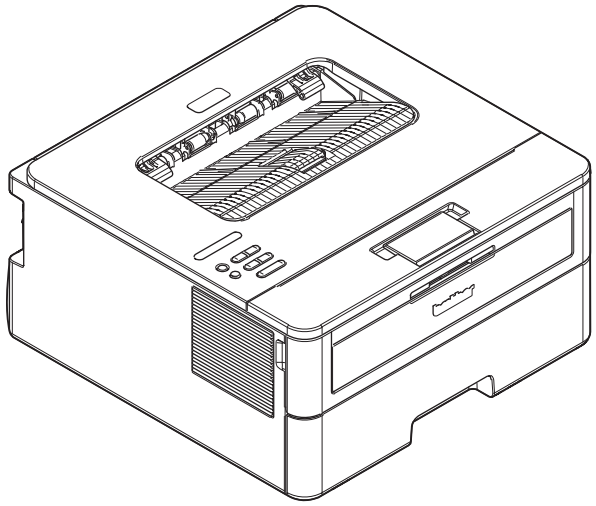
brother

Brother Laser Printer

SERVICE MANUAL

MODEL

HL-2290/2295D/2590DN/2595DW/B2000D/ B2050DN/B2080DW/L2310D/L2312D/ L2325DW/L2330D/L2331D/L2335D/ L2336D/L2350DW/L2351DW/L2352DW/ L2357DW/L2370DN/L2370DW(XL)/ L2371DN/L2372DN/L2375DW/L2376DW/ L2385DW/L2386DW



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

August 2017
SM-PRN111
84UH*
Ver.4

Trademarks

BROTHER is either a trademark or a registered trademark of Brother Industries, Ltd.

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Apple and Mac are trademarks of Apple Inc., registered in the U.S. and other countries.

AirPrint and the AirPrint logo are trademarks of Apple Inc.

App Store is a service mark of Apple Inc.

Wi-Fi is a registered trademark of Wi-Fi Alliance®.

Android is a trademark of Google Inc.

Google Play is a trademark of Google Inc.

Mopria® and the Mopria® Logo are registered trademarks and service marks of Mopria Alliance, Inc. in the United States and other countries. Unauthorized use is strictly prohibited.

Each company whose software title is mentioned in this manual has a Software License Agreement specific to its proprietary programs.

Software Trademarks

FlashFX® is a registered trademark of Datalight, Inc.

FlashFX® Pro™ is a trademark of Datalight, Inc.

FlashFX® Tera™ is a trademark of Datalight, Inc.

Reliance™ is a trademark of Datalight, Inc.

Reliance Nitro™ is a trademark of Datalight, Inc.

Datalight® is a registered trademark of Datalight, Inc.

Any trade names and product names of companies appearing on Brother products, related documents and any other materials are all trademarks or registered trademarks of those respective companies.

Open Source Licensing Remarks

This product includes open-source software.

Go to the manual download selection of your model's home page of Brother Solutions Center at support.brother.com to view the Open Source Licensing Remarks and Copyright Information.

Copyright and License

This product includes software developed by the following vendors:

This product includes the "KASAGO TCP/IP" software developed by ZUKEN ELMIC, Inc.

U.S.Patent Office 5,860,082/6,260,156

CONTENTS

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 a fire.

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

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

■ To use the Machine Safely

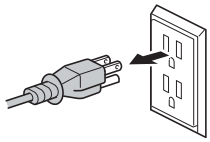
Please keep these instructions for later reference and read them before attempting any maintenance. If you do not follow these safety instructions, there is a possibility of a fire, electrical shock, burn or suffocation.

WARNING

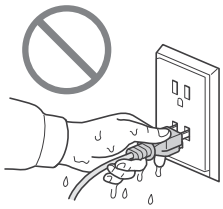
ELECTRICAL HAZARDS

Failure to follow 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. DO NOT push objects of any kind into this product through slots or openings in the product, as 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.

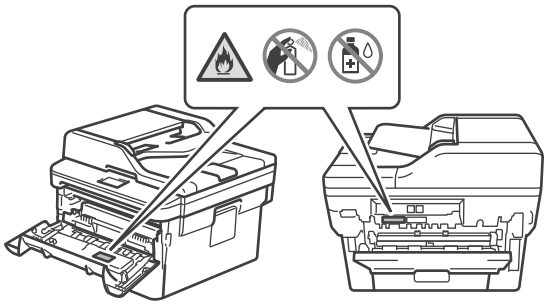
WARNING	When removing the Low-voltage power supply, do not touch it within 3 minutes after disconnecting the AC cord as it may cause an electric shock due to the electric charge accumulated in the capacitor.

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.

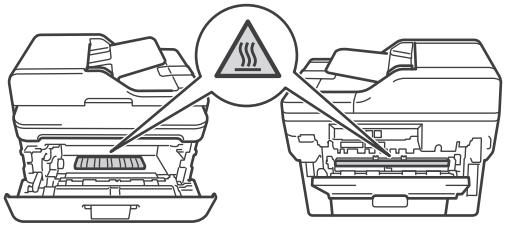


DO NOT attempt to operate this product when a paper jam or stray pieces of paper are inside the product. Prolonged contact of the paper with the fuser unit could cause a fire.

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. Carefully clean the toner dust with a dry, lint-free soft cloth and dispose of it according to local regulations.

⚠ HOT SURFACE

Immediately after using the product, some internal parts of the product will be extremely hot. Wait at least 10 minutes for the product to cool down before you touch the internal parts of the product.

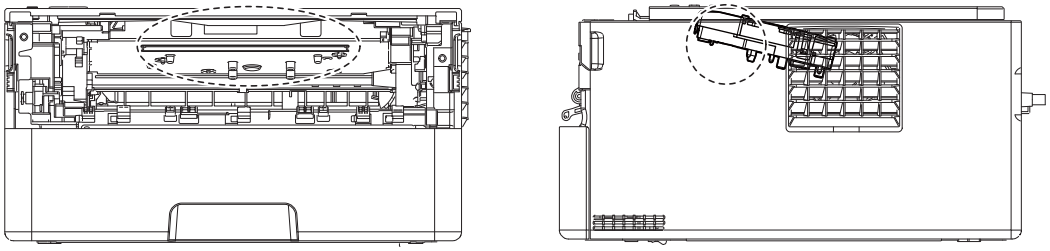


■ Caution for Laser Product (WARNHINWEIS für Laserdrucker)

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.

CHAPTER 1 SUPPLEMENTAL SPECIFICATIONS

1. GENERAL

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

Model	HL-2290	HL-2295D	HL-L2310D HL-L2312D	HL-L2330D HL-L2331D	HL-L2335D HL-L2336D	HL-B2000D	HL-L2350DW HL-L2351DW HL-L2352DW	HL-L2357DW
Wired/ Wireless LAN	N/A	N/A	N/A	N/A	N/A	N/A	Wireless	Wireless
Duplex Printing	N/A	✓	✓	✓	✓	✓	✓	✓
LCD Type	LED	LED	LED	LED	LED	LED	16 characters x 1 line	16 characters x 1 line
USB Host (front)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
USB Host (rear)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCL/PS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paper Input/ Standard Tray	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets

Model	HL-L2325DW	HL-2590DN	HL-L2370DN HL-L2371DN HL-L2372DN	HL-L2370DW(XL) HL-L2375DW HL-L2376DW	HL-B2050DN	HL-B2080DW	HL-L2385DW HL-L2386DW HL-2595DW
Wired/ Wireless LAN	Wireless	Wired	Wired	Wired/ Wireless	Wired	Wired/ Wireless	Wired/ Wireless
Duplex Printing	✓	✓	✓	✓	✓	✓	✓
LCD Type	16 characters x 1 line	16 characters x 1 line	16 characters x 1 line	16 characters x 1 line	16 characters x 1 line	16 characters x 1 line	16 characters x 1 line
USB Host (front)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
USB Host (rear)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NFC	N/A	N/A	N/A	N/A	N/A	N/A	✓
PCL/PS	N/A	N/A	✓	✓	✓	✓	✓
Paper Input/ Standard Tray	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets	250 sheets

Specifications are subject to change without notice.

Model		HL-2290	HL-2295D	HL-L2310D HL-L2312D	HL-L2330D HL-L2331D	HL-L2335D HL-L2336D
Warm-up time	From Sleep mode	Less than 9 seconds at 73.4F / 50% (23°C / 50%)				
	From Power OFF → ON	Less than 26 seconds at 73.4F / 50% (23°C / 50%)				
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)				
Printing speed (A4/Letter)		Up to 30/32 ppm (Quiet Mode: Up to 13/13 ppm)		Up to 28/28 ppm (Engine spec: Up to 30/32 ppm) (Quiet Mode: Up to 13/13 ppm) (for the USA) Up to 30/32 ppm (Quiet Mode: Up to 13/13 ppm) (except for the USA)	Up to 30/32 ppm (Quiet Mode: Up to 13/13 ppm)	Up to 34/36 ppm (Quiet Mode: Up to 13/13 ppm)
CPU		600 MHz				
Dimensions (W x D x H)	Carton size	444 x 449 x 366 mm (17.5" x 17.7" x 14.4")		438 x 283 x 519 mm (17.2" x 11.1" x 20.4")		
	Machine size	356 x 360 x 183 mm (14.0" x 14.2" x 7.2")				
Weights	with Carton	TBD	TBD	8.3 kg / 18.2 lb (for HL-L2310D) 8.5 kg / 18.7 lb (for HL-L2312D)	8.3 kg / 18.2 lb (HL-L2330D for the USA) TBD (HL-L2330D for Latin America, and HL-L2331D)	8.4 kg / 18.4 lb (HL-L2335D for Korea) 9.0 kg / 19.9 lb (HL-L2335D for Gulf) TBD (for HL-L2336D)
	without Carton with toner/drum	TBD	TBD	7.2 kg / 15.9 lb	7.2 kg / 15.9 lb (HL-L2330D for the USA) TBD (HL-L2330D for Latin America, and HL-L2331D)	7.2 kg / 15.9 lb (HL-L2335D for Korea) 7.4 kg / 16.3 lb (HL-L2335D for Gulf) TBD (for HL-L2336D)
	without Carton nor toner/drum	TBD	TBD	6.3 kg / 13.9 lb (for HL-L2310D) 6.1 kg / 13.4 lb (for HL-L2312D)	6.3 kg / 13.9 lb (HL-L2330D for the USA) TBD (HL-L2330D for Latin America, and HL-L2331D)	6.3 kg / 13.9 lb (HL-L2335D for Korea) 6.1 kg / 13.4 lb (HL-L2335D for Gulf) TBD (for HL-L2336D)

Specifications are subject to change without notice.

Model		HL-B2000D	HL-L2350DW HL-L2351DW HL-L2352DW	HL-L2357DW	HL-L2325DW	HL-2590DN
Warm-up time	From Sleep mode	Less than 9 seconds at 73.4F / 50% (23°C / 50%)				
	From Power OFF → ON	Less than 26 seconds at 73.4F / 50% (23°C / 50%)				
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)				
Printing speed (A4/Letter)		Up to 34/36 ppm (Quiet Mode: Up to 13/13 ppm)	Up to 30/32 ppm (Quiet Mode: Up to 13/13 ppm)		Up to 24 ppm (LTR) (Quiet Mode: Up to 13 ppm)	Up to 34/36 ppm (Quiet Mode: Up to 13/13 ppm)
CPU		600 MHz				
Dimensions (W x D x H)	Carton size	444 x 449 x 366 mm (17.5" x 17.7" x 14.4")	438 x 283 x 519 mm (17.2" x 11.1" x 20.4")			
	Machine size	356 x 360 x 183 mm (14.0" x 14.2" x 7.2")				
Weights	with Carton	9.0 kg / 19.9 lb	8.3 kg / 18.2 lb (for HL-L2350DW) 8.3 kg / 18.4 lb (for HL-L2351DW) 8.5 kg / 18.7 lb (for HL-L2352DW) TBD (for HL-L2350DWR)	8.5 kg / 18.7 lb	TBD	TBD
	without Carton with toner/drum	7.4 kg / 16.3 lb	7.2 kg / 15.9 lb (except for HL-L2350DWR) TBD (for HL-L2350DWR)	7.2 kg / 15.9 lb	TBD	TBD
	without Carton nor toner/drum	6.5 kg / 14.3 lb	6.3 kg / 13.9 lb (HL-L2350DW for the USA, and HL-L2351DW) 6.1 kg / 13.4 lb (except for HL-L2350DW for the USA, and HL-L2352DW) TBD (for HL-L2350DWR)	6.1 kg / 13.4 lb	TBD	TBD

Specifications are subject to change without notice.

Model		HL-L2370DN HL-L2371DN HL-L2372DN	HL-L2370DW(XL) HL-L2375DW HL-L2376DW	HL-B2050DN	HL-B2080DW	HL-L2385DW HL-L2386DW HL-2595DW
Warm-up time	From Sleep mode	Less than 9 seconds at 73.4F / 50% (23°C / 50%)				Less than 4 seconds at 73.4F / 50% (23°C / 50%)
	From Power OFF → ON	Less than 26 seconds at 73.4F / 50% (23°C / 50%)				
First print time	From Ready mode	Less than 8.5 seconds at 73.4F (23°C)				Less than 7 seconds at 73.4F (23°C) / 230V
	From Sleep mode	Less than 17.5 seconds at 73.4F (23°C)				Less than 11 seconds at 73.4F (23°C) / 230V
Printing speed (A4/Letter)		Up to 34/36 ppm (Quiet Mode: Up to 13/13 ppm)				
CPU		600 MHz				
Dimensions (W x D x H)	Carton size	438 x 283 x 519 mm (17.2" x 11.1" x 20.4")	438 x 283 x 519 mm (17.2" x 11.1" x 20.4") (except for HL-L2370DW(XL)) 444 x 449 x 366 mm (17.5" x 17.7" x 14.4") (for HL-L2370DW(XL))	444 x 449 x 366 mm (17.5" x 17.7" x 14.4")		
	Machine size	356 x 360 x 183 mm (14.0" x 14.2" x 7.2")				

Model		HL-L2370DN HL-L2371DN HL-L2372DN	HL-L2370DW(XL) HL-L2375DW HL-L2376DW	HL-B2050DN	HL-B2080DW	HL-L2385DW HL-L2386DW HL-2595DW
Weights	with Carton	8.3 kg / 18.2 lb (HL-L2370DN for Europe and HL-L2371DN for Europe) 8.5 kg / 18.7 lb (for HL-L2372DN) 9.0 kg / 19.9 lb (HL-L2370DN for Asia) TBD (HL-L2370DN for Russia and HL-L2371DN for Asia)	8.3 kg / 18.2 lb (HL-L2370DW for the USA, and except for HL-L2375DW for Asia) TBD (HL-L2370DW for Latin America) 9.3 kg / 20.5 lb (for HL-L2370DWXL) 9.0 kg / 19.9 lb (HL-L2375DW for Asia) 8.4 kg / 18.4 lb (for HL-L2376DW)	9.0 kg / 19.9 lb	9.2 kg / 20.2 lb (for Europe) 9.0 kg / 19.9 lb (for Asia)	TBD (HL-L2385DW for Oceania) 9.8 kg / 21.7 lb (HL-L2385DW for Asia) 9.5 kg / 21.0 lb (for HL-L2386DW) 8.3 kg / 18.3 lb (for HL-2595DW)
	without Carton with toner/drum	7.2 kg / 15.9 lb (HL-L2370DN for Europe, HL-L2371DN for Europe, and HL-L2372DN) 7.4 kg / 16.3 lb (HL-L2370DN for Asia) TBD (HL-L2370DN for Russia and HL-L2371DN for Asia)	7.2 kg / 15.9 lb (HL-L2370DW for the USA, except for HL-L2375DW for Asia, and HL-L2376DW) TBD (HL-L2370DW for Latin America) 7.8 kg / 17.1 lb (for HL-L2370DWXL) 7.4 kg / 16.3 lb (HL-L2375DW for Asia)	7.4 kg / 16.3 lb	7.4 kg / 16.3 lb	TBD (HL-L2385DW for Oceania) 8.1 kg / 17.9 lb (HL-L2385DW for Asia) 7.9 kg / 17.4 lb (for HL-L2386DW and HL-2595DW)
	without Carton nor toner/drum	6.1 kg / 13.4 lb (HL-L2370DN for Europe and Asia, HL-L2371DN for Europe, and HL-L2372DN) TBD (HL-L2370DN for Russia and HL-L2371DN for Asia)	6.3 kg / 13.9 lb (HL-L2370DW for the USA, HL-L2370DWXL and HL-L2376DW) TBD (HL-L2370DW for Latin America) 6.1 kg / 13.4 lb (for HL-L2375DW)	6.5 kg / 14.3 lb	6.3 kg / 13.9 lb (for Europe) 6.5 kg / 14.3 lb (for Asia)	TBD (HL-L2385DW for Oceania) 6.8 kg / 15.0 lb (HL-L2385DW for Asia) 7.0 kg / 15.4 lb (for HL-L2386DW and HL-2595DW)

Specifications are subject to change without notice.

2. NETWORK CONNECTIVITY

Model		HL-2290	HL-2295D	HL-L2310D HL-L2312D	HL-L2330D HL-L2331D	HL-L2335D HL-L2336D
Wired network	Network node type	N/A				
Wireless network	Network node type	N/A				

Model		HL-B2000D	HL-L2350DW HL-L2351DW HL-L2352DW	HL-L2357DW	HL-L2325DW	HL-2590DN
Wired network	Network node type	N/A				NC-9300h
Wireless network	Network node type	N/A	NC-8800w			N/A

Model		HL-L2370DN HL-L2371DN HL-L2372DN	HL-L2370DW(XL) HL-L2375DW HL-L2376DW	HL-B2050DN	HL-B2080DW	HL-L2385DW HL-L2386DW HL-2595DW
Wired network	Network node type	NC-9300h				
Wireless network	Network node type	N/A	NC-8800w	N/A	NC-8800w	

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 15,000 pages
Maintenance parts life (Non-Periodical Spare Parts)	Fuser unit	50,000 pages
	Laser unit	50,000 pages
	PF kit 1	50,000 pages
	PF kit MP	50,000 pages

Specifications are subject to change without notice.

4. SUPPLIES

<table>
<tr><td colspan="2">Model</td><td>HL-2290</td><td>HL-2295D</td><td>HL-L2310D
HL-L2312D</td><td>HL-L2330D
HL-L2331D</td><td>HL-L2335D
HL-L2336D</td></tr>
<tr><td rowspan="5">Toner cartridge</td><td>Starter toner *1</td><td colspan="2">Approximately 3,000 pages</td><td>Approximately 700 pages</td><td>Approximately 700 pages (for HL-L2330D)
Approximately 3,000 pages (HL-L2331D for India)</td><td>Approximately 1,200 pages (HL-L2335D for Asia)
Approximately 3,000 pages (HL-L2335D for Gulf and Philippines)
Approximately 700 pages (HL-L2335D for Taiwan)
Approximately 3,000 pages (HL-L2336D for Vietnam / Indonesia)</td></tr>
<tr><td>Standard toner</td><td colspan="3">Approximately 1,200 pages</td><td>Approximately 1,200 pages (for HL-L2330D)
N/A (for HL-L2331D)</td><td>Approximately 1,200 pages</td></tr>
<tr><td>High capacity toner</td><td colspan="5">Approximately 3,000 pages</td></tr>
<tr><td>Super high capacity toner</td><td colspan="2">N/A</td><td>Approximately 4,500 pages (for the USA and Europe)
N/A (for Russia and Oceania)</td><td>Approximately 4,500 pages</td><td>Approximately 4,500 pages (for HL-L2335D)
N/A (for HL-L2336D)</td></tr>
<tr><td>Ultra high capacity toner</td><td colspan="5">N/A</td></tr>
<tr><td colspan="7">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="5">Life expectancy: Approximately 12,000 pages (page/job)
The life expectancy varies according to the use condition.
Shelf life: 2 years</td></tr>
<tr><td colspan="7">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 50°C: Up to 5 days
* Storage condition at the temperature of -20°C: Up to 5 days
(Humidity) Normal condition: 35 to 85%RH (without condensation)
* Storage condition at the humidity of 85 to 95%RH: Up to 5 days (without condensation)
* Storage condition at the humidity of 10 to 35%RH: 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-B2000D</td><td>HL-L2350DW
HL-L2351DW
HL-L2352DW</td><td>HL-L2357DW</td><td>HL-L2325DW</td><td>HL-2590DN</td></tr>
<tr><td rowspan="5">Toner cartridge</td><td>Starter toner *1</td><td>Approximately 2,600 pages</td><td>Approximately 700 pages (except for HL-L2351DW)
Approximately 3,000 pages (for HL-L2351DW)</td><td>Approximately 1,200 pages</td><td>Approximately 700 pages</td><td>Approximately 3,000 pages</td></tr>
<tr><td>Standard toner</td><td>N/A</td><td>Approximately 1,200 pages (except for HL-L2351DW)
N/A (for HL-L2351DW)</td><td colspan="3">Approximately 1,200 pages</td></tr>
<tr><td>High capacity toner</td><td>N/A</td><td colspan="4">Approximately 3,000 pages</td></tr>
<tr><td>Super high capacity toner</td><td>N/A</td><td>Approximately 4,500 pages (except for HL-L2350DW for Russia and Oceania)
N/A (HL-L2350DW for Russia and Oceania)</td><td colspan="2">Approximately 4,500 pages</td><td>N/A</td></tr>
<tr><td>Ultra high capacity toner</td><td colspan="5">N/A</td></tr>
<tr><td colspan="7">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="5">Life expectancy: Approximately 12,000 pages (page/job)
The life expectancy varies according to the use condition.
Shelf life: 2 years</td></tr>
<tr><td colspan="7">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 50°C: Up to 5 days
* Storage condition at the temperature of -20°C: Up to 5 days
(Humidity) Normal condition: 35 to 85%RH (without condensation)
* Storage condition at the humidity of 85 to 95%RH: Up to 5 days (without condensation)
* Storage condition at the humidity of 10 to 35%RH: 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-L2370DN
HL-L2371DN
HL-L2372DN</td><td>HL-L2370DW(XL)
HL-L2375DW
HL-L2376DW</td><td>HL-B2050DN</td><td>HL-B2080DW</td><td>HL-L2385DW
HL-L2386DW
HL-2595DW</td></tr>
<tr><td rowspan="5">Toner cartridge</td><td>Starter toner *1</td><td>Approximately 4,500 pages (HL-L2371DN for Europe)
N/A (HL-L2371DN for Asia)
Approximately 700 pages (HL-L2370DN for Europe and Russia, and HL-L2372DN)
Approximately 1,200 pages (HL-L2370DN for Asia)
Approximately 3,000 pages (HL-L2370DN for Korea)</td><td>Approximately 700 pages (for HL-2370DW)
Approximately 7,500 pages (for HL-2370DW(XL))
Approximately 1,200 pages (HL-L2375DW for Europe, Russia and Asia)
Approximately 700 pages (HL-2370DW for Oceania)
Approximately 3,000 pages (HL-L2375DW for Gulf, Korea and Philippines)
Approximately 700 pages (HL-L2375DW for Taiwan)
N/A (for HL-L2376DW)</td><td colspan="2">Approximately 2,600 pages</td><td>Approximately 700 pages (HL-L2385DW for Oceania)
Approximately 3,000 pages (HL-L2385DW for Asia)
Approximately 4,500 pages (HL-L2385DW for Korea and Philippines)
N/A (for HL-L2386DW)
Approximately 3,000 pages (for HL-2595DW)</td></tr>
<tr><td>Standard toner</td><td>Approximately 1,200 pages (except for HL-L2371DN)
N/A (for HL-L2371DN)</td><td>Approximately 1,200 pages</td><td colspan="2">N/A</td><td>Approximately 1,200 pages</td></tr>
<tr><td>High capacity toner</td><td colspan="2">Approximately 3,000 pages</td><td colspan="2">N/A</td><td>Approximately 3,000 pages</td></tr>
<tr><td>Super high capacity toner</td><td>Approximately 4,500 pages (except for HL-L2370DN for Russia)
N/A (HL-L2370DN for Russia)</td><td>Approximately 4,500 pages (except for HL-L2375DW for Oceania and Russia)
N/A (HL-L2375DW for Oceania and Russia)</td><td colspan="2">N/A</td><td>Approximately 4,500 pages</td></tr>
<tr><td>Ultra high capacity toner</td><td colspan="5">N/A</td></tr>
<tr><td colspan="7">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="5">Life expectancy: Approximately 12,000 pages (page/job)
The life expectancy varies according to the use condition.
Shelf life: 2 years</td></tr>
<tr><td colspan="7">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 50°C: Up to 5 days
* Storage condition at the temperature of -20°C: Up to 5 days
(Humidity) Normal condition: 35 to 85%RH (without condensation)
* Storage condition at the humidity of 85 to 95%RH: Up to 5 days (without condensation)
* Storage condition at the humidity of 10 to 35%RH: 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 AND TROUBLESHOOTING

1. INTRODUCTION

Troubleshooting is the countermeasure procedures that the service personnel should follow if an error or malfunction occurs with the machine. It is impossible to anticipate all of the possible troubles which may occur in future and determine the troubleshooting procedures, so this chapter covers some sample troubles. However, those samples will help the service personnel pinpoint and repair other defective elements.

1.1 Precautions

Be sure to observe and follow all the precautions to prevent any secondary problems from happening during troubleshooting.

(1) Always turn OFF the power and unplug the power cable before removing any covers or PCBs, adjusting the machine and so on. If you need to take voltage measurements with the power switched on, take the greatest of care not to receive an electric shock.

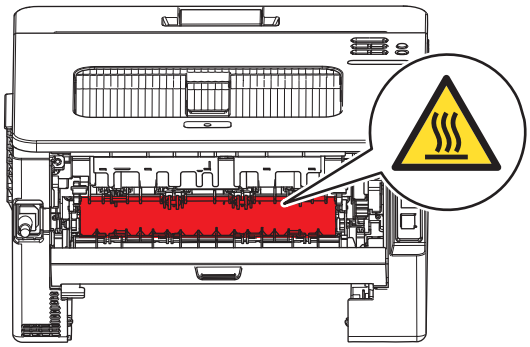
(2) When connecting or disconnecting cable connectors, make sure that you hold the connector body and not the cables.

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

(4) Follow the warning by all means.

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) Check again that the portions and parts repaired or removed during the repair work function properly when the repair is completed.

A certain interface or function could be set to invalid to serve the needs of customers. Ask sales representative if this is the case before performing the check.

1.2 Checks before Commencing Troubleshooting

Check the following items before attempting to repair the machine.

■ Operating environment

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

(2) The machine is used in a clean environment where the temperature is between 10°C (50°F) and 32°C (89.6°F) and the relative humidity is maintained between 20% and 80%.

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

(4) Keep the machine horizontal when you carry it. To prevent injuries when moving or lifting this machine, make sure to use at least two people.

■ Power supply

(1) The AC input power supply described on the rating plate of the machine 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) A recommended type of paper is being used.

(2) The paper is not damp.

(3) The paper is not short-grained paper or acid paper.

■ Consumable parts

(1) The drum unit (including the toner cartridge and toner box) is installed correctly.

■ Others

(1) Condensation

When the machine is moved from a cold place into a warm room, 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, etc., 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 contrast when printing.
- Condensation on the charge unit may cause corona charge leakage.
- Condensation on the plate and separation pad may cause paper feed problems.

If condensation has occurred, leave the machine for at least two hours to allow it to reach 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 drive normally under the low temperature environment. This is due to there being too much load to drive each unit. In this case, increase the room temperature.

■ Cleaning

Use a soft dry 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

■ Manual feed slot models

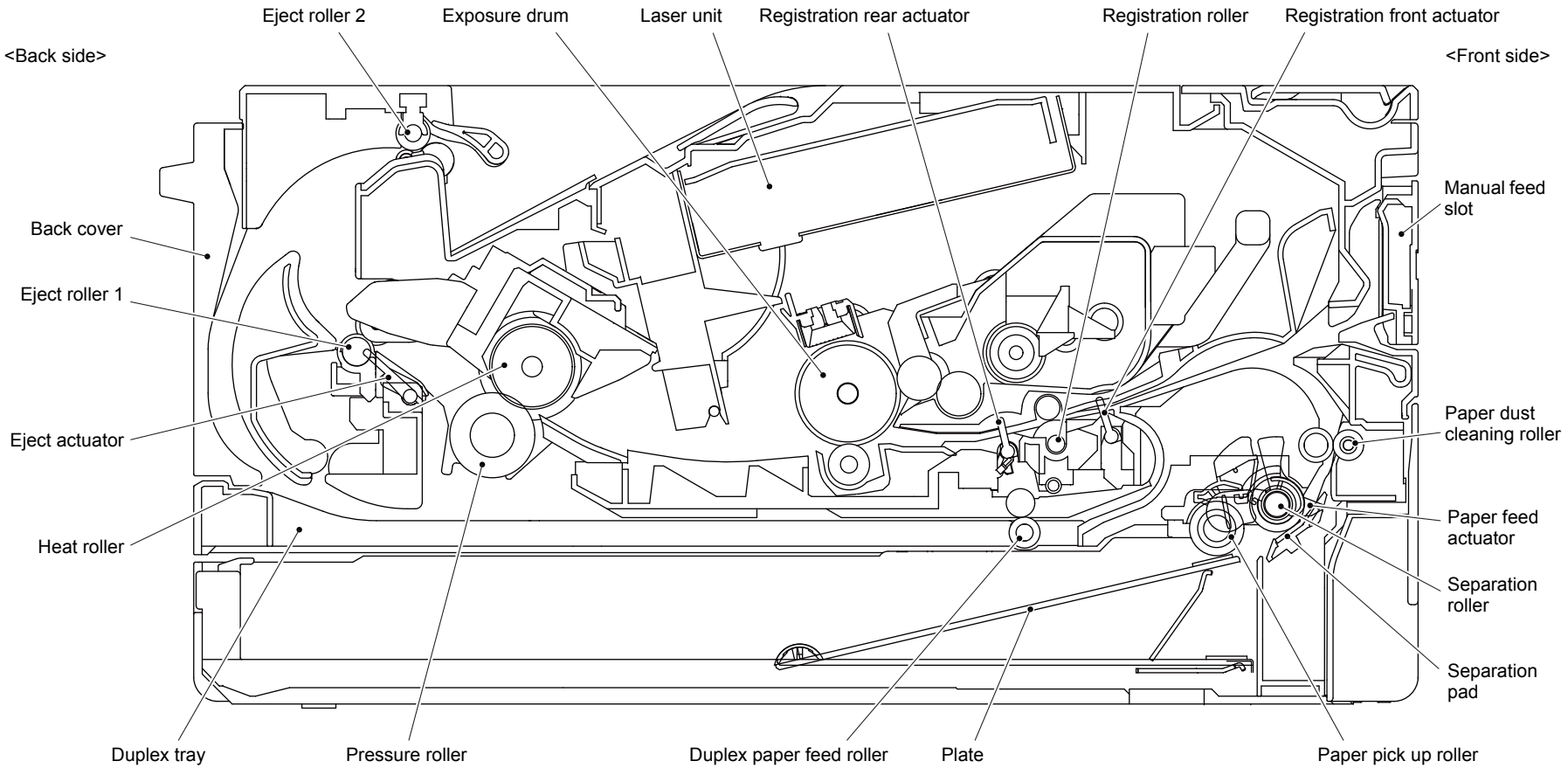


Fig. 2-1

■ MP models

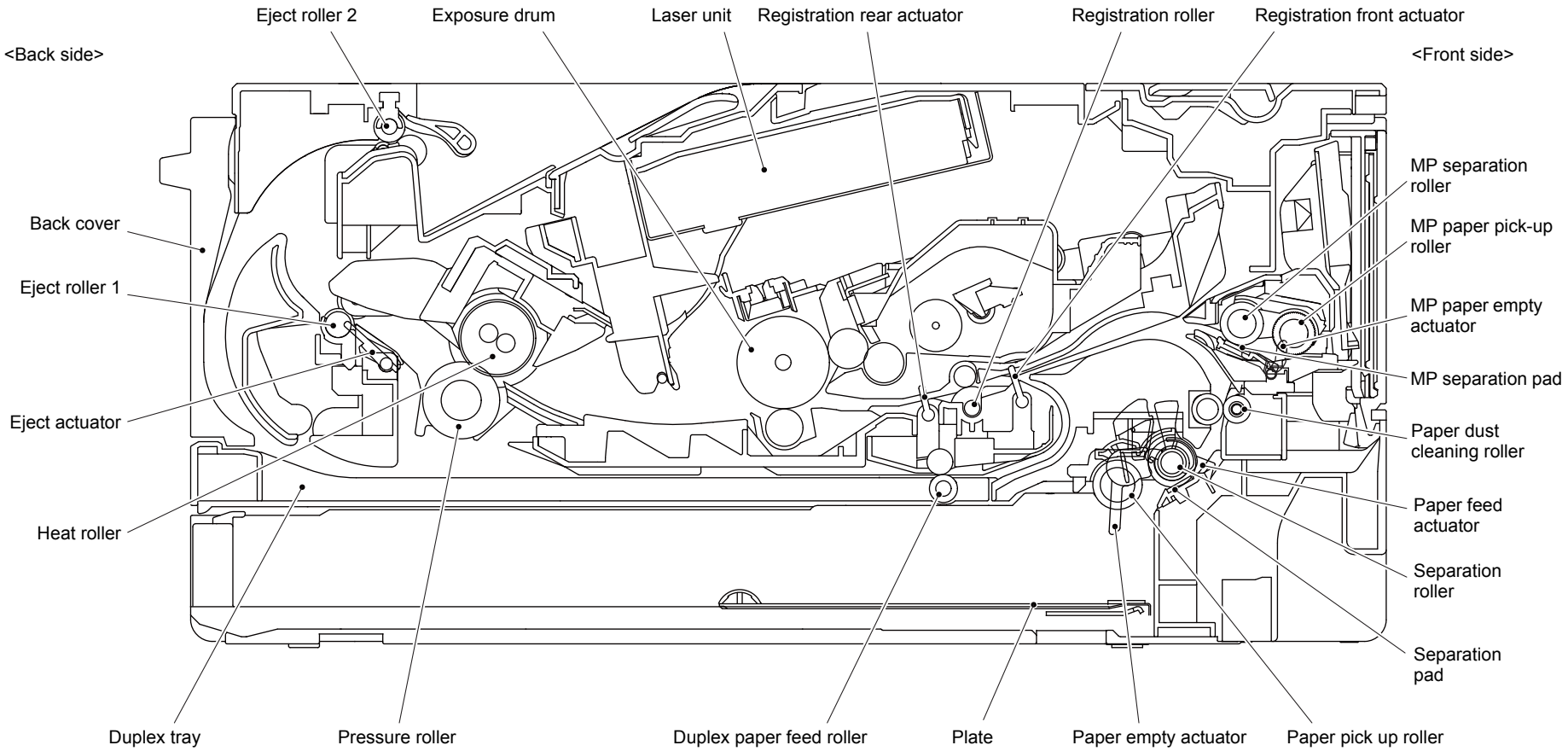


Fig. 2-2

2.2 Paper Feeding

■ Manual feed slot models

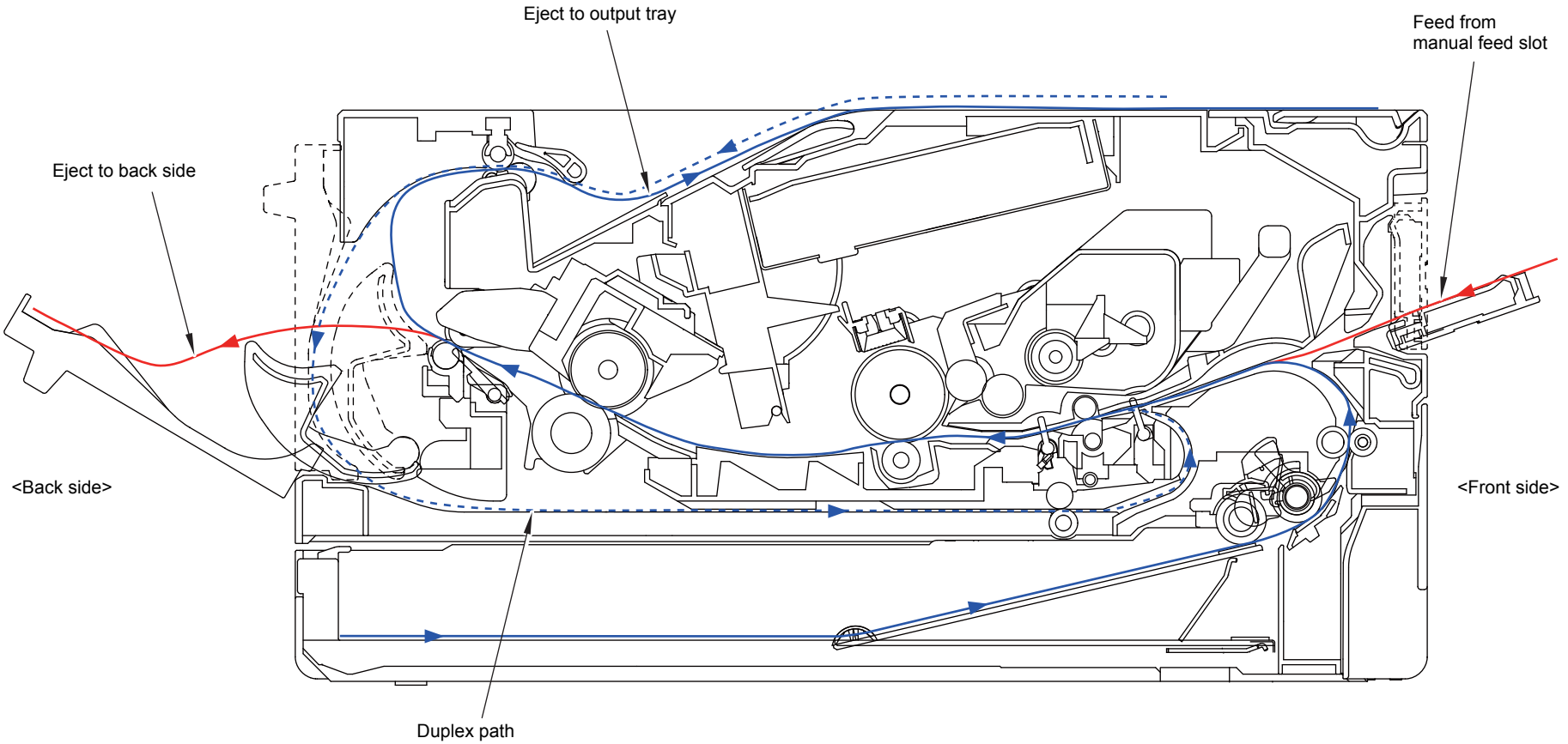


Fig. 2-3

■ MP models

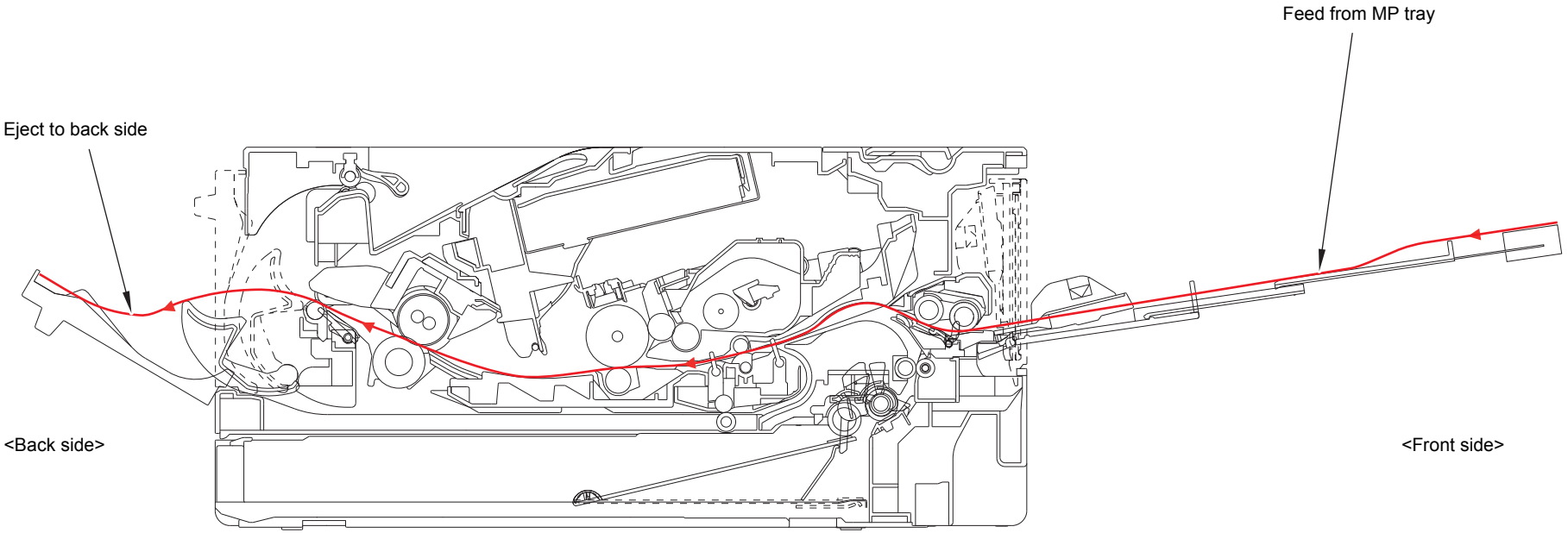


Fig. 2-4

2.3 Operation of Each Part and Location of Parts

Part name	Operation
Paper pick up roller	Feeds the paper to the separation roller from the paper tray.
Separation roller, Separation pad	Separates paper fed from the paper tray into single sheets.
Paper feed actuator (Paper feed sensor)	Detects paper trays (open / closed). Detects paper jams in paper trays. Determines whether paper is fed from the paper tray.
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 paper alignment when the paper makes contact with the stopped registration roller. After the correction, it rotates to feed the paper to the process.
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 determine 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)	Detect whether or not paper is ejected from the fuser unit. In the case of the 2-sided printing, detect the rear edge of paper and adjust the timing of the eject roller 2 switching. Detects paper jam in the rear section of the machine. Detects open fuser cover.
Eject roller 1	Feeds the paper ejected from the fuser unit to eject roller 2.
Eject roller 2	Eject the paper to the face-down output tray. In the case of the 2-sided printing, after the front of the sheet is printed and the paper is fed up to a certain point, eject roller 2 rotates conversely, and the paper is fed to the duplex tray.
Duplex paper feed roller	Feeds the paper passing through the duplex tray to the registration roller.
Front cover sensor	Detects open / closed front cover.
Paper empty actuator	Detects the paper in the paper tray 1. Detects paper jams in the paper tray 1.
MP paper pick-up roller	Feeds paper from the MP tray to the MP separation roller.
MP separation roller, MP separation pad	Separates the paper fed from the MP tray into single sheets.
MP paper empty actuator (MP paper empty sensor)	Detects the paper in the MP tray. Detects paper jams in the MP tray.
Back cover/duplex tray sensor	Detects open / closed back cover or the duplex tray is set.
New toner sensor	When exchange to the new toner cartridge, detects the kinds of toner and add 1 to the reset of the developing bias and to the exchange count.
Toner sensor	Detects the toner cartridge is set.

Part name	Operation
External temperature/humidity sensor	Detects external temperature and humidity around the machine.
Pickup clutch	Drives the pick up roller at the timing of paper feeding.
Registration clutch	Controls the activation of the registration roller for the paper alignment adjustment.
MP solenoid	Presses the MP paper pick-up roller against the paper when feeding from the MP tray.

■ Location of sensors and clutches

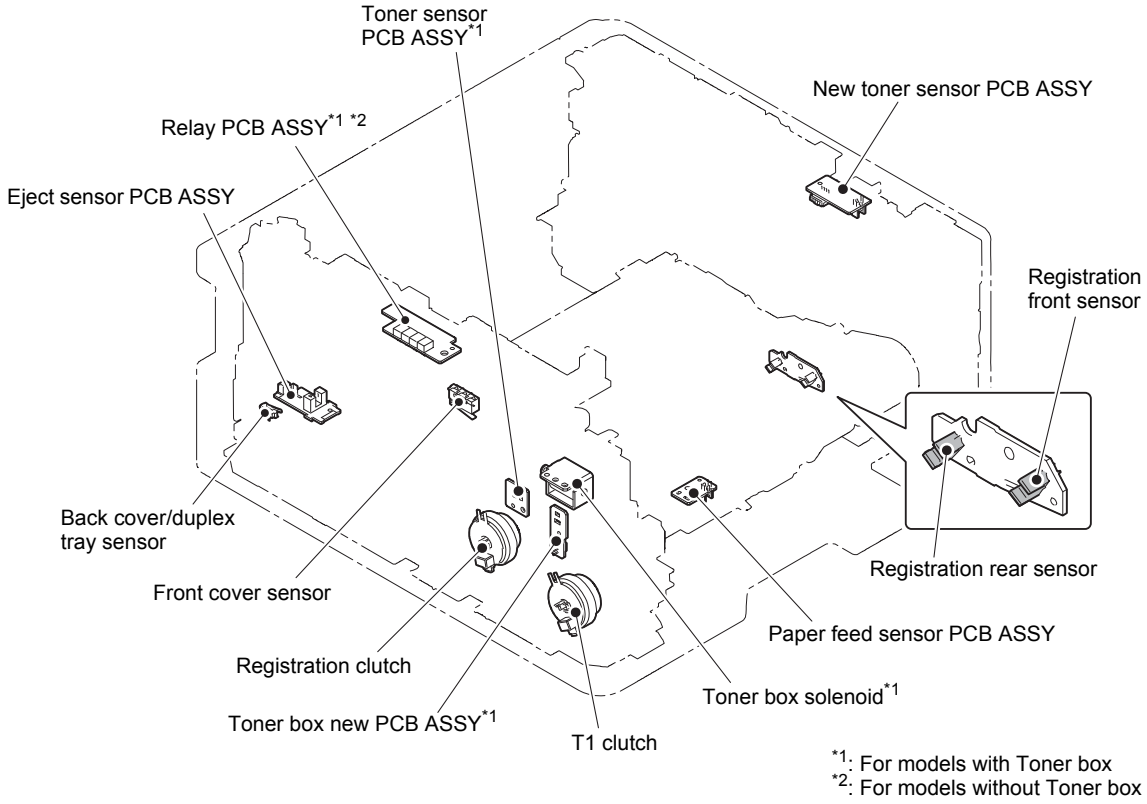


Fig. 2-5

2.4 Block Diagram

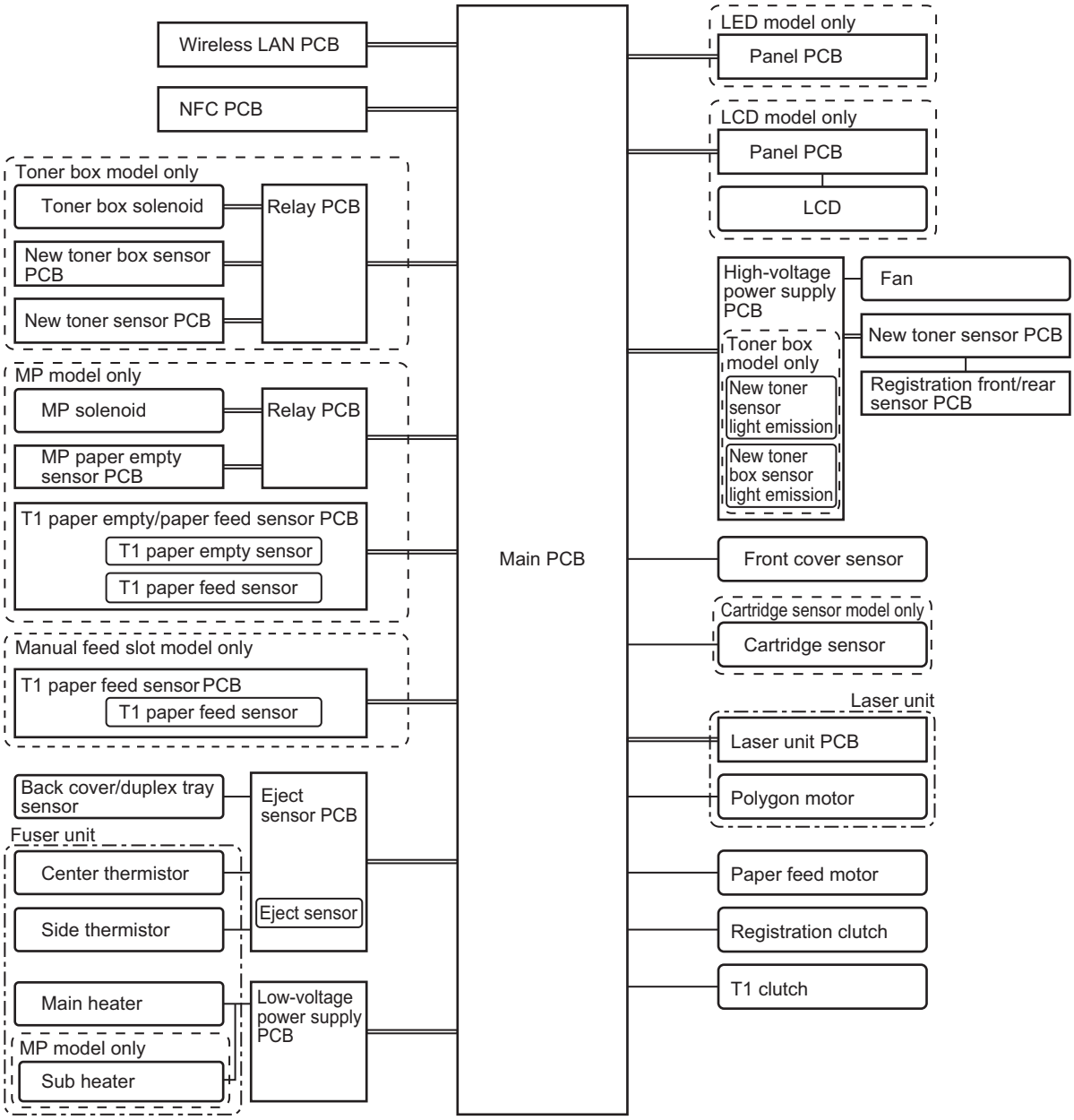


Fig. 2-6

2.5 Main Components

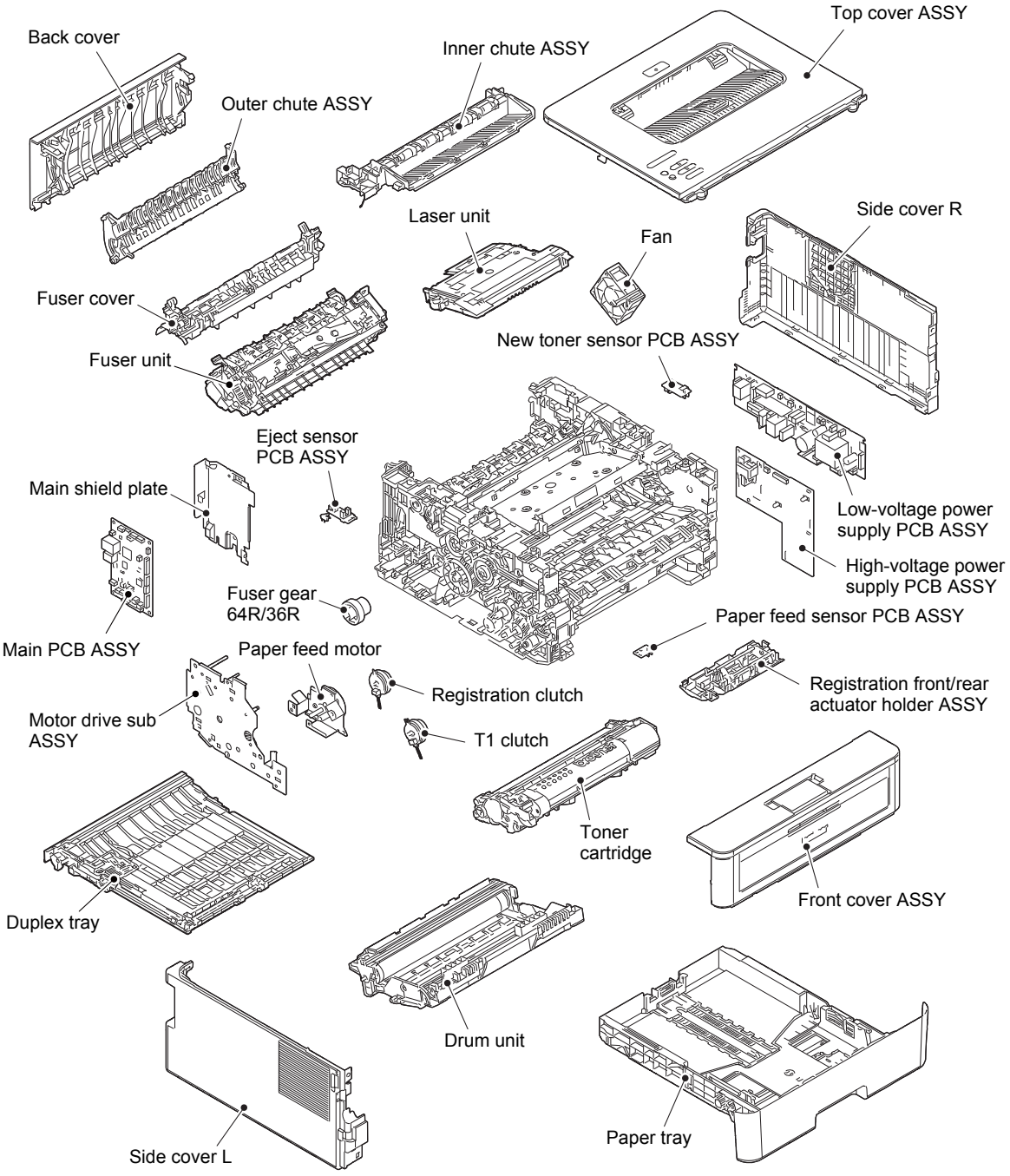


Fig. 2-7

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

The shaded errors hardly occur under normal use. They may be caused by noise around the installation site, variation in power supply voltage, or software failure.

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
0101	---		050A	The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.	2-35
0102	ASIC error or motor driver error occurred.	2-33	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.	2-35
0201	Cannot detect the synchronized signal of the paper feed motor. The speed of the paper feed motor does not stabilize within the specified time.	2-33	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.	2-35
0202	---		050D	---	
0203	---				
0300	Cannot detect the lock signal of the polygon motor for the laser unit. (second time)	2-33	050F	---	
0305	Cannot detect the lock signal of the polygon motor for the laser unit. (first time)	2-33	0800	---	
0401	BD sensor failure (second time)	2-34	0900	Detected irregular power supply for more than 100 times.	2-36
0402	---		0A01	---	
0405	BD sensor failure (first time)	2-34	0A02	Detected a fan failure.	2-36
0501	The center thermistor of the fuser unit has not reached the specified temperature within the specified time.	2-35	0A03	---	
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.	2-35	0B01	An error occurred in the high-voltage power supply PCB ASSY while operating.	2-37
0503	The center thermistor of the fuser unit detected a temperature higher than the specified value.	2-35	0B02	An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	2-37
0504	After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	2-35	0C00	---	
0505	The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	2-35	0D01	---	
0506	The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	2-35	0D02	---	
0508	Temperature of the end part didn't rise by 1 °C when the fuser unit heater was turned ON.	2-35	0D03	---	

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
0D04	---		2500	Toner cartridge could not communicate with the cartridge sensor.	2-37
0E00	---		2501	---	
1003	---		2502	---	
1004	---		2503	---	
1100	---		2601	---	
1200	---		2602	---	
1300	---		2603	---	
1400	---		2604	---	
1500	---		2605	---	
1701	---		2701	---	
1801	---		2702	---	
1802	---		2703	---	
1803	---		2801	---	
1808	---		2802	---	
1901	---		2803	---	
1A01	---		2804	---	
1B01	---		2805	---	
1C00	---		2806	---	
1D01	---		2901	---	
1D02	---		2902	---	
1D03	---		2903	---	
1D04	---		2904	---	
1E01	---		2905	---	
1E02	---		2906	---	
1F00	---		2A01	---	
1F02	---		2A02	---	
2000	---		2A03	---	
2001	---		2A04	---	
2002	---		2A05	---	
2003	---		2B01	---	
2100	---		2B02	---	
2101	---		2C01	---	
2102	---		2C02	---	
2103	---		2D01	---	
2200	Cartridge sensor detected that the incompatible toner cartridge was installed.	2-37	2E00	Could not communicate with the cartridge sensor on the machine side.	2-37
2201	---		2E01	---	
2202	---		2E03	---	
2203	---		2F01	---	
2400	Toner cartridge is not recognized by the cartridge sensor.	2-37	2F03	---	
2401	---		3001	---	
2402	---		3002	---	
2403	---		3003	---	

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
3102	---		4900	---	
3202	---		4A00	---	
3301	---		4B01	Dot counter of the toner cartridge or develop roller counter reaches the upper limit soon.	2-38
3302	---		4B02	---	
3401	---		4B03	---	
3402	---		4B04	---	
3501	---		4B06	The amount of toner supplied of the toner box reaches the upper limit soon.	2-38
3601	---		4C01	Dot count or develop roller counter of the toner cartridge in models without toner box has reached the upper limit in the toner stop mode.	2-38
3701	---		4C02	---	
3702	---		4C03	---	
3703	---		4C04	---	
3801	---		4C05	---	
3802	---		4C06	The amount of toner supplied of the toner box has reached the upper limit.	2-38
3900	---		4D01	Dot count or develop roller counter of the toner cartridge in models without toner box is reaching the upper limit in the continuous printing mode.	2-38
3A00	A communication error occurred between the controller and engine in main PCB.	2-37	4E01	Toner cartridge in models without toner box has reached the upper limit in the continuous printing mode.	2-38
4000	Number of the drum unit rotations reaches the upper limit soon.	2-38	4F01	The new toner sensor of the toner cartridge could not detect a new cartridge properly.	2-39
4001	---		4F02		
4002	---		4F03		
4003	---		4F04		
4004	---		4F05	New process sensor could not detect the new drum unit correctly.	2-39
4200	Number of the drum unit rotations has reached the upper limit.	2-38	5001		
4201	---		5002		
4202	---		5003		
4203	---		5004		
4204	---		5005		
4209	---		5006		
4300	---		5100	---	
4400	---		5200	---	
4500	---		5301	---	
4600	---		5302	---	
4700	---		5401	---	
4800	---		5402	---	

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
5406	---		6300	---	
5502	---		6400	---	
5602	---		6602	---	
5702	---		6701	---	
5801	---		6801	The side thermistor detected a temperature higher than the specified value.	2-43
5802	---		6802	---	
5902	---		6901	Some fuser unit errors occurred at power-ON or upon recovery from sleep mode.	2-43
5A02	---		6902	After the error was detected at the fuser unit, power was turned ON again and the error is being checked. (If power is turned OFF and ON after error code 6901 occurred, this code is displayed for about 15 minutes.)	2-43
5B02	---		6A00	Electric discharge that may be caused by dirt on the corona wire of the drum unit was detected.	2-44
5C02	---		6B01	---	
5D02	---		6B02	---	
5E00	New toner box sensor could not detect the new toner box correctly.	2-39	6B03	---	
6001	The front cover sensor detected that the front cover was open.	2-40	6B04	---	
6002	---		6B0A	---	
6003	---		6C01	---	
6004	The eject sensor detected that the fuser cover was open.	2-40	6C02	---	
6007	---		6C03	---	
6101	The new toner sensor detected that no toner cartridge was set.	2-41	6C04	---	
6102	---		6D00	---	
6103	---		6E00	---	
6104	---		6F00	Detected that supply power is unstable. (less than 100 times)	2-44
6106	The new toner box sensor detected that no toner box was set.	2-41	7000	After the registration rear sensor detects paper pass, the eject sensor does not detect paper pass.	2-44
6200	Detected that the drum unit was not set by detecting the electrodes current.	2-41	7001	---	
6201	---		7002	---	
6202	---		7003	---	
6203	---		7004	---	
6204	---		7100	After the registration rear sensor detects the end of paper pass and the specified period of time has passed, the eject sensor continues to detect paper pass.	2-45
6208	---		7101	---	
6209	---		7102	---	
620A	---		7103	---	

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
7104	---		8100	---	
7105	---		8401	---	
7106	---		8402	---	
7200	When the paper is fed from the MP tray, after the MP paper empty sensor detects paper pass, the registration rear sensor does not detect paper pass after a set period of time.	2-45	8403	---	
7300	---		8501	---	
7301	---		8502	---	
7302	When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the T1 paper feed sensor detected paper pass.	2-46	8503	---	
7400	---		8504	---	
7401	---		8505	---	
7402	---		8506	---	
7500	---		8507	---	
7501	---		8508	---	
7502	---		8601	---	
7601	---		8602	---	
7602	---		8603	---	
7701	---		8604	---	
7702	---		8701	---	
7800	After the first side is printed in 2-sided printing mode, the registration front sensor does not detect paper pass after a set period of time.	2-46	8702	---	
7801	---		8703	---	
7802	---		8708	---	
7803	---		8709	---	
7804	---		870A	---	
7805	---		870B	---	
7900	---		870C	---	
7A01	---		870D	---	
7A02	---		870E	---	
7B01	---		870F	---	
7B02	---		8801	---	
7B03	---		8802	---	
7B04	---		8808	---	
7B05	---		8809	---	
7C00	---		880A	---	
7D00	---		8901	---	
7E00	---		8902	---	
7F00	---		8903	The back cover sensor detected the open state when 2-sided printing is started (before the registration of printing in the engine).	2-47
8000	---		8904	The back cover sensor detected the open state during 2-sided printing (after the registration of printing in the engine).	2-47

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
8A01	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	2-47	9203	---	
8A02	---		9204	---	
8B01	---		9205	---	
8C00	There is no paper set in the manual feed slot on the manual feed slot printing.	2-48	9206	---	
8D01	---		9301	When paper was fed from the MP tray, the MP paper empty sensor detected that no paper was in the MP tray.	2-49
8D02	---		9302	When paper was fed from the paper tray, the T1 paper feed sensor detected that no paper was in the paper tray.	2-49
8E01	---		9303	---	
8E02	---		9304	---	
8F01	---		9305	---	
8F02	---		9306	---	
8F03	---		9309	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	2-50
9001	The size of paper loaded in the MP tray and the one specified from the driver are not same when paper is fed from the MP tray.	2-48	930A	---	
9002	The size of paper loaded in the paper tray and the one specified from the driver are not same when paper is fed from the paper tray.	2-48	9501	---	
9003	---		9502	---	
9004	---		9503	---	
9005	---		9504	---	
9006	---		9505	---	
9102	---		9601	---	
9103	---		9608	---	
9104	---		9701	For 2-sided printing, paper size setting of the printer driver that was not supported by 2-sided printing was selected.	2-50
9105	---		9702	For printing by feeding paper from the paper tray, the size of paper specified from the driver set the size which was not supported by the paper tray.	2-50
9200	---		9703		
9201	When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.	2-48	9704		
9202	When printing from the paper tray, paper type setting in the machine does not match the setting in the driver.	2-48	9705		

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
9706			AE00	---	
9801			AF00	---	
9802			B000	---	
9803			B700	---	
9804			B800	---	
9901			B900	---	
9902			BB00	---	
9903			BC00	---	
9A01			BD00	---	
9A02			BF00	---	
9A03			C001	---	
9B01	---		C002	---	
9B02	---		C003	---	
9B03	---		C004	---	
9B04	---		C100	---	
9B05	---		C700	The memory is insufficient to expand the data of PC-Print.	2-51
9B06	---		C800	The memory used to store secure print data exceeded the memory size for secure print data.	2-51
9C01	---		C900	---	
9C02	---		CA00	---	
9C03	---		D100	---	
9C06	---		D200	---	
9C07	---		D800	---	
9D02	---		D900	---	
9D03	---		DA00	---	
9D04	---		DB00	---	
9D05	---		E000	An error occurred in the ROM check sum.	2-51
A000	---		E001	---	
A200	---		E002	---	
A300	---		E100	Program error	2-51
A400	---		E400	---	
A500	---		E500	An error occurred during access to the DRAM in the main PCB ASSY.	2-51
A600	---		E600	Write error in the EEPROM of the main PCB ASSY	2-51
A700	---		E701	---	
A800	---		E702	Read error in the flash ROM	2-51
A900	---		E900	An error occurred while initializing the NFC.	2-51
AA00	---		EC00	---	
AB00	---		ED00	---	
AC00	---		EE00	---	
AD00	---		F900	The spec code was not entered correctly.	2-52

Error Codes	Description	Refer to:	Error Codes	Description	Refer to:
FA01	---		FB0A	---	
FA02	---		FB0B	---	
FA03	---		FB0C	---	
FB01	---		FB0D	---	
FB02	---		FB0E	---	
FB03	---		FB0F	---	
FB04	---		FC01	---	
FB05	---		FC02	---	
FB06	---		FC03		
FB07	---		FC04		
FB08	---		FC05		
FB09	---				

3.2 Error Message

The error messages displayed on the LCD and LED of the machine and their description are shown in the table below.

3.2.1 LCD models

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
Cannot Detect	**Put the Drum Unit back in.**	New process sensor could not detect the new drum unit correctly.	4F05	2-39
	Put the Toner Cartridge back in.	Toner cartridge is not recognized by the cartridge sensor.	2400	2-37
Cartridge Error	**Put the Toner Cartridge back in.**	The new toner sensor of the toner cartridge could not detect a new cartridge properly.	4F01	2-39
		New toner box sensor could not detect the new toner box correctly.	5E00	2-39
Cooling Down	**Wait for a while**	The side thermistor detected a temperature higher than the specified value.	6801	2-43
Cover is Open	**Close the Front Cover.**	The front cover sensor detected that the front cover was open.	6001	2-40
	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	2-40
Drum !	**Slide the Green tab on Drum Unit.**	Electric discharge that may be caused by dirt on the corona wire of the drum unit was detected.	6A00	2-44
Drum End Soon	**-**	Number of the drum unit rotations reaches the upper limit soon.	4000	2-38
Ignore Data	**-**	Detected undecodable data during printing. Received undecodable PS data.	---	4.11.1
Jam 2-sided	**Pull out the 2-sided Tray at the back of the machine and remove the jammed paper.**	After the first side is printed in 2-sided printing mode, the registration front sensor does not detect paper pass after a set period of time.	7800	2-46

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
Jam Inside	**Open the Front Cover, pull out the Drum Unit completely and remove the jammed paper.**	After the registration rear sensor detects paper pass, the eject sensor does not detect paper pass.	7000	2-44
Jam MP Tray	**Remove the jammed paper from MP Tray and press Go.**	When the paper is fed from the MP tray, after the MP paper empty sensor detects paper pass, the registration rear sensor does not detect paper pass after a set period of time.	7200	2-45
Jam Rear	**Open the Back Cover and remove the jammed paper, then press Go.**	After the registration rear sensor detects the end of paper pass and the specified period of time has passed, the eject sensor continues to detect paper pass.	7100	2-45
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 T1 paper feed sensor detected paper pass.	7302	2-46
Machine Error F9	**-**	The spec code was not entered correctly.	F900	2-52
Manual Feed	**Load #S paper.**	There is no paper set in the manual feed slot on the manual feed slot printing.	8C00	2-48
Media Mismatch	**Reload correct paper in MP Tray, then press Go.**	When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.	9201	2-48
	Reload correct paper in Tray 1, then press Go.	When printing from the paper tray, paper type setting in the machine does not match the setting in the driver.	9202	2-48
No Cartridge	**Put the Toner Cartridge back in.**	Toner cartridge could not communicate with the cartridge sensor.	2500	2-37
No Drum Unit	**Open the Front Cover, then install the Drum Unit.**	Detected that the drum unit was not set by detecting the electrodes current.	6200	2-41
No Paper	**Reload paper in Tray.**	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	9309	2-50

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
No Paper MP	**Reload paper in MP Tray.**	When paper was fed from the MP tray, the MP paper empty sensor detected that no paper was in the MP tray.	9301	2-49
No Paper T1	**Reload paper in Tray 1.**	When paper was fed from the paper tray, the T1 paper feed sensor detected that no paper was in the paper tray.	9302	2-49
	-	When paper was fed from the paper tray, the engine status detected that no paper was in the paper tray.	---	4.2.1
No Toner	**Open the Front Cover, then install Toner Cartridge.**	The new toner sensor detected that no toner cartridge was set.	6101	2-41
		The new toner box sensor detected that no toner box was set.	6106	2-41
Out of Memory	**Press Go for 2 seconds.**	The memory is insufficient to expand the data of PC-Print.	C700	2-51
Paper Low T1	**-**	Detected that the paper is running out when the paper feed motor drive and T1 paper empty sensor turned ON.	---	4.11.3
Print Data Full	**Print Data is full. Press Cancel and delete the previously stored data.**	The memory used to store secure print data exceeded the memory size for secure print data.	C800	2-51
Print Unable 01	**Turn the power off and then back on again.**	ASIC error or motor driver error occurred.	0102	2-33
Print Unable 02	**Turn the power off and then back on again.**	Cannot detect the synchronized signal of the paper feed motor. The speed of the paper feed motor does not stabilize within the specified time.	0201	2-33
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)	0300	2-33
Print Unable 04	**Turn the power off and then back on again.**	BD sensor failure (second time)	0401	2-34

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
Print Unable 05	**Turn the power off and then back on again.**	Detected the fuser unit temperature error.	0501	2-35
			0502	2-35
			0503	2-35
			0504	2-35
			0505	2-35
			0506	2-35
			0508	2-35
			050A	2-35
			050B	2-35
			050C	2-35
Print Unable 09	**Turn the power off and then back on again.**	Detected irregular power supply for more than 100 times.	0900	2-36
Print Unable 0A	**Turn the power off and then back on again.**	Detected a fan failure.	0A02	2-36
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.	0B01	2-37
		An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	0B02	2-37
Print Unable 2E	**Turn the power off and then back on again.**	Could not communicate with the cartridge sensor on the machine side.	2E00	2-37
Print Unable 3A	**Turn the power off and then back on again.**	A communication error occurred between the controller and engine in main PCB.	3A00	2-37
Print Unable E0	**Turn the power off and then back on again.**	An error occurred in the ROM check sum.	E000	2-51
Print Unable E1	**Turn the power off and then back on again.**	Program error	E100	2-51
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.	E500	2-51
Print Unable E6	**Turn the power off and then back on again.**	Write error in the EEPROM of the main PCB ASSY	E600	2-51

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
Print Unable E7	**Turn the power off and then back on again.**	Read error in the flash ROM	E702	2-51
Print Unable E9	**Turn the power off and then back on again.**	An error occurred while initializing the NFC.	E900	2-51
Print Unable ZC	**Turn the power off and then back on again.**	Detected that supply power is unstable. (less than 100 times)	6F00	2-44
Replace Drum	**-**	Number of the drum unit rotations has reached the upper limit.	4200	2-38
Replace Toner	**-**	Dot count or develop roller counter of the toner cartridge in models without toner box is reaching the upper limit in the continuous printing mode.	4D01	2-38
	Open the Front Cover, then install Toner Cartridge	The amount of toner supplied of the toner box has reached the upper limit.	4C06	2-38
	Open the Front Cover, replace Toner Cartridge.	Dot count or develop roller counter of the toner cartridge in models without toner box has reached the upper limit in the toner stop mode.	4C01	2-38
Self-Diagnostic	**Turn the power off, then on again. Leave the machine for 15 min.**	Some fuser unit errors occurred at power-ON or upon recovery from sleep mode.	6901	2-43
	Will Automatically Restart within 15 minutes.	After the error was detected at the fuser unit, power was turned ON again and the error is being checked. (If power is turned OFF and ON after error code 6901 occurred, this code is displayed for about 15 minutes.)	6902	2-43
Size Error	**Specify the correct paper size for Tray 1.**	For printing by feeding paper from the paper tray, the size of paper specified from the driver set the size which was not supported by the paper tray.	9702	2-50

Error message		Description	Error codes	Refer to:
Initial display	Scroll			
Size Error DX	**Press Go for 2 seconds. Specify the correct paper and load the same size paper as the Printer driver setting.**	For 2-sided printing, paper size setting of the printer driver that was not supported by 2-sided printing was selected.	9701	2-50
	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	2-47
Sizemismatch	**Load #S paper in #T and press Go.**	The size of paper loaded in the MP tray and the one specified from the driver are not same when paper is fed from the MP tray.	9001	2-48
		The size of paper loaded in the paper tray and the one specified from the driver are not same when paper is fed from the paper tray.	9002	2-48
Toner Ended	**Open the Front Cover, replace Toner Cartridge.**	Toner cartridge in models without toner box has reached the upper limit in the continuous printing mode.	4E01	2-38
Toner Low	**-**	Dot counter of the toner cartridge or develop roller counter reaches the upper limit soon.	4B01	2-38
		The amount of toner supplied of the toner box reaches the upper limit soon.	4B06	2-38
Wrong Toner	**Open the Front Cover, then install Toner Cartridge**	Cartridge sensor detected that the incompatible toner cartridge was installed.	2200	2-37
2-sided Disabled	**Close the Back Cover of the machine.**	The back cover sensor detected the open state when 2-sided printing is started (before the registration of printing in the engine).	8903	2-47
		The back cover sensor detected the open state during 2-sided printing (after the registration of printing in the engine).	8904	2-47

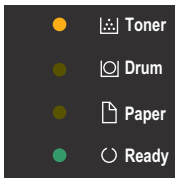
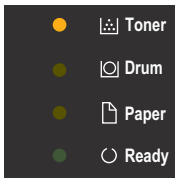
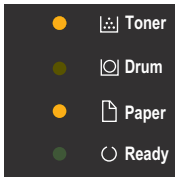
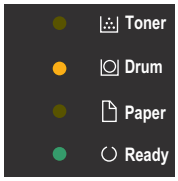
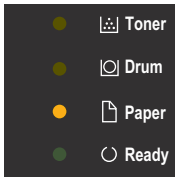
3.2.2 LED Display (LED Models)

■ 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] to reset the machine.

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

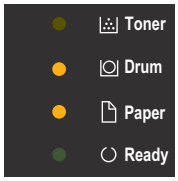
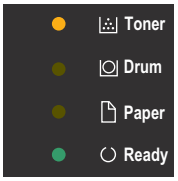
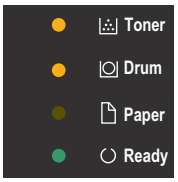
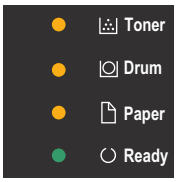
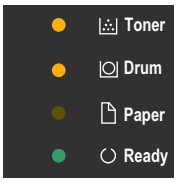
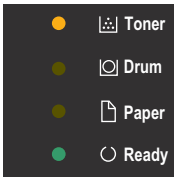
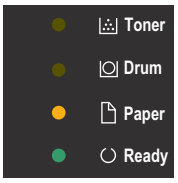
LED	Type of problem	Error codes	Refer to:
	The front cover sensor detected that the front cover was open.	6001	2-40
	The eject sensor detected that the fuser cover was open.	6004	2-40
	After the registration rear sensor detects paper pass, the eject sensor does not detect paper pass.	7000	2-44
	After the registration rear sensor detects the end of paper pass and the specified period of time has passed, the eject sensor continues to detect paper pass.	7100	2-45
	When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the T1 paper feed sensor detected paper pass.	7302	2-46
	After the first side is printed in 2-sided printing mode, the registration front sensor does not detect paper pass after a set period of time.	7800	2-46
	The back cover sensor detected the open state when 2-sided printing is started (before the registration of printing in the engine).	8903	2-47
	The back cover sensor detected the open state during 2-sided printing (after the registration of printing in the engine).	8904	2-47
	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	8A01	2-47
	The size of paper loaded in the MP tray and the one specified from the driver are not same when paper is fed from the MP tray.	9001	2-48
	The size of paper loaded in the paper tray and the one specified from the driver are not same when paper is fed from the paper tray.	9002	2-48
	When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.	9201	2-48
	When printing from the paper tray, paper type setting in the machine does not match the setting in the driver.	9202	2-48
	For 2-sided printing, paper size setting of the printer driver that was not supported by 2-sided printing was selected.	9701	2-50
	For printing by feeding paper from the paper tray, the size of paper specified from the driver set the size which was not supported by the paper tray.	9702	2-50
	The memory is insufficient to expand the data of PC-Print.	C700	2-51

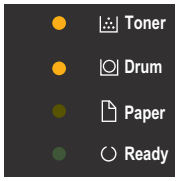
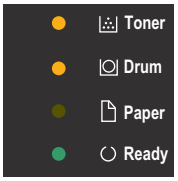
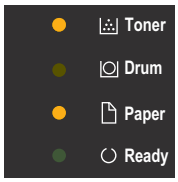
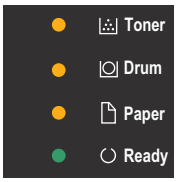
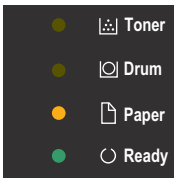
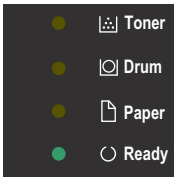
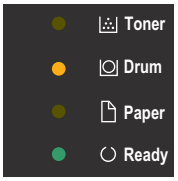
LED	Type of problem	Error codes	Refer to:
	Dot counter of the toner cartridge or develop roller counter reaches the upper limit soon.	4B01	2-38
	The amount of toner supplied of the toner box reaches the upper limit soon.	4B06	2-38
	Dot count or develop roller counter of the toner cartridge in models without toner box is reaching the upper limit in the continuous printing mode.	4D01	2-38
	The amount of toner supplied of the toner box has reached the upper limit.	4C06	2-38
	Dot count or develop roller counter of the toner cartridge in models without toner box has reached the upper limit in the toner stop mode.	4C01	2-38
	Toner cartridge in models without toner box has reached the upper limit in the continuous printing mode.	4E01	2-38
	Electric discharge that may be caused by dirt on the corona wire of the drum unit was detected.	6A00	2-44
	Number of the drum unit rotations reaches the upper limit soon.	4000	2-38
	Number of the drum unit rotations has reached the upper limit.	4200	2-38
	There is no paper set in the manual feed slot on the manual feed slot printing.	8C00	2-48
	When paper was fed from the paper tray, the T1 paper feed sensor detected that no paper was in the paper tray.	9302	2-49
	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	9309	2-50

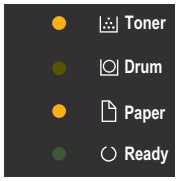
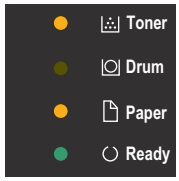
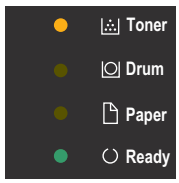
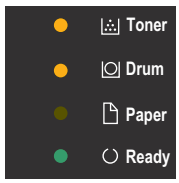
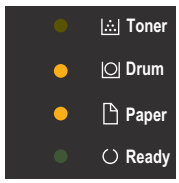
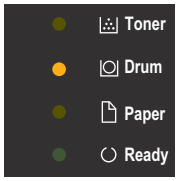
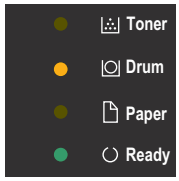
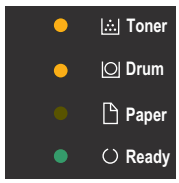
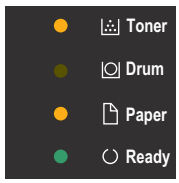
LED	Type of problem	Error codes	Refer to:
	Cartridge sensor detected that the incompatible toner cartridge was installed.	2200	2-37
	Toner cartridge is not recognized by the cartridge sensor.	2400	2-37
	Toner cartridge could not communicate with the cartridge sensor.	2500	2-37
	The new toner sensor of the toner cartridge could not detect a new cartridge properly.	4F01	2-39
	New process sensor could not detect the new drum unit correctly.	4F05	2-39
	New toner box sensor could not detect the new toner box correctly.	5E00	2-39
	The new toner sensor detected that no toner cartridge was set.	6101	2-41
	An error occurred in the ROM check sum.	E000	2-51
	Program error	E100	2-51
	An error occurred during access to the DRAM in the main PCB ASSY.	E500	2-51
	Read error in the flash ROM	E702	2-51
	The side thermistor detected a temperature higher than the specified value.	6801	2-43

■ LED display when service call occurs

When a service call occurs, the four LEDs flash. Pressing the [Go] allows you to identify the location of the problem based on the combination of the LED status: lit, flashing or unlit. Pressing the [Go] 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 paper feed motor. The speed of the paper feed motor does not stabilize within the specified time.	0201	2-33
			An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	0B02	2-37
			An error occurred in the high-voltage power supply PCB ASSY while operating.	0B01	2-37
			Cannot detect the lock signal of the polygon motor for the laser unit. (second time)	0300	2-33
			BD sensor failure (second time)	0401	2-34
			Write error in the EEPROM of the main PCB ASSY	E600	2-51
			Detected a fan failure.	0A02	2-36

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			Detected irregular power supply for more than 100 times.	0900	2-36
			Detected that supply power is unstable. (less than 100 times)	6F00	2-44
			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	2-35
			The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.	050A	2-35
			Some fuser unit errors occurred at power-ON or upon recovery from sleep mode.	6901	2-43
			After the error was detected at the fuser unit, power was turned ON again and the error is being checked. (If power is turned OFF and ON after error code 6901 occurred, this code is displayed for about 15 minutes.)	6902	2-43
			After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	0504	2-35
			The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	0505	2-35
			The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	0506	2-35

LED	Press [Go] once	Press [Go] twice	Type of problem	Error codes	Refer to:
			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	2-35
			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	2-35
			The center thermistor of the fuser unit has not reached the specified temperature within the specified time.	0501	2-35
			The center thermistor of the fuser unit detected a temperature higher than the specified value.	0503	2-35
			ASIC error or motor driver error occurred.	0102	2-33
			Could not communicate with the cartridge sensor on the machine side.	2E00	2-37
			A communication error occurred between the controller and engine in main PCB.	3A00	2-37

4. TROUBLESHOOTING

4.1 Error Cause and Remedy

■ Error code 0102

ASIC error or motor driver error occurred.

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

■ Error code 0201

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

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

■ Error code 0300

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

Error code 0305

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

Step	Cause	Remedy
1	Connection failure of the polygon motor harness	Reconnect the polygon motor harness.
2	Laser unit failure	Replace the laser unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0401

BD sensor failure (second time)

Error code 0405

BD sensor failure (first time)

<User Check>

- There is a possibility of condensation. Leave the front and back cover open for at least 30 minutes when the power is ON. Close those covers and turn the power switch OFF and then back ON again.

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

■ Error code 0501

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

Error code 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.

Error code 0503

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

Error code 0504

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

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

Error code 0506

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

Error code 0508

Temperature of the end part didn't rise by 1 °C when the fuser unit heater was turned ON.

Error code 050A

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

Error code 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.

Error code 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.

<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 heater harness of the fuser unit	Reconnect the heater harness of the fuser unit.
3	Connection failure of the eject sensor PCB harness	Reconnect the eject sensor PCB harness.
4	Connection failure of the low-voltage power supply PCB harness	Reconnect the low-voltage power supply PCB 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 0900

Detected irregular power supply for more than 100 times.

Step	Cause	Remedy
1	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY. Refer to "1.3.21 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 after the replacement.
2	Main PCB failure	Replace the main PCB ASSY.

Note:
The irregular power supply detection error (Error code 0900) of the low-voltage power supply PCB 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 might occur again even if the low-voltage power supply PCB ASSY is replaced. For this reason, be sure to ask the user to rearrange the installation environment.

■ Error code 0A02

Detected a fan failure.

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

■ Error code 0B01

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

Error code 0B02

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

<User Check>

- Slide the green tab of the drum unit to left and right for two to three times to clean the corona wire.
- There is a possibility of condensation. Leave the front and back cover open for at least 30 minutes when the power is ON. Close those covers and turn the power switch OFF and then back ON again.

Step	Cause	Remedy
1	Dirt on the machine, the drum unit, the toner cartridge and the toner box terminal	Clean the machine, the drum unit, the toner cartridge and the toner box terminal. (Refer to Fig. 2-8 (P2-42), Fig. 2-9 (P2-42), Fig. 2-12 (P2-64) and Fig. 2-13 (P2-65).)
2	Connection failure of the high-voltage power supply PCB harness	Reconnect the high-voltage power supply PCB harness.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 2200

Cartridge sensor detected that the incompatible toner cartridge was installed.

Error code 2400

Toner cartridge is not recognized by the cartridge sensor.

Error code 2500

Toner cartridge could not communicate with the cartridge sensor.

Error code 2E00

Could not communicate with the cartridge sensor on the machine side.

<User Check>

- Replace with a toner cartridge which has a correspondent capacity.

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

■ Error code 3A00

A communication error occurred between the controller and engine in main PCB.

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

■ Error code 4000

Number of the drum unit rotations reaches the upper limit soon.

Error code 4200

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

<User Check>

- Prepare a new drum unit.

Step	Cause	Remedy
1	If the error display is not cleared after the drum unit in the toner box model has been replaced with a new one.	Refer to "2.3 Resetting Drum Counter" in Chapter 5 and perform the manual new drum detection.
2	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

Dot counter of the toner cartridge or develop roller counter reaches the upper limit soon.

Error code 4B06

The amount of toner supplied of the toner box reaches the upper limit soon.

<User Check>

- Prepare a new toner cartridge.

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

■ Error code 4C01

Dot count or develop roller counter of the toner cartridge in models without toner box has reached the upper limit in the toner stop mode.

Error code 4C06

The amount of toner supplied of the toner box has reached the upper limit.

Error code 4D01

Dot count or develop roller counter of the toner cartridge in models without toner box is reaching the upper limit in the continuous printing mode.

Error code 4E01

Toner cartridge in models without toner box has reached the upper limit in the continuous printing mode.

<User Check>

- Replace the toner cartridge whose counter reached the upper limit.

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

■ Error code 4F01

The new toner sensor of the toner cartridge could not detect a new cartridge properly.

<User Check>

- Replace the toner cartridge with a new toner cartridge 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 harness	Reconnect the new toner sensor PCB harness.
2	New toner actuator coming off or caught in some sections of the machine	Reattach the new toner actuator.
3	New toner sensor failure	Replace the new toner sensor PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 4F05

New process sensor could not detect the new drum unit correctly.

<User Check>

- Replace the drum unit with a new drum unit again.
- If the machine is on the uneven surface, place it on a level surface.

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.

■ Error code 5E00

New toner box sensor could not detect the new toner box correctly.

<User Check>

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

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

■ Error code 6001

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

<User Check>

• Close the front cover.

Step	Cause	Remedy
1	Connection failure of the front cover sensor harness	Reconnect the front cover sensor harness.
2	Front cover failure	Replace the front cover.
3	Front cover sensor failure	Replace the front cover sensor.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6004

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 some 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 harness	Reconnect the eject sensor PCB harness.
4	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6101

The new toner sensor detected that no toner cartridge was set.

<User Check>

- Set the toner cartridge correctly.

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.

■ Error code 6106

The new toner box sensor detected that no toner box was set.

<User Check>

- Set the toner box correctly.

Step	Cause	Remedy
1	New toner box actuator coming off or caught in some sections of the machine	Reattach the new toner box actuator.
2	New toner box sensor failure	Replace the high-voltage power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6200

Detected that the drum unit was not set by detecting the electrodes current.

<User Check>

- Set the drum unit correctly.

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. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
2	Dirt on the high-voltage power supply PCB terminal	Clean the high-voltage power supply PCB terminal.
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 main body

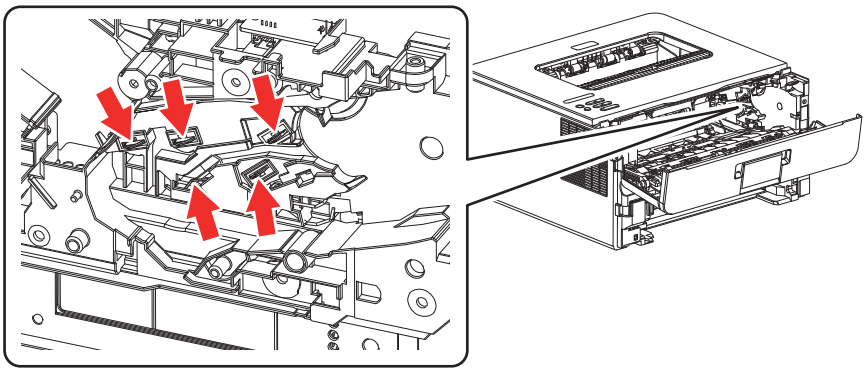


Fig. 2-8

■ Electrodes location of the drum unit and process unit

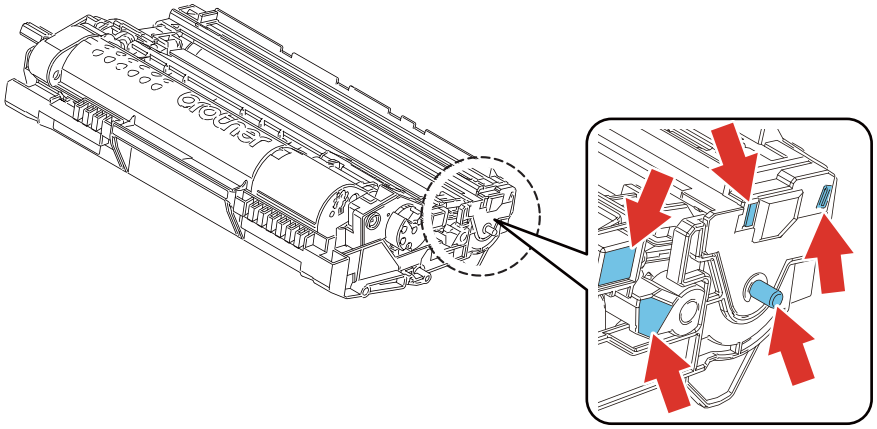


Fig. 2-9

■ Error code 6801

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

<User Check>

- Lower the room temperature.
- Keep the machine away from heating appliances.
- Check that the fan is not clogged.

Step	Cause	Remedy
1	Connection failure of the side thermistor harness	Reconnect the side thermistor harness.
2	Fuser unit thermistor failure	Replace the fuser unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6901

Some fuser unit errors occurred at power-ON or upon recovery from sleep mode.

Error code 6902

After the error was detected at the fuser unit, power was turned ON again and the error is being checked. (If power is turned OFF and ON after error code 6901 occurred, this code is displayed for about 15 minutes.)

Step	Cause	Remedy
1	Connection failure of a fuser unit harness	Reconnect the fuser unit harness.
2	Connection failure of the eject sensor PCB harness	Reconnect the eject sensor PCB harness.
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 function code 99.

■ Error code 6A00

Electric discharge that may be caused by dirt on the corona wire of the drum unit was detected.

<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 electrode of the drum unit. (Refer to Fig. 2-9 (P2-42).)
- Replace the drum unit.

Step	Cause	Remedy
1	Dirt on the electrodes of the machine	Clean the electrodes of the machine. (Refer to Fig. 2-8 (P2-42).)
2	Dirt on the high-voltage power supply PCB terminal	Clean the high-voltage power supply PCB terminal.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6F00

Detected that supply power is unstable. (less than 100 times)

<User Check>

- Turn the power switch OFF and then back ON again.
- Use a noise filter on the power supply.

Step	Cause	Remedy
1	The power supply waveform is incorrect	Install a voltage stabilizer in the power supply part.

■ Error code 7000

After the registration rear sensor detects paper pass, the eject sensor does not detect paper pass.

<User Check>

- Remove the jammed paper.

Step	Cause	Remedy
1	Foreign object inside the machine	Remove the foreign object.
2	Eject actuator coming off or caught in some sections of the machine	Reattach the eject actuator.
3	Fuser cover attachment failure	Reattach the fuser cover.
4	Connection failure of the eject sensor PCB harness	Reconnect the eject sensor PCB harness.
5	Damaged fuser drive gear 64R/ 36R	Replace the fuser drive gear 64R/36R.
6	Damaged gears in the paper feed drive system	Replace the frame L unit.
7	Eject sensor failure	Replace the eject sensor PCB ASSY.
8	Fuser unit failure	Replace the fuser unit.
9	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7100

After the registration rear sensor detects the end of paper pass and the specified period of time has passed, the eject sensor continues to detect 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 some sections of the machine	Reattach the eject actuator.
3	Fuser cover attachment failure	Reattach the fuser cover.
4	Back cover attachment failure	Reattach the back cover.
5	Eject sensor failure	Replace the eject sensor PCB ASSY.
6	Back cover failure	Replace the back cover.
7	Damaged fuser drive gear 64R/36R	Replace the fuser drive gear 64R/36R.
8	Damaged gears in the paper feed drive system	Replace the frame L unit.
9	Fuser unit failure	Replace the fuser unit.
10	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7200

When the paper is fed from the MP tray, after the MP paper empty sensor detects paper pass, the registration rear sensor does not detect paper pass after a set period of time.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the MP tray paper guide.
- Check if the papers loaded in the MP tray is not held down with your hand.
- Check if the double feed occurs in the MP tray.
- Close the front cover correctly.

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	Registration rear actuator coming off or caught in some sections of the machine	Reattach the registration rear actuator.
3	Connection failure of the registration front/rear sensor PCB harness	Reconnect the registration front/rear sensor PCB harness.
4	Registration rear sensor failure	Replace the actuator holder ASSY.
5	Damaged gears in the paper feed drive system	Replace the frame L unit.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7302

When printing from the paper tray, the registration front sensor does not detect paper pass within the specified time after the T1 paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper guide of paper tray.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	Registration front actuator attachment failure	Reattach the registration front actuator.
3	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
4	Registration front/rear sensor PCB failure	Replace the actuator holder ASSY.
5	Damaged gears in the paper feed drive system	Replace the frame L unit.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7800

After the first side is printed in 2-sided printing mode, the registration front sensor does not detect paper pass after a set period of time.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine or duplex tray	Remove the foreign object.
2	Gears in the paper feed system coming off	Reattach the paper feed gear.
3	Duplex tray failure	Replace the duplex tray.
4	Damaged gears in the paper feed drive system	Replace the frame L unit.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8903

The back cover sensor detected the open state when 2-sided printing is started (before the registration of printing in the engine).

Error code 8904

The back cover sensor detected the open state during 2-sided printing (after the registration of printing in the engine).

<User Check>

- Close the back cover correctly.
- Check that the duplex tray is set correctly.

Step	Cause	Remedy
1	Duplex tray is not set correctly	Reattach the duplex tray correctly.
2	Back cover sensor attachment failure	Reattach the back cover sensor.
3	Breakage of boss that presses the back cover sensor	Replace the back cover.
4	Guide which pushes the back cover sensor of the duplex tray is faulty	Replace the duplex tray.
5	Back cover sensor failure	Replace the eject sensor PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8A01

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 actuator holder ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8C00

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

<User Check>

• Set the 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 front/rear sensor PCB harness	Reconnect the registration front/rear sensor PCB harness.
3	Registration front sensor failure	Replace the actuator holder ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9001

The size of paper loaded in the MP tray and the one specified from the driver are not same when paper is fed from the MP tray.

Error code 9002

The size of paper loaded in the paper tray and the one specified from the driver are not same when paper is fed from the paper tray.

<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 actuator holder ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9201

When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.

Error code 9202

When printing from the paper tray, paper type setting in the machine does not match the setting in the driver.

<User Check>

• Use the same paper type setting for the machine and driver.

Step	Cause	Remedy
1	Malfunction of the main PCB	Install the latest main firmware.
2	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9301

When paper was fed from the MP tray, the MP paper empty sensor detected that no paper was in the MP tray.

<User Check>

- Load paper to the MP tray.

Step	Cause	Remedy
1	MP paper empty actuator caught in some sections of the machine	Reattach the MP paper empty actuator.
2	Connection failure of the MP paper empty sensor PCB harness	Reconnect the MP paper empty sensor PCB harness.
3	Connection failure of the MP relay PCB harness	Reconnect the MP relay PCB harness.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9302

When paper was fed from the paper tray, the T1 paper feed sensor detected that no paper was in the paper tray.

<User Check>

- Set paper in the paper tray.

Step	Cause	Remedy
1	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
2	Connection failure of the T1 clutch harness	Reconnect the T1 clutch harness.
3	Connection failure of the paper feed motor flat cable	Reconnect the paper feed motor flat cable.
4	T1 paper feed actuator caught in some sections of the machine (non paper empty sensor models only)	Reattach the T1 paper feed actuator.
5	T1 paper empty actuator caught in some sections of the machine (paper empty sensor models only)	Reattach the T1 paper empty actuator.
6	Abrasion of the PF kit 1	Replace the PF kit 1.
7	Paper feed motor flat cable failure	Replace the paper feed motor flat cable.
8	T1 clutch failure	Replace the T1 clutch.
9	T1 paper feed sensor PCB failure (non paper empty sensor models only)	Replace the T1 paper feed sensor PCB ASSY.
10	Paper feed motor failure	Replace the paper feed motor.
11	Damaged gears in the paper feed drive system	Replace the frame L unit.
12	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9309

Detected that there was no paper set in all trays when TrayAuto was selected for printing.

<User Check>

- Set paper in the paper tray.

Step	Cause	Remedy
1	Connection failure of the MP paper empty sensor PCB harness	Reconnect the MP paper empty sensor PCB harness.
2	Connection failure of the T1 paper feed sensor harness (non paper empty sensor models only)	Reconnect the T1 paper feed sensor harness.
3	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
4	Connection failure of the T1 clutch harness	Reconnect the T1 clutch harness.
5	T1/MP paper empty actuator caught in some sections of the machine	Reattach the T1/MP paper empty actuator.
6	T1 paper feed actuator caught in some sections of the machine (non paper empty sensor models only)	Reattach the T1 paper feed actuator.
7	Abrasion of the PF kit 1	Replace the PF kit 1.
8	T1 paper empty/paper feed sensor PCB failure (paper empty sensor models only)	Replace the T1 paper empty/paper feed sensor PCB ASSY.
9	Paper feed motor failure	Replace the paper feed motor.
10	Damaged gears in the paper feed drive system	Replace the frame L unit.
11	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9701

For 2-sided printing, paper size setting of the printer driver that was not supported by 2-sided printing was selected.

Error code 9702

For printing by feeding paper from the paper tray, the size of paper specified from the driver set the size which was not supported by the paper tray.

<User Check>

- Select the specified paper size 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

The memory is insufficient to expand the data of PC-Print.

Error code C800

The memory used to store secure print data exceeded the memory size for secure 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

An error occurred in the ROM check sum.

Error code E100

Program error

<User Check>

- Install the latest main firmware.

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

■ Error code E500

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

Error code E600

Write error in the EEPROM of the main PCB ASSY

Error code E702

Read error in the flash ROM

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

■ Error code E900

An error occurred while initializing the NFC.

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

■ Error code F900

The spec code was not entered correctly.

Step	Cause	Remedy
1	The power was turned OFF while function code 74 was running.	Reenter the spec code. (Refer to “1.3.16 Setting by spec (Function code 74)” in Chapter 5.)
2	Main PCB failure	Replace the main PCB ASSY.

Memo:
Press the [▲] or the [▼] under error code F900 display to select the maintenance mode.

4.2 Troubleshooting for Paper Feeding Problems

Problems related to paper feeding are end user recoverable if following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

4.2.1 No paper feeding 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 163 g/m^2.
- Check that the MP tray is not set as the paper tray.
- Flip through the paper and reset it in the paper tray.
- Clean the paper pick up roller.

Step	Cause	Remedy
1	Dirt on the paper dust cleaning roller of the paper tray	Refer to the figure below to clean the paper dust cleaning roller and inside of the paper dust cleaning roller cover.
2	T1 roller holder ASSY attachment failure	Reattach the T1 roller holder ASSY correctly.
3	Connection failure of the paper feed motor flat cable	Reconnect the paper feed motor flat cable.
4	Connection failure of the T1 paper feed sensor harness (non paper empty sensor models only)	Reconnect the T1 paper feed sensor harness.
5	Connection failure of the T1 clutch harness	Reconnect the T1 clutch harness.
6	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
7	T1 paper empty actuator coming off	Reattach the T1 paper empty actuator.
8	Abrasion of the paper pick up roller	Replace the PF kit 1.
9	T1 paper feed sensor failure (non paper empty sensor models only)	Replace the T1 paper feed sensor PCB ASSY.
10	T1 paper empty sensor failure (paper empty sensor models only)	Replace the T1 paper empty/paper feed sensor PCB ASSY.
11	Paper feed motor flat cable failure	Replace the paper feed motor flat cable.
12	Paper feed motor failure	Replace the paper feed motor.
13	Damaged gears in the paper feed drive system	Replace the frame L unit.
14	Damaged fuser unit	Replace the fuser unit.
15	Main PCB failure	Replace the main PCB ASSY.

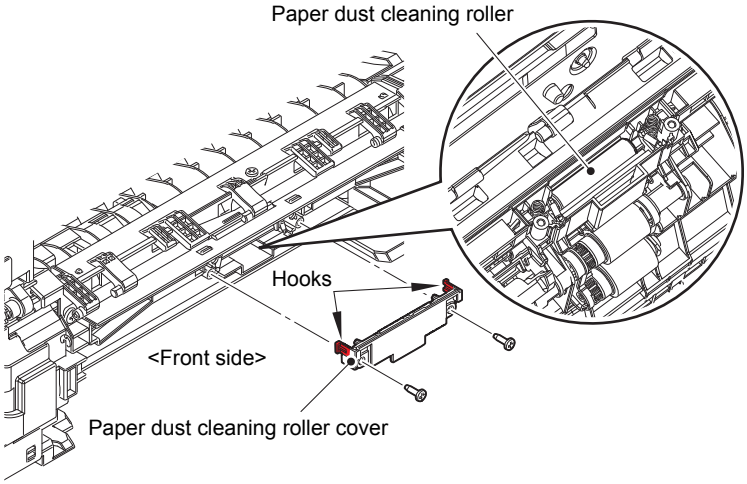


Fig. 2-10

4.2.2 No paper feeding from MP tray

<User Check>

- Check that the paper is set in the MP tray deeply.
- Check that too much paper is not loaded in the MP tray.
- Check if the machine is used with the MP tray support and MP flap are in closed state.
- Check that the thickness of the paper is 60 to 230 g/m^2.
- Check that the paper tray is not set as the paper tray by the printer driver.
- Flip through the paper and reset it in the MP tray.
- Clean the MP paper pick-up roller.
- Check whether the paper tray is closed correctly.

Step	Cause	Remedy
1	MP roller holder ASSY attachment failure	Reattach the MP roller holder ASSY correctly.
2	Connection failure of the paper feed motor flat cable	Reconnect the paper feed motor flat cable.
3	Connection failure of the MP paper empty/registration front sensor harness	Reconnect the MP paper empty/ registration front sensor harness.
4	Paper feed motor flat cable failure	Replace the paper feed motor flat cable.
5	Paper feed motor failure	Replace the paper feed motor.
6	Damaged gears in the paper feed drive system	Replace the frame L unit.
7	Damaged fuser unit	Replace the fuser unit.
8	Main PCB failure	Replace the main PCB ASSY.

4.2.3 No paper feeding 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 230 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	T1 roller holder ASSY attachment failure	Reattach the T1 roller holder ASSY.
2	Connection failure of the paper feed motor flat cable	Reconnect the paper feed motor flat cable.
3	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
4	Abrasion of the paper pick up roller	Replace the PF kit 1.
5	Paper feed motor flat cable failure	Replace the paper feed motor flat cable.
6	Registration front sensor failure	Replace the actuator holder ASSY.
7	Paper feed motor failure	Replace the paper feed motor.
8	Damaged gears in the paper feed drive system	Replace the frame L unit.
9	Damaged fuser unit	Replace the fuser unit.
10	Main PCB failure	Replace the main PCB ASSY.

4.2.4 Multiple sheets of paper are fed

<User Check>

- Check that there is not too much paper set in each paper tray.
- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each paper tray or rotate the paper 180°.
- Check that the thickness of the paper is 60 to 163 g/m^2 for the paper tray, and 60 to 230 g/m^2 for the MP tray.
- Flip through the paper and reset it in the paper tray.

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

4.2.5 Paper becomes wrinkled

<User Check>

- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each paper tray or rotate the paper 180°.
- Adjust each paper guide according to each paper size.
- Check that the thickness of the paper is 60 to 163 g/m^2 for the paper tray, and 60 to 230 g/m^2 for the MP tray.
- 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.
- Check that the paper size is matched to the setting for the duplex printer.

Step	Cause	Remedy
1	Paper eject ASSY failure	Replace the paper eject ASSY.
2	Fuser unit failure	Replace the fuser unit.

4.2.6 Paper is fed at an angle

<User Check>

- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each paper tray or rotate the paper 180°.
- Adjust each paper guide according to each paper size.
- Check that the thickness of the paper is 60 to 163 g/m^2 for the paper tray, and 60 to 230 g/m^2 for the MP tray.
- Check that there is not too much paper set in the paper tray.
- Check that the type of paper is appropriate.
- Clean each paper pick up roller.
- Check that the green envelope lever is not lowered on only one side.

Step	Cause	Remedy
1	One-side abrasion of the paper pick up rollers	Replace the PF kit.
2	Paper feed unit failure	Replace the paper feed unit.

4.2.7 Paper curls

<User Check>

- Change the driver setting to be matched with the size of the paper set in the paper tray.
- Select “Reduce Paper Curl” in the driver.
- Check that the paper is set in each paper tray correctly.
- Open the back cover and try printing with straight paper ejection mode.
- Check that the paper is not damp.

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

4.2.8 Unable to perform 2-sided printing

<User Check>

- Close the back cover completely.
- Close the paper tray completely.
- 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	Eject sensor failure	Replace the eject sensor PCB ASSY.
4	Duplex tray failure	Replace the duplex tray.
5	Damaged gears in the ejecting system	Replace the frame L unit.
6	Main PCB failure	Replace the main PCB ASSY.

4.2.9 Paper jam

■ Paper jam at 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 each paper guide according to the paper size.
- Check that there is not too much paper set.
- Check that the thickness of the paper is 60 to 163 g/m^2.
- Flip through the paper and reset it in the paper tray.

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	Paper feed actuator coming off	Reattach the paper feed actuator.
4	Registration front actuator coming off	Reattach the registration front actuator.
5	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
6	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
7	Connection failure of the T1 paper feed sensor harness (non paper empty sensor models only)	Reconnect the T1 paper feed sensor harness.
8	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
9	Registration front sensor failure	Replace the actuator holder ASSY.
10	T1 paper feed sensor failure (non paper empty sensor models only)	Replace the T1 paper feed sensor PCB ASSY.
11	T1 paper empty sensor failure (paper empty sensor models only)	Replace the T1 paper empty/paper feed sensor PCB ASSY.
12	Paper feed motor failure	Replace the paper feed motor.
13	Damaged gears in the paper feed drive system	Replace the frame L unit.
14	Damaged fuser unit	Replace the fuser unit.
15	Main PCB failure	Replace the main PCB ASSY.

■ Paper jam at the MP tray

<User Check>

- Check that the paper is set in the MP tray correctly.
- Flip over the paper in the MP tray or rotate the paper 180°.
- Adjust each paper guide according to each paper size.
- Check that there is not too much paper set.
- Check that the thickness of the paper is 60 to 230 g/m^2.
- Flip through the paper and reset it in the MP tray.

Step	Cause	Remedy
1	Foreign object around the MP tray	Remove the foreign object.
2	Connection failure of the MP paper empty/registration front sensor harness	Reconnect the MP paper empty/ registration front sensor harness.
3	MP registration front actuator coming off	Reattach the MP registration front actuator.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	Paper feed motor failure	Replace the paper feed motor.
6	Damaged gears in the MP paper feed system	Replace the frame L unit.
7	Damaged fuser unit	Replace the fuser unit.
8	Main PCB failure	Replace the main PCB ASSY.

■ Paper jam at 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 230 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 harness	Reconnect the registration front/rear sensor harness.
3	T1 registration front actuator coming off	Reattach the T1 registration front actuator.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	Registration front/rear sensor failure	Replace the actuator holder ASSY.
6	Paper feed motor failure	Replace the paper feed motor.
7	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
8	Damaged gears in the paper feed drive system	Replace the frame L unit.
9	Fuser unit failure	Replace the fuser unit.
10	Main PCB failure	Replace the main PCB ASSY.

■ Paper jam at the paper feeding section at the center of the machine

<User Check>

- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each 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 each paper tray.
- Check that the thickness of the paper is 60 to 163 g/m^2 for the paper tray, and 60 to 230 g/m^2 for the MP tray.
- 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 harness	Reconnect the eject sensor harness.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Damaged fuser drive gear	Replace the fuser drive gear.
6	Eject sensor failure	Replace the eject sensor PCB ASSY.
7	Registration rear sensor failure	Replace the actuator holder ASSY.
8	Paper feed motor failure	Replace the paper feed motor.
9	Damaged gears in the paper feed drive system	Replace the frame L unit.
10	Damaged fuser unit	Replace the fuser unit.
11	Main PCB failure	Replace the main PCB ASSY.

■ Paper jam at the eject section

<User Check>

- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each 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 each paper tray.
- Check that the thickness of the paper is 60 to 163 g/m^2 for the paper tray, and 60 to 230 g/m^2 for the MP tray.
- Flip through the paper and reset it in the paper tray.

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	Eject actuator coming off	Reattach the eject actuator.
3	Connection failure of the eject sensor harness	Reconnect the eject sensor harness.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Eject sensor failure	Replace the eject sensor PCB ASSY.
6	Paper feed motor failure	Replace the paper feed motor.
7	Damaged gears in the paper feed drive system	Replace the frame L unit.
8	Damaged fuser unit	Replace the fuser unit.
9	Main PCB failure	Replace the main PCB ASSY.

■ Paper jam at the duplex tray

<User Check>

- Flip over the paper in each paper tray or rotate the paper 180°.
- Check that the thickness of the paper is 60 to 105 g/m^2 for the duplex tray.
- Flip through the paper and reset it in the paper tray.
- Use paper specified by the manufacturer.
- Check that the paper size is matched to the setting for the duplex printer.

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

4.3 Troubleshooting for Image Defects

4.3.1 Image defect examples

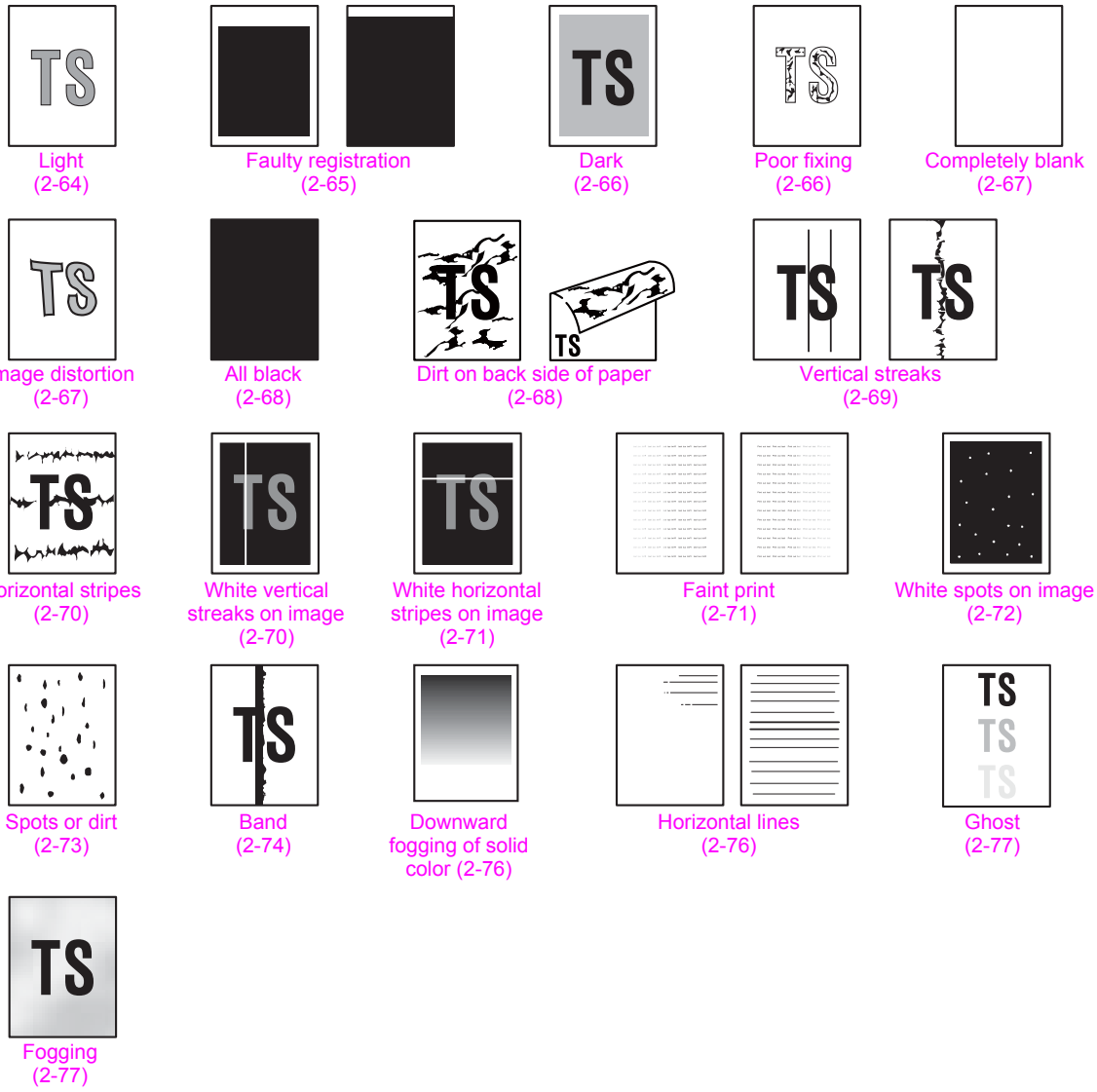


Fig. 2-11

4.3.2 Troubleshooting image defect

Image defect related problems are end user recoverable if following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

■ Light

TS

<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 if paper is not damp.
- Use specified paper.

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. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
2	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge, process unit and those of the machine. (Refer to Fig. 2-8 (P2-42), below and Fig. 2-13 (P2-65).)
3	Dirt on the electrodes of the high-voltage power supply PCB and those of the machine	Clean the electrodes of the high-voltage power supply PCB and those of the machine.
4	Fuser unit failure	Replace the fuser unit.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Electrodes location of the toner cartridge

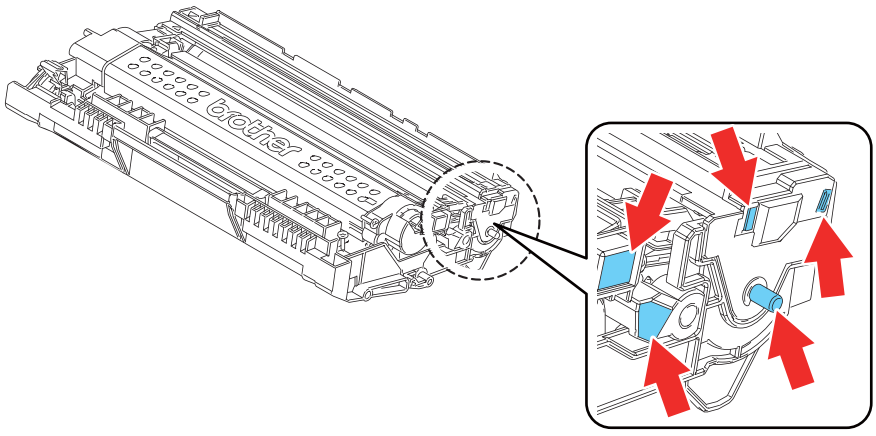


Fig. 2-12

■ Electrodes location of the process unit

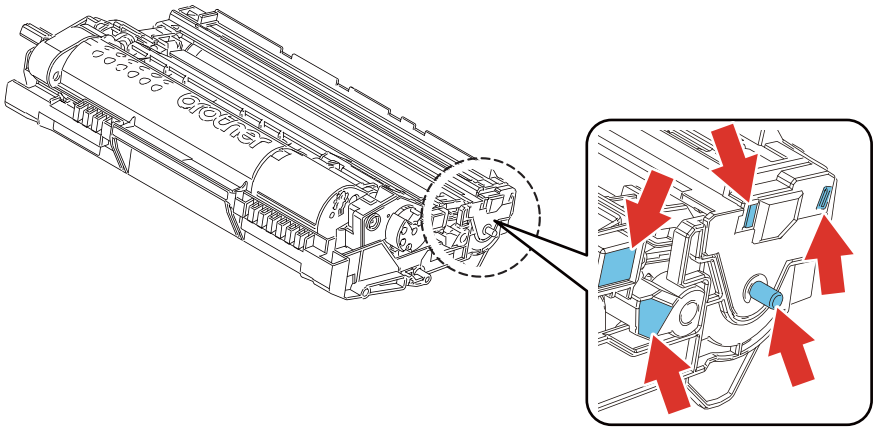


Fig. 2-13

■ Faulty registration

<User Check>

- Check whether appropriate paper type is selected on the driver.
- Install the latest main firmware.

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.

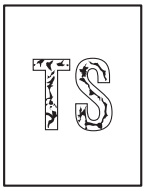
■ Dark

<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.
- Execute density adjustment from the control panel.
- 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. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
2	Wrong adjusted value of the laser unit entered	Refer to "3.1 Entering Adjusted Value of Laser Unit" in Chapter 4, and enter the adjusted value of the laser unit correctly.
3	Dirt on the electrodes of the high-voltage power supply PCB	Clean the electrodes of the high-voltage power supply PCB.
4	Fuser unit failure	Replace the fuser unit.
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.

■ Poor fixing

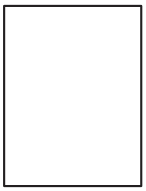


<User Check>

- 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 drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
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. 2-8 (P2-42) and Fig. 2-12 (P2-64).)
3	Fuser unit failure	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
5	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
6	Laser unit failure	Replace the laser unit.
7	Main PCB failure	Replace the main PCB ASSY.

■ Completely blank

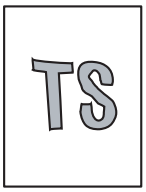


<User Check>

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

Step	Cause	Remedy
1	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
2	Laser unit attachment failure	Reattach the laser unit.
3	Laser unit flat cable failure	Replace the laser unit flat cable.
4	Dirt on the electrodes of the high-voltage power supply PCB and those of the machine	Clean the electrodes of the high-voltage power supply PCB and those of the machine.
5	Laser unit failure	Replace the laser unit.
6	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.

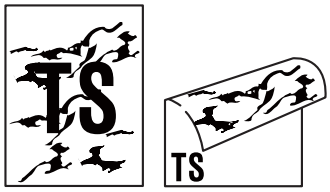
■ All black

<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. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
2	Laser unit flat cable failure	Replace the laser unit flat cable.
3	Dirt on the electrodes of the high-voltage power supply PCB and those of the machine	Clean the electrodes of the high-voltage power supply PCB and those of the machine.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
5	Laser unit failure	Replace the laser unit.
6	Main PCB failure	Replace the main PCB ASSY.

■ Dirt on back side of paper



<User Check>

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

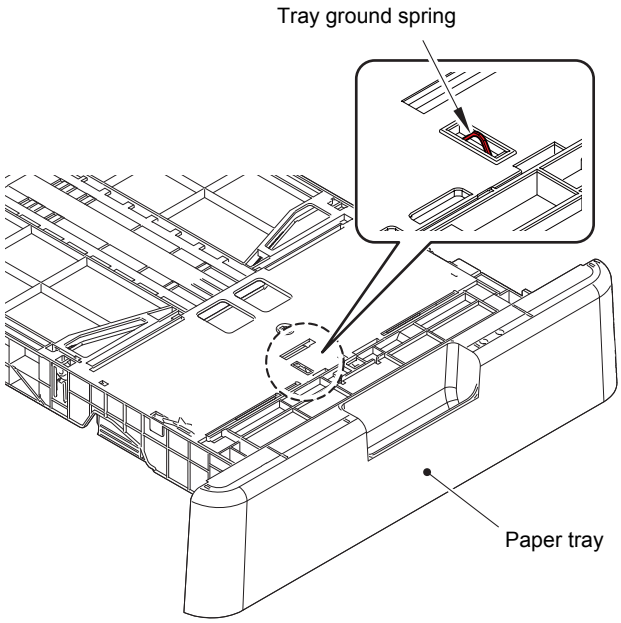
Step	Cause	Remedy
1	Dirt in the paper feed system	Wipe dirt off.
2	Dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ 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 <How to clean the drum unit> 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.

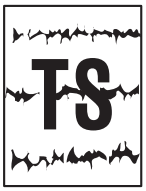
Step	Cause	Remedy
1	Dirt in the paper feed system	Wipe dirt off.
2	A ground wire or ground plate installation failure (Grounding is not performed correctly.)	Retighten the screws of each ground wire or ground plate. Repair the bend of the tray ground spring of the paper tray. (Refer to the figure below.)
3	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
4	Dirt on the cleaner pinch roller of the fuser cover	Replace the cleaner pinch roller S ASSY.
5	Dirt on the fuser unit	Replace the fuser unit.
6	Laser unit failure	Replace the laser unit.



<Bottom of paper tray>

Fig. 2-14

■ Horizontal stripes



<User Check>

- This problem may disappear after printing multiple sheets of paper.
- Refer to <How to clean the drum unit> 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. 2-9 (P2-42) and Fig. 2-8 (P2-42).)
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
3	A ground wire or ground plate installation failure (Grounding is not performed correctly.)	Retighten the screws of each ground wire or ground plate. Repair the bend of the tray ground spring of the paper tray. (Refer to Fig. 2-14 (P2-69).)
4	Scratch or dirt on the fuser unit	Replace the fuser unit.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ White vertical streaks on image

<User Check>

- Check that there is no dust on the toner cartridge.
- Refer to <How to clean the drum unit> 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 exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
2	Laser unit failure	Replace the laser unit.

■ White horizontal stripes on image

<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. 2-9 (P2-42) and Fig. 2-8 (P2-42).)
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
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.

■ 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 on image

<User Check>

- Check that the fan is not clogged.
- Refer to <How to clean the drum unit> 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.

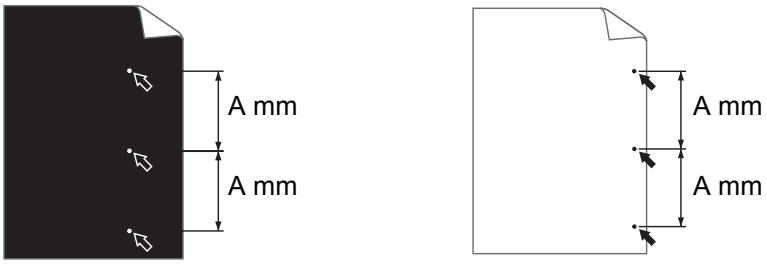
Step	Cause	Remedy
1	Dirt on the paper dust cleaning roller of the paper tray	Refer to the Fig. 2-10 (P2-53) to clean the paper dust cleaning roller.
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
3	Clogged filter	Clean the filter.
4	Scratch or dirt on the fuser unit	Replace the fuser unit.
5	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 pitch at which defects appear on the image.

<Pitches on images caused by rollers>

Part name	The pitch which appears in the image
Develop roller	26.5 mm
Exposure drum	94.5 mm
Heat roller of the fuser unit	78.5 mm
Pressure roller of the fuser unit	78.5 mm

< Examples of image distortion >



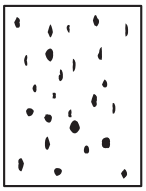
White dots repeat in A mm distance on the black page with printed images.

Black dots repeat in A mm distance on the page.

Fig. 2-15

Refer to the <Pitches on images caused by rollers> table above for what represents the value A.

■ Spots or dirt



<User Check>

- Check if damp paper is used.
- Refer to <How to clean the drum unit> 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 dust cleaning roller of the paper tray	Refer to the Fig. 2-10 (P2-53) to clean the paper dust cleaning roller.
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
3	Clogged filter	Clean the filter.
4	Scratch or dirt on the fuser unit	Replace the fuser unit.
5	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 <Pitches on images caused by rollers> and determine the cause based on the pitch at which defects appear on the image.

■ Band

<User Check>

- Clean the corona wire of the drum unit.
- Clean the corona wire by sliding the green tab of the drum unit to the left end.
- This problem may disappear after printing multiple sheets of paper.
- Refer to <How to clean the drum unit> 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	A ground wire or ground plate installation failure (Grounding is not performed correctly.)	Retighten the screws of each ground wire or ground plate. Repair the bend of the tray ground spring of the paper tray. (Refer to Fig. 2-14 (P2-69).)
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to "2.2 Drum Cleaning" in Chapter 5.)
3	Laser unit failure	Replace the laser unit.

<How to clean the drum unit (the shape of the drum is different from the actual one)>

(1) Remove the toner cartridge from the drum unit. Turn the drum unit as shown in the illustration. Make sure that the drum unit gear is on the left side.

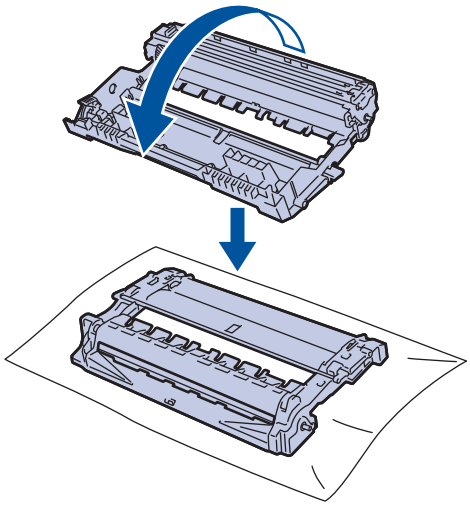


Fig. 2-16

(2) Use the numbered markers next to the drum roller to find the mark on the drum. For example, a dot in column 2 on the check sheet means that there is a mark in drum region “2”.

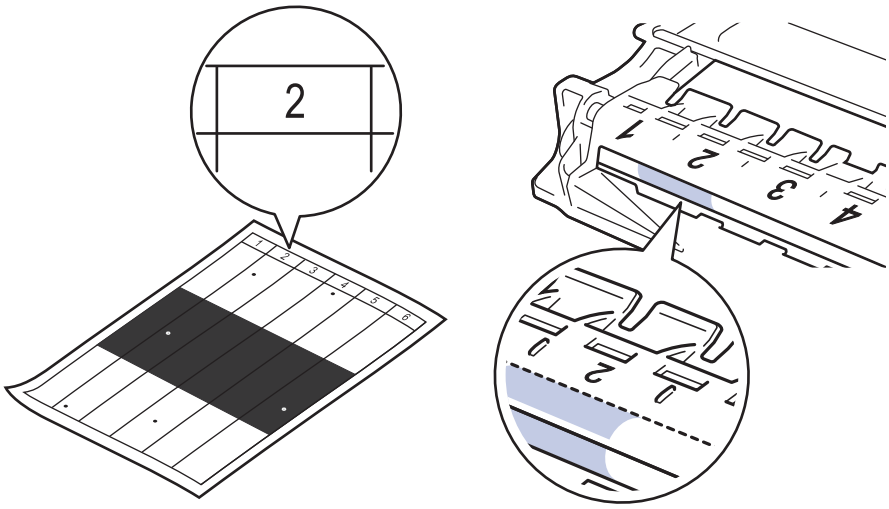


Fig. 2-17

(3) Turn the edge of the drum unit towards you while looking at the drum surface to find the mark.

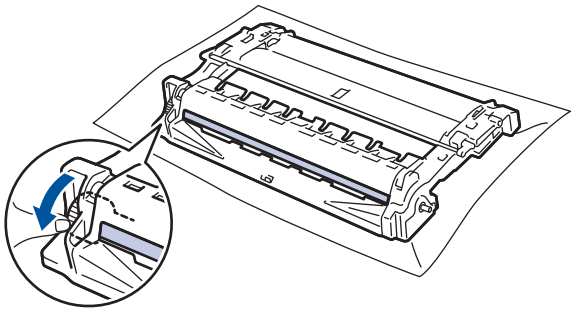


Fig. 2-18

(4) Wipe the surface of the drum gently with a dry cotton swab until the mark or foreign material on the surface comes off.

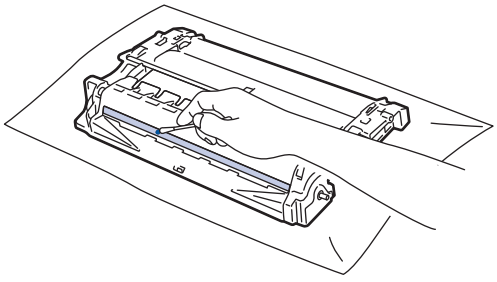


Fig. 2-19

Note:
Do not clean the exposure drum surface with anything sharp like a ball pointed pen.

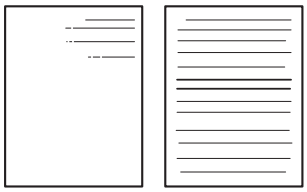
■ Downward fogging of solid color

<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 <How to clean the drum unit> 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. 2-9 (P2-42) and Fig. 2-8 (P2-42).)
2	Dirt on the exposure drum	Perform drum cleaning. (Refer to “2.2 Drum Cleaning” in Chapter 5.)
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.

■ 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 whether appropriate paper type is selected on the driver.
- Select “Improve Toner Fixing” in the driver.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Scratch or dirt on the fuser unit, or conductive leaf spring deformation	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 if 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	Dirt on the electrodes of the toner cartridge and those of the machine	Clean the electrodes of the toner cartridge. (Refer to Fig. 2-12 (P2-64).)
2	New toner sensor PCB failure	Replace the new toner sensor PCB ASSY.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	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

The end user can solve problems pertaining to software, for instance, print cannot be made from a computer although test print and printer setting print can be made from the machine, by following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

4.4.1 Unable to 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 online User's Guide.
- Check the driver settings.
- Reset the machine to the default settings. (Refer to the online 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.

* Follow the procedures below to verify the product ID in Macintosh.

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

(2) Click the [More Info...] in the [About This Mac] dialog box.

(3) Select [USB] under the [Hardware] in [Contents] on the left side.

(4) Select the machine [HL-XXXX] from [USB Device Tree].

(5) Check [Product ID] in [HL-XXXX].

■ Product ID (Hexadecimal)

HL-2290	: 0093h	HL-L2310D	: 009Ah
HL-2295D	: 0094h	HL-L2312D	: 009Ah
HL-2590DN	: 0095h	HL-L2310DR	: 009Ah
HL-2595DW	: 0096h	HL-L2385DW	: 00A3h
HL-B2000D	: 0097h	HL-L2386DW	: 00A3h
HL-B2050DN	: 0098h	HL-L2350DW	: 009Eh
HL-B2080DW	: 0099h	HL-L2350DWR	: 009Eh
HL-L2325DW	: 009Bh	HL-L2351DW	: 009Eh
HL-L2330D	: 009Ch	HL-L2352DW	: 009Eh
HL-L2331D	: 009Ch	HL-L2370DN	: 00A0h
HL-L2335D	: 009Dh	HL-L2370DNR	: 00A0h
HL-L2336D	: 009Dh	HL-L2372DN	: 00A0h
HL-L2357DW	: 009Fh	HL-L2375DW	: 00A2h
HL-L2370DW	: 00A1h	HL-L2375DWR	: 00A2h
HL-L2371DN	: 00ABh	HL-L2376DW	: 00A2h

4.5 Troubleshooting for Network Problems

4.5.1 Cannot make a print through network connection

<User Check>

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

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

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 back ON again.
- Unplug the AC cord and then plug it again.

Step	Cause	Remedy
1	Connection failure of the panel relay flat cable	Reconnect the panel relay flat cable.
2	Connection failure of the low-voltage power supply PCB harness	Reconnect the low-voltage power supply PCB harness.
3	AC cord failure	Replace the AC cord.
4	Connection failure of the LCD relay flat cable	Reconnect the LCD relay flat cable.
5	Panel relay PCB failure	Replace the panel relay PCB ASSY.
6	LCD failure	Replace the LCD panel ASSY.
7	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
8	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 back ON again.

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

4.6.3 Unable to perform panel operation

<User Check>

- Turn the power switch OFF and then back ON again.

Step	Cause	Remedy
1	Connection failure of the low-voltage power supply PCB harness	Reconnect the low-voltage power supply PCB harness.
2	Connection failure of the LCD flat cable	Reconnect the LCD flat cable.
3	Connection failure of the panel flat cable	Reconnect the panel flat cable.
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.

4.7 Troubleshooting for Toner Cartridge and Drum Unit Problems

4.7.1 New toner not detected

<User Check>

- Be sure to set a new toner cartridge(or box).
- Check that the genuine toner cartridge(or box) 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 harness (Models without toner box)	Reconnect the new toner sensor PCB harness.
3	Connection failure of the new toner box sensor PCB harness (Models with toner box)	Reconnect the new toner box sensor PCB harness.
4	Connection failure of the toner box relay PCB harness (Models with toner box)	Reconnect the toner box relay PCB harness.
5	New toner sensor PCB failure (Models without toner box)	Replace the new toner sensor PCB ASSY.
6	New toner box sensor PCB failure (Models with toner box)	Replace the new toner box sensor PCB ASSY.
7	Relay PCB failure (Models with toner box)	Replace the relay PCB ASSY.
8	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

4.7.2 Toner cartridge not detected

<User Check>

- Re-assemble the toner cartridge(or box).
- Replace the toner cartridge(or box) with a new one.

Step	Cause	Remedy
1	New toner sensor PCB failure (Models without toner box)	Replace the new toner sensor PCB ASSY.
2	New toner box sensor PCB failure (Models with toner box)	Replace the new toner box sensor PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.7.3 Toner replacement message displayed on LCD is not cleared

<User Check>

- Be sure to set a new toner cartridge(or box).
- Check that the genuine toner cartridge(or box) 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 harness (Models without toner box)	Reconnect the new toner sensor PCB harness.
3	Connection failure of the new toner box sensor PCB harness (Models with toner box)	Reconnect the new toner box sensor PCB harness.
4	Connection failure of the toner box relay PCB harness (Models with toner box)	Reconnect the toner box relay PCB harness.
5	New toner sensor PCB failure (Models without toner box)	Replace the new toner sensor PCB ASSY.
6	New toner box sensor PCB failure (Models with toner box)	Replace the new toner box sensor PCB ASSY.
7	Relay PCB failure (Models with toner box)	Replace the relay PCB ASSY.
8	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
9	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. 2-8 (P2-42) and Fig. 2-9 (P2-42).)
2	Dirt on the electrodes of the high-voltage power supply PCB and those of the machine	Clean the electrodes of the high-voltage power supply PCB and those of the machine.
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 Drum replacement message displayed on LCD is not cleared

<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 harness	Reconnect the eject sensor PCB harness.
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	Laser unit attachment failure	Reattach the laser unit.
2	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
3	Connection failure of the polygon motor harness	Reconnect the polygon motor harness.
4	Laser unit failure	Replace the laser unit.
5	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 back ON again.
- Install the latest main firmware.
- 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 Full memory

<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.

4.11 Troubleshooting for Other Problems

4.11.1 Cannot make print

<User Check>

- Turn the power switch OFF and then back 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.
- Install the latest main firmware.
- Match the document size with the one specified in the driver.

Step	Cause	Remedy
1	Connection failure of the wireless LAN connector	Reconnect the wireless LAN connector.
2	Connection failure of the MP paper empty sensor PCB harness	Reconnect the MP paper empty sensor PCB harness.
3	Connection failure of the T1 paper feed sensor harness (non paper empty sensor models only)	Reconnect the T1 paper feed sensor harness.
4	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
5	Connection failure of the T1 clutch harness	Reconnect the T1 clutch harness.
6	T1/MP paper empty actuator caught in some sections of the machine (paper empty sensor models only)	Reattach the appropriate T1/MP paper empty actuator.
7	T1 paper feed actuator caught in some sections of the machine (non paper empty sensor models only)	Reattach the T1 paper feed actuator.
8	T1 paper feed sensor PCB failure (non paper empty sensor models only)	Replace the T1 paper feed sensor PCB ASSY.
9	T1 paper empty/paper feed sensor PCB failure (paper empty sensor models only)	Replace the T1 paper empty/paper feed sensor PCB ASSY.
10	Wireless LAN PCB failure	Replace the wireless LAN PCB.
11	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 back ON again.

Step	Cause	Remedy
1	Firmware version does not match	Reinstall the latest sub firmware and main firmware in this order.
2	In case of update failure by interruption, the firmware might not correctly written in the ROM	Update the firmware again by the following procedure.* 1) Turn OFF the machine. 2) For LED models Open the front cover and then turn ON the machine while pressing the [Go]. If the Paper, Drum, and Toner LEDs light, release the [Go]. If all LEDs go out, press the [Go] four times. For LCD models Turn ON the machine while pressing the [OK] and [Go]. 3) Double-click the “Filedg32.exe” to start, and select “Brother Maintenance USB Printer”. 4) Drag and drop the firmware (upd file) in the FILEDG32 screen. Update is started.
3	Main PCB failure	Replace the main PCB ASSY.

* By the above update procedure, the other models firmware can be updated to the machine. (You can update LCD models firmware to LED models.) Check that the firmware is right and update correctly. If the other models firmware was updated by mistake, the machine may repeat power ON/OFF or not powered ON. In such case, replace the main PCB.

4.11.3 “Paper Low” message does not disappear

<User Check>

- Turn the power switch OFF and then back ON again.
- Refill the paper in the appropriate paper tray.

Step	Cause	Remedy
1	Damaged plate-up plate in the paper tray	Replace the paper tray.
2	Paper feed motor failure	Replace the paper feed motor.
3	Damaged plate push-up mechanism in the machine	Replace the frame L unit.
4	Main PCB failure	Replace the main PCB ASSY.

4.11.4 Message indicating that the report is full does not disappear

<User Check>

- Output each report.

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

4.11.5 Paper tray cannot be recognized

<User Check>

- Close the paper tray properly.

Step	Cause	Remedy
1	Connection failure of the T1 paper feed sensor harness (non paper empty sensor models only)	Reconnect the T1 paper feed sensor harness.
2	Connection failure of the T1 paper empty/paper feed sensor harness (paper empty sensor models only)	Reconnect the T1 paper empty/paper feed sensor harness.
3	T1 paper feed sensor PCB failure (non paper empty sensor models only)	Replace the T1 paper feed sensor PCB ASSY.
4	T1 paper empty/paper feed sensor PCB failure (paper empty sensor models only)	Replace the T1 paper empty/paper feed sensor PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

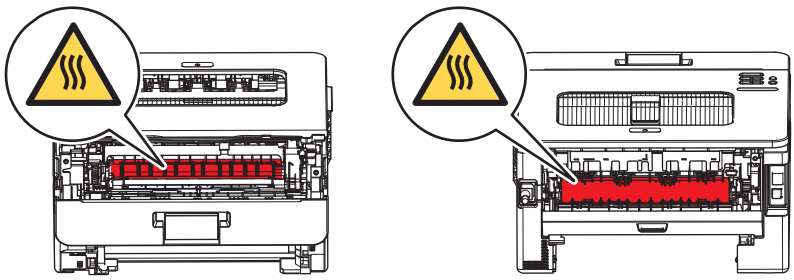
CHAPTER 3 DISASSEMBLY/REASSEMBLY

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.
- After a repair, update the firmware to the latest version.

WARNING	When removing the Low-voltage power supply, do not touch it within 3 minutes after disconnecting the AC cord as it may cause an electric shock due to the electric charge accumulated in the capacitor.

2. PACKING

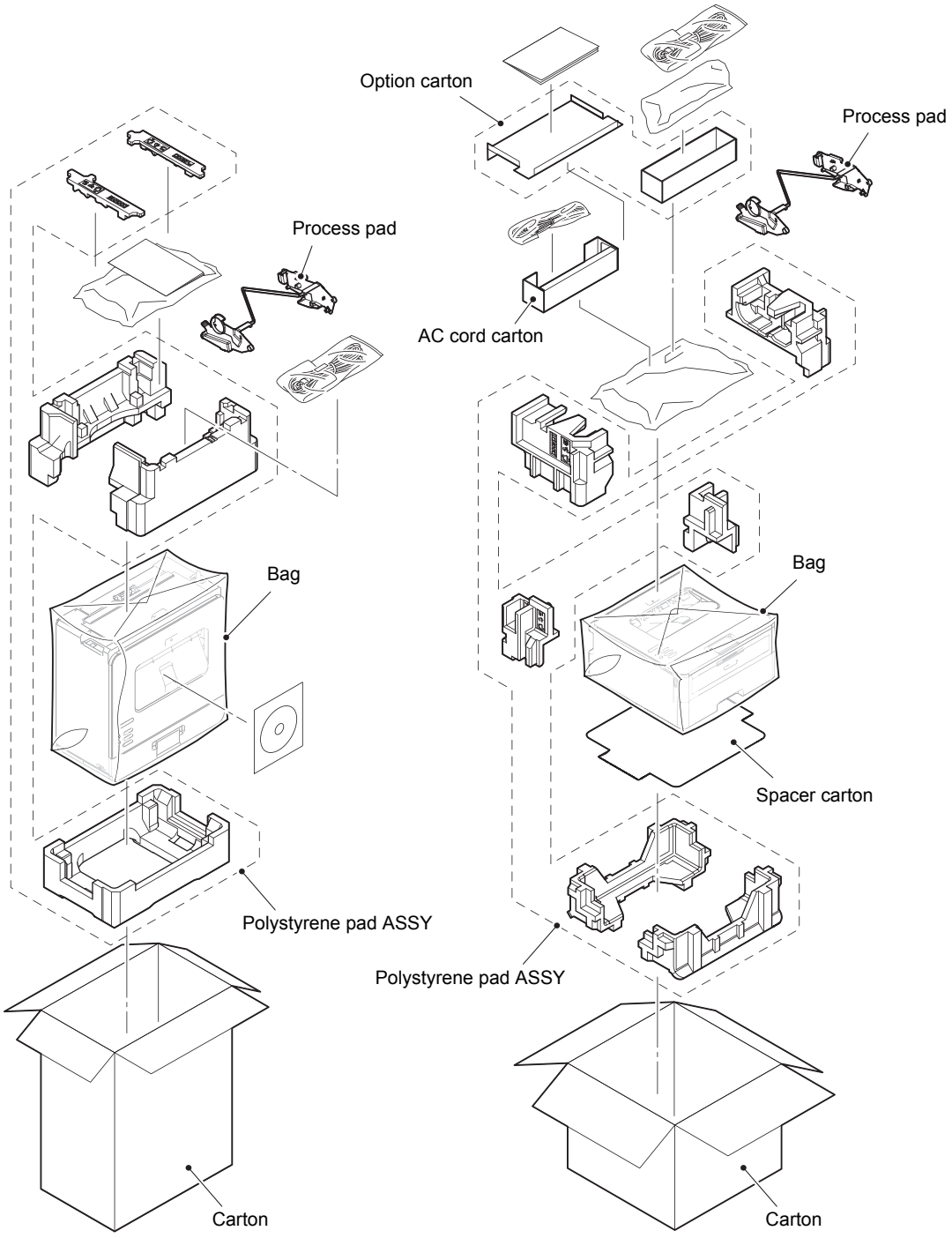
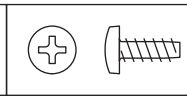
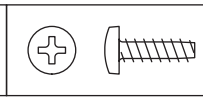
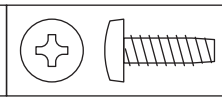


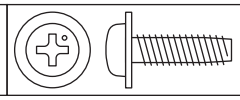
Fig. 3-1

3. SCREW CATALOGUE

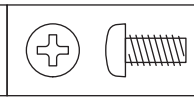
Taptite bind B

Taptite bind B M3x8	
Taptite bind B M3x10	
Taptite bind B M4x12	

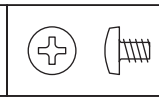
Taptite pan B

Taptite pan B M4x14	

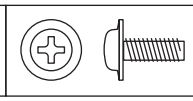
Screw pan

Screw pan M4x8	

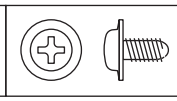
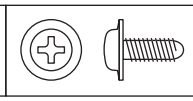
Screw bind

Screw bind M3x4	

Screw cup

Screw cup M3x8	

Taptite cup S

Taptite cup S M3x6 SR	
Taptite cup S M3x8 SR	

Screw pan (S/P washer)

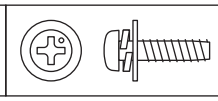
Screw pan (S/P washer) M3x12DB	

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	3	0.8±0.1 (8±1)
Fuser unit		Taptite pan B M4x14	2	0.8±0.1 (8±1)
LVPS shield plate cover		Screw cup M3x8 (black)	2	0.45±0.05 (4.5±0.5)
		Screw pan M4x8	1	0.45±0.05 (4.5±0.5)
Ground harness		Screw pan M4x8	1	0.45±0.05 (4.5±0.5)
Low-voltage power supply PCB ASSY		Screw cup M3x8 (black)	2	0.45±0.05 (4.5±0.5)
High-voltage power supply PCB ASSY		Screw cup M3x8 (black)	1	0.45±0.05 (4.5±0.5)
Relay PCB ASSY (For toner box models and MP models)		Taptite bind B M4x12	1	0.8±0.1 (8±1)
Toner box new PCB ASSY (For models with toner box)		Taptite bind B M3x8	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		Screw cup M3x8 (black)	2	0.6±0.1 (6±1)
Main PCB ASSY		Screw cup M3x8 (black)	3	0.6±0.1 (6±1)
MP frame parts (For MP models)		Taptite bind B M4x12	3	0.8±0.1 (8±1)
		Taptite pan B M4x14	1	0.8±0.1 (8±1)
Front chute ASSY	For manual feed models	Taptite bind B M4x12	2	0.8±0.1 (8±1)
		Screw pan (S/P washer) M3x12DB	1	0.5±0.1 (5±1)
	For MP models	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Frame L unit		Taptite bind B M4x12 (11a) (Under bar)	1	0.8±0.1 (8±1)
		Taptite cup S M3x6 SR (11b) (for securing the chute ground plate)	1	0.5±0.1 (5±1)
		Taptite bind B M4x12 (11c) (for securing the registration chute)	1	0.8±0.1 (8±1)
		Taptite cup S M3x8 SR (11d) (for securing the laser L FG plate)	1	0.8±0.1 (8±1)
		Taptite bind B M4x12 (12a)	2	0.8±0.1 (8±1)
		Taptite cup S M3x8 SR (12b)	2	0.8±0.1 (8±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)
		Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Paper feed motor		Screw bind M3x4	3	0.65±0.05 (6.5±0.5)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Toner box drive cover	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Toner sensor PCB ASSY	Taptite bind B M3x8	1	0.4±0.05 (4±0.5)
Holder toner box	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Lift cam guide	Taptite bind B M4x12	1	0.8±0.1 (8±1)
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)
LVPS shield plate	Taptite cup S M3x8 SR	1	0.55±0.05 (5.5±0.5)
	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Frame R unit	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)

5. LUBRICATION

Lubricating oil type (Maker name)	Lubrication point		Quantity of lubrication
FLOIL BG-10KS (Kanto Kasei)	Fuser gear 64R/36R	3 places	1.5 to 2.0 mm dia. ball

■ **Fuser gear 64R/36R**

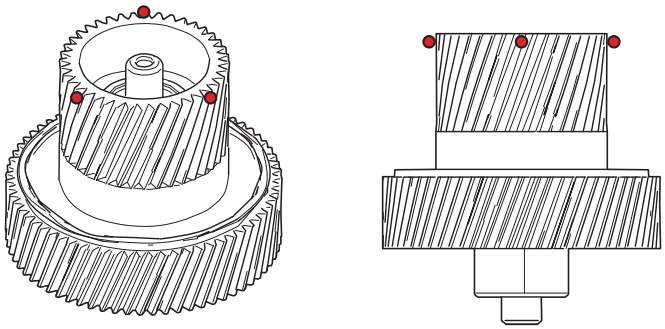


Fig. 3-3

6. OVERVIEW OF GEARS

<Layout view>

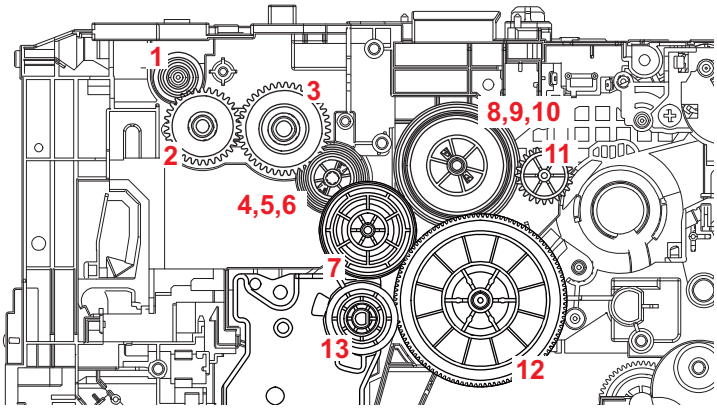


Fig. 3-4

<Development view>

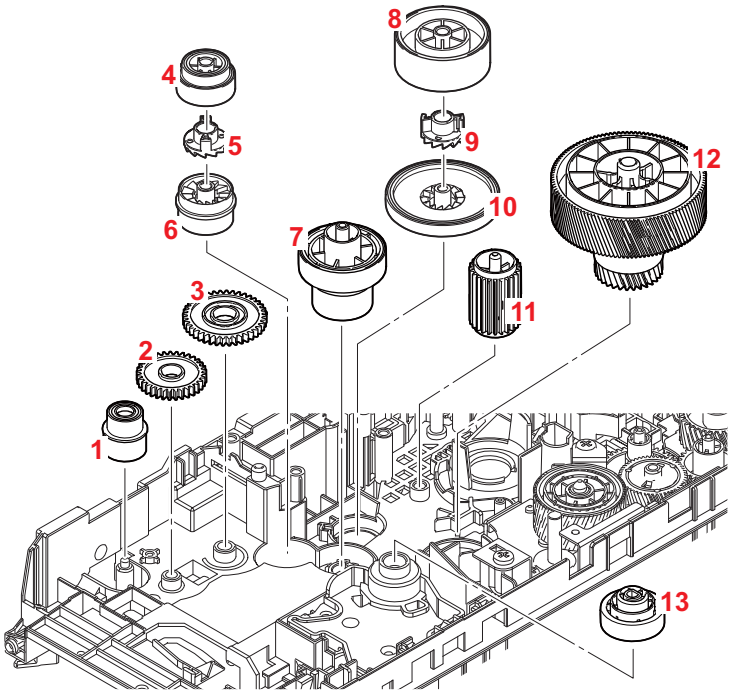


Fig. 3-5

Note:

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

<Name of gears>

1	D00AHW	Ejector gear 16/15	8	D00HHK	Gear 70R DEV
2	LY9006	Ejector gear 33	9	D00HHM	Clutch DEV NON toner box
3	LY9005	Ejector gear 40	10	D00HHL	Gear 55 DEV
4	D00ALK	Gear oneway 35L/22 fuser	11	D00EFZ	Gear DEV idle 24
5	D00ALM	Clutch fuser	12	D00AKE	Gear 115L 30L drum
6	D00ALL	Gear oneway 20 fuser	13	D00AH4	Gear 47R DX
7	D00ALH	Gear 64R/36R fuser			

* These parts are subject to change without notice.

<Layout view>

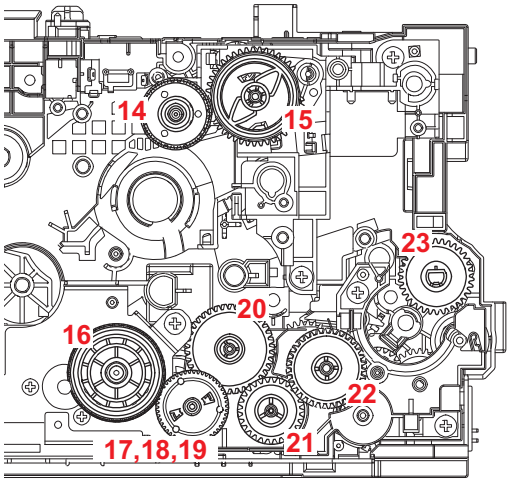


Fig. 3-6

<Development view>

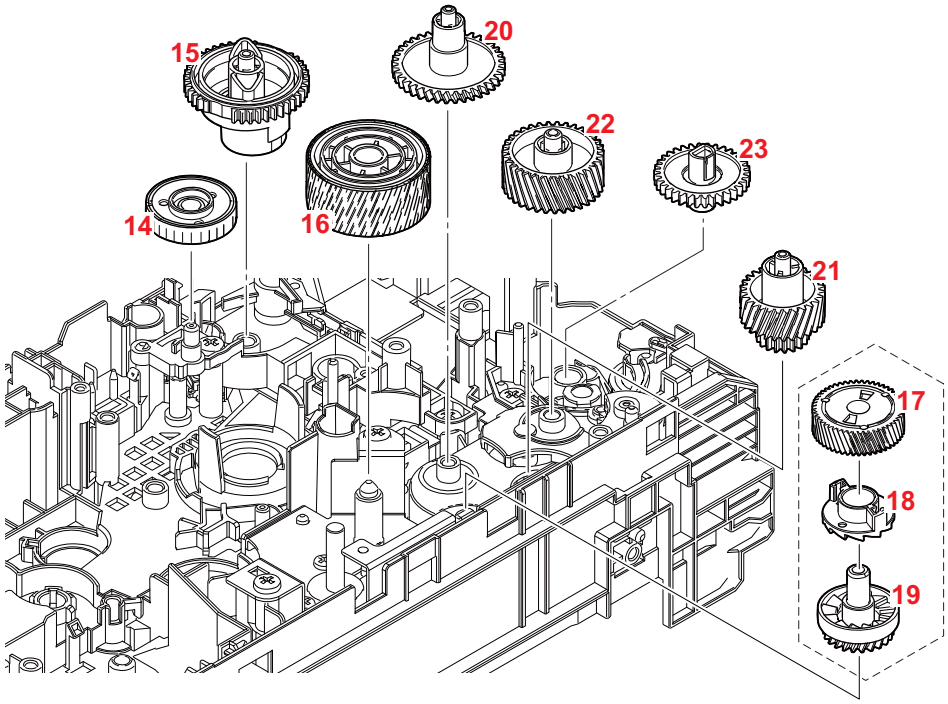


Fig. 3-7

Note:

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

<Name of gears>

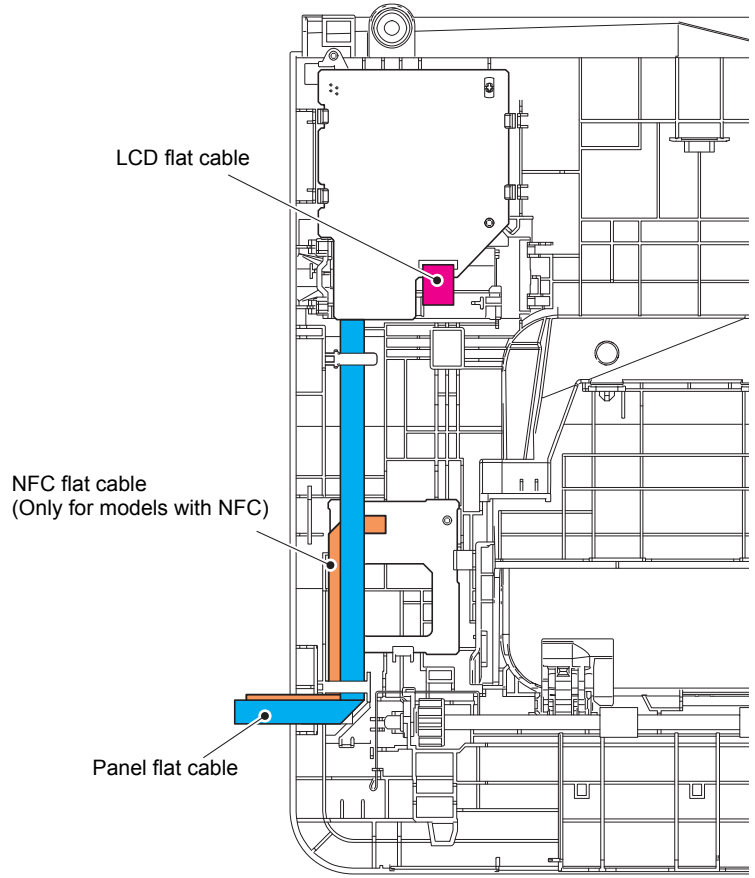
14	D00EGI	Gear toner box idle 32	19	D00CXT	Gear 23R PF
15	D00CUB	Sector gear toner box	20	D00AK9	Gear 38L PF
16	D00AM4	Gear 68R drum idle	21	D00AK8	Gear 28R/18 PF
17	D00AKA	Gear 50L PF	22	D00AK7	Gear 34L PF
18	D00CXU	Clutch PF	23	LY9088	Feeder gear 34

* These parts are subject to change without notice.

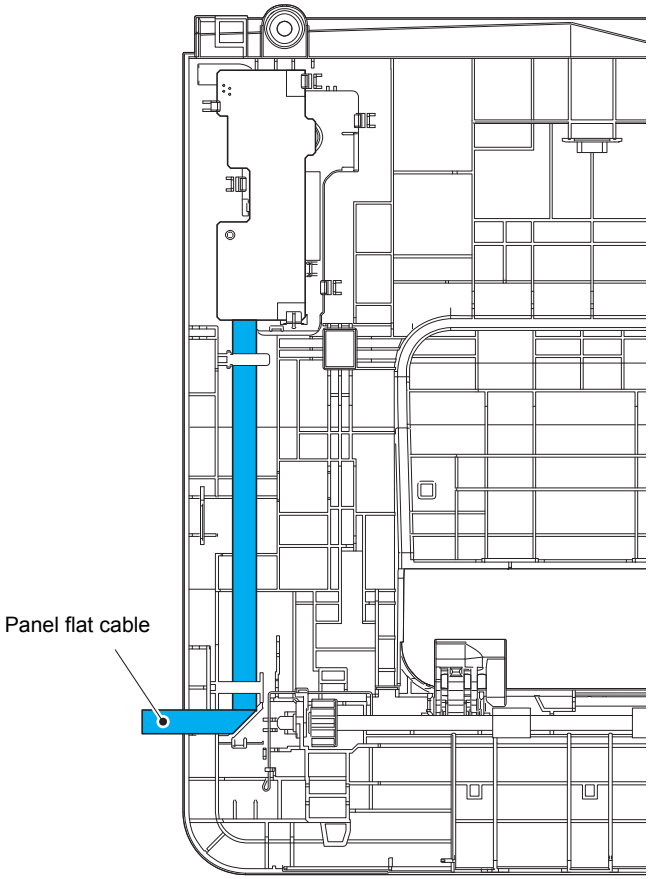
7. HARNESS ROUTING

1 Top cover ASSY

<LCD models>

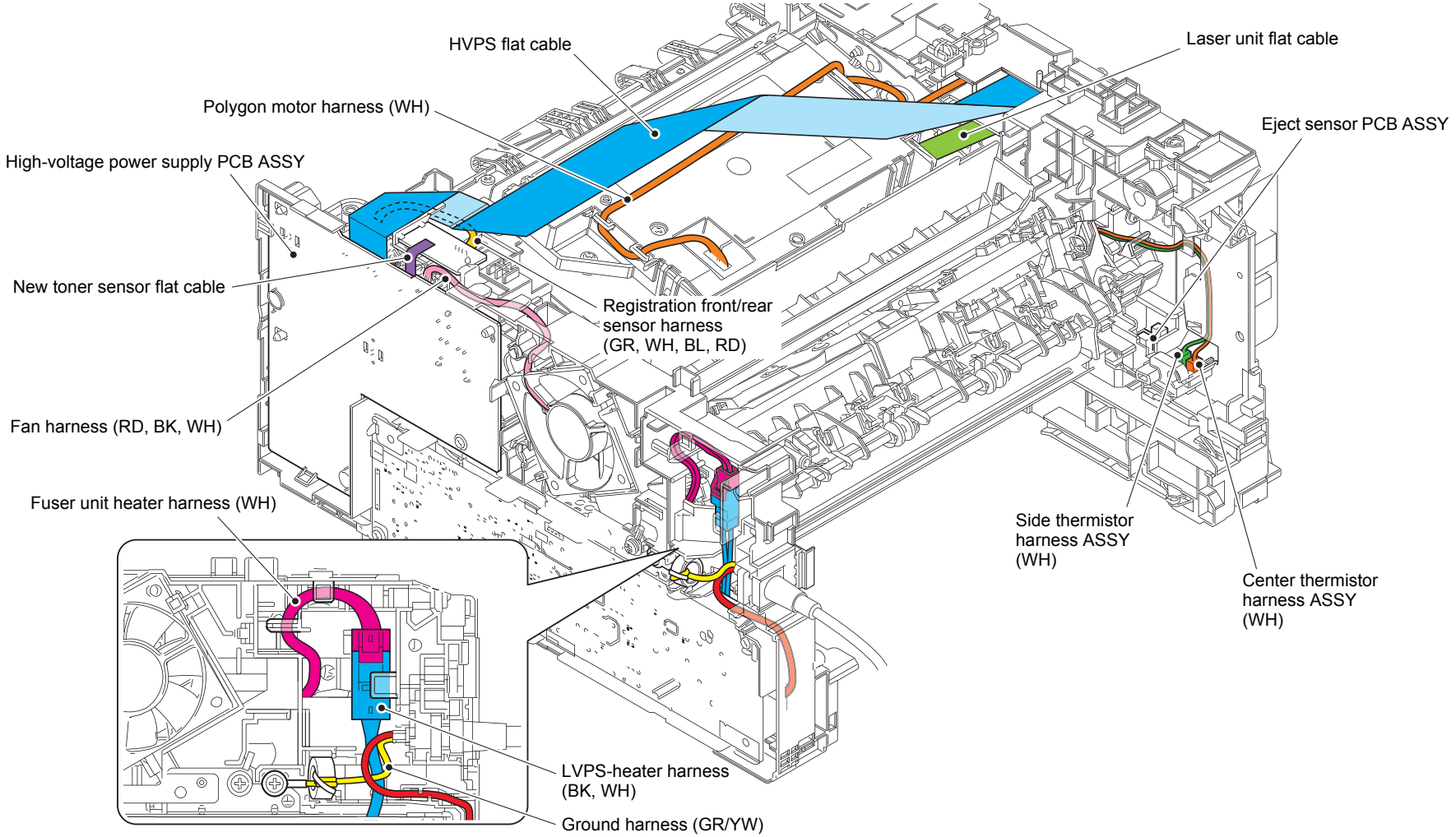


<LED models>



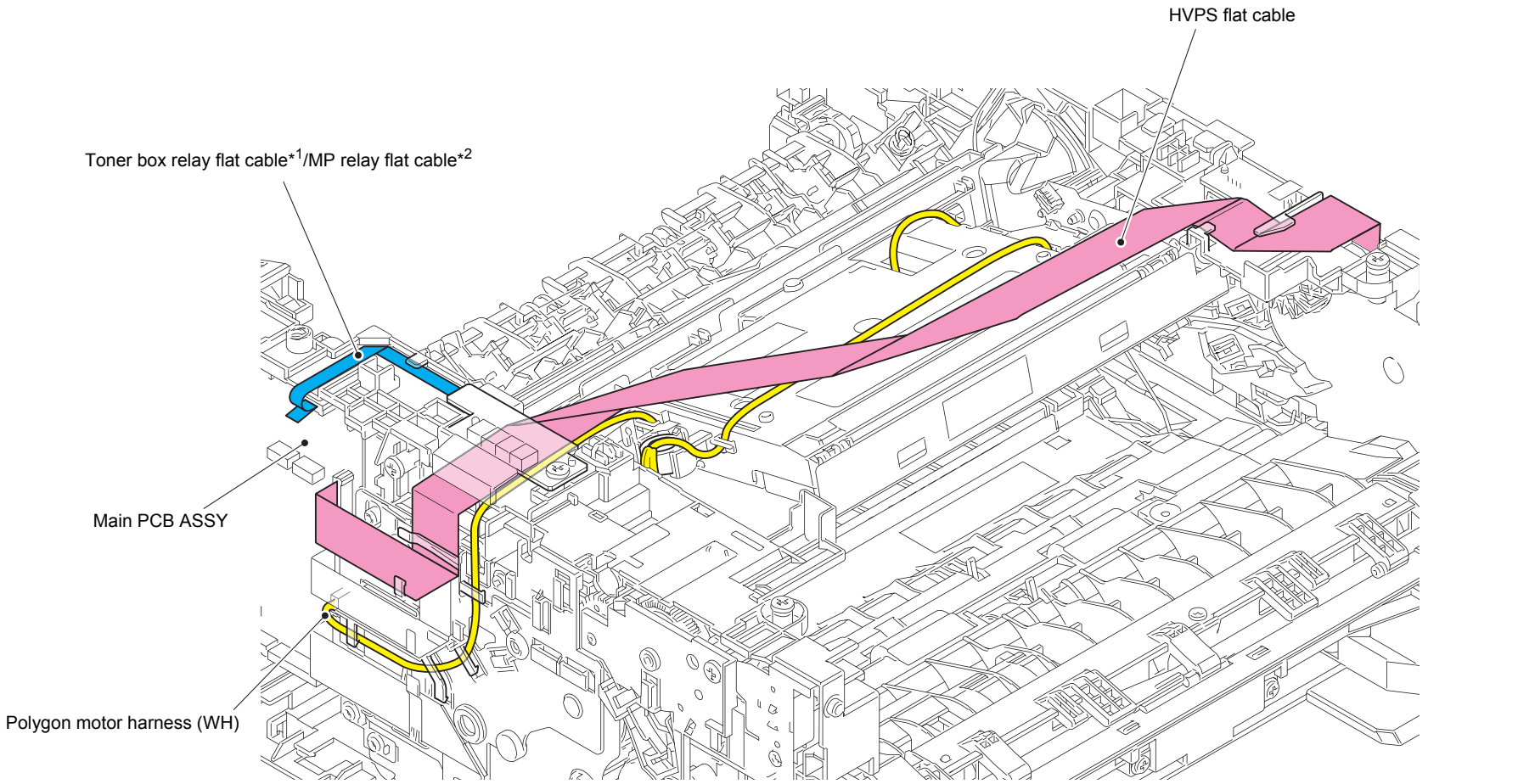
Harness colors are subject to change for some reason.

2 Rear side of the machine



Harness colors are subject to change for some reason.

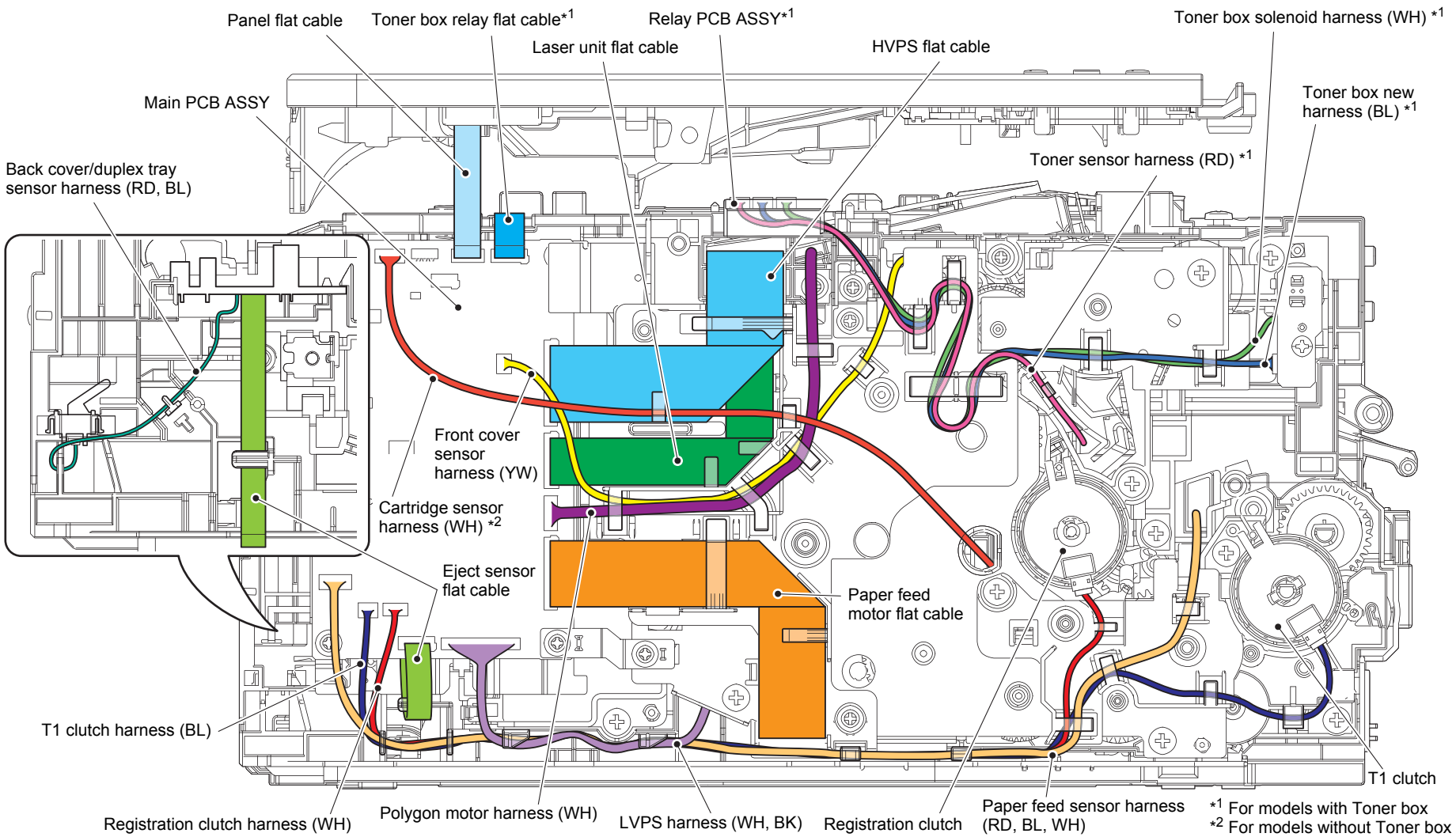
3 Top side of the machine



*1 For models with Toner box
*2 For MP models

Harness colors are subject to change for some reason.

4 Frame L unit (Manual feed models)

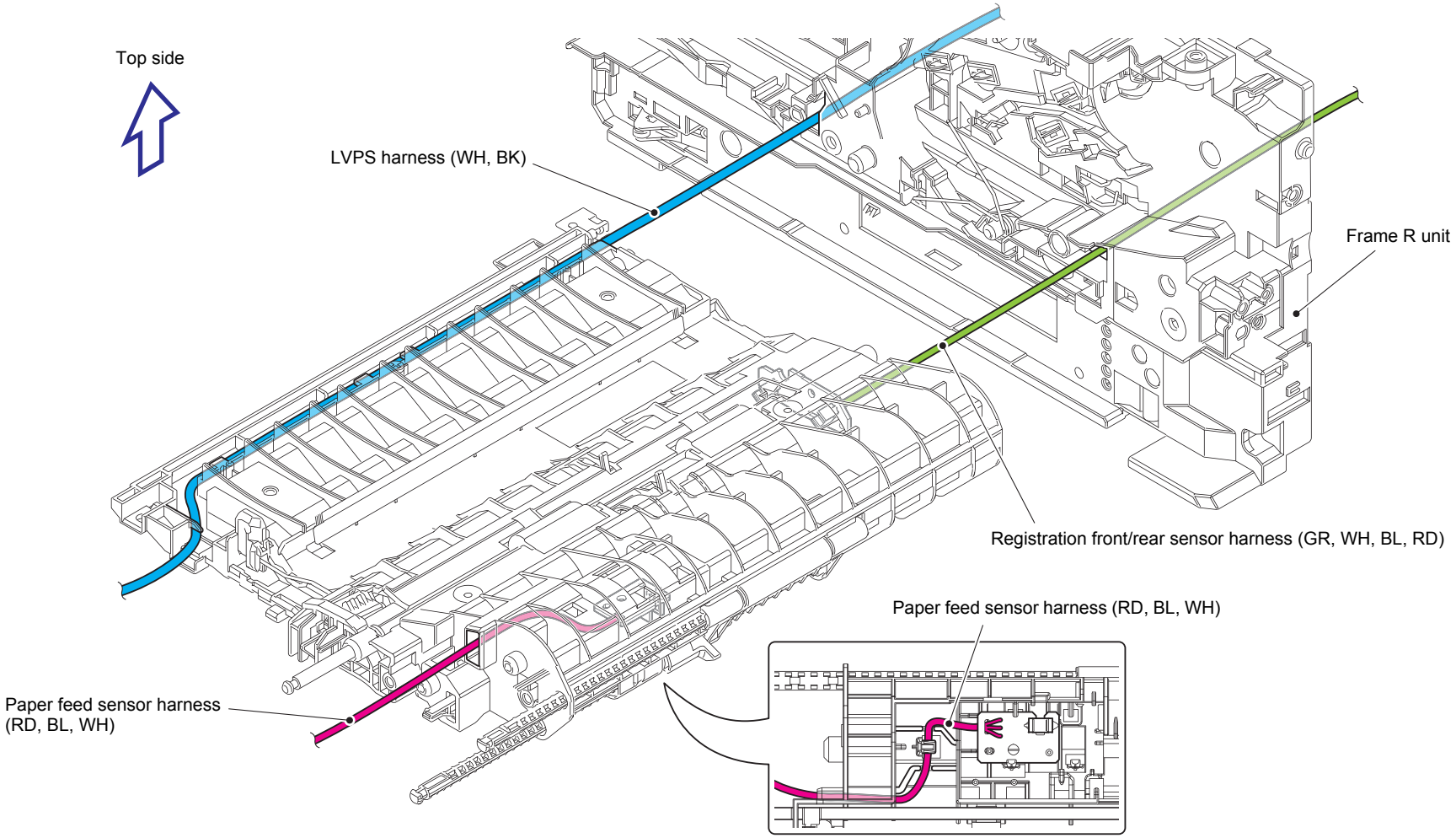


Harness colors are subject to change for some reason.

5 Frame L unit (MP models)

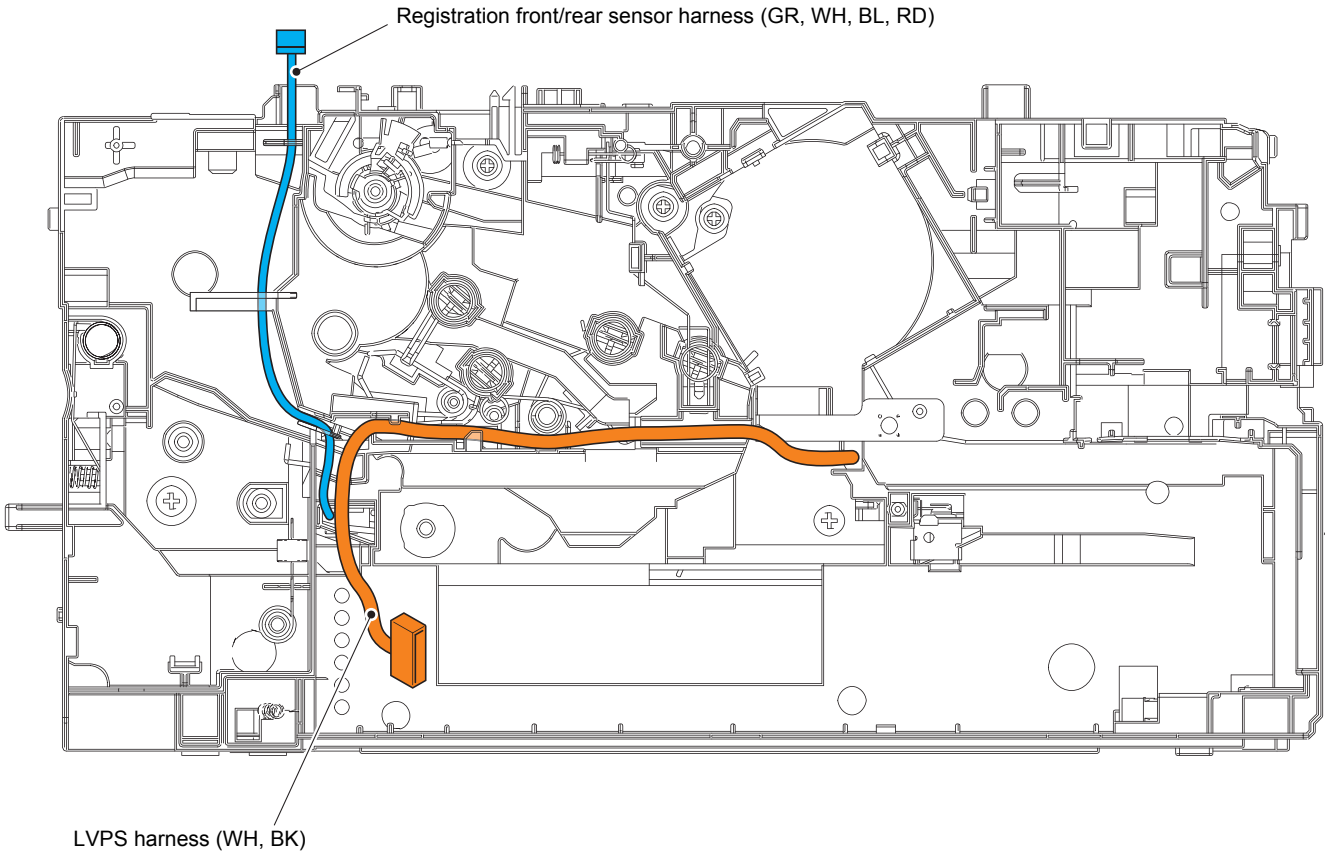
Harness colors are subject to change for some reason.

6 Top side of the registration chute



Harness colors are subject to change for some reason.

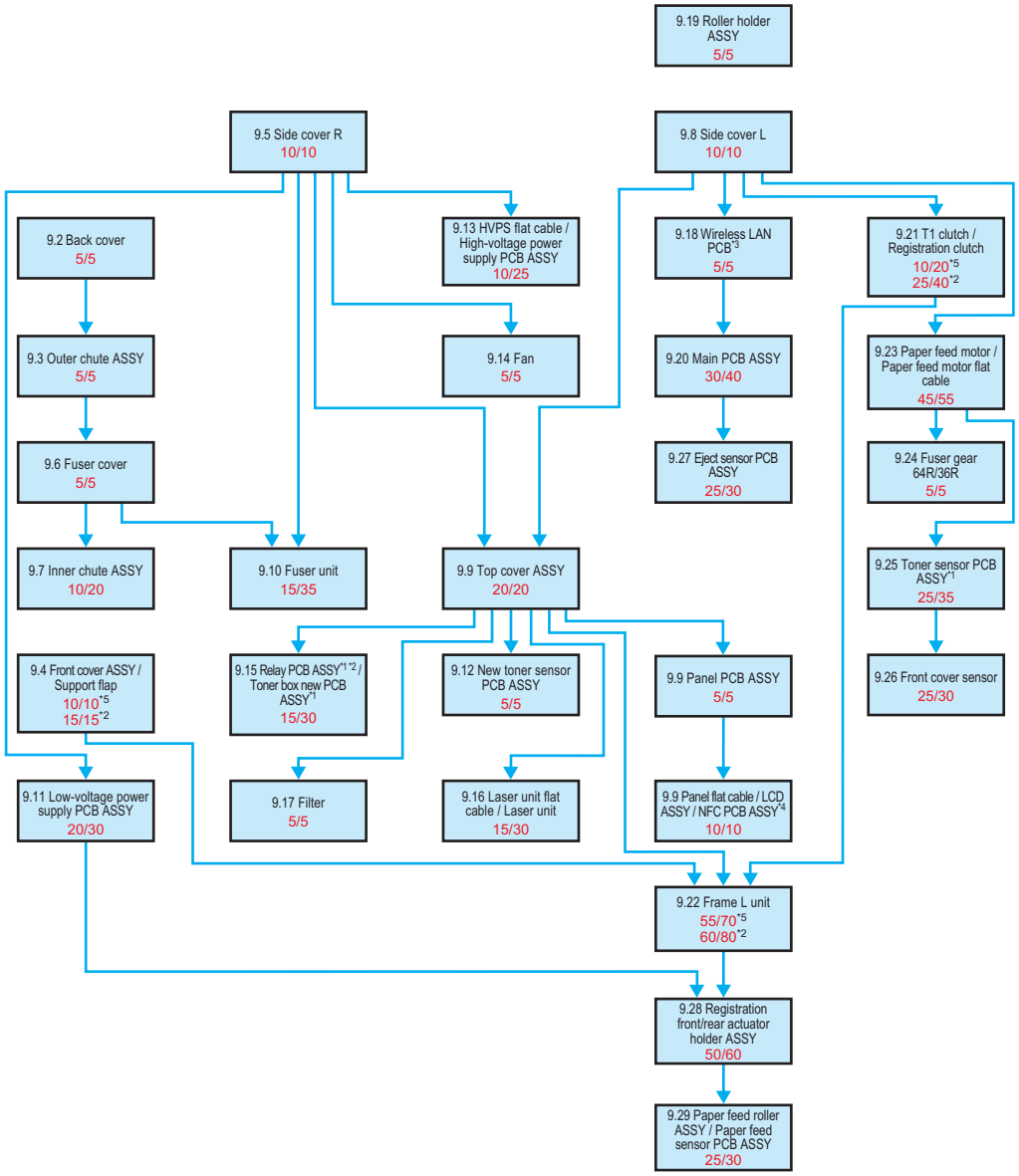
7 Frame R unit



Harness colors are subject to change for some reason.

8. DISASSEMBLY FLOW CHART

Disassembly / Reassembly (second)



*1 For models with Toner box
*2 For MP models
*3 Only for wireless network models
*4 Only for models with NFC
*5 For manual feed models

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 & Drum unit or Toner box & Process unit
- Duplex tray
- LAN port cap

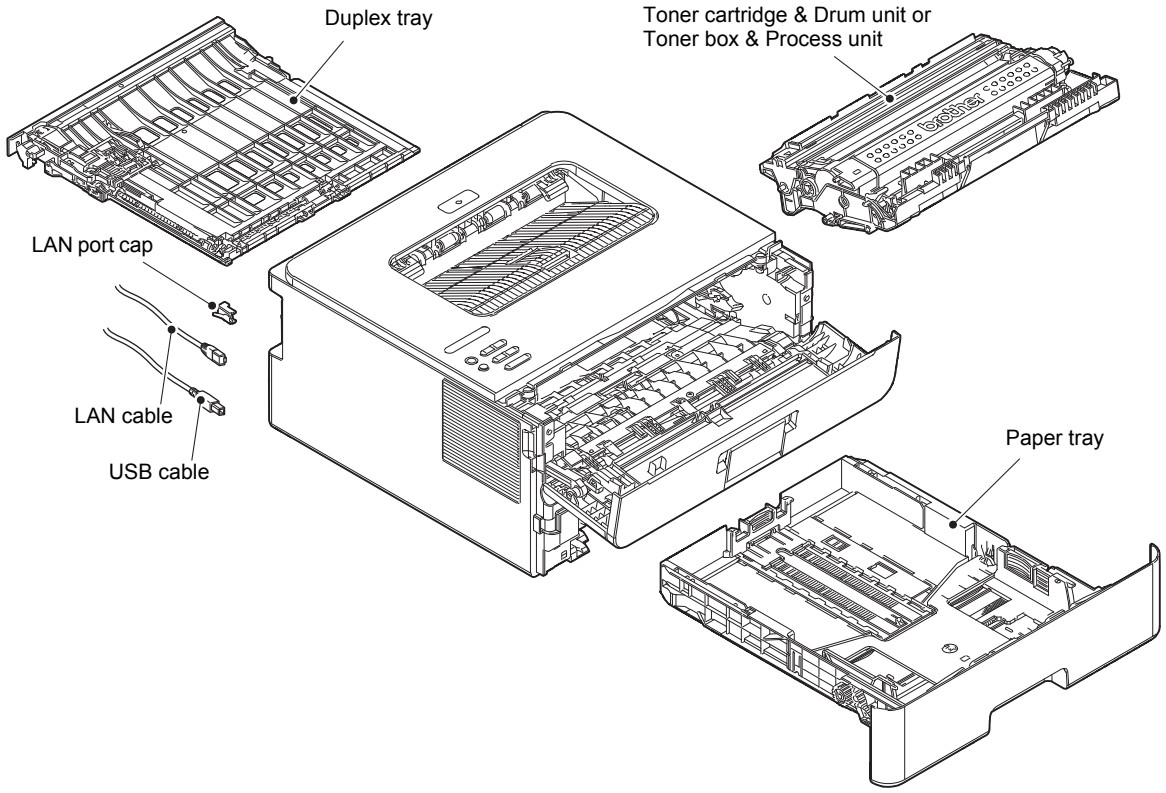


Fig. 3-8

9.2 Back cover

(1) Open the Back cover.

(2) Push both Ribs on the Back cover outward, and remove the Pin 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.

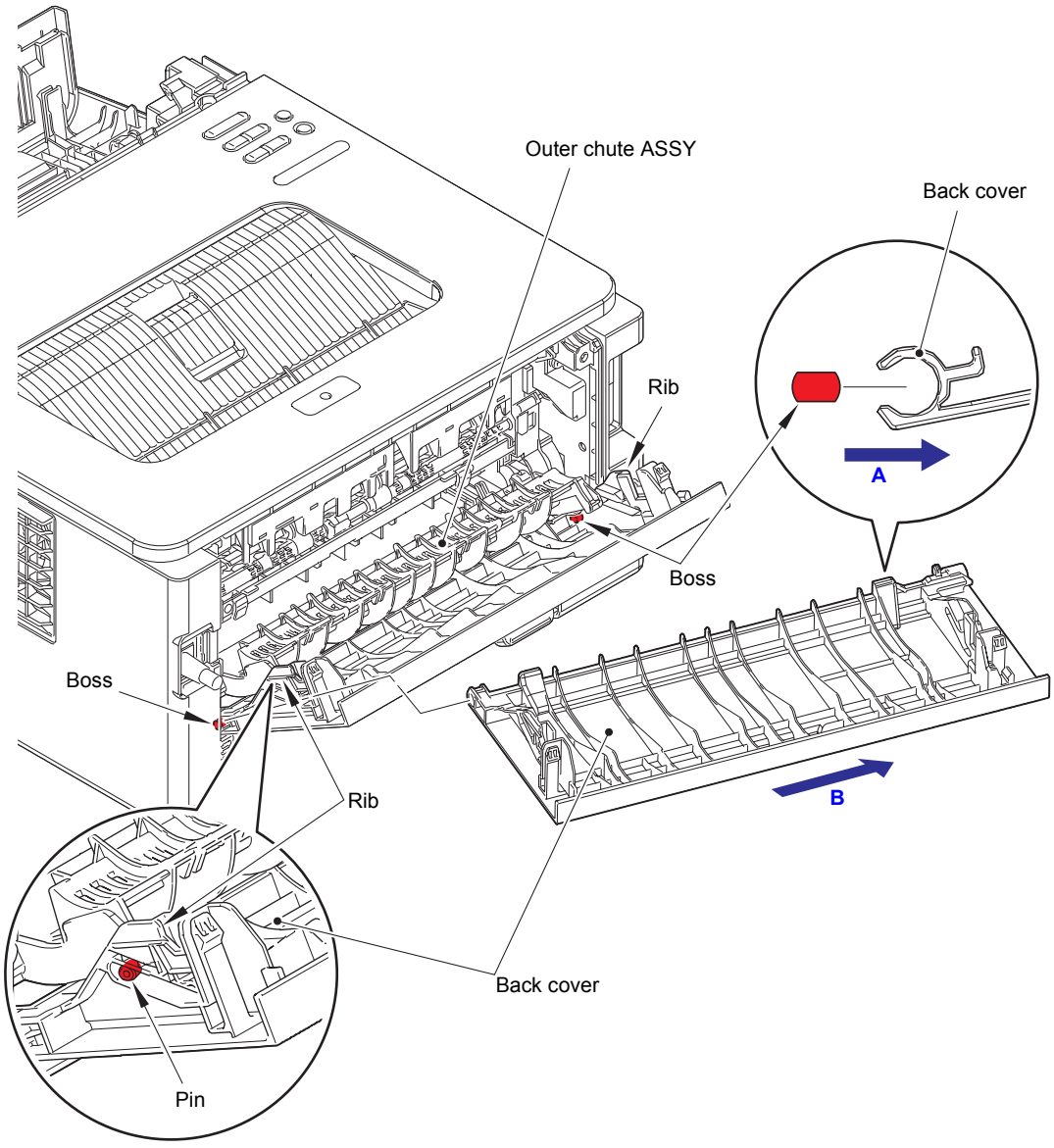


Fig. 3-9

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.

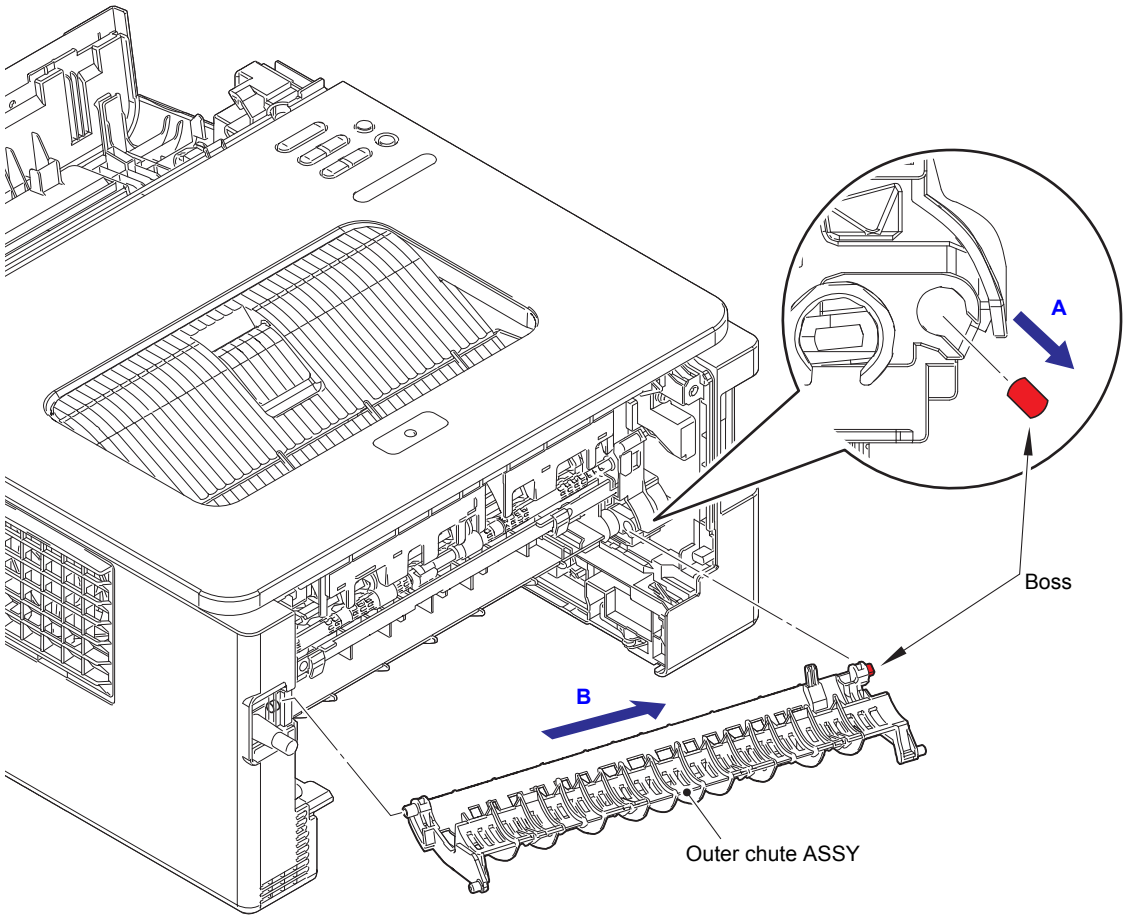


Fig. 3-10

9.4 Front cover ASSY / Support flap

■ Manual feed models

(1) Open the Front cover ASSY.

(2) Remove the Collar 4 to 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.

(4) Remove the Support flap from the Front cover ASSY.

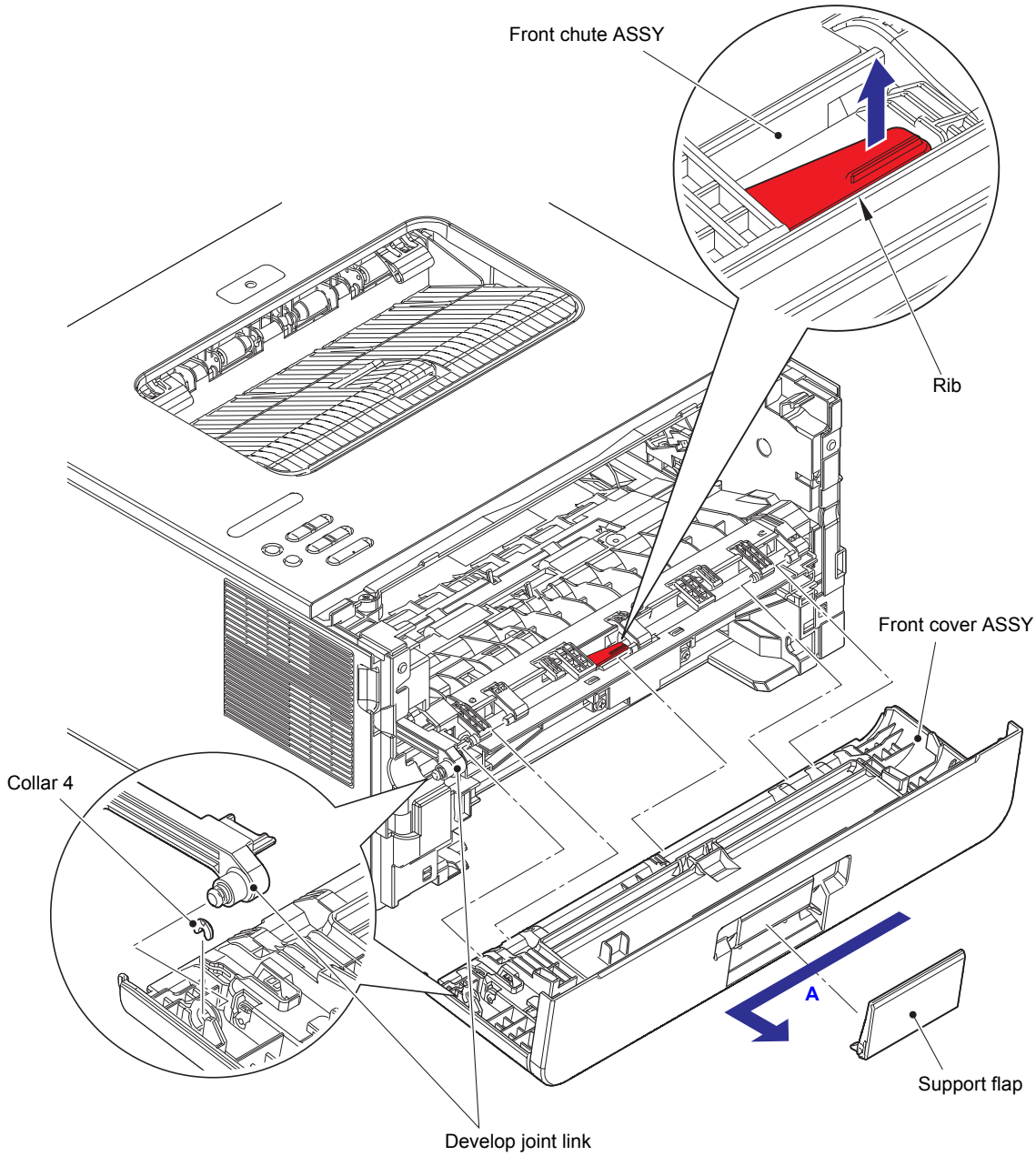


Fig. 3-11

■ MP models

(1) Open the Front cover ASSY. Remove the Collar 5 from the Link MP pin.

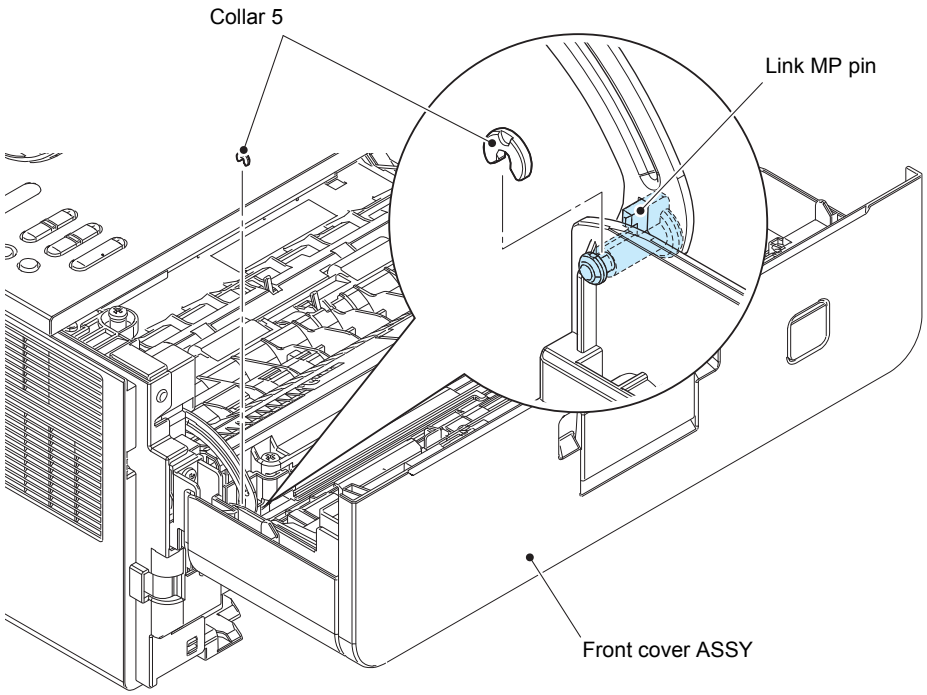


Fig. 3-12

(2) Close the Front cover ASSY. Open the MP tray, and release each Boss and remove the MP paper guide from the MP tray.

(3) Pull out the Link MP pin to remove the Develop joint link MP from the Front cover ASSY.

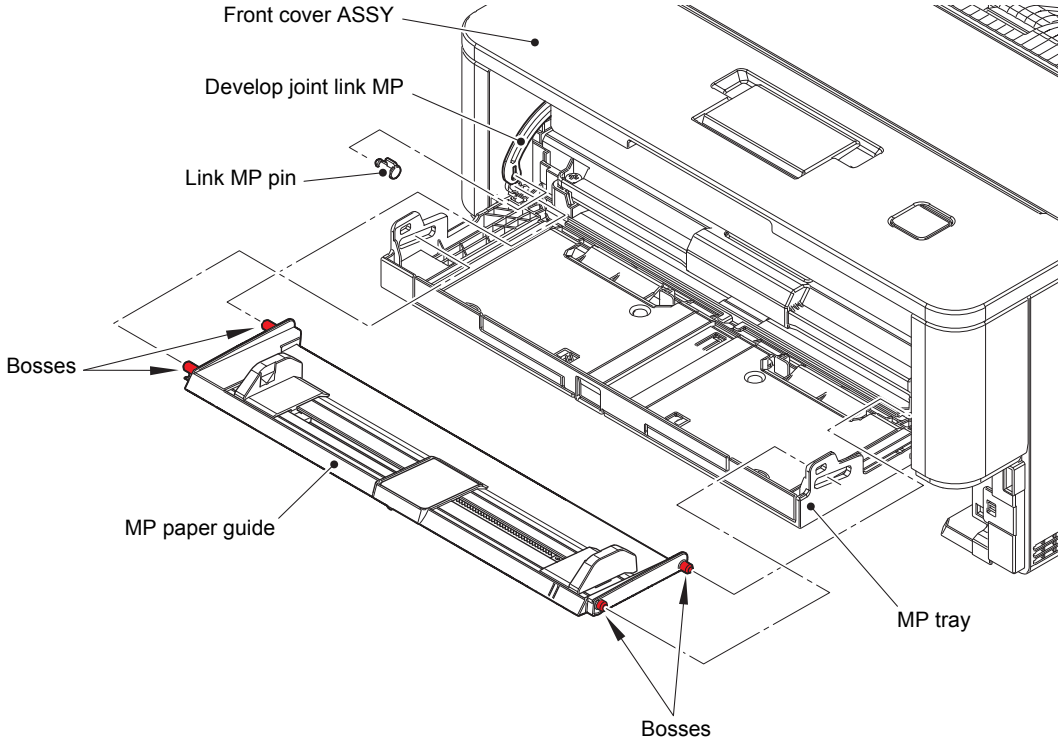


Fig. 3-13

(4) Open the Front cover ASSY. Release each Boss and remove the Front cover ASSY.

(5) Remove the Support flap from the Front cover ASSY.

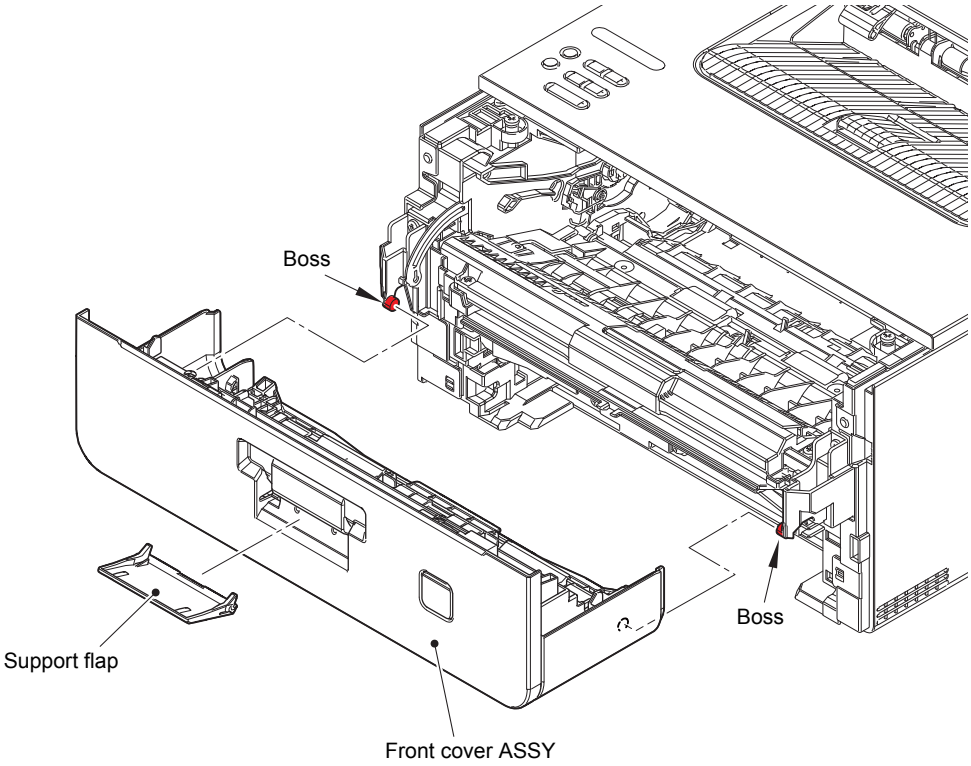


Fig. 3-14

9.5 Side cover R

(1) Release the Hooks A, B, and the Hook C on the Side cover R in order of the arrow A to C, and remove the Side cover R.

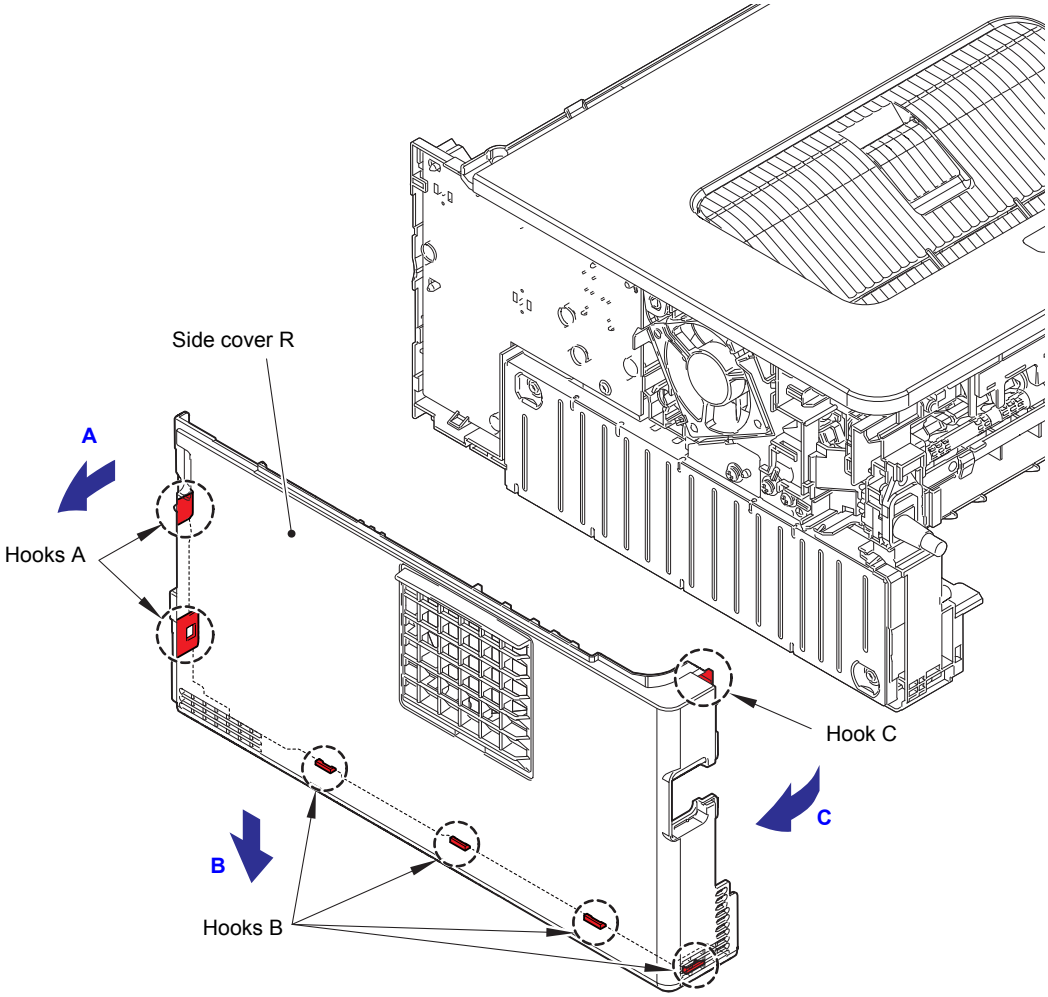


Fig. 3-15

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.

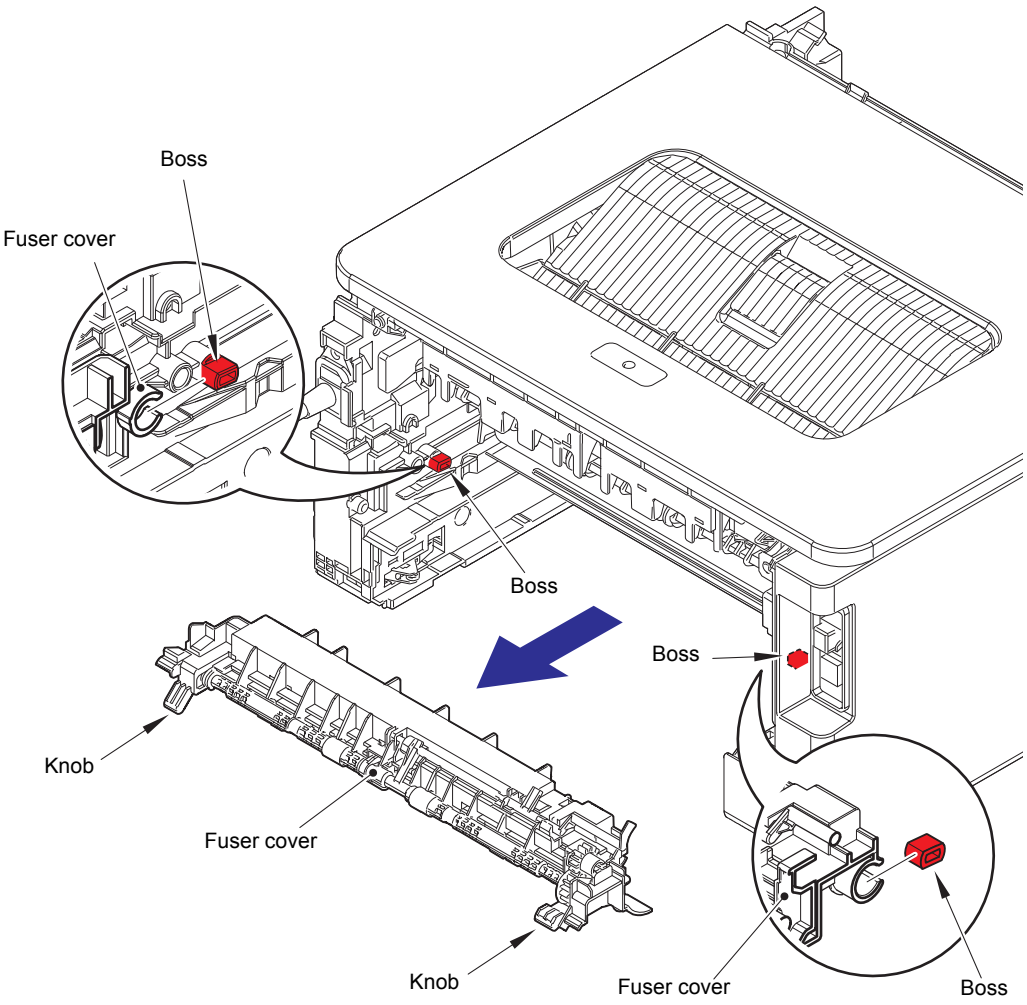


Fig. 3-16

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.

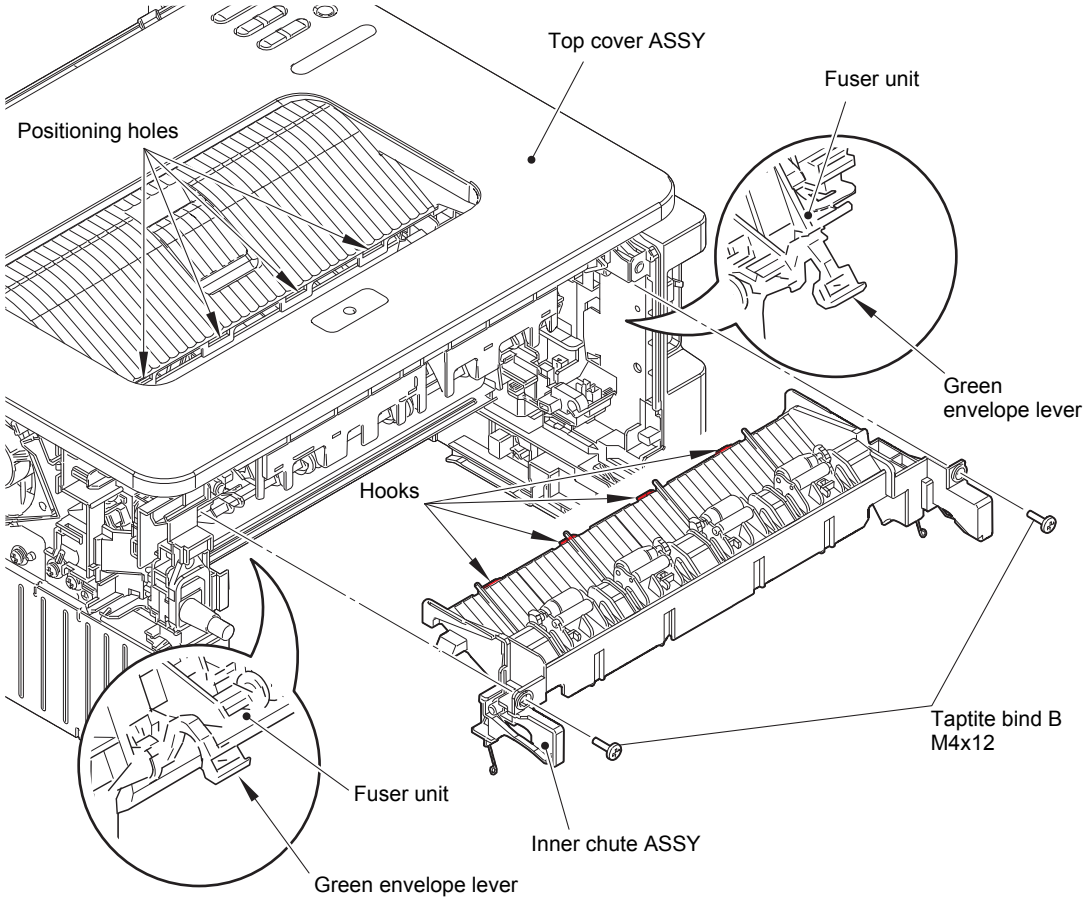


Fig. 3-17

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 Hooks A, B, and the Hook C on the Side cover L in order of the arrow A to C, and remove the Side cover L.

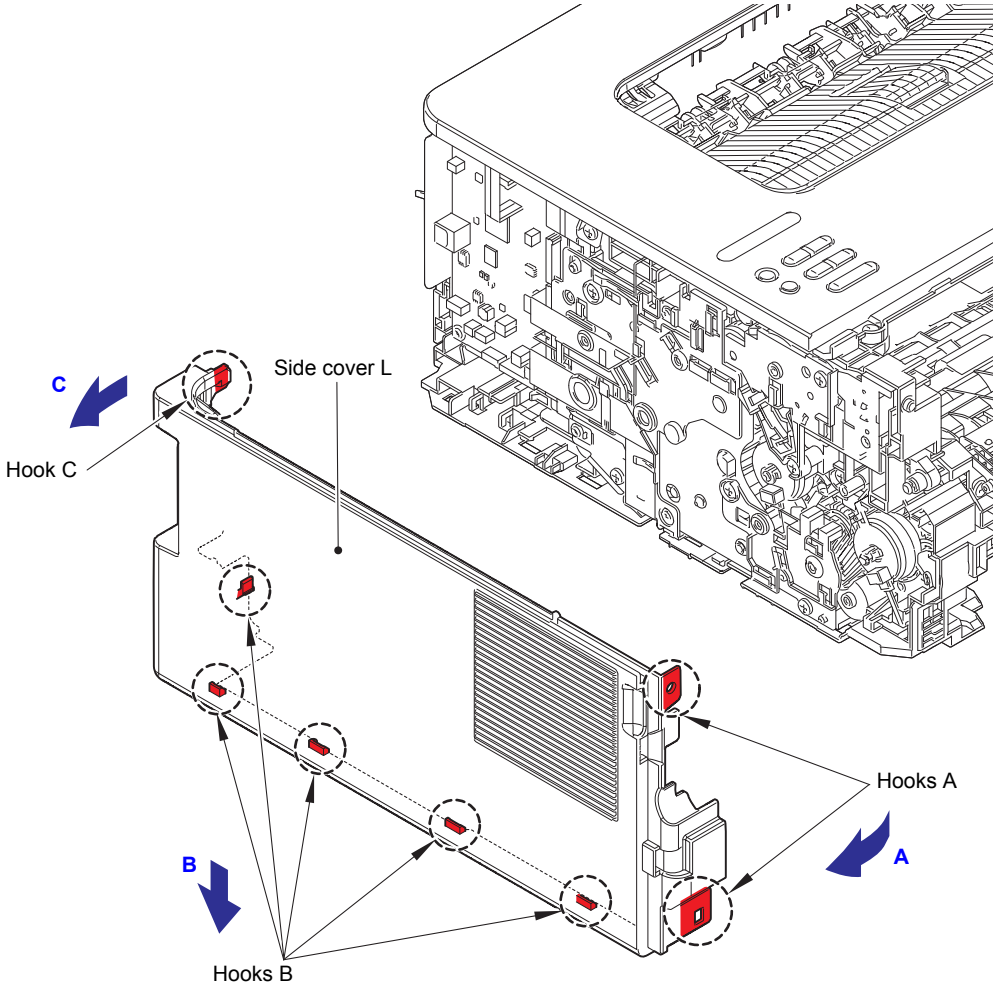


Fig. 3-18

9.9 Top cover ASSY

(1) Disconnect the Panel flat cable and the NFC flat cable (only for models with NFC) from the Main 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.

(2) Remove the three Taptite bind B M4x12 screws.

(3) Release the Hooks on the Top cover ASSY in order of the Hook A to D, and remove the Top cover ASSY in the direction of the arrow.

(4) Remove the Paper stopper from the Top cover ASSY.

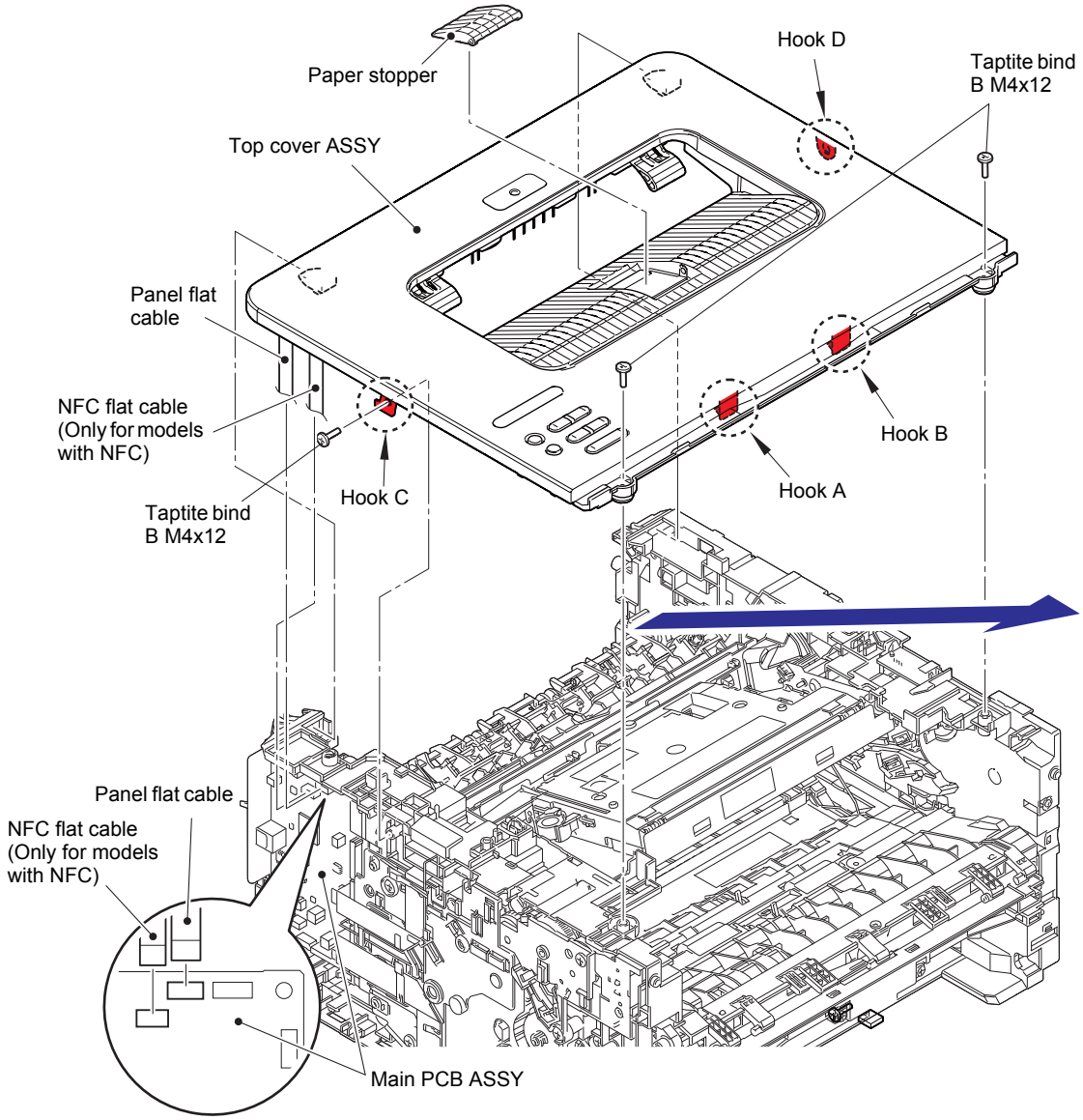


Fig. 3-19

■ Top cover ASSY <LED models>

(5) Release each Hook to remove the Panel PCB ASSY from the Top cover ASSY. Release the Panel flat cable from the securing fixtures.

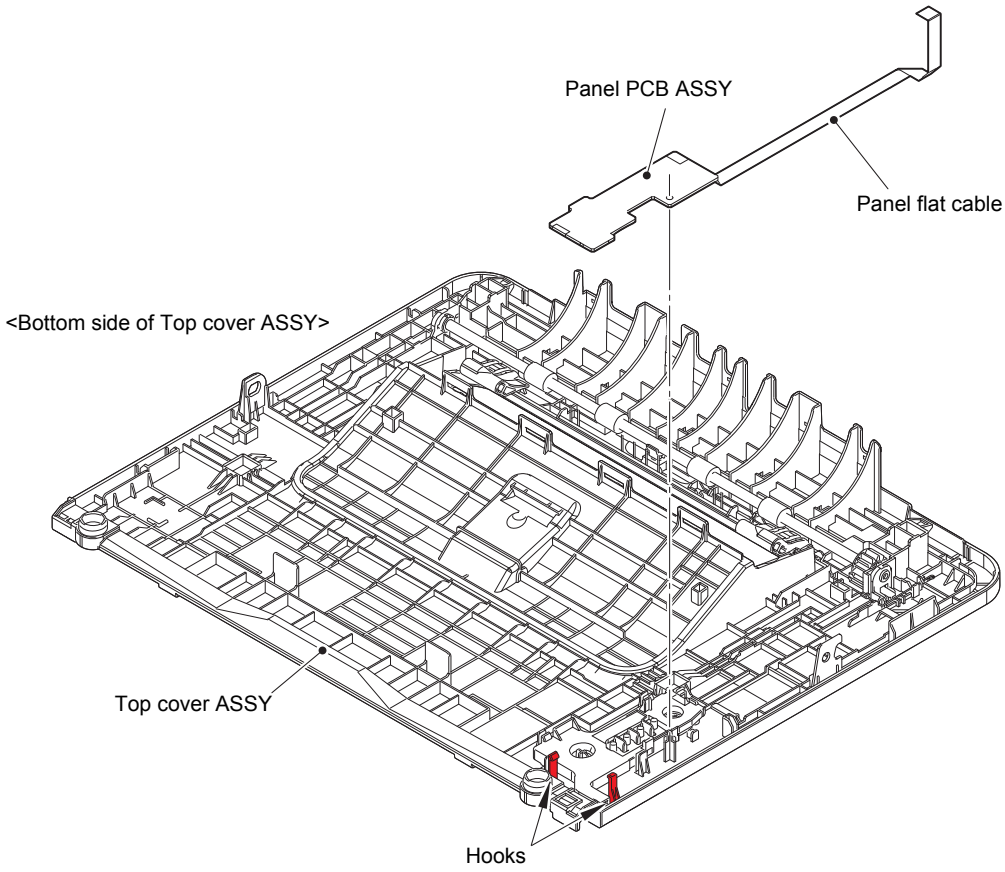


Fig. 3-20

Harness routing: Refer to “1. Top cover ASSY”.

■ Top cover ASSY <LCD models>

(5) Disconnect the LCD flat cable from the LCD 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 each Hook to remove the LCD PCB ASSY from the Top cover ASSY. Release the Panel flat cable from the securing fixtures.

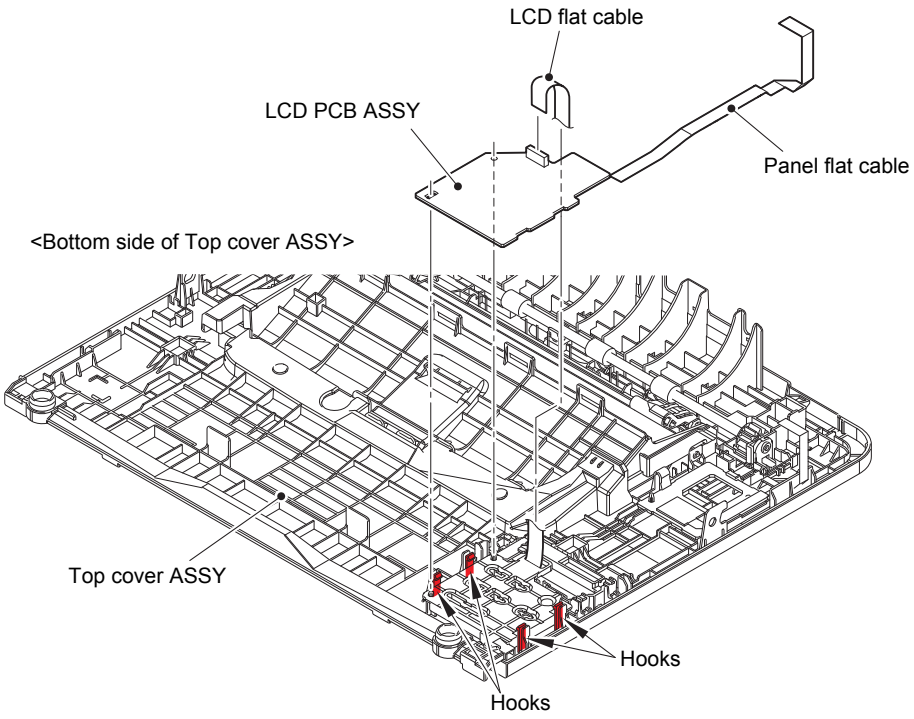


Fig. 3-21

Harness routing: Refer to “1. Top cover ASSY”.

(7) Remove the Rubber key from the Top cover ASSY.

(8) Release each Hook A to remove the LCD cover from the Top cover ASSY.

(9) Release the Hook B to remove the LCD ASSY from the LCD cover.

(10) Release the Hook C to remove the NFC PCB ASSY from the Top cover ASSY. (Only for models with NFC)

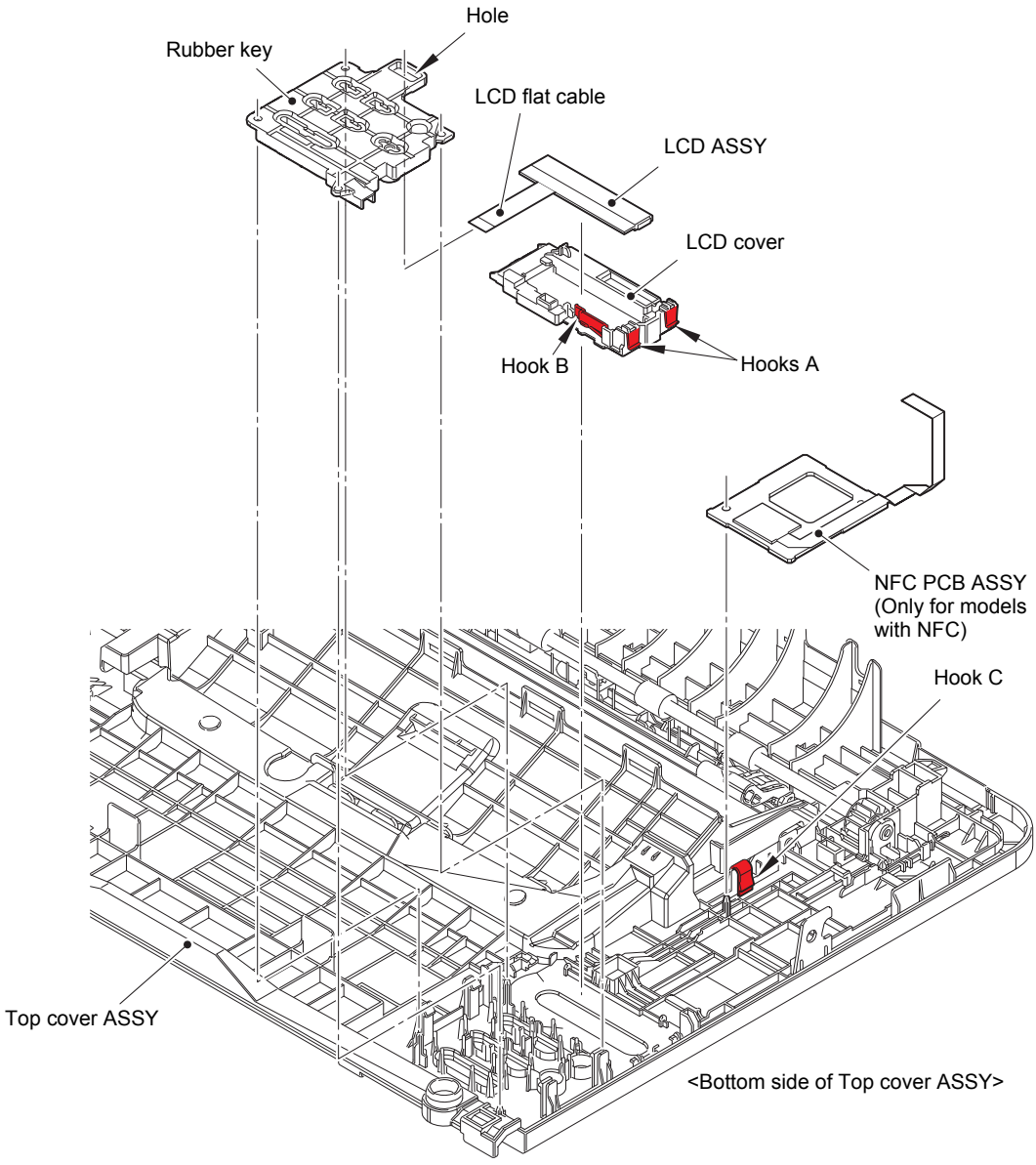


Fig. 3-22

9.10 Fuser unit

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

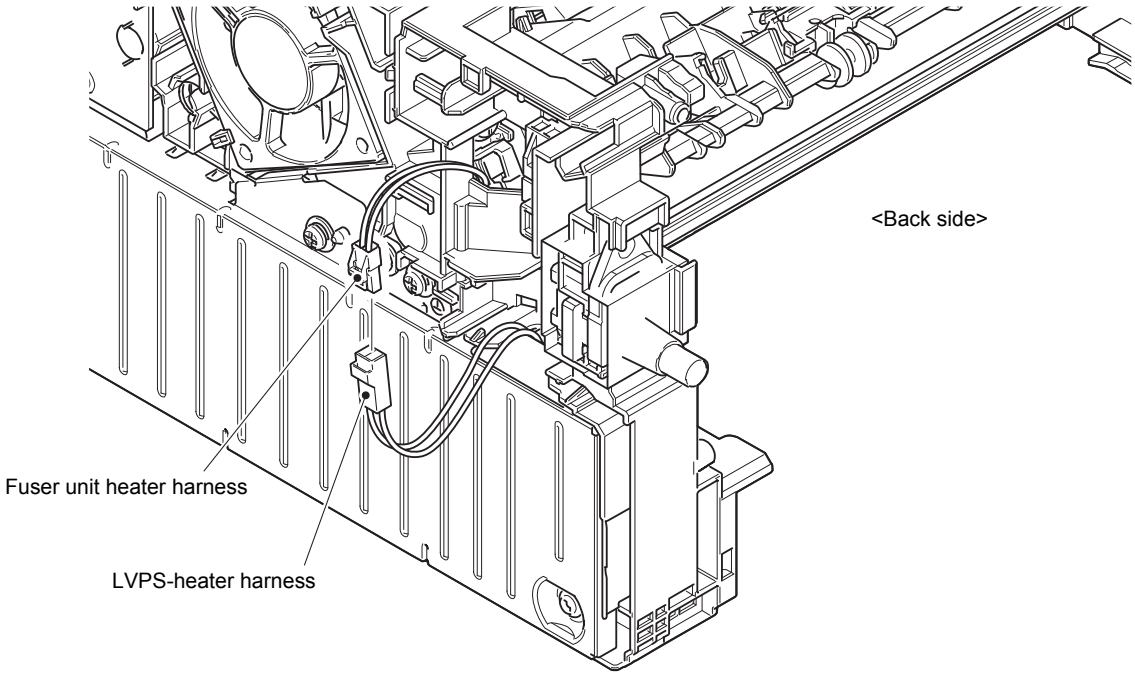


Fig. 3-23

Harness routing: Refer to “2. 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.

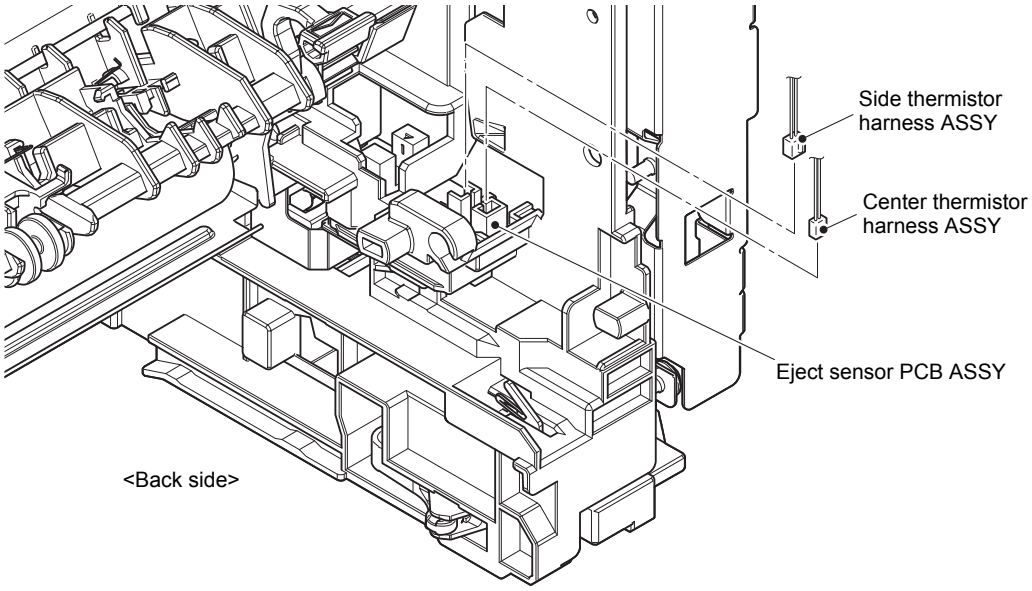


Fig. 3-24

Harness routing: Refer to “2. Rear side of the machine”.

(4) Remove the two Taptite pan B M4x14 screws, and remove the Fuser unit.

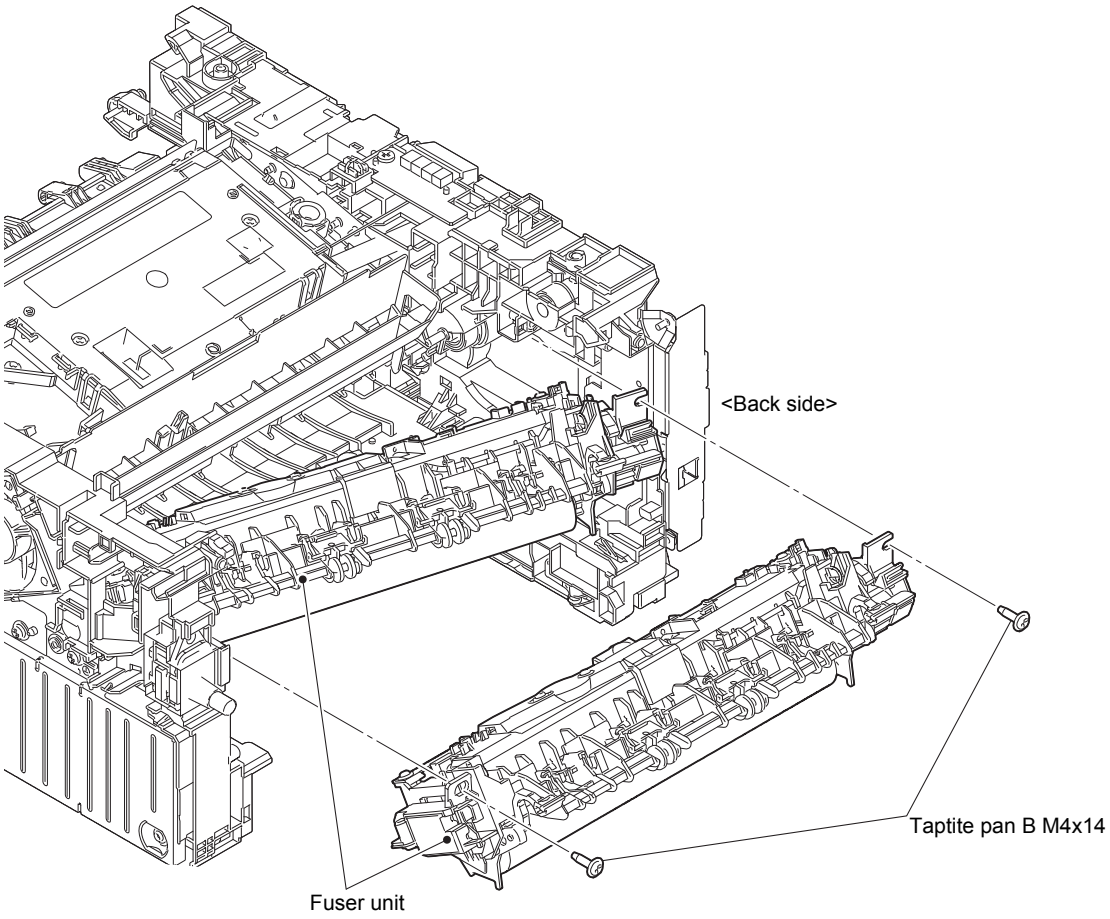


Fig. 3-25

Note:
- DO NOT apply a physical impact or vibration to the Fuser unit.
- DO NOT touch the roller and the electrodes to prevent breakage of the Fuser unit.

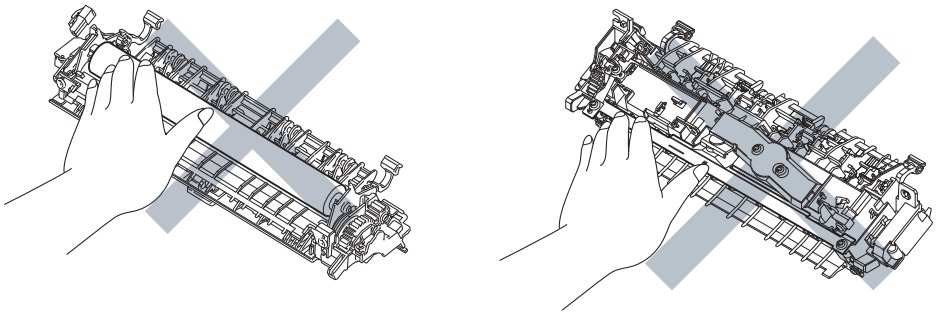


Fig. 3-26

9.11 Low-voltage power supply PCB ASSY

WARNING	When removing the Low-voltage power supply, DO NOT touch it within 3 minutes after disconnecting the AC cord as it may cause an electric shock due to the electric charge accumulated in the capacitor.

(1) Remove the two Screw cup M3x8 (black) screws, the Screw pan M4x8 screw, the Washer spring 2-4, and the Washer 5, and remove the LVPS shield plate cover and the LVPS insulation sheet.

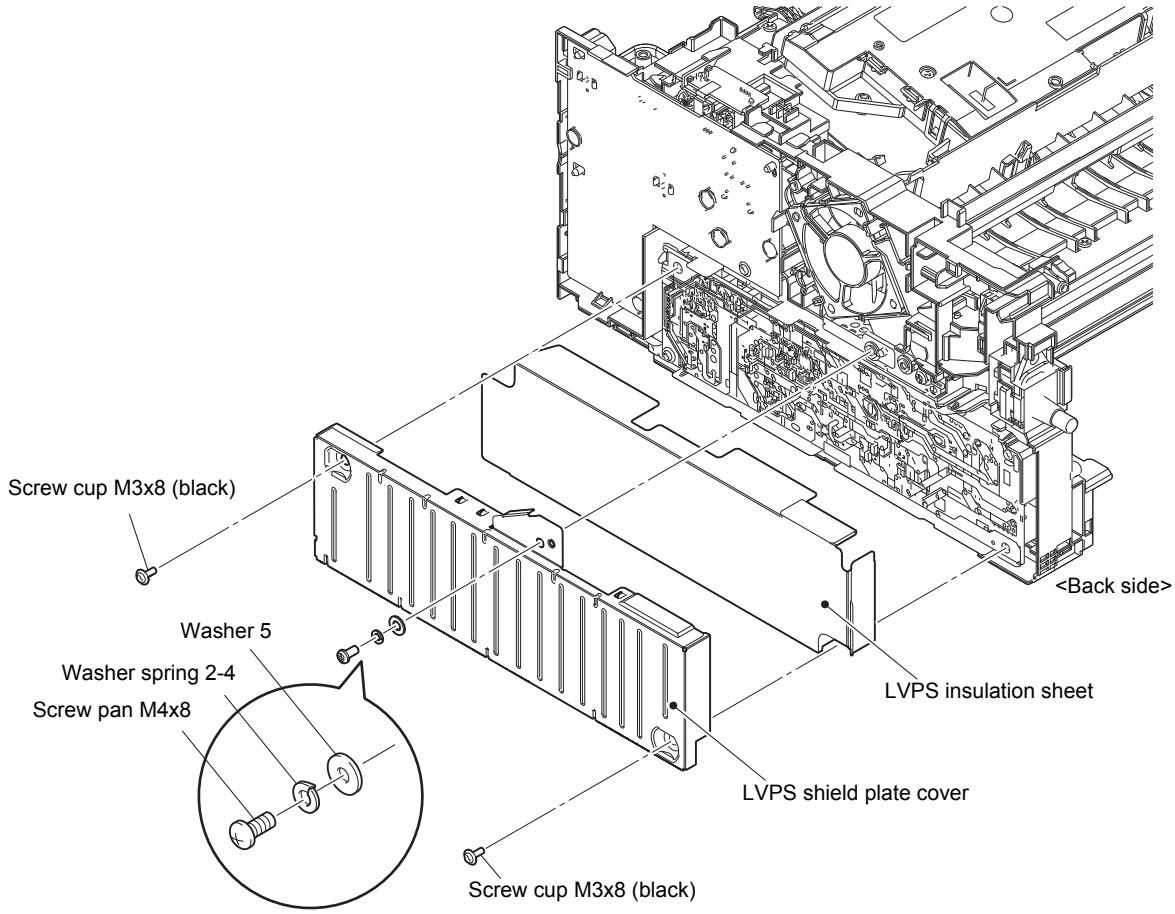


Fig. 3-27

Assembling Note:

- Make sure to attach the LVPS insulation sheet. Failure to attach the insulation sheet can result in fire or electrical shock.

(2) Remove the Screw pan M4x8 screw, the Washer spring 2-4, and the Washer 5, and remove the Ground harness from the LVPS shield plate.

(3) Release the Ground harness from the securing fixtures.

(4) Remove the Power cord from the Mounting position and release it from the securing fixtures.

(5) Remove the two Screw cup M3x8 (black) screws to remove the Low-voltage power supply PCB ASSY. Disconnect the LVPS harness from the back of the Low-voltage power supply PCB ASSY.

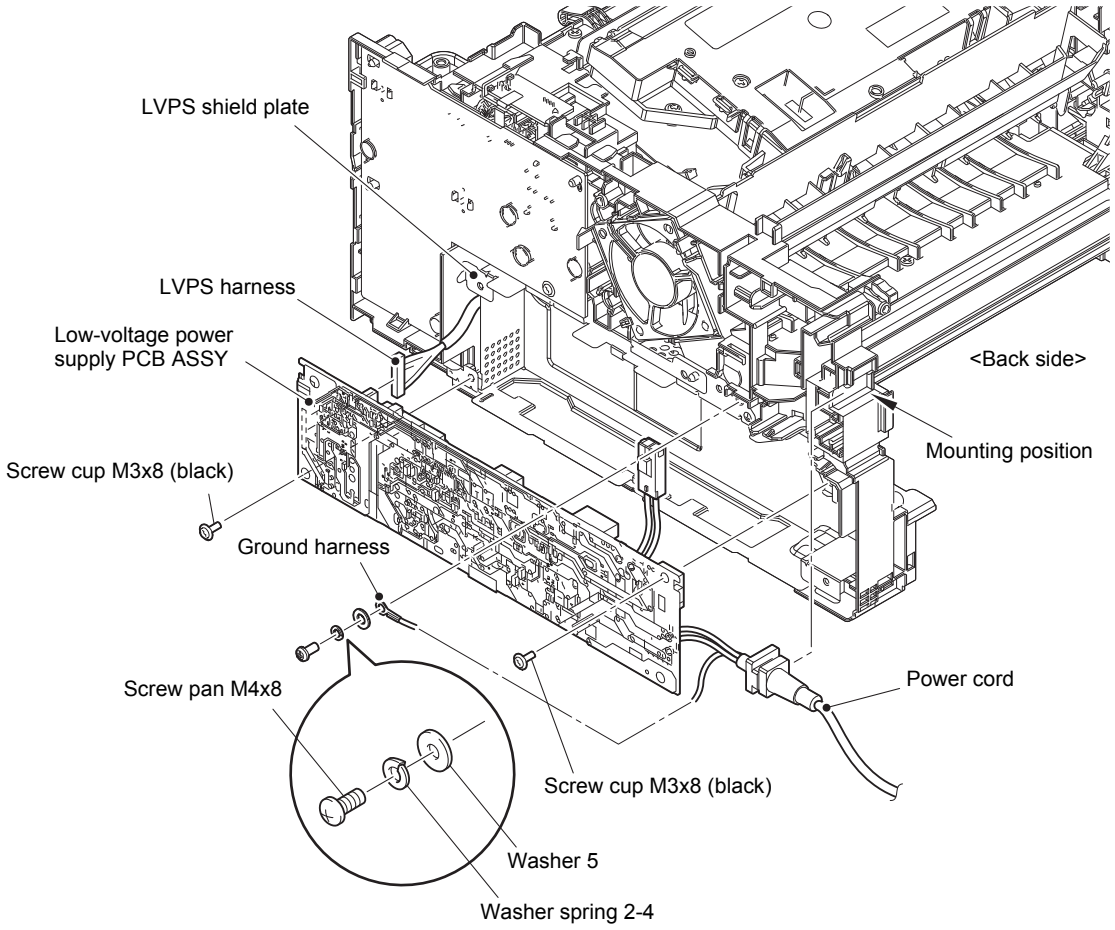


Fig. 3-28

Harness routing: Refer to “2. 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.

9.12 New toner sensor PCB ASSY

(1) Disconnect the New toner sensor flat cable from the High-voltage power supply PCB ASSY, and release the Hook to remove the New toner sensor PCB ASSY. Disconnect the Registration front/rear sensor harness from the New toner sensor PCB ASSY.

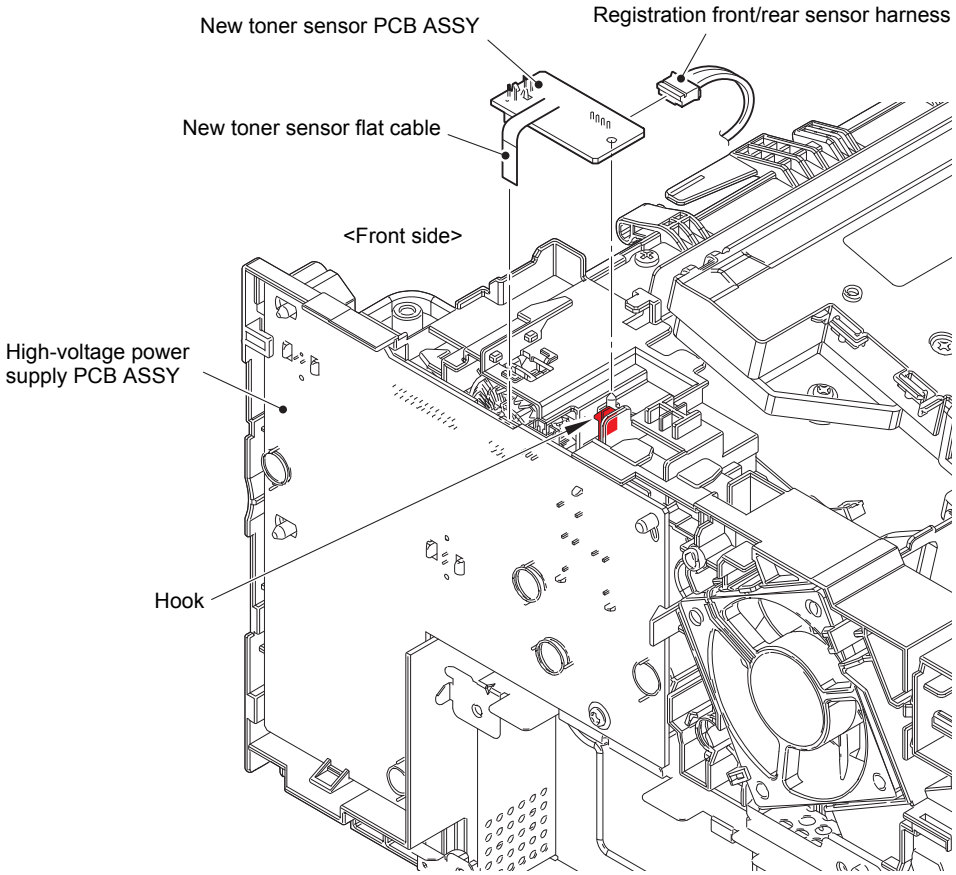


Fig. 3-29

Harness routing: Refer to “2. Rear side of the machine”.

9.13 HVPS flat cable / High-voltage power supply PCB ASSY

(1) Disconnect the HVPS flat cable 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) Disconnect the Fan harness from the High-voltage power supply PCB ASSY.

(3) Remove the Screw cup M3x8 (black) screw. Release each Hook and pull out the right side of the High-voltage power supply PCB ASSY in the direction of the arrow A to remove it from the Pins. And then pull out the High-voltage power supply PCB ASSY in the direction of the arrow B to remove it from the Rib.

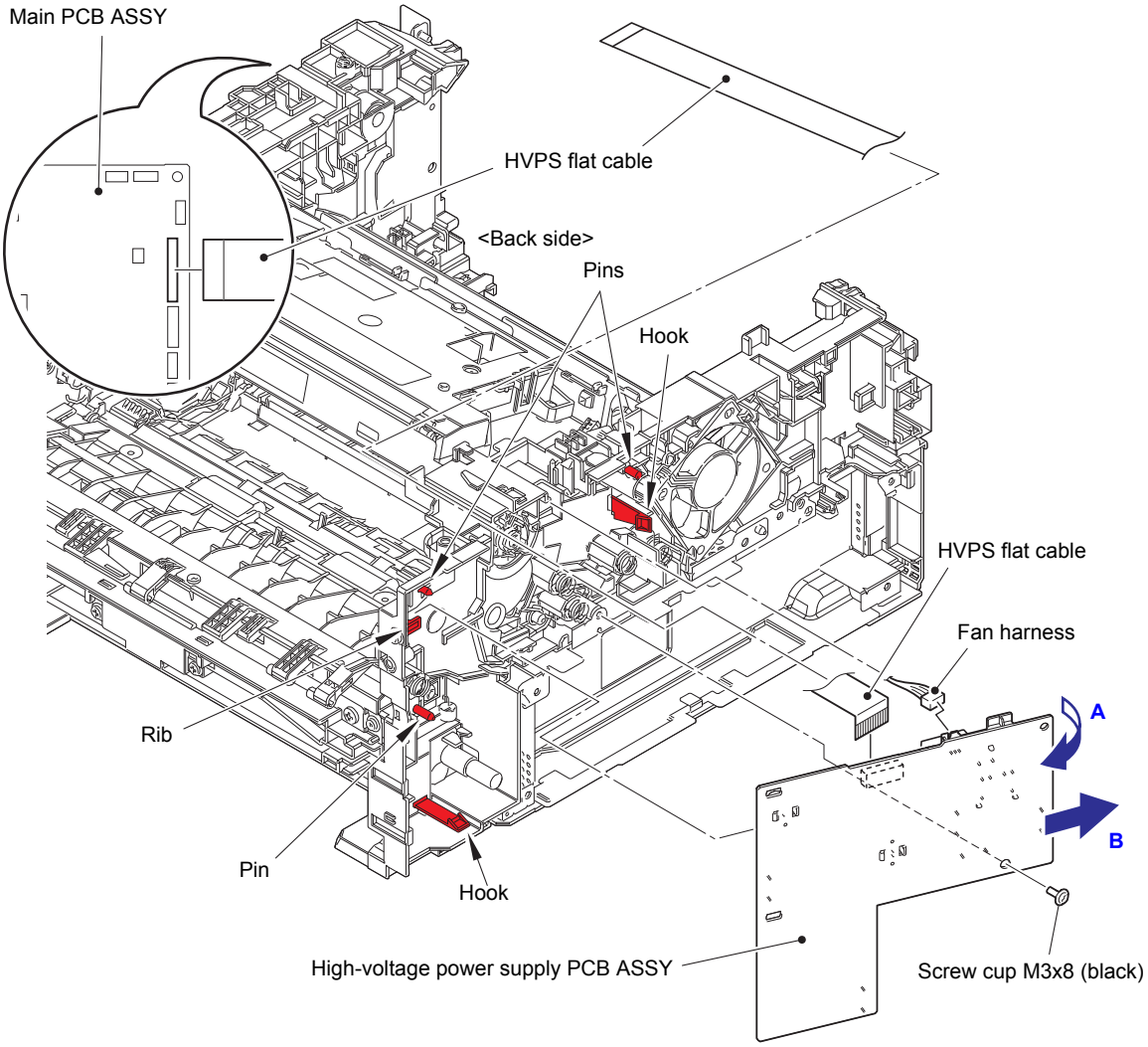


Fig. 3-30

Harness routing: Refer to "2. Rear side of the machine" and "3. Top side of the machine".

Assembling Note:

- After attaching the High-voltage power supply PCB ASSY, push the Electrode springs from inside of the machine to check that nothing is caught. (Refer to Fig. 2-8.)

Assembling Note:

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

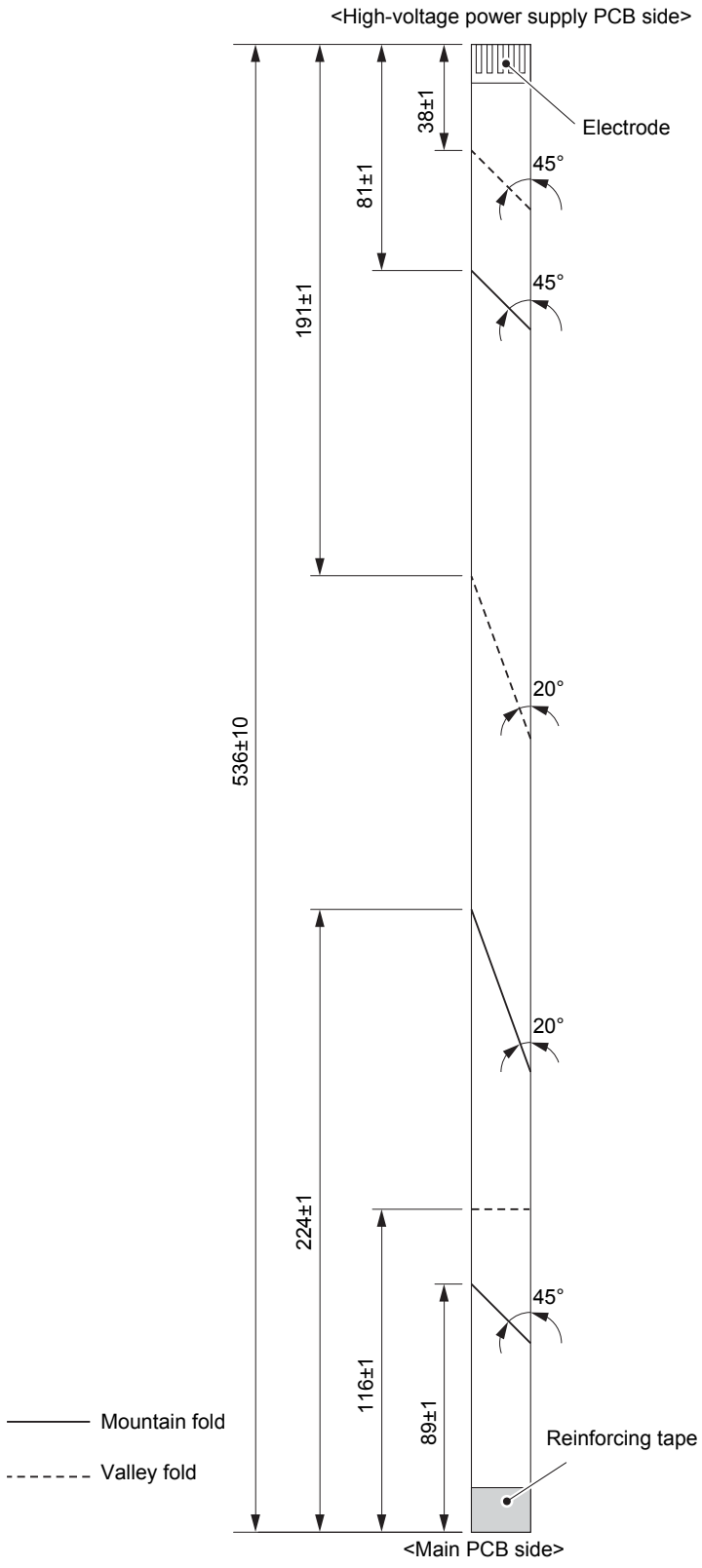


Fig. 3-31

9.14 Fan

(1) Release the Fan harness from the securing fixtures.

(2) Release each Hook to remove the Fan, and pull out the Fan harness from the Hole.

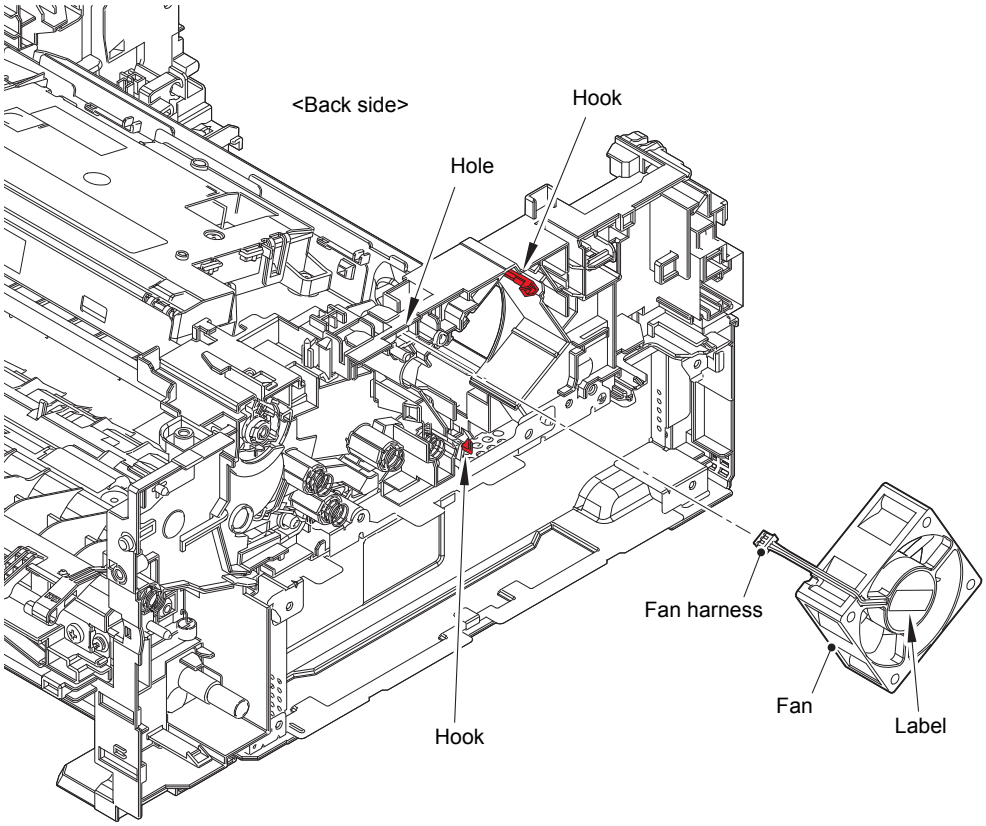


Fig. 3-32

Harness routing: Refer to “2. Rear side of the machine”.

Assembling Note:

- When assembling the Fan, insert the Fan harness into the hole to make sure that the Fan harness is not caught.
- Attach the Fan so that the surface with the Label faces out.

9.15 Relay PCB ASSY (For toner box models and MP models) / Toner box new PCB ASSY (For models with toner box)

■ Toner box models

(1) Disconnect the Toner box relay flat cable from the Main PCB ASSY.

(2) Release the Toner sensor harness, the Toner box new harness, and the Toner box solenoid harness from the securing fixtures.

(3) Remove the Taptite bind B M4x12 screw. Remove the Relay PCB ASSY, and disconnect each harness from the Relay PCB ASSY.

(4) Remove the Taptite bind B M3x8 screw to remove the Shading film and the Toner box new PCB ASSY.

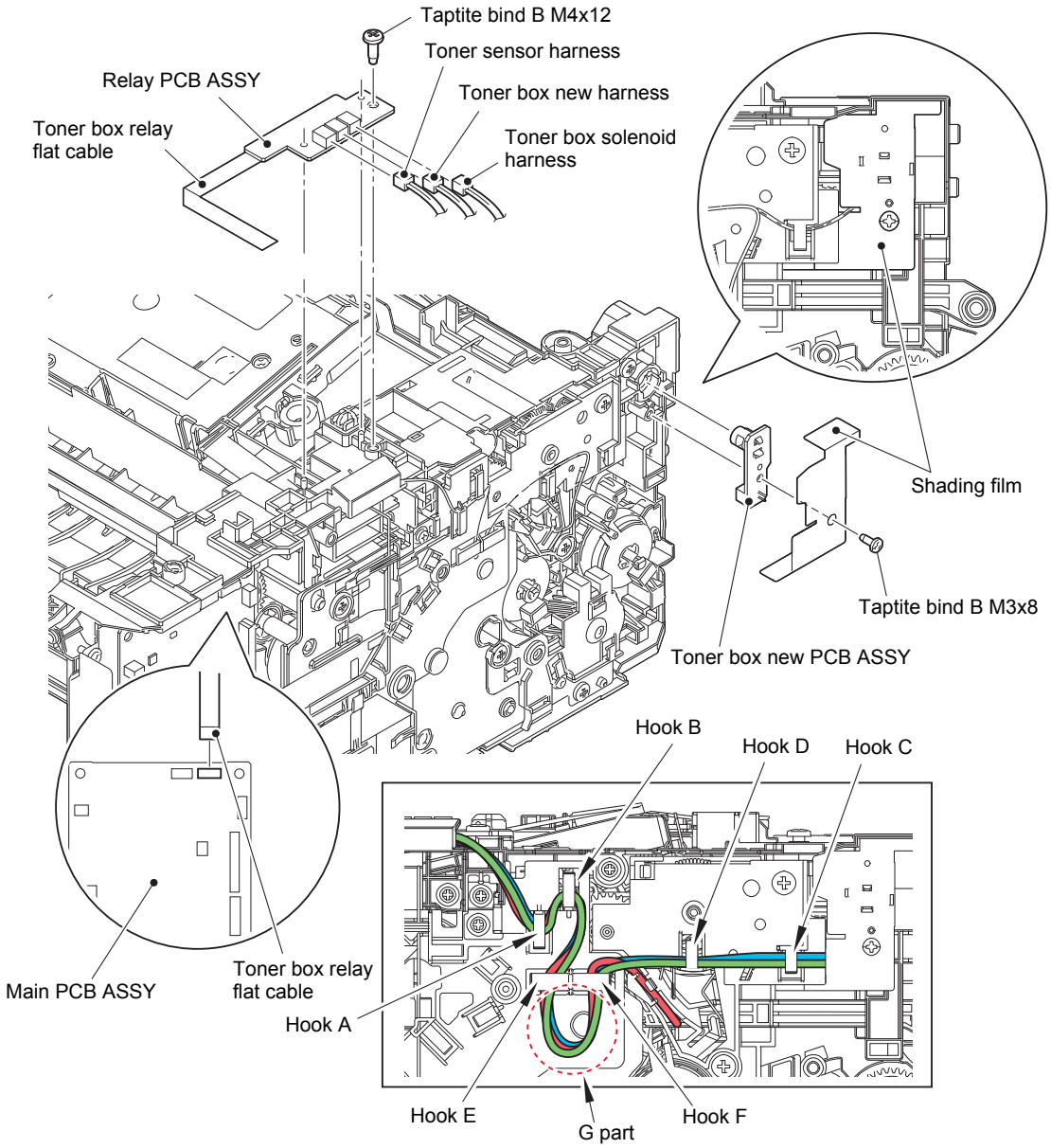


Fig. 3-33

Harness routing: Refer to "3. Top side of the machine" and "4. Frame L unit (Manual feed models)".

Assembling Note:

- Secure each harness in the Hooks in order of the Hook A to D, and then secure them in the Hooks from the Hook E to F. Be sure to give them enough slack in the G part for adjustment.

■ MP models

(1) Disconnect the MP relay flat cable from the Main PCB ASSY.

(2) Release the MP sensor harness and the MP paper empty sensor harness from the securing fixtures.

(3) Remove the Taptite bind B M4x12 screw. Remove the Relay PCB ASSY, and disconnect each harness from the Relay PCB ASSY.

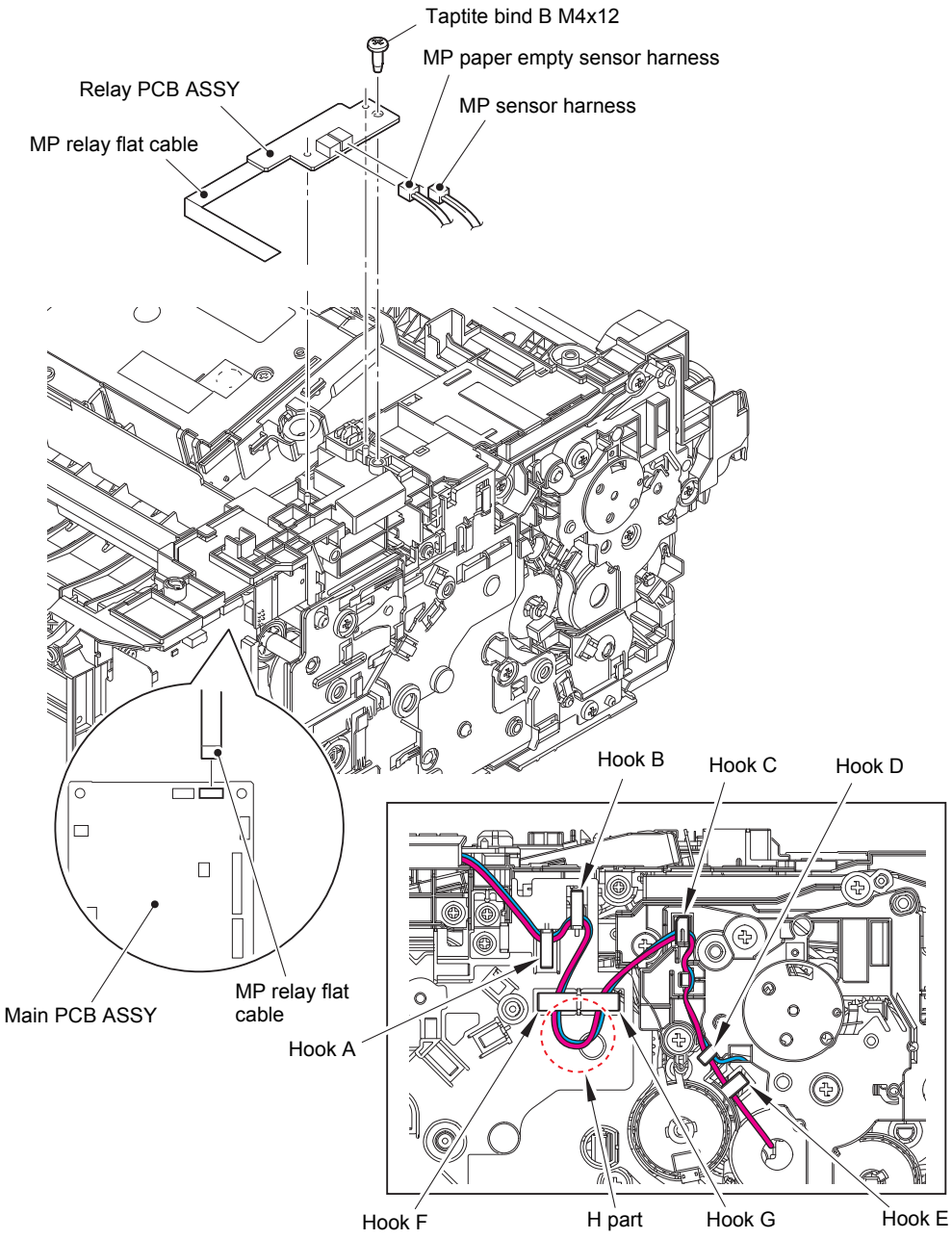


Fig. 3-34

Harness routing: Refer to "3. Top side of the machine" and "5. Frame L unit (MP models)".

Assembling Note:

- Secure each harness in the Hooks in order of the Hook A to E, and then secure them in the Hooks from the Hook F to G. Be sure to give them enough slack in the H part for adjustment.

9.16 Laser unit flat cable / 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) Disconnect the Polygon motor harness from the Main PCB ASSY, and release it from the securing fixtures.

(3) Remove the four Taptite cup S M3x8 SR screws to remove the Laser unit.

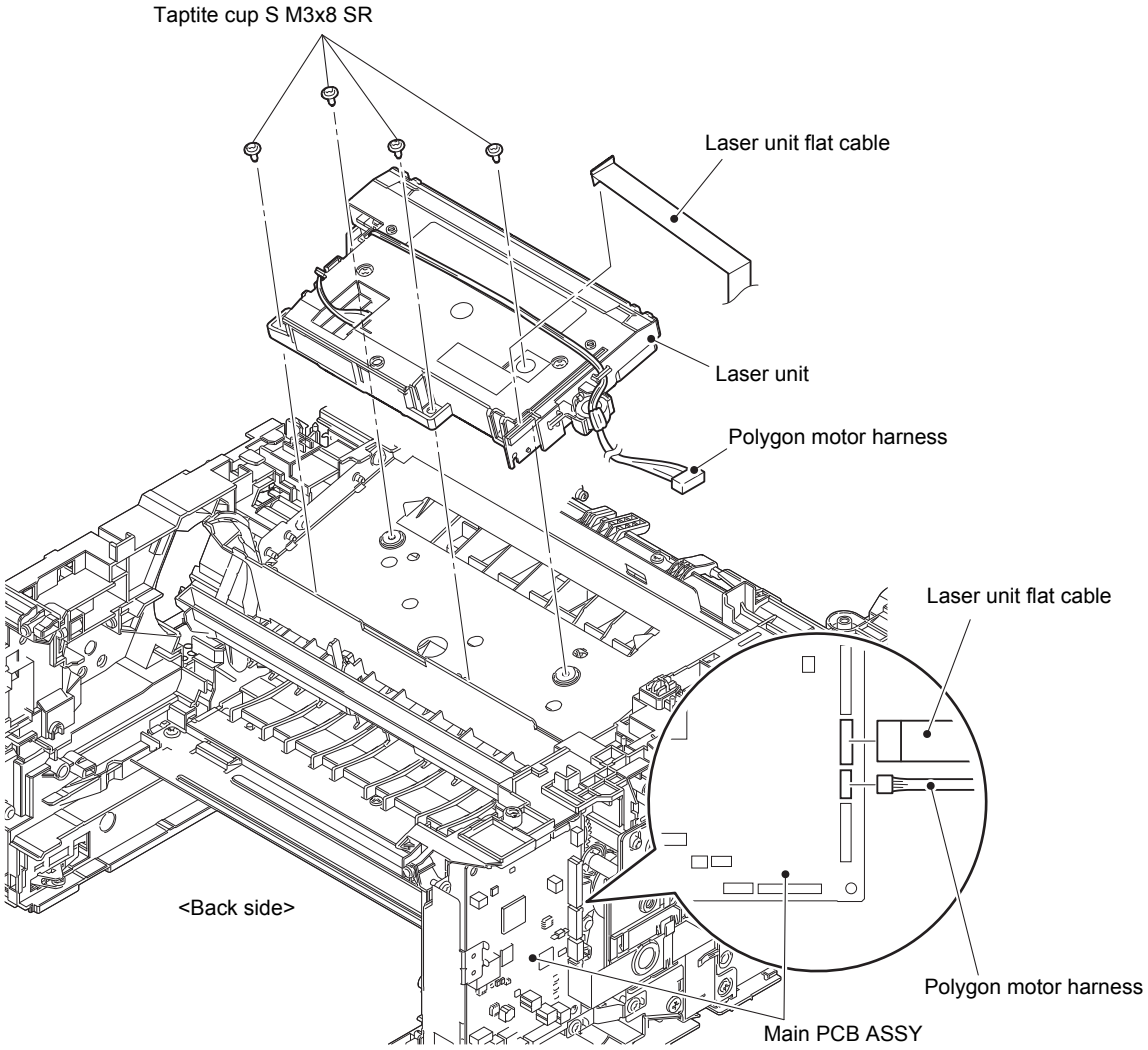


Fig. 3-35

Harness routing: Refer to "3. Top side of the machine", "4. Frame L unit (Manual feed models)".

Assembling Note:

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

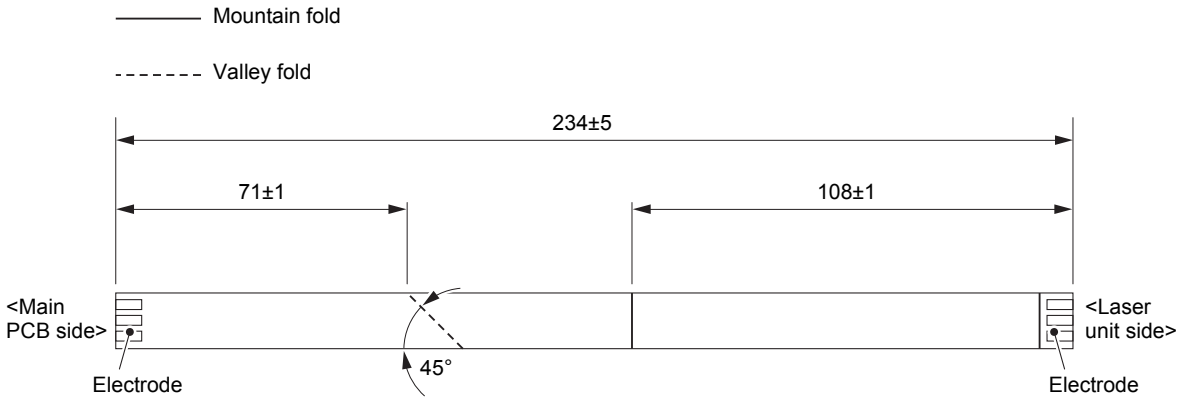


Fig. 3-36

Assembling Note:

- 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>

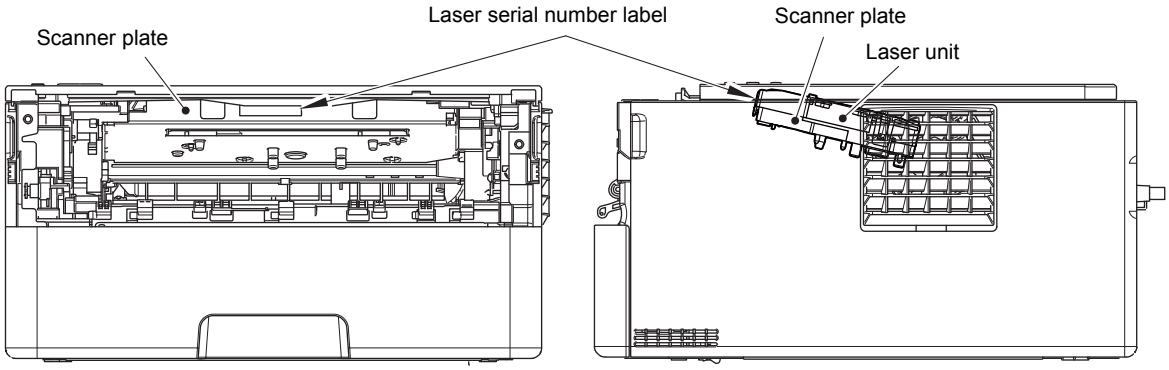


Fig. 3-37

Assembling Note:

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

9.17 Filter

(1) Release the Hook to remove the Filter from the Air duct.

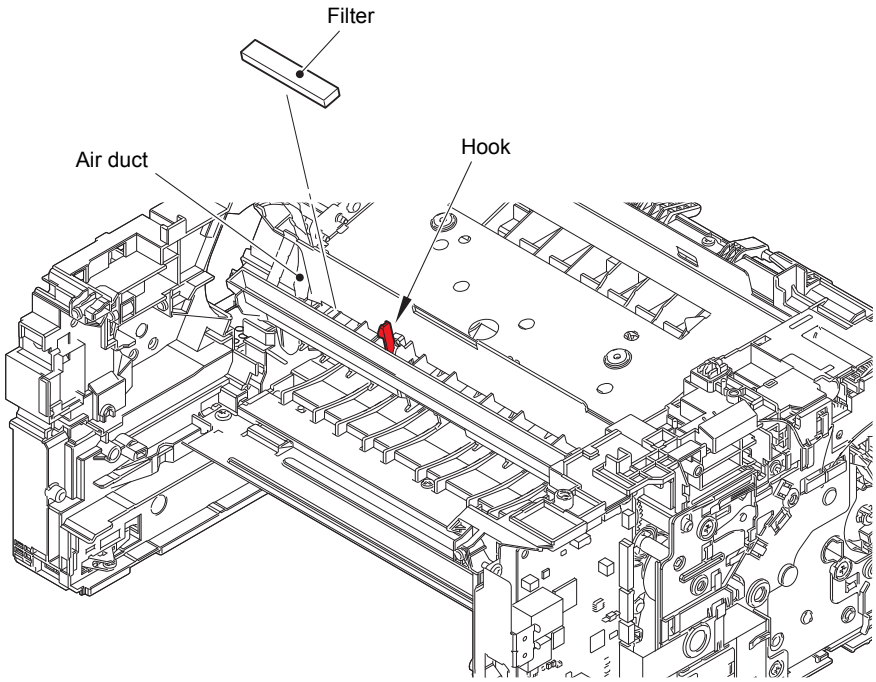


Fig. 3-38

9.18 Wireless LAN PCB (Only for wireless network models)

(1) Remove the Tape on the Wireless LAN PCB, and disconnect the Wireless LAN PCB from the Main PCB ASSY.

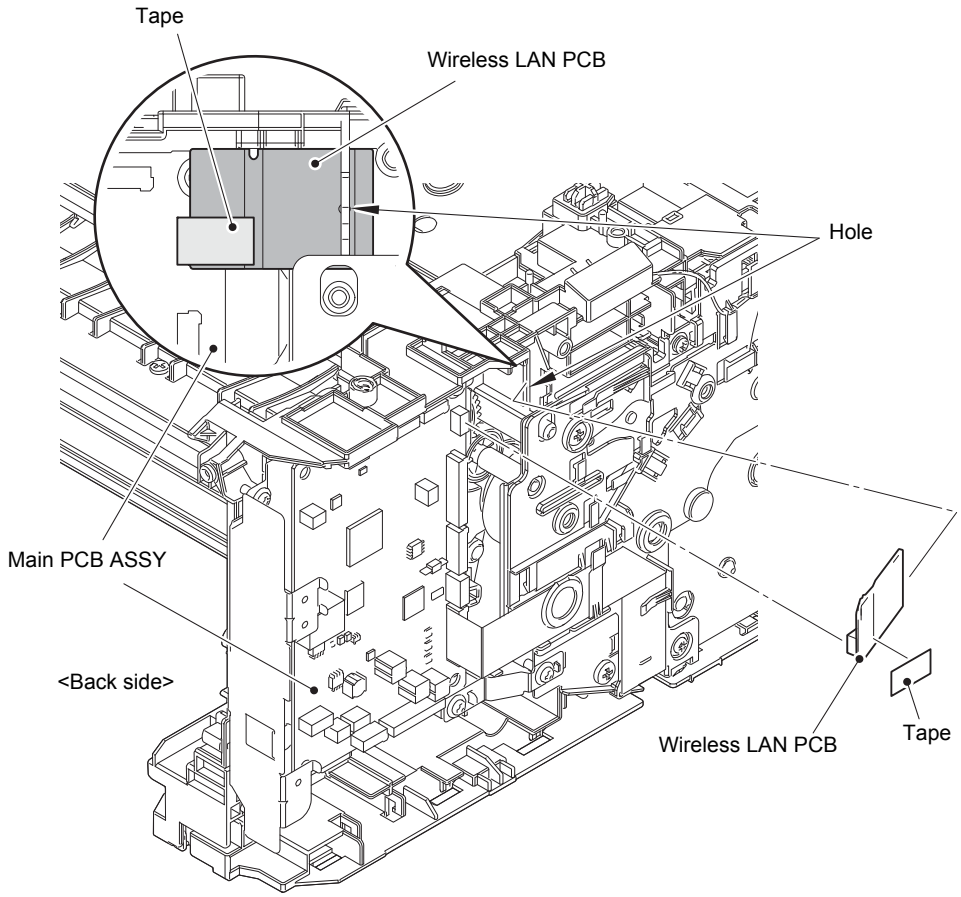


Fig. 3-39

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 all the 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.

9.19 Roller holder ASSY

(1) Push the Link arm in the direction of the arrow A. Rotate the Roller holder ASSY, and release the Boss.

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

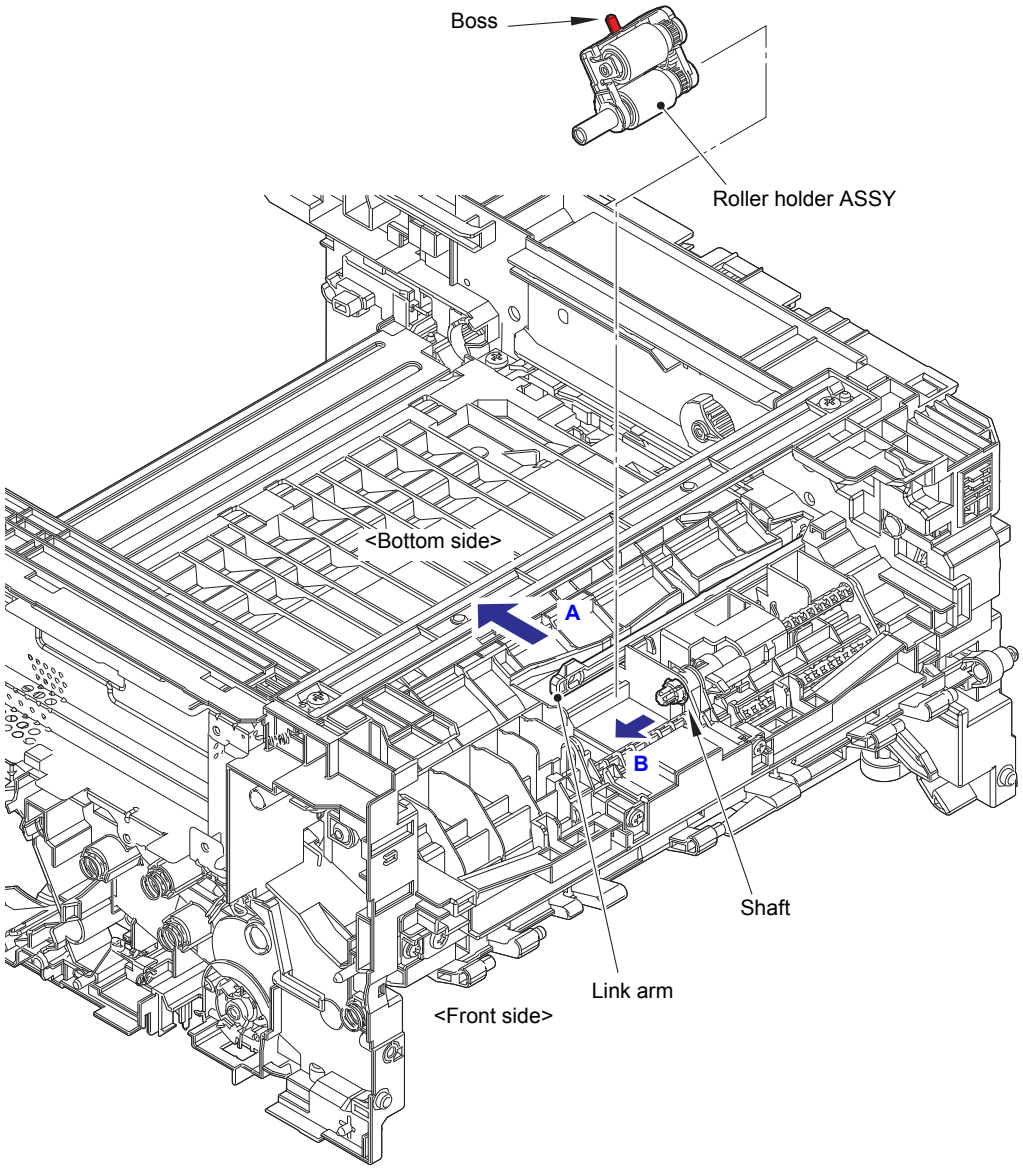


Fig. 3-40

9.20 Main PCB ASSY

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

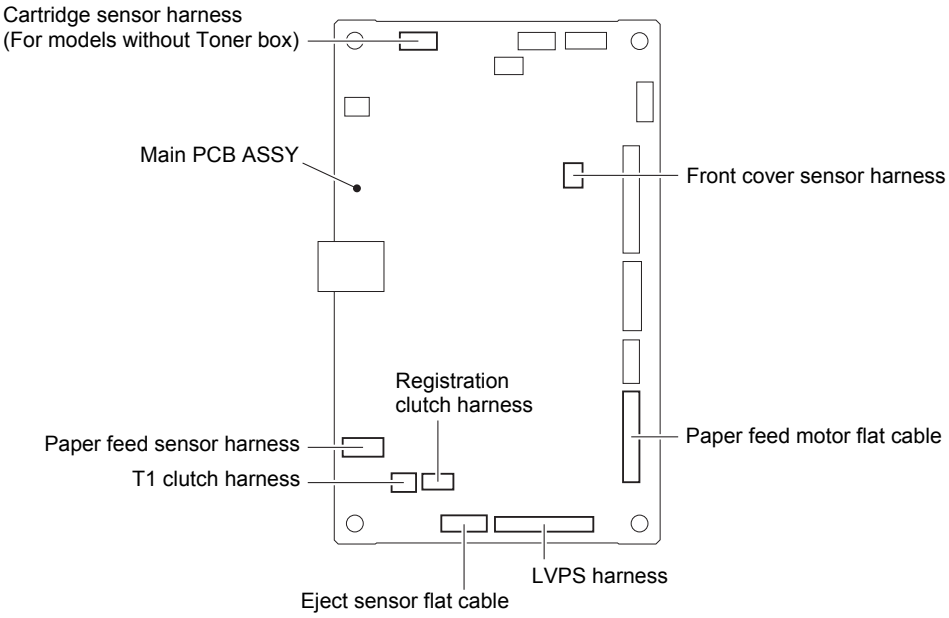


Fig. 3-41

Harness routing: Refer to "3. Top side of the machine", "4. Frame L unit (Manual feed models)".

(2) Remove the two Screw cup M3x8 (black) screws, and remove the Main PCB FG plate 1.

(3) Remove the three Screw cup M3x8 (black) screws, and remove the Main PCB ASSY.

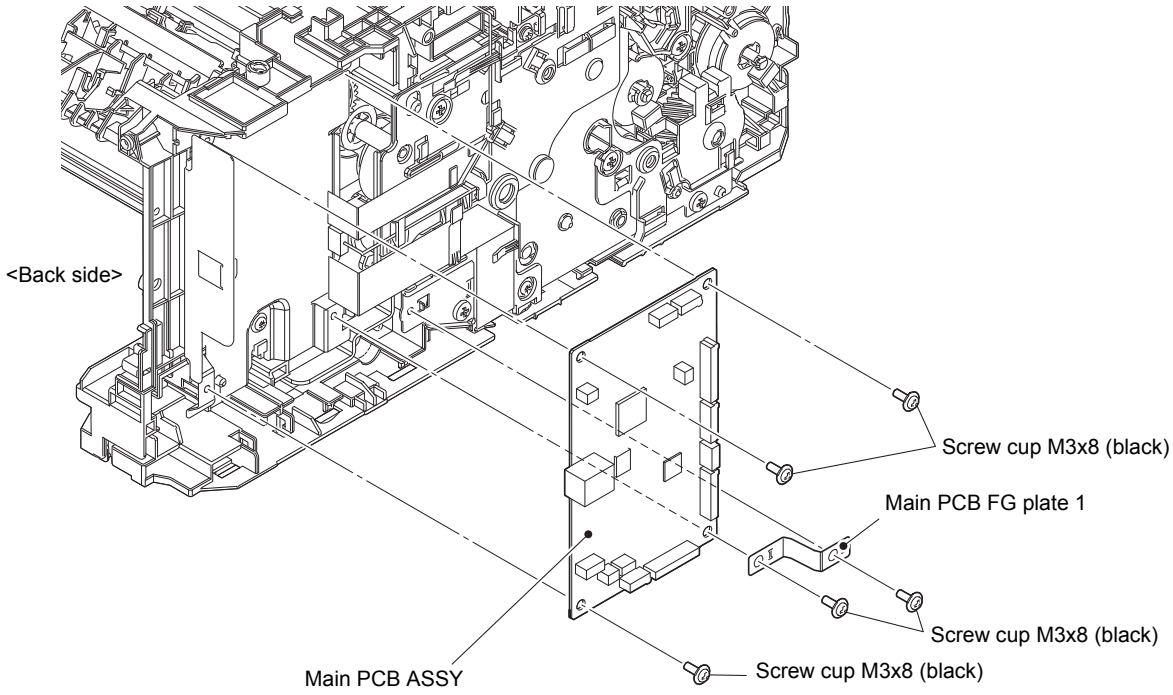


Fig. 3-42

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.

9.21 T1 clutch / Registration clutch

■ Manual feed models

(1) Release the T1 clutch harness and the Registration clutch harness from the securing fixtures.

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

(3) Release the Hook, and remove the Registration clutch.

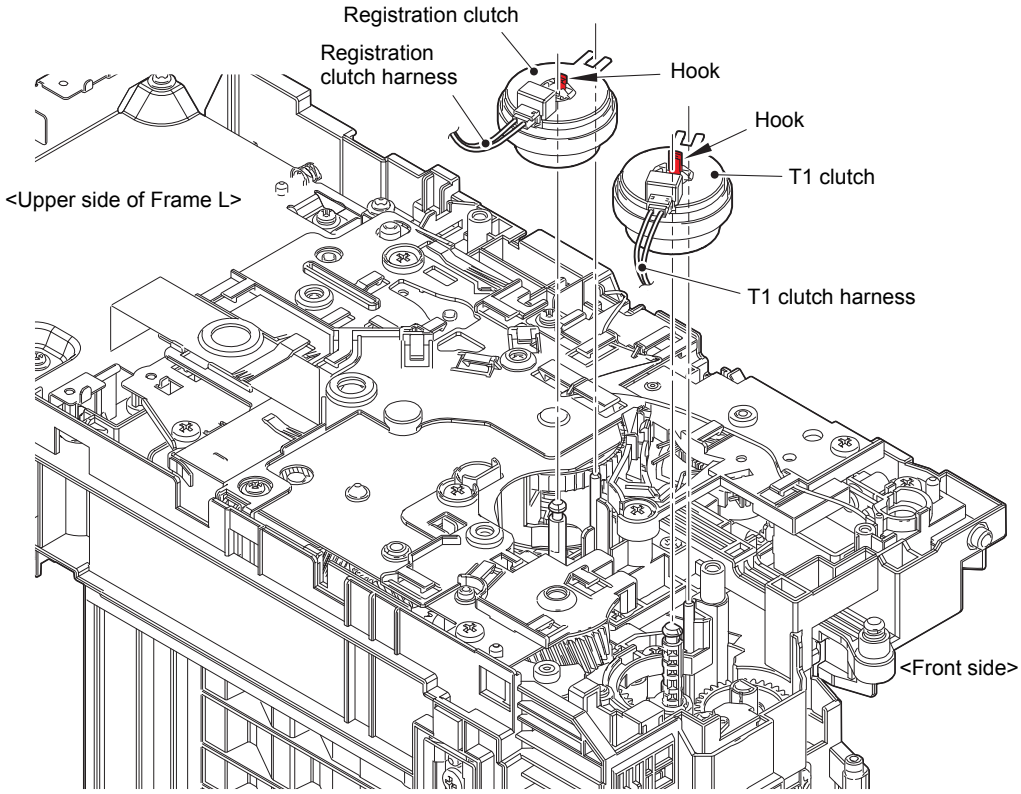


Fig. 3-43

Harness routing: Refer to “4. Frame L unit (Manual feed models)”.

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 the Registration clutch by engaging them with the Pins of the machine as shown in the figure below.

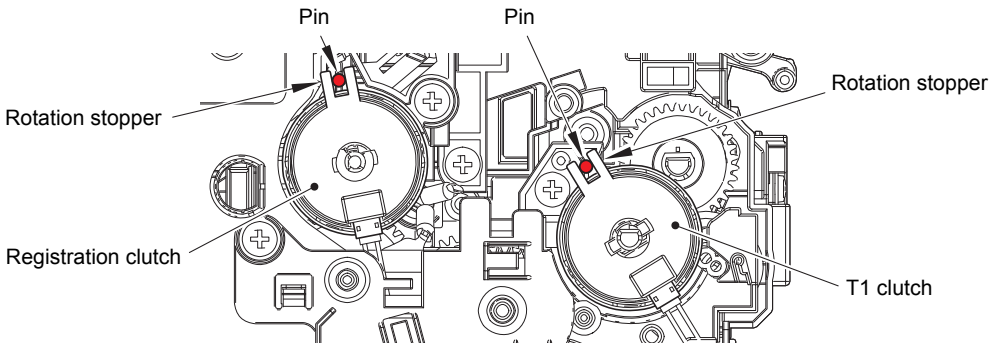


Fig. 3-44

■ MP models

(1) Release the Registration clutch harness from the securing fixtures.

(2) Remove the Collar 4 to remove the Registration clutch.

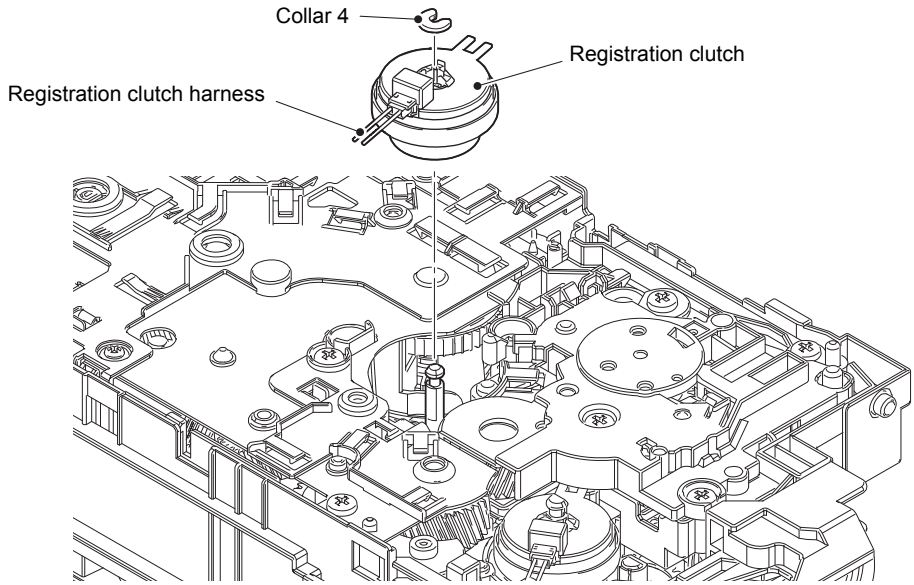


Fig. 3-45

(3) Release the T1 clutch harness and the Paper feed sensor harness from the securing fixtures.

(4) Remove the three Taptite bind B M4x12 screws and the Taptite pan B M4x14 screw to remove the MP frame parts. Pull out the Paper feed sensor harness and the MP paper empty sensor harness from the hole of the MP frame parts.

(5) Release the Hook, and remove the T1 clutch.

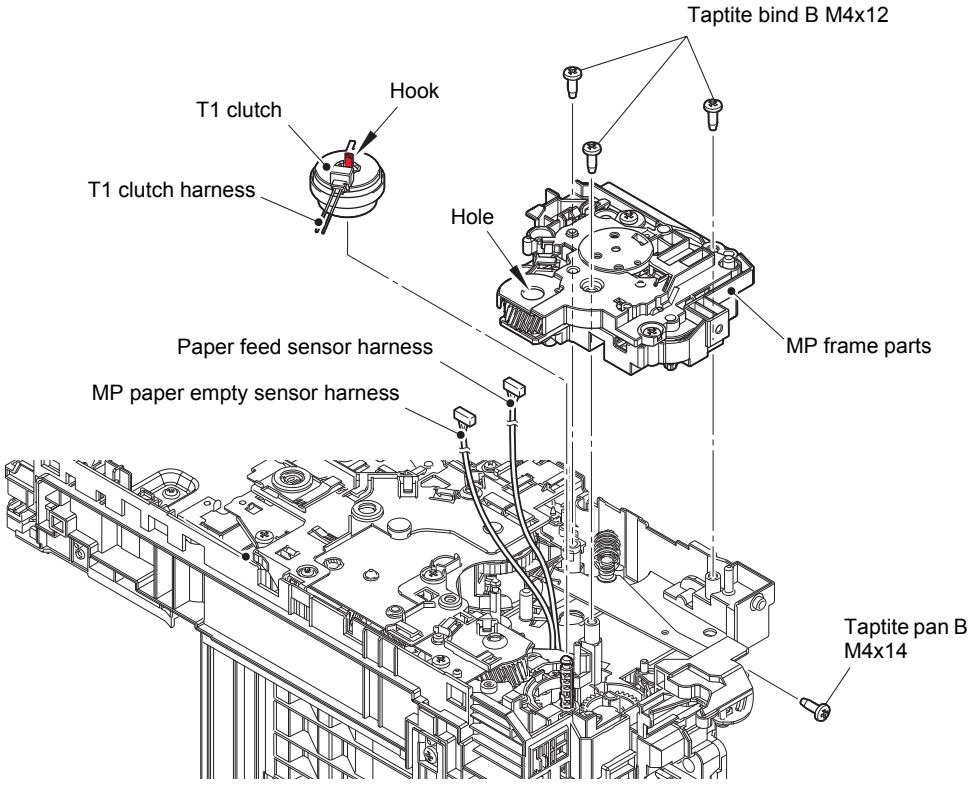


Fig. 3-46

Harness routing: Refer to “5. Frame L unit (MP models)”.

Assembling Note:

- When securing the T1 clutch harness and the Registration clutch harness, check that there is no harness slack.
- Attach the Rotation stopper of the T1 clutch by engaging it with the Pin of the machine as shown in the figure below.
- Attach the Rotation stopper of the Registration clutch by engaging it with the Protruding part of the machine as shown in the figure below.

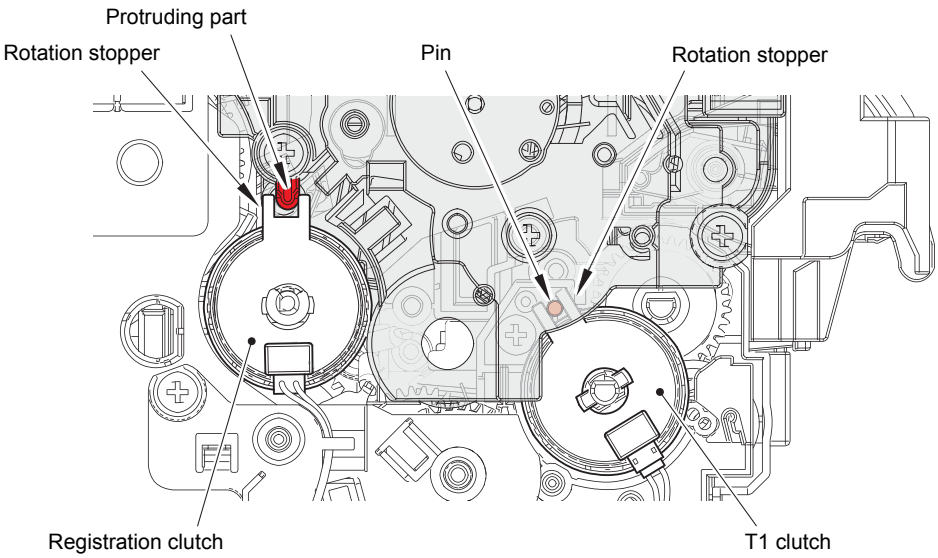


Fig. 3-47

9.22 Frame L unit

■ Manual feed models

(1) Remove the two Taptite bind B M4x12 screws and the Screw pan (S/P washer) M3x12DB screw, and remove the Front chute ASSY.

(2) Release the LVPS harness, the Cartridge sensor harness (only for models without Toner box) and the Paper feed sensor 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.

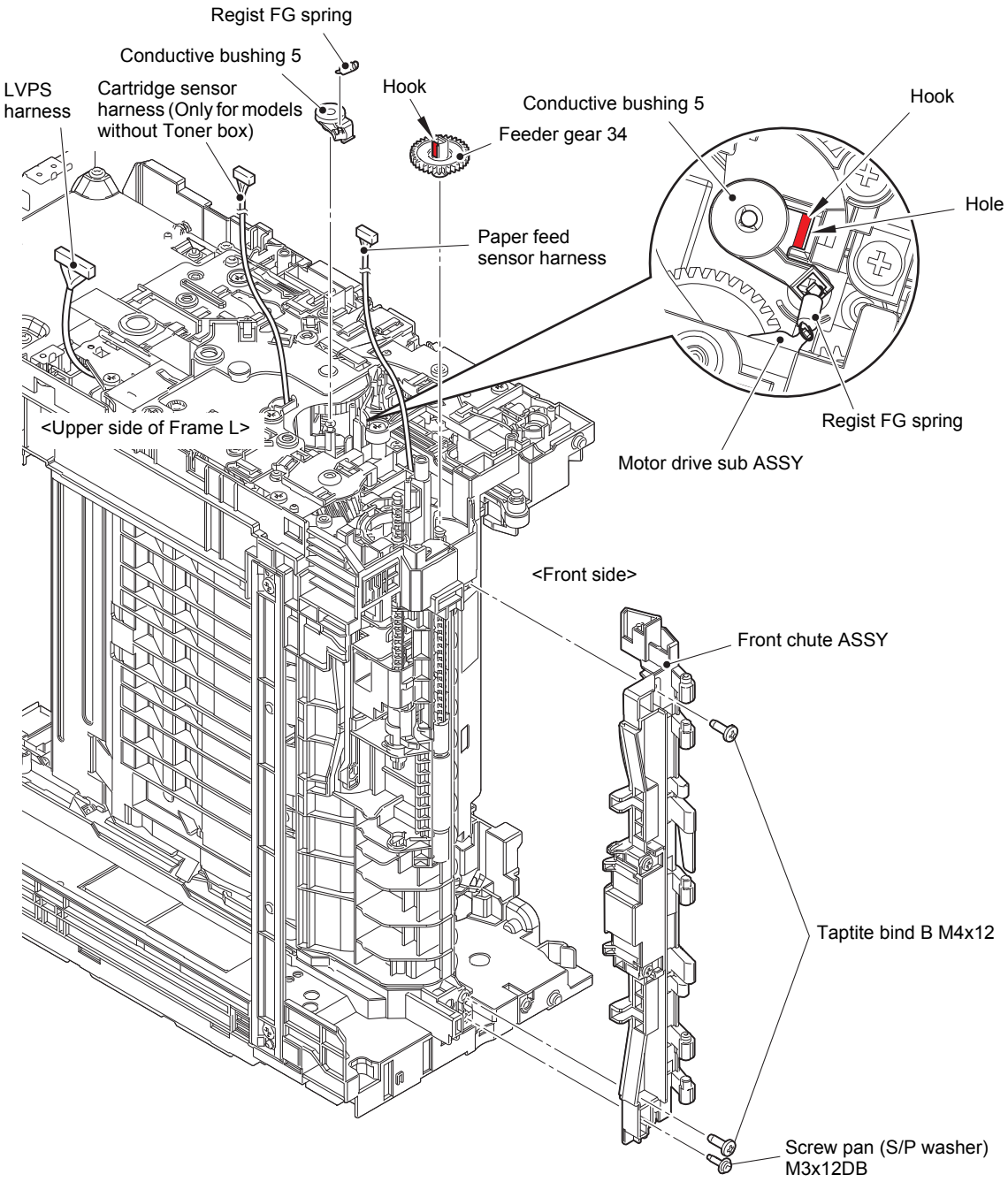


Fig. 3-48

Harness routing: Refer to "4. Frame L unit (Manual feed models)".

■ MP models

(6) Remove the three Taptite bind B M4x12 screws to remove the Front chute ASSY. Pull out the MP paper empty sensor harness from the Hole of the Frame L unit.

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

(8) Remove the Regist FG spring from the Motor drive sub ASSY and the Conductive bushing 5.

(9) Use a flat-blade screwdriver or similar tool to release the Hook from the Hole, and remove the Conductive bushing 5.

(10) Release the Hook, and remove the Feeder gear 34.

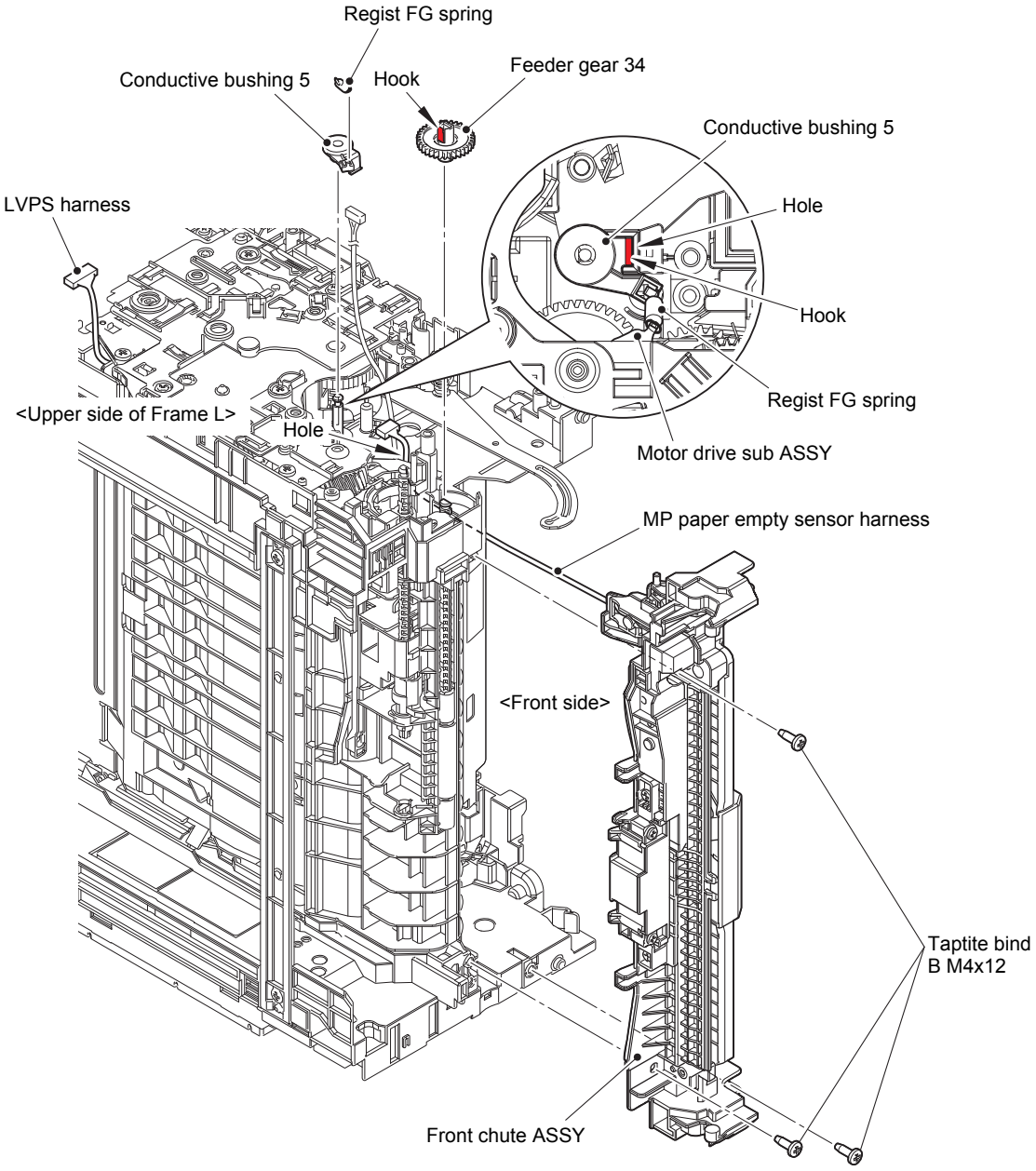


Fig. 3-49

Harness routing: Refer to “5. Frame L unit (MP models)”.

■ Common to all models

(11) Remove the Taptite bind B M4x12 (11a) screw (for securing the Under bar), the Taptite cup S M3x6 SR (11b) screw (for securing the Chute ground plate), the Taptite bind B M4x12 (11c) screw (for securing the Registration chute), and the Taptite cup S M3x8 SR (11d) screw (for securing the Laser L FG plate).

(12) Remove the two Taptite bind B M4x12 (12a) screws and the two Taptite cup S M3x8 SR (12b) screws, and remove the Frame L unit. Pull out the Paper feed sensor harness, the Cartridge sensor harness (only for models without Toner box) and the LVPS harness from the Holes.

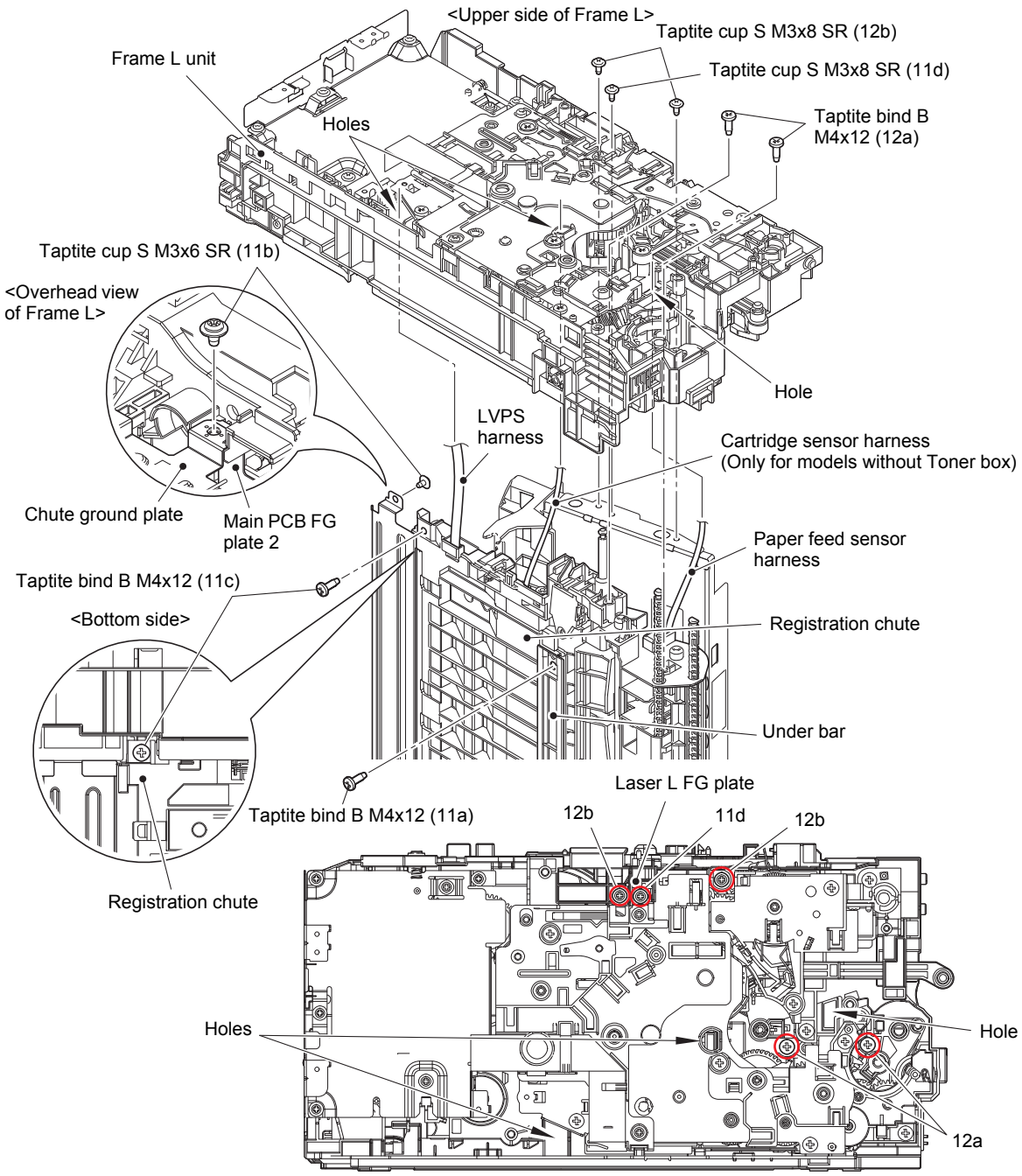


Fig. 3-50

Harness routing: Refer to “4. Frame L unit (Manual feed models)”.

Assembling Note:

- When assembling the Frame L unit, make sure that the Chute ground plate is above the Main PCB FG plate 2.

9.23 Paper feed motor / Paper feed motor flat cable

(1) Release the Paper feed motor flat cable and the Front cover sensor harness from the securing fixtures.

(2) Remove the Taptite bind B M4x12 screw. Release the Hook, and slide the Flat cable guide in the direction of the arrow to remove it from the Motor drive sub ASSY.

(3) Remove the Screw pan (S/P washer) M3x12DB, and remove the Laser L FG plate from the Motor drive sub ASSY.

(4) Remove the three Taptite bind B M4x12 screws and the Taptite cup S M3x8 SR screw, and remove the Motor drive sub ASSY from the Frame L unit.

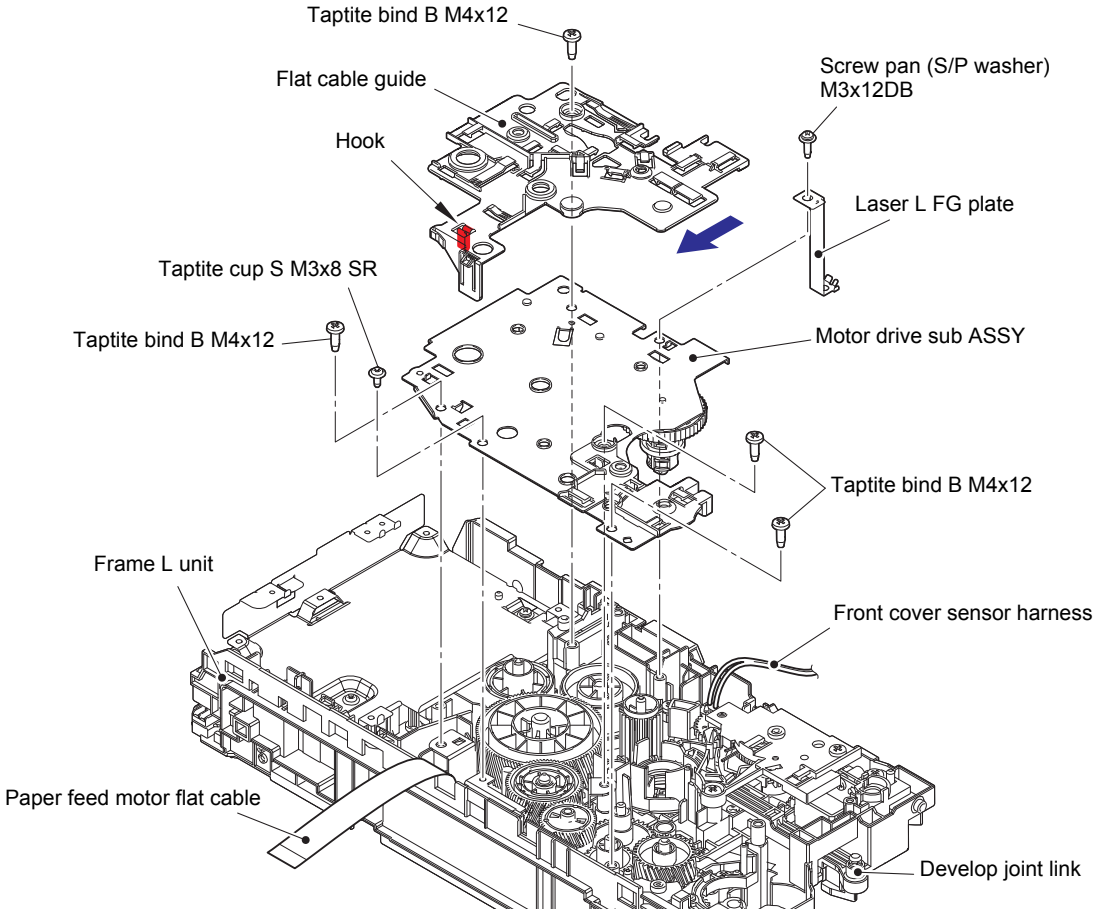


Fig. 3-51

Harness routing: Refer to “4. Frame L unit (Manual feed models)”.

Assembling Note:

- Be careful not to bend the Laser L FG plate.
- Attach the Motor drive sub ASSY to the Frame L unit while the Develop joint link is pushed. Pull the Develop joint link back before tightening the screws for the Motor drive sub ASSY. Failure to follow the procedure above may get the Develop joint link caught and jammed.

Assembling Note:

- 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. If they are not in contact properly, a ghost may occur in the printed image.

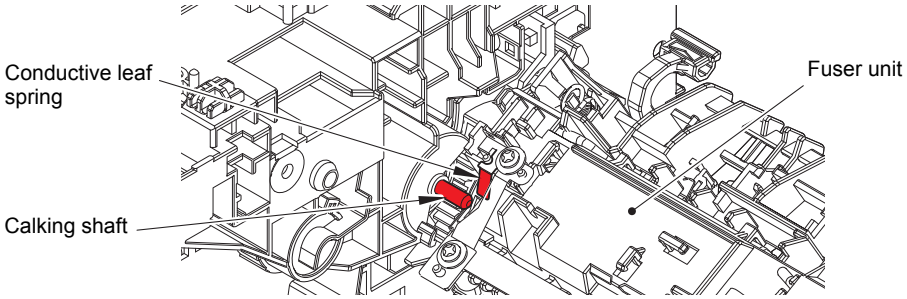


Fig. 3-52

(5) Remove the Gear115L 30L drum, the Gear 50L PF, the Clutch PF, and the Gear 23R PF from the Frame L unit.

(6) Remove the Gear 68R drum idle from the Motor plate ASSY, and remove the Motor plate ASSY from the Frame L unit.

(7) Remove the three Screw bind M3x4 screws, and remove the Paper feed motor from the Motor plate ASSY.

(8) Disconnect the Paper feed motor flat cable from the Paper feed motor.

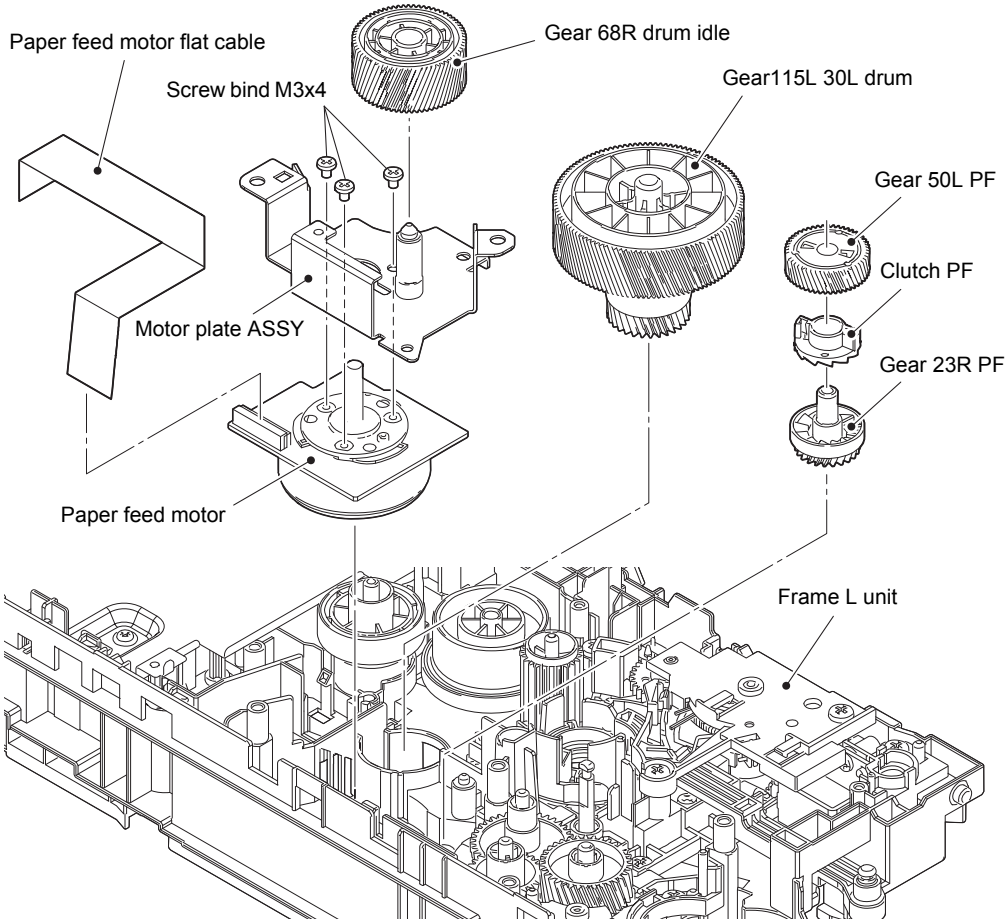


Fig. 3-53

9.24 Fuser gear 64R/36R

(1) Remove the Fuser gear 64R/36R from the Frame L unit.

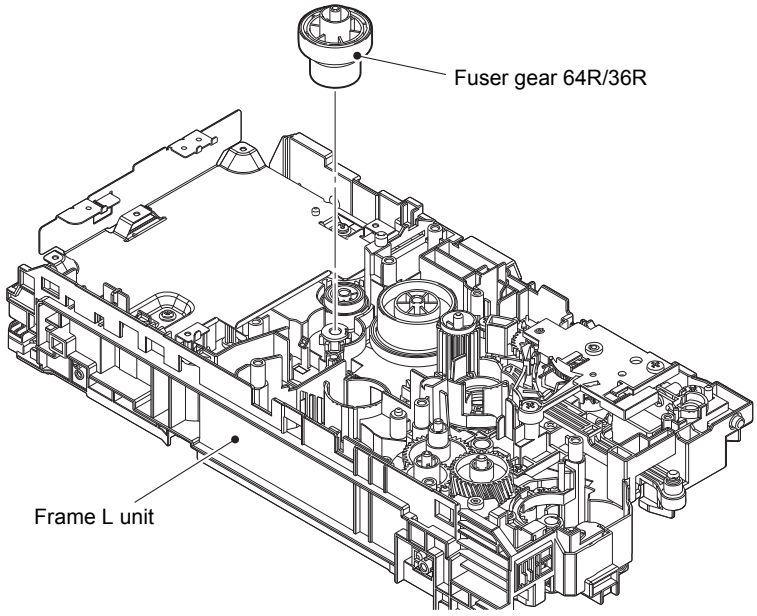


Fig. 3-54

9.25 Toner sensor PCB ASSY (Only for models with Toner box)

(1) Release the Toner sensor harness from the securing fixtures.

(2) Remove the two Taptite bind B M4x12 screws. Release the Hook to remove the Toner box drive cover from the Frame L unit. Pull out the Toner sensor harness from the Hole.

(3) Slide the Develop joint link in the direction of the arrow. Remove the Develop joint disk from the Develop joint lift cover. Release the Hook of the Develop joint link to remove the Develop joint lift cover.

(4) Remove the Develop joint link from the Frame L unit.

(5) Remove the Taptite bind B M3x8 screw to remove the Film and the Toner sensor PCB ASSY.

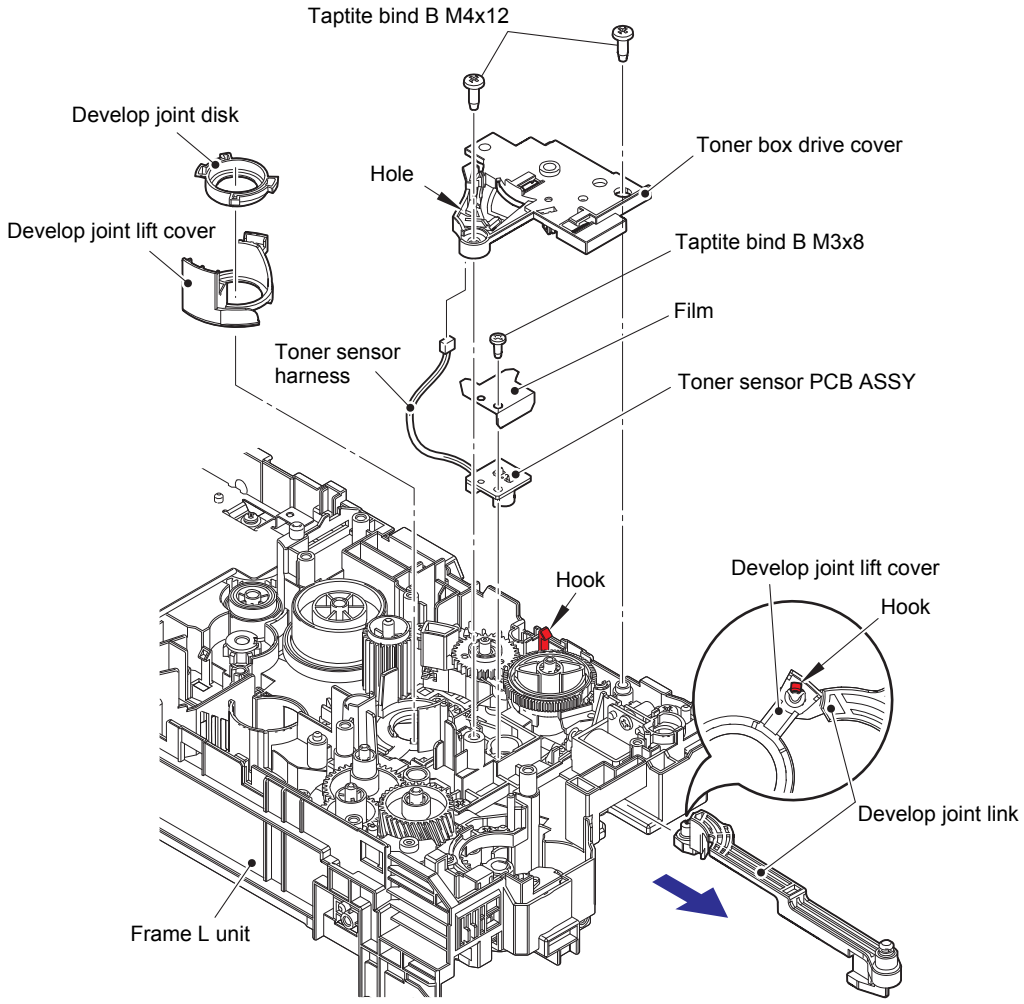


Fig. 3-55

Harness routing: Refer to “4. Frame L unit (Manual feed models)”.

9.26 Front cover sensor

(1) Remove the Gear toner box idle 32 and the Sector gear toner box from the Holder toner box. (Only for models with Toner box)

(2) Remove the Spring sector gear toner box from the Hook of Holder toner box and the Hook of Lever solenoid. (Only for models with Toner box)

(3) Remove the four Taptite bind B M4x12 screws, and remove the Holder toner box and the Lift cam guide from the Frame L unit. (For models with Toner box)
Remove the two Taptite bind B M4x12 screws, and remove the Lift cam guide from the Frame L unit. (For models without Toner box)

(4) Release each Hook to remove the Front cover sensor from the Frame L unit.

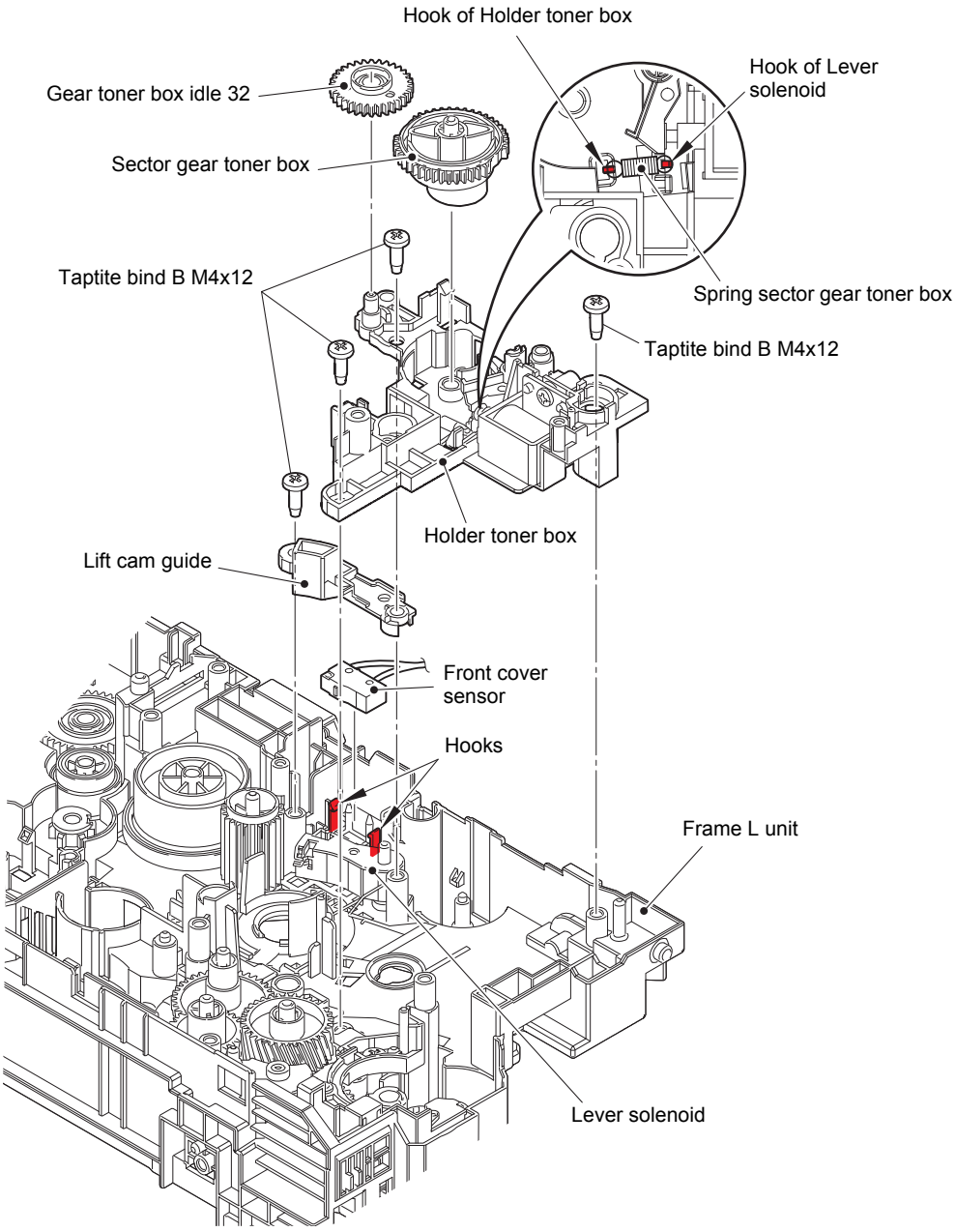


Fig. 3-56

9.27 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 Frame L unit.

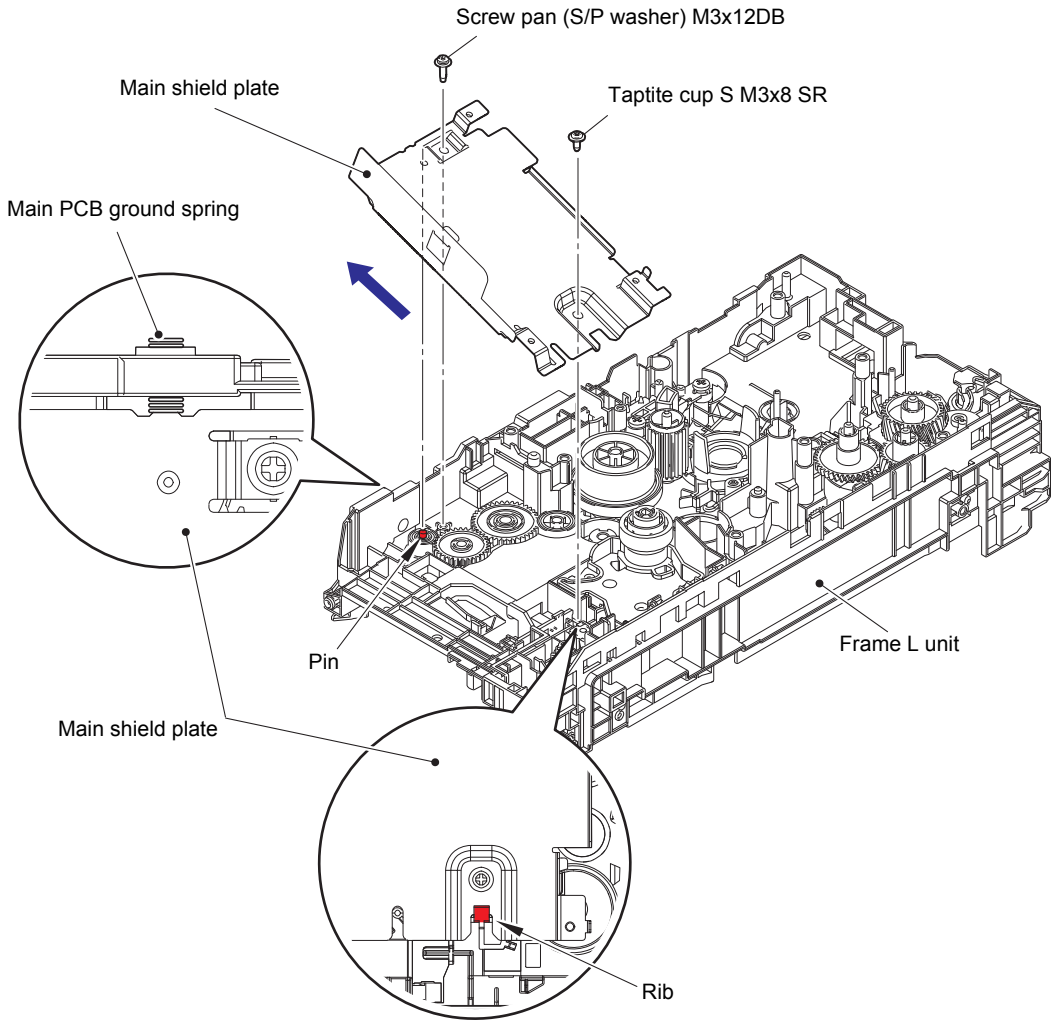


Fig. 3-57

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.
- 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 Frame L unit. 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.

(2) Release the Hook A, and remove the Eject sensor PCB ASSY from the Pin of the Frame L unit.

(3) Release the Back cover/duplex tray sensor harness from the securing fixtures.

(4) Release the Hook B, and remove the DX sensor stopper 2 from the Frame L unit.

(5) Release each Hook C, and remove the Back cover/duplex tray sensor from the Frame L unit.

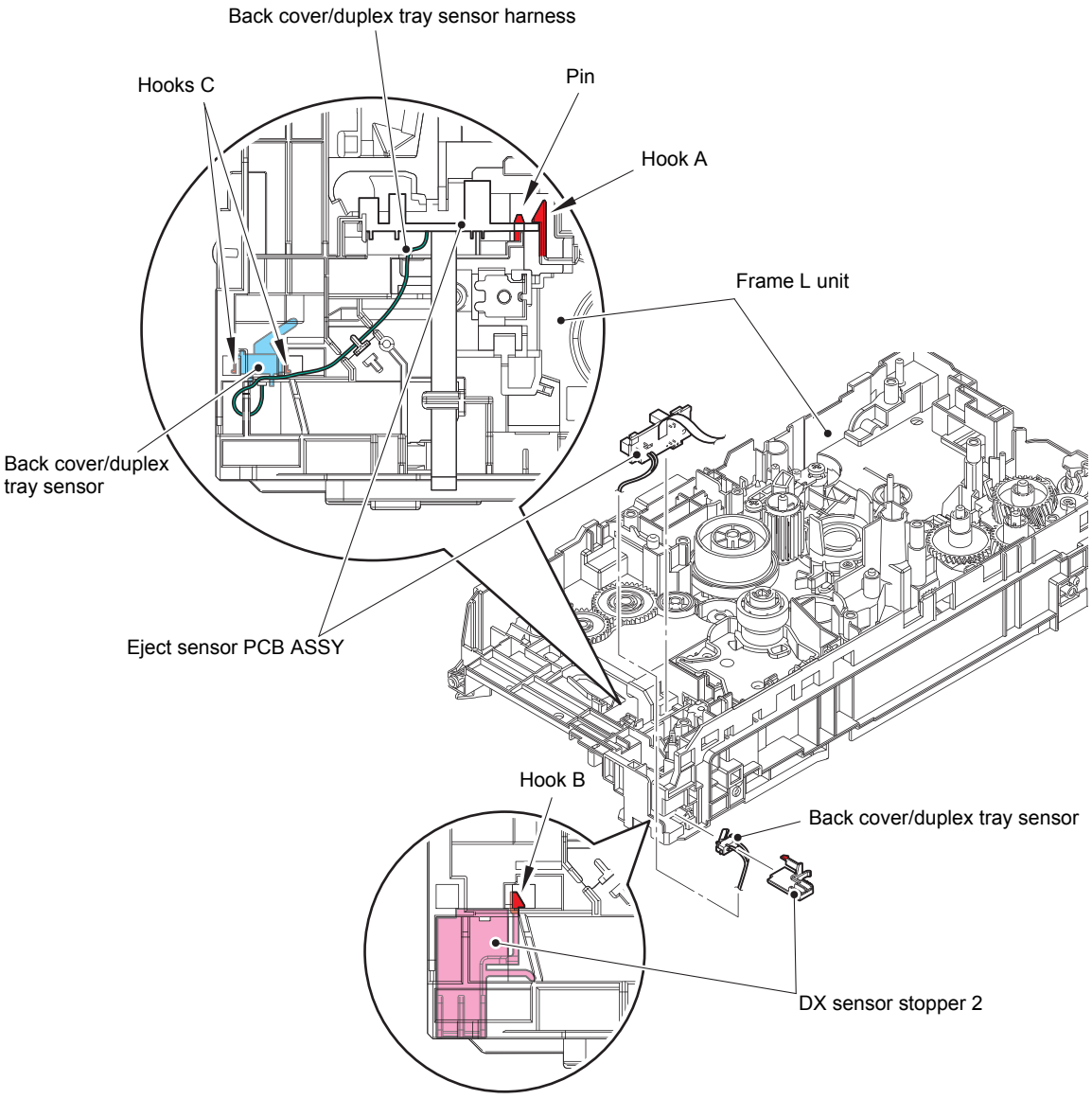


Fig. 3-58

Harness routing: Refer to “4. Frame L unit (Manual feed models)”.

Assembling Note:

- When assembling the Back cover/duplex tray sensor, attach it by engaging the Hooks C of the Back cover/duplex tray sensor properly.

9.28 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) Raise the Laser R FG plate slightly to remove it from the Pin.

(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 the arrow A to remove it from the Pin. And then pull it out in the direction of the arrow B to remove it from the machine.

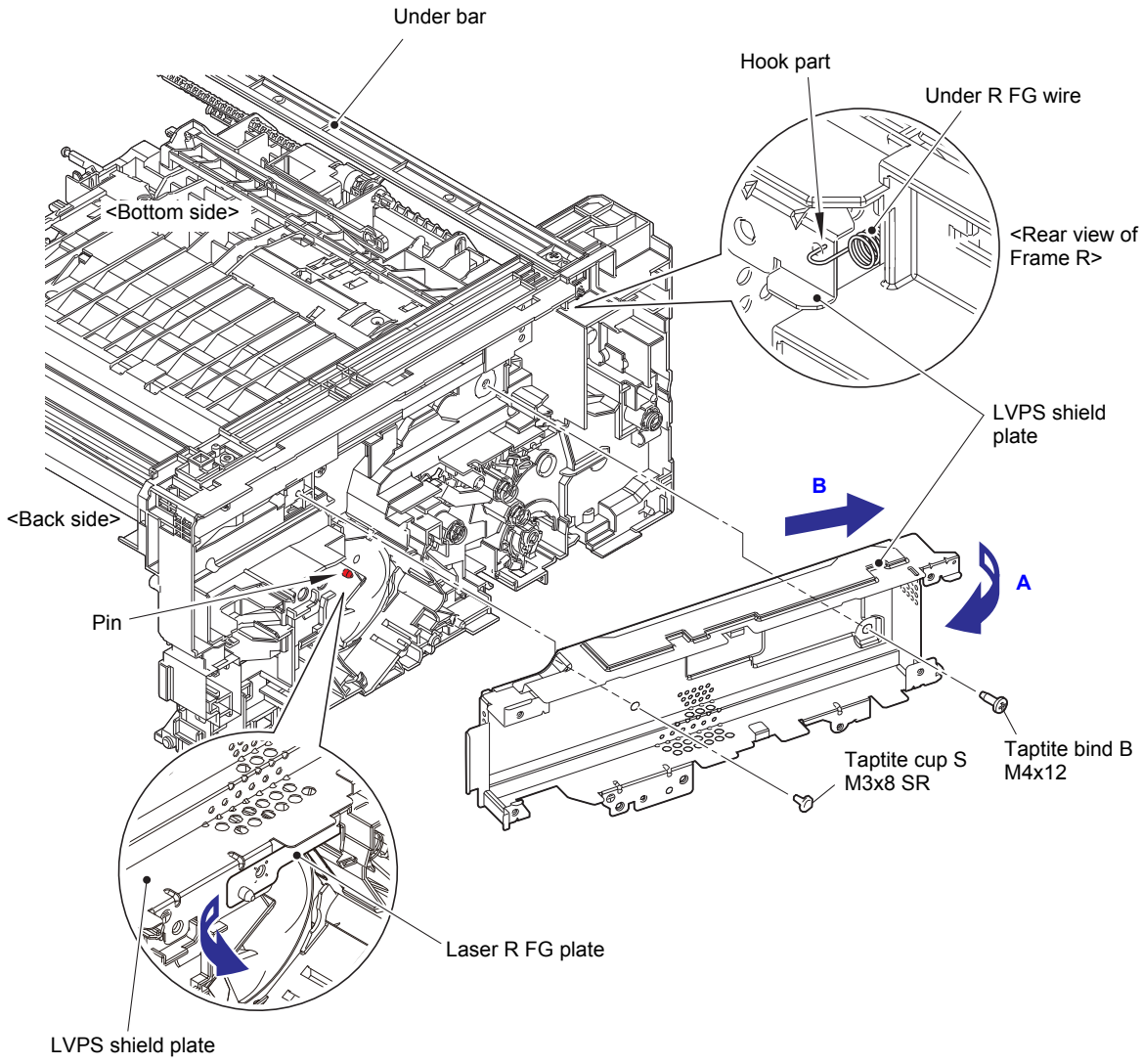


Fig. 3-59

(4) Release the Registration front/rear sensor 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 to remove the Frame R unit. Pull out the Registration front/rear sensor harness from the Hole.

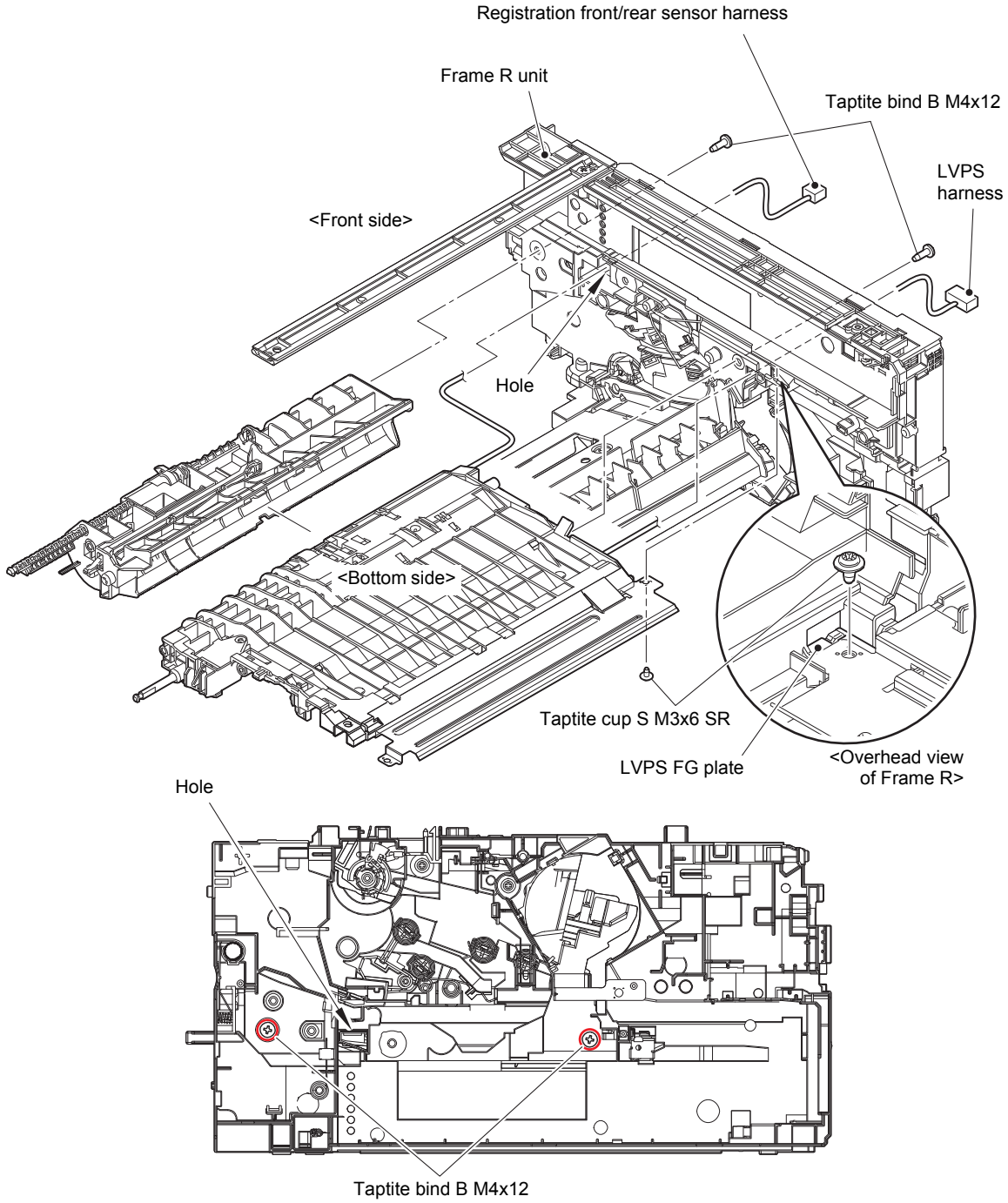


Fig. 3-60

Harness routing: Refer to "6. Top side of the registration chute", "7. Frame R unit".

Assembling Note:

- When attaching the Frame R unit, check that the LVPS FG plate is set to the Frame R unit.

(6) Remove the Taptite bind B M3x10 screw. Release each Hook, and remove the Registration front/rear actuator holder ASSY from the Registration chute. Pull out the Registration front/rear sensor harness from the Hole.

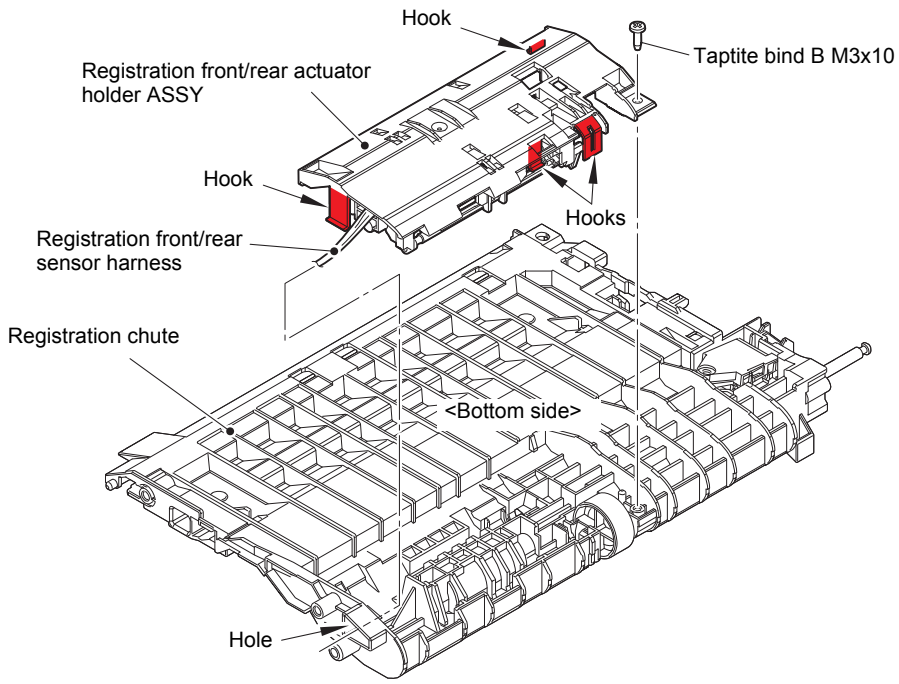


Fig. 3-61

Harness routing: Refer to "6. 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 they are pushed back by their springs (if the springs are not caught at assembling).

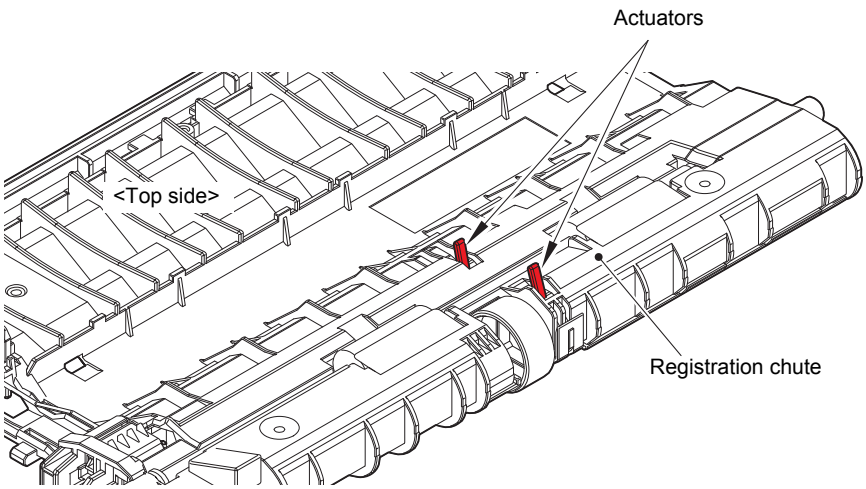


Fig. 3-62

9.29 Paper feed roller ASSY / Paper feed sensor PCB ASSY

(1) Release each Hook of the Paper feed sensor cover to remove the Paper feed sensor cover.

(2) Remove the Paper feed actuator spring from the Hook of the Paper feed actuator and the Hook of the Paper feed frame ASSY.

(3) Release the Hook of the Separation R shaft bearing to remove the Separation R shaft and the Paper feed actuator.

(4) Release each Hook of the two Feed roller bushings, and remove the Paper feed roller ASSY from the Paper feed frame ASSY in the direction of the arrow. Remove the two Feed roller bushings from the Paper feed roller ASSY.

(5) Release the Hook A to remove the Paper feed sensor PCB ASSY. Release the Paper feed sensor harness from the securing fixtures.

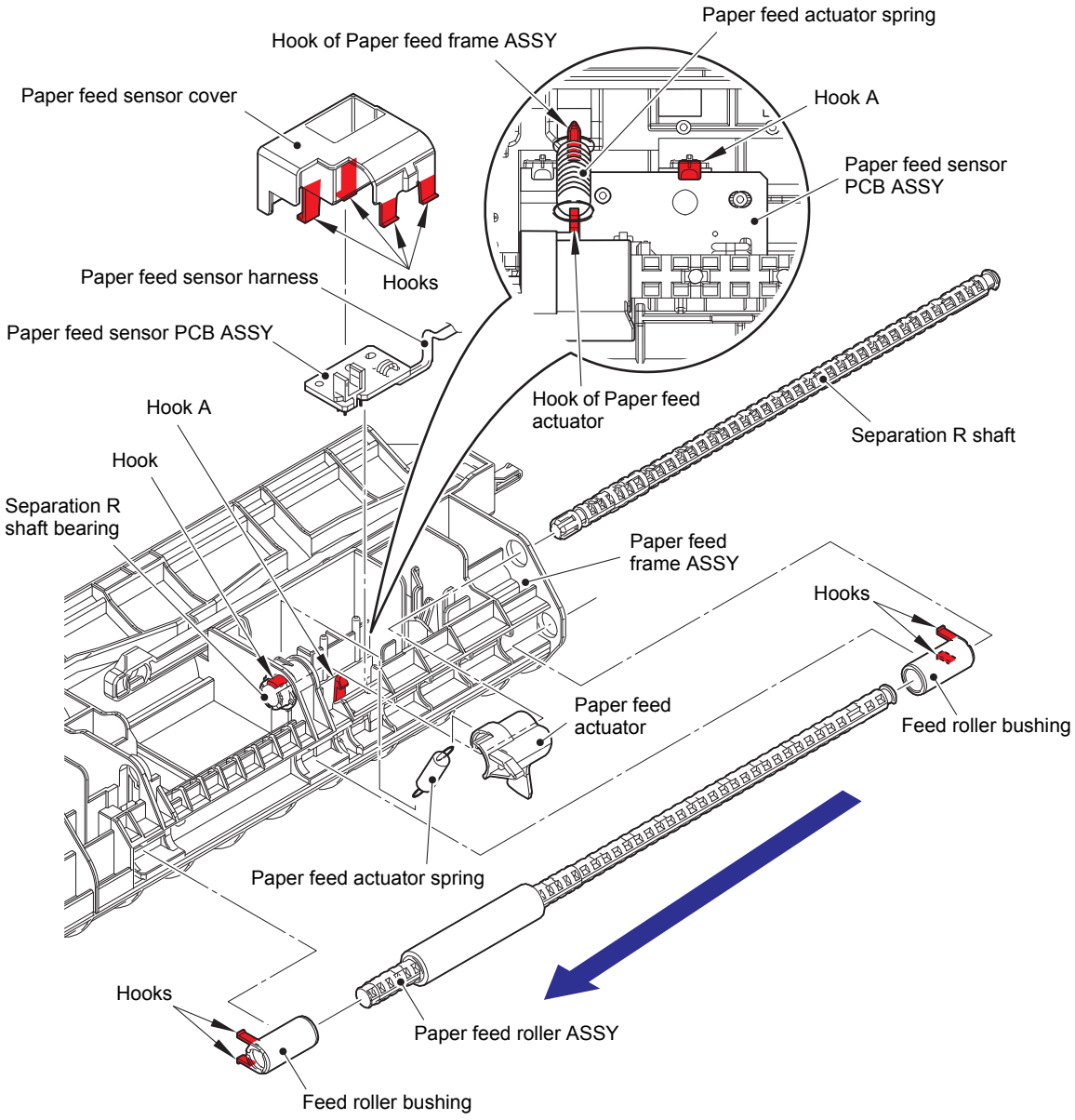


Fig. 3-63

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 by Spec
- Installing Firmware (Sub 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 (SvSettingTool.exe)
Copy this file into the temporary folder created on the C drive.
* .NET Framework 4.5.2 or later of Microsoft is needed to use SvSettingTool.

(4) Download utility (FILEDG32.EXE)
Copy this file into the temporary folder created on the C drive.

(5) Maintenance printer driver (MaintenanceDriver.zip)
When the maintenance printer 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	djf or upd file (ex. DXXXXX_A.djf or DXXXXX _A.upd)
Main firmware	djf or upd file (ex. DXXXXX_A.djf or DXXXXX _A.upd)

(7) Memory access tool (MemoryAccessTool.exe)

1.1 Setting by Spec

<Operating Procedure>

Note:

- When the supply PCB is replaced with a new one, the machine automatically enters maintenance mode by turning it ON so the procedure (1) below to enter the maintenance mode is not necessary.

LCD models

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

LED models

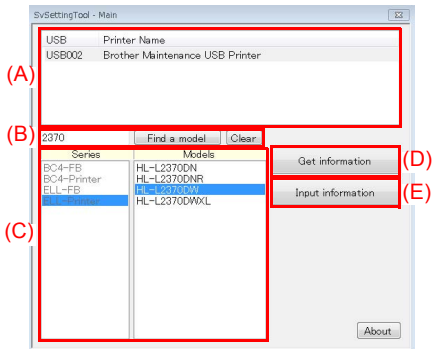
(1) Follow the procedure below to enter the maintenance mode.
   1) Disconnect the AC cord from the socket and open the front cover.
   2) Press and hold the [Go] and connect the AC cord to the socket. The Toner, Drum, and Paper LEDs light.
   3) Release the [Go]. All LEDs go out.
   4) Press and hold the [Go] and check that the Paper LED lights. Release the [Go] and close the front cover. The Ready LED lights and the machine enters the maintenance mode.

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

(3) Double-click “SvSettingTool.exe”. The screen shown on the right appears.

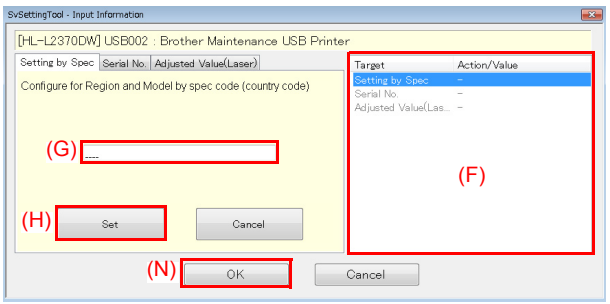
(4) Check that the USB port connected with the machine is displayed in the box (A).

(5) Enter the model name in the box (B) and press the [Find a model]. Series name and model name are displayed in the box (C). If the connected product name is not displayed, keep pressing the [Find a model] until it shows up.



(6) Click the [Input information] shown as (E).
The Input Information screen shown on the right appears.

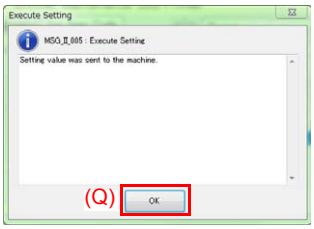
(7) Click the [Setting by Spec] in the box (F). Set Spec Code screen appears.
Enter the 4-digit country code in the box (G), and click the [Set] shown as (H).
“Set[****]” and entered value appears on the “Setting by Spec” line in (F). (“****” indicates the spec code entered.)



(8) Click the [OK] shown as (N).
The Execute Setting screen shown on the right appears and the setting by spec is written to the machine.

(9) Click the [OK] shown as (Q) and close the Execute Setting screen.

(10) Turn the power switch OFF and then ON again.



Note:

- Perform settings for a country as described in "1.3.16 Setting by spec (Function code 74)" in Chapter 5.
  Please contact Brother distributors for the latest information.
- Always turn the machine OFF and then ON again after setting the country. Turning the power switch OFF and then ON again starts the EEPROM formatting. Time required for formatting is 5 to 30 seconds depending on the product.

1.2 Installing Firmware (Sub 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>

LCD models

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

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

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

LED models

When the supply PCB is replaced with a new one, the machine automatically enters maintenance mode by turning it ON so the procedure below to check the firmware version is not necessary.
Perform "1.2.2 Installing firmware".

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

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

Note:

- For LCD models, you can check the Sub firmware, and Main firmware version by implementing "Print maintenance information (Function code 77)" (refer to "1.3.17 Print maintenance information (Function code 77)" in Chapter 5).

1.2.2 Installing firmware

Note:

- DO NOT disconnect the AC 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>

(1) Follow the procedure below to enter the maintenance mode.

LCD models

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

LED models

1) Disconnect the AC cord from the socket and open the front cover.
2) Press and hold the [Go] and connect the AC cord to the socket. The Toner, Drum, and Paper LEDs light.
3) Release the [Go]. All LEDs go out.
4) Press and hold the [Go] and check that the Paper LED lights. Release the [Go] and close the front cover. The Ready LED lights and the machine enters 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 steps (1) to (5) to install required firmwares.

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

1.3 Setting Serial Number and Entering Adjusted Value of Laser Unit

<Operating Procedure>

LCD models

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

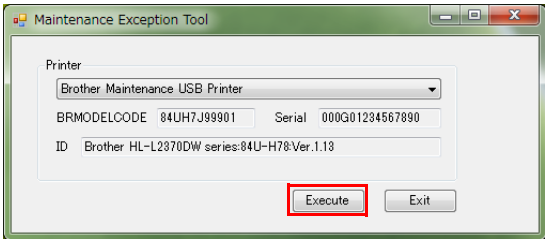
LED models

(1) Follow the procedure below to enter the maintenance mode.
   1) Disconnect the AC cord from the socket and open the front cover.
   2) Press and hold the [Go] and connect the AC cord to the socket. The Toner, Drum, and Paper LEDs light.
   3) Release the [Go]. All LEDs go out.
   4) Press and hold the [Go] and check that the Paper LED lights. Release the [Go] and close the front cover. The Ready LED lights and the machine enters the maintenance mode.

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

(3) Open the temporary folder and double-click “MemoryAccessTool.exe”. The screen shown on the right appears.

(4) Click the [Execute] and close the Maintenance Exception Tool screen. Wait for 5 seconds or longer and then proceed to the next step.



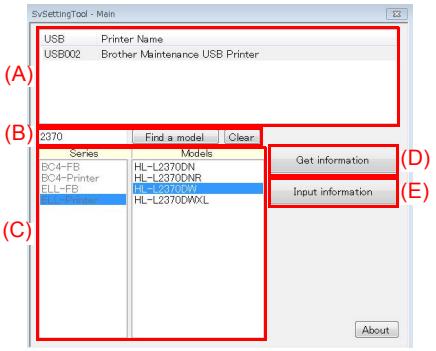
Note:

- If the [Execute] on the Memory access tool is pressed once, it is valid as long as the machine does not quit the maintenance mode.
- If the BRMODELCODE, the Serial, and the ID fields are blank, quit the maintenance mode and then restart from step (1).

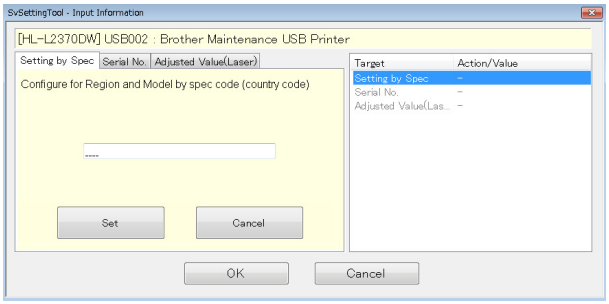
(5) Double-click “SvSettingTool.exe”. The screen shown on the right appears.

(6) Check that the USB port connected with the machine is displayed in the box (A).

(7) Enter the model name in the box (B) and press the [Find a model]. Series name and model name are displayed in the box (C). If the connected product name is not displayed, keep pressing the [Find a model] until it shows up.

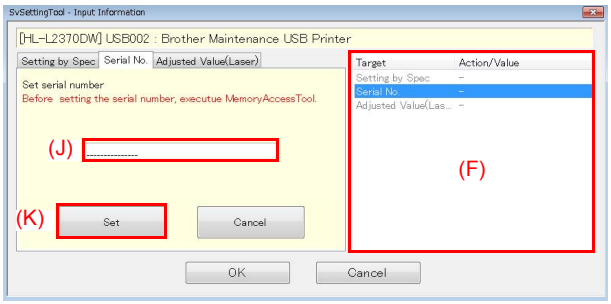


(8) Click the [Input information] shown as (E).
The Input Information screen shown on the right appears.



(9) Click the [Serial No.] in the box (F). The Serial No. screen appears.

(10) Enter the serial number (15 digits) of the machine in the box (J) and click the [Set] shown as (K). "Set[**********]" and entered value appears on the "Serial No." line in the box (F). ("**********" indicates the Serial No. entered.)



(11) Check the laser serial number label attached to the location shown in the illustration below.
Ex.) **SN0114060584617<u>34753</u>**

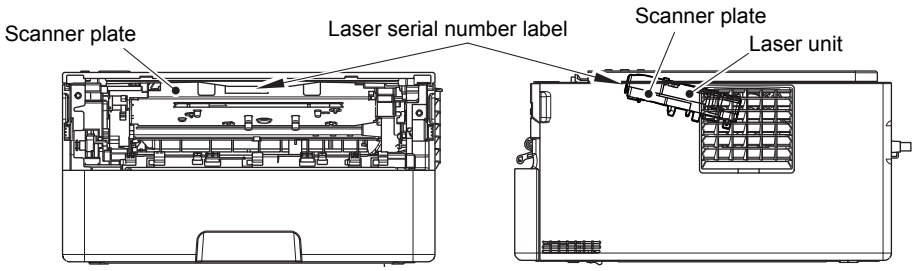
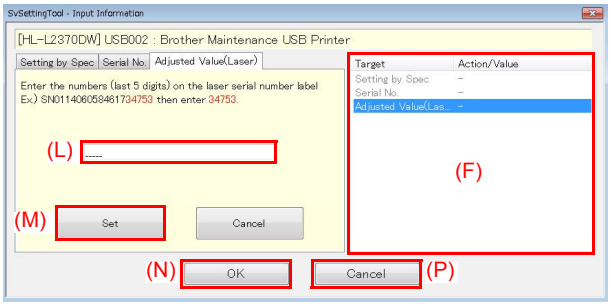


Fig. 4-1

(12) Click the [Adjusted Value(Laser)] in the box (F). The Laser Adjusted Value screen appears.

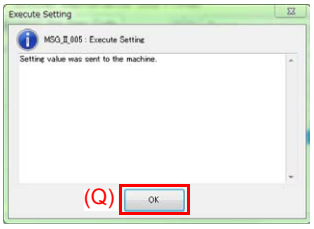
(13) Enter the last five digits of the laser serial number in the box (L), and click the [Set] shown as (M). "Set[*****]" and entered value appears on the "Adjusted Value(Laser)" line in the box (F). ("*****" indicates the laser adjusted value entered.)



(14) Click the [OK] shown as (N).
The Execute Setting screen shown on the right appears and the setting serial number and entering adjusted value of laser unit are written to the machine.

(15) Click the [OK] shown as (Q) and close the Execute Setting screen.

(16) Click the [Cancel] shown as (P) and close the Input Information screen.

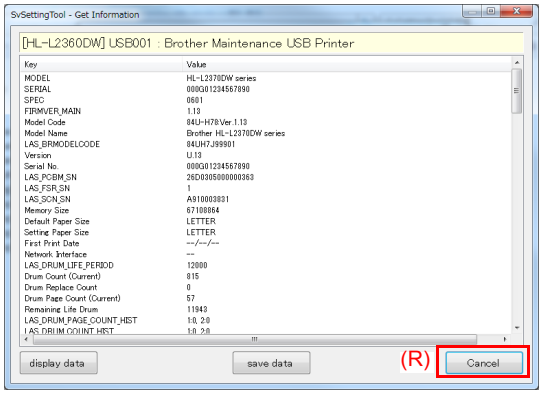


(17) Click the [Get information] shown as (D). The machine maintenance information appears.

(18) In the maintenance information, check the Serial No. in the “Serial No.” field and the Laser Adjusted value in the “Laser Adjusted value(Position)” field.

(19) Click the [Cancel] shown as (R) and close the Get Information screen.

(20) Turn the power switch OFF and then ON again.



Note:

- For LCD models, serial number can be set by referring to “1.3.19 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 the Low-voltage Power Supply PCB

■ **What you need to prepare**

None

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

LED models

Refer to "1.4.14 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 "1.3.21 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 (SvSettingTool.exe)
Copy this file into the temporary folder created on the C drive.

(4) Maintenance printer driver (MaintenanceDriver.zip)
When the maintenance printer driver is not installed, 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>

(1) Follow the procedure below to enter the maintenance mode.

LCD models

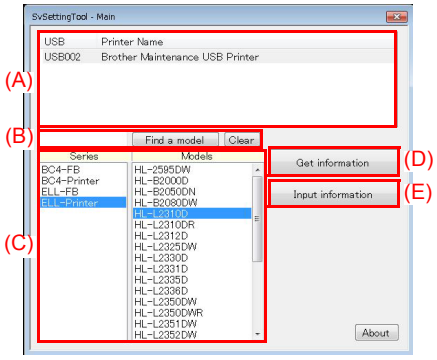
1) Press the [OK] and then the [Go] while the machine is in the ready state. Then, press the [▲] four times to enter the maintenance mode.

LED models

1) Disconnect the AC cord from the socket and open the front cover.
2) Press and hold the [Go] and connect the AC cord to the socket. The Toner, Drum, and Paper LEDs light.
3) Release the [Go]. All LEDs go out.
4) Press and hold the [Go] and check that the Paper LED lights. Release the [Go] and close the front cover. The Ready LED lights and the machine enters the maintenance mode.

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

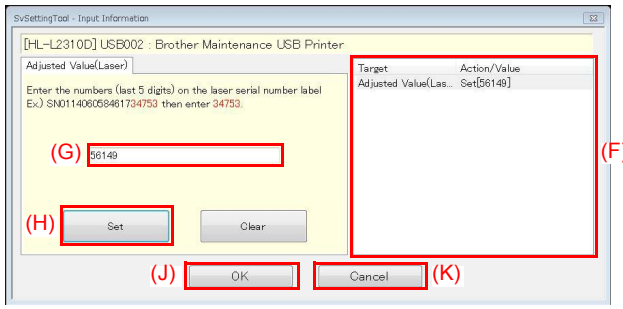
(3) Open the temporary folder and double-click "SvSettingTool.exe". The screen shown on the right appears.



(4) Check that the USB port connected with the machine is displayed in the box (A).

(5) Enter the model name in the box (B) and press the [Find a model]. Series name and model name are displayed in the box (C).

(6) Click the [Input information] shown as (E).
The Input information screen shown on the right appears.



(7) Check the laser serial number label attached to the location shown in the illustration below.
Ex.) **SN0114060584617345 3**

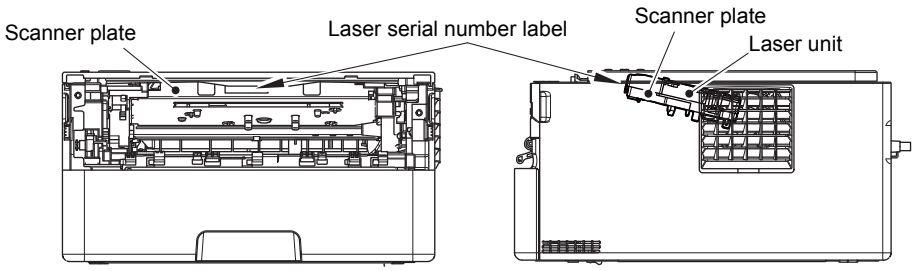
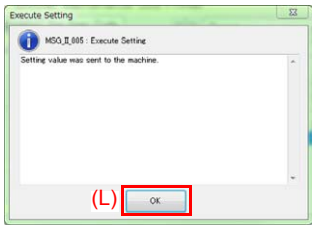


Fig. 4-2

(8) Click the [Adjusted Value(Laser)] in the box (F). The Laser Adjusted Value screen appears.

(9) Enter the last five digits of the laser serial number in the box (G), and click the [Set] shown as (H). “Set[*****]” and entered value appears on the “Adjusted Value(Laser)” line in the box (F). (“*****” indicates the laser adjusted value entered.)

(10) Click the [OK] shown as (J).
The Execute Setting screen shown on the right appears and the laser adjusted value is written to the machine.

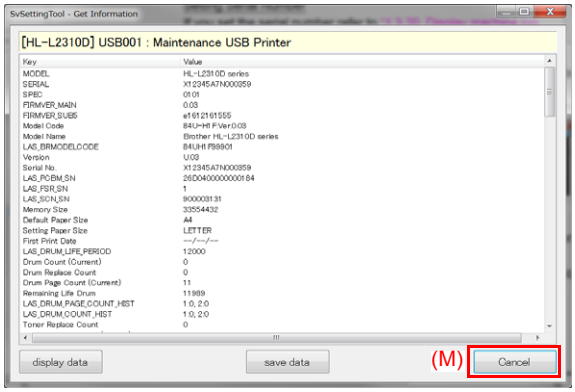


(11) Click the [OK] shown as (L) and close the Execute Setting screen.

(12) Click the [Cancel] shown as (K) and close the Input information screen.

(13) Click the [Get information] shown as (D). The machine maintenance information appears.

(14) In the maintenance information, check that the value in the “Laser Adjusted value(Video)” field and the value in the “Laser Adjusted value(Position)” field are same as the value entered in procedure (9).



(15) Click the [Cancel] shown as (M) and close the Get information screen.

(16) 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].

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] and then the [Go] while the machine is in the ready state. Then, press the [▲] four times to enter the maintenance mode.

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

(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 [▼]. Check that the desired maintenance mode is displayed on the LCD, and press the [OK].

LED models

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

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

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

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

(5) Press the [Go] again for the assigned number of times to select the function (While you are pressing the [Go], the Ready LED remains lit). Toner, Drum, and Paper LEDs go out in a second after the [Go] 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, 45, 77, 80, 82, 91).

<Operating Procedure>

LCD models

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

(2) Press the [▲] or [▼] 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].

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

LED models

(1) Check that the front cover is closed.

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

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

(4) Press the [Go] for the assigned number of times to enter maintenance mode (While you are pressing the [Go], 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
03	Transition to shipping state	1.3.2
09	Monochrome print quality test pattern	1.3.3
10	Set worker switches (WSW)	1.3.4
11	Print worker switch (WSW) setting data	1.3.4
12	Check LCD operation	1.3.5
13	Check control panel key operation	1.3.6
25	Display software version	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 position / Adjust upper-end print position / Change ON/OFF setting for lower case compensation / Change ON/OFF setting for fixation strength improvement	1.3.10
57	Check toner cartridge	1.3.11
67	Continuous print test	1.3.12
69	Print frame pattern (single-side printing)	1.3.13
70	Print frame pattern (duplex printing)	1.3.14
71	Print test pattern	1.3.15
74	Setting by spec	1.3.16
77	Print maintenance information	1.3.17
78	Check fan operation	1.3.18
80	Display machine log information	1.3.19
82	Display machine error code	1.3.20
88	Reset irregular power supply detection counter of low-voltage power supply PCB	1.3.21
91	Initialize EEPROM parameters	1.3.1
99	Quit maintenance mode	1.3.22

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

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

<End-user accessible maintenance mode>

Front cover	No. of times [Go] is pressed to enter maintenance mode	No. of times [Go] 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	Invalid	—
		12	Engine error ignore mode	1.4.4
		13 or more	Test printing	1.4.1

<Maintenance mode functions for service personnel>

Front cover	No. of times [Go] is pressed to enter maintenance mode	No. of times [Go] is pressed to select function	Function	Refer to:
Open	1	1	Check sensor operation	1.4.5
		2	Print continuous lattice pattern	1.4.6
		3	Invalid	—
		4	Factory use (disabled)	—
		5	Check RAM	1.4.7
		6	Invalid	—
		7	Change ON/OFF setting for duplex printing	1.4.8
		8	Change A4/Letter setting for paper size	1.4.9
		9	Engine error ignore mode	1.4.4
		10	Invalid	—
		11 or more	Returns to the ready state	—

Front cover	No. of times [Go] is pressed to enter maintenance mode	No. of times [Go] is pressed to select function	Function	Refer to:
Open	2	1	Maintenance printing	1.4.10
		2	Print maintenance data and frame pattern	1.4.11
		3	Invalid	—
		4	Factory use (disabled)	—
		5	Transition to shipping state	1.4.12
		6 to 9	Invalid	—
		10	Change Ready LED light intensity in sleep mode	1.4.13
		11	Invalid	—
		12	Reset irregular power supply detection counter of low-voltage power supply PCB	1.4.14
		13	Factory use (disabled)	—
		14 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	Factory use (disabled)	—
		14	Factory use (disabled)	—
		15 or more	Returns to the ready state	—
	4	—	Firmware installing mode	1.4.15
	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	1.4.16

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.

<table>
<tr><th>Data item</th><th>01</th><th>91</th></tr>
<tr><td>Printer switch
(Counter information)</td><td rowspan="4">Areas not to be initialized</td><td rowspan="4">Areas not to be initialized</td></tr>
<tr><td>Error history</td></tr>
<tr><td>Mac Address (Ethernet Address)</td></tr>
<tr><td>Continuity counter</td></tr>
<tr><td>Password for control panel operation lock</td><td rowspan="9">Areas to be initialized</td></tr>
<tr><td>Secure function lock</td></tr>
<tr><td>Worker switches</td><td rowspan="8">Areas to be initialized</td></tr>
<tr><td>User switches (items initialized when “Factory Reset” is executed)</td></tr>
<tr><td>Function settings except user switches
(settings not subject to “Factory Reset”)
- Language
- Interface</td></tr>
<tr><td>LAN setting</td></tr>
<tr><td>PCL core area
(Emulation setting values)</td></tr>
</table>

<Operating Procedure>

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “Maintenance 01” (or “Maintenance 91” as required) on the LCD, and press the [OK].
“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 Transition to shipping state (Function code 03)

The function code 03 includes following functions: Check sum information display for soft switch, Default special operation setting, and Resetting to factory shipping state. Check sum information display for soft switch is used by sales and production, not by servicemen. Servicemen only use other one function: Resetting to factory shipping state.

■ Display soft switch check SUM

<Function>

This function is to display soft switch check SUM such as FSW/USW/WSW etc. Only for soft switch display and not used for the service.

This function is displayed on LCD after enter function code 03 as “1.SWSUM?”.

■ Change ON/OFF setting of special function at start up

<Function>

By the special function at start up is set to an invalid state ([FUNC DISABLE]), “■ Transfer to the shipping state” in the next item can be used. Be careful it is unable to transfer the machine to the shipping state a valid state ([FUNC ENABLE]).

<Operating Procedure>

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 03” on the LCD, and press the [OK].
“1.SWSUM?” is displayed on the LCD.

(2) Press the [▲] or [▼] to select “2.PowerOnFunc ?” and then press the [Go]. “FUNC ENABLE” or “FUNC DISABLE” is displayed on the LCD.

(3) If “FUNC DISABLE” appears on the LCD, the machine's state is switchable to the factory shipping state. Press and hold the [Go] for five seconds to return the machine to the initial state of maintenance mode.
If “FUNC ENABLE” appears on the LCD, press the [▲] or [▼] to select “FUNC DISABLE”, and press the [OK]. “1.SWSUM?” is displayed on the LCD; and the machine returns to the initial state of the function code 03.

■ Transfer to the shipping state

<Function>

This function is to transfer the machine to the shipping state when used new spare main PCB for repair, etc. When not perform this function to the new spare main PCB and leave, some software will be unavailable such as MPS applications or BrAdmin tool. Also, the machine keeps poor state of security such as risk of leaking private information. Do not forget to perform this function after replacing the new spare main PCB. However, this product does not have function for place back to the pre-shipping state from the shipping state.

Note:

Be careful that if the special function at start up in the preceding item is a valid state ([FUNC ENABLE]), it is unable to transfer the machine to the shipping state.
Be sure to operate after changing to an invalid state ([FUNC DISABLE]).

<Operating Procedure>

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 03” on the LCD, and press the [OK].
“1.SWSUM?” is displayed on the LCD.

(2) Press the [▲] or [▼] to select “3.ShippingStat?” and then press the [OK]. “ON” or “OFF: Change OK?” is displayed on the LCD.

(3) When “ON” is displayed on the LCD, the machine is at shipping state. Press and hold the [Go] for five seconds to return to the initial state of the maintenance mode.
When “OFF: Change OK?” is displayed on the LCD, press the [OK]. The machine will transfer to the shipping state and returns to the initial state of the maintenance mode.

1.3.3 Monochrome 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 09” on the LCD, and press the [OK]. 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.

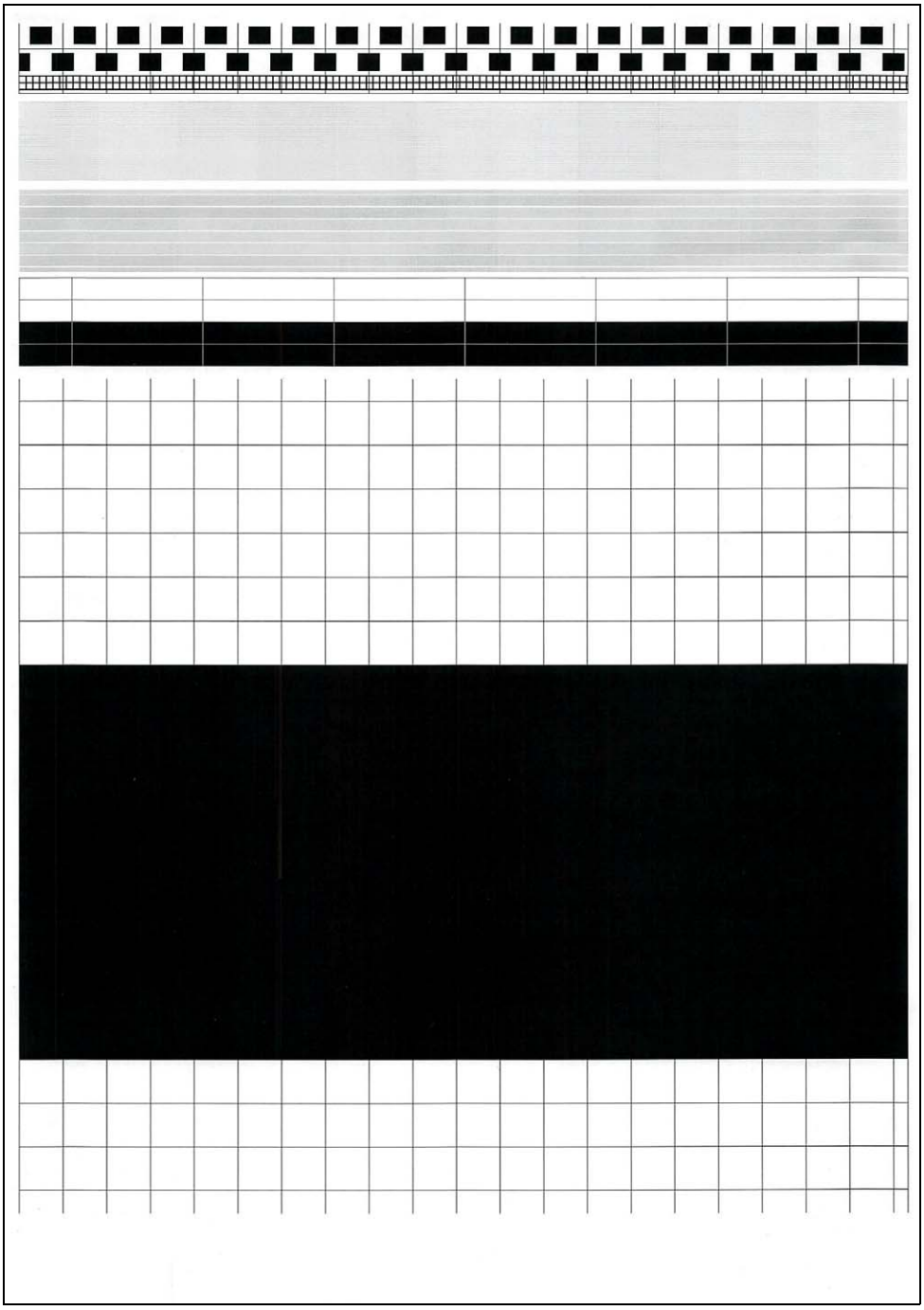


Fig. 5-1

1.3.4 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 2.0 High-Speed/USB 1.1 Full-Speed
WSW49 Selector 7	Paper size setting for PDF direct printing
WSW56 Selector 1	Change ON/OFF setting for PS emulation
WSW56 Selector 6	Change coverage type
WSW56 Selector 7	Change ON/OFF setting for PCL emulation (This selector is applicable to models equipped without PCL.)
WSW59 Selector 1	Change ON/OFF setting for USB serial number (SN) sending
WSW63 Selector 3	Change time display method (Japanese: YY/MM/DD or others)
WSW63 Selector 8	Change ON/OFF setting for Israeli font support
WSW64 Selector 1-6	Language setting
WSW64 Selector 7-8	Default paper size setting
WSW65 Selector 1-2	Default media type setting
WSW65 Selector 3	Change ON/OFF setting for BOND paper support
WSW65 Selector 4	Change ON/OFF setting for HAGAKI paper support
WSW65 Selector 5	Change ON/OFF setting for OHP support
WSW65 Selector 6	Change ON/OFF setting for LABEL paper support
WSW65 Selector 7	Change ON/OFF setting for glossy paper support
WSW81 Selector 1	Change ON/OFF setting for PS emulation
WSW81 Selector 2	Change ON/OFF setting for PCL emulation

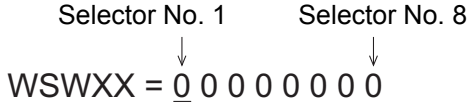
<Operating Procedure>

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

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

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

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



(5) Pressing the [▲] enters “1”, and pressing the [▼] 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 [▼] as described in the procedure (5).

(7) Press the [OK]. 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] for five seconds 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 11” on the LCD, and press the [OK].

(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.

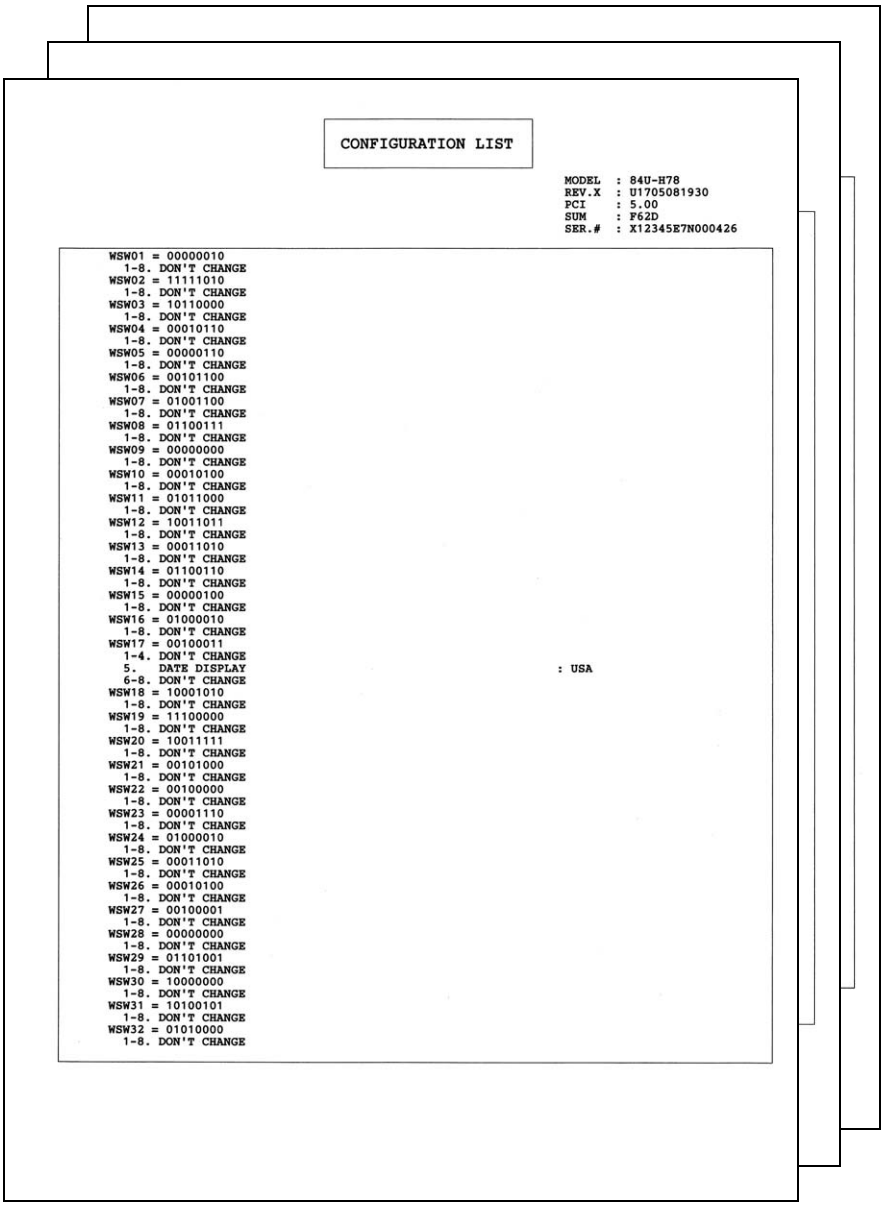


Fig. 5-2

1.3.5 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 12” on the LCD, and press the [OK].

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

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

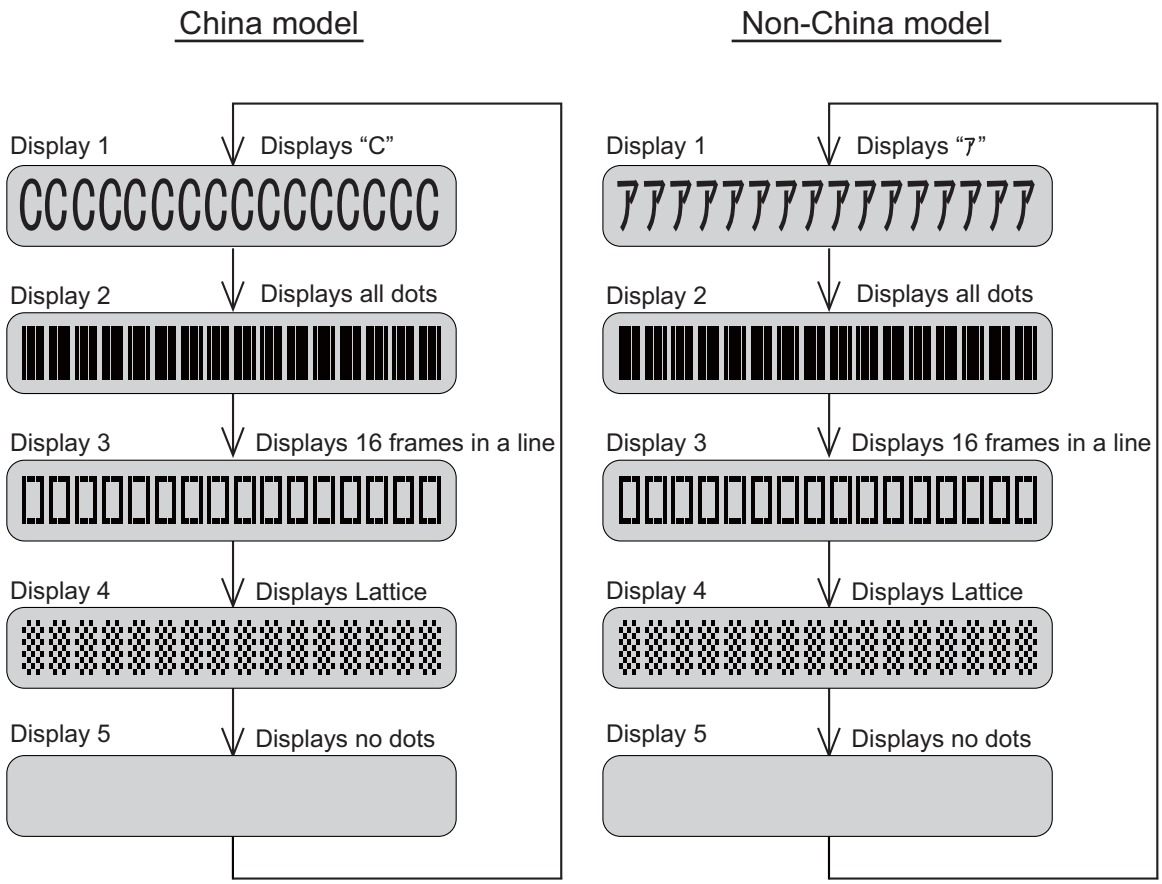


Fig. 5-3

1.3.6 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 13” on the LCD, and press the [OK]. “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] for five seconds 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].

■ **Order of pressing keys**

Fig. 5-4

1.3.7 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 [▼] in the initial state of maintenance mode to display "MAINTENANCE 25" on the LCD, and press the [OK]. “MAIN:Ver*.**” is displayed on the LCD.

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

(3) Press and hold the [Go] for five seconds, 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)
ENG : Ver1.00	Engine firmware version information
NET : Ver1.00	Network program version information
SUB5 : Ver1.00 (P) *1	Sub 5 firmware version information
B0608071049:5708 *1	Boot program creation date and check sum information
U0612271600:7B0A *1	Main firmware creation date and check sum information
e0612312359:1234	Sub 5 firmware creation date and check sum information
ROM Check Sum	Check sum self-diagnosis function *2

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

*2 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] 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.

1.3.8 Check sensor operation (Function code 32)

<Function>

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

<Operating Procedure>

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

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

LCD	Sensor name	Detection status	
		With display	No display
CV	Front cover sensor	Front cover closed	Front cover open
RC	Back cover/duplex tray sensor	Back cover closed and Duplex tray set	Back cover open and No duplex tray
PO	Eject sensor	No paper	Paper set
NT*1	New toner/Toner cartridge detect sensor	OFF/ Toner cartridge set	ON/ No toner cartridge
NP*2	New process cartridge/process cartridge detect sensor	OFF/ Process cartridge set	ON/ No process cartridge
NB*2	New toner box/Toner box cartridge detect sensor	OFF/ Toner box cartridge set	ON/ No toner box cartridge
NT*2	Toner amount sensor	Toner not full	Toner full
C1	Paper feed sensor	T1 closed and No paper	T1 open and Paper set
RM	Registration front sensor	No paper	Paper set
RA	Registration rear sensor	No paper	Paper set
MP	MP paper empty sensor	No paper	Paper set
P1	Paper empty sensor	No paper	Paper set

*1 Available on models without toner box

*2 Available on models with toner box

(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] for five seconds, this operation is finished and the machine returns to the initial state of maintenance mode.

■ **Location of sensors**

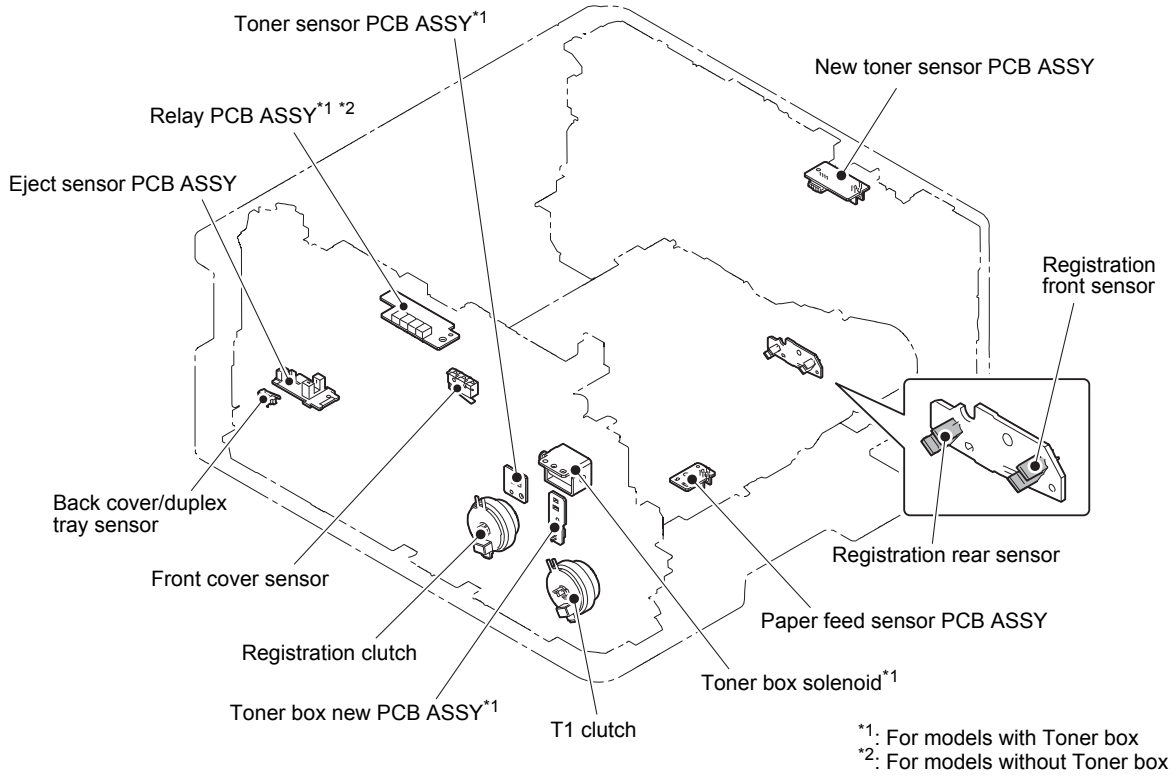


Fig. 5-5

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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 33” on the LCD, and press the [OK].

(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] for five seconds, 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 position / Adjust upper-end print position / Change ON/OFF setting for lower case compensation / Change ON/OFF setting for fixation strength improvement (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 the serial number of the machine. (default)
USBNo.= OFF	Returns “0”.

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

<Operating Procedure>

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

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

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

(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 position

<Function>

In the event that the left-end print start position deviates, use this function to adjust the position left and right. The adjustable range is -100 to 750 (1 unit = 0.084 mm = 300 dpi). (Shifted to left when the value is negative)

<Operating Procedure>

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

(2) Press the [▲] or [▼] to display “XAdjust” on the LCD, and press the [OK] or [Go]. “XAdjust=MP” is displayed on the LCD.

(3) Refer to <Adjustment option table> on the table below, press the [▲] or [▼] to select from the adjustment options, and press the [OK] or [Go]. “XAdj. **= 0*” is displayed on the LCD. (Selected option is shown for **.)

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

(5) Press the [OK] or [Go] after adjusting the value. “Accepted” is displayed on the LCD.

(6) Press and hold the [Go] for five seconds, and the machine returns to the initial state of maintenance mode.

<Adjustment option table>

Single-side printing

Adjustment option	LCD
MP tray first side	X Adjust MP
Paper tray first side	X Adjust T1
N/A (disabled)	X Adjust DX
N/A (disabled)	X Adjust DXMP

Duplex printing

Adjustment option	LCD
MP tray second side	X Adjust MP
Paper tray second side	X Adjust T1
*1	X Adjust DX
MP tray first side	X Adjust DXMP
Paper tray first side	X Adjust DXT1

*1 Adjusts first side print start position of all tray (paper tray and MP tray). Value of X Adjust DX is added to each tray adjustment value.
For example, when printing from paper tray, it adjusts as “X Adjust DXT1 value” + “X Adjust DX value” and print. Besides, when the added value is over than the adjustable range (-100 to 750), adjusted value will be for minimum -100 and maximum 750 and does not become out of adjustable range.

■ Adjust upper-end print position

<Function>

In the event that the upper-end print start position deviates, use this function to adjust the position up and down. Adjustable range is -50 to 50 (1 unit = 0.084 mm = 300 dpi). (Shifted down when the value is negative)

<Operating Procedure>

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

(2) Press the [▲] or [▼] to display “Y Adjust” on the LCD, and press the [OK] or [Go]. “YAdjust MP” is displayed on the LCD.

(3) Refer to <Adjustment option table> on the table below, press the [▲] or [▼] to select from the adjustment options, and press the [OK] or [Go]. “YAdj. **= 0*” is displayed on the LCD. (Selected option is shown for **.)

(4) To shift the writing start position down, press the [▼] to decrease the value. To shift the position up, press the [▲] to increase the value.

(5) Press the [OK] or [Go] after adjusting the value. “Accepted” is displayed on the LCD.

(6) Press and hold the [Go] for five seconds, and the machine returns to the initial state of maintenance mode.

<Adjustment option table>

Single-side printing

Adjustment option	LCD
MP tray first side	Y Adjust MP
Paper tray first side	Y Adjust T1
*1	Y Adjust TRAY
N/A (disabled)	Y Adjust DX
N/A (disabled)	Y Adjust DXMP
N/A (disabled)	Y Adjust DXT1

Duplex printing

Adjustment option	LCD
MP tray second side	Y Adjust MP
Paper tray second side	Y Adjust T1
*2	Y Adjust TRAY
*1	Y Adjust DX
MP tray first side	Y Adjust DXMP
Paper tray first side	Y Adjust DXT1

*1 Adjusts first side print start position of all tray (paper tray and MP tray). Value of Y Adjust TRAY and Y Adjust DX is added to each tray adjustment value.
For example, when printing from paper tray, it adjusts as “Y Adjust T1 value” + “Y Adjust TRAY value” or “Y Adjust DXT1 value” + “Y Adjust DX value” and print. Besides, when the added value is over than the adjustable range (-50 to 50), adjusted value will be for minimum -50 and maximum 50 and does not become out of adjustable range.

*2 Adjusts second side print start position of all tray (paper tray and MP tray). Value of Y Adjust TRAY is added to each tray adjustment value.
For example, when printing from paper tray, it adjusts as “Y Adjust T1 value” + “Y Adjust TRAY value” and print. Besides, when the added value is over than the adjustable range (-50 to 50), adjusted value will be for minimum -50 and maximum 50 and does not become out of adjustable range.

■ Change ON/OFF setting for lower case compensation

<Function>

This function is used to expand and compensate the white lower case which is easily collapsed by the pattern matching.

<Operating Procedure>

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

(2) Press the [▲] or [▼] to display “Dot Correct” on the LCD, and press the [OK] or [Go]. “Dot Correct = ON*” is displayed on the LCD.

(3) Press the [▲] or [▼] to select “Dot Correct = ON” or “Dot Correct = OFF”, and press the [OK] or [Go]. “Accepted” is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

■ Change ON/OFF setting for fixation strength improvement

<Function>

When the fuser unit does not reach the target temperature and the fixation strength cannot be secured due to an external factor such as the power source environment is poor, this function provides a mode which can secure the fixation strength by checking the fuser temperature before feeding.

<Operating Procedure>

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

(2) Press the [▲] or [▼] to display “Fix Intensity Up” on the LCD, and press the [OK] or [Go]. “Fix Mode = OFF*” is displayed on the LCD.

(3) Press the [▲] or [▼] to select “Fix Mode = ON” or “Fix Mode = OFF”, and press the [OK] or [Go]. “Accepted” is displayed on the LCD, and the machine returns to the initial state of maintenance mode.

1.3.11 Check toner cartridge (Models with cartridge sensor only) (Function code 57)

<Function>

This function is used to acquire the toner cartridge data and check whether the country code is right and it is compatible with the machine and capacity. Also checks the toner cartridge version and the continuity (contact).

<Operating Procedure>

■ Compatibility check

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 57” on the LCD, and press the [OK]. “IC_ACT ALL” is displayed on the LCD.

(2) Press the [▲] or [▼] to display “1” on the LCD, and press the [OK]. “IC_ACT BLACK” is displayed on the LCD.

(3) Press the [OK]. Perform the compatibility check with the machine. If it is compatible, “IC_ACT OK” is displayed on the LCD. If it is not compatible, an error in the <Error display> table below is displayed on the LCD.

<Error display>

LCD	Description
NG0 to 99	Cartridge sensor on the machine is faulty. Cartridge sensor PCB ASSY has to be replaced with a new one.
NG100 to 199	Toner cartridge could not communicate with the cartridge sensor. Cartridge sensor contact is faulty or broken. Toner cartridge without the cartridge sensor is installed.
NG200 to 299	Communication between the toner cartridge and cartridge sensor shows error. Toner cartridge may not be a genuine product.
NG300 to 399	Communication and authentication of the cartridge sensor was performed successfully but the cartridge information was deemed incompatible. Toner cartridge may not be installed correctly.

■ Destination check

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 57” on the LCD, and press the [OK]. “IC_ACT ALL” is displayed on the LCD.

(2) Press the [▲] or [▼] to display “3” on the LCD, and press the [OK]. “IC_AREA BLACK” is displayed on the LCD.

(3) Press the [OK]. Perform the destination check. If it is compatible, “IC_AREA OK” is displayed on the LCD. If it is not compatible, an error in the <Error display> table above is displayed on the LCD.

■ Capacity check

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 57” on the LCD, and press the [OK]. “IC_ACT ALL” is displayed on the LCD.

(2) Press the [▲] or [▼] to display “4” on the LCD, and press the [OK]. “IC_SIZE BLACK” is displayed on the LCD.

(3) Press the [OK]. Perform the destination check. If it is compatible, “IC_SIZE OK” is displayed on the LCD. If it is not compatible, an error in the <Error display> table above is displayed on the LCD.

■ Version information check

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 57” on the LCD, and press the [OK]. “IC_ACT ALL” is displayed on the LCD.

(2) Press the [▲] or [▼] to display “5” on the LCD, and press the [OK]. “IC_VER BLACK” is displayed on the LCD.

(3) Press the [OK]. Perform the destination check. If it is compatible, “IC_VER **” is displayed on the LCD. (“**” indicates the version information) If it is not compatible, an error in the <Error display> table on the previous page is displayed on the LCD.

■ Continuity (contact) check

(1) Press the [▲] or [▼] in the initial state of maintenance mode to display “MAINTENANCE 57” on the LCD, and press the [OK]. “IC_ACT ALL” is displayed on the LCD.

(2) Press the [▲] or [▼] to display “0” on the LCD, and press the [OK]. “IC_TX BLACK” is displayed on the LCD.

(3) Press the [OK]. Perform the destination check. If it is compatible, “IC_TX OK” is displayed on the LCD. If it is not compatible, an error in the <Error display> table on the previous page is displayed on the LCD.

1.3.12 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 67” on the LCD, and press the [OK]. “SELECT: K 100%” is displayed on the LCD.

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

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

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

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

(6) Refer to the <Print page> table, press the [▲] or [▼] to select the pages printing, and press the [OK]. 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 [▼] to select the number of pages for 1 job, and press the [OK]. (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] for five seconds, 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:GLOSSY	Glossy paper
SELECT:HAGAKI	Postcard *

* Display appears on LCD, but it is not available.

<Print type>

LCD	Description
SELECT: TRAY1 SX	Single-side printing from paper tray
SELECT: MP SX	Single-side printing from MP tray
SELECT: MF SX	Single-side printing from manual feed slot
SELECT: TRAY1 DX *	Duplex printing from paper tray
SELECT: MP DX *	Duplex printing from MP tray
SELECT: MF DX *	Duplex printing from manual feed slot
SELECT: AUTO SX	Single-side printing to automatically selected tray
SELECT: AUTO DX *	Double-side printing to automatically selected tray

* Supports paper size only for A4, Letter, Legal and Folio.

<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)

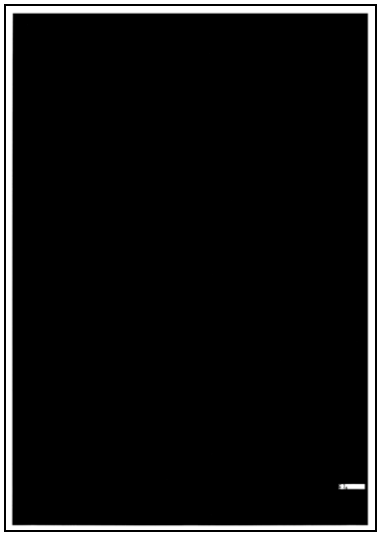
LCD	Description
SELECT:1P/JOB	Prints 1 page per job *1
SELECT:2P/JOB	Prints 2 pages per job *1
SELECT:5P/JOB	Prints 5 pages per job *1
SELECT:2I/JOB	Prints 2 images per job *2
SELECT:5I/JOB	Prints 5 images per job *2 *3
SELECT:10I/JOB	Prints 10 images per job *2

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

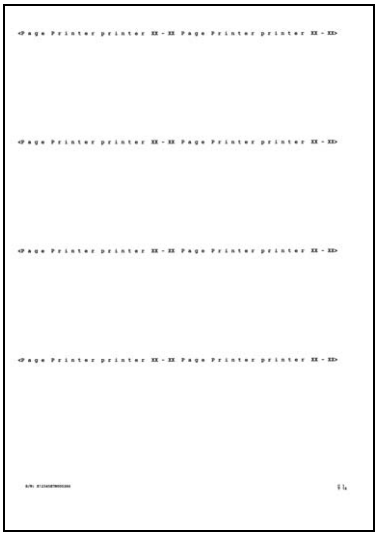
*2 Selectable only when the DX is set as print type.

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

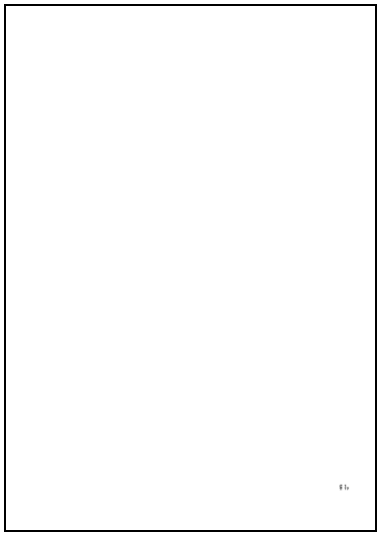
K 100%



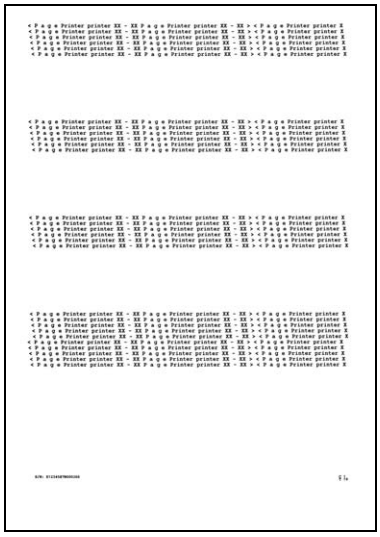
K 1%



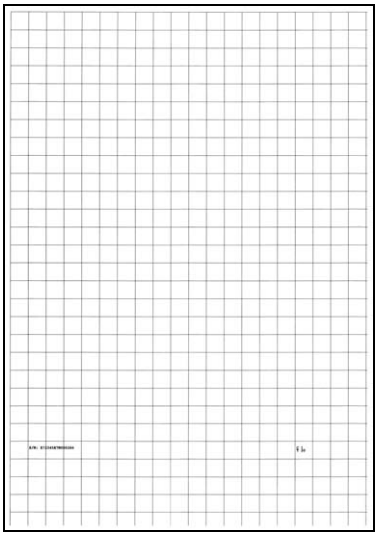
W 100%



K 5%



Lattice



Total

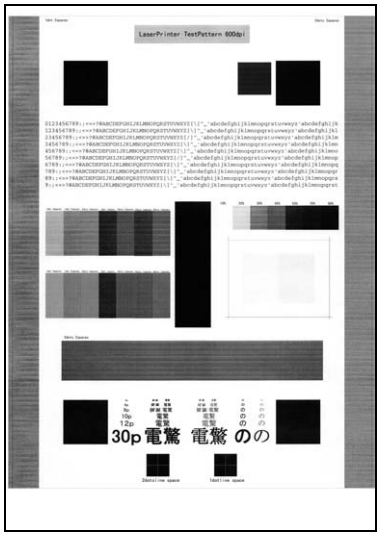


Fig. 5-6

1.3.13 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 69” on the LCD, and press the [OK]. “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] for five seconds, 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]. “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] 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] to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] to release the error.
Jam Rear	

■ **Frame pattern**

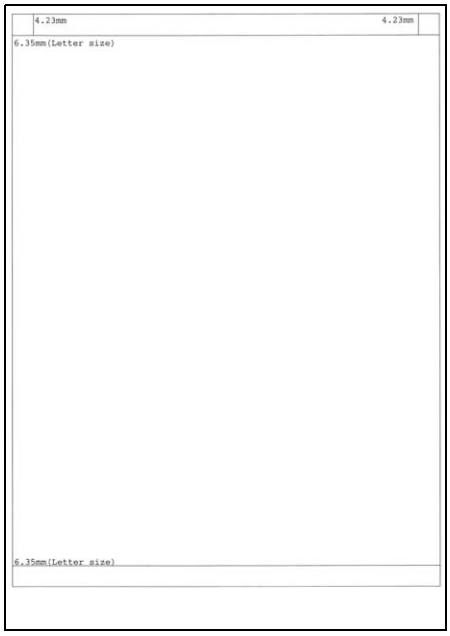


Fig. 5-7

1.3.14 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 70” on the LCD, and press the [OK]. “PRINTING” is displayed on the LCD, and the frame pattern (refer to the figure below) is printed on both sides of the paper.

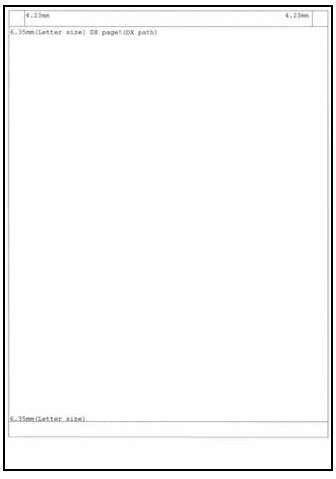
(3) When printing is completed, “WAKU DX” is displayed on the LCD.
Press and hold the [Go] for five seconds, and the machine returns to the initial state of maintenance mode.

Note:

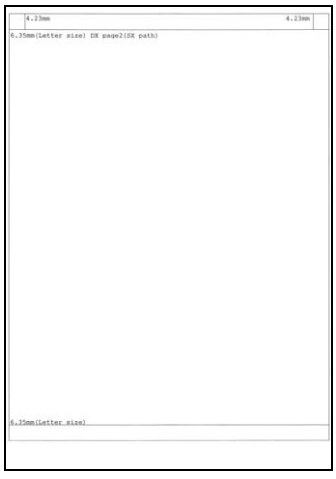
- If printing fails, printing is stopped with displaying any of the errors shown in the table below. To retry printing, refer to the “Remedy” in the table below to eliminate the error cause, and press the [Go]. “PRINTING” is displayed on the LCD, and the frame pattern is printed on a single sheet of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

Error display	Remedy
Replace Toner	Replace the toner cartridge and press the [Go] 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] to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] to release the error.
Jam Rear	
Jam Duplex	
Duplex Disabled	Refill the paper tray, close the tray and all covers, and press the [Go] to release the error.

■ Frame pattern



(First side)



(Second side)

Fig. 5-8

1.3.15 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 71” on the LCD, and press the [OK]. “SELECT: LETTER” is displayed on the LCD.

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

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

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

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

(6) When printing is completed, “OK” is displayed on the LCD, and it returns to the printing pattern display. Press the [OK] to perform this again.

(7) Press and hold the [Go] for five seconds, 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]. “PRINTING” is displayed on the LCD, and the test pattern is printed.

<Paper size>

LCD	Description
SELECT:LETTER	Letter
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

<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 *

* Press and hold the [Go] for five seconds to display “CANCELING” and the continuous printing is completed.

<Error display>

LCD	Remedy
Replace Toner	Replace the toner cartridge and press the [Go] 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] to release the error.
Jam Tray1	Remove the jammed paper, close the paper tray and all covers, and press the [Go] to release the error.
Jam Rear	

■ Test pattern

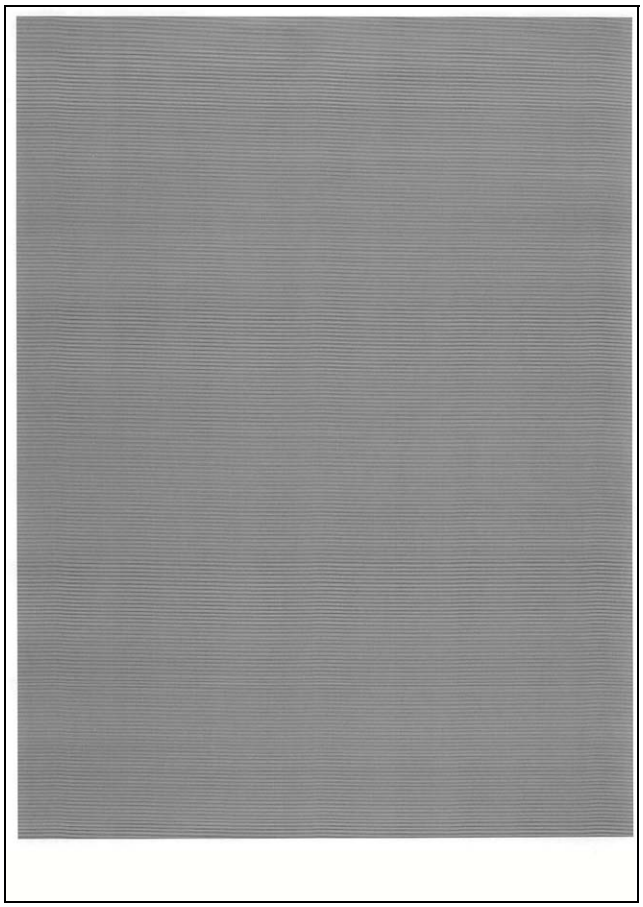


Fig. 5-9

1.3.16 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 74” on the LCD, and press the [OK]. The country code currently set is displayed on the LCD (The first digit is flashing).

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

(3) Press the [▲] to enter “1”, or the [▼] to enter “0” similarly. Then press the [OK]. 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 [▼] is pressed. Press the [Go] 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.

■ Setting by spec code list

MODEL	Country Code		Country Code (Detail)	
HL-2290	China	0020	---	---
HL-2295D	China	0420	---	---
HL-2590DN	China	0420	---	---
HL-2595DW	China	0B20	---	---
HL-B2000D	China	0529	---	---
			---	---
			---	---
	India	0545	---	---
HL-B2050DN	China	0820	---	---
HL-B2080DW	China	0950	---	---
			---	---
			---	---
	India	0945	---	---
	Vietnam	0929	---	---
HL-L2310D	China	0101	---	---
			---	---
			---	---
	Germany	0103	---	---
	U.S.A	0101	---	---
HL-L2310DR	China	0148	---	---
HL-L2312D	China	0150	---	---
HL-L2330D	China	0201	---	---
			---	---
			---	---
			---	---
			---	---

MODEL	Country Code		Country Code (Detail)	
HL-L2331D	China	0245	---	---
HL-L2335D	China	0321	---	---
			---	---
			---	---
			---	---
HL-L2336D	China	0329	---	---
HL-L2350DW	China	0101	---	---
			---	---
			---	---
	Germany	0103	---	---
	U.S.A	0101	---	---
HL-L2350DWR	China	0148	---	---
HL-L2351DW	China	0145	---	---
HL-L2352DW	China	0150	---	---
HL-L2357DW	China	0203	---	---
HL-L2370DN	China	0303	---	---
			---	---
			---	---
	Germany	0303	---	---
HL-L2370DNR	China	0348	---	---
HL-L2370DW	China	0601	---	---
			---	---
			---	---
			---	---
	U.S.A	0601	---	---
HL-L2370DWXL	China	0601	---	---
HL-L2371DN	China	0548	---	---
			---	---
			---	---
HL-L2372DN	China	0350	---	---
HL-L2375DW	Australia	0706	---	---
	China	0703	---	---
			---	---
			---	---
			---	---
			---	---
			---	---
			---	---
			---	---
			---	---
	Germany	0703	---	---
	Japan	0747	---	---
HL-L2375DWR	China	0748	---	---

MODEL	Country Code		Country Code (Detail)	
HL-L2376DW	China	0729	---	---
			---	---
			---	---
HL-L2385DW	Australia	0A06	---	---
	Korea	0A40	---	---
	Philippines	0A21	---	---
	Singapore	0A40	---	---
HL-L2386DW	Indonesia	0A29	---	---
	Turkey	0A25	---	---

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.
- The spec code list above is current as of October 2017.
  Please contact Brother distributors for the latest information.

1.3.17 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 77” on the LCD, and press the [OK]. Printing maintenance information starts.
When printing is completed, the machine returns to the initial state of maintenance mode.

■ Maintenance information

```
MAINTENANCE
①HL-L2385DW series ②Serial No.=X12345E7N000735 ③Model=84U-H98④Country=0A40 ⑤SW CheckSum=D9 /OK
⑥Main ROM: Ver.1.16 U1710021531  ⑩ROM ChkSum: 9676      ⑫26000000FF   FF   0202
                                                         ⑬OKNG   00000000001

⑦ Boot ROM: B1706191256
⑧ Engine Version: 1.11(0.00)
⑨ USB Prod.ID: 00A3              ⑪RAM Size =  128Mbyte



 Remaining life of :
⑭*Toner Cartridge: 80%     ⑮**Drum Unit: 11949 (100%)
                             Toner Warn Threshold: OFF


 <Device Status(Total/2-sided)>
 ⑯Total Page Count: 47/6
 ⑰PC-Print Count: 0/0
 ⑱Other Count: 47/6

 ⑲***Average Coverage(Total): 55.58%
 ⑳***Average Coverage(Current)*: 57.98%
 ㉑***Average Coverage(Previous): 1.44%
 ㉒***Average Coverage(Latest): 3.48%
㉓ <Drum Information>
  Drum Page Count:51      Drum Count: 726
㉔ <Developing Roller Count(Current/Previous)>
    2472/601
㉕ <Total Pages>           47
   MP Tray: 0             2-sided: 3
   Tray1: 44              Std.Output: 44
   A4/Letter: 47          Envelope: 0
   Legal/Folio: 0         A5: 0
   B5/Executive: 0        Others: 0
   Plain/Thin/Recycled: 47
   Thick/Thicker/Bond: 0
   Envelope/Env.Thick/Env.Thin: 0
   Label Paper: 0         Hagaki: 0
 ㉖Toner(Current/Previous): 45/2
 ㉗Developing Roller Count(Current/Previous)
    1389/391
   NGC: 0

㉘ <Total Paper Jams: 0>
   Jam Tray 1: 0
   Jam MP Tray: 0         Jam Rear: 0
   Jam 2-sided: 0         Jam Inside: 0

㉙ <Function Info: 0000000000 0000000000>

㉙ <Error History (last 10 errors)>          Page
   1: 9302:No Paper T1                      25
   2: 6200:No Drum Unit                     2
   3: 6101:No Toner                         2
   4:
   5:
   6:
   7:
   8:
   9:
  10:
㉚ <Replace Count>
   Toner Cartridge: 1 (0)
   Drum Unit: 0

㉛ <Developing Bias: 270V>
㉜ <Engine Sensor Log>
   KO: 000180/001570      MN: 000720/001605
   RS: 000895/001580      EJ: 001845/001610
㉝ <Status Log>
   830100  853FC5  830100  830100  830100
   830100  012001  012001  830100  830100
㉞ <Power On Time: 0 hours> <Power On Count: 27>
  <First Date PC Prn: --/--/-->
  <Last Media Type: Plain>

㉟ 1:2:0,2883,575,52,80,405,528,42,68,410,497,10,5,2438,0,0
  2:0:0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
  3:0:0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

*   Remaining life will vary depending on the types of documents printed,
    their coverage and device usage.
**  Based on A4/Letter printing.
*** Calculated coverage.
```

Fig. 5-10

1	Model name	19	Accumulated average coverage
2	Serial number	20	Average coverage by the current toner cartridge
3	Model code	21	Average coverage by the previous toner cartridge
4	Spec code	22	Latest job average coverage
5	Switch check sum (factory use)	23	Drum page count / Rotations of the drum
6	Main firmware version	24	Total rotations of the develop roller (currently use / previously used toner cartridge)
7	Boot firmware version	25	Total printed pages per paper tray / paper size / paper type
8	Engine archive version	26	Printed pages per toner cartridge (current / previous)
9	USB product ID	27	Total rotations of the develop roller used in printing (currently use / previously used toner cartridge)
10	ROM check sum	28	Total number of paper jams / Paper jams by sections of the product
11	RAM size	29	Machine error log / Total pages printed at the time of the error / Time of error
12	Main PCB serial number / Wireless LAN setting by country / Wireless LAN output peak / WLAN Setup YES/NO setting / Toner type (current) / Toner type (previous)	30	Number of times each consumable has been replaced
13	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 / The number of times that the irregular power supply detection error occurred / Next power ON/OFF setting	31	Develop bias voltage value
14	Estimated remaining toner amount	32	Engine sensor log (Not necessary for maintenance)
15	Remaining life of drum unit / Threshold of toner	33	Status log (Not necessary for maintenance)
16	Total printed pages (Total / Duplex)	34	Total power distribution time / The number of times that the power is turned ON / Start date for machine operation / Latest paper type used
17	Total PC printed pages (Total / Duplex)	35	New toner cartridge detection log
18	Total pages printed by other methods (Total / Duplex)	36	SSW information 1/2

1.3.18 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 78” on the LCD, and press the [OK]. “F100” is displayed on the LCD and the fan rotates at 100% speed.

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

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

■ Location of fan

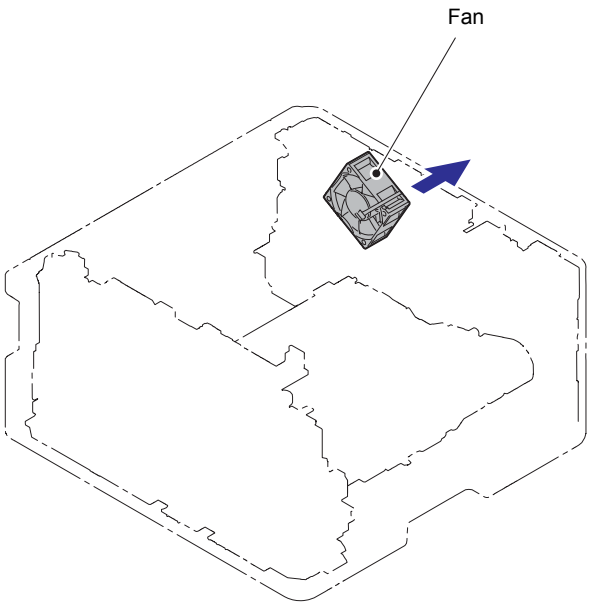


Fig. 5-11

1.3.19 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 80” on the LCD, and press the [OK]. “MACERR_01:****” is displayed on the LCD.

(2) Pressing the [Go] displays the next item. Pressing the [Back] returns to the previous item. Press and hold the [Go] for five seconds, and the machine returns 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
PFMP_PG:00000000	Pages fed from PF kit MP
PFK1_PG:00000000	Pages fed from PF kit 1
FUSR_PG:00000000	Printed pages on fuser unit
LASR_PG:00000000	Printed pages on laser unit
TTL_PG:00000000	Total number of pages printed
DX_PG:00000000	Total number of two-sided pages printed
TTLPCPT:00000000	Total number of pages printed via PC
DX_PCPT:00000000	Total number of two-sided pages printed via PC
TTL_OTH:00000000	Total number of pages printed by other methods
DX_OTH:00000000	Total number of two-sided pages printed by other methods
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
TNSPL:0000000000	Supply amount of the toner box (Toner box models only)
MP_PG:00000000	Paper input for MP tray (MP models only)
MN_PG:00000000	Paper input for manual feed slot (Manual feed slot models only)
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

LCD	Description
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
MP_JAM:00000	Paper jams that have occurred in the MP tray (MP models only)
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 *3
KTN_PG1:00000000	Pages printed with the current toner cartridge
KTN_PG2:00000000	Pages printed with the previous toner cartridge
KDEV_BIAS:400V	Developing bias voltage value
ENGERR##:000000	Engine error log (last ten errors) *4
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 *5
FUNC1:0000000000	SSW information 1 *6

*1 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] 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] 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 [▼] while the serial number is displayed to display "9" on the LCD, and press the [OK]. 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]. The second digit starts to flash. Enter the second digit to the 15th digit similarly.
4) Press the [Go], and the new serial number is saved. The machine returns to the initial state of maintenance mode.

*3 Pressing the [OK] while the number of each consumable part had replaced is displayed shows "DATE_XX:000000" (XX: each consumable part) and the replaced date on the LCD.

*4 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] 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] again returns the LCD display to machine error log.

*5 01 to 10 will be displayed for "##" in chronological order. Pressing the [OK] 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] again returns the LCD display to log for design analysis.

*6 Pressing the [OK] while the SSW information 1 is displayed changes the display to the SSW information 2.

1.3.20 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 82” on the LCD, and press the [OK]. “MACHINE ERR XXXX” is displayed on the LCD.

(2) Press and hold the [Go] for five seconds, and the machine returns to the initial state of maintenance mode.

1.3.21 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 88" on the LCD, and press the [OK]. “Reset-LVPS” is displayed on the LCD.

(2) Press the [OK]. “Reset-LVPS OK?” is displayed on the LCD.

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

1.3.22 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 [▼] in the initial state of maintenance mode to display “MAINTENANCE 99” on the LCD, and press the [OK]. The machine quits maintenance mode and returns to the ready state.

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

■ End-user accessible maintenance mode functions

1.4.1 Test printing

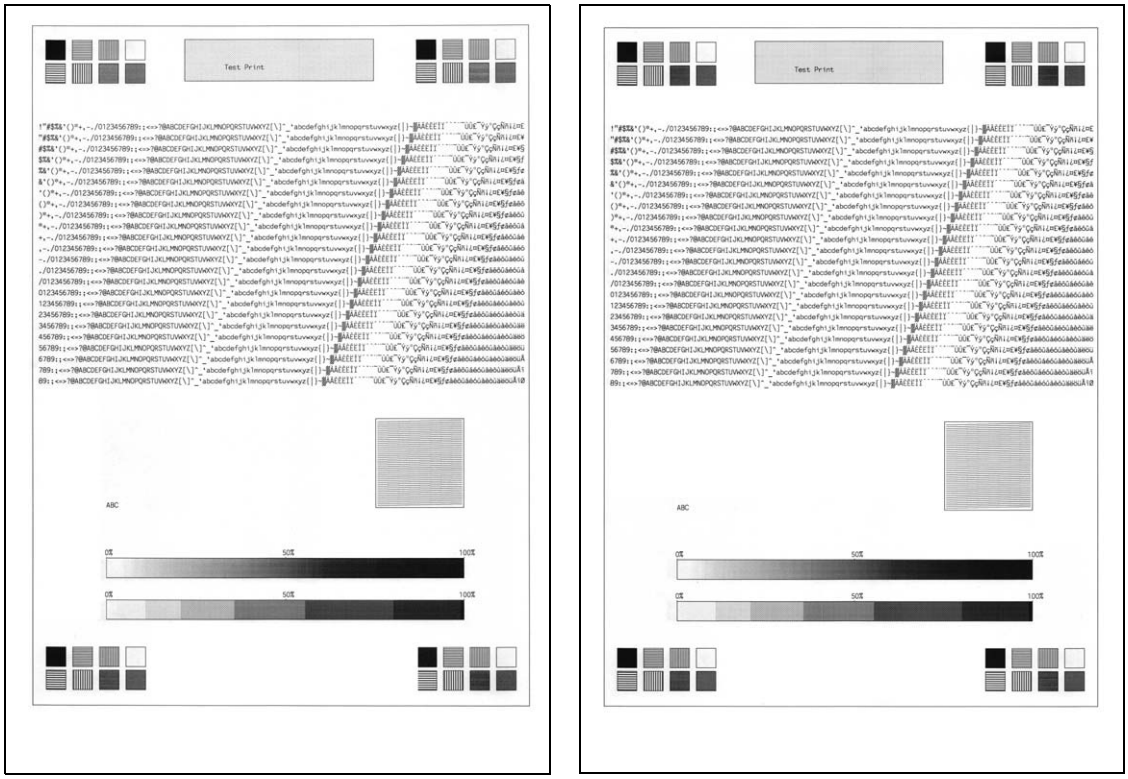
This function is used to print a test pattern (print quality check sheet) to check any missing image and print quality.

<Operating Procedure>

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

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

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



(First side) (Second side)

Fig. 5-12

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 position / Adjust upper-end print position / Change ON/OFF setting for lower case compensation / Change ON/OFF setting for fixation strength improvement (Function code 45)" for LCD models)

For LED models, the setting currently applied can be determined by pressing the [Go] 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

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

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

1.4.4 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

■ Maintenance mode functions for service personnel

1.4.5 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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.

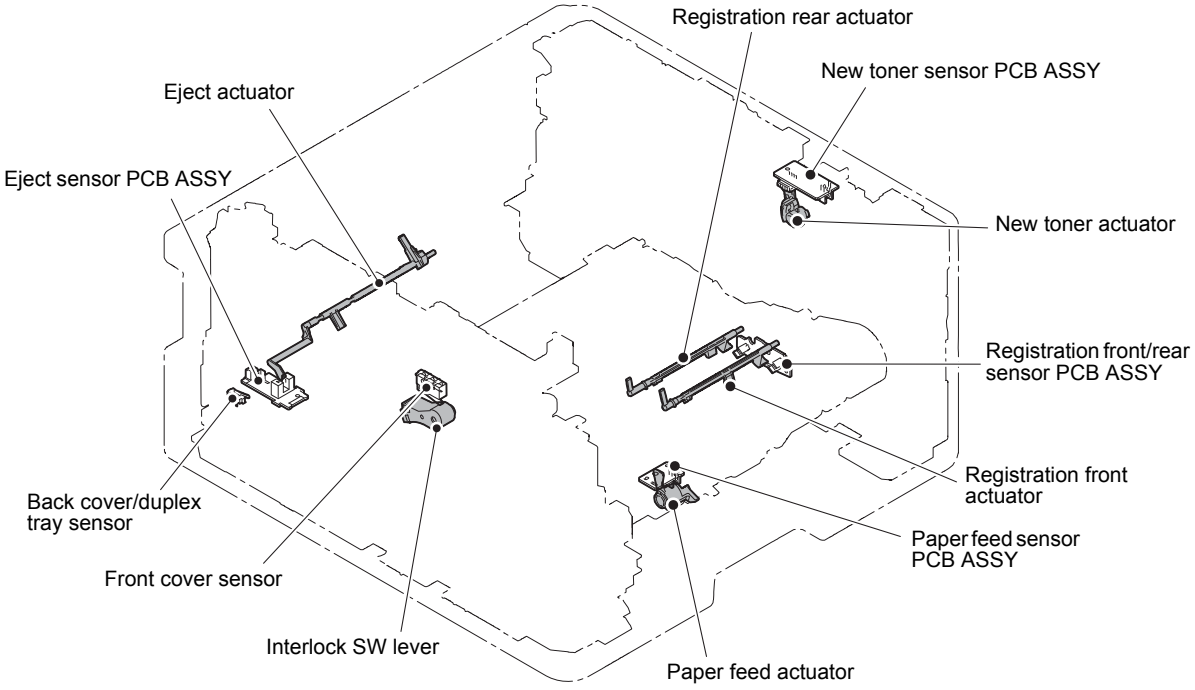


Fig. 5-13

1.4.6 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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] for five seconds to stop printing.

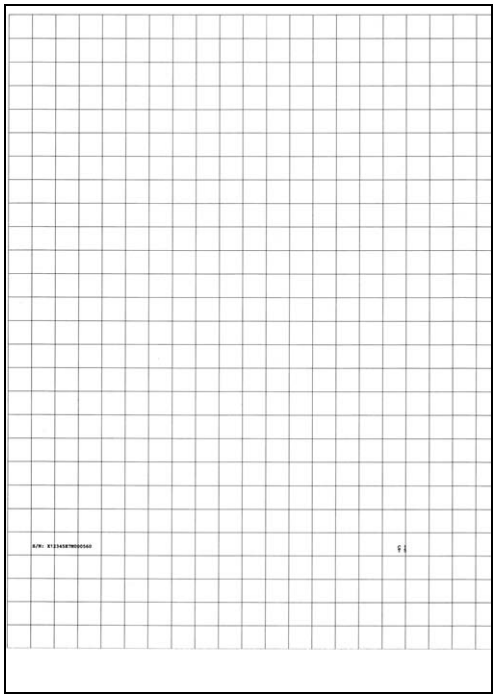


Fig. 5-14

1.4.7 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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 disconnect the AC cord and then connect it again.
The machine returns to the ready state.

1.4.8 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] 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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.

1.4.9 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] 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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.

1.4.10 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 "1.3.17 Print maintenance information (Function code 77)" for LCD models)

<Operating Procedure>

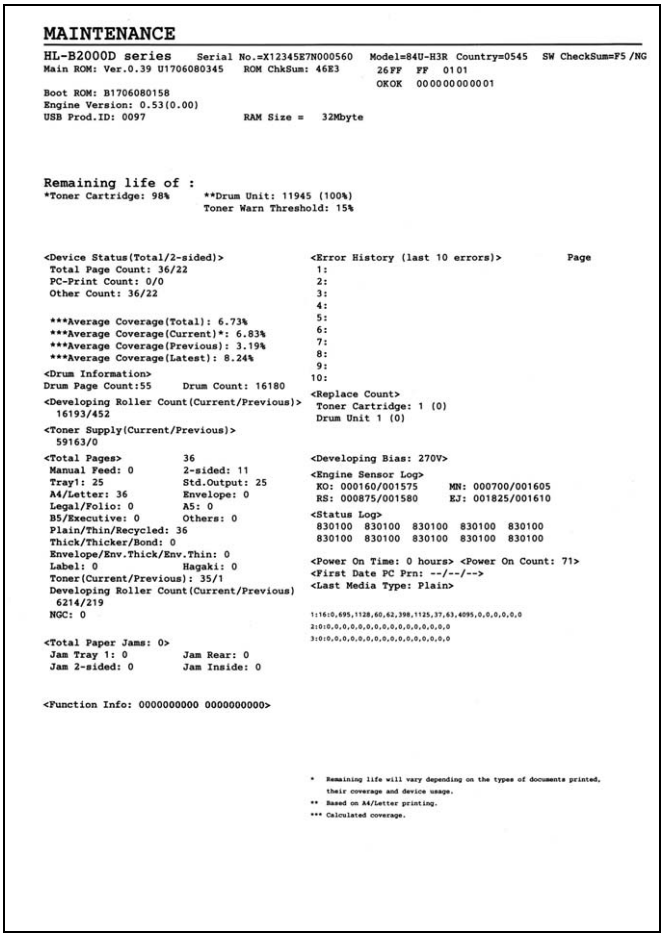
(1) Open the front cover while the power switch is turned OFF.

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

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

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

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



MAINTENANCE

HL-B2000D series Serial No.=X12345E7N000560 Model=84U-H3R Country=0545 SW CheckSum=F5 /NG
Main ROM: Ver.0.39 U1706080345 ROM ChkSum: 46E3 26FF FF 0101
OKOK 000000000001

Boot ROM: B1706080158
Engine Version: 0.53(0.00)
USB Prod.ID: 0097 RAM Size = 32Mbyte

Remaining life of :
*Toner Cartridge: 98% **Drum Unit: 11945 (100%)
Toner Warn Threshold: 15%

<Device Status(Total/2-sided)>
Total Page Count: 36/22
PC-Print Count: 0/0
Other Count: 36/22

***Average Coverage(Total): 6.73%
***Average Coverage(Current)*: 6.83%
***Average Coverage(Previous): 3.19%
***Average Coverage(Latest): 8.24%

<Drum Information>
Drum Page Count:55 Drum Count: 16180
<Developing Roller Count(Current/Previous)>
16193/452
<Toner Supply(Current/Previous)>
59163/0

<Total Pages> 36
Manual Feed: 0 2-sided: 11
Tray1: 25 Std.Output: 25
A4/Letter: 36 Envelope: 0
Legal/Folio: 0 A5: 0
B5/Executive: 0 Others: 0
Plain/Thin/Recycled: 36
Thick/Thicker/Bond: 0
Envelope/Env.Thick/Env.Thin: 0
Label: 0 Hagaki: 0
Toner(Current/Previous): 35/1
Developing Roller Count(Current/Previous)
6214/219
NGC: 0

<Total Paper Jams: 0>
Jam Tray 1: 0 Jam Rear: 0
Jam 2-sided: 0 Jam Inside: 0

<Function Info: 0000000000 0000000000>

<Error History (last 10 errors)> Page
1:
2:
3:
4:
5:
6:
7:
8:
9:
10:

<Replace Count>
Toner Cartridge: 1 (0)
Drum Unit 1 (0)

<Developing Bias: 270V>
<Engine Sensor Log>
KO: 000160/001575 MN: 000700/001605
RS: 000875/001580 EJ: 001825/001610
<Status Log>
830100 830100 830100 830100 830100
830100 830100 830100 830100 830100

<Power On Time: 0 hours> <Power On Count: 71>
<First Date PC Prn: --/--/-->
<Last Media Type: Plain>

1:16:0,695,1128,60,62,398,1125,37,63,4095,0,0,0,0,0,0
2:0:0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
3:0:0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

* Remaining life will vary depending on the types of documents printed, their coverage and device usage.
** Based on A4/Letter printing.
*** Calculated coverage.

Fig. 5-15

1.4.11 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>

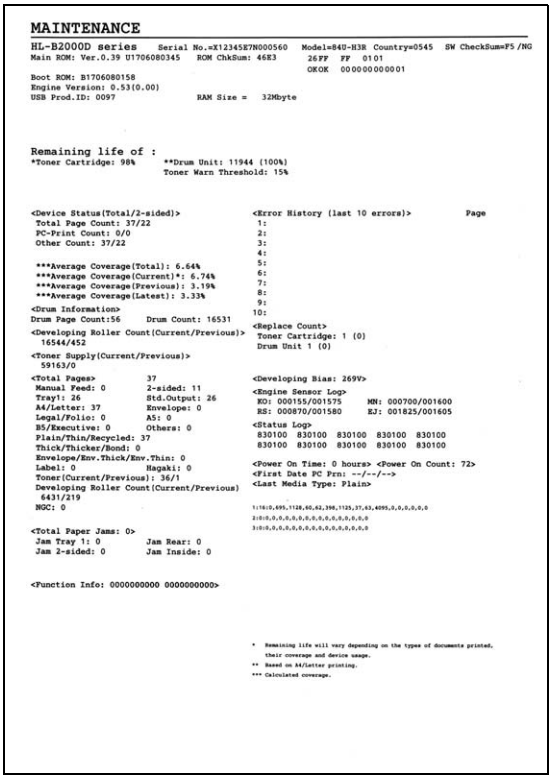
(1) Open the front cover while the power switch is turned OFF.

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

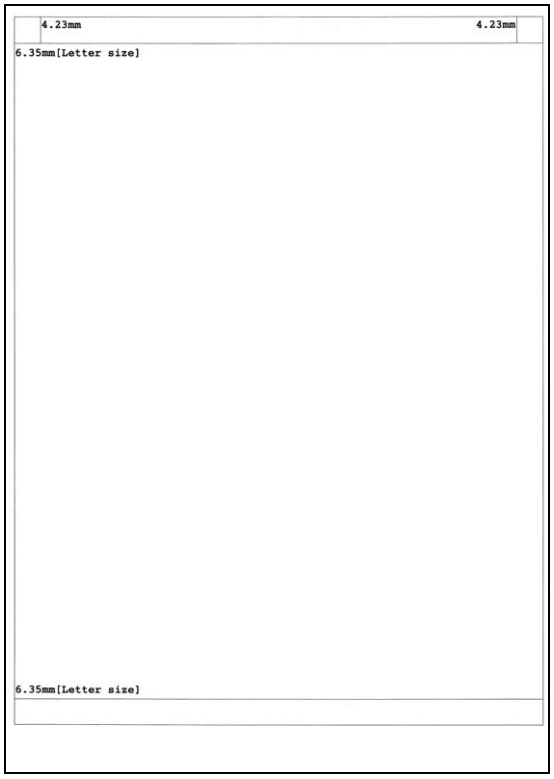
(3) Release the [Go]. All LEDs go out.

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

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



(First side)



(Second side)

Fig. 5-16

1.4.12 Resetting to factory shipping state

This function returns the machine to the factory shipping state when a new supply main PCB is used for an occasion like repair. If this function is ignored when a new supply main PCB is used, software like MPS application and BrAdmin tool are not operable. It may also be exposed to information leakage risk due to the compromised security. When a new supply main PCB is used, always implement this function after the repair. This machine does not have a function to return the machine from the factory shipping state to the state prior to the factory shipment.

<Operating Procedure>

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

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

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

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

(5) Press the [Go] five times and close the front cover. Toner, Drum, and Paper LEDs go out in a second and the machine returns to the factory shipping state.

1.4.13 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] ten times and checking the LED status after several seconds. (Although all LEDs light after several seconds after the [Go] 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 10 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.

1.4.14 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

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

(5) Press the [Go] 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.

1.4.15 Firmware installing mode

This mode is used to write the firmware (main program).

Refer to "1.2 Installing Firmware (Sub firmware and main firmware)" in Chapter 4 for the detailed procedure.

1.4.16 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], and turn ON the power switch. The Toner, Drum, and Paper LEDs light.

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

(4) Press and hold the [Go] until the Paper LED lights, then release the [Go]. The machine returns to the ready state of maintenance mode for service personnel. Close the front cover.

2. OTHER SERVICE FUNCTIONS

2.1 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] 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.

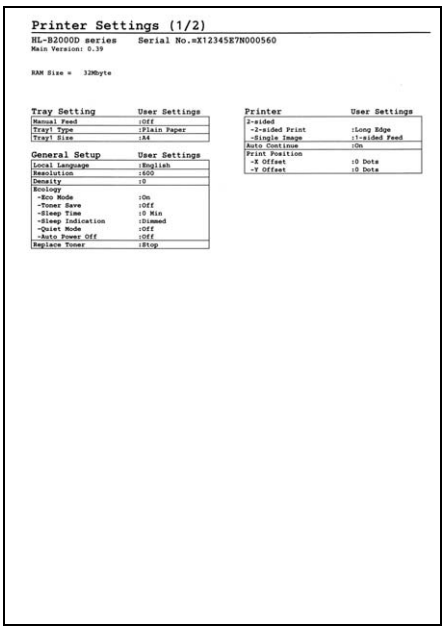
(3) Refer to the table below, press the [▲] or [▼] to display desired item and press the [OK].

(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].

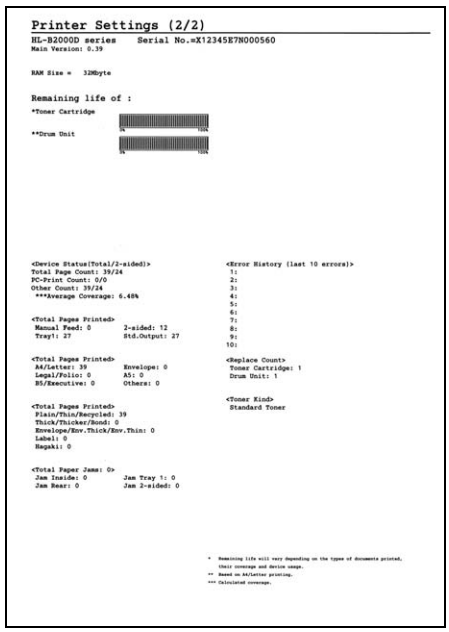
(5) Pressing the [OK] for five seconds returns the machine to the ready state.

LED models

(1) Press the [Go] 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.



(First side)



(Second side)

Fig. 5-17

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.

2.2 Drum Cleaning

<Function>

Attach the drum cleaning sheet kit (SP) (D011B4001) on the drum unit, and drum cleaning starts.

<Operating Procedure>

The insertion supplied with the drum cleaning sheet kit (SP) (D011B4001) is published on the next page.

Note:

- The drum cleaning sheet is supposed to be used only one time.

How to use the drum cleaning sheet

Precaution for use: The drum cleaning sheet is supposed to be used only one time.

brother at your side

1 Check the group your machine belongs.

Check the product model of your machine and look for it in the list below to find out the group of your machine.

Group A

DCP-7195DW	MFC-7895DW
MFC-L2730DW	MFC-L2730DWR
MFC-L2732DW	MFC-L2750DW
MFC-L2750DWR	MFC-L2750DWXL
MFC-L2751DW	MFC-L2770DW
MFC-L2771DW	

Group B

DCP-7090	DCP-7095D
DCP-7190DN	DCP-B7500D
DCP-B7520DW	DCP-B7530DN
DCP-B7535DW	DCP-L2510D
DCP-L2510DR	DCP-L2511D
DCP-L2512D	DCP-L2530DW
DCP-L2530DWR	DCP-L2531DW
DCP-L2532DW	DCP-L2535D
DCP-L2535DW	DCP-L2536D
DCP-L2537DW	DCP-L2550DN
DCP-L2550DNR	DCP-L2550DW
DCP-L2551DN	DCP-L2551DW
DCP-L2552DN	MFC-7390
MFC-7490D	MFC-7890DN
MFC-B7700D	MFC-B7715DW
MFC-B7720DN	MFC-L2690DW
MFC-L2710DN	MFC-L2710DNR
MFC-L2710DW	MFC-L2710DWR
MFC-L2712DN	MFC-L2712DW
MFC-L2713DW	MFC-L2715D
MFC-L2715DW	MFC-L2716D
MFC-L2716DW	MFC-L2717DW
HL-L2390DW	

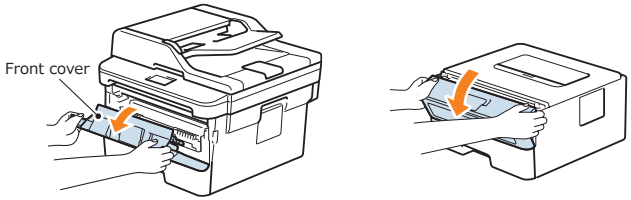
Group C

HL-2590DN	HL-2595DW
HL-B2050DN	HL-B2080DW
HL-L2325DW	HL-L2350DW
HL-L2350DWR	HL-L2351DW
HL-L2352DW	HL-L2357DW
HL-L2370DN	HL-L2370DNR
HL-L2370DW	HL-L2370DWXL
HL-L2371DN	HL-L2372DN
HL-L2375DW	HL-L2375DWR
HL-L2376DW	HL-L2385DW
HL-L2386DW	

Group D

HL-2290	HL-2295D
HL-B2000D	HL-L2310D
HL-L2310DR	HL-L2312D
HL-L2330D	HL-L2331D
HL-L2335D	HL-L2336D

2 Check that the power of the machine is ON and open the front cover.



3 Follow the instruction according to the group.

Group A

1) Press ✕ to release the error.
2) Press ⚙ > [All setting] > [Machine Info.] > [Parts life] in this order on the touch panel.
3) [Drum###%] (# refers to numbers) appears on the LCD.
4) Press and hold ✕, and release ✕ as soon as "Attached the cleaning sheet. Please refer to the included instruction." appears on the LCD.

Group B

1) Press ⚙.
2) Press ▲ to display [Machine Info] on the LCD and press OK.
3) Press ▲ to display [Parts life] on the LCD and press OK.
4) Press OK again. [Remaining###%] (# refers to numbers) appears on the LCD.
5) Press Back and ▼ at the same time. "Attached the cleaning sheet. Please refer to the included instruction." appears on the LCD.

Group C

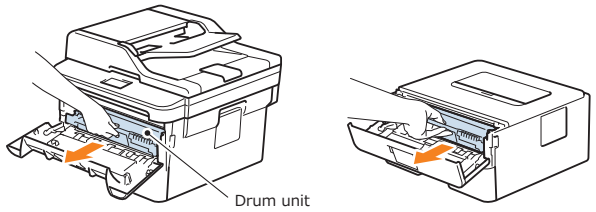
1) Press ▲ to display [Machine Info] on the LCD and press OK.
2) Press ▲ to display [Parts life] on the LCD and press OK.
3) Press OK again. [Remaining###%] (# refers to numbers) appears on the LCD.
4) Press Back and ▼ at the same time. "Attached the cleaning sheet. Please refer to the included instruction." appears on the LCD.

Group D

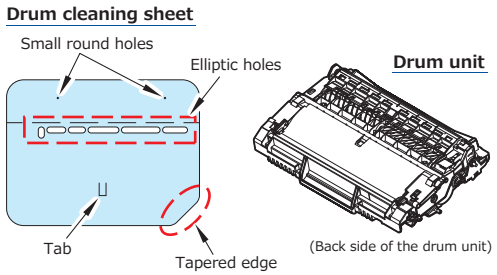
1) Open the back cover.
2) Press Back five times.
3) Drum LED and Ready LED flashes in turn.
4) Close the back cover.

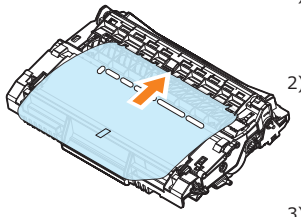
4 Remove the drum unit from the machine.

Caution Toner can be scattered when the drum unit is getting removed from the machine. Prepare a paper which may be stained on the flat surface and place the drum unit on it.

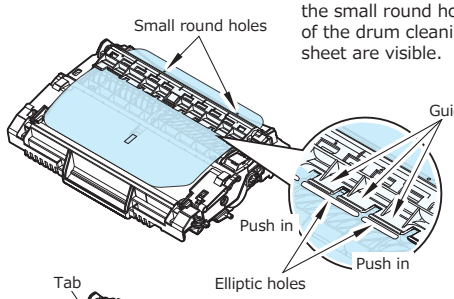


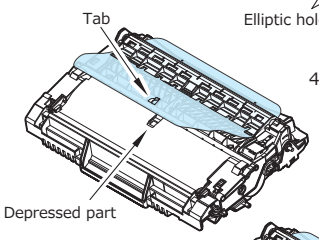
5 Attach the drum cleaning sheet on the drum unit.



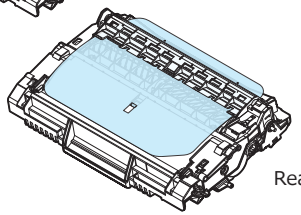


1) Turn the drum unit upside down and place it as shown in the figure on the left.
2) Insert the drum cleaning sheet into the drum unit. Check that the tapered edge of the drum cleaning sheet is at the right bottom.
3) Push the elliptic holes of the drum cleaning sheet onto the guides of the drum unit so that the small round holes of the drum cleaning sheet are visible.

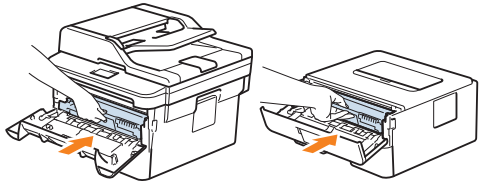




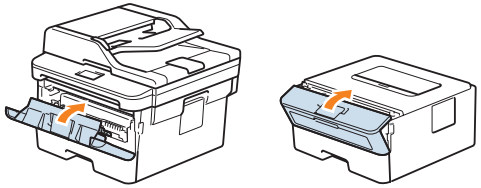
4) Push the tab of the drum cleaning sheet onto the depressed part of the drum unit.



6 Attach the drum unit on the machine.



7 Cleaning starts automatically once the front cover is closed.



"Drum cleaning" appears on the LCD during the cleaning.
* Not displayed for machines in Group D.

Note Drum cleaning takes about a minute. Rasping sound comes out from the machine during the cleaning but it's not faulty.

Caution Once the cleaning starts, it does not stop until the cleaning completes successfully. Even the cleaning stops due to an error, it starts again once the error gets resolved.

8 Remove the drum cleaning sheet from the drum unit.

1) "Drum Cleaning completed." appears on the LCD once the cleaning completes.
   * For machines in Group D, check that the machine stopped the cleaning.
2) Open the front cover.
3) Remove the drum unit from the machine.
4) Remove the drum cleaning sheet from the drum unit.
5) Attach the drum unit without the drum cleaning sheet on the machine.
6) Close the front cover.

Caution Always remove the drum cleaning sheet from the drum unit after the drum cleaning. Paper jam error appears if the drum cleaning sheet is not removed.

D010SU001

2.3 Resetting Drum Counter

<Function>

This function resets the drum counter when replacing it.

<Operating Procedure>

LCD models

(1) Press the [OK] and [∧] simultaneously while the machine is in the ready state.

(2) "Drum" is displayed on the LCD. Press the [OK].

(3) "Reset Drum? ▼Reset ▲Exit" is displayed on the LCD.

(4) Press the [∨] to display "Accepted" on the LCD. The drum counter is reset, and the machine returns to the ready state.

LED models

(1) Open the front cover. Paper LED lights.

(2) Press and hold the [Go]. The Toner LED, Drum LED, Paper LED and Ready LED light in this order. Check that all those LEDs light and release [Go]. The drum counter is reset, and the Paper LED starts flashing.

(3) Close the front cover.

Note:

- Resetting operation is ignored when the drum page count has not exceeded 100 pages.

2.4 Change Active/Inactive Setting for Quiet Mode (LED models only)

<Function>

This mode lowers the printing speed to suppress operation noise.

<Operating Procedure>

(1) Press the [Go] 11 times while the machine is in the ready state. All LEDs light. The number of flashes after pressing the [Go] 11 times indicates the function is active or inactive.

All LEDs flash once: Quiet mode is inactive

All LEDs flash twice: Quiet mode is active

2.5 Change Active/Inactive Setting for Auto Power Down Mode (LED models only)

<Function>

This function is used to change the active/inactive setting for auto power down mode. Time required to start the auto power down differs from one country to another but it's not changeable in this function. (Europe models only)

<Operating Procedure>

(1) Press the [Go] four times while the machine is in the ready state. All LEDs light.
The number of flashes after pressing the [Go] four times indicates the function is active or inactive.

All LEDs flash once: Auto power down mode is inactive

All LEDs flash twice: Auto power down mode is active

2.6 Change Active/Inactive Setting for Eco Mode (LED models only)

<Function>

This function is used to change the active/inactive setting for eco mode.

<Operating Procedure>

(1) Press the [Go] nine times while the machine is in the ready state. All LEDs light.
The number of flashes after pressing the [Go] nine times indicates the function is active or inactive.

All LEDs flash once: Eco mode is inactive

All LEDs flash twice: Eco mode is active

2.7 Change Active/Inactive Setting for Toner Save Mode (LED models only)

<Function>

This function is used to change the active/inactive setting for toner save mode.

<Operating Procedure>

(1) Press the [Go] 13 times while the machine is in the ready state. All LEDs light.
The number of flashes after pressing the [Go] 13 times indicates the function is active or inactive.

All LEDs flash once: Toner save mode is inactive

All LEDs flash twice: Toner save mode is active

2.8 Change Continue/Stop Mode for Toner Cartridge (LED models only)

<Function>

This function is used to change the toner setting to continuous printing mode which allows you to use the current toner cartridge even the LED is prompting toner replacement.

<Operating Procedure>

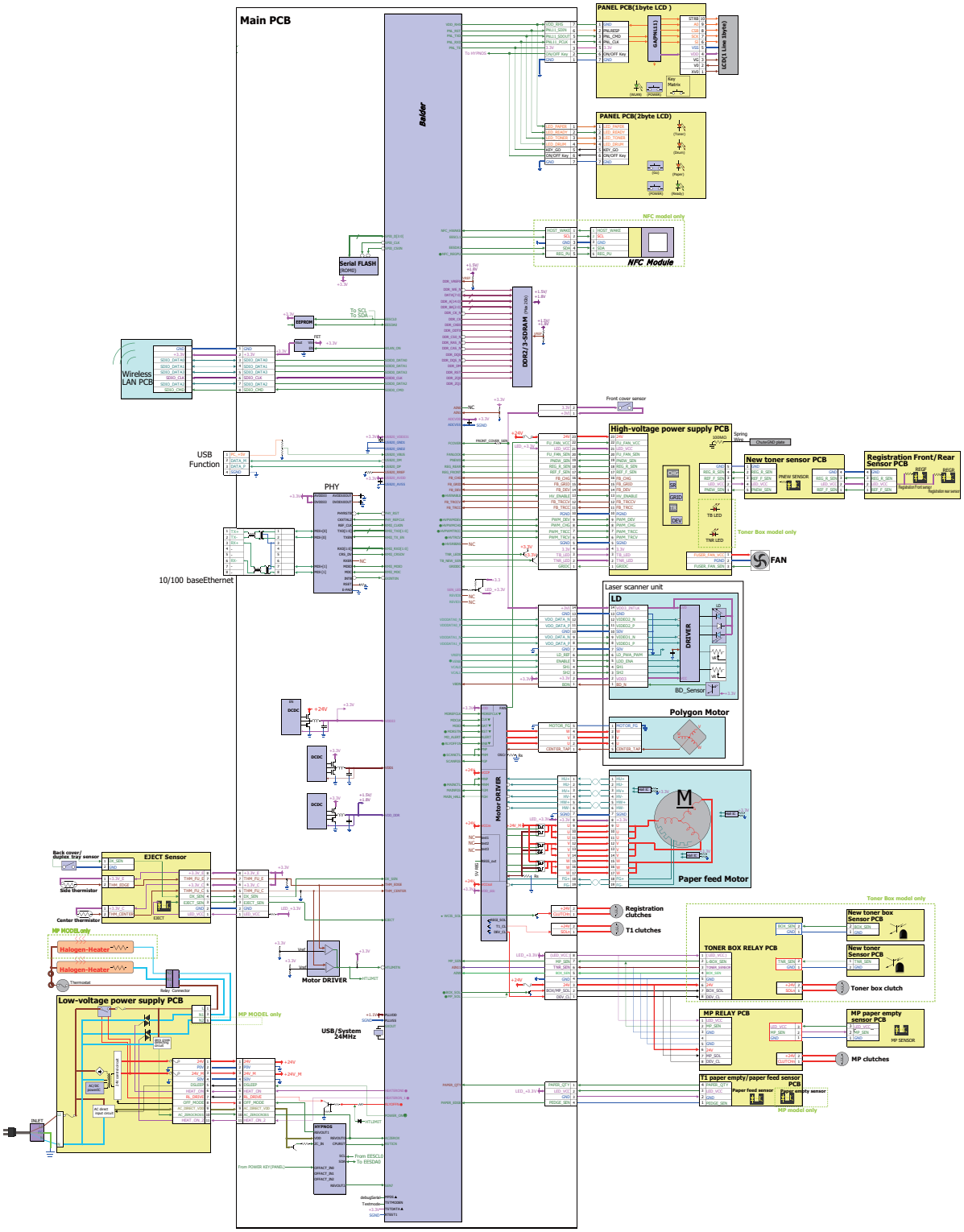
(1) Press the [Go] seven times while the machine is in the ready state. All LEDs light. The number of flashes after pressing the [Go] seven times indicates the machine is in the continue mode or stop mode.

All LEDs flash once: Stop mode

All LEDs flash twice: Continue mode

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

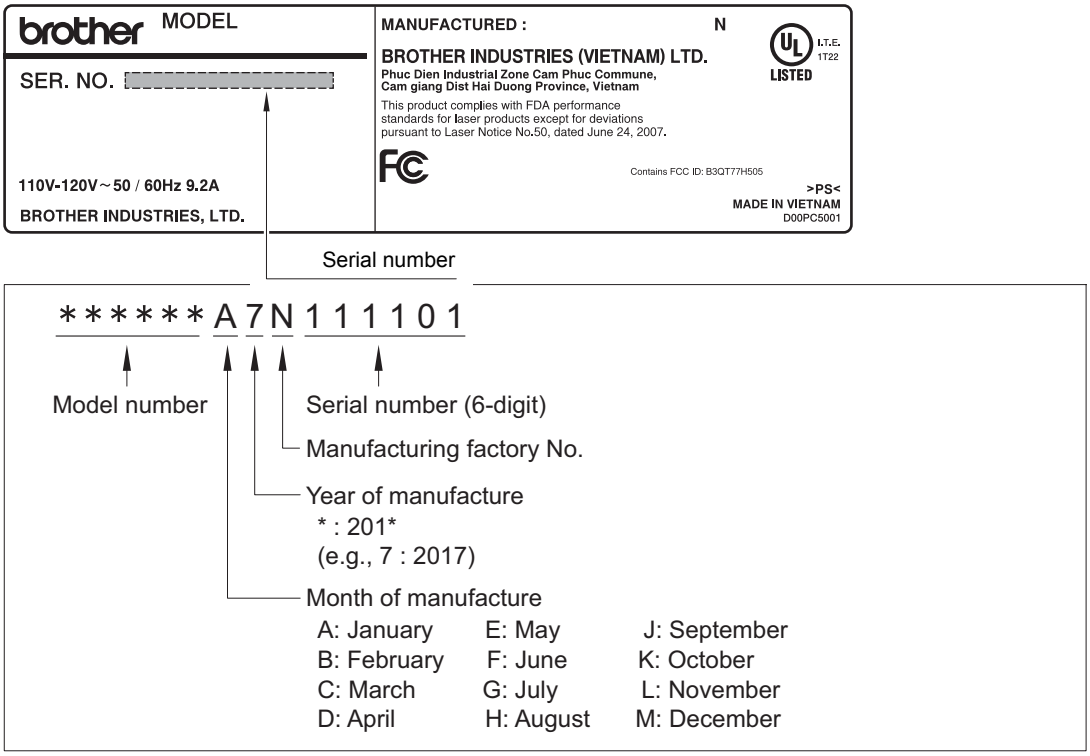


Fig. App 1-1

<Location>

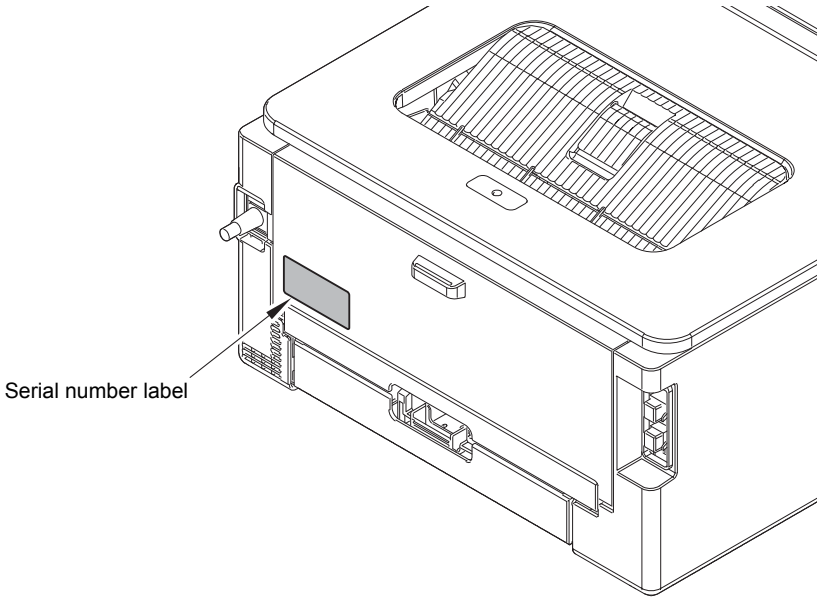


Fig. App 1-2

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] 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], and check that all LEDs go out.

(3) Press the [Go] ten times. When completed, the machine returns to the ready state automatically.

LCD models

(1) Press the [▲] or [▼] to display “Initial Setup” on the LCD, and press the [OK].

(2) Press the [▲] and [Back] simultaneously. “Reset” is displayed on the LCD.

(3) Press the [OK]. “Machine Reset” is displayed on the LCD.

(4) Press the [OK]. “▼Reset ▲Exit” is displayed on the LCD, and press the [▼].

(5) “Reboot OK?▼Yes ▲No” is displayed on the LCD.

(6) Press the [▼] to delete the user setting information and return the machine to the ready state.

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:

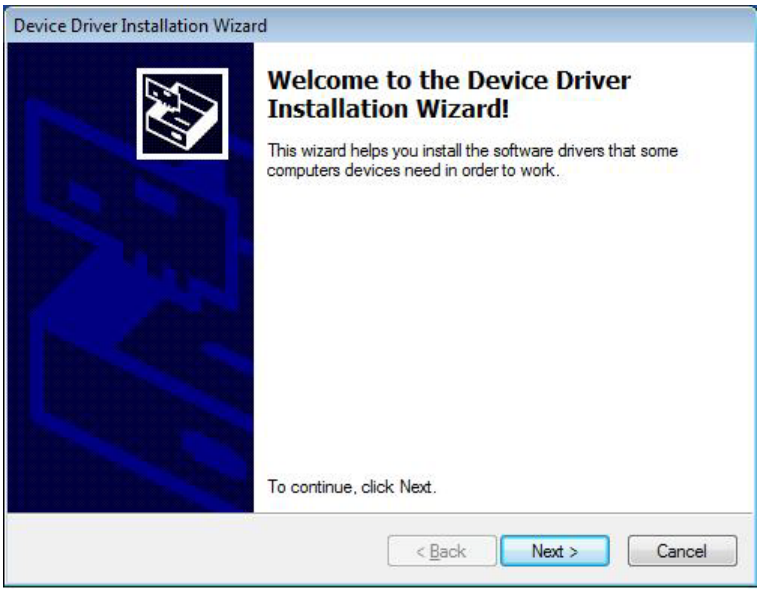
- Once this installation procedure is carried out for a computer, no more driver/software installation will be required for that computer to identify machines. If the Brother Maintenance USB Printer driver has been already installed to your computer according to this procedure, skip this section.
- Before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

■ Windows 7/Windows 8/Windows 8.1/Windows 10

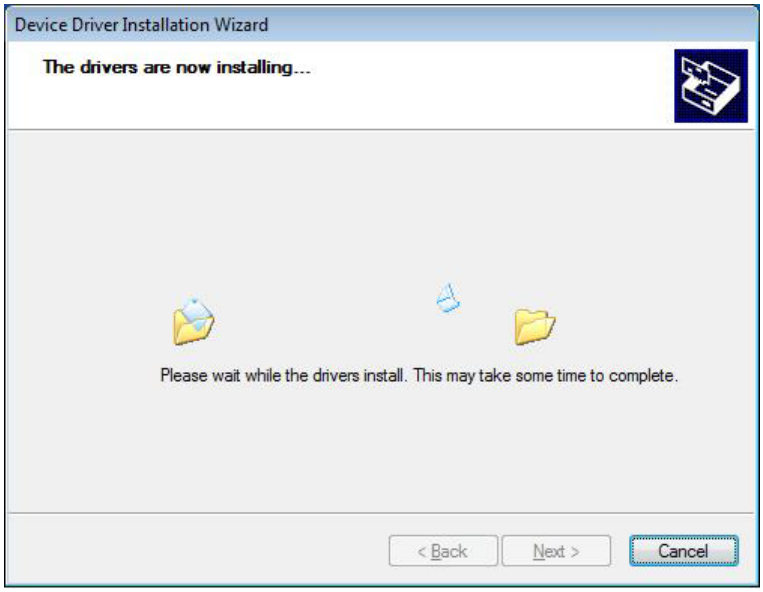
(1) Check that the AC cord of the machine is unplugged from the electrical outlet. Disconnect the USB cable that connects the machine with your computer.

(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 AC 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.