object around the paper tray	Remove the foreign object.
2	Paper dust cleaning roller attachment failure	Reattach the paper dust cleaning roller.
3	Registration front actuator coming off	Reattach the registration front actuator.
4	Connection failure of the registration front/rear sensor PCB harness	Reconnect the registration front/rear sensor PCB harness.
5	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
6	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
7	HVPS flat cable breakage	Replace the HVPS flat cable.
8	Registration front sensor failure	Replace the registration front/rear actuator holder ASSY.
9	Registration clutch failure	Replace the registration clutch.
10	Main motor failure	Replace the main motor.
11	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
12	Panel PCB failure	Replace the panel PCB ASSY.
13	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
14	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
15	Damaged fuser unit	Replace the fuser unit.
16	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in the manual feed slot

<User Check>

- Check that the paper is set in the manual feed slot correctly.
- Flip over the paper in the manual feed slot or rotate the paper 180°.
- Adjust the paper guide according to the paper size.
- Check that multiple sheets of paper are not set.
- Check that the thickness of the paper is 60 to 163 g/m^2.

Step	Cause	Remedy
1	Foreign object around the manual feed slot	Remove the foreign object.
2	Connection failure of the registration front/rear sensor PCB harness	Reconnect the registration front/rear sensor PCB harness.
3	Registration front actuator coming off	Reattach the registration front actuator.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
6	HVPS flat cable breakage	Replace the HVPS flat cable.
7	Registration front sensor failure	Replace the registration front/rear actuator holder ASSY.
8	Registration clutch failure	Replace the registration clutch.
9	Main motor failure	Replace the main motor.
10	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
11	Damaged gears in the feeding system	Replace the main frame L ASSY.
12	Damaged fuser unit	Replace the fuser unit.
13	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in the feeding path in the center of the machine

<User Check>

- Check that the paper is set in paper tray correctly.
- Flip over the paper in paper tray or rotate the paper 180°.
- Adjust each paper guide according to the paper size.
- Check that there is not too much paper set in the paper tray.
- Check that the thickness of the paper is 60 to 105 g/m^2.
  (60 to 163 g/m^2 for manual feed slot)
- Flip through the paper and reset it in the paper tray.
- Replace the drum unit.

Step	Cause	Remedy
1	Foreign object inside the machine	Remove the foreign object.
2	Eject actuator coming off	Reattach the eject actuator.
3	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	Fuser cover attachment failure	Reattach the fuser cover.
6	Registration clutch failure	Replace the registration clutch.
7	Eject sensor failure	Replace the eject sensor PCB ASSY.
8	Registration rear sensor failure	Replace the registration front/rear actuator holder ASSY.
9	Main motor failure	Replace the main motor.
10	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
11	Damaged gears in the feeding system	Replace the main frame L ASSY.
12	Fuser unit failure	Replace the fuser unit.
13	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in the ejecting section

<User Check>

- Check that the paper is set in paper tray correctly.
- Flip over the paper in paper tray or rotate the paper 180°.
- Adjust each paper guide according to the paper size.
- Check that there is not too much paper set in the paper tray.
- Check that the thickness of the paper is 60 to 105 g/m^2.
  (60 to 163 g/m^2 for manual feed slot)
- Flip through the paper and reset it in the paper tray.

Step	Cause	Remedy
1	Foreign object in the back cover	Remove the foreign object.
2	Eject actuator coming off	Reattach the eject actuator.
3	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Eject sensor failure	Replace the eject sensor PCB ASSY.
6	Damaged gears in the ejecting system	Replace the main frame L ASSY.
7	Fuser unit failure	Replace the fuser unit.
8	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in the duplex tray

<User Check>

- Flip over the paper in paper tray or rotate the paper 180°.
- Check that the thickness of the paper is 60 to 105 g/m^2.
  (60 to 163 g/m^2 for manual feed slot)
- Flip through the paper and reset it in the paper tray.

Step	Cause	Remedy
1	Foreign object in the duplex paper feed system	Remove the foreign object.
2	Eject actuator coming off	Reattach the eject actuator.
3	Fuser cover attachment failure	Reattach the fuser cover.
4	Back cover failure	Replace the back cover.
5	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
6	Duplex tray failure	Replace the duplex tray.
7	Main PCB failure	Replace the main PCB ASSY.

4.3 Troubleshooting for Image Defects

4.3.1 Image defect examples

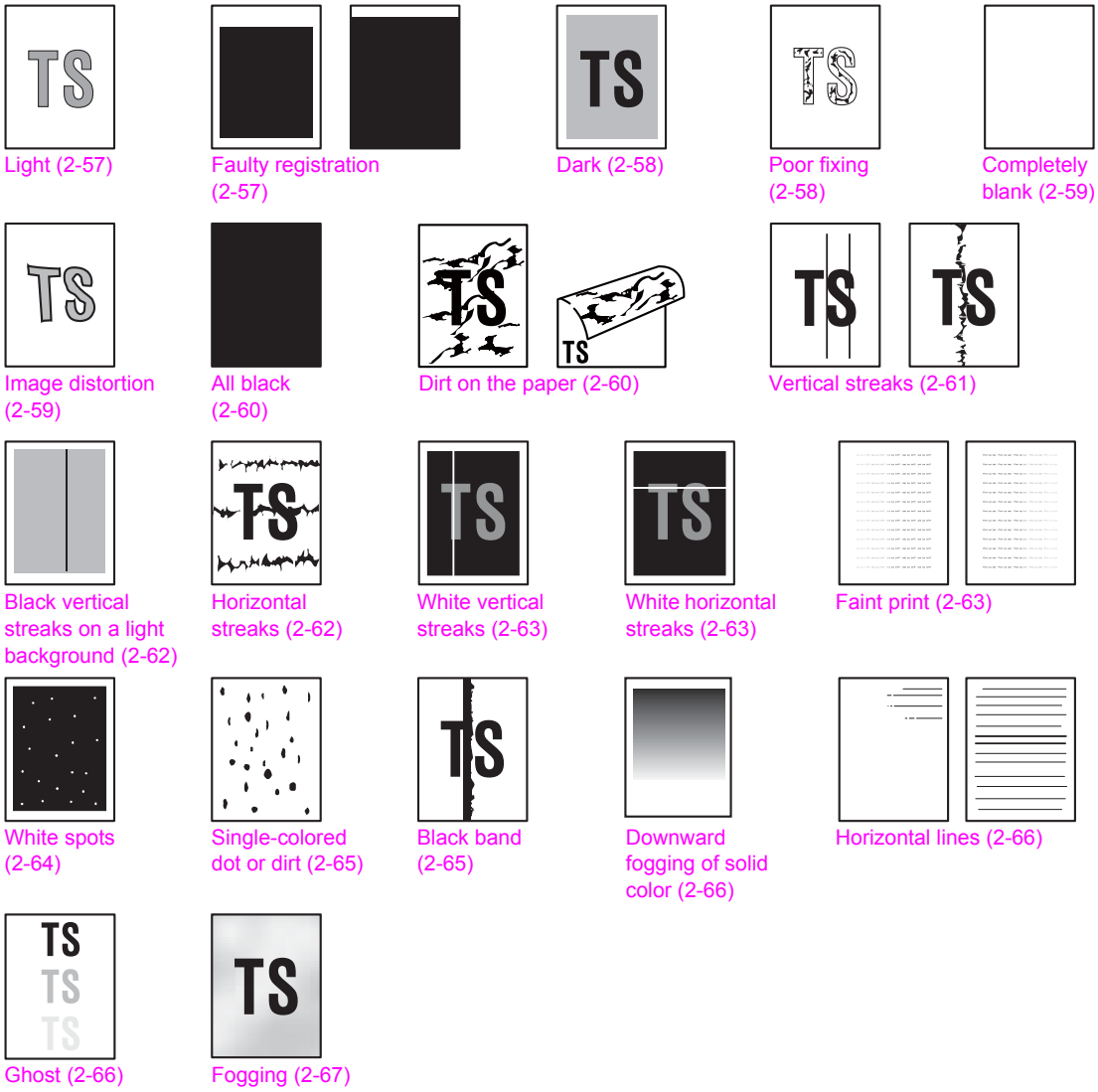
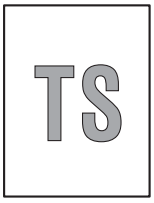


Fig. 2-9

4.3.2 Troubleshooting according to image defect

End users can solve problems related to image defect as long as they follow the User Check items. If the problem still cannot be solved, implement each procedure according to the step numbers in the tables below.

■ Light

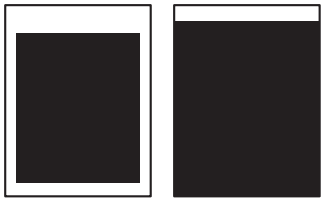


<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- If the whole page is light, toner save mode may be ON. Turn OFF the toner save mode.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Turn ON the power switch, and leave the machine for a while (condensation).
- Check that the paper is not damp.

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
3	Wrong adjusted value of the laser unit entered	Refer to "1.3 Setting Serial Number and Entering Adjusted Value of Laser Unit" in Chapter 4, and enter the adjusted value of the laser unit correctly.
4	Dirt on the electrodes of the high-voltage power supply PCB	Clean the electrodes of the machine. (Refer to Fig. 2-6.)
5	Fuser unit failure	Replace the fuser unit.
6	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Faulty registration



<User Check>

- Check that the appropriate paper type is selected in the driver.

Step	Cause	Remedy
1	Registration rear actuator coming off	Reattach the registration rear actuator.
2	Laser unit failure	Replace the laser unit.
3	Main PCB failure	Replace the main PCB ASSY.

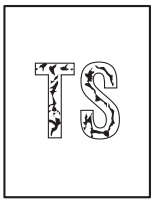
■ Dark

<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- If a new toner cartridge has been detected, check that it was not replaced with another toner cartridge.
- Clean the corona wire of the drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
3	Wrong adjusted value of the laser unit entered	Refer to "1.3 Setting Serial Number and Entering Adjusted Value of Laser Unit" in Chapter 4, and enter the adjusted value of the laser unit correctly.
4	Dirt on the electrodes of the high-voltage power supply PCB	Clean the electrodes of the machine. (Refer to Fig. 2-6.)
5	Fuser unit failure	Replace the fuser unit.
6	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.
8	Laser unit failure	Replace the laser unit.

■ Poor fixing

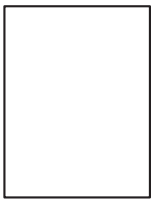


<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- Clean the corona wire of the drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Fuser unit failure	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
5	Laser unit failure	Replace the laser unit.
6	Main PCB failure	Replace the main PCB ASSY.

■ Completely blank

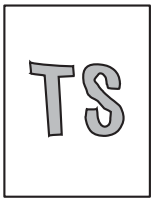


<User Check>

- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Install the latest firmware.

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
3	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
4	Laser unit attachment failure	Reattach the laser unit.
5	Laser unit flat cable failure	Replace the laser unit flat cable.
6	Dirt on the electrodes of the high-voltage power supply PCB	Clean the electrodes of the machine. (Refer to Fig. 2-6.)
7	Laser unit failure	Replace the laser unit.
8	Main PCB failure	Replace the main PCB ASSY.

■ Image distortion



Step	Cause	Remedy
1	Laser unit attachment failure	Reattach the laser unit.
2	Laser unit failure	Replace the laser unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ All black

<User Check>

- Clean the corona wire of the drum unit.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
3	Laser unit flat cable failure	Replace the laser unit flat cable.
4	Dirt on the electrodes of the high-voltage power supply PCB	Clean the electrodes of the machine. (Refer to Fig. 2-6.)
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	Laser unit failure	Replace the laser unit.
7	Main PCB failure	Replace the main PCB ASSY.

■ Dirt on the paper

<User Check>

- This problem may disappear after printing multiple sheets of paper.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Dirt on the paper feed system	Wipe off the dirt.
2	Dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Vertical streaks

<User Check>

- Clean the corona wire of the drum unit.
- Return the corona wire cleaning tab to the "▲" position.
- This problem may disappear after printing multiple sheets of paper.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirt on the paper feed system	Wipe off the dirt.
2	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray (Refer to the figure below).
3	Dirt on the fuser unit	Replace the fuser unit.
4	Laser unit failure	Replace the laser unit.

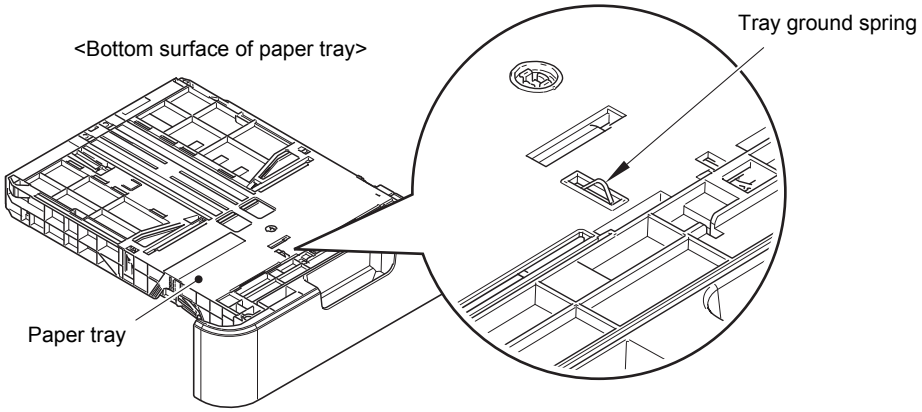
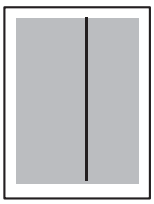


Fig. 2-10

■ Black vertical streaks on a light background



<User Check>

- Clean the corona wire of the drum unit.
- This problem may disappear after printing multiple sheets of paper.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Turn ON the power switch, and leave the machine for a while (condensation).
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Laser unit failure	Replace the laser unit.

■ Horizontal streaks

<User Check>

- Clean the corona wire of the drum unit.
- This problem may disappear after printing multiple sheets of paper.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray. (Refer to Fig. 2-10.)
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ White vertical streaks

<User Check>

- Clean the corona wire of the drum unit.
- Check that there is no dust on the toner cartridge.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Laser unit failure	Replace the laser unit.

■ White horizontal streaks

<User Check>

- This problem may disappear after printing multiple sheets of paper.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Scratch or dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

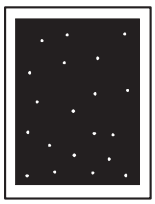
■ Faint print

<User Check>

- Check that the machine is positioned on a level surface.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Laser unit failure	Replace the laser unit.
2	Fuser unit failure	Replace the fuser unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ White spots

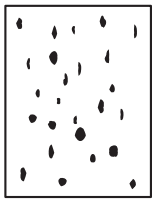


<User Check>

- Check that the fan is not clogged.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Accumulated paper dust	Remove the paper dust cleaning roller cover and get rid of the paper dust in the area described in Fig. 2-7.
2	Clogged filter	Clean the filter.
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Single-colored dot or dirt



<User Check>

- Check that the paper is not damp.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Accumulated paper dust	Remove the paper dust cleaning roller cover and get rid of the paper dust in the area described in Fig. 2-7.
2	Clogged filter	Clean the filter.
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

Note:

- Image defects which appear periodically may be caused by failure of rollers. Refer to the table below and determine the cause based on the diameter of the rollers or the pitch at which defects appear on the image.

<Pitch appears in the image and rollers >

Part name	Pitch at which defects appear in the image
Develop roller	32.4 mm
Exposure drum	94.2 mm
Heat roller in the fuser unit	78.5 mm
Pressure roller in the fuser unit	78.5 mm

■ Black band

<User Check>

- Clean the corona wire of the drum unit.
- Return the corona wire cleaning tab to the "▲" position.
- This problem may disappear after printing multiple sheets of paper.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray. (Refer to Fig. 2-10.)
2	Laser unit failure	Replace the laser unit.

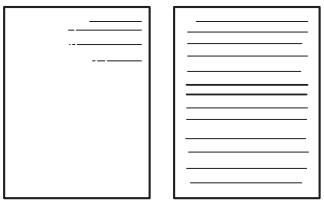
■ Downward fogging of solid color

<User Check>

- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
2	Main PCB failure	Replace the main PCB ASSY.

■ Horizontal lines



<User Check>

- This problem may disappear after printing multiple sheets of paper.
- Refer to the User's Guide to remove the dirt from the exposure drum using a cotton applicator.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Scratch or dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Ghost

<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- Check that the appropriate paper type is selected in the driver.
- Select "Improve Toner Fixing" in the driver.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Scratch or dirt on the fuser unit	Replace the fuser unit.
2	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Fogging

<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- Check that the acid paper is not used.
- This problem may disappear after printing multiple sheets of paper.
- Replace the toner cartridge with a new one.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
2	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

Note:

• This problem tends to occur when the life of the drum unit or toner cartridge is expiring.

4.4 Troubleshooting for Software Problems

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

4.4.1 Cannot receive data

<User Check>

- Check that the USB cable or LAN 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.)

Step	Cause	Remedy
1	Machine connection	For Macintosh, check the Product ID*. When it is wrong, update the firmware.
2	Main PCB failure	Replace the main PCB ASSY.

* Check the Product ID on a Macintosh according to the following procedure:

(1) Select "About This Mac" from the "Apple" menu.

(2) Press the "More Info..." button in the "About This Mac" dialog box.

(3) Select "USB" at the bottom of "Hardware" in the "Content" on the left side of the screen.

(4) Select "HL-XXXX" in the "USB Device Tree".

(5) Check the "Product ID" under "HL-XXXX".

Product ID (hexadecimal)

- HL-L232*D series : 0062h
- HL-L236*D* series : 0059h
- HL-L2340D : 0063h
- HL-L2300D : 0061h
- HL-L2305 : 0075h
- HL-L2315DW : 0092h
- HL-2560DN : 006Fh
- HL-2569DW : 006Eh
- HL-2260D : 006Dh
- HL-2260 : 006Ch

4.5 Troubleshooting for Network Problems

4.5.1 Cannot print via network connection

<User Check>

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

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

4.5.2 Cannot connect to access point

<User Check>

- Check the wireless LAN settings.
- Check the access point settings.
- Change the machine installation location.
- Set the access point manually.

Step	Cause	Remedy
1	Invalid wireless LAN setting	Enable the WSW54 selector 4 setting.

4.6 Troubleshooting for Control Panel Problems

4.6.1 Nothing is displayed on the LCD

<User Check>

- Turn the power switch OFF and then ON again.

Step	Cause	Remedy
1	Rubber key attachment failure	Reattach the rubber key.
2	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
3	Connection failure of the LVPS harness	Reconnect the LVPS harness.
4	Power cord failure	Replace the power cord.
5	Rubber key failure	Replace the rubber key.
6	Panel PCB failure	Replace the panel PCB ASSY.
7	LCD failure	Replace the LCD.
8	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

4.6.2 Nothing is displayed on the LED

<User Check>

- Turn the power switch OFF and then ON again.

Step	Cause	Remedy
1	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
2	Connection failure of the LVPS harness	Reconnect the LVPS harness.
3	Power cord failure	Replace the power cord.
4	Panel PCB failure	Replace the panel PCB ASSY.
5	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.6.3 Control panel is inoperable

<User Check>

- Turn the power switch OFF and then ON again.

Step	Cause	Remedy
1	Rubber key attachment failure (LCD models)	Reattach the rubber key.
2	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
3	Connection failure of the LVPS harness	Reconnect the LVPS harness.
4	Rubber key failure (LCD models)	Replace the rubber key.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

4.7 Troubleshooting for Toner and Drum Problems

4.7.1 New toner is not detected

<User Check>

- Check that the packaged toner cartridge is not set.
- Check that a new (not used) toner cartridge is set.
- Check that the genuine toner cartridge is set.

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
3	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
4	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.7.2 Toner cartridge cannot be recognized

<User Check>

- Set the toner cartridge correctly.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
3	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
4	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.7.3 Error message prompting toner cartridge replacement does not disappear

<User Check>

- Check that a new (not used) toner cartridge is set.
- Check that the genuine toner cartridge is set.

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the new toner sensor PCB flat cable	Reconnect the new toner sensor PCB flat cable.
3	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
4	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

4.7.4 Drum error

<User Check>

- Clean the corona wire of the drum unit.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-5 and Fig. 2-6.)
2	Dirt on the high-voltage power supply PCB terminal	Clean the electrodes of the machine. (Refer to Fig. 2-6.)
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.7.5 Error message prompting drum replacement does not disappear

<User Check>

- Reset the drum counter according to the manual.

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

4.8 Troubleshooting for Fuser Unit Problems

4.8.1 Fuser unit failure

Step	Cause	Remedy
1	Connection failure of the center thermistor harness	Reconnect the center thermistor harness.
2	Connection failure of the side thermistor harness	Reconnect the side thermistor harness.
3	Connection failure of the heater harness	Reconnect the heater harness.
4	Connection failure of the eject sensor PCB flat cable	Reconnect the eject sensor PCB flat cable.
5	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
6	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
7	Fuser unit failure	Replace the fuser unit.
8	Main PCB failure	Replace the main PCB ASSY.

Note:

- Turn the power switch OFF and then ON again. Leave the machine for 15 minutes. This problem may then be cleared.
- The machine may recover from the error, when the test printing of the maintenance mode for service personnel is started. However, conducting this operation while the heater has not yet cooled may cause the fuser unit to melt. Be careful.

4.9 Troubleshooting for Laser Unit Problems

4.9.1 Laser unit failure

<User Check>

- Turn ON the power switch, then open the front cover and the back cover. Leave the machine for a while to remove condensation.

Step	Cause	Remedy
1	Wrong adjusted value of laser unit entered	Refer to “1.3 Setting Serial Number and Entering Adjusted Value of Laser Unit” in Chapter 4, and enter the adjusted value of the laser unit correctly.
2	Ground plate contact failure	Retighten the screws to secure the laser unit ground plate.
3	Laser unit attachment failure	Reattach the laser unit.
4	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
5	Laser unit failure	Replace the laser unit.
6	Main PCB failure	Replace the main PCB ASSY.

4.10 Troubleshooting for PCB Problems

4.10.1 Main PCB failure

<User Check>

- Turn the power switch OFF and then ON again.
- Install the latest firmware.
- Check that the PC Print is not forbidden.
- Check the print limit ID.
- Check that the print data is not damaged.

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

4.10.2 Memory full

<User Check>

- Print the accumulated data.
- Reduce the amount or resolution of the data.

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

4.10.3 Print limit / ID authentification error

<User Check>

- Check that the PC Print is not forbidden.
- Check the print limit ID.

Step	Cause	Remedy
1	Forgot ID	Execute "Initialize EEPROM parameters (function code: 01)" to reset ID and let user to input a new ID.
2	Main PCB failure	Replace the main PCB ASSY.

4.11 Troubleshooting for Other Problems

4.11.1 Cannot print

<User Check>

- Turn the power switch OFF and then ON again.
- Check that the USB cable is connected to the host correctly.
- Check that the LAN cable is connected to the host correctly.
- Replace the USB cable.
- Replace the LAN cable.
- Check that the maximum printable page number has not been exceeded.
- Check that the PC Print is not forbidden.
- Check the print limit ID.
- Check the network connection.
- Check the relevant section in the Network Setting Guide.
- Check that the print data is not damaged.

Step	Cause	Remedy
1	Forgot print limit ID	Execute "Initialize EEPROM parameters (function code: 01)" to reset ID and let user to input a new ID.
2	Connection failure of the wireless LAN connector	Reconnect the wireless LAN connector.
3	Wireless LAN PCB failure	Replace the wireless LAN PCB.
4	Main PCB failure	Replace the main PCB ASSY.

4.11.2 Cannot update firmware

<User Check>

- Make sure that there is no other function running.
- Turn the power switch OFF and then ON again.

Step	Cause	Remedy
1	Firmware version does not match	Reinstall the latest sub firmware, demo firmware, and main firmware in this order.
2	Main PCB failure	Replace the main PCB ASSY.

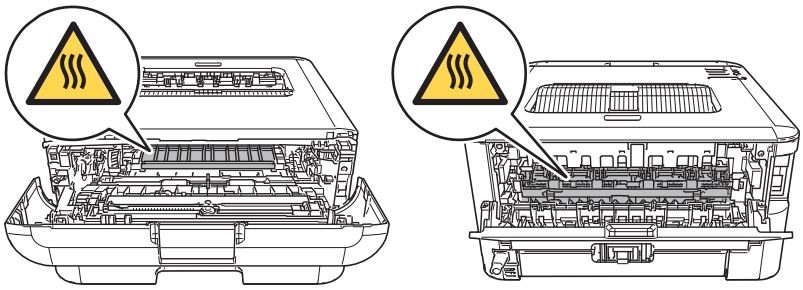
CHAPTER 3 DISASSEMBLY/REASSEMBLY

1. SAFETY PRECAUTIONS

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

WARNING

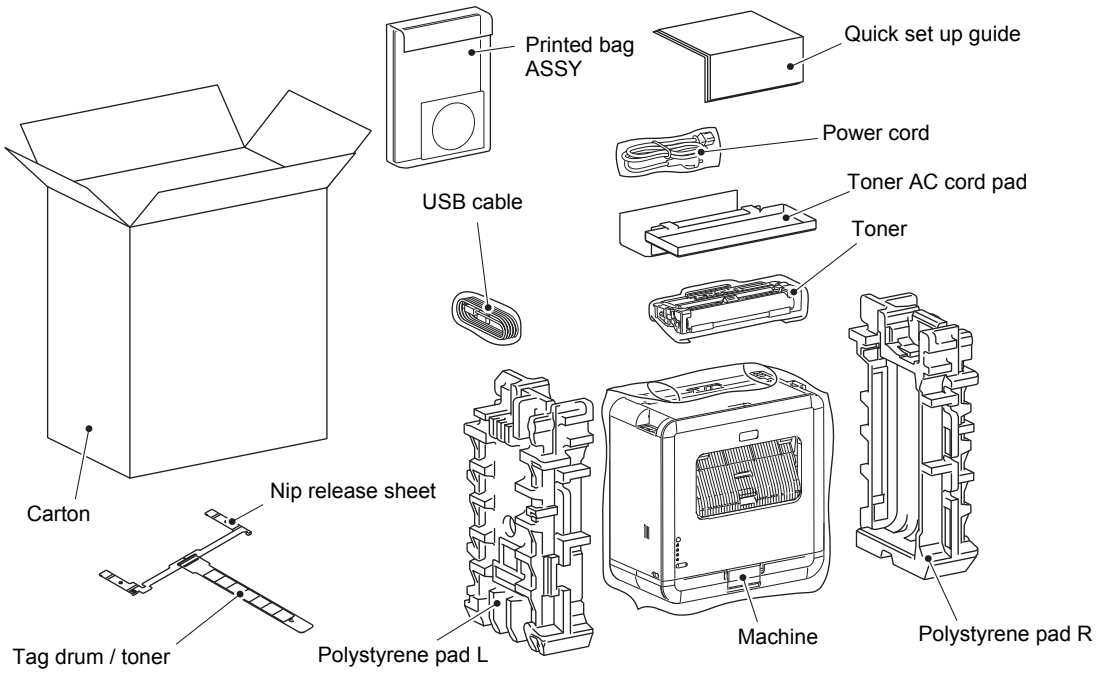
Some parts inside the machine are extremely hot immediately after the machine is used. When opening the front cover ASSY or back cover to access any parts inside the machine, never touch the shaded parts shown in the following figures.



- 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 harness.
- After disconnecting flat cables, check that each cable is not damaged at its end or shortcircuited.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cables are not at an angle.
- When connecting or disconnecting 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.
- Forcefully closing the front cover without mounting the toner cartridge and the drum unit can damage the machine.
- After assembly, it is recommended to conduct dielectric strength test and continuity test.
- When mounting the inlet, check that the inlet is housed in the frame completely and that the harness is not caught in the frame.
- The insulation sheet should not be damaged.

2. PACKING

<Inlet model>



<For China>

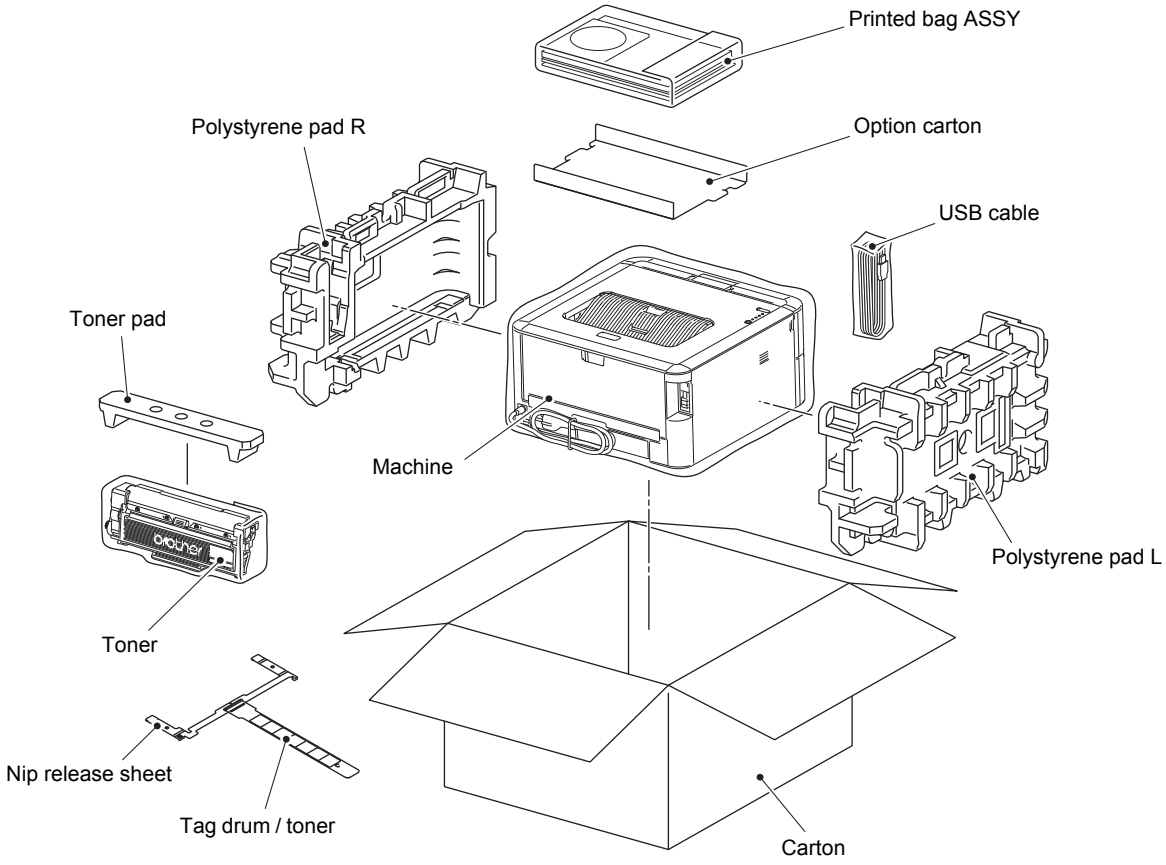
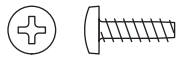
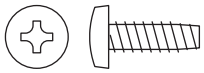


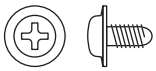
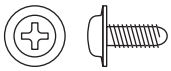
Fig. 3-1

3. SCREW CATALOGUE

Taptite bind B

Taptite bind B M3x10	
Taptite bind B M4x12	

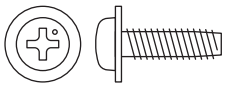
Taptite cup S

Taptite cup S M3x6 SR	
Taptite cup S M3x8 SR	

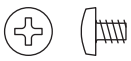
Screw pan (S/P washer)

Screw pan (S/P washer) M3.5x6	
Screw pan (S/P washer) M3x12DB	

Taptite pan B

Taptite pan B M4x14	

Screw bind

Screw bind M3x4	

Taptite flat B

Taptite flat B M3x10	

Fig. 3-2

4. SCREW TORQUE LIST

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Inner chute ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Top cover ASSY	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Fuser unit	Taptite pan B M4x14	2	0.8±0.1 (8±1)
LVPS shield plate cover	Taptite cup S M3x8 SR	2	0.45±0.05 (4.5±0.5)
	Screw pan (S/P washer) M3.5x6	1	0.45±0.05 (4.5±0.5)
Low-voltage power supply PCB ASSY	Screw pan (S/P washer) M3.5x6	1	0.45±0.05 (4.5±0.5)
	Taptite flat B M3x10*	1	0.5±0.1 (5±1)
	Taptite cup S M3x8 SR	2	0.45±0.05 (4.5±0.5)
High-voltage power supply PCB ASSY	Taptite cup S M3x8 SR	1	0.45±0.05 (4.5±0.5)
Laser unit	Taptite cup S M3x8 SR	4	0.8±0.1 (8±1)
Main PCB FG plate 1	Taptite cup S M3x8 SR	2	0.6±0.1 (6±1)
Main PCB ASSY	Taptite cup S M3x8 SR	3	0.6±0.1 (6±1)
Front chute ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Main frame L ASSY	Taptite bind B M4x12 (6a) (7a)	3	0.8±0.1 (8±1)
	Taptite bind B M4x12 (6c)	1	0.75±0.05 (7.5±0.5)
	Taptite cup S M3x6 SR	1	0.5±0.1 (5±1)
	Taptite cup S M3x8 SR	3	0.5±0.1 (5±1)
Flat cable guide	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Laser L FG plate	Screw pan (S/P washer) M3x12DB	1	0.5±0.1 (5±1)
Motor drive sub ASSY	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Motor plate calking ASSY	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Main motor	Screw bind M3x4	3	0.65±0.05 (6.5±0.5)
Main shield plate	Taptite cup S M3x8 SR	1	0.5±0.1 (5±1)
	Screw pan (S/P washer) M3x12DB	1	0.5±0.1 (5±1)
Laser R FG plate	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
LVPS shield plate	Taptite cup S M3x8 SR	1	0.5±0.1 (5±1)
	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Main frame R ASSY	Taptite cup S M3x6 SR	1	0.5±0.1 (5±1)
	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Registration front/rear actuator holder ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)

* For inlet models
Models with inlet: Germany/U.K./Switzerland/Italy/Israel/Russia/France/Belgium/Netherlands/PAN-NORDIC/Iberia/CEE-General/Peru

5. LUBRICATION

Lubricating oil type (Maker name)	Lubrication point		Quantity of lubrication
FLOIL BG-10KS (Kanto Kasei)	Fuser gear 67R/40R	3 places	1.5 to 2.0 mm dia. ball

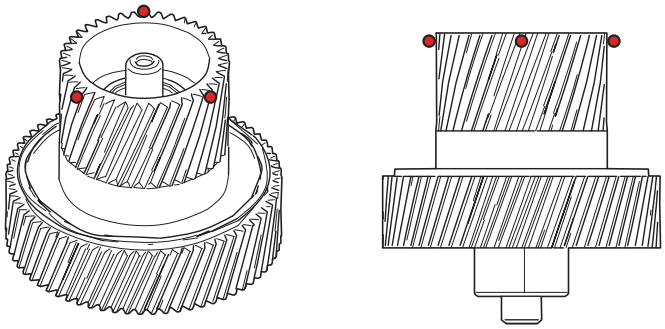


Fig. 3-3

6. OVERVIEW OF GEARS

<Layout view>

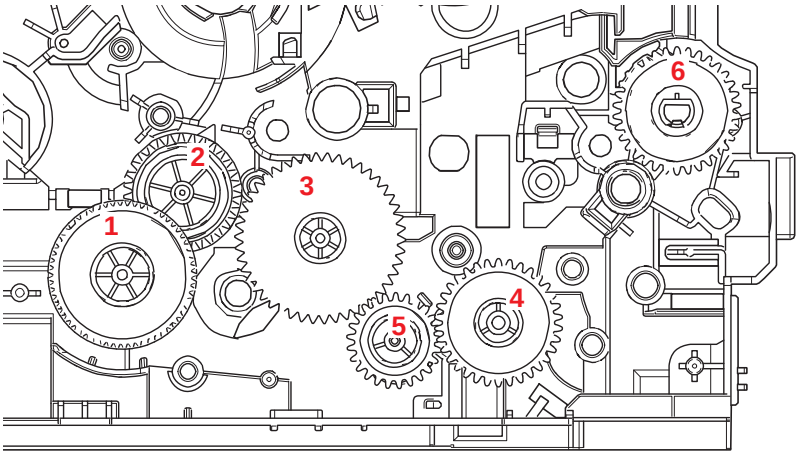


Fig. 3-4

<Development view>

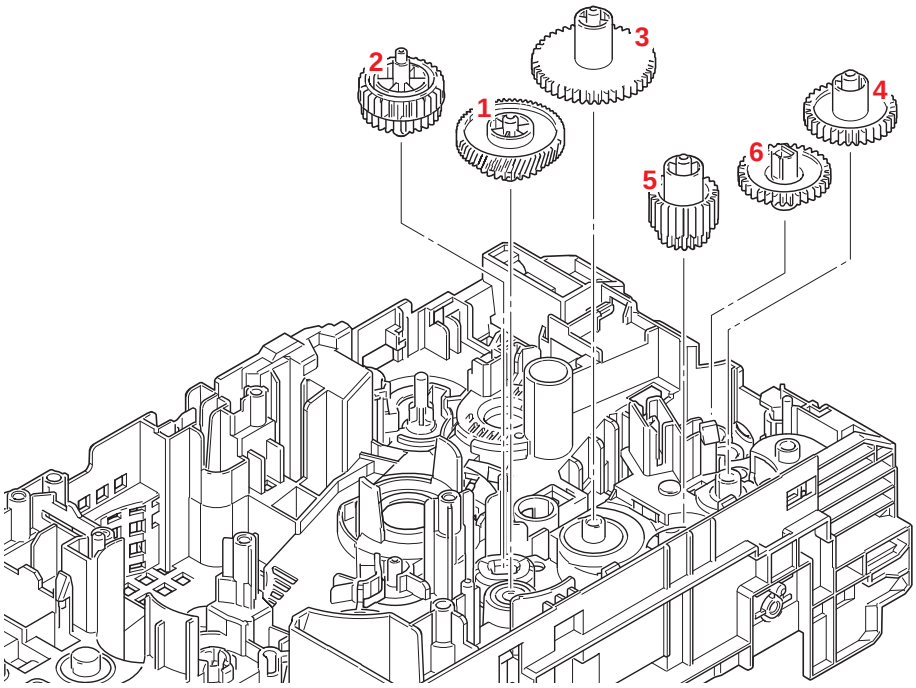


Fig. 3-5

Note:

- When handling gears, make sure that frame L faces up. Otherwise all gears come off.

<Name of gears>

1	LY9021	PF gear 61R/26	4	LY9025	PF gear 34
2	LY9022	PF gear 31/29	5	LY9024	PF gear 25/18
3	LY9023	PF gear 46	6	LY9088	Feeder gear 34

* These parts are subject to change without notice.

<Layout view>

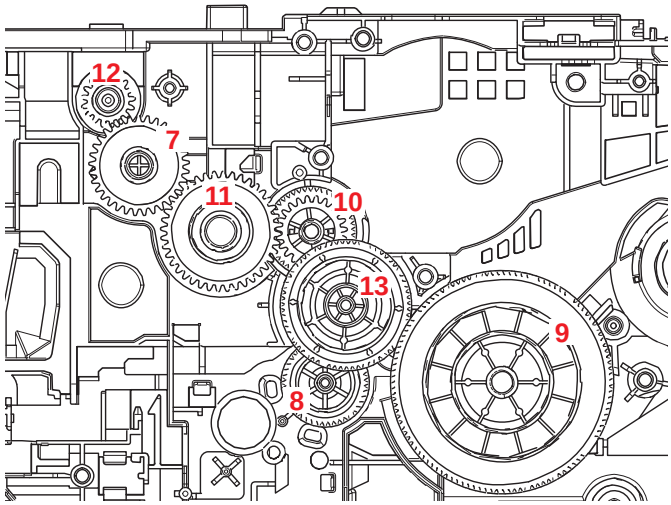


Fig. 3-6

<Development view>

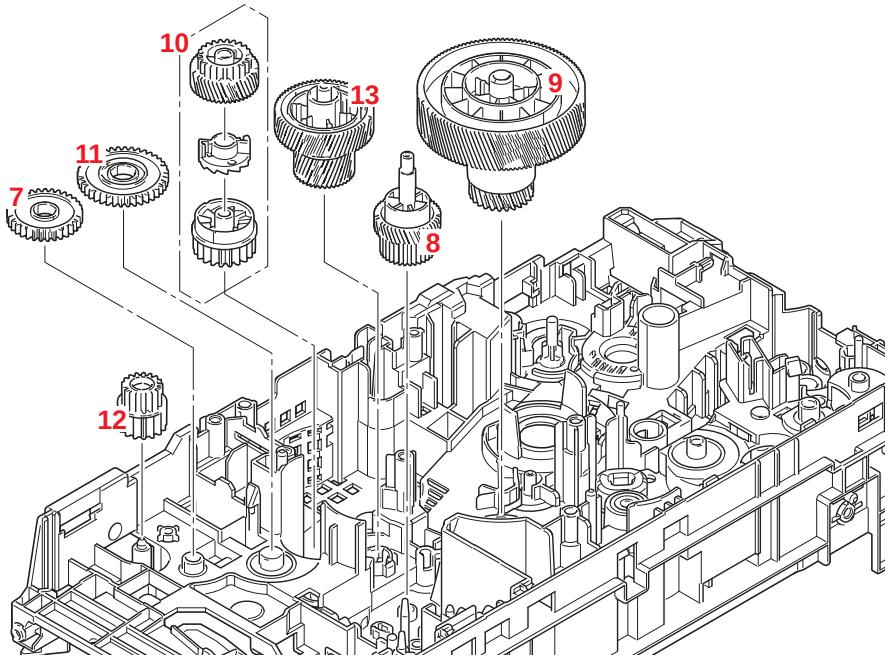


Fig. 3-7

Note:

- When handling gears, make sure that frame L faces up. Otherwise all gears come off.

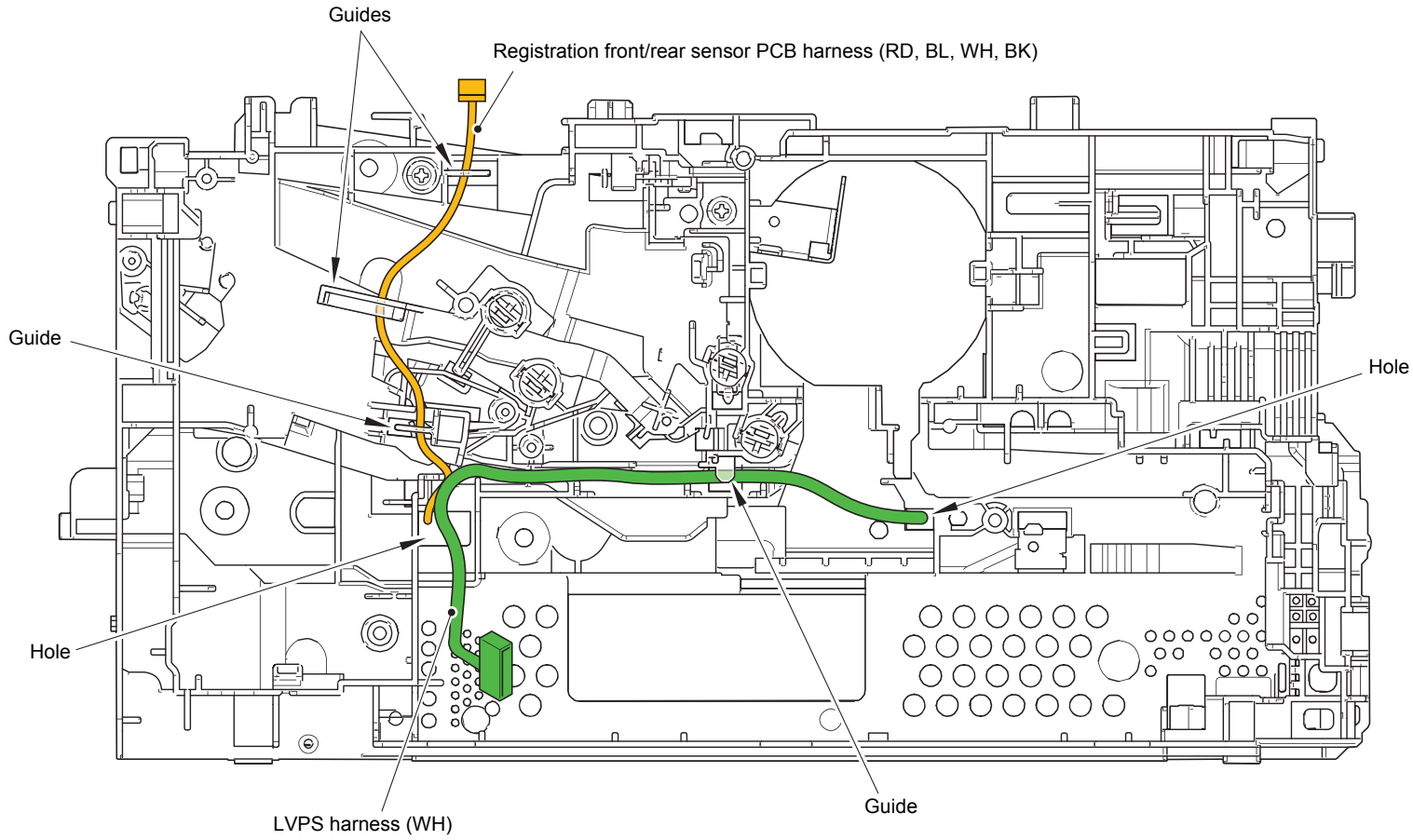
<Name of gears>

7	LY9006	Ejector gear 33	11	LY9005	Ejector gear 40
8	LY9008	DX gear 44/32	12	LY9007	Ejector gear 17/16
9	LY9026	Drum gear115L/26L	13	LY9029	Fuser gear 67R/40R
10	LY9030	Fuser gear oneway 45L/23			
	LY9032	Fuser clutch			
	LY9031	Fuser gear oneway 21			

* These parts are subject to change without notice.

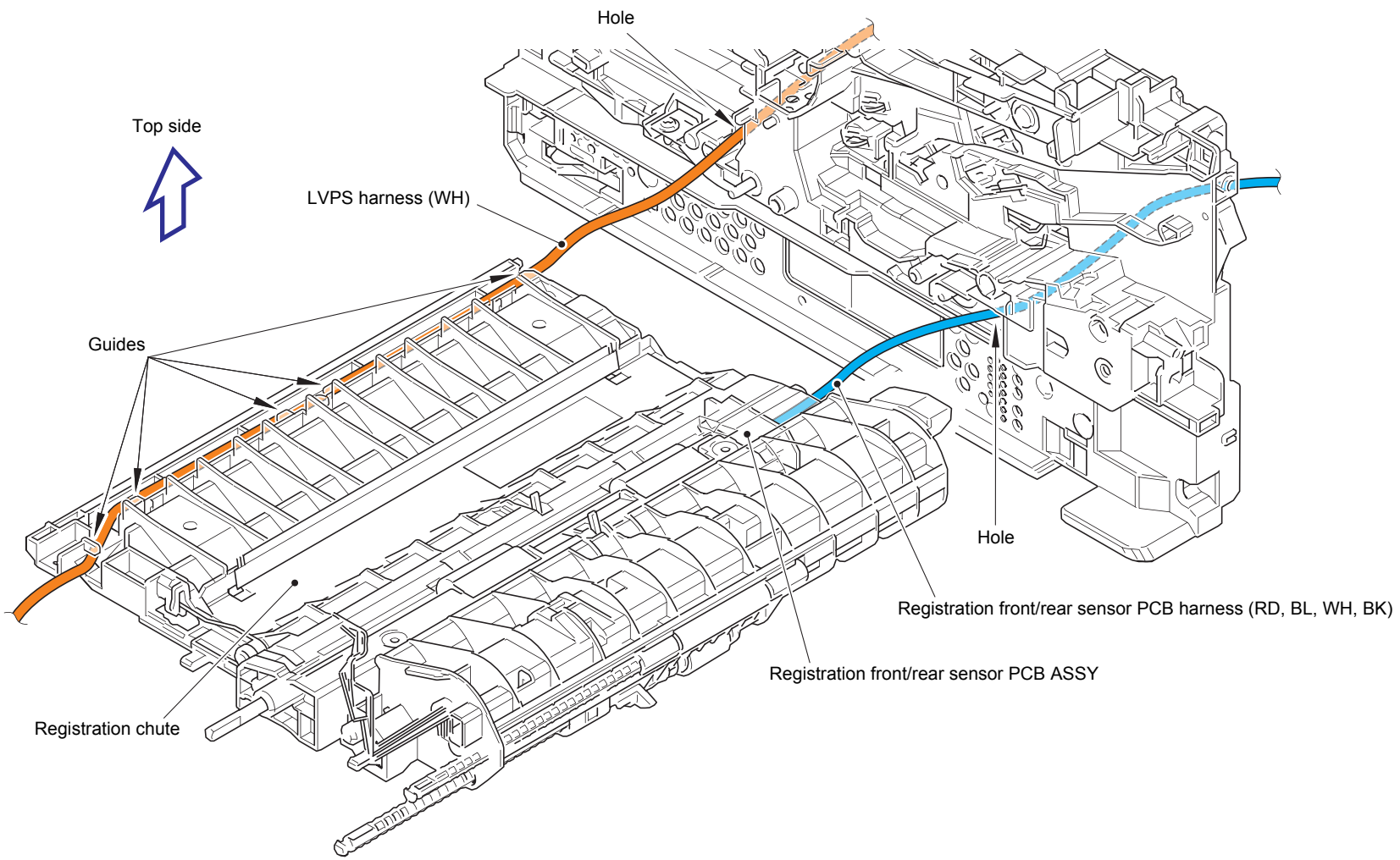
7. HARNESS ROUTING

1 Right side of the machine



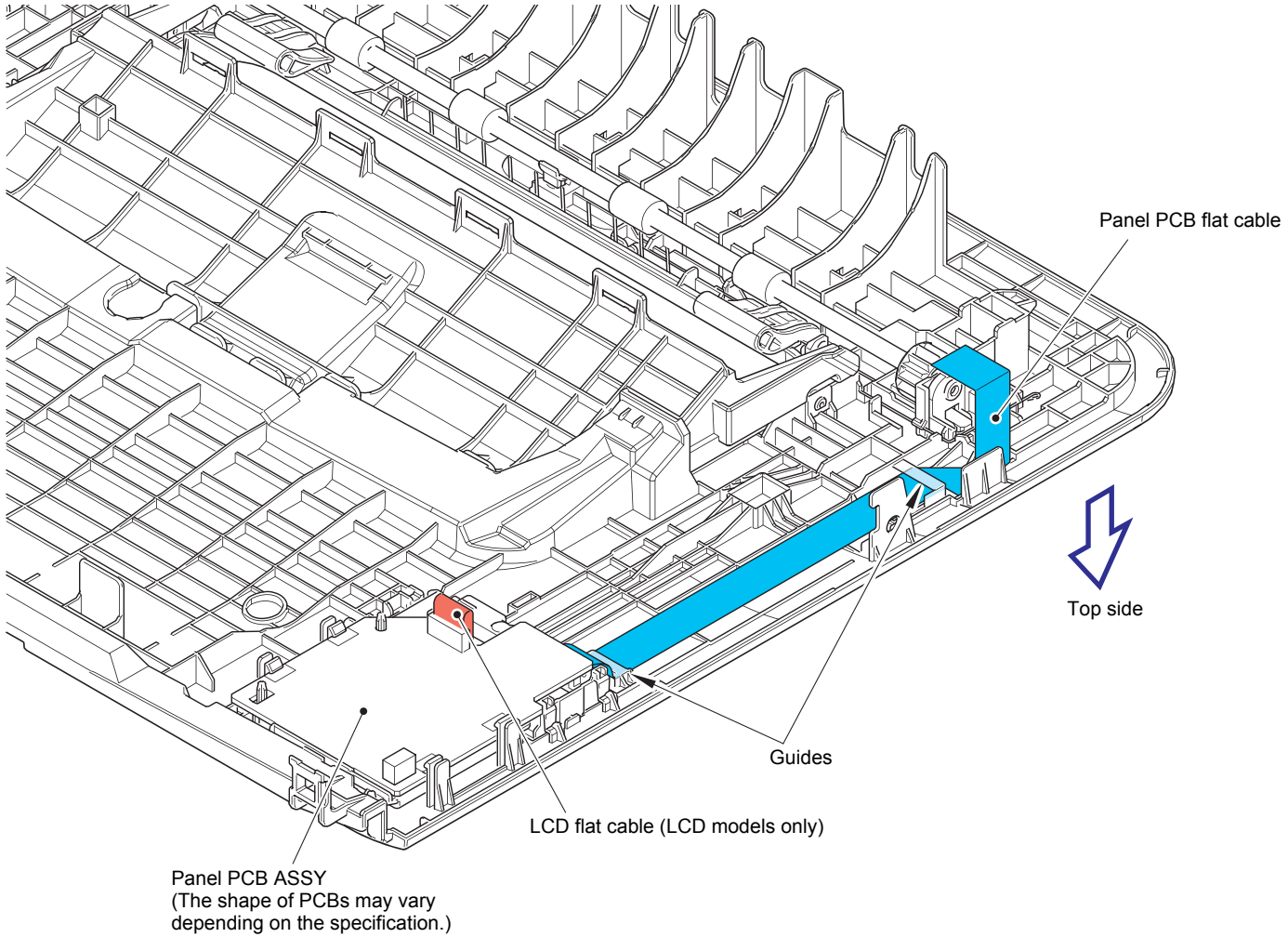
Harness colors are subject to change for some reason.

2 Top side of the registration chute

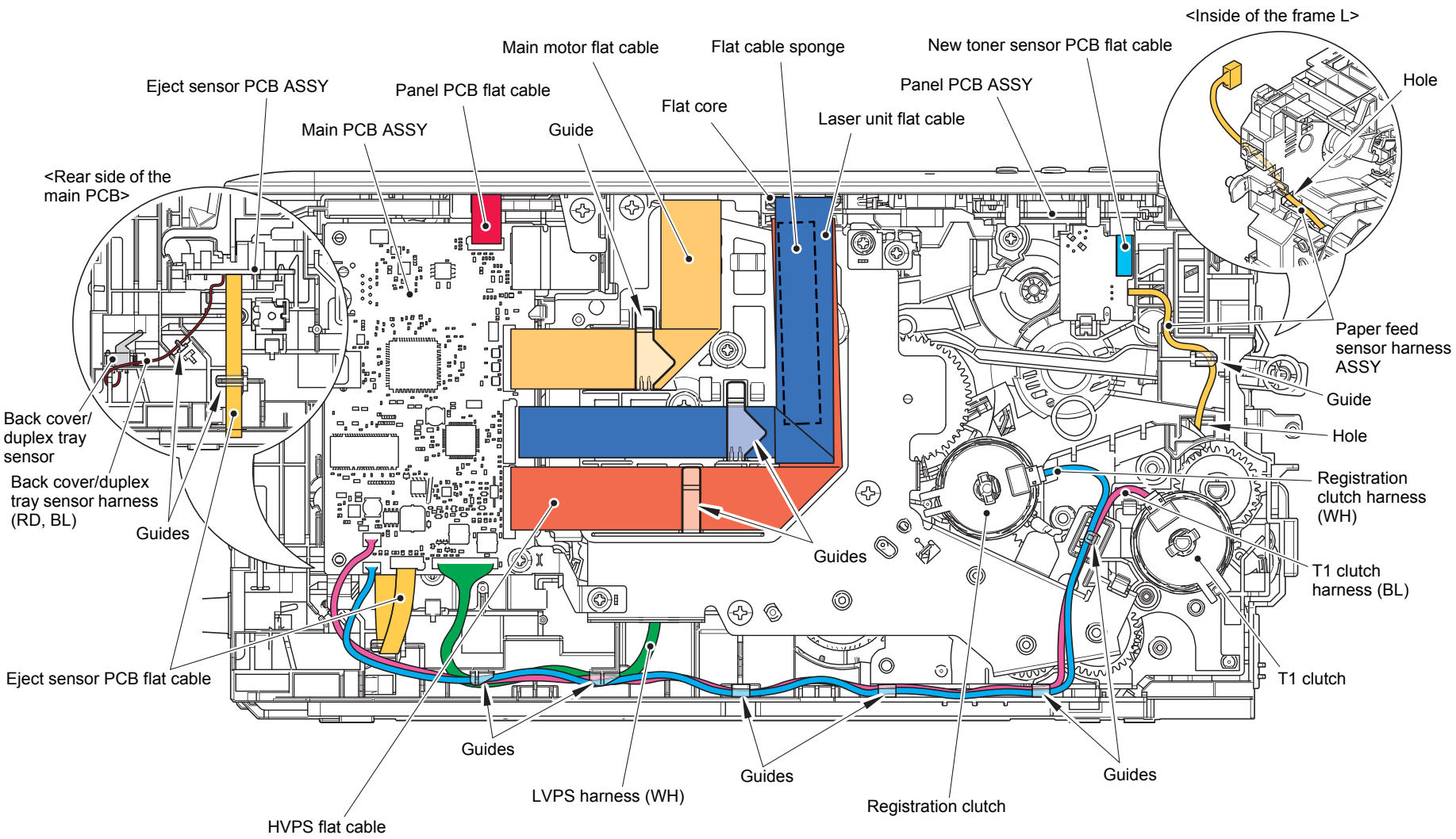


Harness colors are subject to change for some reason.

3 Bottom side of the top cover ASSY

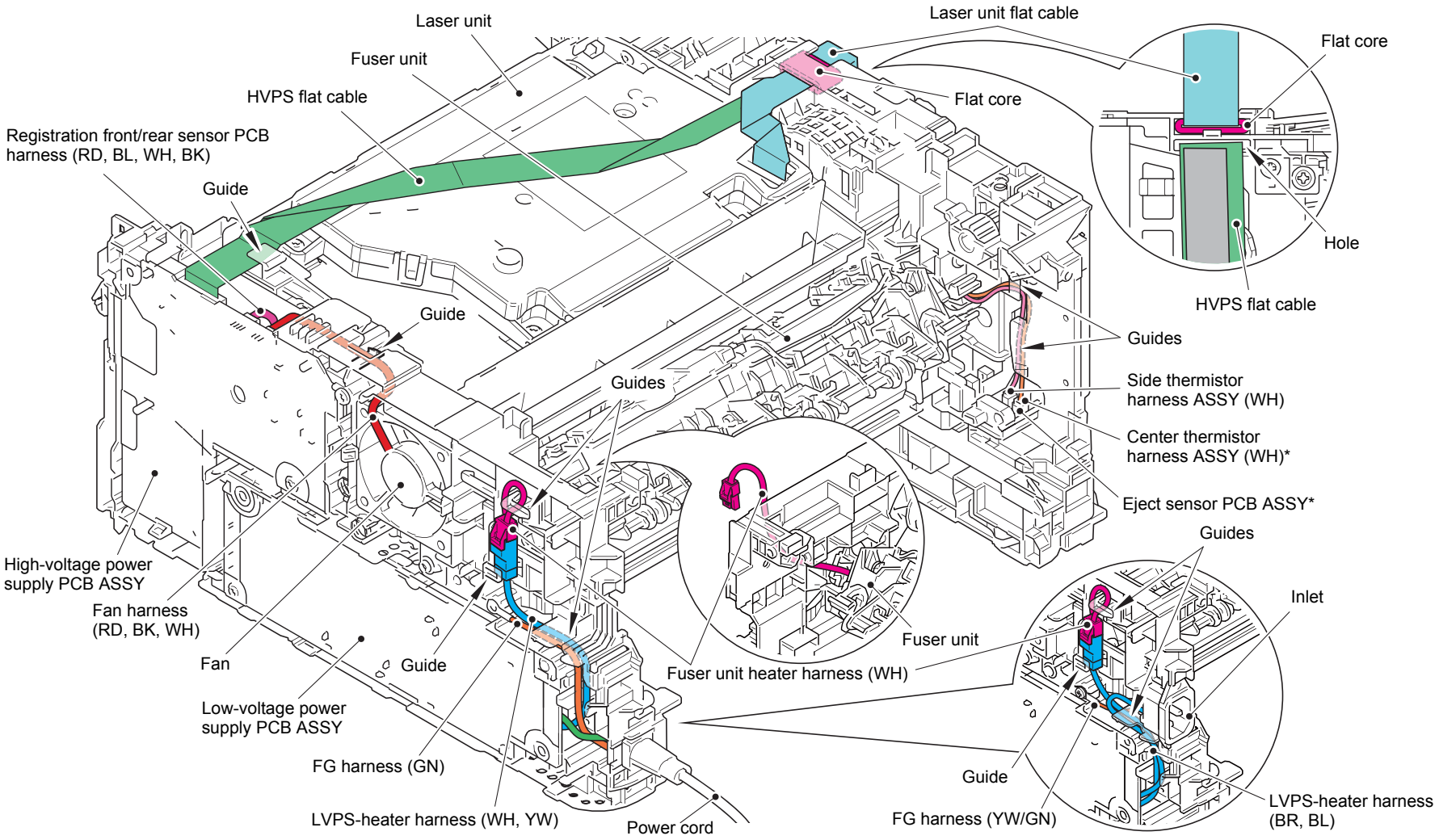


4 Left side of the machine



Harness colors are subject to change for some reason.

5 Rear side of the machine

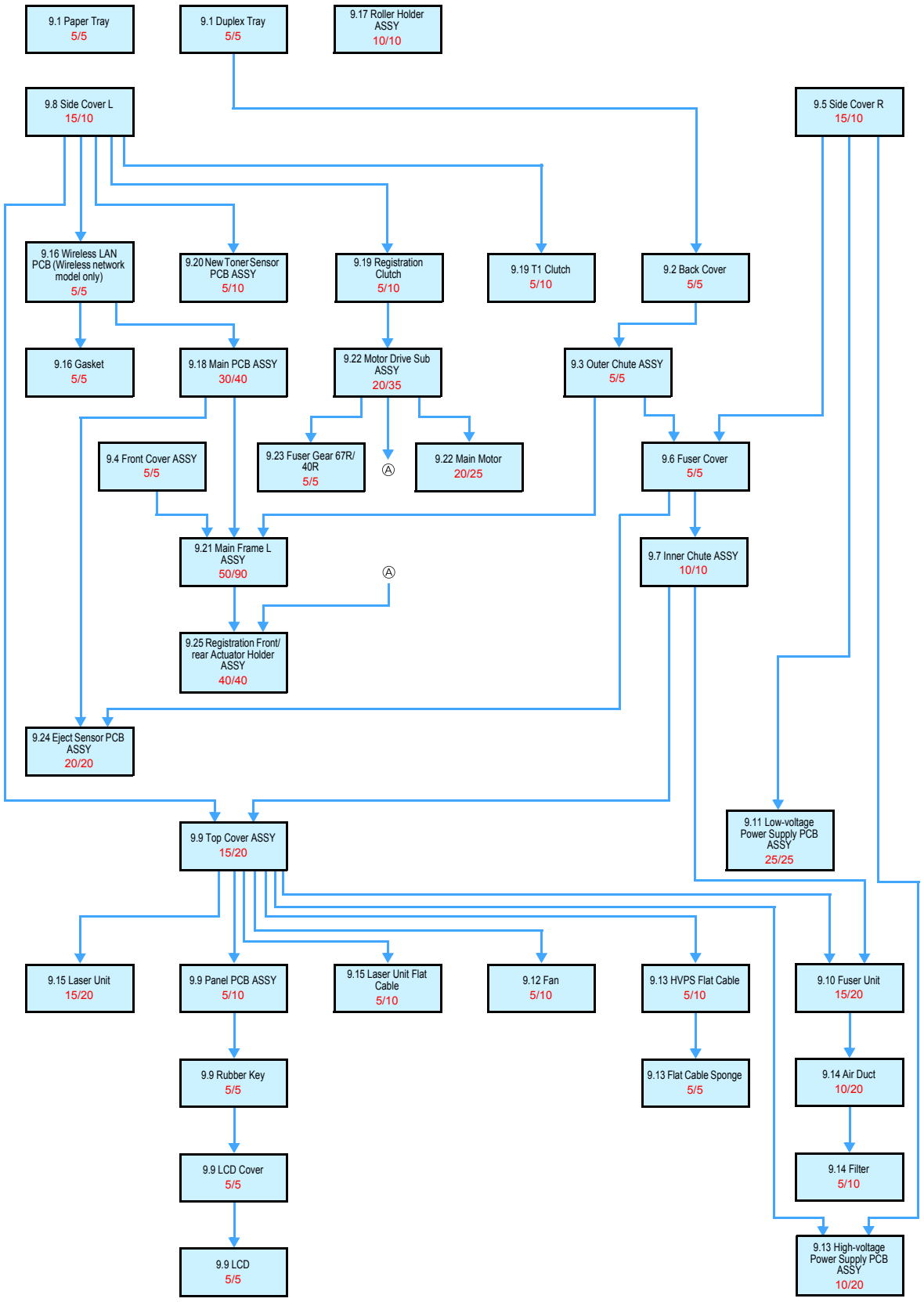


Harness colors are subject to change for some reason.

* Center thermistor has a black and blue connectors (230V models only). The black connector may be connected to the blue insertion port and vice versa.

8. DISASSEMBLY FLOW CHART

Disassembly / Reassembly (second)



9. DISASSEMBLY PROCEDURE

9.1 Preparation

■ Disconnecting Cables and Removing Accessories

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:

- USB cable (if connected)
- LAN cable (if connected)

(2) Remove the following:

- Paper tray
- Toner cartridge and drum unit
- Duplex tray
- LAN port cap

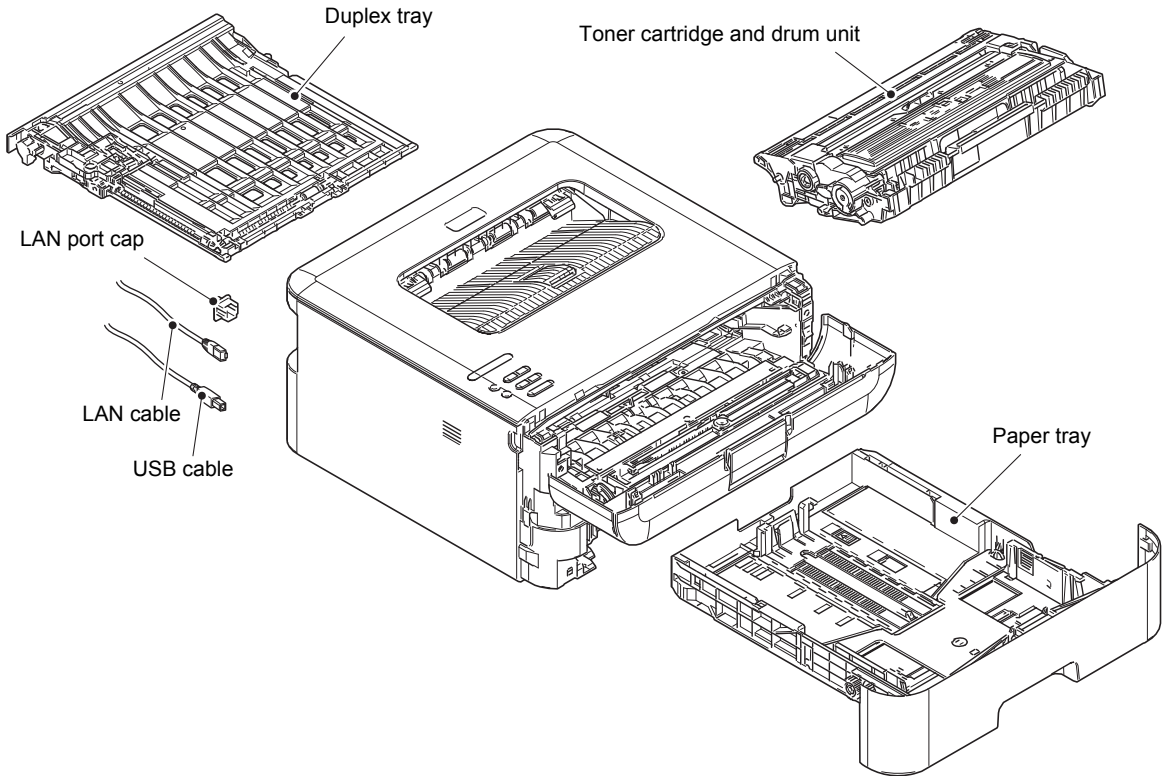


Fig. 3-8

9.2 Back Cover

(1) Open the back cover.

(2) Push both ribs on the back cover outward, and remove the pins on the outer chute ASSY.

(3) Pull out the right side of the back cover in the direction of the arrow A to remove it from the boss, and remove the back cover in the direction of the arrow B.

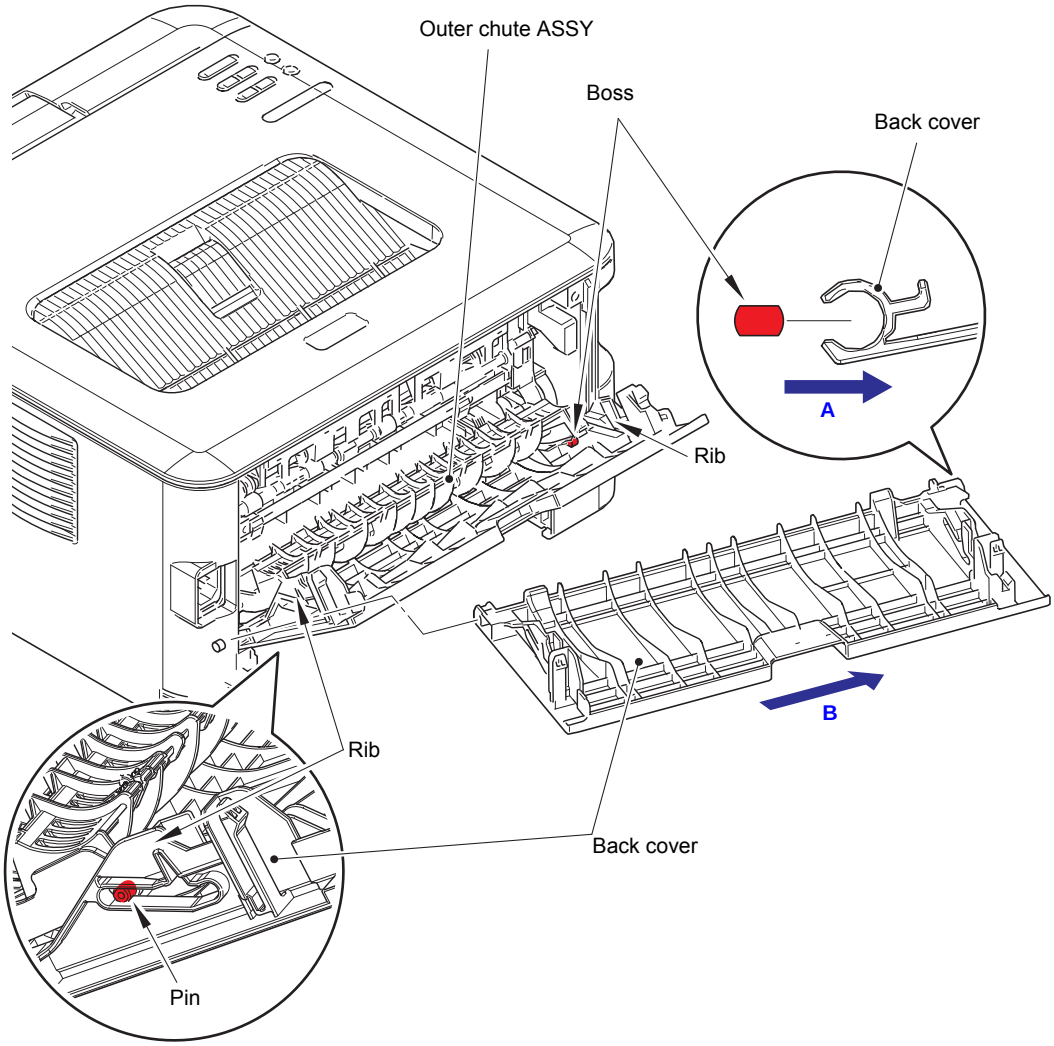


Fig. 3-9

9.3 Outer Chute ASSY

(1) Pull out the right side of the outer chute ASSY in the direction of the arrow A to remove the boss of the outer chute ASSY, and remove the outer chute ASSY in the direction of the arrow B.

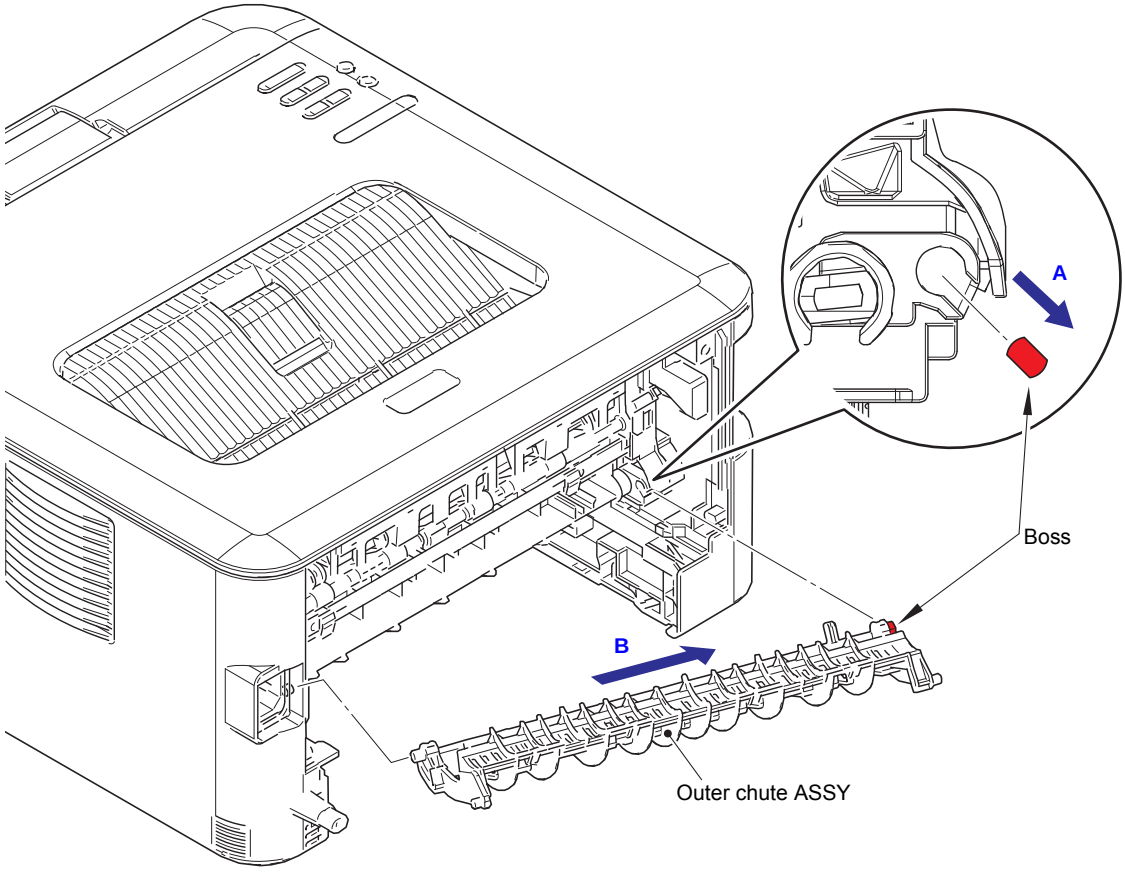


Fig. 3-10

9.4 Front Cover ASSY

(1) Open the front cover ASSY.

(2) Release the hook of the develop joint link, and remove the develop joint link from the front cover ASSY.

(3) Lift the rib on the front chute ASSY, and slide the front cover ASSY in the direction of the arrow A to remove it.

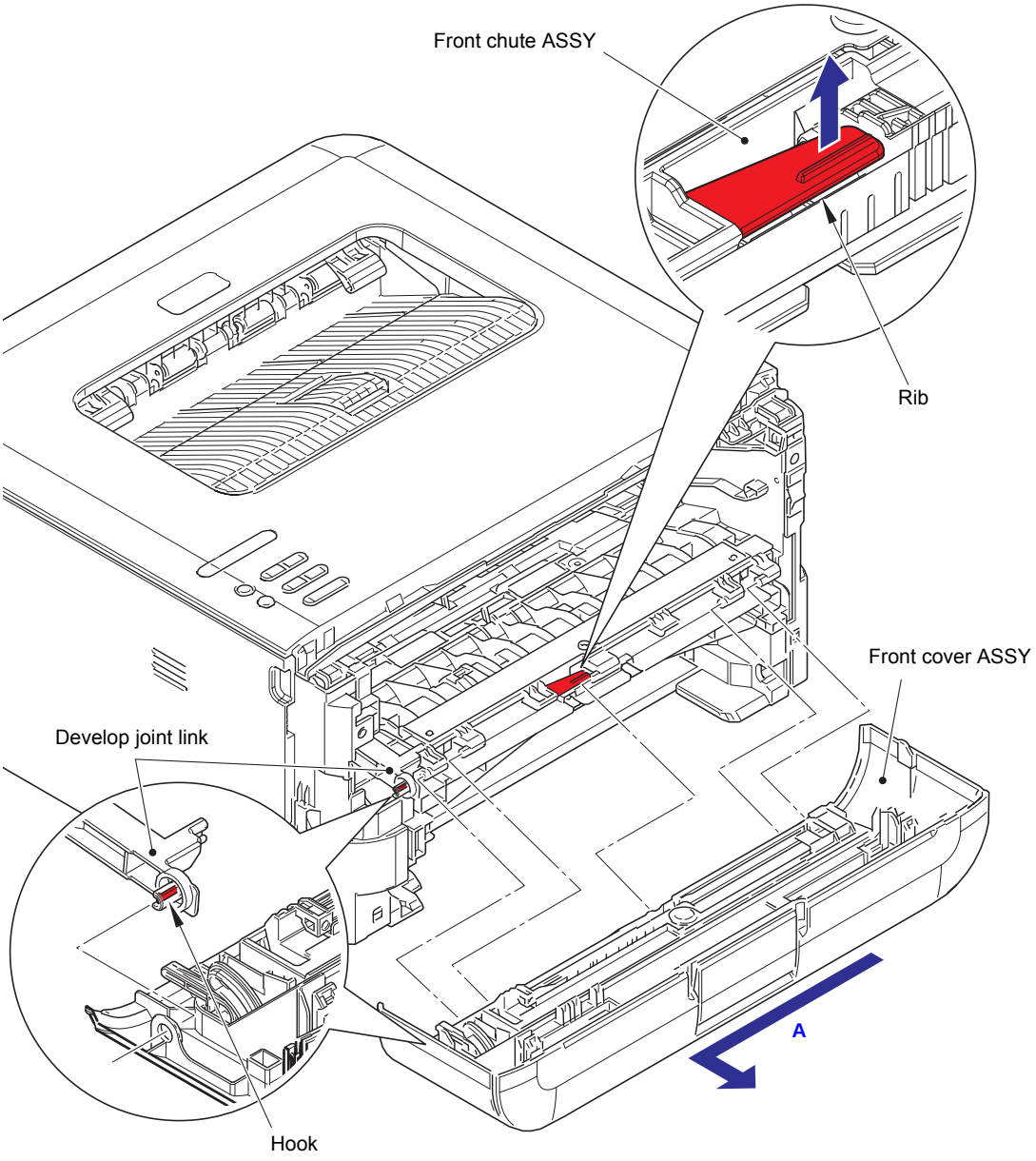


Fig. 3-11

9.5 Side Cover R

(1) Release the each hook on the side cover R in order of the arrow A to C, and remove the side cover R from the main body.

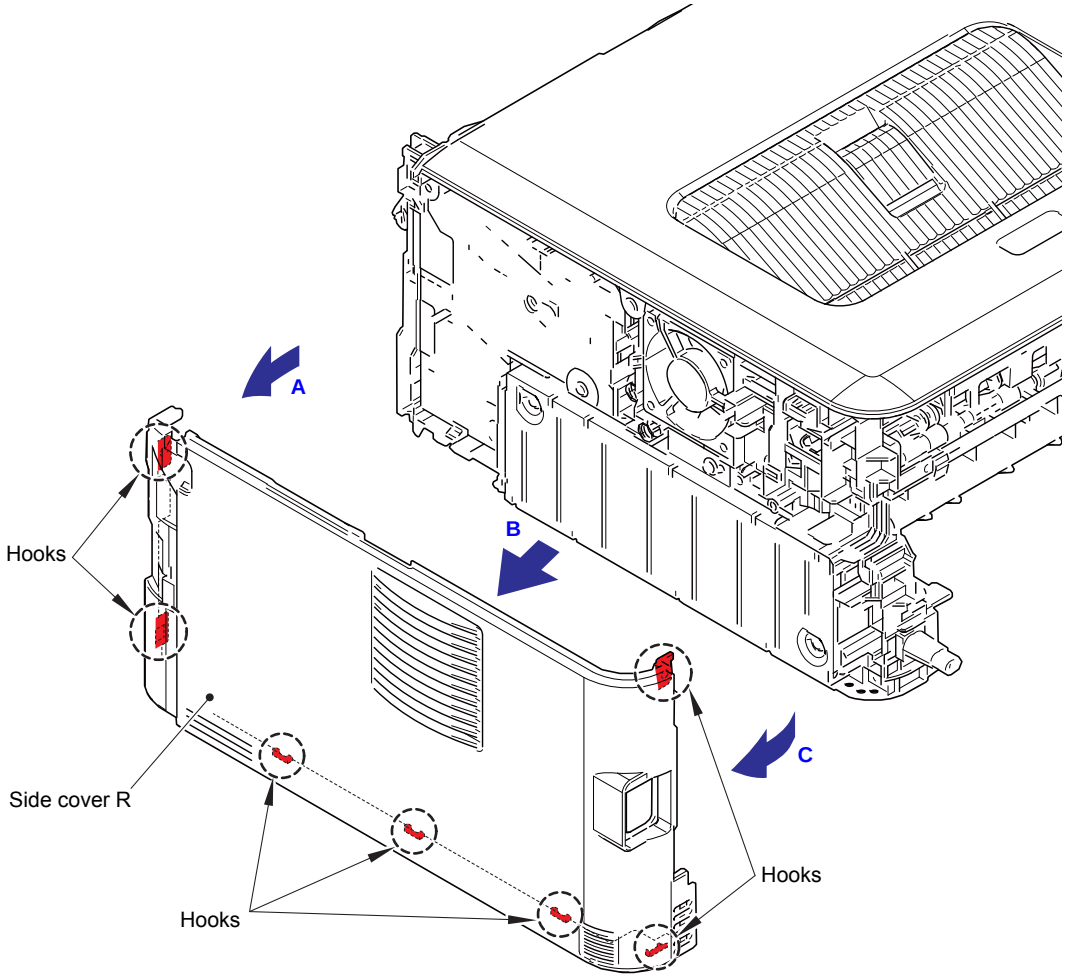


Fig. 3-12

9.6 Fuser Cover

(1) Hold the knobs on the fuser cover, and pull the fuser cover down.

(2) Pull the fuser cover in the direction of the arrow to remove it from the bosses, and remove the fuser cover.

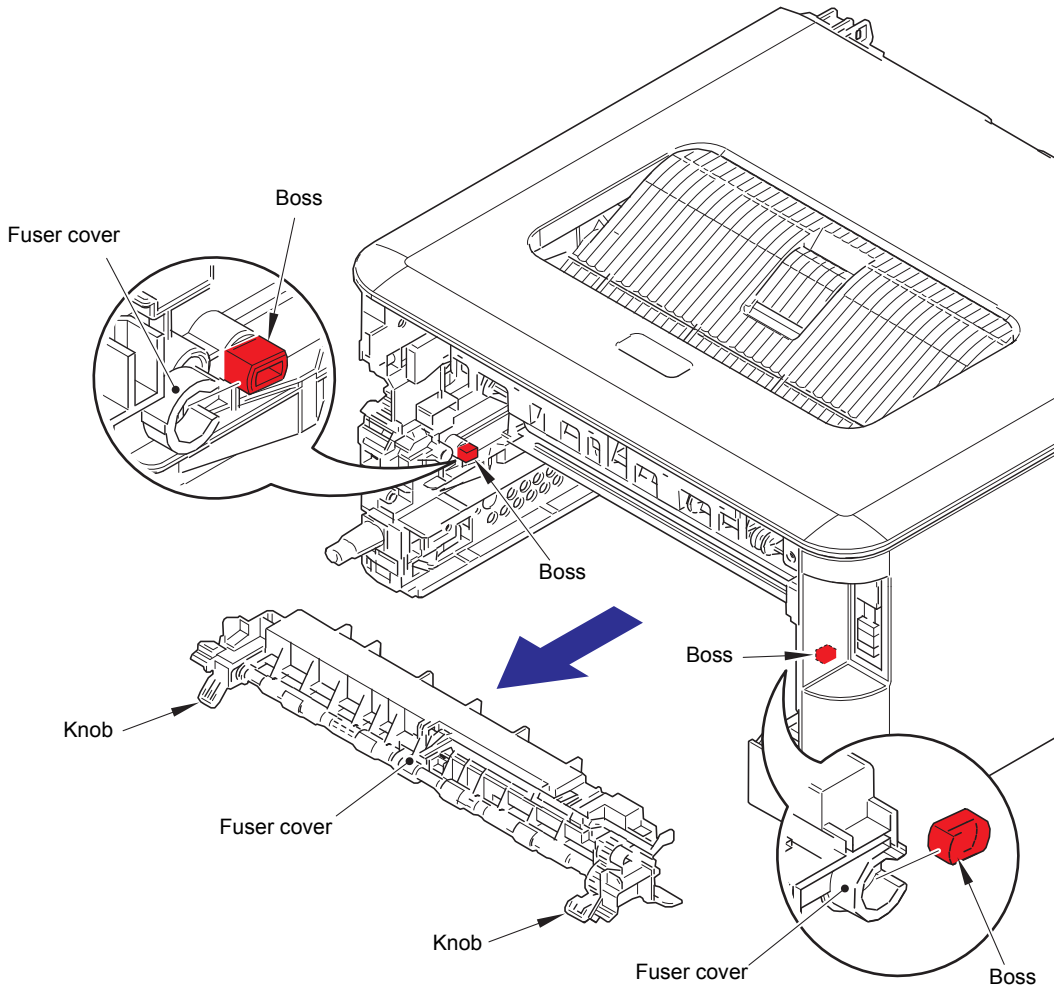


Fig. 3-13

9.7 Inner Chute ASSY

(1) Pull down the green envelope levers on both sides of the fuser unit.

(2) Remove the two taptite bind B M4x12 screws, and remove the inner chute ASSY.

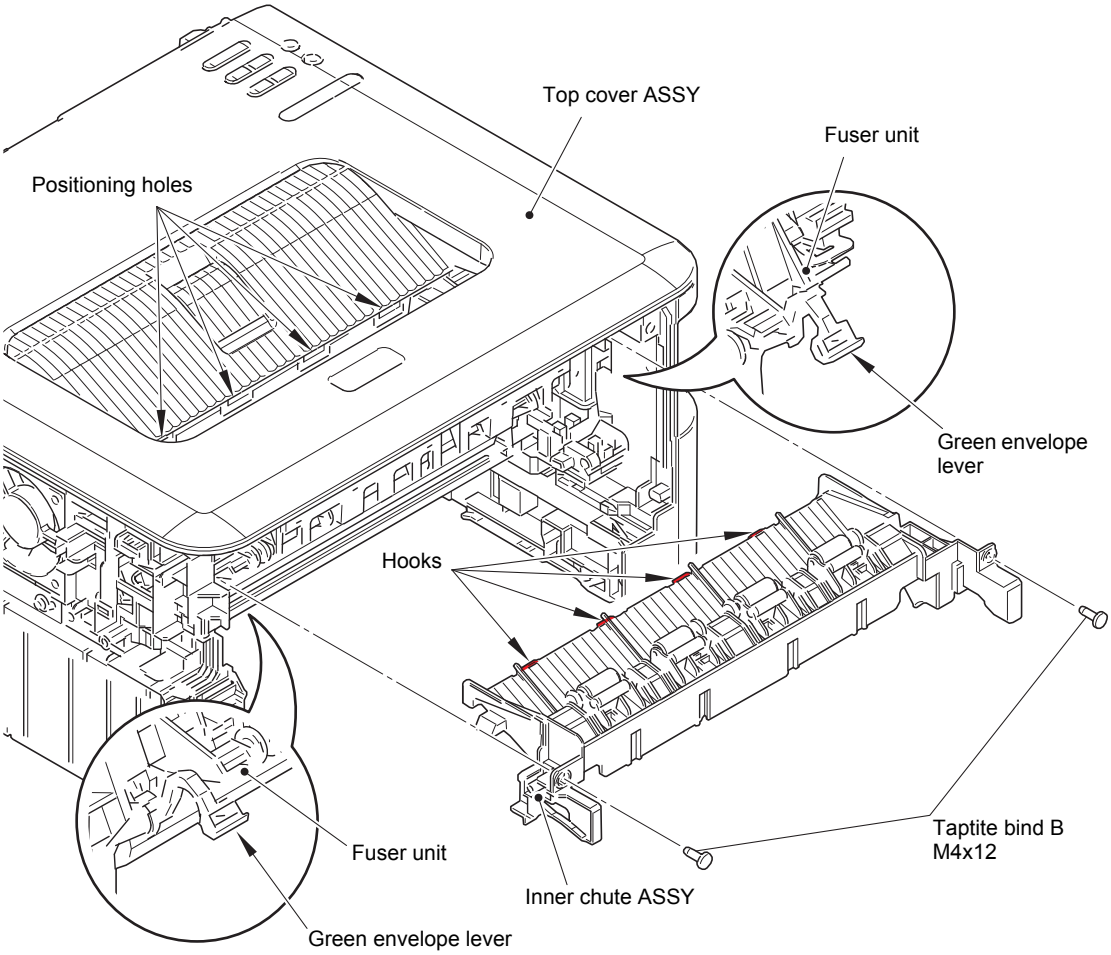


Fig. 3-14

Assembling Note:

- When attaching the inner chute ASSY, engage the hooks on the inner chute ASSY with the positioning holes on the top cover ASSY.
- After assembling the inner chute ASSY, pull up the green envelope levers on both sides of the fuser unit.

9.8 Side Cover L

(1) Release the each hook on the side cover L in order of the arrow A to C, and remove the side cover L from the main body.

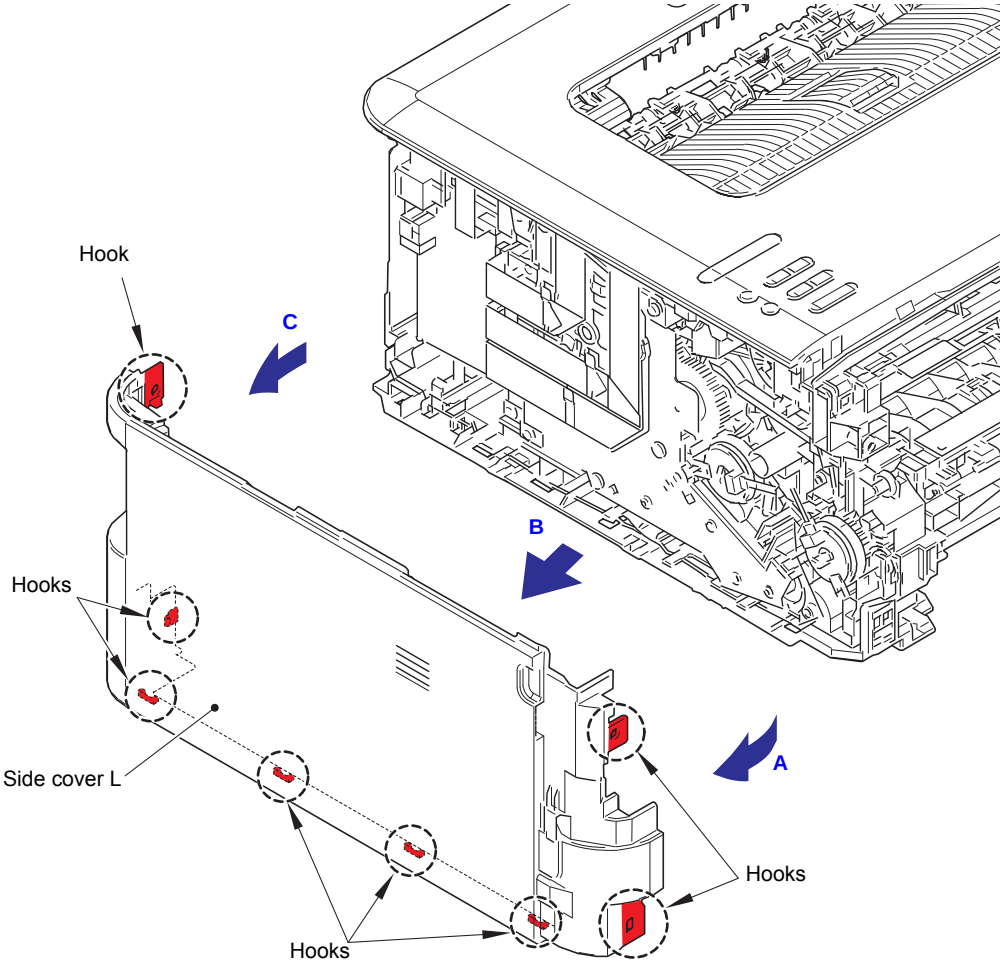


Fig. 3-15

9.9 Top Cover ASSY

(1) Disconnect the panel PCB flat cable from the main PCB ASSY.

(2) Disconnect the new toner sensor PCB flat cable from the panel PCB ASSY.

Note:

- 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.

(3) Remove the taptite bind B M4x12 screw.

(4) Release the hooks on the top cover ASSY in order of the hook A to F, and remove the top cover ASSY in the direction of the arrow.

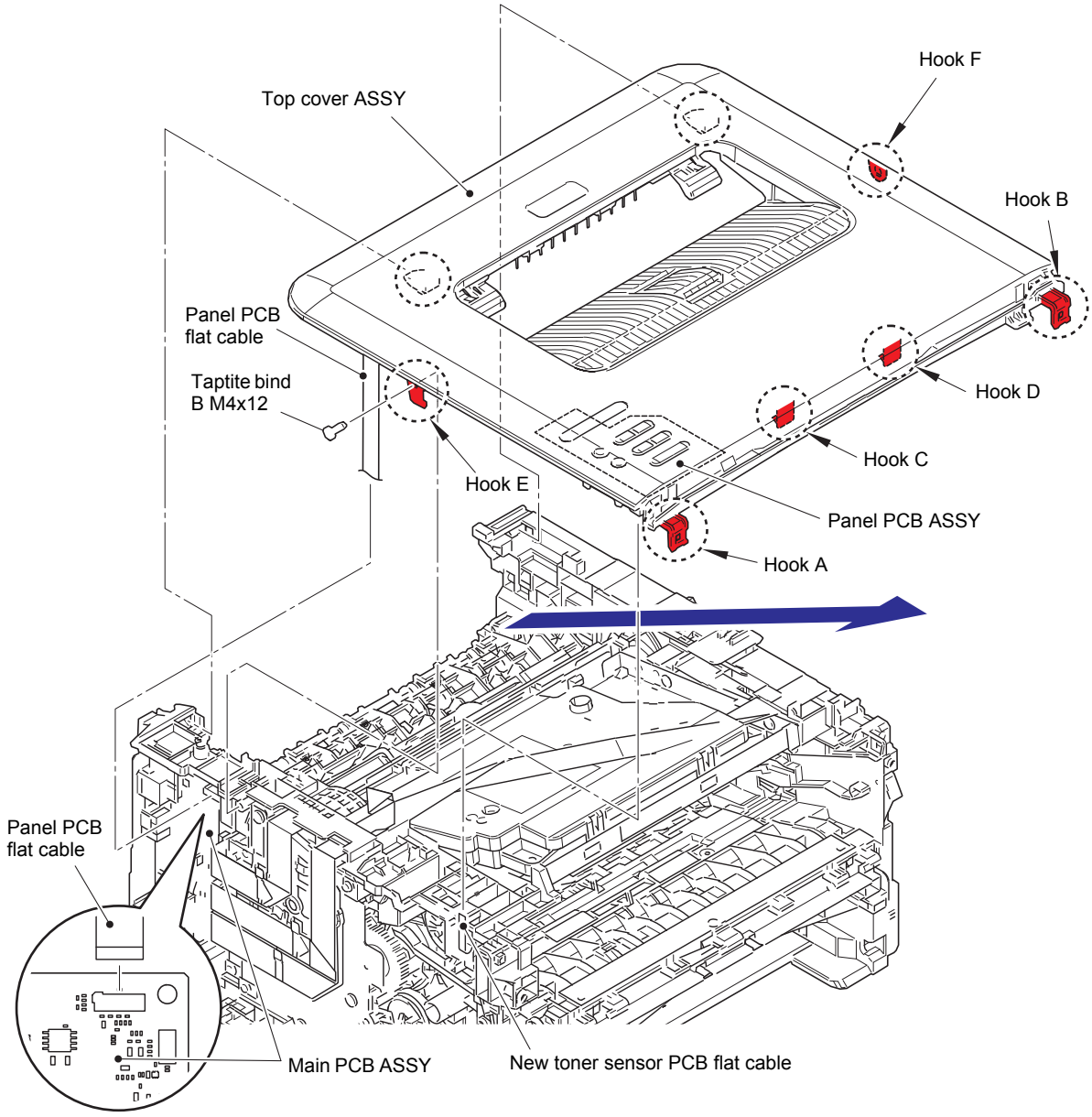


Fig. 3-16

■ Top cover ASSY (For LED models)

(5) Release the hook, and remove the panel PCB ASSY from the top cover ASSY. Release the panel PCB flat cable from the each guide.

(6) Release both pins of the top chute by pushing them in the direction of arrow A and pull the top chute in the direction of arrow B to remove the top chute from the top cover ASSY.

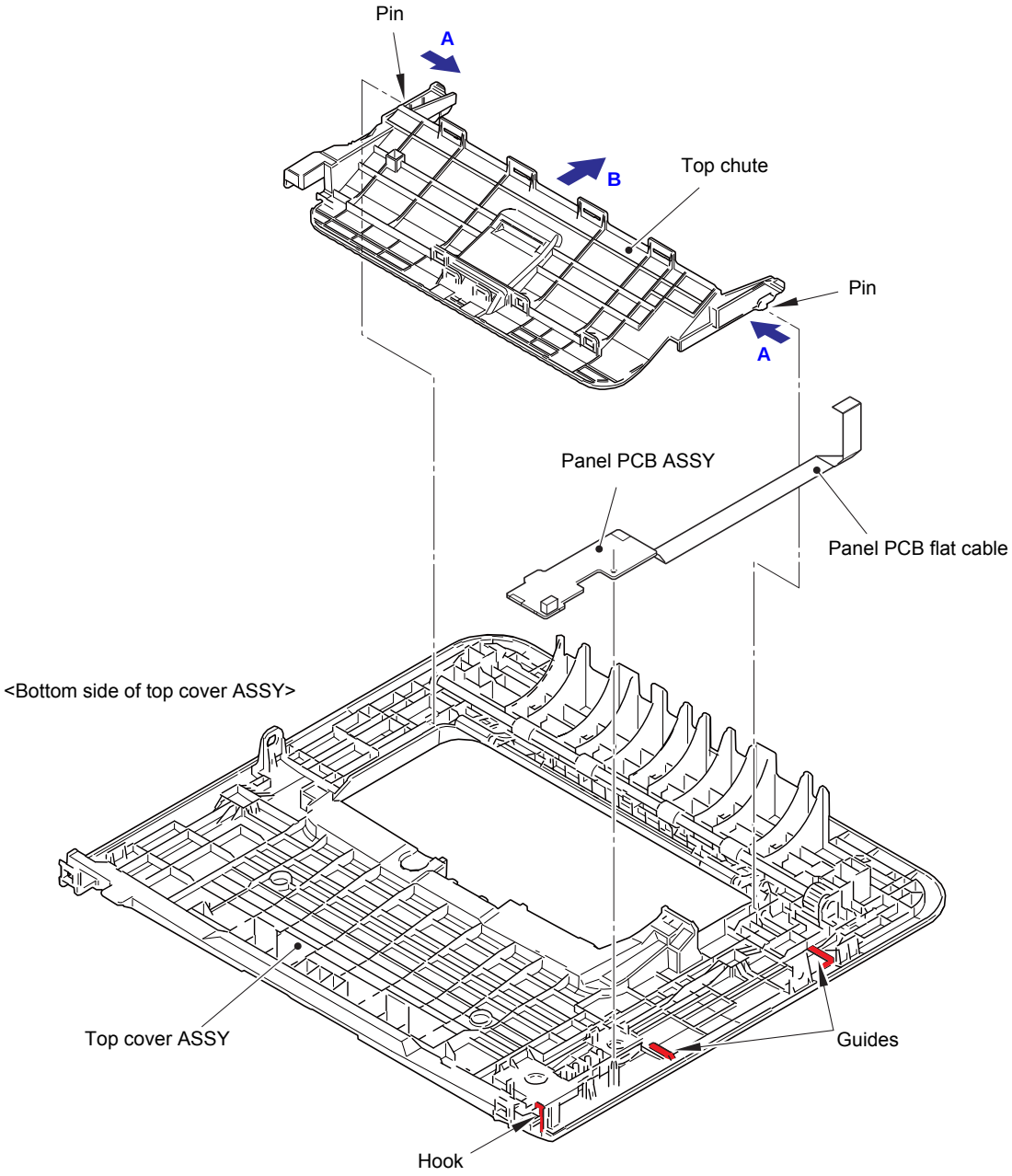


Fig. 3-17

Harness routing: Refer to "3. Bottom side of the top cover ASSY".

■ Top cover ASSY (For LCD models)

(5) Disconnect the LCD flat cable from the panel PCB ASSY.

Note:
- 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.

(6) Release the hooks A, and remove the panel PCB ASSY from the top cover ASSY. Release the panel PCB flat cable from the each guide on the top cover ASSY.

(7) Remove the rubber key from the top cover ASSY.

(8) Release the hooks B, and remove the LCD cover from the top cover ASSY.

(9) Release the hook C, and remove the LCD from the LCD cover.

(10) Release both pins of the top chute by pushing them in the direction of arrow A and pull the top chute in the direction of arrow B to remove the top chute from the top cover ASSY.

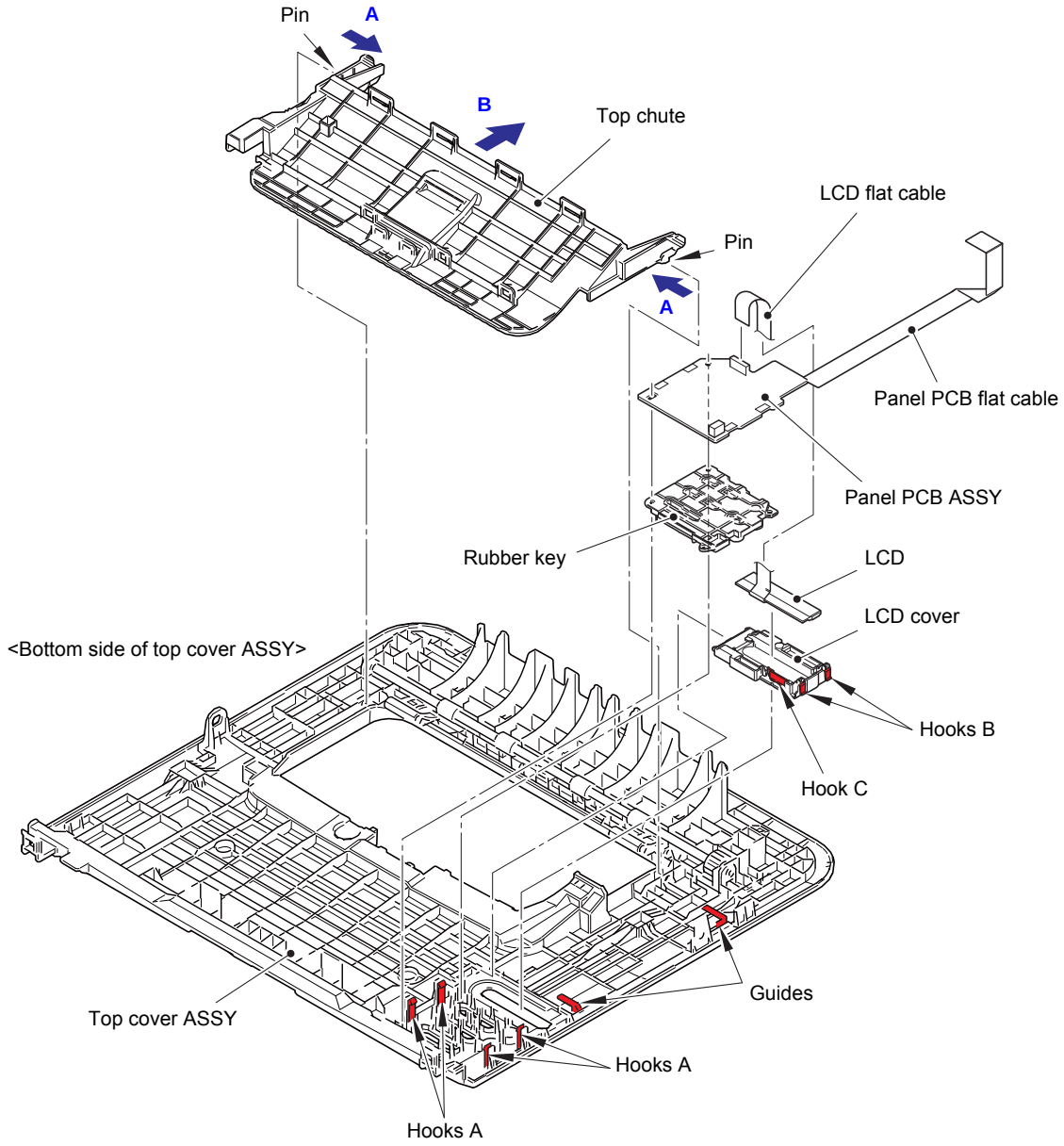


Fig. 3-18

Harness routing: Refer to "3. Bottom side of the top cover ASSY".

9.10 Fuser Unit

(1) Release the fuser unit heater harness from the securing fixtures, and disconnect it from the LVPS-heater harness.

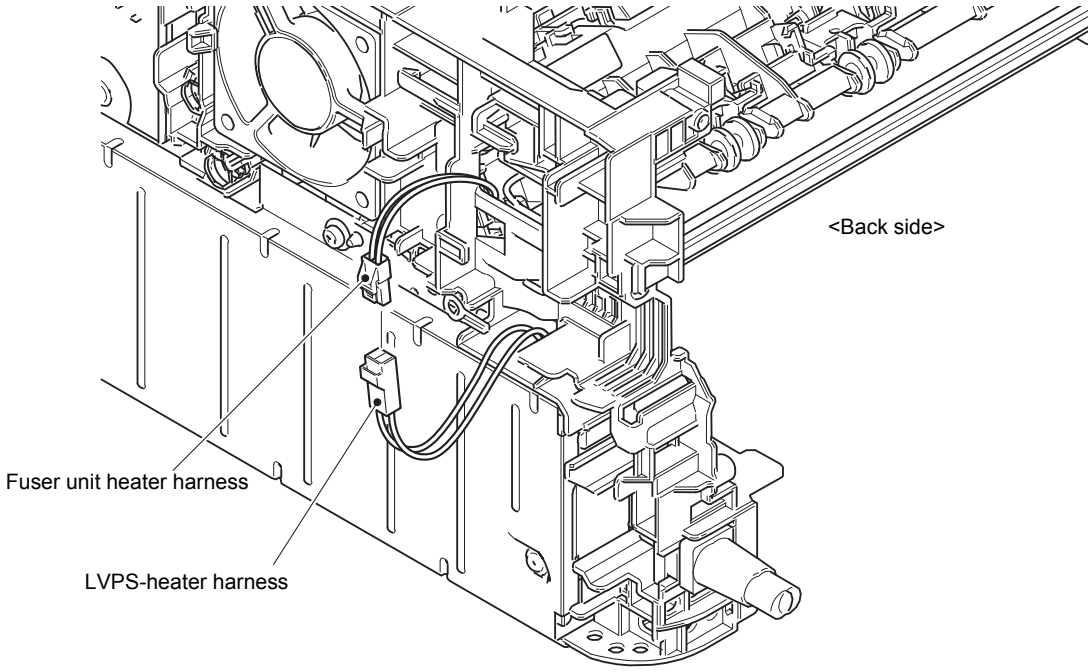


Fig. 3-19

Harness routing: Refer to “5. Rear side of the machine”.

(2) Disconnect the center thermistor harness ASSY and the side thermistor harness ASSY from the eject sensor PCB ASSY.

(3) Release the center thermistor harness ASSY and the side thermistor harness ASSY from the securing fixtures.

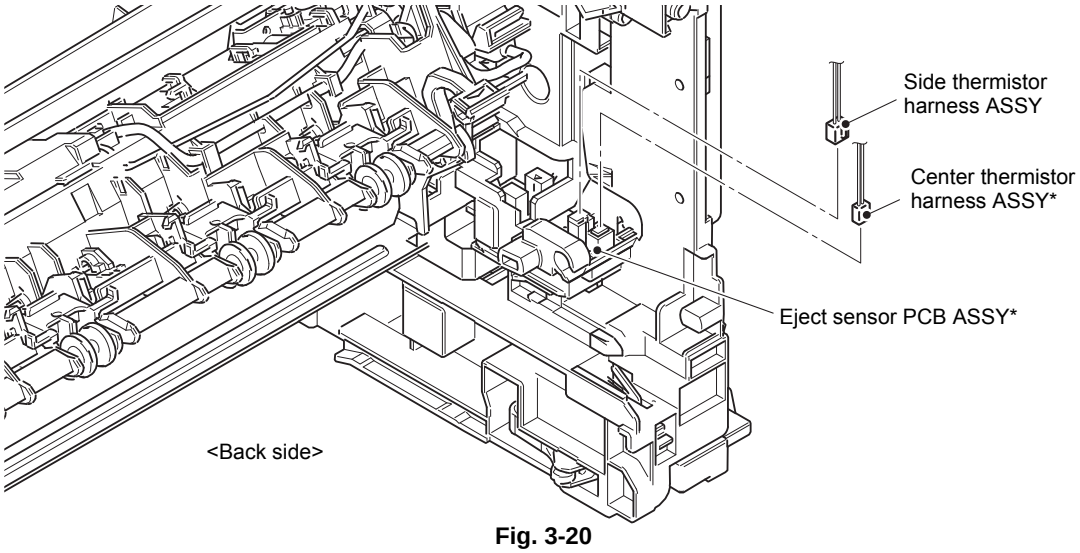


Fig. 3-20

Harness routing: Refer to “5. Rear side of the machine”.

Assembling Note:

* Center thermistor has a black and blue connectors. (230V models only)
The black connector may be connected to the blue insertion port and vice versa.

(4) Remove the two taptite pan B M4x14 screws, and remove the fuser unit.

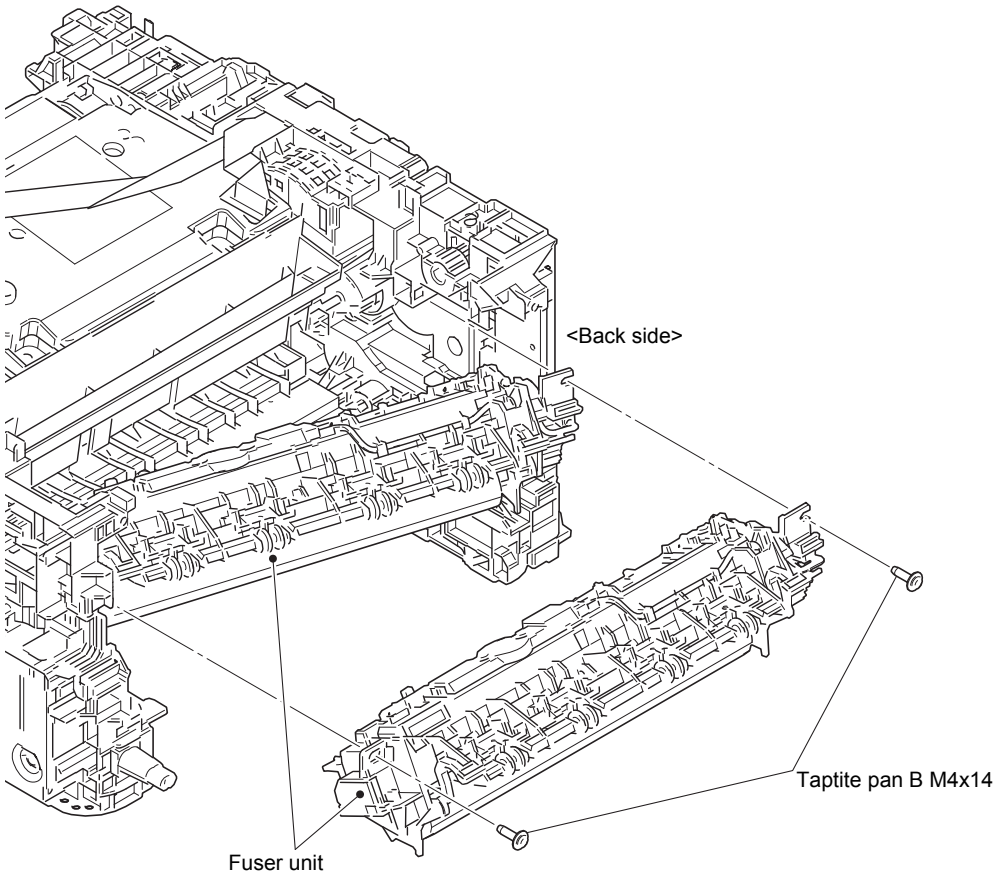


Fig. 3-21

Note:

- DO NOT apply a physical impact or vibration to the fuser unit.
- DO NOT touch the rollers and electrodes to prevent breakage of the fuser unit.

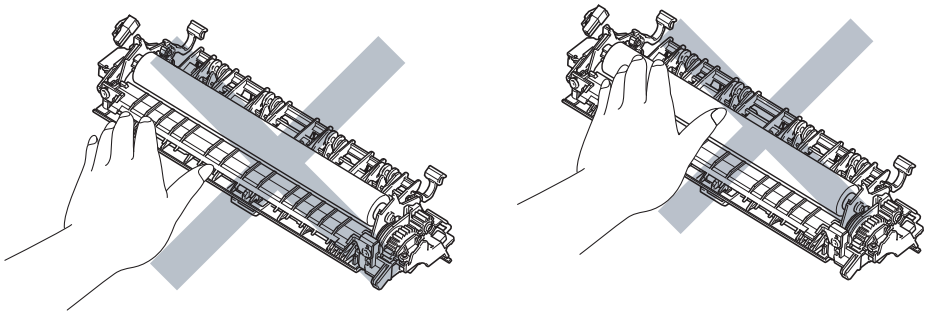


Fig. 3-22

9.11 Low-voltage Power Supply PCB ASSY

(1) Remove the front chute FG spring from the LVPS shield plate cover and the front chute ASSY.

(2) Remove the two taptite cup S M3x8 SR screws and the screw pan (S/P washer) M3.5x6 screw to remove the LVPS shield plate cover and the LVPS insulation sheet.

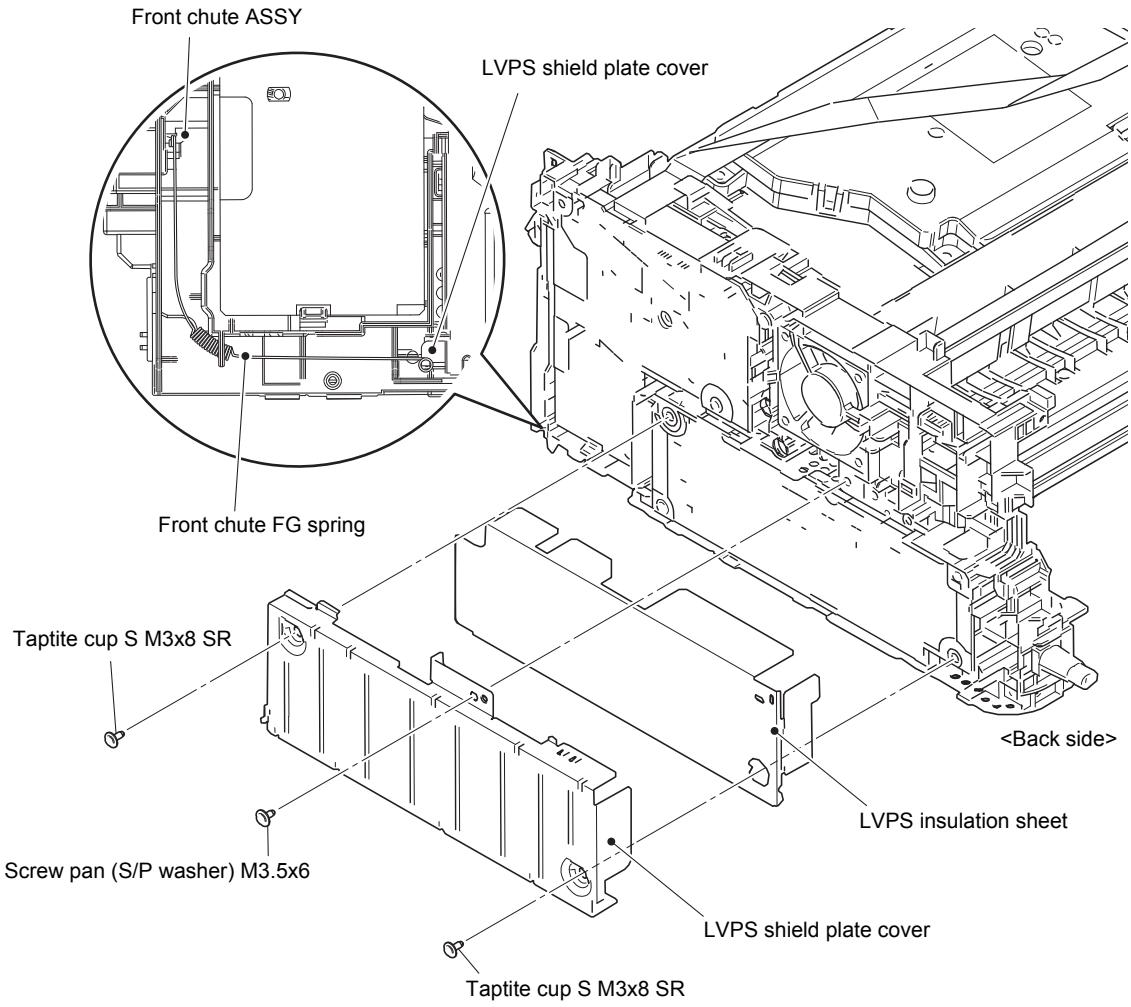


Fig. 3-23

(3) Remove the screw pan (S/P washer) M3.5x6 screw, and remove the FG harness from the LVPS shield plate.

(4) Release the LVPS-heater harness and the FG harness from the securing fixtures.

(5) Remove the power cord or the inlet from the mounting position. (For models with inlet*, remove the taptite flat B M3x10 screw, and remove the inlet*.)

(6) Remove the two taptite cup S M3x8 SR screws, and remove the low-voltage power supply PCB ASSY. Disconnect the LVPS harness from the back of the low-voltage power supply PCB ASSY.

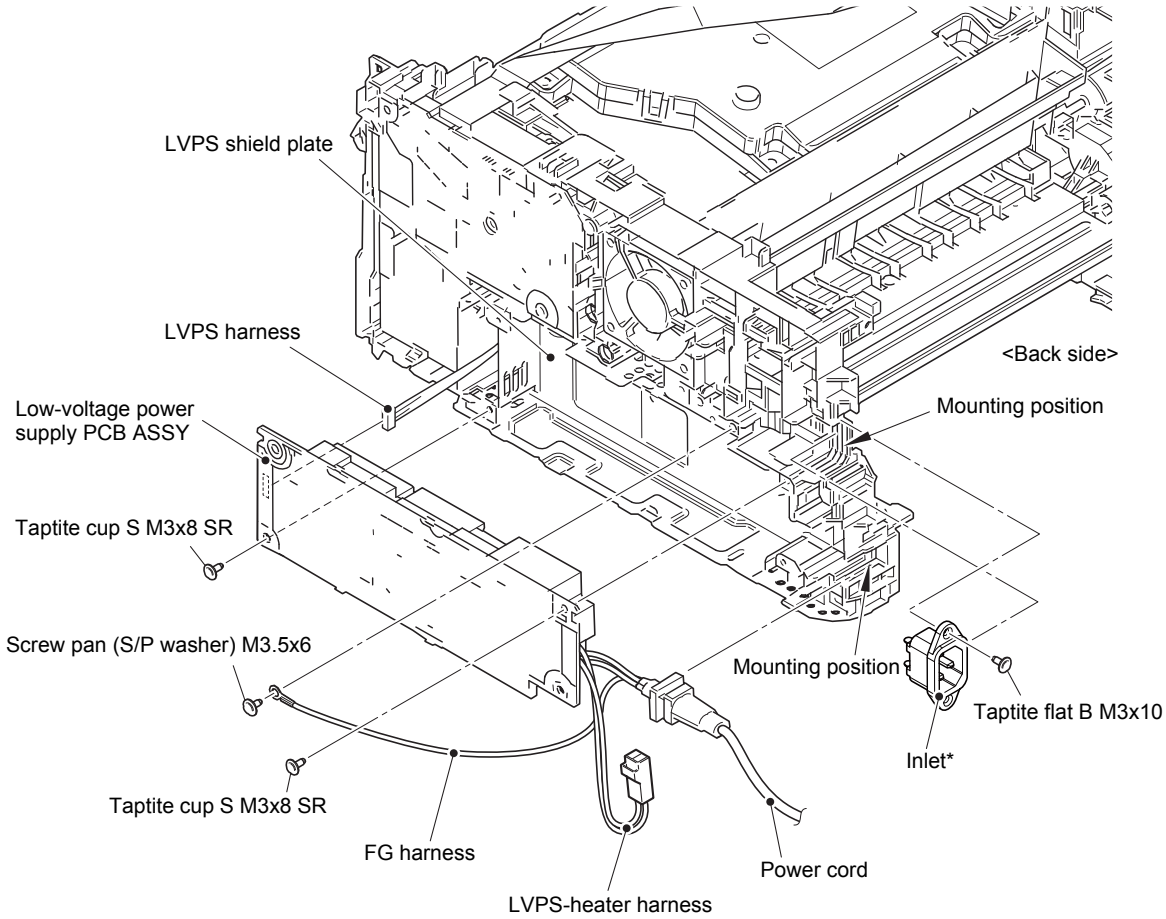


Fig. 3-24

Harness routing: Refer to "5. Rear side of the machine".

Assembling Note:

- After the replacement, refer to "2. IF YOU REPLACE THE LOW-VOLTAGE POWER SUPPLY PCB ASSY" in chapter 4 to reset irregular power supply detection counter of the low-voltage power supply PCB ASSY.
- Make sure to attach insulation sheet. Failure to attach the insulation sheet can result in fire or electrical shock.

* Models with inlet: Germany/U.K./Switzerland/Italy/Israel/Russia/France/Belgium/Netherlands/PAN-NORDIC/Iberia/CEE-General/Peru

9.12 Fan

(1) Disconnect the fan harness from the high-voltage power supply PCB ASSY, and release it from the securing fixtures.

(2) Release each hook to remove the fan, and pull out the fan harness from the hole.

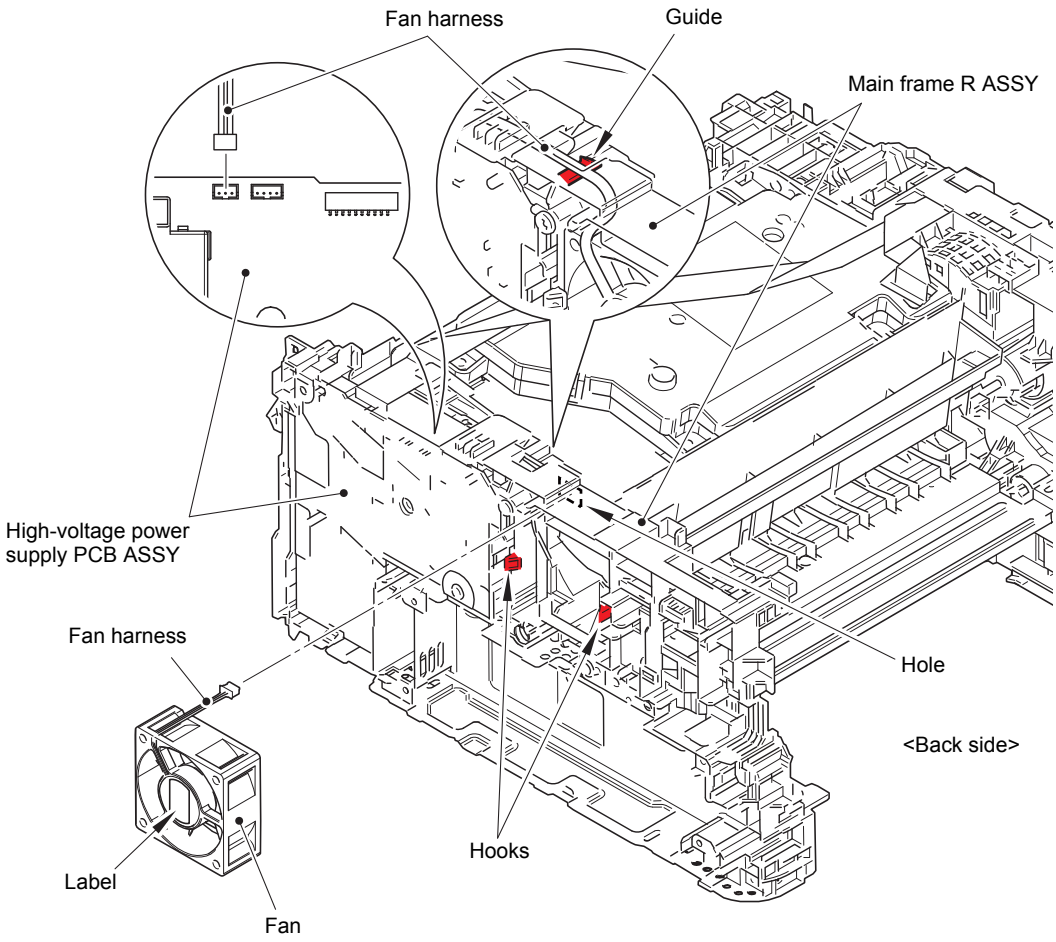


Fig. 3-25

Harness routing: Refer to “5. Rear side of the machine”.

Assembling Note:

- When assembling the fan, insert the fan harness into the hole and slip it onto the guide of the main frame R ASSY to make sure that the fan harness is not caught.
- Attach the fan so that the surface with the label faces out.

9.13 High-voltage Power Supply PCB ASSY

(1) Disconnect the HVPS flat cable and the registration front/rear sensor PCB harness from the high-voltage power supply PCB ASSY. Disconnect the HVPS flat cable from the main PCB ASSY, and release it from the securing fixtures.

Note:

- 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.

(2) Remove the taptite cup S M3x8 SR screw. Release the hooks and pull out the right side of the high-voltage power supply PCB ASSY in the direction of arrow A to remove it from the pins. Then pull out the high-voltage power supply PCB ASSY in the direction of arrow B to remove it from the rib.

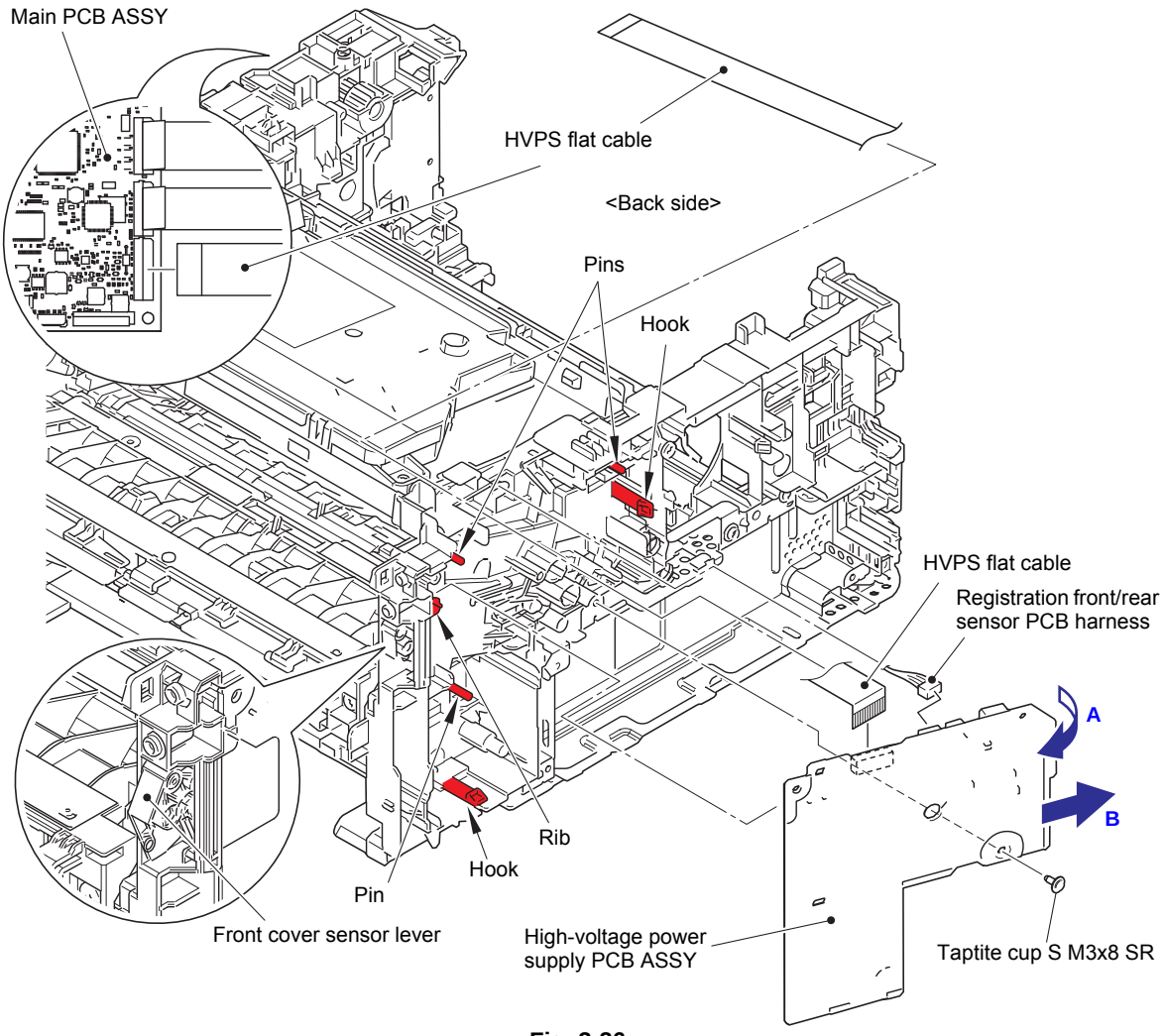


Fig. 3-26

Harness routing: Refer to "5. Rear side of the machine".

Assembling Note:

- After attaching the high-voltage power supply PCB ASSY, push electrode springs from inside of the machine to check that the nothing is caught. (Refer to Fig. 2-6.)
- When attaching the high-voltage power supply PCB ASSY, check that the front cover sensor lever is on the position in the figure above (jutted forward).

Assembling Note:

• Fold the HVPS flat cable at the positions described below.

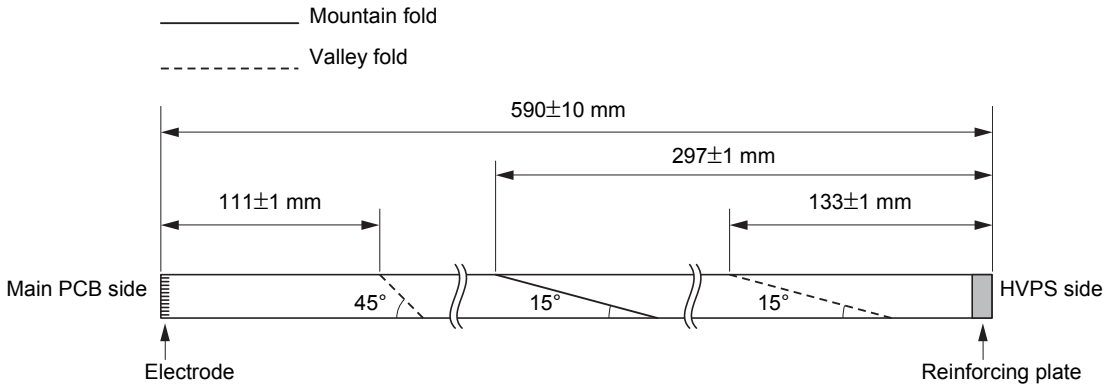


Fig. 3-27

Assembling Note:

• Attach the flat cable sponge to the location shown in the figure below.

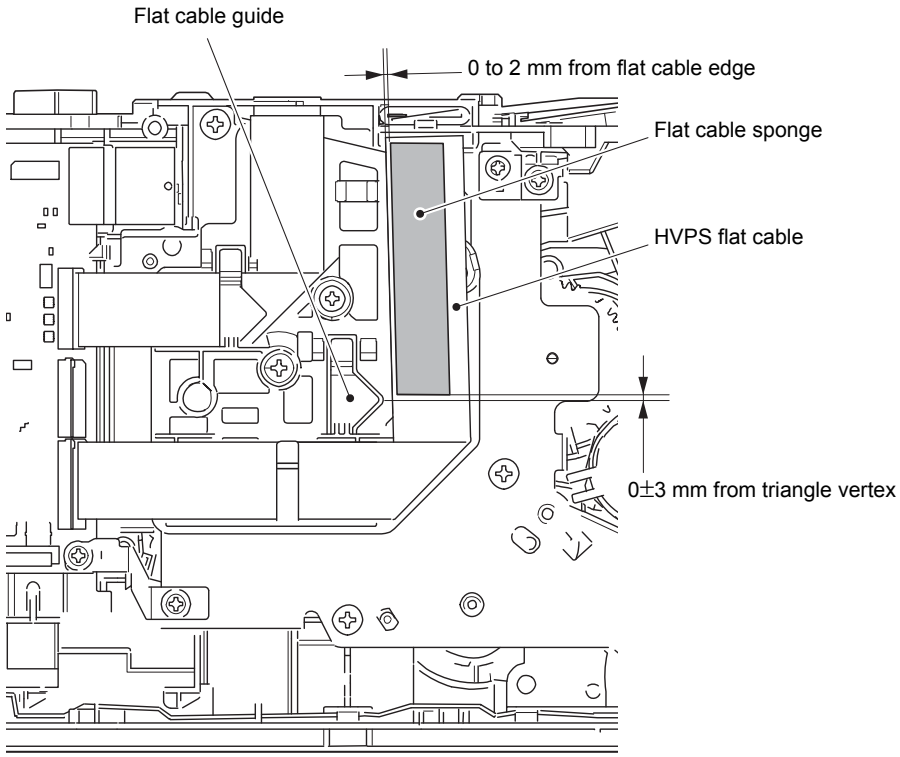


Fig. 3-28

9.14 Filter

(1) Release each hook to remove the air duct.

(2) Pull out the rib on the air duct in the direction of the arrow, and remove the filter.

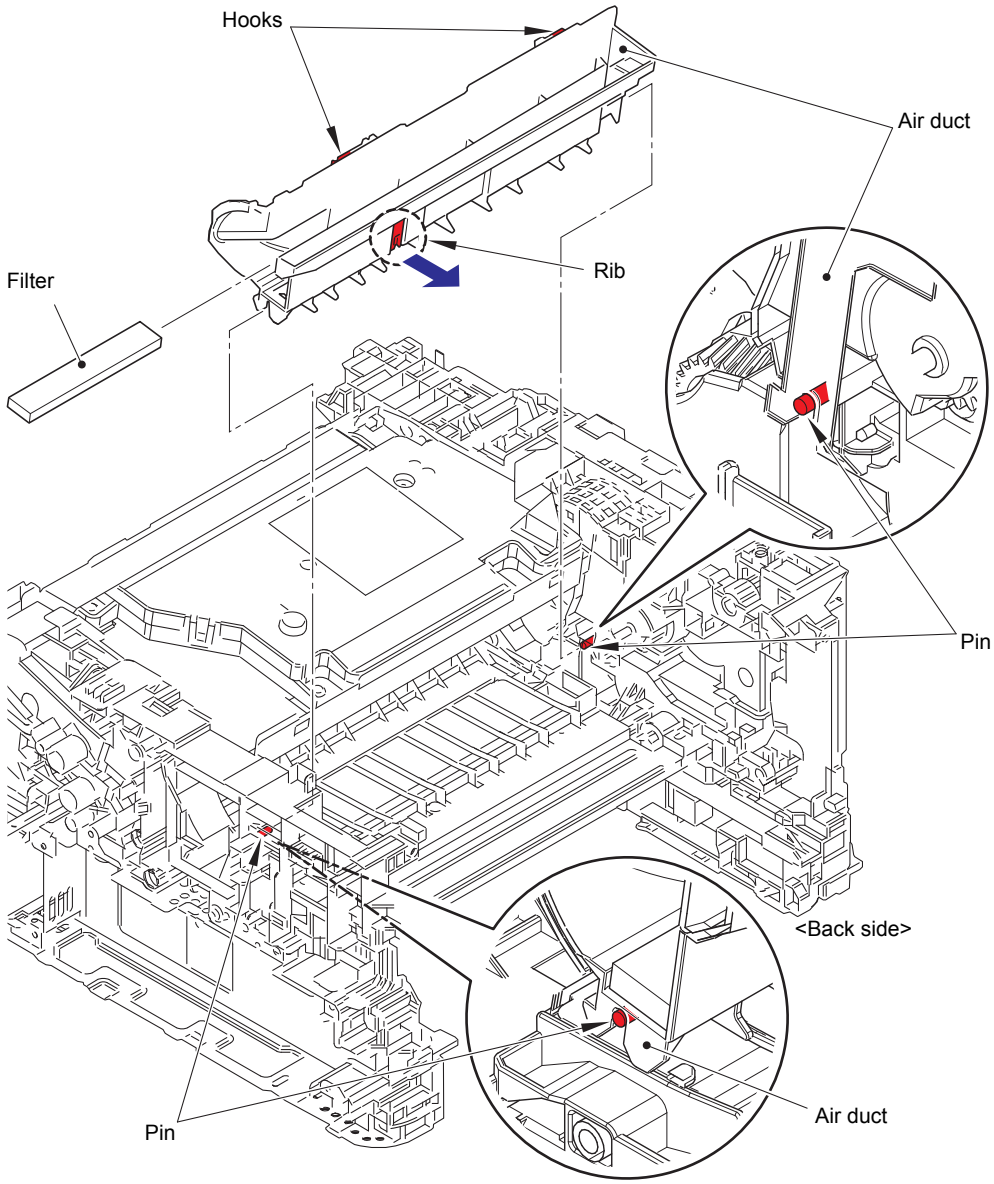


Fig. 3-29

Assembling Note:

• When attaching the air duct, engage the notches on the air duct with the pins.

9.15 Laser Unit

(1) Disconnect the laser unit flat cable from the main PCB ASSY and the laser unit, and release it from the securing fixtures.

Note:

- 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.

(2) Remove the four taptite cup S M3x8 SR screws, and remove the laser unit.

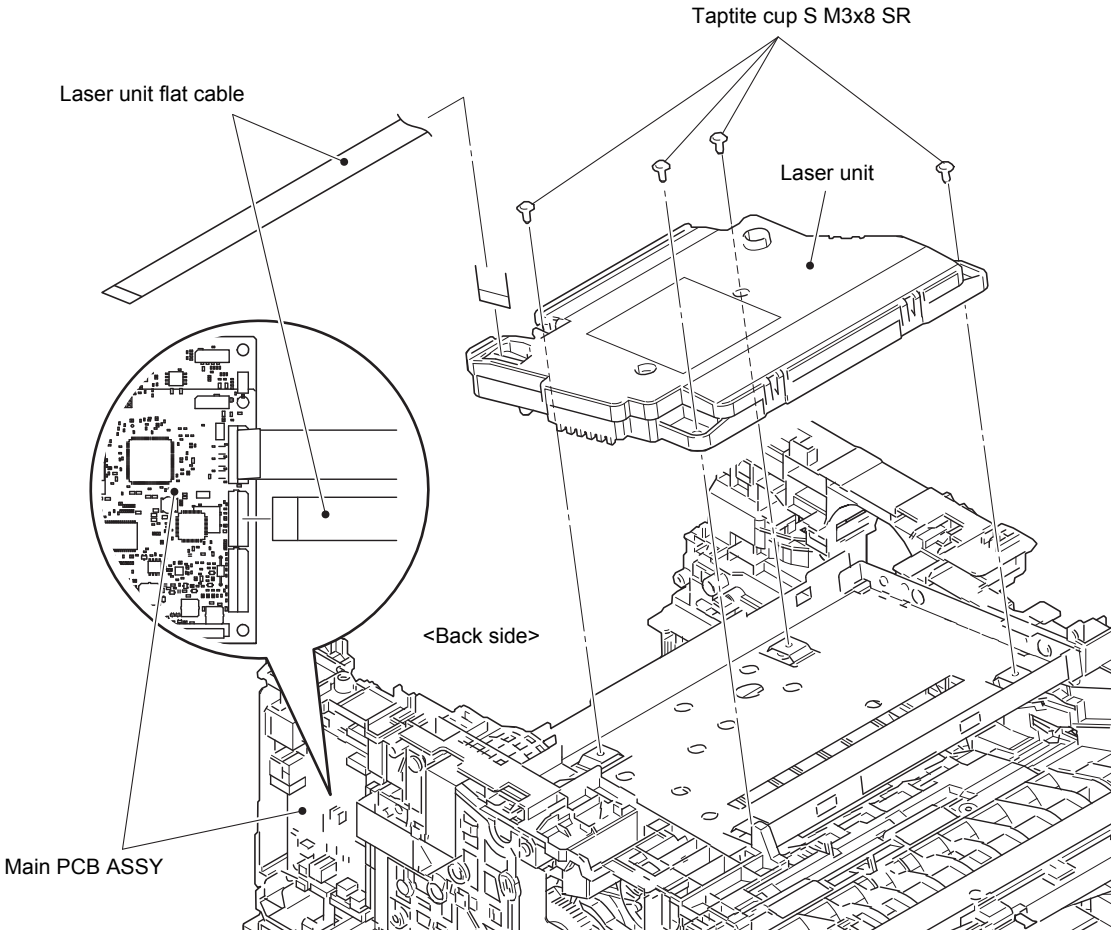


Fig. 3-30

Harness routing: Refer to "4. Left side of the machine" and "5. Rear side of the machine".

Assembling Note:

- Fold the laser unit flat cable at the positions described below.

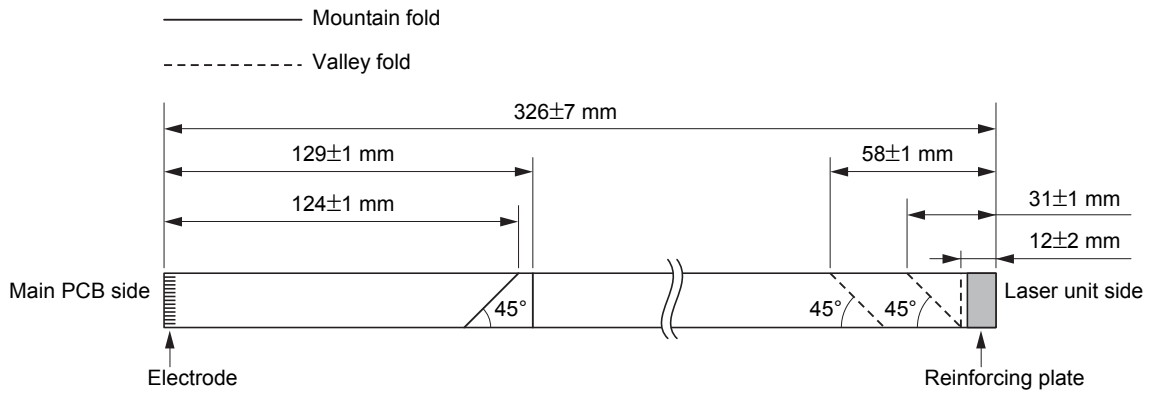


Fig. 3-31

Assembling Note:

- There are two types of laser unit (SP / SN) that can be ordered as a spare part. When replacing the laser unit, be sure to order the same type of the laser unit that was attached to the machine.
- After the replacement, refer to "3. IF YOU REPLACE THE LASER UNIT" in chapter 4 to enter the adjusted value of the laser unit.

<How to identify the type of laser unit and the position of the laser serial number label>

Check the first two characters of the laser serial number label.

- SP type: SPxxxxxxVXXYY
- SN type: SNxxxxxxVXXYY

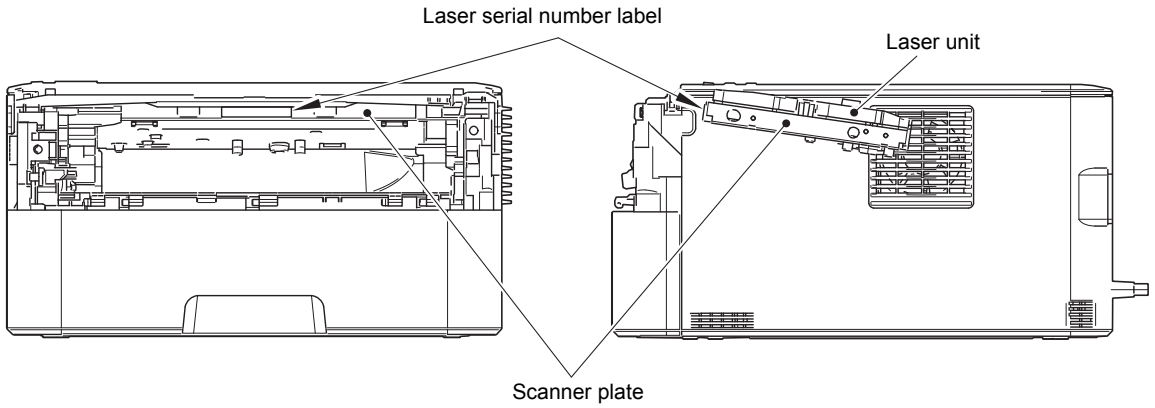


Fig. 3-32

Assembling Note:

- Attach the laser serial number label as shown in the figure above (on the scanner plate) after replacing the laser unit.

9.16 Wireless LAN PCB (Wireless network model only)

(1) Remove the tape on the wireless LAN PCB, and disconnect the wireless LAN PCB from the main PCB ASSY.

(2) Remove the gasket from the wireless LAN PCB.

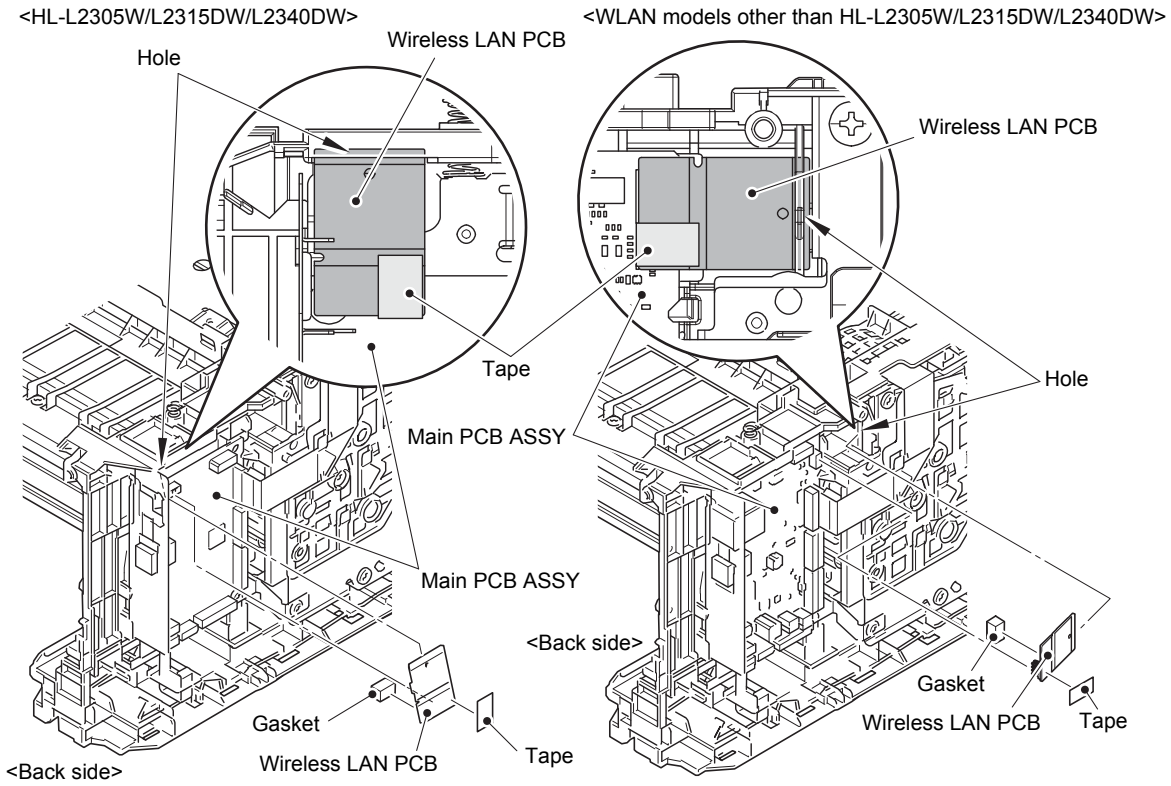


Fig. 3-33

Assembling Note:

- When connecting the wireless LAN PCB, insert the wireless LAN PCB to the hole on the machine, and connect the wireless LAN PCB to the main PCB ASSY.
- When assembling the wireless LAN PCB, remove the all tapes on the wireless LAN PCB. Also, do not attach a tape. These tapes are for securing the wireless LAN PCB during the shipping, not required for usage. These tapes are special tape and using other tapes may cause short circuit between terminals.
- Attach the gasket to the location shown in the figure below.

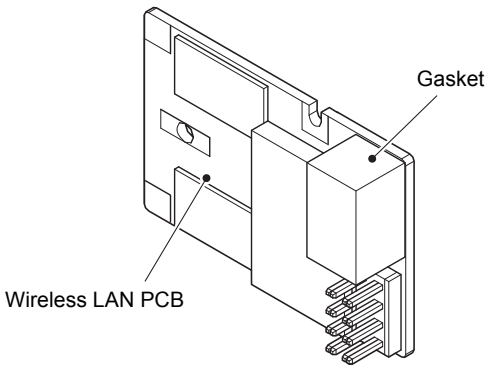


Fig. 3-34

9.17 Roller Holder ASSY

(1) Push the link arm in the direction of arrow A. Rotate the roller holder ASSY, and release the boss.

(2) Slide the roller holder ASSY in the direction of arrow B, and remove it from the shaft. Remove the roller holder ASSY.

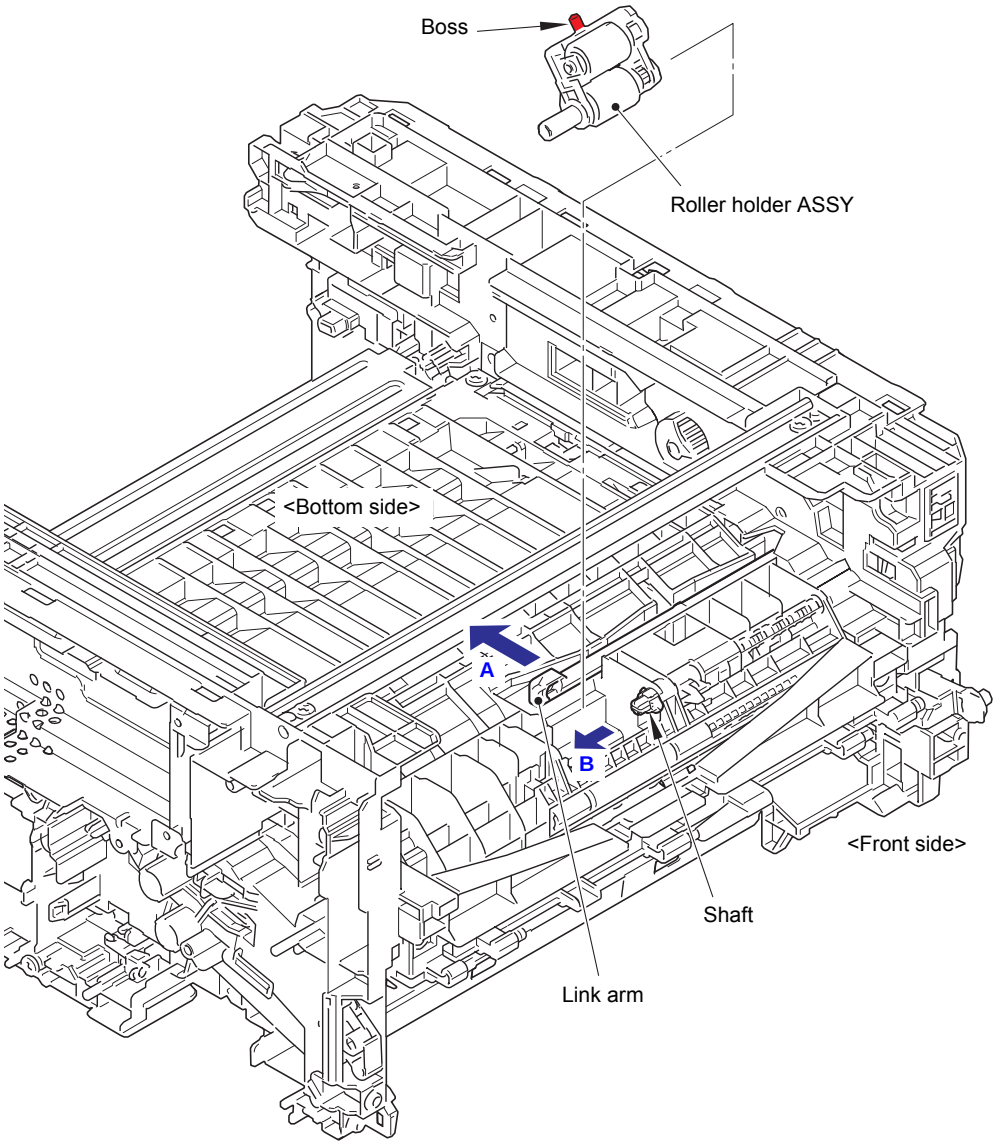


Fig. 3-35

9.18 Main PCB ASSY

(1) Disconnect all harnesses and flat cables from the main PCB ASSY.

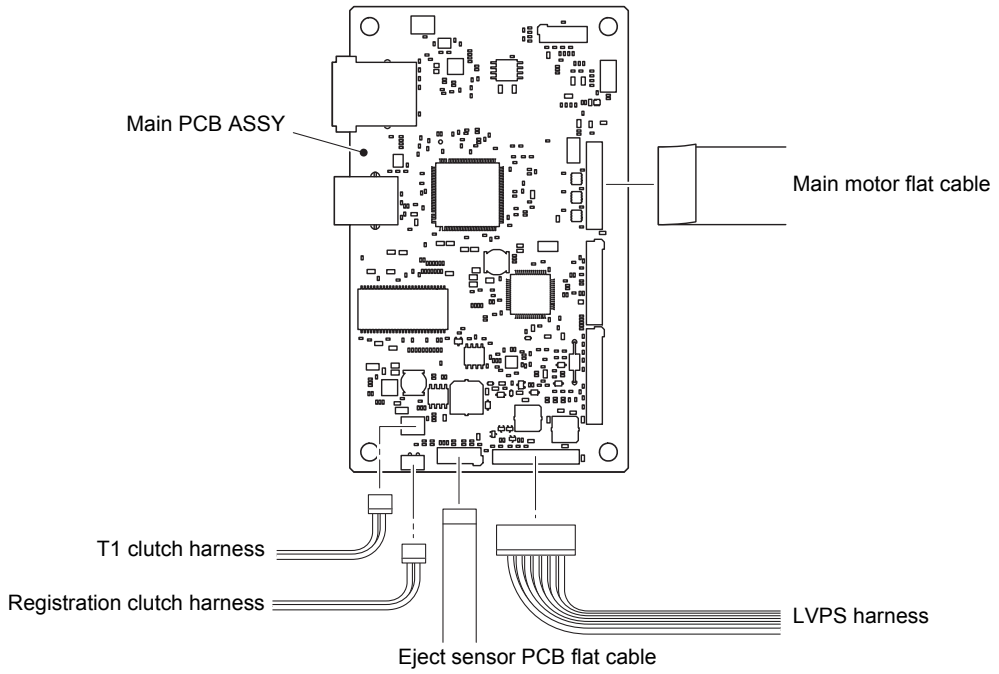


Fig. 3-36

Harness routing: Refer to "4. Left side of the machine".

(2) Remove the two taptite cup S M3x8 SR screws, and remove the main PCB FG plate 1.

(3) Remove the three taptite cup S M3x8 SR screws. Release the hook, and remove the main PCB ASSY.

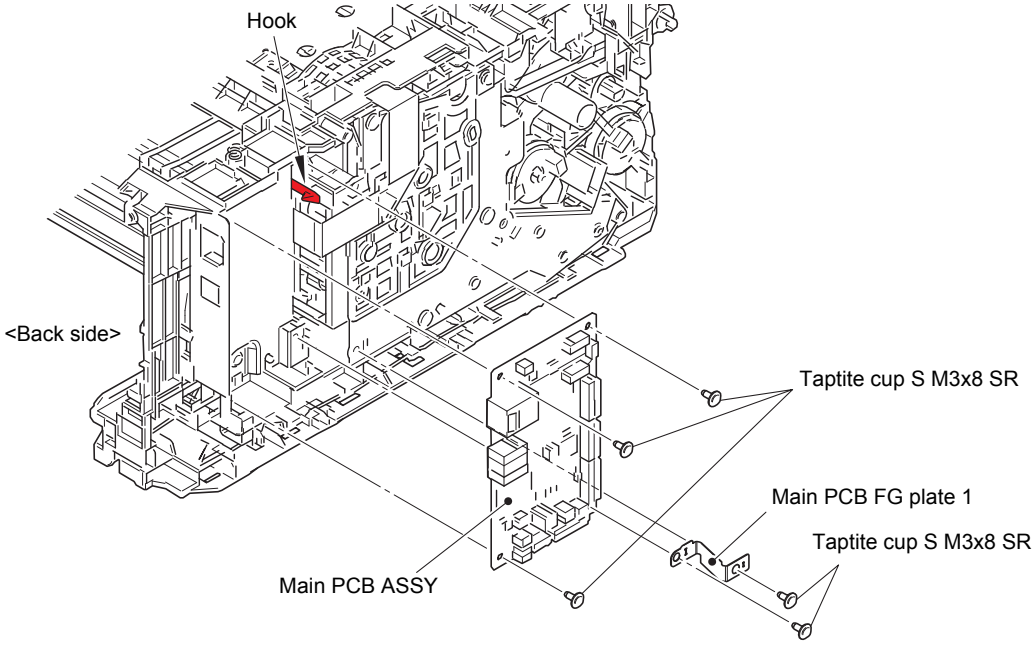


Fig. 3-37

Assembling Note:

- After the replacement, refer to "1. IF YOU REPLACE THE MAIN PCB ASSY" in chapter 4 to enter the adjusted value of the main PCB ASSY.

9.19 T1 Clutch and Registration Clutch

(1) Release the T1 clutch harness (BL) and the registration clutch harness (WH) from the securing fixtures.

(2) Release the hook, and remove the T1 clutch.

(3) Release the hook, and remove the registration clutch.

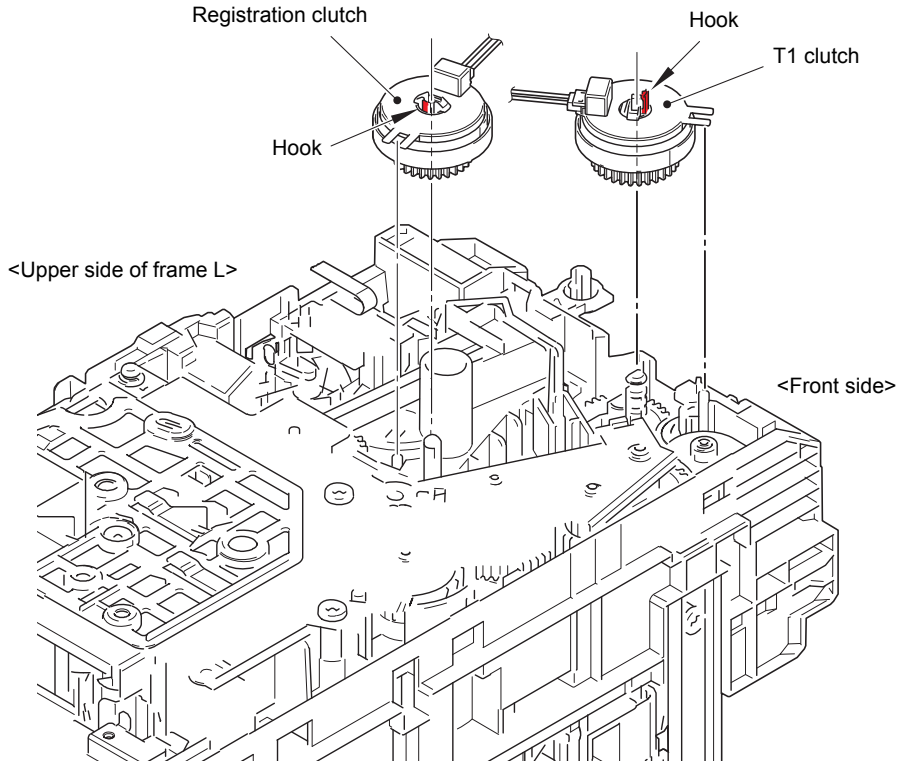


Fig. 3-38

Harness routing: Refer to “4. Left side of the machine”.

Assembling Note:

- When securing the T1 clutch harness and the registration clutch harness, check that there is no harness slack.
- Attach the rotation stoppers of the T1 clutch and registration clutch by engaging them with the pins of the machine as shown in the figure below.

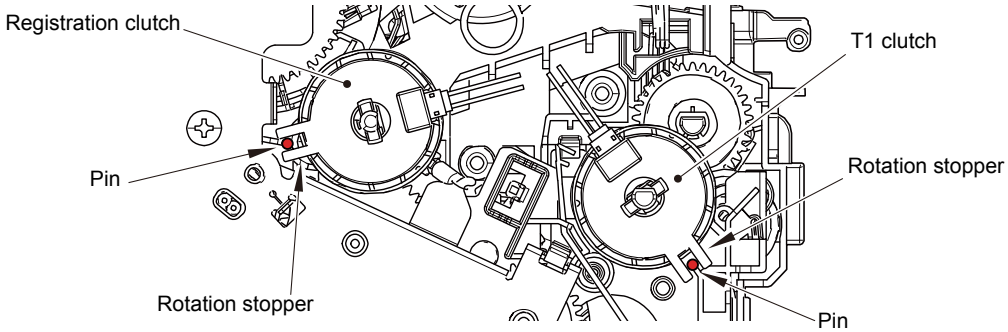


Fig. 3-39

9.20 New Toner Sensor PCB ASSY

(1) Release the hook, and remove the new toner sensor PCB ASSY. Disconnect the paper feed sensor harness ASSY from the new toner sensor PCB ASSY, and release it from the securing fixtures.

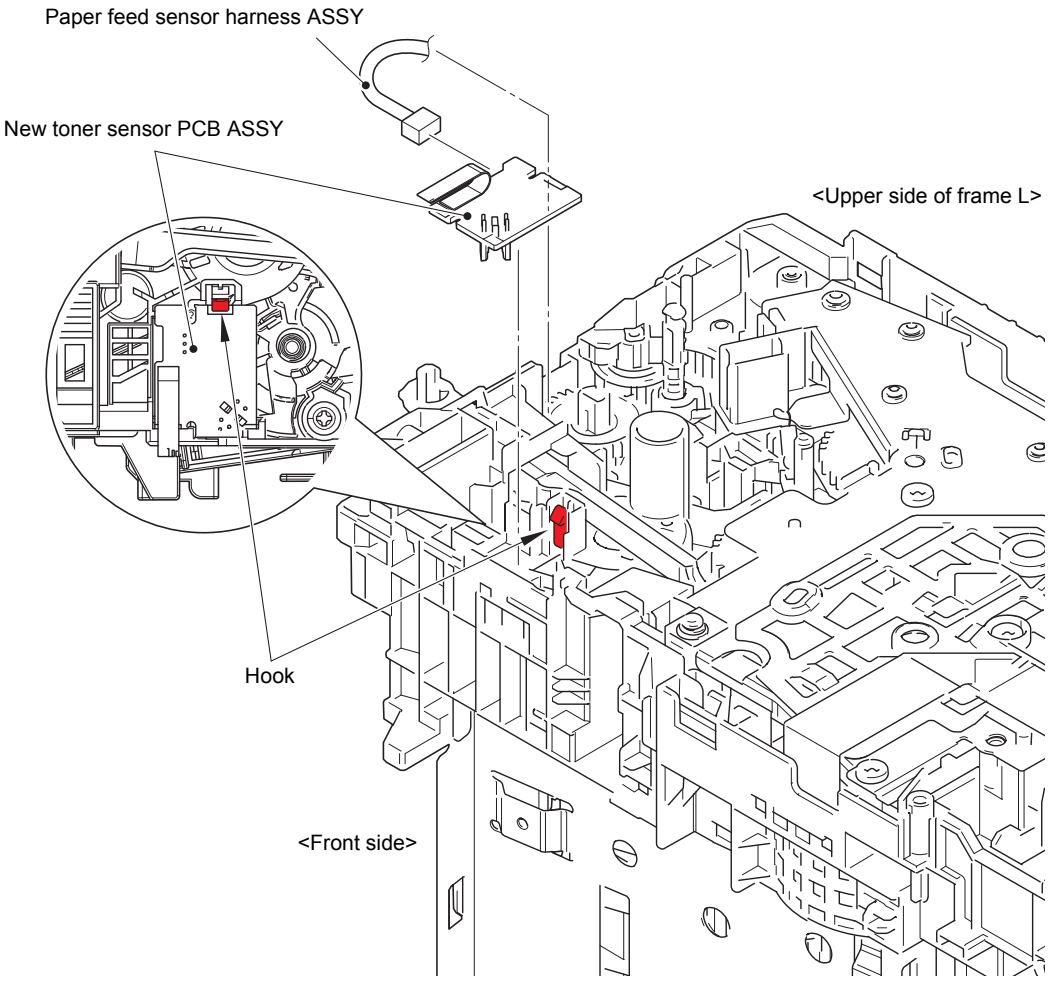


Fig. 3-40

Harness routing: Refer to “4. Left side of the machine”.

9.21 Main Frame L ASSY

(1) Remove the two taptite bind B M4x12 screws, and remove the front chute ASSY.

(2) Release the LVPS harness from the securing fixtures.

(3) Remove the regist FG spring from the motor drive sub ASSY and the conductive bushing 5.

(4) Use a flat-blade screwdriver or similar tool to release the hook from the hole, and remove the conductive bushing 5.

(5) Release the hook, and remove the feeder gear 34.

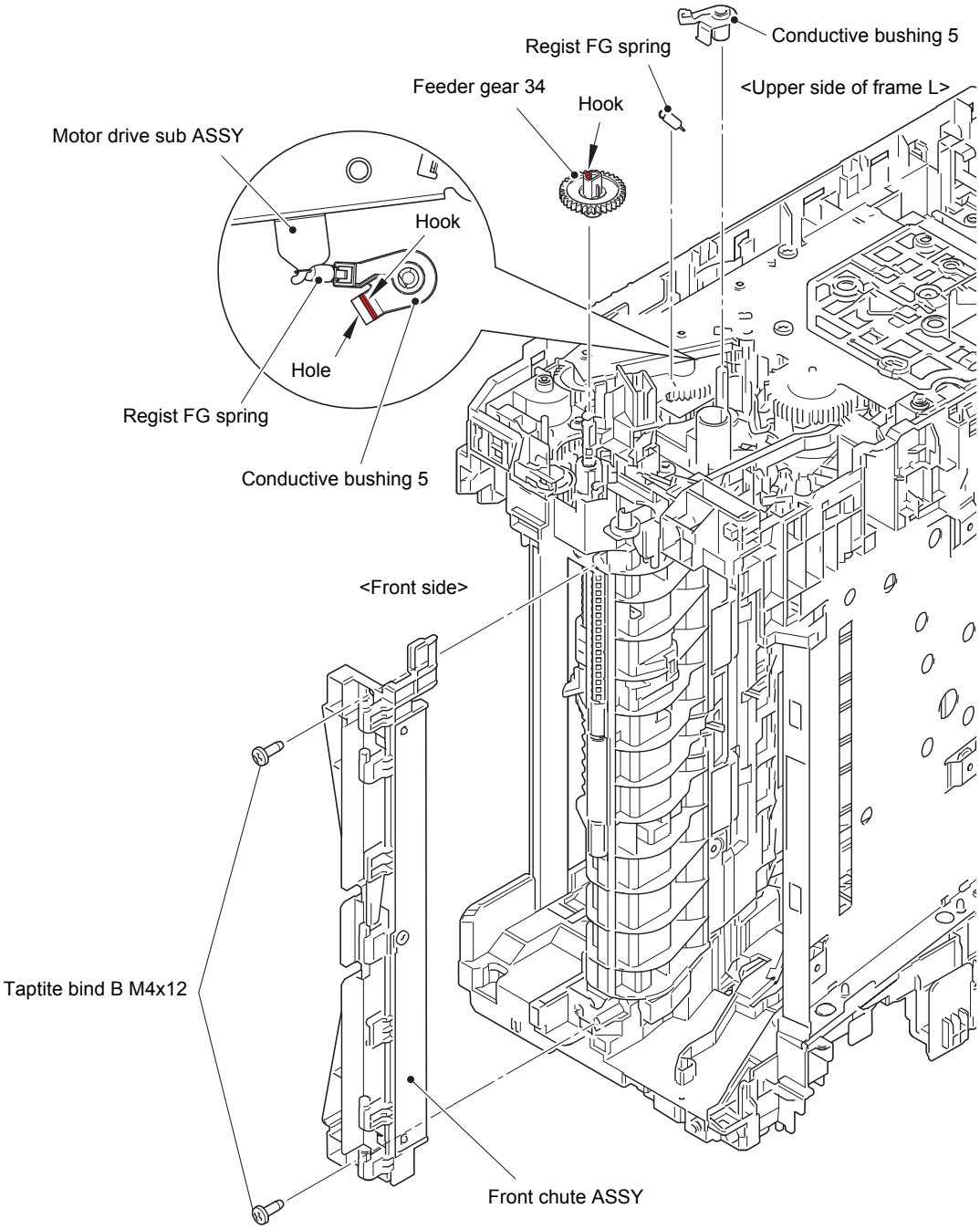


Fig. 3-41

Harness routing: Refer to “4. Left side of the machine”.

(6) Remove the taptite bind B M4x12 (6a) screw (for securing the under bar), the taptite cup S M3x6 SR (6b) screw (for securing the chute ground plate), the taptite bind B M4x12 (6c) screw (for securing the registration chute) and the taptite cup S M3x8 SR (6d) screw (for securing the laser L FG plate).

(7) Remove the two taptite bind B M4x12 (7a) screws and the two taptite cup S M3x8 SR (7b) screws, and remove the main frame L ASSY. Pull out the paper feed sensor harness ASSY and the LVPS harness from the holes.

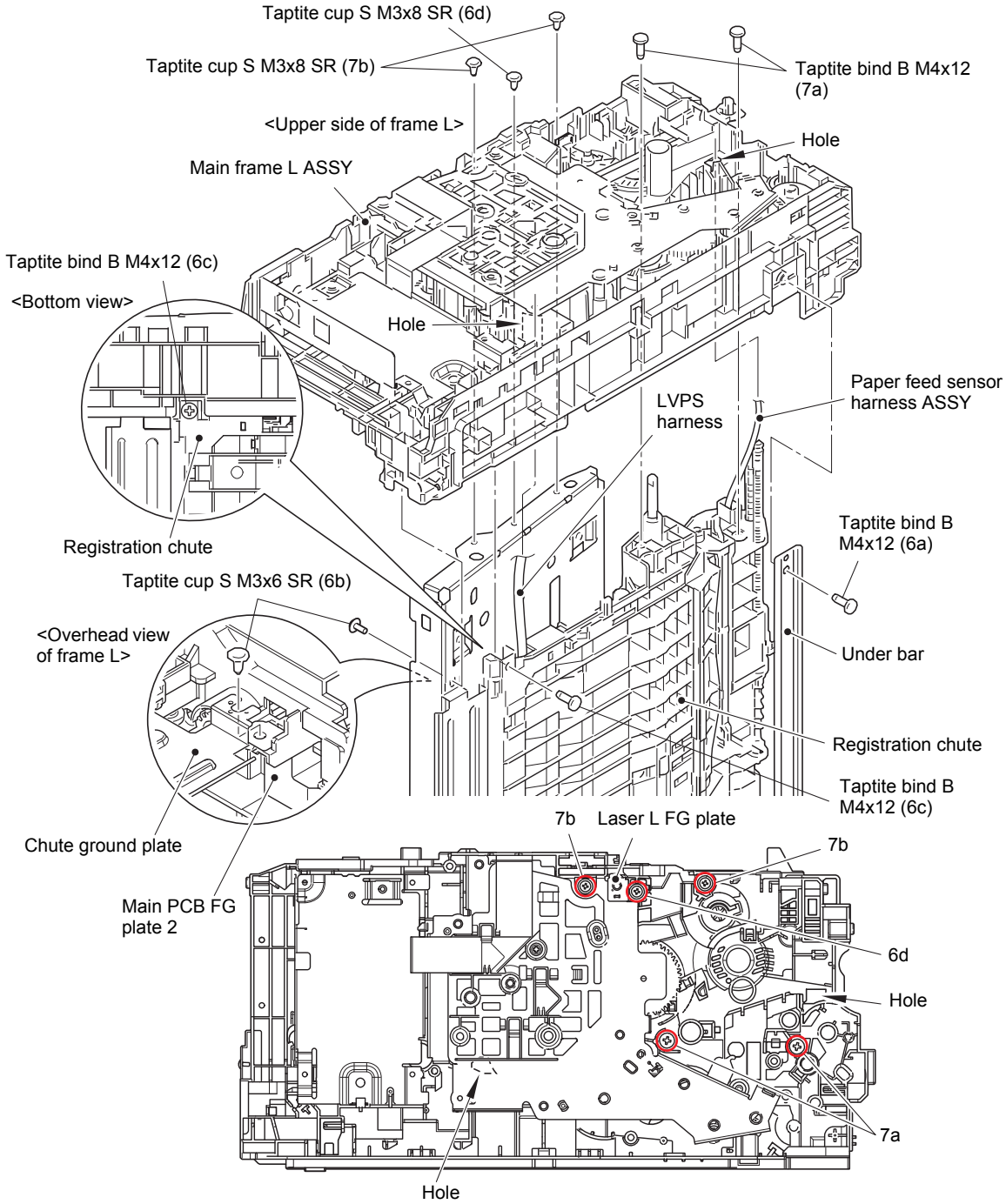


Fig. 3-42

Harness routing: Refer to “4. Left side of the machine”.

Assembling Note:

- When assembling the main frame L ASSY, make sure that the chute ground plate is above the main PCB FG plate 2.

9.22 Main Motor

(1) Release the main motor flat cable from the securing fixtures.

(2) Remove the taptite bind B M4x12 screw. Release the hook A, and remove the flat cable guide from the motor drive sub ASSY.

(3) Remove the screw pan (S/P washer) M3x12DB screw, and remove the laser L FG plate from the motor drive sub ASSY.

(4) Remove the three taptite bind B M4x12 screws. Release the hook B to remove the motor drive sub ASSY from the main frame L ASSY.

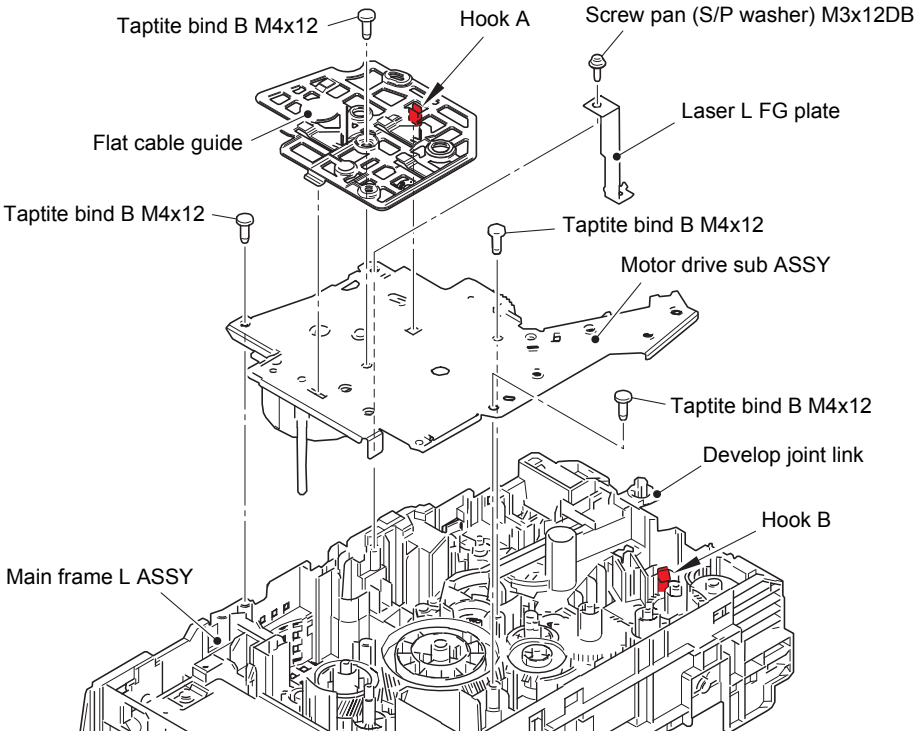


Fig. 3-43

Harness routing: Refer to “4. Left side of the machine”.

Assembling Note:

- Be careful not to bend the laser L FG plate.
- Attach the motor drive sub ASSY to the main frame L ASSY while the develop joint link is pushed. Pull the develop joint link back before tightening the screw for motor drive sub ASSY. Failure to follow the procedure above may get the develop joint link caught and jammed.
- If you removed the motor drive sub ASSY while the fuser unit was attached on the machine, remove the fuser unit once (refer to “9.10 Fuser Unit”) and reattach it after attaching the motor drive sub ASSY.
  The conductive leaf spring of the fuser unit may be deformed by the calking shaft.

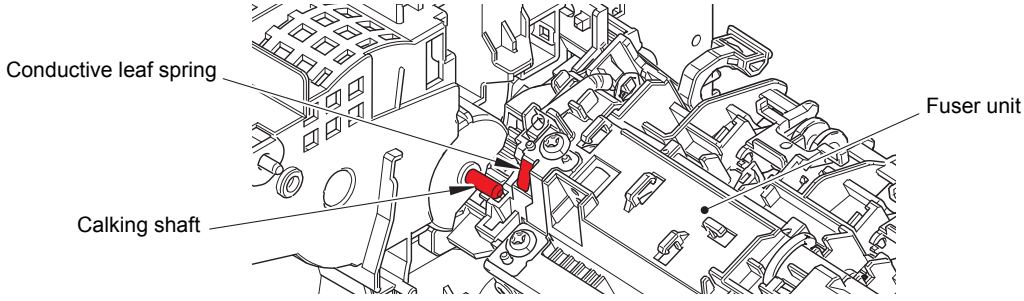


Fig. 3-44

(5) Remove the taptite cup S M3x8 SR screw to remove the motor plate calking ASSY and the drum idle gear 68R from the motor drive sub ASSY.

(6) Remove the three screw bind M3x4 screws, and remove the main motor from the motor plate calking ASSY.

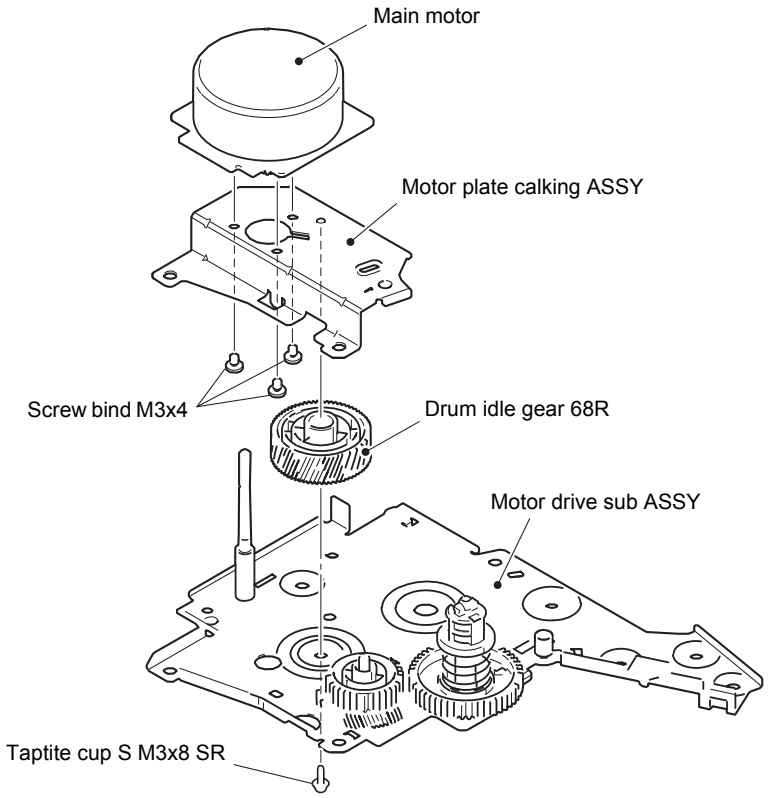


Fig. 3-45

Assembling Note:

- When assembling the motor plate calking ASSY, set the drum idle gear 68R and the develop gear 65L/34 to the motor plate calking ASSY as shown in the figure below, and then attach it to the motor drive sub ASSY.

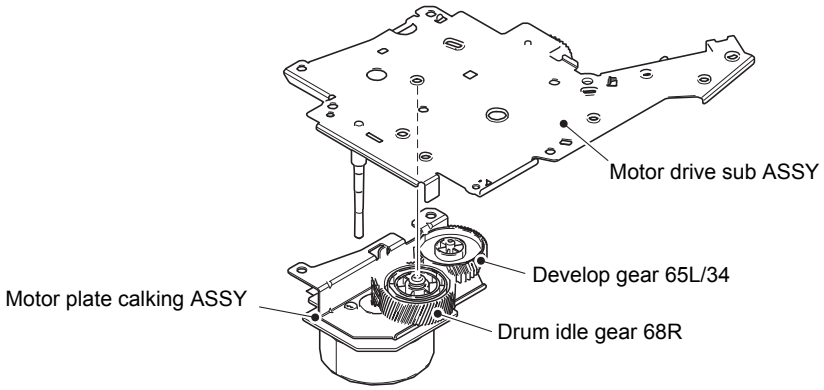


Fig. 3-46

9.23 Fuser Gear 67R/40R

(1) Remove the fuser gear 67R/40R from the main frame L ASSY.

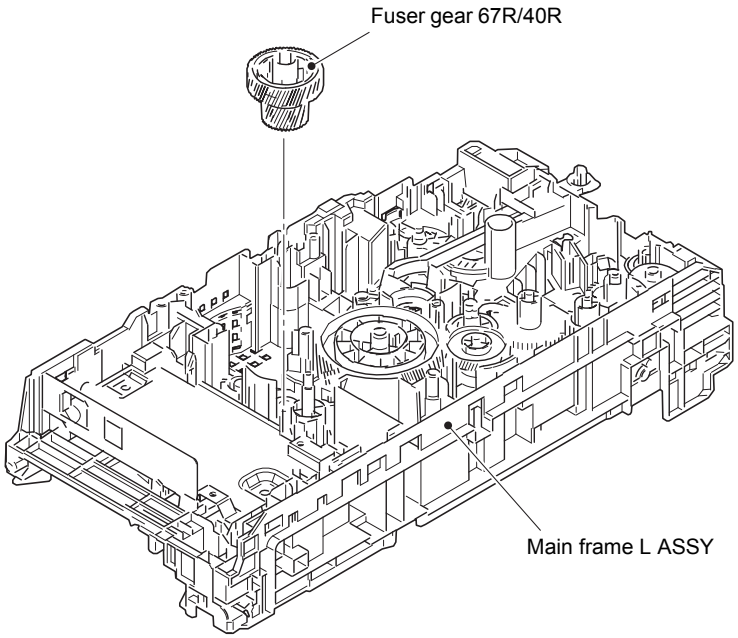


Fig. 3-47

9.24 Eject Sensor PCB ASSY

(1) Remove the taptite cup S M3x8 SR screw and the screw pan (S/P washer) M3x12DB screw. Lift the upper side of the main shield plate up to remove it from the pin, and pull out the main shield plate in the direction of the arrow to remove it from the rib of the main frame L ASSY.

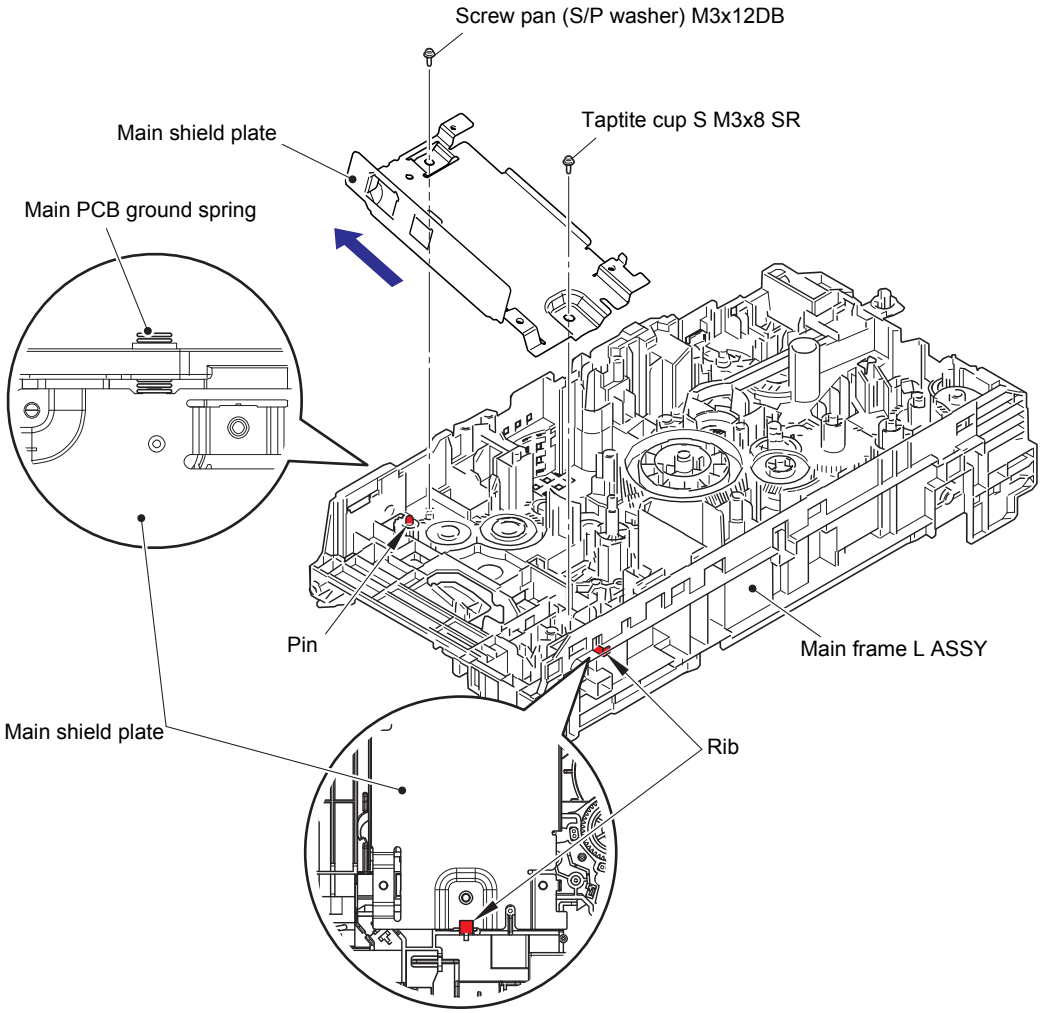


Fig. 3-48

Assembling Note:

- When assembling the main shield plate, check that the main PCB ground spring is not inclined. Attach it correctly as shown in the figure above.

(2) Release the hook A, and remove the eject sensor PCB ASSY from the pin on the main frame L ASSY.

(3) Release the back cover/duplex tray sensor harness from the guide on the main frame L ASSY.

(4) Release the hooks B, and remove the back cover/duplex tray sensor from the main frame L ASSY.

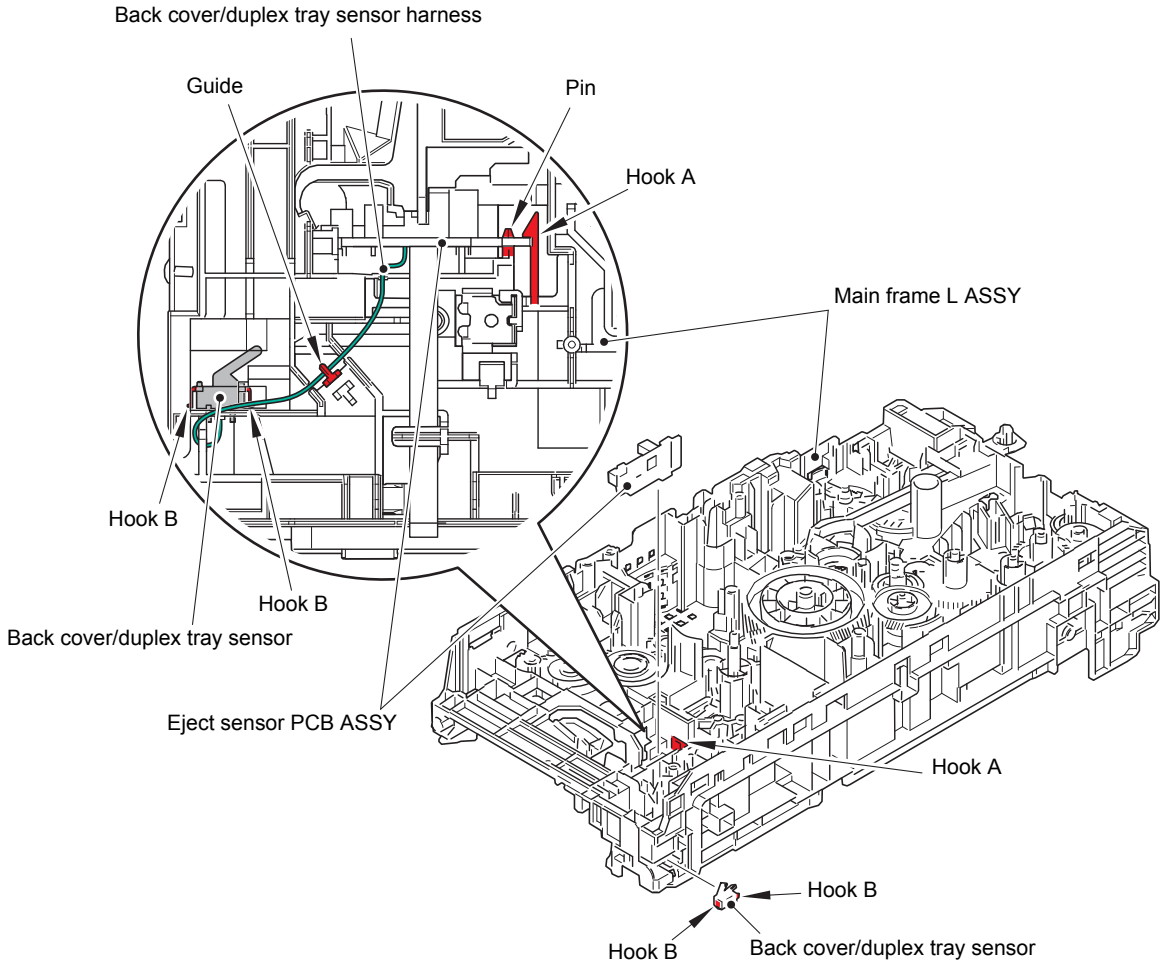


Fig. 3-49

Assembling Note:

- When assembling the back cover/duplex tray sensor, attach it by engaging the hooks B of the back cover/duplex tray sensor properly.
- If you removed the main shield plate while the fuser unit was attached on the machine, release the side thermistor harness ASSY and the center thermistor harness ASSY from the securing fixture of the main frame L ASSY. Then tighten the screw for the main shield plate and secure each harness in the securing fixture. If the main shield plate is assembled while the fuser unit is attached to the machine, the side thermistor harness ASSY and the center thermistor harness ASSY may be caught.

9.25 Registration Front/rear Actuator Holder ASSY

Note:
- As the under bar is easy to bend, be careful to handle it.

(1) Release the hook part of the under R FG wire from the LVPS shield plate.

(2) Remove the taptite cup S M3x8 SR screw, and remove the laser R FG plate.

(3) Remove the taptite cup S M3x8 SR screw and the taptite bind B M4x12 screw. Pull out the right side of the LVPS shield plate in the direction of arrow A to remove it from the pin. Then pull it out in the direction of arrow B to remove it from the machine.

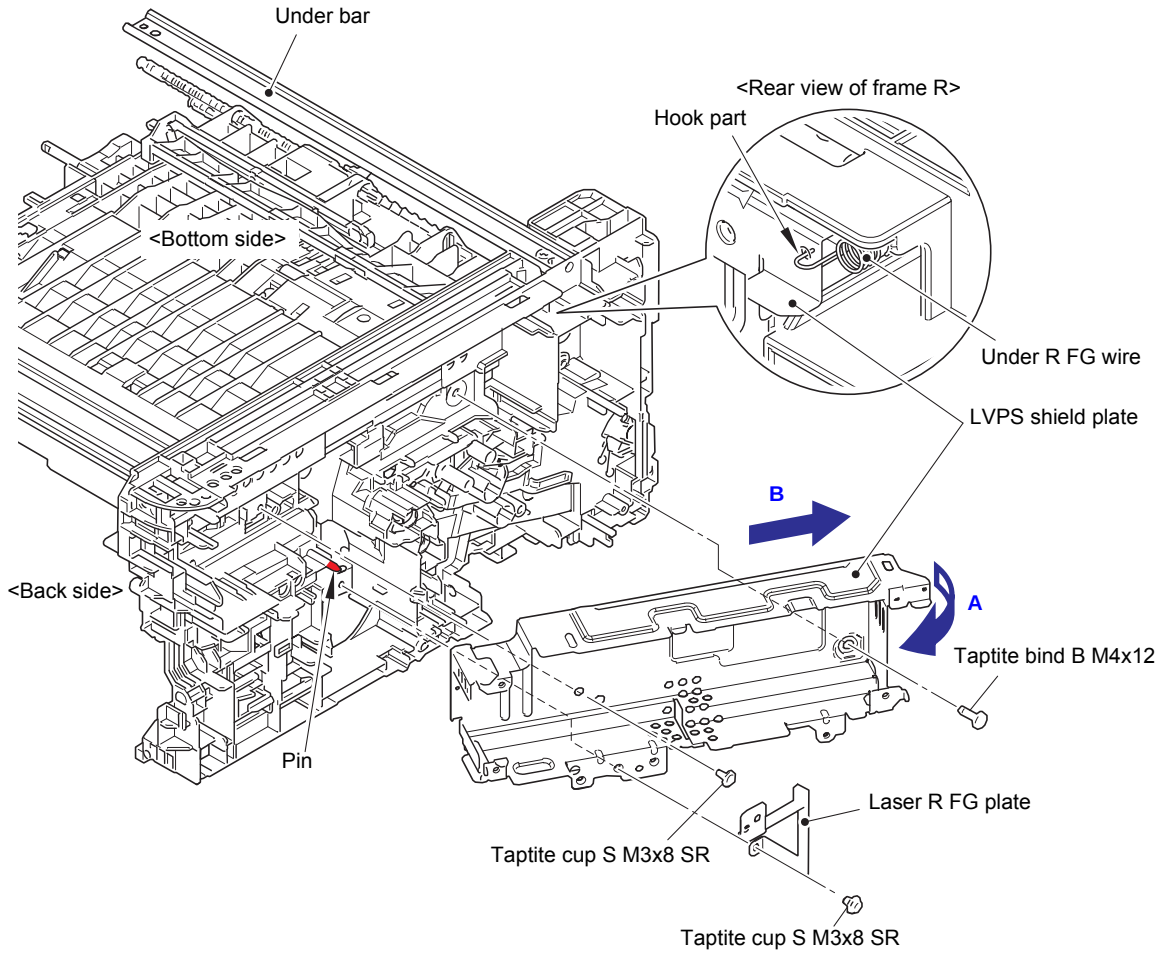


Fig. 3-50

(4) Release the registration front/rear sensor PCB harness and the LVPS harness from the securing fixtures.

(5) Remove the taptite cup S M3x6 SR screw and the two taptite bind B M4x12 screws, and remove the main frame R ASSY. Pull out the registration front/rear sensor PCB harness from the hole.

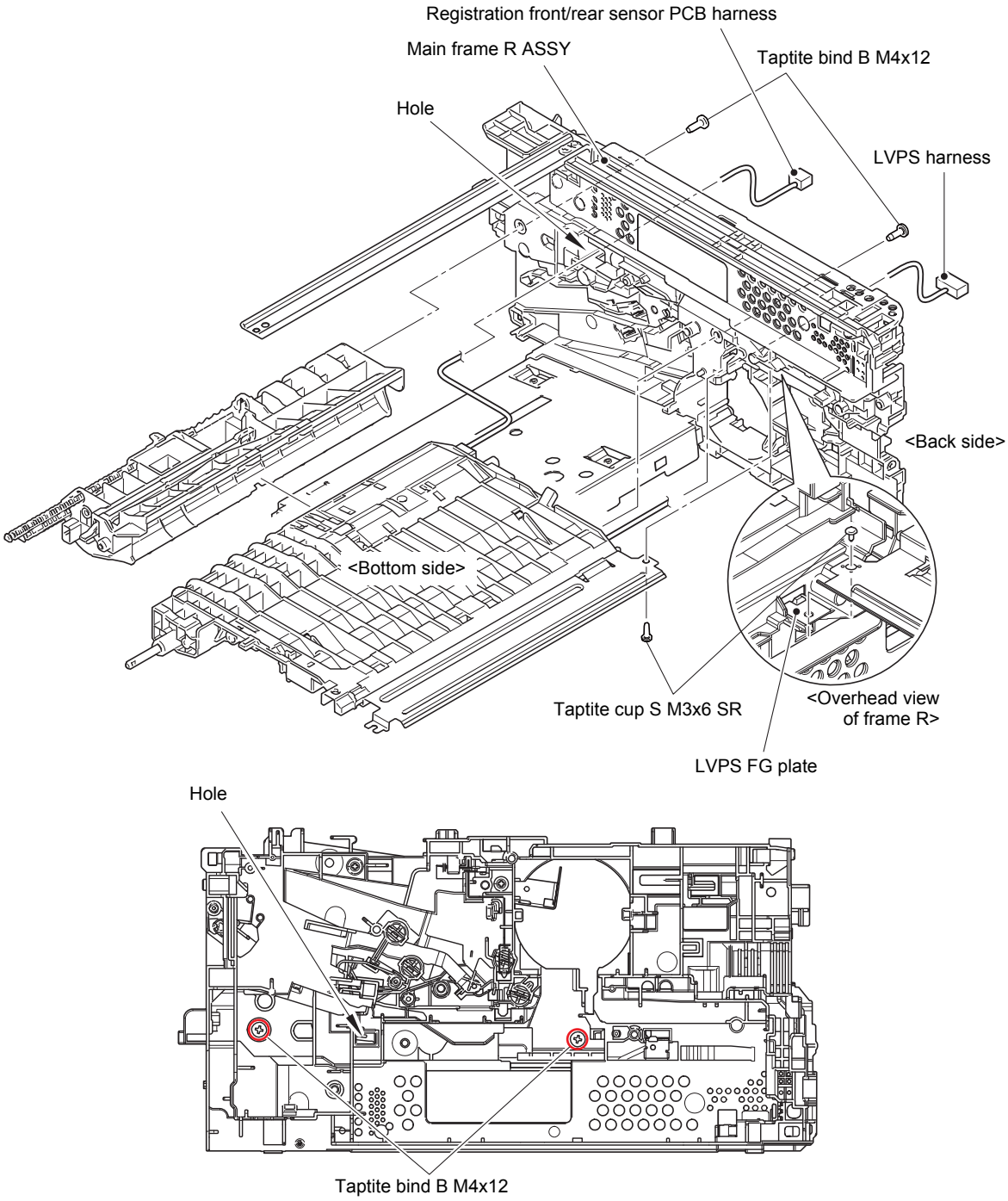


Fig. 3-51

Harness routing: Refer to "1. Right side of the machine" and "2. Top side of the registration chute".

Assembling Note:

- When attaching the main frame R ASSY, check that the LVPS FG plate is set to the main frame R ASSY.

(6) Remove the taptite bind B M3x10 screw. Release the each hook, and remove the registration front/rear actuator holder ASSY from the registration chute. Pull out the registration front/rear sensor PCB harness from the hole.

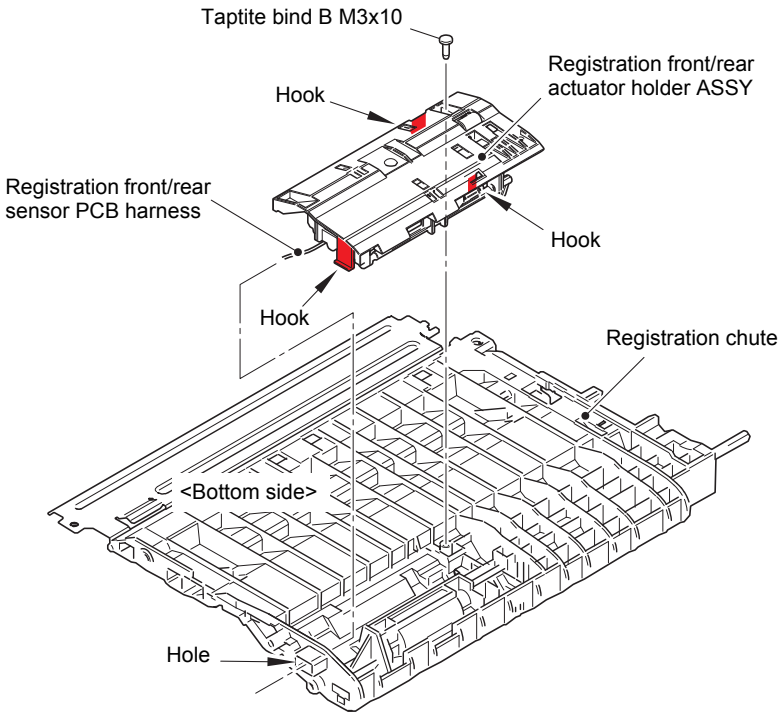


Fig. 3-52

Harness routing: Refer to "2. Top side of the registration chute".

Assembling Note:

- After assembling the registration front/rear actuator holder ASSY to the registration chute, push the actuators by fingers and check if it is pushed back by its spring (if the spring is not caught at assembling).

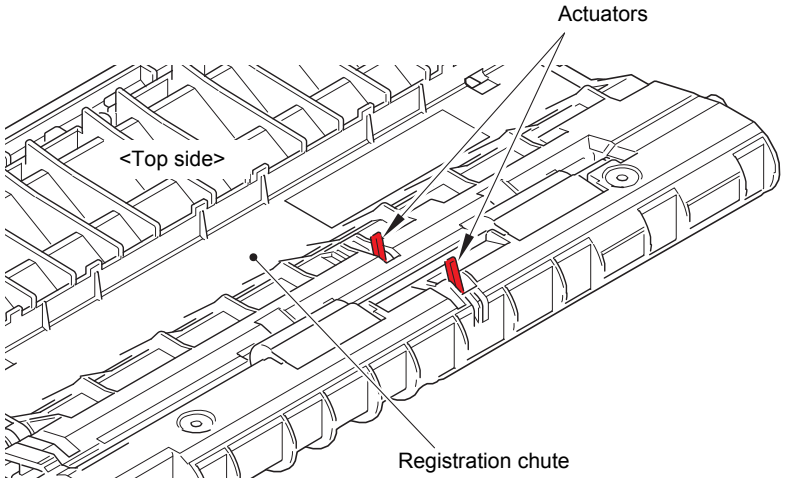


Fig. 3-53

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

1. IF YOU REPLACE THE MAIN PCB ASSY

■ What to do after replacement

- Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)
- Installing Firmware (Sub Firmware, Demo Firmware, and Main Firmware)
- Setting Serial Number and Entering Adjusted Value of Laser Unit

■ What you need to prepare

(1) One USB cable

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

(3) Service setting tool (BrUsbsn.zip)
Copy this file into the temporary folder created on the C drive. Extract the copied file and double-click "BrUsbsn.exe" to start it.

(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, copy this file into the temporary folder created on the C drive, and extract the copied file. Refer to "APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER" for the installation procedure.

(6) Firmware

Sub firmware (PCL/PS-compliant model only) *1	LZXXXX_$.djf
Demo firmware (US model only)	LZXXXX_$.djf
Main firmware	LZXXXX_$.djf
LZXXXX : First six digits of the part number of the firmware $: Alphabetic character representing the revision version of the firmware	

*1 PCL/PS-compliant model:
HL-L2360DN/2560DN/L2361DN/L2360DW/L2365DW/L2366DW

(7) Default paper size setting tool (SET_COUNTRYCODE.zip) (LED Models only)
Copy this file into the temporary folder created on the C drive.

1.1 Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)

<Operating Procedure>

LED models

(1) Copy the "SET_COUNTRYCODE.zip" file of the relevant model to the desired location on the computer and extract it.

(2) Turn OFF the power switch of the machine and open the front cover.

(3) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(4) Release the [Go] key. All LEDs go out.

(5) Press and hold the [Go] key more than two seconds and check that the Paper LED lights. Release the [Go] key and close the front cover.

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

(7) Open the temporary folder and double-click "FILEDG32.EXE" to start it, and select "Brother Maintenance USB Printer".

(8) Drag and drop the pjl file copied in the procedure (1) onto the "Brother Maintenance USB Printer" icon in the FILED32 screen. The file is loaded to the machine, and the setting starts.

(9) Wait for approximately five seconds, and then turn OFF the power switch of the machine and disconnect the USB cable.

LCD models

(1) Press the [OK] key and then the [Go] key while the machine is in the ready state. Then, press the [▲] key four times to enter the maintenance mode.

(2) Press the [▲] or [▼] key to display "MAINTENANCE 74" on the LCD, and press the [OK] key. The country code currently set is displayed on the LCD. (The first digit is flashing.)

(3) Press the [▲] key to enter "1", or the [▼] key to enter "0". Then press the [OK] key. The second digit starts to flash.

(4) Press the [▲] key to enter "1", or the [▼] key to enter "0" similarly. Then press the [OK] key. The second digit is completed and the fourth digit starts to flash.

(5) The third digit and fourth digit changes at once when the [▲] or [▼] key is pressed. Press the [Go] key when the desired value is shown on the screen. The new setting is saved, and "PARAMETER INIT" is displayed on the LCD. The machine then returns to the initial state of maintenance mode.

Note:

- For LCD models, perform settings for a country as described in “1.3.15 Setting by spec (function code: 74)” in Chapter 5.
  Please contact Brother distributors for the latest information.

1.2 Installing Firmware (Sub Firmware, Demo Firmware, and Main Firmware)

1.2.1 Checking firmware version

Check whether the firmware installed on the machine 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 machine as described in “1.2.2 Installing firmware”.

<How to check firmware version>

LED models

(1) Press the [Go] key three times while the machine is in the ready state.

Printer settings is printed.
Check the firmware version printed on the Printer settings.

LCD models

(1) Press the [OK] key and then the [Go] key while the machine is in the ready state. Then, press the [▲] key four times to enter the maintenance mode.

(2) Press the [▲] or [▼] key to display "MAINTENANCE 25" on the LCD, and press the [OK] key. "MAIN:Ver*.**" is displayed on the LCD.

(3) Change the displayed item by pressing the [Go], [▲] or [▼] key to check all firmwares.

Note:

- For LCD models, you can check the Sub firmware, Demo firmware, and Main firmware version by implementing "Print maintenance information (function code: 77)" (refer to “1.3.16 Print maintenance information (function code: 77)” in Chapter 5).

1.2.2 Installing firmware

Note:

- DO NOT disconnect the power cord or USB cable from the machine or computer during installing.
- If the install is failed, turn OFF the machine and turn it back on. The machine enters the firmware installing mode automatically. Continue to the operating procedure below.

<Operating Procedure>

LED models

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press and hold the [Go] key for more than two seconds until the Ready and Paper LEDs light. Release the [Go] key and close the front cover.

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

(6) Open the temporary folder and double-click "FILEDG32.EXE" to start it, and select "Brother Maintenance USB Printer".

(7) Drag and drop the required program file (ex: LZXXXX_$.djf) in the same folder onto the "Brother Maintenance USB Printer" icon. The file is loaded to the machine, and installing to the flash ROM starts.

(8) When installing is completed, the machine restarts and returns to the ready state automatically.

(9) Turn OFF the power switch of the machine, and then repeat the procedures (1) to (8) to install required firmwares.

(10) Turn OFF the power switch of the machine, and disconnect the USB cable.

LCD models

(1) Press the [OK] key and then the [Go] key while the machine is in the ready state. Then, press the [▲] key four times to enter the maintenance mode.

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

(3) Open the temporary folder and double-click "FILEDG32.EXE" to start it, and select "Brother Maintenance USB Printer".

(4) Drag and drop the required program file (ex: LZXXXX_$.djf) in the same folder onto the "Brother Maintenance USB Printer" icon. The file is loaded to the machine, and installing to the flash ROM starts.

(5) When installing is completed, the machine restarts and returns to the ready state automatically.

(6) Repeat the procedures (1) to (5) to install required firmwares.

(7) Turn OFF the power switch of the machine, and disconnect the USB cable.

1.3 Setting Serial Number and Entering Adjusted Value of Laser Unit

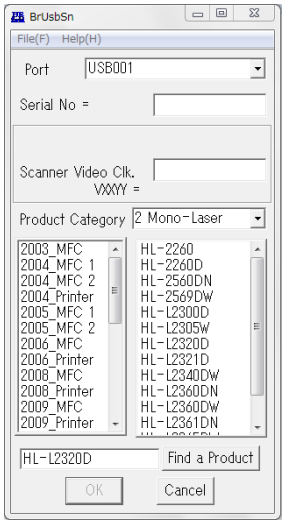
<Operating Procedure>

Common to LED/LCD models

(1) Enter the maintenance mode. (For LED models, refer to the procedures (2) to (5) of "1.1 Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)" in this chapter. For LCD models, refer to the procedure (1) of "1.1 Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)" in this chapter.)

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

(3) Double-click the "BrUsbsn.exe" file that was copied to the temporary folder in the computer to start it. "BrUsbSn" screen shown on the right appears.



(4) Enter the model name of your machine in the [Find a Product] field (ex: HL-L2320D) and click the [Find a Product] button. [Find a Product] button turns into [Find Next] button, and model name appears in the box above the [Find Next] button.

(5) Check if the model name of your machine is shown in the box above the [Find Next] button. If you can not find the model name of your machine, keep clicking the [Find Next] button until it appears.

(6) In the [Port] field on the "BrUsbSn" screen, 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.

(7) Enter the serial number (15 digits) of the machine in the [Serial No] field.

(8) Check the laser serial number label attached to the location shown in the figure below.

(9) Enter the five digits of the laser serial number in the [Scanner Video Clk] field.

ex.) SN0114060584617<u>34753</u>

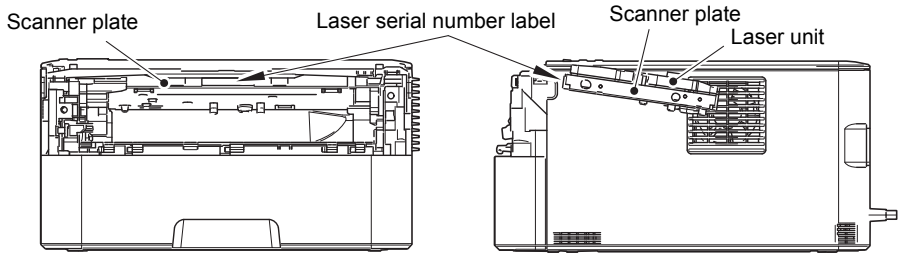


Fig. 4-1

(10) Click the [OK] button. The serial number and the adjusted value of the laser unit are written to the machine.

(11) Turn OFF the power switch of the machine and disconnect the USB cable from the machine and computer.

Note:

- For LCD models, serial number can be set by referring to "1.3.18 Display machine log information (function code: 80)" in Chapter 5. Refer to "APPENDIX 1 SERIAL NUMBERING SYSTEM" for how to check the serial number.

2. IF YOU REPLACE THE LOW-VOLTAGE POWER SUPPLY PCB ASSY

■ **What to do after replacement**

- Reset Irregular Power Supply Detection Counter of Low-voltage Power Supply PCB

■ **What you need to prepare**

None

2.1 Reset Irregular Power Supply Detection Counter of Low-voltage Power Supply PCB

LED models

Refer to "1.4.15 Reset irregular power supply detection counter of low-voltage power supply PCB" in Chapter 5 to reset the irregular power supply detection counter.

LCD models

Refer to "1.3.20 Reset irregular power supply detection counter of low-voltage power supply PCB (function code: 88)" in Chapter 5 to reset the irregular power supply detection counter.

3. IF YOU REPLACE THE LASER UNIT

■ What to do after replacement

- Entering Adjusted Value of Laser Unit

■ What you need to prepare

(1) One USB cable

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

(3) Service setting tool (BrUsbsn.zip)
Copy this file into the temporary folder created on the C drive. Extract the copied file and double-click "BrUsbsn.exe" to start it.

(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, copy this file into the temporary folder created on the C drive, and extract the copied file. Refer to “APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER” for the installation procedure.

3.1 Entering Adjusted Value of Laser Unit

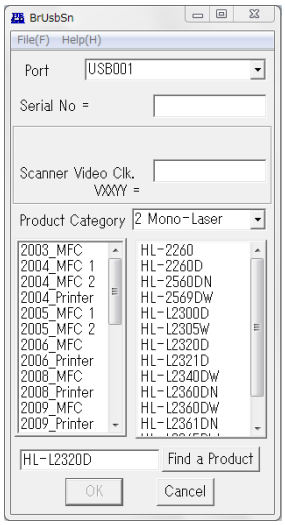
<Operating Procedure>

Common to all models

(1) Enter the maintenance mode. (For LED models, refer to the procedures (2) to (5) of "1.1 Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)" in this chapter. For LCD models, refer to the procedure (1) of "1.1 Setting Default Paper Size (LED Models) / Setting by Spec (LCD Models)" in this chapter.)

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

(3) Double-click the "BrUsbsn.exe" file that was copied to the temporary folder in the computer to start it. "BrUsbSn" screen shown on the right appears.



(4) Enter the model name of your machine in the [Find a Product] field (ex: HL-L2320D) and click the [Find a Product] button. [Find a Product] button turns into [Find Next] button, and model name appears in the box above the [Find Next] button.

(5) Check if the model name of your machine is shown in the box above the [Find Next] button. If you can not find the model name of your machine, keep clicking the [Find Next] button until it appears.

(6) In the [Port] field on the "BrUsbSn" screen, 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.

(7) Check the laser serial number label attached to the location shown in the figure below.

(8) Enter the five digits of the laser serial number in the [Scanner Video Clk] field.

ex.) SN0114060584617<u>34753</u>

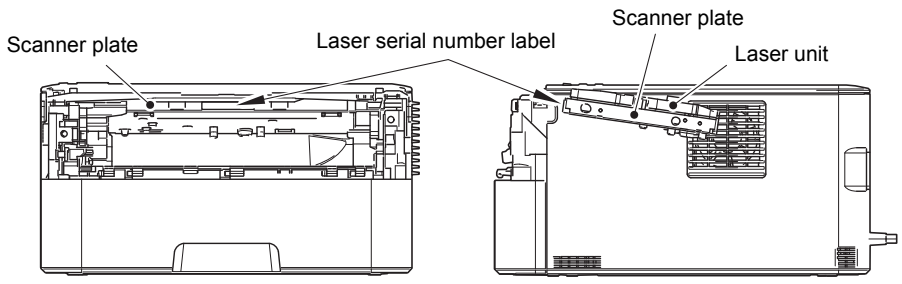


Fig. 4-2

(9) Click the [OK] button. The adjusted value of the laser unit is written to the machine.

(10) Turn OFF the power switch of the machine and disconnect the USB cable from the machine and computer.

CHAPTER 5 SERVICE FUNCTIONS

1. MAINTENANCE MODE

Maintenance mode is exclusively designed for checking, setting and adjusting the machine using the keys on the control panel. For LCD models, you can conduct operational checks of sensors or test printing, display the log information or error codes, and change the worker switches (WSW) by using maintenance mode functions. Although LED models are not equipped with the above maintenance mode functions, they are equipped with conventional maintenance mode functions using the [Go] key.

1.1 How to Enter Maintenance Mode

1.1.1 Method of entering maintenance mode for service personnel

<Operating Procedure>

LCD models

(1) Press the [OK] key and then the [Go] key while the machine is in the ready state. Then, press the [▲] key four times to enter the maintenance mode.

Note:
- To enter the maintenance mode, press the [Go] key in two seconds after pressing the [OK] key. Similarly, press the [▲] key in two seconds after pressing the [Go] key.

(2) "■■ MAINTENANCE ■■■" is displayed on the LCD to indicate that the machine entered the initial state of maintenance mode. The machine is ready to accept entry via keys.

(3) To select any of the maintenance mode functions shown in the "1.2 List of Maintenance Mode Functions", press the [▲] or [▼] key. Check that the desired maintenance mode is displayed on the LCD, and press the [OK] key.

LED models

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key for the assigned number of times to enter maintenance mode (While you are pressing the [Go] key, the Ready LED remains lit). Toner, Drum, and Paper LEDs light when the [Go] key is pressed for assigned number of times.

(5) Press the [Go] key again for the assigned number of times to select the function (While you are pressing the [Go] key, the Ready LED remains lit).
Toner, Drum, and Paper LEDs go out in a second after the [Go] key is pressed for assigned number of times.

1.1.2 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 "1.2 List of Maintenance Mode Functions" (function code: 09, 12, 25, 28, 45, 77, 80, 82, 91).

<Operating Procedure>

LCD models

(1) Press the [OK], [Go], and [OK] keys in this order while the machine is in the ready state. "0" is displayed on the LCD.

(2) Press the [▲] or [▼] key several times until the desired maintenance mode function is displayed on the LCD. Check that the desired maintenance mode is displayed on the LCD, and press the [OK] key.

(3) Each time the selected maintenance mode function is completed, the machine returns to the ready state automatically. For function codes 12, 25, 28, 45, 80, and 82, pressing and holding the [Go] key returns the machine to the ready state.

LED models

(1) Check that the front cover is closed.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key for the assigned number of times to enter maintenance mode (While you are pressing the [Go] key, the Ready LED remains lit).

(5) Each time the selected maintenance mode function is completed, the machine returns to the ready state automatically.

1.2 List of Maintenance Mode Functions

1.2.1 List of maintenance mode functions for LCD models

Function code	Function	Refer to:
01	Initialize EEPROM parameters	1.3.1
09	Print quality test pattern	1.3.2
10	Set worker switches (WSW)	1.3.3
11	Print worker switch (WSW) setting data	1.3.3
12	Check LCD operation	1.3.4
13	Check control panel key operation	1.3.5
25	Display software version	1.3.6
28	Change setting for OnePushDemo function	1.3.7
32	Check sensor operation	1.3.8
33	Display LAN connection status	1.3.9
45	Change USB No. return value / Adjust left-end print start position on second side when duplex printing	1.3.10
67	Continuous print test	1.3.11
69	Print frame pattern (single-side printing)	1.3.12
70	Print frame pattern (duplex printing)	1.3.13
71	Print test pattern	1.3.14
74	Setting by spec	1.3.15
77	Print maintenance information	1.3.16
78	Check fan operation	1.3.17
80	Display machine log information	1.3.18
82	Display machine error code	1.3.19
88	Reset irregular power supply detection counter of low-voltage power supply PCB	1.3.20
91	Initialize EEPROM parameters	1.3.1
99	Quit maintenance mode	1.3.21

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

1.2.2 List of maintenance mode functions using [Go] key (LED models)

<End-user accessible maintenance mode>

Front cover	No. of times [Go] key is pressed to enter maintenance mode	No. of times [Go] key is pressed to select function	Function	Refer to:
Closed	0	1 or 2	Test printing	1.4.1
		3	Change USB No. return value	1.4.2
		4 to 7	Test printing	1.4.1
		8	Factory Reset	1.4.3
		9	Test printing	1.4.1
		10	Settings Reset	1.4.3
		11	Quiet mode	1.4.4
		12	Engine error ignore mode	1.4.5
		13	One Push printing recovery mode	1.4.6
		14 or more	Test printing	1.4.1

<Maintenance mode functions for service personnel>

Front cover	No. of times [Go] key is pressed to enter maintenance mode	No. of times [Go] key is pressed to select function	Function	Refer to:
Open	1	1	Check sensor operation	1.4.7
		2	Print continuous lattice pattern	1.4.8
		3	Invalid	—
		4	Factory use (disabled)	—
		5	Check RAM	1.4.9
		6	Invalid	—
		7	Change ON/OFF setting for duplex printing	1.4.10
		8	Change A4/Letter setting for paper size	1.4.11
		9	Engine error ignore mode	1.4.5
		10	Invalid	—
		11 or more	Returns to the ready state	—

Front cover	No. of times [Go] key is pressed to enter maintenance mode	No. of times [Go] key is pressed to select function	Function	Refer to:
Open	2	1	Maintenance printing	1.4.12
		2	Print maintenance data and frame pattern	1.4.13
		3	Invalid	—
		4	Factory use (disabled)	—
		5 to 9	Invalid	—
		10	Change Ready LED light intensity in sleep mode	1.4.14
		11	Invalid	—
		12	Reset irregular power supply detection counter of low-voltage power supply PCB	1.4.15
		13 or more	Returns to the ready state	—
	3	1	Factory use (disabled)	—
		2	Factory use (disabled)	—
		3	Factory use (disabled)	—
		4 to 8	Invalid	—
		9	Factory use (disabled)	—
		10 to 11	Invalid	—
		12	Factory use (disabled)	—
		13 or more	Returns to the ready state	—
	4	—	Firmware installing mode	1.4.16
	5	1	Factory use (disabled)	—
	6	1 or more	Returns to the ready state	—
	7	—	Factory use (disabled)	—
	8	1 or more	Returns to the ready state	—
	9	—	Factory use (disabled)	—
	10 or more	1 or more	Returns to the ready state	—
	Press and hold over 2 seconds	—	Ready state of maintenance mode for service personnel	1.4.17

1.3 Details of Maintenance Mode Functions for LCD Models

1.3.1 Initialize EEPROM parameters (function code: 01, 91)

<Function>

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

Entering function code 01 initializes most EEPROM areas. Entering function code 91 initializes only the specified areas as shown in the table below.

Data item	01	91
Printer switch (Counter information)	Areas not to be initialized	Areas not to be initialized
Error history		
Mac Address (Ethernet Address)		
Password for control panel operation lock	Areas to be initialized	
Secure function lock		
Worker switches		
User switches (items initialized when "Factory Reset" is executed)		Areas to be initialized
Function settings except user switches (settings not subject to "Factory Reset") - Language - Interface		
LAN setting		
PCL core area (Emulation setting values)		

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "Maintenance 01" (or "Maintenance 91" as required) on the LCD, and press the [OK] key.
"PARAMETER INIT" is displayed on the LCD.

(2) When initializing parameters is completed, the machine returns to the initial state of maintenance mode.

Note:
- Function code 01 is for service personnel. Function code 91 is for user support.

1.3.2 Print quality test pattern (function code: 09)

<Function>

This function is used to print test patterns to check any missing image and print quality.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 09" on the LCD, and press the [OK] key. It starts printing the print quality test pattern (refer to the figure below).

(2) When printing is completed, the machine returns to the initial state of maintenance mode.

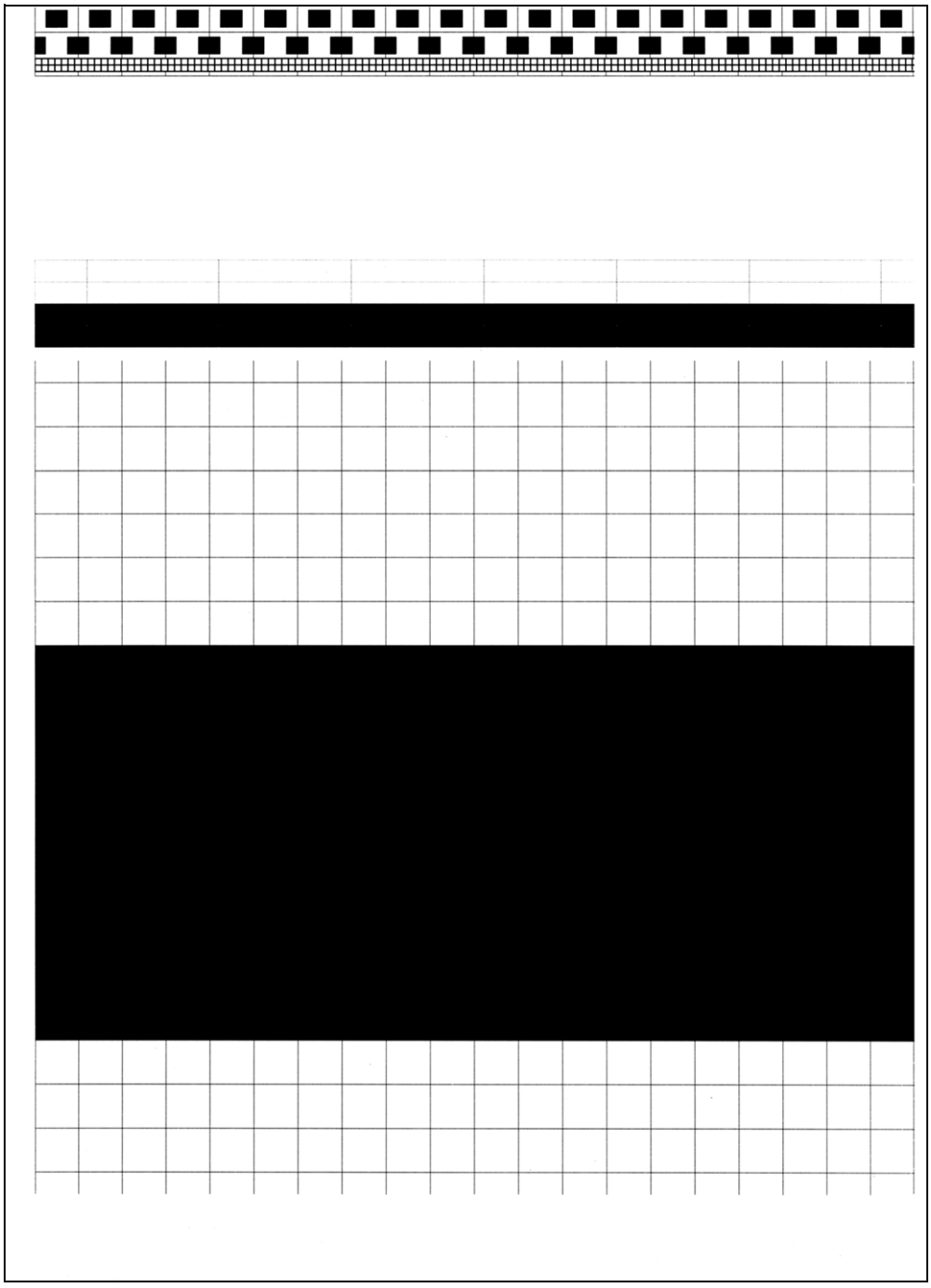


Fig. 5-1

1.3.3 Set worker switches (WSW) and print worker switch setting data (function code: 10, 11)

[1] Set worker switches (function code: 10)

<Function>

The worker switches shown in the table below can be used to set the function to satisfy various requirements. These switch settings can be changed using the keys on the control panel.

The worker switches are factory set to conform to the laws and regulations of the country the machine is shipped to. Do not change these settings unless necessary.

WSW No.	Function
WSW17 Selector 5	Change time display method (American: MM/DD/YY or European: DD/MM/YY)
WSW47 Selector 8	Change USB High/Full Speed
WSW56 Selector 6	Change coverage type display
WSW56 Selector 7	Change ON/OFF setting for PCL Emulation
WSW59 Selector 1	Change ON/OFF setting for USB serial number sending
WSW63 Selector 1-2	Change printing speed
WSW63 Selector 3	Change time display method (Japanese: YY/MM/DD or others)
WSW63 Selector 4-7	Demo printing type
WSW63 Selector 8	Change ON/OFF setting for Israeli font support
WSW64 Selector 1-6	Language setting
WSW64 Selector 7-8	Default paper size
WSW65 Selector 1-2	Default media type
WSW65 Selector 3	Change ON/OFF setting for Bond Paper support
WSW65 Selector 4	Change ON/OFF setting for Postcard support
WSW65 Selector 6	Change ON/OFF setting for Label support
WSW78 Selector 1	Recording stop function when the drum reaches the end of life

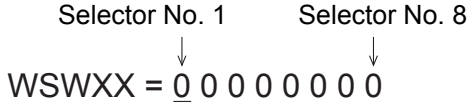
<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 10" on the LCD.

(2) Press the [OK] key. "WSW00" is displayed on the LCD, indicating that the machine is ready for worker switch number entry.

(3) Press the [▲] or [▼] key to display the worker switch number for which you want to change the setting on the LCD.

(4) Press the [OK] key. The following message is displayed on the LCD, and selector No.1 flashes.



(5) Pressing the [▲] key enters "1", and pressing the [▼] key enters "0". Press either to enter desired number to Selector No.1. The next digit starts flashing.

(6) Keep entering numbers to Selector No.8 using the [▲] or [▼] key as described in the procedure (5).

(7) Press the [OK] key. The new selector setting value is stored in the EEPROM, and the LCD returns to the ready state for worker switch number entry ([WSW00]).

(8) When all switch setting is completed, press and hold the [Go] key to return the machine to the initial state of maintenance mode.

[2] Print worker switch (WSW) setting data (function code: 11)

<Function>

This function is used to print the setting items of the worker switches and the set details.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 11" on the LCD, and press the [OK] key.

(2) "PRINTING" is displayed on the LCD, and printing the CONFIGURATION LIST (refer to the figure below) starts.

(3) When printing is completed, the machine returns to the initial state of maintenance mode.

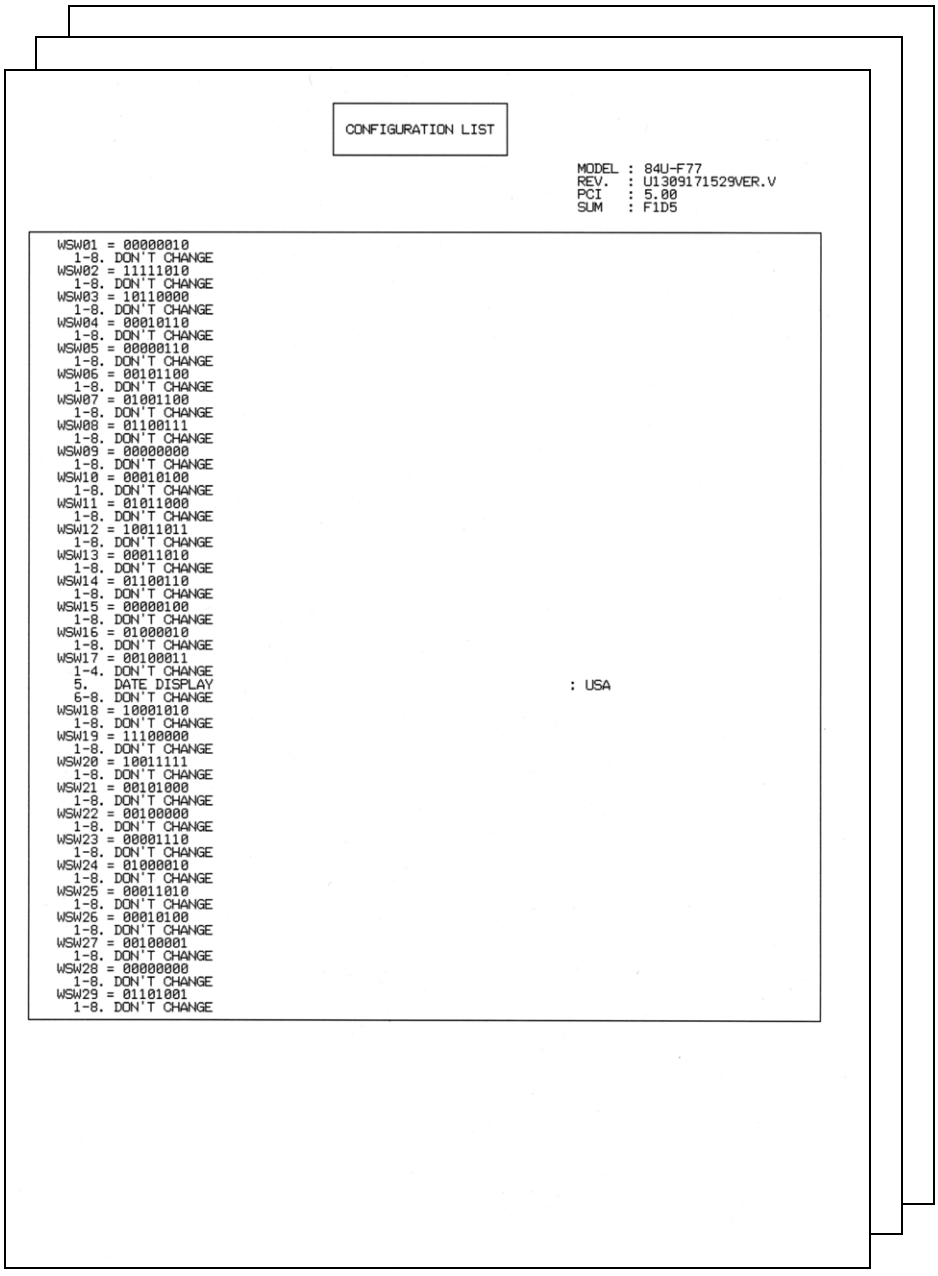


Fig. 5-2

1.3.4 Check LCD operation (function code: 12)

<Function>

This function is used to check that the LCD on the control panel is operating normally.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 12" on the LCD, and press the [OK] key.

(2) Each press of the [Go] key cycles through the displays as shown in the figure below.

(3) When you press and hold the [Go] key, the machine returns to the initial state of maintenance mode, regardless of the display status.

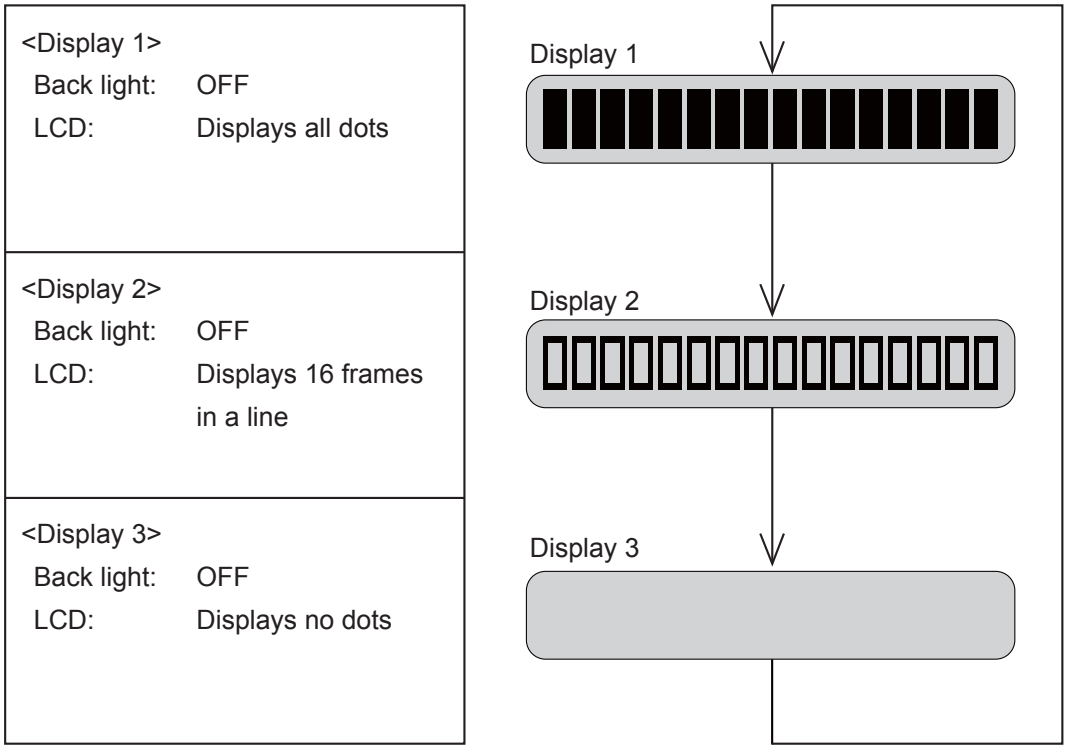


Fig. 5-3

1.3.5 Check control panel key operation (function code: 13)

<Function>

This function is used to check that keys on the control panel are operating normally.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 13" on the LCD, and press the [OK] key. "00:" is displayed on the LCD.

(2) Press the keys on the control panel according to the numbers provided in the figure below.
Each time the key is pressed, the corresponding figure is displayed on the LCD in decimal notation.
Check that the number and the key name displayed on the LCD matches the number assigned to the key that has been pressed. If the keys are pressed in the incorrect order, "INVALID OPERATE" is displayed on the LCD. Press and hold the [Go] key and try again with the correct key.

(3) When the key operation is normal, the machine returns to the initial state of maintenance mode when the last key is pressed. To cancel operation and return to the initial state of maintenance mode, press and hold the [Go] key.

■ **Order of pressing keys**

Fig. 5-4

1.3.6 Display software version (function code: 25)

<Function>

This function is used to check the version information of the firmwares and programs, or check sum information.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 25" on the LCD, and press the [OK] key. "MAIN:Ver*.**" is displayed on the LCD.

(2) Pressing the [Go], [▲] or [▼] key changes the display item as shown in the table below.

(3) Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

LCD	Description
MAIN: Ver1.00 (A) *1	Main firmware version information ((A): Revision information)
SUB1 : Ver1.00 (P) *1	Sub firmware version information ((P): Identifier for PCL/PS) *2
ENG : Ver1.00	Engine firmware version information
NET : Ver1.00	Network program version information
B0608071049:5708 *1	Boot program creation date
U0612271600:7B0A *1	Main firmware creation date
D0611301115:E6C3 *1	Demo firmware data creation date
F0612312359:1234 *1	Font firmware creation date
P0612271602:BD40 *1	Sub firmware (PCL/PS) creation date
ROM Check Sum	Check sum self-diagnosis function *3

*1 How to display the check sum information
You can check the check sum information by pressing the [OK] key while each version is displayed. When the [OK] key is pressed again, the LCD returns to the version display.

*2 (P) indicates that the firmware supports PCL/PS.

*3 There are two types of check sum information that can be checked with this function. This function checks if these two types of check sum information match each other. When the [OK] key is pressed while "ROM Check Sum" is displayed, check is automatically conducted for each ROM of each software part. When the check sum matches, "OK" is displayed on the LCD. When all ROMs result in OK, "ROM Check Sum OK" is displayed at the end, and the operation is finished. When the check sum of any ROM does not match, "NG" is displayed, and the display stops.

1.3.7 Change OnePushDemo function setting (function code: 28)

<Function>

This function is used to implement Demo printing by pressing the [Go] key, and is mainly used for sales promotion at dealers. This function is disabled once printing is performed from the computer. Change the setting to enable the function.

OnePushDemo = ON(Enabled) / OFF(Disabled).

The setting currently selected is marked "*".

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 28" on the LCD, and press the [OK] key. "OnePushDemo=ON" is displayed on the LCD.

(2) Press the [▲] or [▼] key to display "OnePushDemo=ON" when enabling this function or "OnePushDemo=OFF" when disabling this function.

(3) Press the [OK] key. The setting currently displayed is saved, and the machine returns to the initial state of maintenance mode.

Note:

- To cancel operation and return to the initial state of maintenance mode, press and hold the [Go] key.
- Once the OnePushDemo function is enabled, this will not be disabled even when printing is performed from the computer as long as the power switch is not turned OFF. However, if the power switch is turned OFF and then ON again after the OnePushDemo function was enabled, this function will be disabled when printing is performed from the computer.

1.3.8 Check sensor operation (function code: 32)

<Function>

This function is used to check that sensors are operating normally.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 32" on the LCD, and press the [OK] key. "C1NTCVRCPORMRA" is displayed on the LCD.

The table below summarizes the displays on the LCD, sensor names and detection status.

LCD	Sensor names	Detection status (displayed / not displayed)
C1	Paper feed sensor	Paper tray set / No paper tray
NT	New toner sensor	OFF/ON
CV	Front cover sensor	Front cover closed / Front cover open
RC	Back cover/duplex tray sensor	Back cover closed / Back cover open
PO	Eject sensor	No paper / Paper set
RM	Registration front sensor	No paper / Paper set
RA	Registration rear sensor	No paper / Paper set

(2) Change the conditions subject to sensor detection and check that the display on the LCD changes depending on the sensor status. For example, feed the paper through the registration front/rear sensor, open the front cover or back cover, remove the toner cartridge, or create paper jam at the exit.

(3) When you press and hold the [Go] key, this operation is finished and the machine returns to the initial state of maintenance mode.

■ Location of sensors

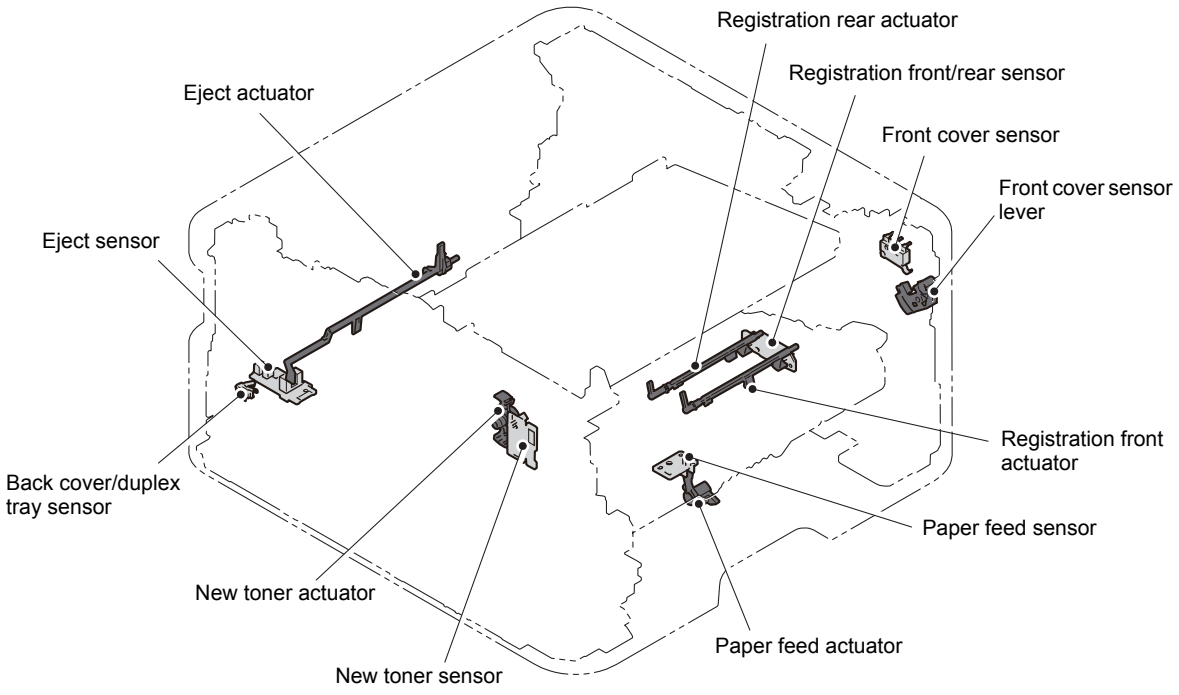


Fig. 5-5

1.3.9 Display LAN connection status (function code: 33)

<Function>

This function is used to check the connection status of the wired LAN.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 33" on the LCD, and press the [OK] key.

(2) One of the following items is displayed on the LCD depending on the wired LAN connection of the machine.

(3) Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

LCD	LAN connection status
Active 100B-FD	100B-FD
Active 100B-HD	100B-HD
Active 10B-FD	10B-FD
Active 10B-HD	10B-HD
Inactive	Not connected

1.3.10 Change USB No. return value / Adjust left-end print start position on second side when duplex printing (function code: 45)

■ Change USB No. return value

<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 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".

LCD	Description
USBNo.= ON	Returns "0".
USBNo.= OFF	Returns the serial number of the machine.

The setting currently selected is marked "*" at the end of the display.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 45" on the LCD, and press the [OK] key. "USBNo." is displayed on the LCD.

(2) Press the [OK] or [Go] key. "USBNo.=ON" is displayed on the LCD.

(3) Press the [▲] or [▼] key to select "USBNo.=ON" or "USBNo.=OFF", and then press the [OK] or [Go] key.

(4) "Accepted" is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

(5) Turn the power switch OFF.

Note:
- This setting is applied after the power switch is turned OFF and then ON again.

■ Adjust left-end print start position on second side when duplex printing

<Function>

In the event that the left-end print start position deviates on the second side when duplex printing, use this function to adjust the position left and right. The adjustable range is -100 to 750 (unit: 300 dpi). (Shifted to left when the value is negative)

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 45" on the LCD, and press the [OK] key. "USBNo." is displayed on the LCD.

(2) Press the [▲] or [▼] key to display "DX.XAdjust" on the LCD, and press the [OK] or [Go] key. "DX.XAdjust=**" is displayed on the LCD.

(3) To shift the writing start position to the left, press the [▼] key to decrease the value. To shift the position to the right, press the [▲] key to increase the value.

(4) Press the [OK] or [Go] key after adjusting the value. "Accepted" is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

1.3.11 Continuous print test (function code: 67)

<Function>

This function is used to conduct paper feed and eject tests while printing patterns.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 67" on the LCD, and press the [OK] key. "SELECT: K 100%" is displayed on the LCD.

(2) Refer to the <Print pattern> table, press the [▲] or [▼] key to select the print pattern, and press the [OK] key. "SELECT: A4" is displayed on the LCD.

(3) Refer to the <Paper size> table, press the [▲] or [▼] key to select the paper size, and press the [OK] key. "SELECT: PLAIN" is displayed on the LCD.

(4) Refer to the <Print specification> table, press the [▲] or [▼] key to select the media specification, and press the [OK] key. "SELECT: TRAY1 SX" is displayed on the LCD.

(5) Refer to the <Print type> table, press the [▲] or [▼] key to select the print type, and press the [OK] key. "SELECT: 1PAGE" is displayed on the LCD.

(6) Refer to the <Print page> table, press the [▲] or [▼] key to select the pages printing, and press the [OK] key. For intermittent pattern printing, "SELECT: 1P/JOB" is displayed on the LCD. For other printings, move on to the procedure (8).

(7) Refer to the <Number of pages per job> (Only for intermittent pattern printing) table, press the [▲] or [▼] key to select the number of pages for 1 job, and press the [OK] key. (Only for intermittent pattern printing)

(8) "PAPER FEED TEST" is displayed on the LCD, and printing test pattern starts using the selected conditions.

(9) When you press and hold the [Go] key, test pattern printing is stopped, and the machine returns to the initial state of maintenance mode.

<Print pattern>

LCD	Description
SELECT:K 100%	Black 100% solid printing
SELECT:W 100%	White 100% solid printing
SELECT:K1%	Black 1% intermittent pattern printing *
SELECT:K5%	Black 5% intermittent pattern printing *
SELECT:Lattice	Lattice printing
SELECT:Total	Print total pattern

* For job printing, up to 500 sheets for single-side printing, and 1,000 sheets for duplex printing.

<Paper size>

LCD	Description
SELECT:A4	A4
SELECT:LETTER	Letter
SELECT:ISOB5	ISO B5
SELECT:JISB5	JIS B5
SELECT:A5	A5
SELECT:A5L	A5L
SELECT:JISB6	JIS B6
SELECT:A6	A6
SELECT:EXECUTE	Executive size
SELECT:LEGAL	Legal size
SELECT:FOLIO	Folio size
SELECT:HAGAKI	Postcard size

<Print specification>

LCD	Description
SELECT:PLAIN	Plain paper
SELECT:THIN	Plain paper (thin)
SELECT:THICK	Plain paper (thick)
SELECT:THICKER	Plain paper (thicker)
SELECT:RECYCLED	Recycled paper
SELECT:BOND	Bond paper
SELECT:LABEL	Label
SELECT:ENVELOPE	Envelope
SELECT:ENVTHIN	Envelope (thin)
SELECT:ENVTHICK	Envelope (thick)
SELECT:HAGAKI	Postcard

<Print type>

LCD	Description
SELECT:TRAY1 SX	Single-side printing from paper tray
SELECT:TRAY1 DX	Duplex printing from paper tray
SELECT:MF SX	Single-side printing from manual feed slot
SELECT:MF DX	Duplex printing from manual feed slot

<Print page>

LCD	Description
SELECT:1PAGE	1-page printing
SELECT:CONTINUE	Continuous printing
SELECT:JOB Job	Intermittent printing per job *

* Selectable only when the printing pattern is set to "K1%" or "K5%", and the print type is not set to the manual feed slot.

<Number of pages per job> (Only for intermittent pattern printing)

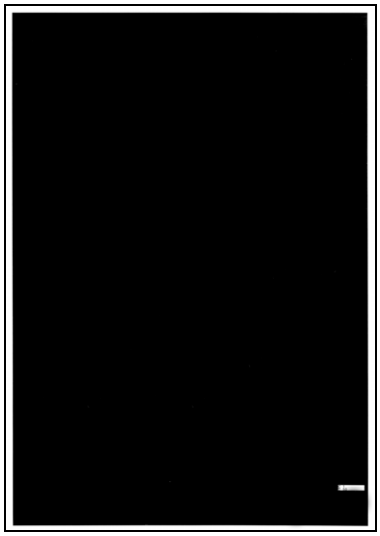
LCD	Description
SELECT:1P/JOB	Prints 1 page per job *1
SELECT:2P/JOB	Prints 2 pages per job *1
SELECT:5P/JOB	Prints 5 pages per job *1
SELECT:2I/JOB	Prints 2 images per job *2
SELECT:5I/JOB	Prints 5 images per job *2 *3
SELECT:10I/JOB	Prints 10 images per job *2

*1 Selectable only when the SX is set as print type.

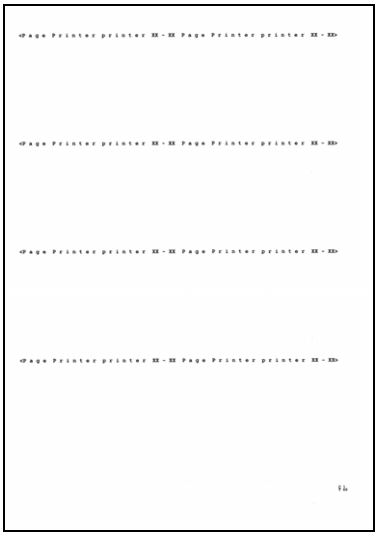
*2 Selectable only when the DX is set as print type.

*3 Fifth page will be printed as single-side printing.

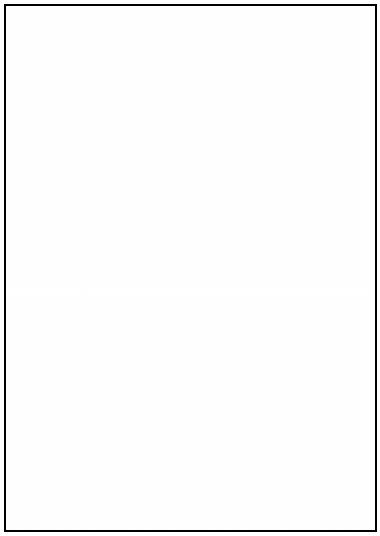
K 100%



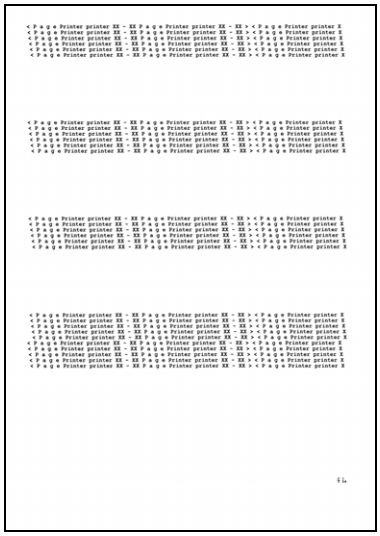
K 1%



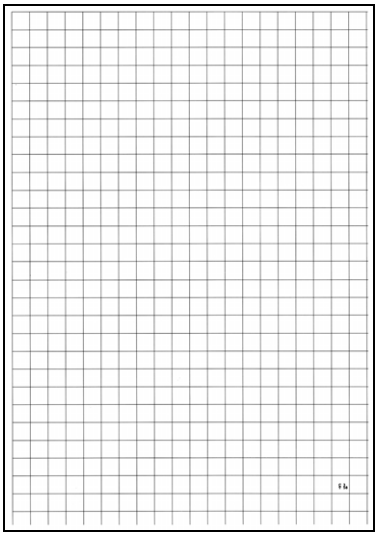
W 100%



K 5%



Lattice



Total

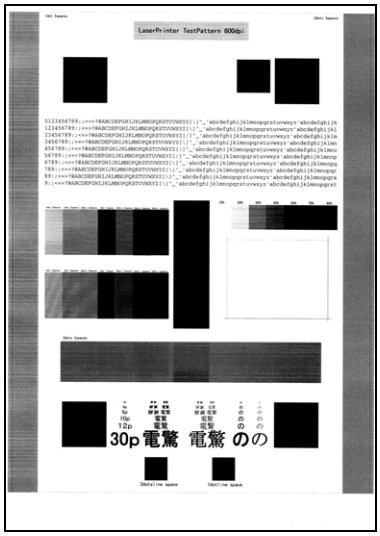


Fig. 5-6

1.3.12 Print frame pattern (single-side printing) (function code: 69)

<Function>

This function is used to print the frame pattern on a single side of the paper to check for printing flaws and omission.

<Operating Procedure>

(1) Set the paper specified in the default paper settings (A4 or Letter) to the paper tray.

(2) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 69" on the LCD, and press the [OK] key. "PRINTING" is displayed on the LCD, and the frame pattern (refer to the figure below) is printed on a single side of the paper.

(3) When printing is completed, "WAKU SX" is displayed on the LCD.
When you press and hold the [Go] key, this operation is finished and the machine returns to the initial state of maintenance mode.

Note:

- If printing fails, printing is stopped with displaying any of the errors shown in the table below. To retry printing, refer to the "Remedy" in the table below to eliminate the error cause, and press the [Go] key. "PRINTING" is displayed on the LCD, and the frame pattern is printed on a single sheet of paper.

Error display	Remedy
Replace Toner	Replace the toner cartridge and press the [Go] key to release the error.
Cover is Open	Close the front cover.
No Paper	Refill the paper tray and close it. And then press the [Go] key to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] key to release the error.
Jam Rear	

■ **Frame pattern**

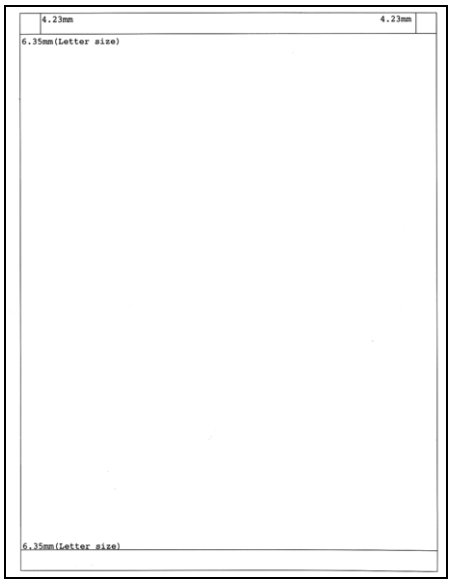


Fig. 5-7

1.3.13 Print frame pattern (duplex printing) (function code: 70)

<Function>

This function is used to print the frame pattern on both sides of the paper to check for printing flaws and omission.

<Operating Procedure>

(1) Set the paper specified in the default paper settings (A4 or Letter) to the paper tray.

(2) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 70" on the LCD, and press the [OK] key. "PRINTING" is displayed on the LCD, and the frame pattern (refer to the figure below) is printed on both sides of the paper.

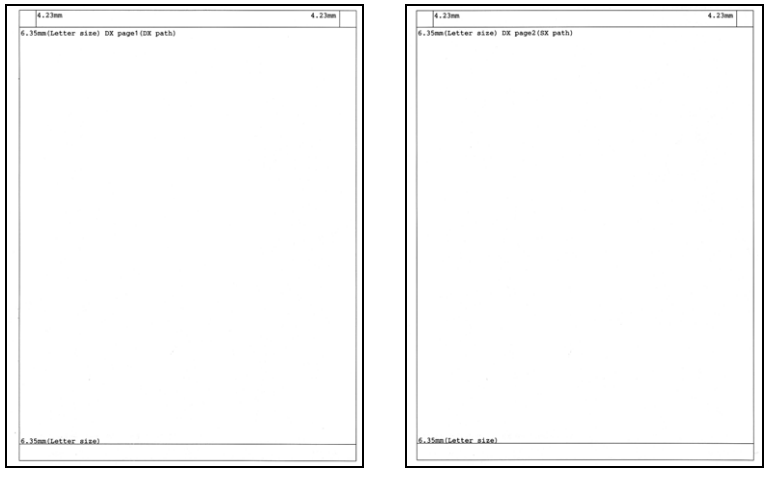
(3) When printing is completed, "WAKU DX" is displayed on the LCD.
Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

Note:

- If printing fails, printing is stopped with displaying any of the errors shown in the table below. To retry printing, refer to the "Remedy" in the table below to eliminate the error cause, and press the [Go] key. "PRINTING" is displayed on the LCD, and the frame pattern is printed on a single sheet of the paper.

Error display	Remedy
Replace Toner	Replace the toner cartridge and press the [Go] key to release the error.
Cover is Open	Close the front cover.
No Paper	Refill the paper tray and close it. And then press the [Go] key to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] key to release the error.
Jam Rear	
Jam Duplex	
Duplex Disabled	Refill the paper tray, close the tray and all covers, and press the [Go] key to release the error.

■ **Frame pattern**



(First side) (Second side)

Fig. 5-8

1.3.14 Print test pattern (function code: 71)

<Function>

This function is used to print the test pattern to check whether the develop roller or exposure drum is dirty or damaged.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 71" on the LCD, and press the [OK] key. "SELECT: A4" is displayed on the LCD.

(2) Refer to the <Paper size> table, press the [▲] or [▼] key to select the paper size, and press the [OK] key. "SELECT: PLAIN" is displayed on the LCD.

(3) Refer to the <Print specification> table, press the [▲] or [▼] key to select the media specification, and press the [OK] key. "SELECT: SX" is displayed on the LCD.

(4) Refer to the <Print type> table, press the [▲] or [▼] key to select the print type, and press the [OK] key. "SELECT: 1PAGE" is displayed on the LCD.

(5) Refer to the <Print page> table, press the [▲] or [▼] key to select the pages printing, and press the [OK] key. "PRINTING" is displayed on the LCD, and printing test pattern starts using the selected conditions.

(6) When printing is completed, "2D3S K" is displayed on the LCD, and it returns to the printing pattern display. Press the [OK] key to perform this again.

(7) Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

Note:

- If printing fails, printing is stopped with displaying any of the errors shown in the <Error display> table. To retry printing, refer to the "Remedy" in the table to eliminate the error cause, and press the [Go] key. "PRINTING" is displayed on the LCD, and the test pattern is printed.

<Paper size>

LCD	Description
SELECT:A4	A4
SELECT:ISOB5	ISO B5
SELECT:JISB5	JIS B5
SELECT:A5	A5
SELECT:A5L	A5L
SELECT:JISB6	JIS B6
SELECT:A6	A6
SELECT:EXECUTE	Executive size
SELECT:LEGAL	Legal size
SELECT:FOLIO	Folio size
SELECT:HAGAKI	Postcard size
SELECT:LETTER	Letter

<Print specification>

LCD	Description
SELECT:PLAIN	Plain paper
SELECT:THICK	Plain paper (thick)
SELECT:THIN	Plain paper (thin)
SELECT:THICKER	Plain paper (thicker)
SELECT:RECYCLED	Recycled paper
SELECT:BOND	Bond paper
SELECT:LABEL	Label
SELECT:ENVELOPE	Envelope
SELECT:ENVTHIN	Envelope (thin)
SELECT:ENVTHICK	Envelope (thick)
SELECT:GLOSSY	Glossy paper
SELECT:HAGAKI	Postcard

<Print type>

LCD	Description
SELECT:SX	Single-side printing from paper tray
SELECT:DX	Duplex printing from paper tray

<Print page>

LCD	Description
SELECT:1PAGE	1-page printing
SELECT:CONTINUE	Continuous printing

<Error display>

LCD	Remedy
Replace Toner	Replace the toner cartridge and press the [Go] key to release the error.
Cover is Open	Close the front cover.
No Paper	Refill the paper tray and close it. And then press the [Go] key to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] key to release the error.
Jam Rear	

■ Test pattern

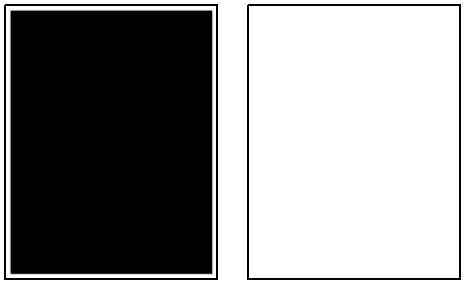


Fig. 5-9

1.3.15 Setting by spec (function code: 74)

<Function>

This function is used to customize the machine according to language, function settings, and worker switch settings.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 74" on the LCD, and press the [OK] key. The country code currently set is displayed on the LCD (The first digit is flashing).

(2) Press the [▲] key to enter "1", or the [▼] key to enter "0". Then press the [OK] key. The second digit starts to flash.

(3) Press the [▲] key to enter "1", or the [▼] key to enter "0" similarly. Then press the [OK] key. The second digit is completed and the fourth digit starts to flash.

(4) The third digit and fourth digit changes at once when the [▲] or [▼] key is pressed. Press the [Go] key when the desired value is shown on the LCD. The new setting is saved, and "PARAMETER INIT" is displayed on the LCD. The machine then returns to the initial state of maintenance mode.

Note:

- If there is no entry for one minute or longer, the machine returns to the initial state of maintenance mode automatically, regardless of the display status.

■ Setting by spec code list

Model	Spec code	
HL-2260	China	0020
HL-2260D	China	0220
HL-2560DN	China	0220
HL-L2300D	Australia	0106
	CEE-General	0104
	France/Belgium/ Netherlands	0104
	Germany	0104
	Iberia	0104
	Israel	0104
	Italy	0104
	New Zealand	0106
	Pan-Nordic	0104
	Switzerland	0104
	U.S.A	0101
	UK	0104
HL-L2300DR	Russia	0104
HL-L2305W	U.S.A	0001
HL-L2315DW	U.S.A	0101
HL-L2320D	Argentina	0136
	Brazil	0142
	Canada	0102
	Chile	0136
	Iran	0141
	Malaysia	0140
	Taiwan	0123
	Thailand	0140
	U.S.A	0101
	Vietnam	0140
HL-L2321D	India	0140
	Vietnam	0140
HL-L2340DW	Australia	0006
	CEE-General	0004
	France/Belgium/ Netherlands	0004
	Germany	0004
	Iberia	0004
	Israel	0004
	Italy	0004
	New Zealand	0006
	Pan-Nordic	0004
	Switzerland	0004
	U.S.A	0001
	UK	0004
HL-L2340DWR	Russia	0004

Model	Spec code	
HL-L2360DN	CEE-General	0004
	France/Belgium/ Netherlands	0004
	Germany	0004
	Iberia	0004
	Indonesia	0040
	Italy	0004
	Korea	0040
	Malaysia	0040
	Pan-Nordic	0004
	Switzerland	0004
	Thailand	0040
	UK	0004
HL-L2360DNR	Russia	0004
HL-L2360DW	Argentina	0136
	Brazil	0142
	Canada	0102
	Chile	0136
	Peru	0136
	U.S.A	0101
HL-L2361DN	India	0040
	Vietnam	0040
HL-L2365DW	Australia	0106
	CEE-General	0104
	France/Belgium/ Netherlands	0104
	Germany	0104
	Indonesia	0140
	Italy/Iberia	0104
	Korea	0140
	Malaysia	0140
	Middle East And North Africa	0125
	New Zealand	0106
	Pan-Nordic	0104
	Philippines	0121
	South Africa	0141
	Switzerland	0104
	Taiwan	0123
	Thailand	0140
	UAE	0141
	UK	0104
HL-L2365DWR	Russia	0104
HL-L2366DW	India	0140
	Vietnam	0140

Note:

- This code list is current as of April 2017.
  Please contact Brother distributors for the latest information.

1.3.16 Print maintenance information (function code: 77)

<Function>

This function is used to print the maintenance information, such as remaining amount of consumables, the number of replacements, and counter information.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 77" on the LCD, and press the [OK] key. Printing maintenance information starts.
When printing is completed, the machine returns to the initial state of maintenance mode.

■ Maintenance information

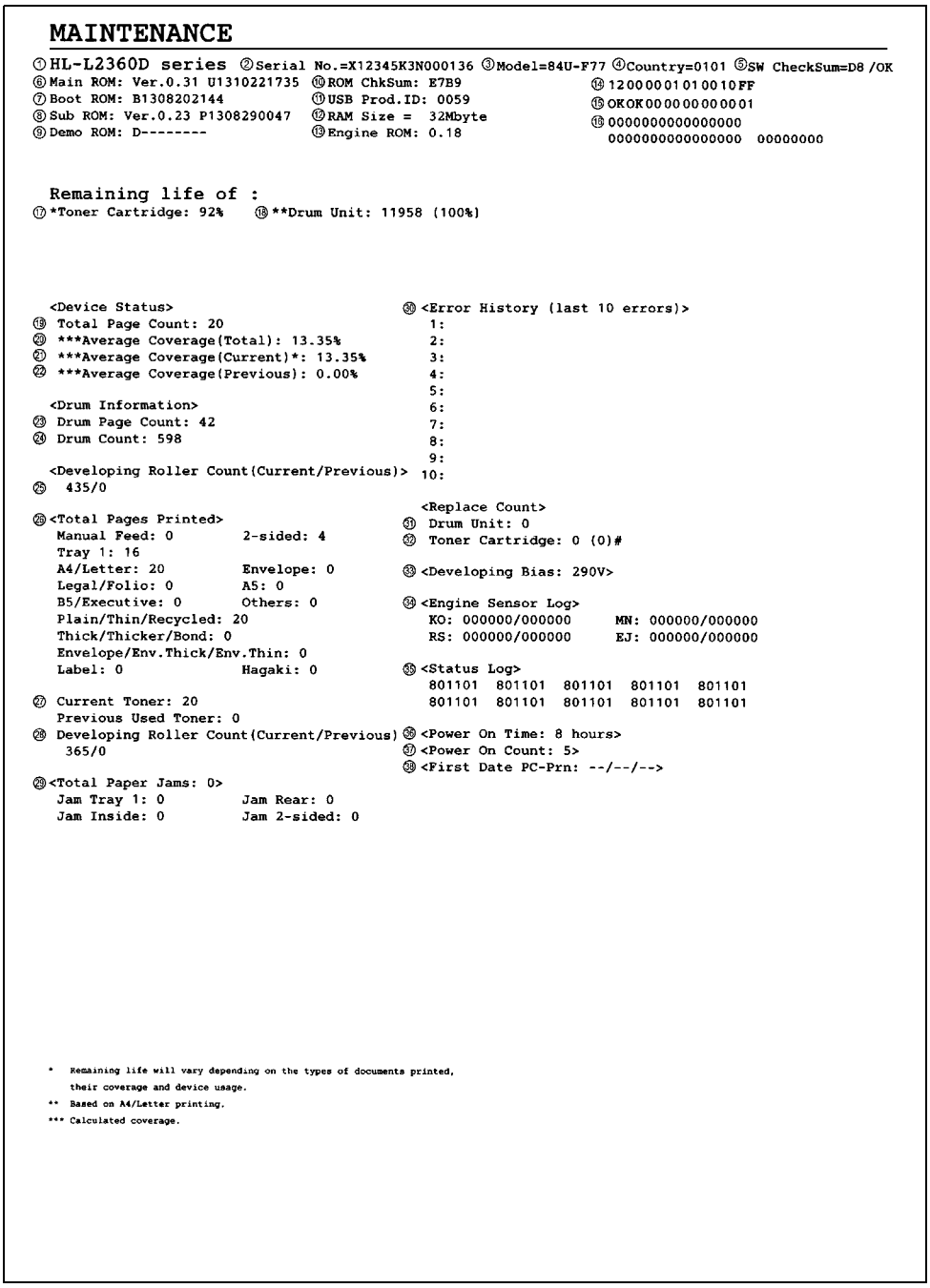


Fig. 5-10

1	Model name	20	Accumulated average coverage
2	Serial number	21	Average coverage by the current toner cartridge
3	Model code	22	Average coverage by the previous toner cartridge
4	Country code	23	Drum page count
5	Check sum for WSW, PSW, USW, and FSW (factory use)	24	Rotations of the drum
6	Main firmware version	25	Total rotations of the develop roller (currently/previously used toner cartridge)
7	Boot firmware version	26	Total printed pages per paper tray/ paper size/paper type
8	Sub firmware version	27	Printed pages per (currently/previously used) toner cartridge
9	Demo firmware version	28	Total rotations of the develop roller excluding rotations not related to printing such as warming-up (currently/previously used toner cartridge)
10	ROM check sum	29	Total paper jams / Paper jams by section
11	USB ID code	30	Machine error log / Total pages printed at the time of the error
12	RAM size	31	The number of times that the drum unit has been replaced
13	Engine firmware version	32	The number of times that the toner cartridge has been replaced
14	First digit of the main PCB serial number Wireless LAN setting by spec / Wireless LAN output peak / WLAN Setup YES/NO setting / OnePushDemo setting / Product Inspection ID Current toner cartridge type / Previous toner cartridge type	33	Developing bias voltage value
15	Main PCB inspection log / High voltage inspection log / The number of times that the discharge error, fuser unit error, polygon motor lock error, irregular power supply detection error occurred / Process status	34	Engine sensor log (Not necessary for maintenance)
16	Process status / Process checksum	35	Status log (Not necessary for maintenance)
17	Estimated remaining toner amount	36	Total power distribution time
18	Remaining life of drum unit	37	The number of times that the power is turned ON
19	Total printed pages	38	Start date for machine operation

1.3.17 Check fan operation (function code: 78)

<Function>

This function is used to check that the fan is operating normally. Switch the setting among rotation speed 100%, 50%, and OFF.

LCD	Name	Description
F	Fan	Emits the heat in the fuser unit.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 78" on the LCD, and press the [OK] key. "F100" is displayed on the LCD and the fan rotates at 100% speed.

(2) By pressing the [Go] key, "F50" is displayed on the LCD and the fan rotates at 50% speed.

(3) By pressing the [Go] key again, "F 0" is displayed on the LCD and the fan stops. Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

1.3.18 Display machine log information (function code: 80)

<Function>

This function is used to display the log information on the LCD.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 80" on the LCD, and press the [OK] key. "MACERR_01:****" is displayed on the LCD.

(2) Pressing the [Go] key displays the next item. Pressing the [Back] key returns to the previous item.
Pressing the [Go] key for a while returns the machine to the initial state of maintenance mode.

Maintenance information

LCD	Description
MACERR_##:0000	Machine error log (last ten errors) *1
USB:000G8J000166	Serial number *2
MAC:008077112233	MAC address
PCB:911309123456	Main PCB serial number
KTN_ERM:87%	Estimated remaining toner amount based on the average coverage
KTN_RRM:67%	Estimated remaining toner amount based on the rotations of develop roller
DRUM_PG:00000000	Printed pages for drum unit
TTL_PG:00000000	Total number of pages printed
KCVRGUSI:4.32%	Average coverage by the current toner cartridge
KCVRGACC:3.47%	Accumulated average coverage
DRUM:00000000	Rotations of the drum
KTN_RND: 00000000	Rotations of the black toner develop roller
MN_PG:00000000	Paper input for manual feed slot
TR1_PG:00000000	Paper input for paper tray
DX_PG:00000000	Paper input for duplex tray
A4+LTR:00000000	Total paper input for A4 and Letter
LG+FOL:00000000	Total paper input for Legal and Folio
B5+EXE:00000000	Total paper input for B5 and Execute
ENVLOP:00000000	Paper input for Envelope
A5 :00000000	Paper input for A5 (including A5 Landscape)
OTHER :00000000	Paper input for other sizes
PLTNRE:00000000	Total printed pages of plain, thin, and recycled paper
TKTRBD:00000000	Total printed pages of thick, thicker, and bond paper
ENVTYP:00000000	Total printed pages of envelope, thick envelope, and thin envelope
LABEL:00000000	Printed labels
HAGAKI:00000000	Printed postcards
TTL_JAM:00000000	Total paper jams that have occurred

LCD	Description
TR1_JAM:00000000	Paper jams that have occurred in paper tray
IN_JAM:00000000	Paper jams that have occurred in the machine
RE_JAM:00000000	Paper jams that have occurred at the ejecting section or back cover
DX_JAM:00000000	Paper jams that have occurred in the duplex tray
POWER:00000375	Total power distribution time (hour)
PWRCNT:00000001	The number of times that the power is turned ON
KTN_CH:0000	The number of times that the toner cartridge has been replaced
DRUM_CH:0000	The number of times that the drum unit has been replaced
KTN_PG1:00000000	Pages printed with the current black toner cartridge
KTN_PG2:00000000	Pages printed with the previous black toner cartridge
KDEV_BIAS:400V	Black developing bias voltage value
ENGERR##:000000	Engine error log (last ten errors) *3
HODN_ER:0000	The number of discharge errors occurred
FUSR_ER:0000	The number of fuser unit errors occurred
MTLK_ER:0000	The number of polygon motor errors occurred in the laser scanner
DEVSTATUS__##:00	Log for design analysis *4

*1 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] key while the machine error log is displayed shows "PGCNT:00000000 (total pages printed at the time of the error)" on the LCD, and pressing the [OK] key again returns the LCD display to machine error log.

*2 The serial number can be changed according to the procedures below.

1) Press the [▲] or [▼] key while the serial number is displayed to display "9" on the LCD, and press the [OK] key. LCD displays the serial number again.

2) Enter the "4", "7" and "5" in this order as described in the procedure 1). Serial number is displayed on the LCD. The first digit starts flashing to indicate that it is editable.

3) Press the first digit of the serial number on the keypad, [▲] or [▼] to display the first number of the serial number on the LCD, and press the [OK] key. The second digit starts to flash. Enter the second digit to the 15th digit similarly.

4) Press the [Go] key, and the new serial number is saved. The machine returns to the initial state of maintenance mode.

*3 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] key while the machine error log is displayed shows "TM:00000 BT:000 (TM: minutes passed from the previous error, BT: number of times that the power is turned ON/OFF)" on the LCD. Pressing the [OK] key again returns the LCD display to machine error log.

*4 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] key while log for design analysis is displayed shows "PGCNT:00000000 (total pages printed at the time of the error)" on the LCD. Pressing the [OK] key again returns the LCD display to log for design analysis.

1.3.19 Display machine error code (function code: 82)

<Function>

This function is used to display the latest error code on the LCD.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 82" on the LCD, and press the [OK] key. "MACHINE ERR XXXX" is displayed on the LCD.

(2) Press the [Go] key, and the machine returns to the initial state of maintenance mode.

1.3.20 Reset irregular power supply detection counter of low-voltage power supply PCB (function code: 88)

<Function>

This function is used to reset the number of irregular power supply errors in the main PCB after replacing the low-voltage power supply PCB.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 88" on the LCD, and press the [OK] key. "Reset-LVPS" is displayed on the LCD.

(2) Press the [OK] key. "LVPS OK?" is displayed on the LCD.

(3) Pressing the [Go] key resets the number of times that irregular power supply errors occurred and "Reset-LVPS" is displayed on the LCD.
Press and hold the [Go] key, and the machine returns to the initial state of maintenance mode.

1.3.21 Quit maintenance mode (function code: 99)

<Function>

This function is used to quit the maintenance mode, restart the machine, and return it to the ready state. Also forcefully close the fuser unit error.

<Operating Procedure>

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 99" on the LCD, and press the [OK] key. The machine quits maintenance mode and returns to the ready state.

1.4 Details of Maintenance Mode Functions Using [Go] key (LED models)

■ End-user accessible maintenance mode functions

1.4.1 Test printing

This function is used to print a test pattern (print quality check sheet) to check any missing image and print quality.

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key. Test printing starts.

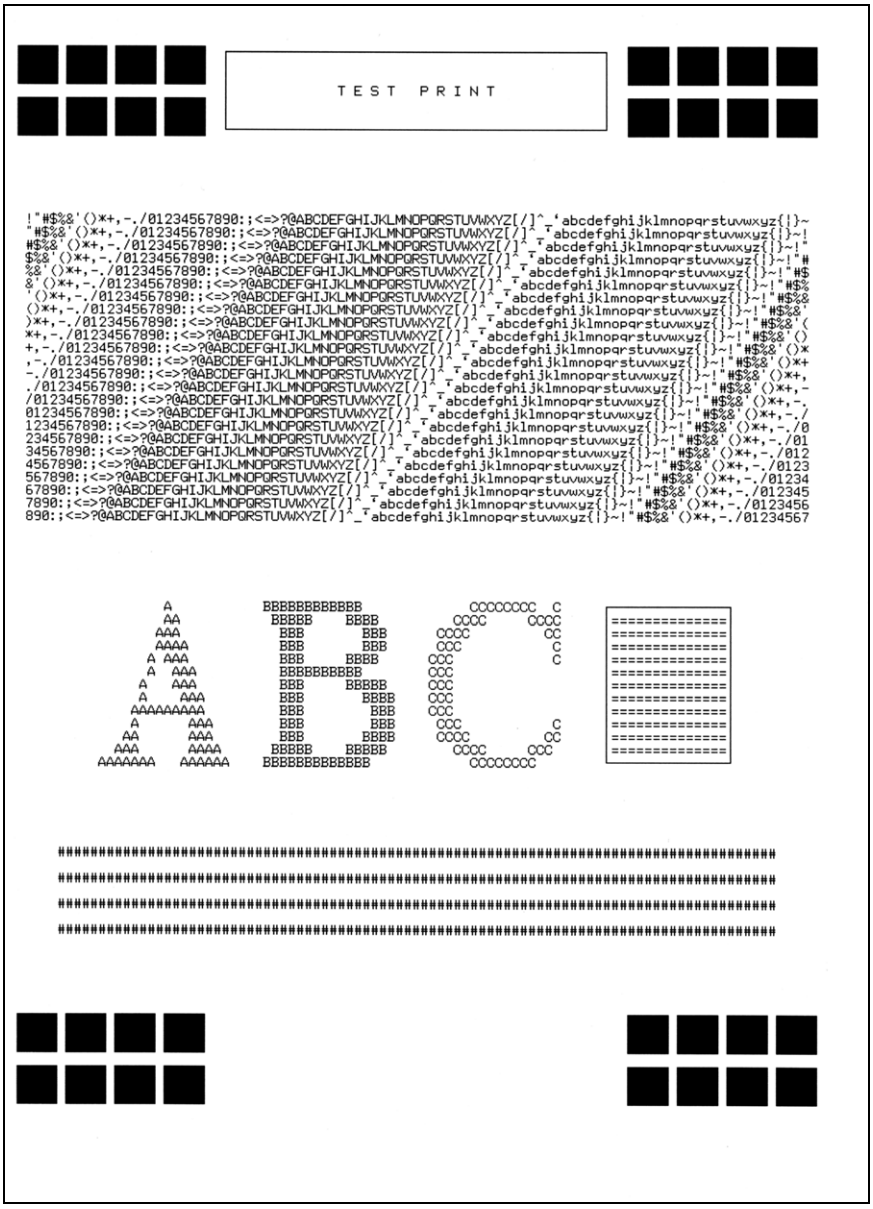


Fig. 5-11

1.4.2 Change USB No. return value

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 USB device. If the serial number cannot be obtained, the number of devices increases each time the device is connected to the computer. The USB No. return value can be fixed to "0" to avoid this problem.

(The same function as that described in "1.3.10 Change USB No. return value / Adjust left-end print start position on second side when duplex printing (function code: 45)" for LCD models)

For LED models, the setting currently applied can be determined by pressing the [Go] key three times and checking the LED status after several seconds.

LED	Return value setting
Toner LED lights for one second.	Returns the serial number of the machine. (Default) → Returns "0".
Drum LED lights for one second.	Returns "0". → Returns the serial number of the machine.

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key three times. Toner and Drum LEDs light for one second and the return value is set.

1.4.3 Factory Reset / Settings Reset

This function is used to delete data in the following table.

Data item	Factory Reset	Settings Reset
Counter information		
Error history		
Worker switches		
User switches	✓	✓
Function setting		✓
MAC address		
LAN setting		✓
Emulation setting	✓	✓

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key eight times (Factory Reset) or ten times (Settings Reset). The corresponding data is deleted.

1.4.4 Quiet mode

This mode lowers the printing speed to suppress operation noise.

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key 11 times. The setting of the Quiet mode is switched.

1.4.5 Engine error ignore mode

When an engine error occurs and the machine cannot be recovered unless the main PCB is replaced, using this function enables the machine to start, ignoring the engine error, to retrieve the EEPROM data.

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key 12 times. Engine error ignore mode is set.

1.4.6 One Push printing recovery mode

The OnePushDemo function allows you to perform Demo printing by pressing the [Go] key (mainly used for sales promotion at dealers). However, the OnePushDemo function is disabled once printing is performed from the computer. Entering this mode restores OnePushDemo function which has been disabled. After restoration, however, the contents of Demo printing will be the same as those of test printing.

<Operating Procedure>

(1) Check that the front cover is closed. Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key. All LEDs go out.

(3) Press the [Go] key 13 times. OnePushDemo function is set.

■ Maintenance mode functions for service personnel

1.4.7 Check sensor operation

This function is used to check whether the sensors, electromagnetic clutch, and motors are operating normally. While sensor operation is being checked, the Ready LED flashes once each time the sensor or switch status changes from ON to OFF or OFF to ON.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key again. Toner, Drum, and Paper LEDs go out in a second.

Activate the sensors, electromagnetic clutch, and motors shown in the figure below, and check that the Ready LED flashes. When the status changes consecutively, the Ready LED also flashes consecutively. Toner LED lights after completing all checks.

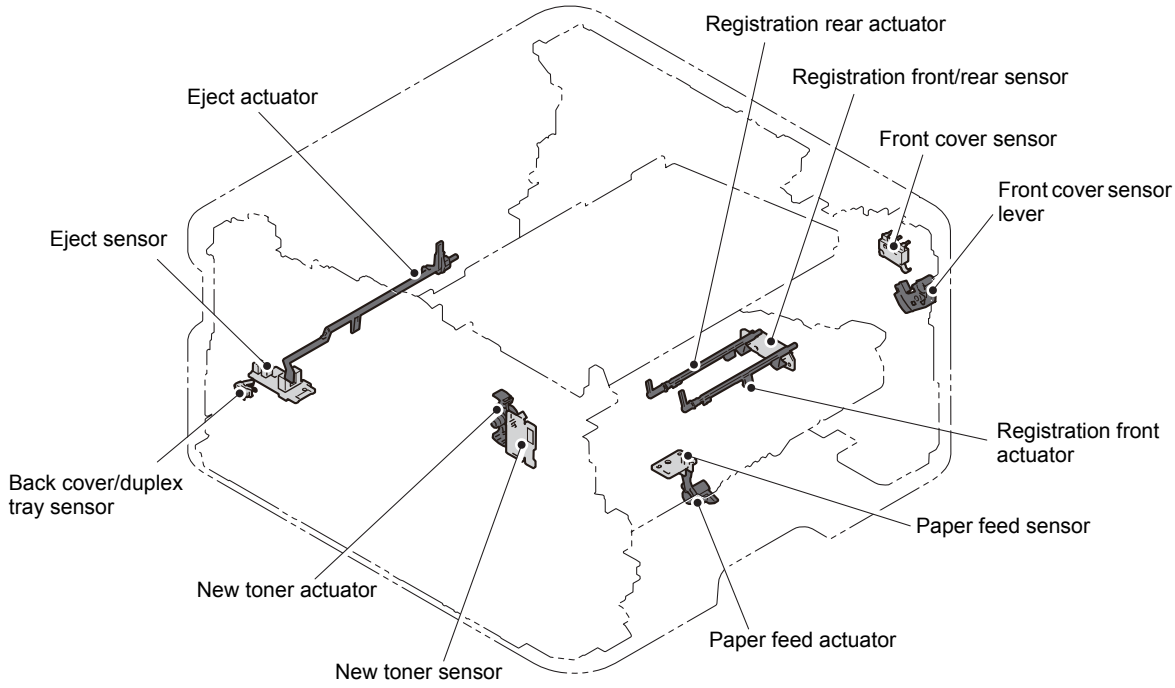


Fig. 5-12

1.4.8 Print continuous lattice pattern

This function is used to print a lattice pattern continuously.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key twice and close the front cover. Toner, Drum, and Paper LEDs go out in a second and the lattice pattern is printed continuously.

(6) Press and hold the [Go] key to stop printing.

1.4.9 Check RAM

This function is used to check the entire RAM, instead of the partial RAM check normally performed.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key five times. Toner, Drum, and Paper LEDs go out in a second and RAM check starts. When the RAM check result is NG, all LEDs flash. When the result is acceptable, the Ready LED and Paper LED flashes in turn continuously.

(6) Close the front cover and turn the power switch OFF and then ON again. The machine returns to the ready state.

1.4.10 Change ON/OFF setting for duplex printing

This function allows you to change the duplex printing setting to ON or OFF. The setting applied is reversed each time this mode is entered.

The setting currently applied can be determined by pressing the [Go] key seven times and checking the LED status after several seconds.

LED	Duplex printing setting
Toner and Drum LEDs light for one second.	Duplex printing OFF → Duplex printing ON
LED does not light	Duplex printing ON → Duplex printing OFF

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key seven times. Toner, Drum, and Paper LEDs go out in a second and the duplex printing setting is changed to ON or OFF. Close the front cover. When the setting is completed, the machine returns to the ready state.

1.4.11 Change A4/Letter setting for paper size

This function allows you to change the default paper size setting to A4 or Letter. The setting applied is reversed each time this mode is entered.

The setting currently applied can be determined by pressing the [Go] key eight times and checking the LED status after several seconds. When the setting is completed, the machine returns to the ready state.

LED	Default paper size setting
Toner and Drum LEDs light for one second.	A4 → Letter
LED does not light	Letter → A4

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key eight times. Toner, Drum, and Paper LEDs go out in a second and the paper size setting is changed to A4 or Letter. Close the front cover. When the setting is completed, the machine returns to the ready state.

1.4.12 Maintenance printing

This function is used to print maintenance information, such as the remaining amount of consumables, the number of replacements, and counter information. (The same function as that described in "1.3.16 Print maintenance information (function code: 77)" for LCD models)

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key twice. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key and close the front cover. Toner, Drum, and Paper LEDs go out in a second and the maintenance printing starts.

1.4.13 Print maintenance data and frame pattern

This function is used to print maintenance data on the first side and print the frame pattern on the second side in duplex printing mode. Short Bind is automatically applied to duplex printing in this mode. When printing is completed, the setting applied prior to Short Bind is restored.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key twice. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key twice and close the front cover. Toner, Drum, and Paper LEDs go out in a second and the maintenance and frame pattern printing starts.

1.4.14 Change Ready LED light intensity in sleep mode

This function is used to set the Ready LED status in sleep mode whether to turn it OFF completely or light it at low light intensity. The setting applied is reversed each time this mode is entered.

The setting currently applied can be determined by pressing the [Go] key ten times and checking the LED status after several seconds. (Although all LEDs light after several seconds after the [Go] key is pressed ten times, determine the setting by the status of the Ready LED.)

LED	Ready LED light intensity setting in sleep mode
Ready LED lights at low intensity for one second.	Completely OFF (default) → Light at low intensity
Ready LED lights at 100% intensity for one second.	Light at low intensity → Completely OFF

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key twice. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key ten times. Toner, Drum, and Paper LEDs go out in a second and the Ready LED light intensity setting in sleep mode is changed. Close the front cover. When the setting is completed, the machine returns to the ready state.

1.4.15 Reset irregular power supply detection counter of low-voltage power supply PCB

This function is used to reset the number of irregular power supply errors in the main PCB after replacing the low-voltage power supply PCB.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press the [Go] key twice. The Toner, Drum, and Paper LEDs light.

(5) Press the [Go] key 12 times. Toner, Drum, and Paper LEDs go out in a second and the irregular power supply detection error is released. Close the front cover. When the error is released, the machine returns to the ready state.

1.4.16 Firmware installing mode

This mode is used to write the firmware (main program).

Refer to "1.1 Installing Firmware (Sub Firmware, Demo Firmware, and Main Firmware)" in Chapter 4 for the detailed procedure.

1.4.17 Ready state of maintenance mode for service personnel

Drivers of the same number of virtual USB devices are required for the computer to recognize the USB-connected terminals. If the machine is connected to the computer at each time any repair work is performed, virtual USB devices with the same number of the repaired machines are automatically configured on the computer. To prevent numerous virtual USB devices from being configured, entering maintenance mode for service personnel enables your computer to identify multiple terminals via one single virtual USB device.

Enter this mode when using the download utility or service setting tool by installing the maintenance driver.

<Operating Procedure>

(1) Open the front cover while the power switch is turned OFF.

(2) Press and hold the [Go] key, and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

(3) Release the [Go] key. All LEDs go out.

(4) Press and hold the [Go] key more than two seconds. Check that the Paper LED is lit and release the [Go] key. The machine returns to the ready state of maintenance mode for service personnel. Close the front cover.

2. OTHER SERVICE FUNCTIONS

2.1 Engine Error Ignore Mode (LCD models only)

<Function>

When an engine error occurs and the machine cannot be recovered unless the main PCB is replaced, using this function enables the machine to start, ignoring the engine error, to retrieve the EEPROM data. (The same function as maintenance mode functions using [Go] key which is described in “1.4.5 Engine error ignore mode”.)

<Operating Procedure>

(1) Check that the power cord is not connected to the socket. Press the [Go] and [Back] keys simultaneously and plug the power cord. Check that "Please wait" is displayed on the LCD and release the keys.

(2) "Ready" will be displayed on the LCD after a while and the machine enters the engine error ignore mode.

2.2 Change USB No. Return Value / Adjust Left-end Print Start Position on Second Side when Duplex Printing (LCD models only)

(The same function as that described in "1.3.10 Change USB No. return value / Adjust left-end print start position on second side when duplex printing (function code: 45)" for LCD models)

■ Change USB No. return value

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 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, fix the USB No. return value to "0".

LCD	Description
USBNo. = ON	Returns "0".
USBNo. = OFF	Returns the serial number of the machine. (Default)

The setting currently selected is marked "*" at the end of the display.

<Operating Procedure>

(1) Press the [Go] and [▼] keys simultaneously while the machine is in the ready state. Check that "USBNo." is displayed on the LCD and release the keys.

(2) Press the [OK] key. "USBNo.=ON" is displayed on the LCD.

(3) Press the [▲] or [▼] key to select "USBNo.=ON" or "USBNo.=OFF", and then press the [OK] key. "Accepted" is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

(4) Turn the power switch OFF.

Note:
- This setting is applied after the power switch is turned OFF and then ON again.

■ Adjust left-end print start position on second side when duplex printing

<Function>

In the event that the left-end print start position deviates on the second side when duplex printing, use this function to adjust the position left and right. The adjustable range is -100 to 750 (unit: 300 dpi). (Shifted to left when the value is negative)

<Operating Procedure>

(1) Press the [Go] and [▼] keys simultaneously while the machine is in the ready state. Check that "USBNo." is displayed on the LCD and release the keys.

(2) Press the [▲] or [▼] key to display "DX.XAdjust" on the LCD, and press the [OK] key. "DX.XAdjust=**" is displayed on the LCD.

(3) To shift the writing start position to the left, press the [▼] key to decrease the value. To shift the position to the right, press the [▲] key to increase the value.

(4) Press the [OK] key after adjusting the value. "Accepted" is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

2.3 Print Printer Settings

<Function>

Printer Settings can be printed. The title, model name and serial number are printed on all pages. For LCD models, Network Configuration, Wireless LAN report, Test print, Demo Print, and Font List can be printed besides Print settings. Also, serial number, firmware version, total printed pages, and usage of toner can be displayed.

<Operating Procedure>

LCD models

(1) Press the [OK] key three times while the machine is in the ready state. "Printing" appears on the LCD and the Print Settings is printed.

(2) When printing Print Settings is completed, "Select▼▲ or OK" appears on the LCD.

(3) Refer to the table below, press the [▲] or [▼] key to display desired item and press the [OK] key.

(4) When any printing has been executed, it returns to the procedure (2).
When any display has been executed, it returns to the previous state by pressing the [Back] key.

(5) Pressing the [OK] key for a while returns the machine to the ready state.

LED models

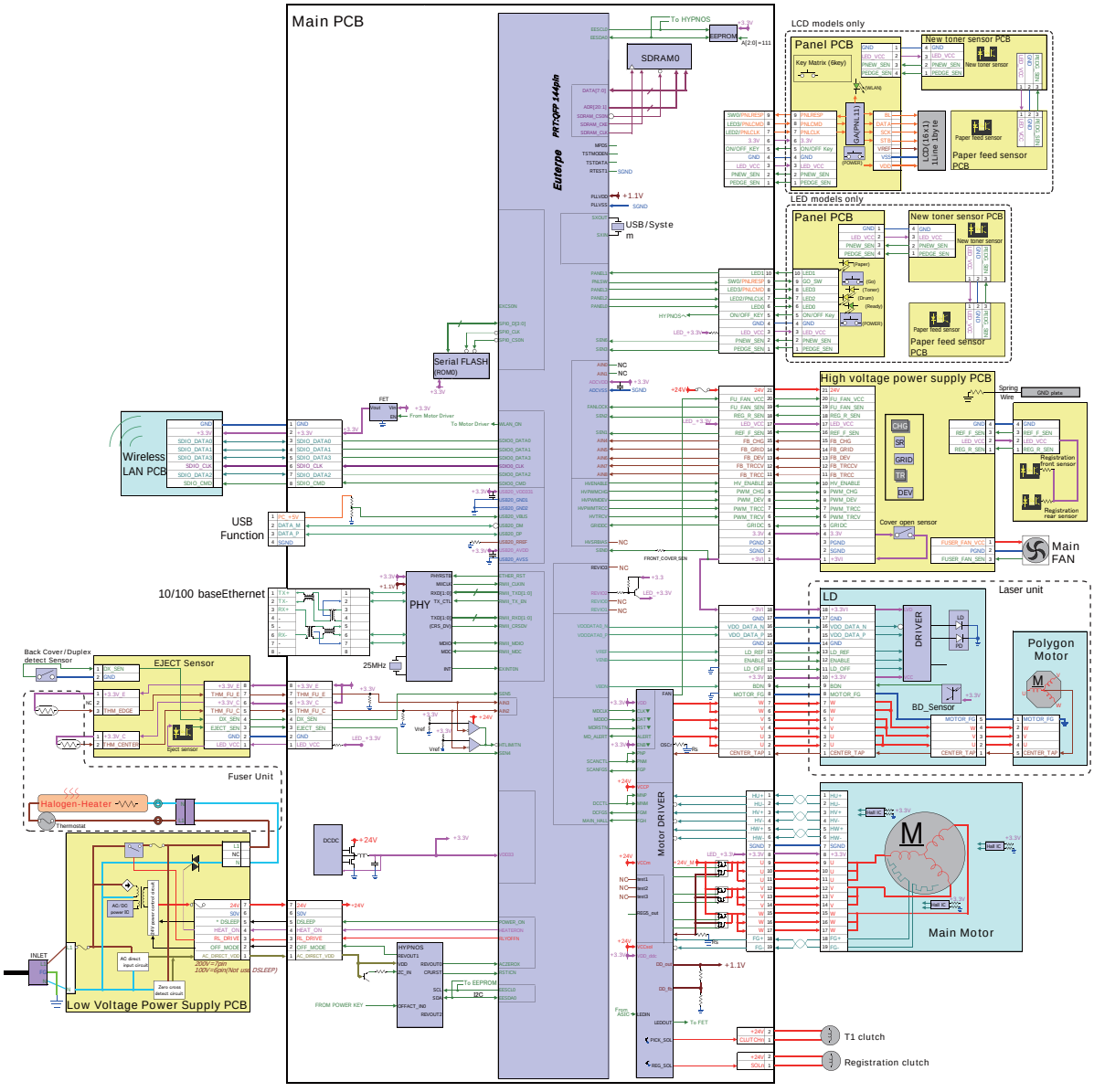
(1) Press the [Go] key three times while the machine is in the ready state. Print Settings is printed.
When printing Print Settings is completed, the machine returns to the ready state.

Printing operable from LCD models

LCD	Description
Printer settings	Prints setting list. Also prints various machine settings.
Network Configuration	Prints Wired / Wireless LAN settings.
WLAN report	Prints wireless LAN connection status, measures for connection errors, and network settings.
Test print	Prints test pattern. Also checks missing image and print quality.
Demo Print	Checks operation at events like exhibition / Demonstration printing.
Font List	Prints font data available for internal PCL and PS Emulation.

CHAPTER 6 WIRING DIAGRAM

1. WIRING DIAGRAM



CHAPTER 7 PERIODICAL MAINTENANCE

1. PERIODICAL REPLACEMENT PARTS

There are no parts to be replaced periodically.

APPENDIX 1 SERIAL NUMBERING SYSTEM

■ Serial number labels on the printer

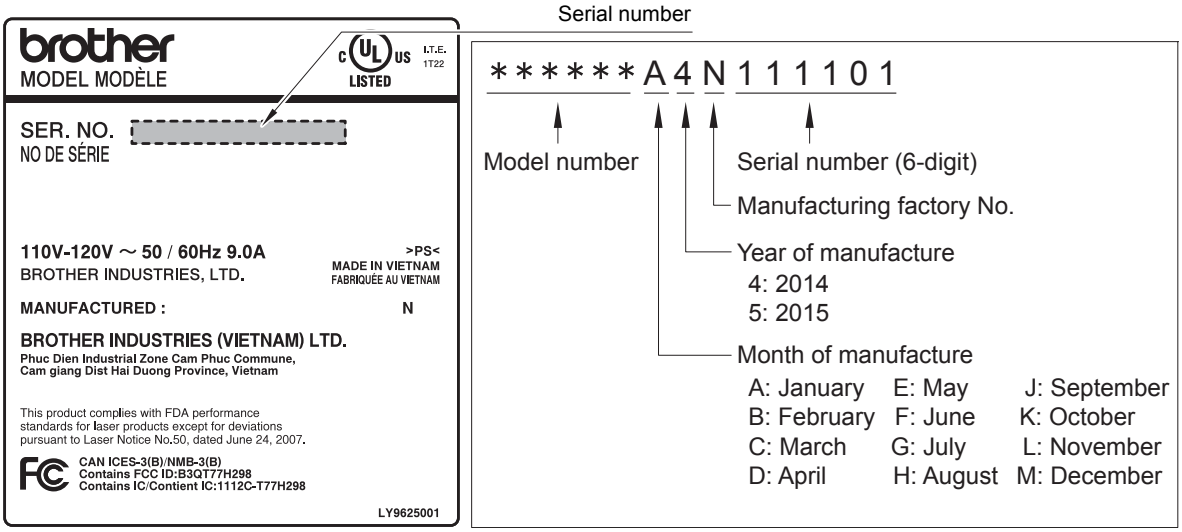


Fig. App. 1-1

<Location>

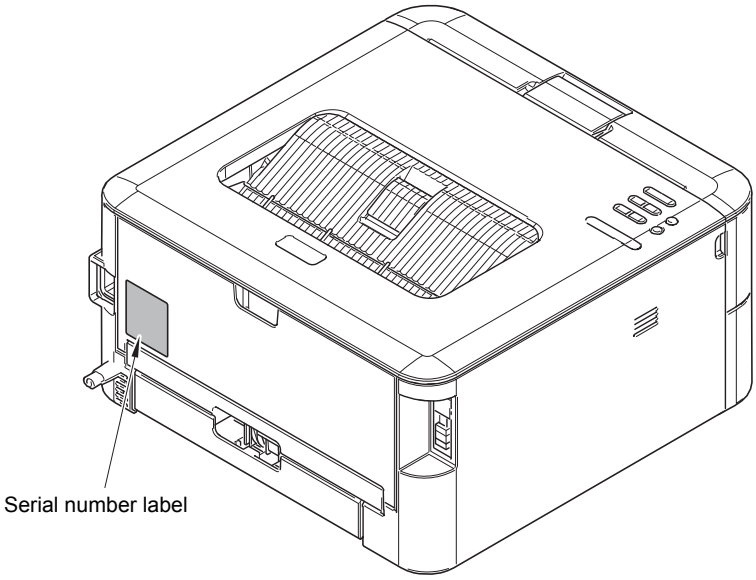


Fig. App. 1-2

APPENDIX 2 DELETING USER SETTING INFORMATION

The user setting information for the machine is stored in the main PCB. You can return this to the default settings by following the procedure below.

<Operating Procedure>

LED models

(1) Press and hold the [Go] key with the front cover of the machine closed, and turn ON the power switch of the machine. Check that the Toner, Drum, and Paper LEDs light.

(2) Release the [Go] key, and check that all LEDs go out.

(3) Press the [Go] key ten times. When completed, the machine returns to the ready state automatically.

LCD models

(1) Press the [▲] or [▼] key to display "Reset Menu" on the LCD, and press the [OK] key.

(2) Press the [▲] and [Back] keys simultaneously. "Settings Reset" is displayed on the LCD.

(3) Press the [OK] key. "Restart Printer?" is displayed on the LCD.

(4) Press the [OK] key. When completed, the machine returns to the ready state automatically.

APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER

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

Note:

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

■ Windows XP

(1) Check that the power switch of the machine is turned OFF. Disconnect the USB cable that connects the machine with your computer.

(2) Turn ON your computer.

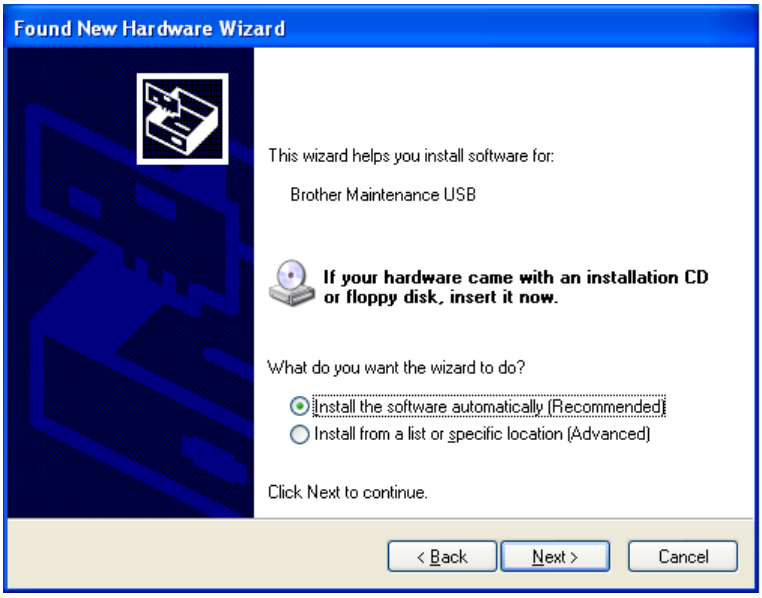
(3) Turn ON the power switch of the machine.

(4) Enter the maintenance mode.
(Refer to “1.1 How to Enter Maintenance Mode” in Chapter 5.)

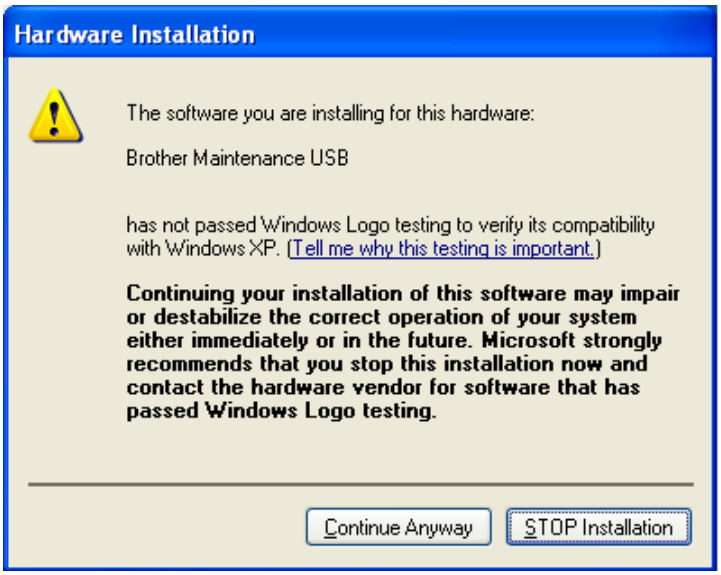
(5) Connect the machine to your computer using a USB cable.
The following window appears.

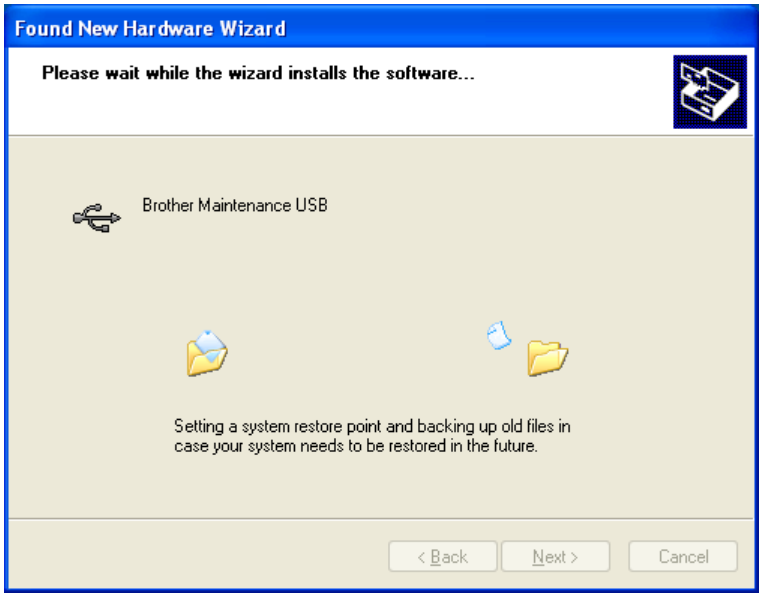
(6) The following screen appears, indicating the detection of new hardware device by the system. Select “No, not this time.” And click [Next].

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



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



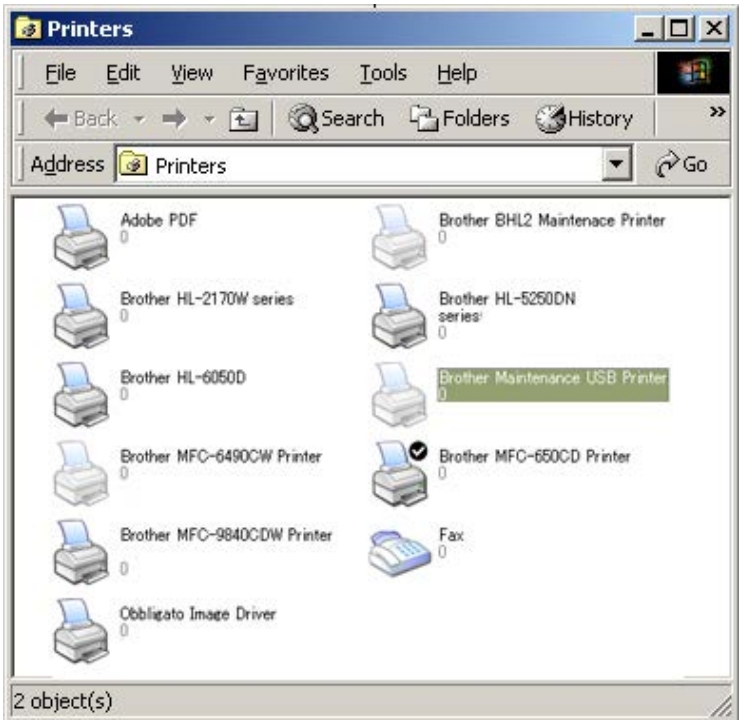


(9) Repeat steps (6) to (8) three times. Installation is completed.

(10) If the Brother Maintenance USB Printer driver is successfully installed, the following message screen appears. Click [Finish] to return.

Note:

In order to check whether the printer driver is successfully installed, click [Start], [Settings], [Printers] to select the Printers window. Then, check that the Brother Maintenance USB Printer icon is shown.



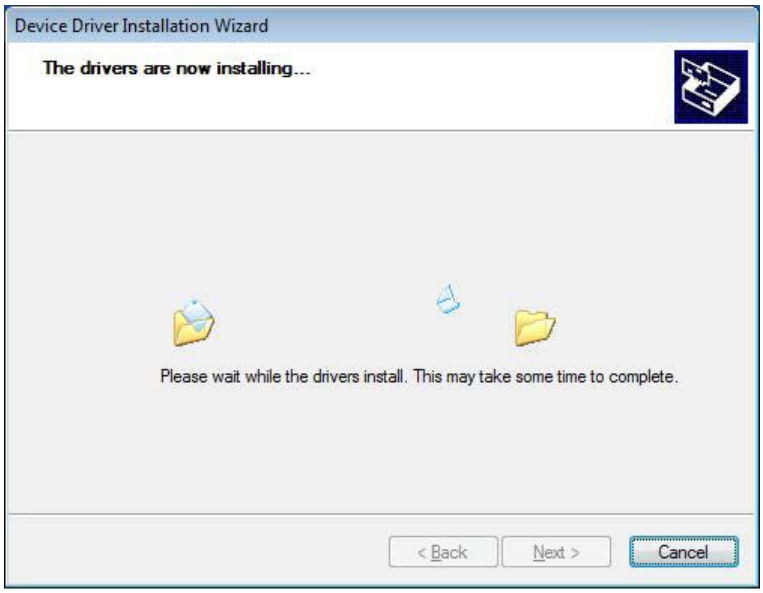
■ Windows Vista/Windows 7/Windows 8/Windows 8.1

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

(2) Turn ON your computer.

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

The following screen is displayed during installation.



(4) Wait for the following screen to appear and click [Finish].

(5) Plug the power cord of the machine into an electrical outlet.

(6) Enter the maintenance mode.
(Refer to “1.1 How to Enter Maintenance Mode” in Chapter 5.)

(7) Connect the machine to your computer using a USB cable and the installation will be performed automatically.