Brother Laser Printer

SERVICE MANUAL

MODEL

HL-L5000D/5580D/5585D/L5100DN/5590DN/L5100DNT/L5102DW/L5200DW/L5202DW/L5200DWT/L6200DW/L6200DWT/L6202DW/L6250DN/5595DN/L6250DW/L6300DW/L6400DW/L6402DW/L6300DWT/L6400DWT

OPTION

LT : Lower Tray
LT-5500/5505/6500/6505

MX : Mailbox
MX-4000

TT : Tower Tray
TT-4000

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

November 2015
SM-PRN101
84UG*
(3)

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Other Information

CONTENTS

SAFETY INFORMATION

CHAPTER 1 SUPPLEMENTAL SPECIFICATIONS

1. GENERAL 1-1
2. NETWORK CONNECTIVITY 1-8
3. SERVICE INFORMATION 1-9
4. SUPPLIES 1-10

CHAPTER 2 ERROR INDICATIONS & TROUBLESHOOTING

1. INTRODUCTION 2-1
   - 1.1 Precautions 2-1
   - 1.2 Checks before Commencing Troubleshooting 2-2
2. OVERVIEW 2-4
   - 2.1 Cross-section Drawing 2-4
   - 2.2 Paper Feeding 2-5
   - 2.3 Operation of Each Part 2-6
   - 2.4 Block Diagram 2-8
   - 2.5 Main Components 2-9
3. ERROR INDICATIONS 2-10
   - 3.1 Error Codes 2-10
   - 3.2 Error Messages 2-20
     - 3.2.1 Non touch panel models 2-20
     - 3.2.2 Touch panel models 2-29
4. TROUBLESHOOTING 2-42
   - 4.1 Error Cause and Remedy 2-42
   - 4.2 Troubleshooting for Paper Feeding Problems 2-84
     - 4.2.1 No paper is fed from machine paper tray 2-84
     - 4.2.2 No paper is fed from LT 2-85
     - 4.2.3 No paper is fed from TT 2-86
     - 4.2.4 No paper is fed from MP tray 2-87
     - 4.2.5 Multiple sheets of paper are fed 2-88
     - 4.2.6 Paper becomes wrinkled 2-88
     - 4.2.7 Paper is fed at an angle 2-89
     - 4.2.8 Paper is curled 2-90
     - 4.2.9 Duplex printing is not possible 2-90
     - 4.2.10 Paper jam 2-91
   - 4.3 Troubleshooting for Image Defects 2-98
     - 4.3.1 Image defect examples 2-98

4.3.2 Troubleshooting according to image defect 2-99
4.4 Troubleshooting for Software Problems 2-111
4.4.1 Cannot receive data 2-111
4.5 Troubleshooting for Network Problems 2-112
4.5.1 Cannot print via network connection 2-112
4.5.2 Cannot connect to access point 2-112
4.6 Troubleshooting for Control Panel Problems 2-112
4.6.1 Nothing is displayed on the LCD 2-112
4.6.2 Nothing is displayed on the LED 2-113
4.6.3 Control panel is inoperable 2-113
4.7 Troubleshooting for Toner and Drum Problems 2-114
4.7.1 New toner is not detected 2-114
4.7.2 Toner cartridge cannot be recognized 2-114
4.7.3 Error message prompting toner cartridge replacement does not disappear 2-114
4.7.4 Drum error 2-115
4.7.5 Error message prompting drum replacement does not disappear 2-115
4.8 Troubleshooting for Fuser Unit Problems 2-116
4.8.1 Fuser unit failure 2-116
4.9 Troubleshooting for Laser Unit Problems 2-116
4.9.1 Laser unit failure 2-116
4.10 Troubleshooting for PCB Problems 2-117
4.10.1 Main PCB failure 2-117
4.10.2 Memory full 2-117
4.11 Troubleshooting for Other Problems 2-118
4.11.1 Cannot print 2-118
4.11.2 Cannot update firmware 2-118
4.11.3 USB direct interface errors 2-118
4.11.4 "Paper Low" message does not disappear 2-119

CHAPTER 3 DISASSEMBLY/REASSEMBLY

1. SAFETY PRECAUTIONS 3-1
2. PACKING 3-2
3. SCREW CATALOGUE 3-5
4. SCREW TORQUE LIST 3-6
5. LUBRICATION 3-12
6. OVERVIEW OF GEARS 3-14
7. HARNESS ROUTING 3-17
8. DISASSEMBLY FLOW CHART 3-33
8.1 Machine 3-33
8.2 LT 3-35
8.3 MX 3-36
8.4 TT 3-37

9. DISASSEMBLY PROCEDURE 3-38
9.1 Preparation 3-38
9.2 Paper tray 3-39
9.3 Back cover / Outer chute 3-41
9.4 Fuser cover 3-42
9.5 Fuser unit 3-43
9.6 MP cover ASSY 3-46
9.7 Front cover ASSY 3-48
9.8 Side cover L 3-49
9.9 Side cover R 3-50
9.10 Top cover ASSY 3-51
9.10.1 Panel PCB ASSY 3-51
9.10.2 Top cover ASSY 3-52
9.10.3 NFC PCB ASSY 3-53
9.10.4 Control panel 3-54
9.10.5 Stack sensor PCB ASSY 3-58
9.10.6 Top cover printed ASSY 3-59
9.10.7 Top cover ASSY 3-60
9.10.8 Panel PCB ASSY 3-61
9.10.9 Top cover printed ASSY 3-62
9.11 Main PCB ASSY / Wireless LAN PCB (Wireless LAN models only) 3-63
9.12 External temperature/humidity sensor 3-66
9.13 Laser unit 3-67
9.14 PF roller holder ASSY 3-69
9.15 Low-voltage power supply PCB ASSY 3-70
9.16 Toner amount detection sensor PCB ASSY (light emission) 3-73
9.17 Main fan 3-75
9.18 Filter 3-77
9.19 Relay front PCB ASSY 3-78
9.20 Registration clutch / T1 pickup clutch 3-79
9.21 Main frame L ASSY 3-80
9.22 Paper feed motor 3-83
9.23 Develop joint gear 37 / Develop joint 3-85
9.24 Toner amount detection sensor PCB ASSY (light reception) 3-86
9.25 MP solenoid 3-87
9.26 Develop clutch 51R 3-88
9.27 Internal temperature sensor 3-89
9.28 Fuser drive gear 39 3-90
9.29 MX connector ASSY (Touch panel models only) 3-92
9.30 Eject motor 3-93
9.31 Back cover/duplex tray sensor 3-94
9.32 LT/TT connector 3-95

9.33 High-voltage power supply PCB ASSY 3-96
9.34 Eject sensor PCB ASSY 3-99
9.35 MP roller holder ASSY / MP separation pad ASSY / MP separation pad spring 3-100
9.36 T1 paper feed sensor PCB ASSY /
T1 paper feed actuator / T1 paper feed actuator spring 3-101
9.37 MP paper empty sensor PCB ASSY /
MP paper empty actuator 1 / MP paper empty actuator 2 3-103
9.38 Paper empty sensor PCB ASSY
(Models with 520-sheet T1 and HL-5580D/5585D only) 3-106
9.39 Registration front/rear sensor PCB ASSY 3-107

10. DISASSEMBLY PROCEDURE (LT UNIT) 3-110

10.1 Paper tray 3-110
10.2 LT roller holder ASSY 3-112
10.3 LT side cover L 3-113
10.4 LT side cover R 3-114
10.5 LT front cover ASSY 3-115
10.6 LT control PCB ASSY 3-116
10.7 LT pickup clutch 3-117
10.8 LT release clutch 3-118
10.9 LT connector ASSY / LT connector upper 3-121
10.10 LT paper feed sensor PCB ASSY 3-122
10.11 LT paper empty sensor PCB ASSY 3-125

11. DISASSEMBLY PROCEDURE (MX UNIT) 3-126

11.1 Bin ASSY A/B 3-126
11.2 MX relay PCB ASSY 3-131
11.3 MX switching solenoid / MX bin switching solenoid 3-133
11.4 MX control PCB ASSY 3-136
11.5 MX back cover sensor 3-137
11.6 MX connector holder ASSY 3-138
11.7 MX motor 3-140
11.8 MX bin stack sensor PCB ASSY 3-142
11.9 MX bin detection sensor 3-143
11.10 Feed roller ASSY upper MX 3-144
11.11 Feed roller ASSY lower MX 3-146

12. DISASSEMBLY PROCEDURE (TT UNIT) 3-149

12.1 Preparation 3-149
12.2 Paper tray 3-150
12.3 TT roller holder ASSY 3-152
12.4 Covers 3-153
12.5 TT control PCB ASSY 3-157
12.6 TT balance sensor L / TT balance sensor R 3-159
12.7 Fan motor 3-161

12.8 TT motor 3-162
12.9 T2TT unit 3-164
12.10 T3TT unit 3-166
12.11 Low-voltage power supply PCB ASSY 3-167
12.12 T4TT unit 3-170
12.13 T5TT unit 3-172
12.14 LT/TT connector ASSY (T2TT only) 3-173
12.15 TT relay PCB ASSY (Common to all TT) 3-174
12.16 TT pickup clutch (Common to all TT) 3-176
12.17 TT release clutch (Common to all TT) 3-177
12.18 TT jam sensor PCB ASSY (Common to all TT) 3-179
12.19 TT paper feed sensor PCB ASSY (Common to all TT) 3-183
12.20 TT paper empty sensor PCB ASSY (Common to all TT) 3-185
12.21 Adjuster 3-186

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

1. IF YOU REPLACE THE MAIN PCB ASSY 4-1
1.1 Installing Firmware (Sub Firmware and Main Firmware) 4-2
1.1.1 Checking firmware version 4-2
1.1.2 Installing firmware 4-3
1.2 Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only) 4-4
1.3 Initializing the EEPROM of the Main PCB ASSY (Function Code: 01) 4-4
1.4 Configure for Country/Region and Model (Function Code: 74) 4-5
1.5 Activating Memory Writing 4-5
1.6 Setting Serial Number and Entering Adjusted Value of Laser Unit 4-6
1.7 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only) 4-7
1.8 Resetting to Factory Shipping State 4-8
2. IF YOU REPLACE THE LOW-VOLTAGE POWER SUPPLY PCB ASSY 4-9
2.1 Resetting Irregular Power Supply Counter of the Low-voltage Power Supply PCB (Function Code: 88) 4-9
3. IF YOU REPLACE THE LASER UNIT 4-10
3.1 Entering Adjusted Value of Laser Unit 4-11
3.2 Resetting Printed Pages Counter of the Laser Unit 4-11
4. IF YOU REPLACE THE LCD PANEL ASSY OR PANEL PCB 4-12
4.1 Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only) 4-12
4.2 Checking LCD Operation (Function Code: 12) 4-12
5. IF YOU REPLACE THE FUSER UNIT 4-13
5.1 Resetting Printed Pages Counter of the Fuser Unit 4-13
6. IF YOU REPLACE A PF KIT 4-14
6.1 Resetting Printed Pages Counter of a PF Kit 4-14

7. IF YOU REPLACE THE MX / TT / LT AND TT/LT CONTROL PCB 4-15
7.1 Installing Firmware (Main Firmware) 4-16
7.1.1 Checking firmware version 4-16
7.1.2 Installing firmware 4-17
7.2 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only) 4-18

CHAPTER 5 SERVICE FUNCTIONS

1. MAINTENANCE MODE 5-1
1.1 How to Enter Maintenance Mode 5-1
1.1.1 Method of entering maintenance mode for service personnel 5-1
1.1.2 Method of entering end-user accessible maintenance mode 5-3
1.2 List of Maintenance Mode Functions 5-4
1.3 Details of Maintenance Mode Functions 5-5
1.3.1 Initialize EEPROM parameters (function code: 01, 91) 5-5
1.3.2 Print quality test pattern (function code: 09) 5-6
1.3.3 Set worker switches (WSW) and print worker switch setting data (function code: 10, 11) 5-7
1.3.4 Check LCD operation (function code: 12) 5-10
1.3.5 Check control panel key operation (function code: 13) 5-12
1.3.6 Display software version (function code: 25) 5-13
1.3.7 Change OnePushDemo function setting (function code: 28) 5-14
1.3.8 Check sensor operation (function code: 32) 5-15
1.3.9 Display LAN connection status (function code: 33) 5-21
1.3.10 Change USB No. return value / Adjust left-end print position / Adjust upper-end print position / Set HEXDUMP mode (function code: 45) 5-22
1.3.11 Adjust printable range for each speed level (Full speed / Half speed for thick paper / Quiet Mode) (function code: 46) 5-25
1.3.12 Adjust touch panel (function code: 61) (Touch panel models only) 5-27
1.3.13 Continuous print test (function code: 67) 5-28
1.3.14 Print frame pattern (single-side printing) (function code: 69) 5-33
1.3.15 Print frame pattern (duplex printing) (function code: 70) 5-34
1.3.16 Print test pattern (function code: 71) 5-35
1.3.17 Configure for country/region and model (function code: 74) 5-38
1.3.18 Print maintenance information (function code: 77) 5-41
1.3.19 Check main fan operation (function code: 78) 5-43
1.3.20 Display machine log information (function code: 80) 5-44
1.3.21 Display machine error code (function code: 82) 5-48
1.3.22 Reset counters for consumable parts (function code: 88) 5-49
1.3.23 Quit maintenance mode (function code: 99) 5-50

2. OTHER SERVICE FUNCTIONS 5-51
2.1 Print Printer Settings 5-51
2.2 Reset the Drum Unit Counter 5-52

CHAPTER 6 WIRING DIAGRAM

1. WIRING DIAGRAM 6-1

CHAPTER 7 PERIODICAL MAINTENANCE

1. SAFETY PRECAUTIONS 7-1

2. PERIODICAL REPLACEMENT PARTS 7-2

2.1 Preparation 7-2

2.2 Fuser unit 7-3

2.3 Laser unit 7-7

2.4 PF kit MP 7-14

2.5 PF kit 1 7-15

2.6 PF kit 2/3/4/5 7-17

APPENDIX 1 SERIAL NUMBERING SYSTEM

APPENDIX 2 DELETING USER SETTING INFORMATION

APPENDIX 3 INSTALLING THE MAINTENANCE PRINTER DRIVER

SAFETY INFORMATION

■ Definitions of Warnings, Cautions and Notes

The following conventions are used in this manual:

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injuries.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injuries.

❗ IMPORTANT

IMPORTANT indicates a potentially hazardous situation which, if not avoided, may result in damage to property or loss of product functionality.

Prohibition icons indicate actions that must not be performed.

Electrical Hazard icons alert you to possible electrical Shock.

Fire hazard icons alert you to the possibility of fire.

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

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

■ To use the Machine Safely

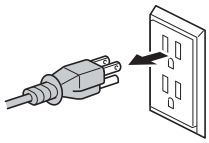
Please keep these instructions for later reference and read them before attempting any maintenance. If you do not follow these safety instructions, there is a possibility of a fire, electrical shock, burn or suffocation.

WARNING

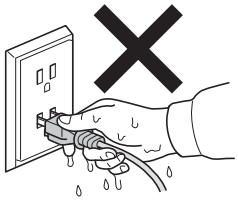
ELECTRICAL HAZARDS

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

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



DO NOT handle the plug with wet hands.



DO NOT use this product during an electrical storm.

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

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

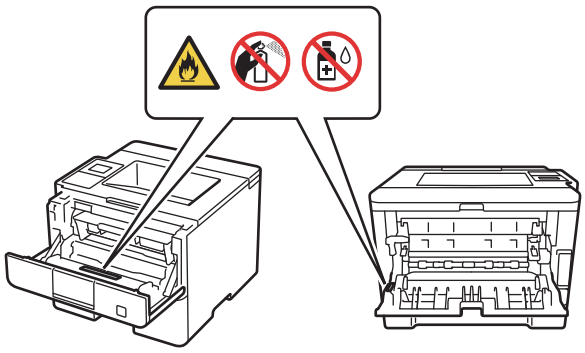
This product should be connected to an AC power source within the range indicated on the rating label. DO NOT connect it to a DC power source or inverter.

Power Cord Safety:

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

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

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

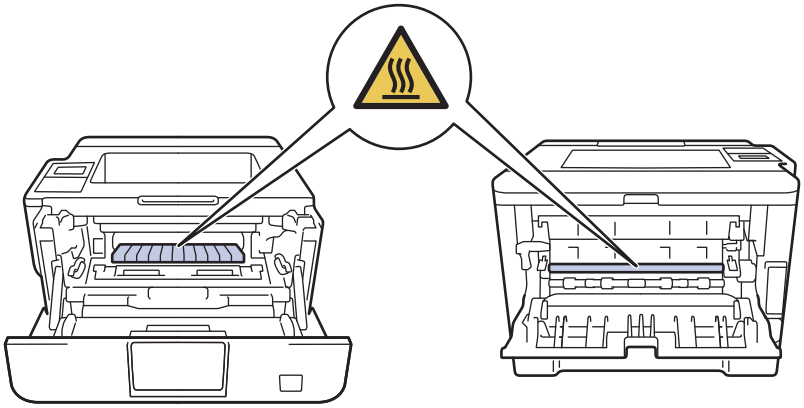


DO NOT attempt to operate this product when a paper jam or stray pieces of paper are inside the product. Prolonged contact of the paper with the fuser unit could cause a fire.

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

HOT SURFACE

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

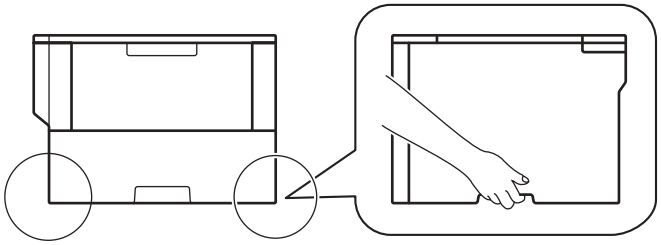


If you use a Lower Tray/Mailbox, DO NOT carry the product with the Lower Tray/Mailbox as you may be injured or cause damage to the product because it is not attached to the Lower Tray/Mailbox.

When moving the product, hold it by grasping the handholds at the bottom firmly from the front of the product. If the mailbox is used, carry it separately.

Machine weight:
over 9 kg

Tower tray weight:
over 46 kg



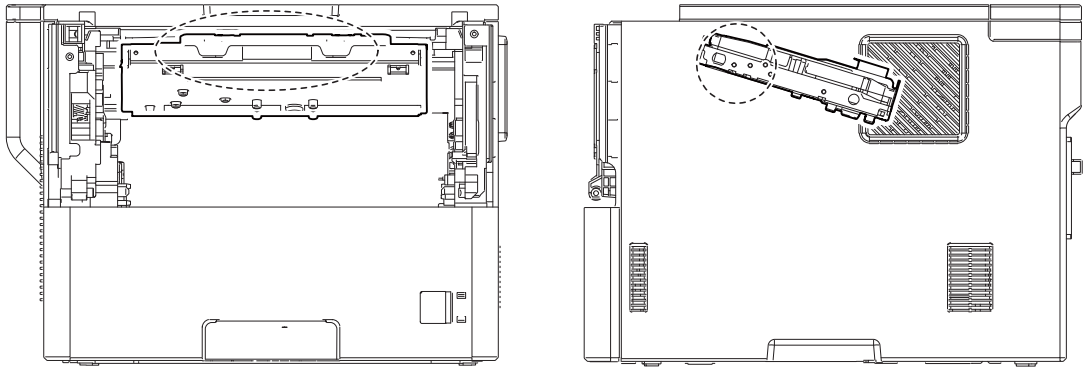
Be careful when carrying the machine or options for your safety.

■ Caution for Laser Product (WARNHINWEIS für Laserdrucker)

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

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

<Location of the laser beam window>



■ Additional Information

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

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

In print

CHAPTER 1 SUPPLEMENTAL SPECIFICATIONS

1. GENERAL

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

Model	HL-L5000D HL-5580D HL-5585D	HL-L5100DN HL-5590DN	HL-L5100DNT	HL-L5102DW	HL-L5200DW HL-L5202DW	HL-L5200DWT	HL-L6200DW HL-L6202DW
Wired/ Wireless LAN	N/A	Wired		Wireless	Wired/Wireless		
Duplex printing	✓						
LCD type	16 characters x 1 line						
USB Host (front)	N/A						
USB Host (rear)	N/A						
NFC	N/A						
PCL/PS	N/A	✓					
Paper Input/ Standard Tray	250 sheets		250 sheets (T1) 520 sheets (T2)	250 sheets		250 sheets (T1) 520 sheets (T2)	520 sheets
Lower Tray (Option)	250 sheets (LT-5500) or 520 sheets (LT-6500) x 2 pcs (Max. 1,040 sheets)		250 sheets (LT-5500) or 520 sheets (LT-6500) x 1 pcs (Max. 520 sheets)	250 sheets (LT-5500) or 520 sheets (LT-6500) x 2 pcs (Max. 1,040 sheets)		250 sheets (LT-5500) or 520 sheets (LT-6500) x 1 pcs (Max. 520 sheets)	250 sheets (LT-5500) or 520 sheets (LT-6500) x 2 pcs or 250 sheets x 3 pcs (Max. 1,040 sheets)
Mailbox (Option)	N/A						
Tower Tray (Option)	N/A						

Specifications are subject to change without notice.

Model	HL-L6250DW	HL-L6200DWT	HL-L6250DN HL-5595DN	HL-L6300DW	HL-L6400DW HL-L6402DW	HL-L6300DWT HL-L6400DWT
Wired/ Wireless LAN	Wired/Wireless		Wired	Wired/Wireless		
Duplex printing	✓					
LCD type	16 characters x 1 line			Touch panel		
USB Host (front)	N/A					
USB Host (rear)	N/A			✓		
NFC	N/A			✓		
PCL/PS	✓					
Paper Input/ Standard Tray	520 sheets	520 sheets (T1) 520 sheets (T2)	520 sheets			520 sheets (T1) 520 sheets (T2)
Lower Tray (Option)	250 sheets (LT-5505) or 520 sheets (LT-6505) x 2 pcs or 250 sheets x 3 pcs (Max. 1,040 sheets)	250 sheets (LT-5500) or 520 sheets (LT-6500) x 1 pcs (Max. 520 sheets)	250 sheets (LT-5500) or 520 sheets (LT-6500) x 2 pcs or 250 sheets x 3 pcs (Max. 1,040 sheets)	250 sheets (LT-5500 for the U.S.A./ LT-5505 for Europe) or 520 sheets (LT-6500 for the U.S.A./ LT-6505 for Europe) x 2 pcs or 250 sheets x 3 pcs (Max. 1,040 sheets)	250 sheets (LT-5505) or 520 sheets (LT-6505) x 2 pcs or 250 sheets x 3 pcs (Max. 1,040 sheets)	250 sheets (LT-5505) or 520 sheets (LT-6505) x 1 pcs (Max. 520 sheets)
Mailbox (Option)	N/A			✓		
Tower Tray (Option)	N/A			✓		N/A

Specifications are subject to change without notice.

Model		HL-L5000D	HL-5580D	HL-5585D	HL-L5100DN	HL-5590DN
Warm-up time	From Sleep mode	Less than 5.8 sec. at 73.4F (23°C / 50%RH) (for the U.S.A. / Brazil) Less than 4.8 sec. at 73.4F (23°C / 50%RH) (Except for the U.S.A. / Brazil)				
	From Power OFF → ON	Less than 25 sec. at 73.4F / 50% (23°C / 50%RH)				
First print time	From Ready mode	Less than 7.2 secs at 73.4F (23°C)				
	From Sleep mode	Less than 13.0 secs at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 12.0 secs at 73.4F (23°C) (Except for the U.S.A. / Brazil)				
Printing Speed (A4/Letter)		Up to 40/42 ppm (Quiet Mode: Up to 25/26 ppm)				
CPU		Cortex-A9 800 MHz				
Dimensions (W x D x H)	Carton size	485 x 450 x 377 mm (19.1 x 17.7 x 14.8 inch)	549 x 498 x 435 mm (21.6 x 19.6 x 17.1 inch)	549 x 498 x 435 mm (21.6 x 19.6 x 17.1 inch)	485 x 450 x 377 mm (19.1 x 17.7 x 14.8 inch) (Except for Singapore) 485 x 450 x 501 mm (19.1 x 17.7 x 19.7 inch) (for Singapore)	549 x 498 x 435 mm (21.6 x 19.6 x 17.1 inch)
	Machine size	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)
Weights	with Carton	13.1 kg / 28.8 lb (for the U.S.A.) 13.0 kg / 28.7 lb (for Europe) 13.3 kg / 29.4 lb (for Asia)	13.5 kg / 29.8 lb	13.5 kg / 29.8 lb	12.8 kg / 28.3 lb (for the U.S.A.) 12.7 kg / 28.1 lb (for Latin America / Oceania) 13.0 kg / 28.7 lb (for Europe) 13.3 kg / 29.4 lb (for Asia except Singapore) 13.8 kg / 30.3 lb (for Singapore)	13.5 kg / 29.8 lb
	without Carton with toner/drum	10.7 kg / 23.5 lb (for the U.S.A.) 10.7 kg / 23.6 lb (for Europe) 11.1 kg / 24.4 lb (for Asia)	10.7 kg / 23.6 lb	10.7 kg / 23.6 lb	10.7 kg / 23.5 lb (for the U.S.A. / Latin America / Oceania) 10.7 kg / 23.6 lb (for Europe) 11.1 kg / 24.4 lb (for Asia)	10.7 kg / 23.6 lb
	without Carton nor toner/drum	9.3 kg / 20.5 lb	9.5 kg / 21.0 lb	9.5 kg / 21.0 lb	9.3 kg / 20.5 lb	9.5 kg / 21.0 lb

Specifications are subject to change without notice.

Model		HL-L5100DNT	HL-L5102DW	HL-L5200DW	HL-L5202DW	HL-L5200DWT
Warm-up time	From Sleep mode	Less than 5.8 sec. at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 4.8 sec. at 73.4F (23°C) (Except for the U.S.A. / Brazil)				
	From Power OFF → ON	Less than 25 sec. at 73.4F / 50% (23°C / 50%)				
First print time	From Ready mode	Less than 7.2 secs at 73.4F (23°C)				
	From Sleep mode	Less than 13.0 secs at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 12.0 secs at 73.4F (23°C) (Except for the U.S.A. / Brazil)				
Printing Speed (A4/Letter)		Up to 40/42 ppm (Quiet Mode: Up to 25/26 ppm)				
CPU		ARM9 266 MHz				
Dimensions (W x D x H)	Carton size	662 x 522 x 702 mm (26.1 x 20.6 x 27.6 inch)	485 x 450 x 377 mm (19.1 x 17.7 x 14.8 inch)	485 x 450 x 377 mm (19.1 x 17.7 x 14.8 inch)	485 x 450 x 377 mm (19.1 x 17.7 x 14.8 inch)	662 x 522 x 702 mm (26.1 x 20.6 x 27.6 inch)
	Machine size	373 x 388 x 387 mm (14.7 x 15.3 x 15.2 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 255 mm (14.7 x 15.3 x 10.0 inch)	373 x 388 x 387 mm (14.7 x 15.3 x 15.2 inch)
Weights	with Carton	22.0 kg / 48.5 lb	12.8 kg / 28.2 lb	12.8 kg / 28.3 lb (for the U.S.A.) 13.0 kg / 28.7 lb (for Europe) 12.7 kg / 28.1 lb (for Oceania) 13.8 kg / 30.3 lb (for Asia)	12.8 kg / 28.2 lb	21.8 kg / 48.1 lb (for the U.S.A.) 22.0 kg / 48.5 lb (for Europe)
	without Carton with toner/drum	14.6 kg / 32.2 lb	10.7 kg / 23.5 lb	10.7 kg / 23.5 lb (for the U.S.A./ Oceania) 10.7 kg / 23.6 lb (for Europe) 11.1 kg / 24.4 lb (for Asia)	10.7 kg / 23.5 lb	14.6 kg / 32.1 lb (for the U.S.A.) 14.6 kg / 32.2 lb (for Europe)
	without Carton nor toner/drum	13.2 kg / 29.1 lb	9.3 kg / 20.5 lb	9.3 kg / 20.5 lb	9.3 kg / 20.5 lb	13.2 kg / 29.1 lb

Specifications are subject to change without notice.

Model		HL-L6200DW	HL-L6202DW	HL-L6250DW	HL-L6200DWT	HL-L6250DN
Warm-up time	From Sleep mode	Less than 5.7 sec. at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 4.7 sec. at 73.4F (23°C) (Except for the U.S.A. / Brazil)				
	From Power OFF → ON	Less than 25 sec. at 73.4F / 50% (23°C / 50%)				
First print time	From Ready mode	Less than 7.5 secs at 73.4F (23°C)				
	From Sleep mode	Less than 13.2 secs at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 12.2 secs at 73.4F (23°C) (Except for the U.S.A. / Brazil)				
Printing Speed (A4/Letter)		Up to 46/48 ppm (Except for Asia) Up to 50/52 ppm (for Asia) (Quiet Mode: Up to 25/26 ppm)				
CPU		Cortex-A9 800 MHz				
Dimensions (W x D x H)	Carton size	485 x 450 x 409 mm (19.1 x 17.7 x 16.1 inch)	485 x 450 x 409 mm (19.1 x 17.7 x 16.1 inch)	485 x 450 x 531 mm (19.1 x 17.7 x 20.9 inch)	662 x 522 x 734 mm (26.1 x 20.6 x 28.9 inch)	485 x 450 x 531 mm (19.1 x 17.7 x 20.9 inch)
	Machine size	373 x 388 x 287 mm (14.7 x 15.3 x 11.3 inch)	373 x 388 x 287 mm (14.7 x 15.3 x 11.3 inch)	373 x 388 x 287 mm (14.7 x 15.3 x 11.3 inch)	373 x 388 x 419 mm (14.7 x 15.3 x 16.5 inch)	373 x 388 x 287 mm (14.7 x 15.3 x 11.3 inch)
Weights	with Carton	14.1 kg / 31.2 lb (for the U.S.A.) 14.0 kg / 31.0 lb (for Latin America) 14.1 kg / 31.0 lb (for Oceania) 14.6 kg / 32.3 lb (for Asia)	14.1 kg / 31.1 lb	15.0 kg / 33.1 lb	23.0 kg / 50.7 lb	15.0 kg / 33.1 lb
	without Carton with toner/drum	11.9 kg / 26.3 lb (for the U.S.A./ Latin America) 12.0 kg / 26.4 lb (for Oceania) 12.4 kg / 27.2 lb (for Asia)	11.9 kg / 26.3 lb	12.4 kg / 27.4 lb	15.9 kg / 35.0 lb	12.4 kg / 27.4 lb
	without Carton nor toner/drum	10.6 kg / 23.3 lb	10.6 kg / 23.3 lb	10.6 kg / 23.3 lb	14.5 kg / 32.0 lb	10.6 kg / 23.3 lb

Specifications are subject to change without notice.

Model		HL-5595DN	HL-L6300DW	HL-L6400DW	HL-L6402DW	HL-L6300DWT	HL-L6400DWT
Warm-up time	From Sleep mode	Less than 5.7 sec. at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 4.7 sec. at 73.4F (23°C) (Except for the U.S.A. / Brazil)					
	From Power OFF → ON	Less than 25 sec. at 73.4F / 50% (23°C / 50%)					
First print time	From Ready mode	Less than 7.5 secs at 73.4F (23°C)					
	From Sleep mode	Less than 13.2 secs at 73.4F (23°C) (for the U.S.A. / Brazil) Less than 12.2 secs at 73.4F (23°C) (Except for the U.S.A. / Brazil)					
Printing Speed (A4/Letter)		Up to 46/48 ppm (Except for Asia) Up to 50/52 ppm (for Asia) (Quiet Mode: Up to 25/26 ppm)		Up to 50/52 ppm (Quiet Mode: Up to 25/26 ppm)			
CPU		ARM9 266 MHz					
Dimensions (W x D x H)	Carton size	549 x 498 x 467 mm (21.6 x 19.6 x 18.4 inch)	497 x 492 x 427 mm (19.6 x 19.4 x 16.8 inch)	497 x 492 x 531 mm (19.6 x 19.4 x 20.9 inch)	497 x 492 x 531 mm (19.6 x 19.4 x 20.9 inch)	662 x 522 x 752 mm (26.1 x 20.6 x 29.6 inch)	662 x 522 x 856 mm (26.1 x 20.6 x 33.7 inch)
	Machine size	373 x 388 x 287 mm (14.7 x 15.3 x 11.3 inch)	400 x 396 x 288 mm (15.7 x 15.6 x 11.3 inch)	400 x 396 x 288 mm (15.7 x 15.6 x 11.3 inch)	400 x 396 x 288 mm (15.7 x 15.6 x 11.3 inch)	400 x 396 x 420 mm (15.7 x 15.6 x 16.5 inch)	400 x 396 x 420 mm (15.7 x 15.6 x 16.5 inch)
Weights	with Carton	14.9 kg / 32.9 lb	15.6 kg / 34.4 lb (for the U.S.A.) 15.8 kg / 34.8 lb (for Europe)	15.8 kg / 34.8 lb (for the U.S.A.) 15.7 kg / 34.6 lb (for Latin America) 16.0 kg / 35.2 lb (for Europe) 15.5 kg / 34.3 lb (for Oceania) 16.0 kg / 35.3 lb (for Asia)	15.8 kg / 34.7 lb	25.3 kg / 55.7 lb	25.7 kg / 56.6 lb (for the U.S.A.) 25.9 kg / 57.0 lb (for Europe)
	without Carton with toner/drum	12.0 kg / 26.4 lb	13.1 kg / 29.0 lb (for the U.S.A.) 13.2 kg / 29.1 lb (for Europe)	13.3 kg / 29.3 lb (for the U.S.A.) 13.3 kg / 29.4 lb (for Latin America) 13.4 kg / 29.4 lb (for Europe) 13.2 kg / 29.0 lb (for Oceania) 13.4 kg / 29.6 lb (for Asia)	13.3 kg / 29.3 lb	17.1 kg / 37.7 lb	17.2 kg / 37.9 lb (for the U.S.A.) 17.3 kg / 38.0 lb (for Europe)
	without Carton nor toner/drum	10.8 kg / 23.8 lb	11.5 kg / 25.4 lb	11.5 kg / 25.4 lb	11.5 kg / 25.4 lb	15.4 kg / 34.0 lb	15.4 kg / 34.0 lb

Specifications are subject to change without notice.

■ Option

Model	LT		MX	TT
	LT-5500 LT-5505 (250 sheets)	LT-6500 LT-6505 (520 sheets)	MX-4000	TT-4000
Dimensions (W x D x H)	363 x 384 x 122 mm (14.3 x 15.1 x 4.8 inch) The height 20 mm of its whole size is the boss parts which connects with the machine.	363 x 384 x 152 mm (14.3 x 15.1 x 6.0 inch) The height 20 mm of its whole size is the boss parts which connects with the machine.	367 x 416 x 381 mm (14.4 x 16.4 x 15.0 inch)	660 x 660 x 717.4 mm (26.0 x 26.0 x 28.2 inch)
Weights	2.8 kg / 6.2 lb	3.9 kg / 8.5 lb	4.4 kg / 9.7 lb	46.6 kg / 102.7 lb 47.7 kg / 105.2 lb with AC cord

Specifications are subject to change without notice.

2. NETWORK CONNECTIVITY

Model		HL-L5000D HL-5580D HL-5585D	HL-L5100DN HL-L5100DNT HL-5590DN	HL-L5102DW
Wired network	Network node type	N/A	NC-8900h	N/A
Wireless network	Network node type	N/A		NC-8500w

Model		HL-L5200DW HL-L5200DWT HL-L5202DW	HL-L6200DW HL-L6200DWT HL-L6202DW HL-L6250DW	HL-L6250DN HL-5595DN	HL-L6300DW HL-L6300DWT HL-L6400DW HL-L6400DWT HL-L6402DW
Wired network	Network node type	NC-8900h			
Wireless network	Network node type	NC-8500w		N/A	NC-8500w

Specifications are subject to change without notice.

3. SERVICE INFORMATION

Model		HL-L5000D HL-5580D HL-5585D	HL-L5100DN HL-L5100DNT HL-5590DN	HL-L5102DW	HL-L5200DW HL-L5200DWT HL-L5202DW
Machine life		300,000 pages (A4/LTR) or 5 years			
MTBF		4,000 hours			
MTTR		0.5 hours			
Maximum monthly volume		Up to 50,000 pages			
Periodical maintenance parts*	Fuser Unit	Up to 200,000 pages			
	Laser Unit	Up to 200,000 pages			
	PF kit 1	Up to 100,000 pages			
	PF kit 2	Up to 200,000 pages			
	PF kit 3	Up to 200,000 pages			
	PF kit 4	Up to 200,000 pages			
	PF kit 5	Up to 200,000 pages			
	PF kit MP	Up to 50,000 pages			

Specifications are subject to change without notice.

* PF kit 1 to 5 have same parts but their life cycles are different from the marketing strategical point of view.
(Alarm notification for part replacement sets off according to each model's life cycle.)

Model		HL-L6200DW HL-L6200DWT HL-L6202DW HL-L6250DW	HL-L6250DN HL-5595DN	HL-L6300DW HL-L6300DWT	HL-L6400DW HL-L6400DWT HL-L6402DW
Machine life		300,000 pages (A4/LTR) or 5 years		600,000 pages (A4/LTR) or 5 years	
MTBF		4,000 hours			
MTTR		0.5 hours			
Maximum monthly volume		Up to 100,000 pages		Up to 125,000 pages	Up to 150,000 pages
Periodical maintenance parts*	Fuser Unit	Up to 200,000 pages			
	Laser Unit	Up to 200,000 pages			
	PF kit 1	Up to 200,000 pages			
	PF kit 2	Up to 200,000 pages			
	PF kit 3	Up to 200,000 pages			
	PF kit 4	Up to 200,000 pages			
	PF kit 5	Up to 200,000 pages			
	PF kit MP	Up to 50,000 pages			

Specifications are subject to change without notice.

* PF kit 1 to 5 have same parts but their life cycles are different from the marketing strategical point of view.
(Alarm notification for part replacement sets off according to each model's life cycle.)

4. SUPPLIES

Model		HL-L5000D HL-5580D HL-5585D	HL-L5100DN HL-L5100DNT HL-5590DN	HL-L5102DW	HL-L5200DW HL-L5200DWT HL-L5202DW	HL-L6200DW HL-L6200DWT HL-L6202DW
Toner cartridge	Starter Toner *1	Approximately 3,000 pages (for the U.S.A. / China) Approximately 2,000 pages (for Europe) Approximately 8,000 pages (for Asia)	Approximately 3,000 pages (for the U.S.A. / Latin America / Europe / China) Approximately 2,000 pages (for Oceania) Approximately 8,000 pages (for Asia)	Approximately 8,000 pages	Approximately 3,000 pages (for the U.S.A. / Europe) Approximately 2,000 pages (for Oceania) Approximately 8,000 pages (for Asia / Brazil)	Approximately 3,000 pages (for the U.S.A. / Latin America / Oceania) Approximately 8,000 pages (for Asia / Brazil)
	Standard Toner	Approximately 3,000 pages				
	High Capacity Toner	Approximately 8,000 pages				
	Super High Capacity Toner	Approximately 12,000 pages (for Asia / China) N/A (Except for Asia)	Approximately 12,000 pages (for Latin America / Asia / China) N/A (Except for Latin America / Asia)	Approximately 12,000 pages	Approximately 12,000 pages (for Asia / Brazil) N/A (Except for Asia / Brazil)	Approximately 12,000 pages
	Ultra High Capacity Toner	N/A				
When printing A4/Letter size one-sided pages in accordance with ISO/IEC 19752 Shelf life: 2 years without opening (6 months after opening)						
Drum unit		Life expectancy: Approximately 30,000 pages (1 page/job) Approximately 50,000 pages (3 page/job) The life expectancy varies according to the use condition. Shelf life: 2 years				
The shelf life of toner cartridge and drum unit is guaranteed under the normal condition as below; (Temperature) Normal condition: 0 to 40°C (Humidity) Normal condition: 35%RH to 85%RH (without condensation) * Storage condition at the temperature of 50°C/90%RH: Up to 5 days * Storage condition at the temperature of -20°C: Up to 5 days						

Specifications are subject to change without notice.

*1 Toner supplied with the machine.

<table>
<tr><td colspan="2">Model</td><td>HL-L6250DN</td><td>HL-5595DN</td><td>HL-L6250DW</td><td>HL-L6300DW
HL-L6300DWT</td><td>HL-L6400DW
HL-L6400DWT
HL-L6402DW</td></tr>
<tr><td rowspan="4">Toner cartridge</td><td>Starter Toner *1</td><td>Approximately 12,000 pages</td><td>Approximately 3,000 pages</td><td>Approximately 12,000 pages</td><td>Approximately 8,000 pages</td><td>Approximately 12,000 pages (for the U.S.A. / Latin America / Europe / Asia)
Approximately 8,000 pages (for Oceania)
Approximately 20,000 pages (for Brazil)</td></tr>
<tr><td>Standard Toner</td><td colspan="5">Approximately 3,000 pages</td></tr>
<tr><td>High Capacity Toner</td><td colspan="5">Approximately 8,000 pages</td></tr>
<tr><td>Super High Capacity Toner</td><td colspan="5">Approximately 12,000 pages</td></tr>
<tr><td></td><td>Ultra High Capacity Toner</td><td colspan="4">N/A</td><td>Approximately 20,000 pages</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 30,000 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
(Humidity) Normal condition: 35%RH to 85%RH (without condensation)
* Storage condition at the temperature of 50°C/90%RH: Up to 5 days
* Storage condition at the temperature of -20°C: Up to 5 days</td></tr>
</table>

Specifications are subject to change without notice.

*1 Toner supplied with the machine.

CHAPTER 2 ERROR INDICATIONS & TROUBLESHOOTING

1. INTRODUCTION

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

1.1 Precautions

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

(1) Be sure to unplug the AC cord before removing any covers or PCBs, or adjusting the machine.

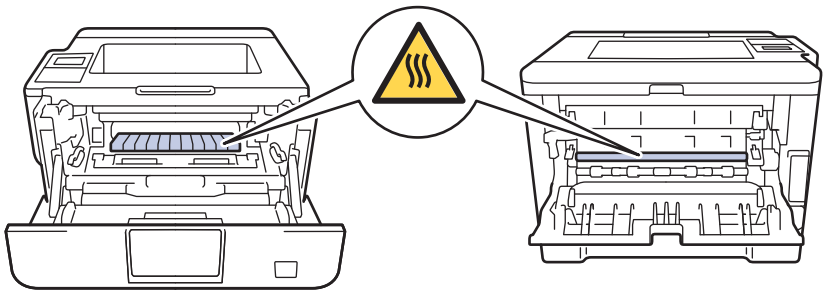
(2) Do not hold the cable when connecting or disconnecting the cable. Be sure to hold the connector.

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

(4) Be sure to always observe all warnings.

Warning

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



Warning

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

(5) After repair is completed, check that the repaired sections, including those removed once and then remounted, operate normally.

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 commencing repairs on the machine.

■ Operating environment

(1) The machine is placed on a flat, stable surface.
(2) The machine is used in a clean environment where the temperature is 10°C (50°F) to 32°C (89.6°F), and the relative humidity is maintained between 20% and 80%.
(3) The machine is not exposed to direct sunlight, excessive heat, moisture, or dust.
(4) When moving the product, hold it by grasping the handholds at the bottom firmly from the front of the product.

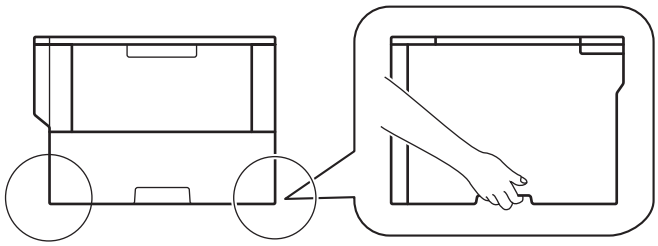


Fig. 2-1

■ Power supply

(1) Power described on the rating label attached on the machine is supplied. Power fluctuation should be within ±10% of the rated voltage.
(2) The AC input power supply is within the regulated value.
(3) The cables and harnesses are connected correctly.
(4) The fuses are not blown.

■ Paper

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

■ Consumable parts

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

■ Others

(1) Condensation

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

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

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

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

(2) Low temperature

The motor may not operate normally in a cold environment because too much load is applied to each drive. In this case, increase the room temperature.

■ Cleaning

Use a soft lint-free cloth.

Warning

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

2. OVERVIEW

2.1 Cross-section Drawing

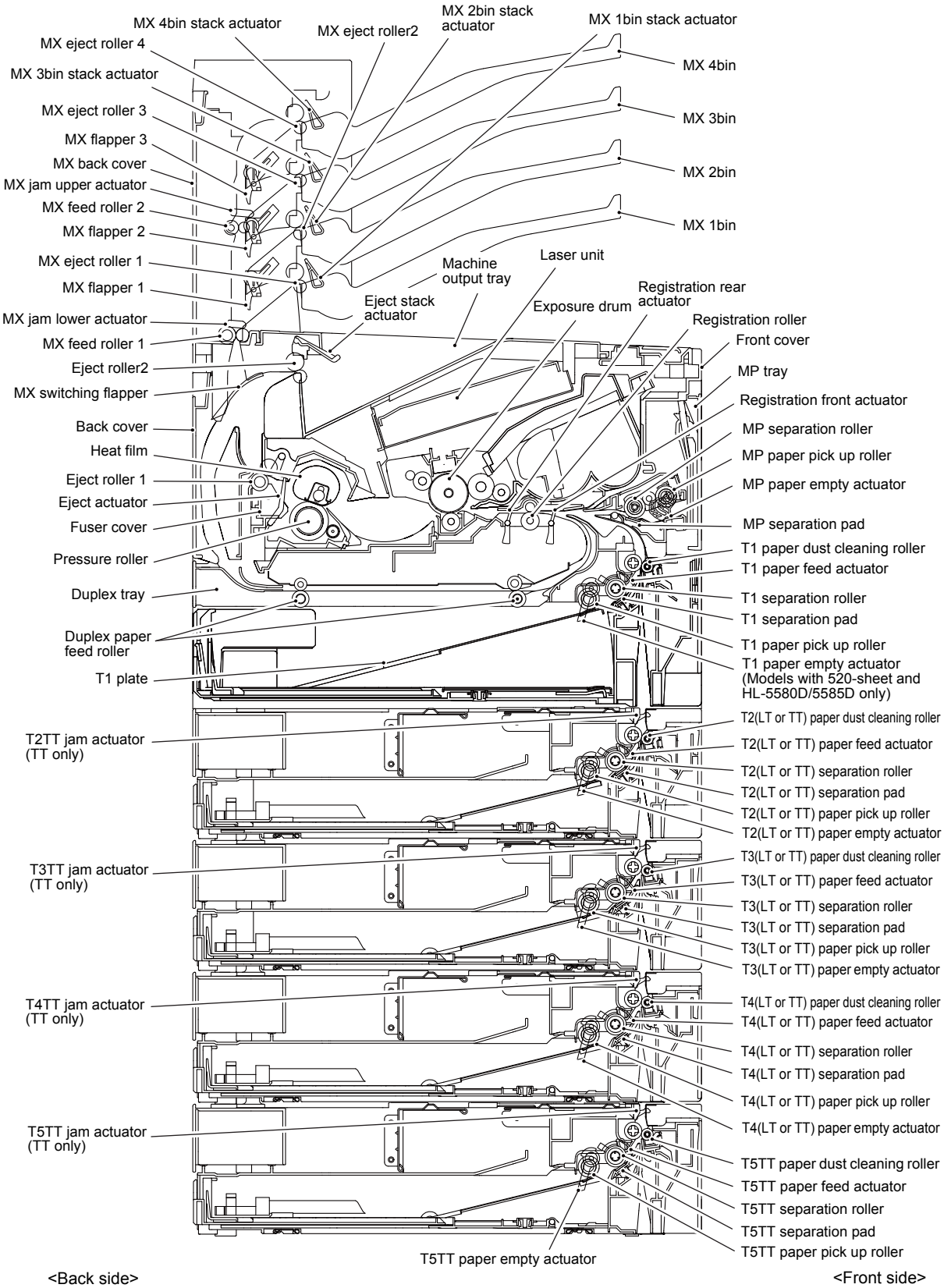


Fig. 2-2

2.2 Paper Feeding

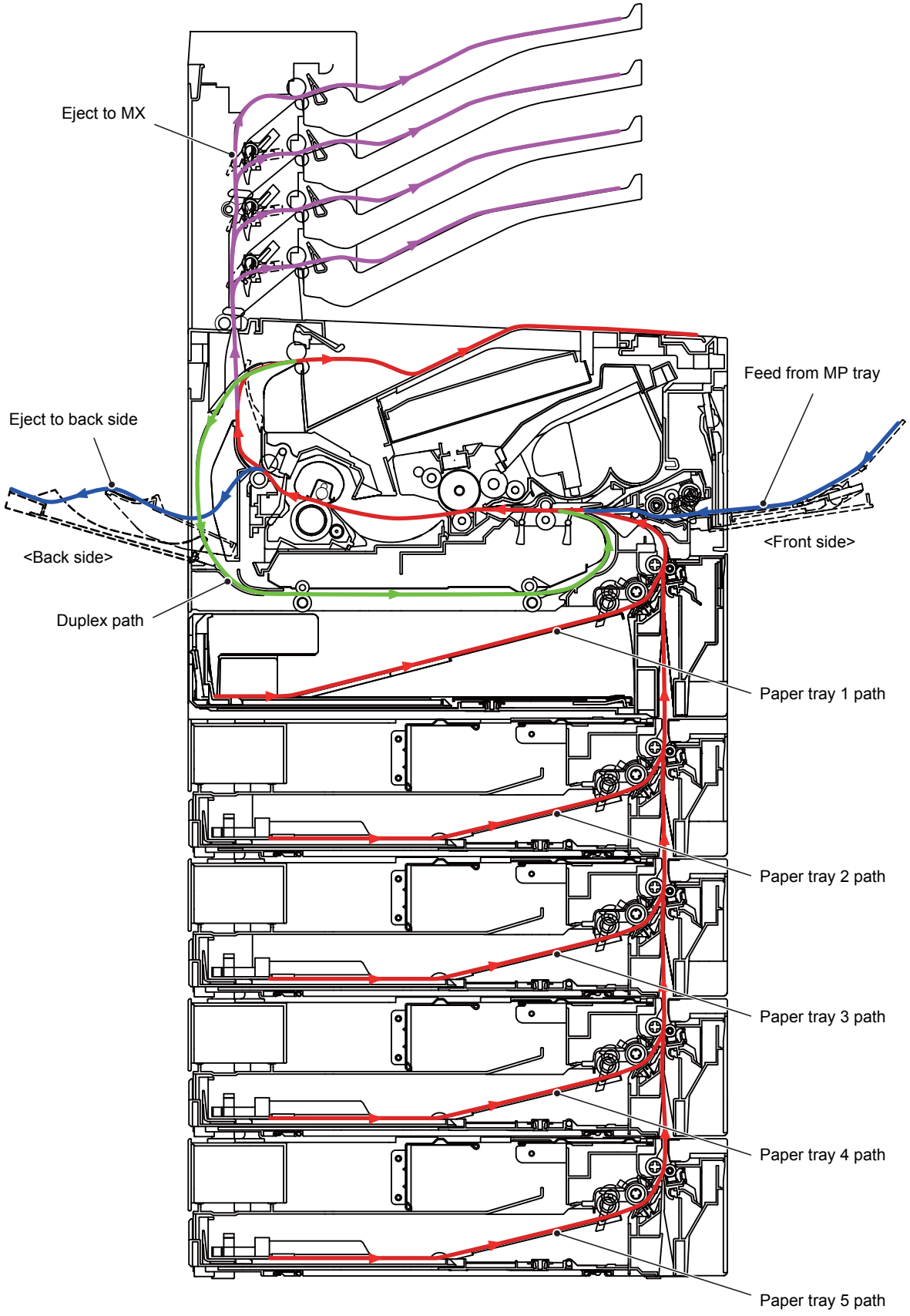


Fig. 2-3

2.3 Operation of Each Part

Part name	Operation
Paper pick up roller	Feeds paper from the paper tray to the separation roller.
Separation roller, Separation pad	Separates paper fed from the paper tray into single sheets.
Paper feed actuator (Paper feed sensor)	Detects paper trays (open / closed). Detects paper jams in paper trays. Determines whether paper is fed from the paper tray.
Paper empty actuator (Paper empty sensor)	Detects paper in the paper tray. (Models with 520-sheet LT/TT and HL-5580D/5585D only.)
TT jam actuator (TT jam sensor)	Detects paper jams in the front section of the tray. (TT only)
TT balance sensor L/R	Detects if the TT is mounted properly. (TT only)
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 feeding path.
Registration rear actuator (Registration rear sensor)	Detects paper pass and adjusts the writing start position for the paper. Detects paper jams in the front or center section of the machine. Detects the rear edge of the paper to determine the paper size.
Heat film, Pressure roller	Fuses the toner transferred to paper by heat and pressure, and feeds paper to the eject roller 1.
Eject actuator (Eject sensor)	Determines whether paper is ejected from the fuser unit. Detects the rear edge of the paper in duplex printing mode to adjust the turn-over timing of the eject roller 2. Detects paper jam in the rear section of the machine. Calculates time to open/close the MX flapper 1, 2 and 3 after the paper has been fed when ejecting the paper to MX bin.
Eject roller 1	Feeds the paper ejected from the fuser unit to eject roller 2.
Eject roller 2	Ejects the paper to the output tray of the machine. During the duplex printing, the eject roller 2 rotates conversely and feeds the paper to the duplex tray after the paper has been fed from the eject roller 2 with the first side printed.
Duplex paper feed roller	Feeds the paper passing through the duplex tray to the registration roller.
Front cover sensor	Detects open front cover.
Back cover/duplex tray sensor	Detects open / closed back cover or the duplex tray is set.
MP paper pick up roller	Feeds paper from the MP tray to the MP separation roller.

Part name	Operation
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.
Eject stack actuator (Eject stack sensor)	Detects the full of a machine output tray. (Touch panel models only)
MX switching flapper	Selects where the paper is ejected (output tray / MX).
MX jam lower actuator (MX jam lower sensor)	Detects paper jams in the MX 1bin and 2bin. Detects paper jams in the upper section of the output tray.
MX jam upper actuator (MX jam upper sensor)	Detects paper jams in the MX 3bin and 4bin. Detects paper jams in the rear side of the MX.
MX flapper	Selects where the paper is ejected (MX 1bin / 2bin / 3bin / 4bin).
MX eject roller 1/2/3/4	Ejects the paper to each bin.
MX feed roller 1	Feeds the paper ejected from the machine to the MX feed roller 2, MX eject roller 1, or MX eject roller 2.
MX feed roller 2	Feeds the paper ejected from the MX feed roller 1 to the MX eject roller 3 or MX eject roller 4.
MX bin stack actuator (MX bin stack sensor)	Detects the full state of the MX 1bin / 2bin / 3bin / 4bin.
MX back cover sensor	Detects open / closed MX back cover.
MX 2bin sensor, MX 4bin sensor	Detects the MX 2bin and 4bin.

2.4 Block Diagram

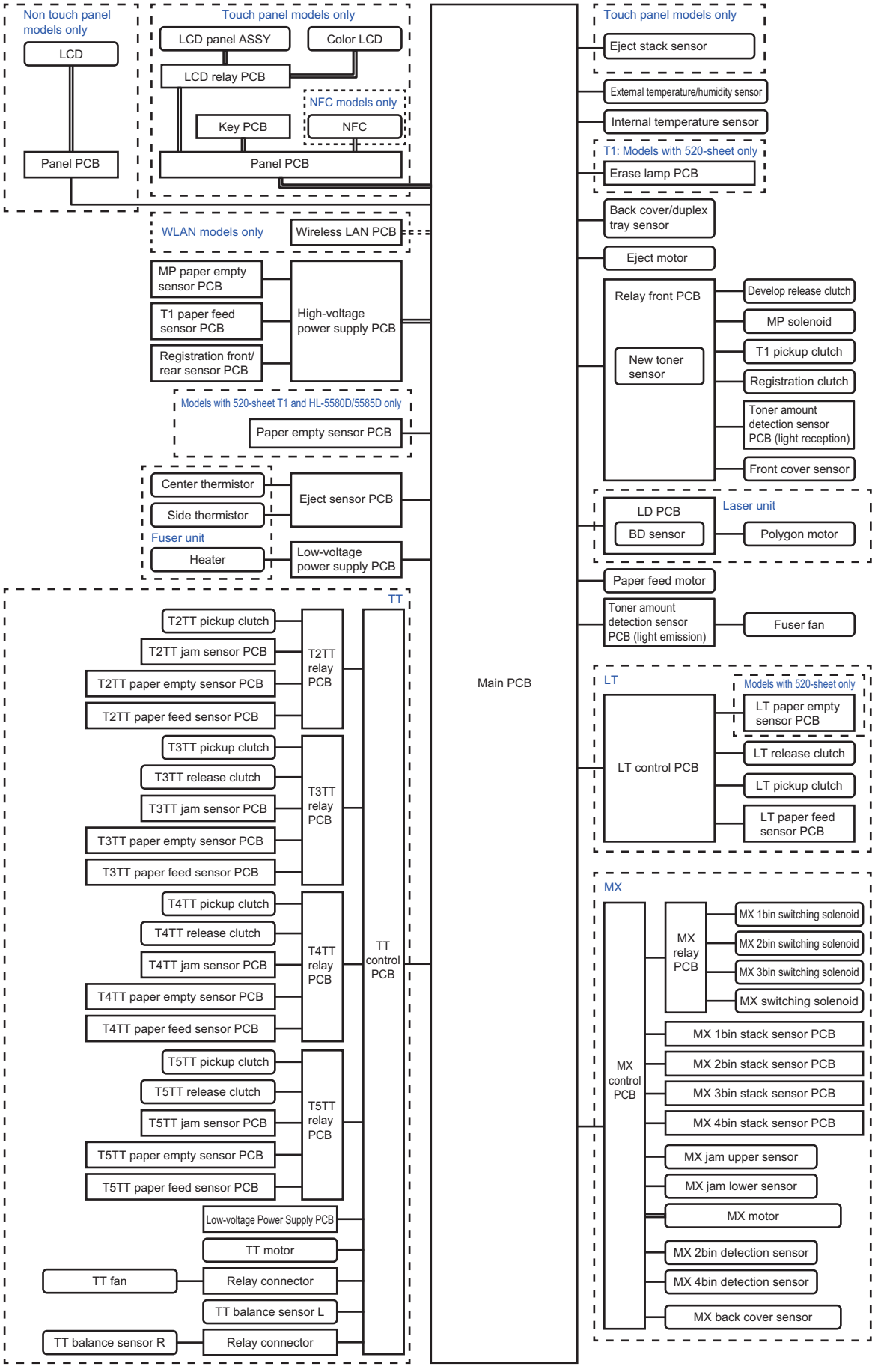


Fig. 2-4

2.5 Main Components

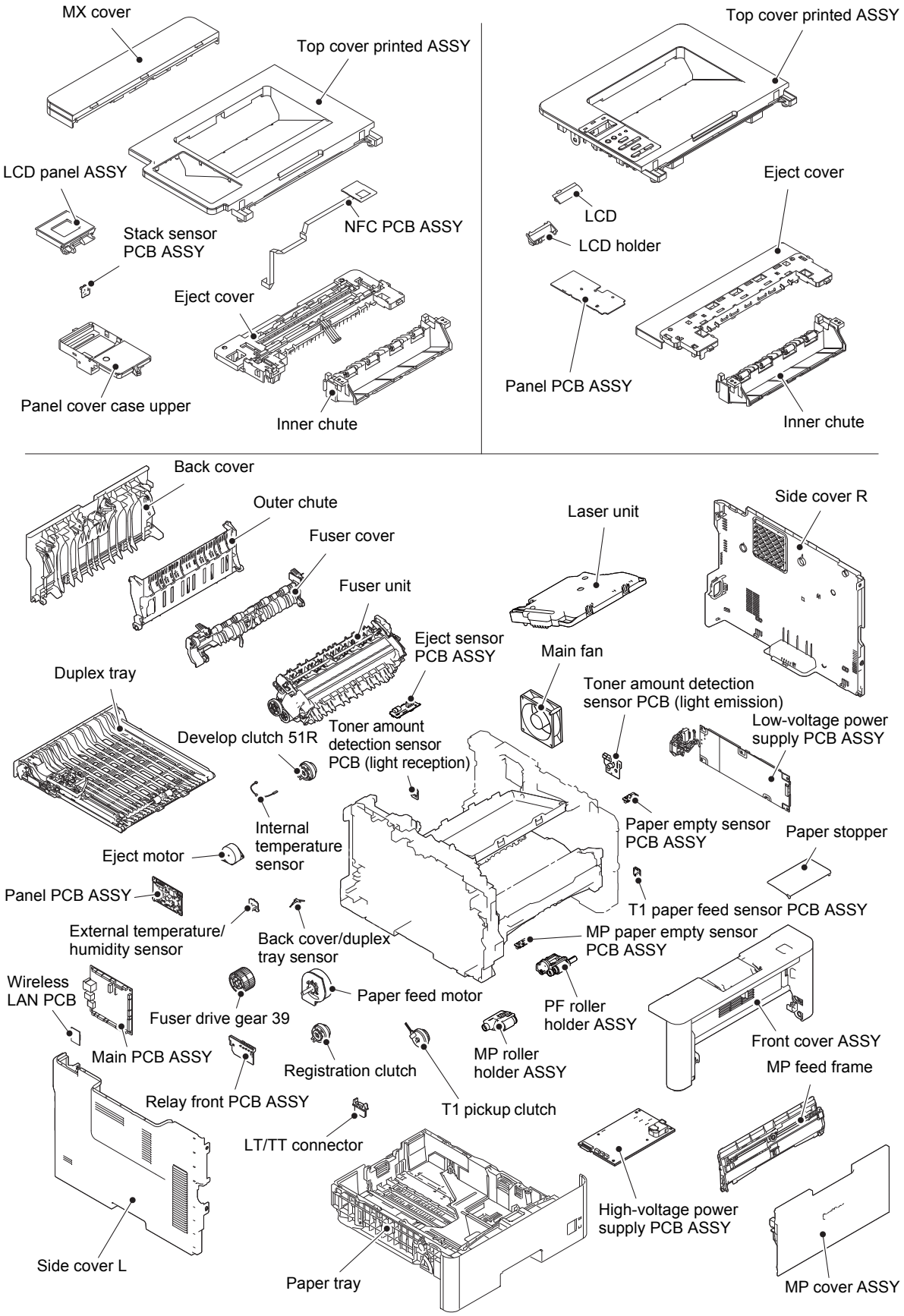


Fig. 2-5

3. ERROR INDICATIONS

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

3.1 Error Codes

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

Error codes	Description	Refer to:	Error codes	Description	Refer to:
0101	—		0504	After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	2-44
0102	Communication error between the engine ASIC and motor driver or faulty motor driver.	2-42	0505	The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	2-44
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.	2-42	0506	The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	2-44
0202	—		0508	The side thermistor of the fuser unit did not detect a temperature rise when the heater was ON.	2-44
0203	Eject motor failure was detected.	2-42	050A	The hardware detected a temperature error through the center thermistor or the side thermistor of the fuser unit.	2-45
0300	Cannot detect the lock signal of the polygon motor for the laser unit (second time).	2-43	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.	2-45
0305	Cannot detect the lock signal of the polygon motor for the laser unit (first time).	2-43	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.	2-45
0401	Cannot detect the synchronized signal of the polygon motor for the laser unit (second time).	2-43	050D	—	
0402	—		050F	—	
0405	Cannot detect the synchronized signal of the polygon motor for the laser unit (first time).	2-43	0800	An error occurred in the internal temperature sensor.	2-45
0501	The center thermistor of the fuser unit has not reached the specified temperature within the specified time.	2-44	0900	Detected irregular power supply for more than 100 times.	2-46
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.	2-44	0A01	—	
0503	The center thermistor of the fuser unit detected a temperature higher than the specified value.	2-44	0A02	Detected a main fan failure.	2-46

Error codes	Description	Refer to:	Error codes	Description	Refer to:
0B01	An error occurred in the high-voltage power supply PCB ASSY while operating.	2-46	2102	—	
0B02	An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	2-46	2103	—	
0C00	—		2104	—	
0D01	—		2105	—	
0D02	—		2201	—	
0D03	—		2202	—	
0D04	—		2203	—	
0E00	—		2204	—	
1003	—		2205	—	
1004	—		2206	—	
1100	—		2207	—	
1200	—		2301	—	
1300	—		2302	—	
1400	—		2401	—	
1701	Detected a TT fan failure.	2-47	2402	—	
1801	A communication error occurred between the ASIC and T2LT control PCB in the engine. (LT only)	2-47	2403	—	
1802	A communication error occurred between the ASIC and T3LT control PCB ASSY in the engine. (LT only)	2-47	2404	—	
1803	A communication error occurred between the ASIC and T4LT control PCB ASSY in the engine. (LT only)	2-47	2405	—	
1808	A communication error occurred between the ASIC and TT control PCB in the engine.	2-47	2408	—	
1901	Detected a TT motor failure.	2-48	2409	—	
1A01	A communication error occurred between the ASIC and MX control PCB in the engine.	2-48	2501	—	
1B01	Detected an MX motor failure.	2-48	2502	—	
1C00	—		2503	—	
1D01	—		2504	—	
1D02	—		2601	—	
1D03	—		2602	—	
1D04	—		2603	—	
1E01	—		2604	—	
1E02	—		2605	—	
1F00	When the TT was connected, TT balance sensor L/R wasn't connected properly.	2-48	2701	—	
2001	—		2702	—	
2002	—		2703	—	
2003	—		2801	—	
2004	—		2802	—	
2005	—		2803	—	
2006	—		2804	—	
2101	—		2805	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
2806	—		3202	—	
2901	—		3301	—	
2902	—		3302	—	
2903	—		3401	—	
2904	—		3402	—	
2905	—		3501	—	
2906	—		3601	—	
2A01	—		3701	—	
2A02	—		3702	—	
2A03	—		3703	—	
2B01	—		3801	A temperature error occurred in the external temperature/humidity sensor.	2-49
2B02	—		3802	—	
2C01	—		3900	—	
2C02	—		3A00	—	
2D01	—		4000	The number of rotations of the drum unit is reaching the upper limit.	2-49
2E01	—		4001	—	
2E02	—		4002	—	
2E03	—		4003	—	
2E04	—		4004	—	
2E05	—		4200	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	2-49
2E06	—		4201	—	
2E07	—		4202	—	
2E08	—		4203	—	
2E0A	—		4204	—	
2F01	—		4300	—	
2F02	—		4400	—	
2F03	—		4500	The number of printable pages of the fuser unit has reached the upper limit.	2-49
2F04	—		4600	The number of printable pages of the laser unit has reached the upper limit.	2-50
2F05	—		4700	—	
2F06	—		4800	—	
2F07	—		4900	—	
2F08	—		4A00	—	
2F0A	—		4B01	Dot counter or develop roller counter of the toner is reaching the upper limit.	2-50
3001	—		4B02	—	
3002	—		4B03	—	
3003	—		4B04	—	
3102	—		4C01	Dot counter or develop roller counter of the toner has reached the upper limit.	2-50

Error codes	Description	Refer to:	Error codes	Description	Refer to:
4C02	—		5902	—	
4C03	—		5A02	—	
4C04	—		5B02	—	
4C05	—		5C02	—	
4D01	—		6001	The front cover sensor detected that the front cover was open.	2-51
4E01	—		6002	—	
4F01	The new toner sensor could not detect the new toner cartridge correctly.	2-50	6003	—	
4F02	—		6004	The eject sensor detected that the fuser cover was open.	2-52
4F03	—		6007	—	
4F04	—		6101	The toner amount detection sensor detected that the toner cartridge was not set.	2-52
5001	Printable pages set for PF kit MP have reached the upper limit.	2-51	6102	—	
5002	Printable pages set for PF kit 1 have reached the upper limit.	2-51	6103	—	
5003	Printable pages set for PF kit 2 have reached the upper limit.	2-51	6104	—	
5004	Printable pages set for PF kit 3 have reached the upper limit.	2-51	6200	Detected that the drum unit was not set by detecting the GRID terminal current.	2-52
5005	Printable pages set for PF kit 4 have reached the upper limit.	2-51	6201	—	
5006	Printable pages set for PF kit 5 have reached the upper limit.	2-51	6202	—	
5100	—		6203	—	
5200	—		6204	—	
5301	—		6208	—	
5302	—		6209	—	
5401	—		620A	—	
5402	—		6300	—	
5406	—		6400	—	
5502	—		6602	—	
5602	—		6701	—	
5702	—		6801	The side thermistor of the fuser unit or internal temperature sensor detected a temperature higher than the specified value.	2-53
5801	—		6802	—	
5802	—		6901	An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	2-54

Error codes	Description	Refer to:	Error codes	Description	Refer to:
6902	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	2-54	7100	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	2-56
6A00	Detected discharge that may be attributable to dirty corona wire on the drum unit.	2-54	7101	—	
6B01	—		7102	—	
6B02	—		7103	—	
6B03	—		7104	—	
6B04	—		7105	—	
6B0A	—		7106	—	
6C01	—		7200	When feeding from the MP tray, the registration rear sensor does not detect paper pass within the specified time after the registration front sensor detected paper pass.	2-56
6C02	—		7201	—	
6C03	—		7300	—	
6C04	—		7301	When printing from the paper tray 1, the T1 paper feed sensor does not detect paper pass within the specified time while the T1 paper empty sensor detects some paper set.	2-57
6D00	Detected more LTs than connectible limit.	2-55	7302	When printing from the paper tray 1, the registration front sensor does not detect paper pass within the specified time after the T1 paper feed sensor detected paper pass.	2-57
6E00	—		7400	—	
6F00	Detected irregular power supply for less than 100 times.	2-55	7401	When printing from the paper tray 2, the T2(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T2(LT or TT) paper empty sensor detects some paper set.	2-58
7000	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	2-55	7402	When printing from the paper tray 2, the registration front sensor or the T2TT jam sensor does not detect paper pass within the specified time after the T2(LT or TT) paper feed sensor detected paper pass.	2-59
7001	—		7500	—	
7002	—		7501	When printing from the paper tray 3, the T3(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T3(LT or TT) paper empty sensor detects some paper set.	2-60
7003	—		7502	When printing from the paper tray 3, the registration front sensor or the T2/T3TT jam sensor does not detect paper pass within the specified time after the T3(LT or TT) paper feed sensor detected paper pass.	2-61
7004	—		7601	When printing from the paper tray 4, the T4(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T4(LT or TT) paper empty sensor detects some paper set.	2-62

Error codes	Description	Refer to:	Error codes	Description	Refer to:
7602	When printing from the paper tray 4, the registration front sensor or the T2/T3/T4TT jam sensor does not detect paper pass within the specified time after the T4(LT or TT) paper feed sensor detected paper pass.	2-63	7C00	—	
7701	When printing from the paper tray 5, the T5TT paper feed sensor does not detect paper pass within the specified time while the T5TT paper empty sensor detects some paper set.	2-64	7D00	—	
7702	When printing from the paper tray 5, the registration front sensor or the T2/T3/T4/T5TT jam sensor does not detect paper pass within the specified time after the T5TT paper feed sensor detected paper pass.	2-65	7E00	—	
7800	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	2-66	7F00	MX(2 or 4) bin sensor detected that the only one of the two removable plates is removed from the MX.	2-70
7801	—		8000	—	
7802	—		8100	—	
7803	—		8401	—	
7804	—		8402	—	
7805	—		8403	—	
7900	—		8501	When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (before registering printing data to engine).	2-71
7A01	—		8502	When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (before registering printing data to engine).	2-71
7A02	—		8503	When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (before registering printing data to engine).	2-71
7B01	The MX jam lower sensor does not detect paper pass within the specified time after the eject sensor detected paper pass.	2-67	8504	When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (before registering printing data to engine).	2-71
7B02	The MX 1bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.	2-67	8505	When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (after registering printing data to engine).	2-72
7B03	The MX 2bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.	2-68	8506	When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (after registering printing data to engine).	2-72
7B04	The MX 3bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.	2-69	8507	When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (after registering printing data to engine).	2-72
7B05	The MX 4bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.	2-70	8508	When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (after registering printing data to engine).	2-72

Error codes	Description	Refer to:	Error codes	Description	Refer to:
8601	—		8801	—	
8602	—		8802	—	
8603	—		8808	MX back cover sensor detected the open cover when the MX was selected as the output tray (before registering printing data to engine).	2-74
8604	—		8809	MX back cover sensor detected the open cover when the MX was selected as the output tray (after registering printing data to engine).	2-74
8701	MX 1bin, 2bin, 3bin, or 4bin stack sensor or machine stack sensor detected the ejected paper full state at the start of printing.	2-72	880A	—	
8702	Machine stack sensor detected the eject paper full state at the start of printing when the machine output tray was selected as the output tray.	2-73	8901	—	
8703	—		8902	—	
8708	MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray.	2-73	8903	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	2-75
8709	MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray.	2-73	8904	The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	2-75
870A	MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray.	2-73	8A01	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	2-75
870B	MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray.	2-73	8A02	—	
870C	Machine stack sensor or MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	2-74	8B01	Detected that the TT was not turned ON.	2-76
870D	Machine stack sensor or MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	2-74	8C00	—	
870E	Machine stack sensor or MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	2-74	8D01	—	
870F	Machine stack sensor or MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	2-74	8D02	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
8E01	—		9204	When printing from the paper tray 3, paper type setting in the machine does not match the setting in the driver.	2-77
8E02	—		9205	When printing from the paper tray 4, paper type setting in the machine does not match the setting in the driver.	2-77
8F01	—		9206	When printing from the paper tray 5, paper type setting in the machine does not match the setting in the driver.	2-77
8F02	—		9301	When printing from the MP tray, the MP paper empty sensor detected that there was no paper set in the MP tray.	2-78
8F03	—		9302	When printing from paper tray 1, the T1 paper empty sensor or the T1 paper feed sensor detected that there was no paper set in paper tray 1.	2-78
9001	When printing from the MP tray, the size of paper set in the MP tray does not match the size specified by the driver.	2-76	9303	When printing from paper tray 2, the T2(LT or TT) paper empty sensor detected that there was no paper set in paper tray 2.	2-78
9002	When printing from the paper tray 1, the size of paper set in the paper tray 1 does not match the size specified by the driver.	2-76	9304	When printing from paper tray 3, the T3(LT or TT) paper empty sensor detected that there was no paper set in paper tray 3.	2-78
9003	When printing from the paper tray 2, the size of paper set in the paper tray 2 does not match the size specified by the driver.	2-76	9305	When printing from paper tray 4, the T4(LT or TT) paper empty sensor detected that there was no paper set in paper tray 4.	2-78
9004	When printing from the paper tray 3, the size of paper set in the paper tray 3 does not match the size specified by the driver.	2-76	9306	When printing from paper tray 5, the T5TT paper empty sensor detected that there was no paper set in paper tray 5.	2-78
9005	When printing from the paper tray 4, the size of paper set in the paper tray 4 does not match the size specified by the driver.	2-76	9309	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	2-79
9006	When printing from the paper tray 5, the size of paper set in the paper tray 5 does not match the size specified by the driver.	2-76	930A	—	
9102	—		9400	Firmware version of the main PCB is older than that of the TT, MX and LT.	2-79
9103	—		9501	—	
9104	—		9502	—	
9105	—		9503	—	
9200	—		9504	—	
9201	When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.	2-77	9505	—	
9202	When printing from the paper tray 1, paper type setting in the machine does not match the setting in the driver.	2-77	9601	—	
9203	When printing from the paper tray 2, paper type setting in the machine does not match the setting in the driver.	2-77	9608	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
9701	A tray set to duplex printing-incompatible size was specified in duplex printing.	2-80	A300	—	
9702	When printing from paper tray 1, a paper size not supported for paper tray 1 was specified from the driver.	2-80	A400	—	
9703	When printing from paper tray 2, a paper size not supported for paper tray 2 was specified from the driver.	2-80	A500	—	
9704	When printing from paper tray 3, a paper size not supported for paper tray 3 was specified from the driver.	2-80	A600	—	
9705	When printing from paper tray 4, a paper size not supported for paper tray 4 was specified from the driver.	2-80	A700	—	
9706	When printing from paper tray 5, a paper size not supported for paper tray 5 was specified from the driver.	2-80	A800	—	
9801	—		A900	—	
9802	—		AA00	—	
9803	—		AB00	—	
9804	—		AC00	—	
9901	—		AD00	—	
9902	—		AE00	—	
9903	—		AF00	—	
9A01	—		B000	—	
9A02	—		B700	—	
9A03	—		B800	—	
9B01	—		B900	—	
9B02	—		BB00	—	
9B03	—		BC00	—	
9B04	—		BD00	—	
9B05	—		BF00	—	
9B06	—		C001	Access request to the server timed out because the server address was wrong, network was not connected, or server was not working.	2-81
9C01	—		C002	User authentication error due to wrong user name, wrong password, or date and time was not synchronized between the machine and server.	2-81
9C02	—		C003	Cannot access to the file because the directory name is wrong, writing into directory is not permitted, or writing into file is locked or not permitted.	2-81
9C03	—		C004	Cannot acquire current time which is required for user authentication because the time has not been acquired.	2-81
9C06	—		C100	Failed to save data to a USB flash memory.	2-81
9C07	—		C700	There is insufficient memory to expand PC print data.	2-81
A000	—		C800	The memory size allotted for Secure Print was exceeded when saving Secure Print data.	2-82
A200	—		C900	—	

Error codes	Description	Refer to:	Error codes	Description	Refer to:
CA00	—		FA03	—	
D100	—		FB01	—	
D200	—		FB02	—	
D800	An error occurred while initializing the touch panel.	2-82	FB03	—	
D900	—		FB04	—	
DA00	—		FB05	—	
DB00	—		FB06	—	
E000	An error occurred in the ROM check sum.	2-82	FB07	—	
E100	Program error	2-82	FB08	—	
E400	—		FB09	—	
E500	An error occurred during access to the DRAM in the main PCB ASSY.	2-83	FB0A	—	
E600	Write error in the EEPROM of the main PCB ASSY	2-83	FB0B	—	
E701	System error in the flash ROM	2-83	FB0C	—	
E702	Read error in the flash ROM	2-83	FB0D	—	
E900	An error occurred while initializing the NFC.	2-83	FB0E	—	
EC00	A USB device not within the specification is connected to the USB terminal, resulting in over current.	2-83	FB0F	—	
ED00	—		FC01	—	
EE00	—		FC02	—	
F900	The spec code was not entered correctly.	2-83	FC03	—	
FA01	—		FC04	—	
FA02	—		FC05	—	

3.2 Error Messages

3.2.1 Non touch panel models

First line	Scroll	Description	Error codes	Refer to:
Cartridge Error	Put the Toner Cartridge back in.	The new toner sensor could not detect the new toner cartridge correctly.	4F01	2-50
Cooling Down	Wait for a while	The side thermistor of the fuser unit or internal temperature sensor detected a temperature higher than the specified value.	6801	2-53
Cover is Open	Close the Back Cover of the machine.	The eject sensor detected that the fuser cover was open.	6004	2-52
	Close the Front Cover.	The front cover sensor detected that the front cover was open.	6001	2-51
Drum !	Slide the Green tab on Drum Unit.	Detected discharge that may be attributable to dirty corona wire on the drum unit.	6A00	2-54
Drum End Soon	—	The number of rotations of the drum unit is reaching the upper limit.	4000	2-49
Ignore Data	—	Detected undecodable data during printing. Received undecodable PS data.	---	4.11.1
Jam 2-sided	Pull out the Duplex Tray at the back of the machine and remove the jammed paper.	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	7800	2-66
Jam Inside	Open the Front Cover, pull out the Drum Unit completely and remove the jammed paper.	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	7000	2-55
Jam MP Tray	Remove the jammed paper from MP Tray and press Go.	When feeding from the MP tray, the registration rear sensor does not detect paper pass within the specified time after the registration front sensor detected paper pass.	7200	2-56
Jam Rear	Open the Back Cover and remove the jammed paper.	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	7100	2-56
Jam Tray 1	Remove the jammed paper from Tray 1.	When printing from the paper tray 1, the registration front sensor does not detect paper pass within the specified time after the T1 paper feed sensor detected paper pass.	7302	2-57

First line	Scroll	Description	Error codes	Refer to:
Jam Tray 2	Remove the jammed paper from Tray 2.	When printing from the paper tray 2, the registration front sensor does not detect paper pass within the specified time after the T2LT paper feed sensor detected paper pass.	7402	2-59
Jam Tray 3	Remove the jammed paper from Tray 3.	When printing from the paper tray 3, the registration front sensor does not detect paper pass within the specified time after the T3LT paper feed sensor detected paper pass.	7502	2-61
Jam Tray 4	Remove the jammed paper from Tray 4.	When printing from the paper tray 4, the registration front sensor does not detect paper pass within the specified time after the T4LT paper feed sensor detected paper pass. (Models with 250-sheet LT only)	7602	2-63
Log Access Error	Server Timeout, contact your administrator.	Cannot acquire current time which is required for user authentication because the time has not been acquired.	C004	2-81
Machine Error F9	—	The spec code was not entered correctly.	F900	2-83
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	2-77
	Reload correct paper in Tray 1, then press Go.	When printing from the paper tray 1, paper type setting in the machine does not match the setting in the driver.	9202	2-77
	Reload correct paper in Tray 2, then press Go.	When printing from the paper tray 2, paper type setting in the machine does not match the setting in the driver.	9203	2-77
	Reload correct paper in Tray 3, then press Go.	When printing from the paper tray 3, paper type setting in the machine does not match the setting in the driver.	9204	2-77
	Reload correct paper in Tray 4, then press Go.	When printing from the paper tray 4, paper type setting in the machine does not match the setting in the driver.	9205	2-77
No Drum Unit	Open the Front Cover, then install the Drum Unit.	Detected that the drum unit was not set by detecting the GRID terminal current.	6200	2-52
No Paper	Reload paper in Tray.	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	9309	2-79

First line	Scroll	Description	Error codes	Refer to:
No Paper Fed T1	Reload paper in Tray 1, then press Go.	When printing from the paper tray 1, the T1 paper feed sensor does not detect paper pass within the specified time while the T1 paper empty sensor detects some paper set.	7301	2-57
No Paper Fed T2	Reload paper in Tray 2, then press Go.	When printing from the paper tray 2, the T2LT paper feed sensor does not detect paper pass within the specified time while the T2LT paper empty sensor detects some paper set.	7401	2-58
No Paper Fed T3	Reload paper in Tray 3, then press Go.	When printing from the paper tray 3, the T3LT paper feed sensor does not detect paper pass within the specified time while the T3LT paper empty sensor detects some paper set.	7501	2-60
No Paper Fed T4	Reload paper in Tray 4, then press Go.	When printing from the paper tray 4, the T4LT paper feed sensor does not detect paper pass within the specified time while the T4LT paper empty sensor detects some paper set.	7601	2-62
No Paper MP	Reload paper in MP Tray.	When printing from the MP tray, the MP paper empty sensor detected that there was no paper set in the MP tray.	9301	2-78
No Paper T1	Reload paper in Tray 1.	When printing from paper tray 1, the T1 paper empty sensor or the T1 paper feed sensor detected that there was no paper set in paper tray 1.	9302	2-78
No Paper T2	Reload paper in Tray 2.	When printing from paper tray 2, the T2LT paper empty sensor detected that there was no paper set in paper tray 2.	9303	2-78
No Paper T3	Reload paper in Tray 3.	When printing from paper tray 3, the T3LT paper empty sensor detected that there was no paper set in paper tray 3.	9304	2-78
No Paper T4	Reload paper in Tray 4.	When printing from paper tray 4, the T4LT paper empty sensor detected that there was no paper set in paper tray 4.	9305	2-78
No Toner	Open the Front Cover, then install Toner Cartridge.	The toner amount detection sensor detected that the toner cartridge was not set.	6101	2-52

First line	Scroll	Description	Error codes	Refer to:
No Tray T1	Reinstall Tray	When printing from paper tray 1 to 4, the T1 paper feed sensor detected open paper tray 1 (before registering printing data to engine).	8501	2-71
		When printing from paper tray 1 to 4, the T1 paper feed sensor detected open paper tray 1 (after registering printing data to engine).	8505	2-72
No Tray T2	Reinstall Tray 2	When printing from paper tray 2 to 4, the T2LT paper feed sensor detected open paper tray 2 (before registering printing data to engine).	8502	2-71
		When printing from paper tray 2 to 4, the T2LT paper feed sensor detected open paper tray 2 (after registering printing data to engine).	8506	2-72
No Tray T3	Reinstall Tray 3	When printing from paper tray 3 to 4, the T3LT paper feed sensor detected open paper tray 3 (before registering printing data to engine).	8503	2-71
		When printing from paper tray 3 to 4, the T3LT paper feed sensor detected open paper tray 3 (after registering printing data to engine).	8507	2-72
No Tray T4	Reinstall Tray 4	When printing from paper tray 4, the T4LT paper feed sensor detected open paper tray 4 (before registering printing data to engine).	8504	2-71
		When printing from paper tray 4, the T4LT paper feed sensor detected open paper tray 4 (after registering printing data to engine).	8508	2-72
Out of Memory	Press Cancel	There is insufficient memory to expand PC print data.	C700	2-81
Output Tray Full	Remove the paper from the Output Tray.	MX 1bin, 2bin, 3bin, or 4bin stack sensor or machine stack sensor detected the ejected paper full state at the start of printing.	8701	2-72
	Remove the paper from the Standard Output Tray.	Machine stack sensor detected the eject paper full state at the start of printing when the machine output tray was selected as the output tray.	8702	2-73

First line	Scroll	Description	Error codes	Refer to:
Paper Low Tray 1	—	Detected that the paper is running out when the paper feed motor drive and T1 paper empty sensor turned ON.	---	4.11.4
Paper Low Tray 2	—	Detected that the paper is running out when the paper feed motor drive and T2LT paper empty sensor turned ON.	---	4.11.4
Paper Low Tray 3	—	Detected that the paper is running out when the paper feed motor drive and T3LT paper empty sensor turned ON.	---	4.11.4
Print Data Full	Print Data is full. Press Cancel and delete the previously stored data.	The memory size allotted for Secure Print was exceeded when saving Secure Print data.	C800	2-83
Print Unable 01	Turn the power off and then back on again.	An error occurred at the motor drive circuit in the main PCB.	0102	2-43
Print Unable 02	Turn the power off and then back on again.	Main PCB detected an error in the paper feed motor.	0201	2-43
		Main PCB detected an error in the eject motor.	0203	2-43
Print Unable 03	Turn the power off and then back on again.	Main PCB detected an error at the polygon motor in the laser unit.	0300	2-44
Print Unable 04	Turn the power off and then back on again.	Main PCB detected an error at the polygon motor in the laser unit.	0401	2-44
Print Unable 05	Turn the power off and then back on again.	Detected the fuser unit temperature error.	0501	2-45
			0502	2-45
			0503	2-45
			0504	2-45
			0505	2-45
			0506	2-45
			0508	2-45
			050A	2-46
			050B	2-46
			050C	2-46
Print Unable 08	Turn the power off and then back on again.	An error occurred in the internal temperature sensor.	0800	2-46
Print Unable 09	Turn the power off and then back on again.	Detected irregular power supply for more than 100 times.	0900	2-47
Print Unable 0A	Turn the power off and then back on again.	Main PCB detected the main fan failure.	0A02	2-47

First line	Scroll	Description	Error codes	Refer to:
Print Unable 0B	Turn the power off and then back on again.	An error occurred in the high-voltage power supply PCB ASSY during the operation.	0B01	2-46
		An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	0B02	2-46
Print Unable 18	Turn the power off and then back on again.	A communication error occurred between the main PCB and T2LT control PCB.	1801	2-47
		A communication error occurred between the main PCB and T3LT control PCB.	1802	2-47
		A communication error occurred between the main PCB and T4LT control PCB.	1803	2-47
		A communication error occurred between the main PCB and TT control PCB.	1808	2-47
Print Unable 19	Turn the power off and then back on again.	Detected a TT motor failure.	1901	2-48
Print Unable 1A	Turn the power off and then back on again.	A communication error occurred between the main PCB and MX control PCB.	1A01	2-48
Print Unable 1B	Turn the power off and then back on again.	Detected an MX motor failure.	1B01	2-48
Print Unable 38	Turn the power off and then back on again.	A temperature error occurred in the external temperature/humidity sensor.	3801	2-49
Print Unable C1	Turn the power off and then back on again.	Failed to save data to a USB flash memory.	C100	2-81
Print Unable E0	Turn the power off and then back on again.	An error occurred at the ROM check sum in the firmware.	E000	2-82
Print Unable E1	Turn the power off and then back on again.	Program error	E100	2-82
Print Unable E5	Turn the power off and then back on again.	Detected an error in the main PCB.	E500	2-83
Print Unable E6	Turn the power off and then back on again.	Detected an error in the main PCB.	E600	2-83
Print Unable E7	Turn the power off and then back on again.	Detected an error in the main PCB.	E701	2-83
			E702	2-83
Print Unable E9	Turn the power off and then back on again.	An error occurred while initializing the NFC.	E900	2-83
Print Unable ZC	Turn the power off and then back on again.	Detected irregular power supply for less than 100 times.	6F00	2-55

First line	Scroll	Description	Error codes	Refer to:
Replace Drum	—	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	4200	2-49
Replace Fuser	—	The number of printable pages of the fuser unit has reached the upper limit.	4500	2-49
Replace Laser	—	The number of printable pages of the laser unit has reached the upper limit.	4600	2-50
Replace PF Kit1	—	Printable pages set for PF kit 1 have reached the upper limit.	5002	2-51
Replace PF Kit2	—	Printable pages set for PF kit 2 have reached the upper limit.	5003	2-51
Replace PF Kit3	—	Printable pages set for PF kit 3 have reached the upper limit.	5004	2-51
Replace PF Kit4	—	Printable pages set for PF kit 4 have reached the upper limit.	5005	2-51
Replace PF KitMP	—	Printable pages set for PF kit MP have reached the upper limit.	5001	2-51
Replace Toner	Open the Front Cover, replace Toner Cartridge.	Dot counter or develop roller counter of the toner has reached the upper limit.	4C01	2-50
Self-Diagnostic	Turn the power off, then on again. Leave the machine for 15 min.	An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	6901	2-54
	Will Automatically Restart within 15 minutes.	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	6902	2-54

First line	Scroll	Description	Error codes	Refer to:
Size Error	Specify the correct paper size for Tray 1.	When printing from paper tray 1, a paper size not supported for paper tray 1 was specified from the driver.	9702	2-80
	Specify the correct paper size for Tray 2.	When printing from paper tray 2, a paper size not supported for paper tray 2 was specified from the driver.	9703	2-80
	Specify the correct paper size for Tray 3.	When printing from paper tray 3, a paper size not supported for paper tray 3 was specified from the driver.	9704	2-80
	Specify the correct paper size for Tray 4.	When printing from paper tray 4, a paper size not supported for paper tray 4 was specified from the driver.	9705	2-80
Size Error DX	Press Cancel. Specify the correct paper and load the same size paper as the Printer driver setting.	A tray set to duplex printing-incompatible size was specified in duplex printing.	9701	2-80
	Specify the correct paper and press Go.	The registration rear sensor detected that the paper fed was smaller or larger than the specified size in duplex printing mode.	8A01	2-75
Size Mismatch	Load #S paper in #T and press Go.	When printing from the MP tray, the size of paper set in the MP tray does not match the size specified by the driver.	9001	2-76
		When printing from the paper tray 1, the size of paper set in the paper tray 1 does not match the size specified by the driver.	9002	2-76
		When printing from the paper tray 2, the size of paper set in the paper tray 2 does not match the size specified by the driver.	9003	2-76
		When printing from the paper tray 3, the size of paper set in the paper tray 3 does not match the size specified by the driver.	9004	2-76
		When printing from the paper tray 4, the size of paper set in the paper tray 4 does not match the size specified by the driver.	9005	2-76
Toner Low	—	Dot counter or develop roller counter of the toner is reaching the upper limit.	4B01	2-50

First line	Scroll	Description	Error codes	Refer to:
Too Many Trays	Turn the power off and remove additional trays.	Detected more LTs than connectible limit.	6D00	2-55
2-sided Disabled	Close the Back Cover and put the 2-sided Tray back in.	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	8903	2-75
		The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	8904	2-75

3.2.2 Touch panel models

Error message		Description	Error codes	Refer to:
First line	Second line			
Cartridge Error	Put the Toner Cartridge back in.	The new toner sensor could not detect the new toner cartridge correctly.	4F01	2-50
Cooling Down	Wait for a while.	The side thermistor of the fuser unit or internal temperature sensor detected a temperature higher than the specified value.	6801	2-53
Cover is Open	—	The front cover sensor detected that the front cover was open.	6001	2-51
		The eject sensor detected that the fuser cover was open.	6004	2-52
		MX back cover sensor detected the open cover when the MX was selected as the output tray (before registering printing data to engine).	8808	2-74
		MX back cover sensor detected the open cover when the MX was selected as the output tray (after registering printing data to engine).	8809	2-74
Drum !	—	Detected discharge that may be attributable to dirty corona wire on the drum unit.	6A00	2-54
Firmware Update	You must update the firmware.	Firmware version of the main PCB is older than that of the TT, MX and LT.	9400	2-79
Ignore Data	Press Stop[x].	Detected undecodable data during printing. Received undecodable PS data.	---	4.11.1
	Ignore Data			
Jam 2-sided	—	The registration front sensor does not detect paper pass within the specified time after the first side was printed in duplex printing mode.	7800	2-66
Jam Inside	—	The eject sensor does not detect paper pass after the registration rear sensor detected the paper pass.	7000	2-55

Error message		Description	Error codes	Refer to:
First line	Second line			
Jam MailBox	—	The MX jam lower sensor does not detect paper pass within the specified time after the eject sensor detected paper pass.	7B01	2-67
		The MX 1bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.	7B02	2-67
		The MX 2bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.	7B03	2-68
		The MX 3bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.	7B04	2-69
		The MX 4bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.	7B05	2-70
Jam MP Tray	—	When feeding from the MP tray, the registration rear sensor does not detect paper pass within the specified time after the registration front sensor detected paper pass.	7200	2-56
Jam Rear	—	The eject sensor remains ON (paper pass detected) even after the registration rear sensor detected the end of paper pass.	7100	2-56
Jam Tray1	—	When printing from the paper tray 1, the registration front sensor does not detect paper pass within the specified time after the paper feed sensor detected paper pass.	7302	2-57
Jam Tray2	—	When printing from the paper tray 2, the registration front sensor or the T2TT jam sensor does not detect paper pass within the specified time after the T2(LT or TT) paper feed sensor detected paper pass.	7402	2-59
Jam Tray3	—	When printing from the paper tray 3, the registration front sensor or the T2/T3TT jam sensor does not detect paper pass within the specified time after the T3(LT or TT) paper feed sensor detected paper pass.	7502	2-61

Error message		Description	Error codes	Refer to:
First line	Second line			
Jam Tray4	—	When printing from the paper tray 4, the registration front sensor or the T2/T3/T4TT jam sensor does not detect paper pass within the specified time after the T4(LT or TT) paper feed sensor detected paper pass.	7602	2-63
Jam Tray5	—	When printing from the paper tray 5, the registration front sensor or the T2/T3/T4/T5TT jam sensor does not detect paper pass within the specified time after the T5TT paper feed sensor detected paper pass.	7702	2-65
Log Access Error	Authentication error, contact your administrator.	User authentication error due to wrong user name, wrong password, or date and time was not synchronized between the machine and server.	C002	2-81
	File access error, contact your administrator.	Cannot access to the file because the directory name is wrong, writing into directory is not permitted, or writing into file is locked or not permitted.	C003	2-81
	Server timeout, contact your administrator.	Access request to the server timed out because the server address was wrong, network was not connected, or server was not working.	C001	2-81
	Wrong Date & Time, contact your administrator.	Cannot acquire current time which is required for user authentication because the time has not been acquired.	C004	2-81
Machine Error F9	—	The spec code was not entered correctly.	F900	2-83

Error message		Description	Error codes	Refer to:
First line	Second line			
Maintenance	Replace Fuser	The number of printable pages of the fuser unit has reached the upper limit.	4500	2-49
	Replace Laser	The number of printable pages of the laser unit has reached the upper limit.	4600	2-50
	Replace PF Kit MP	Printable pages set for PF kit MP have reached the upper limit.	5001	2-51
	Replace PF Kit 1	Printable pages set for PF kit 1 have reached the upper limit.	5002	2-51
	Replace PF Kit 2	Printable pages set for PF kit 2 have reached the upper limit.	5003	2-51
	Replace PF Kit 3	Printable pages set for PF kit 3 have reached the upper limit.	5004	2-51
	Replace PF Kit 4	Printable pages set for PF kit 4 have reached the upper limit.	5005	2-51
	Replace PF Kit 5	Printable pages set for PF kit 5 have reached the upper limit.	5006	2-51
Media Type Mismatch	Reload correct paper in MP Tray, then press [Retry].	When printing from the MP tray, paper type setting in the machine does not match the setting in the driver.	9201	2-77
	Reload correct paper in Tray1, then press [Retry].	When printing from the paper tray 1, paper type setting in the machine does not match the setting in the driver.	9202	2-77
	Reload correct paper in Tray2, then press [Retry].	When printing from the paper tray 2, paper type setting in the machine does not match the setting in the driver.	9203	2-77
	Reload correct paper in Tray3, then press [Retry].	When printing from the paper tray 3, paper type setting in the machine does not match the setting in the driver.	9204	2-77
	Reload correct paper in Tray4, then press [Retry].	When printing from the paper tray 4, paper type setting in the machine does not match the setting in the driver.	9205	2-77
	Reload correct paper in Tray5, then press [Retry].	When printing from the paper tray 5, paper type setting in the machine does not match the setting in the driver.	9206	2-77
No Drum Unit	Open the Front Cover, then install the Drum Unit.	Detected that the drum unit was not set by detecting the GRID terminal current.	6200	2-52

Error message		Description	Error codes	Refer to:
First line	Second line			
No HUB Support	No HUB Support.	A USB device with a built-in hub is connected.	---	4.11.3
No Paper	—	Detected that there was no paper set in all trays when TrayAuto was selected for printing.	9309	2-79
	No Paper T1	Detected that there was no paper set in the paper tray 1 when printing from the paper tray 1.	---	4.2.1
	No Paper T2	Detected that there was no paper set in the paper tray 2 when printing from the paper tray 2.	---	4.2.1
	No Paper T3	Detected that there was no paper set in the paper tray 3 when printing from the paper tray 3.	---	4.2.1
	No Paper T4	Detected that there was no paper set in the paper tray 4 when printing from the paper tray 4.	---	4.2.1
	No Paper T5	Detected that there was no paper set in the paper tray 5 when printing from the paper tray 5.	---	4.2.1
No Paper Fed T1	Reload paper in Tray 1, then press [Retry].	When printing from the paper tray 1, the T1 paper feed sensor does not detect paper pass within the specified time while the T1 paper empty sensor detects some paper set.	7301	2-57
No Paper Fed T2	Reload paper in Tray 2, then press [Retry].	When printing from the paper tray 2, the T2(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T2(LT or TT) paper empty sensor detects some paper set.	7401	2-58
No Paper Fed T3	Reload paper in Tray 3, then press [Retry].	When printing from the paper tray 3, the T3(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T3(LT or TT) paper empty sensor detects some paper set.	7501	2-60
No Paper Fed T4	Reload paper in Tray 4, then press [Retry].	When printing from the paper tray 4, the T4(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T4(LT or TT) paper empty sensor detects some paper set.	7601	2-62

Error message		Description	Error codes	Refer to:
First line	Second line			
No Paper Fed T5	Reload paper in Tray 5, then press [Retry].	When printing from the paper tray 5, the T5TT paper feed sensor does not detect paper pass within the specified time while the T5TT paper empty sensor detects some paper set.	7701	2-64
No Paper MP	—	When printing from the MP tray, the MP paper empty sensor detected that there was no paper set in the MP tray.	9301	2-78
No Paper T1	—	When printing from paper tray 1, the T1 paper empty sensor or the T1 paper feed sensor detected that there was no paper set in paper tray 1.	9302	2-78
No Paper T2	—	When printing from paper tray 2, the T2(LT or TT) paper empty sensor detected that there was no paper set in paper tray 2.	9303	2-78
No Paper T3	—	When printing from paper tray 3, the T3(LT or TT) paper empty sensor detected that there was no paper set in paper tray 3.	9304	2-78
No Paper T4	—	When printing from paper tray 4, the T4(LT or TT) paper empty sensor detected that there was no paper set in paper tray 4.	9305	2-78
No Paper T5	—	When printing from paper tray 5, the T5TT paper empty sensor detected that there was no paper set in paper tray 5.	9306	2-78
No Toner	Open the Front Cover, then install Toner Cartridge.	The toner amount detection sensor detected that the toner cartridge was not set.	6101	2-52
No Tray Attachment	Please install the Tower Tray Attachment Brackets.	When the TT was connected, TT balance sensor L/R wasn't connected properly.	1F00	2-48
No Tray T1	—	When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (before registering printing data to engine).	8501	2-71
		When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (after registering printing data to engine).	8505	2-72

Error message		Description	Error codes	Refer to:
First line	Second line			
No Tray T2	—	When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (before registering printing data to engine).	8502	2-71
		When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (after registering printing data to engine).	8506	2-72
No Tray T3	—	When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (before registering printing data to engine).	8503	2-71
		When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (after registering printing data to engine).	8507	2-72
No Tray T4	—	When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (before registering printing data to engine).	8504	2-71
		When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (after registering printing data to engine).	8508	2-72
Out of Memory	Press Stop[x].	There is insufficient memory to expand PC print data.	C700	2-81

Error message		Description	Error codes	Refer to:
First line	Second line			
Output Tray Full	—	MX 1bin, 2bin, 3bin, or 4bin stack sensor or machine stack sensor detected the ejected paper full state at the start of printing.	8701	2-72
		Machine stack sensor detected the eject paper full state at the start of printing when the machine output tray was selected as the output tray.	8702	2-73
		MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray.	8708	2-73
		MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray.	8709	2-73
		MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray.	870A	2-73
		MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray.	870B	2-73
		Machine stack sensor or MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	870C	2-74
		Machine stack sensor or MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	870D	2-74
		Machine stack sensor or MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	870E	2-74
		Machine stack sensor or MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray and "Use Std. Tray when full" setting was ON.	870F	2-74

Error message		Description	Error codes	Refer to:
First line	Second line			
Paper Low	Paper Low Tray 1	Detected that the paper is running out when the paper feed motor drive and T1 paper empty sensor turned ON.	---	4.11.4
	Paper Low Tray 2	Detected that the paper is running out when the paper feed motor,TT motor drive and T2(LT or TT) paper empty sensor turned ON.	---	4.11.4
	Paper Low Tray 3	Detected that the paper is running out when the paper feed motor,TT motor drive and T3(LT or TT) paper empty sensor turned ON.	---	4.11.4
	Paper Low Tray 4	Detected that the paper is running out when the TT motor drive and T4TT paper empty sensor turned ON.	---	4.11.4
	Paper Low Tray 5	Detected that the paper is running out when the TT motor drive and T5TT paper empty sensor turned ON.	---	4.11.4
Print Data Full	Secure Print Data is full. Press Stop[x] Key and delete the previously stored data.	The memory size allotted for Secure Print was exceeded when saving Secure Print data.	C800	2-82
Print Unable 01	Turn the power off and then back on again.	An error occurred at the motor drive circuit in the main PCB.	0102	2-42
Print Unable 02	Turn the power off and then back on again.	Main PCB detected an error in the paper feed motor.	0201	2-42
		Main PCB detected an error in the eject motor.	0203	2-42
Print Unable 03	Turn the power off and then back on again.	Main PCB detected an error at the polygon motor in the laser unit.	0300	2-43
Print Unable 04	Turn the power off and then back on again.	Main PCB detected an error at the polygon motor in the laser unit.	0401	2-43
Print Unable 05	Turn the power off and then back on again.	Detected the fuser unit temperature error.	0501	2-44
			0502	2-44
			0503	2-44
			0504	2-44
			0505	2-44
			0506	2-44
			0508	2-44
			050A	2-45
			050B	2-45
			050C	2-45

Error message		Description	Error codes	Refer to:
First line	Second line			
Print Unable 08	Turn the power off and then back on again.	An error occurred in the internal temperature sensor.	0800	2-45
Print Unable 09	Turn the power off and then back on again.	Detected irregular power supply for more than 100 times.	0900	2-46
Print Unable 0A	Turn the power off and then back on again.	Main PCB detected the main fan failure.	0A02	2-46
Print Unable 0B	Turn the power off and then back on again.	An error occurred in the high-voltage power supply PCB ASSY during the operation.	0B01	2-46
		An error occurred in the high-voltage power supply PCB ASSY when the machine was in the ready state.	0B02	2-46
Print Unable 17	Turn the power off and then back on again.	Detected a TT fan failure.	1701	2-47
Print Unable 18	Turn the power off and then back on again.	A communication error occurred between the main PCB and T2LT control PCB.	1801	2-47
		A communication error occurred between the main PCB and T3LT control PCB.	1802	2-47
		A communication error occurred between the main PCB and T4LT control PCB.	1803	2-47
		A communication error occurred between the main PCB and TT control PCB.	1808	2-47
Print Unable 19	Turn the power off and then back on again.	Detected a TT motor failure.	1901	2-48
Print Unable 1A	Turn the power off and then back on again.	A communication error occurred between the main PCB and MX control PCB.	1A01	2-48
Print Unable 1B	Turn the power off and then back on again.	Detected an MX motor failure.	1B01	2-48
Print Unable 38	Turn the power off and then back on again.	A temperature error occurred in the external temperature/humidity sensor.	3801	2-49
Print Unable 8B	Turn the power off and then back on again.	Detected that the TT was not turned ON.	8B01	2-76
Print Unable C1	Turn the power off and then back on again.	Failed to save data to a USB flash memory.	C100	2-81
Print Unable E0	Turn the power off and then back on again.	An error occurred at the ROM check sum in the firmware.	E000	2-82

Error message		Description	Error codes	Refer to:
First line	Second line			
Print Unable E1	Turn the power off and then back on again.	Program error	E100	2-82
Print Unable E5	Turn the power off and then back on again.	Detected an error in the main PCB.	E500	2-83
Print Unable E6	Turn the power off and then back on again.	Detected an error in the main PCB.	E600	2-83
Print Unable E7	Turn the power off and then back on again.	Detected an error in the main PCB.	E701	2-83
			E702	2-83
Print Unable E9	Turn the power off and then back on again.	An error occurred while initializing the NFC.	E900	2-83
Print Unable ZC	Turn the power off and then back on again.	Detected irregular power supply for less than 100 times.	6F00	2-55
Replace Toner	—	Dot counter or develop roller counter of the toner has reached the upper limit.	4C01	2-50
Screen Init. Fail	Remove any material which is on the touchscreen.	An error occurred while initializing the touch panel.	D800	2-82
Self-Diagnostic	Turn the power off, then on again. Leave the machine for 15 min.	An error occurred in the fuser unit when the power switch was turned ON or sleep mode was released.	6901	2-54
	Will automatically restart within 15 minutes.	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected in the fuser unit. (This message is displayed for approximately 15 minutes when the machine is restarted after error code 6901 has occurred.)	6902	2-54
Size Error	Specify the correct paper size for Tray1.	When printing from paper tray 1, a paper size not supported for paper tray 1 was specified from the driver.	9702	2-80
	Specify the correct paper size for Tray2.	When printing from paper tray 2, a paper size not supported for paper tray 2 was specified from the driver.	9703	2-80
	Specify the correct paper size for Tray3.	When printing from paper tray 3, a paper size not supported for paper tray 3 was specified from the driver.	9704	2-80

Error message		Description	Error codes	Refer to:
First line	Second line			
Size Error	Specify the correct paper size for Tray4.	When printing from paper tray 4, a paper size not supported for paper tray 4 was specified from the driver.	9705	2-80
	Specify the correct paper size for Tray5.	When printing from paper tray 5, a paper size not supported for paper tray 5 was specified from the driver.	9706	2-80
Size Error 2-sided	Specify the correct paper and press [Retry].	A tray set to duplex printing-incompatible size was specified in duplex printing.	9701	2-80
	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	2-75
Size Mismatch	Reload correct paper in MP Tray, then press [Retry].	When printing from the MP tray, the size of paper set in the MP tray does not match the size specified by the driver.	9001	2-76
	Reload correct paper in Tray1, then press [Retry].	When printing from the paper tray 1, the size of paper set in the paper tray 1 does not match the size specified by the driver.	9002	2-76
	Reload correct paper in Tray2, then press [Retry].	When printing from the paper tray 2, the size of paper set in the paper tray 2 does not match the size specified by the driver.	9003	2-76
	Reload correct paper in Tray3, then press [Retry].	When printing from the paper tray 3, the size of paper set in the paper tray 3 does not match the size specified by the driver.	9004	2-76
	Reload correct paper in Tray4, then press [Retry].	When printing from the paper tray 4, the size of paper set in the paper tray 4 does not match the size specified by the driver.	9005	2-76
	Reload correct paper in Tray5, then press [Retry].	When printing from the paper tray 5, the size of paper set in the paper tray 5 does not match the size specified by the driver.	9006	2-76

Error message		Description	Error codes	Refer to:
First line	Second line			
Supplies	Drum End Soon.	The number of rotations of the drum unit is reaching the upper limit.	4000	2-49
	Replace Drum	The number of rotations of the drum unit has reached the upper limit. (Printing does not stop.)	4200	2-49
	Toner Low	Dot counter or develop roller counter of the toner is reaching the upper limit.	4B01	2-50
Too many bins	—	MX(2 or 4) bin sensor detected that the only one of the two removable plates is removed from the MX.	7F00	2-70
Too Many Trays	Turn the power off and remove additional trays.	Detected more LTs than connectible limit.	6D00	2-55
Unable to Update:01	Check the firmware update file and try again.	An error occurred during the automatic firmware update with USB flash memory.	---	4.11.2
Unable to Update:02				
Unable to Update:03				
Unable to Update:04				
Unable to Update:05				
Unable to Update:06				
Unable to Update:07				
Unable to Update:08				
Unusable Device	Unusable device.	The connected USB device is not supported.	---	4.11.3
2-sided Disabled	—	The back cover/duplex tray sensor detected that the cover was open when duplex printing is started. (Before registering printing data to engine)	8903	2-75
		The back cover/duplex tray sensor detected that the cover was open during duplex printing. (After registering printing data to engine)	8904	2-75

4. TROUBLESHOOTING

4.1 Error Cause and Remedy

■ Error code 0102

Communication error between the engine ASIC and motor driver or faulty motor driver.

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

■ Error code 0203

Eject motor failure was detected.

Step	Cause	Remedy
1	Connection failure of the eject motor harness	Reconnect the eject motor harness.
2	Eject motor failure	Replace the eject motor.
3	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
4	Damaged part in eject gears	Replace the main frame L ASSY.
5	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).

Error code 0401

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

Error code 0405

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

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

■ Error code 0501

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

The side thermistor of the fuser unit did not detect a temperature rise when the heater was ON.

<User Check>

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

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

■ Error code 050A

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 fuser unit heater harness	Reconnect the fuser unit heater harness.
3	Connection failure of the eject sensor harness	Reconnect the eject sensor harness.
4	Connection failure of the low-voltage power supply harness	Reconnect the low-voltage power supply 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 0800

An error occurred in the internal temperature sensor.

Step	Cause	Remedy
1	Connection failure of the internal temperature sensor harness	Reconnect the internal temperature sensor harness.
2	Internal temperature sensor failure	Replace the main frame L ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 0900

Detected irregular power supply for more than 100 times.

<User Check>

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

Step	Cause	Remedy
1	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY. Refer to "1.3.22 Reset counters for consumable parts (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 of the low-voltage power supply PCB (error code: 0900) occurs when there is a large distortion in the power supply voltage supplied to the machine. In this case, if the same power supply is used, the same error may occur even when the low-voltage power supply PCB ASSY is replaced. Ask the user to review the installation environment.
- Do not reset the power supply PCB counter before replacing it with a new one. It may cause fire.

■ Error code 0A02

Detected a main fan failure.

Step	Cause	Remedy
1	Connection failure of the main fan harness	Reconnect the main fan harness.
2	Connection failure of the toner amount detection sensor PCB harness (light emission)	Reconnect the toner amount detection sensor PCB harness (light emission).
3	Main fan failure	Replace the main fan.
4	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
5	Toner amount detection sensor PCB (light emission) failure	Replace the toner amount detection sensor PCB ASSY (light emission).
6	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>

- Replace the drum unit. (corona wire breakage)

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

■ Error code 1701

Detected a TT fan failure.

Step	Cause	Remedy
1	Malfunction of the TT control PCB	Install the latest main firmware.
2	Connection failure of the TT fan harness	Reconnect the TT fan harness.
3	LT/TT connector failure (machine side or TT side)	Replace the LT/TT connector of the machine side or TT side.
4	TT fan failure	Replace the TT fan.
5	TT control PCB failure	Replace the TT control PCB.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1801

A communication error occurred between the ASIC and T2LT control PCB in the engine. (LT only)

Error code 1802

A communication error occurred between the ASIC and T3LT control PCB ASSY in the engine. (LT only)

Error code 1803

A communication error occurred between the ASIC and T4LT control PCB ASSY in the engine. (LT only)

Step	Cause	Remedy
1	Malfunction of the LT control PCB	Install the latest main firmware.
2	An LT/TT connector failure (machine side or LT side)	Replace the appropriate LT/TT connector of the machine side or LT side.
3	An LT control PCB failure	Replace the appropriate LT control PCB.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1808

A communication error occurred between the ASIC and TT control PCB in the engine.

Step	Cause	Remedy
1	Malfunction of the TT control PCB	Install the latest main firmware.
2	LT/TT connector failure (machine or TT side)	Replace the LT/TT connector on the machine side or TT side.
3	TT control PCB failure	Replace the TT control PCB.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1901

Detected a TT motor failure.

Step	Cause	Remedy
1	Malfunction of the TT control PCB	Install the latest main firmware.
2	Connection failure of the TT motor harness	Reconnect the TT motor harness.
3	LT/TT connector failure (machine side or TT side)	Replace the LT/TT connector of the machine side or TT side.
4	TT motor failure	Replace the TT motor.
5	TT control PCB failure	Replace the TT control PCB.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1A01

A communication error occurred between the ASIC and MX control PCB in the engine.

Step	Cause	Remedy
1	Connection failure of the MX control PCB harness	Reconnect the MX control PCB harness.
2	MX connector failure (machine side or MX side)	Replace the MX connector of the machine side or MX side.
3	MX control PCB failure	Replace the MX control PCB.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1B01

Detected an MX motor failure.

Step	Cause	Remedy
1	Connection failure of the MX motor harness	Reconnect the MX motor harness.
2	MX connector failure (machine side or MX side)	Replace the MX connector of the machine side or MX side.
3	MX motor failure	Replace the MX motor.
4	MX control PCB failure	Replace the MX control PCB.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 1F00

When the TT was connected, TT balance sensor L/R wasn't connected properly.

Step	Cause	Remedy
1	Connection failure of the TT balance sensor L/R harness.	Reconnect the TT balance sensor L/R harness or relay connector harness.
2	TT balance sensor L/R attachment failure	Reattach the TT balance sensor L/R.
3	LT/TT connector failure (machine side or TT side)	Replace the LT/TT connector of the machine side or TT side.
4	TT balance sensor L/R failure	Replace the TT balance sensor L/R.
5	TT control PCB failure	Replace the TT control PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 3801

A temperature error occurred in the external temperature/humidity sensor.

Step	Cause	Remedy
1	Connection failure of the external temperature/humidity sensor harness	Reconnect the external temperature/humidity sensor harness.
2	External temperature/humidity sensor failure	Replace the main frame L ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 4000

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

Error code 4200

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

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

■ Error code 4500

The number of printable pages of the fuser unit has reached the upper limit.

Step	Cause	Remedy
1	End of life of the fuser unit	Replace the fuser unit. Refer to “1.3.22 Reset counters for consumable parts (function code: 88)” in Chapter 5 to reset the fuser unit counter after the replacement.
2	Replace the fuser unit with a new one and reset the fuser unit counter. If the error display is not cleared, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 4600

The number of printable pages of the laser unit has reached the upper limit.

Step	Cause	Remedy
1	End of life of the laser unit	Replace the laser unit. Refer to "1.3.22 Reset counters for consumable parts (function code: 88)" in Chapter 5 to reset the laser unit counter after the replacement.
2	Replace the laser unit with a new one and reset the laser unit counter. If the error display is not cleared, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 4B01

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

Error code 4C01

Dot counter or develop roller counter of the toner has reached the upper limit.

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

■ Error code 4F01

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

<User Check>

- If the machine is on the uneven surface, place it on a level surface.

Step	Cause	Remedy
1	Connection failure of the relay front harness	Reconnect the relay front harness.
2	New toner actuator coming off or caught in some sections of the machine	Reattach the new toner actuator.
3	Develop joint coming off or caught in some sections of the machine	Reattach the develop joint.
4	New toner sensor failure	Replace the relay front PCB ASSY.
5	Paper feed drive gears failure	Replace the main frame L ASSY.
6	If the error display is not cleared after replacing the toner cartridge with a new one again, the main PCB is faulty.	Replace the main PCB ASSY.

■ Error code 5001

Printable pages set for PF kit MP have reached the upper limit.

Error code 5002

Printable pages set for PF kit 1 have reached the upper limit.

Error code 5003

Printable pages set for PF kit 2 have reached the upper limit.

Error code 5004

Printable pages set for PF kit 3 have reached the upper limit.

Error code 5005

Printable pages set for PF kit 4 have reached the upper limit.

Error code 5006

Printable pages set for PF kit 5 have reached the upper limit.

Step	Cause	Remedy
1	End of life of the applicable PF kit	Replace the applicable PF kit. Refer to "1.3.22 Reset counters for consumable parts (function code: 88)" in Chapter 5 to reset the applicable PF kit counter after the replacement.
2	If the error display is not cleared after the applicable PF kit counter has been reset, the main PCB is faulty.	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	Connection failure of the relay front harness	Reconnect the relay front harness.
3	Front cover sensor attachment failure	Reattach the front cover sensor.
4	Front cover failure	Replace the front cover.
5	Front cover sensor failure	Replace the relay front PCB ASSY.
6	Relay front PCB failure	Replace the relay front PCB ASSY.
7	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 harness	Reconnect the eject sensor 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 toner amount detection sensor detected that the toner cartridge was not set.

<User Check>

• Set the toner cartridge correctly.

Step	Cause	Remedy
1	Toner amount detection sensor PCB (light reception) failure	Replace the toner amount detection sensor PCB ASSY (light reception).
2	Relay front PCB failure	Replace the relay front 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 GRID terminal current.

<User Check>

• Set the drum unit correctly.

Step	Cause	Remedy
1	Dirt on the GRID terminals of the drum unit and those of the machine	Clean the CHG and GRID terminals of the drum unit and those of the machine. (Refer to Fig. 2-6 and Fig. 2-7.)
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 the toner cartridge and drum unit

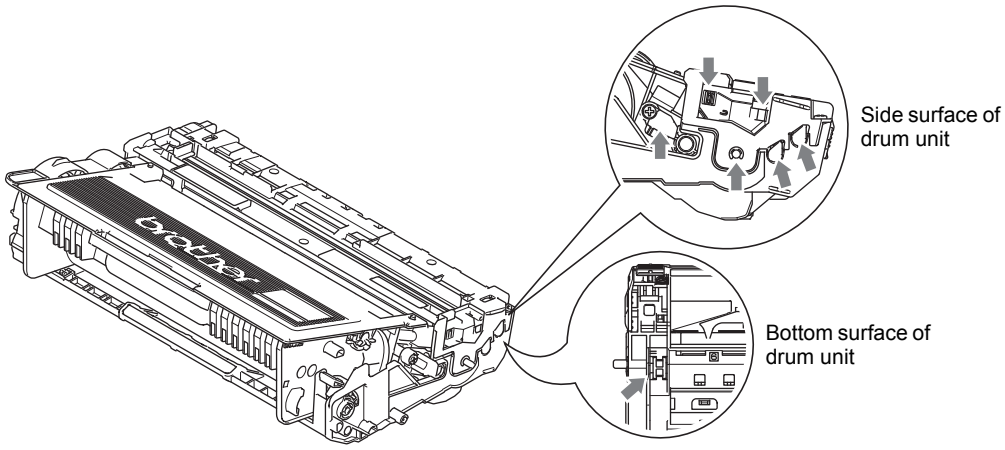


Fig. 2-6

■ Electrodes location of the machine

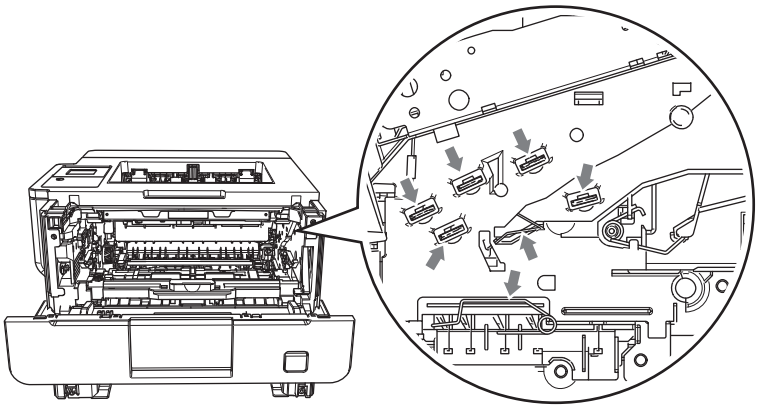


Fig. 2-7

■ Error code 6801

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

<User Check>

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

Step	Cause	Remedy
1	Connection failure of the internal temperature sensor harness	Reconnect the internal temperature sensor harness.
2	Internal temperature sensor failure	Replace the main frame L ASSY.
3	Fuser unit side thermistor failure	Replace the fuser unit.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6901

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

Error code 6902

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

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

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

Note:

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

■ Error code 6A00

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

<User Check>

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

Step	Cause	Remedy
1	Dirt on the high-voltage power supply PCB terminal	Clean the electrodes of the machine. (Refer to Fig. 2-7.)
2	High-voltage power supply PCB attachment failure	Check if each electrode comes back smoothly after pressing it. If not, reattach each electrode.
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 6D00

Detected more LTs than connectible limit.

<User Check>

- Reduce LTs to acceptable numbers.
- Reconnect LTs.

Step	Cause	Remedy
1	Dust around the LT/TT connector	Clean the LT/TT connector.
2	Malfunction of the LT control PCB	Install the latest main firmware.
3	Machine or LT/TT connector failure	Replace the machine or LT/TT connector.
4	LT control PCB failure	Replace a LT control PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 6F00

Detected irregular power supply for less than 100 times.

<User Check>

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

■ Error code 7000

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

<User Check>

- Remove the jammed paper.
- Replace the drum unit with a new one.

Step	Cause	Remedy
1	Foreign object inside the machine	Remove the foreign object.
2	Connection failure of the eject sensor harness	Reconnect the eject sensor harness.
3	Eject actuator coming off or caught in some sections of the machine	Reattach the eject actuator.
4	Fuser cover attachment failure	Reattach the fuser cover.
5	Eject sensor failure	Replace the eject sensor PCB ASSY.
6	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
7	Fuser unit failure	Replace the fuser unit.
8	Damaged fuser gears or drum gears	Replace the main frame L ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7100

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

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	Eject actuator caught in some sections of the machine	Reattach the eject actuator.
3	Fuser cover attachment failure	Reattach the fuser cover.
4	Eject sensor failure	Replace the eject sensor PCB ASSY.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	Fuser cover failure	Replace the fuser cover.
7	Damaged eject roller 1 drive gears	Replace the main frame L ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7200

When feeding from the MP tray, the registration rear sensor does not detect paper pass within the specified time after the registration front sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the MP tray paper guide.
- Close the front cover correctly.

Step	Cause	Remedy
1	Foreign object in the front 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 harness	Reconnect the registration front/rear sensor harness.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	MP feed frame attachment failure	Reattach the MP feed frame.
6	Registration rear sensor failure	Replace the registration front/rear sensor PCB ASSY.
7	Registration clutch failure	Replace the registration clutch.
8	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
9	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
10	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7301

When printing from the paper tray 1, the T1 paper feed sensor does not detect paper pass within the specified time while the T1 paper empty sensor detects some paper set.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 1 paper guide.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	T1 paper pick up roller holder attachment failure	Reattach the T1 paper pick up roller holder.
3	T1 paper feed actuator attachment failure	Reattach the T1 paper feed actuator.
4	Connection failure of the T1 pickup clutch harness	Reattach the T1 pickup clutch harness.
5	Connection failure of the T1 paper feed sensor harness	Reconnect the T1 paper feed sensor harness.
6	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
7	PF kit 1 failure	Replace the PF kit 1.
8	T1 pickup clutch failure	Replace the T1 pickup clutch.
9	T1 paper feed sensor PCB failure	Replace the T1 paper feed sensor PCB ASSY.
10	T1 paper empty sensor PCB failure	Replace the T1 paper empty sensor PCB ASSY.
11	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
12	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
13	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7302

When printing from the paper tray 1, 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 tray 1 paper guide.

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 registration front/rear sensor PCB ASSY.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7401

When printing from the paper tray 2, the T2(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T2(LT or TT) paper empty sensor detects some paper set.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 2 paper guide.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	Malfunction of the LT control PCB or TT control PCB	Install the latest main firmware.
3	T2(LT or TT) paper pick up roller holder attachment failure	Reattach the T2(LT or TT) paper pick up roller holder.
4	T2(LT or TT) paper feed actuator attachment failure	Reattach the T2(LT or TT) paper feed actuator.
5	Connection failure of the T2(LT or TT) pickup clutch harness	Reconnect the T2(LT or TT) pickup clutch harness.
6	Connection failure of the T2(LT or TT) paper feed sensor harness	Reconnect the T2(LT or TT) paper feed sensor harness.
7	PF kit 2 failure	Replace the PF kit 2.
8	T2(LT or TT) pickup clutch failure	Replace the T2(LT or TT) pickup clutch.
9	T2(LT or TT) paper feed sensor PCB failure	Replace the T2(LT or TT) paper feed sensor PCB ASSY.
10	T2(LT or TT) paper empty sensor PCB failure	Replace the T2(LT or TT) paper empty sensor PCB ASSY.
11	T2LT control PCB failure	Replace the T2LT control PCB ASSY.
12	TT control PCB failure	Replace the TT control PCB ASSY.
13	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
14	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7402

When printing from the paper tray 2, the registration front sensor or the T2TT jam sensor does not detect paper pass within the specified time after the T2(LT or TT) paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 2 paper guide.
- Install the latest main firmware.

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	T2TT jam sensor attachment failure	Reattach the T2TT jam sensor.
4	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
5	Connection failure of the T2TT jam sensor harness	Reconnect the T2TT jam sensor harness.
6	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
7	Connection failure of the T2LT control PCB harness	Reconnect the T2LT control PCB harness.
8	Connection failure of the T2LT release clutch harness	Reconnect the T2LT release clutch harness.
9	T2LT release clutch failure	Replace the T2LT release clutch.
10	Registration front/rear sensor PCB failure	Replace the registration front/rear sensor PCB ASSY.
11	T2TT jam sensor PCB failure	Replace the T2TT jam sensor PCB ASSY.
12	TT control PCB failure	Replace the TT control PCB ASSY.
13	T2LT control PCB failure	Replace the T2LT control PCB ASSY.
14	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
15	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
16	Damaged gears in the LT paper feeding system	Replace the LT.
17	Damaged gears in the TT paper feeding system	Replace the TT.
18	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7501

When printing from the paper tray 3, the T3(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T3(LT or TT) paper empty sensor detects some paper set.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 3 paper guide.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	Malfunction of the LT control PCB or TT control PCB	Install the latest main firmware.
3	T3(LT or TT) paper pick up roller holder attachment failure	Reattach the T3(LT or TT) paper pick up roller holder.
4	T3(LT or TT) paper feed actuator attachment failure	Reattach the T3(LT or TT) paper feed actuator.
5	Connection failure of the T3(LT or TT) pickup clutch harness	Reconnect the T3(LT or TT) pickup clutch harness.
6	Connection failure of the T3(LT or TT) paper feed sensor harness	Reconnect the T3(LT or TT) paper feed sensor harness.
7	PF kit 3 failure	Replace the PF kit 3.
8	T3(LT or TT) pickup clutch failure	Replace the T3(LT or TT) pickup clutch.
9	T3(LT or TT) paper feed sensor PCB failure	Replace the T3(LT or TT) paper feed sensor PCB ASSY.
10	T3(LT or TT) paper empty sensor PCB failure	Replace the T3(LT or TT) paper empty sensor PCB ASSY.
11	T3LT control PCB failure	Replace the T3LT control PCB ASSY.
12	TT control PCB failure	Replace the TT control PCB ASSY.
13	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
14	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7502

When printing from the paper tray 3, the registration front sensor or the T2/T3TT jam sensor does not detect paper pass within the specified time after the T3(LT or TT) paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 3 paper guide.
- Install the latest main firmware.

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	T2/T3TT jam sensor attachment failure	Reattach the T2/T3TT jam sensor.
4	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
5	Connection failure of the T2/ T3TT jam sensor harness	Reconnect the T2/T3TT jam sensor harness.
6	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
7	Connection failure of the T2/ T3LT control PCB harness	Reconnect the T2/T3LT control PCB harness.
8	Connection failure of the T2/ T3LT release clutch harness	Reconnect the T2/T3LT release clutch harness.
9	Connection failure of the T3TT release clutch harness	Reconnect the T3TT release clutch harness.
10	T2/T3LT release clutch failure	Replace the T2/T3LT release clutch.
11	T3TT release clutch failure	Replace the T3TT release clutch.
12	Registration front/rear sensor PCB failure	Replace the registration front/rear sensor PCB ASSY.
13	T2/T3TT jam sensor PCB failure	Replace the T2/T3TT jam sensor PCB ASSY.
14	TT control PCB failure	Replace the TT control PCB ASSY.
15	T2/T3LT control PCB failure	Replace the T2/T3LT control PCB ASSY.
16	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
17	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
18	Damaged gears in an LT paper feeding system	Replace the LT.
19	Damaged gears in the TT paper feeding system	Replace the TT.
20	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7601

When printing from the paper tray 4, the T4(LT or TT) paper feed sensor does not detect paper pass within the specified time while the T4(LT or TT) paper empty sensor detects some paper set.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 4 paper guide.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	Malfunction of the LT control PCB or TT control PCB	Install the latest main firmware.
3	T4(LT or TT) paper pick up roller holder attachment failure	Reattach the T4(LT or TT) paper pick up roller holder.
4	T4(LT or TT) paper feed actuator attachment failure	Reattach the T4(LT or TT) paper feed actuator.
5	Connection failure of the T4(LT or TT) pickup clutch harness	Reconnect the T4(LT or TT) pickup clutch harness.
6	Connection failure of the T4(LT or TT) paper feed sensor harness	Reconnect the T4(LT or TT) paper feed sensor harness.
7	PF kit 4 failure	Replace the PF kit 4.
8	T4(LT or TT) pickup clutch failure	Replace the T4(LT or TT) pickup clutch.
9	T4(LT or TT) paper feed sensor PCB failure	Replace the T4(LT or TT) paper feed sensor PCB ASSY.
10	T4(LT or TT) paper empty sensor PCB failure	Replace the T4(LT or TT) paper empty sensor PCB ASSY.
11	T4LT control PCB failure	Replace the T4LT control PCB ASSY.
12	TT control PCB failure	Replace the TT control PCB ASSY.
13	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
14	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7602

When printing from the paper tray 4, the registration front sensor or the T2/T3/T4TT jam sensor does not detect paper pass within the specified time after the T4(LT or TT) paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 4 paper guide.
- Install the latest main firmware.

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	T2/T3/T4TT jam sensor attachment failure	Reattach the T2/T3/T4TT jam sensor.
4	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
5	Connection failure of the T2/T3/T4TT jam sensor harness	Reconnect the T2/T3/T4TT jam sensor harness.
6	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
7	Connection failure of the T2/T3/T4LT control PCB harness	Reconnect the T2/T3/T4LT control PCB harness.
8	Connection failure of the T2/T3/T4LT release clutch harness	Reconnect the T2/T3/T4LT release clutch harness.
9	Connection failure of the T3/T4TT release clutch harness	Reconnect the T3/T4TT release clutch harness.
10	T2/T3/T4LT release clutch failure	Replace the T2/T3/T4LT release clutch.
11	T3/T4TT release clutch failure	Replace the T3/T4TT release clutch.
12	Registration front/rear sensor PCB failure	Replace the registration front/rear sensor PCB.
13	T2/T3/T4TT jam sensor PCB failure	Replace the T2/T3/T4TT jam sensor PCB ASSY.
14	TT control PCB failure	Replace the TT control PCB ASSY.
15	T2/T3/T4LT control PCB failure	Replace the T2/T3/T4LT control PCB ASSY.
16	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
17	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
18	Damaged gears in an LT paper feeding system	Replace the LT.
19	Damaged gears in the TT paper feeding system	Replace the TT.
20	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7701

When printing from the paper tray 5, the T5TT paper feed sensor does not detect paper pass within the specified time while the T5TT paper empty sensor detects some paper set.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 5 paper guide.

Step	Cause	Remedy
1	Foreign object in the front of the machine	Remove the foreign object.
2	Malfunction of the TT control PCB	Install the latest main firmware.
3	T5TT paper pick up roller holder attachment failure	Reattach the T5TT paper pick up roller holder.
4	T5TT paper feed actuator attachment failure	Reattach the T5TT paper feed actuator.
5	Connection failure of the T5TT pickup clutch harness	Reconnect the T5TT pickup clutch harness.
6	Connection failure of the T5TT paper feed sensor harness	Reconnect the T5TT paper feed sensor harness.
7	PF kit 5 failure	Replace the PF kit 5.
8	T5TT pickup clutch failure	Replace the T5TT pickup clutch.
9	T5TT paper feed sensor PCB failure	Replace the T5TT paper feed sensor PCB ASSY.
10	T5TT paper empty sensor PCB failure	Replace the T5TT paper empty sensor PCB ASSY.
11	TT control PCB failure	Replace the TT control PCB ASSY.
12	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
13	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7702

When printing from the paper tray 5, the registration front sensor or the T2/T3/T4/T5TT jam sensor does not detect paper pass within the specified time after the T5TT paper feed sensor detected paper pass.

<User Check>

- Remove the jammed paper.
- Add the paper properly using the paper tray 5 paper guide.
- Install the latest main firmware.

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	T2/T3/T4/T5TT jam sensor attachment failure	Reattach the T2/T3/T4/T5TT jam sensor.
4	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
5	Connection failure of the T2/T3/T4/T5TT jam sensor harness	Reconnect the T2/T3/T4/T5TT jam sensor harness.
6	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
7	Connection failure of the T3/T4/T5TT release clutch harness	Reconnect the T3/T4/T5TT release clutch harness.
8	T3/T4/T5TT release clutch failure	Replace the T3/T4/T5TT release clutch.
9	Registration front/rear sensor PCB failure	Replace the registration front/rear sensor PCB ASSY.
10	T2/T3/T4/T5TT jam sensor PCB failure	Replace the T2/T3/T4/T5TT jam sensor PCB ASSY.
11	TT control PCB failure	Replace the TT control PCB ASSY.
12	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
13	Damaged gears in the TT paper feeding system	Replace the TT.
14	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7800

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

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine or duplex tray	Remove the foreign object.
2	Twisted TT frame	Loosen the nine screws shown in the figure below and tighten them again.
3	Connection failure of the eject motor harness	Reconnect the eject motor harness.
4	MX flapper attachment failure	Reattach the MX flapper.
5	MX switching solenoid failure	Replace the MX switching solenoid.
6	Duplex tray failure	Replace the duplex tray.
7	Eject motor failure	Replace the eject motor.
8	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
9	Paper eject roller failure	Replace the paper eject roller.
10	Main PCB failure	Replace the main PCB ASSY.

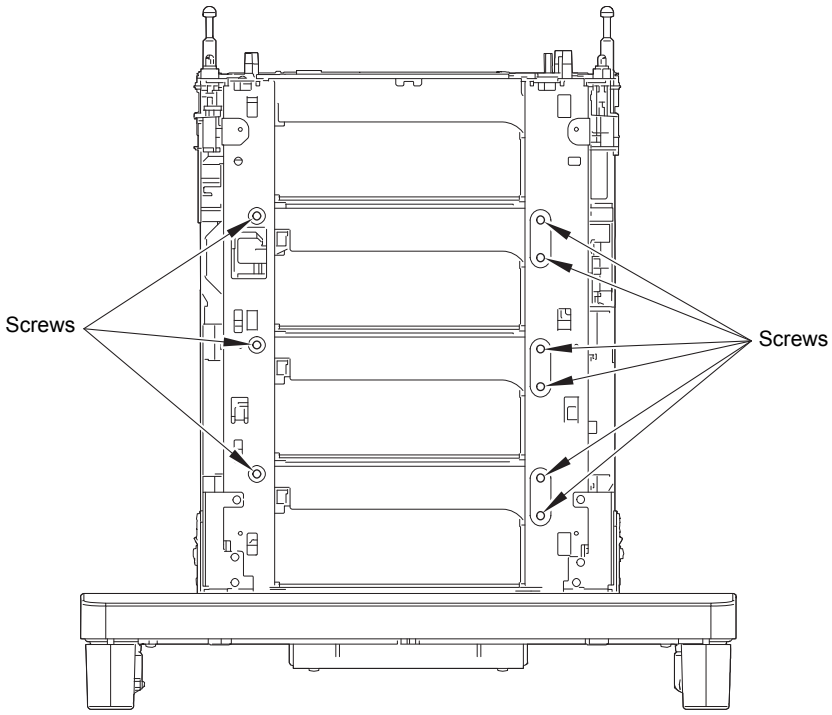


Fig. 2-8

■ Error code 7B01

The MX jam lower sensor does not detect paper pass within the specified time after the eject sensor detected paper pass.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	MX flapper attachment failure	Reattach the MX flapper.
3	Connection failure of the MX jam lower sensor harness	Reconnect the MX jam lower sensor harness.
4	Connection failure of the MX motor harness	Reconnect the MX motor harness.
5	MX switching solenoid failure	Replace the MX switching solenoid.
6	MX motor failure	Replace the MX motor.
7	MX control PCB failure	Replace the MX control PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7B02

The MX 1bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	MX flapper 1 attachment failure	Reattach the MX flapper 1.
3	MX 1bin stack actuator attachment failure	Reattach the MX 1bin stack actuator.
4	Connection failure of the MX flapper 1 solenoid harness	Reconnect the MX flapper 1 solenoid harness.
5	Connection failure of the MX 1bin stack sensor harness	Reconnect the MX 1bin stack sensor harness.
6	Connection failure of the MX relay PCB harness	Reconnect the MX relay PCB harness.
7	MX 1bin stack sensor failure	Replace the MX 1bin stack sensor.
8	MX flapper 1 solenoid failure	Replace the MX flapper 1 solenoid.
9	MX relay PCB failure	Replace the MX relay PCB ASSY.
10	MX control PCB failure	Replace the MX control PCB ASSY.
11	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7B03

The MX 2bin stack sensor does not detect paper pass within the specified time after the MX jam lower sensor detected paper pass.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	MX flapper 1 or 2 attachment failure	Reattach the MX flapper 1 or 2.
3	MX 2bin stack actuator attachment failure	Reattach the MX 2bin stack actuator.
4	Connection failure of the MX flapper 2 solenoid harness	Reconnect the MX flapper 2 solenoid harness.
5	Connection failure of the MX 2bin stack sensor harness	Reconnect the MX 2bin stack sensor harness.
6	Connection failure of the MX relay PCB harness	Reconnect the MX relay PCB harness.
7	MX 2bin stack sensor failure	Replace the MX 2bin stack sensor.
8	MX flapper 1 or 2 solenoid failure	Replace the MX flapper 1 or 2 solenoid.
9	MX relay PCB failure	Replace the MX relay PCB ASSY.
10	MX control PCB failure	Replace the MX control PCB ASSY.
11	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7B04

The MX 3bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	MX flapper 3 attachment failure	Reattach the MX flapper 3.
3	MX 3bin stack actuator attachment failure	Reattach the MX 3bin stack actuator.
4	Connection failure of the MX flapper 3 solenoid harness	Reconnect the MX flapper 3 solenoid harness.
5	Connection failure of the MX 3bin stack sensor harness	Reconnect the MX 3bin stack sensor harness.
6	Connection failure of the MX relay PCB harness	Reconnect the MX relay PCB harness.
7	MX 3bin stack sensor failure	Replace the MX 3bin stack sensor.
8	MX flapper 3 solenoid failure	Replace the MX flapper 3 solenoid.
9	MX relay PCB failure	Replace the MX relay PCB ASSY.
10	MX control PCB failure	Replace the MX control PCB ASSY.
11	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7B05

The MX 4bin stack sensor does not detect paper pass within the specified time after the MX jam upper sensor detected paper pass.

<User Check>

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

Step	Cause	Remedy
1	Foreign object in the rear of the machine	Remove the foreign object.
2	MX flapper 3 attachment failure	Reattach the MX flapper 3.
3	MX 4bin stack actuator attachment failure	Reattach the MX 4bin stack actuator.
4	Connection failure of the MX 4bin stack sensor harness	Reconnect the MX 4bin stack sensor harness.
5	Connection failure of the MX relay PCB harness	Reconnect the MX relay PCB harness.
6	MX 4bin stack sensor failure	Replace the MX 4bin stack sensor.
7	MX relay PCB failure	Replace the MX relay PCB ASSY.
8	MX control PCB failure	Replace the MX control PCB ASSY.
9	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7F00

MX(2 or 4) bin sensor detected that the only one of the two removable plates is removed from the MX.

<User Check>

- Remove or attach both of the two removable plates.
- Reattach the removable plates.

Step	Cause	Remedy
1	Connection failure of the MX 2bin detection sensor harness or MX 4bin detection sensor harness	Reconnect the MX 2bin detection sensor harness or MX 4bin detection sensor harness.
2	MX 2bin detection sensor or MX 4bin detection sensor failure	Replace the MX 2bin detection sensor or MX 4bin detection sensor.
3	MX control PCB failure	Replace the MX control PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8501

When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (before registering printing data to engine).

Error code 8502

When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (before registering printing data to engine).

Error code 8503

When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (before registering printing data to engine).

Error code 8504

When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (before registering printing data to engine).

<User Check>

- Close the appropriate paper tray correctly.

Step	Cause	Remedy
1	Malfunction of an LT control PCB or TT control PCB	Install the latest main firmware.
2	An LT/TT paper feed actuator coming off or caught in some sections of the machine	Reattach the appropriate LT/TT paper feed actuator.
3	An LT/TT paper feed sensor failure	Replace the appropriate LT/TT paper feed sensor PCB ASSY.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
5	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
6	TT relay PCB failure	Replace a TT relay PCB ASSY.
7	TT control PCB failure	Replace the TT control PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8505

When printing from paper tray 1 to 5, the T1 paper feed sensor detected open paper tray 1 (after registering printing data to engine).

Error code 8506

When printing from paper tray 2 to 5, the T2(LT or TT) paper feed sensor detected open paper tray 2 (after registering printing data to engine).

Error code 8507

When printing from paper tray 3 to 5, the T3(LT or TT) paper feed sensor detected open paper tray 3 (after registering printing data to engine).

Error code 8508

When printing from paper tray 4 to 5, the T4(LT or TT) paper feed sensor detected open paper tray 4 (after registering printing data to engine).

<User Check>

• Close the appropriate paper tray correctly.

Step	Cause	Remedy
1	Malfunction of an LT control PCB or TT control PCB	Install the latest main firmware.
2	An LT/TT paper feed sensor failure	Replace the appropriate LT/TT paper feed sensor PCB ASSY.
3	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
4	TT relay PCB failure	Replace a TT relay PCB ASSY.
5	TT control PCB failure	Replace the TT control PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8701

MX 1bin, 2bin, 3bin, or 4bin stack sensor or machine stack sensor detected the ejected paper full state at the start of printing.

<User Check>

• Remove the paper from all output trays.

Step	Cause	Remedy
1	Malfunction of the MX control PCB	Install the latest main firmware.
2	Machine stack sensor failure	Replace the machine stack sensor.
3	MX control PCB failure	Replace the MX control PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8702

Machine stack sensor detected the eject paper full state at the start of printing when the machine output tray was selected as the output tray.

<User Check>

• Remove the paper from the machine output tray.

Step	Cause	Remedy
1	Machine stack actuator coming off or caught in some sections of the machine	Reattach the machine stack actuator.
2	Machine stack sensor failure	Replace the machine stack sensor.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8708

MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray.

Error code 8709

MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray.

Error code 870A

MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray.

Error code 870B

MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray.

<User Check>

• Remove the paper from the appropriate tray.

Step	Cause	Remedy
1	Malfunction of the MX control PCB	Install the latest main firmware.
2	MX 1bin, 2bin, 3bin, or 4bin stack actuator coming off or caught in some sections of the machine	Reattach the appropriate stack actuator.
3	MX 1bin, 2bin, 3bin, or 4bin stack sensor failure	Replace the appropriate stack sensor.
4	MX control PCB failure	Replace the MX control PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 870C

Machine stack sensor or MX 1bin stack sensor detected the eject paper full state at the start of printing when the MX 1bin was selected as the output tray and "Use Std. Tray when full" setting was ON.

Error code 870D

Machine stack sensor or MX 2bin stack sensor detected the eject paper full state at the start of printing when the MX 2bin was selected as the output tray and "Use Std. Tray when full" setting was ON.

Error code 870E

Machine stack sensor or MX 3bin stack sensor detected the eject paper full state at the start of printing when the MX 3bin was selected as the output tray and "Use Std. Tray when full" setting was ON.

Error code 870F

Machine stack sensor or MX 4bin stack sensor detected the eject paper full state at the start of printing when the MX 4bin was selected as the output tray and "Use Std. Tray when full" setting was ON.

<User Check>

• Remove the paper from the appropriate output tray.

Step	Cause	Remedy
1	Malfunction of the MX control PCB	Install the latest main firmware.
2	MX 1bin, 2bin, 3bin, or 4bin stack actuator coming off or caught in some sections of the machine	Reattach the appropriate stack actuator.
3	MX 1bin, 2bin, 3bin, or 4bin stack sensor failure	Replace the appropriate stack sensor.
4	MX control PCB failure	Replace the MX control PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8808

MX back cover sensor detected the open cover when the MX was selected as the output tray (before registering printing data to engine).

Error code 8809

MX back cover sensor detected the open cover when the MX was selected as the output tray (after registering printing data to engine).

<User Check>

• Close the MX back cover correctly.

Step	Cause	Remedy
1	MX back cover sensor attachment failure	Reattach the MX back cover sensor.
2	Connection failure of the MX back cover sensor harness	Reconnect the MX back cover sensor harness.
3	Damaged MX back cover	Replace the MX back cover.
4	MX back cover sensor failure	Replace the MX back cover sensor.
5	MX control PCB failure	Replace the MX control PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8903

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

Error code 8904

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

<User Check>

- Close the back cover correctly.
- Attach the duplex tray correctly.

Step	Cause	Remedy
1	Back cover/duplex tray sensor attachment failure	Reattach the back cover/duplex tray sensor.
2	Connection failure of the back cover/duplex tray sensor harness	Reconnect the back cover/duplex tray sensor harness.
3	Damaged back cover	Replace the back cover.
4	Damaged duplex tray	Replace the duplex tray.
5	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 specified paper.

Step	Cause	Remedy
1	Registration rear actuator caught in some sections of the machine	Reattach the registration rear actuator.
2	Registration rear sensor failure	Replace the registration front/rear 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.

■ Error code 8B01

Detected that the TT was not turned ON.

<User Check>

- Turn ON the TT.
- Reconnect the AC cord of the TT.

Step	Cause	Remedy
1	Malfunction of the TT control PCB	Install the latest main firmware.
2	Connection failure of the TT low-voltage power supply PCB harness	Reconnect the TT low-voltage power supply PCB harness.
3	TT AC cord breakage	Replace the AC cord.
4	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
5	TT control PCB failure	Replace the TT control PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9001

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

Error code 9002

When printing from the paper tray 1, the size of paper set in the paper tray 1 does not match the size specified by the driver.

Error code 9003

When printing from the paper tray 2, the size of paper set in the paper tray 2 does not match the size specified by the driver.

Error code 9004

When printing from the paper tray 3, the size of paper set in the paper tray 3 does not match the size specified by the driver.

Error code 9005

When printing from the paper tray 4, the size of paper set in the paper tray 4 does not match the size specified by the driver.

Error code 9006

When printing from the paper tray 5, the size of paper set in the paper tray 5 does not match the size specified by the driver.

<User Check>

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

Step	Cause	Remedy
1	Registration rear actuator caught in some sections of the machine	Reattach the registration rear actuator.
2	Registration rear sensor failure	Replace the registration front/rear sensor PCB 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 1, paper type setting in the machine does not match the setting in the driver.

Error code 9203

When printing from the paper tray 2, paper type setting in the machine does not match the setting in the driver.

Error code 9204

When printing from the paper tray 3, paper type setting in the machine does not match the setting in the driver.

Error code 9205

When printing from the paper tray 4, paper type setting in the machine does not match the setting in the driver.

Error code 9206

When printing from the paper tray 5, 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 printing from the MP tray, the MP paper empty sensor detected that there was no paper set in the MP tray.

Error code 9302

When printing from paper tray 1, the T1 paper empty sensor or the T1 paper feed sensor detected that there was no paper set in paper tray 1.

Error code 9303

When printing from paper tray 2, the T2(LT or TT) paper empty sensor detected that there was no paper set in paper tray 2.

Error code 9304

When printing from paper tray 3, the T3(LT or TT) paper empty sensor detected that there was no paper set in paper tray 3.

Error code 9305

When printing from paper tray 4, the T4(LT or TT) paper empty sensor detected that there was no paper set in paper tray 4.

Error code 9306

When printing from paper tray 5, the T5TT paper empty sensor detected that there was no paper set in paper tray 5.

<User Check>

- Set paper in the appropriate paper tray.

Step	Cause	Remedy
1	Malfunction of an LT control PCB or TT control PCB	Install the latest main firmware.
2	Connection failure of a LT/TT paper empty sensor harness	Reconnect the appropriate LT/TT paper empty sensor harness.
3	An LT/TT paper empty actuator caught in some sections of the machine	Reattach the appropriate LT/TT paper empty actuator.
4	An LT/TT paper empty sensor PCB failure	Replace the appropriate LT/TT paper empty sensor PCB ASSY.
5	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
6	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
7	TT relay PCB failure	Replace a TT relay PCB ASSY.
8	TT control PCB failure	Replace the TT control PCB ASSY.
9	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	Malfunction of an LT control PCB or TT control PCB	Install the latest main firmware.
2	Connection failure of an LT/TT paper empty sensor harness	Reconnect the appropriate LT/TT paper empty sensor harness.
3	Connection failure of the T1 paper feed sensor harness	Reconnect the T1 paper feed sensor harness. (Models with 250-sheet only)
4	An LT/TT paper empty actuator caught in some sections of the machine	Reattach the appropriate LT/TT paper empty actuator.
5	T1 paper feed actuator caught in some sections of the machine	Reattach the T1 paper feed actuator. (Models with 250-sheet only)
6	Abrasion of a PF kit	Replace the appropriate PF kit.
7	An LT/TT paper empty sensor PCB failure	Replace the appropriate LT/TT paper empty sensor PCB ASSY.
8	T1 paper feed sensor PCB failure	Replace the T1 paper feed sensor PCB ASSY. (Models with 250-sheet only)
9	T1, T2, or T3(LT or TT) pickup clutch failure	Replace the T1, T2, or T3(LT or TT) pickup clutch.
10	Paper feed motor failure	Replace the paper feed motor. (Models with 250-sheet only)
11	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
12	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
13	TT relay PCB failure	Replace a TT relay PCB ASSY.
14	TT control PCB failure	Replace the TT control PCB ASSY.
15	Damaged gears in the paper feeding system	Replace the main frame L ASSY. (Models with 250-sheet only)
16	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9400

Firmware version of the main PCB is older than that of the TT, MX and LT.

<User Check>

• Install the latest main firmware.

Step	Cause	Remedy
1	Main firmware version and firmware version of the TT, MX and LT do not match	Install the latest main firmware.

■ Error code 9701

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

Error code 9702

When printing from paper tray 1, a paper size not supported for paper tray 1 was specified from the driver.

Error code 9703

When printing from paper tray 2, a paper size not supported for paper tray 2 was specified from the driver.

Error code 9704

When printing from paper tray 3, a paper size not supported for paper tray 3 was specified from the driver.

Error code 9705

When printing from paper tray 4, a paper size not supported for paper tray 4 was specified from the driver.

Error code 9706

When printing from paper tray 5, a paper size not supported for paper tray 5 was specified from the driver.

<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 C001

Access request to the server timed out because the server address was wrong, network was not connected, or server was not working.

Error code C002

User authentication error due to wrong user name, wrong password, or date and time was not synchronized between the machine and server.

Error code C003

Cannot access to the file because the directory name is wrong, writing into directory is not permitted, or writing into file is locked or not permitted.

Error code C004

Cannot acquire current time which is required for user authentication because the time has not been acquired.

<User Check>

- Refer to the online User's Guide to set the network again.
- Check the LAN cable routing.
- Check the wireless LAN settings.

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

■ Error code C100

Failed to save data to a USB flash memory.

<User Check>

- Change the USB flash memory.
- Check if there is sufficient memory in the USB flash memory.

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

■ Error code C700

There is insufficient memory to expand PC print data.

<User Check>

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

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

■ Error code C800

The memory size allotted for Secure Print was exceeded when saving 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 D800

An error occurred while initializing the touch panel.

Step	Cause	Remedy
1	Panel firmware version and main firmware version do not match	Install the latest main firmware.
2	Connection failure of the panel PCB flat cable	Reconnect the panel PCB flat cable.
3	LCD relay PCB failure	Replace the LCD panel ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code E000

An error occurred in the ROM check sum.

Error code E100

Program error

Step	Cause	Remedy
1	Malfunction of the main firmware	Install the latest main firmware.
2	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 E701

System error in the flash ROM

Error code E702

Read error in the flash ROM

Step	Cause	Remedy
1	Malfunction of the main firmware	Install the latest main firmware.
2	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 panel PCB flat cable	Reconnect the panel PCB flat cable.
2	Connection failure of the NFC PCB flat cable	Reconnect the NFC PCB flat cable.
3	Panel PCB failure	Replace the panel PCB ASSY.
4	NFC PCB failure	Replace the NFC PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Error code EC00

A USB device not within the specification is connected to the USB terminal, resulting in over current.

<User Check>

- Disconnect the USB device from the USB flash memory port and turn the machine OFF. Turn the machine ON again after a while.
- Replace the USB device with a different one.

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

4.2 Troubleshooting for Paper Feeding Problems

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

4.2.1 No paper is fed from machine 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 120 g/m^2 (paper tray 1).
- Check that the MP tray, LT or TT is not set as the paper tray.
- Flip through the paper and reset it in the paper tray.
- Clean the paper pick up roller.
- Install the latest main firmware.

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.
2	Attachment failure of the T1 roller holder ASSY	Reattach the T1 roller holder ASSY correctly.
3	Connection failure of the paper feed motor harness	Reconnect the paper feed motor harness.
4	Connection failure of the T1 paper feed sensor harness	Reconnect the T1 paper feed sensor harness.
5	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
6	Connection failure of the T1 pickup clutch harness	Reconnect the T1 pickup clutch 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 pickup clutch failure	Replace the T1 pickup clutch.
10	T1 paper empty sensor failure	Replace the T1 paper empty sensor.
11	Damaged plate gear	Replace the T1 plate gear.
12	Paper feed motor failure	Replace the paper feed motor.
13	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
14	Panel PCB failure	Replace the panel PCB ASSY.
15	Damaged gears in the paper pickup system	Replace the main frame L ASSY.
16	Damaged fuser unit	Replace the fuser unit.
17	Main PCB failure	Replace the main PCB ASSY.

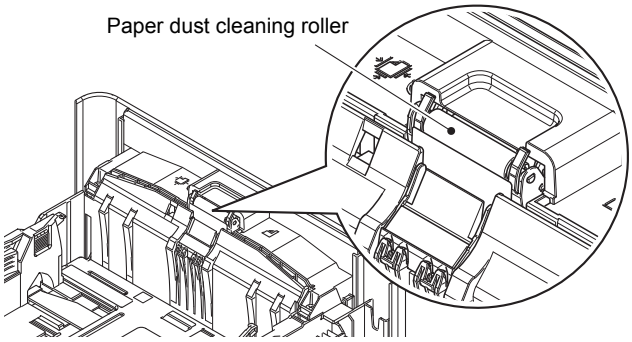


Fig. 2-9

4.2.2 No paper is fed from LT

<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 120 g/m^2 (paper tray 2 to 4).
- Check that the MP tray, T1 or TT is not set as the paper tray.
- Flip through the paper and reset it in the paper tray.
- Clean the paper pick up roller.
- Install the latest main firmware.

Step	Cause	Remedy
1	Dirt on a paper dust cleaning roller of the paper tray	Clean the appropriate paper dust cleaning roller. (Refer to Fig. 2-9.)
2	Attachment failure of a roller holder ASSY	Reattach the appropriate roller holder ASSY correctly.
3	Connection failure of the paper feed motor harness	Reconnect the paper feed motor harness.
4	Connection failure of an LT paper feed sensor harness	Reconnect the appropriate LT paper feed sensor harness.
5	Connection failure of an LT control PCB flat cable	Reconnect the appropriate LT control PCB flat cable.
6	Connection failure of an LT release clutch harness	Reconnect the appropriate LT release clutch harness.
7	Connection failure of an LT pickup clutch harness	Reconnect the appropriate LT pickup clutch harness.
8	An LT paper empty actuator coming off	Reattach the appropriate LT paper empty actuator.
9	Abrasion of a paper pick up roller	Replace the appropriate PF kit.
10	An LT release clutch failure	Replace the appropriate LT release clutch.
11	An LT pickup clutch failure	Replace the appropriate LT pickup clutch.
12	An LT paper empty sensor failure	Replace the appropriate LT paper empty sensor PCB ASSY.
13	Damaged a plate gear	Replace the appropriate plate gear.
14	Damaged fuser gear	Replace the fuser gear.
15	Damaged an LT/TT connector	Replace the appropriate LT/TT connector.
16	Paper feed motor failure	Replace the paper feed motor.
17	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
18	Panel PCB failure	Replace the panel PCB ASSY.
19	Damaged LT drive gear system of the machine	Replace the main frame L ASSY.
20	Damaged fuser unit	Replace the fuser unit.
21	Main PCB failure	Replace the main PCB ASSY.

4.2.3 No paper is fed from TT

<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 120 g/m^2 (paper tray 2 to 5).
- Check that the MP tray, LT or TT are not set as the paper tray.
- Flip through the paper and reset it in the paper tray.
- Clean the paper pick up roller.
- Install the latest main firmware.
- Replace the relay AC cord.
- Turn the power switch of TT OFF and then back ON again.

Step	Cause	Remedy
1	Dirt on a paper dust cleaning roller of the paper tray	Clean the appropriate paper dust cleaning roller. (Refer to Fig. 2-9.)
2	Attachment failure of a roller holder ASSY	Reattach the appropriate roller holder ASSY correctly.
3	Connection failure of the TT motor harness	Reconnect the TT motor harness.
4	Connection failure of a TT paper feed sensor harness	Reconnect the appropriate TT paper feed sensor harness.
5	Connection failure of a TT relay PCB harness	Reconnect the appropriate TT relay PCB harness.
6	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
7	Connection failure of the TT low-voltage power supply PCB harness	Reconnect the TT low-voltage power supply PCB harness.
8	Connection failure of a TT release clutch harness	Reconnect the appropriate TT release clutch harness.
9	Connection failure of a TT pickup clutch harness	Reconnect the appropriate TT pickup clutch harness.
10	Connection failure of a TT jam sensor harness	Reconnect the appropriate TT jam sensor harness.
11	A TT paper empty actuator coming off	Reattach the appropriate TT paper empty actuator.
12	Abrasion of a paper pick up roller	Replace the appropriate PF kit.
13	A TT release clutch failure	Replace the appropriate TT release clutch.
14	A TT pickup clutch failure	Replace the appropriate TT pickup clutch.
15	A TT paper empty sensor failure	Replace the appropriate TT paper empty sensor PCB ASSY.
16	TT balance sensor L/R failure	Replace the TT balance sensor L/R.
17	A TT jam sensor failure	Replace the appropriate TT jam sensor PCB ASSY.
18	Damaged a plate gear	Replace the appropriate plate gear.
19	Damaged an LT/TT connector	Replace the appropriate LT/TT connector.
20	TT motor failure	Replace the TT motor.
21	A TT relay PCB failure	Replace the appropriate TT relay PCB ASSY.
22	TT control PCB failure	Replace the TT control PCB ASSY.
23	Panel PCB failure	Replace the panel PCB ASSY.
24	TT low-voltage power supply PCB failure	Replace the TT low-voltage power supply PCB ASSY.
25	Main PCB failure	Replace the main PCB ASSY.

4.2.4 No paper is fed from MP tray

<User Check>

- Check that the paper is set in the MP tray deeply
- Check that the thickness of the paper is 60 to 200 g/m^2.
- Check that the paper tray is not set as the paper tray.

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 harness	Reconnect the paper feed motor harness.
3	Connection failure of the MP paper empty sensor harness	Reconnect the MP paper empty sensor harness.
4	Connection failure of the MP solenoid harness	Reconnect the MP solenoid harness.
5	MP paper empty actuator coming off	Reattach the MP paper empty actuator.
6	Connection failure of the registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
7	Connection failure of the relay front harness	Reconnect the relay front harness.
8	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
9	Abrasion of the MP paper pick up roller	Replace the PF kit MP.
10	MP solenoid failure	Replace the MP solenoid.
11	MP paper empty sensor failure	Replace the MP paper empty sensor PCB ASSY.
12	Registration front/rear sensor PCB failure	Replace the registration front/rear sensor PCB ASSY.
13	Paper feed motor failure	Replace the paper feed motor.
14	Damaged fuser unit	Replace the fuser unit.
15	Relay front PCB failure	Replace the relay front PCB ASSY.
16	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
17	Main PCB failure	Replace the main PCB ASSY.

4.2.5 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 120 g/m^2 for paper tray 1 to 5, and 60 to 200 g/m^2 for the MP tray.
- Flip through the paper and reset it in each paper tray.

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

4.2.6 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 120 g/m^2 for paper tray 1 to 5, and 60 to 200 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.

Step	Cause	Remedy
1	Eject motor failure	Replace the eject motor.
2	MX motor failure	Replace the MX motor.
3	Fuser unit failure	Replace the fuser unit.
4	Damaged gears in the ejecting system	Replace the main frame L ASSY.

4.2.7 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 120 g/m^2 for paper tray 1 to 5, and 60 to 200 g/m^2 for MP tray.
- Check that there is not too much paper set in each paper tray.
- Check that each type of paper is appropriate.
- Clean each paper pick up roller.
- Check that the green envelope lever is not lowered on only one side.
- Replace the drum unit.
- Replace the toner cartridge.

Step	Cause	Remedy
1	Tray guide coming off on the machine side	Reattach the tray guide on the machine side. Refer to the figure below.
2	One-side abrasion of the paper pick up rollers	Replace the PF kit.
3	Damaged gears in the paper feeding system	Replace the main frame L ASSY.

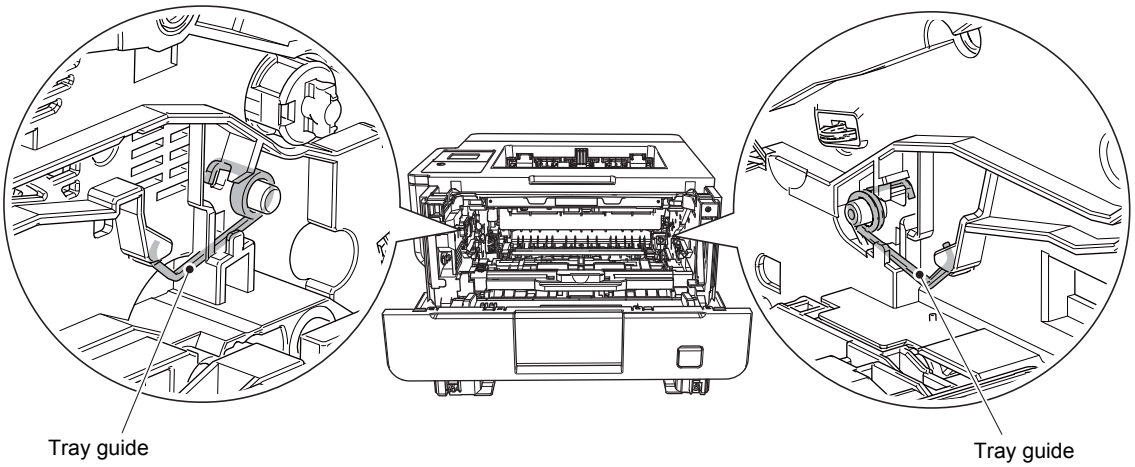


Fig. 2-10

4.2.8 Paper is curled

<User Check>

- Check that the paper specified in driver settings is matched to the paper set.
- Select "Reduce Paper Curl" in the driver.
- Check that the paper is set in each paper tray correctly.
- Open the back cover and try printing with straight paper ejection mode.

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

4.2.9 Duplex printing is not possible

<User Check>

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

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

4.2.10 Paper jam

■ Paper jams in the paper tray 1

<User Check>

- Check that the paper is set in the paper tray correctly.
- Flip over the paper in the paper tray or rotate the paper 180°.
- Adjust the paper guide according to the paper size.
- Check that there is not too much paper set in the paper tray.
- Check that the thickness of the paper is 60 to 120 g/m^2 for paper tray 1.
- 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	Reconnect the T1 paper feed sensor harness.
8	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
9	HVPS flat cable breakage	Replace the HVPS flat cable.
10	Registration front sensor failure	Replace the registration front/rear sensor PCB ASSY.
11	T1 paper feed sensor failure	Replace the T1 paper feed sensor PCB ASSY.
12	Registration clutch failure	Replace the registration clutch.
13	Paper feed motor failure	Replace the paper feed motor.
14	Relay front PCB failure	Replace the relay front PCB ASSY.
15	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
16	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
17	Damaged fuser unit	Replace the fuser unit.
18	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in LT path

<User Check>

- Check that the paper is set in each LT correctly.
- Flip over the paper in each LT 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 LT.
- Check that the thickness of the paper is 60 to 120 g/m^2 for paper tray 2 to 4.
- Flip through the paper and reset it in each LT.
- Install the latest main firmware.

Step	Cause	Remedy
1	Foreign object around an LT	Remove the foreign object.
2	A paper dust cleaning roller attachment failure	Reattach the appropriate paper dust cleaning roller.
3	An LT paper feed actuator coming off	Reattach the appropriate LT paper feed actuator.
4	Registration front actuator coming off	Reattach the registration front actuator.
5	Connection failure of an LT paper feed sensor harness	Reconnect the appropriate LT paper feed sensor harness.
6	Connection failure of an LT release clutch harness	Reconnect the appropriate LT release clutch harness.
7	Connection failure of an LT control PCB harness	Reconnect the appropriate LT control PCB harness.
8	An LT paper feed sensor failure	Replace the appropriate LT paper feed sensor.
9	An LT release clutch failure	Replace the appropriate LT release clutch.
10	Paper feed motor failure	Replace the paper feed motor.
11	An LT control PCB failure	Replace the appropriate LT control PCB ASSY.
12	Damaged LT drive gear system of the machine	Replace the main frame L ASSY.
13	Damaged fuser unit	Replace the fuser unit.
14	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in TT path

<User Check>

- Check that the paper is set in each tray in the TT correctly.
- Flip over the paper or rotate the paper 180°.
- Adjust the 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 120 g/m^2 for paper tray 2 to 5.
- Flip through the paper and reset it in each paper tray.
- Install the latest main firmware.

Step	Cause	Remedy
1	Foreign object in the TT paper feeding path	Remove the foreign object.
2	Twisted TT frame	Loosen the nine screws shown in Fig. 2-8 and tighten them again.
3	A paper dust cleaning roller attachment failure	Reattach the appropriate paper dust cleaning roller.
4	A TT paper feed actuator coming off	Reattach the appropriate TT paper feed actuator.
5	A TT jam actuator coming off	Reattach the appropriate TT jam actuator.
6	Connection failure of a TT jam sensor harness	Reconnect the appropriate TT jam sensor harness.
7	Connection failure of a TT paper feed sensor harness	Reconnect the appropriate TT paper feed sensor harness.
8	Connection failure of a TT release clutch harness	Reconnect the appropriate TT release clutch harness.
9	Connection failure of a TT relay PCB harness	Reconnect the appropriate TT relay PCB harness.
10	Connection failure of the TT control PCB harness	Reconnect the TT control PCB harness.
11	A TT paper feed sensor failure	Replace the appropriate TT paper feed sensor.
12	A TT release clutch failure	Replace the appropriate TT release clutch.
13	TT balance sensor L/R failure	Replace the TT balance sensor L/R.
14	A TT jam sensor failure	Replace the appropriate TT jam sensor PCB ASSY.
15	TT motor failure	Replace the TT motor.
16	A TT relay PCB failure	Replace the appropriate TT relay PCB ASSY.
17	TT control PCB failure	Replace the TT control PCB ASSY.
18	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in 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 the paper guide according to the paper size.
- Check that the thickness of the paper is 60 to 200 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 registration front/rear sensor harness	Reconnect the registration front/rear sensor harness.
3	Registration front actuator coming off	Reattach the registration front actuator.
4	Connection failure of the registration clutch harness	Reconnect the registration clutch harness.
5	Connection failure of the HVPS flat cable	Reconnect the HVPS flat cable.
6	Connection failure of the relay front harness	Reconnect the relay front harness.
7	Registration front sensor failure	Replace the registration front/rear actuator holder ASSY.
8	Registration clutch failure	Replace the registration clutch.
9	Paper feed motor failure	Replace the paper feed motor.
10	Relay front PCB failure	Replace the relay front PCB ASSY.
11	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
12	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
13	Damaged fuser unit	Replace the fuser unit.
14	Main PCB failure	Replace the main PCB ASSY.

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

<User Check>

- Check that the paper is set in each paper tray correctly.
- Flip over the paper in each paper tray or rotate the paper 180°.
- Adjust the paper guide according to the paper size.
- Check that there is not too much paper set in each paper tray.
- Check that the thickness of the paper is 60 to 120 g/m^2 for paper tray 1 to 5, and 60 to 200 g/m^2 for the MP tray.
- Flip through the paper and reset it in each 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 gear	Replace the fuser gear.
6	Eject sensor failure	Replace the eject sensor PCB ASSY.
7	Registration rear sensor failure	Replace the registration front/rear sensor PCB ASSY.
8	Paper feed motor failure	Replace the paper feed motor.
9	Damaged gears in the paper feeding system	Replace the main frame L ASSY.
10	Fuser unit failure	Replace the fuser unit.
11	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in the ejecting 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 the 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 105 g/m^2.
- Flip through the paper and reset it in each 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	Connection failure of the eject motor harness	Reconnect the eject motor harness.
5	Connection failure of the MX motor harness	Reconnect the MX motor harness.
6	Connection failure of the MX switching solenoid harness	Reconnect the MX switching solenoid harness.
7	Fuser cover attachment failure	Reattach the fuser cover.
8	MX switching flapper attachment failure	Reattach the MX switching flapper.
9	Eject sensor failure	Replace the eject sensor PCB ASSY.
10	MX switching solenoid failure	Replace the MX switching solenoid.
11	Eject motor failure	Replace the eject motor.
12	MX motor failure	Replace the MX motor.
13	Damaged gears in the ejecting system	Replace the main frame L ASSY.
14	Damaged gears inside the MX	Replace the MX.
15	Fuser unit failure	Replace the fuser unit.
16	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in 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 each paper tray.
- Use A4 or Letter paper (specified by the manufacturer).

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	Damaged gears in the duplex paper feeding system	Replace the main frame L ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

■ Paper jams in MX

<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.
- Flip through the paper and reset it in each paper tray.
- Close the MX back cover correctly.

Step	Cause	Remedy
1	Foreign object in the MX feeding system	Remove the foreign object.
2	MX switching flapper attachment failure	Reattach the MX switching flapper.
3	Connection failure of the MX jam lower sensor harness	Reconnect the MX jam lower sensor harness.
4	Connection failure of the MX jam upper sensor harness	Reconnect the MX jam upper sensor harness.
5	Connection failure of the MX bin stack sensor PCB harness	Reconnect the appropriate MX bin stack sensor PCB harness.
6	Connection failure of the MX relay PCB harness	Reconnect the MX relay PCB harness.
7	MX back cover failure	Replace the MX back cover.
8	MX back cover sensor failure	Replace the MX back cover sensor ASSY.
9	An MX bin stack sensor failure	Replace the appropriate MX bin stack sensor PCB ASSY.
10	MX motor failure	Replace the MX motor.
11	MX relay PCB failure	Replace the MX relay PCB ASSY.
12	MX control PCB failure	Replace the MX control PCB ASSY.
13	Damaged gears inside the MX	Replace the MX.
14	Main PCB failure	Replace the main PCB ASSY.

4.3 Troubleshooting for Image Defects

4.3.1 Image defect examples

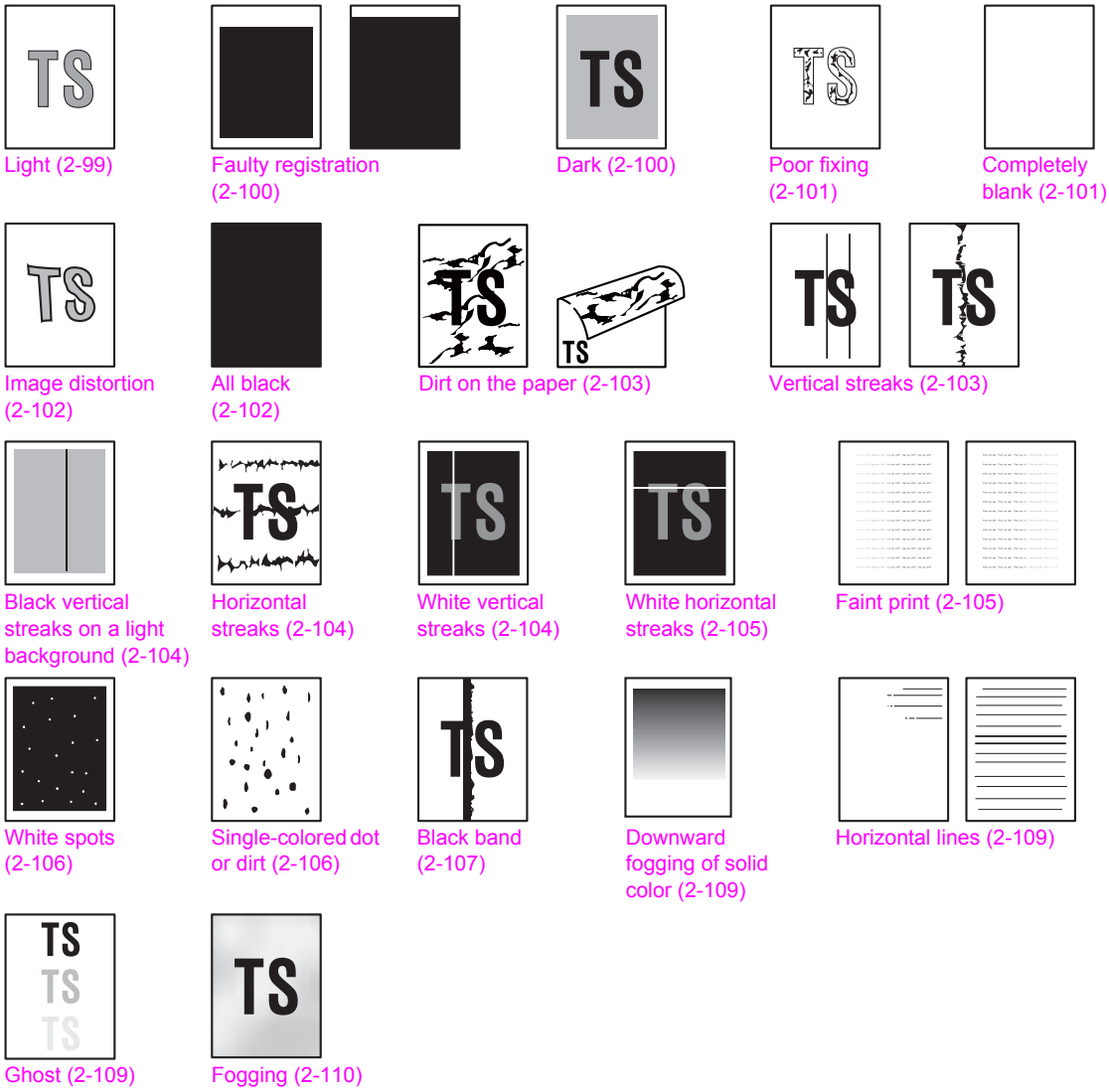
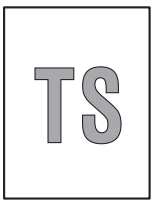


Fig. 2-11

4.3.2 Troubleshooting according to image defect

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

■ Light

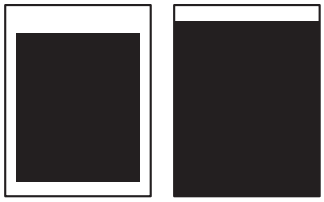


<User Check>

- Check the usage environment of the machine. Using the machine in hot-humid or cold-dry conditions can cause this problem.
- If the whole page is light, toner save mode may be ON. Turn OFF the toner save mode.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Turn ON the power switch, and leave the machine for a while (condensation).
- Check that the paper is not damp.
- 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. 2-6 and Fig. 2-7.)
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. 2-6 and Fig. 2-7.)
3	Dirt on the electrodes of the machine	Clean the electrodes of the machine. (Refer to Fig. 2-7.)
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.
7	Laser unit failure	Replace the laser unit.

■ Faulty registration

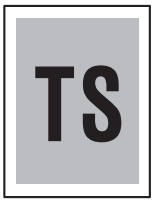


<User Check>

- Check that the appropriate paper type is selected in the driver.
- Install the latest main firmware.

Step	Cause	Remedy
1	Wrong adjusted value of 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.
2	Wrong adjusted value of TT entered	Refer to "7.2 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)" in Chapter 4 to adjust the writing start position.
3	Registration rear actuator coming off	Reattach the registration rear actuator.
4	Distortion at TT assembly	Reattach the TT.
5	Laser unit failure	Replace the laser unit.
6	Main PCB failure	Replace the main PCB ASSY.

■ Dark

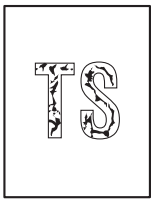


<User Check>

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

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

■ Poor fixing

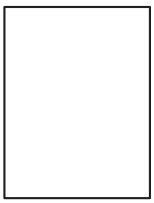


<User Check>

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

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

■ Completely blank

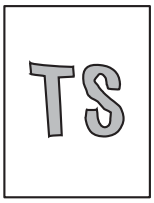


<User Check>

- Clean the corona wire of the drum unit.
- 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	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. 2-6 and Fig. 2-7.)
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. 2-6 and Fig. 2-7.)
3	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
4	Laser unit attachment failure	Reattach the laser unit.
5	Laser unit flat cable failure	Replace the laser unit flat cable.
6	Dirt on the electrodes of the machine	Clean the electrodes of the machine. (Refer to Fig. 2-7.)
7	Laser unit failure	Replace the laser unit.
8	Main PCB failure	Replace the main PCB ASSY.

■ Image distortion



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

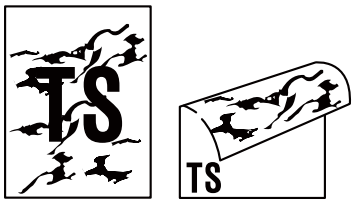
■ All black

<User Check>

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

Step	Cause	Remedy
1	Dirt on the electrodes of the drum unit and those of the machine	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-6 and Fig. 2-7.)
2	Laser unit flat cable failure	Replace the laser unit flat cable.
3	Dirt on the electrodes of the machine	Clean the electrodes of the machine. (Refer to Fig. 2-7.)
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 the paper



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

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

■ Vertical streaks

<User Check>
- Clean the corona wire of the drum unit.
- Return the corona wire cleaning tab to the "▲" position.
- This problem may disappear after printing multiple sheets of paper.
- Refer to <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 feeding system	Wipe off the dirt.
2	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray (Refer to the figure below).
3	Dirt on the fuser unit	Replace the fuser unit.
4	Laser unit failure	Replace the laser unit.

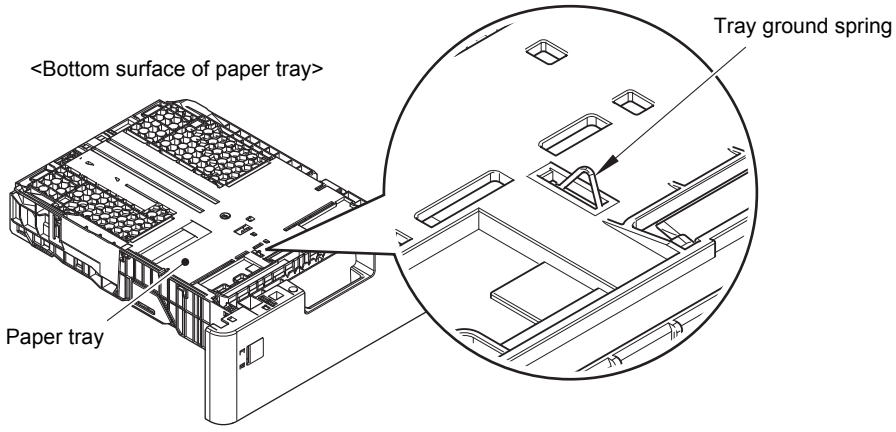
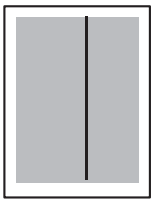


Fig. 2-12

■ Black vertical streaks on a light background



<User Check>

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

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-6 and Fig. 2-7.)
2	Laser unit failure	Replace the laser unit.

■ Horizontal streaks

<User Check>

- Clean the corona wire of the drum unit.
- This problem may disappear after printing multiple sheets of paper.
- Refer to <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. 2-6 and Fig. 2-7.)
2	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray. (Refer to Fig. 2-12.)
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ White vertical streaks

<User Check>

- Clean the corona wire of the drum unit.
- Check that there is no dust on the toner cartridge.
- Refer to <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. 2-6 and Fig. 2-7.)
2	Laser unit failure	Replace the laser unit.

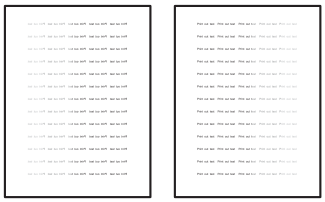
■ White horizontal streaks

<User Check>

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

Step	Cause	Remedy
1	Dirty charge electrodes	Clean the electrodes of the drum unit and those of the machine. (Refer to Fig. 2-6 and Fig. 2-7.)
2	Scratch or dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Faint print

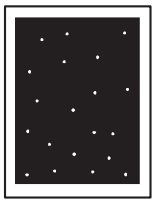


<User Check>

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

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

■ White spots



<User Check>

- Check that the main 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. 2-9 to clean the paper dust cleaning roller.
2	Clogged filter	Clean the filter.
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

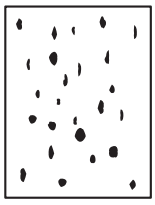
Note:

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

<Pitch appears in the image and rollers>

Part name	Pitch at which defects appear in the image
Develop roller	45.5 mm
Exposure drum	94.2 mm
Heat film in the fuser unit	104 mm
Pressure roller in the fuser unit	94 mm

■ Single-colored dot or dirt



<User Check>

- Check that the paper is not damp.
- 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. 2-9 to clean the paper dust cleaning roller.
2	Clogged filter	Clean the filter.
3	Scratch or dirt on the fuser unit	Replace the fuser unit.
4	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

Note:

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

■ Black band

<User Check>

- Clean the corona wire of the drum unit.
- Return the corona wire cleaning tab to the "▲" position.
- This problem may disappear after printing multiple sheets of paper.
- Refer to <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	FG harnesses or FG plate attachment failure (not grounded correctly)	Retighten the screws to secure the FG harnesses or FG plate. Fix the bent tray ground spring of the paper tray. (Refer to Fig. 2-12.)
2	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. Check where the image distortion occurs by placing the print sample in front of the drum unit.

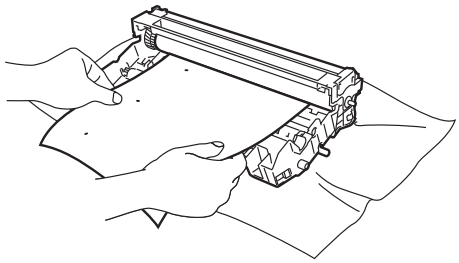
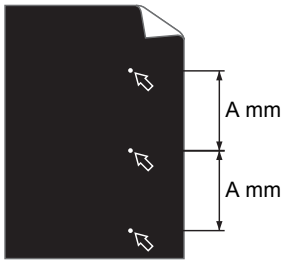
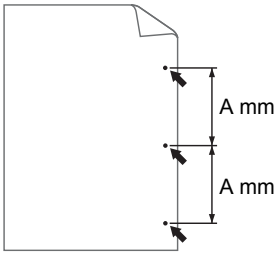


Fig. 2-13

< 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. 2-14

Refer to the table <Pitch appears in the image and rollers> for what represents the value A.

(2) Turn the drum unit gear by hand so that the glued exposure drum surface comes to the front.

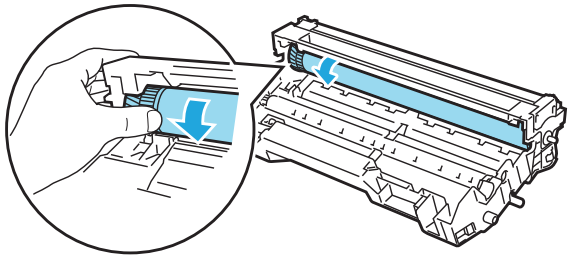


Fig. 2-15

(3) If the position of the dirt on the drum and the dots on the print sample matches, wipe the exposure drum surface with a cotton bud until the dirt and paper dust comes off.

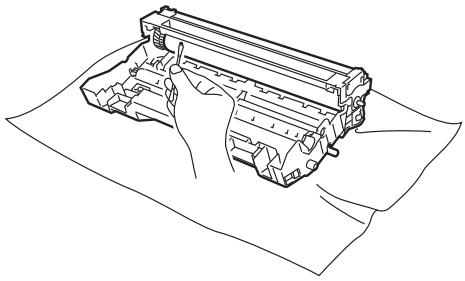


Fig. 2-16

Note:

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

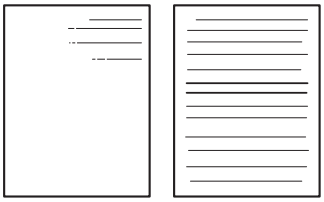
■ Downward fogging of solid color

<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. 2-6 and Fig. 2-7.)
2	Scratch or dirt on the fuser unit	Replace the fuser unit.
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.

■ Ghost

<User Check>

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

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

■ Fogging

<User Check>

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

Step	Cause	Remedy
1	Toner amount detection sensor PCB (light reception) failure	Replace the toner amount detection sensor PCB ASSY (light reception).
2	Relay front PCB failure	Replace the relay front 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

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

4.4.1 Cannot receive data

<User Check>

- Check that the USB cable or LAN cable is not damaged.
- When using an interface switch, check that the correct machine is selected.
- Check the relevant section in the 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.

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

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

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

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

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

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

Product ID (hexadecimal)

- HL-L6402DW : 0089h
- HL-L6400DW series : 0088h
- HL-L6300DW series : 0086h
- HL-L6250DW series : 0085h
- HL-L6202DW : 0084h
- HL-L6200DW series : 0083h
- HL-L5202DW : 0082h
- HL-L5200DW series : 0081h
- HL-L6250DN series : 0080h
- HL-L5100DN series : 007Fh
- HL-5590DN : 007Eh
- HL-L5102DN : 007Dh
- HL-5595DN : 007Ch
- HL-L5102DW : 007Bh
- HL-L5100DW series : 007Ah
- HL-5585D : 0079h
- HL-5580D : 0078h
- HL-L5000D series : 0077h

4.5 Troubleshooting for Network Problems

4.5.1 Cannot print via network connection

<User Check>

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

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

4.5.2 Cannot connect to access point

<User Check>

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

Step	Cause	Remedy
1	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 ON again.

Step	Cause	Remedy
1	Rubber key attachment failure (Non touch panel models only)	Reattach the rubber key.
2	Connection failure of the panel PCB flat cable (Non touch panel models only)	Reconnect the panel PCB flat cable.
3	Connection failure of the low-voltage power supply harness	Reconnect the low-voltage power supply harness.
4	AC cord failure	Replace the AC cord.
5	LCD relay PCB failure	Replace the LCD relay PCB ASSY.
6	Panel PCB failure (Non touch panel models only)	Replace the panel PCB ASSY.
7	LCD failure (Non touch panel models only)	Replace the LCD.
8	Panel PCB failure (Touch panel models only)	Replace the LCD panel ASSY.
9	Low-voltage power supply PCB failure	Replace the low-voltage power supply PCB ASSY.
10	Main PCB failure	Replace the main PCB ASSY.

4.6.2 Nothing is displayed on the LED

<User Check>

- Turn the power switch OFF and then ON again.

Step	Cause	Remedy
1	Connection failure of the key PCB flat cable	Reconnect the key PCB flat cable.
2	Panel PCB failure (Non touch panel models only)	Replace the panel PCB ASSY.
3	Key PCB failure (Touch panel models only)	Replace the LCD panel ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.6.3 Control panel is inoperable

<User Check>

- Turn the power switch OFF and then ON again.

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

4.7 Troubleshooting for Toner and Drum Problems

4.7.1 New toner is not detected

<User Check>

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

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the relay front harness	Reconnect the relay front harness.
3	Relay front PCB failure	Replace the relay front PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.7.2 Toner cartridge cannot be recognized

<User Check>

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

Step	Cause	Remedy
1	Toner amount detection sensor PCB (light reception) failure	Replace the toner amount detection sensor PCB ASSY (light reception).
2	Relay front PCB failure	Replace the relay front PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

4.7.3 Error message prompting toner cartridge replacement does not disappear

<User Check>

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

Step	Cause	Remedy
1	New toner actuator coming off	Reattach the new toner actuator.
2	Connection failure of the relay front harness	Reconnect the relay front harness.
3	Relay front PCB failure	Replace the relay front PCB ASSY.
4	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. 2-6 and Fig. 2-7.)
2	Dirt on the high-voltage power supply PCB terminal	Clean the electrodes of the machine. (Refer to Fig. 2-7.)
3	High-voltage power supply PCB failure	Replace the high-voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

4.7.5 Error message prompting drum replacement does not disappear

<User Check>

- Reset the drum counter according to the manual.

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

4.8 Troubleshooting for Fuser Unit Problems

4.8.1 Fuser unit failure

Step	Cause	Remedy
1	Connection failure of the center thermistor harness	Reconnect the center thermistor harness.
2	Connection failure of the side thermistor harness	Reconnect the side thermistor harness.
3	Connection failure of the heater harness	Reconnect the heater harness.
4	Connection failure of the eject sensor harness	Reconnect the eject sensor 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	Ground plate contact failure	Retighten the screws to secure the laser unit ground plate.
2	Laser unit attachment failure	Reattach the laser unit.
3	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
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 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 Memory full

<User Check>

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

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

4.11 Troubleshooting for Other Problems

4.11.1 Cannot print

<User Check>

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

4.11.2 Cannot update firmware

<User Check>

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

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

4.11.3 USB direct interface errors

<User Check>

- Replace the USB flash memory.
- Check that the extension of data in the USB flash memory is correct.

Step	Cause	Remedy
1	USB host circuit failure	Replace the main PCB ASSY.

4.11.4 "Paper Low" message does not disappear

<User Check>

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

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 main frame L ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

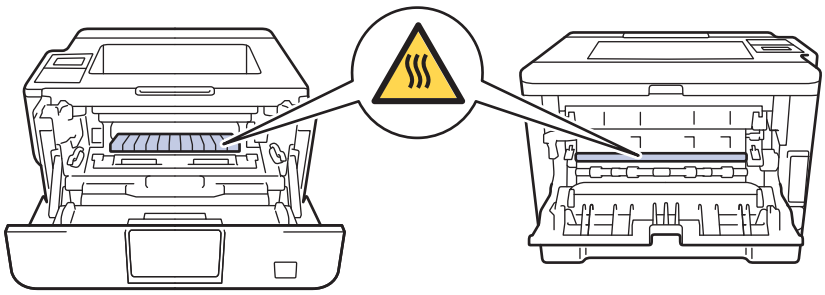
CHAPTER 3 DISASSEMBLY/REASSEMBLY

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.
- The insulation sheet should not be damaged.
- When replacing the PCB, clear the component side and solder side from foreign objects.

2. PACKING

■ Machine

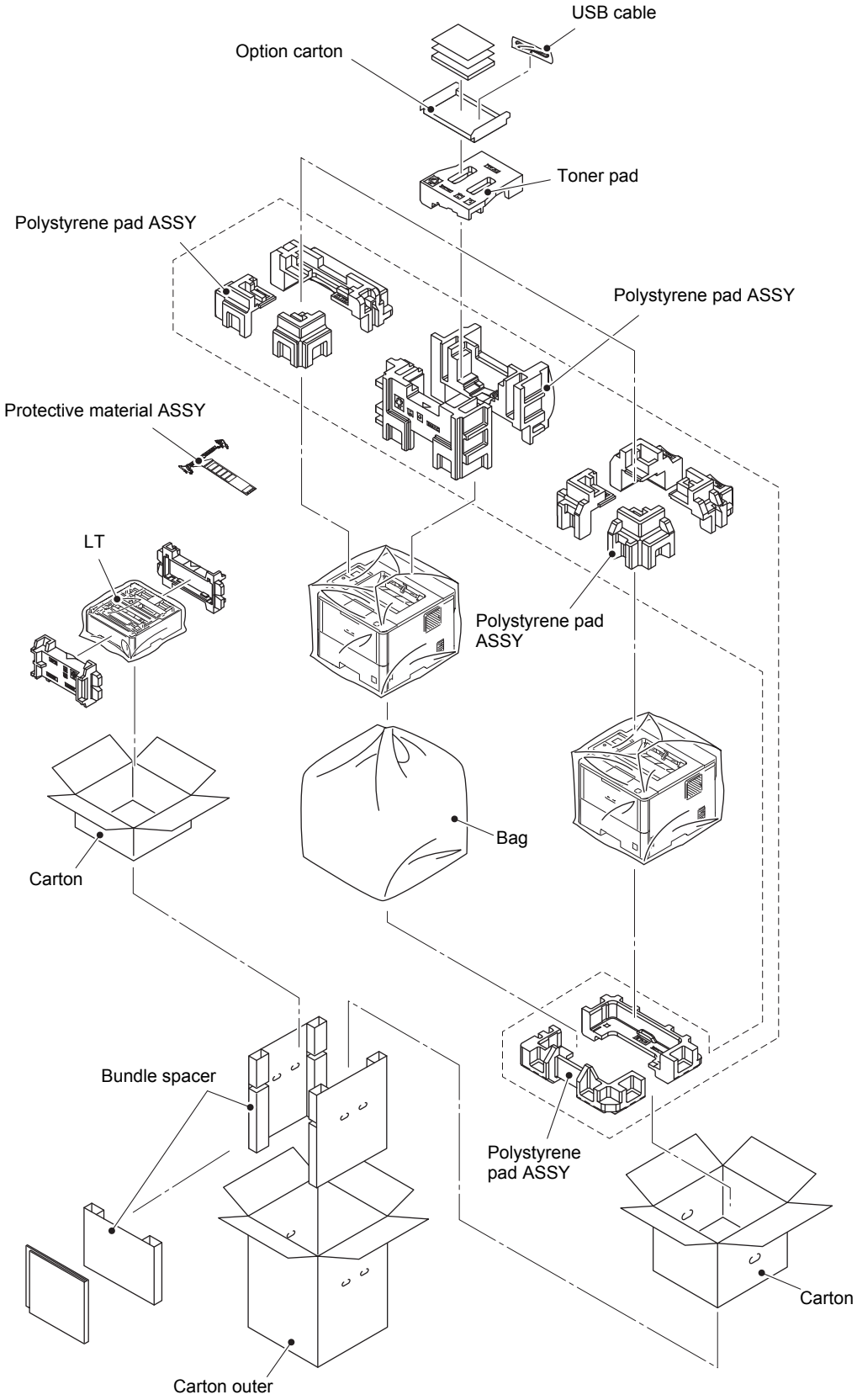


Fig. 3-1

■ MX

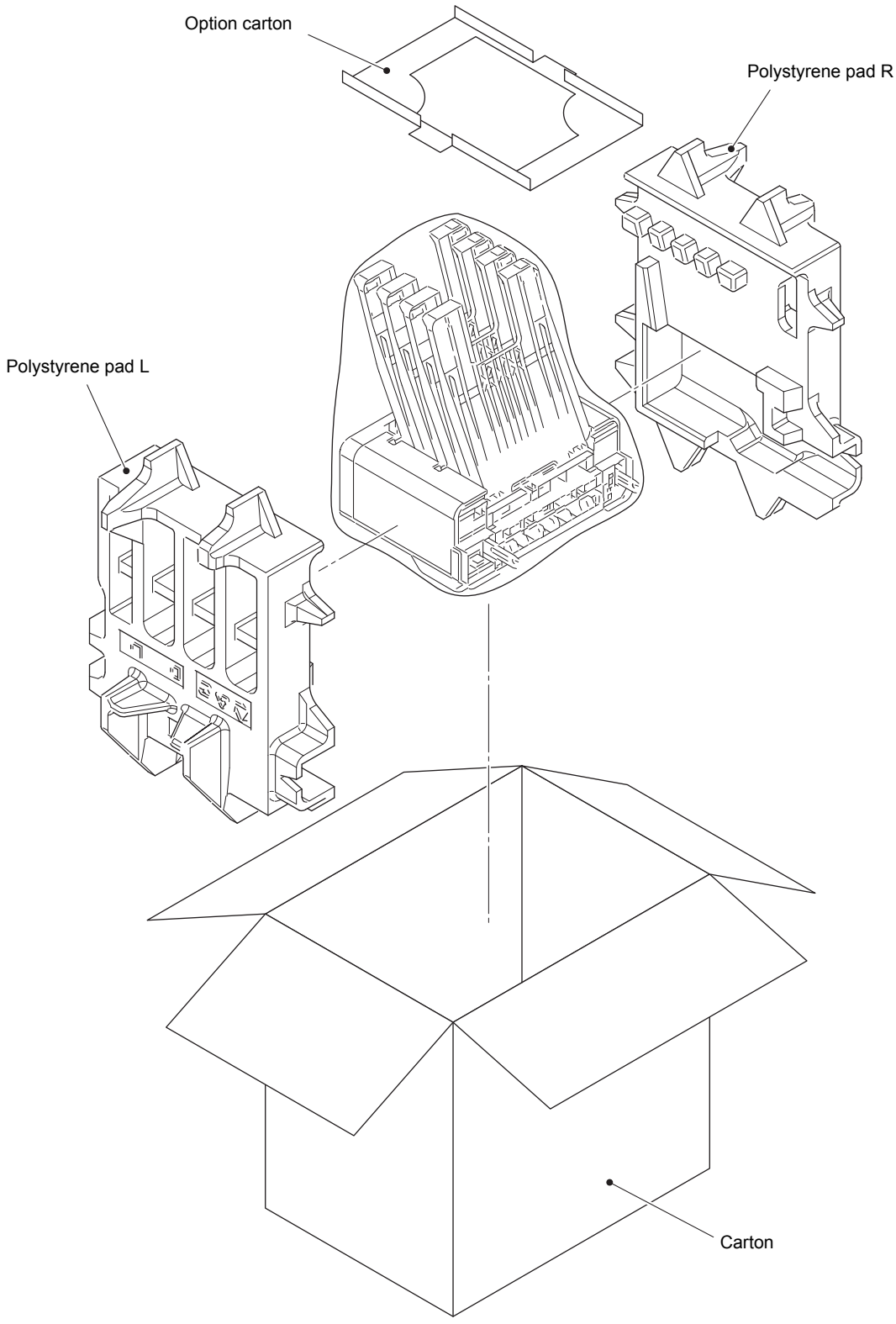


Fig. 3-2

■ **TT**

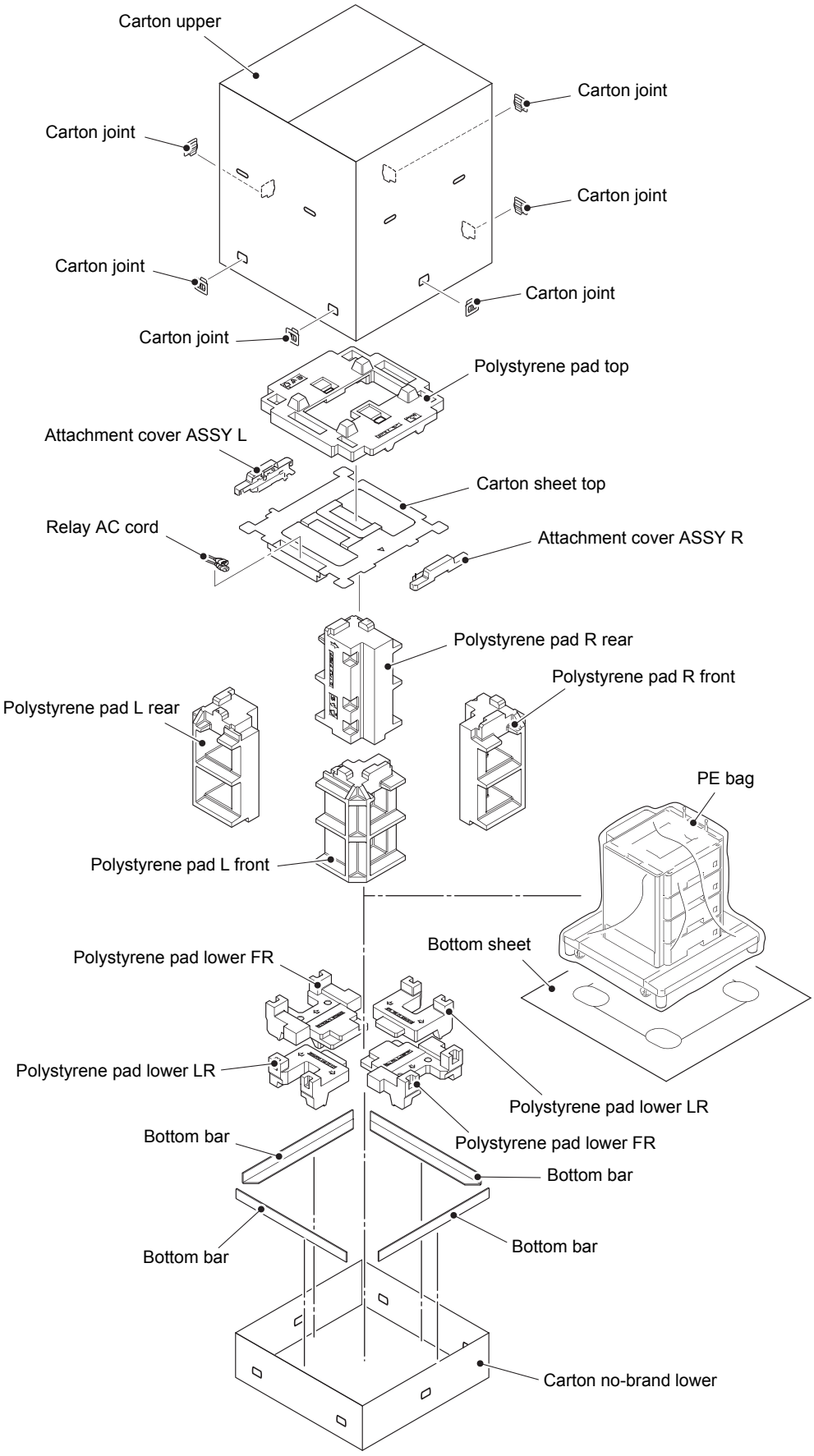
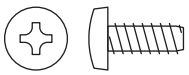
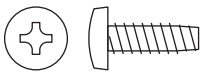
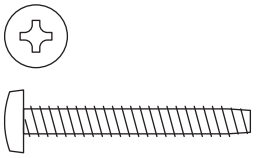

Carton upper
Carton joint
Carton joint
Carton joint
Carton joint
Carton joint
Carton joint
Polystyrene pad top
Attachment cover ASSY L
Carton sheet top
Relay AC cord
Attachment cover ASSY R
Polystyrene pad R rear
Polystyrene pad R front
Polystyrene pad L rear
PE bag
Polystyrene pad L front
Bottom sheet
Polystyrene pad lower FR
Polystyrene pad lower LR
Polystyrene pad lower LR
Polystyrene pad lower FR
Bottom bar
Bottom bar
Bottom bar
Bottom bar
Carton no-brand lower

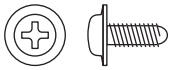
Fig. 3-3

3. SCREW CATALOGUE

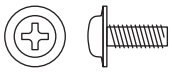
Taptite bind B

Taptite bind B M3x10	
Taptite bind B M4x10	
Taptite bind B M4x12	
Taptite bind B M4x30	

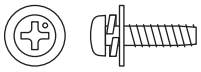
Taptite cup S

Taptite cup S M3x8 SR	

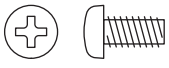
Screw cup

Screw cup M3x8	

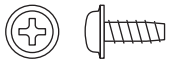
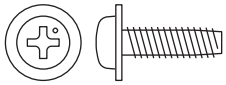
Screw pan (S/P washer)

Screw pan (S/P washer) M3x12 DB	
Screw pan (S/P washer) M3.5x6	

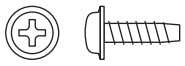
Screw pan

Screw pan M4x8	

Taptite pan B

Taptite pan B M3x8	
Taptite pan B M4x14	

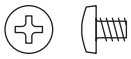
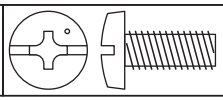
Taptite cup B

Taptite cup B M3x10	

Taptite flat B

Taptite flat B M3x10	

Screw bind

Screw bind M3x4	
Screw bind M5x8	

Shoulder screw

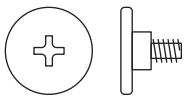
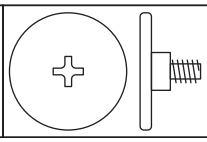
Shoulder screw	
Shoulder screw (black)	

Fig. 3-4

4. SCREW TORQUE LIST

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Fuser unit line cover R	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Fuser unit line cover L	Taptite pan B M4x14	1	0.8±0.1 (8±1)
Fuser unit	Taptite pan B M4x14	1	0.8±0.1 (8±1)
Side cover L	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Side cover R	Taptite bind B M4x12	2	0.8±0.1 (8±1)
FG harness A	Taptite cup S M3x8 SR (Machine side)	1	0.6±0.1 (6±1)
Top cover ASSY (Touch panel models)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
	Taptite bind B M4x12 (Black)	2	0.8±0.1 (8±1)
FG harness A (Touch panel models)	Taptite cup B M3x10 (Top cover side)	1	0.5±0.1 (5±1)
FG harness B (Touch panel models)	Taptite cup B M3x10 (Top cover side)	1	0.5±0.1 (5±1)
Panel cover case lower	Taptite cup B M3x10	4	0.5±0.1 (5±1)
Inner chute (Touch panel models)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Eject cover (Touch panel models)	Taptite bind B M3x10	3	0.5±0.1 (5±1)
Top cover ASSY (Non touch panel models)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
	Taptite bind B M4x12 (Black)	2	0.8±0.1 (8±1)
Inner chute (Non touch panel models)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Main shield plate	Screw cup M3x8 (Black)	3	0.45±0.05 (4.5±0.5)
Veil cover upper	Screw cup M3x8 (Black)	1	0.45±0.05 (4.5±0.5)
Veil cover lower	Screw cup M3x8 (Black)	1	0.45±0.05 (4.5±0.5)
Main PCB ASSY	Screw cup M3x8 (Black)	4	0.45±0.05 (4.5±0.5)
Top bar (Touch panel models)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Laser unit	Taptite cup S M3x8 SR	4	0.8±0.05 (8±0.5)
Scanner ground plate	Taptite cup S M3x8 SR (Fastening side of scanner plate)	1	0.8±0.1 (8±1)
	Screw cup M3x8 (Black) (LV shield plate cover side)	1	0.45±0.05 (4.5±0.5)
LV shield plate cover	Screw cup M3x8 (Black)	3	0.45±0.05 (4.5±0.5)
	Taptite bind B M4x12	1	0.8±0.1 (8±1)
	Screw pan M4x8	1	0.5±0.1 (5±1)
Ground harness	Screw pan M4x8	1	0.5±0.1 (5±1)
Inlet	Taptite flat B M3x10	1	0.5±0.1 (5±1)
Low-voltage power supply PCB ASSY	Screw cup M3x8 (Black)	1	0.45±0.05 (4.5±0.5)
	Taptite bind B M4x12	2	0.8±0.1 (8±1)

Location of screw		Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Under bar ground plate R (T1: Models with 520-sheet)		Taptite cup S M3x8 SR (Fastening side of LV shield plate)	1	0.6±0.1 (6±1)
Under bar front (T1: Models with 250-sheet)		Taptite cup S M3x8 SR (Fastening side of LV shield plate)	1	0.6±0.1 (6±1)
LV shield plate		Taptite bind B M4x12	1	0.8±0.1 (8±1)
Hold cover 1		Taptite bind B M4x12	1	0.8±0.1 (8±1)
Pinch ground spring		Taptite pan B M3x8	1	0.5±0.1 (5±1)
Hold cover 2		Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar front (T1: Models with 520-sheet)		Taptite bind B M4x12	2	0.8±0.1 (8±1)
	Under bar ground plate L			
	Under bar ground plate R			
	Under bar cover			
Under bar rear (T1: Models with 520-sheet)		Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar center (Touch panel models)		Taptite bind B M4x12	2	0.8±0.1 (8±1)
Top bar rear (Touch panel models)		Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar ground plate L (T1: Models with 520-sheet)		Taptite cup S M3x8 SR (Fastening side of drive sub ASSY)	1	0.6±0.1 (6±1)
Under bar front (T1: Models with 250-sheet)		Taptite cup S M3x8 SR (Fastening side of drive sub ASSY)	1	0.6±0.1 (6±1)
		Taptite bind B M4x12	2	0.8±0.1 (8±1)
Main frame L ASSY		Taptite cup S M3x8 SR	4	0.8±0.1 (8±1)
		Taptite bind B M4x12	4	0.8±0.1 (8±1)
Drive sub ASSY		Taptite bind B M4x12	8	0.8±0.1 (8±1)
Paper feed motor plate		Taptite cup S M3x8 SR	4	0.8±0.1 (8±1)
Paper feed motor		Screw bind M3x4	3	0.65±0.05 (6.5±0.5)
MP solenoid		Taptite bind B M3x10	1	0.5±0.1 (5±1)
Main PCB shield calking ASSY		Taptite bind B M4x12	3	0.8±0.1 (8±1)
	Touch panel models	Taptite cup S M3x8 SR	3	0.6±0.1 (6±1)
	Non touch panel models	Taptite cup S M3x8 SR	2	0.6±0.1 (6±1)
MX holder plate (Touch panel models)		Taptite bind B M4x12	3	0.8±0.1 (8±1)
Eject motor plate		Taptite bind B M3x10	2	0.5±0.1 (5±1)
Eject motor		Screw bind M3x4	1	0.65±0.05 (6.5±0.5)
Bottom frame L (T1: Models with 520-sheet)		Taptite bind B M4x30	3	0.8±0.1 (8±1)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Base plate	Screw pan (S/P washer) M3x12 DB	2	0.6±0.1 (6±1)
	Taptite bind B M4x12	4	0.8±0.1 (8±1)
High-voltage power supply PCB ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
T1 paper feed actuator holder ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)
Main frame R	Taptite bind B M4x12	5	0.8±0.1 (8±1)
MP feed frame	Taptite bind B M3x10	2	0.5±0.1 (5±1)
MP paper empty sensor PCB ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)
Paper empty sensor PCB ASSY (Models with 520-sheet T1 and HL-5580D/5585D)	Taptite bind B M3x10	1	0.5±0.1 (5±1)
LT side cover L	Taptite bind B M4x12	2	0.8±0.1 (8±1)
LT side cover R	Taptite bind B M4x12	2	0.8±0.1 (8±1)
LT front cover ASSY	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Under bar front (Models with 520-sheet)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar ground plate L (520)	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Under bar front (Models with 250-sheet)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (3a)	1	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (3b)	1	0.6±0.1 (6±1)
Under bar	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Center FG plate L	Taptite cup S M3x8 SR (5a)	1	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (5b)	1	0.6±0.1 (6±1)
Under bar ground plate L (250)	Taptite cup S M3x8 SR	2	0.8±0.1 (8±1)
LT frame L unit	Taptite bind B M4x12	4	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (7a)	4	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (7b)	2	0.6±0.1 (6±1)
LT drive ASSY	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Center FG plate R	Taptite cup S M3x8 SR (1a)	1	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (1b)	1	0.6±0.1 (6±1)
LT paper feed frame	Taptite cup S M3x8 SR	4	0.6±0.1 (6±1)
Paper feed frame FG plate R		1	0.6±0.1 (6±1)
LT front beam	Taptite bind B M4x12	2	0.8±0.1 (8±1)
LT paper feed actuator holder ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)
LT paper empty sensor PCB ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)

■ Screw torque list (MX)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Side cover R MX	Taptite cup B M3x10	2	0.5±0.1 (5±1)
Side cover L MX	Taptite cup B M3x10	2	0.5±0.1 (5±1)
Top cover MX	Taptite cup B M3x10	4	0.5±0.1 (5±1)
MX FG harness R	Screw cup M3x8 (Black)	1	0.5±0.1 (5±1)
Drive frame MX	Taptite bind B M4x12	7	0.8±0.1 (8±1)
MX switching solenoid	Taptite bind B M3x10	1	0.5±0.1 (5±1)
MX bin switching solenoid	Taptite bind B M3x10	3	0.5±0.1 (5±1)
MX control PCB ASSY	Taptite bind B M3x10	4	0.5±0.1 (5±1)
MX FG harness L	Screw cup M3x8 (Black)	1	0.5±0.1 (5±1)
	Screw pan (S/P washer) M3x12 DB	1	0.5±0.1 (5±1)
MX connector holder ASSY	Taptite bind B M3x10	4	0.5±0.1 (5±1)
MX motor drive ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
MX motor	Screw bind M3x4	3	0.7±0.1 (7±1)
MX bin stack sensor holder	Taptite bind B M3x10	8	0.5±0.1 (5±1)
Bin detection sensor cover	Taptite bind B M3x10	2	0.5±0.1 (5±1)
Arm L MX	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Gear holder MX	Taptite bind B M4x12	1	0.8±0.1 (8±1)

■ Screw torque list (TT)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
Top cover TT	Shoulder screw	8	0.8±0.1 (8±1)
	Taptite bind B M4x10	2	0.8±0.1 (8±1)
Side cover L	Taptite bind B M4x10	7	0.8±0.1 (8±1)
Side cover R	Taptite bind B M4x10	7	0.8±0.1 (8±1)
Back cover	Shoulder screw (Black)	6	0.8±0.1 (8±1)
PCB cover plate	Screw cup M3x8 (Black)	3	0.5±0.1 (5±1)
TT control PCB ASSY	Screw cup M3x8 (Black)	4	0.5±0.1 (5±1)
PCB shield plate	Screw cup M3x8 (Black)	6	0.8±0.1 (8±1)
Attach sensor holder (L side)	Taptite cup S M3x8 SR	1	1.0±0.1 (10±1)
Attach sensor holder (R side)	Taptite cup S M3x8 SR	1	1.0±0.1 (10±1)
Reinforcing plate top L	Taptite cup S M3x8 SR	6	1.0±0.1 (10±1)
FG plate L	Taptite cup S M3x8 SR	4	1.0±0.1 (10±1)
Motor plate calking ASSY	Taptite bind B M4x10	4	0.8±0.1 (8±1)
TT motor	Screw bind M3x4	3	0.65±0.05 (6.5±0.5)
Air duct	Taptite bind B M4x10	1	0.8±0.1 (8±1)
TT ground plate right	Screw pan (S/P washer) M3.5x6	1	0.5±0.1 (5±1)
	Screw cup M3x8 (Black)	1	0.8±0.1 (8±1)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
TT ground plate rear	Screw cup M3x8 (Black) (Left)	1	0.8±0.1 (8±1)
	Screw cup M3x8 (Black) (Right)	1	0.5±0.1 (5±1)
T2TT unit	Taptite cup S M3x8 SR	8	1.0±0.1 (10±1)
	Taptite bind B M4x10	2	0.8±0.1 (8±1)
	Screw cup M3x8 (Black)	6	0.8±0.1 (8±1)
Positioning plate calking ASSY (Four parts)	Taptite cup S M3x8 SR	8	1.0±0.1 (10±1)
Reinforcing plate L (1/2)	Taptite cup S M3x8 SR	6	1.0±0.1 (10±1)
FG plate L	Taptite cup S M3x8 SR	4	1.0±0.1 (10±1)
Calking gear plate ASSY	Taptite bind B M4x12	4	0.8±0.1 (8±1)
T3TT unit	Taptite cup S M3x8 SR	3	0.8±0.1 (8±1)
	Taptite bind B M4x10	2	0.8±0.1 (8±1)
LV shield plate cover	Screw pan (S/P washer) M3.5x6	1	0.5±0.1 (5±1)
	Screw cup M3x8 (Black)	2	0.5±0.1 (5±1)
Ground harness	Screw pan (S/P washer) M3.5x6	1	0.5±0.1 (5±1)
Inlet	Taptite flat B M3x10	2	0.5±0.1 (5±1)
Inlet cover	Taptite bind B M3x10	1	0.5±0.1 (5±1)
Low-voltage power supply PCB ASSY	Screw cup M3x8 (Black)	2	0.5±0.1 (5±1)
Positioning plate calking ASSY (Four parts)	Taptite cup S M3x8 SR	8	1.0±0.1 (10±1)
Reinforcing plate L (2/2)	Taptite cup S M3x8 SR (Left)	3	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR (Right)	3	1.0±0.1 (10±1)
	Screw bind M5x8	3	0.8±0.1 (8±1)
	Screw cup M3x8 (Black)	4	0.8±0.1 (8±1)
Reinforcing plate R	Taptite cup S M3x8 SR	1	1.0±0.1 (10±1)
FG plate L	Taptite cup S M3x8 SR	4	1.0±0.1 (10±1)
Calking gear plate ASSY	Taptite bind B M4x12	4	0.8±0.1 (8±1)
T4TT unit	Taptite cup S M3x8 SR	3	1.0±0.1 (10±1)
	Taptite bind B M4x10	2	0.8±0.1 (8±1)
Positioning plate calking ASSY (Four parts)	Taptite cup S M3x8 SR	8	1.0±0.1 (10±1)
T5TT unit	Taptite cup S M3x8 SR	3	1.0±0.1 (10±1)
	Taptite bind B M4x10	2	0.8±0.1 (8±1)
TT ground plate	Taptite cup S M3x8 SR	2	0.8±0.1 (8±1)
Under bar (Front side)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar ground plate L	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Drive ASSY	Taptite bind B M4x12	3	0.8±0.1 (8±1)

Location of screw	Screw type	Q'ty	Tightening torque N·m (kgf·cm)
TT front cover	Taptite cup B M4x12	2	0.8±0.1 (8±1)
	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
Under bar (Rear side)	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Frame L	Taptite cup S M3x8 SR	2	0.8±0.1 (8±1)
	Taptite bind B M4x12	1	0.8±0.1 (8±1)
UB earth plate R	Taptite cup S M3x8 SR	1	0.8±0.1 (8±1)
TT paper feed frame	Taptite cup S M3x8 SR	2	0.8±0.1 (8±1)
TT front beam	Taptite bind B M4x12	2	0.8±0.1 (8±1)
TT paper feed actuator holder ASSY	Taptite bind B M3x10	1	0.5±0.1 (5±1)
TT paper empty sensor PCB 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 drive gear 39	10 places	1.5 - 2.0 mm dia. ball
	Develop clutch 51R	1 place	
	Develop joint gear 37	4 places	

■ **Fuser drive gear 39**

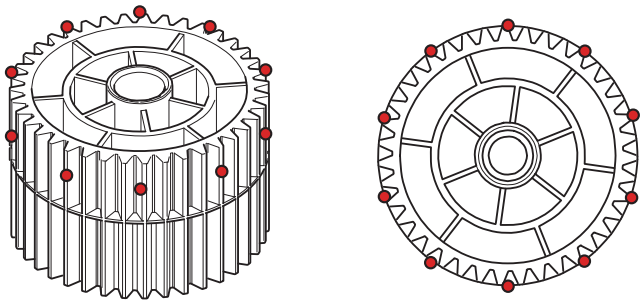


Fig. 3-5

■ **Develop clutch 51R**

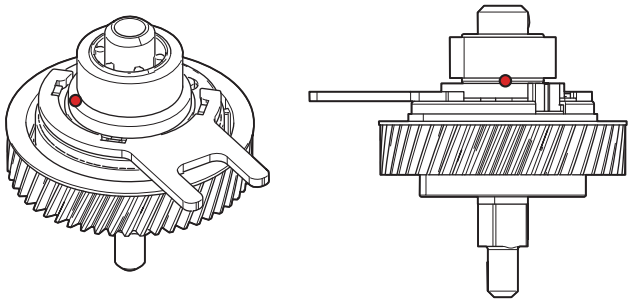


Fig. 3-6

■ **Develop joint gear 37**

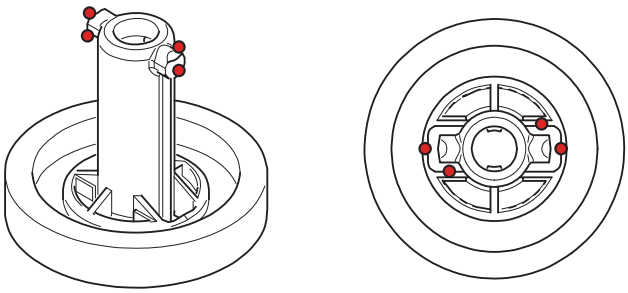


Fig. 3-7

Lubricating oil type (Maker name)	Lubrication point		Quantity of lubrication
HANARL BDX-313A (Kanto Kasei)	MP damper spring	Apply to the internal diameter.	Apply with brush more than once.
	Idle gear 50 Z18M10		

■ MP damper spring

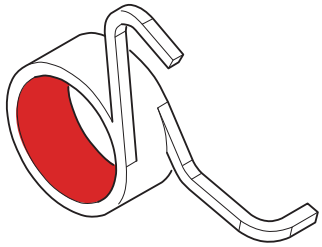


Fig. 3-8

■ Idle gear 50 Z18M10 (Models with 520-sheet only)

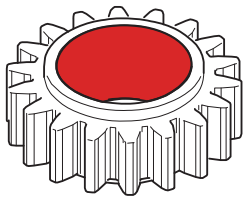


Fig. 3-9

6. OVERVIEW OF GEARS

■ Printer

<Layout view>

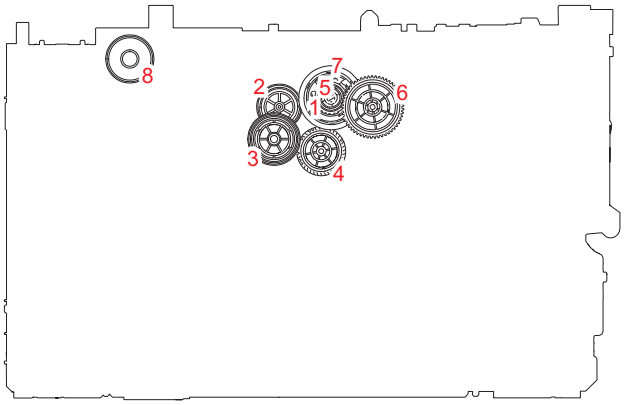


Fig. 3-10

<Development view>

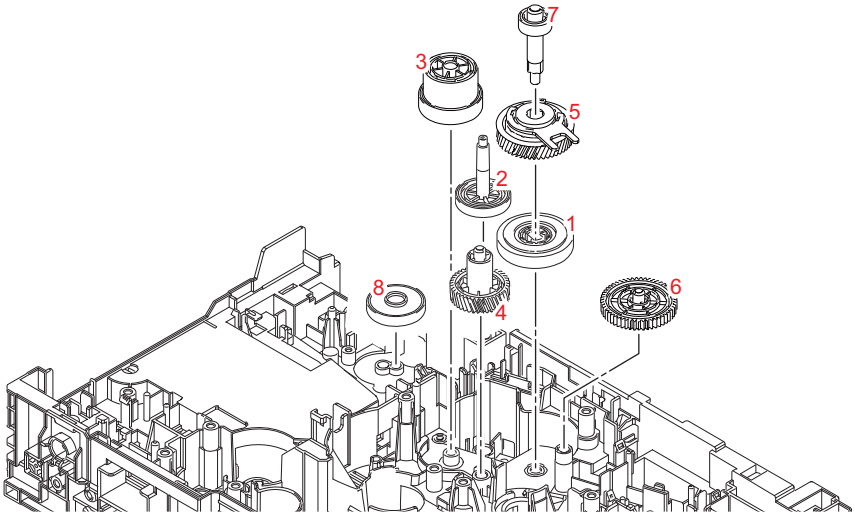


Fig. 3-11

Note:

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

<Name of gears>

1	LY4409	Develop one way clutch 53	5	LY4408	Develop clutch 51R
2	D001D0	Gear 38 DEV	6	LY4405	Develop idle gear 53
3	D001D2	Sun gear 50R42R18 DEV	7	LY4407	Develop shaft gear 22
4	LY4406	DEV high idle gear 39L	8	D000XL	Eject gear

* These parts are subject to change without notice.

<Layout view>

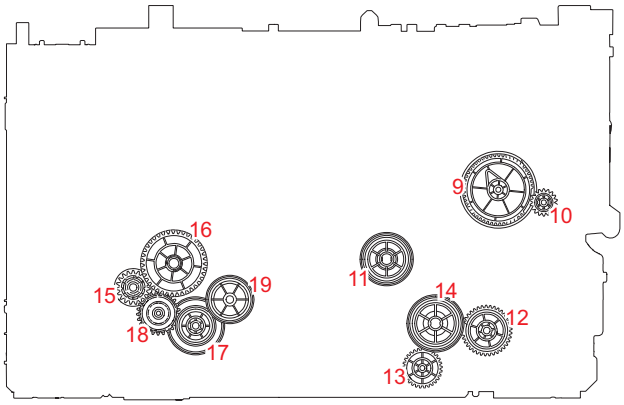


Fig. 3-12

<Development view>

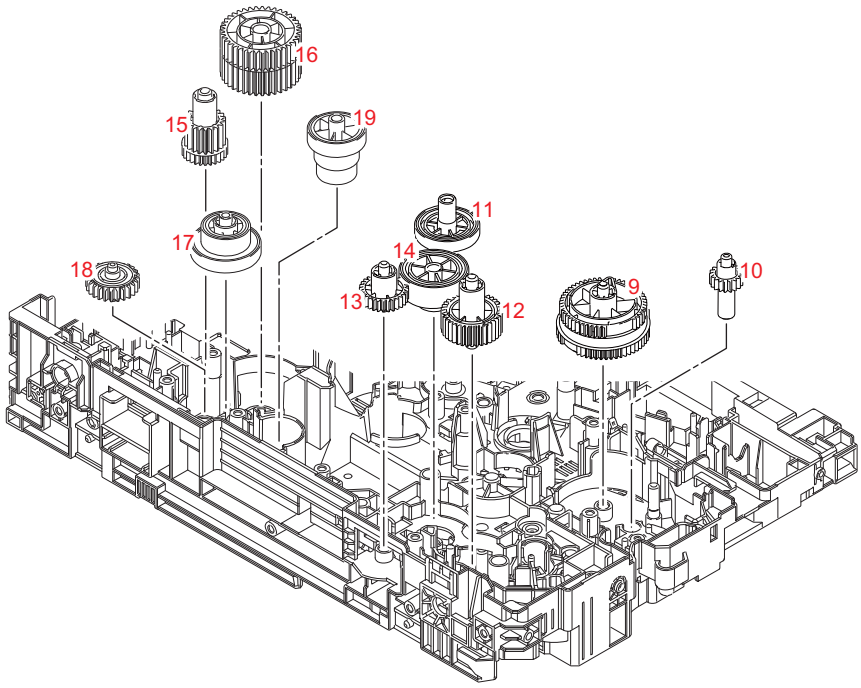


Fig. 3-13

Note:

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

<Name of gears>

9	LY4394	MP sector gear 53/57	15	LY4451	DX gear 27/19
10	LY4336	MP drive gear 18	16	LY4450	Fuser drive gear 39
11	D004PV	Gear 39/17 PP	17	D0004F	Gear 23/40R fuser
12	LY4403	T1 idle gear 37	18	LY4449	Fuser pendulum gear 25
13	LY4398	LT drive gear 29	19	D0004S	Gear 22L/33L fuser
14	D0041S	T1 gear 19 42			

* These parts are subject to change without notice.

■ TT

<Layout view>

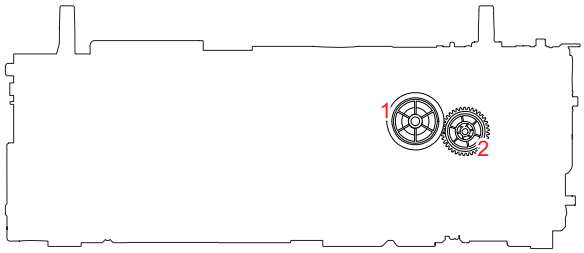


Fig. 3-14

<Development view>

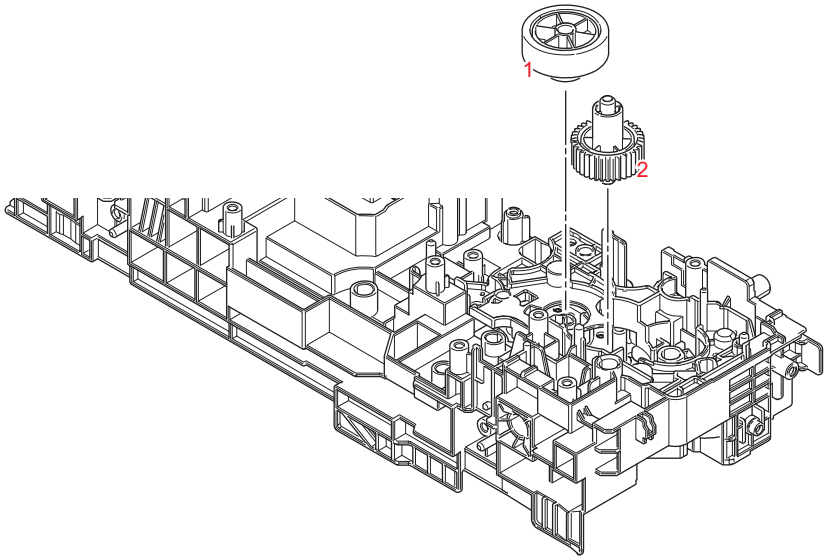


Fig. 3-15

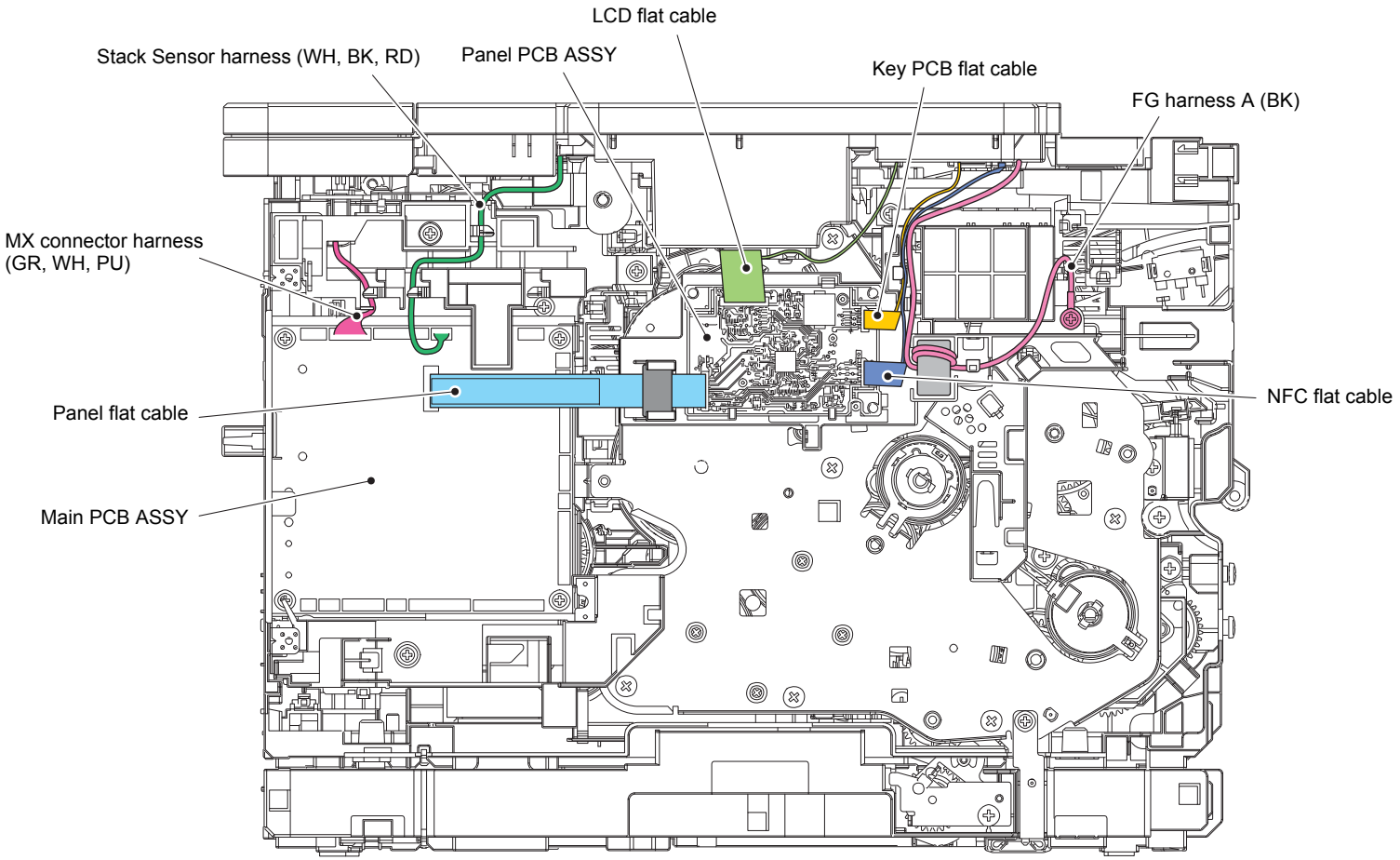
<Name of gears>

1	D00475	TT gear Z20/Z44	2	LY4403	Idle gear 37

* These parts are subject to change without notice.

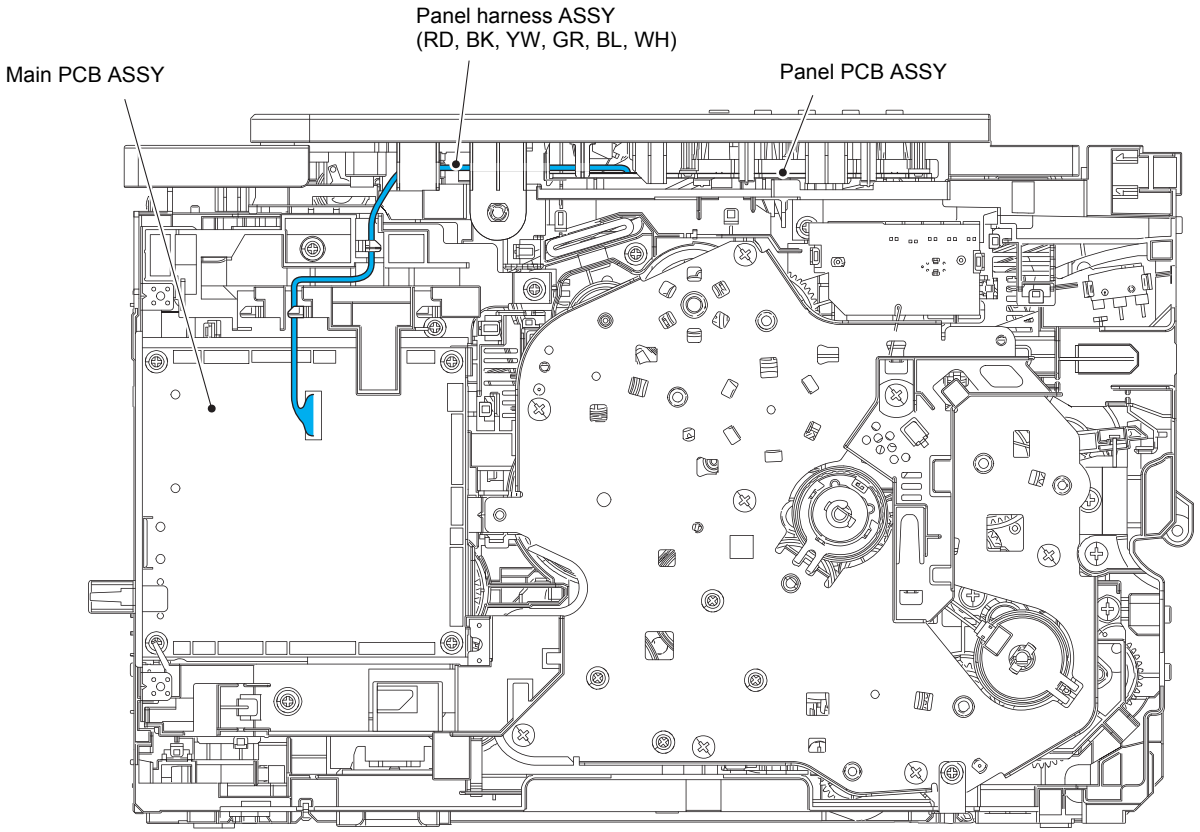
7. HARNESS ROUTING

1 Left side of the machine (Touch panel models)



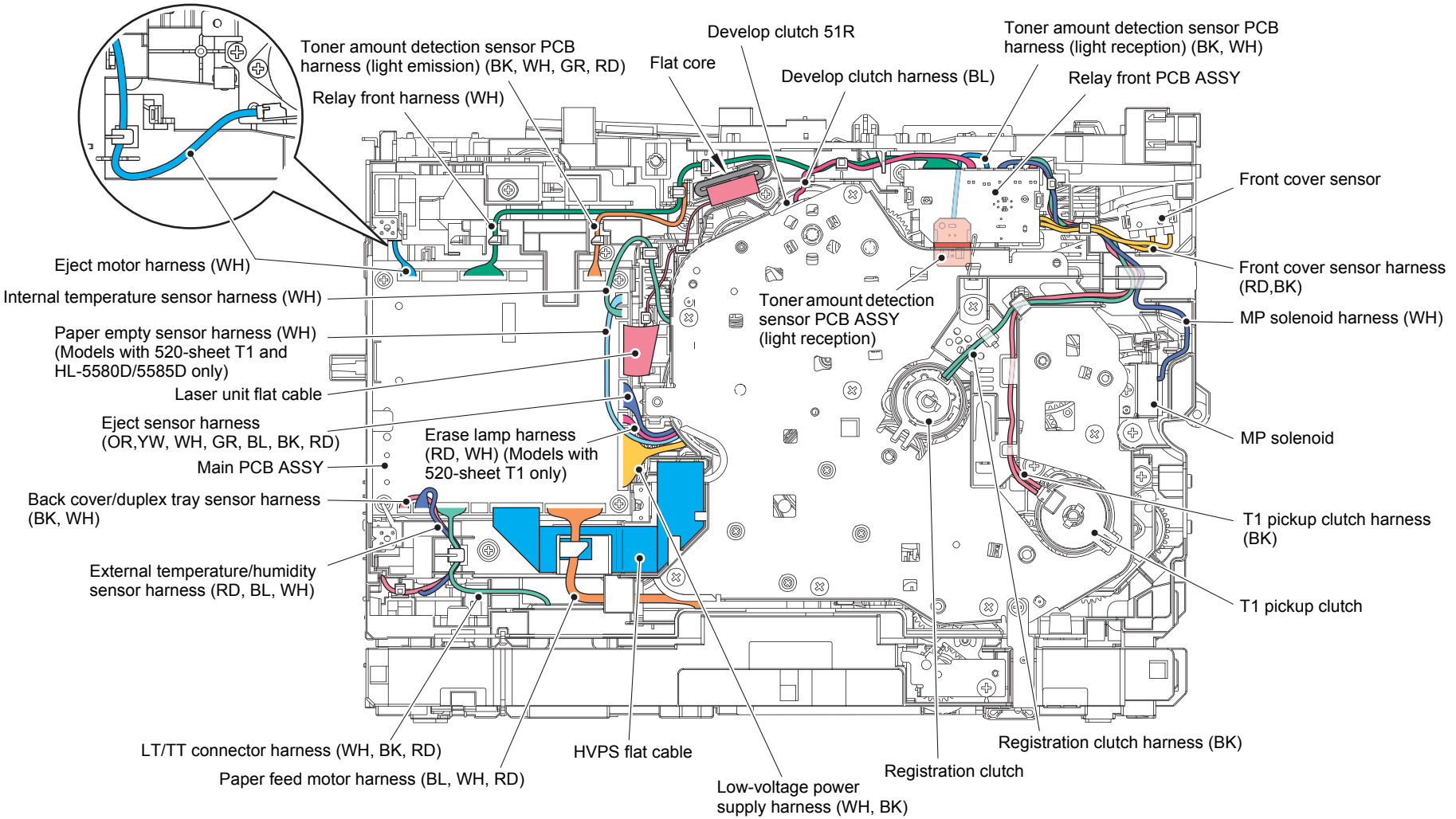
Harness colors are subject to change for some reason.

2 Left side of the machine (Non touch panel models)



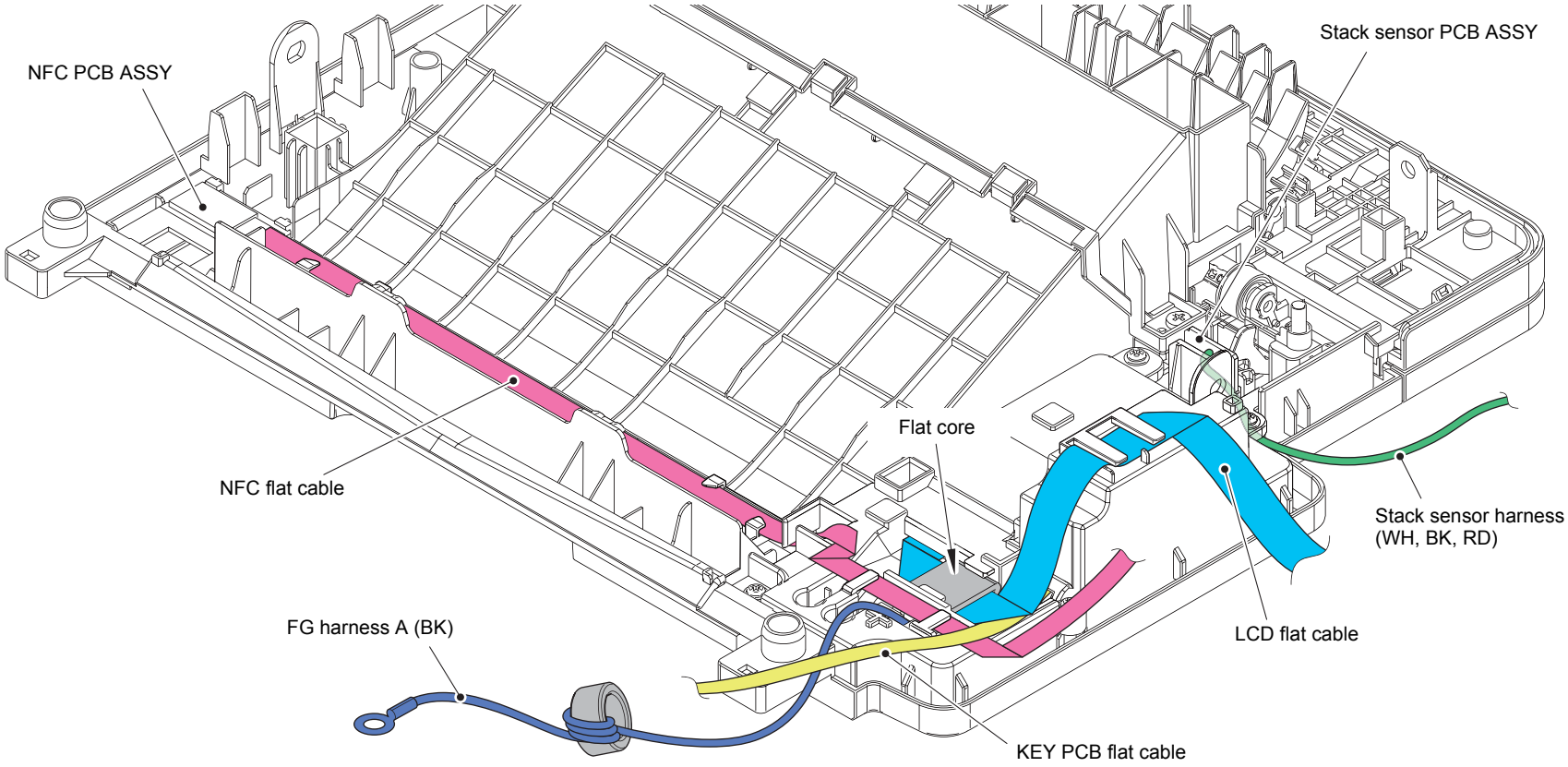
Harness colors are subject to change for some reason.

3 Left side of the machine (Common to all models)



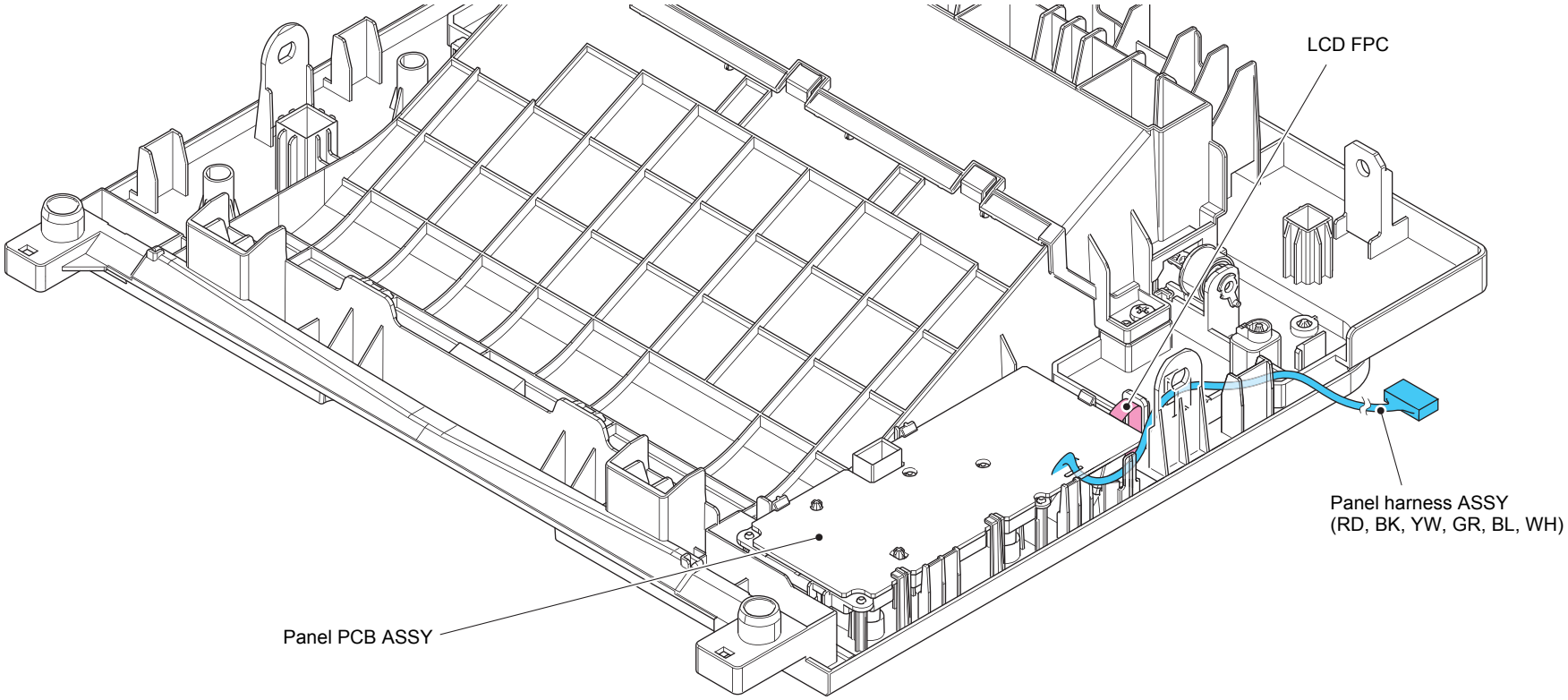
Harness colors are subject to change for some reason.

4 Bottom side of the top cover ASSY (Touch panel models)



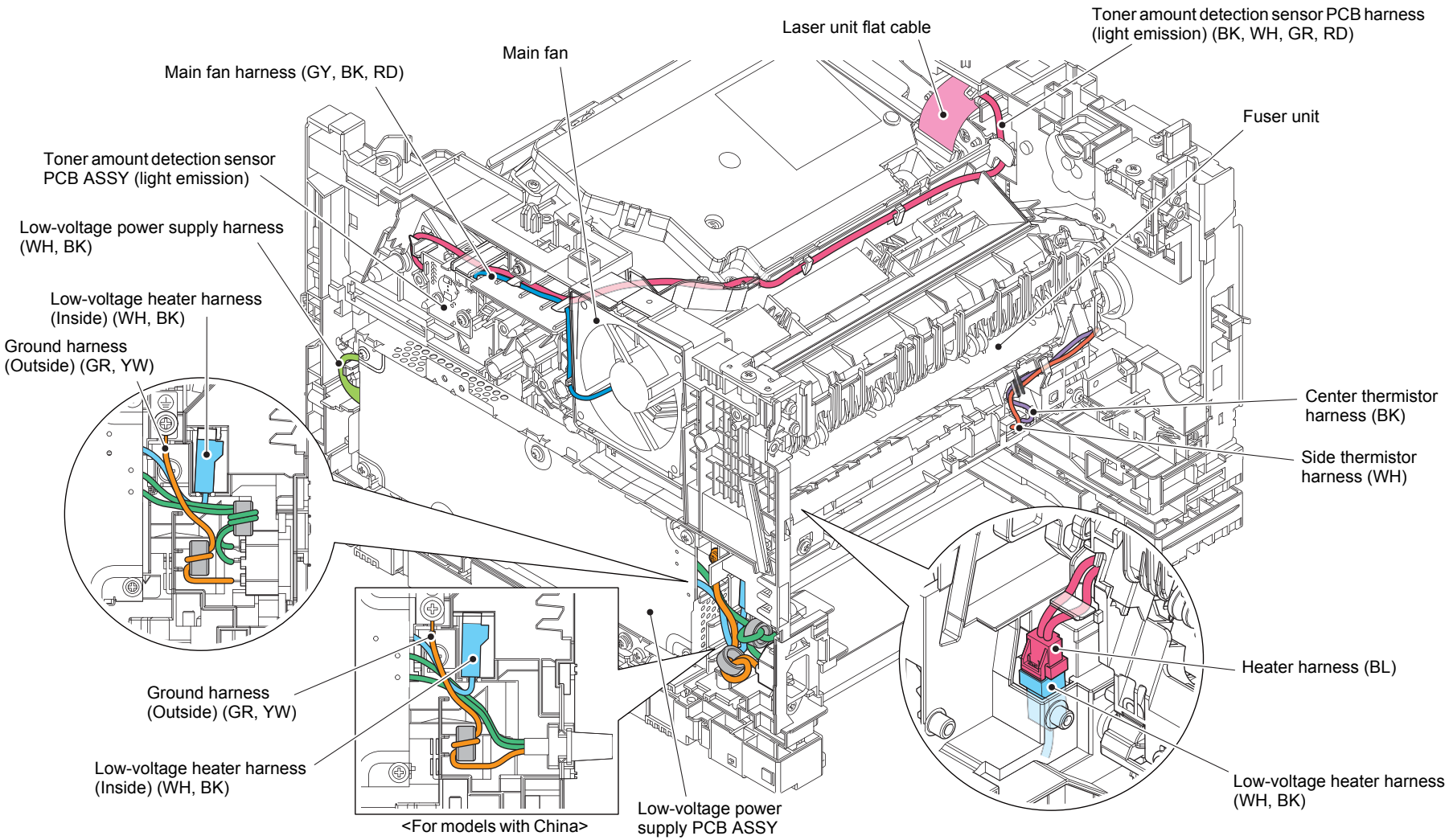
Harness colors are subject to change for some reason.

5 Bottom side of the top cover ASSY (Non touch panel models)



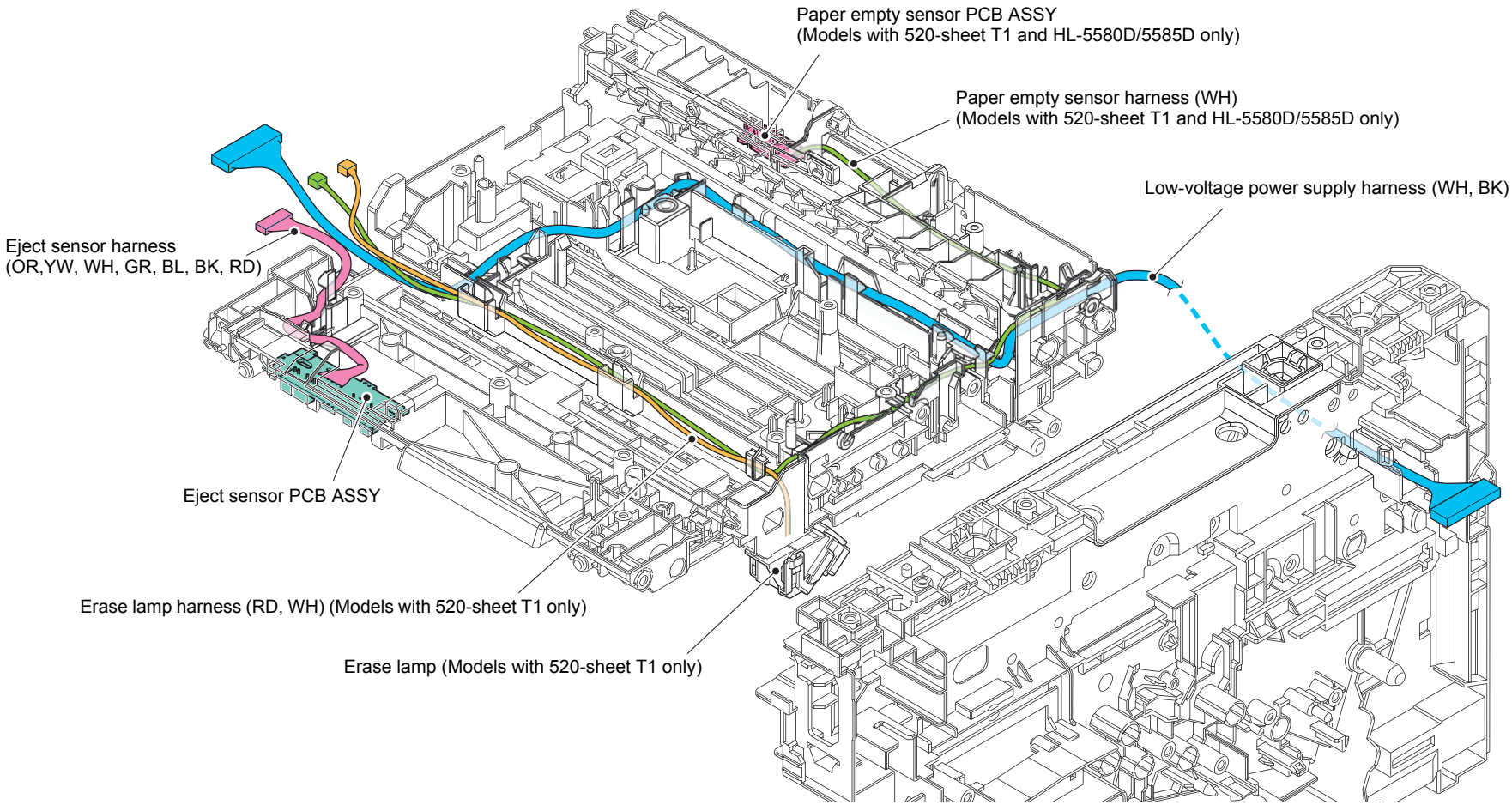
Harness colors are subject to change for some reason.

6 Rear side of the machine



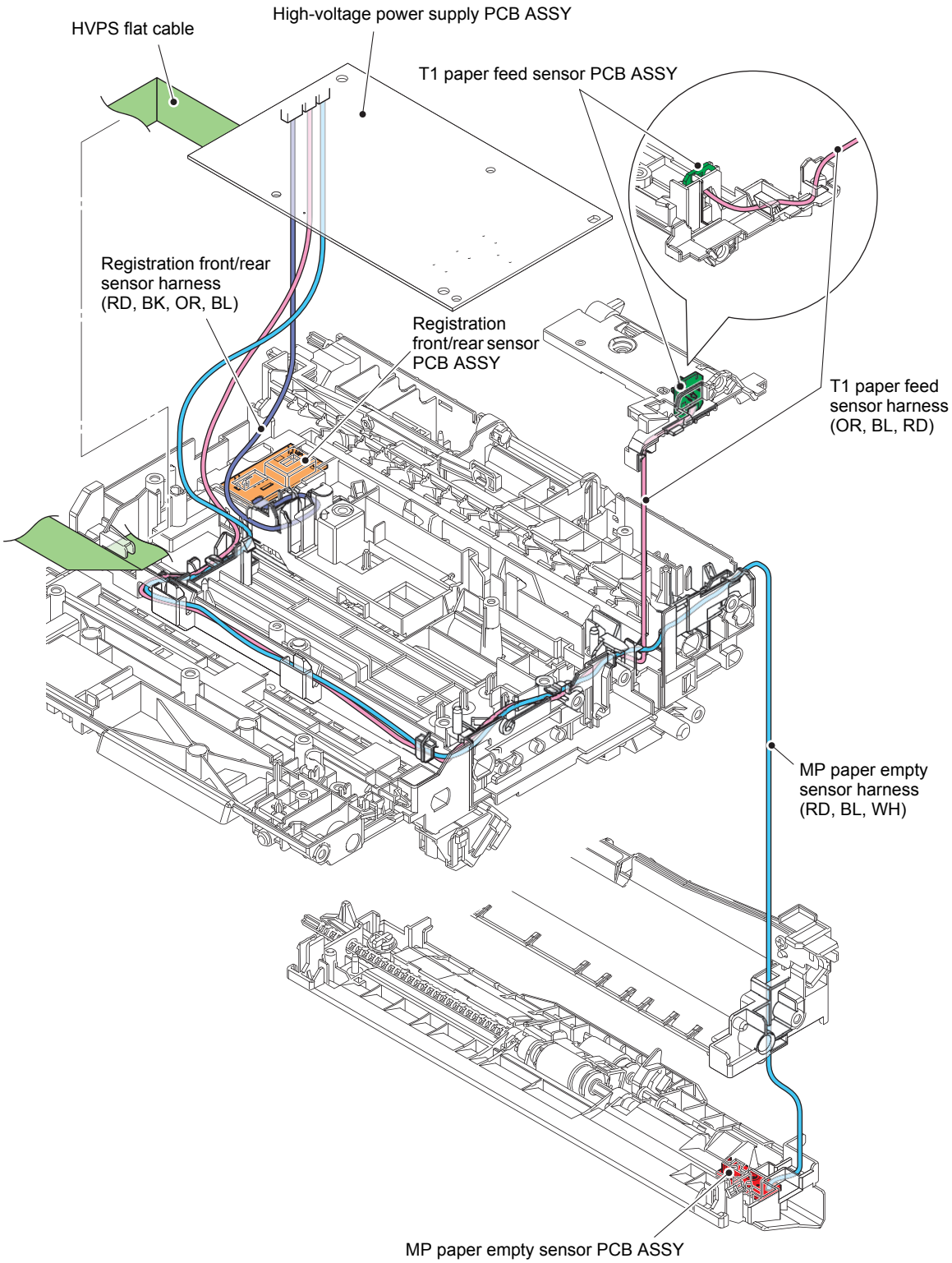
Harness colors are subject to change for some reason.

7 Bottom side of the machine



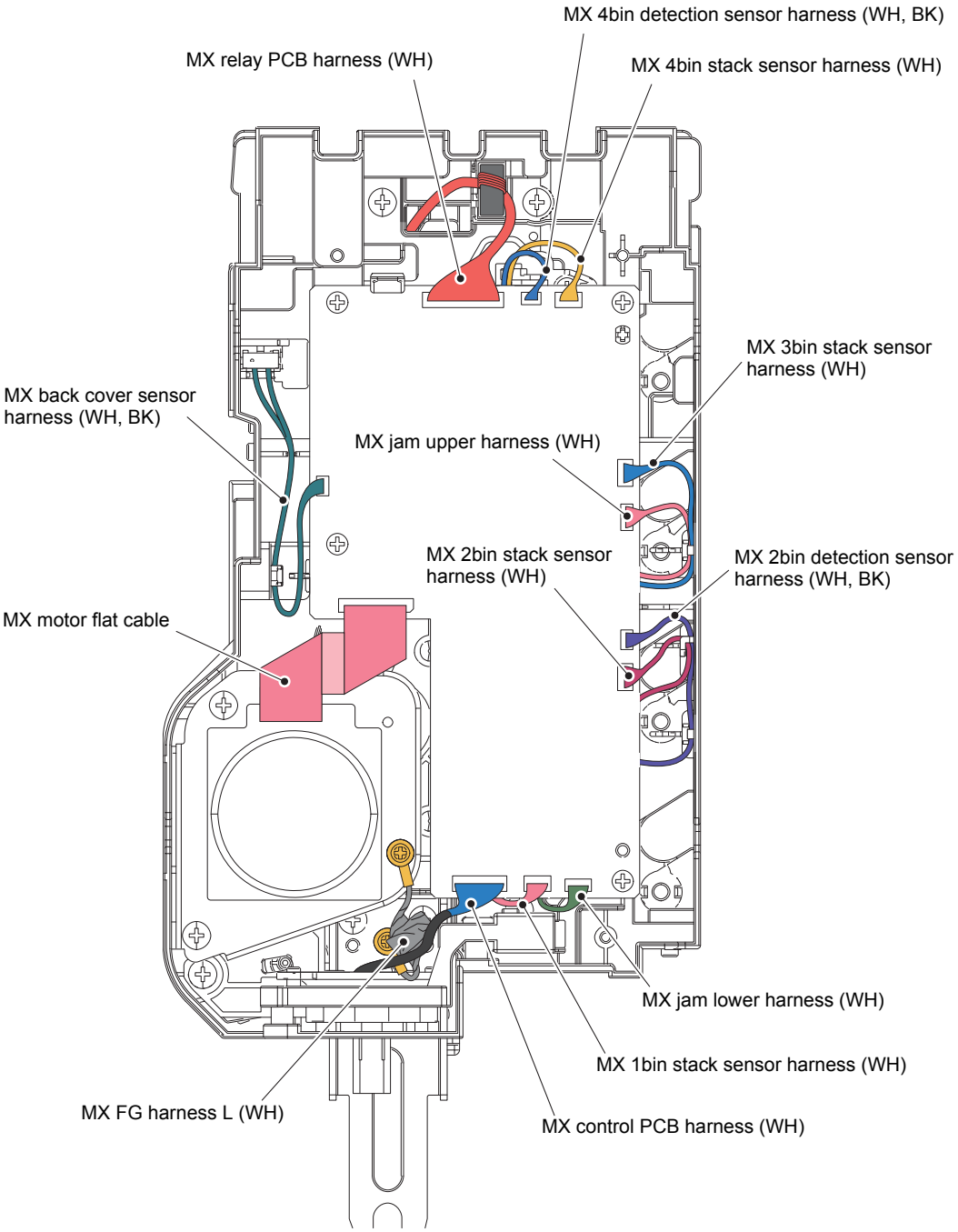
Harness colors are subject to change for some reason.

8 Bottom side of the machine (High-voltage power supply PCB ASSY)



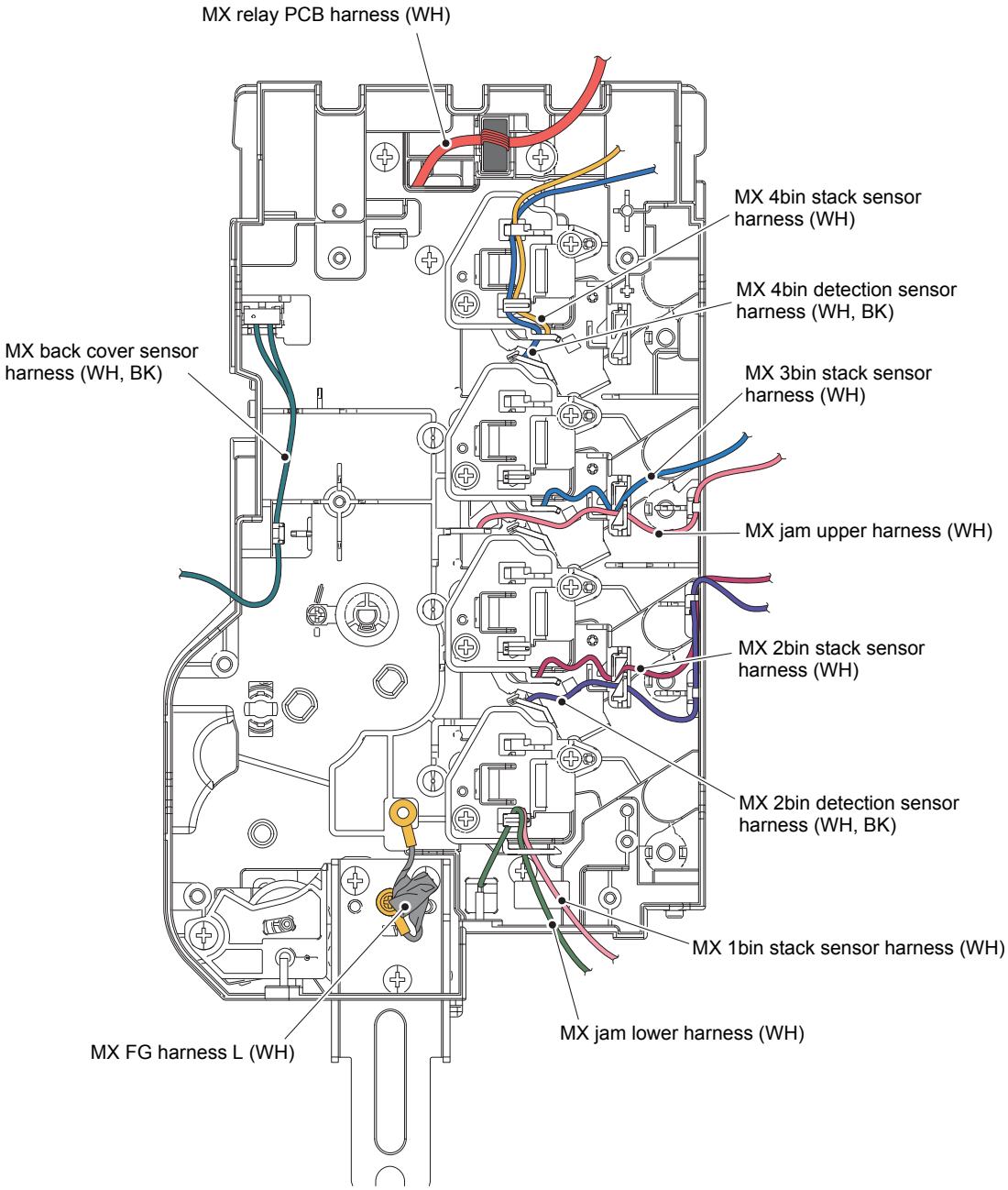
Harness colors are subject to change for some reason.

9 Left side of the MX (MX control PCB)



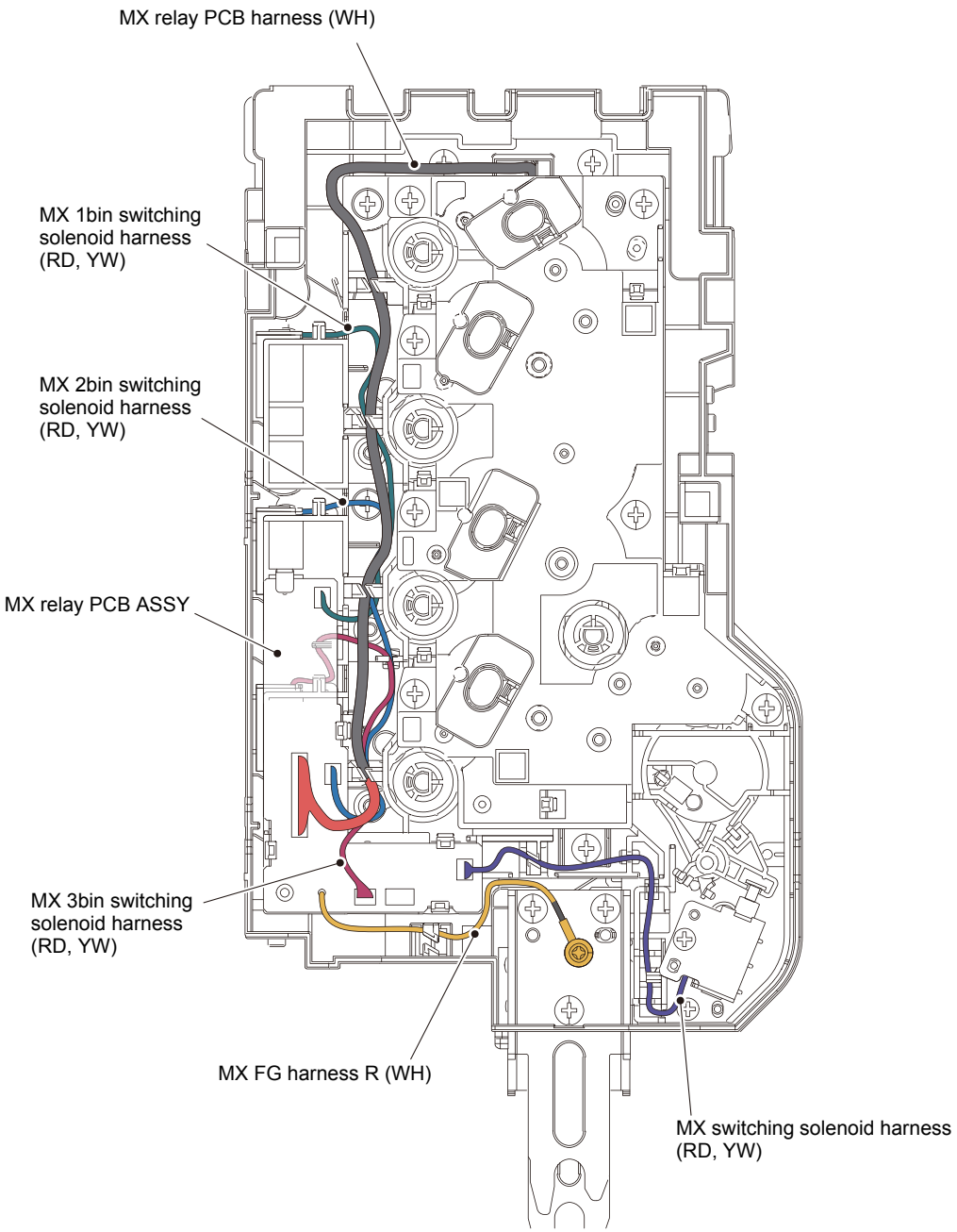
Harness colors are subject to change for some reason.

10 Left side of the MX



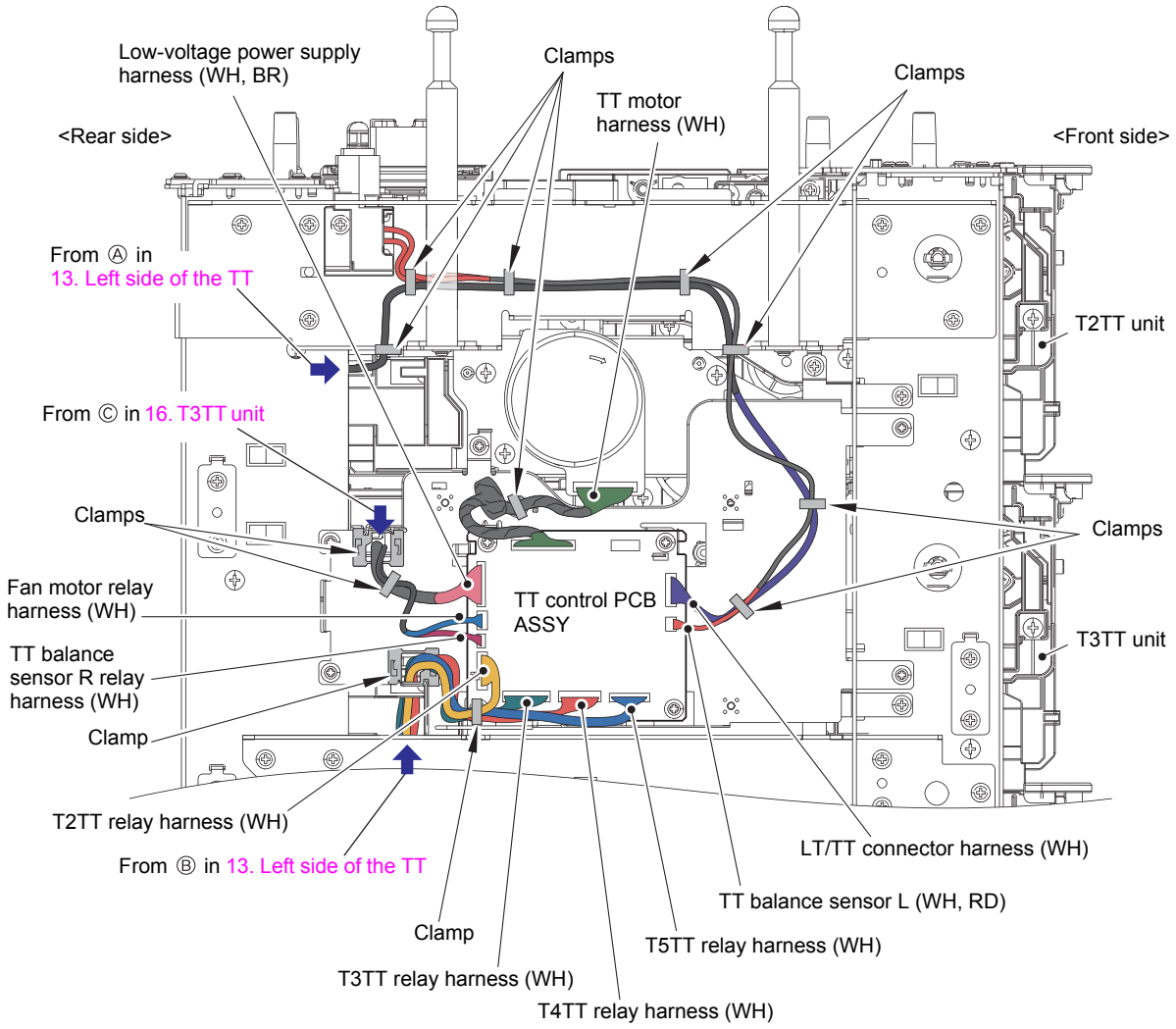
Harness colors are subject to change for some reason.

11 Right side of the MX



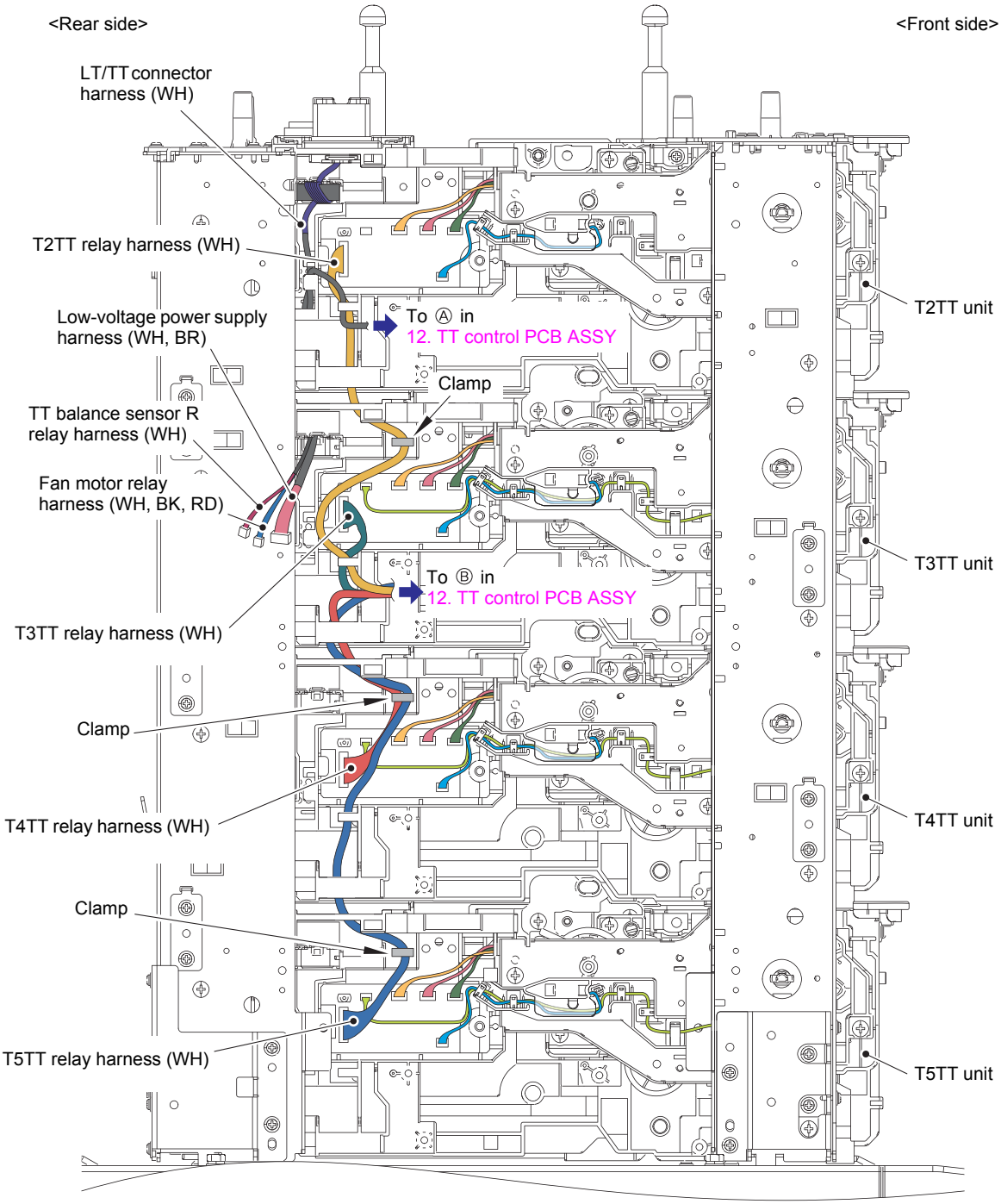
Harness colors are subject to change for some reason.

12 TT control PCB ASSY



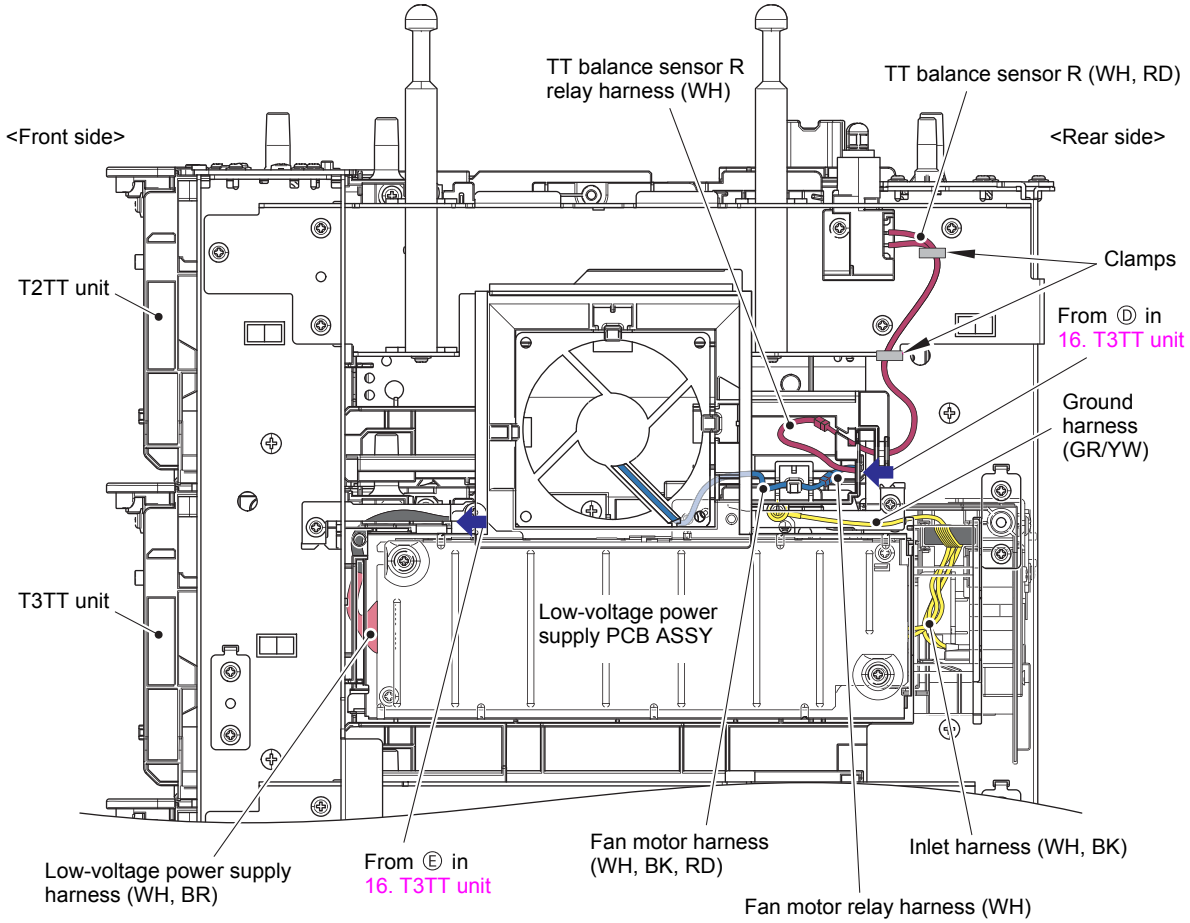
Harness colors are subject to change for some reason.

13 Left side of the TT



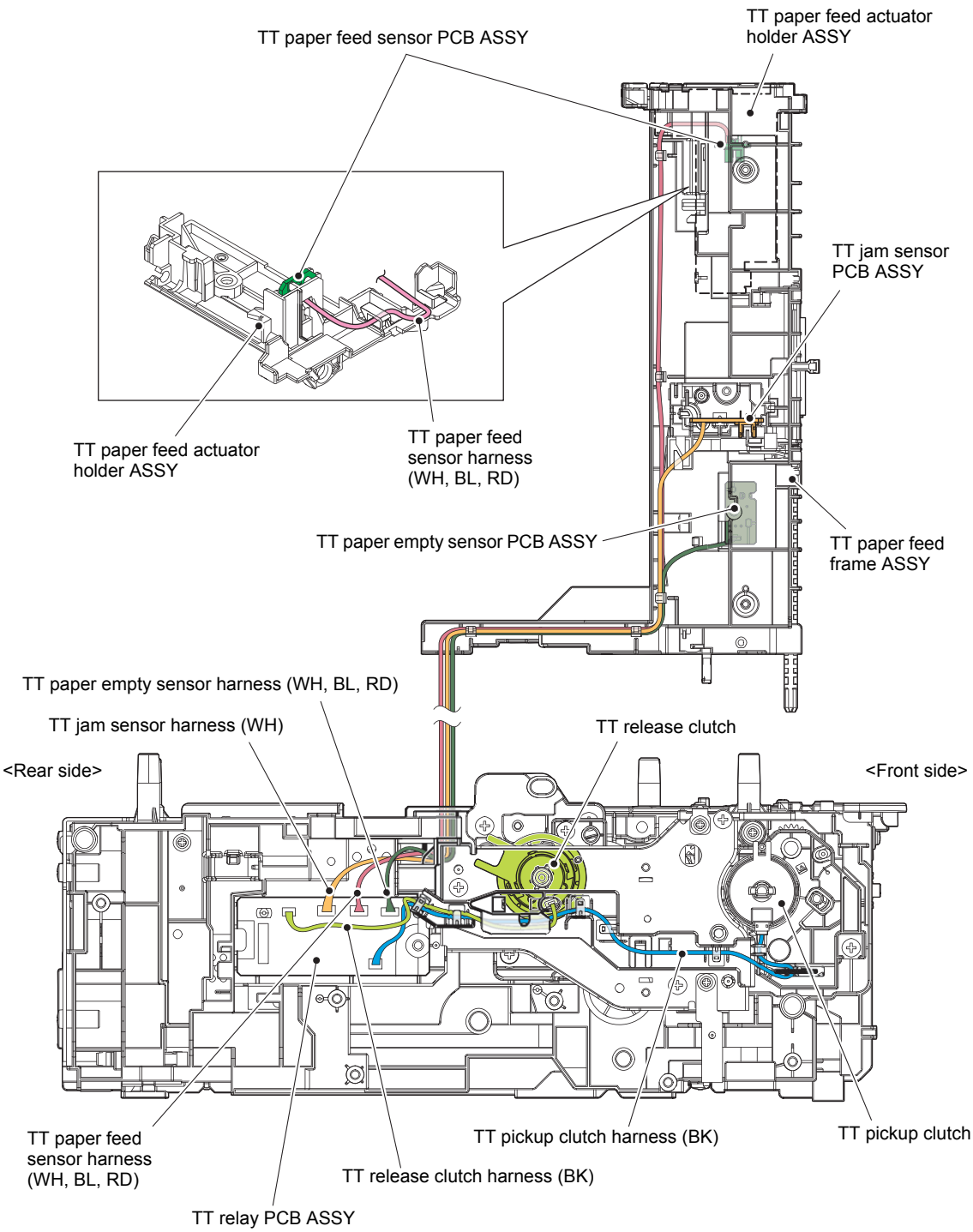
Harness colors are subject to change for some reason.

14 Upper right of the TT



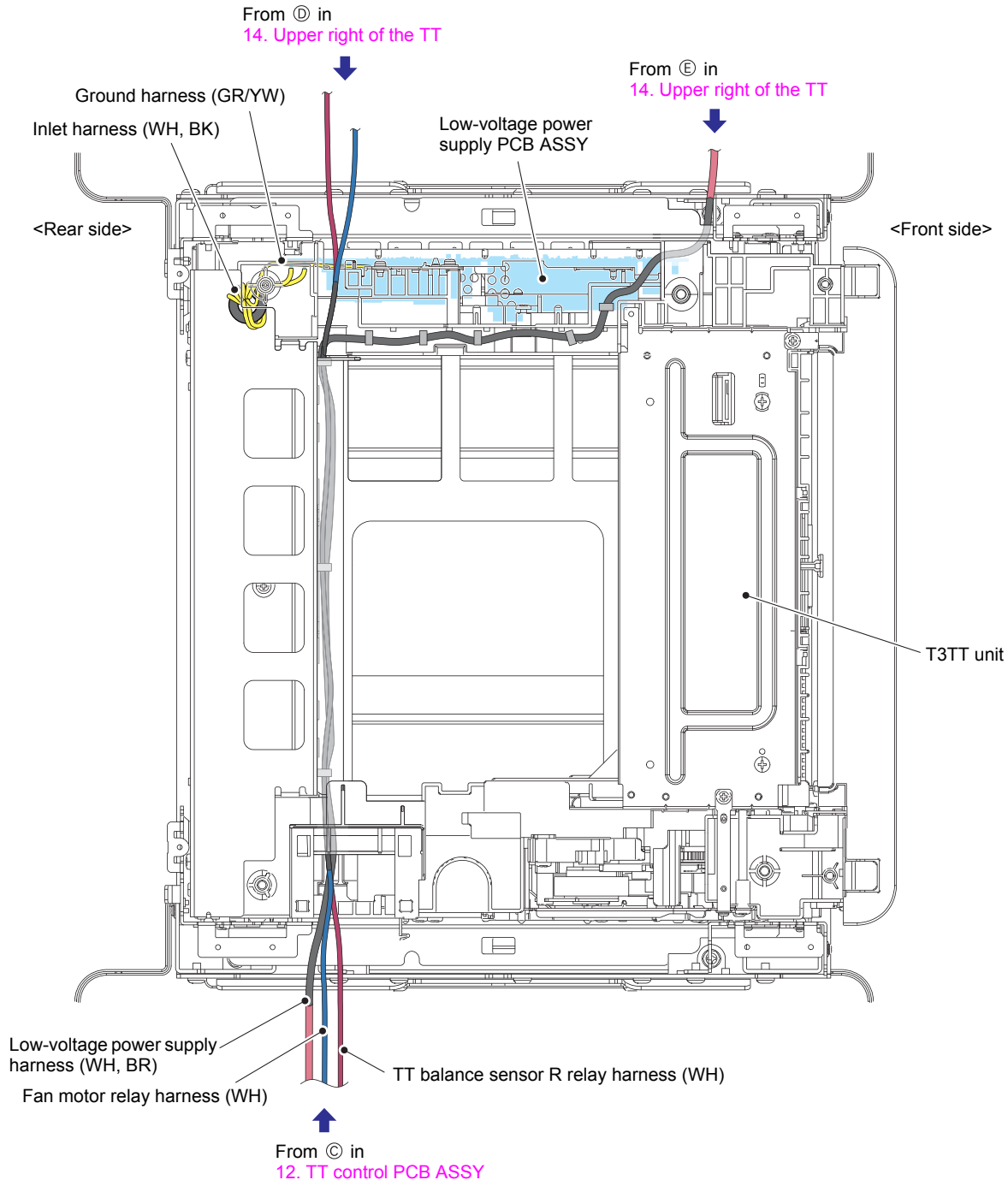
Harness colors are subject to change for some reason.

15 TT relay PCB ASSY (Each TT unit)



Harness colors are subject to change for some reason.

16 T3TT unit

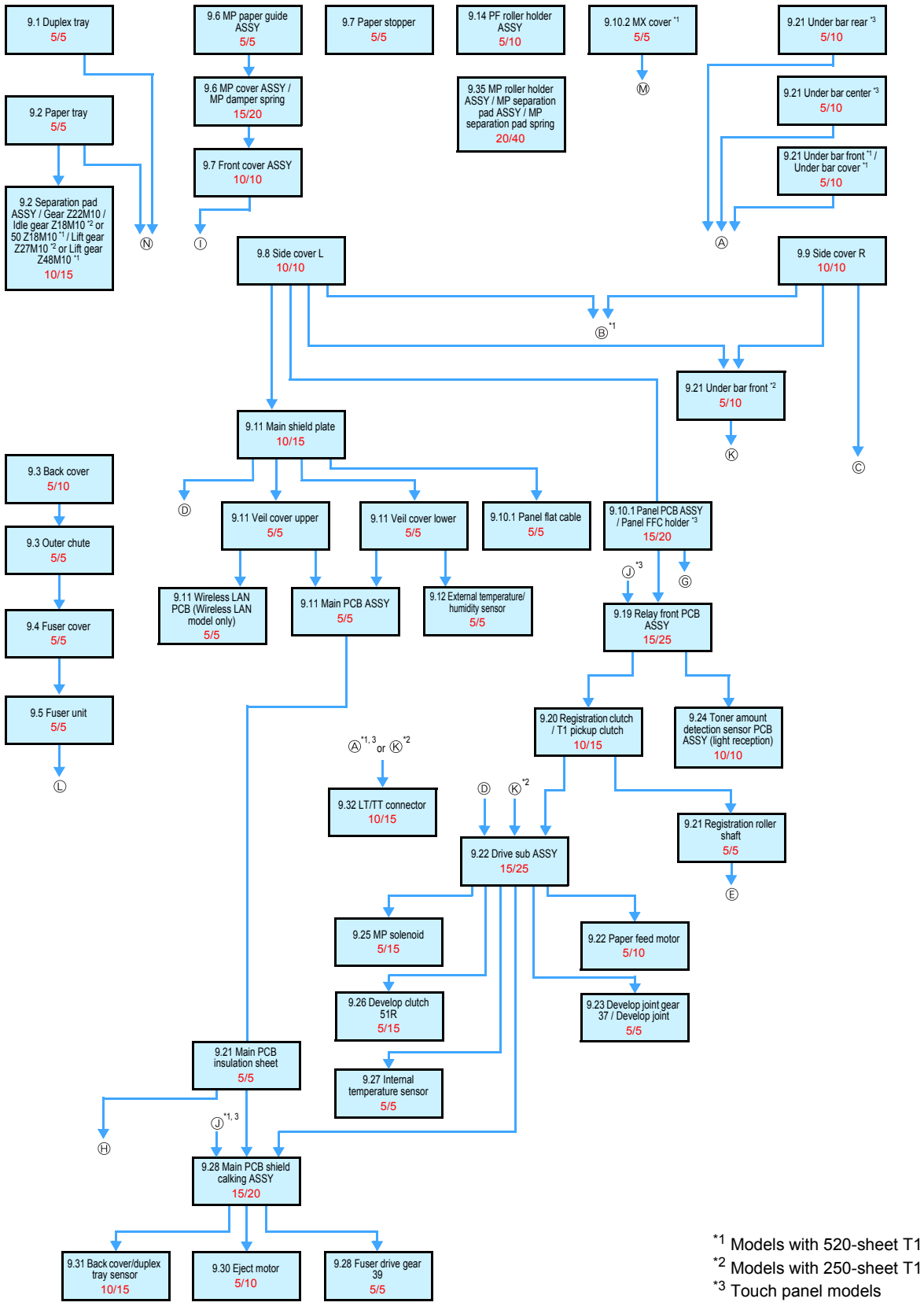


Harness colors are subject to change for some reason.

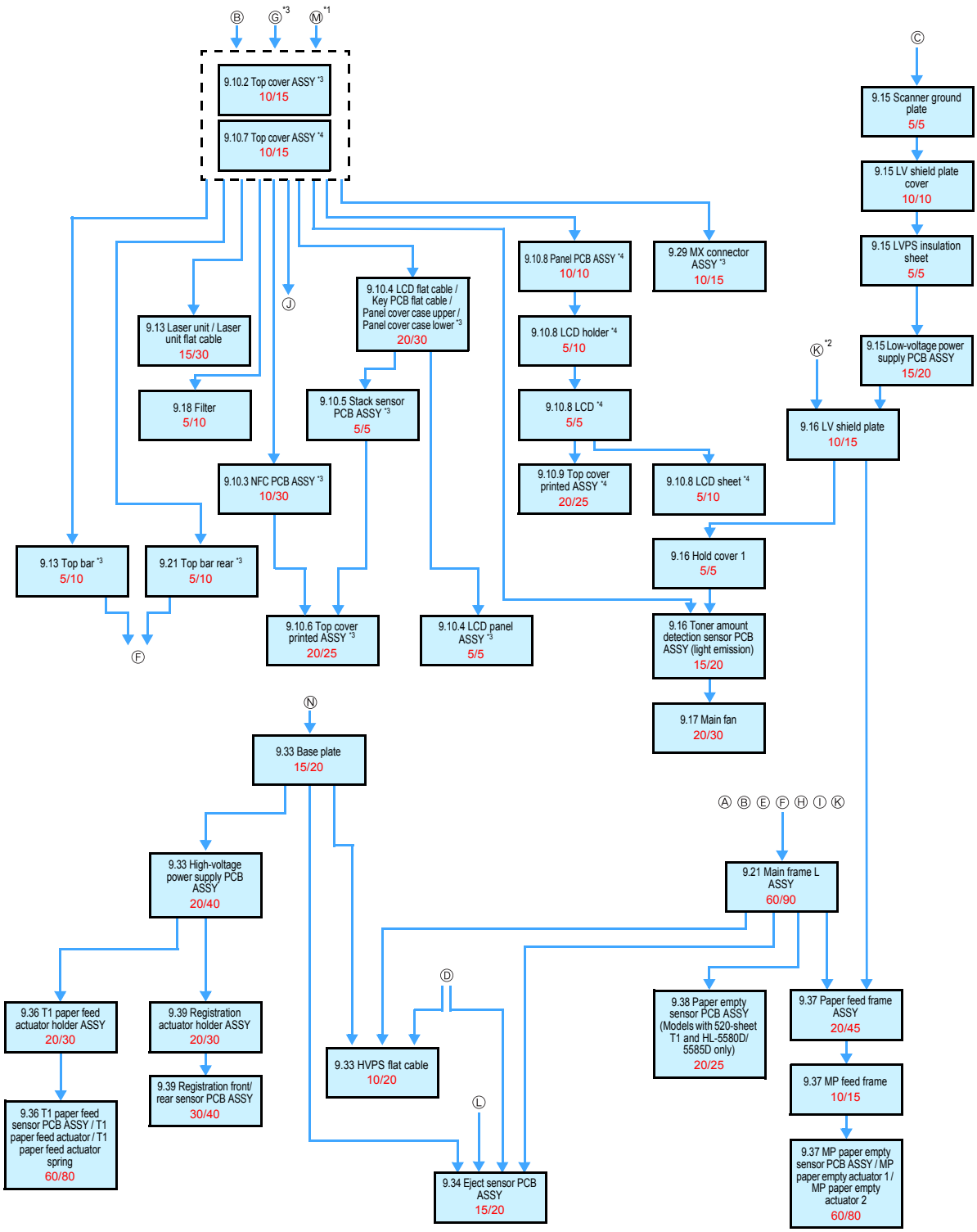
8. DISASSEMBLY FLOW CHART

8.1 Machine

Disassembly / Reassembly (second)



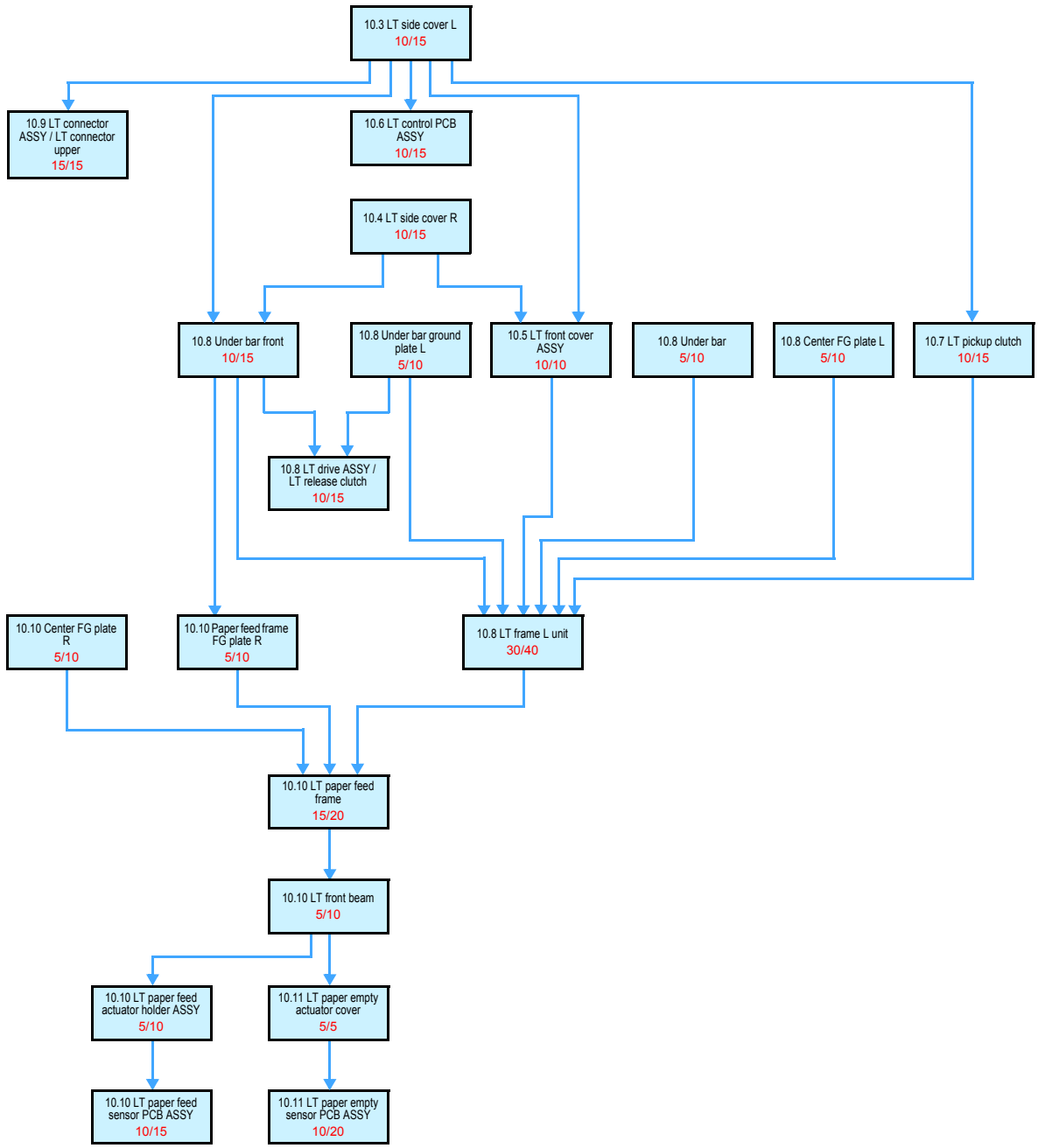
*1 Models with 520-sheet T1
*2 Models with 250-sheet T1
*3 Touch panel models



*1 Models with 520-sheet T1
*2 Models with 250-sheet T1
*3 Touch panel models
*4 Non touch panel models

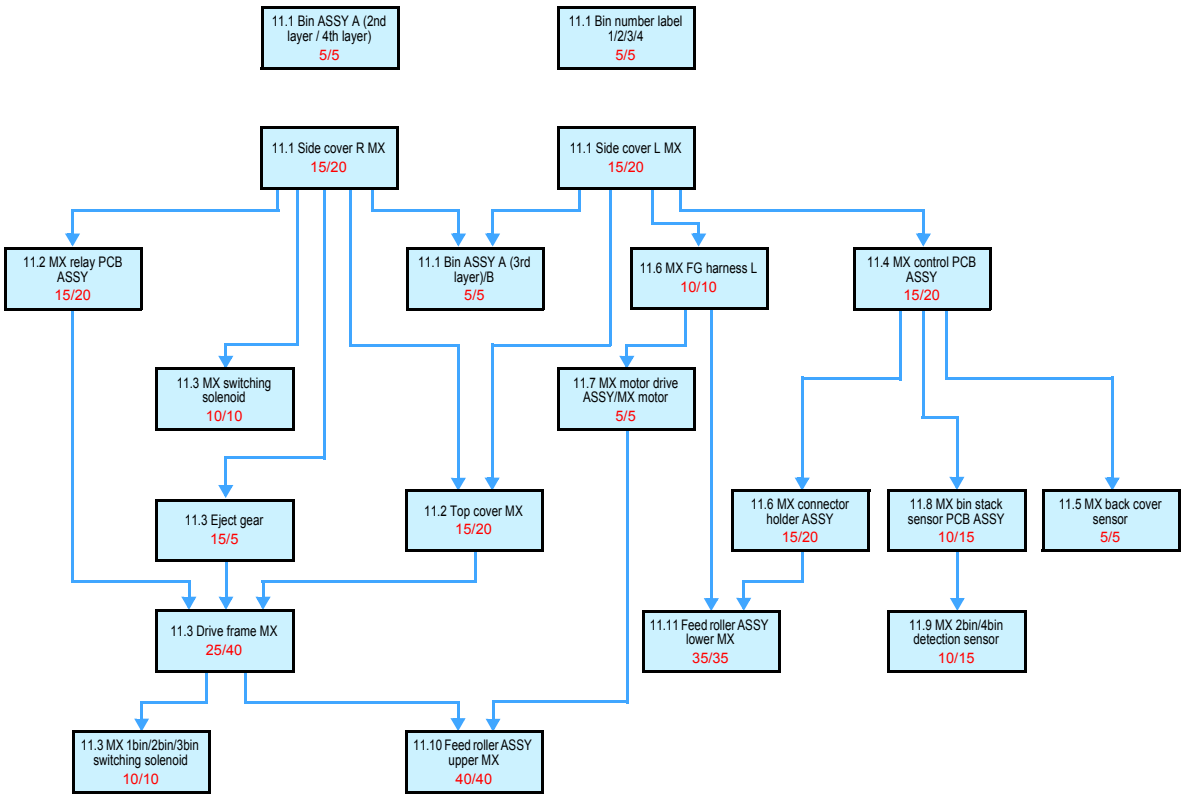
8.2 LT

Disassembly / Reassembly (second)



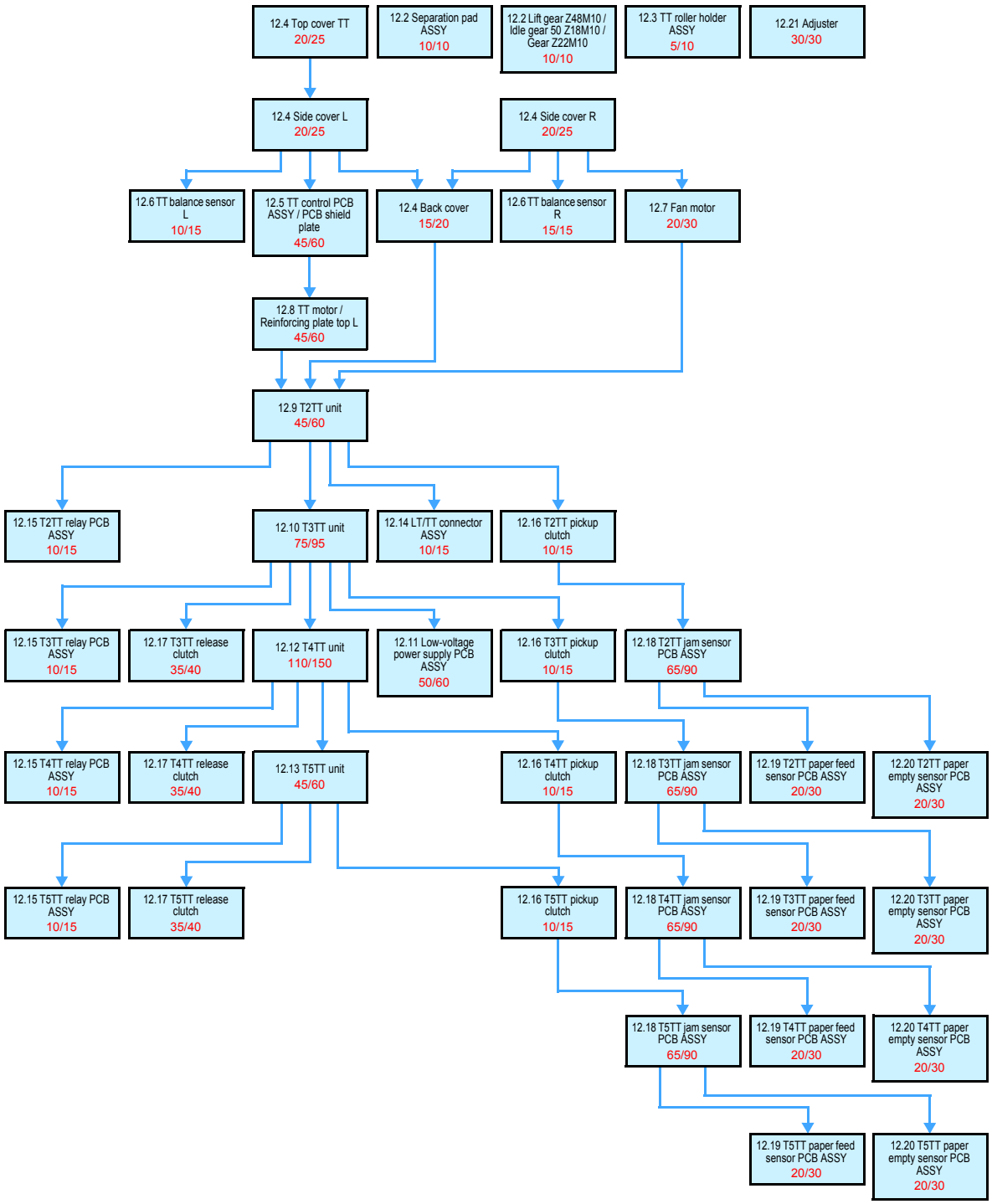
8.3 MX

Disassembly / Reassembly (second)



8.4 TT

Disassembly / Reassembly (second)



9. DISASSEMBLY PROCEDURE

9.1 Preparation

■ Disconnecting Cables and removing Accessories

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:

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

(2) Remove the following:

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

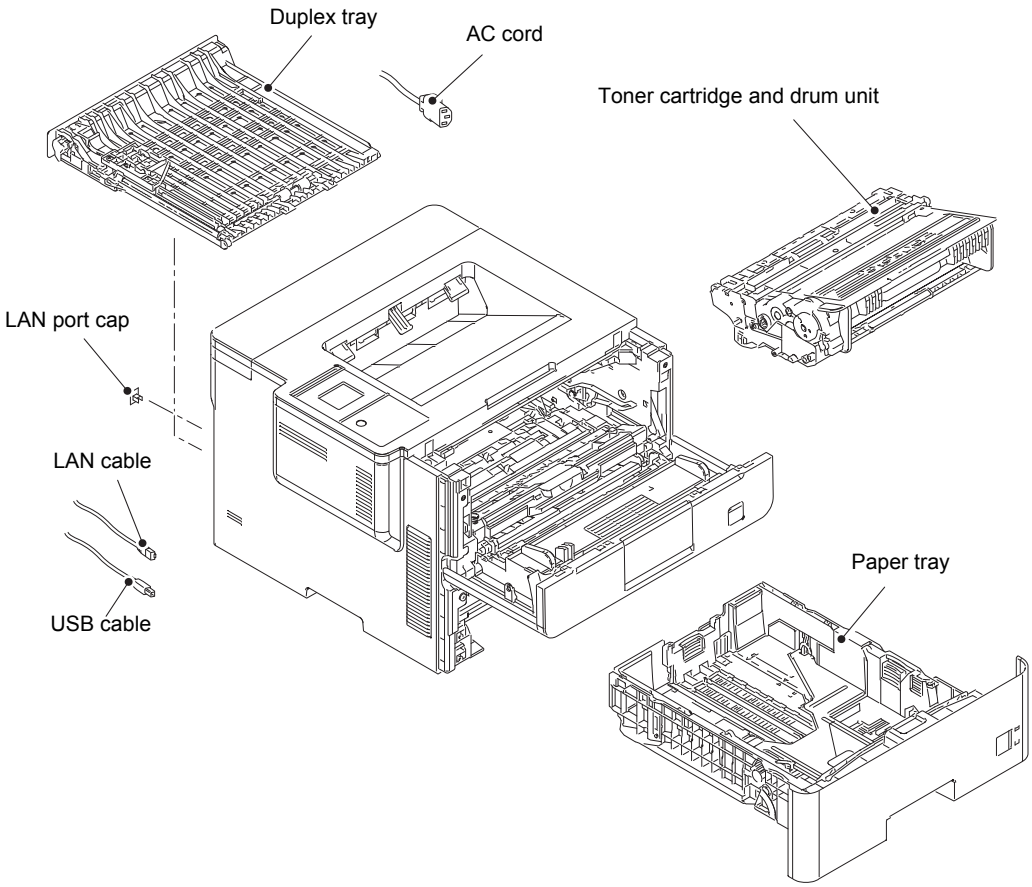


Fig. 3-16

9.2 Paper tray

(1) Release the two hooks on the separation pad ASSY from the paper tray.

(2) Push both side arms on the separation pad ASSY inwards to remove the pins, and remove the separation pad ASSY from the paper tray.

(3) Remove the separation pad spring from the separation pad ASSY.

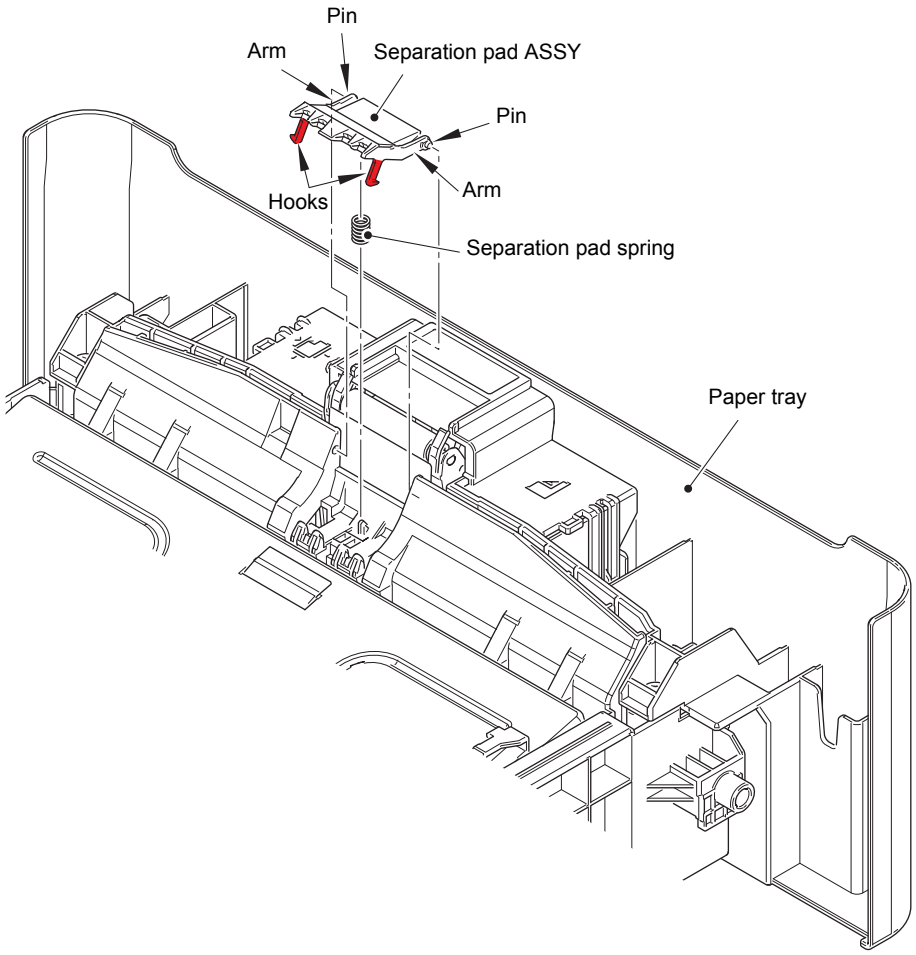


Fig. 3-17

(4) Push the hook on the lift gear Z27M10 (or lift gear Z48M10) while lifting the plate-up plate, and remove the lift gear Z27M10 (or lift gear Z48M10) from the paper tray.
250-sheet: Lift gear Z27M10
520-sheet: Lift gear Z48M10

(5) Remove the gear Z22M10 and the idle gear Z18M10 or 50 Z18M10 from the paper tray.
250-sheet: Idle gear Z18M10
520-sheet: Idle gear 50 Z18M10

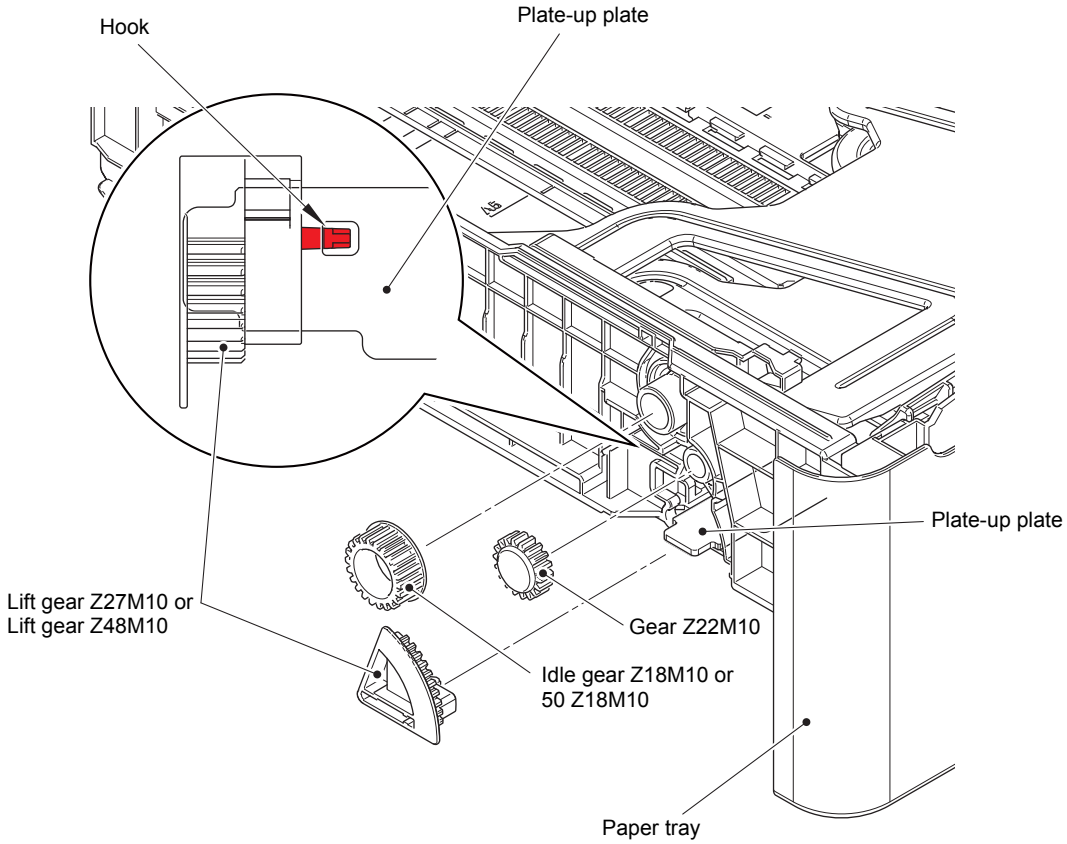


Fig. 3-18

9.3 Back cover / Outer chute

(1) Open the back cover.

(2) Push both ribs of the back cover in the direction of the arrows, and remove the two bosses on the outer chute.

Note:

- Be careful not to damage the ribs inside the back cover.

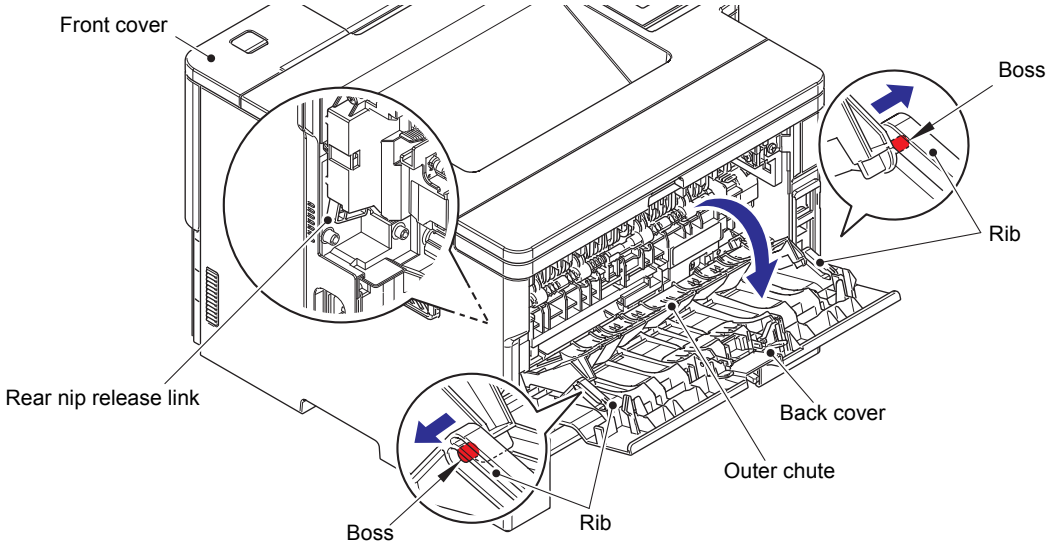


Fig. 3-19

Assembling Note:

- When attaching the back cover, open the front cover and attach the back cover while lifting the rear nip release link.

(3) Remove the back cover from the boss A, and remove the back cover.

(4) Open the outer chute approximately 80 degrees. Remove the outer chute from boss B, and remove the outer chute from the machine.

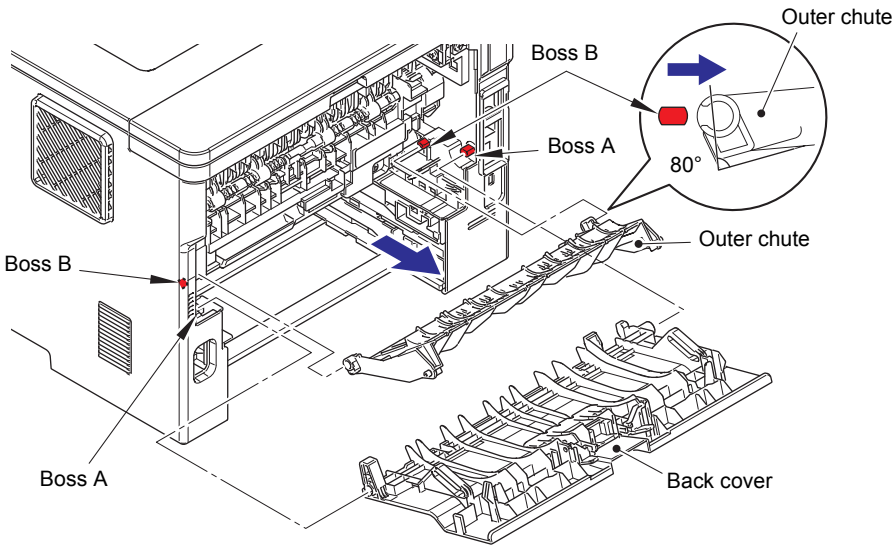


Fig. 3-20

9.4 Fuser cover

(1) Push the two knobs on the fuser cover, and pull the fuser cover down in the direction of the arrow.

(2) Remove the fuser cover from the bosses on the fuser unit, and remove the fuser cover.

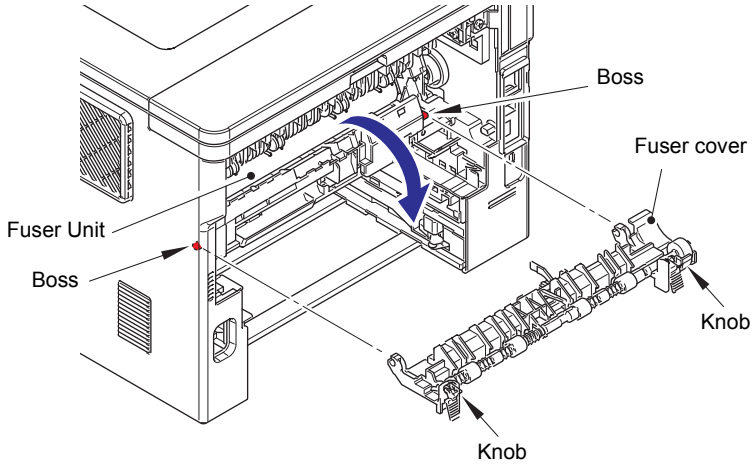
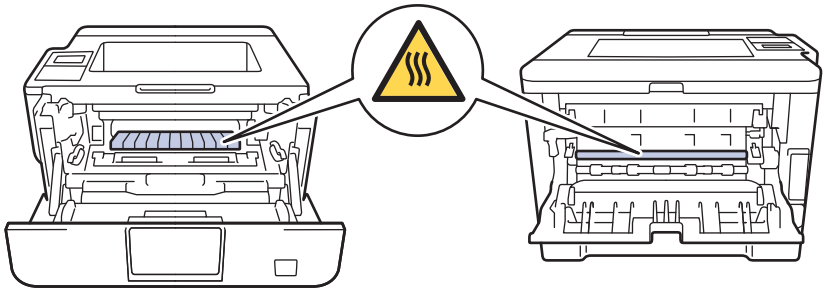


Fig. 3-21

9.5 Fuser unit

CAUTION

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.



Note:

- Do not touch the fuser unit film directly. It may cause the fuser unit failure.

(1) Remove the taptite bind B M4x12 screw, and remove the fuser unit line cover R.

(2) Open the front cover, and release the nip of the pressure roller.

(3) Slide the lower rear nip release link in the direction of the arrow 3b while pulling it in the direction of the arrow 3a to remove the rear nip release link.

(4) Remove the taptite pan B M4x14 screw. Release the hook, and remove the fuser unit line cover L.

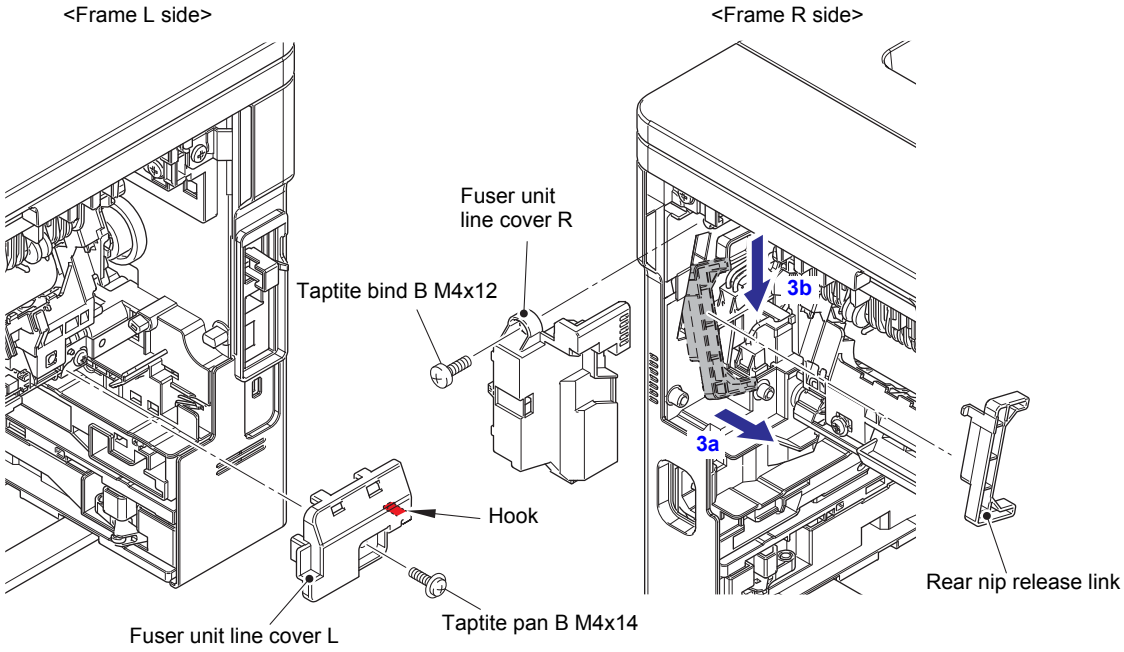


Fig. 3-22

(5) Release the heater harness of the fuser unit from the securing fixtures, and disconnect it from the low-voltage heater harness.

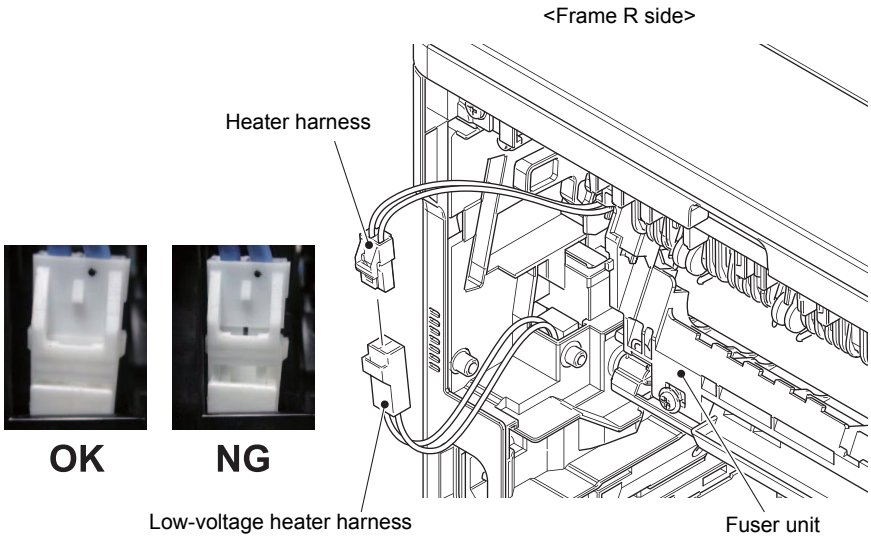


Fig. 3-23

Assembling Note:

- After connecting the heater harness, pull the connector on the heater harness side while holding the connector on the low-voltage heater harness side to make sure it is locked.

Harness routing: Refer to "6. Rear side of the machine".

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

Note:

- When disconnecting the harness, hold the top of the PCB connector to prevent the PCB connector being damaged.

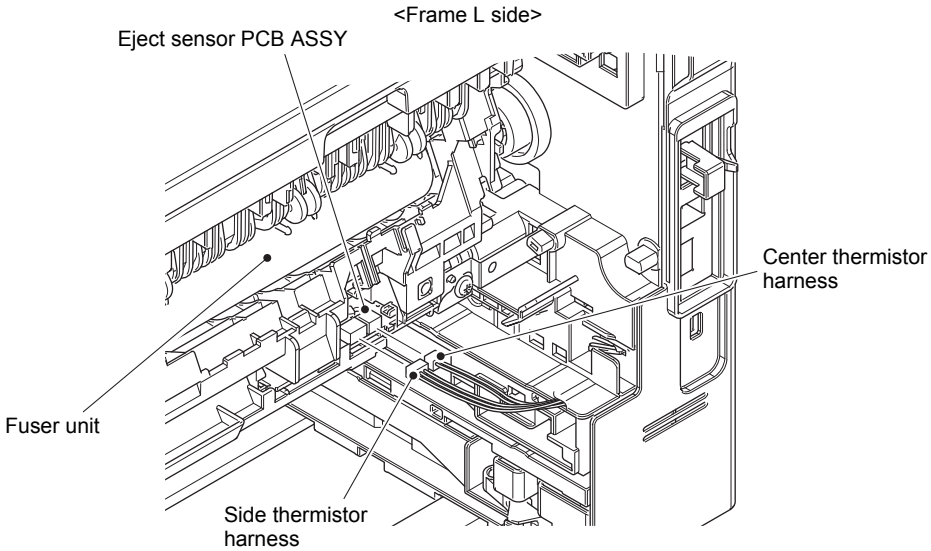


Fig. 3-24

Harness routing: Refer to "6. Rear side of the machine".

(7) Close the front cover and return the pressure roller nip.

(8) Remove the taptite pan B M4x14 screw, and remove the fuser unit.

Note:

- Make sure that the front cover is closed when removing the fuser unit.

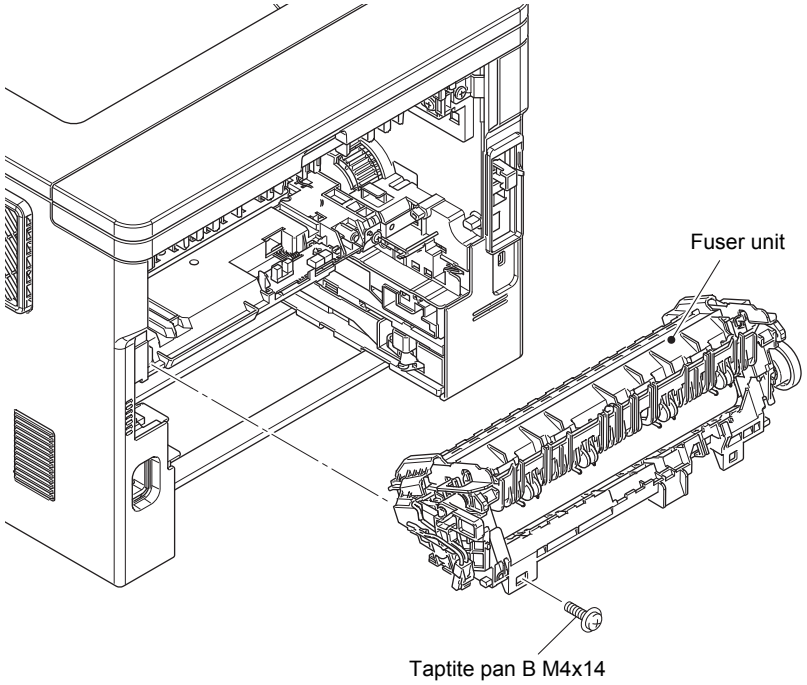


Fig. 3-25

9.6 MP cover ASSY

(1) Open the MP cover ASSY.

(2) Remove the two hooks on the MP paper guide ASSY from the two bosses on the front cover ASSY.

Note:

- When removing the MP paper guide ASSY from the bosses on the front cover ASSY, pull it out strongly in the direction of the arrow.

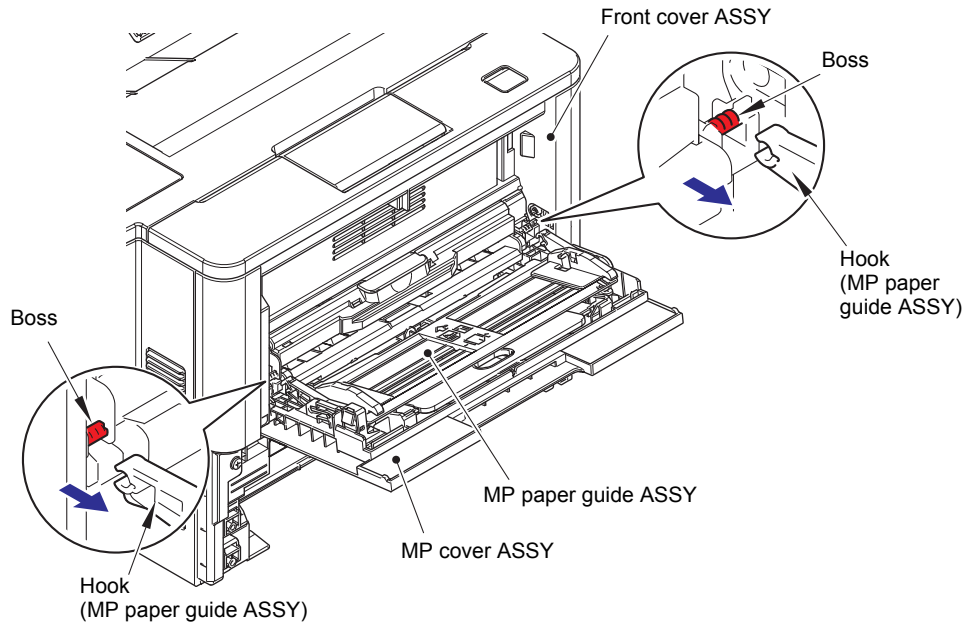


Fig. 3-26

(3) Open the front cover ASSY, and release the hook on the MP damper spring from the front cover ASSY.

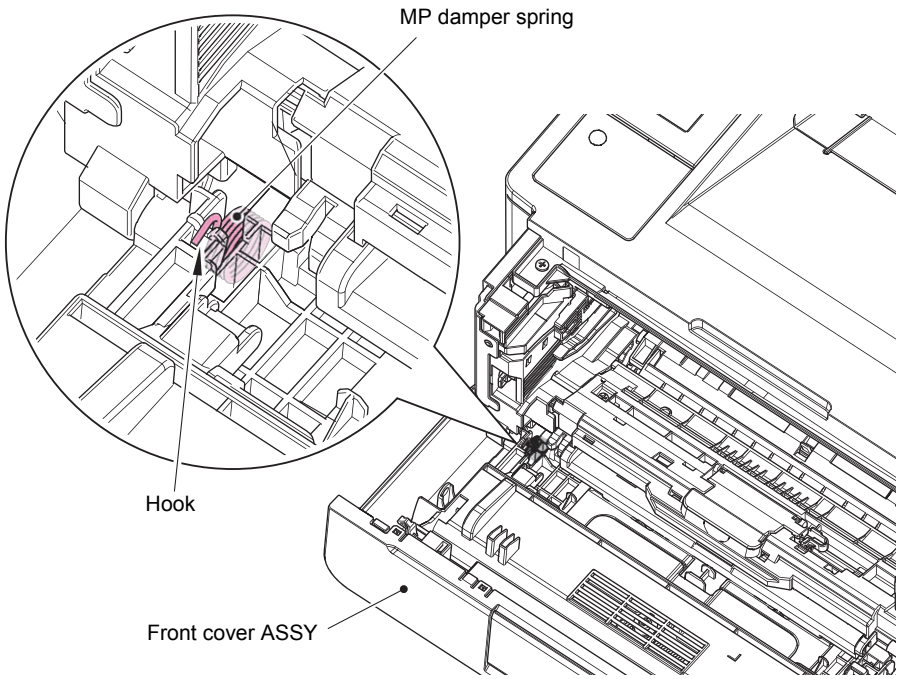


Fig. 3-27

(4) Close the front cover ASSY. Remove the two bosses on the MP cover ASSY, and remove the MP cover ASSY from the front cover ASSY.

Note:

- Remove the MP cover ASSY while pushing "A" on the front cover ASSY in the direction of the arrow.

(5) Remove the MP damper spring from the MP cover ASSY.

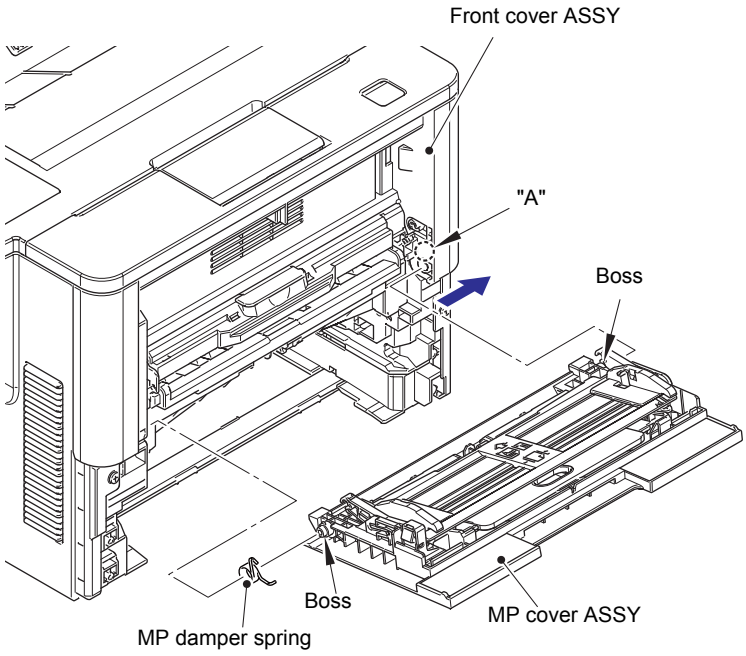


Fig. 3-28

Assembling Note:

- Attach the MP damper spring as described in the figure below.

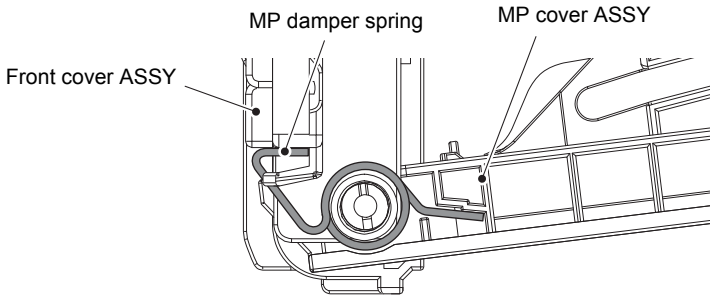


Fig. 3-29

9.7 Front cover ASSY

(1) Push the front cover release button, and open the front cover.
(2) Release the two hooks, and remove the develop joint link from the front cover ASSY.
(3) Release the hook, and remove the nip release link from the front cover ASSY.

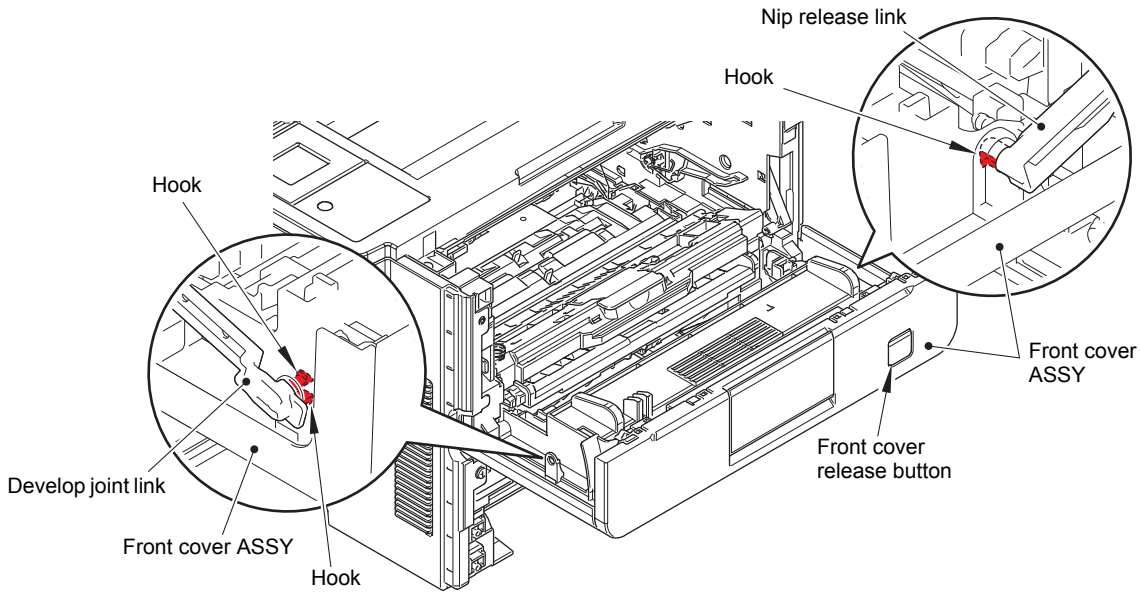


Fig. 3-30

(4) Remove the front cover ASSY from the two bosses.

Note:
- When removing the front cover ASSY, push "A" on the front cover ASSY in the direction of the arrow 4A, and slide the front cover ASSY in the direction of the arrow 4B to remove it.

(5) Remove the two bosses on the paper stopper, and remove the paper stopper from the front cover ASSY.

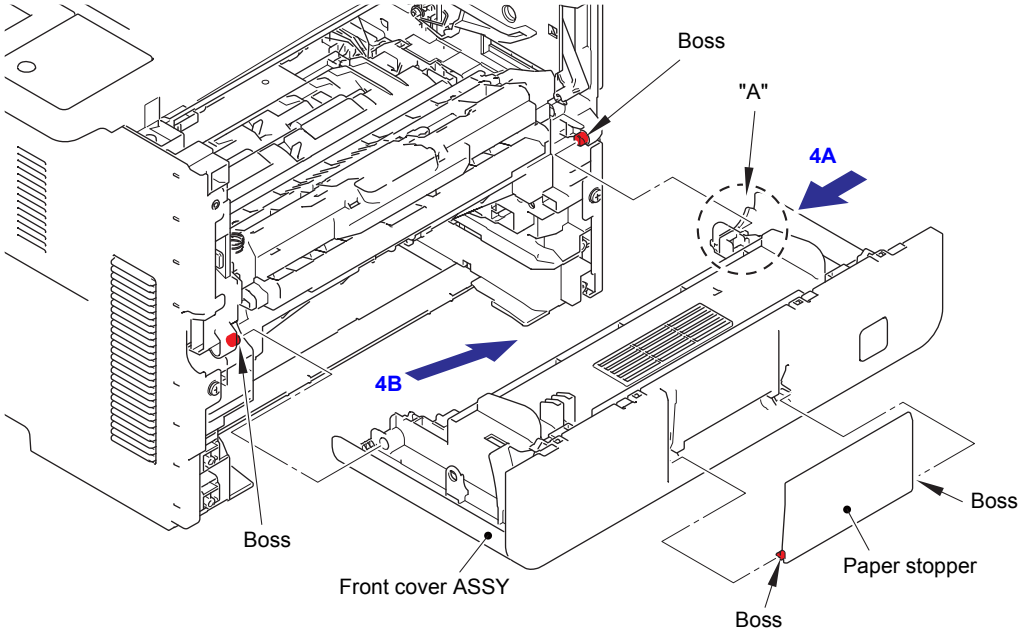


Fig. 3-31

9.8 Side cover L

(1) Remove the two taptite bind B M4x12 screws. Release the hook A, B and C of the arrow A to C in this order, and remove the side cover L.

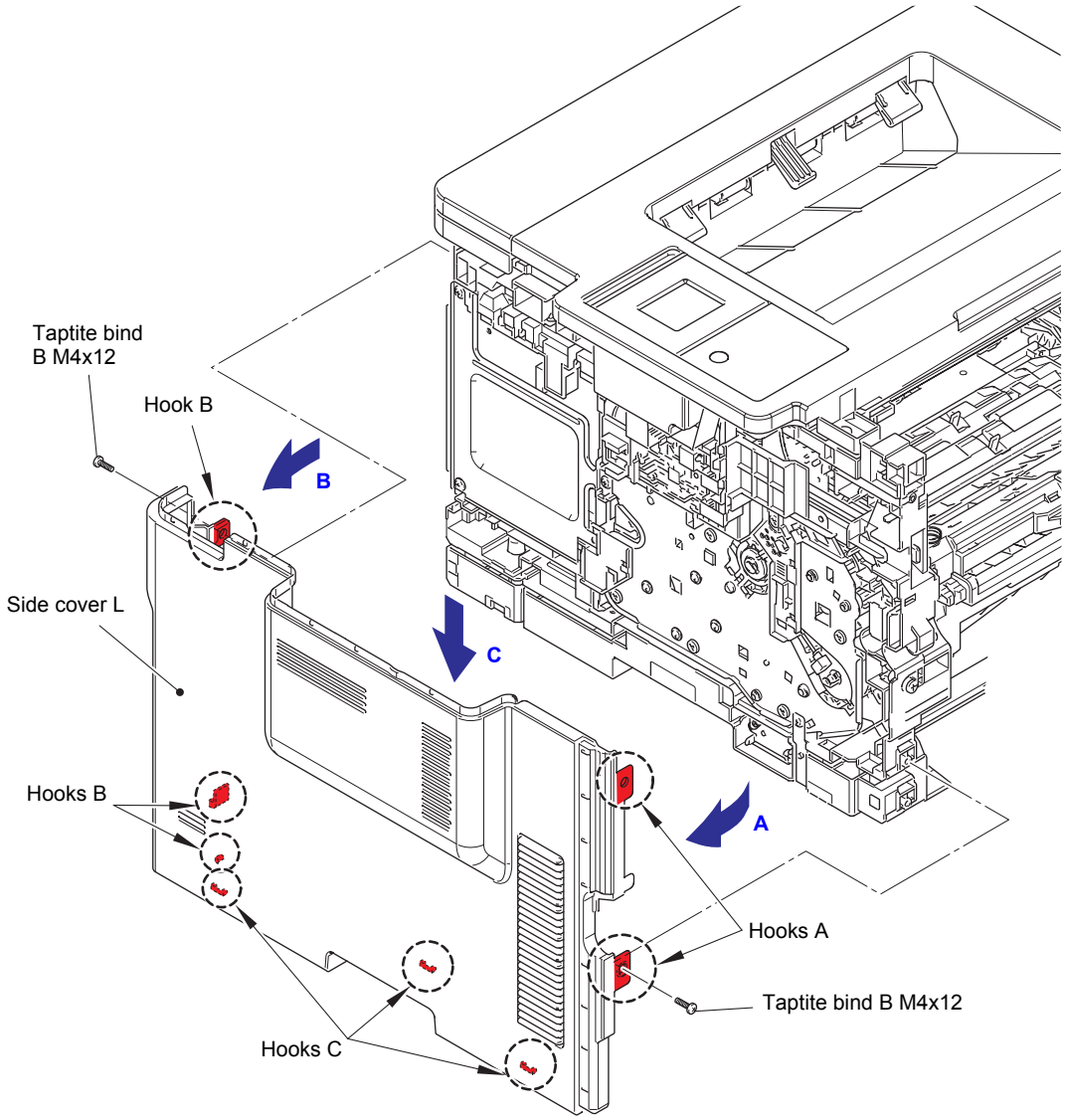


Fig. 3-32

9.9 Side cover R

(1) Remove the two taptite bind B M4x12 screws. Release the hook A, B and C of the arrow A to C in this order, and remove the side cover R.

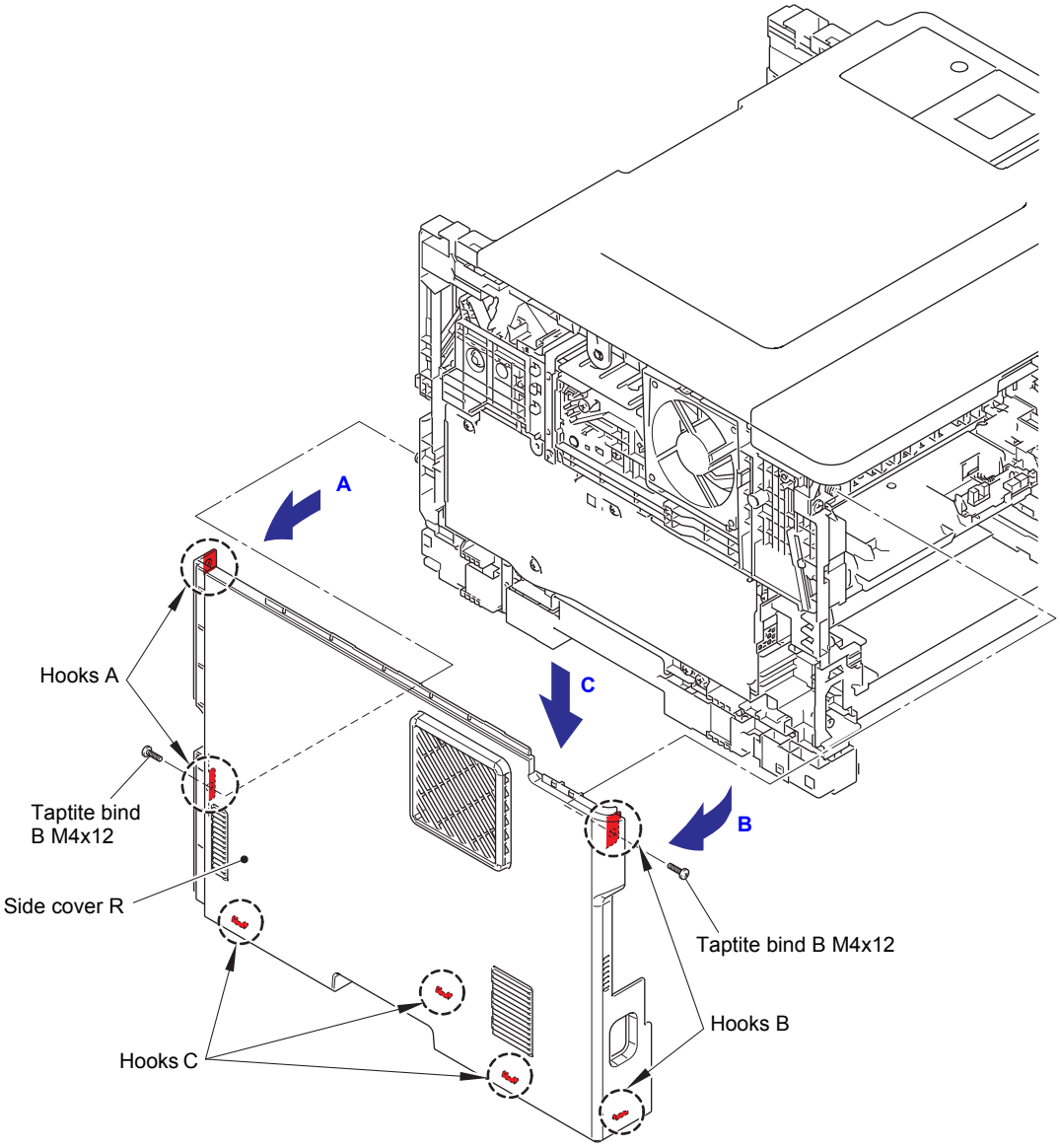


Fig. 3-33

9.10 Top cover ASSY

■ Touch panel models

9.10.1 Panel PCB ASSY

(1) Disconnect all flat cables from the panel PCB ASSY.

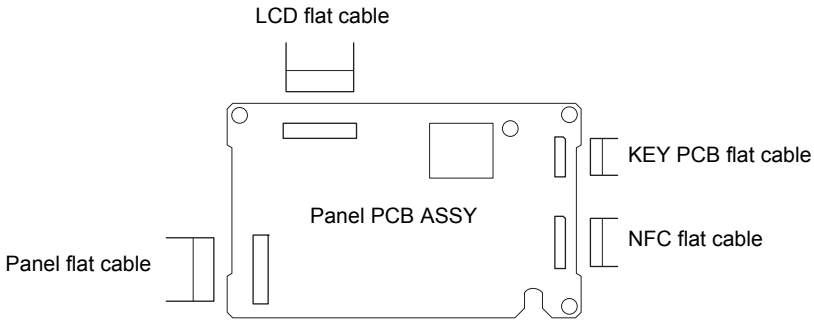


Fig. 3-34

(2) Release the two hooks A, and remove the panel PCB ASSY from the panel FFC holder.

(3) Remove the taptite cup S M3x8 SR screw to disconnect the FG harness A.

(4) Release each flat cable and the FG harness A from the securing fixtures of panel FFC holder.

(5) Release the hook B, slide the panel FFC holder in the direction of the arrow to release each tab, and remove the panel FFC holder.

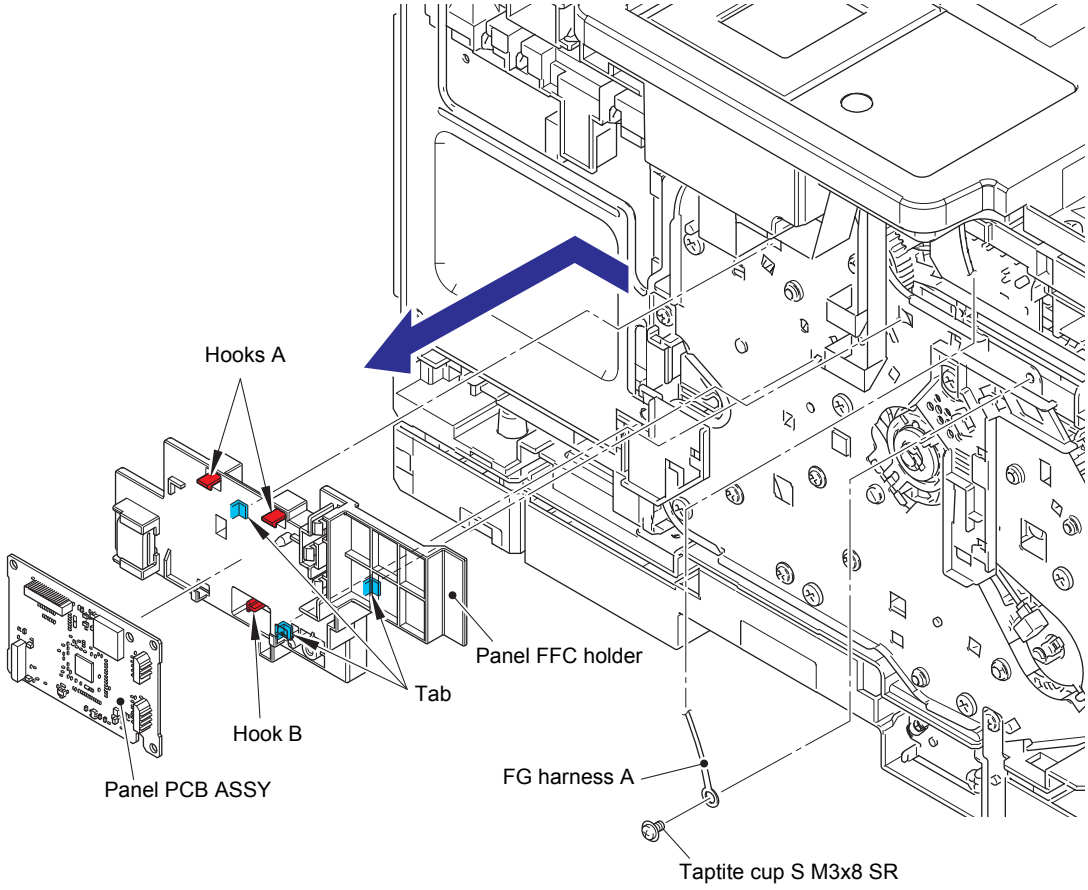


Fig. 3-35

Harness routing: Refer to “1. Left side of the machine (Touch panel models)”.

9.10.2 Top cover ASSY

(1) Remove the MX cover.

(2) Disconnect the stack sensor harness from the main PCB ASSY, and release it from the securing fixtures.

(3) Remove the four taptite bind B M4x12 screws.

(4) Release the hook A first, and then release the hook B. Remove the top cover ASSY.

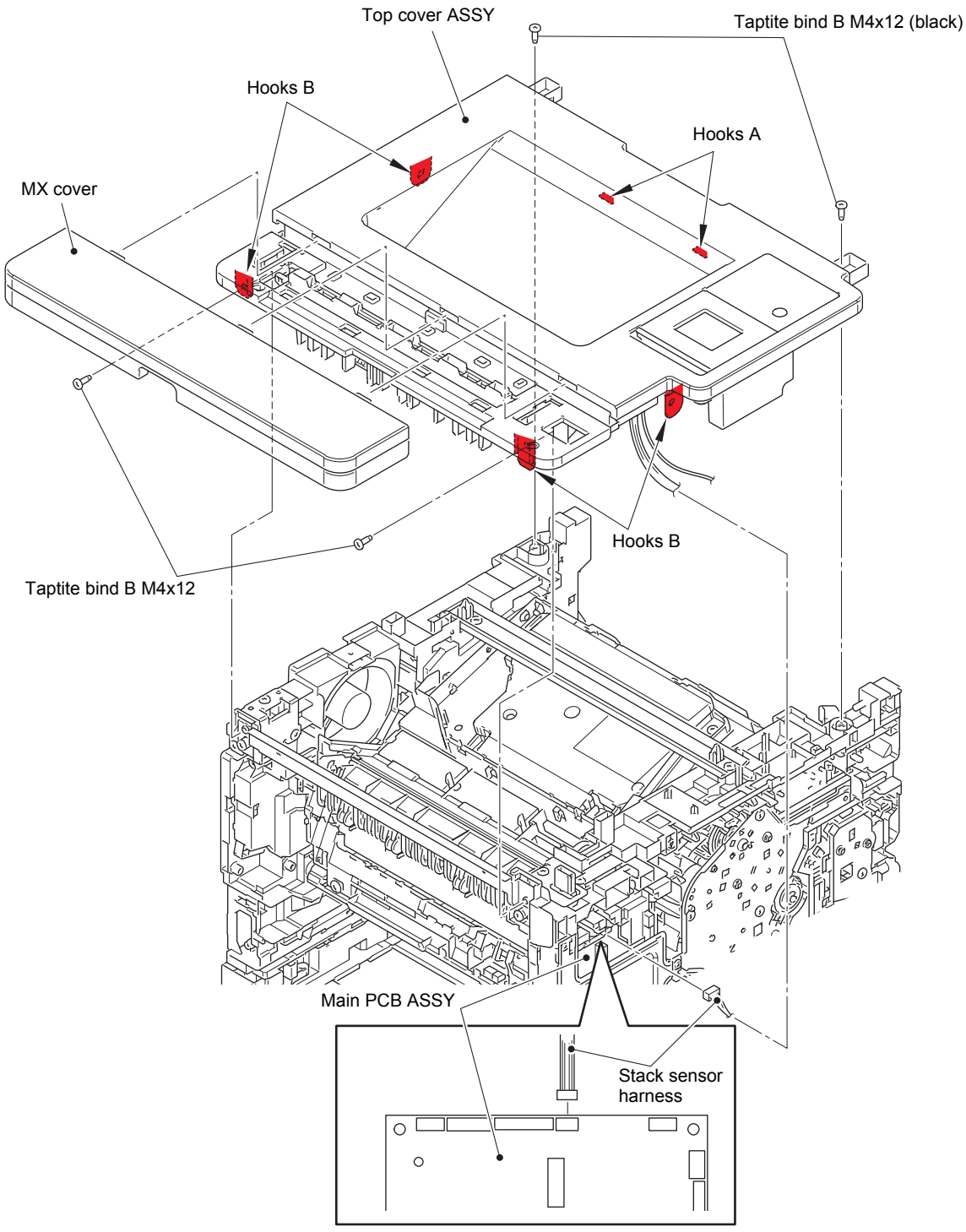


Fig. 3-36

Harness routing: Refer to "1. Left side of the machine (Touch panel models)".

9.10.3 NFC PCB ASSY

(1) Release the NFC flat cable from the securing fixtures.

(2) Release the two hooks, and remove the NFC PCB ASSY from the top cover printed ASSY.

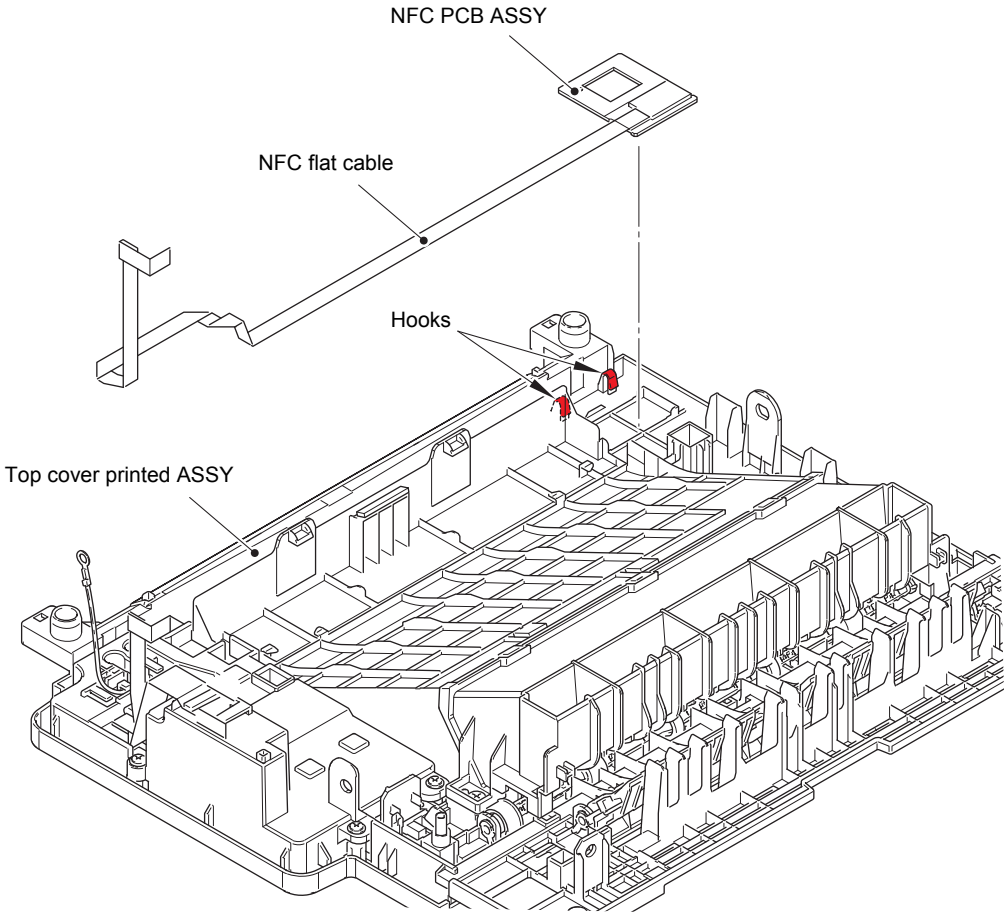


Fig. 3-37

Harness routing: Refer to "4. Bottom side of the top cover ASSY (Touch panel models)".

Assembling Note:

- Fold the NFC flat cable at the positions shown in the figure below.

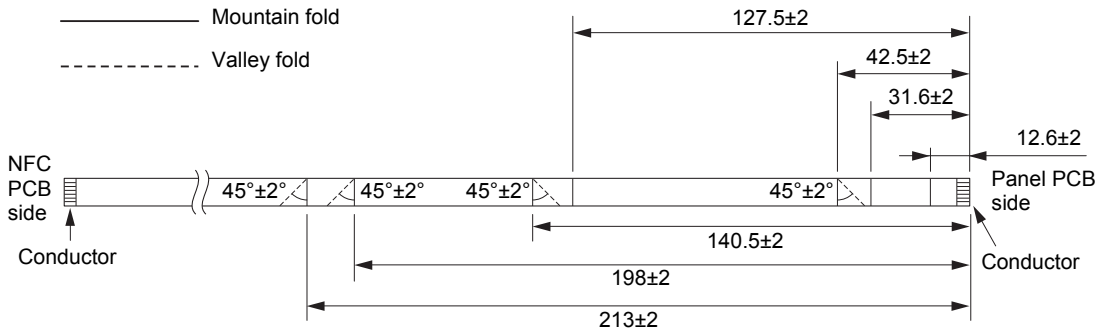


Fig. 3-38

9.10.4 Control panel

(1) Remove the taptite cup B M3x10 screw, and remove the FG harness A from the top cover printed ASSY. Release the FG harness A from the securing fixtures.

(2) Remove the taptite cup B M3x10 screw, and disconnect the FG harness B.

(3) Release the LCD flat cable from the securing fixtures, and disconnect it from the flat core.

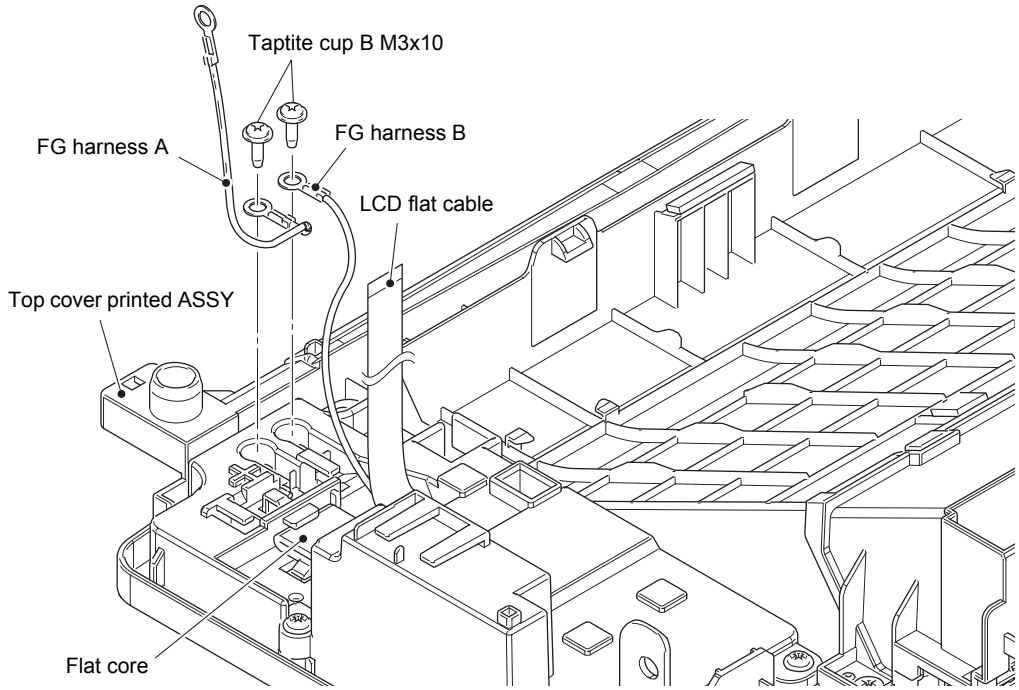


Fig. 3-39

Harness routing: Refer to "4. Bottom side of the top cover ASSY (Touch panel models)".

Assembling Note:

- Fold the LCD flat cable at the positions shown in the figure below.

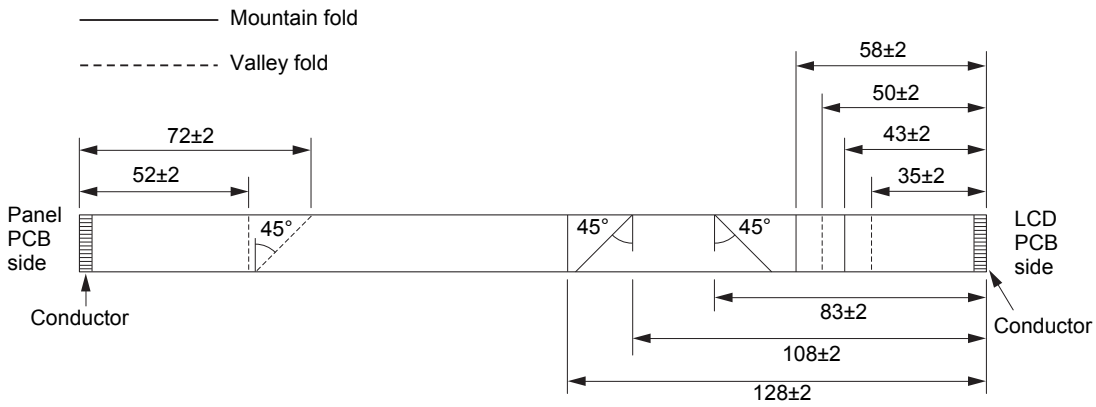


Fig. 3-40

(4) Remove the four taptite cup B M3x10 screws. Remove the panel cover case lower from the top cover printed ASSY. Pull out the FG harness and two flat cables from the hole.

(5) Release the hook, and remove the panel ground spring. Remove the panel spring from the panel ground spring.

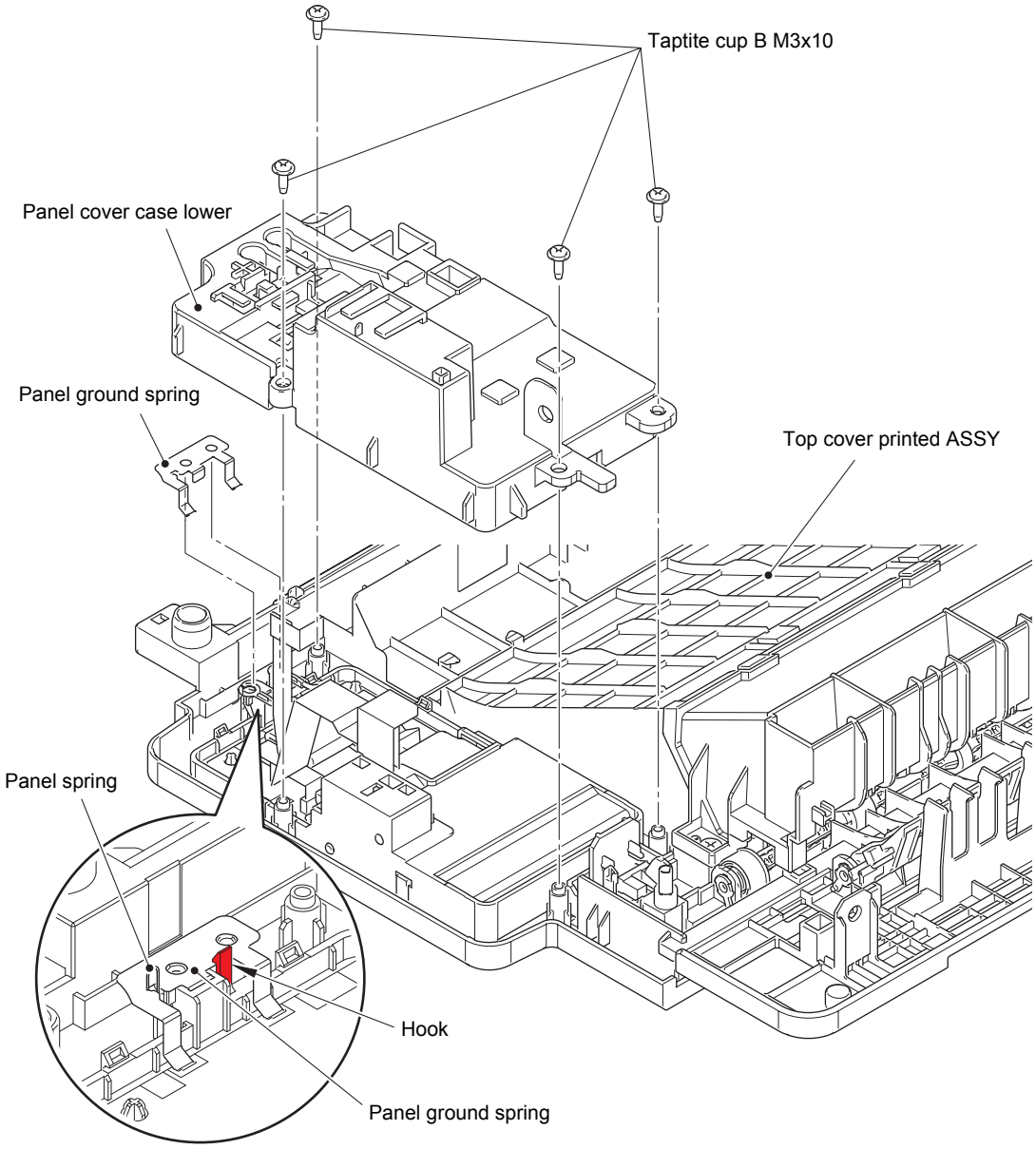


Fig. 3-41

Assembling Note:

- Attach the panel ground spring and panel spring as described in the figure above.

(6) Release each hook, and remove the panel cover case upper from the top cover printed ASSY.

(7) Disconnect the key PCB flat cable from the key PCB ASSY.

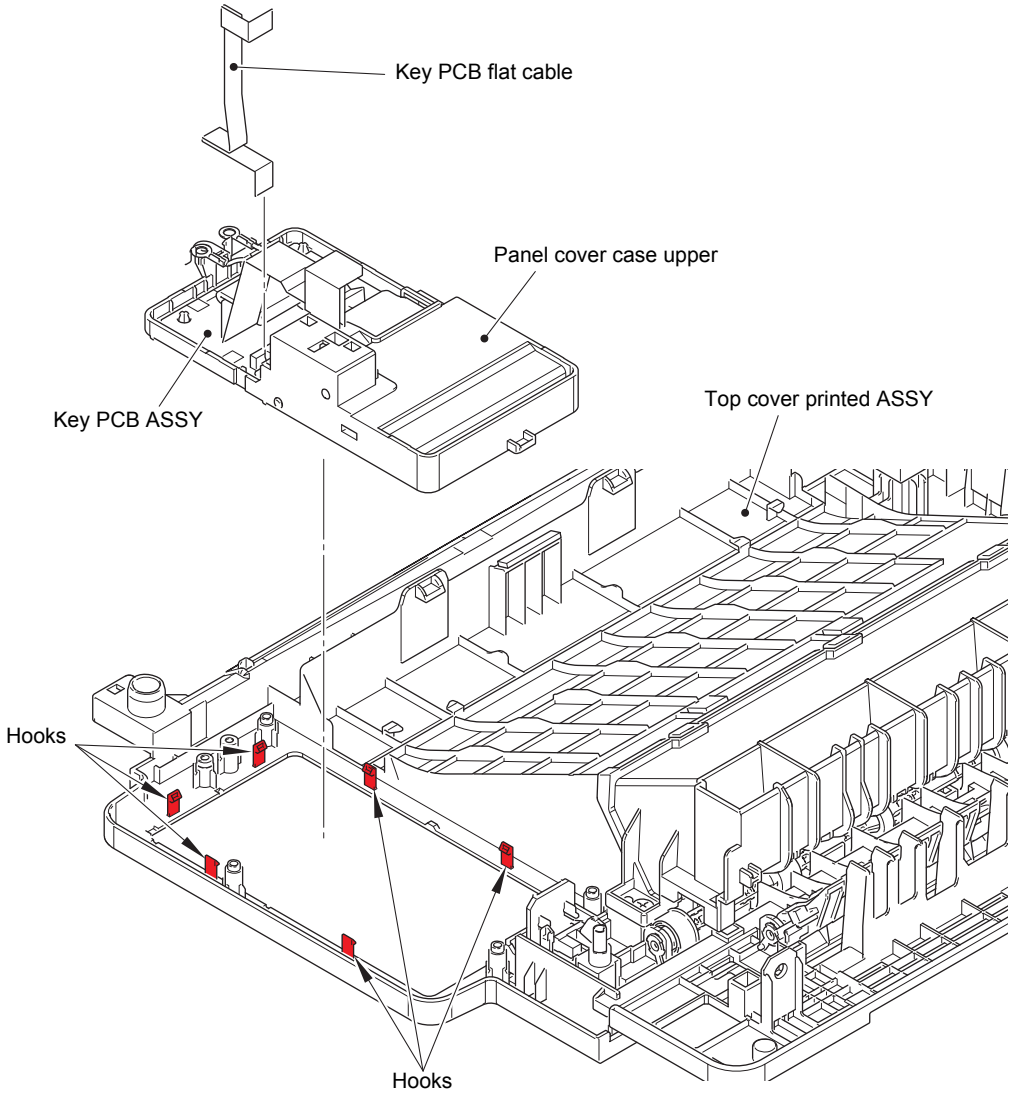


Fig. 3-42

Assembling Note:

- Fold the key PCB flat cable at the positions shown in the figure below.

Fig. 3-43

(8) Remove the two bosses, and remove the LCD panel ASSY from the panel cover case upper.

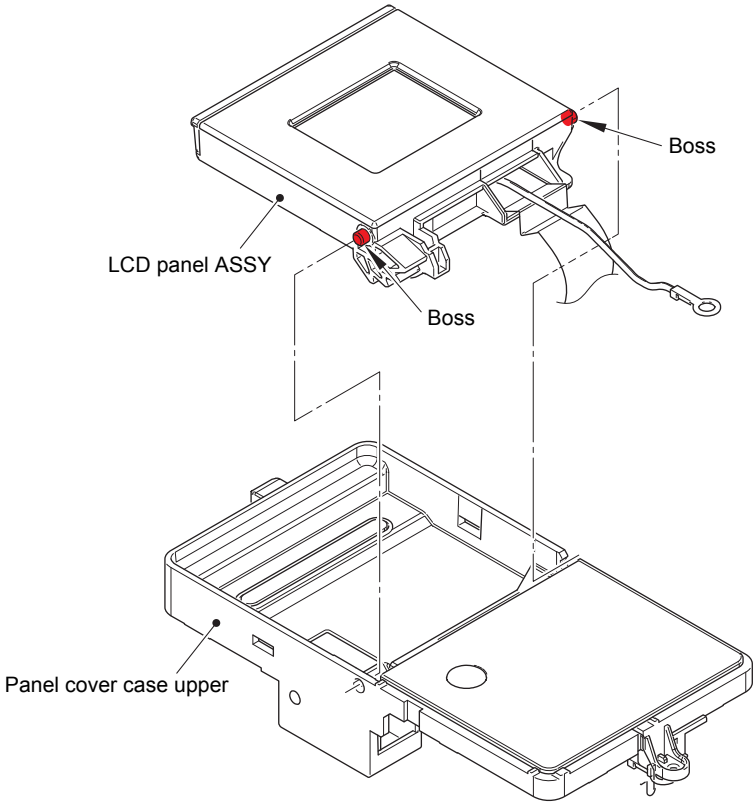


Fig. 3-44

9.10.5 Stack sensor PCB ASSY

(1) Release the hook, and remove the stack sensor PCB ASSY from the top cover printed ASSY.

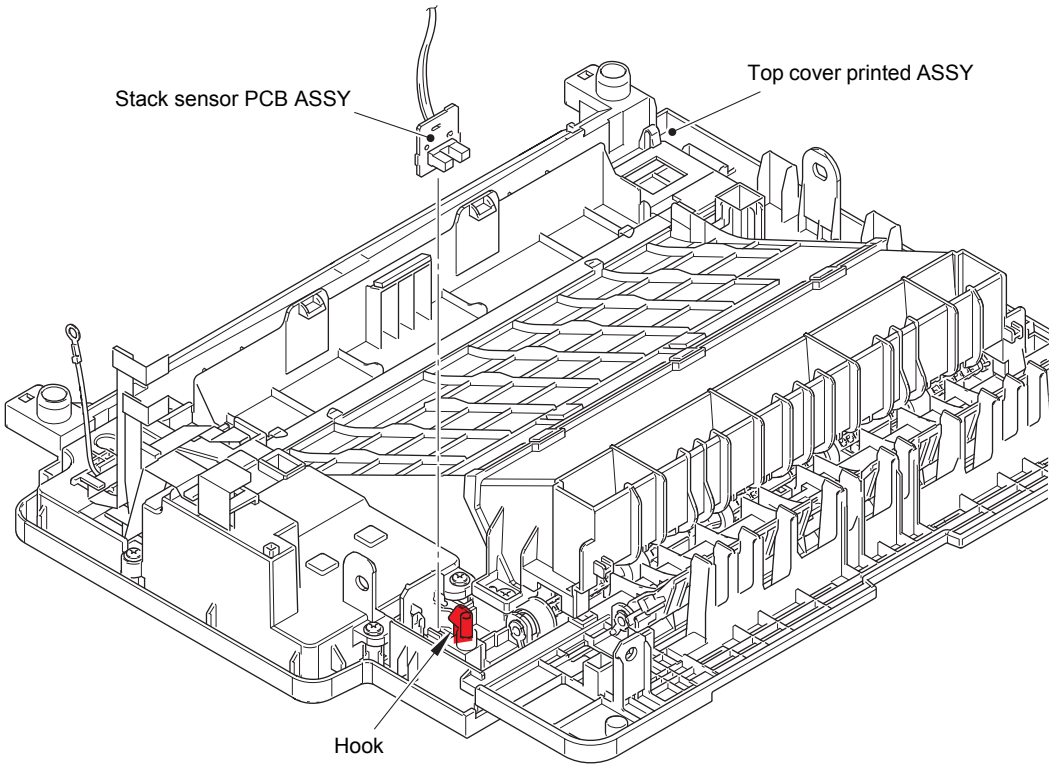


Fig. 3-45

9.10.6 Top cover printed ASSY

(1) Remove the two taptite bind B M4x12 screws, and remove the inner chute from the top cover printed ASSY.

(2) Remove the three taptite bind B M3x10 screws, and remove the eject cover from the top cover printed ASSY.

(3) Release each hook, and remove the two paper stack levers from the top cover printed ASSY.

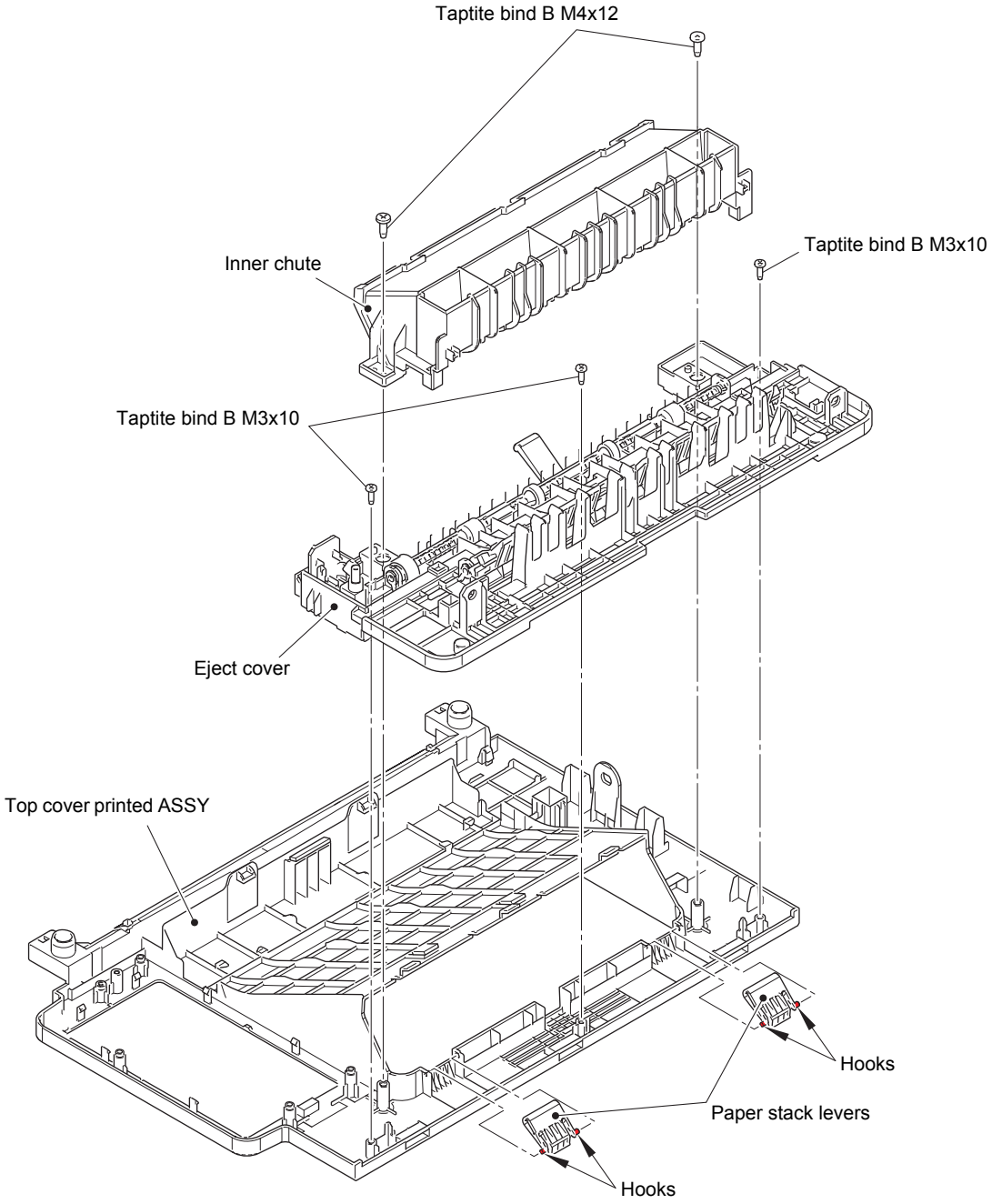


Fig. 3-46

■ Non touch panel models

9.10.7 Top cover ASSY

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

(2) Remove the four taptite bind B M4x12 screws.

(3) Release the hook A first, and then release the hook B. Remove the top cover ASSY.

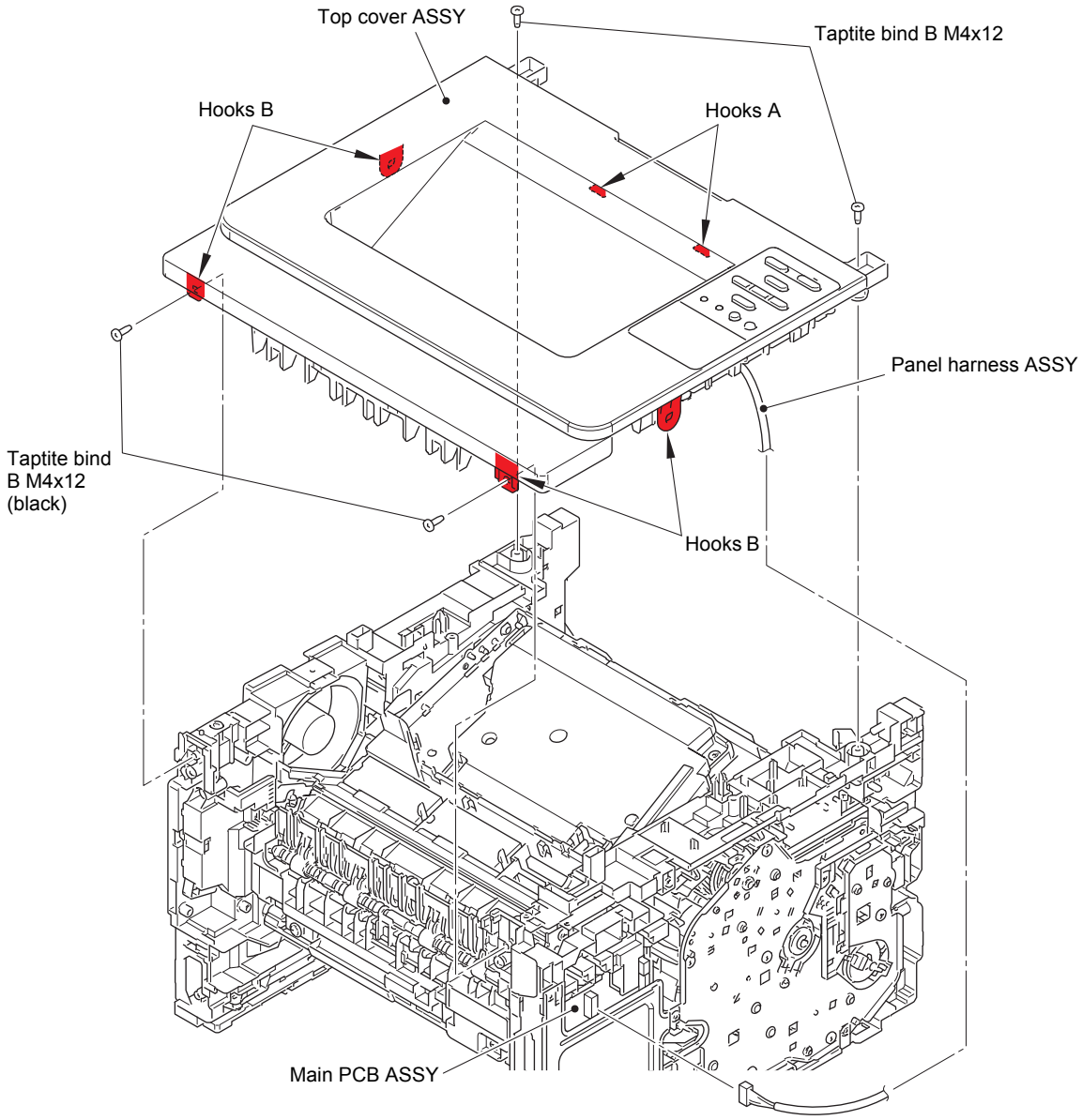


Fig. 3-47

Harness routing: Refer to “2. Left side of the machine (Non touch panel models)”.

9.10.8 Panel PCB ASSY

(1) Release the panel harness ASSY from the securing fixtures. Release the three hooks, and remove the panel PCB ASSY. Release the lock, and remove the LCD FPC from the panel PCB ASSY.

(2) Release the two hooks, and remove the LCD holder from the top cover printed ASSY.

(3) Remove the back light film and LCD from the top cover printed ASSY.

(4) Remove the LCD sheet from the top cover printed ASSY.

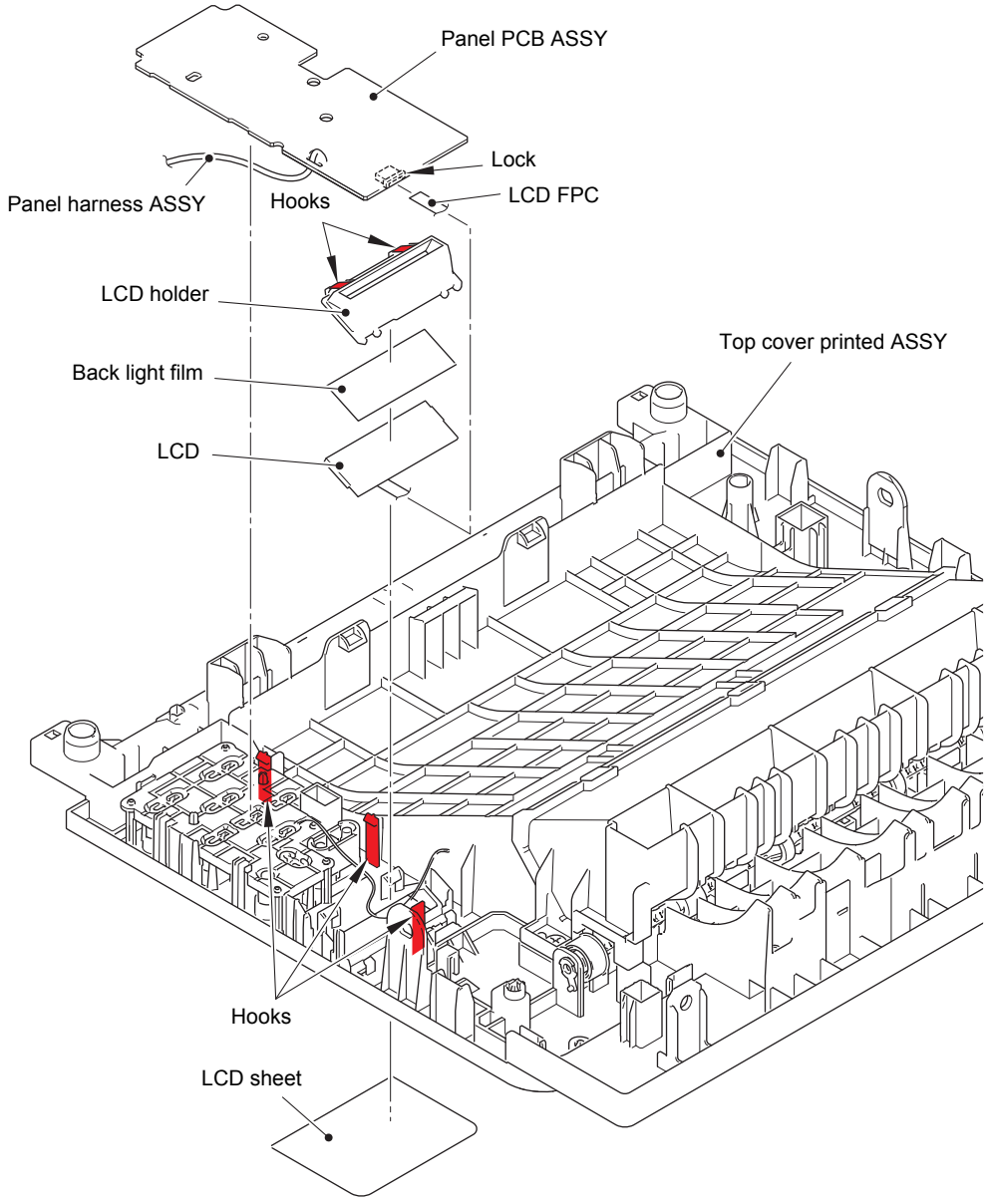


Fig. 3-48

Harness routing: Refer to "5. Bottom side of the top cover ASSY (Non touch panel models)".

9.10.9 Top cover printed ASSY

(1) Remove the two taptite bind B M4x12 screws, and remove the inner chute from the top cover printed ASSY.

(2) Release each hook, and remove the eject cover from the top cover printed ASSY.

(3) Release each boss, and remove the two paper stack levers from the top cover printed ASSY.

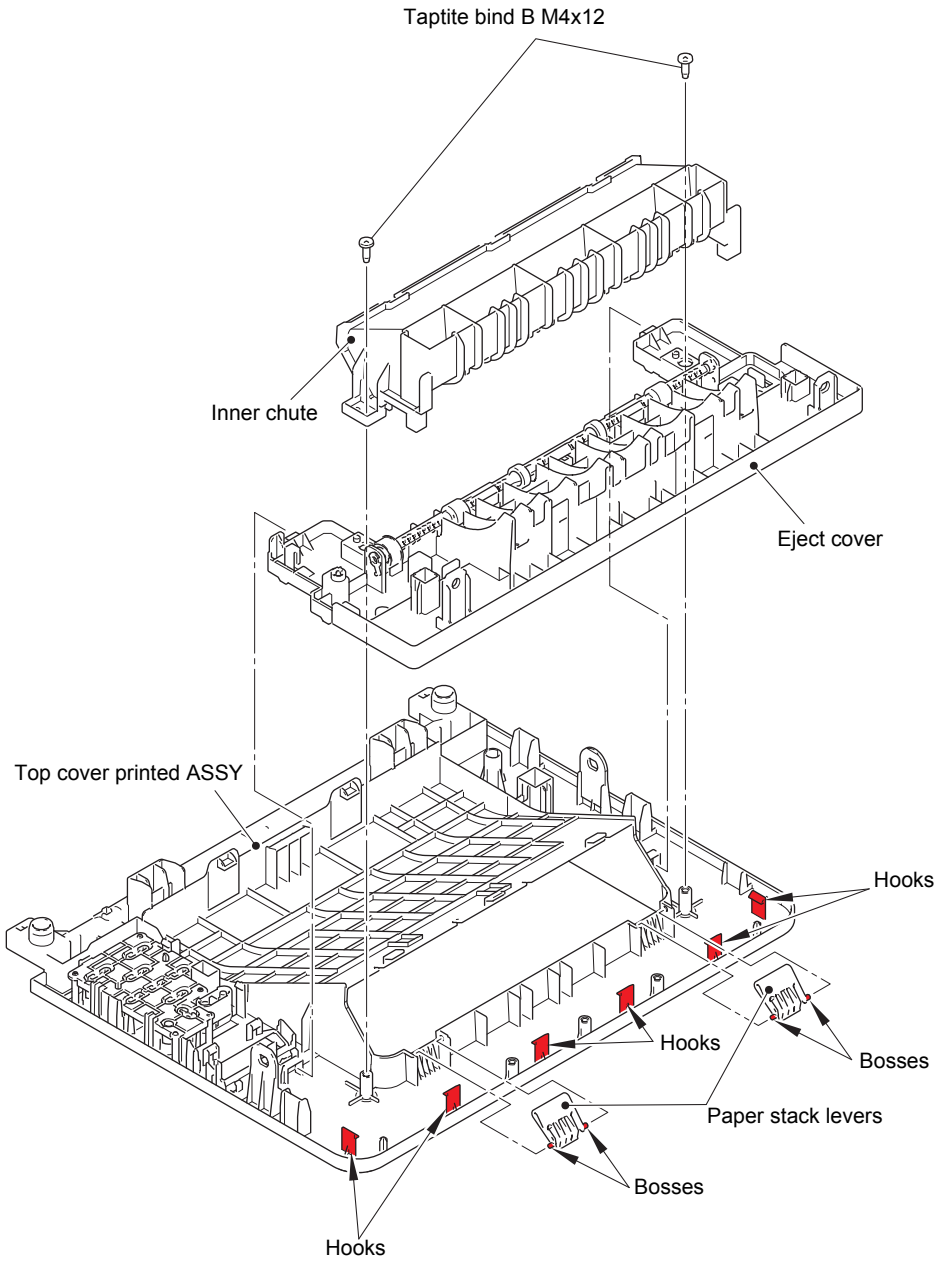


Fig. 3-49

9.11 Main PCB ASSY / Wireless LAN PCB (Wireless LAN models only)

(1) Remove the three screw cup M3x8 (black) screws, and remove the main shield plate.

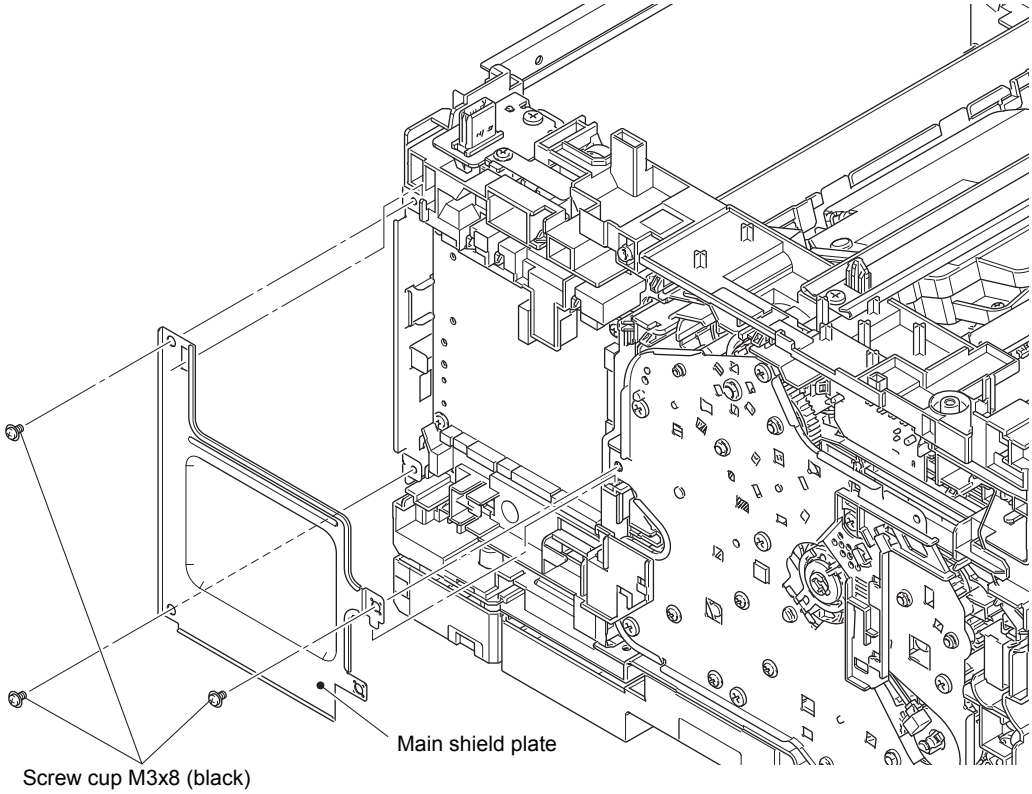


Fig. 3-50

Assembling Note:

- When attaching the main shield plate, engage it with the veil cover hook.

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

Note:

- 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 cable is not at an angle.

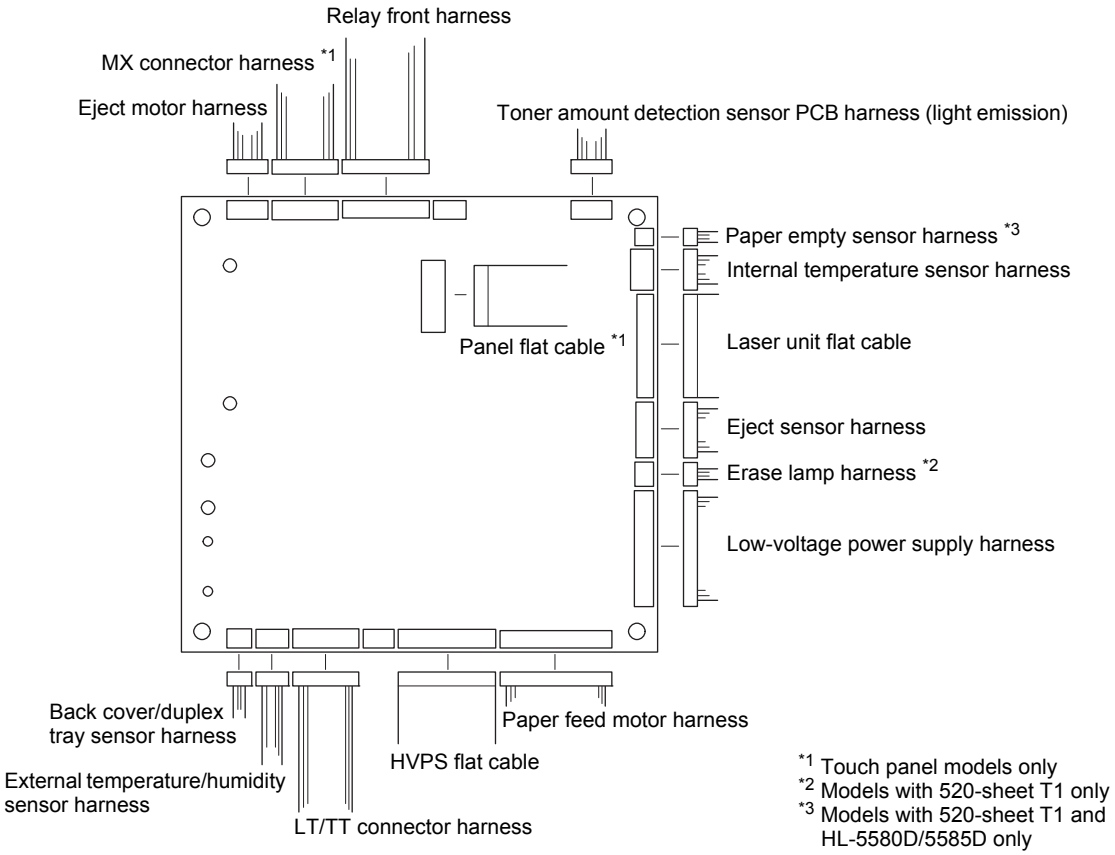


Fig. 3-51

(3) Release each harness and flat cable securing fixture from each veil cover.
(4) Remove the screw cup M3x8 (black) screw, and remove the veil cover upper.

Note:
- For touch panel models, pull out the connector harness from the hole of the veil cover upper.

(5) Disconnect the wireless LAN PCB. (Wireless LAN models only)
(6) Remove the screw cup M3x8 (black) screw, and remove the veil cover lower.
(7) Remove the four screw cup M3x8 (black) screws, and remove the main PCB ASSY.

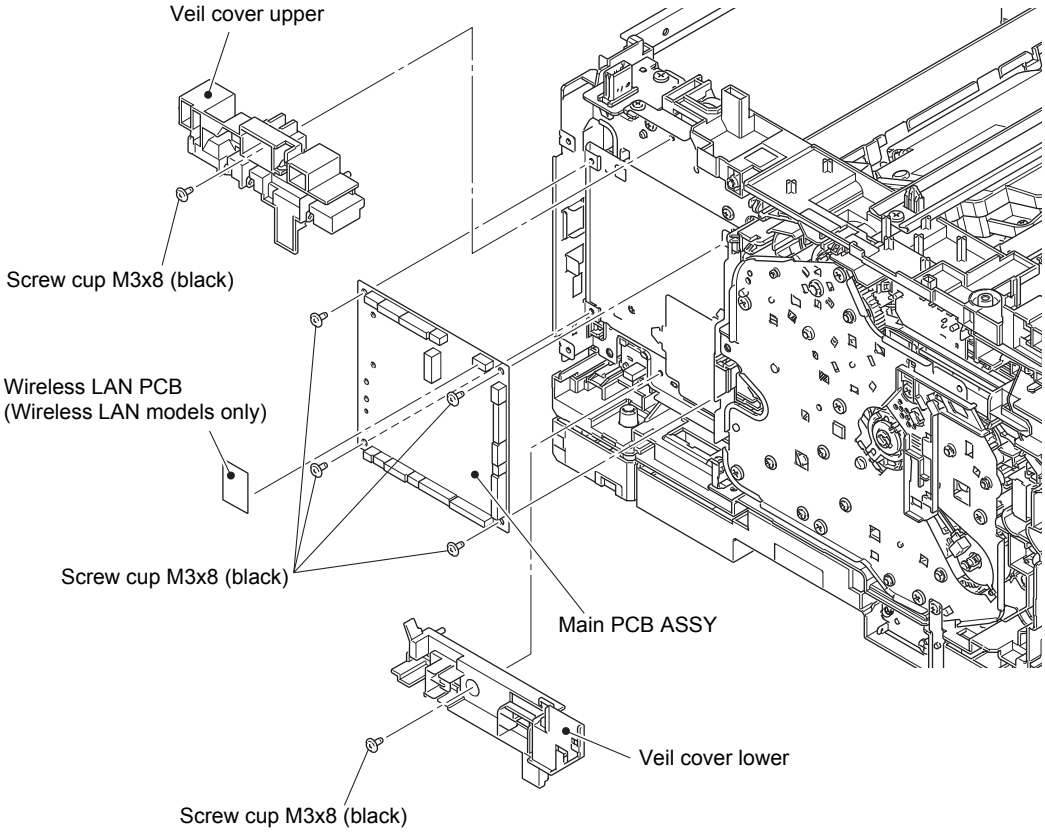


Fig. 3-52

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.12 External temperature/humidity sensor

(1) Release the hook, and remove the external temperature/humidity sensor.

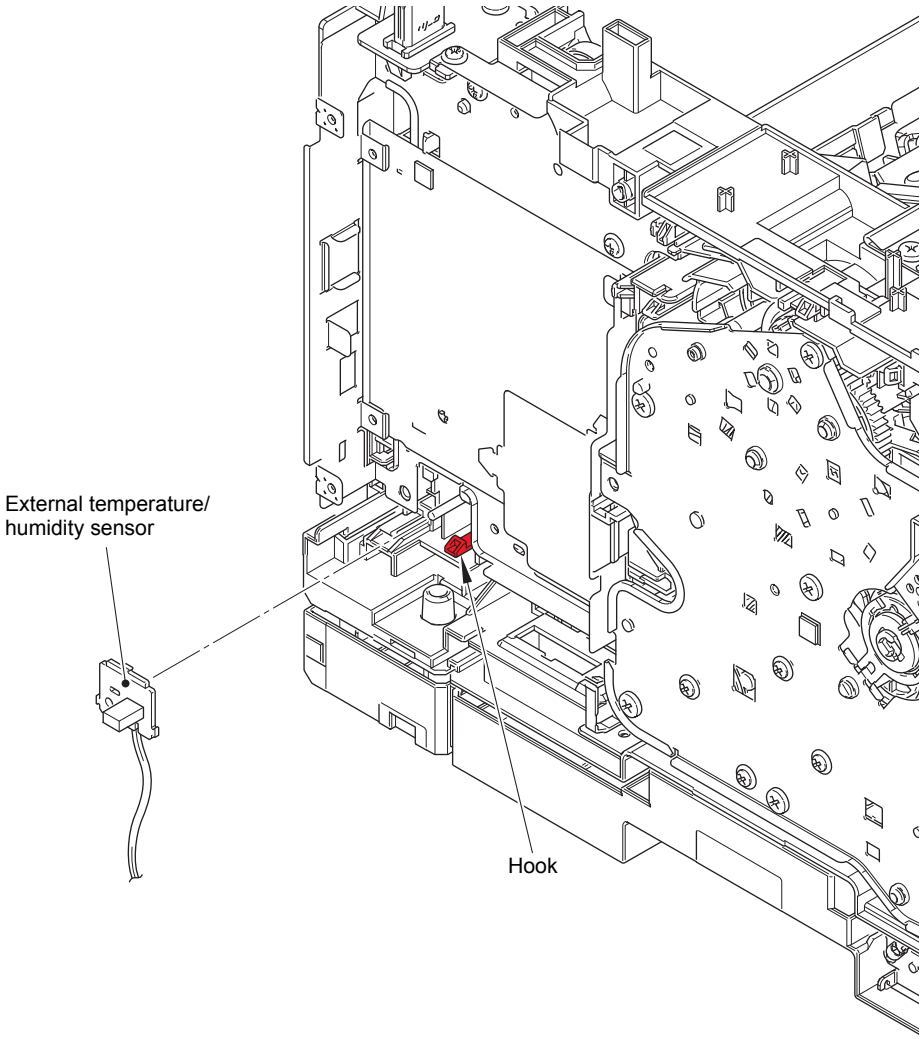


Fig. 3-53

9.13 Laser unit

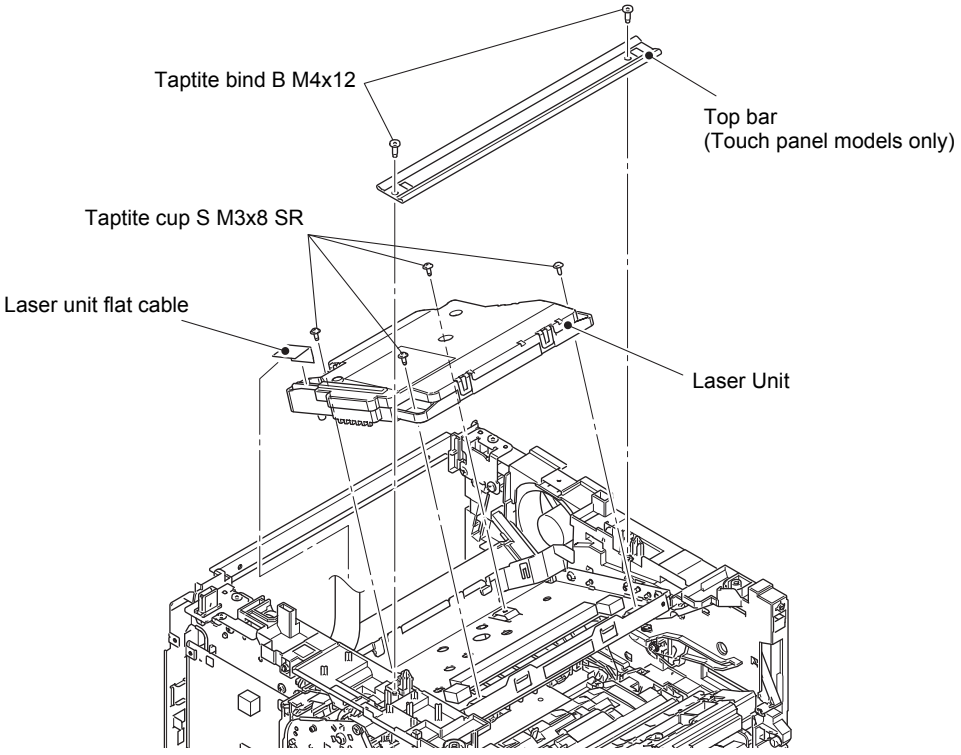
(1) Remove the two taptite bind B M4x12 screws, and remove the top bar. (Touch panel models only)

(2) Disconnect the laser unit flat cable from the laser unit, and release it from the securing fixtures.

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

Note:

- Be careful not to touch the lens of the laser unit.



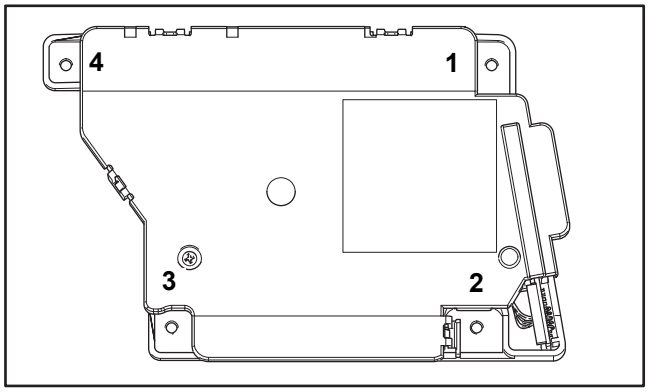


Fig. 3-54

Harness routing:
Refer to “3. Left side of the machine (Common to all models), 6. Rear side of the machine”.

Assembling Note:

- When attaching the laser unit, tighten the screws in the following order: upper right, lower right, lower left and upper left.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cable is not at an angle.

Assembling Note:

- Fold the laser unit flat cable at the positions shown in the figure below.

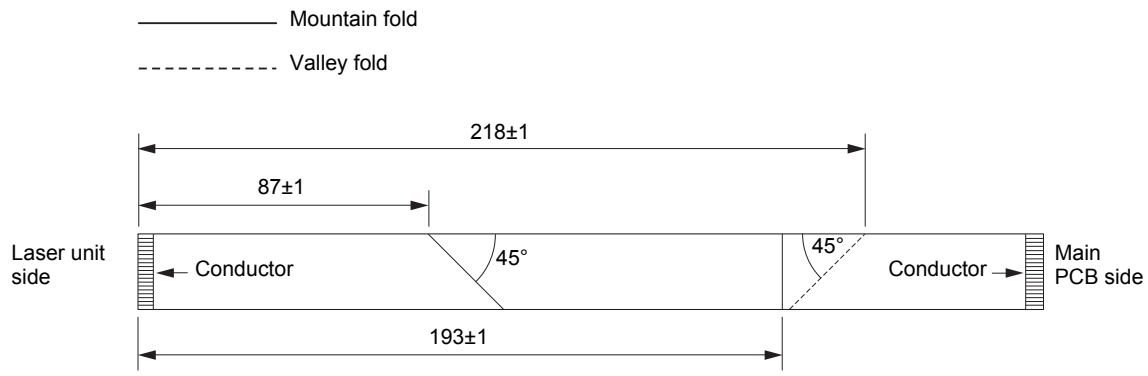


Fig. 3-55

< Location of the laser serial number on the laser unit >

Note:

- Attach the laser serial label to the position (on the laser plate) shown in the figure below after replacing the laser unit.

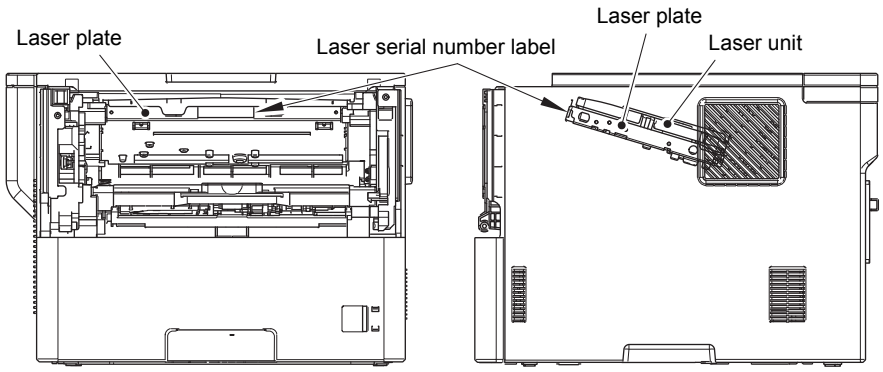


Fig. 3-56

9.14 PF roller holder ASSY

(1) Push the link arm in the direction of the arrow A, and turn the PF roller holder ASSY to remove the boss.

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

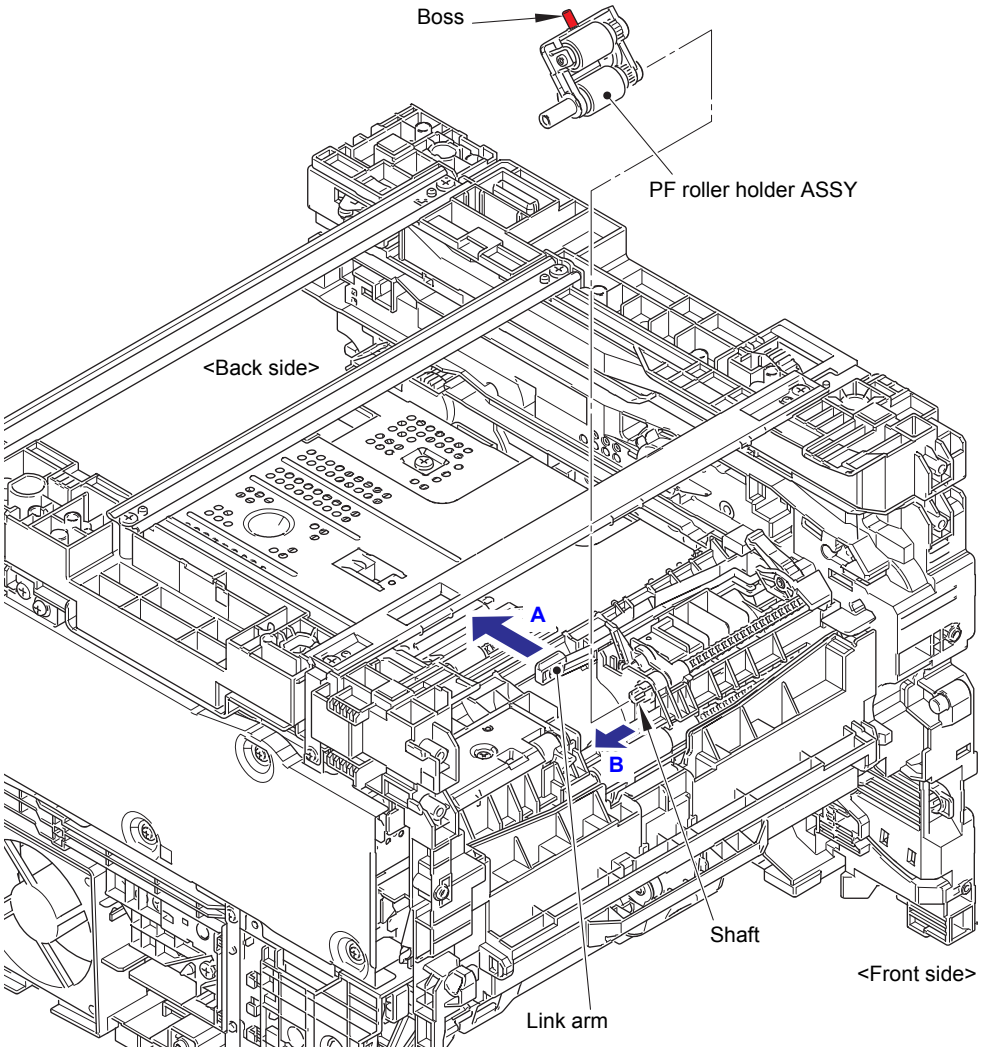


Fig. 3-57

9.15 Low-voltage power supply PCB ASSY

(1) Remove the taptite cup S M3x8 SR screw and screw cup M3x8 (black) screw to remove the scanner ground plate.

(2) Remove the three screw cup M3x8 screws, taptite bind B M4x12 screw, screw pan M4x8 screw, washer spring 2-4, and washer 5 to remove the LV shield plate cover.

(3) Remove the LVPS insulation sheet.

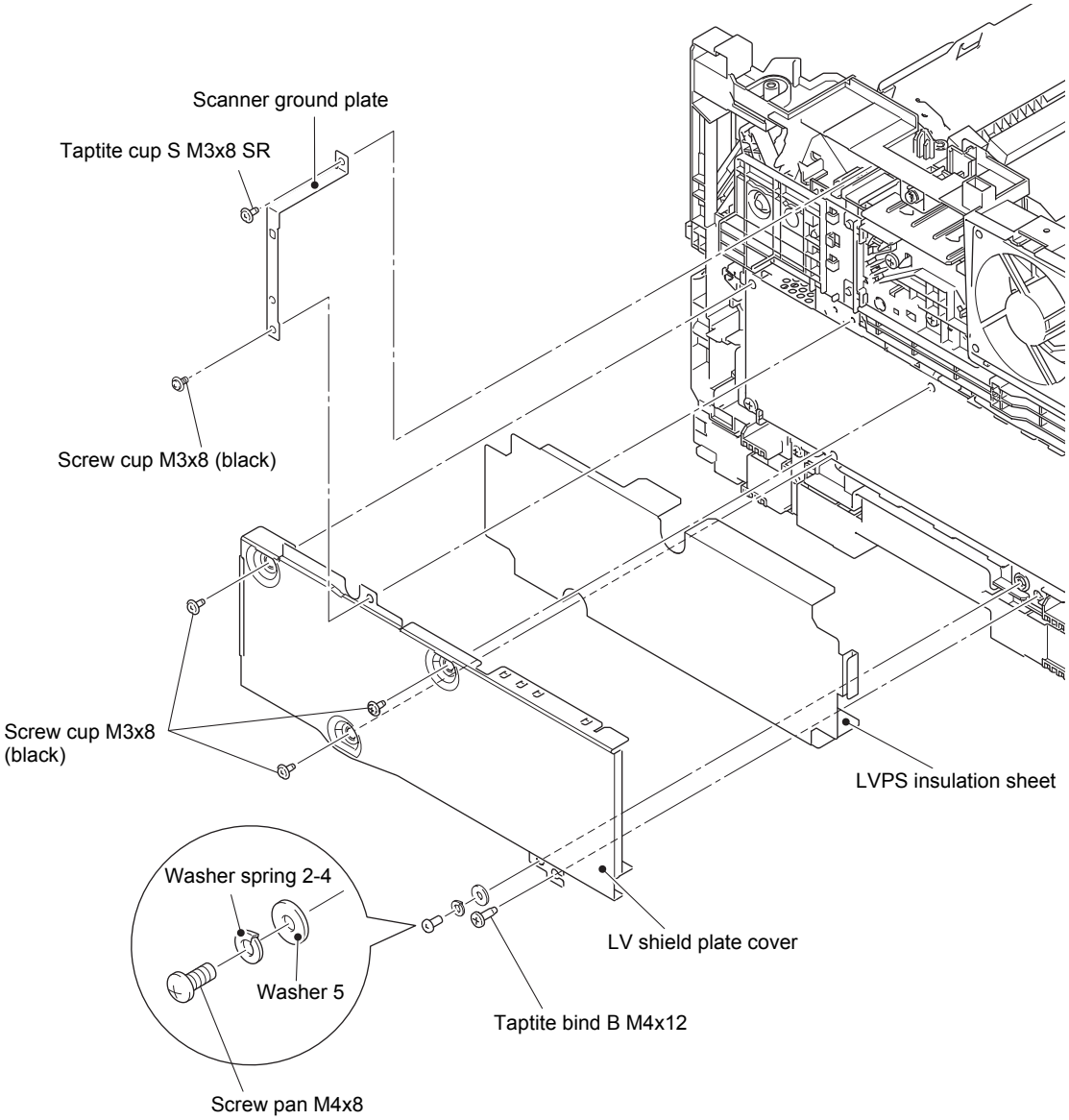


Fig. 3-58

(4) Remove the screw pan M4x8 screw, washer spring 2-4, and washer 5 to remove the ground harness.

(5) Remove the taptite flat B M3x10 screw, and remove the inlet.

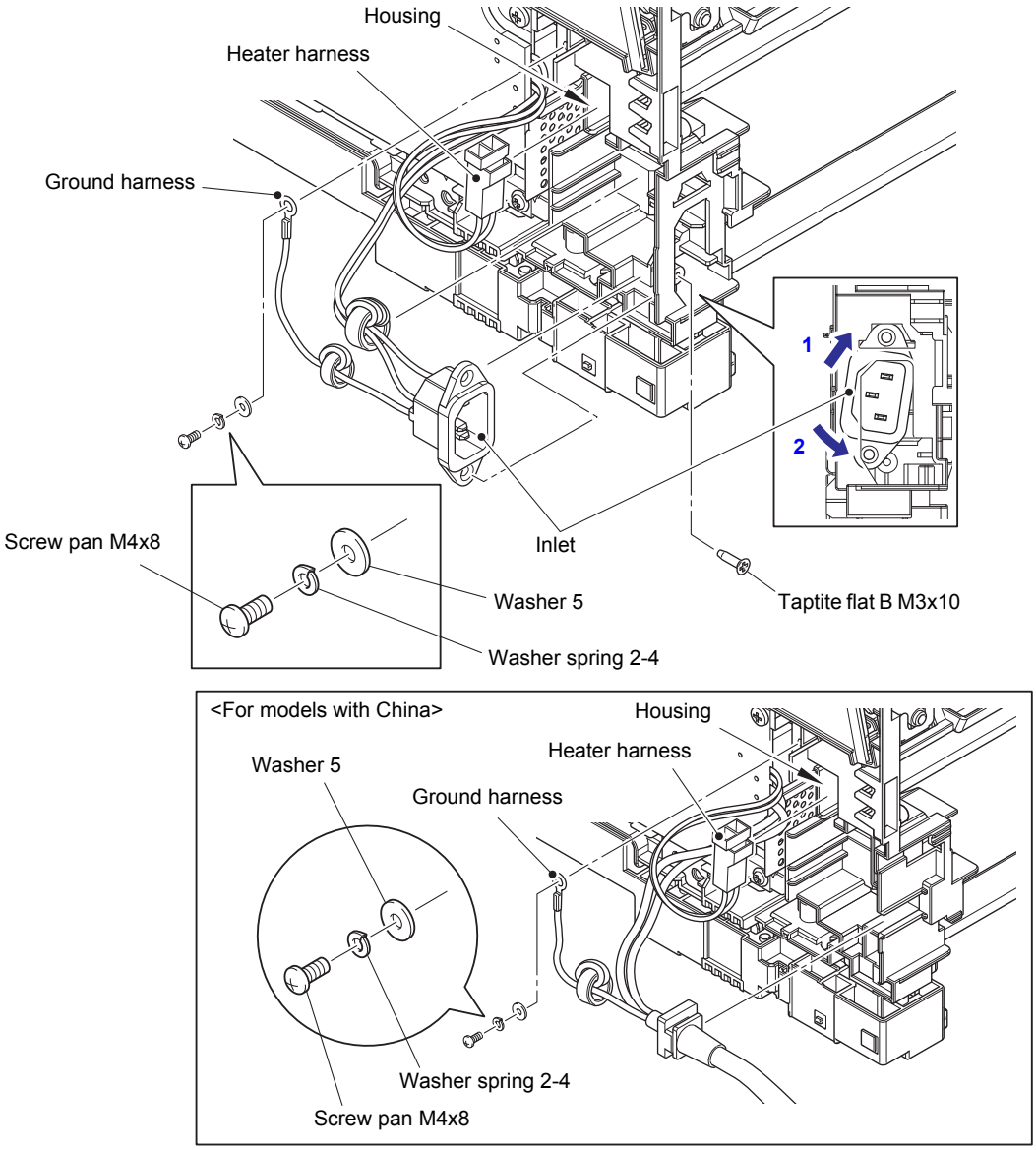


Fig. 3-59

Assembling Note:

- Attach the inlet as shown in the figure above.
- Insert the heater harness into the housing.
- For safety purposes, attach the washer spring 2-4 and washer 5 securely at positions described in the figure above.
- For safety purposes, perform the harness routing properly as described in "6. Rear side of the machine".
- The harness routing diagrams of the models for China are also included in the link.

(6) Remove the screw cup M3x8 (black) screw and two taptite bind B M4x12 screws. Remove the low-voltage power supply PCB ASSY, and disconnect the low-voltage power supply harness from the low-voltage power supply PCB ASSY.

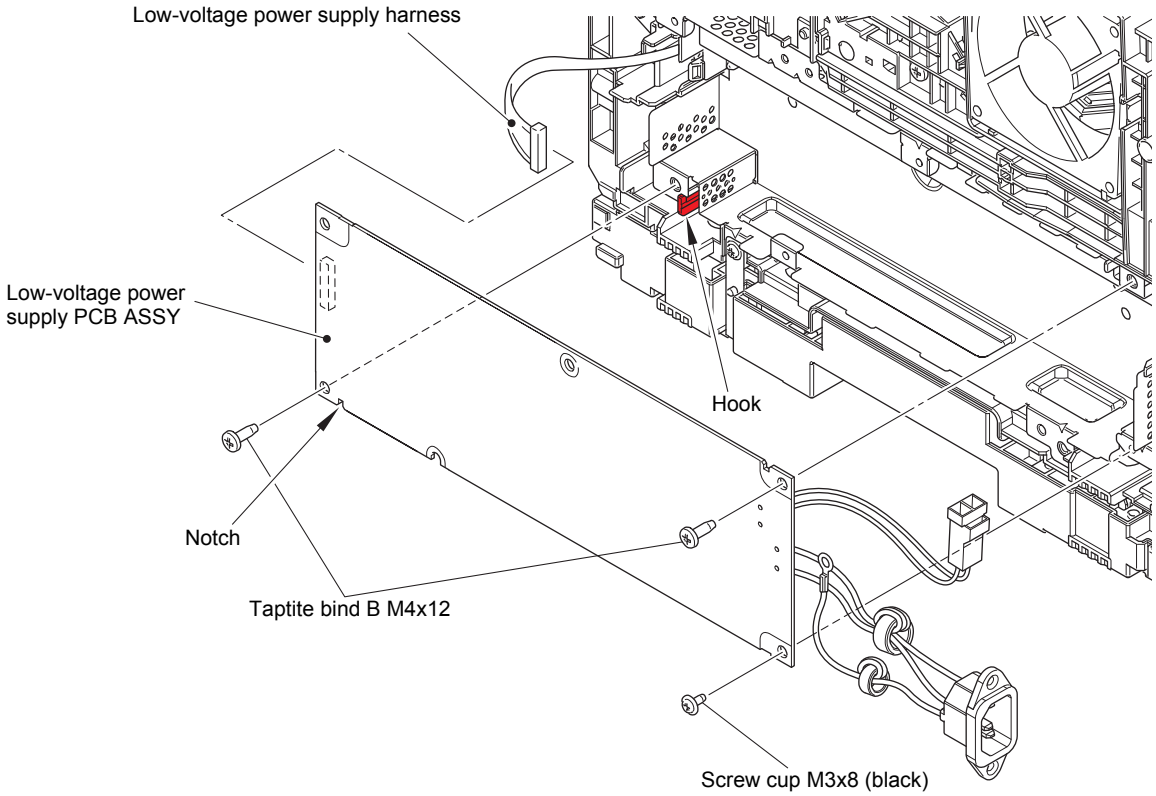


Fig. 3-60

Assembling Note:

- When attaching the low-voltage power supply PCB ASSY, engage the notch on the low-voltage power supply PCB ASSY with the hook.
- Check that the heater harness is housed in the frame L as shown in the figure below. Otherwise the harness may be caught in some sections of the machine, and may catch fire.

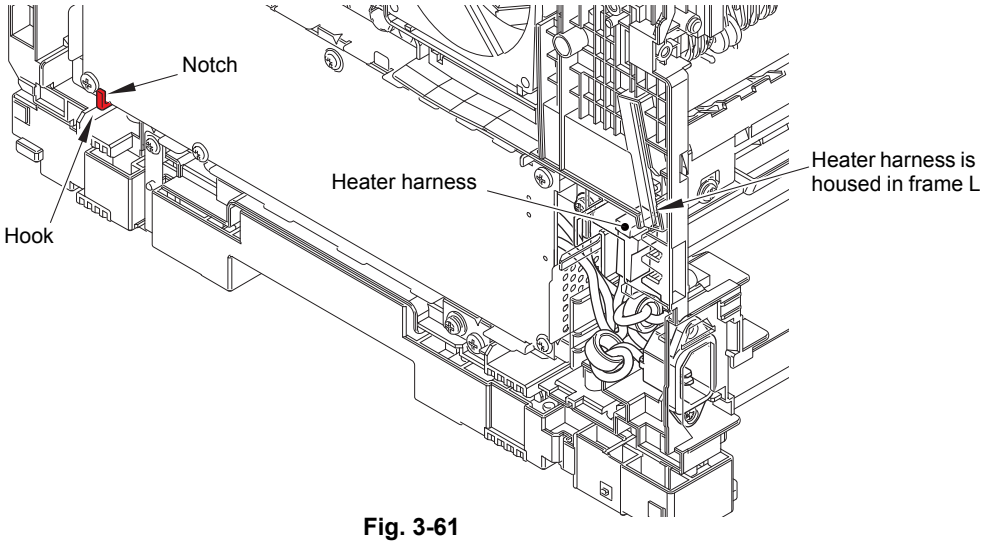


Fig. 3-61

9.16 Toner amount detection sensor PCB ASSY (light emission)

(1) Remove the LV shield plate ground spring from the LV shield plate and front chute.

■ **For models with 520-sheet T1**

(2) Remove the taptite cup S M3x8 SR screw, and lift the under bar ground plate R from the LV shield plate.

■ **For models with 250-sheet T1**

(3) Remove the taptite cup S M3x8 SR screw, and lift the under bar front from the LV shield plate.

■ **Common to all models**

(4) Remove the taptite bind B M4x12 screw. Release the two hooks, and remove the LV shield plate.

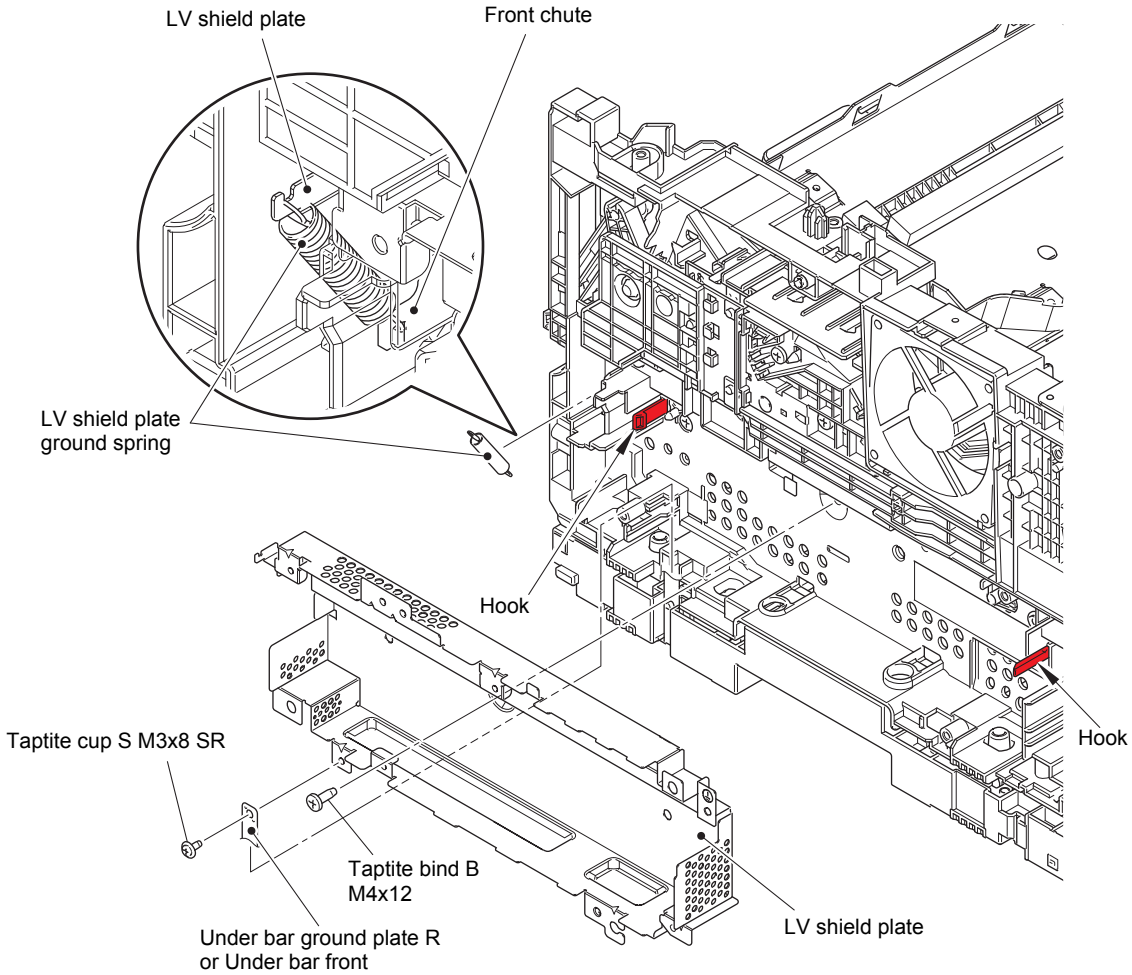


Fig. 3-62

Assembling Note:

- When attaching the LV shield plate, make sure that the under bar ground plate R or under bar front is on the upper side of the LV shield plate.

(5) Remove the taptite bind B M4x12 screw. Release the hook and hold cover 1.

(6) Release the toner amount detection sensor PCB harness (light emission) from the securing fixtures.

(7) Remove the taptite pan B M3x8 screw, and remove the pinch ground spring. Release the hook, and remove the toner amount detection sensor PCB ASSY (light emission). Pull out the main fan harness from the toner amount detection sensor PCB ASSY (light emission).

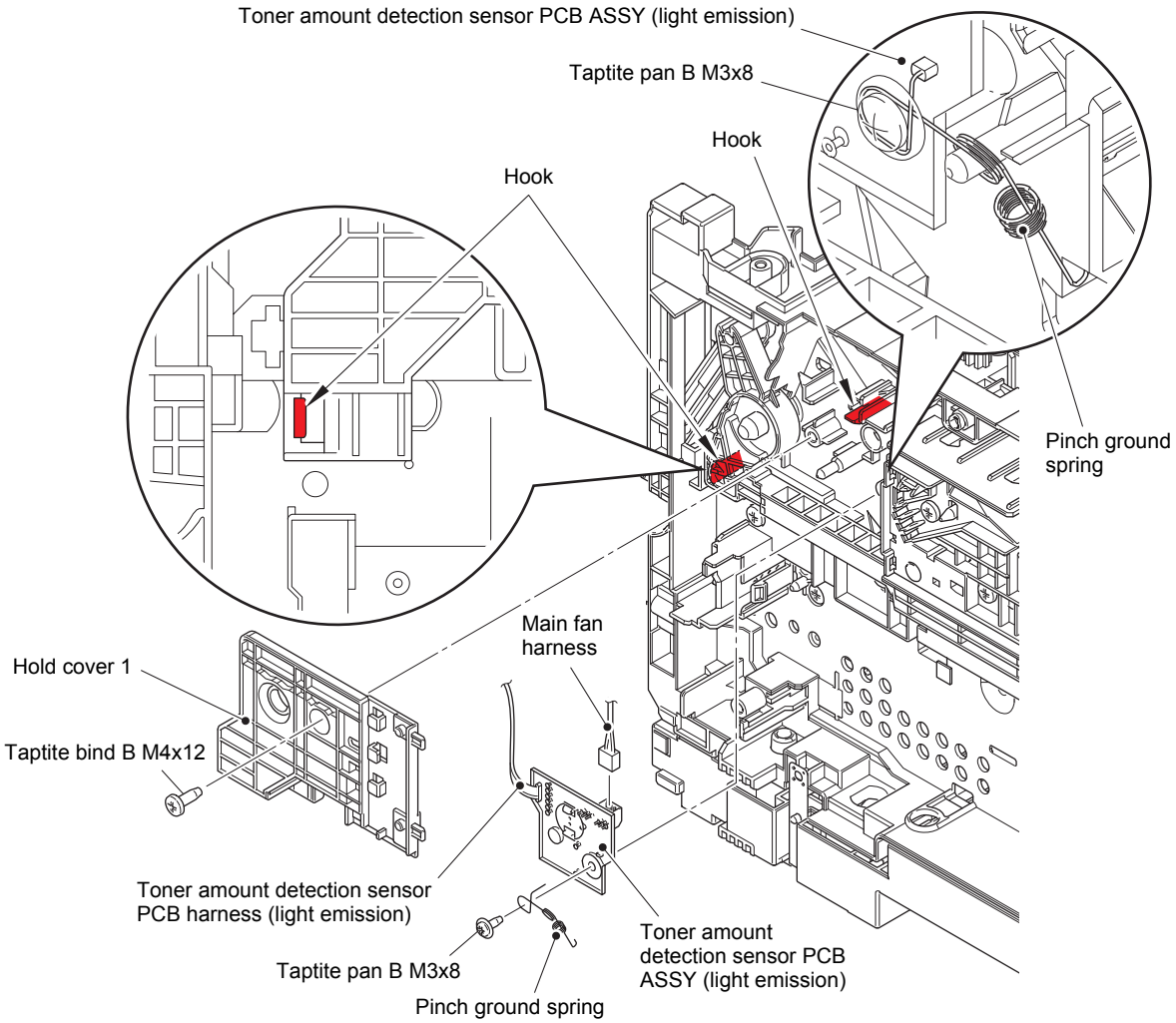


Fig. 3-63

Harness routing:
Refer to "3. Left side of the machine (Common to all models), 6. Rear side of the machine".

Assembling Note:

- Hook the pinch ground spring at the position described in the figure above.

9.17 Main fan

(1) Slide the straight cam in the direction of the arrow 1a to remove the boss on the nip release link from the groove on the straight cam. Slide the straight cam in the direction of the arrow 1b to remove it by engaging "A" with the groove.

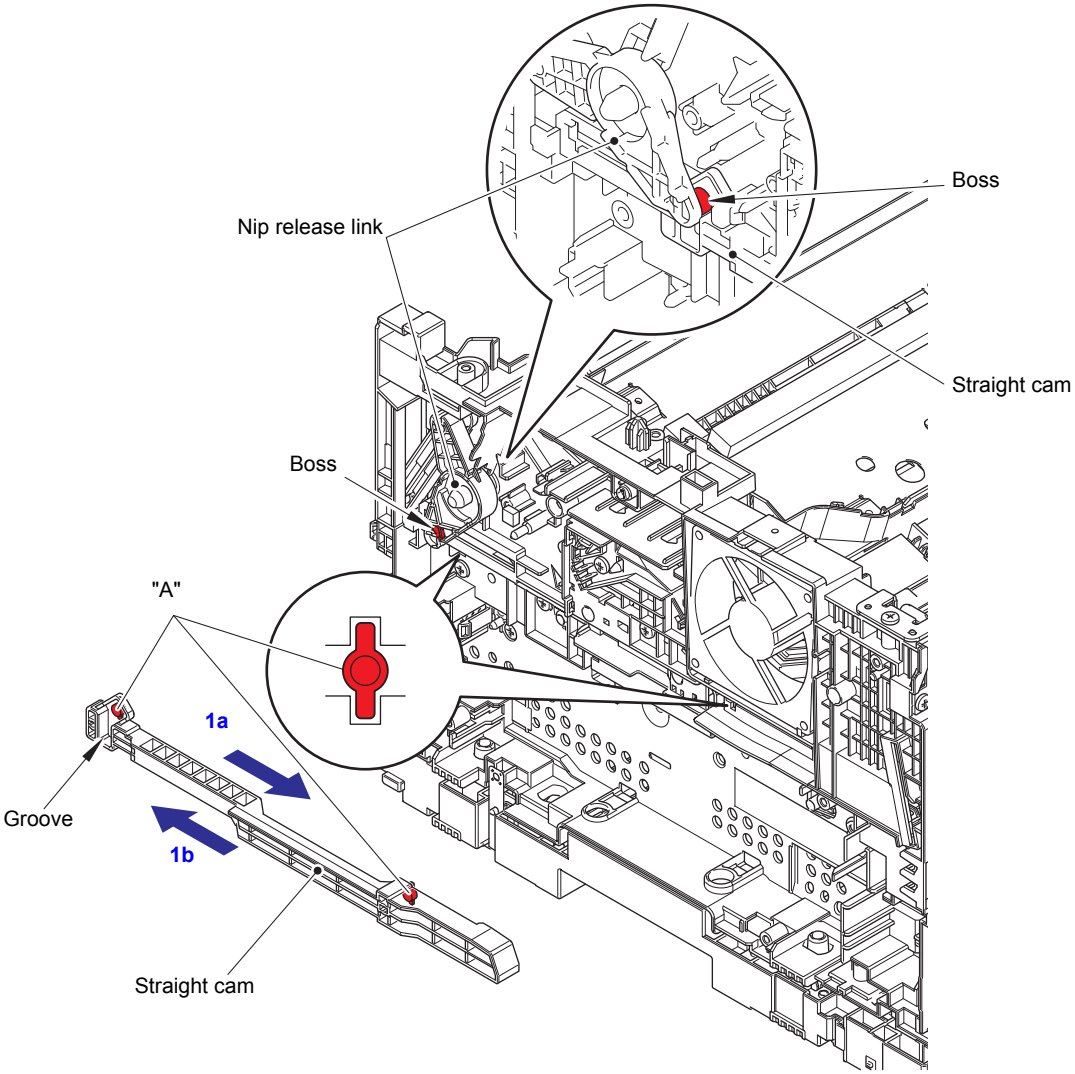


Fig. 3-64

(2) Remove the two taptite bind B M4x12 screws. Release the hook, and open the upper side of the hold cover 2.

(3) Release the main fan harness from the securing fixtures. Remove the main fan, and pull out the main fan harness from the hole.

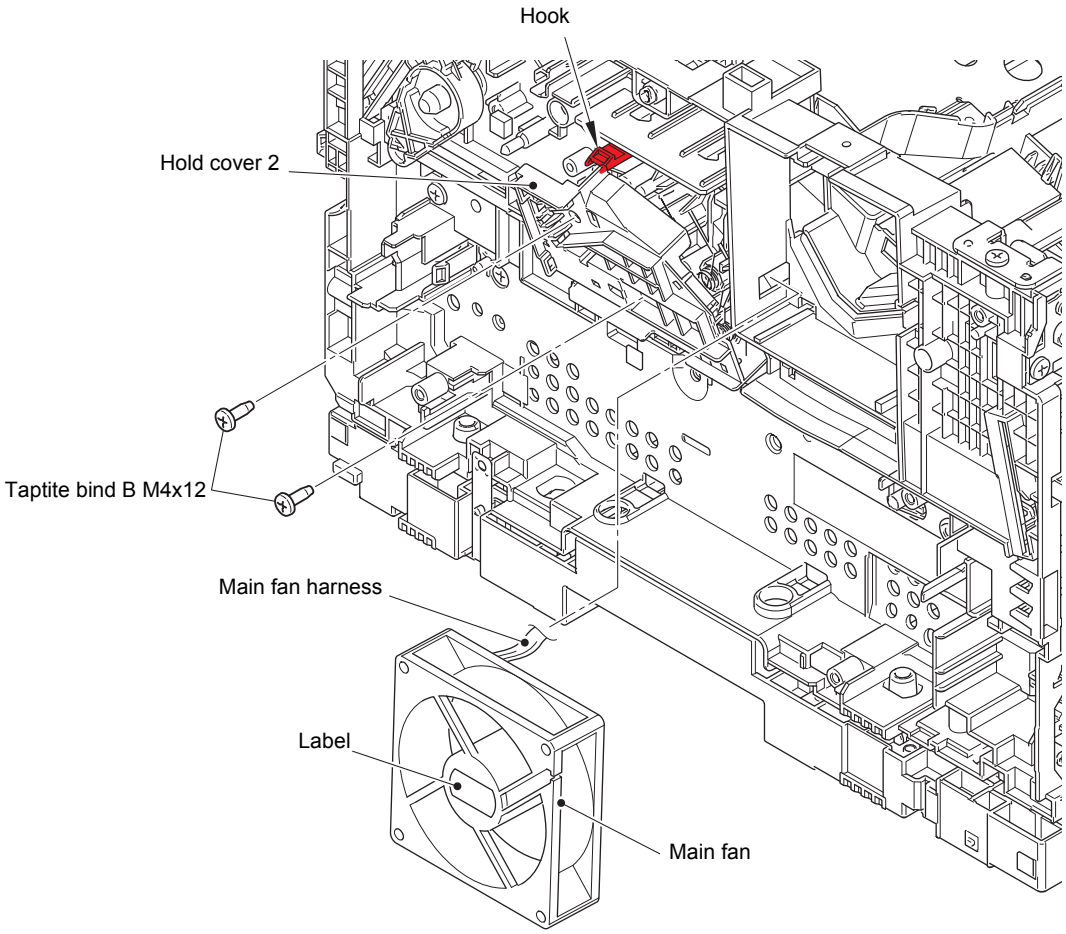


Fig. 3-65

Harness routing: Refer to “6. Rear side of the machine”.

Assembling Note:

- Attach the main fan so that the surface with the label faces out.

9.18 Filter

(1) Release each hook, and remove the two filters from the air duct.

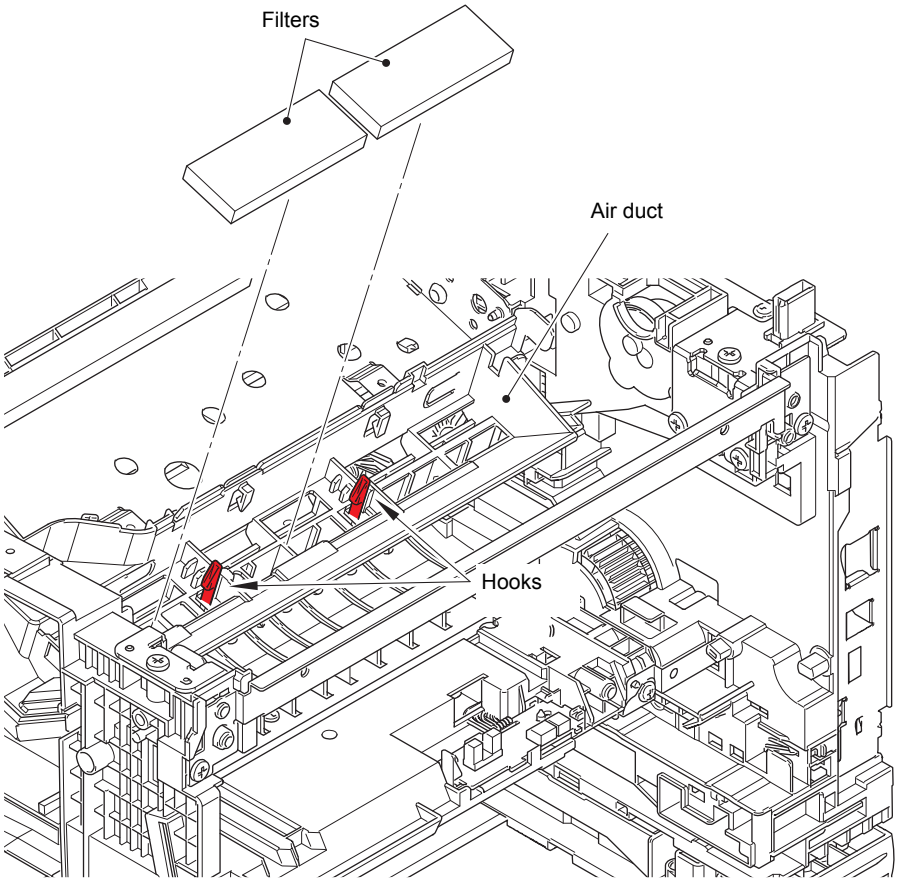


Fig. 3-66

9.19 Relay front PCB ASSY

(1) Release the relay front harness from the securing fixtures.

(2) Release the two hooks, and remove the front cover sensor. Release the front cover sensor harness from the securing fixtures.

Note:
- When removing the front cover sensor, push it from the rear to remove it.

(3) Release the two hooks, and remove the relay front PCB ASSY. Disconnect all harnesses from the relay front PCB ASSY.

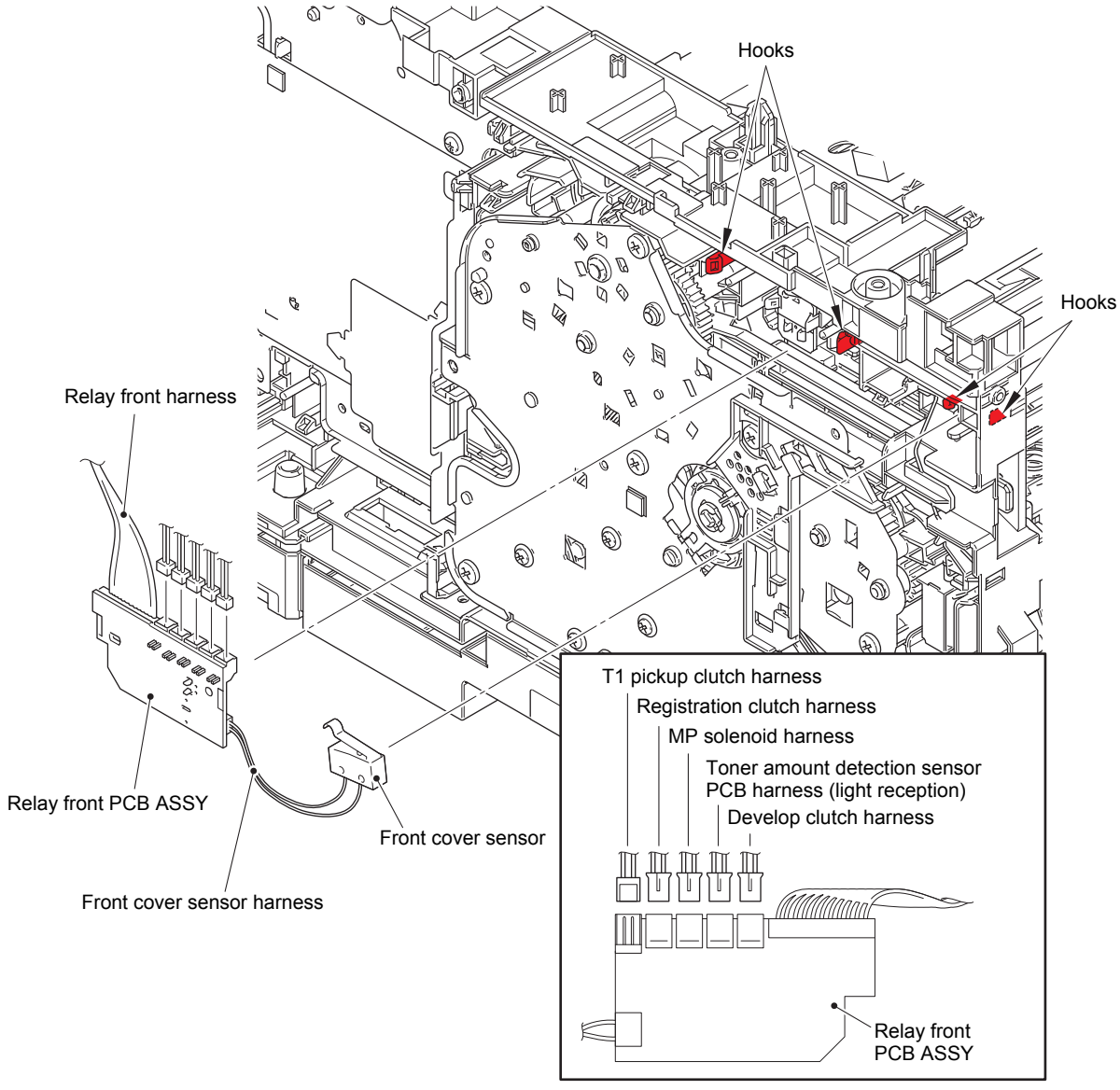


Fig. 3-67

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.20 Registration clutch / T1 pickup clutch

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

(2) Remove collar 6, and remove the registration clutch.

(3) Release the hook, and remove the T1 pickup clutch.

Note:

- Be careful not to damage the hook on the T1 pickup clutch.

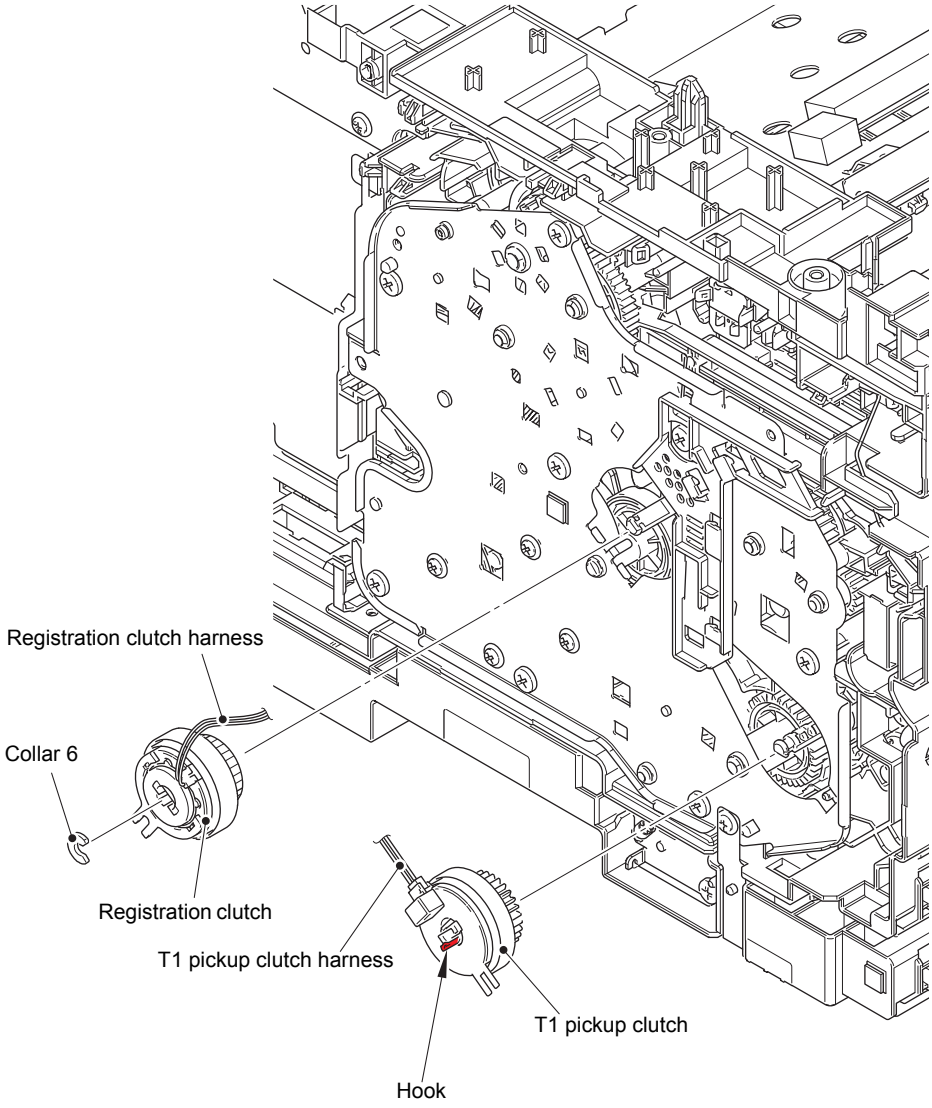


Fig. 3-68

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.21 Main frame L ASSY

■ For models with 520-sheet T1

(1) Remove the two taptite bind B M4x12 screws, and remove the under bar rear. (Touch panel models only.)

(2) Remove the two taptite bind B M4x12 screws, and remove the under bar center. (Touch panel models only.)

(3) Remove the two taptite bind B M4x12 screws, and remove the under bar front, under bar cover and under bar ground plate R.

(4) Remove the two taptite bind B M4x12 screws, and remove the top bar rear. (Touch panel models only.)

(5) Remove the taptite cup S M3x8 SR screw, and remove the under bar ground plate L.

(6) Remove the main PCB insulation sheet (transparent) and the main PCB insulation sheet (black).

Assembling Note:

- Make sure that the black main PCB insulation sheet is inserted properly into the hole of the transparent main PCB insulation sheet as shown in the illustration below.

(7) Turn the registration roller bushing on the registration roller shaft to the position as shown in the figure below, and pull out the registration roller shaft.

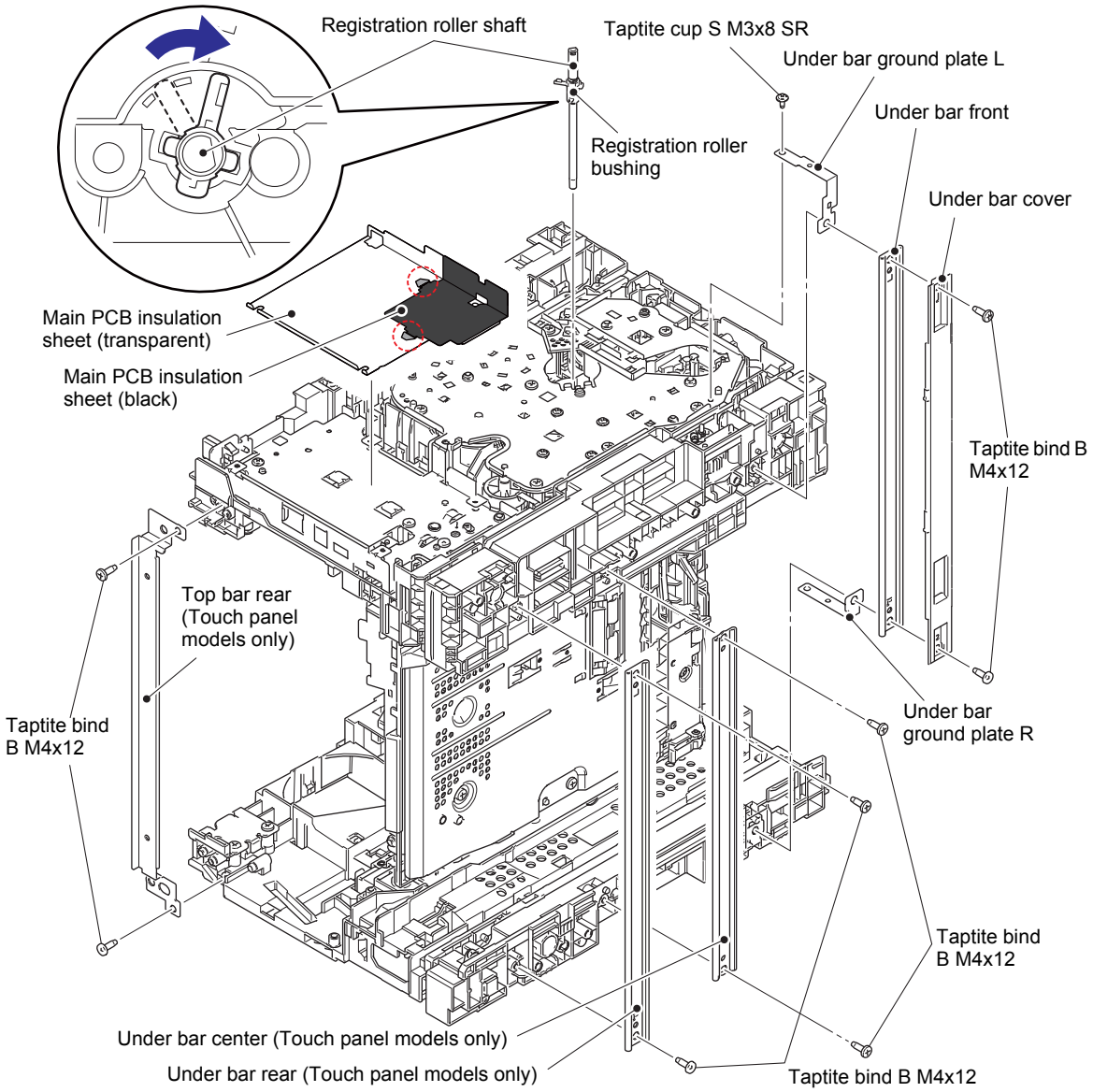


Fig. 3-69

■ For models with 250-sheet T1

(8) Remove the taptite cup S M3x8 SR screw and two taptite bind B M4x12 screws to remove the under bar front.

(9) Remove the main PCB insulation sheet (transparent) and the main PCB insulation sheet (black).

Assembling Note:

- Make sure that the black main PCB insulation sheet is inserted properly into the hole of the transparent main PCB insulation sheet as shown in the illustration below.

(10) Turn the registration roller bushing on the registration roller shaft to the position as shown in the figure below, and pull out the registration roller shaft.

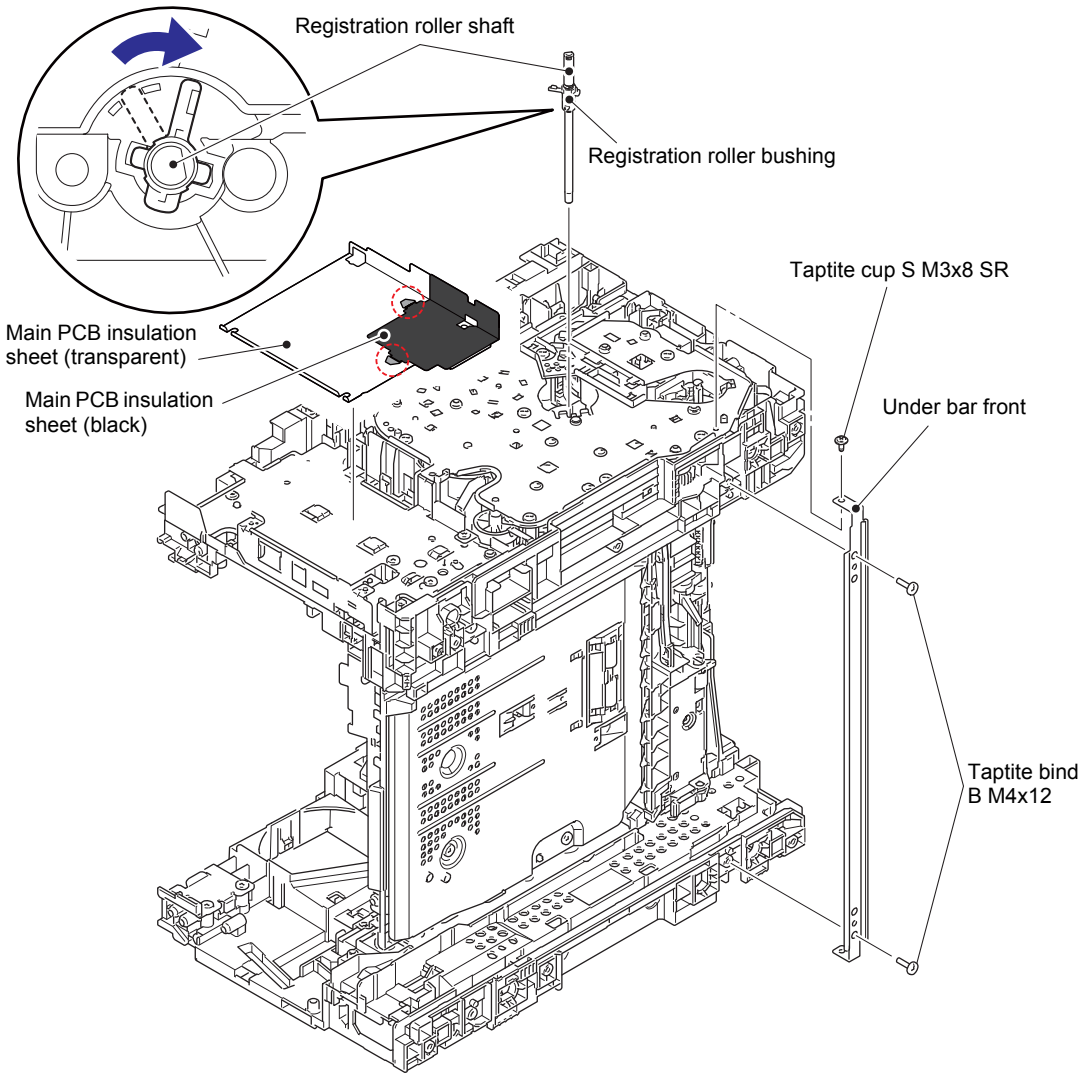


Fig. 3-70

■ Common to all models

(11) Remove the four taptite cup S M3x8 SR screws and four taptite bind B M4x12 screws. Remove the main frame L ASSY, and pull out the erase lamp harness, paper empty sensor harness (models with 520-sheet T1 and HL-5580D/5585D only), low-voltage power supply harness, eject sensor harness, and HVPS flat cable from the hole of the main frame L ASSY.

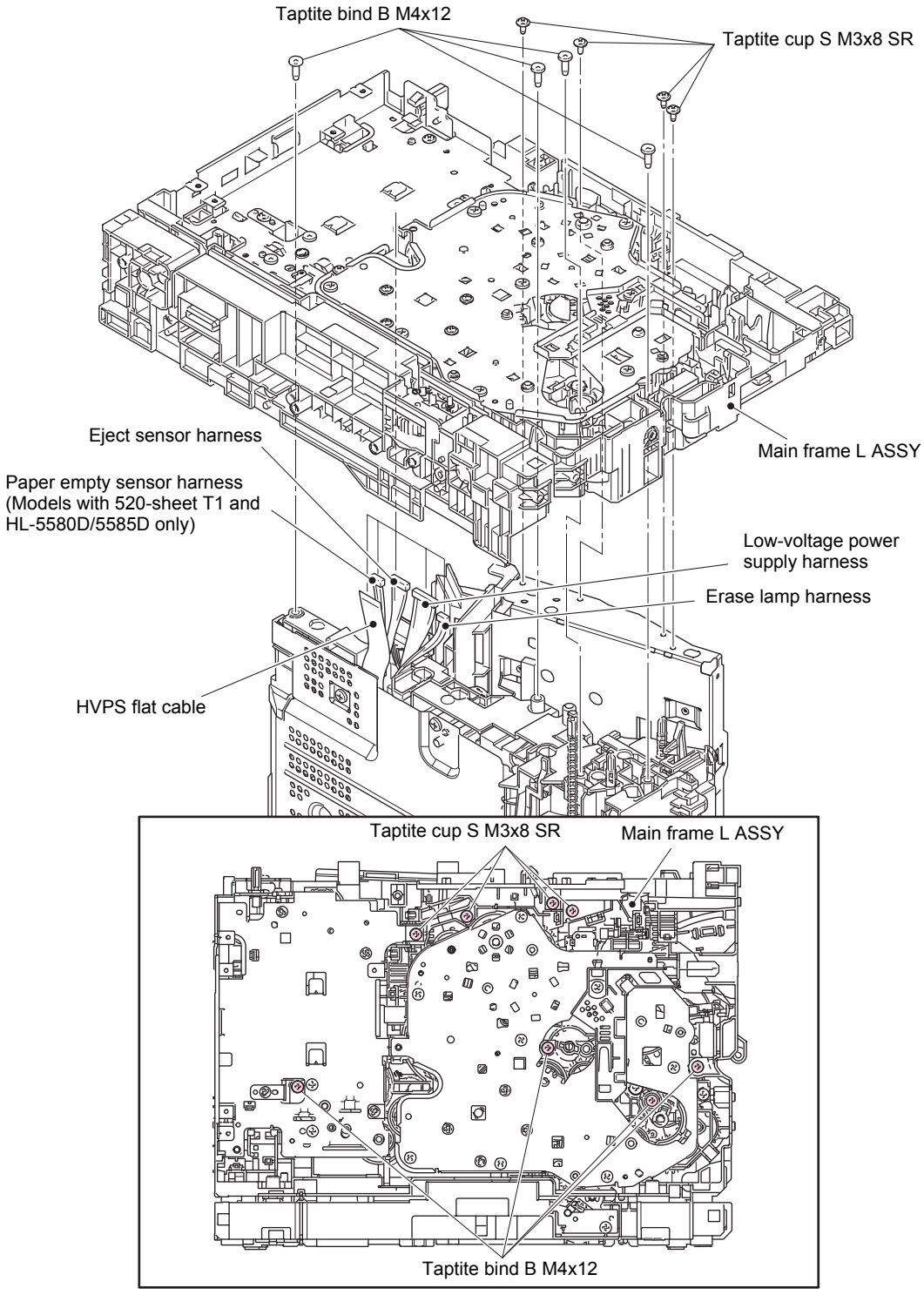


Fig. 3-71

9.22 Paper feed motor

(1) Remove the eight taptite bind B M4x12 screws, and remove the drive sub ASSY from the main frame L ASSY.

Note:

- When removing the drive sub ASSY, be careful not to damage the shaft of the drive sub ASSY.

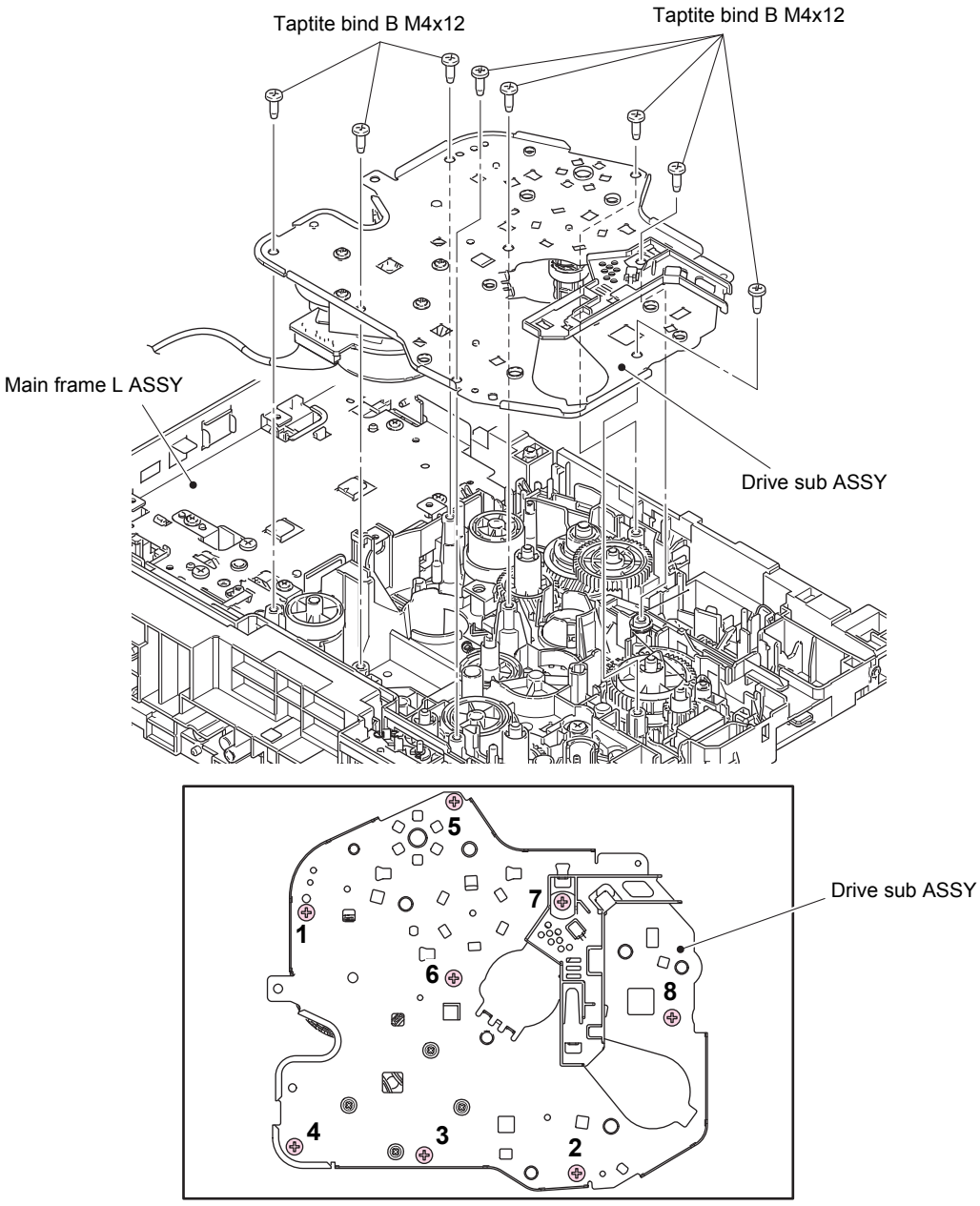


Fig. 3-72

Assembling Note:

- When securing the drive sub ASSY with screws, tighten the screws in the sequence of the numbers engraved on the drive sub ASSY.

Note:

- Do not allow the metallic gear shaft of the paper feed motor and drive sub ASSY to face down. Failure to observe this may cause the steel plate to bend.

(2) Remove the four taptite cup S M3x8 SR screws, and remove the paper feed motor plate from the drive sub ASSY.

(3) Remove the fuser gear 35/83R and the DRM gear 32/83R from the paper feed motor plate.

Note:

- Be careful not to damage the gear teeth.

(4) Remove the three screw bind M3x4 screws, and remove the paper feed motor from the paper feed motor plate.

(5) Disconnect the paper feed motor harness from the paper feed motor.

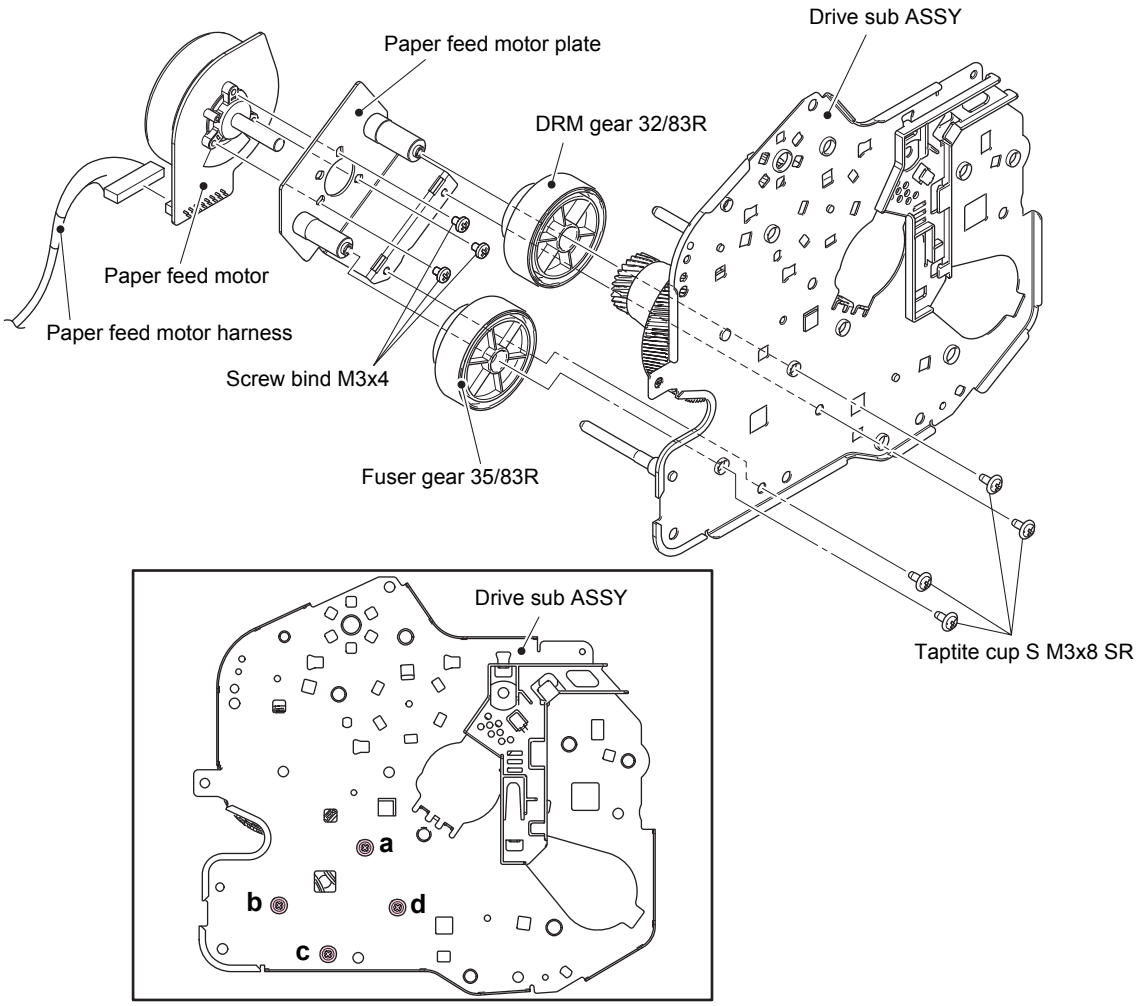


Fig. 3-73

Assembling Note:

- When securing the paper feed motor on the drive sub ASSY with screws, tighten the screws in the sequence of the alphabets engraved on the drive sub ASSY.

9.23 Develop joint gear 37 / Develop joint

(1) Tilt the develop joint to remove it from the drive sub ASSY, and then remove the develop joint spring from the drive sub ASSY.

Note:
- When removing the develop joint, be careful not to damage the hooks.

(2) Pull out the develop joint gear 37 from the drive sub ASSY.

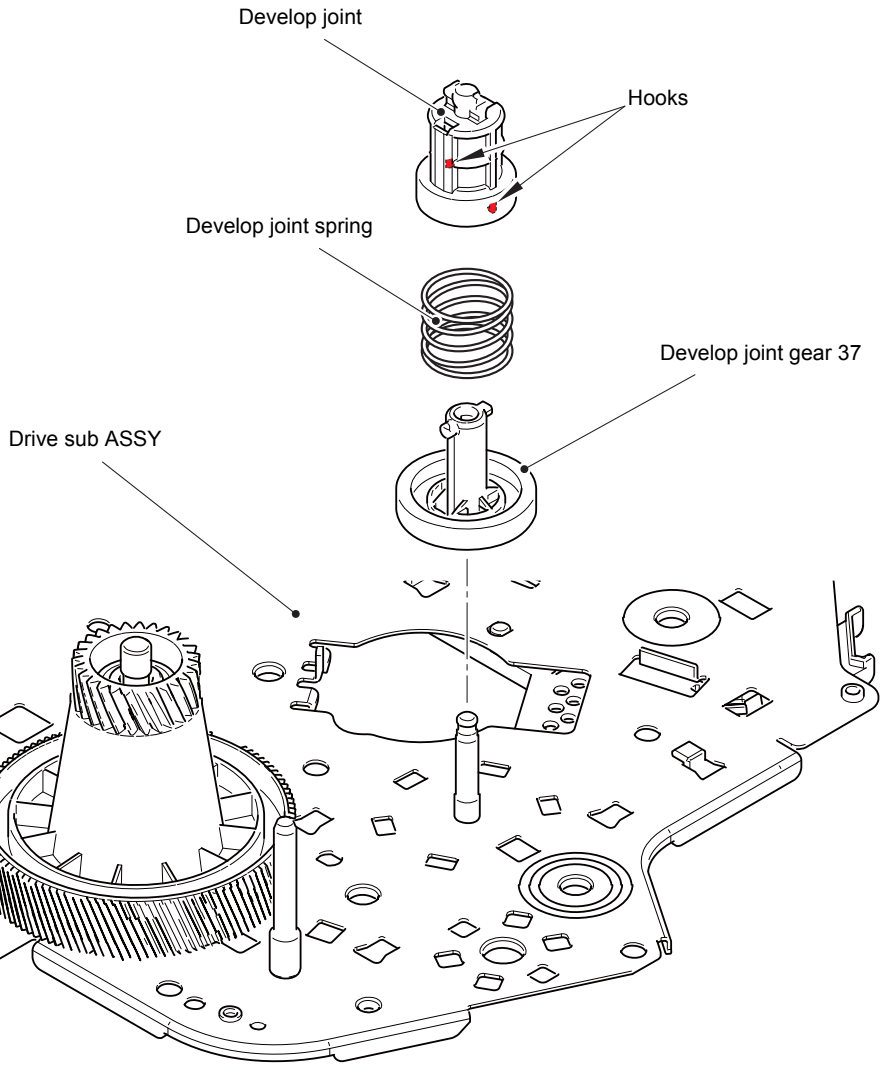


Fig. 3-74

9.24 Toner amount detection sensor PCB ASSY (light reception)

(1) Release the toner amount detection sensor PCB harness (light reception) from the securing fixtures.

(2) Release the two hooks, and remove the toner amount detection sensor PCB ASSY (light reception) from the main frame L ASSY.

(3) Release the two hooks, and remove the toner LED holder from the toner amount detection sensor PCB ASSY (light reception).

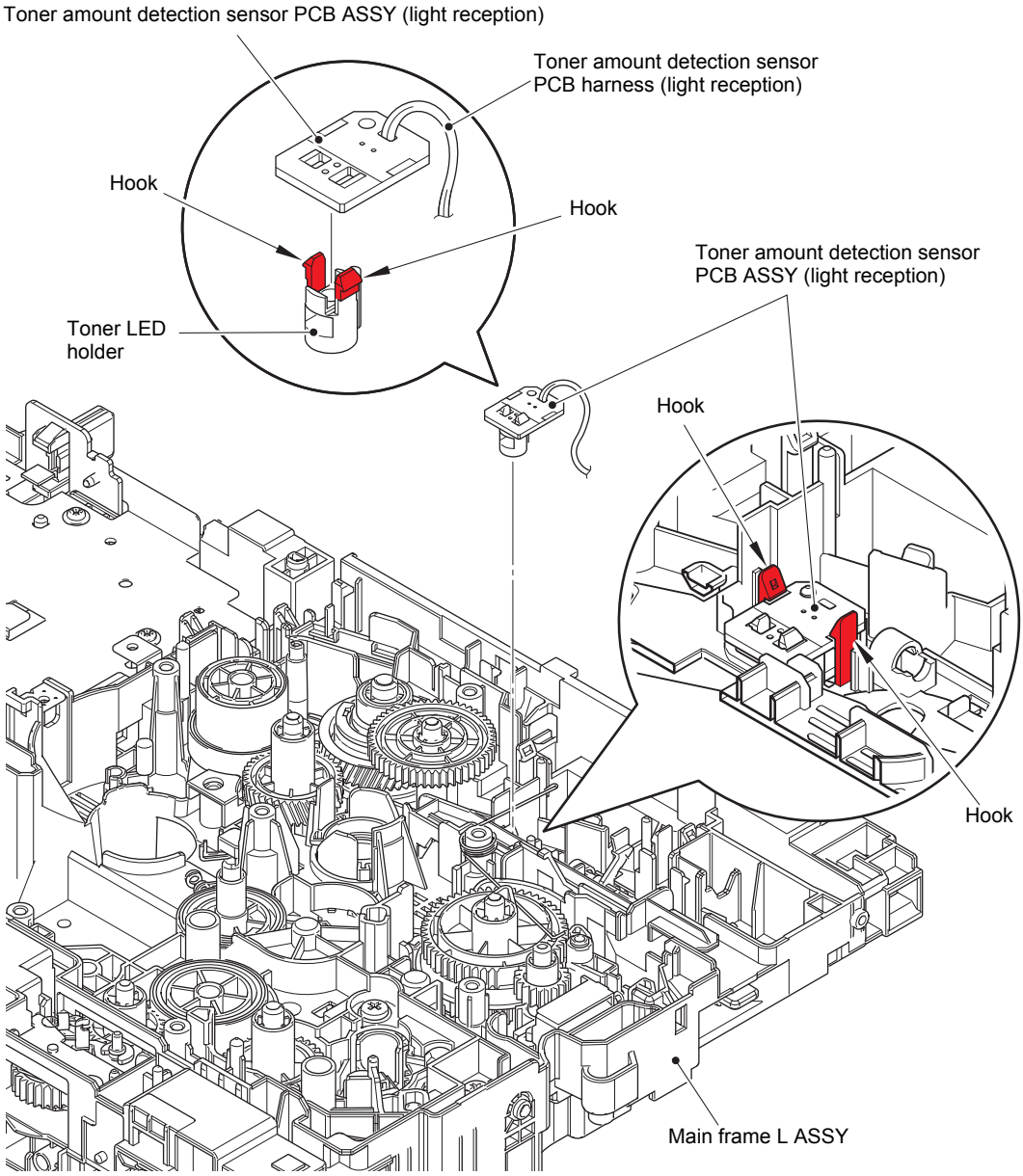


Fig. 3-75

Harness routing: Refer to "3. Left side of the machine (Common to all models)".

9.25 MP solenoid

(1) Remove the MP drive gear 18 from the main frame L ASSY.
(2) Release the MP solenoid harness from the securing fixtures.
(3) Remove the taptite bind B M3x10 screw, and remove the MP solenoid and the MP solenoid lever from the main frame L ASSY.
(4) Remove the MP solenoid lever and the MP solenoid spring from the MP solenoid.

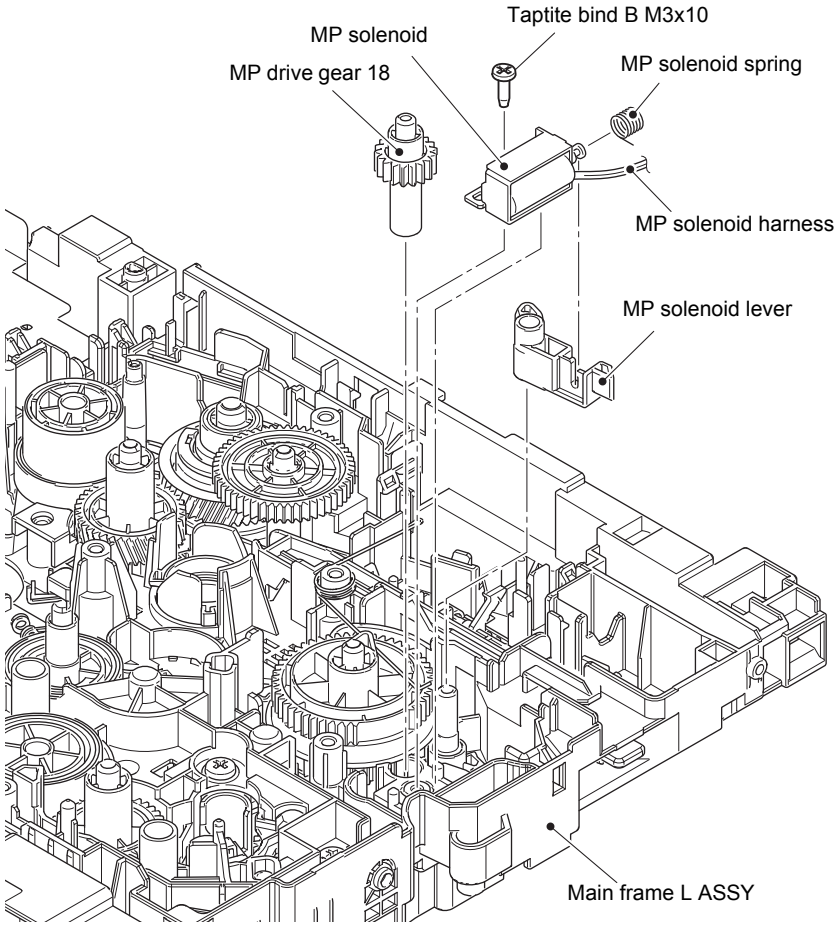


Fig. 3-76

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.26 Develop clutch 51R

(1) Remove the develop idle gear 53 from the main frame L ASSY.

(2) Remove the develop shaft gear 22 from the main frame L ASSY.

(3) Release the develop clutch harness from the securing fixtures, and remove the develop clutch 51R from the main frame L ASSY.

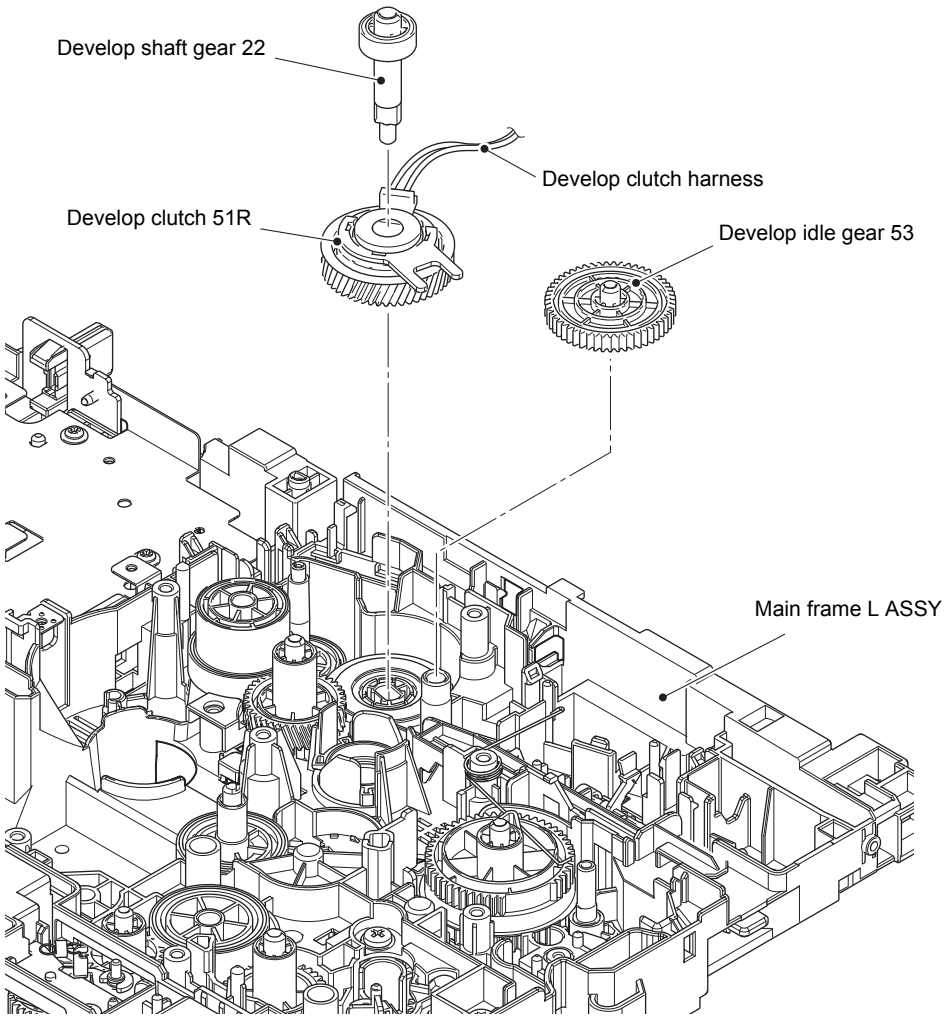


Fig. 3-77

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.27 Internal temperature sensor

(1) Release the internal temperature sensor harness from the securing fixtures, and remove the internal temperature sensor.

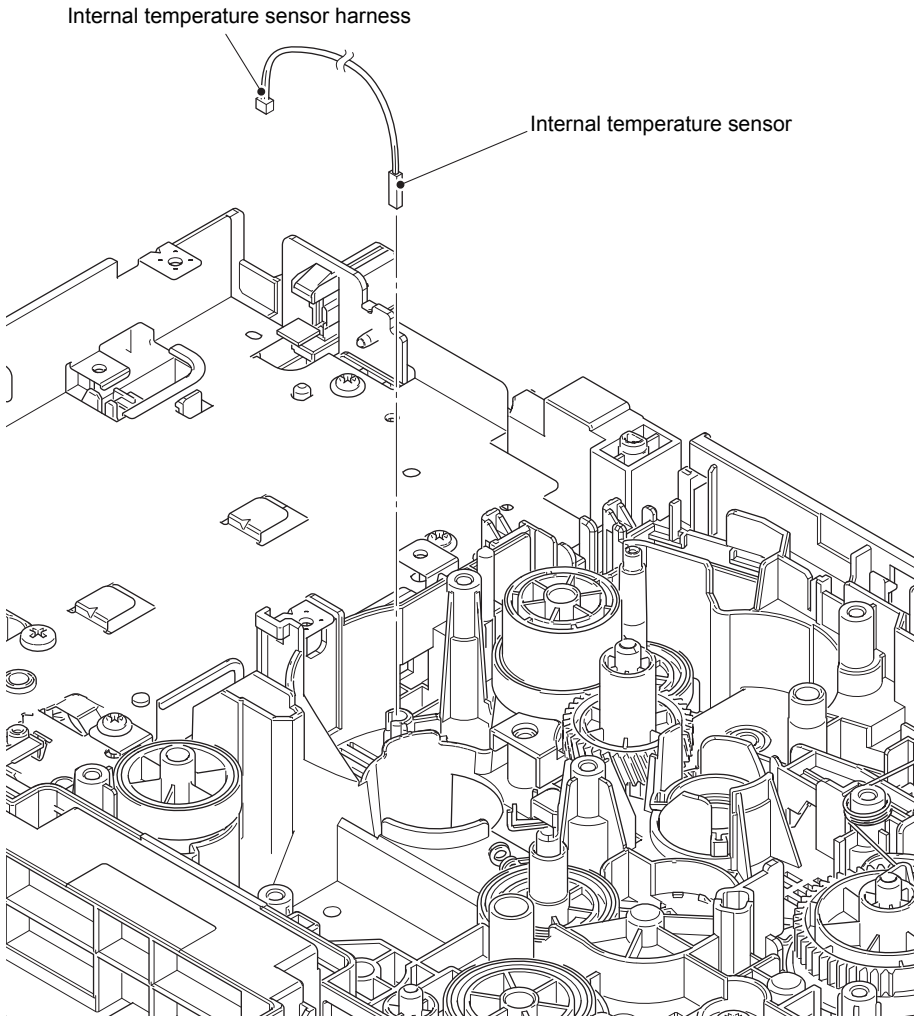


Fig. 3-78

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.28 Fuser drive gear 39

(1) Remove the three taptite bind B M4x12 screws, taptite cup S M3x8 SR screw (A), and two taptite cup S M3x8 SR screws (B). Release the two hooks to remove the main PCB shield calking ASSY from the main frame L ASSY. Pull out the eject motor harness from the hole of the main PCB shield calking ASSY.

Note:

- Screw A is not equipped for models with 250-sheet T1.
- Do not allow the metallic gear shaft of the main PCB shield calking ASSY to face down. Failure to observe this may cause the steel plate to bend.

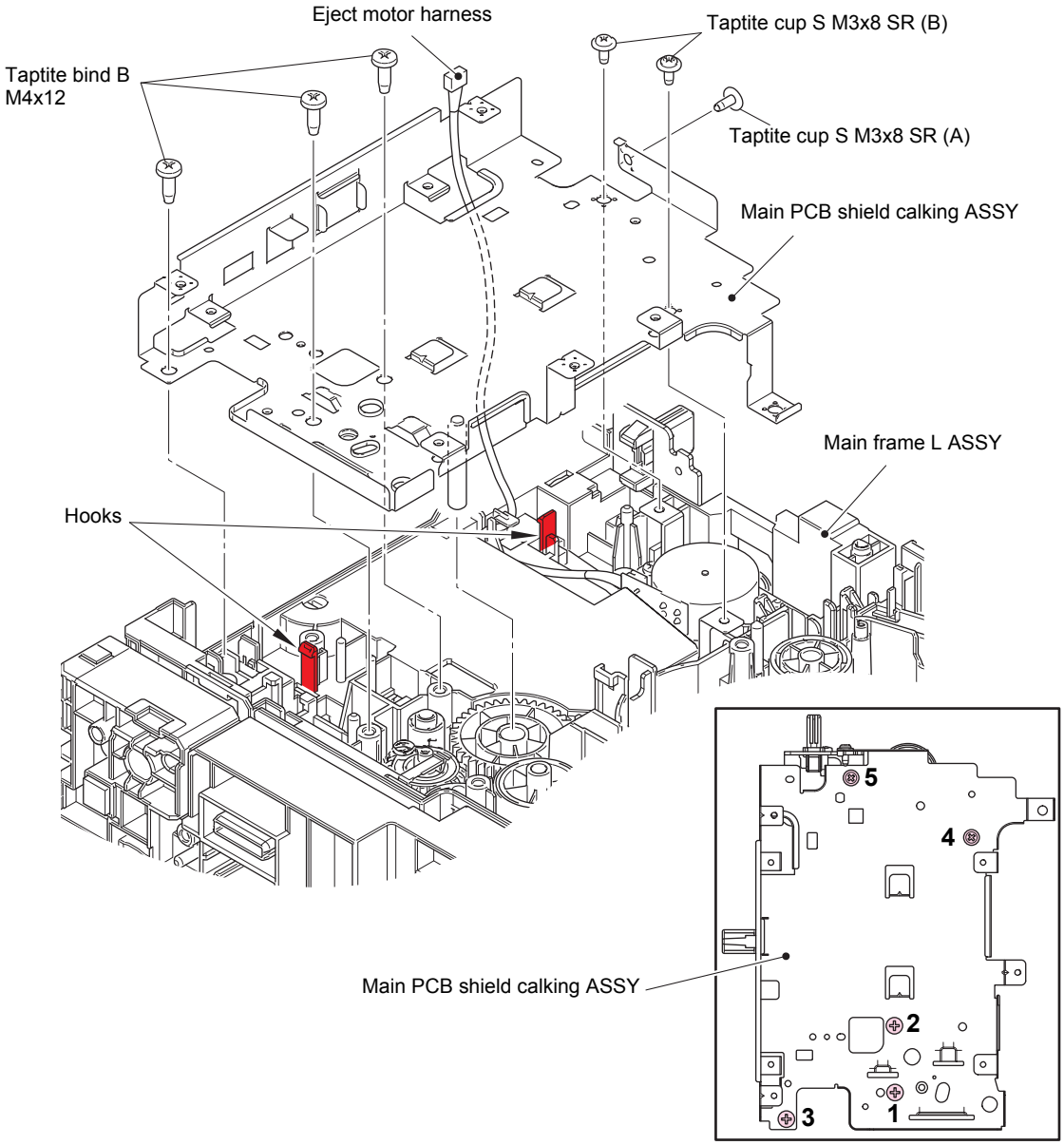


Fig. 3-79

Assembling Note:

- When securing the main PCB shield calking ASSY with screws, tighten the screws in the sequence of the numbers engraved on the main PCB shield calking ASSY.

(2) Remove the fuser drive gear 39 from the main frame L ASSY.

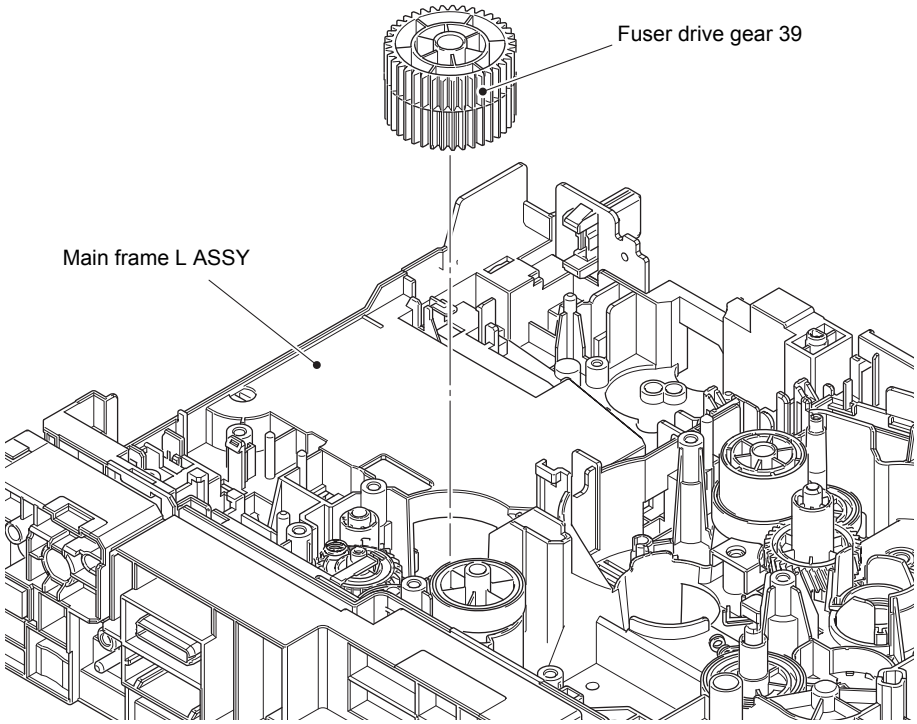


Fig. 3-80

9.29 MX connector ASSY (Touch panel models only)

(1) Remove the three taptite bind B M4x12 screws, and remove the MX holder plate.

(2) Release the two hooks A, and remove the MX connector ASSY from the MX holder plate.

(3) Release the hook B to disconnect the MX connector harness from the MX connector ASSY.

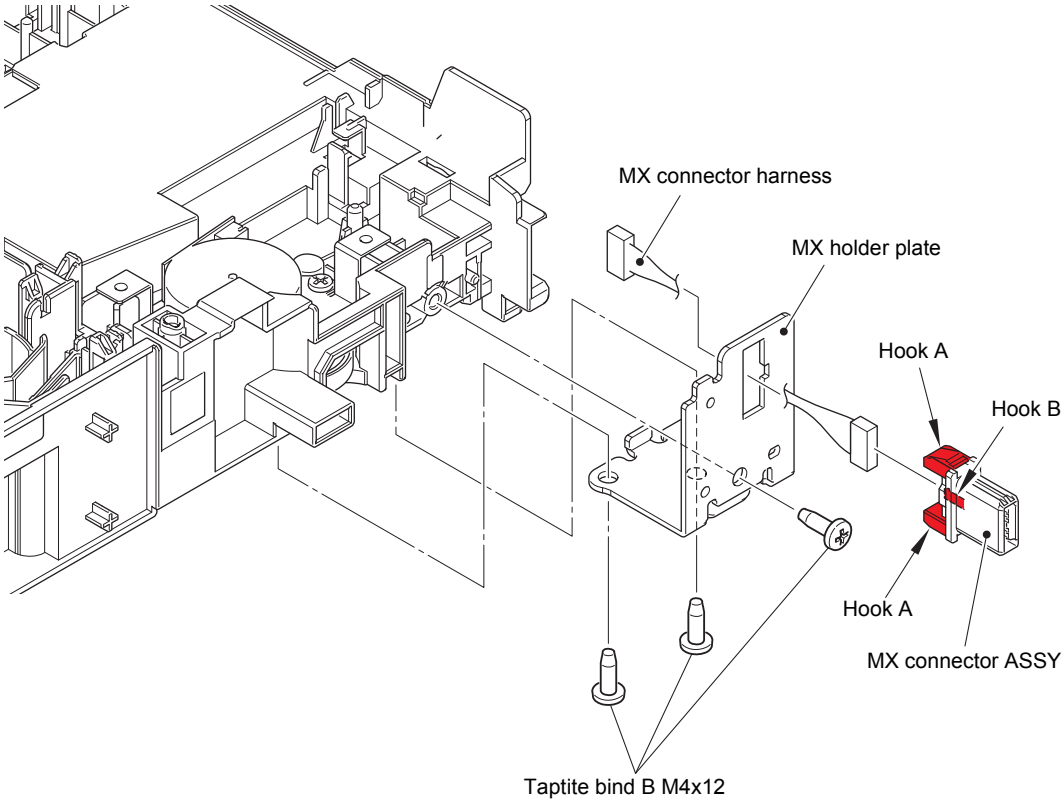


Fig. 3-81

Harness routing: Refer to “1. Left side of the machine (Touch panel models)”.

9.30 Eject motor

(1) Release the eject motor harness from the securing fixtures.

(2) Remove the two taptite bind B M3x10 screws, and remove the eject motor plate from the main frame L ASSY.

(3) Remove the screw bind M3x4 screw. Turn the eject motor in the direction of the arrow, and remove it from the eject motor plate.

(4) Disconnect the eject motor harness from the eject motor.

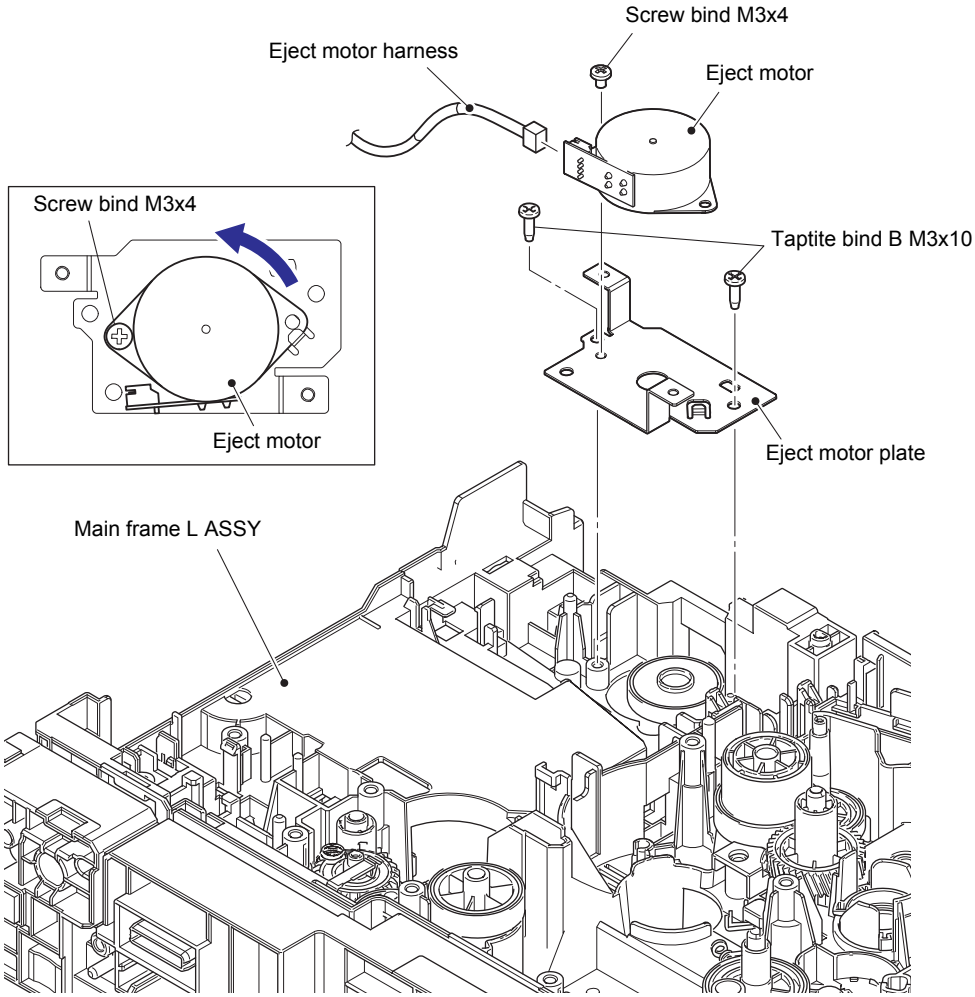


Fig. 3-82

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

9.31 Back cover/duplex tray sensor

(1) Release the back cover/duplex tray sensor harness from the securing fixtures.

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

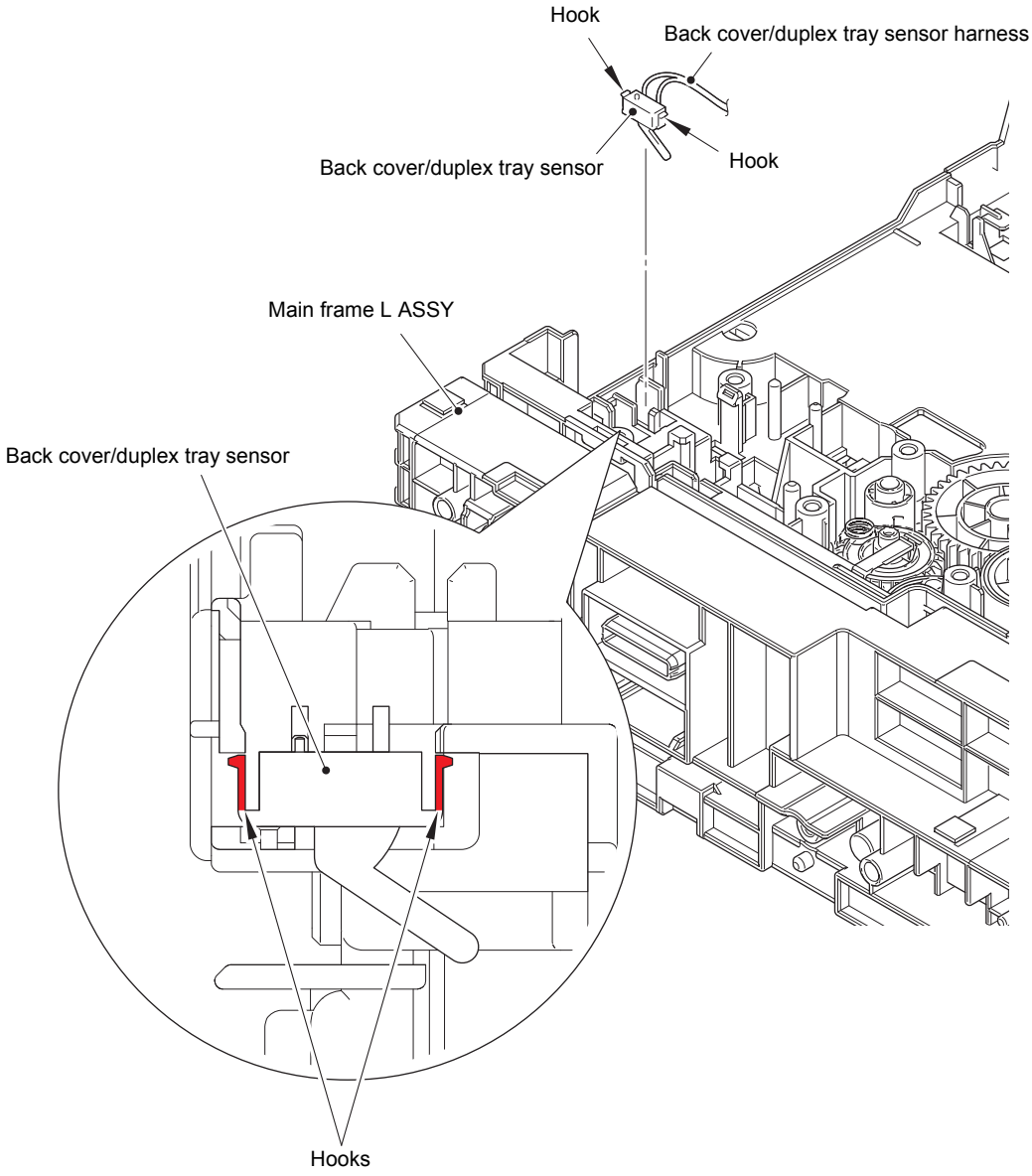


Fig. 3-83

Harness routing: Refer to “3. Left side of the machine (Common to all models)”.

Assembling Note:

- When connecting the back cover/duplex tray sensor, insert it at an angle from the right side.

9.32 LT/TT connector

■ For models with 520-sheet T1

(1) Remove the three taptite bind B M4x30 screws, and remove the bottom frame L from the main frame L ASSY. Then pull out the LT/TT connector harness from the hole of the main frame L ASSY.

(2) Release the two hooks A, and remove the LT/TT connector from the bottom frame L.

■ For models with 250-sheet T1

(3) Release the two hooks A, and remove the LT/TT connector from the main frame L ASSY.

■ Common to all models

(4) Release the two hooks B to disconnect the LT/TT connector harness from the LT/TT connector.

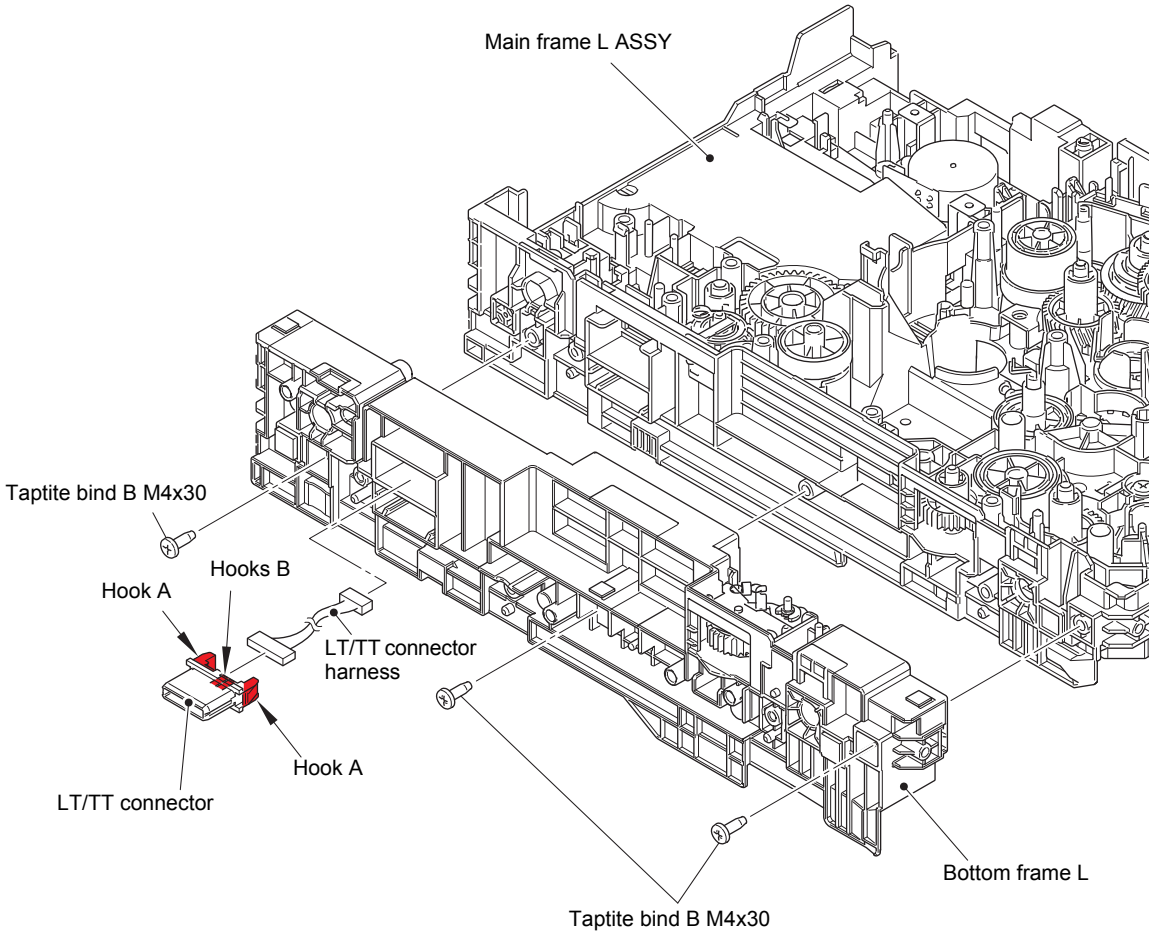


Fig. 3-84

9.33 High-voltage power supply PCB ASSY

(1) Remove the two screw pan (S/P washer) M3x12 DB screws and the four taptite bind B M4x12 screws to remove the base plate.

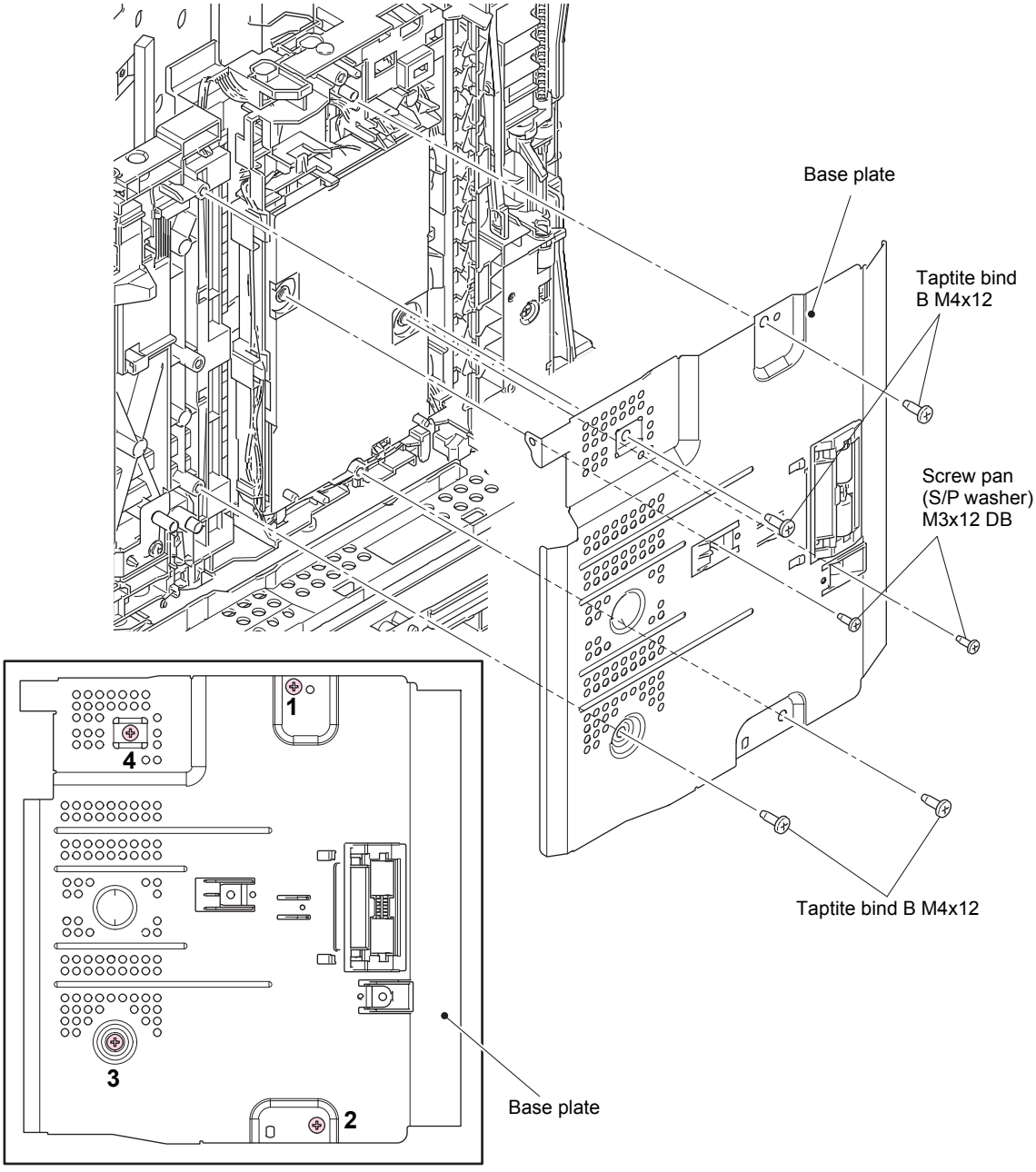


Fig. 3-85

Assembling Note:

- Carefully attach the base plate, avoiding harnesses and flat cables get caught in the base plate.
- When securing the base plate with screws, tighten the screws in the sequence of the numbers engraved on the base plate.

(2) Remove the HV insulation sheet.

(3) Release the HVPS flat cable from the securing fixtures.

(4) Remove the two taptite bind B M4x12 screws. Release the two hooks, and remove the high-voltage power supply PCB ASSY and feed ground spring.

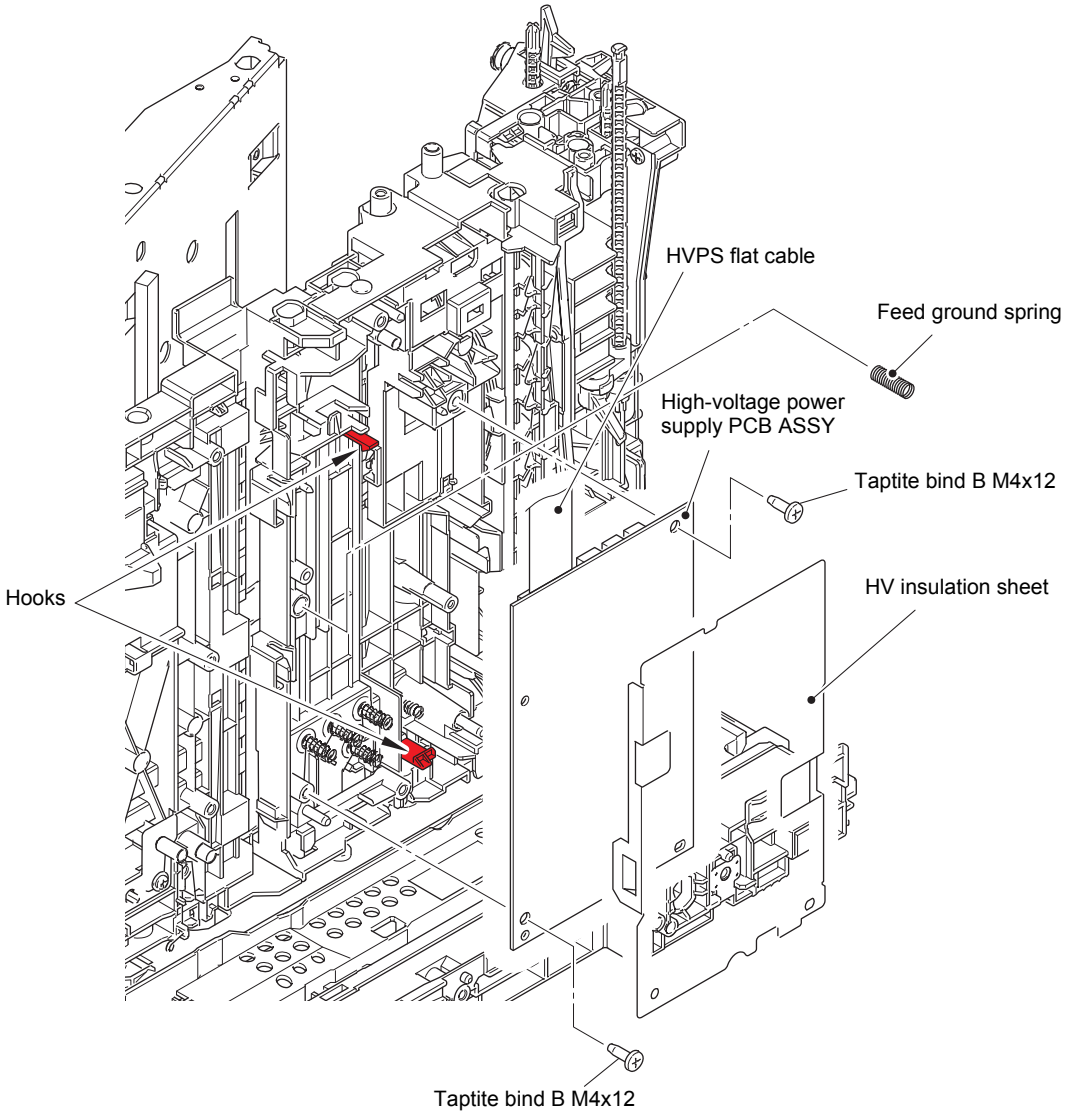


Fig. 3-86

Harness routing: Refer to "8. Bottom side of the machine (High-voltage power supply PCB ASSY)".

(5) Disconnect the registration front/rear sensor harness, T1 paper feed sensor harness and the MP paper empty sensor harness from the high-voltage power supply PCB ASSY to remove the high-voltage power supply PCB ASSY.

(6) Disconnect the HVPS flat cable from the high-voltage power supply PCB ASSY.

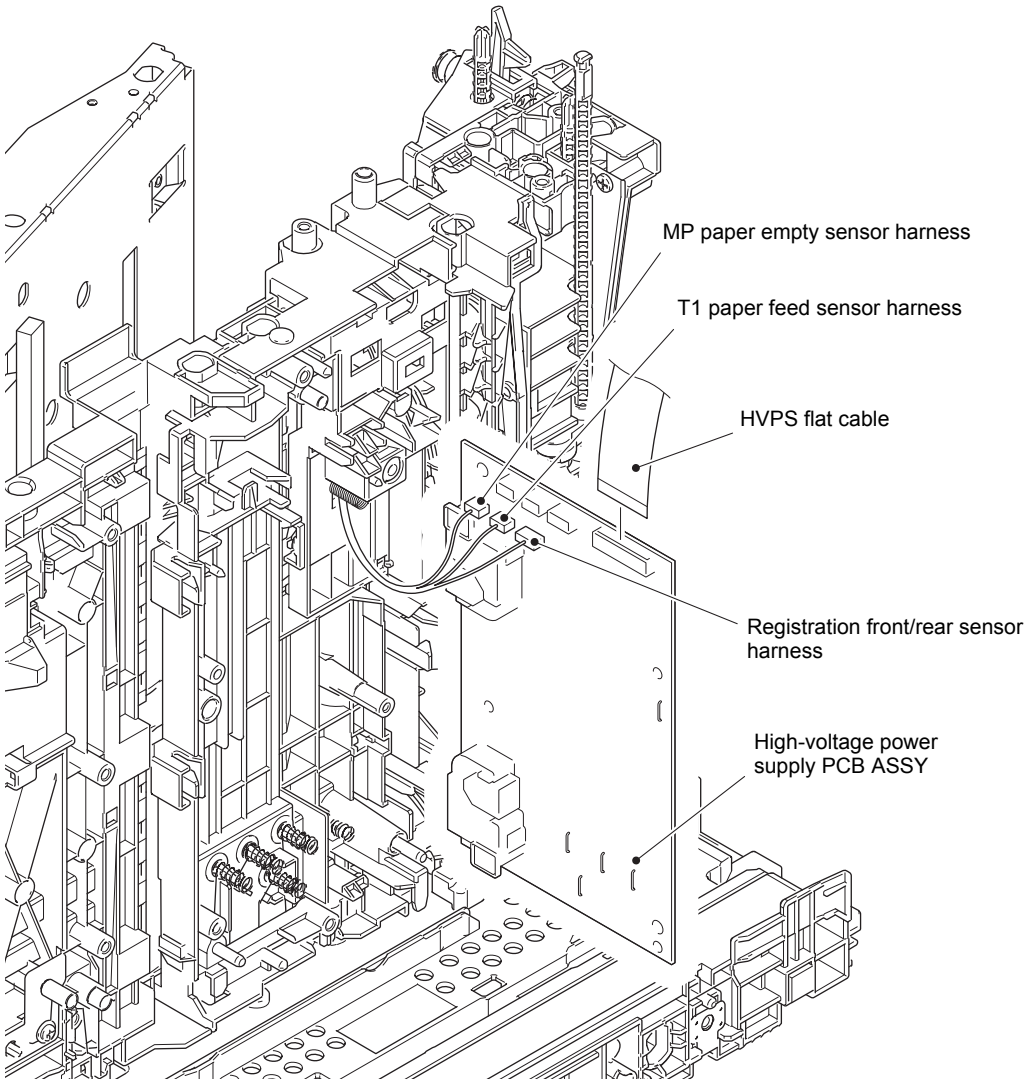


Fig. 3-87

Assembling Note:

- Fold the HVPS flat cable at the positions shown in the figure below.

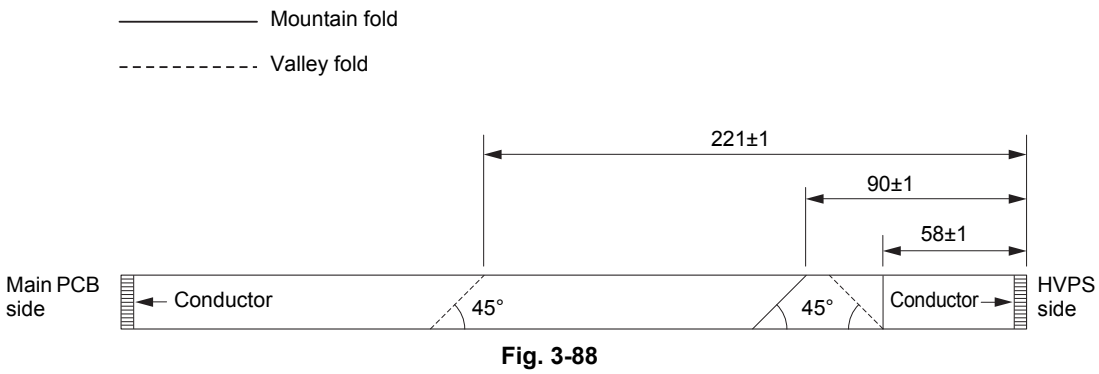


Fig. 3-88

9.34 Eject sensor PCB ASSY

(1) Release the eject sensor harness from the securing fixtures.
(2) Release the hook, and remove the eject sensor PCB ASSY.

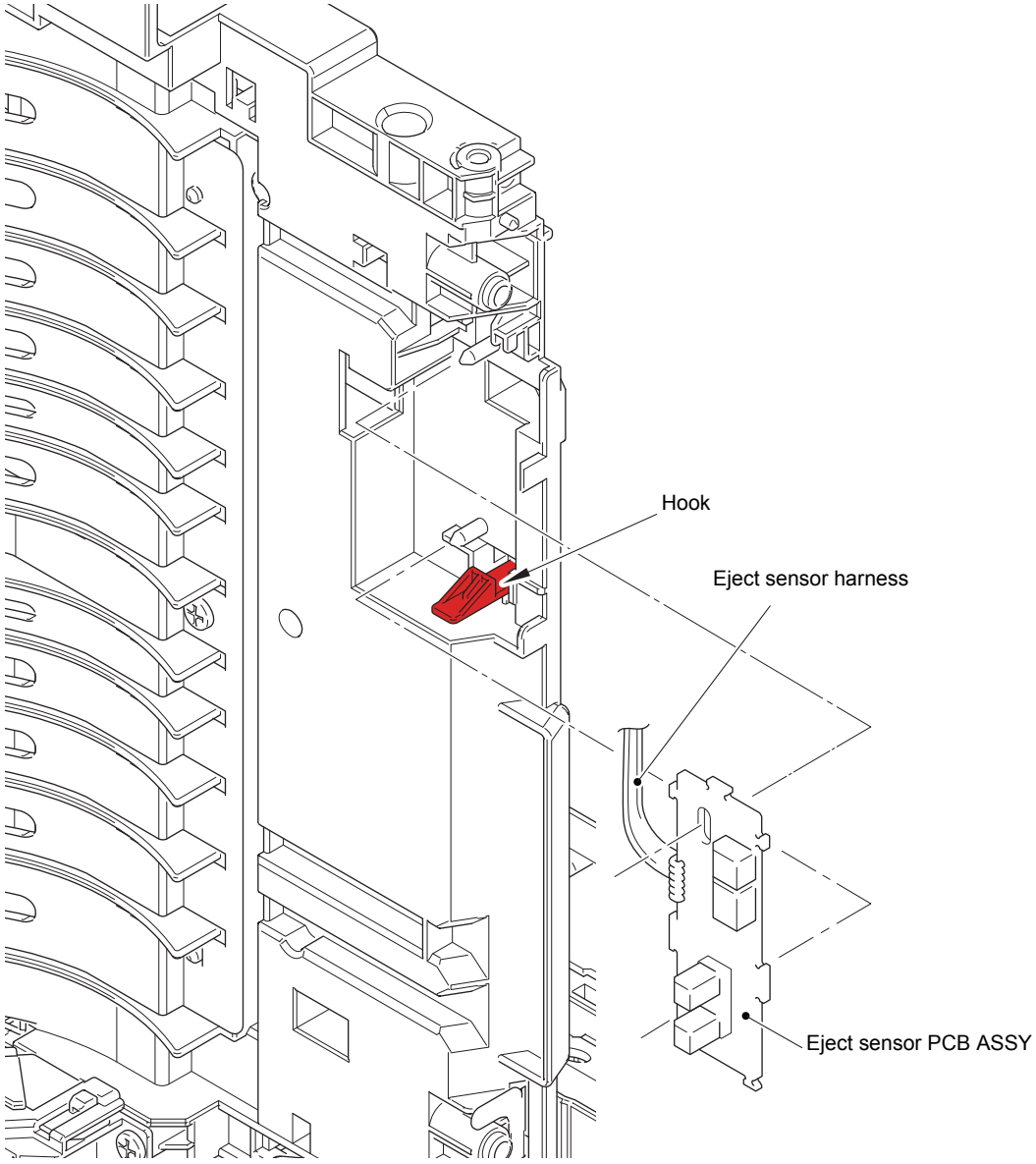


Fig. 3-89

Harness routing: Refer to “7. Bottom side of the machine”.

9.35 MP roller holder ASSY / MP separation pad ASSY / MP separation pad spring

(1) Open the MP roller cover. Release the hook on the MP holder bushing, and slide the MP holder bushing in the direction of the arrow 1.

(2) Slide the MP roller holder ASSY in the direction of the arrow 2a to remove it from the MP separation roller shaft. Then push the MP lift arm in the direction of the arrow 2b to remove the MP roller holder ASSY.

(3) Push the MP lift arm in the direction of the arrow 2b. Raise the MP separation pad ASSY to the 50-degree position, and remove it in the direction of the arrow 3.

(4) Remove the MP separation pad spring.

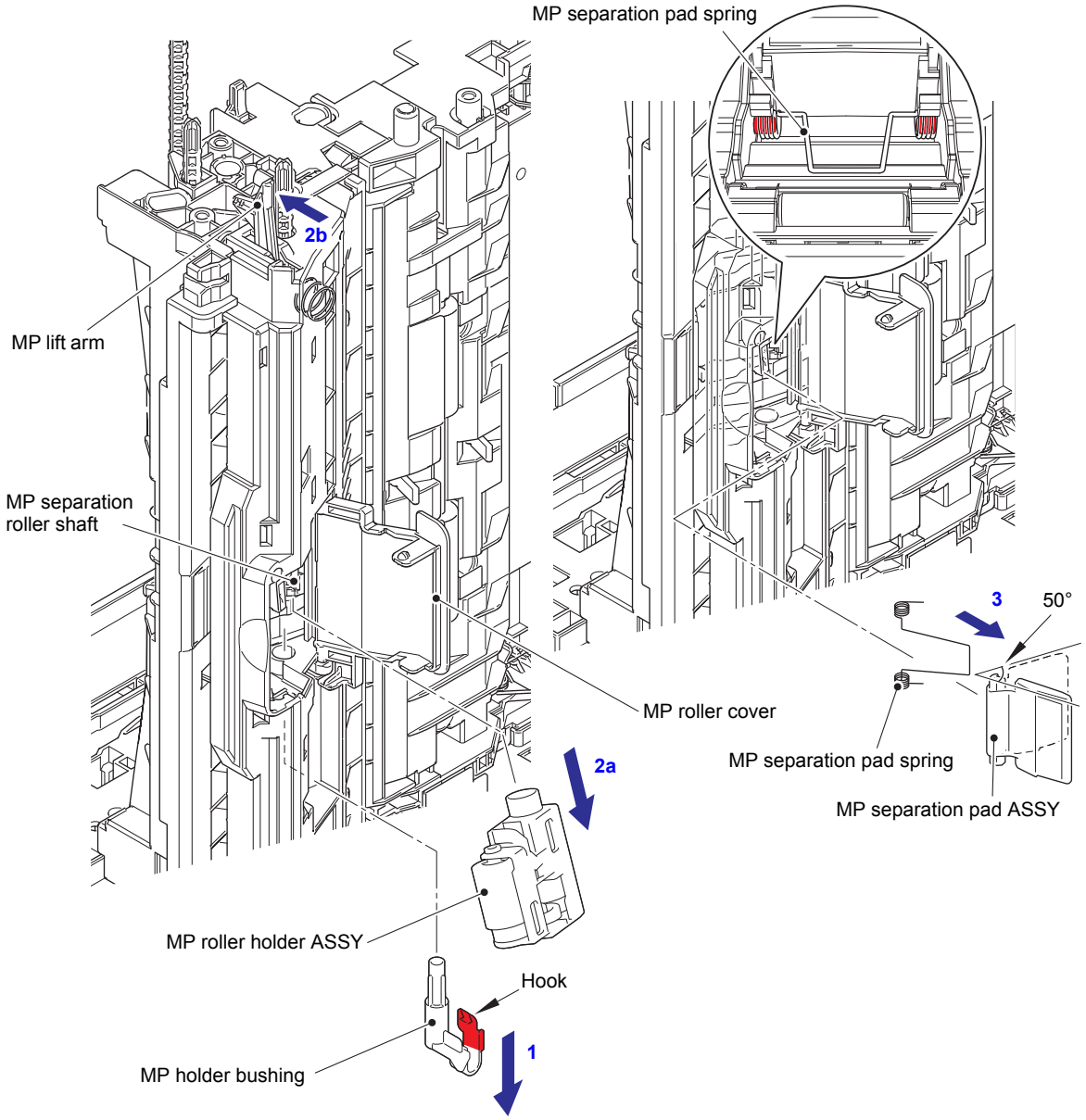


Fig. 3-90

Assembling Note:

- Attach the MP roller holder ASSY while pushing the MP separation pad ASSY.
- Attach the MP separation pad spring as described in the figure above.

9.36 T1 paper feed sensor PCB ASSY / T1 paper feed actuator / T1 paper feed actuator spring

(1) Release the T1 paper feed sensor harness from the securing fixtures.

(2) Remove the taptite bind B M3x10 screw, and remove the T1 paper feed actuator holder ASSY.

(3) Remove the tray lock R.

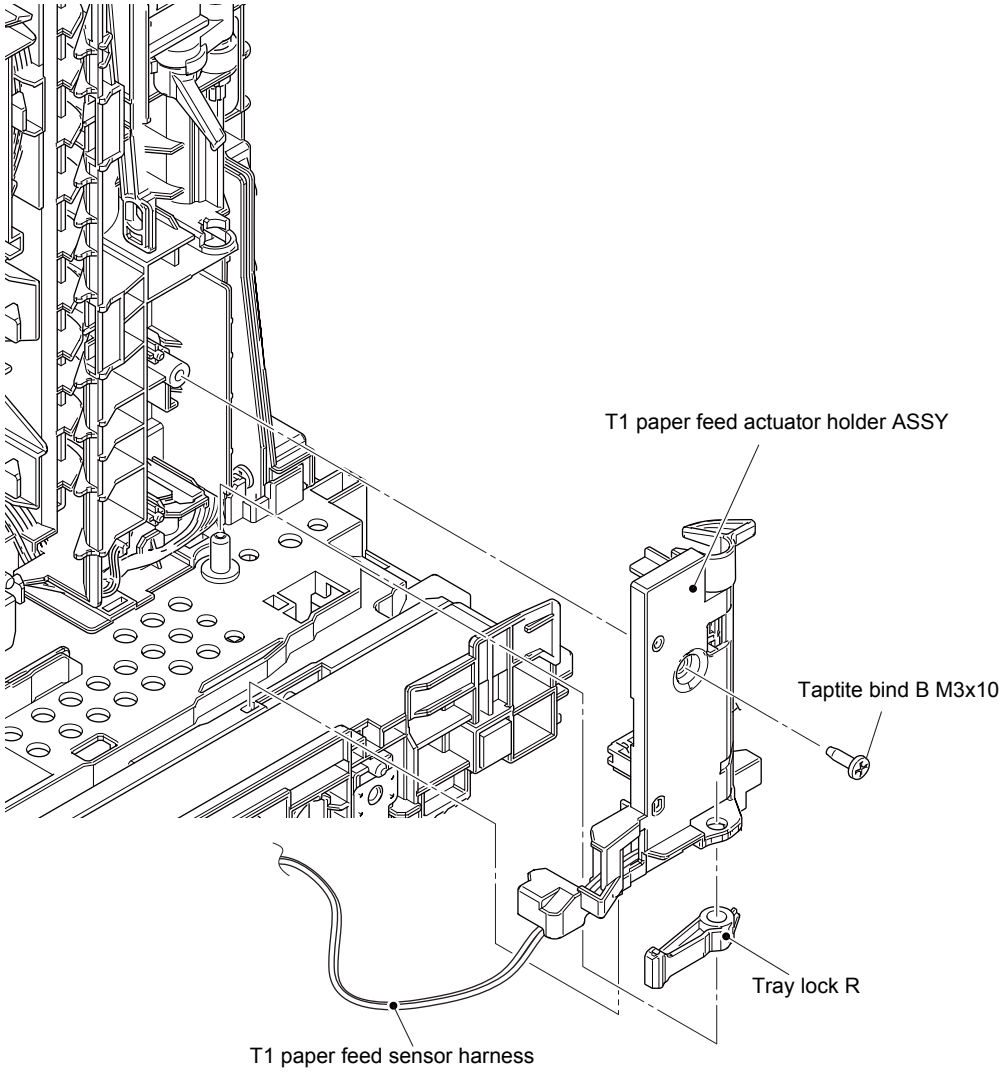


Fig. 3-91

Harness routing: Refer to "8. Bottom side of the machine (High-voltage power supply PCB ASSY)".

(4) Turn the T1 paper feed actuator in the direction of the arrow 4a, and push the hook on the T1 paper feed actuator holder to slide the T1 paper feed actuator in the direction of the arrow 4b to remove it from the T1 paper feed actuator holder.

(5) Remove the T1 paper feed actuator spring from the T1 paper feed actuator.

(6) Remove the securing fixtures of the T1 paper feed sensor harness from the T1 paper feed actuator holder. Release the hook, and remove the T1 paper feed sensor PCB ASSY from the T1 paper feed actuator holder.

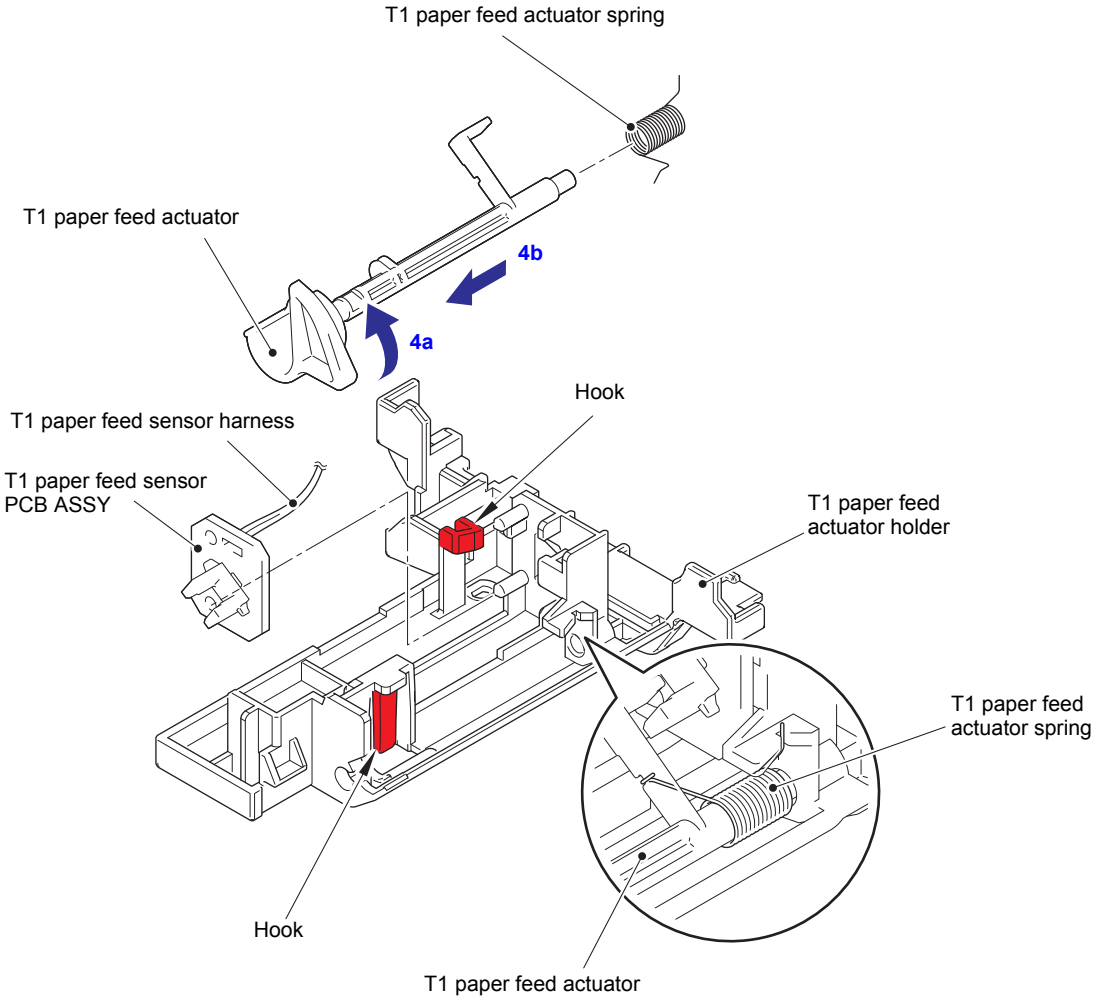


Fig. 3-92

Harness routing: Refer to "8. Bottom side of the machine (High-voltage power supply PCB ASSY)".

9.37 MP paper empty sensor PCB ASSY / MP paper empty actuator 1 / MP paper empty actuator 2

(1) Remove the five taptite bind B M4x12 screws. Remove the main frame R from the paper feed frame ASSY, and pull out the low-voltage power supply harness from the hole of the main frame R.

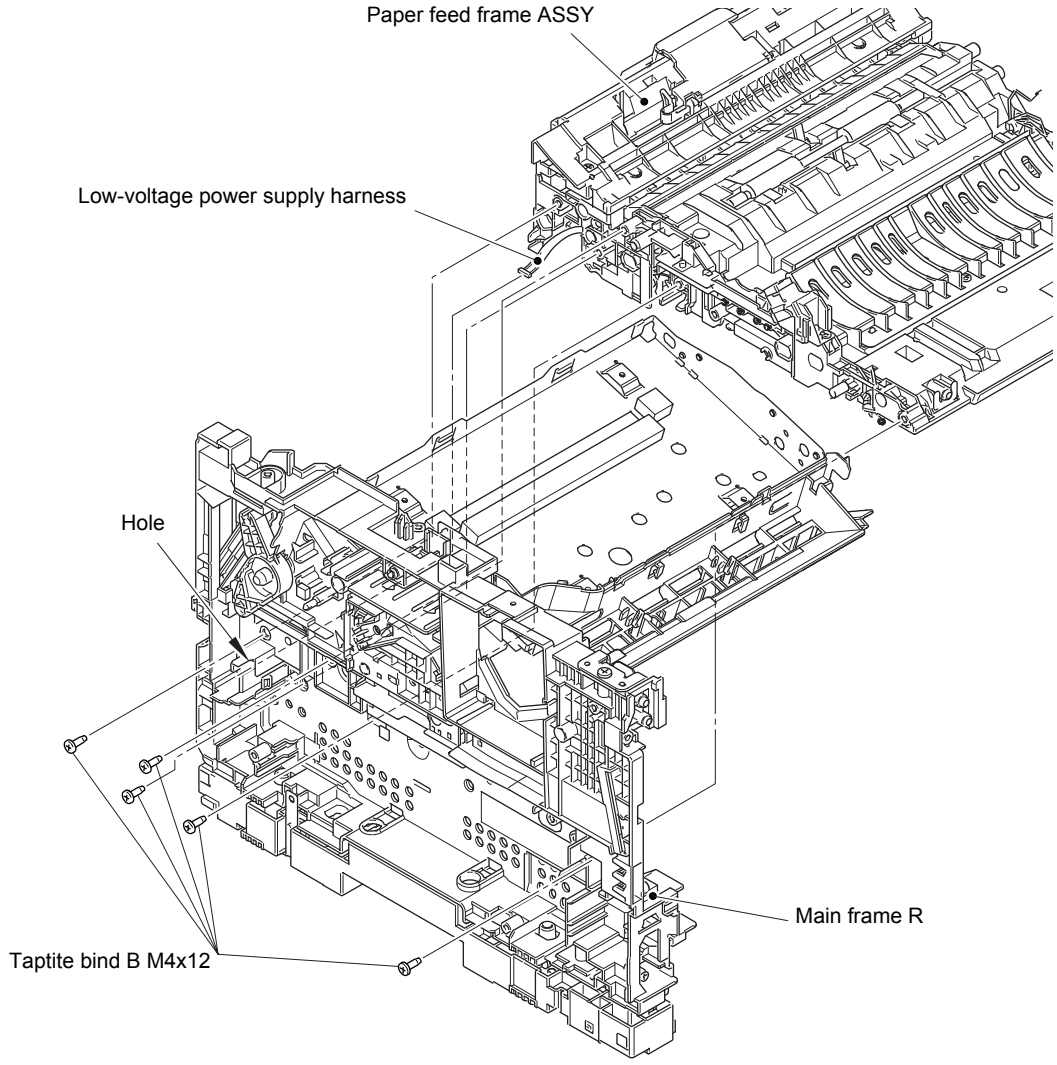


Fig. 3-93

(2) Disconnect the securing fixtures of the MP paper empty sensor harness from the paper feed frame ASSY.

(3) Remove the two taptite bind B M3x10 screws. Release the two hooks, and remove the MP feed frame from the paper feed frame ASSY. Then pull out the MP paper empty sensor harness from hole of the paper feed frame ASSY.

(4) Remove the MP lift arm spring from the paper feed frame ASSY.

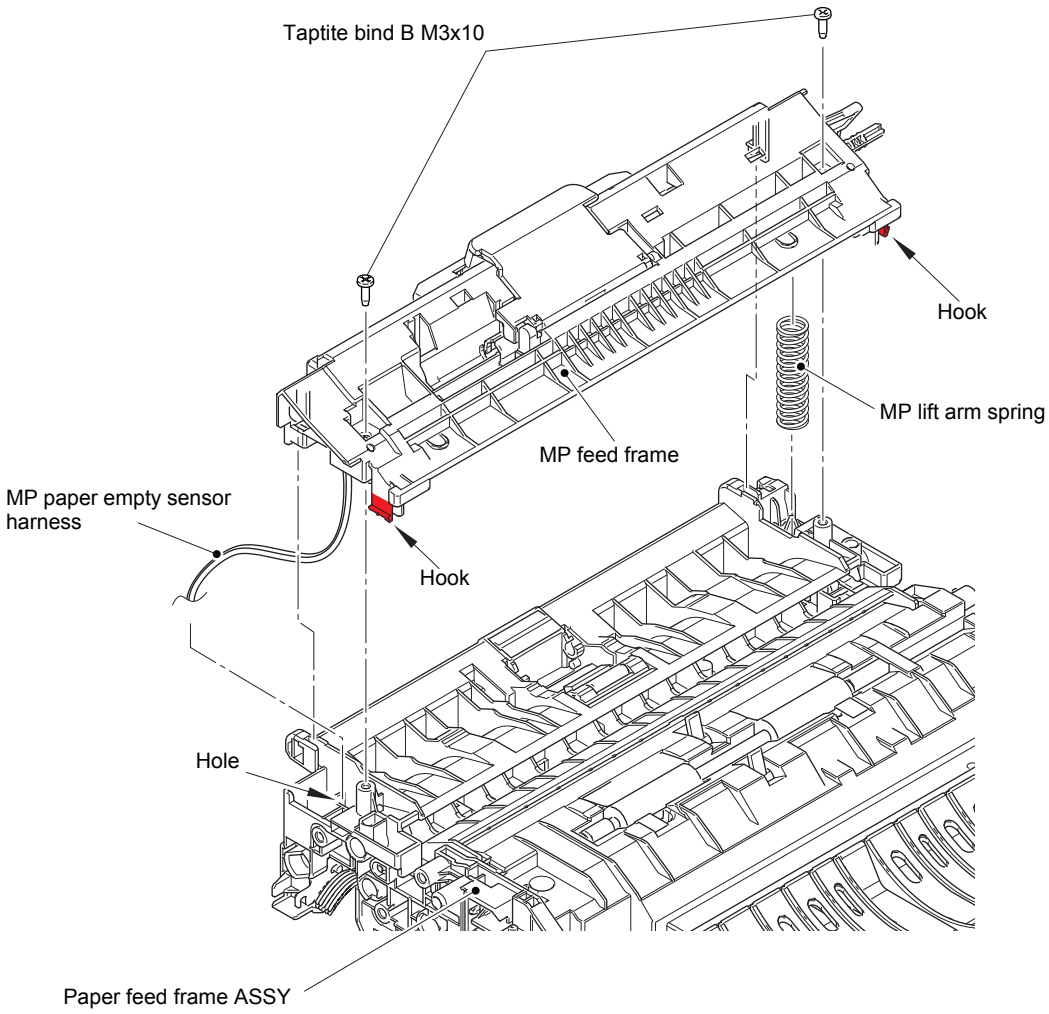


Fig. 3-94

Harness routing: Refer to "8. Bottom side of the machine (High-voltage power supply PCB ASSY)".

(5) Turn MP paper empty actuator 2 in the direction of the arrow 5a, and push the hook in the direction of the arrow 5b to slide MP paper empty actuator 1 in the direction of the arrow 5c to remove it from the MP feed frame in the direction of the arrow 5d.

(6) Turn MP paper empty actuator 2 in the direction of the arrow 5a, and remove it from the MP feed frame in the direction of the arrow 6.

(7) Remove the taptite bind B M3x10 screw. Remove the MP paper empty sensor PCB ASSY from the MP feed frame, and pull out the MP paper empty sensor harness from the hole.

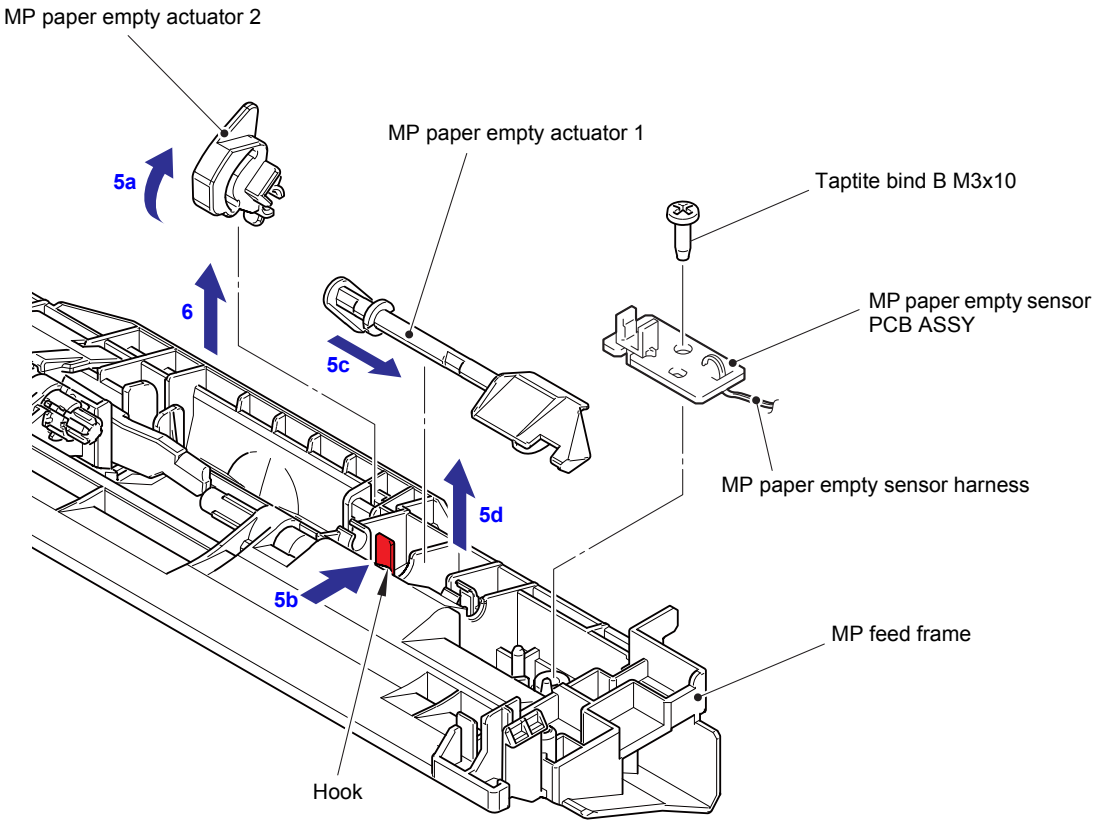


Fig. 3-95

Assembling Note:

- Insert the end of MP paper empty actuator 1 into the groove on the MP paper empty actuator 2.

9.38 Paper empty sensor PCB ASSY (Models with 520-sheet T1 and HL-5580D/5585D only)

(1) Release the hook on the bushing, and pull out the separation roller shaft to remove the paper empty actuator.

(2) Release the hook, and remove the paper empty actuator cover.

(3) Remove the taptite bind B M3x10 screw, and remove the paper empty sensor PCB ASSY. Disconnect the paper empty sensor harness from the paper empty sensor PCB ASSY, and release the paper empty sensor harness from the securing fixtures.

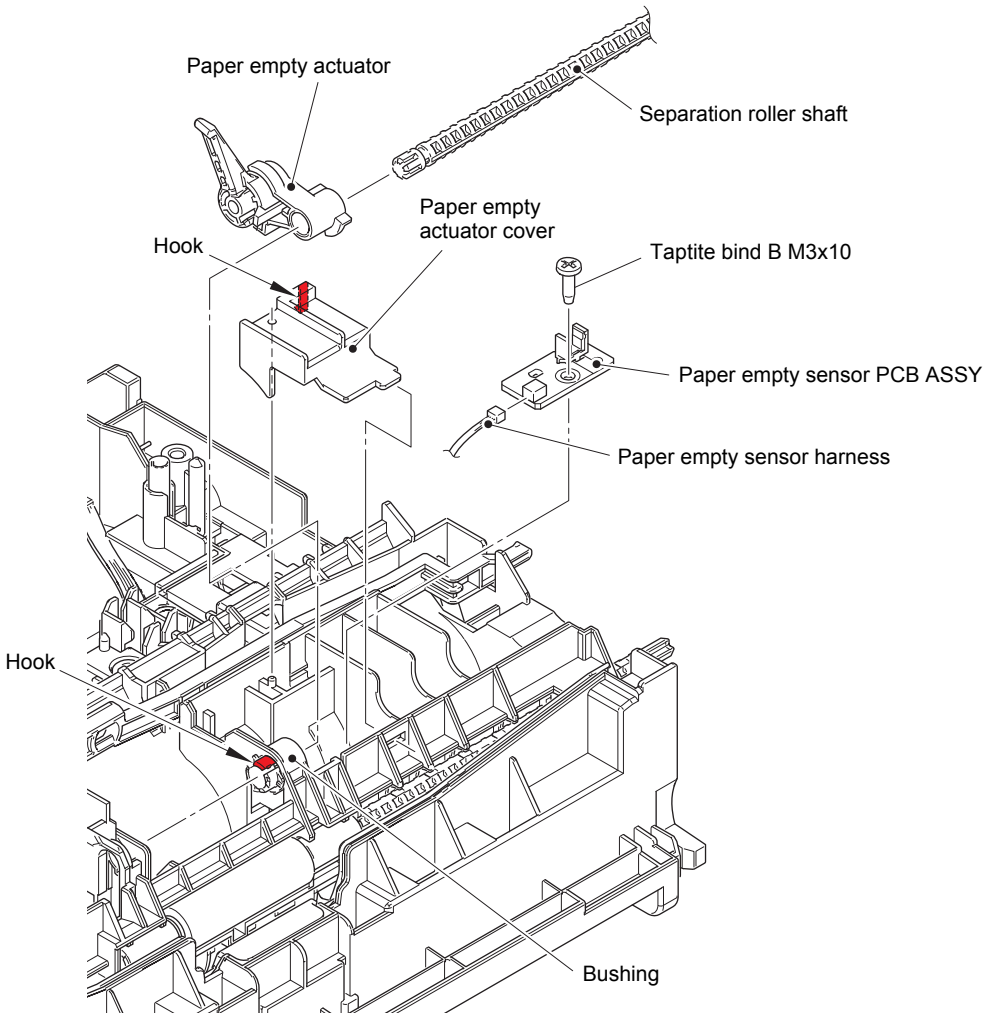


Fig. 3-96

Harness routing: Refer to “7. Bottom side of the machine”.

9.39 Registration front/rear sensor PCB ASSY

(1) Release the low-voltage power supply harness from the securing fixtures.
(2) Release the two hooks, and remove the paper feed frame from the feed chute.

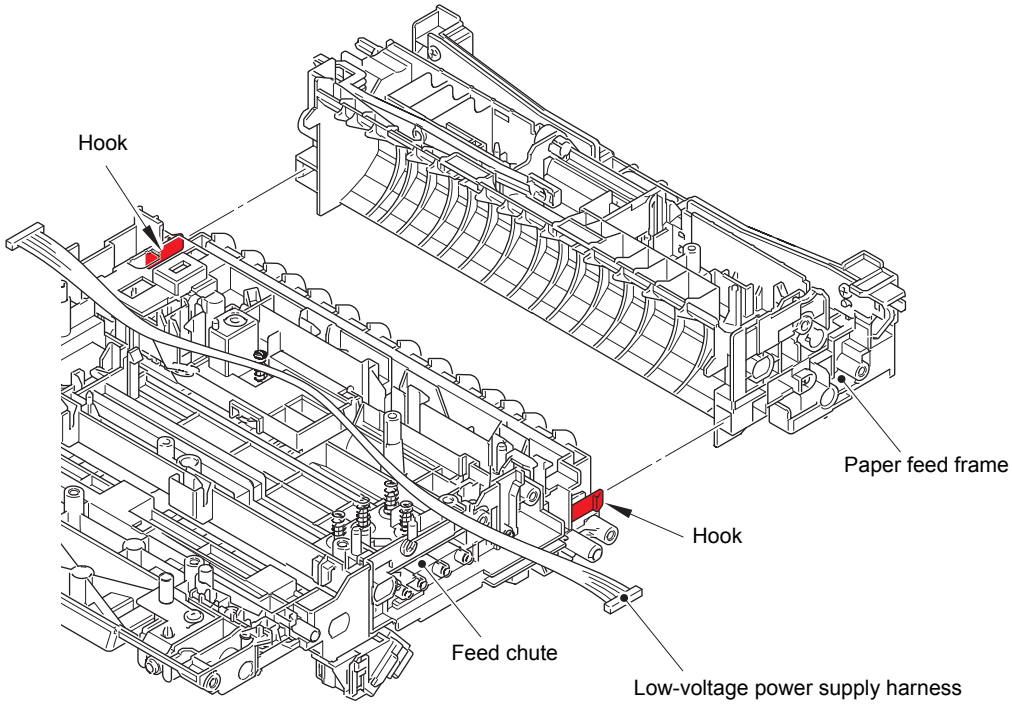


Fig. 3-97

Harness routing: Refer to “7. Bottom side of the machine”.

(3) Remove the ground registration spring from the hook A on the feed chute, and remove the ground registration spring from the feed chute.

(4) Release the electrode TR from the hook B on the registration actuator holder ASSY, and remove the electrode TR from the registration actuator holder ASSY.

(5) Release the hook C, and remove the registration actuator holder ASSY from the feed chute.

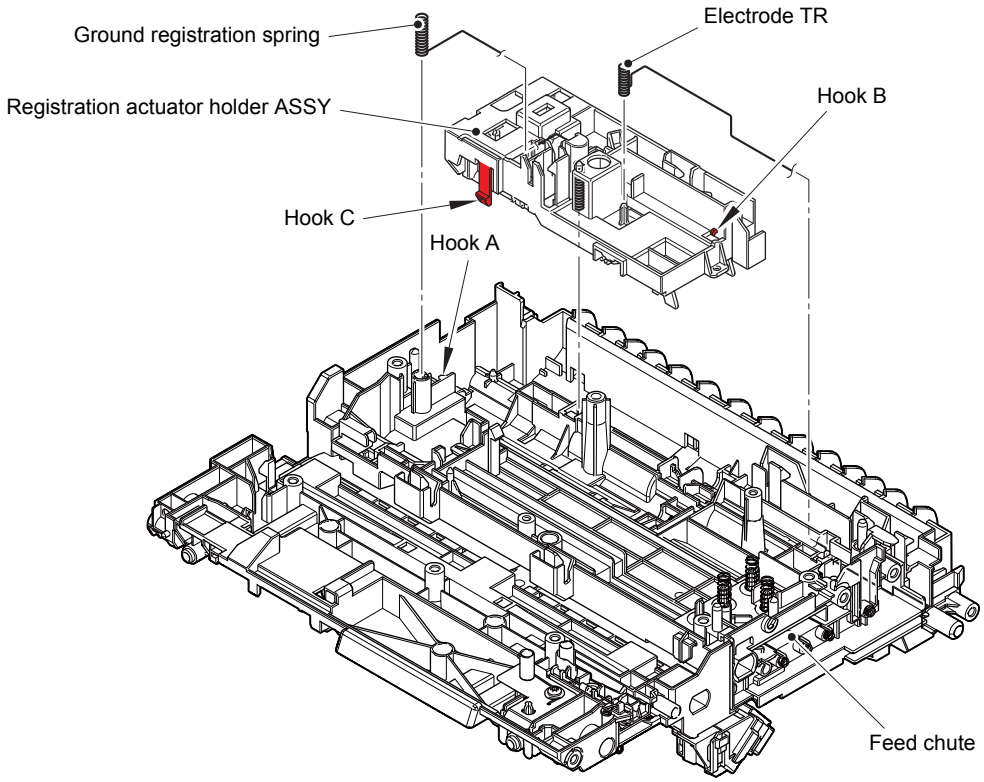


Fig. 3-98

(6) Remove the registration actuator spring from the registration front actuator and the registration actuator holder ASSY.

(7) Turn the registration front actuator to remove it from the guide, and then slide it in the direction of the arrow to remove it from the registration actuator holder ASSY.

(8) Remove the registration actuator spring from the registration rear actuator and the registration actuator holder ASSY.

(9) Turn the registration rear actuator to remove it from the guide, and then slide it in the direction of the arrow to remove it from the registration actuator holder ASSY.

(10) Release the registration front/rear sensor harness from the securing fixtures. Release the hook, and remove the registration front/rear sensor PCB ASSY from the registration actuator holder ASSY.

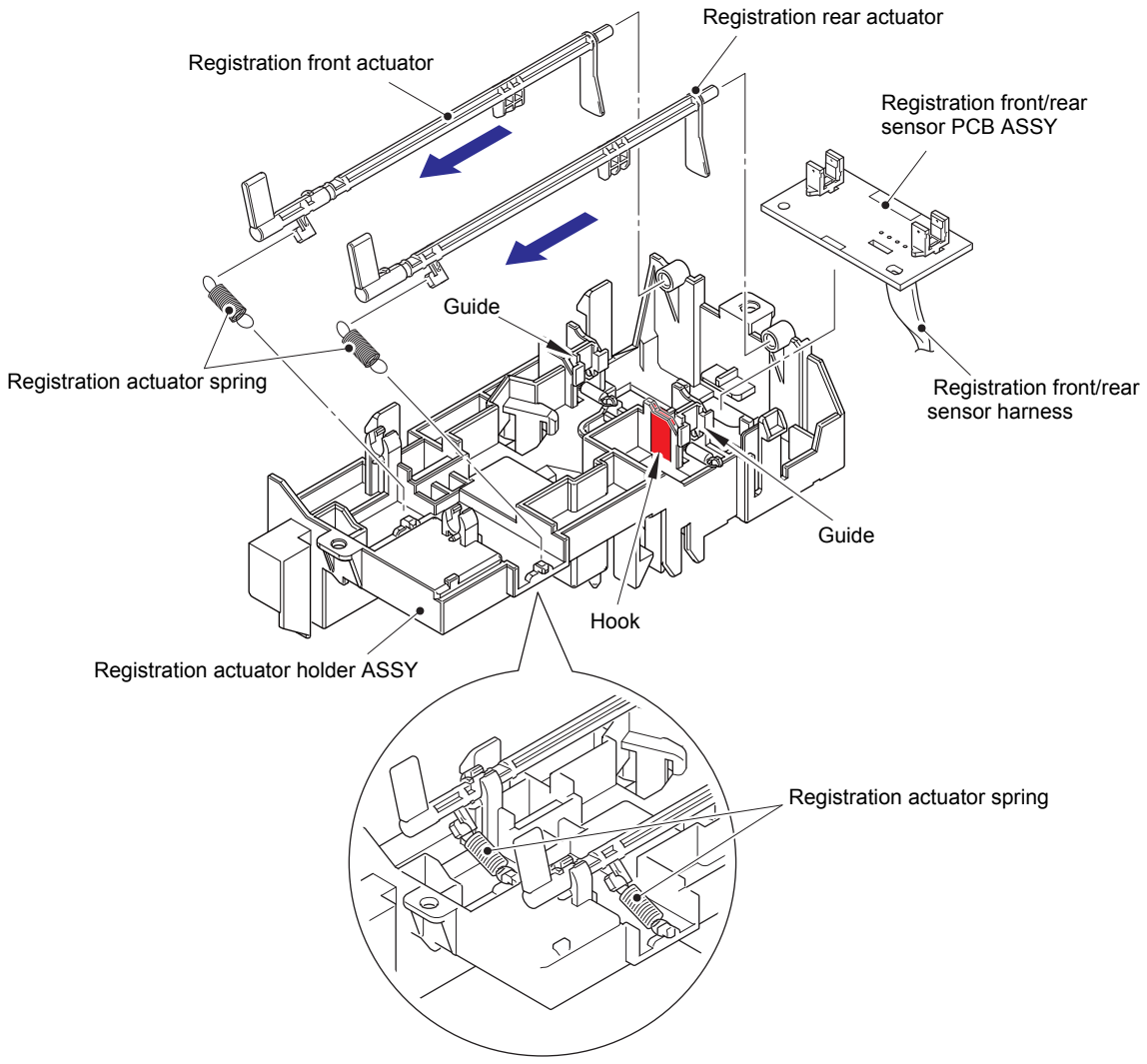


Fig. 3-99

Harness routing: Refer to "8. Bottom side of the machine (High-voltage power supply PCB ASSY)".

Assembling Note:

- Attach the registration actuator spring on the position described in the figure above.

10. DISASSEMBLY PROCEDURE (LT UNIT)

10.1 Paper tray

(1) Release the two hooks on the separation pad ASSY from the paper tray.

(2) Push both side arms on the separation pad ASSY inwards to remove the pins, and remove the separation pad ASSY from the paper tray.

(3) Remove the separation pad spring from the separation pad ASSY.

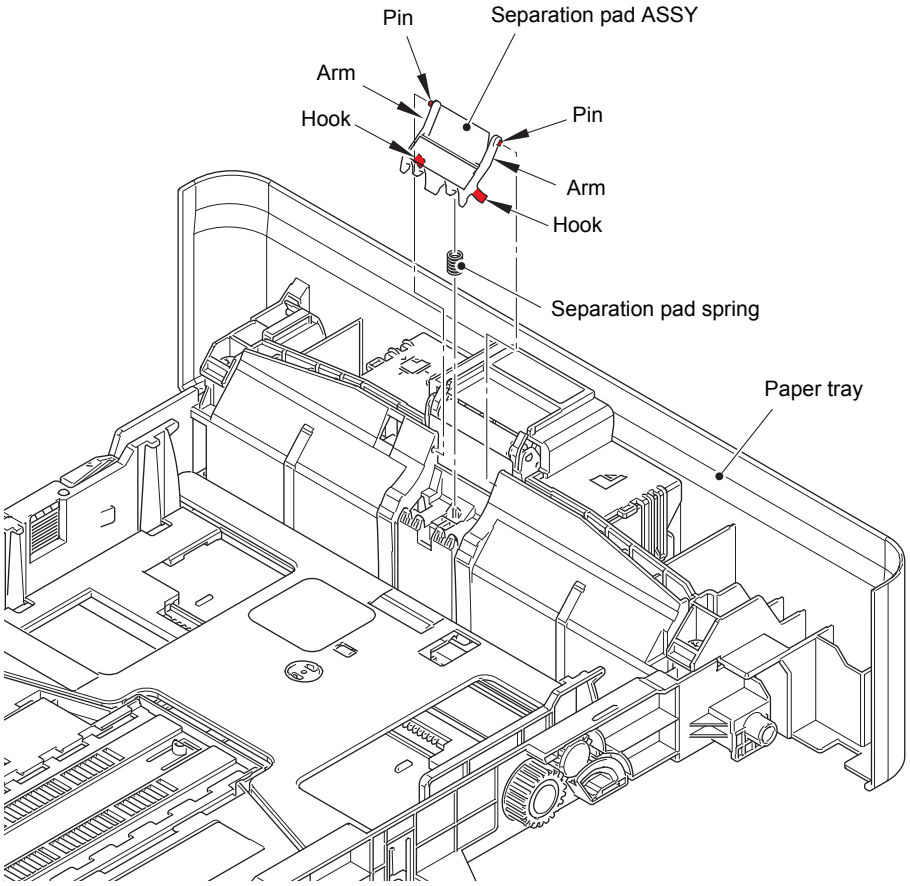


Fig. 3-100

(4) Push the hook on the lift gear Z27M10 (or lift gear Z48M10) while lifting the plate-up plate, and remove the lift gear Z27M10 (or lift gear Z48M10) from the paper tray.
250-sheet: Lift gear Z27M10
520-sheet: Lift gear Z48M10

(5) Remove the gear Z22M10 and the idle gear Z18M10 or 50 Z18M10 from the paper tray.
250-sheet: Idle gear Z18M10
520-sheet: Idle gear 50 Z18M10

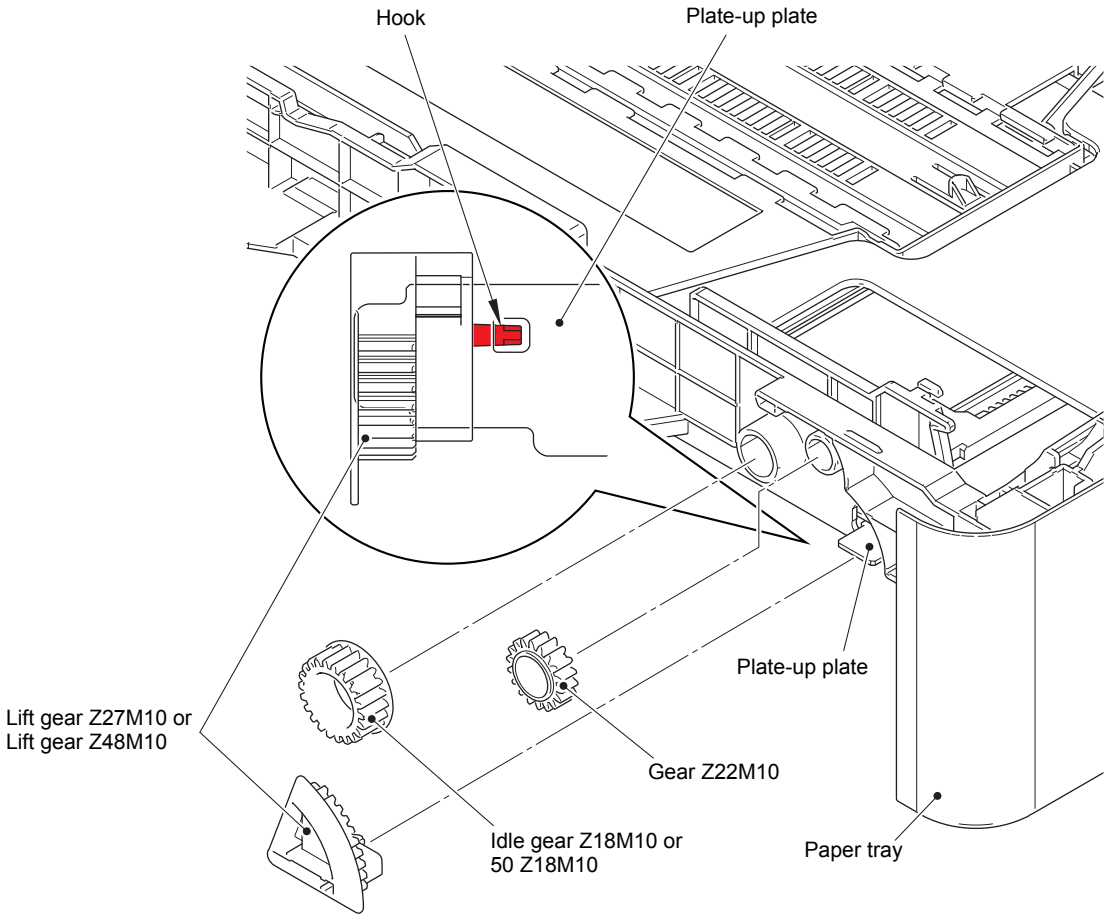


Fig. 3-101

10.2 LT roller holder ASSY

(1) Push the link arm in the direction of the arrow A, and turn the LT roller holder ASSY to remove the boss.

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

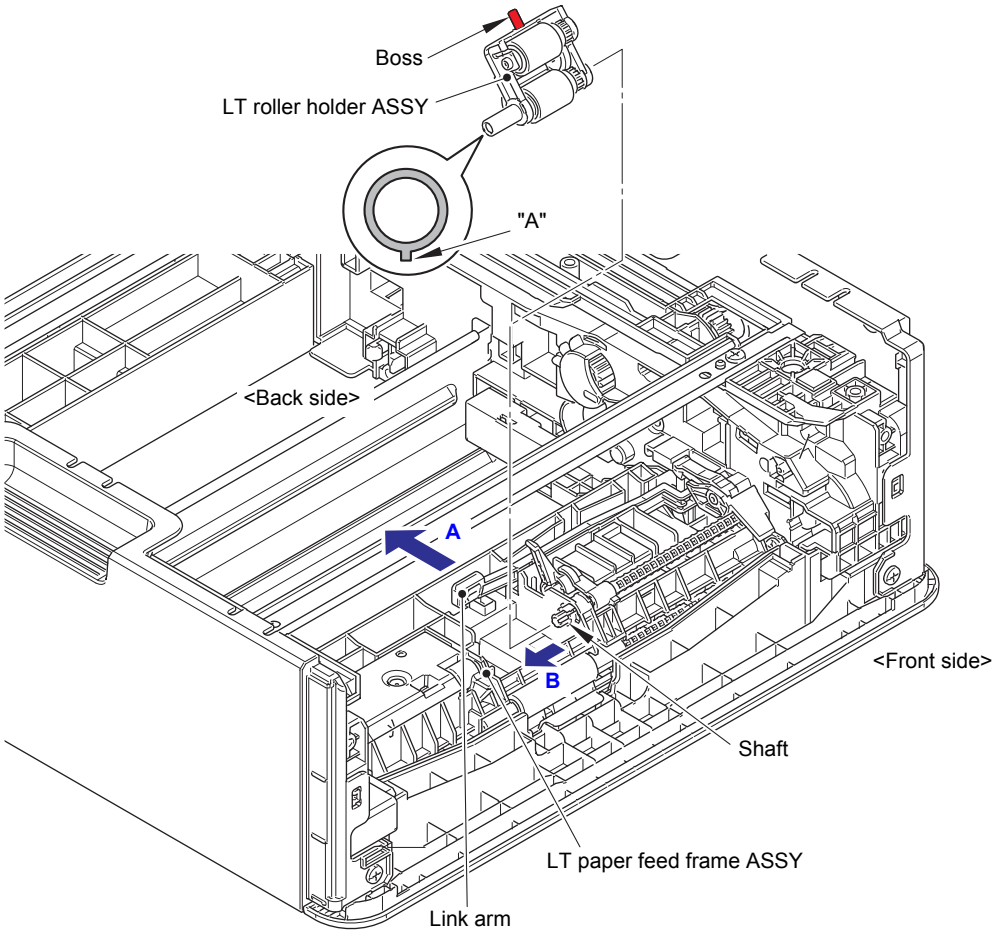


Fig. 3-102

Assembling Note:

- When attaching the LT roller holder ASSY, engage "A" on the shaft of the LT roller holder ASSY with the hole on the LT paper feed frame ASSY, and insert the shaft into the hole.

10.3 LT side cover L

(1) Remove the two taptite bind B M4x12 screws. Release each hook, and remove the LT side cover L from the LT unit.

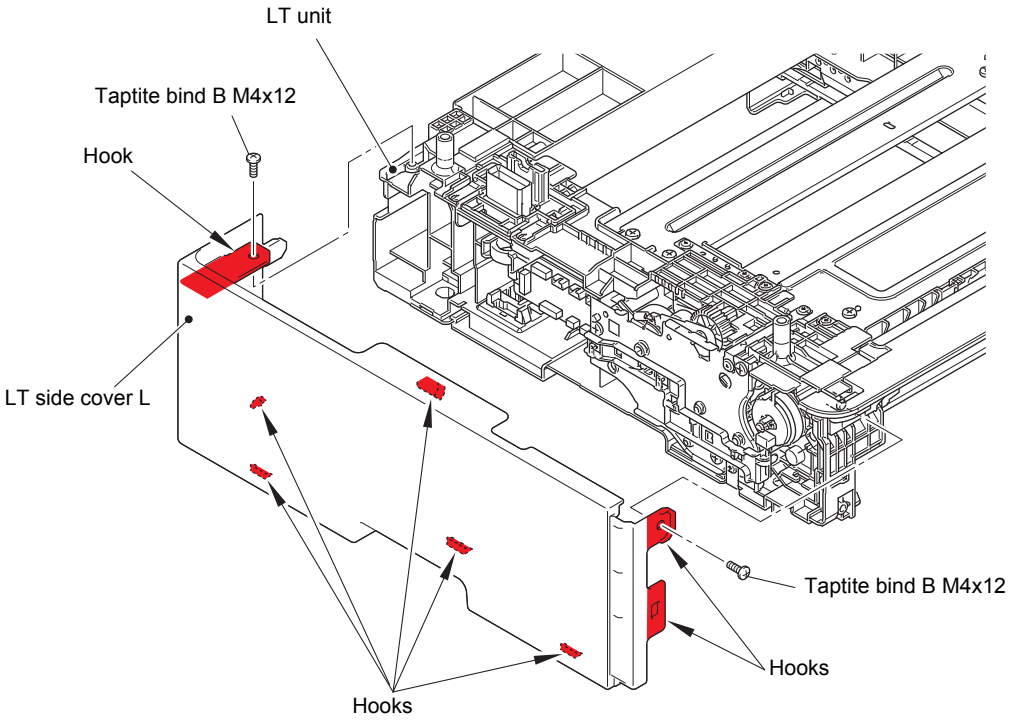


Fig. 3-103

10.4 LT side cover R

(1) Remove the two taptite bind B M4x12 screws. Release each hook, and remove the LT side cover R from the LT unit.

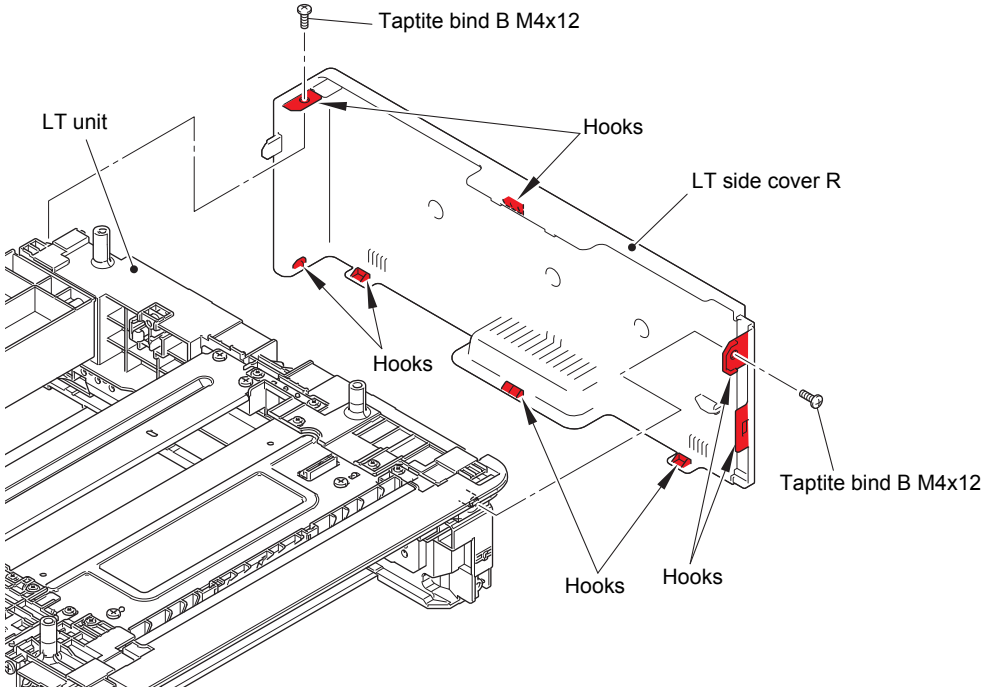


Fig. 3-104

10.5 LT front cover ASSY

(1) Remove the taptite cup S M3x8 SR screw. Release the two hooks, and remove the LT front cover ASSY from the LT unit.

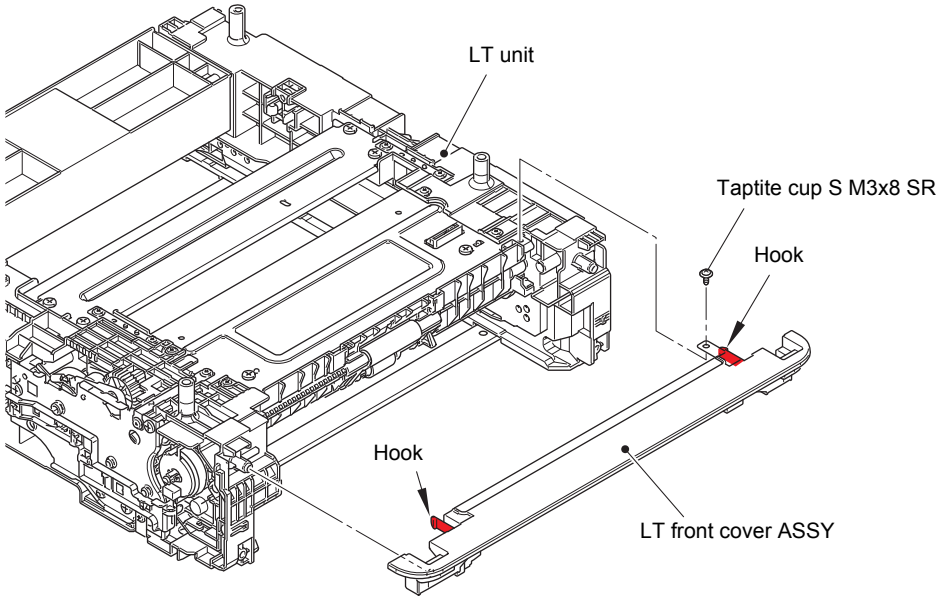


Fig. 3-105

10.6 LT control PCB ASSY

(1) Disconnect all harnesses from the LT control PCB ASSY.

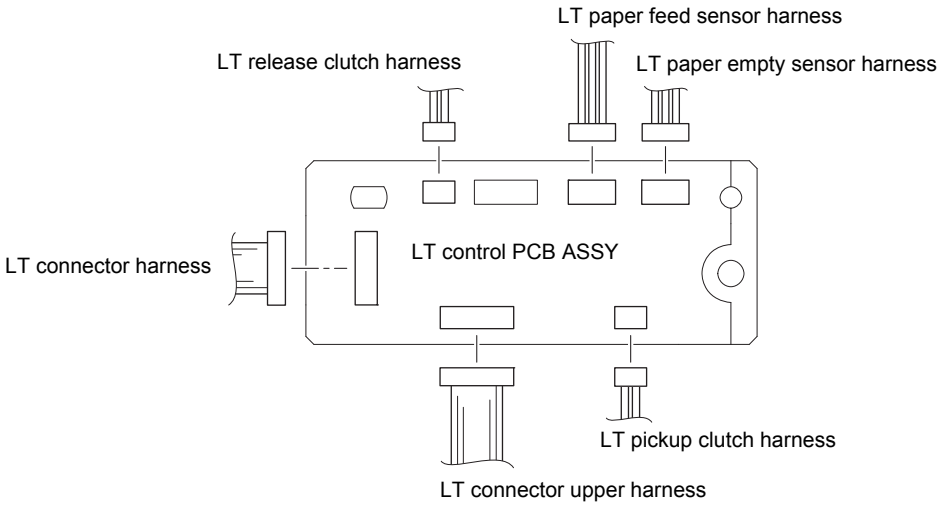


Fig. 3-106

(2) Release the hook, and remove the LT control PCB ASSY from the LT unit.

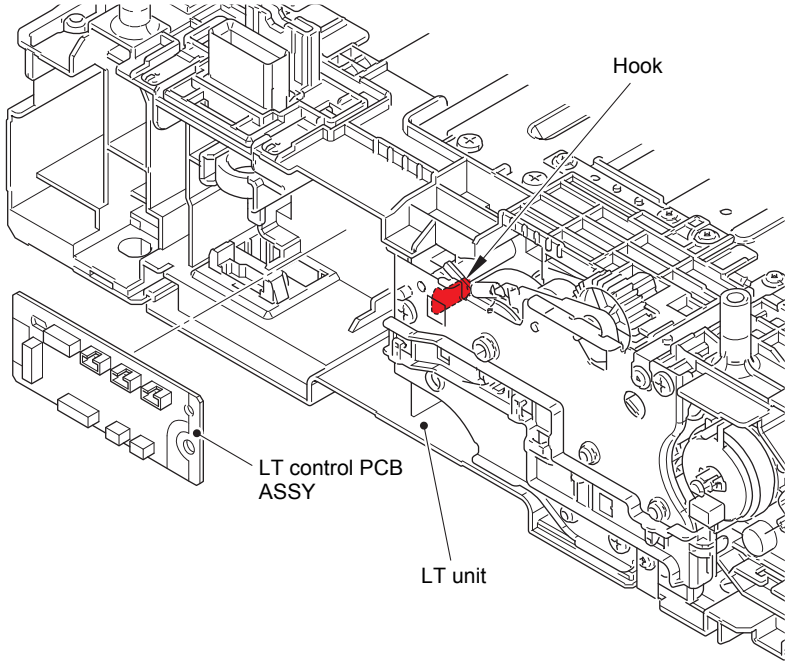


Fig. 3-107

10.7 LT pickup clutch

(1) Release the LT pickup clutch harness from the securing fixtures. Release the hook, and remove the LT pickup clutch from the LT unit.

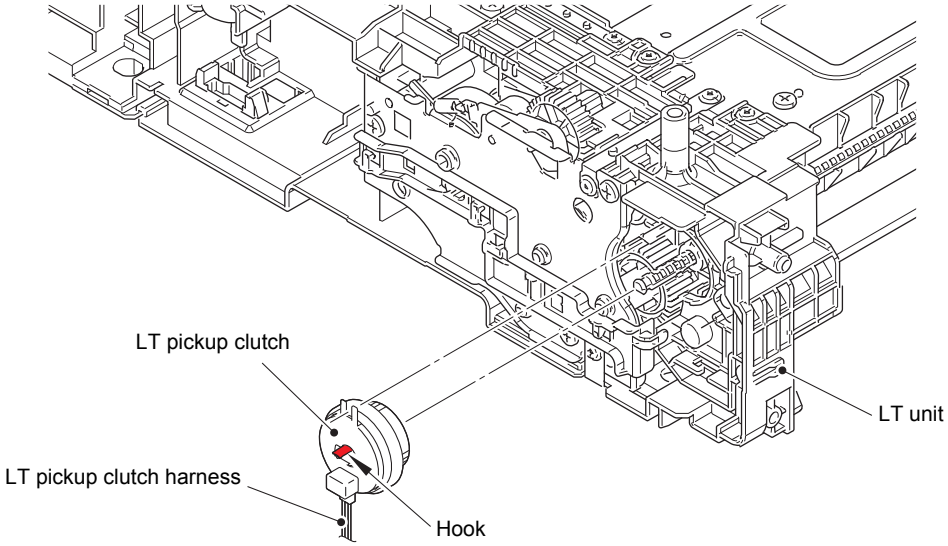


Fig. 3-108

10.8 LT release clutch

■ For models with 520-sheet

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

(2) Remove the taptite cup S M3x8 SR screw, and remove the under bar ground plate L (520).

■ For models with 250-sheet

(3) Remove the two taptite bind B M4x12 screws and two taptite cup S M3x8 SR screws (3a) (3b) to remove the under bar front.

■ Common to all models

(4) Remove the two taptite bind B M4x12 screws, and remove the under bar.

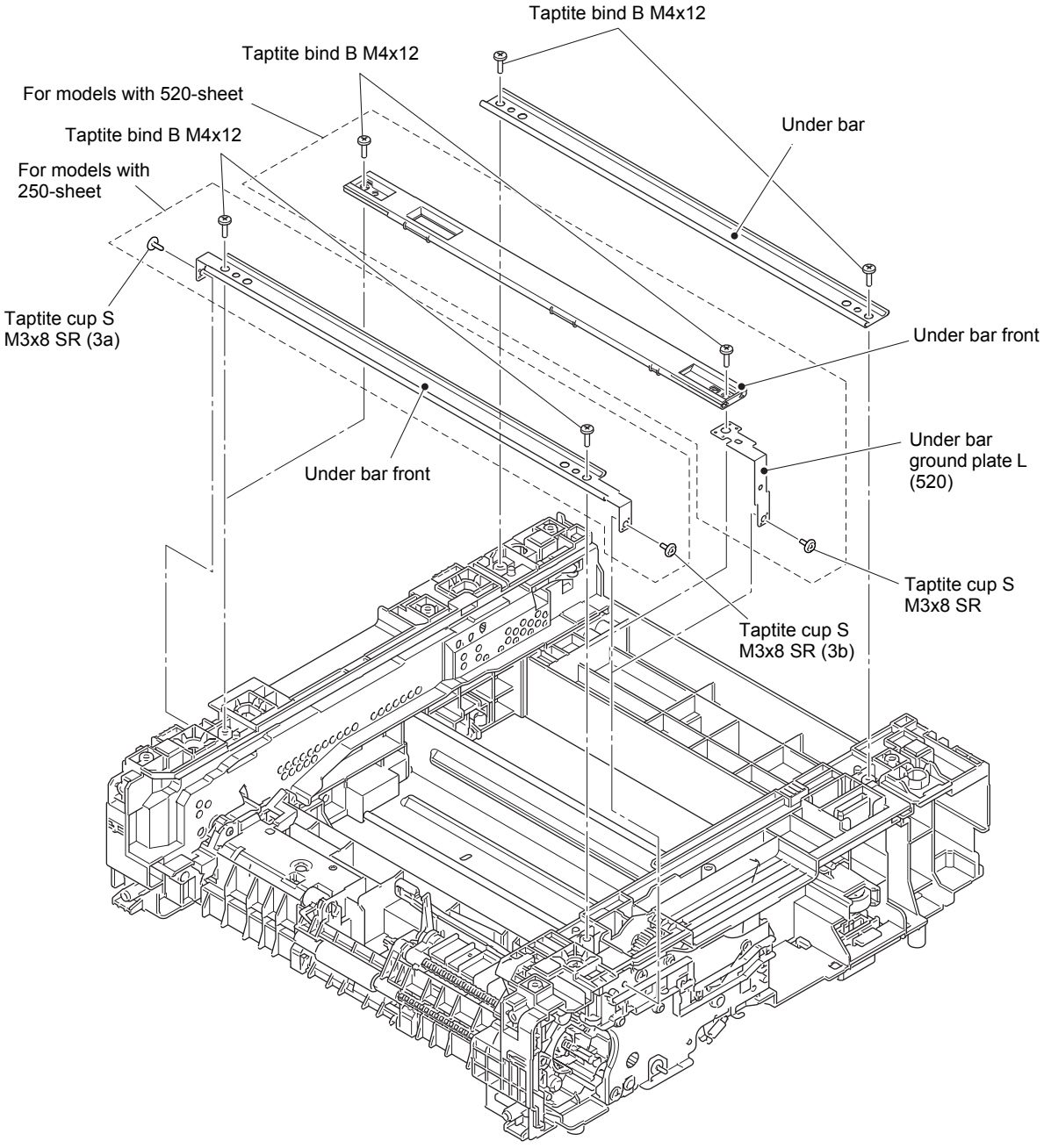


Fig. 3-109

(5) Remove the two taptite cup S M3x8 SR screws (5a) (5b), and remove the center FG plate L from the LT frame L unit.

(6) Remove the two taptite cup S M3x8 SR screws, and remove the under bar ground plate L (250) from the LT frame L unit.

(7) Remove the four taptite bind B M4x12 screws and six taptite cup S M3x8 SR screws (7a) (7b). Remove the LT frame L unit, and disconnect the two harnesses from the LT frame L unit.

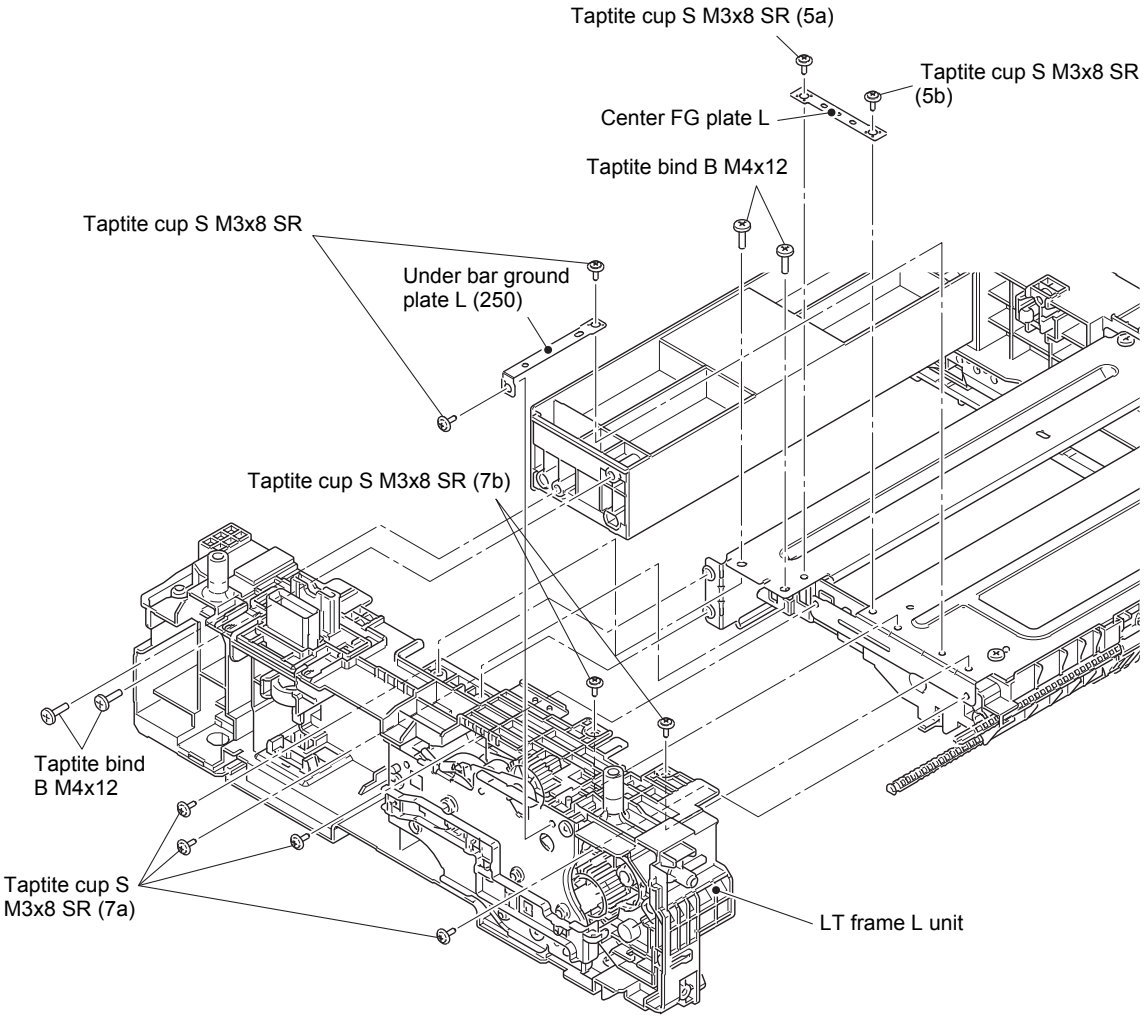


Fig. 3-110

(8) Release the LT release clutch harness from the securing fixtures.

(9) Remove the three taptite bind B M4x12 screws. Remove the LT drive ASSY from the LT frame L unit, and pull out the LT release clutch harness from the hole.

(10) Remove the LT release clutch from the LT frame L unit.

(11) Remove the LT clutch shaft and LT gear 22 from the LT release clutch.

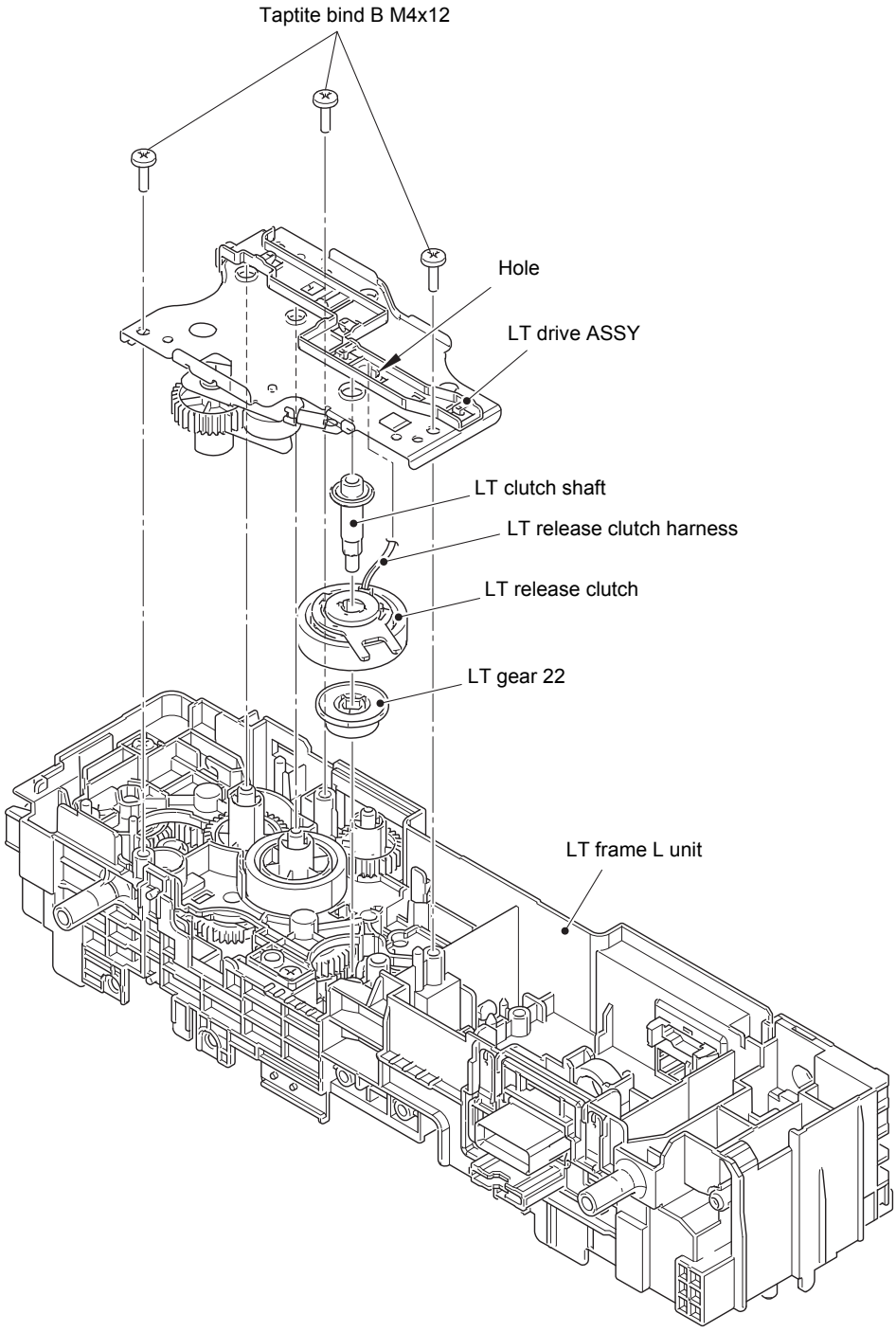


Fig. 3-111

10.9 LT connector ASSY / LT connector upper

(1) Release the hook, and remove the core from the LT frame L unit.

(2) Release the two hooks A, and slide the LT connector ASSY in the direction of the arrow to remove it from the LT frame L unit.

(3) Release the two hooks B to disconnect the LT connector harness from the LT connector ASSY.

(4) Release the two hooks C, and remove the LT connector upper from the LT frame L unit.

(5) Release the two hooks D to disconnect the LT connector upper harness from the LT connector upper.

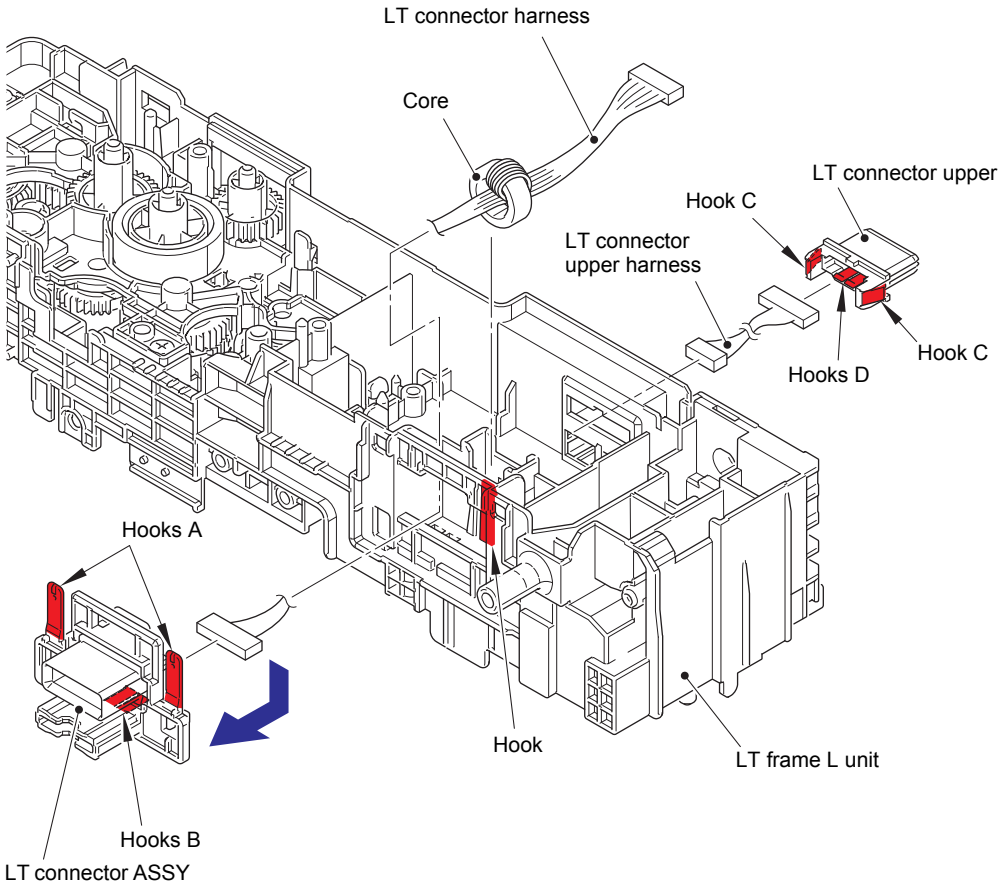


Fig. 3-112

10.10 LT paper feed sensor PCB ASSY

(1) Remove the two taptite cup S M3x8 SR screws (1a) (1b),and remove the center FG plate R from the LT frame R unit.

(2) Remove the five taptite cup S M3x8 SR screws, and remove the paper feed frame FG plate R and LT paper feed frame from the LT frame R unit.

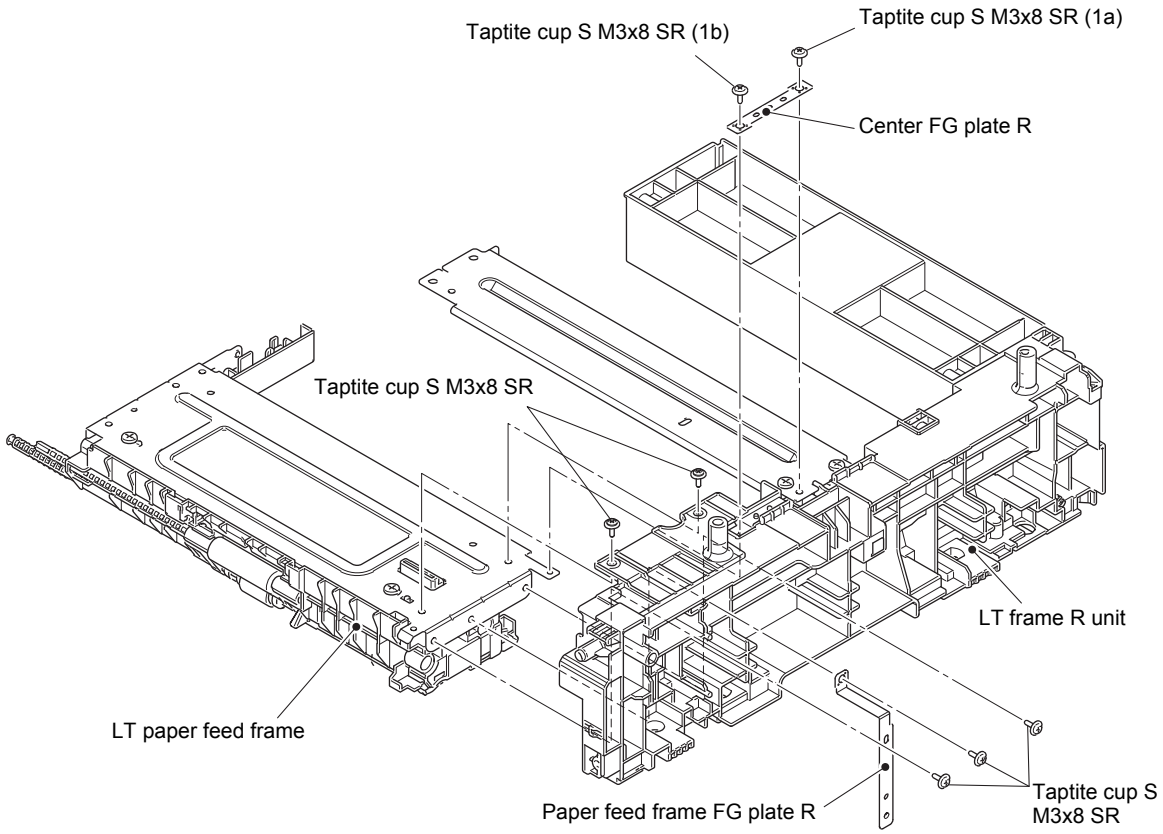


Fig. 3-113

(3) Remove the two taptite bind B M4x12 screws, and remove the LT front beam from the LT paper feed frame ASSY.

(4) Release the LT paper feed sensor harness from the securing fixtures.

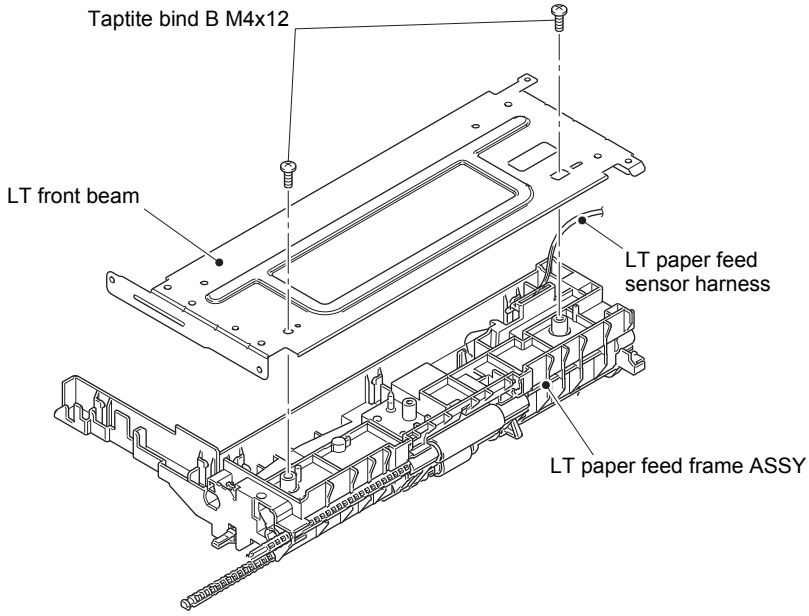


Fig. 3-114

(5) Remove the taptite bind B M3x10 screw, and remove the LT paper feed actuator holder ASSY from the LT paper feed frame ASSY. Disconnect the LT paper feed sensor harness from the LT paper feed frame ASSY.

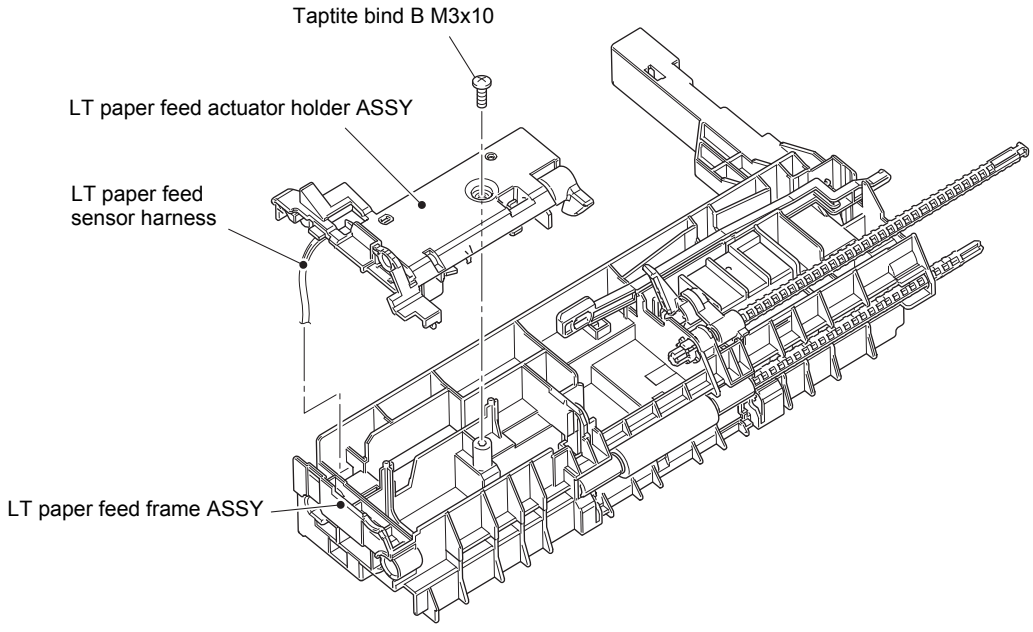


Fig. 3-115

(6) Turn the LT paper feed actuator in the direction of the arrow A, and push the hook on the LT paper feed actuator holder ASSY to slide the LT paper feed actuator in the direction of the arrow B to remove it from the LT paper feed actuator holder ASSY.

(7) Remove the LT paper feed actuator spring from the LT paper feed actuator.

(8) Disconnect the securing fixtures of the LT paper feed sensor harness from the LT paper feed actuator holder ASSY, and then release the hook to remove the LT paper feed sensor PCB ASSY from the LT paper feed actuator holder ASSY.

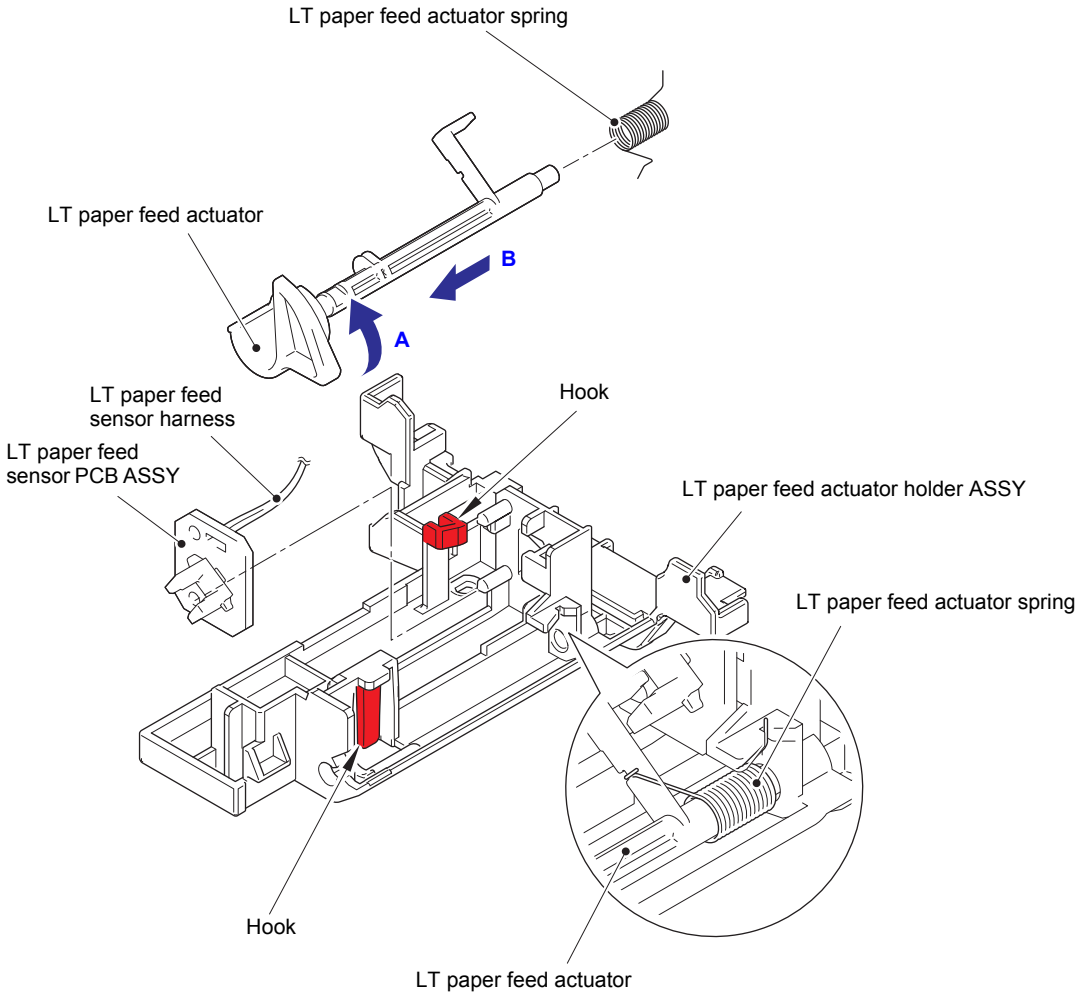


Fig. 3-116

10.11 LT paper empty sensor PCB ASSY

(1) Release the hook on the bushing, and pull out the LT separation roller shaft to remove the LT paper empty actuator.

(2) Release the hook, and remove the LT paper empty actuator cover.

(3) Release the LT paper empty sensor harness from the securing fixtures.

(4) Remove the taptite bind B M3x10 screw, and remove the LT paper empty sensor PCB ASSY.

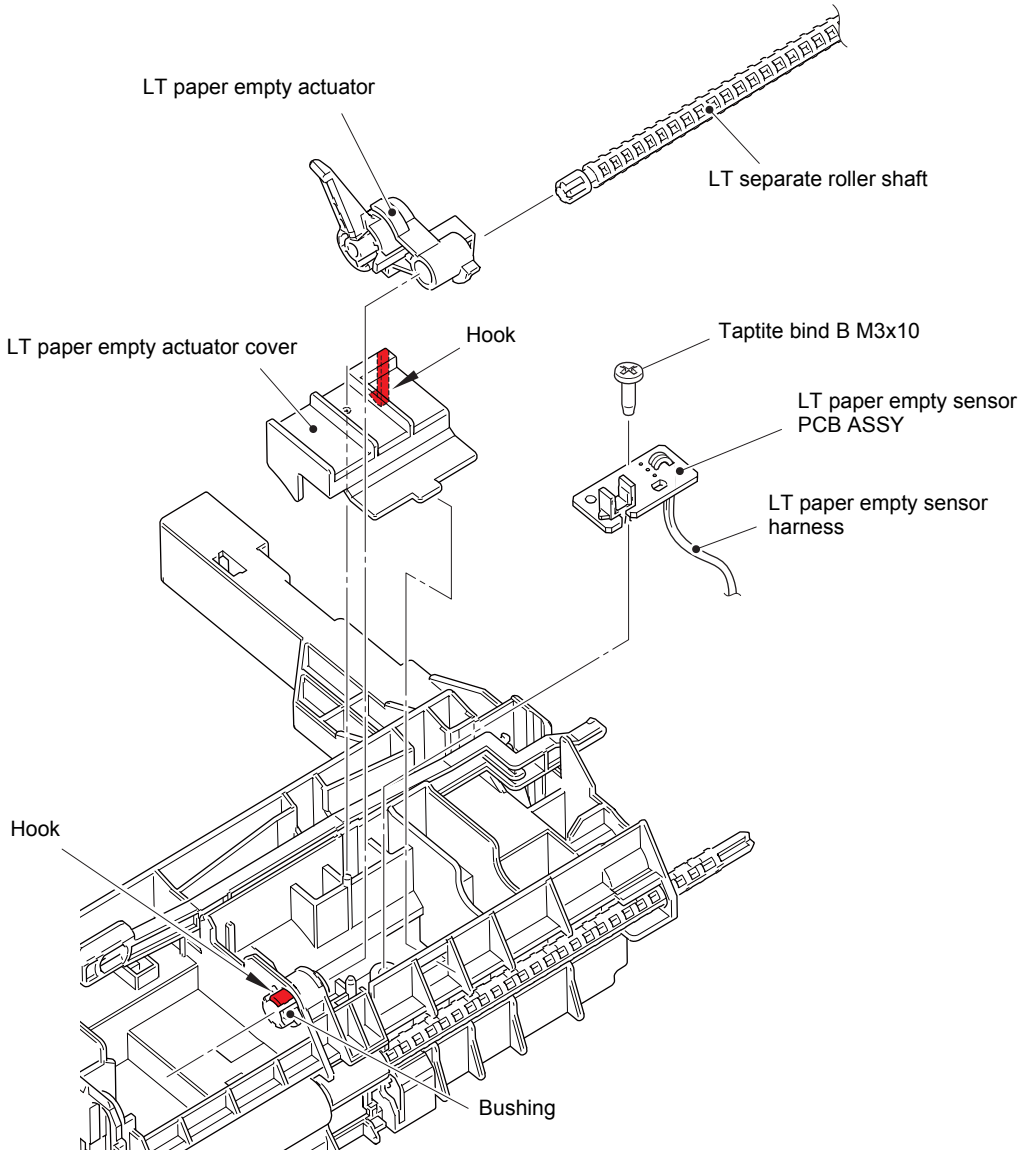


Fig. 3-117

11. DISASSEMBLY PROCEDURE (MX UNIT)

11.1 Bin ASSY A/B

(1) Turn the 2nd layer and the 4th layer of the bin ASSY A upside and then remove them.
(2) Remove the bin number label 2 from the 2nd layer of the bin ASSY A.
(3) Remove the bin number label 4 from the 4th layer of the bin ASSY A.

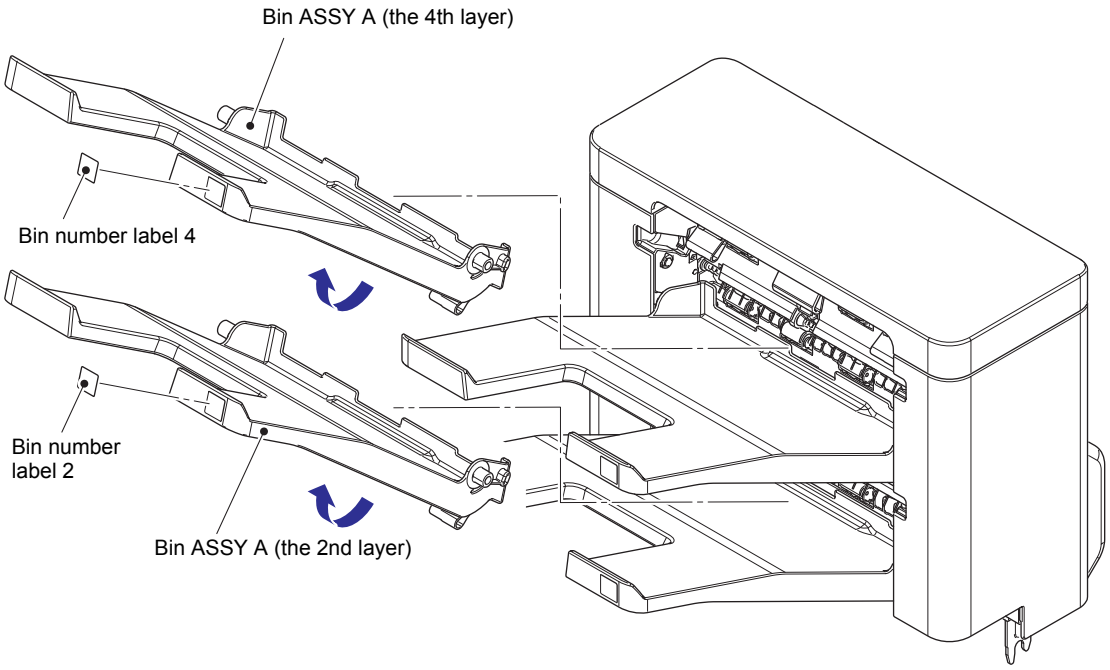


Fig. 3-118

(4) Open the MX back cover, and remove the MX back cover arm from the boss while pushing the two hooks inward. (2 places)

(5) Turn the MX back cover approximately 120° to remove it from the machine.

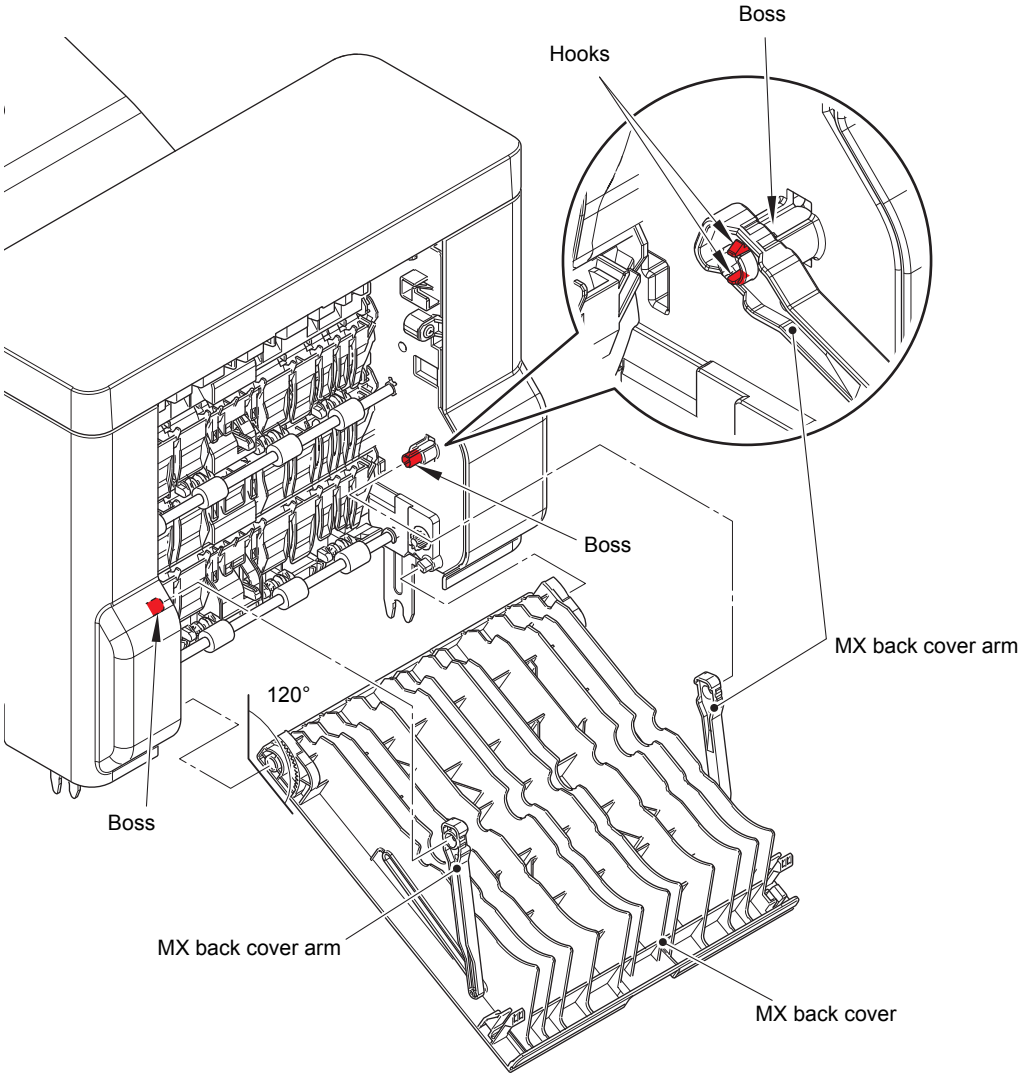


Fig. 3-119

(6) Remove the two taptite cup B M3x10 screws. Release each hook, and remove the side cover R MX.

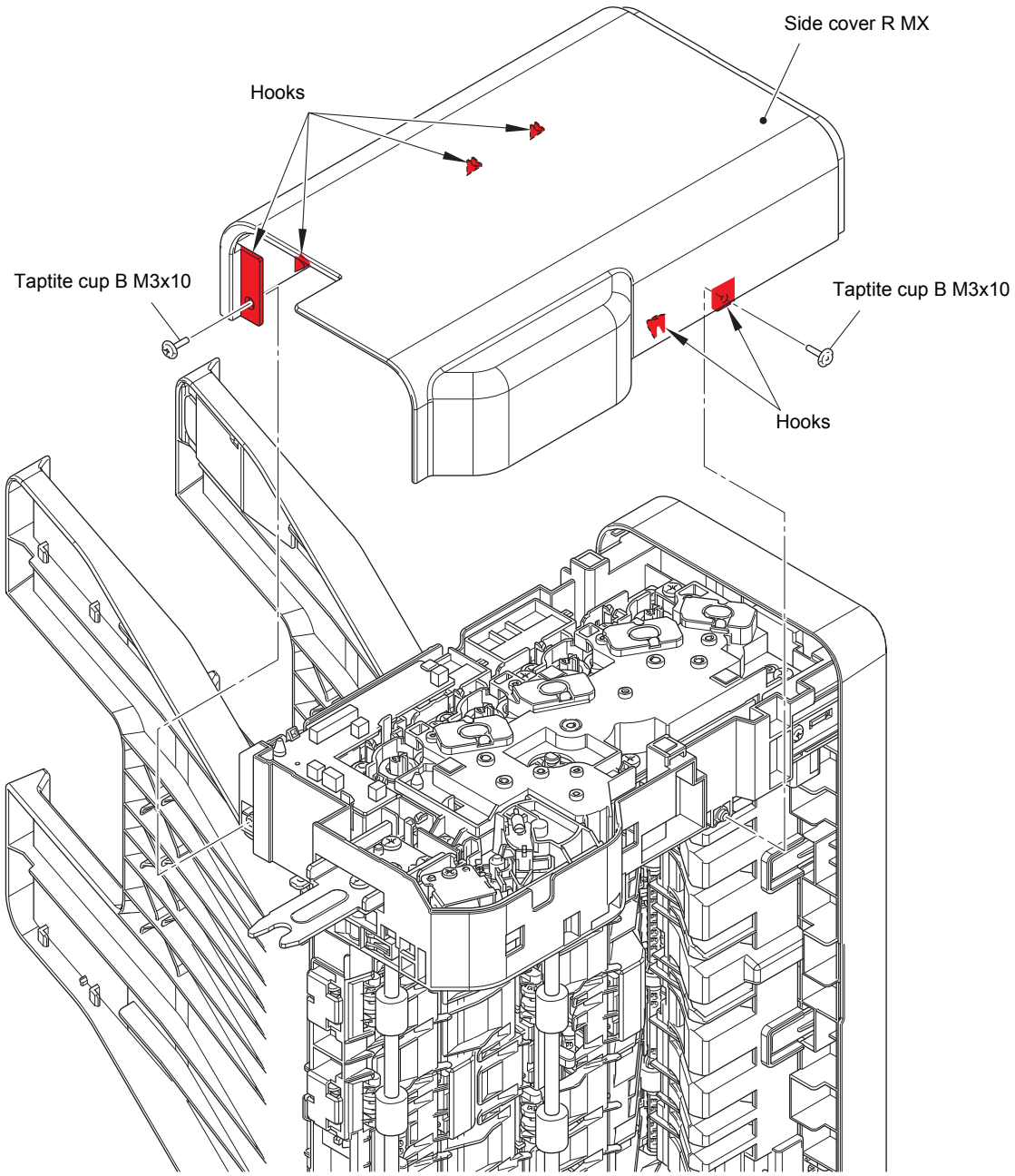


Fig. 3-120

(7) Remove the two taptite cup B M3x10 screws. Release each hook, and remove the side cover L MX.

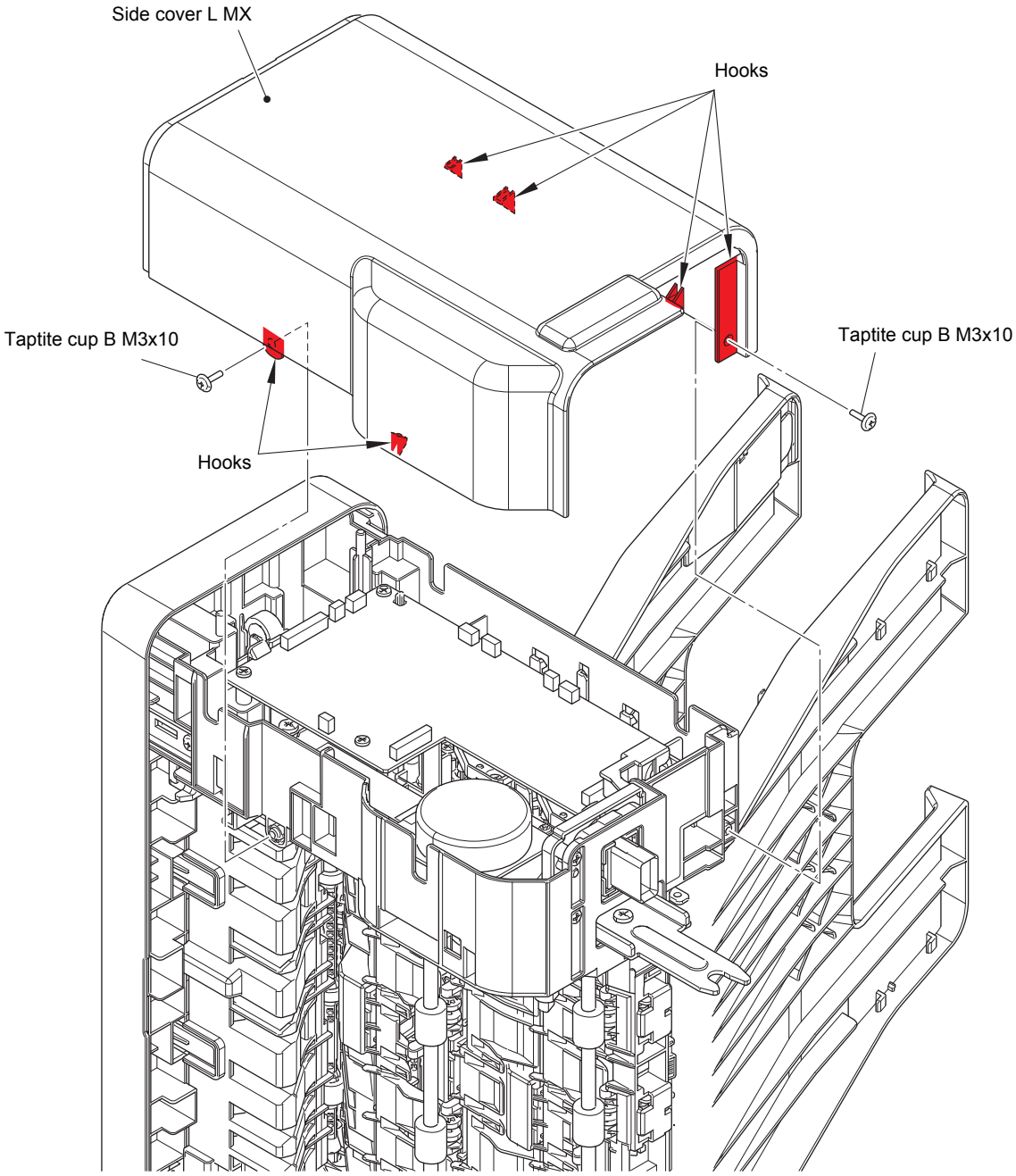


Fig. 3-121

(8) Turn the 3rd layer of the bin ASSY A and the 1st layer of the bin ASSY B upside, and remove them.

Assembling Note:

- As the shape of the bin ASSY A is different from that of the bin ASSY B, do not make mistakes in their attaching positions.

(9) Remove the bin number label 3 from the 3rd layer of the bin ASSY A.

(10) Remove the bin number label 1 from the 1st layer of the bin ASSY B.

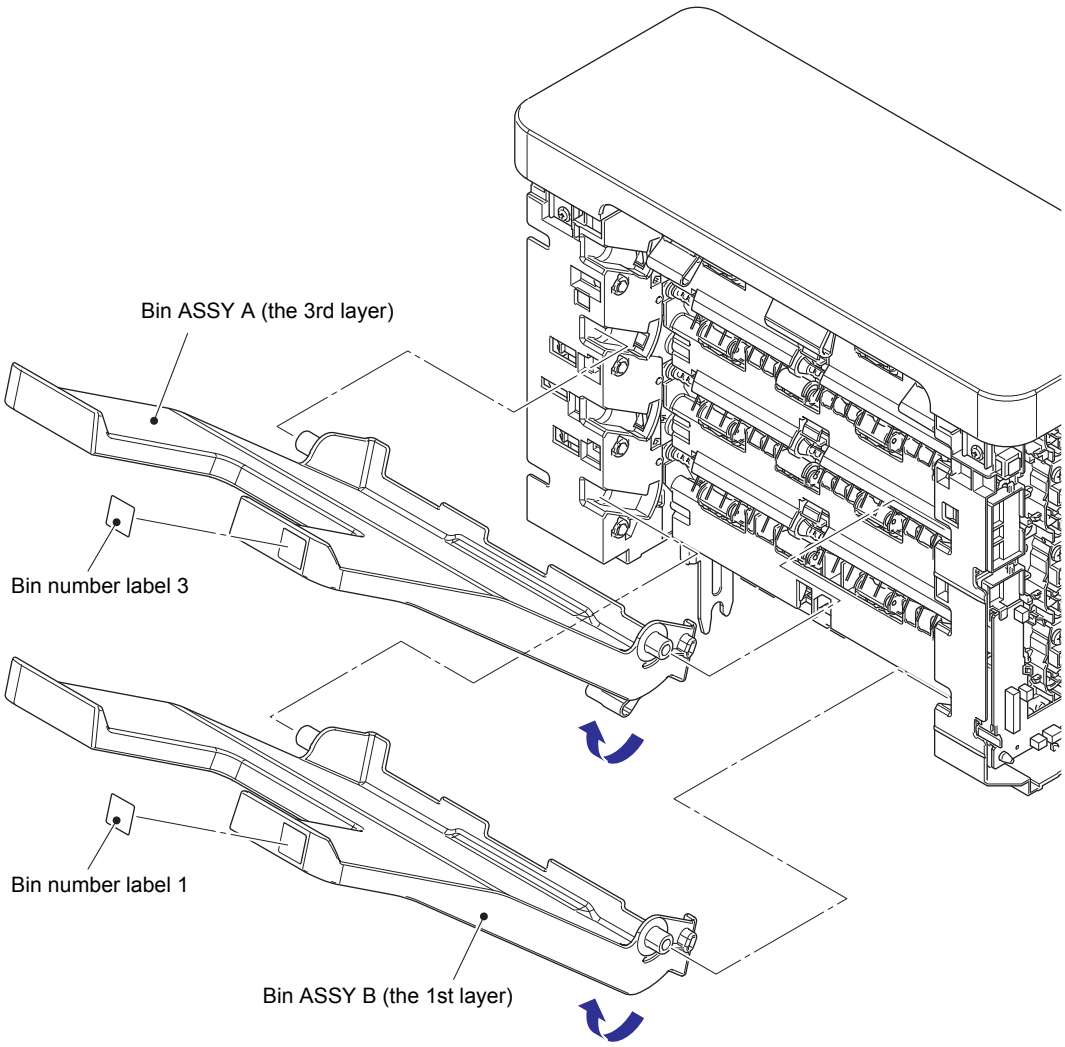


Fig. 3-122

11.2 MX relay PCB ASSY

(1) Remove the four taptite cup B M3x10 screws. Release each hook, and remove the top cover MX.

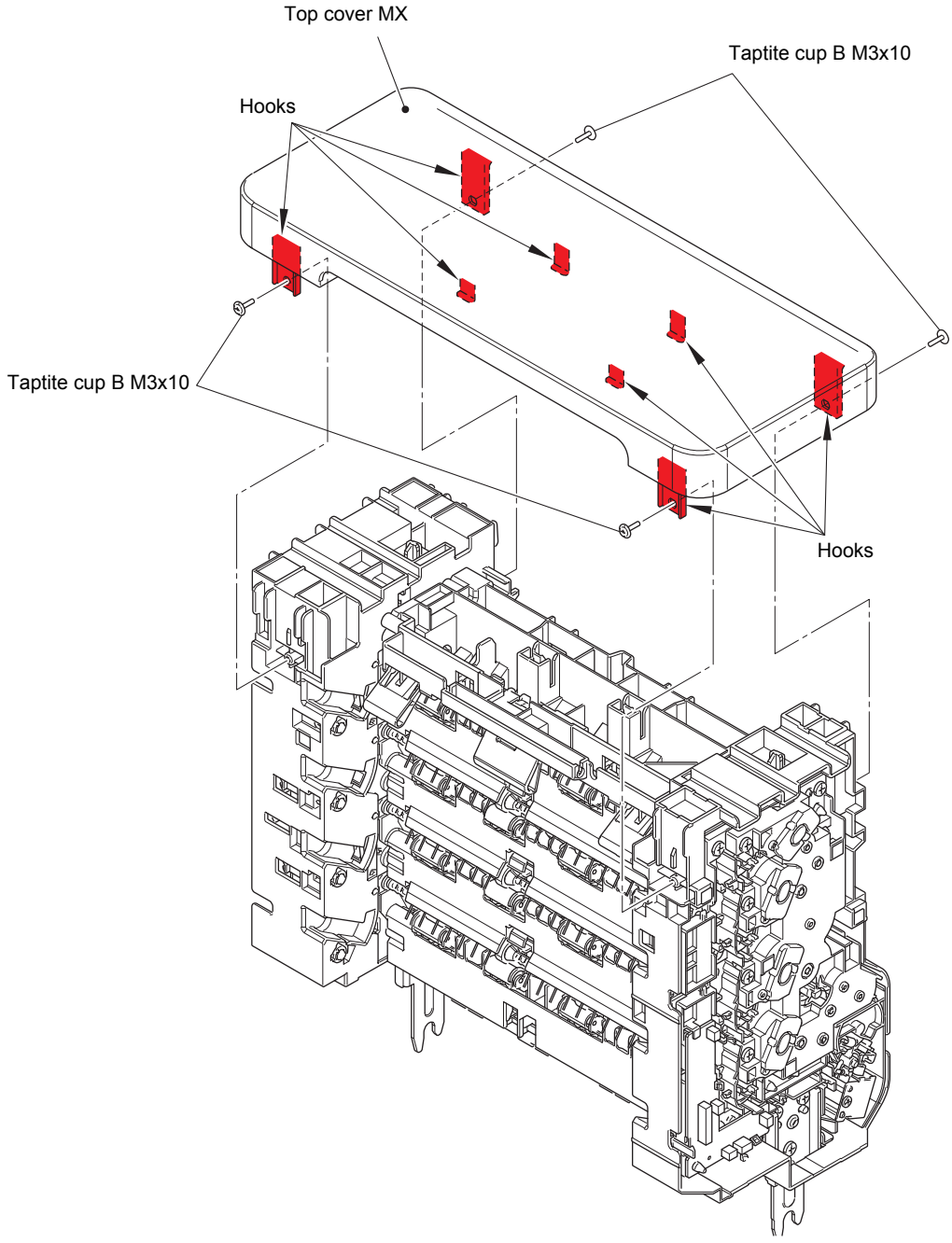


Fig. 3-123

(2) Remove the screw cup M3x8 screw (black) to remove the MX FG harness R, and release it from the securing fixtures.

(3) Disconnect all the harnesses connected to MX relay PCB ASSY, and release them from the securing fixtures of drive frame MX. Release each hook, and remove the MX relay PCB ASSY.

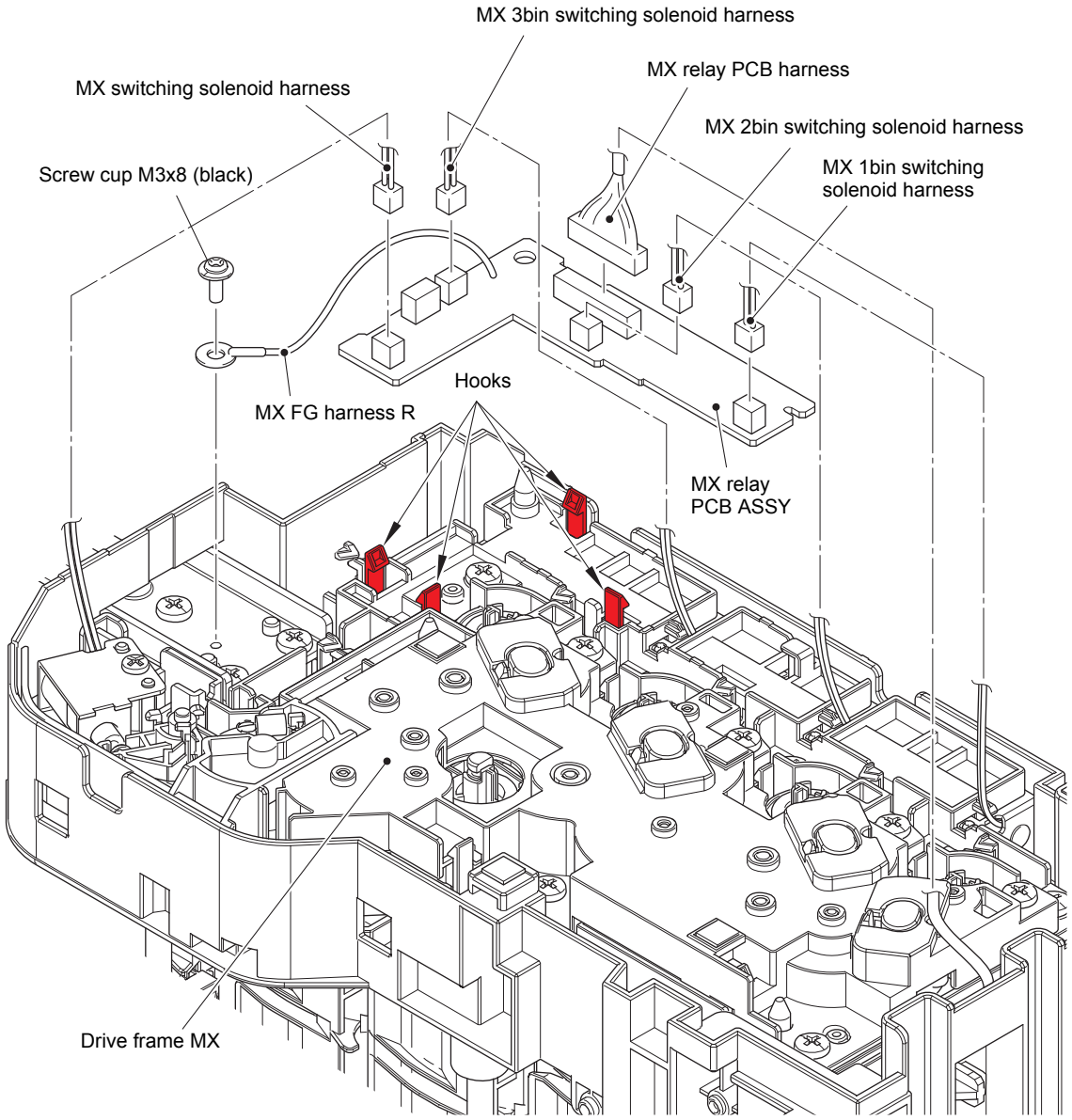


Fig. 3-124

Harness routing: Refer to “11. Right side of the MX”.

11.3 MX switching solenoid / MX bin switching solenoid

(1) Release each hook, and remove the four eject gears.

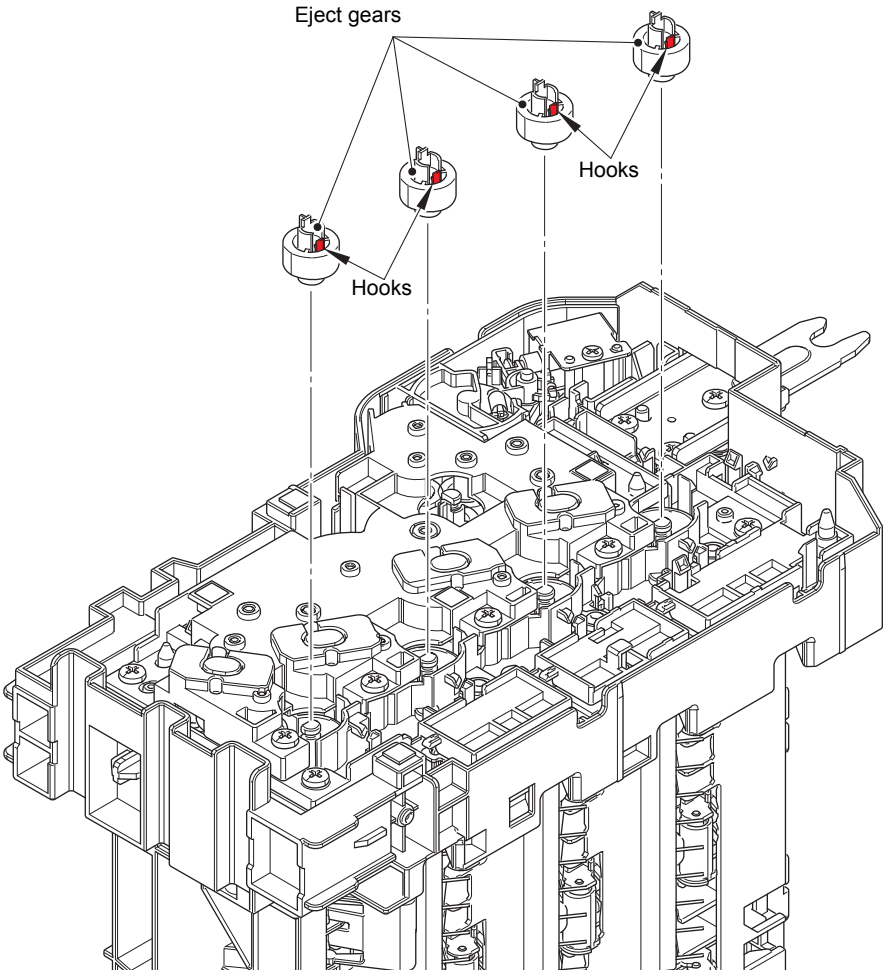


Fig. 3-125

(2) Remove the seven taptite bind B M4x12 screws, and remove the drive frame MX.

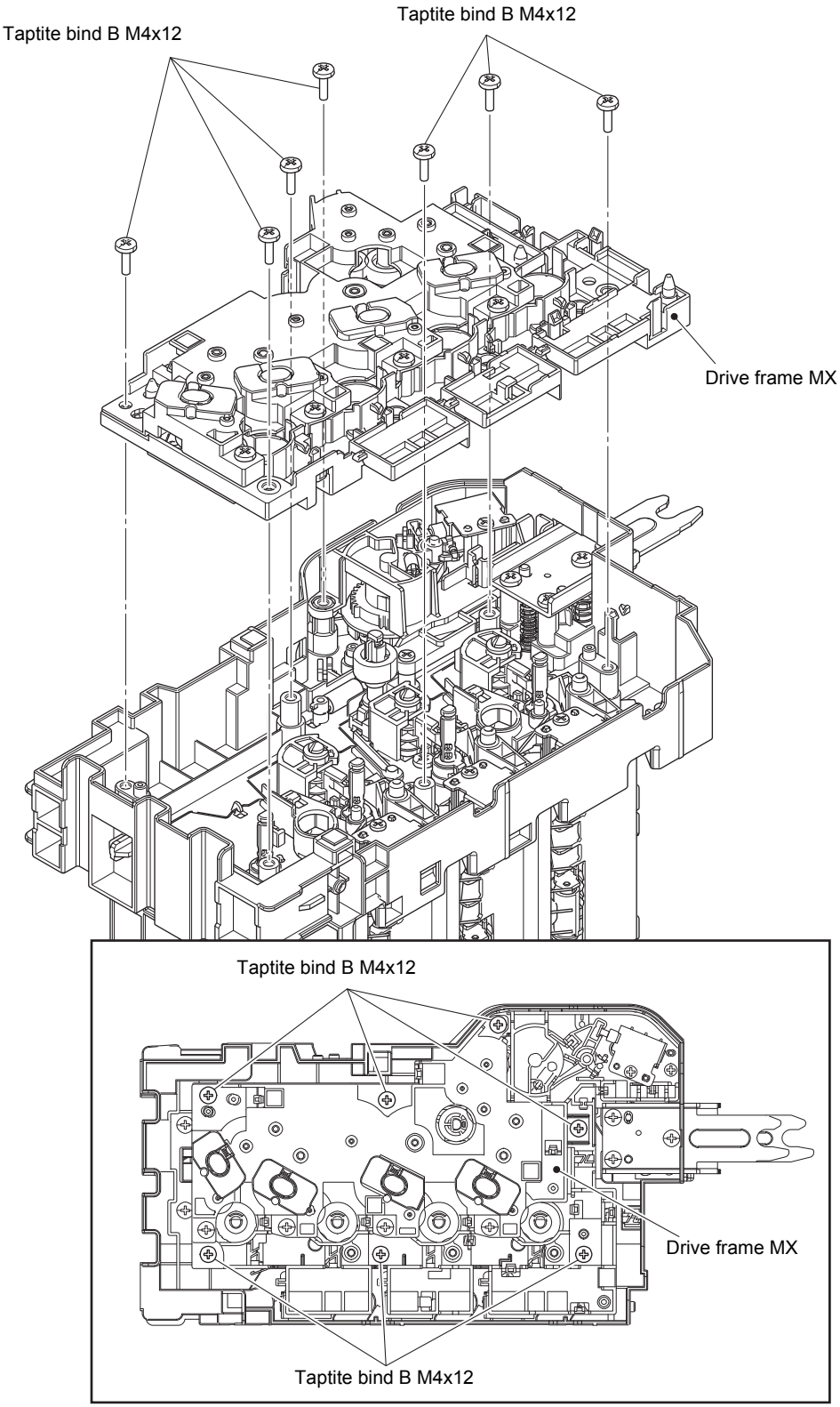


Fig. 3-126

(3) Remove the taptite bind B M3x10 screw, and remove the MX switching solenoid.

(4) Remove the taptite bind B M3x10 screw, and remove the MX bin switching solenoid and the solenoid lever MX. (3 places)

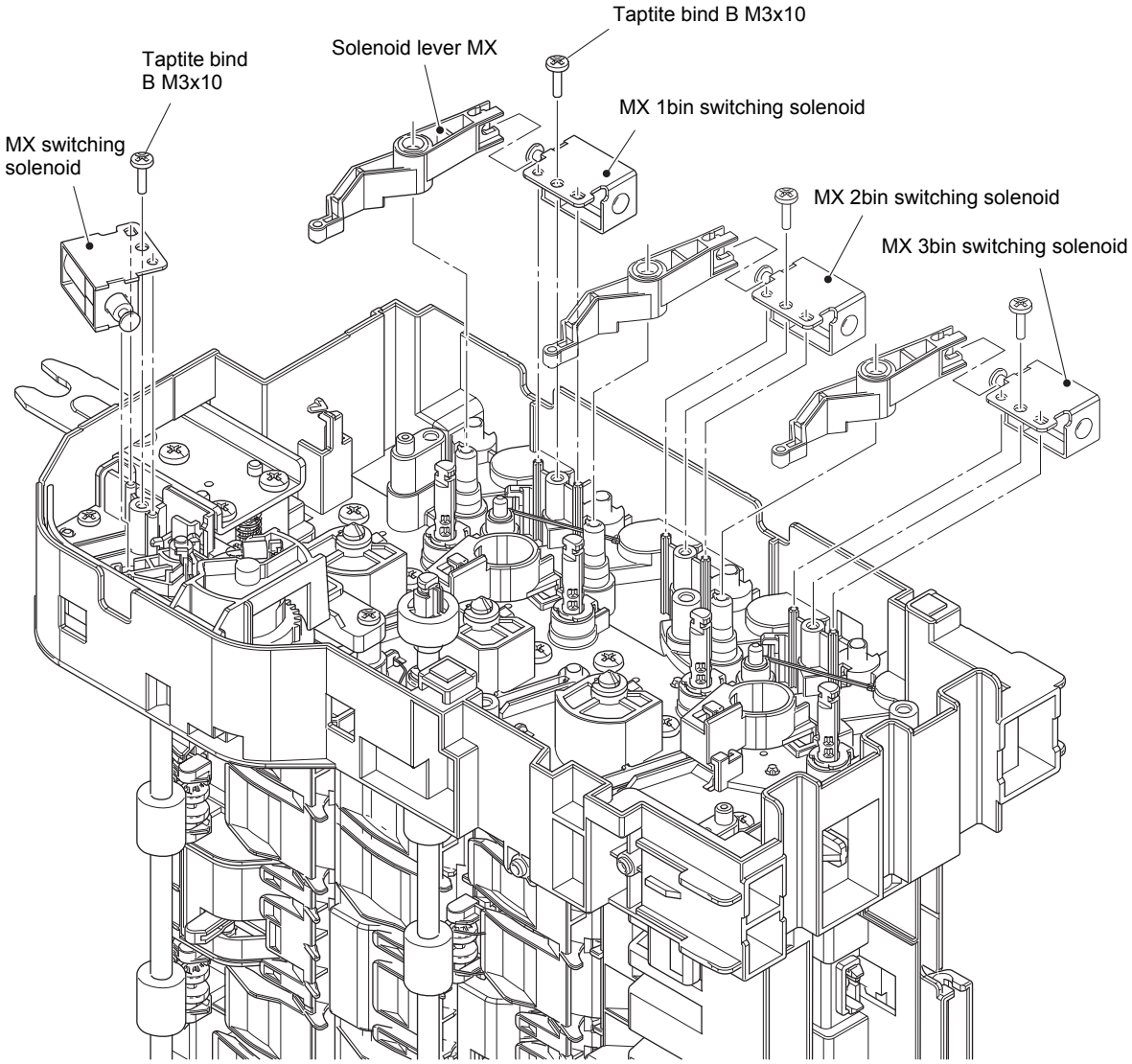


Fig. 3-127

11.4 MX control PCB ASSY

(1) Disconnect all the harnesses and flat cables connected to the MX control PCB ASSY.

(2) Remove the four taptite bind B M3x10 screws. Release the hook, and remove the MX control PCB ASSY.

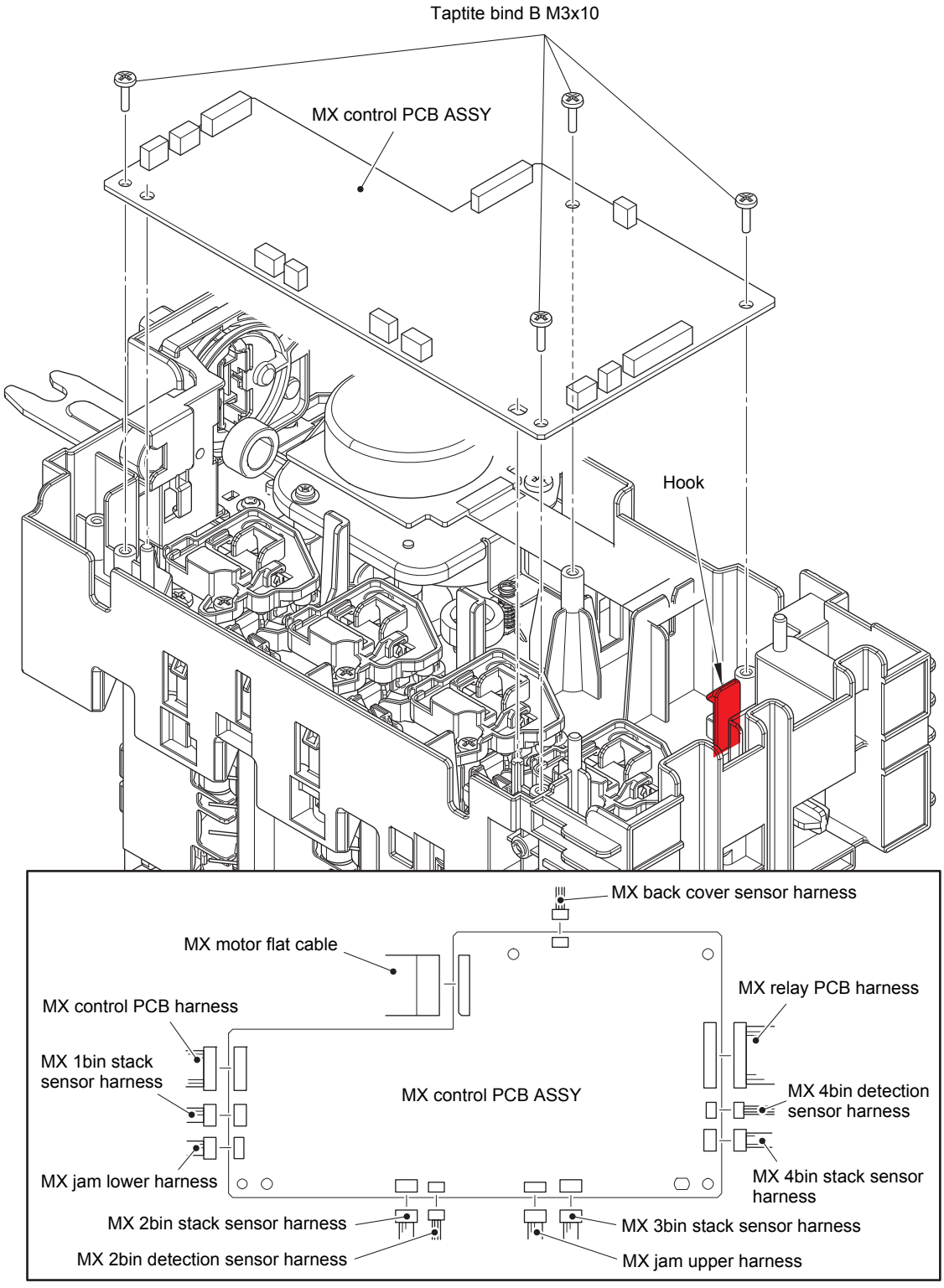


Fig. 3-128

Harness routing: Refer to “9. Left side of the MX (MX control PCB)”.

11.5 MX back cover sensor

(1) Release the two hooks, and remove the MX back cover sensor.

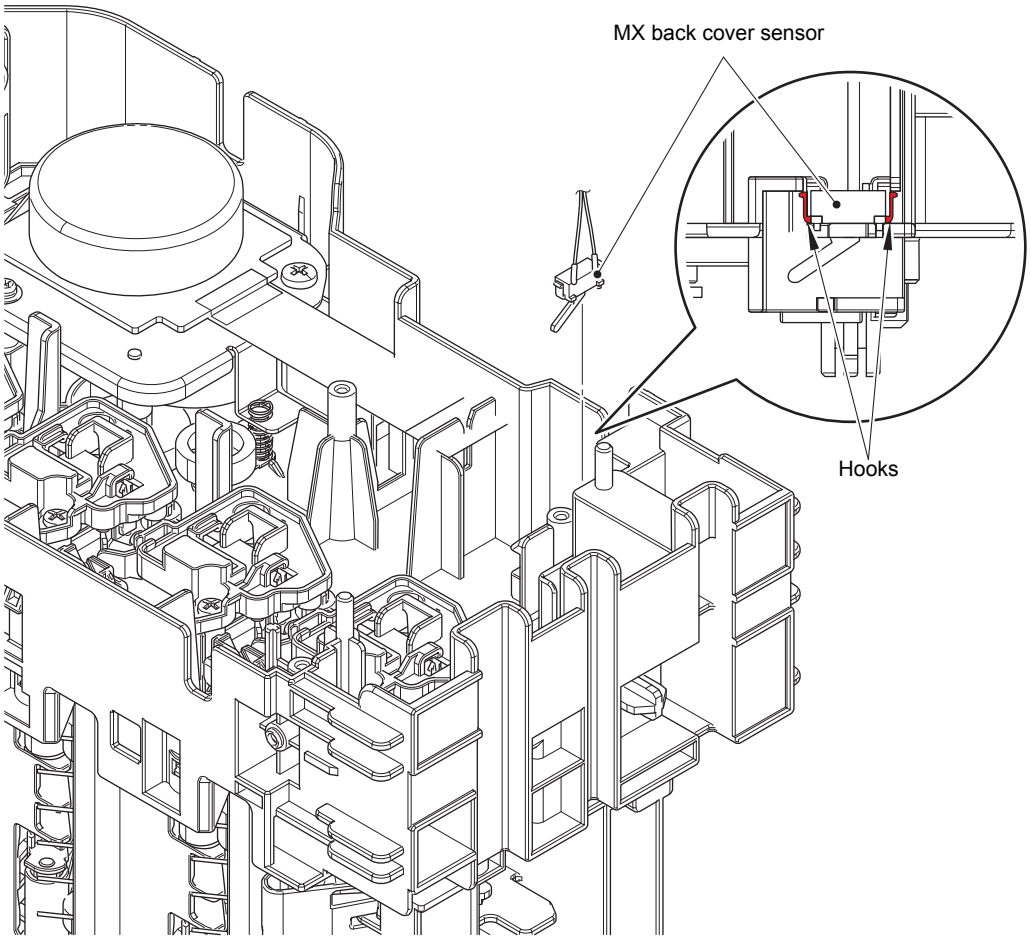


Fig. 3-129

11.6 MX connector holder ASSY

(1) Remove the screw pan (S/P washer) M3x12DB screw and the screw cup M3x8 screw (black) to remove the MX FG harness L.

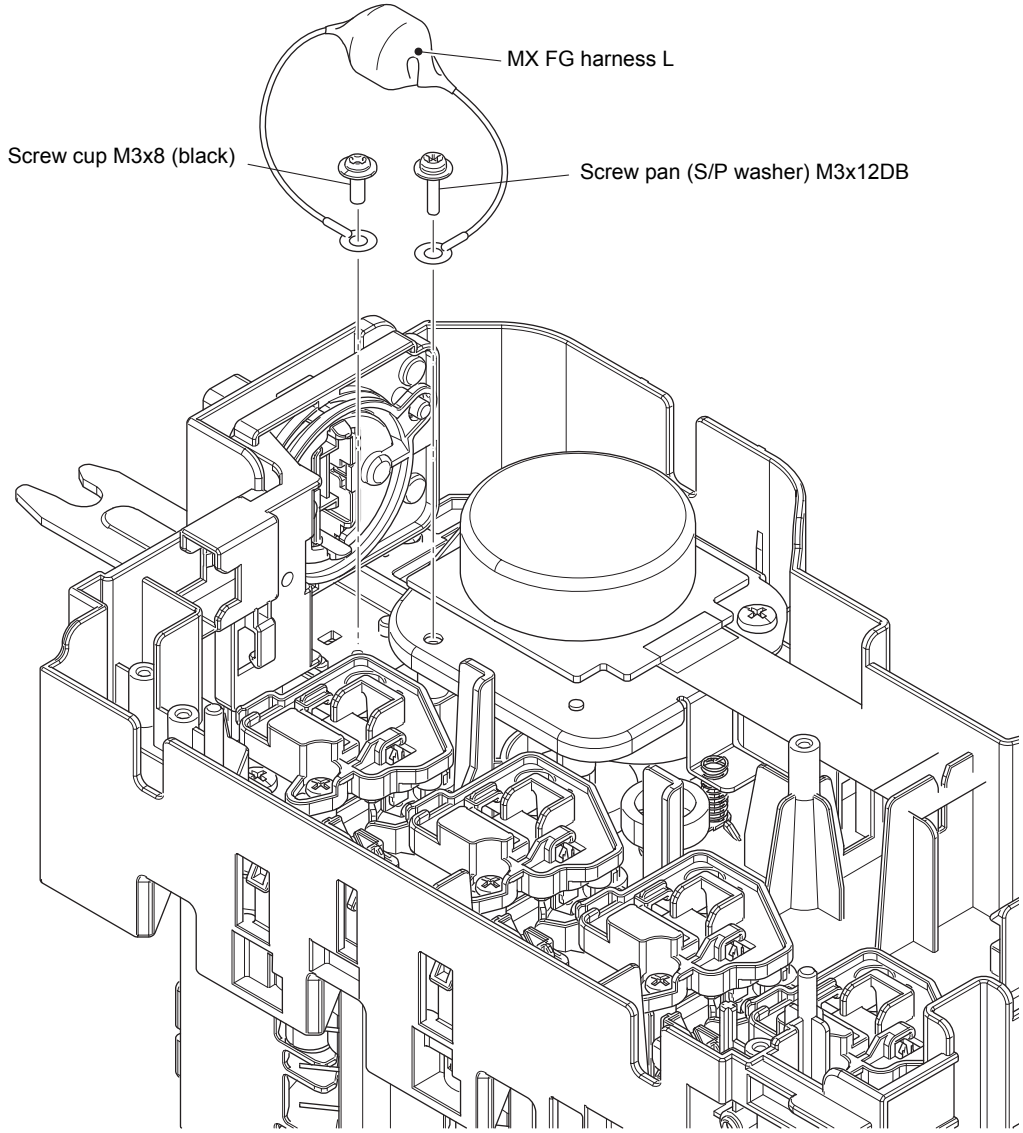


Fig. 3-130

Harness routing: Refer to “9. Left side of the MX (MX control PCB)”.

(2) Remove the four taptite bind B M3x10 screws. Remove the MX connector holder ASSY.

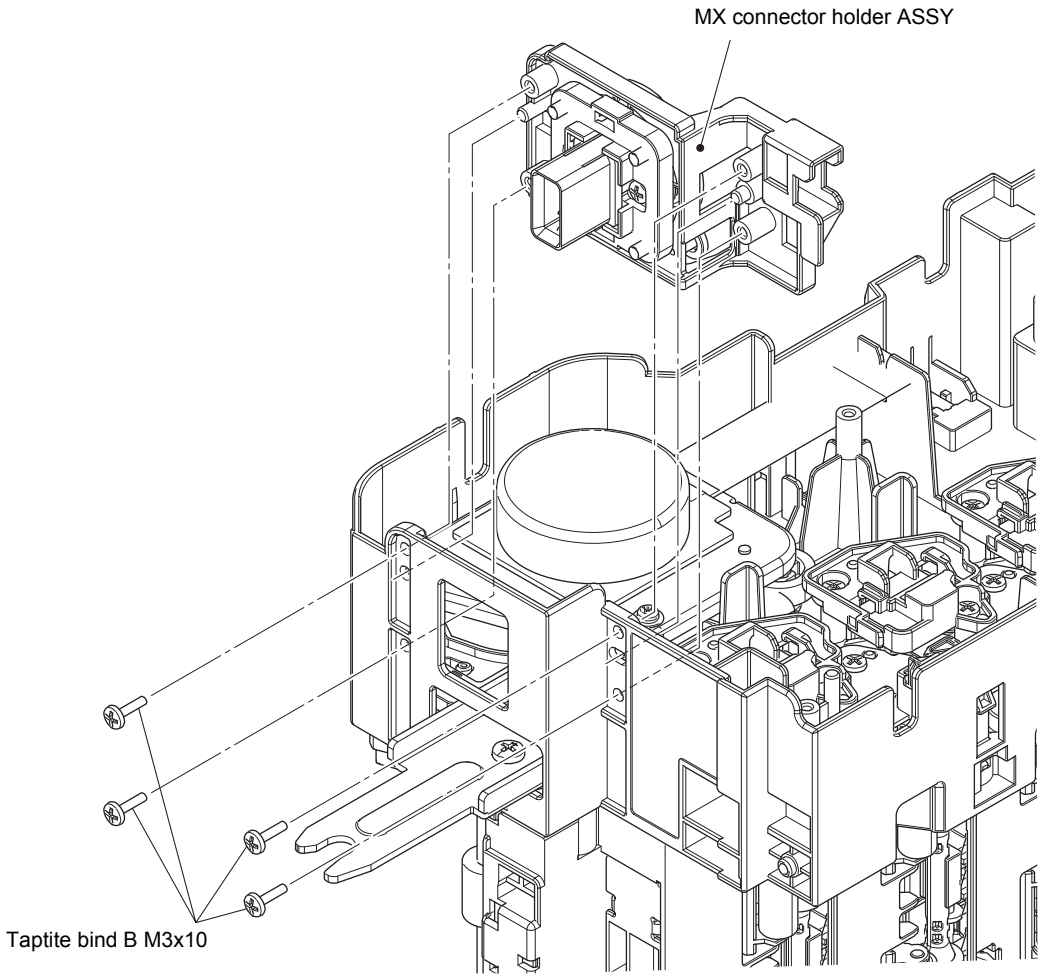


Fig. 3-131

11.7 MX motor

(1) Remove the two taptite bind B M4x12 screws, and remove the MX motor drive ASSY.
(2) Remove the compression spring from the feed roller bush MX.

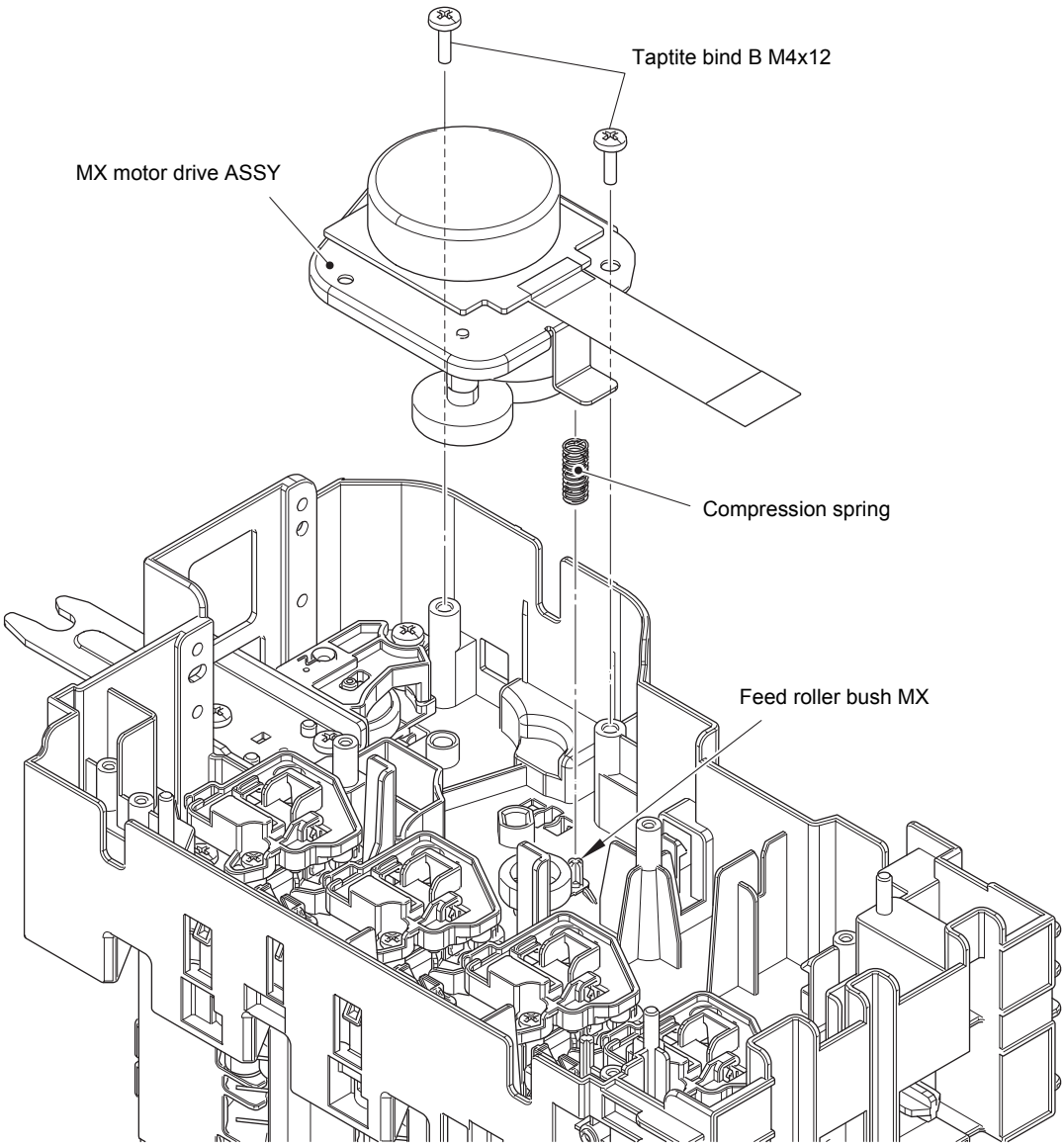


Fig. 3-132

Harness routing: Refer to “9. Left side of the MX (MX control PCB)”.

(3) Remove the gear 30 MX and the two gears 66L/38 MX from the MX motor drive ASSY.

(4) Remove the three screw bind M3x4 screws, and remove the MX motor from the MX motor drive ASSY.

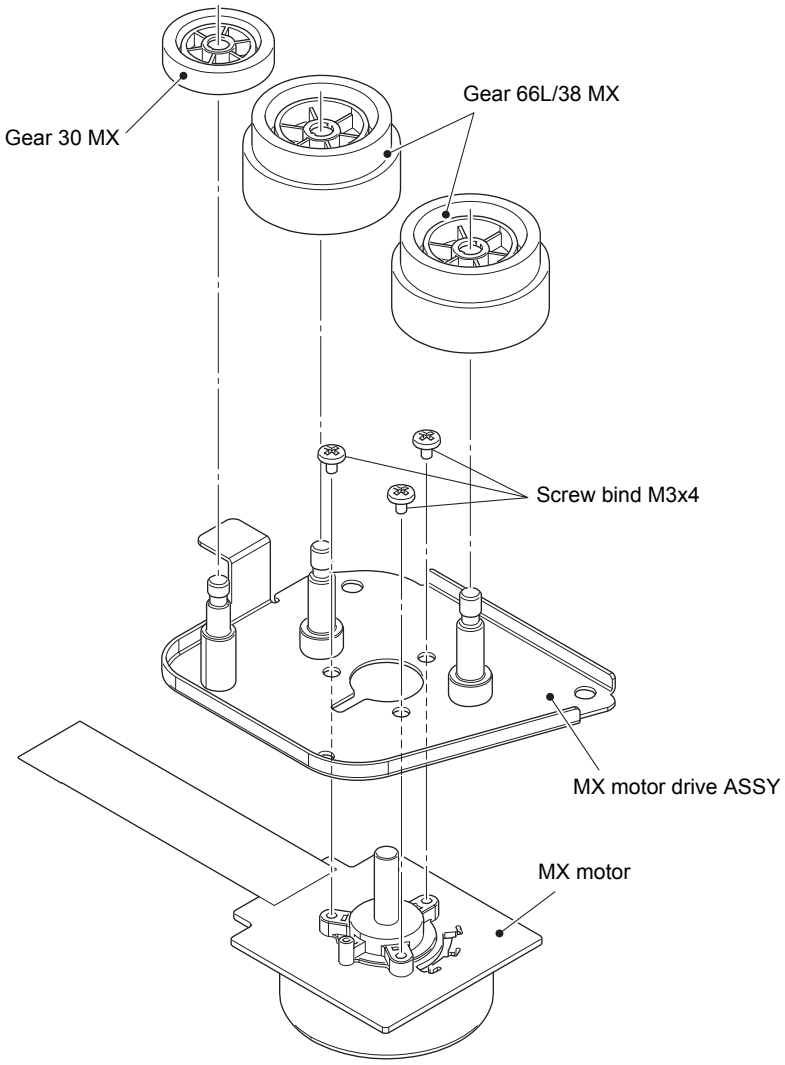


Fig. 3-133

Assembling Note:

- Fold the MX motor flat cable at the positions shown in the figure below.

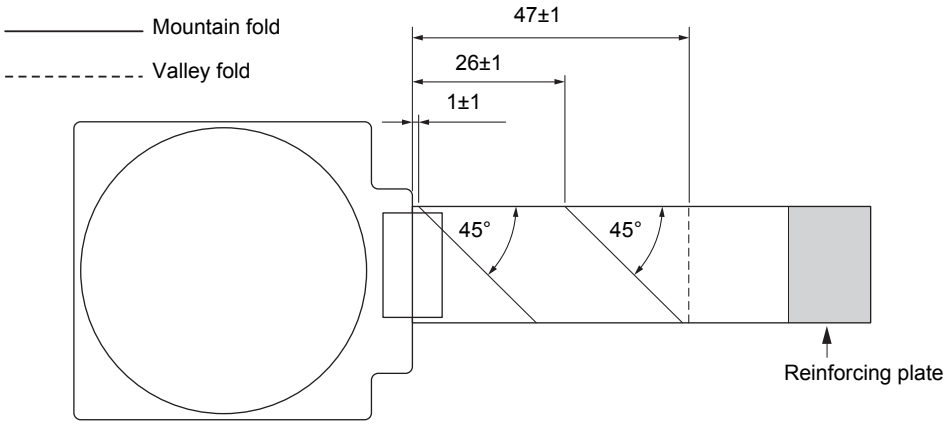


Fig. 3-134

11.8 MX bin stack sensor PCB ASSY

(1) Release each harness from the securing fixtures.

(2) Remove the two taptite bind B M3x10 screws, and remove the MX bin stack sensor holder and the MX bin stack actuator. (4 places)

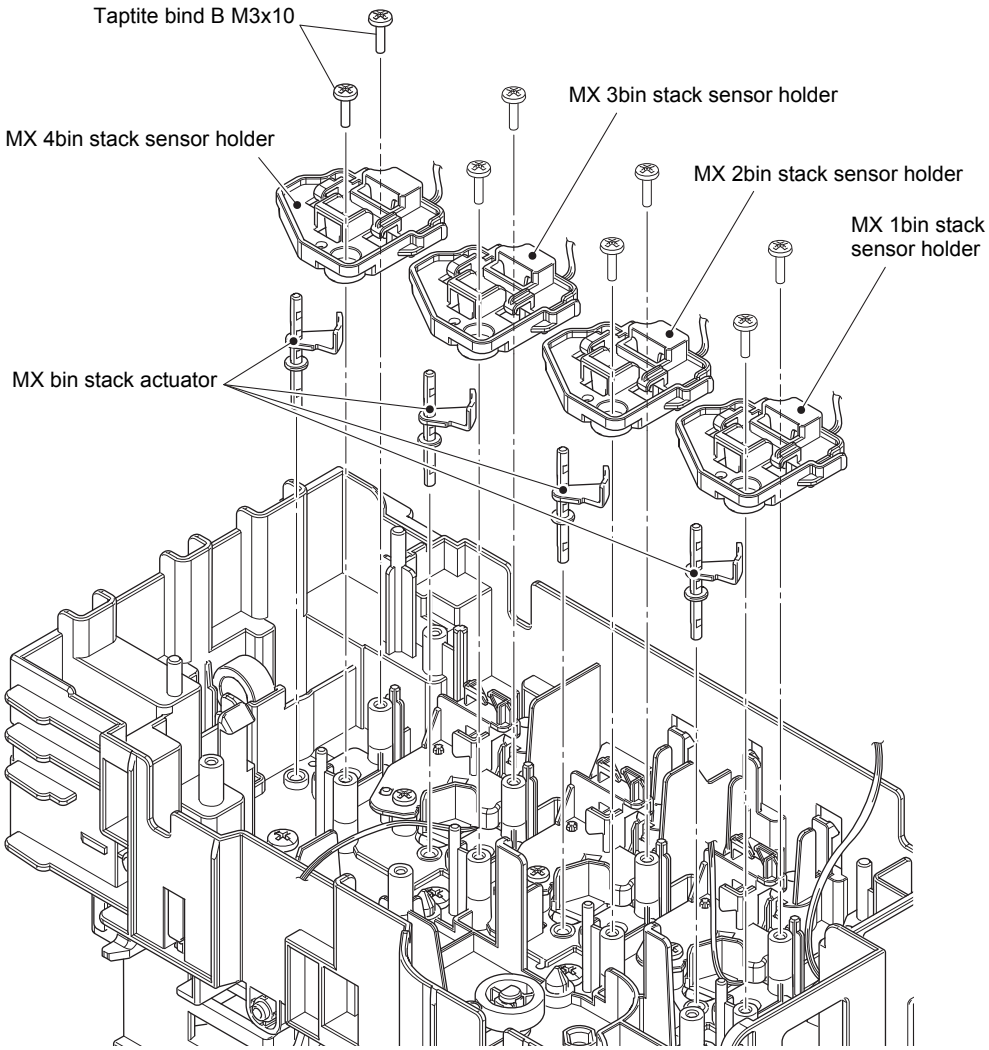


Fig. 3-135

Harness routing: Refer to “10. Left side of the MX”.

(3) Release the two hooks, and remove the MX bin stack sensor PCB ASSY from the MX bin stack sensor holder. Disconnect the MX bin stack sensor harness from the MX bin stack sensor PCB ASSY. (4 parts)

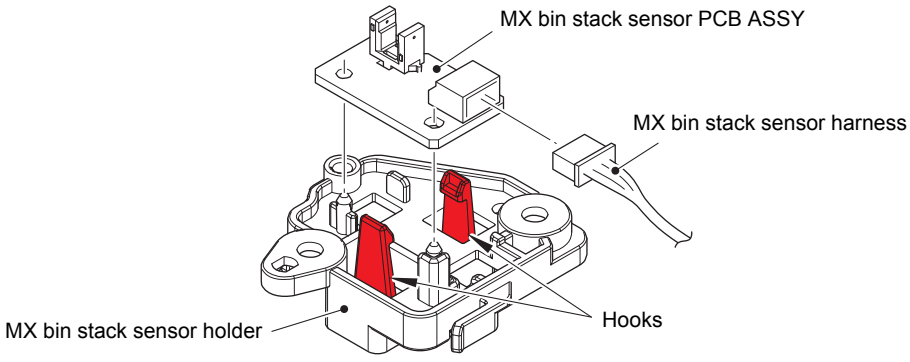


Fig. 3-136

11.9 MX bin detection sensor

(1) Release the MX 2bin detection sensor harness and MX 4bin detection sensor harness from the securing fixtures.

(2) Remove the taptite bind B M3x10 screw, and remove the bin detection sensor cover. (2 places)

(3) Release the two hooks, and remove the MX 2bin detection sensor.

(4) Release the two hooks, and remove the MX 4bin detection sensor.

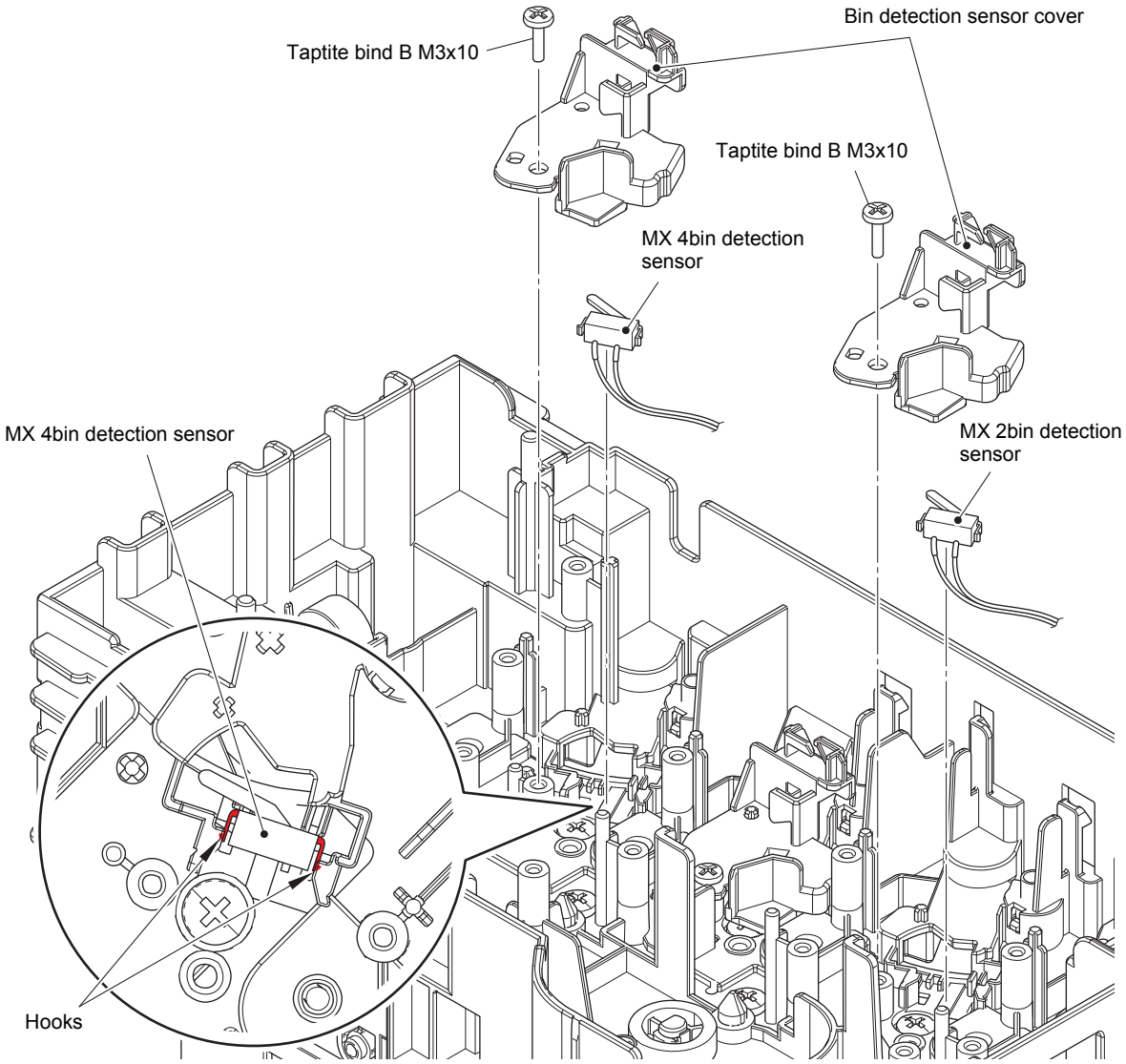


Fig. 3-137

Harness routing: Refer to “10. Left side of the MX”.

11.10 Feed roller ASSY upper MX

(1) Place the frame R ASSY MX face up.

(2) Remove the collar 6 from the feed roller ASSY upper MX.

(3) Release the hook, and remove the eject gear Z20M075 from the feed roller ASSY upper MX.

(4) Remove the collar 6 from the feed roller ASSY upper MX.

(5) Release the hook, and remove the bushing 6 from the feed roller ASSY upper MX.

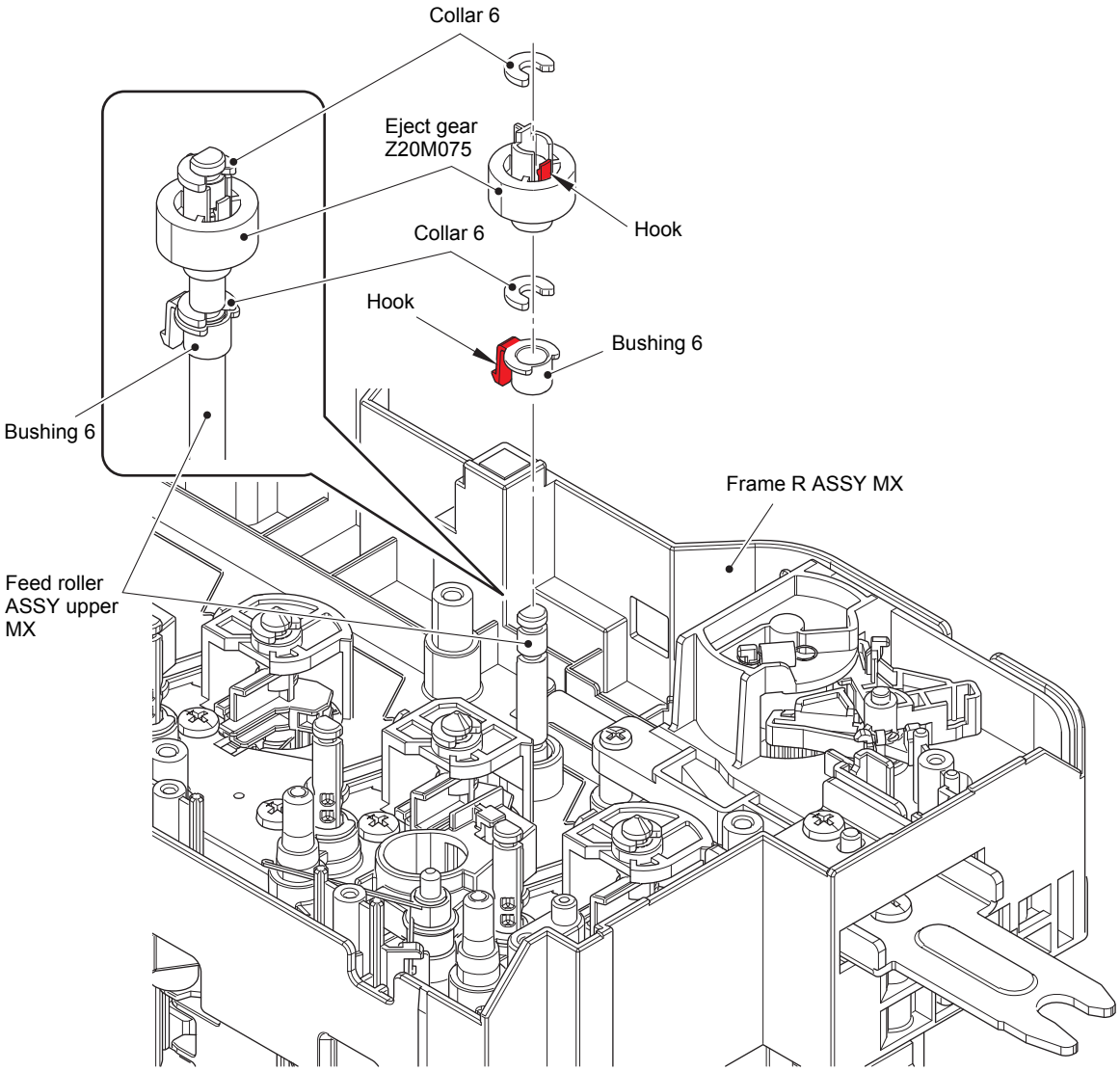


Fig. 3-138

(6) Place the frame L ASSY MX face up.

(7) Release the hook, and remove the feed roller gear L Z21M08 MX from the feed roller ASSY upper MX.

(8) Remove the collar 6 from the feed roller ASSY upper MX.

(9) Turn the feed roller bush MX in the direction of the arrow 9, and remove it from the frame L ASSY MX.

(10) Remove the feed roller ASSY upper MX in the direction of the arrow 10.

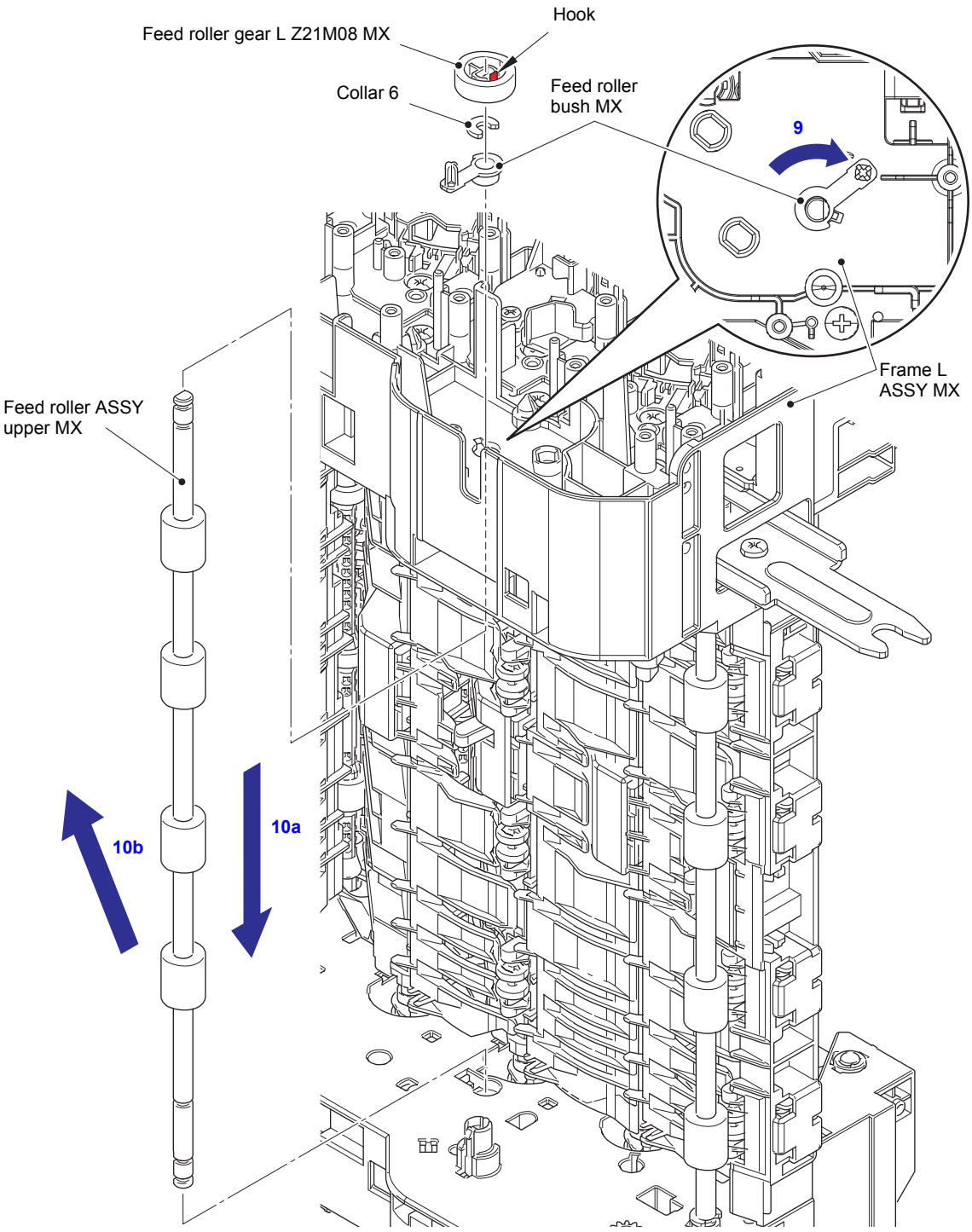


Fig. 3-139

11.11 Feed roller ASSY lower MX

(1) Remove the three taptite bind B M4x12 screws, and remove the arm L MX from the frame L ASSY MX.

(2) Remove the taptite bind B M4x12 screw. Remove the gear holder MX, the pendulum gear Z30M08 MX and the pendulum gear bush from the frame L ASSY MX.

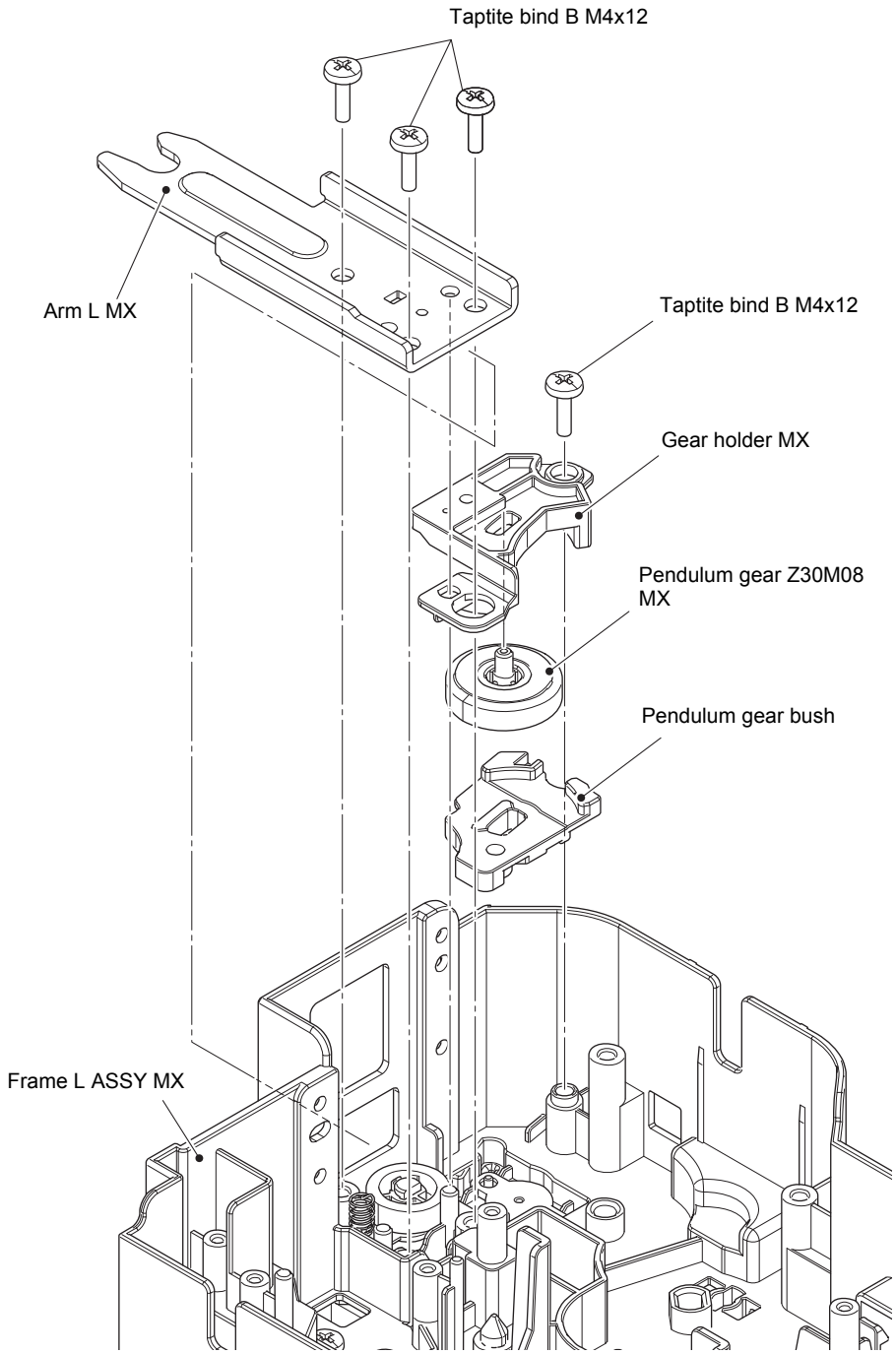


Fig. 3-140

(3) Remove the gear damper from the frame L ASSY MX.

(4) Remove the compression spring from the feed roller bush MX.

(5) Release the hook, and remove the feed roller gear L Z21M08 MX from the feed roller ASSY lower MX.

(6) Turn the feed roller bush MX in the direction of the arrow, and remove it from the frame L ASSY MX.

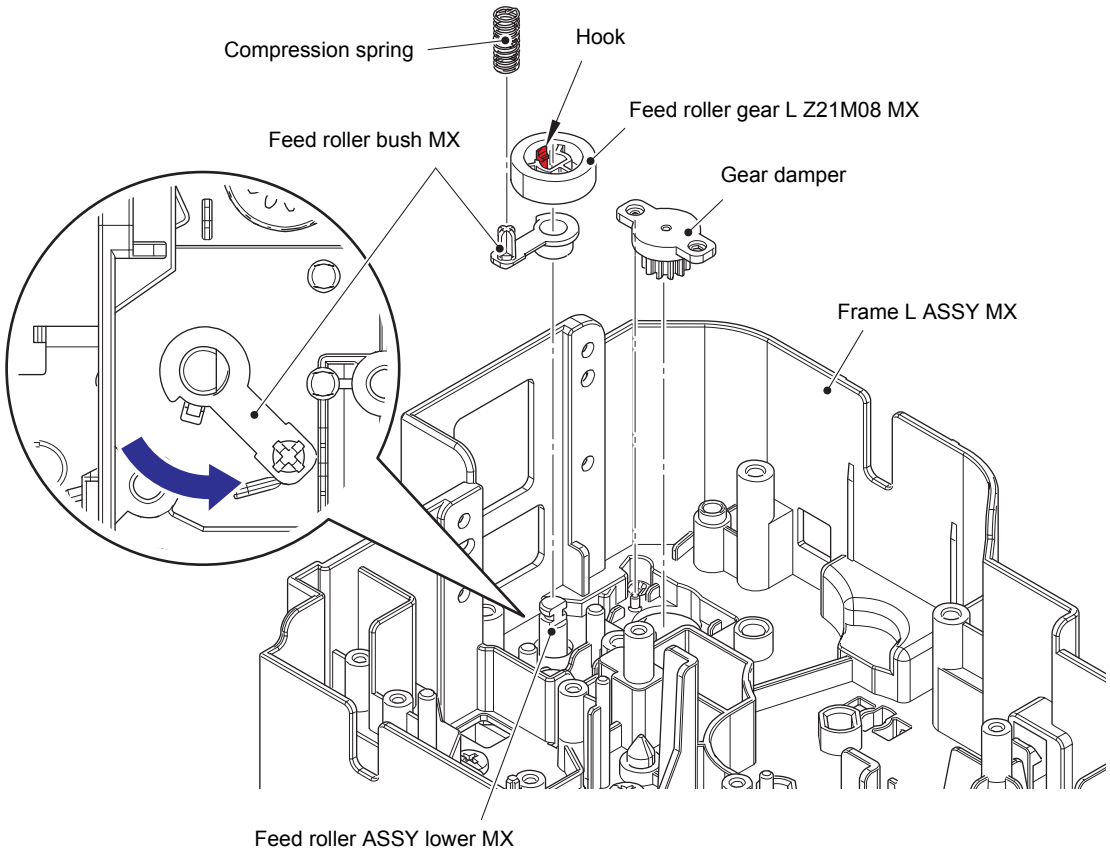


Fig. 3-141

(7) Remove the two collars 6 from the feed roller ASSY lower MX.

(8) Remove the feed roller ASSY lower MX in the direction of the arrow 8.

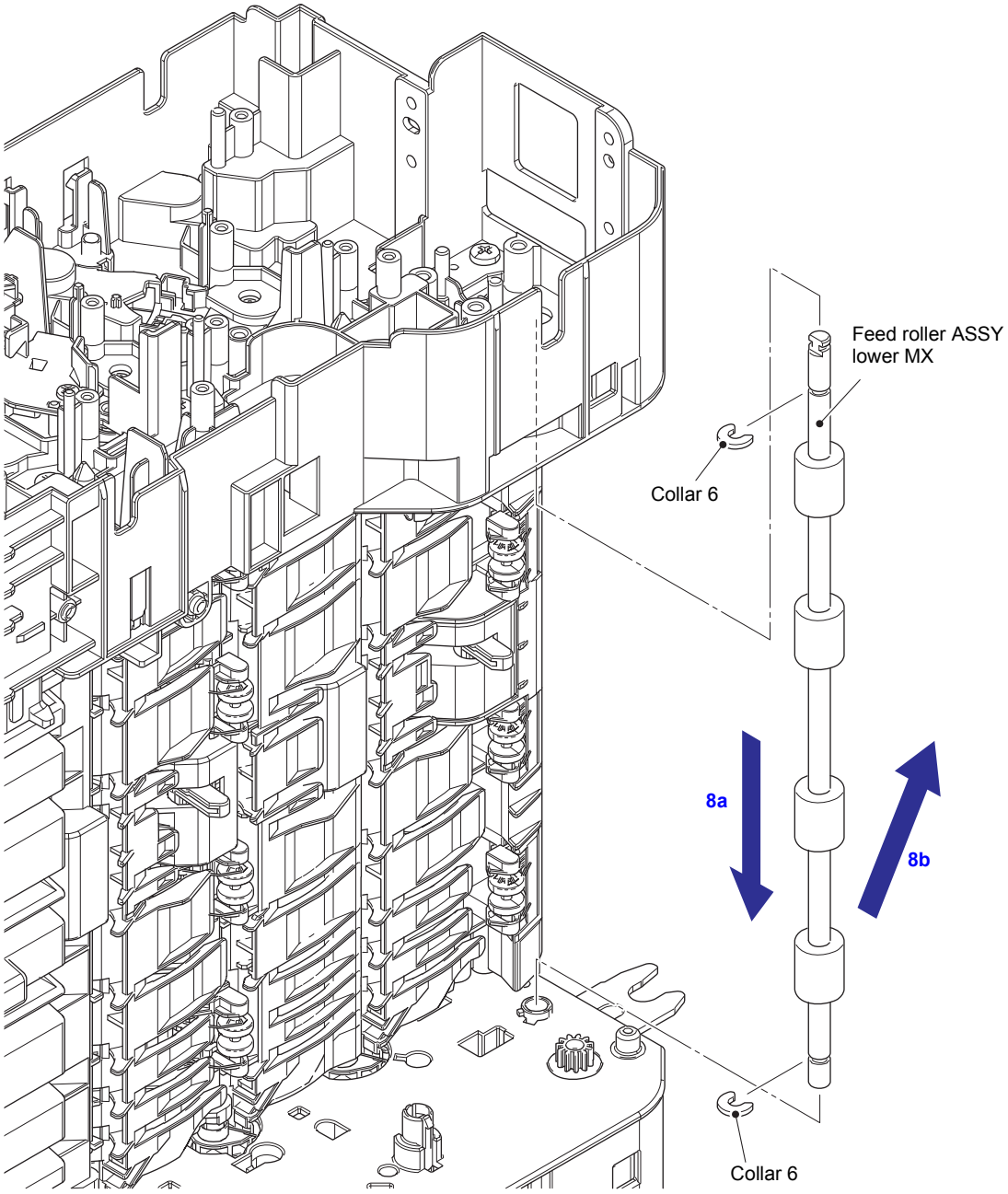


Fig. 3-142

12. DISASSEMBLY PROCEDURE (TT UNIT)

12.1 Preparation

■ **Disconnecting Cables and Removing Accessories**

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:
- AC cord
- Relay AC cord

(2) Remove the following:
- Paper trays

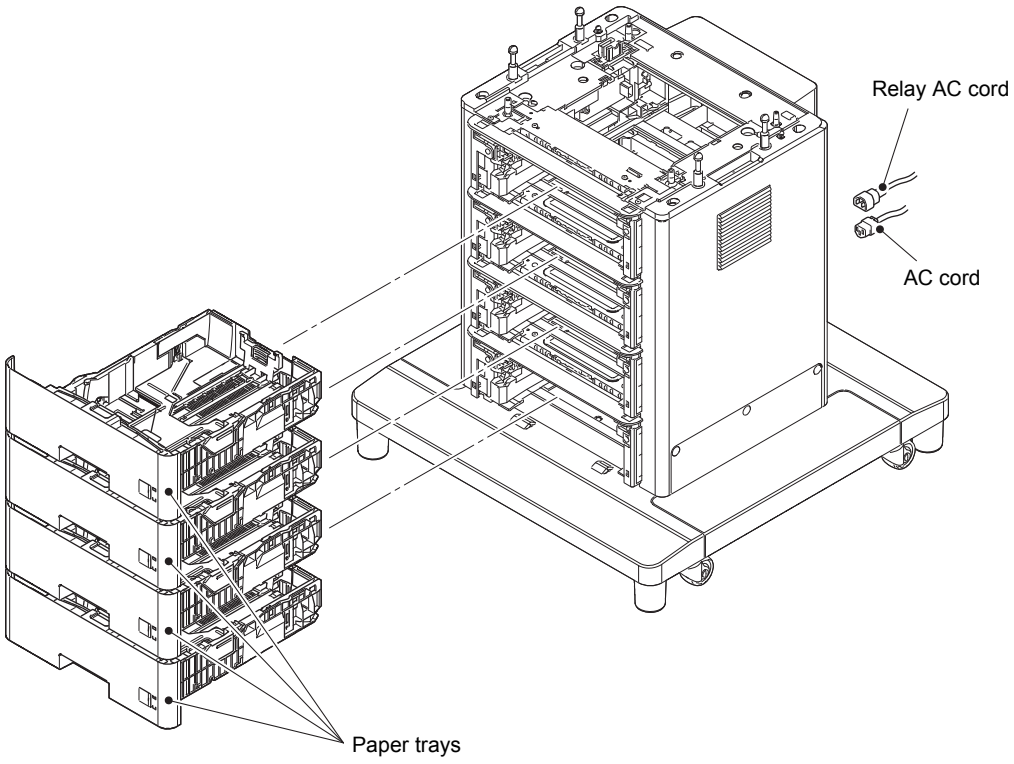


Fig. 3-143

12.2 Paper tray

(1) Release the two hooks on the separation pad ASSY from the paper tray.

(2) Push both arms of the separation pad ASSY inwards and release the pins to remove the separation pad ASSY from the paper tray.

(3) Remove the separation pad spring from the separation pad ASSY.

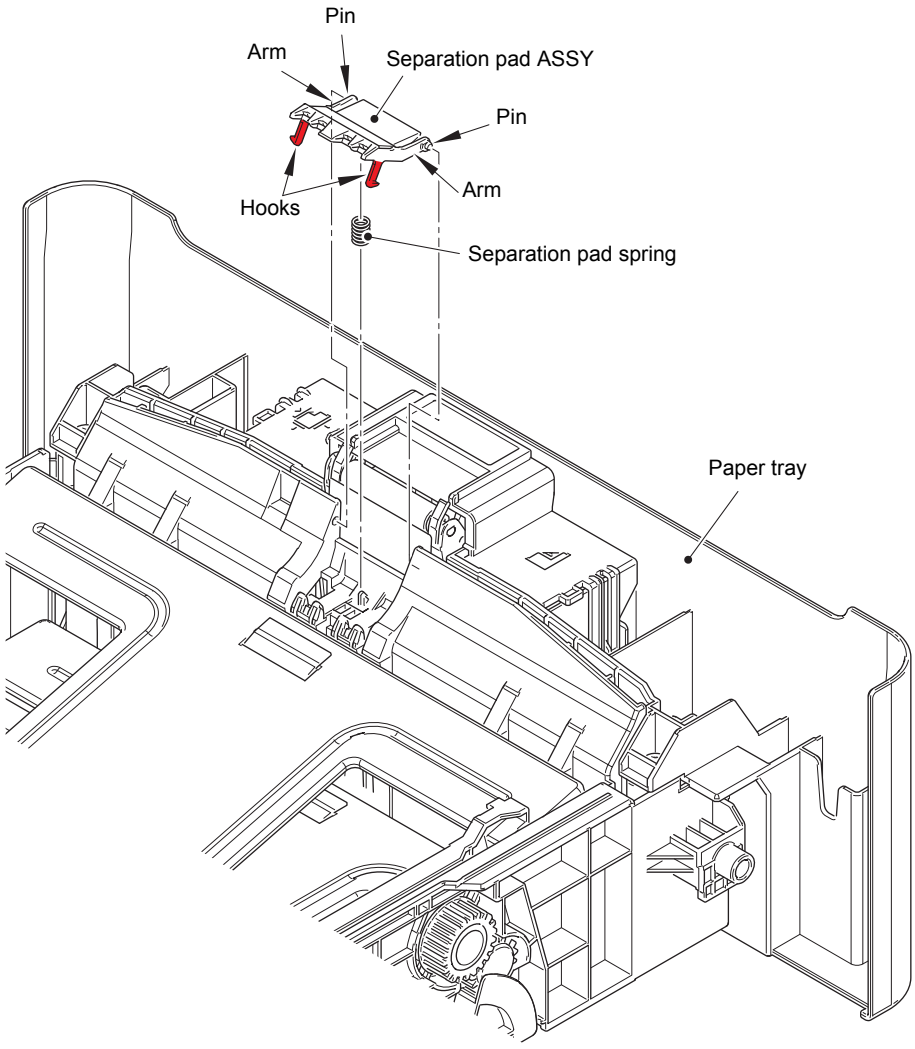


Fig. 3-144

(4) Press the hook on the lift gear Z48M10 while lifting the plate-up plate to remove the lift gear Z48M10 from the paper tray.

(5) Remove the gear Z22M10 and idle gear 50 Z18M10 from the paper tray.

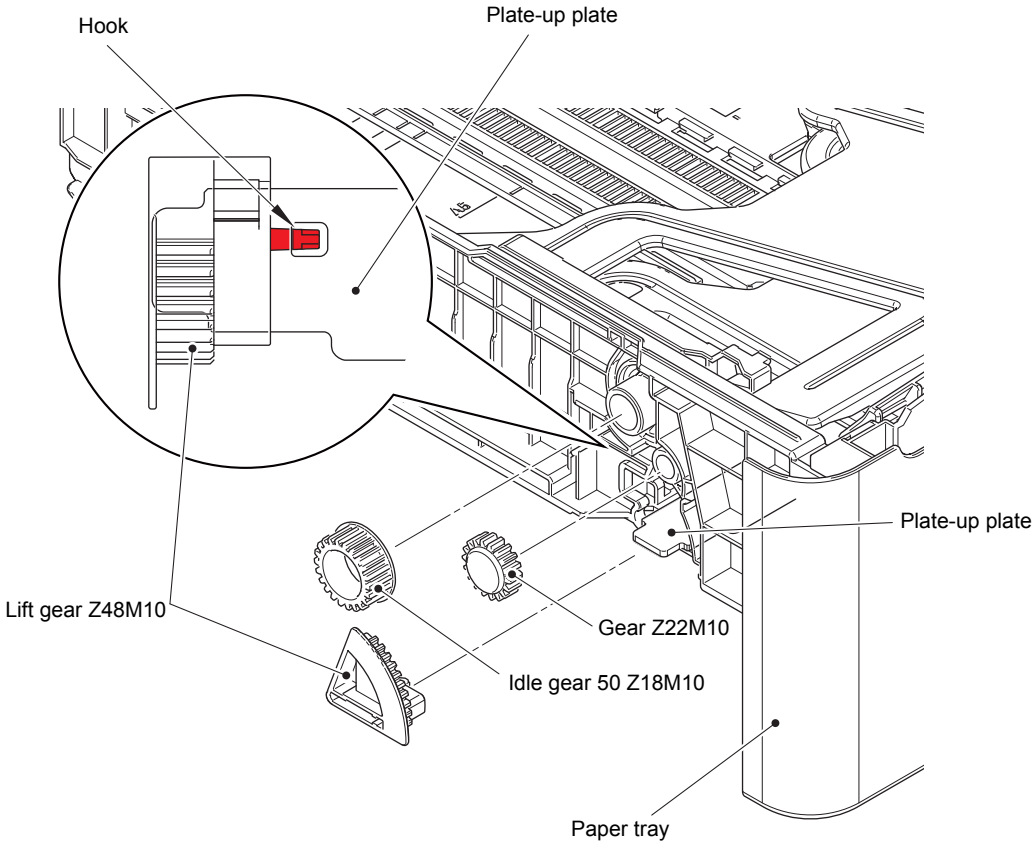


Fig. 3-145

12.3 TT roller holder ASSY

(1) Push the link arm in the direction of the arrow A, and turn the TT roller holder ASSY to remove the boss.

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

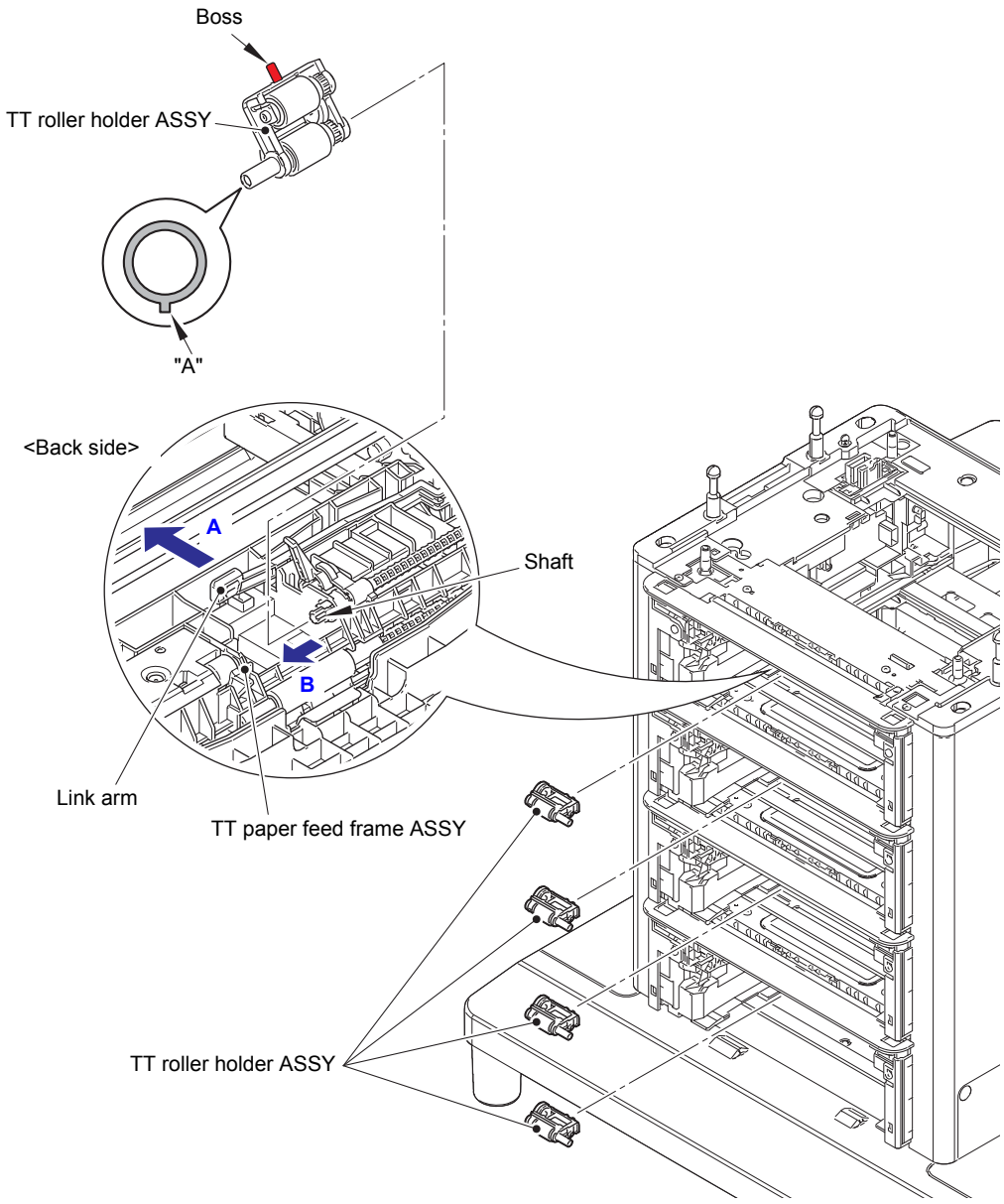


Fig. 3-146

Assembling Note:

- When assembling the TT roller holder ASSY, engage the hole of the TT paper feed frame ASSY with the "A" part of the shaft on the TT roller holder ASSY.

12.4 Covers

(1) Remove the eight shoulder screws and two taptite bind B M4x10 screws. Release the two hooks to remove the top cover TT.

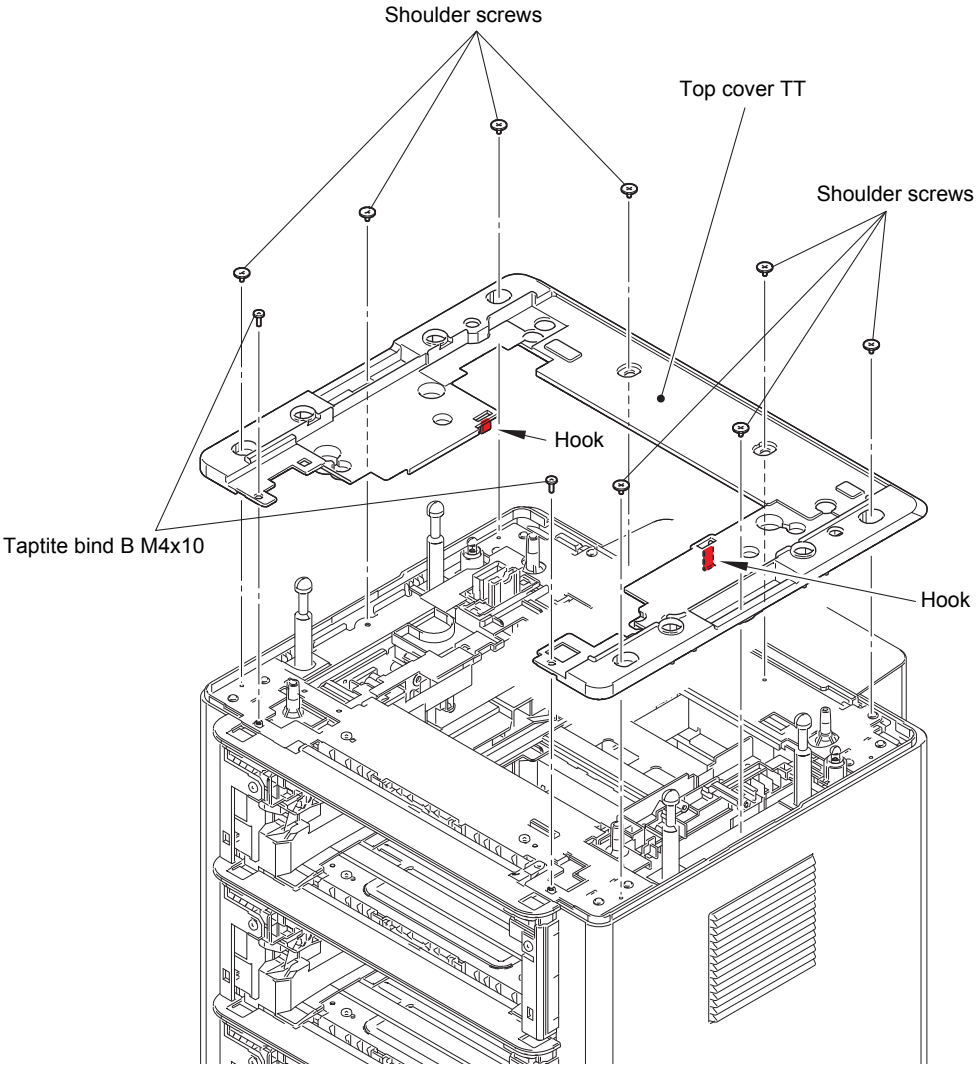


Fig. 3-147

(2) Remove the seven taptite bind B M4x10 screws. Release the front hooks, and remove the boss while pushing the rear top in the direction of the arrow A. Release the inner hook while sliding it in the direction of the arrow B to remove the side cover L.

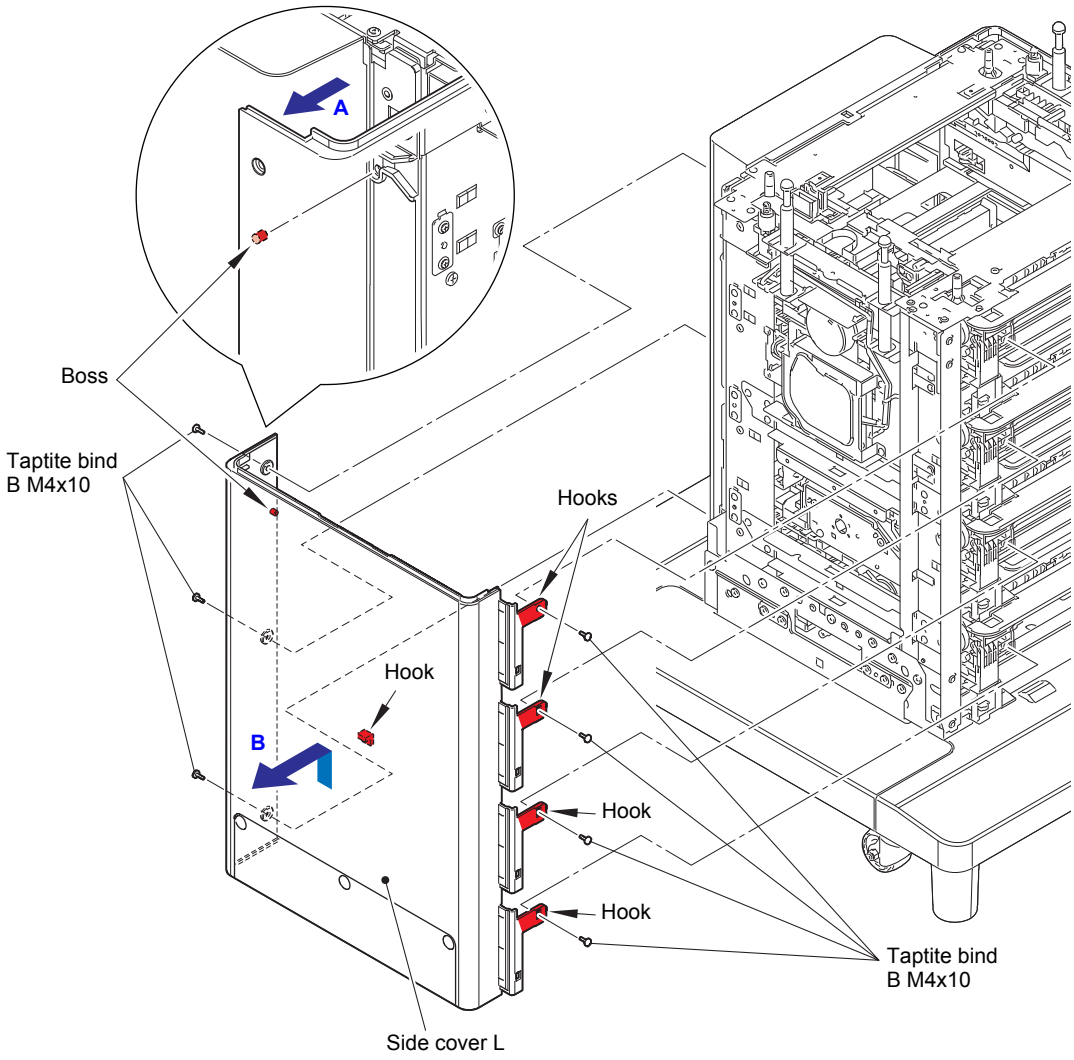


Fig. 3-148

(3) Remove the seven taptite bind B M4x10 screws. Release the front hooks, and remove the boss while pushing the rear top in the direction of the arrow A. Release the inner hook while sliding it in the direction of the arrow B to remove the side cover R.

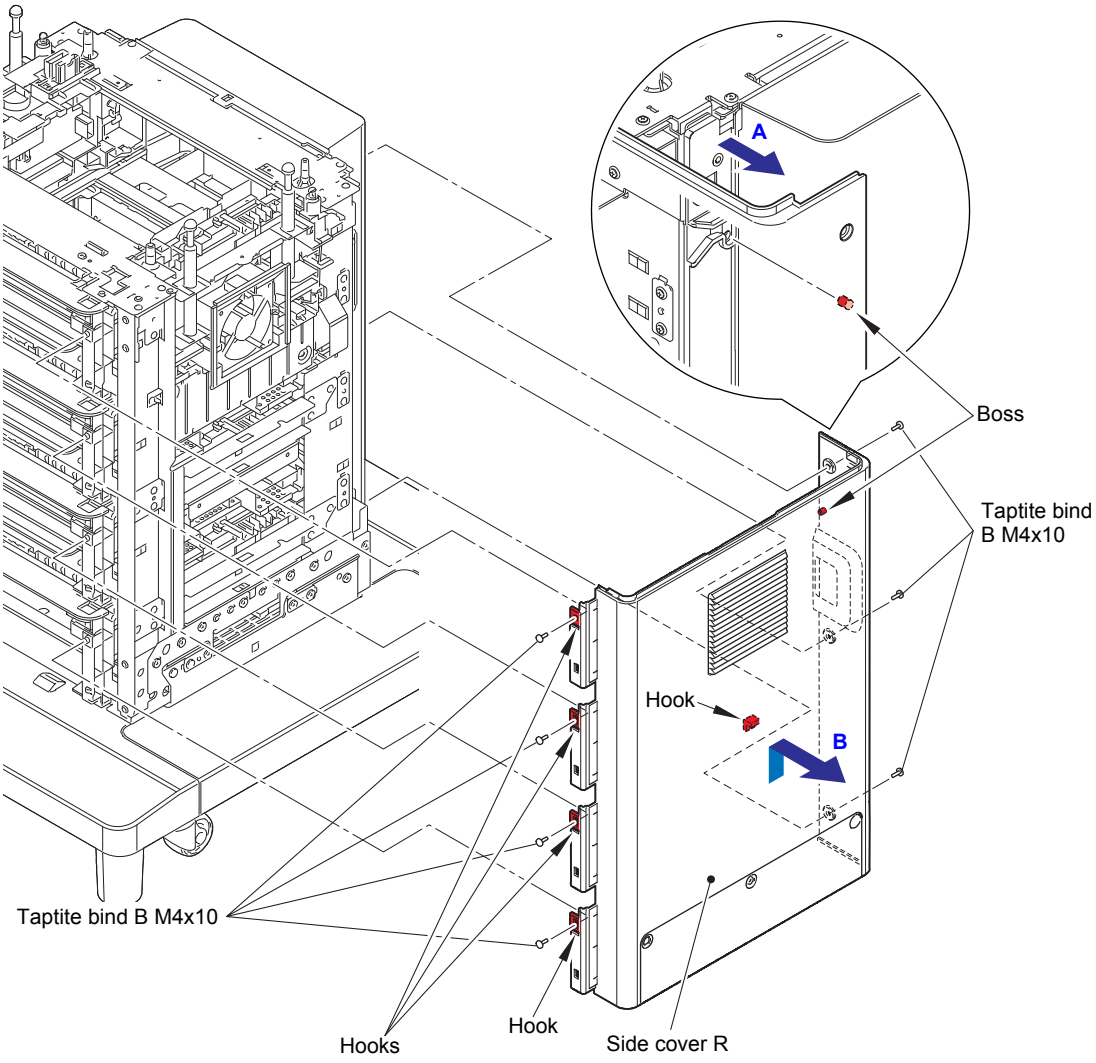


Fig. 3-149

(4) Remove the six shoulder screws (black).

(5) Remove the four bosses while pushing the back cover top in the direction of the arrow, slide it up to release the two hooks, and remove the back cover.

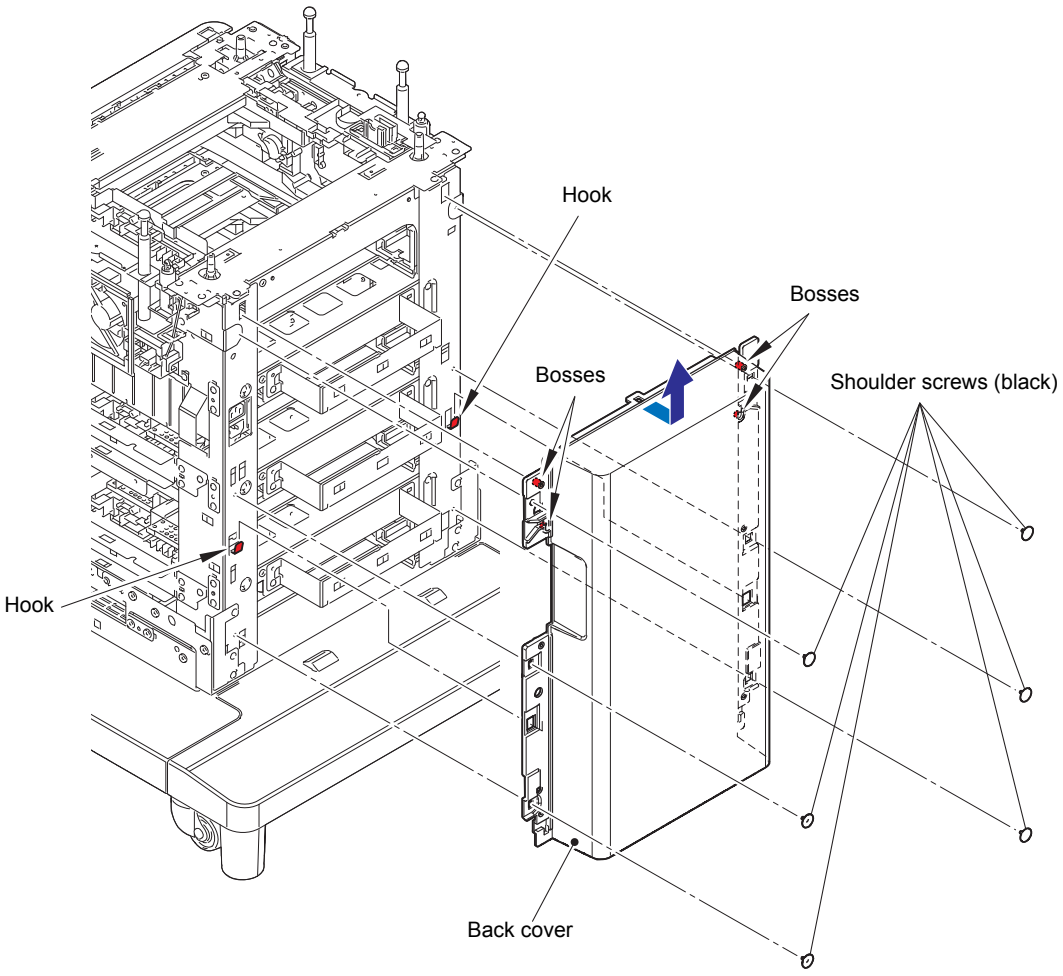


Fig. 3-150

12.5 TT control PCB ASSY

(1) Remove the three screw cup M3x8 (black) screws to remove the PCB cover plate.

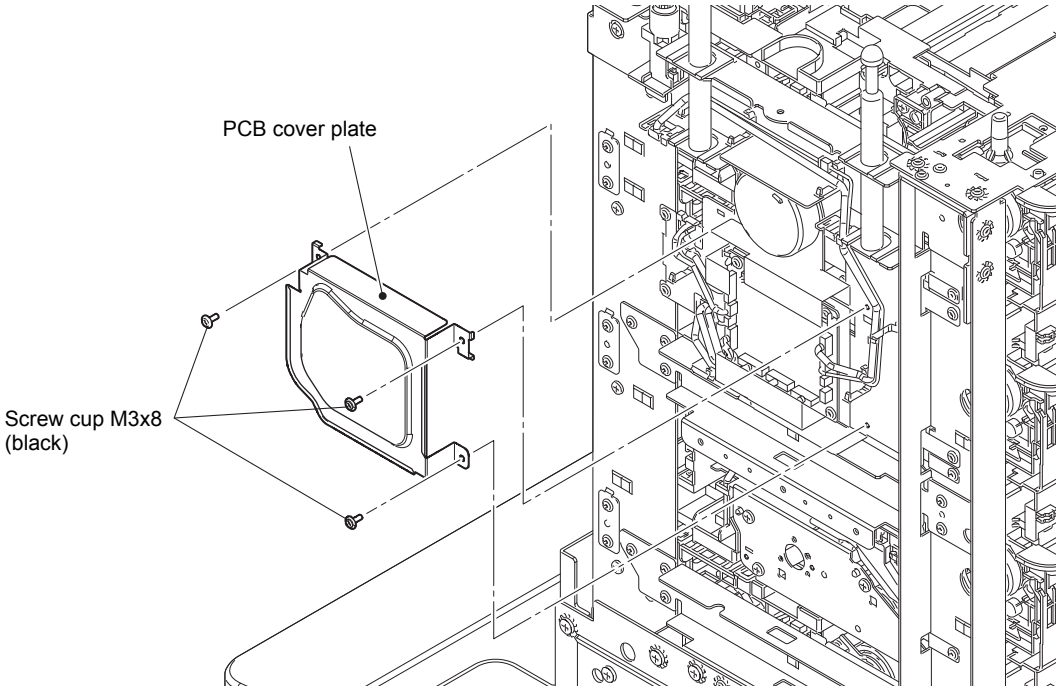


Fig. 3-151

(2) Disconnect all harnesses connected to the TT control PCB ASSY.

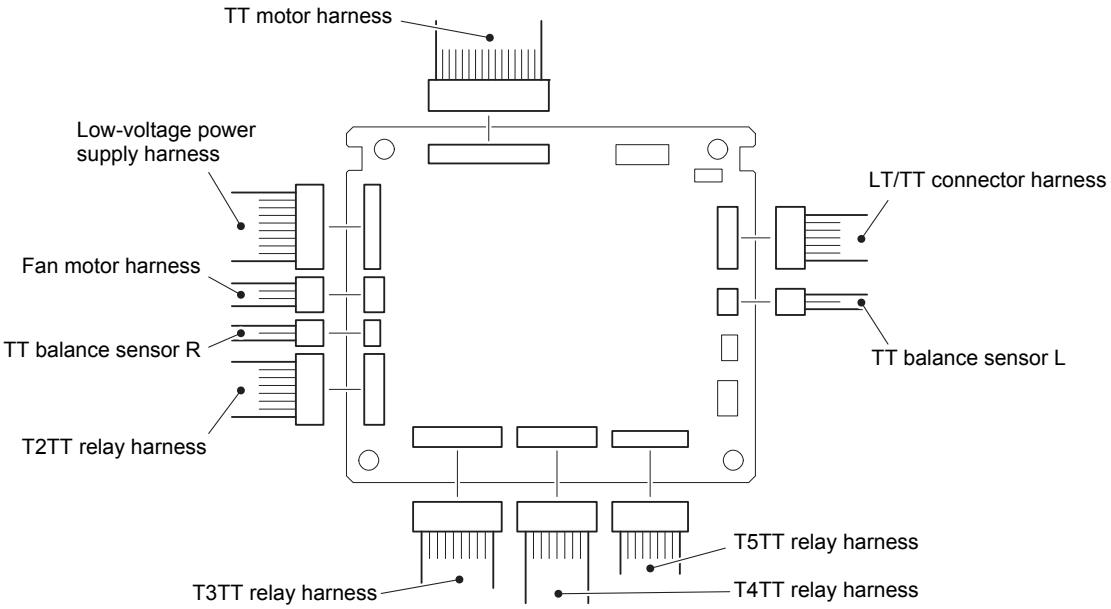


Fig. 3-152

(3) Loosen all clamps and release them from the securing fixtures.

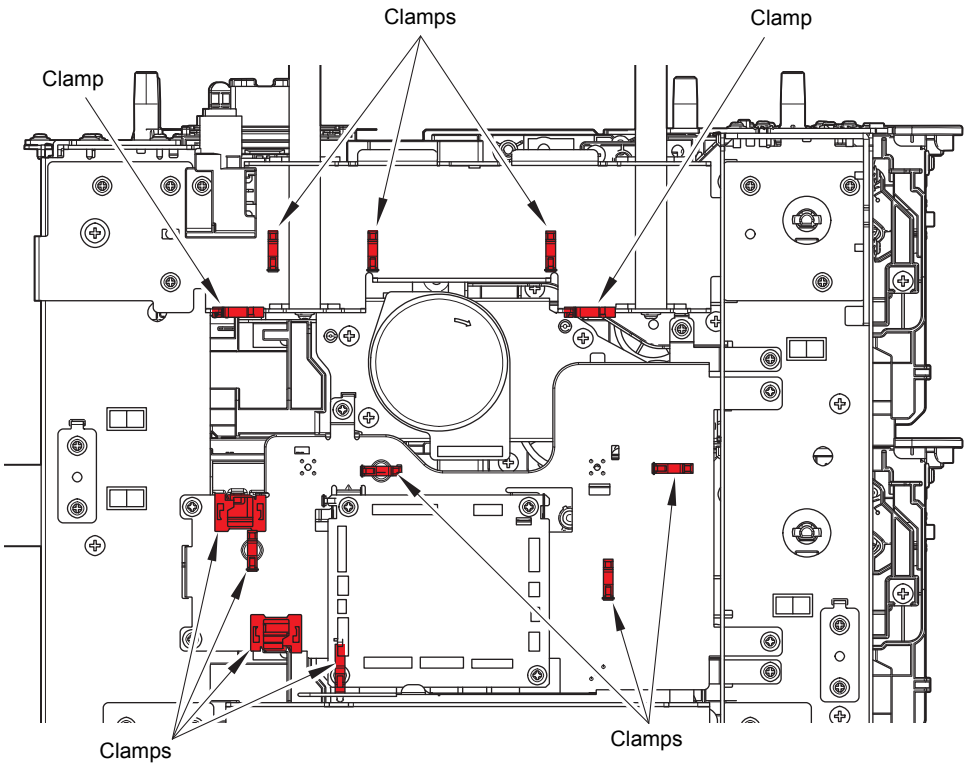


Fig. 3-153

Harness routing: Refer to “12. TT control PCB ASSY”.

(4) Remove the four screw cup M3x8 (black) screws to remove the TT control PCB ASSY.

(5) Remove the six screw cup M3x8 (black) screws to remove the PCB shield plate. Pull out the TT motor harness through the insulation sheet hole.

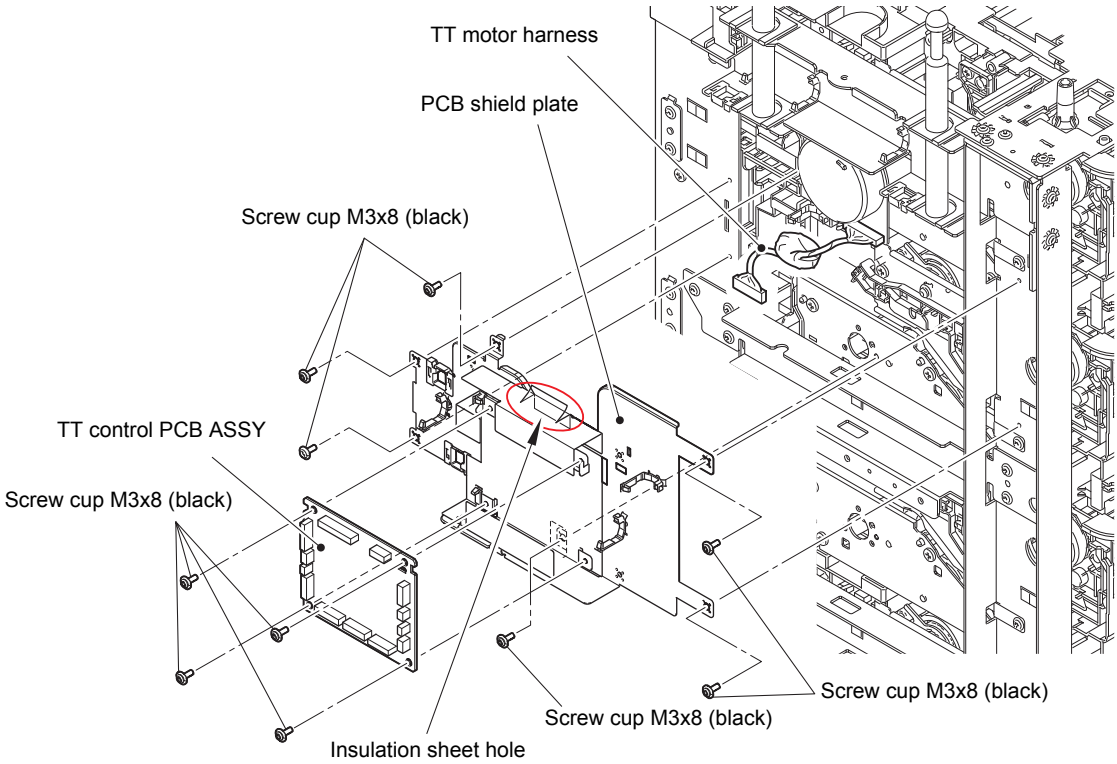


Fig. 3-154

12.6 TT balance sensor L / TT balance sensor R

(1) Remove the taptite cup S M3x8 SR screw to remove the attach sensor holder.

(2) Release the two hooks to remove the TT balance sensor L from the attach sensor holder.

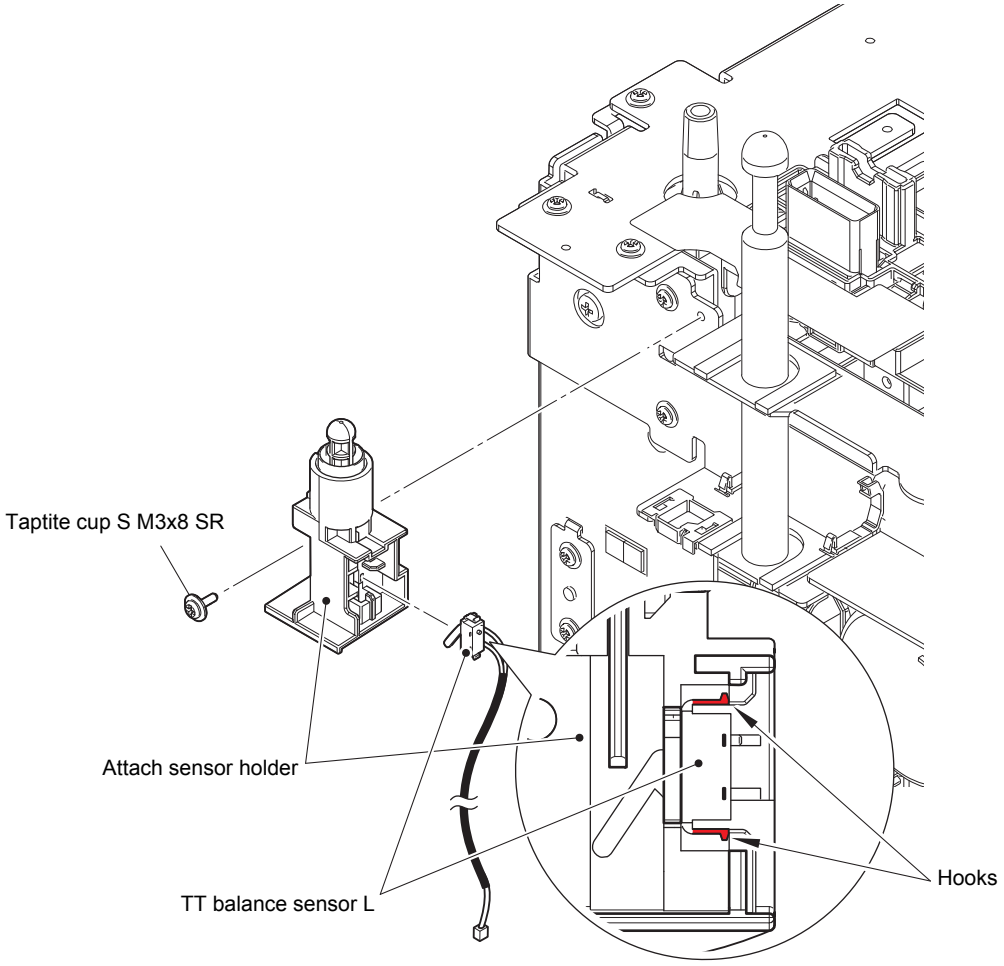


Fig. 3-155

(3) Loosen each clamp, release the TT balance sensor R harness from the securing fixtures, and disconnect it from the TT balance sensor R relay harness.

(4) Remove the taptite cup S M3x8 SR screw to remove the attach sensor holder.

(5) Release the two hooks to remove the TT balance sensor R from the attach sensor holder.

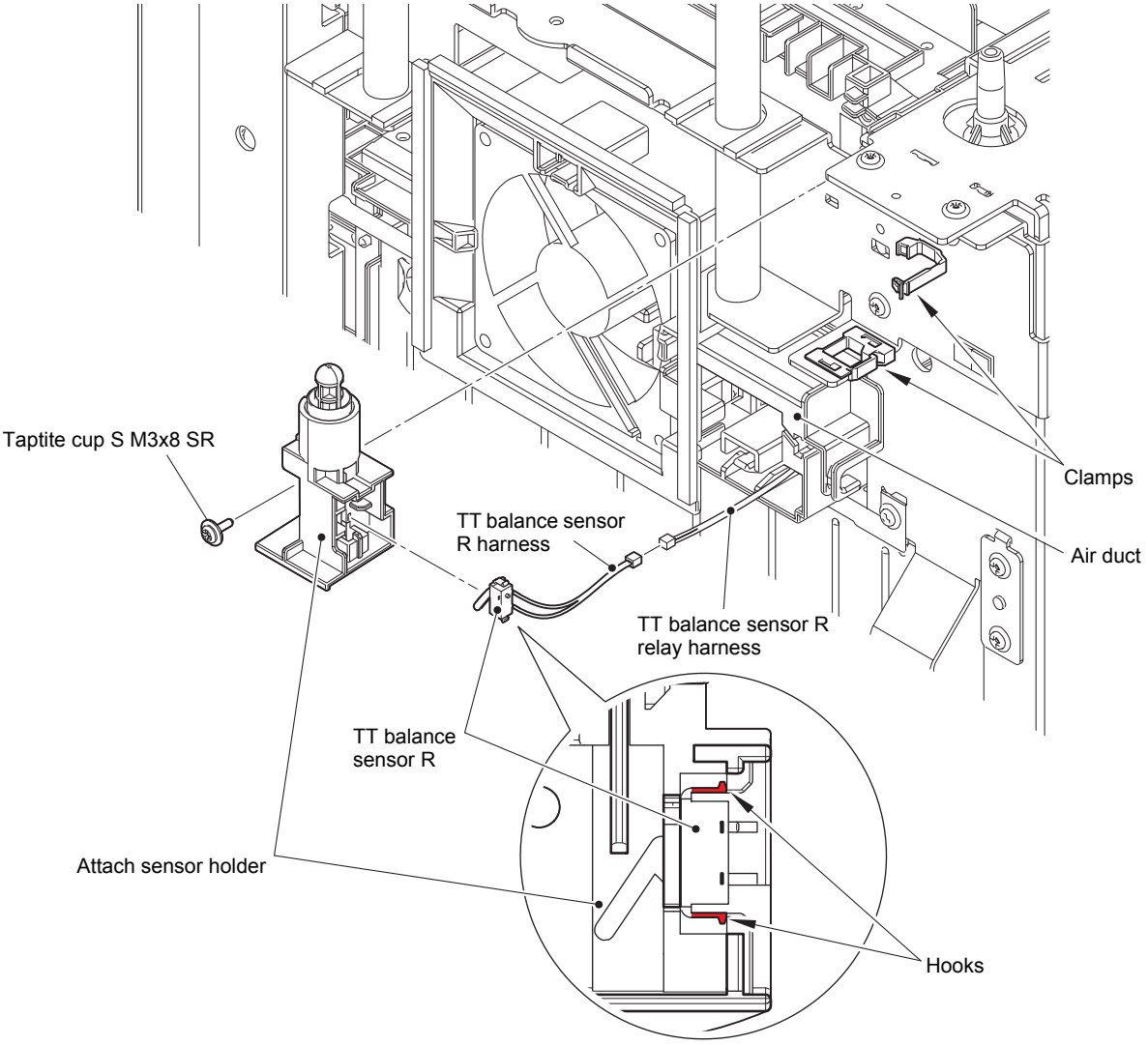


Fig. 3-156

Harness routing: Refer to “14. Upper right of the TT”.

Assembling Note:

- Do not pull the TT balance sensor R relay harness too much, it may cause a connection failure with the TT control PCB ASSY.
- When wiring, make sure that the TT balance sensor R harness does not come out of the air duct.

12.7 Fan motor

(1) Release the fan motor harness from the securing fixtures, and disconnect it from the fan motor relay harness.

(2) Release all hooks to remove the fan motor from the air duct.

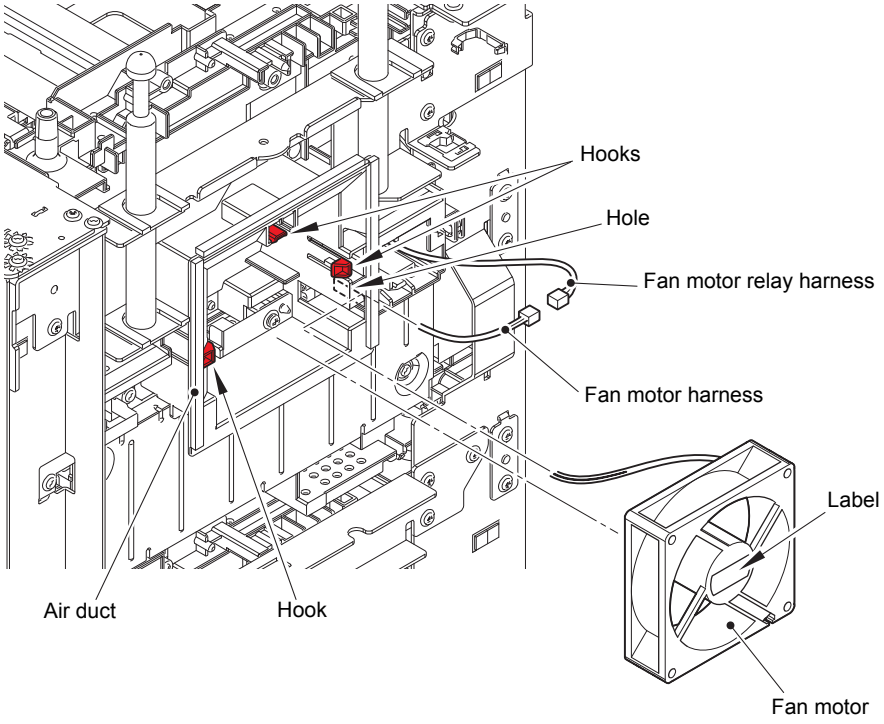


Fig. 3-157

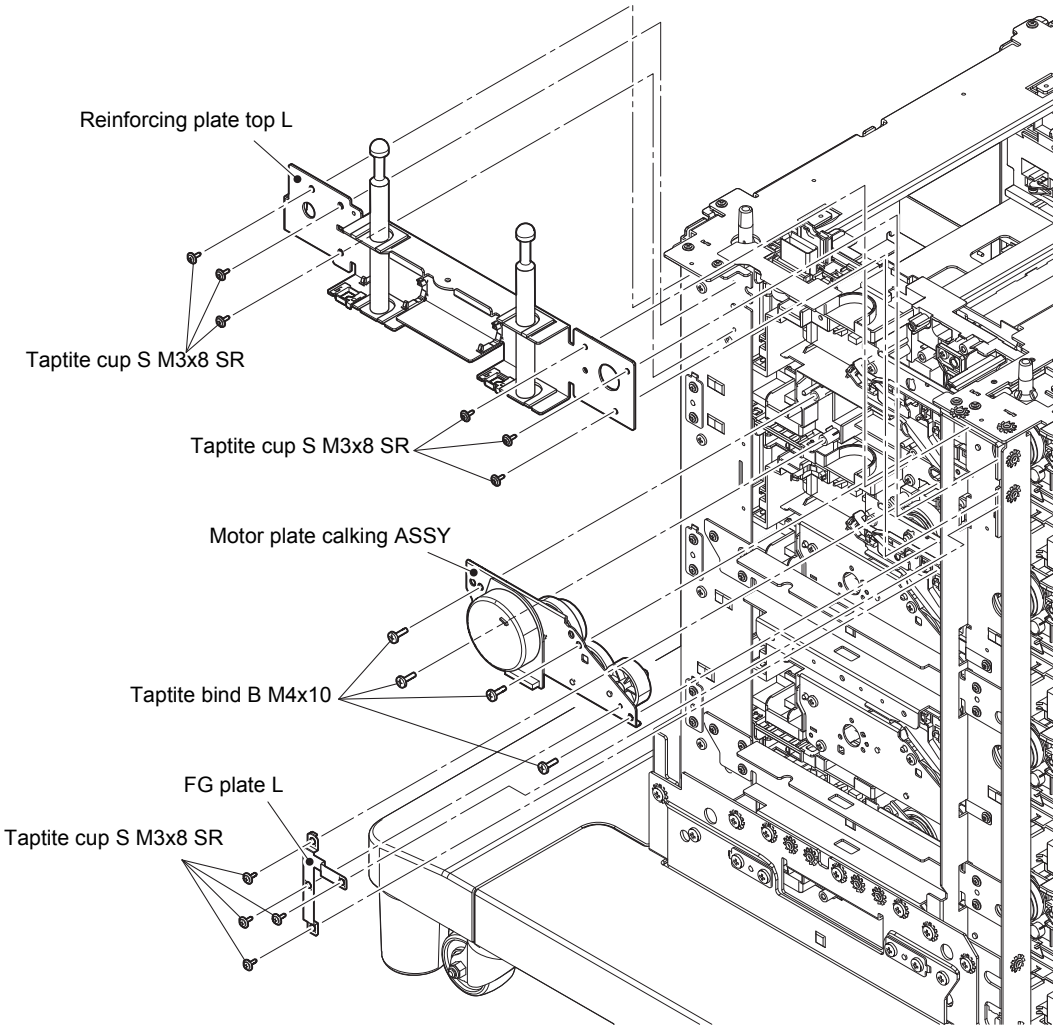
Harness routing: Refer to “14. Upper right of the TT”.

Assembling Note:

- Place the fan motor so that the attached label faces outwards.
- Do not pull the fan motor relay harness too much, it may cause a connection failure with the TT control PCB ASSY.
- When wiring, make sure that the fan motor harness does not come out of the air duct.

12.8 TT motor

(1) Remove the six taptite cup S M3x8 SR screws to remove the reinforcing plate top L.
(2) Remove the four taptite cup S M3x8 SR screws to remove the FG plate L.
(3) Remove the four taptite bind B M4x10 screws to remove the motor plate calking ASSY.



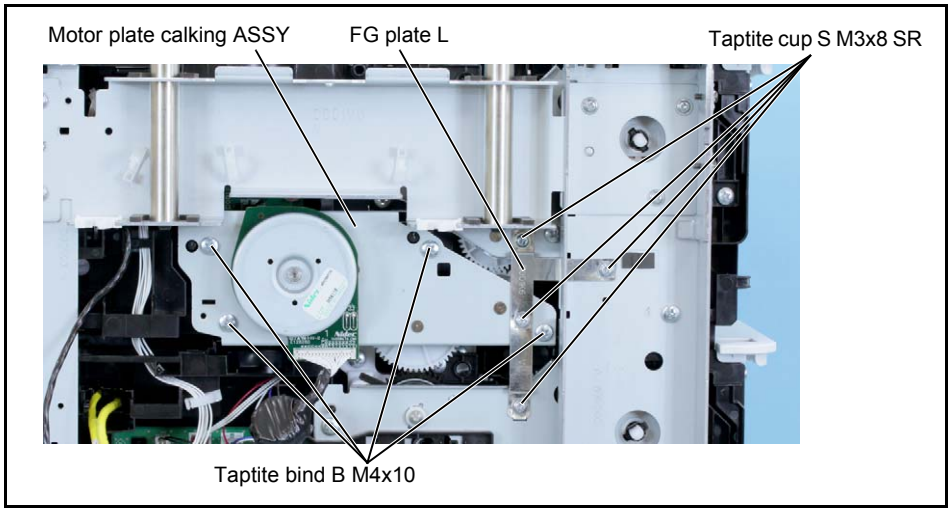


Fig. 3-158

(4) Remove the collar 6 to remove the SPUR gear idle TT Z53 from the motor plate calking ASSY.

(5) Remove the helical gear TT Z88/Z41 from the motor plate calking ASSY.

(6) Remove the three screw bind M3x4 screws to remove the TT motor from the motor plate calking ASSY.

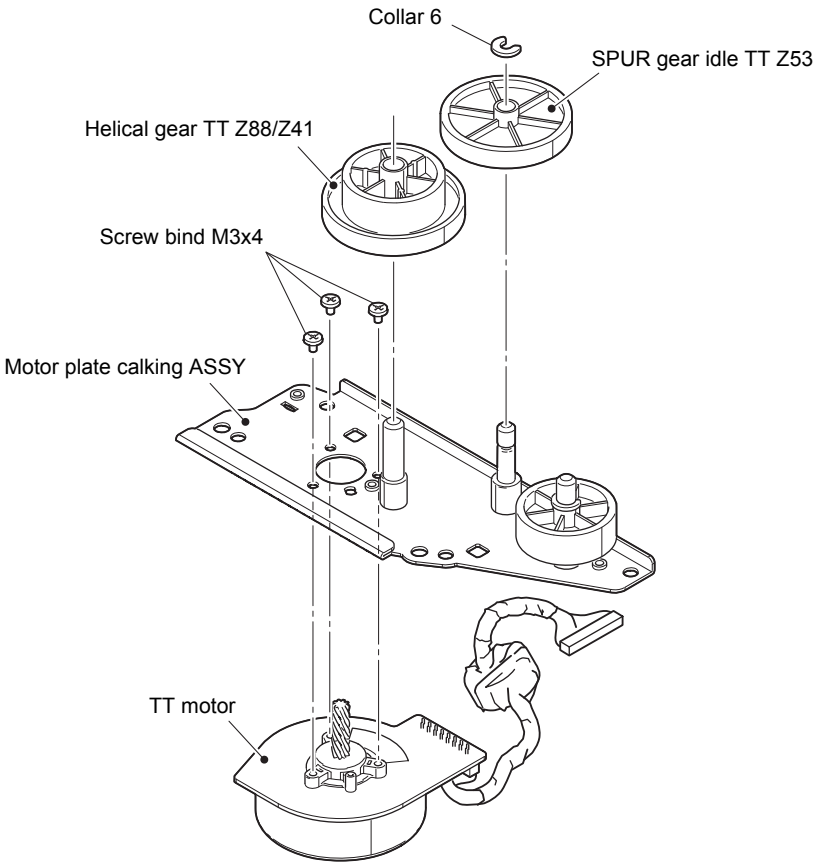


Fig. 3-159

12.9 T2TT unit

(1) Remove the taptite bind B M4x10 screw to remove the air duct. Pull out the two harnesses through the air duct hole.

(2) Remove the screw pan (S/P washer) M3.5x6 screw and screw cup M3x8 (black) screw to remove the TT ground plate right.

(3) Remove the two screw cup M3x8 (black) screws to remove the TT ground plate rear.

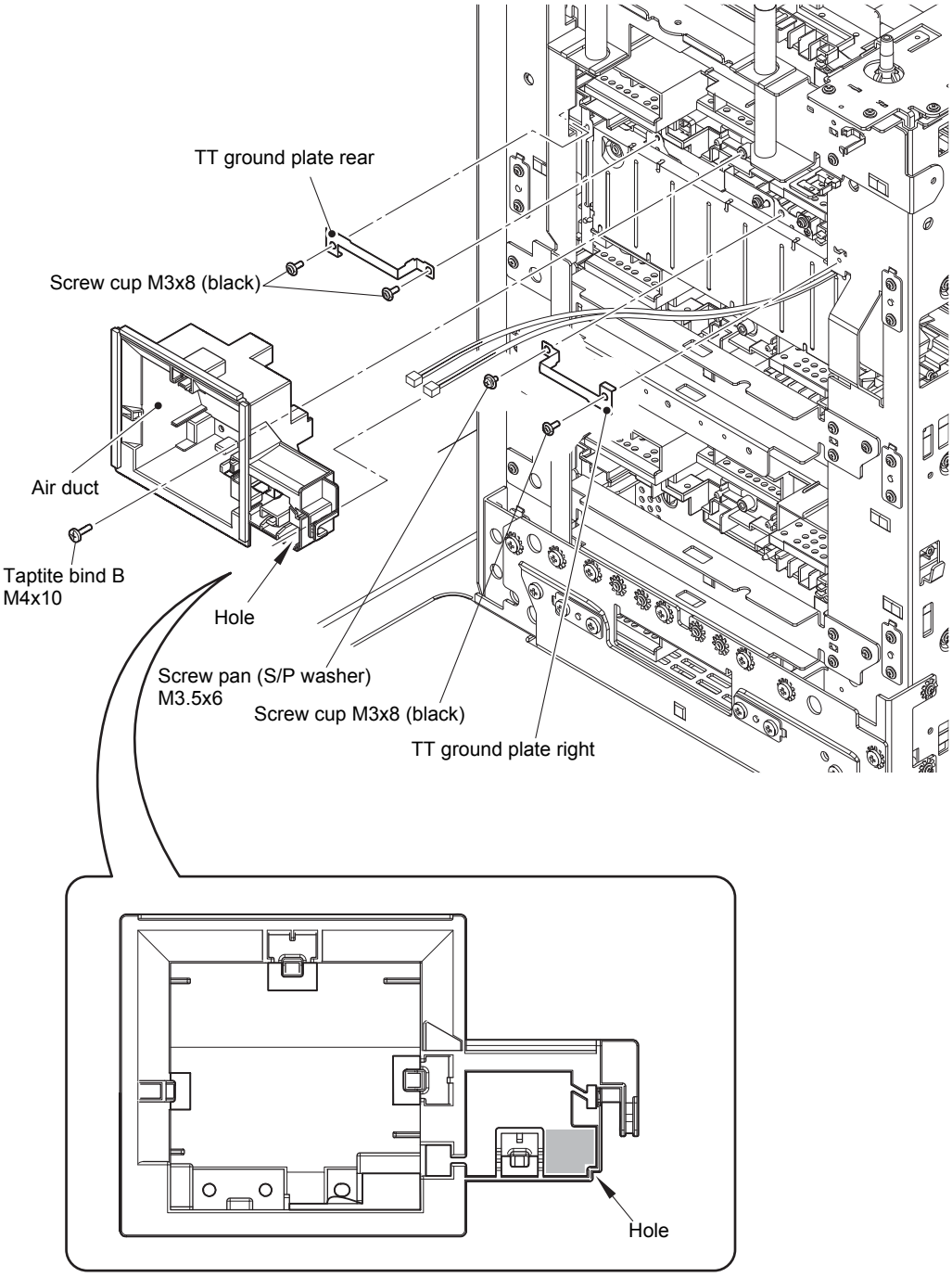


Fig. 3-160

Assembling Note:

- When assembling the T2TT after disassembling the whole TT unit, the top plate front or top plate rear may not be attachable. Loosen the screw securing each TT unit to attach the top plate front or rear and tighten all screws after attaching the T2TT without fail.

(4) Loosen the clamp, and release the T2TT relay harness from the securing fixtures.

(5) Remove the four screw cup M3x8 (black) screws and the four flywheel lock washers from the Top plate front. Remove the eight taptite cup S M3x8 SR screws, the two taptite bind B M4x10 screws, and the two screw cup M3x8 (black) screws to remove the T2TT unit.

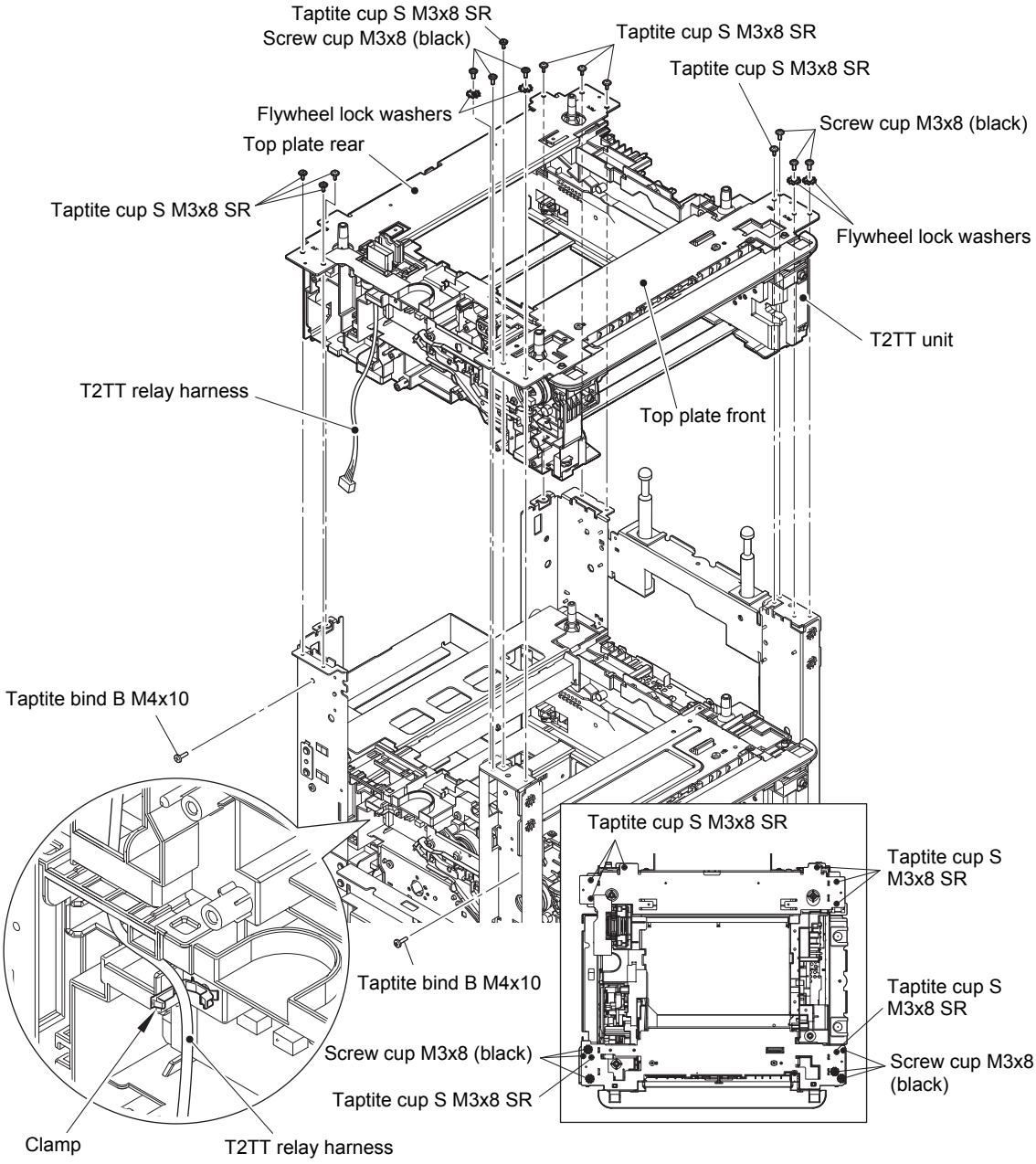


Fig. 3-161

Harness routing: Refer to “13. Left side of the TT”.

12.10 T3TT unit

(1) Remove the two taptite cup S M3x8 SR screws to remove the positioning plate calking ASSY. (Four places)

(2) Remove the six taptite cup S M3x8 SR screws to remove the reinforcing plate L (1/2).

(3) Remove the four taptite cup S M3x8 SR screws to remove the FG plate L.

(4) Remove the four taptite bind B M4x12 screws to remove the calking gear plate ASSY.

(5) Remove the three taptite cup S M3x8 SR screws and the two taptite bind B M4x10 screws. Lift the T3TT unit slightly, and pull the T4TT relay harness and T5TT relay harness from the T3TT unit hole to remove the T3TT unit in the direction of the arrow.

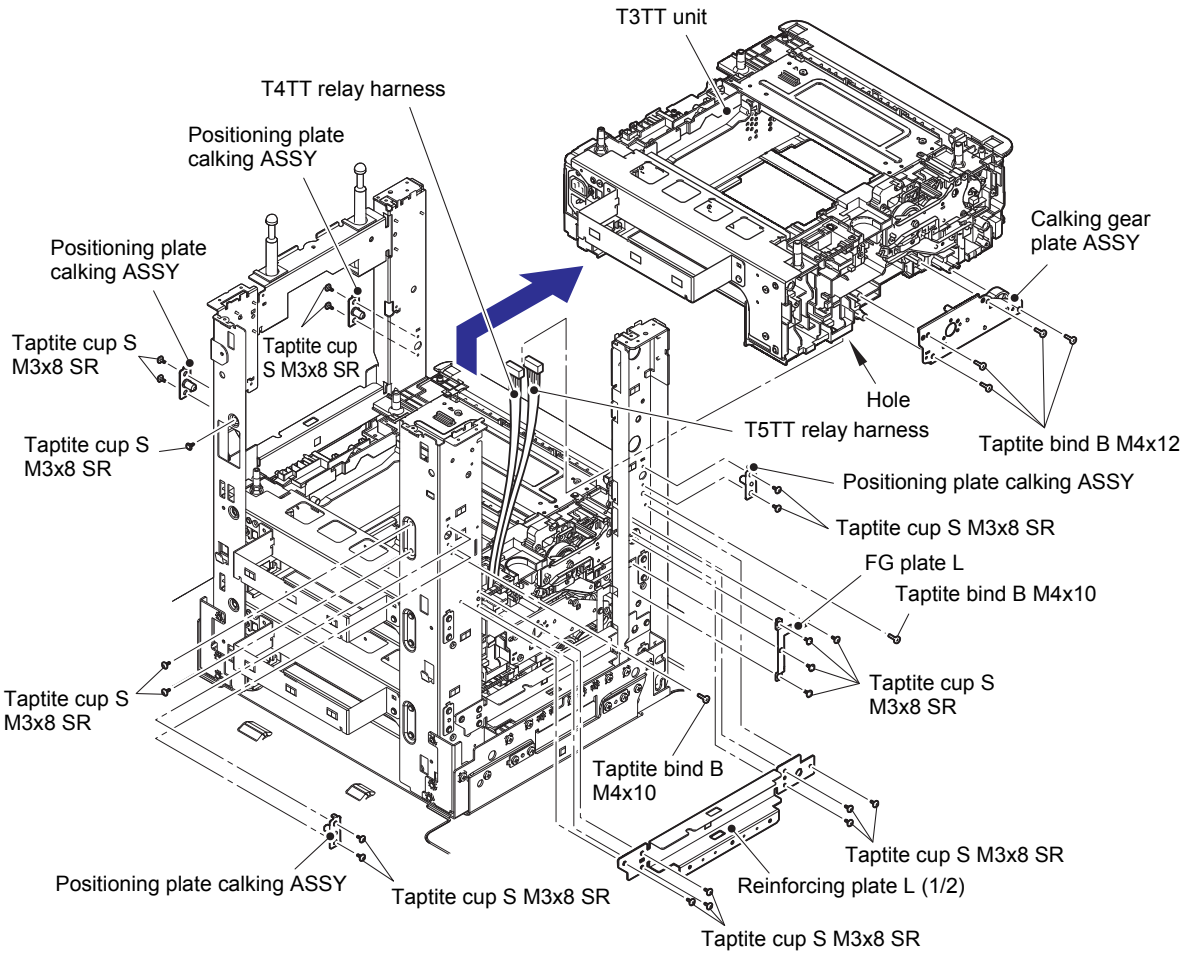


Fig. 3-162

Harness routing: Refer to “13. Left side of the TT”.

12.11 Low-voltage power supply PCB ASSY

(1) Remove the screw pan (S/P washer) M3.5x6 screw and the two screw cup M3x8 (black) screws to remove the LV shield plate cover.

(2) Remove the LV insulation sheet.

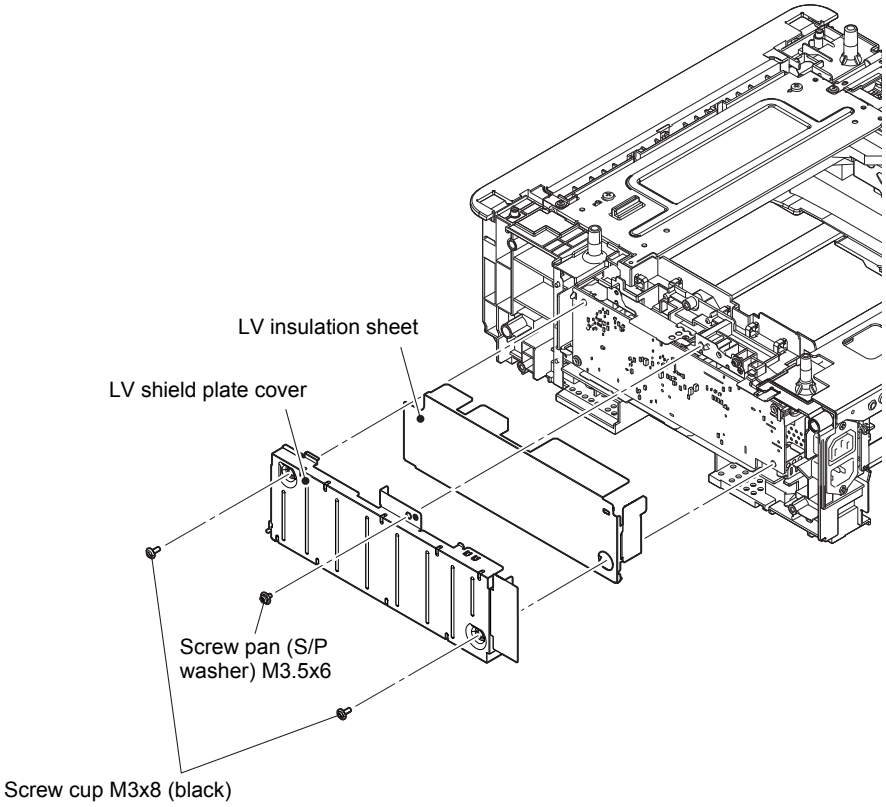


Fig. 3-163

(3) Remove the screw pan (S/P washer) M3.5x6 screw to disconnect the ground harness.

(4) Remove the two taptite flat B M3x10 screws from the inlet.

(5) Remove the taptite bind B M3x10 screw to remove the inlet cover by pulling the inlet forwards.

(6) Pull out the inlet through the TT unit hole.

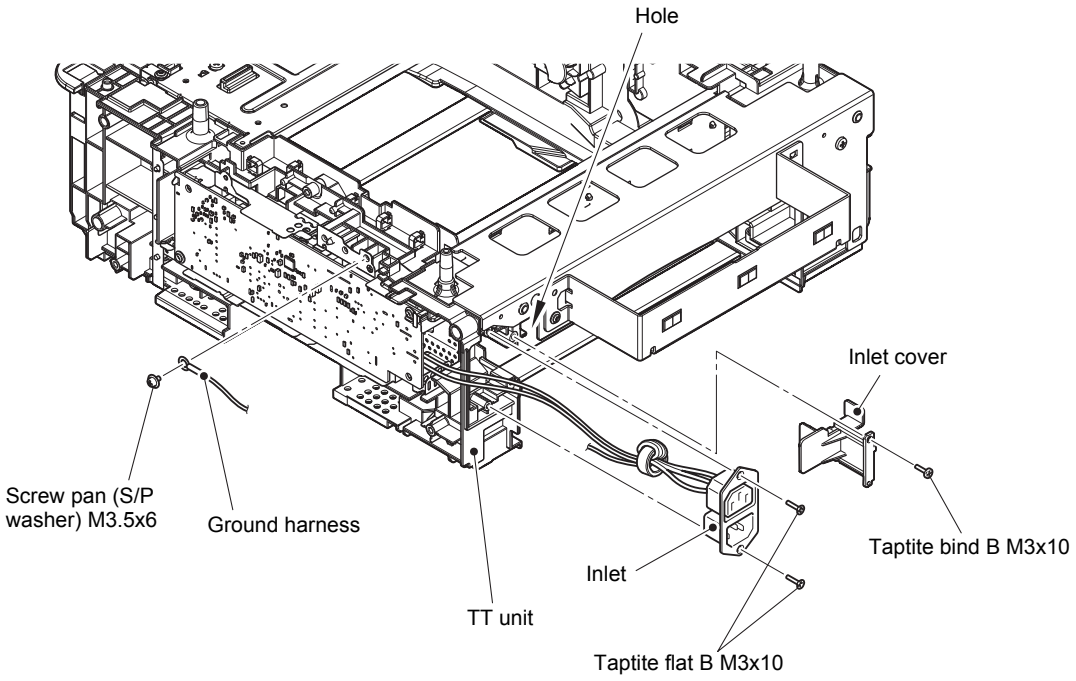


Fig. 3-164

Harness routing: Refer to “14. Upper right of the TT”, “16. T3TT unit”.

Assembling Note:

- When assembling the low-voltage power supply PCB ASSY, engage the notch of the low-voltage power supply PCB ASSY with the hook.
- Check that the inlet harness is housed in the frame R as shown in the illustration below. Otherwise the harness may be caught in some sections of the machine, and may catch fire.

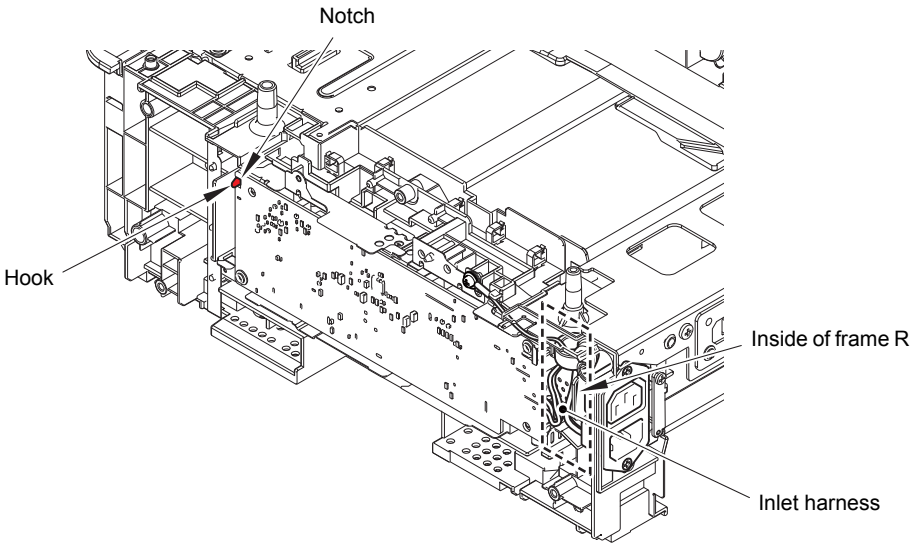


Fig. 3-165

(7) Remove the two screw cup M3x8 (black) screws to remove the low-voltage power supply PCB ASSY. Disconnect the low-voltage power supply harness from the low-voltage power supply PCB ASSY.

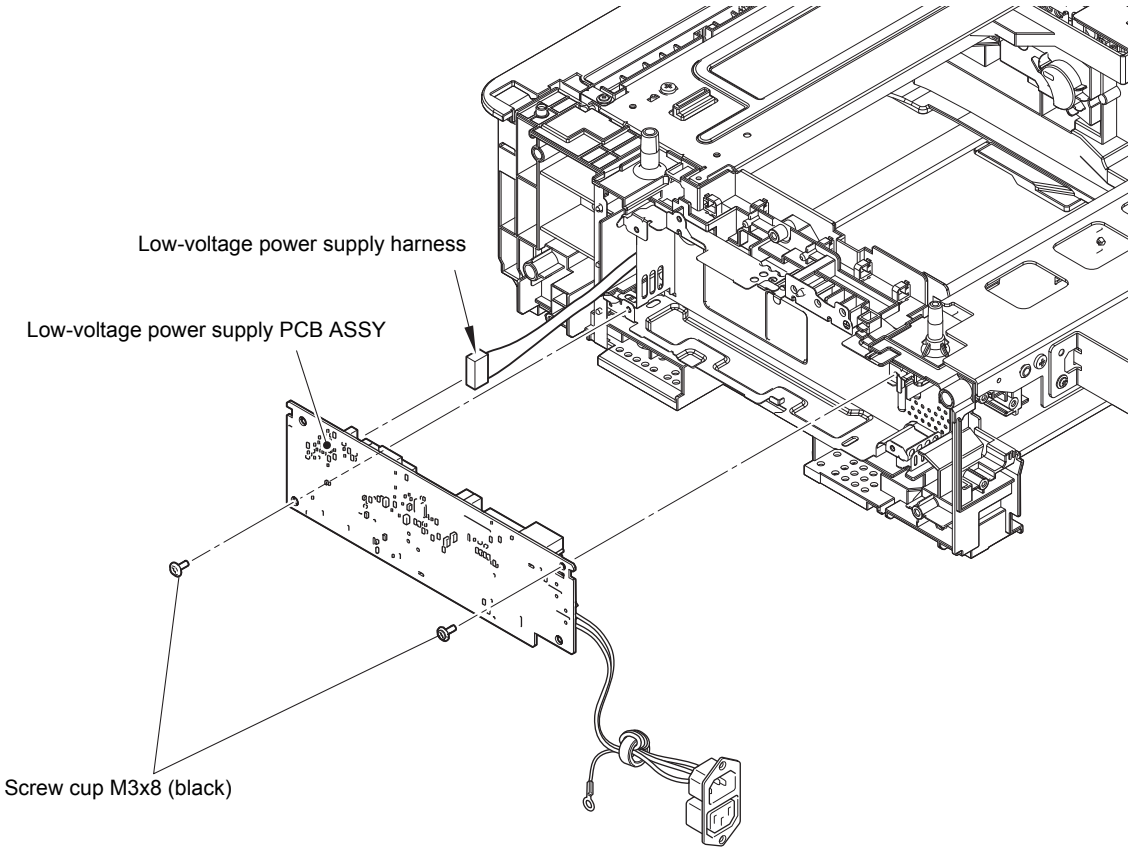


Fig. 3-166

12.12 T4TT unit

(1) Remove the two taptite cup S M3x8 SR screws to remove the positioning plate calking ASSY. (Four places)

(2) Remove the three screw bind M5x8 screws, the three flywheel lock washers, the four screw cup M3x8 (black) screws, and the four flywheel lock washers from the Reinforcing plate L (2/2). Remove the six taptite cup S M3x8 SR screws to remove the reinforcing plate L (2/2).

(3) Remove the taptite cup S M3x8 SR screw from the reinforcing plate R (1/2).

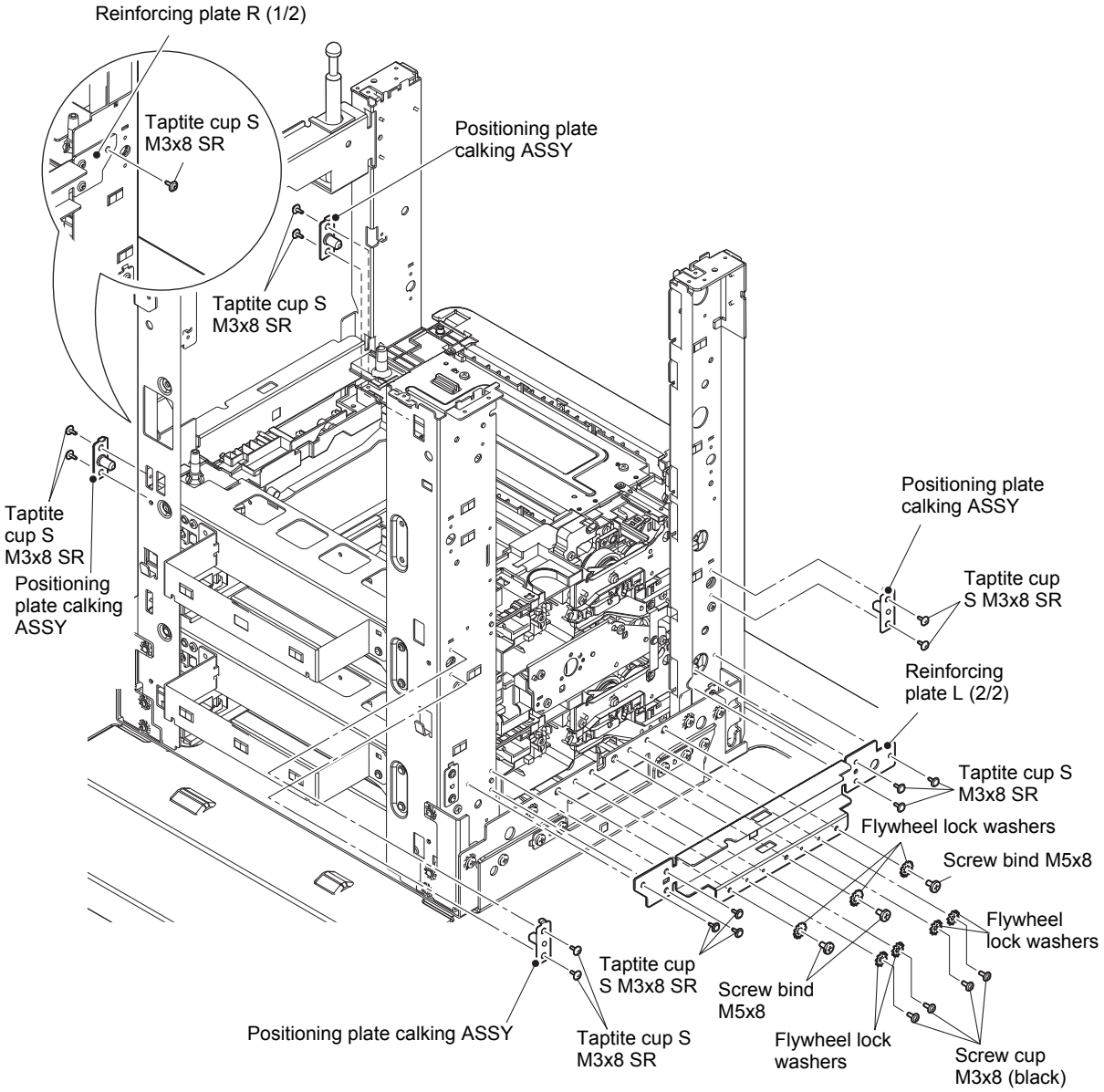


Fig. 3-167

(4) Loosen the clamp, and release the T4TT relay harness and the T5TT relay harness from the securing fixtures.

(5) Remove the four taptite cup S M3x8 SR screws to remove the FG plate L.

(6) Remove the four taptite bind B M4x12 screws to remove the calking gear plate ASSY.

(7) Remove the three taptite cup S M3x8 SR screws and the two taptite bind B M4x10 screws. Lift the T4TT unit slightly, and pull the T5TT relay harness from the T4TT unit hole to remove the T4TT unit in the direction of the arrow.

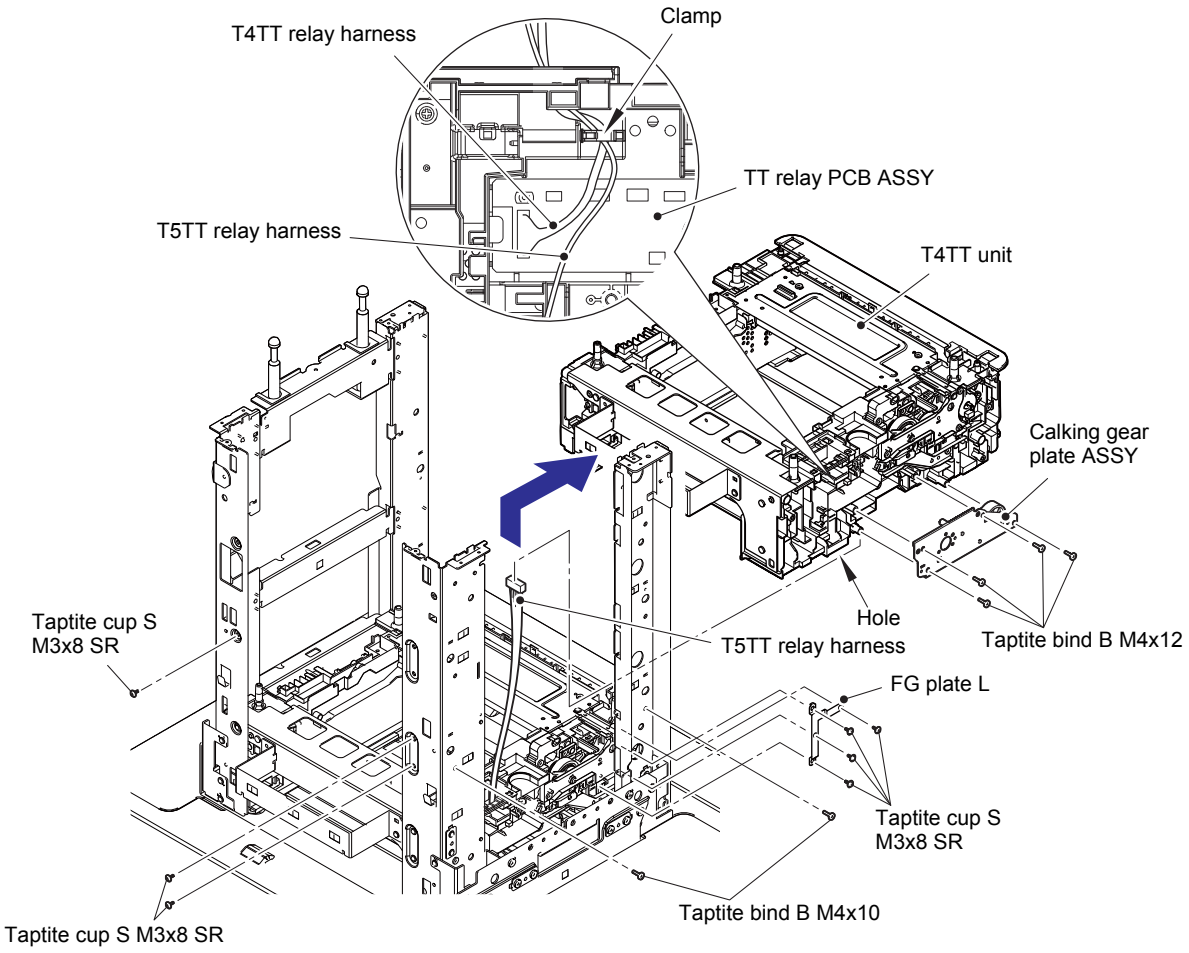


Fig. 3-168

Harness routing: Refer to “13. Left side of the TT”.

12.13 T5TT unit

(1) Remove the two taptite cup S M3x8 SR screws to remove the positioning plate calking ASSY. (Four places)

(2) Remove the three taptite cup S M3x8 SR screws and the two taptite bind B M4x10 screws. Remove the T5TT unit in the direction of the arrow.

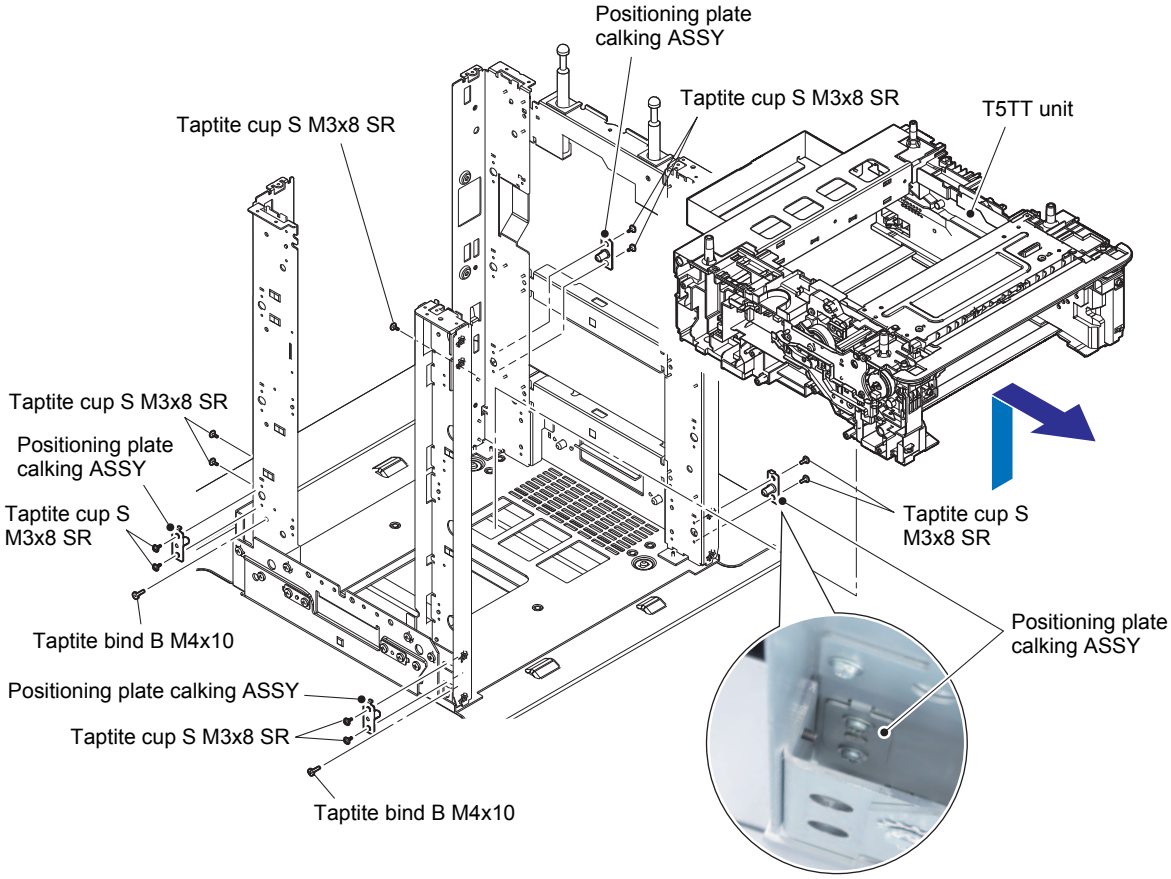


Fig. 3-169

Assembling Note:

- It's easier to attach the positioning plate calking ASSY on the right side with a magnet due to the narrow work space.

12.14 LT/TT connector ASSY (T2TT only)

(1) Release the LT/TT connector harness from the securing fixtures.

(2) Release the hook A to remove the ferrite core.

(3) Release the two hooks B, and slide the LT/TT connector ASSY in the direction of the arrow to remove it. Pull out the LT/TT connector harness through the frame L hole.

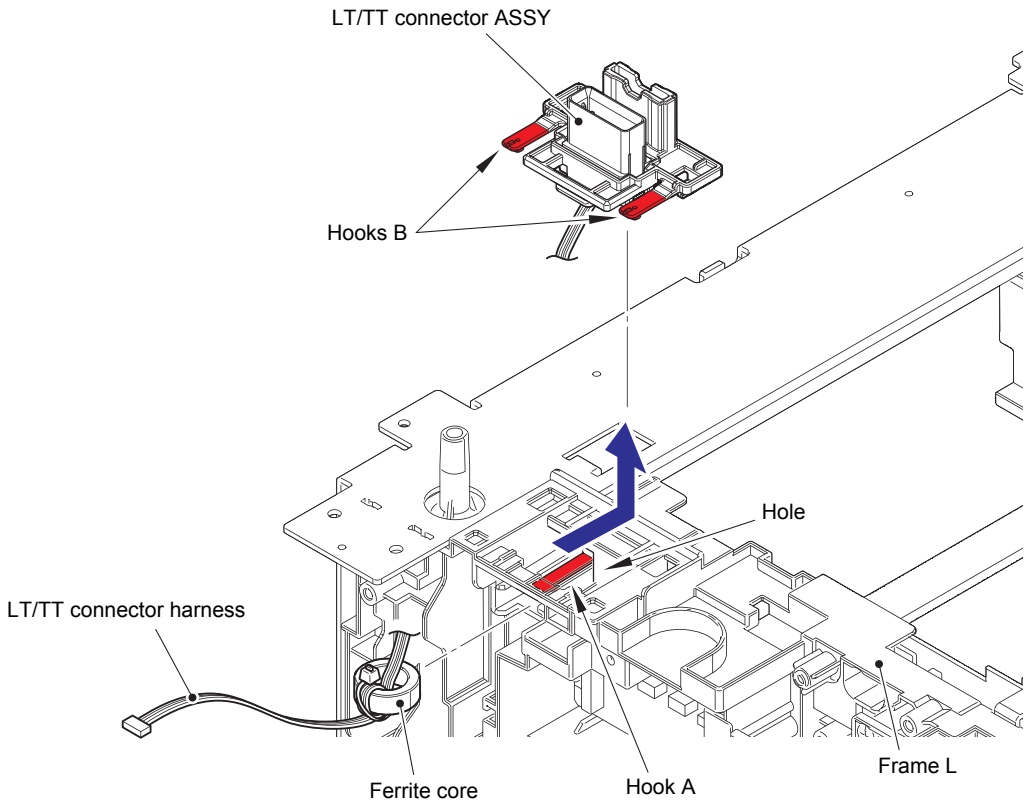


Fig. 3-170

Harness routing: Refer to “13. Left side of the TT”.

12.15 TT relay PCB ASSY (Common to all TT)

(1) Loosen the clamp and release the TT relay harness from the securing fixtures. Pull out the TT relay harness through the frame L hole.

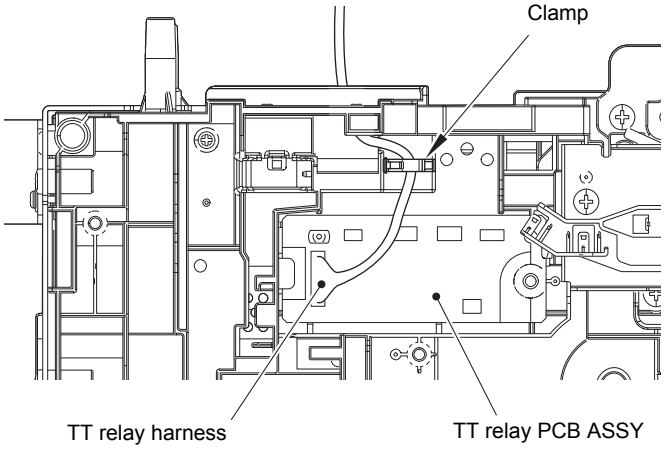


Fig. 3-171

Harness routing: Refer to “13. Left side of the TT”.

(2) Disconnect all harnesses connected to the TT relay PCB ASSY.

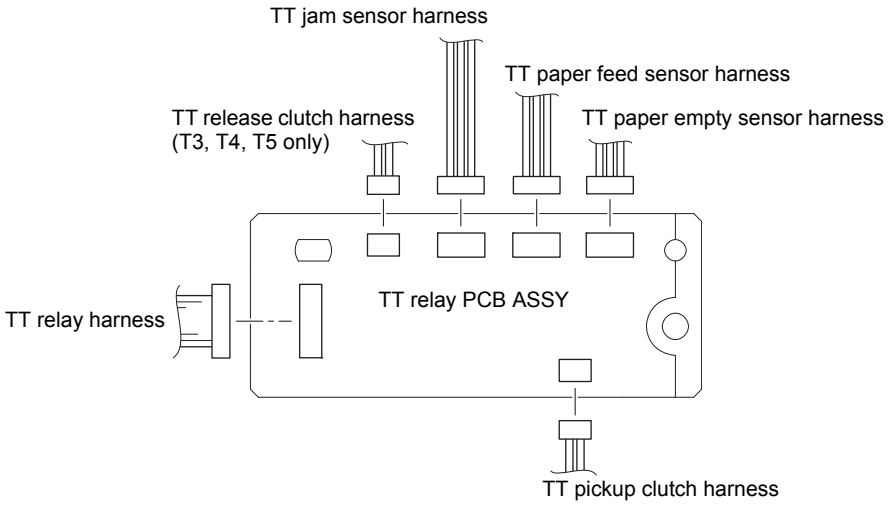


Fig. 3-172

(3) Release the hook to remove the TT relay PCB ASSY from the frame L.

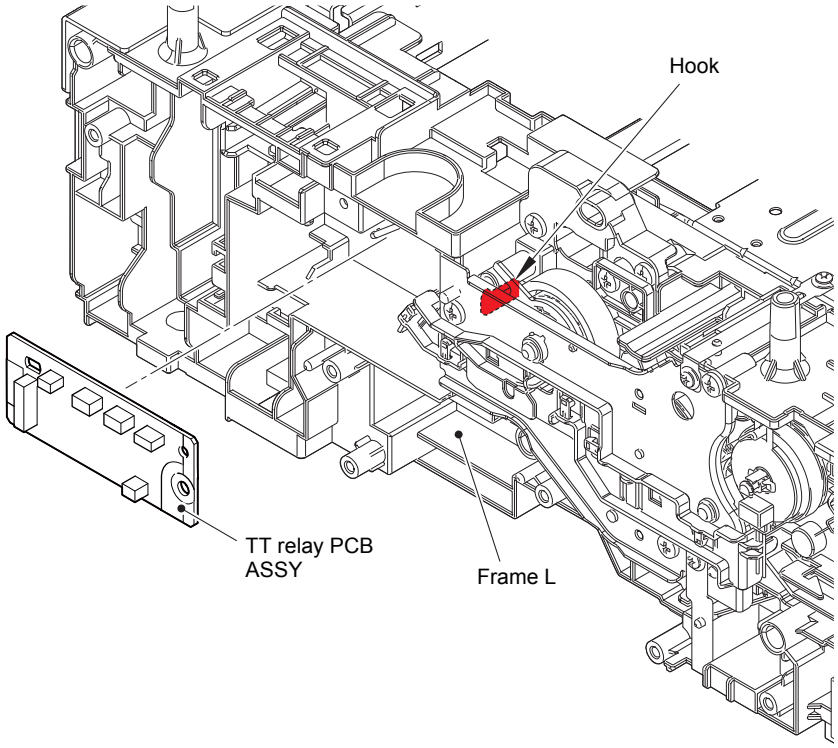


Fig. 3-173

12.16 TT pickup clutch (Common to all TT)

(1) Release the TT pickup clutch harness from the securing fixtures. Release the hook to remove the TT pickup clutch from the frame L.

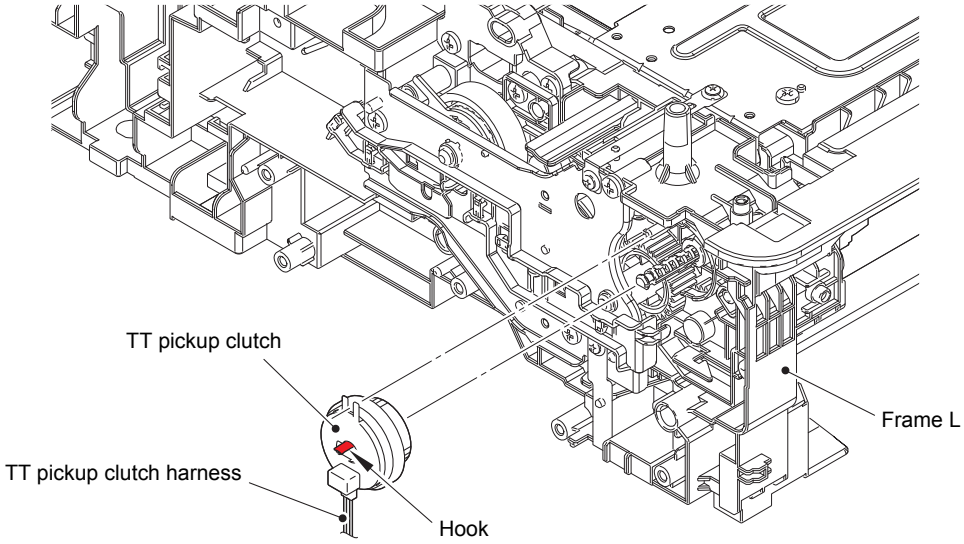


Fig. 3-174

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”.

12.17 TT release clutch (Common to all TT)

(1) Remove the two taptite cup S M3x8 SR screws to remove the TT ground plate.
(2) Remove the two taptite bind B M4x12 screws to remove the front under bar.
(3) Remove the taptite cup S M3x8 SR screw to remove the under bar ground plate L.

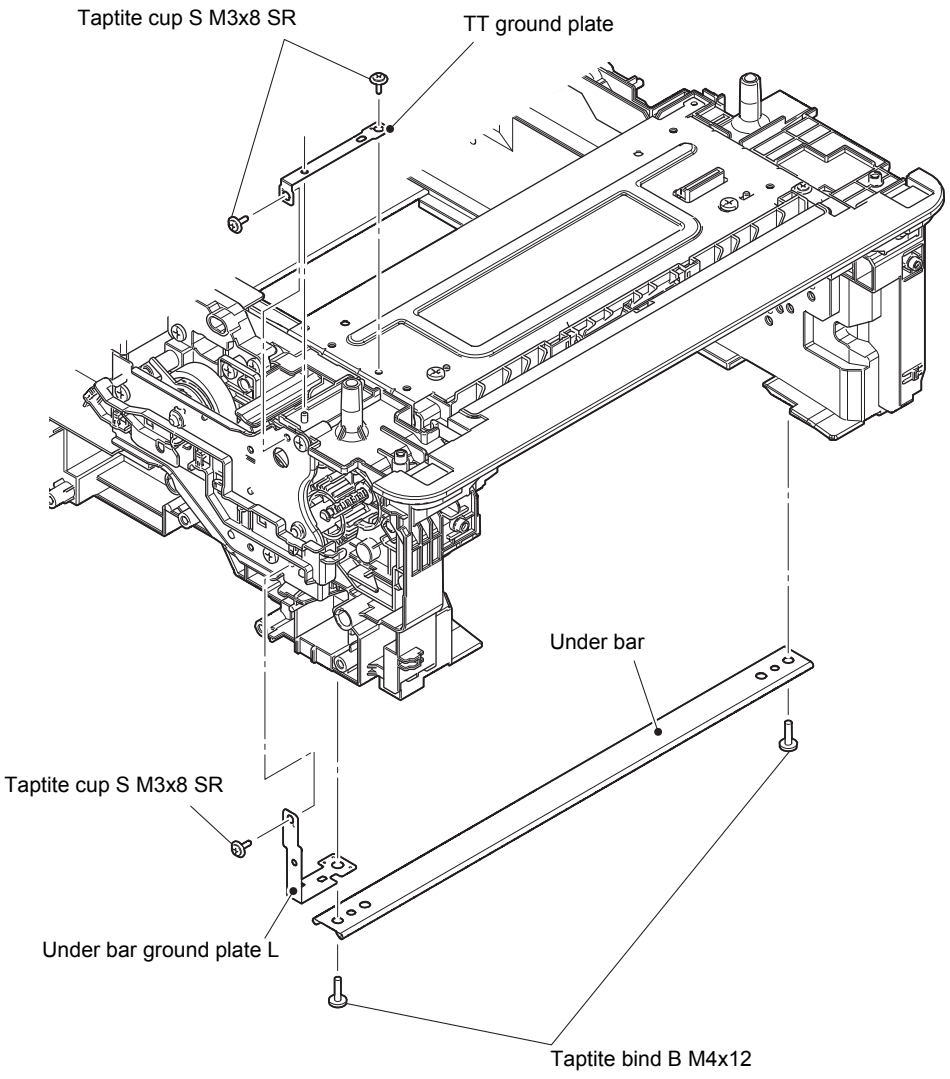


Fig. 3-175

(4) Release the TT release clutch harness* from the securing fixtures. Remove the three taptite bind B M4x12 screws. Remove the drive ASSY and pull out the TT release clutch harness* through the hole.

(5) Remove the TT release clutch*, the TT gear Z20/Z44, and the idle gear 37.

Note:

- The T2TT unit does not have the TT release clutch*.

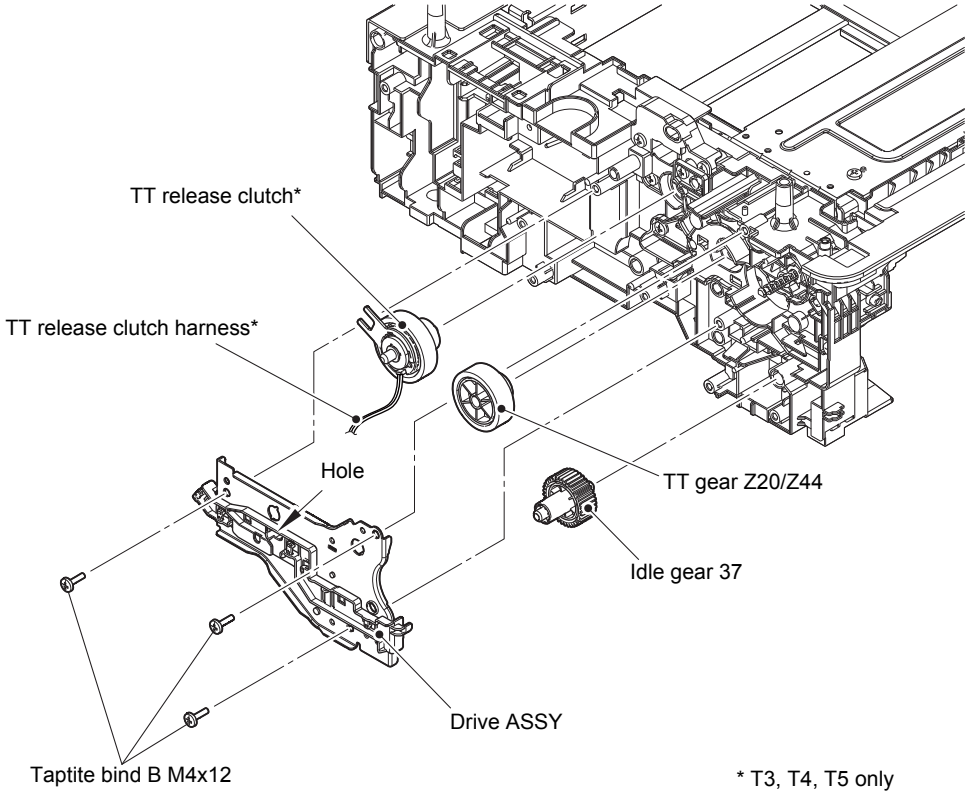


Fig. 3-176

12.18 TT jam sensor PCB ASSY (Common to all TT)

(1) Remove the two taptite cup B M4x12 screws and the taptite cup S M3x8 SR screw to remove the TT front cover.

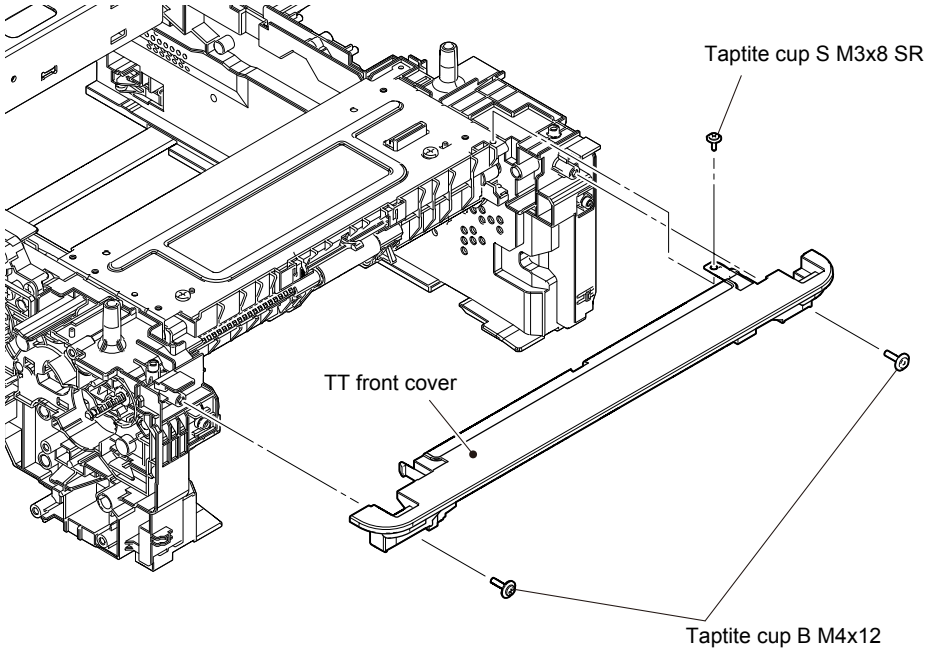


Fig. 3-177

(2) Remove the two taptite bind B M4x12 screws to remove the rear under bar.

(3) Remove the two taptite cup S M3x8 SR screws and the taptite bind B M4x12 screw. Remove the Frame L, and pull out the low-voltage power supply harness*, the fan motor relay harness*, the TT balance sensor R relay harness*, the TT jam sensor harness, the TT paper feed sensor harness and the TT paper empty sensor harness through the two holes.

Note:

- Three harnesses for T2TT, T4TT, and T5TT.

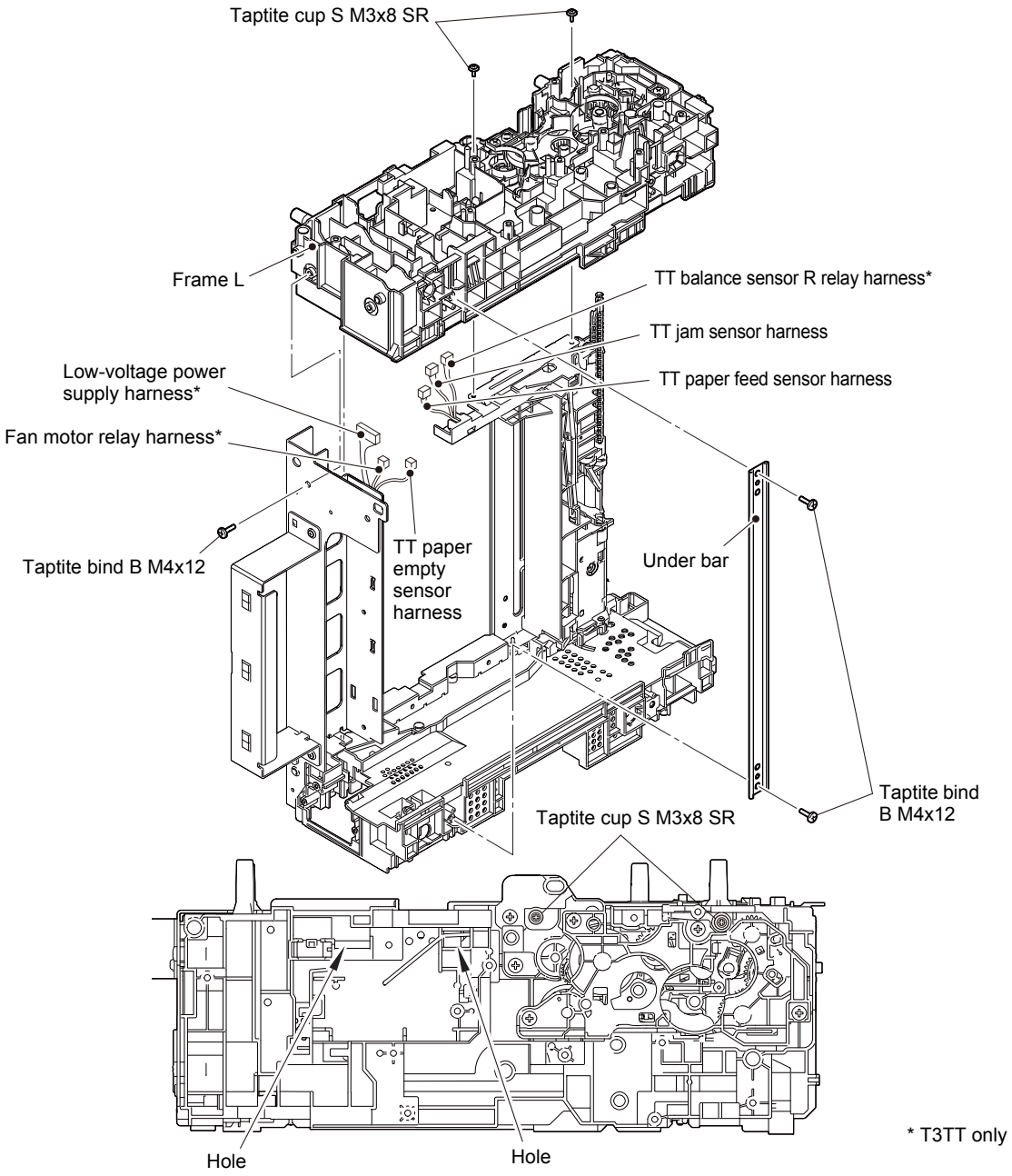


Fig. 3-178

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”, “16. T3TT unit”.

(4) Remove the taptite cup S M3x8 SR screw to remove the UB earth plate R.

(5) Remove the two taptite cup S M3x8 SR screws to remove the TT paper feed frame.

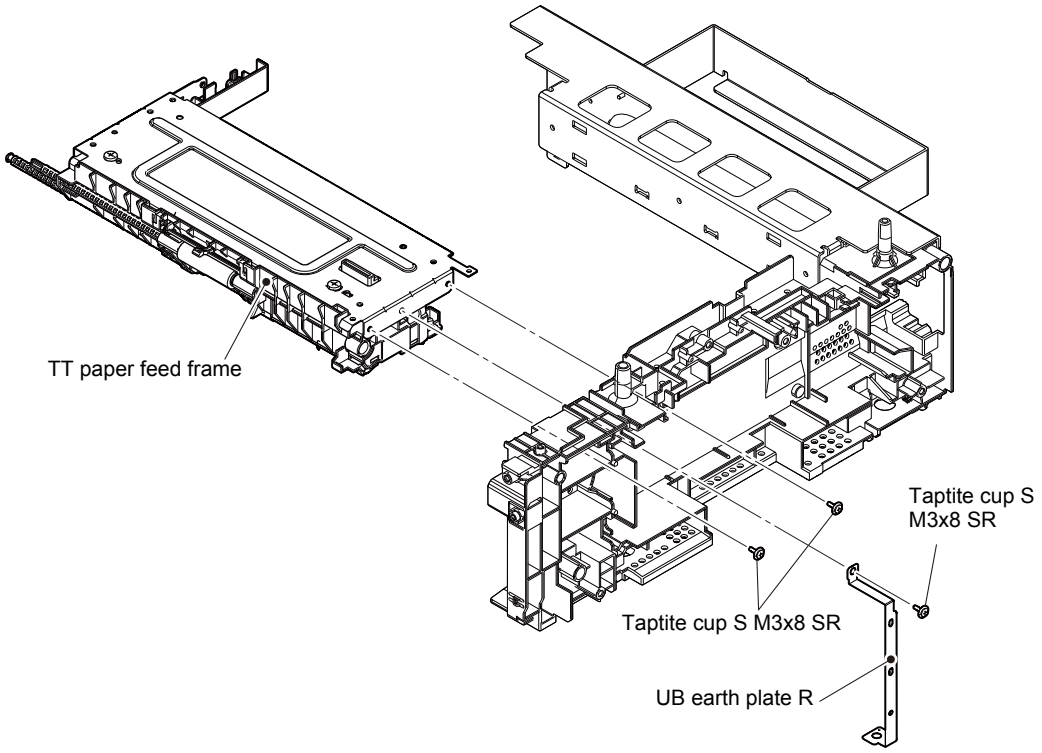


Fig. 3-179

(6) Remove the two taptite bind B M4x12 screws to remove the TT front beam from the TT paper feed frame ASSY.

(7) Release the TT jam sensor harness from the securing fixtures.

(8) Release the hook to remove the TT jam sensor PCB ASSY.

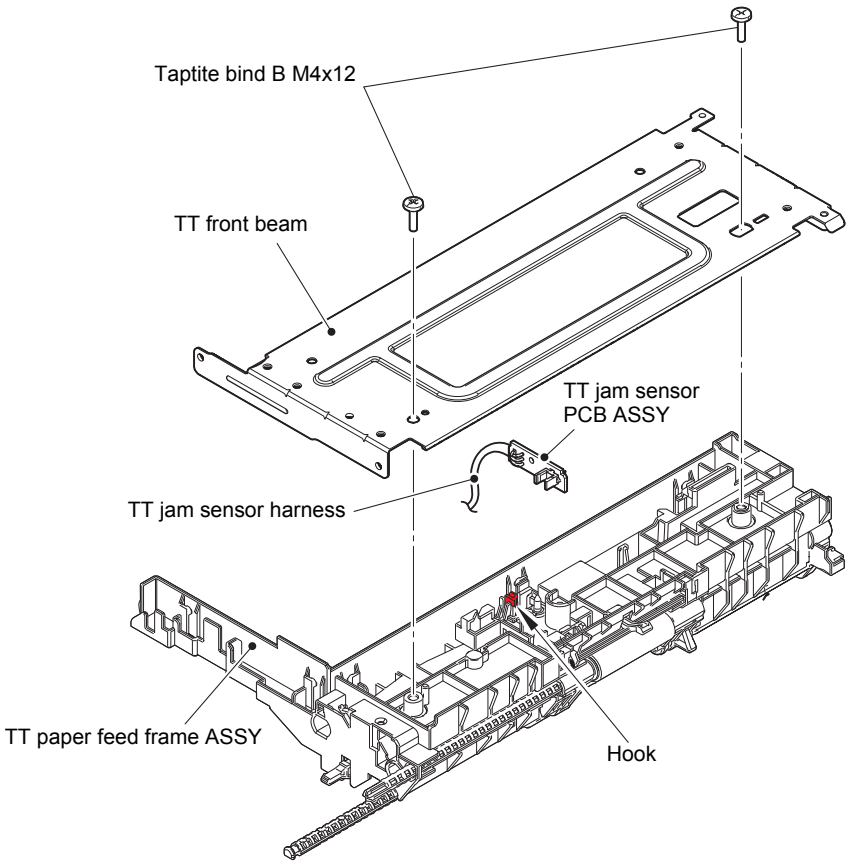


Fig. 3-180

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”.

12.19 TT paper feed sensor PCB ASSY (Common to all TT)

(1) Release the TT paper feed sensor harness from the securing fixtures.

(2) Remove the taptite bind B M3x10 screw to remove the TT paper feed actuator holder ASSY from the TT paper feed frame ASSY. Disconnect the TT paper feed sensor harness from the TT paper feed frame ASSY.

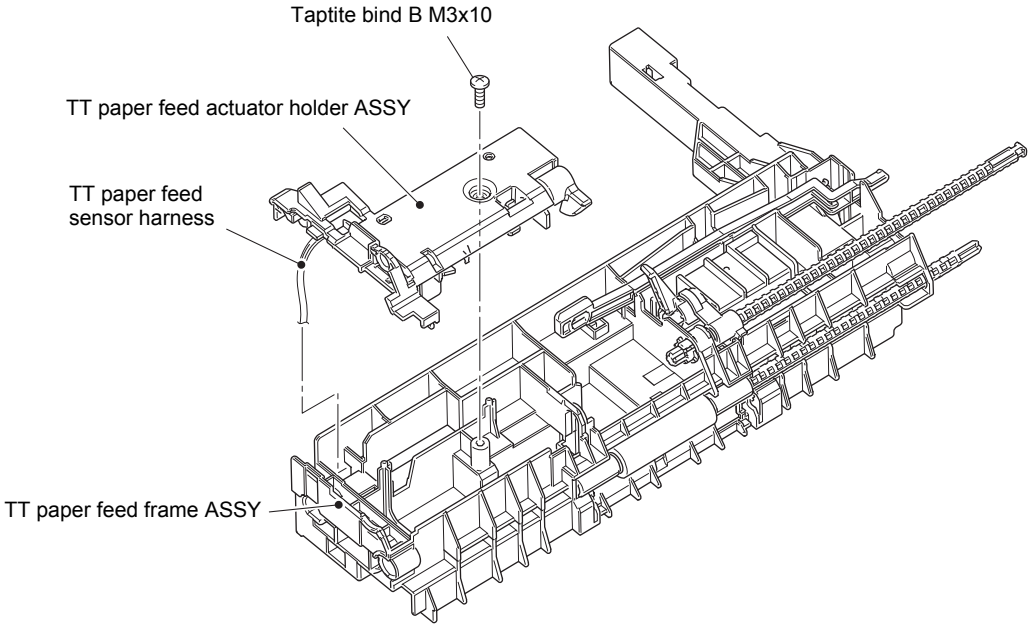


Fig. 3-181

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”.

(3) Turn the TT paper feed actuator in the direction of the arrow A and press the hook on the TT paper feed actuator holder ASSY. Slide the TT paper feed actuator in the direction of the arrow B to remove it from the TT paper feed actuator holder ASSY.

(4) Remove the TT paper feed actuator spring from the TT paper feed actuator.

(5) Release the TT paper feed sensor harness from the securing fixtures of the TT paper feed actuator holder ASSY, and release the hook to remove the TT paper feed sensor PCB ASSY from the TT paper feed actuator holder ASSY.

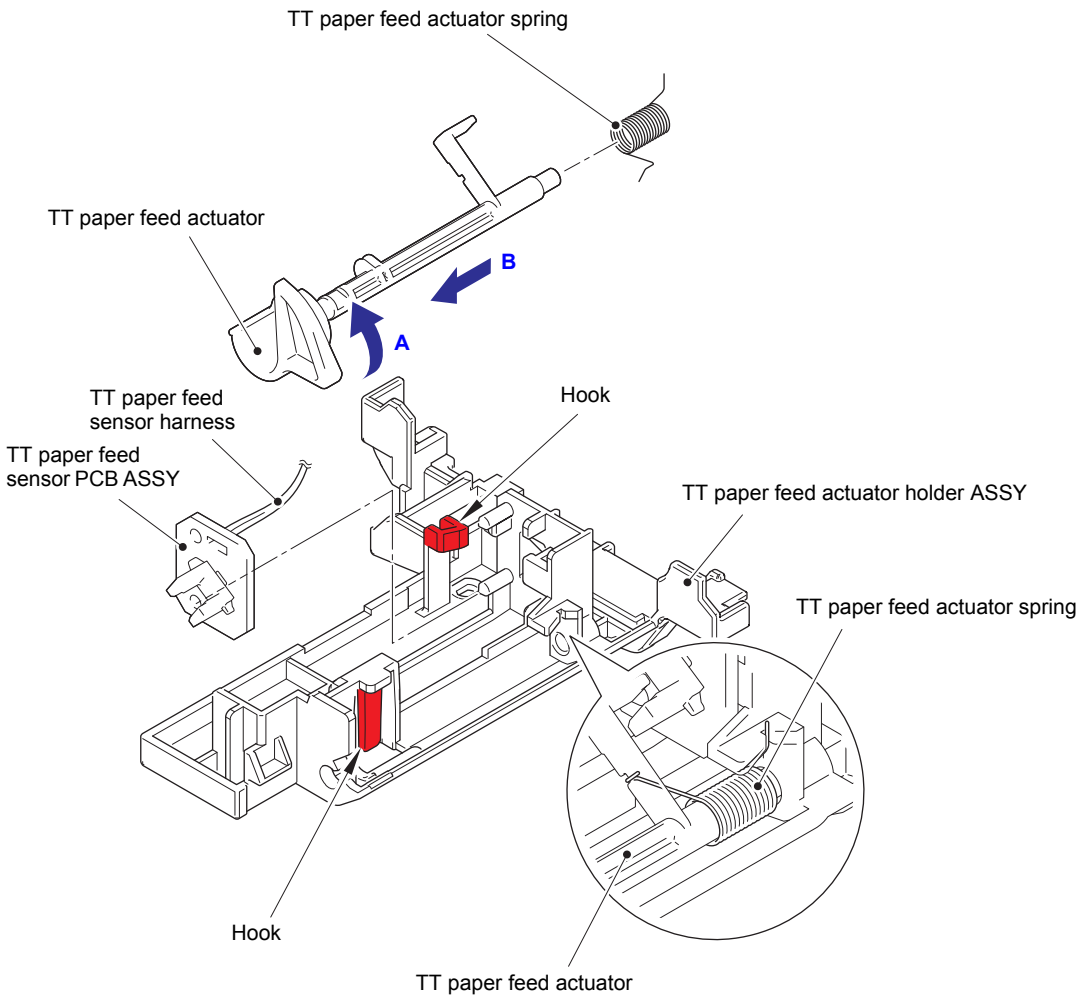


Fig. 3-182

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”.

12.20 TT paper empty sensor PCB ASSY (Common to all TT)

(1) Release the hook on the bushing, and pull out the TT separation roller shaft to remove the TT paper empty actuator.

(2) Release the hook to remove the TT paper empty actuator cover.

(3) Release the TT paper empty sensor harness from the securing fixtures.

(4) Remove the taptite bind B M3x10 screw to remove the TT paper empty sensor PCB ASSY.

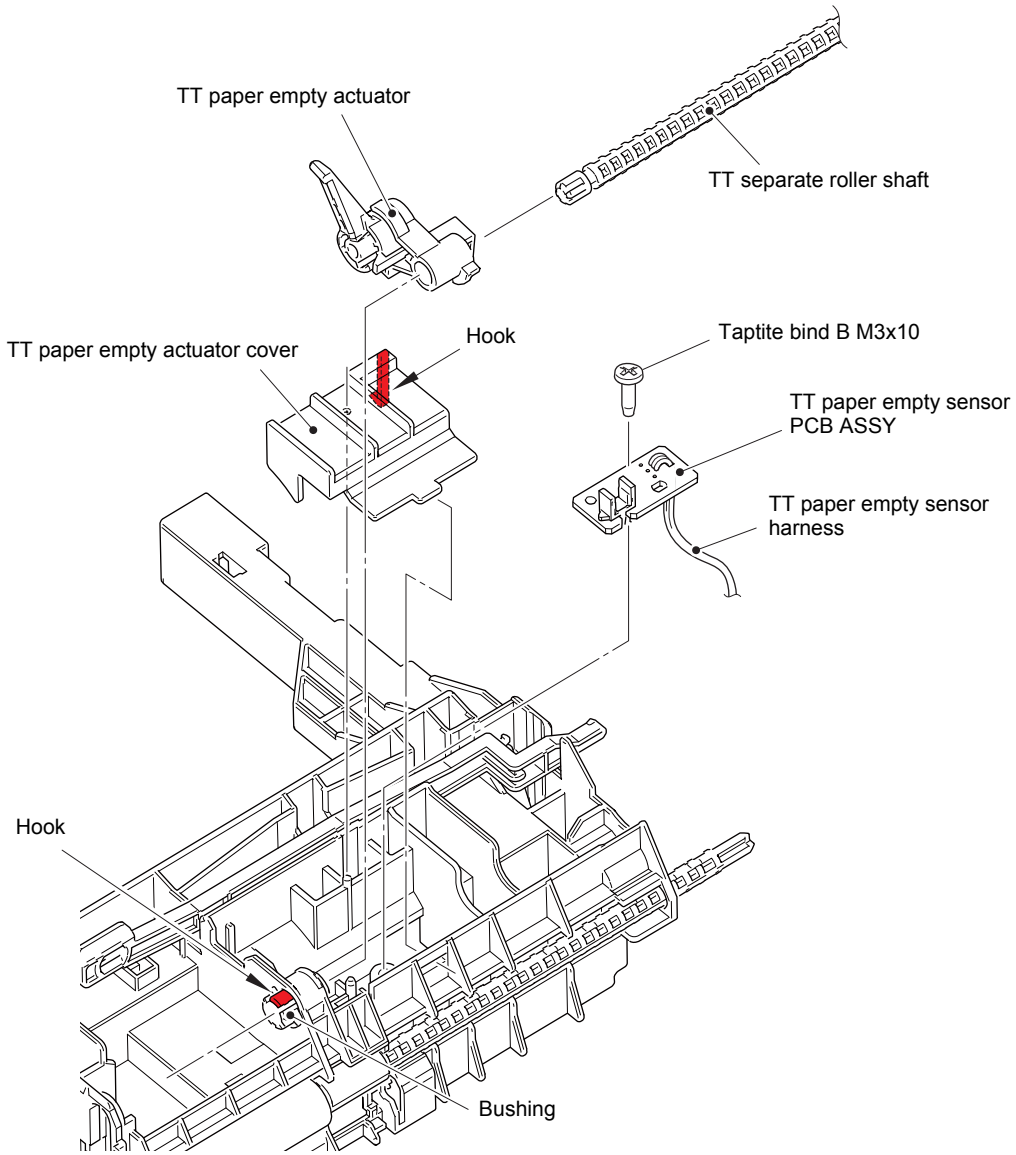


Fig. 3-183

Harness routing: Refer to “15. TT relay PCB ASSY (Each TT unit)”.

12.21 Adjuster

(1) Remove the four adjusters.

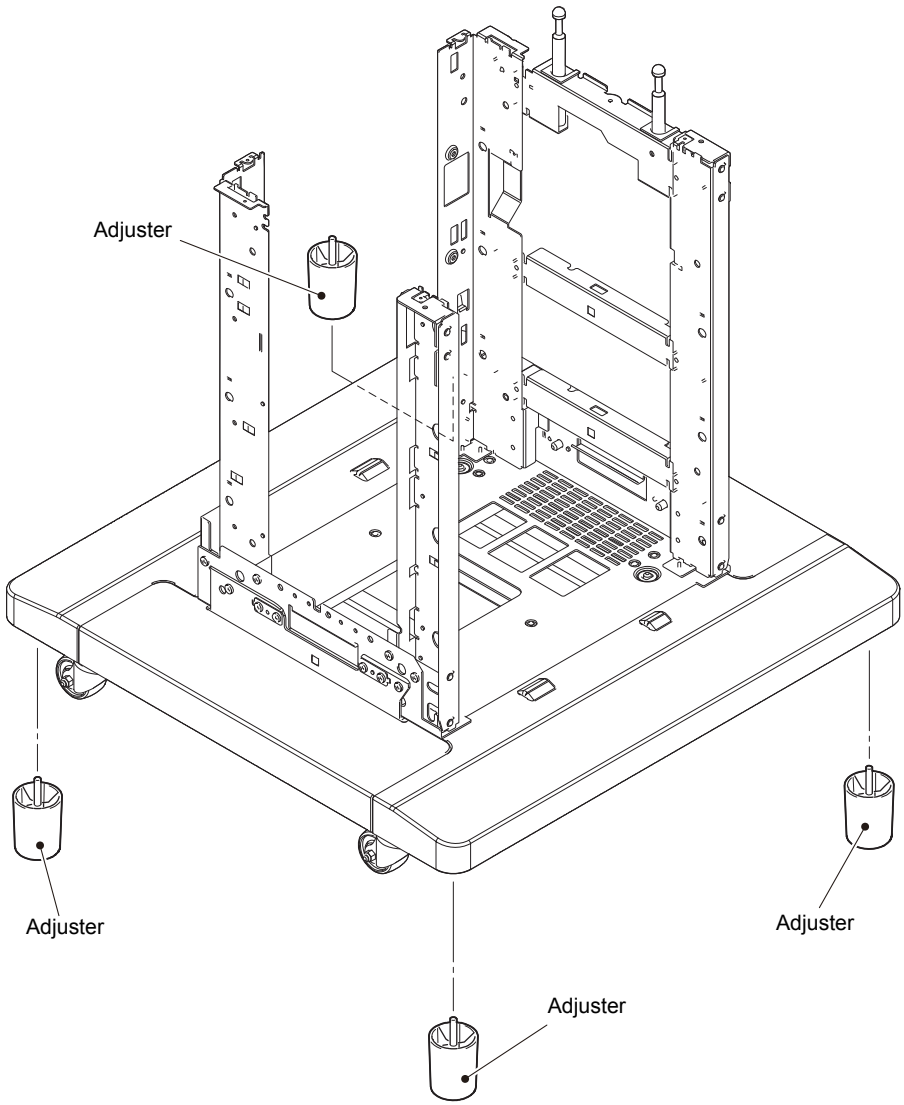


Fig. 3-184

CHAPTER 4 ADJUSTING AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

1. IF YOU REPLACE THE MAIN PCB ASSY

■ What to do after replacement

- Installing Firmware (Sub Firmware and Main Firmware)
- Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only)
- Initializing the EEPROM of the Main PCB ASSY (Function Code: 01)
- Configure for Country/Region and Model (Function Code: 74)
- Activating Memory Writing
- Setting Serial Number and Entering Adjusted Value of Laser Unit
- Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)
- Resetting to Factory Shipping State

■ What you need to prepare

(1) One USB cable

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

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

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

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

(6) Firmware

Sub firmware (PCL/PS-compliant model only)	djf file (ex. 1LINE: D001GJ_A.djf or D001GH_A.djf, Touch panel: D001GG_A.djf)
Main firmware	

(7) USB flash memory (Models with USB host terminal only)

(8) Touch pen (Touch panel models only)

(9) Memory access tool (MemoryAccessTool.exe)

(10) Shipping tool (ShippingTool.exe)

1.1 Installing Firmware (Sub Firmware and Main Firmware)

1.1.1 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 “1.1.2 Installing firmware”.

<How to check firmware version>

Non touch panel models

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

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

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

Touch panel models

(1) Press and hold the [Home] key for approximately five seconds while the machine is in the ready state. Press the blank field at the bottom.
Press the [*], [2], [8], [6], and [4] key on the LCD in this order, and the machine enters into maintenance mode.

(2) Press the [2], and then the [5] key in the initial state of maintenance mode. "MAIN:Ver*.** (#)" is displayed on the LCD.

(3) Change the displayed item by pressing the [Mono] key to check all firmwares.

Memo:

- You can also check the Sub firmware and Main firmware version by implementing "Print maintenance information (function code: 77)" (refer to “1.3.18 Print maintenance information (function code: 77)” in Chapter 5).

1.1.2 Installing firmware

Note:

- TT, MX, and LT have their own firmware respectively. They are included in the main firmware. When connecting the options to the machine and turning on the power switch, the firmwares of these options will be updated with the main firmware version of the machine.

Memo:

- Do not disconnect the power cord, USB flash memory or USB cable from the machine or computer during installing.
- If the installation is failed, turn OFF the machine and turn it back on. The machine enters the firmware install mode automatically. Continue the operation procedure below.
- Firmware installation using USB flash memory is inoperable when the machine is in deep sleep mode. Release the deep sleep mode by opening / closing the front cover before the operation.
- Be sure to reinstall the sub firmware and then the main firmware in this order.
- When the firmware installation using USB flash memory is failed and the error message or no character appears on the LCD, refer to "Firmware installation using PC" in this chapter to install firmware using PC.

<Operating Procedure>

■ Firmware installation using USB flash memory

(1) Create and save a file for automatic firmware update (file name: "_@UPDOP0.8080") under the USB flash memory.

(2) Create the "FIRM" folder under the USB flash memory, and save the program file needed for firmware install (ex: 1LINE: D001GJ_A.djf or D001GH_A.djf, Touch panel: D001GG_A.djf) in the "FIRM" folder.

(3) Connect the USB flash memory to the USB flash memory port at the side of the machine while the machine is in the ready state. "Program Updating.Do not turn off." appears on the LCD and installation starts automatically. Back light blinks during the installation.

(4) When installing is completed, the machine restarts automatically and "Completed..." appears on the LCD. Remove the USB flash memory. If multiple program files are saved in the USB flash memory, other installations start automatically after the restart.
If the installation fails, "Unable to Update:**" appears on the LCD. ("**" indicates the error code.) Refer to the remedy and eliminate the error. Then reboot the machine and start from the procedure (1).

Error display	Description	Remedy
Unable to Update:01	Memory full (Failed to secure the work area for update.)	Delete some data saved in the machine and install again.
Unable to Update:02	No folder is specified	Save the firmware in the root folder (just below the USB flash memory).
Unable to Update:03	Specified folder does not have a file	
Unable to Update:04	File access failure	Change the USB flash memory and install again.
Unable to Update:05	File data parsing error	Acquire the firmware from the data bank again.
Unable to Update:06	File name has exceeded the character limit	Shorten the file name to be less than 119 Byte.
Unable to Update:07	Unsupported DJF file detected	Acquire the firmware from the data bank again.
Unable to Update:08	Other function is in use	Perform it again after finishing the running function.

■ **Firmware installation using PC**

Non touch panel models

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

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

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

(4) Drag and drop the required program file (ex. D001GJ_A.djf or D001GH_A.djf) in the same folder onto the "Brother Maintenance USB Printer" icon in the Filedrgs screen. The file is loaded to the machine, and installing to the flash ROM starts.

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

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

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

Touch panel models

(1) Press and hold the [Home] key for approximately five seconds while the machine is in the ready state.

(2) Press the blank field at the bottom on the LCD.

(3) Press the [*], [2], [8], [6], and [4] key on the LCD in this order. The machine enters the maintenance mode.

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

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

(6) Drag and drop the required program file (ex. D001GG_A.djf) in the same folder onto the "Brother Maintenance USB Printer" icon in the Filedrgs screen. The file is loaded to the machine, and installing to the flash ROM starts.

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

(8) Turn OFF the power switch of the machine, and then repeat the procedures (1) to (7) to install required firmwares.

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

1.2 Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only)

Adjust the touch panel as described in “1.3.12 Adjust touch panel (function code: 61) (Touch panel models only)” in Chapter 5.

1.3 Initializing the EEPROM of the Main PCB ASSY (Function Code: 01)

Initialize the EEPROM of the main PCB ASSY as described in “1.3.1 Initialize EEPROM parameters (function code: 01, 91)” in Chapter 5.

1.4 Configure for Country/Region and Model (Function Code: 74)

Perform settings for a country/region as described in “1.3.17 Configure for country/region and model (function code: 74)” in Chapter 5.

1.5 Activating Memory Writing

Note:

- Setting serial number and entering adjusted value of the laser unit are not operable before activating the memory writing.
- Even the memory writing has been activated by following the procedure, you cannot confirm it on the machine. Therefore, if setting serial number is inoperable, perform the procedure again.

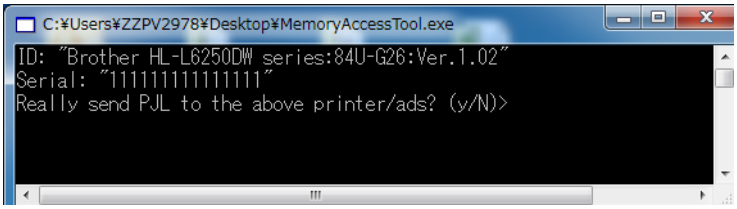
<Operating Procedure>

(1) Check that the machine is in the initial state of maintenance mode.

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

(3) Check that the "Brother Maintenance USB Printer" is set as a default printer. If not, set it as a default printer.

(4) Double-click the "MemoryAccessTool.exe" file. The following window appears.



(5) Enter the [Y]. Memory writing is activated.

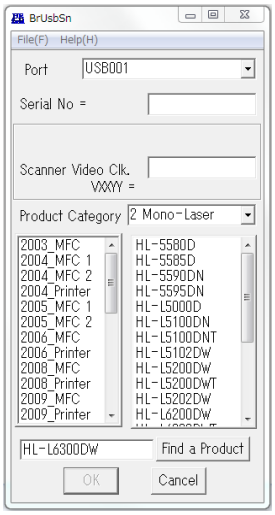
1.6 Setting Serial Number and Entering Adjusted Value of Laser Unit

<Operating Procedure>

(1) Enter the maintenance mode. (Refer to "1.1 How to Enter Maintenance Mode" in Chapter 5.)

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

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



(4) Enter the model name of your machine in the [Find a Product] field (ex: HL-L6300DW) and click the [Find a Product] button. [Find a Product] button turns into [Find Next] button, and model name appears in the box above the [Find Next] button.

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

(6) In the [Port] field on the "BrUsbSn" screen, select the port number assigned to the "Brother Maintenance USB Printer".

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

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

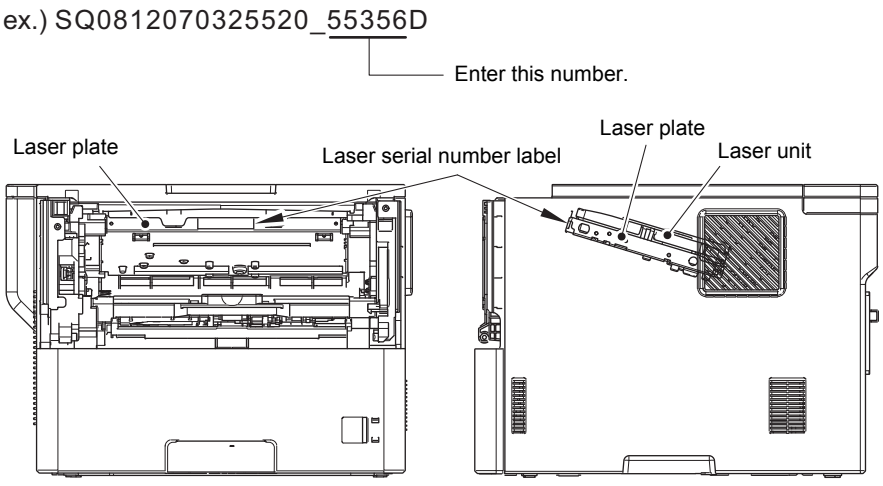


Fig. 4-1

(9) Enter the numbers (5 digits from sixth last digit to second last digit) on the laser serial number label in the [Scanner Video Clk] field.

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

(11) The machine quits maintenance mode (function code: 99) and turn OFF the power switch of the machine and disconnect the USB cable from the machine and computer.

Memo:

- You can also refer to "1.3.20 Display machine log information (function code: 80)" in Chapter 5 to set the serial number.
  Refer to "APPENDIX 1 SERIAL NUMBERING SYSTEM" for how to check the serial number.

1.7 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)

This procedure is for adjusting the printing position according to the tray displacement happened in the TT assembly.

Acceptable displacement quantity against the paper tray 1 is 3.5 mm or less.

If the displacement quantity is 3.5 mm or less, adjustment is not necessary. Even the displacement quantity is 3.5 mm or less, adjust the position in response to the customer's request.

<Operating Procedure>

Touch panel models

(1) Set A4 or Letter size paper in all paper trays (paper tray 1 to 5).

(2) Press the [6], and then the [7] key in the initial state of maintenance mode. "SELECT: K 100%" is displayed on the LCD.

(3) Press the [^] or [v] key to display "SELECT:Lattice" on the LCD, and press the [SET] key. "SELECT:A4" is displayed on the LCD.

(4) Press the [^] or [v] key to select the paper size of the paper set in the paper tray, and press the [SET] key. "SELECT: PLAIN" is displayed on the LCD.

(5) Press the [SET] key. "SELECT: TRAY1 SX" is displayed on the LCD.

(6) Press the [^] or [v] key to display "SELECT:TRAY1 DX" on the LCD, and press the [SET] key. "SELECT:STD" is displayed on the LCD. (MX model only. For models without MX, proceed to the procedure (8).)

(7) Press the [SET] key. "SELECT:1PAGE" is displayed on the LCD.

(8) Press the [SET] key. "PAPER FEED TEST" is displayed on the LCD, and printing test pattern starts.

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

(10) Perform the test printing for all trays by repeating the procedure (2) to (9) while changing the paper tray setting in the procedure (5) from paper tray 2 to 5.

(11) Measure the left and top margin of the test pattern printed from each tray to compare the measurements with the test print outcome from the paper tray 1, and record the left and top margin difference for all paper trays.

(12) Press the [4], and then the [5] key in the initial state of maintenance mode. "USBNo." is displayed on the LCD.

(13) Press the [^] or [v] key to display "X Adjust" on the LCD, and press the [SET] key. "XAdjust MP" is displayed on the LCD.

(14) Press the [▲] or [▼] key to display "X Adjust T2" on the LCD, and press the [SET] key. "XAdj. T2= 0" is displayed on the LCD.

(15) Enter the left margin difference of the test pattern printed from the paper tray 2 measured in the procedure (11). To shift the writing start position to the left, press the [v] key to decrease the value. To shift the position to the right, press the [^] key to increase the value.
It shifts by 0.084 mm for a count.
If the margin difference was 2 mm to the left, 2÷0.084≈23.6. Press the [▼] key to display "XAdj. T2= -23" on the LCD.

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

(17) Repeat the procedure (12) to (16) to enter the left / top margin difference of both first and second side for all trays (paper tray 2 to 5).

1.8 Resetting to Factory Shipping State

<Operating Procedure>

(1) Check that the machine is in the initial state of maintenance mode.

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

(3) Check that the "Brother Maintenance USB Printer" is set as a default printer. If not, set it as a default printer.

(4) Double-click the ShippingTool.exe file. The machine is reset to a factory shipping state.

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

Memo:

- Be sure to perform the procedure. Otherwise security level (e.g., against information leakage risk) would be low.

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

■ **What to do after replacement**

- Resetting Irregular Power Supply Counter of the Low-voltage Power Supply PCB (Function Code: 88)

■ **What you need to prepare**

None

2.1 Resetting Irregular Power Supply Counter of the Low-voltage Power Supply PCB (Function Code: 88)

Refer to "1.3.22 Reset counters for consumable parts (function code: 88)" in Chapter 5 to reset the irregular power supply counter of the low-voltage power supply PCB.

3. IF YOU REPLACE THE LASER UNIT

What to do after replacement

- Entering Adjusted Value of Laser Unit
- Resetting Printed Pages Counter of the Laser Unit

What you need to prepare

(1) One USB cable

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

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

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

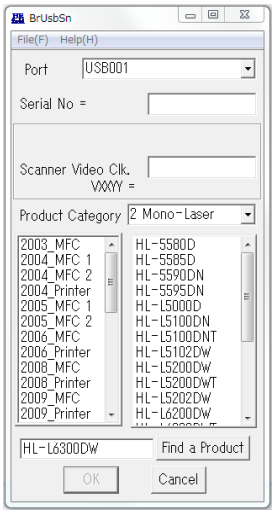
3.1 Entering Adjusted Value of Laser Unit

<Operating Procedure>

(1) Enter the maintenance mode. (Refer to "1.1 How to Enter Maintenance Mode" in Chapter 5.)

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

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



(4) Enter the model name of your machine in the [Find a Product] field (ex: HL-L6300DW) and click the [Find a Product] button. [Find a Product] button turns into [Find Next] button, and model name appears in the box above the [Find Next] button.

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

(6) In the [Port] field on the "BrUsbSn" screen, select the port number assigned to the "Brother Maintenance USB Printer".

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

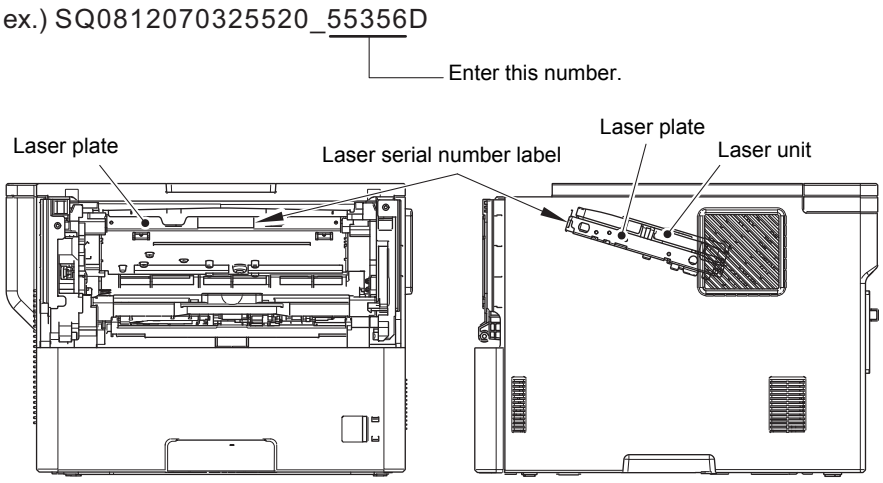


Fig. 4-2

(8) Enter the numbers (5 digits from sixth last digit to second last digit) on the laser serial number label in the [Scanner Video Clk] field.

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

(10) The machine quits maintenance mode (function code: 99) and turn OFF the power switch of the machine and disconnect the USB cable from the machine and computer.

3.2 Resetting Printed Pages Counter of the Laser Unit

Refer to "1.3.22 Reset counters for consumable parts (function code: 88)" in Chapter 5 to reset the printed pages counter of the laser unit.

4. IF YOU REPLACE THE LCD PANEL ASSY OR PANEL PCB

■ **What to do after replacement**

- Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only)
- Checking LCD Operation (Function Code: 12)

■ **What you need to prepare (Touch panel models only)**

Touch pen

4.1 Adjusting Touch Panel (Function Code: 61) (Touch Panel Models only)

Adjust the touch panel as described in “1.3.12 Adjust touch panel (function code: 61) (Touch panel models only)” in Chapter 5.

4.2 Checking LCD Operation (Function Code: 12)

Check LCD operation as described in “1.3.4 Check LCD operation (function code: 12)” in Chapter 5.

5. IF YOU REPLACE THE FUSER UNIT

■ **What to do after replacement**

- Resetting Printed Pages Counter of the Fuser Unit

■ **What you need to prepare**

None

5.1 Resetting Printed Pages Counter of the Fuser Unit

Refer to “1.3.22 Reset counters for consumable parts (function code: 88)” in Chapter 5 to reset the printed pages counter of the fuser unit.

6. IF YOU REPLACE A PF KIT

■ **What to do after replacement**

- Resetting Printed Pages Counter of a PF Kit

■ **What you need to prepare**

None

6.1 Resetting Printed Pages Counter of a PF Kit

Refer to “1.3.22 Reset counters for consumable parts (function code: 88)” in Chapter 5 to reset the printed pages counter of the appropriate PF kit.

7. IF YOU REPLACE THE MX / TT / LT AND TT/LT CONTROL PCB

■ What to do after replacement

- Installing Firmware (Main Firmware)
- Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)

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

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

(5) Firmware

Main firmware	djf file (ex. 1LINE: D001GJ_A.djf or D001GH_A.djf, Touch panel: D001GG_A.djf)

7.1 Installing Firmware (Main Firmware)

7.1.1 Checking firmware version

Check whether the firmwares installed on the MX, TT, and LT are the latest version. If they are the latest version, there is no need to install the firmware. If they are not, be sure to install the firmware to the machine as described in “7.1.2 Installing firmware”.

<How to check firmware version>

Non touch panel models

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

(2) Pressing the [Go], [▲] or [▼] key changes the display item as shown in the table on page "5-13".

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

Touch panel models

(1) Press the [2], and then the [5] key in the initial state of maintenance mode. "MAIN:Ver*.** (#)" is displayed on the LCD.

(2) Pressing the [▲] or [Mono] key changes the display to the next item.

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

Memo:

- You can also check the Main firmware version by implementing "Print maintenance information (function code: 77)" (refer to “1.3.18 Print maintenance information (function code: 77)” in Chapter 5).

7.1.2 Installing firmware

Note:

- TT, MX, and LT have their own firmware respectively. They are included in the main firmware. When connecting the options to the machine and turning on the power switch, the firmwares of these options will be updated with the main firmware version of the machine.

Memo:

- Do not disconnect the power cord, USB flash memory 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 install mode automatically. Continue the operation procedure below.
- Firmware installation using USB flash memory is inoperable when the machine is in deep sleep mode. Release the deep sleep mode by opening / closing the front cover before the operation.
- When the firmware installation using USB flash memory is failed and the error message or no character appears on the LCD, refer to “Firmware installation using PC” in this chapter to install firmware using PC.

<Operating Procedure>

■ Firmware installation using USB flash memory

(1) Create and save a file for automatic firmware update (file name: "_@UPDOP0.8080") under the USB flash memory.

(2) Create the "FIRM" folder under the USB flash memory, and save the program file needed for firmware install (ex: 1LINE: D001GJ_A.djf or D001GH_A.djf, Touch panel: D001GG_A.djf) in the "FIRM" folder.

(3) Connect the USB flash memory to the USB flash memory port at the side of the machine while the machine is in the ready state. "Program Updating.Do not turn off." appears on the LCD and installation starts automatically. Back light blinks during the installation.

(4) When installing is completed, the machine restarts automatically and "Completed..." appears on the LCD. Remove the USB flash memory. If multiple program files are saved in the USB flash memory, other installations start automatically after the restart.
If the installation fails, "Unable to Update:**" appears on the LCD. ("**" indicates the error code.) Refer to the remedy and eliminate the error. Then reboot the machine and start from the procedure (1).

Error display	Description	Remedy
Unable to Update:01	Memory full (Failed to secure the work area for update.)	Delete some data saved in the machine and install again.
Unable to Update:02	No folder is specified	Save the firmware in the root folder (just below the USB flash memory).
Unable to Update:03	Specified folder does not have a file	
Unable to Update:04	File access failure	Change the USB flash memory and install again.
Unable to Update:05	File data parsing error	Acquire the firmware from the data bank again.
Unable to Update:06	File name has exceeded the character limit	Shorten the file name to be less than 119 Byte.
Unable to Update:07	Unsupported DJF file detected	Acquire the firmware from the data bank again.
Unable to Update:08	Other function is in use	Perform it again after finishing the running function.

■ **Firmware installation using PC**

Non touch panel models

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

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

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

(4) Drag and drop the required program file (ex. D001GJ_A.djf or D001GH_A.djf) in the same folder onto the "Brother Maintenance USB Printer" icon in the Filedrgs screen. 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) Turn OFF the power switch of the machine, and disconnect the USB cable.

Touch panel models

(1) Press and hold the [Home] key for approximately five seconds while the machine is in the ready state.

(2) Press the blank field at the bottom on the LCD.

(3) Press the [*], [2], [8], [6], and [4] key on the LCD in this order. The machine enters the maintenance mode.

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

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

(6) Drag and drop the required program file (ex. D001GG_A.djf) in the same folder onto the "Brother Maintenance USB Printer" icon in the Filedrgs screen. The file is loaded to the machine, and installing to the flash ROM starts.

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

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

7.2 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)

Follow the instruction in “1.7 Adjusting Left-end and Upper-end Print Position (Function Code: 45) (TT only)” in Chapter 4 to adjust left-end or upper-end print position.

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. Using maintenance mode functions, you can conduct operational checks of sensors or test printing, display the log information or error codes, and change the worker switches (WSW) etc.

1.1 How to Enter Maintenance Mode

1.1.1 Method of entering maintenance mode for service personnel

<Operating Procedure>

Non touch panel models

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

Note:

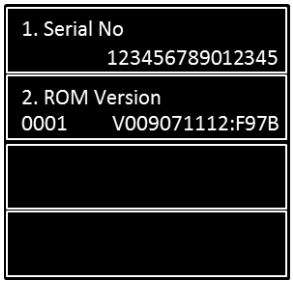
- To enter the maintenance mode, press the [Go] key in two seconds after pressing the [OK] key. Similarly, press the [▲] key in two seconds after pressing the [Go] key.

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

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

Touch panel models

(1) Press and hold the [Home] key for approximately five seconds while the machine is in the ready state. The display shown on the right appears on the LCD.



(2) Press the blank field at the bottom on the LCD. The display below appears on the LCD. Input keys can be changed by pressing the [<<] or [>>] key (refer to the figure below).

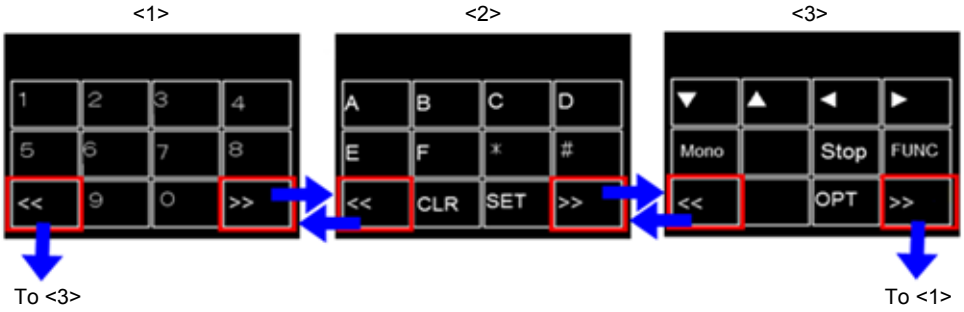
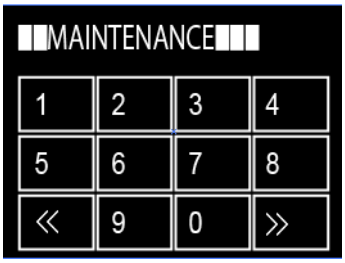


Fig. 5-1

(3) Press the [*], [2], [8], [6], and [4] keys in this order. The display shown on the right appears on the LCD, and the machine enters into maintenance mode.

(4) To select any of the maintenance mode functions shown in the "1.2 List of Maintenance Mode Functions", use the keypad to enter the maintenance mode function code to be executed.



1.1.2 Method of entering end-user accessible maintenance mode

The maintenance mode functions should only be accessed by service personnel. However, end users are allowed to use some of these functions under the guidance of service personnel over the phone. End users can only use the functions shaded in the table "1.2 List of Maintenance Mode Functions" (function code: 09, 12, 25, 28, 45, 61, 77, 80, 82, 91).

<Operating Procedure>

Non touch panel models

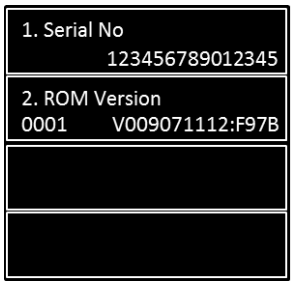
(1) Press the [OK], [Go], and [OK] keys in this order while the machine is in the ready state. "0" is displayed on the LCD.

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

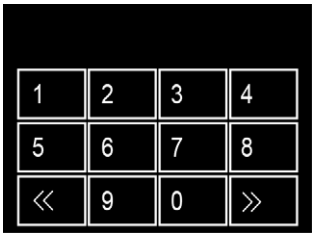
(3) Each time the selected maintenance mode function is completed, the machine returns to the ready state automatically. For function codes 12, 25, 28, 45, 80, and 82, pressing the [X] key returns the machine to the ready state.

Touch panel models

(1) Press and hold the [Home] key for approximately five seconds while the machine is in the ready state. The display shown on the right appears on the LCD.



(2) Press the blank field at the bottom on the LCD.
The display shown on the right appears on the LCD.
(For functions of the [<<] or [>>] key, refer to the Fig. 5-1)



(3) Press the [*], [0], and [#] keys on the LCD in this order. The machine enters into ready state to accept function code entry, so press the function code you want to execute.

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

1.2 List of Maintenance Mode Functions

Function code	Function	Refer to:
01	Initialize EEPROM parameters	1.3.1
09	Print quality test pattern	1.3.2
10	Set worker switches (WSW)	1.3.3
11	Print worker switch (WSW) setting data	1.3.3
12	Check LCD operation	1.3.4
13	Check control panel key operation	1.3.5
25	Display software version	1.3.6
28	Change setting for OnePushDemo function	1.3.7
32	Check sensor operation	1.3.8
33	Display LAN connection status	1.3.9
45	Change USB No. return value / Adjust left-end print position / Adjust upper-end print position / Set HEXDUMP mode	1.3.10
46	Adjust printable range for each speed level (Full speed / Half speed for thick paper / Quiet Mode)	1.3.11
61	Adjust touch panel	1.3.12
67	Continuous print test	1.3.13
69	Print frame pattern (single-side printing)	1.3.14
70	Print frame pattern (duplex printing)	1.3.15
71	Print test pattern	1.3.16
74	Configure for country/region and model	1.3.17
77	Print maintenance information	1.3.18
78	Check main fan operation	1.3.19
80	Display machine log information	1.3.20
82	Display machine error code	1.3.21
88	Reset counters for consumable parts	1.3.22
91	Initialize EEPROM parameters	1.3.1
99	Quit maintenance mode	1.3.23

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

1.3 Details of Maintenance Mode Functions

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

<Function>

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

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

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

<Operating Procedure>

Non touch panel models

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

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

Touch panel models

(1) Press the [0], and then the [1] key (or press the [9] and then the [1] key as required) in the initial state of maintenance mode. "PARAMETER INIT" is displayed on the LCD.

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

Note:

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

1.3.2 Print quality test pattern (function code: 09)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

Touch panel models

(1) Press the [0], and then the [9] key in the initial state of maintenance mode. "MAINTENANCE 09" is displayed on the LCD, and the machine 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.

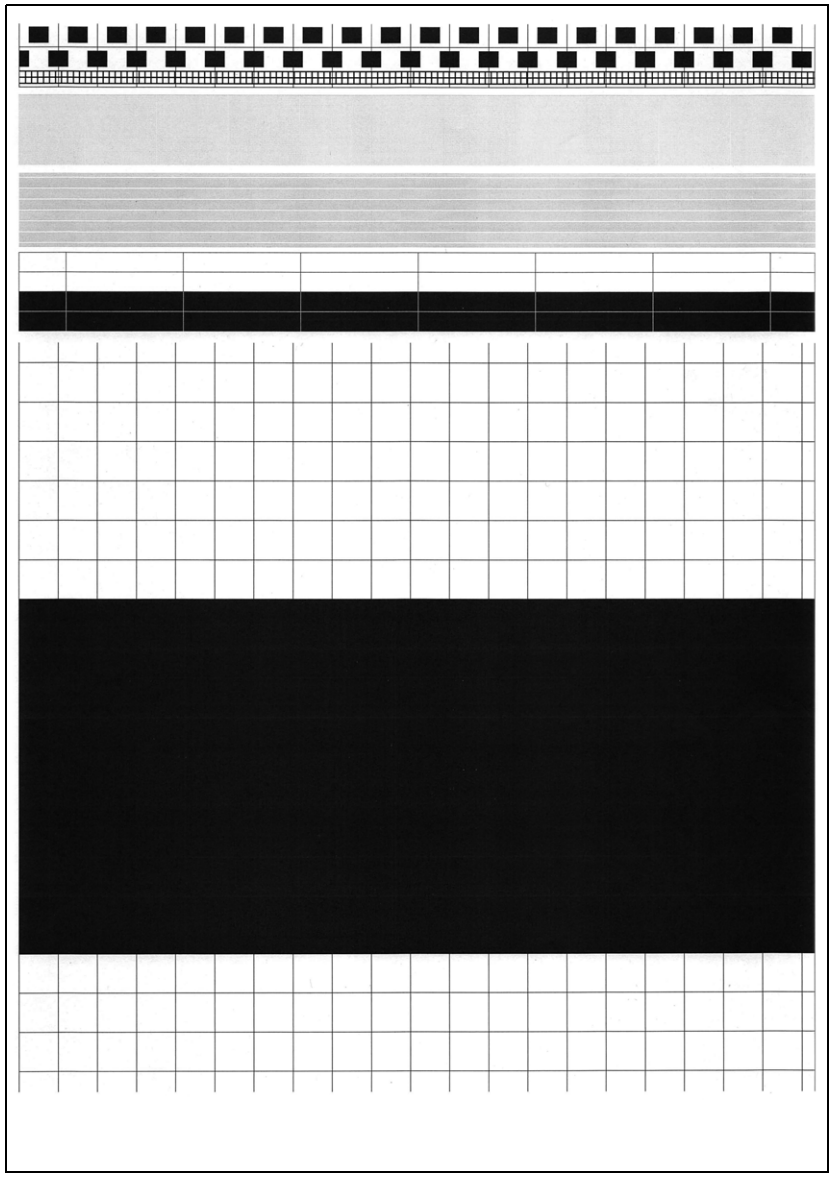


Fig. 5-2

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

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

<Function>

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

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

WSW No.	Function
WSW17 selector 5	Change time display method (American: MM/DD/YY or European: DD/MM/YY)
WSW47 selector 8	Change USB High/Full Speed
WSW56 selector 1	Change ON/OFF setting for models without PS emulation function.
WSW56 selector 6	Change coverage type display
WSW56 selector 7	Change ON/OFF setting for models without PCL emulation function.
WSW59 selector 1	Change ON/OFF setting for USB serial number sending
WSW63 selector 1-2	Change printing speed
WSW63 selector 3	Change time display method (Japanese: YY/MM/DD or others)
WSW63 selector 4-7	Demo printing type
WSW63 selector 8	Change ON/OFF setting for Israeli font support
WSW64 selector 1-6	Language setting
WSW64 selector 7-8	Default paper size
WSW65 selector 1-2	Default media type
WSW65 selector 3	Change ON/OFF setting for Bond Paper support
WSW65 selector 4	Change ON/OFF setting for Postcard support
WSW65 selector 6	Change ON/OFF setting for Label support
WSW78 selector 1	Change continue/stop setting for printing when the drum reach the life limit.
WSW81 selector 1	Change ON/OFF setting for models with PS emulation function.
WSW81 selector 2	Change ON/OFF setting for models with PCL emulation function.

* Refer to the separate manual for details of worker switches.

<Operating Procedure>

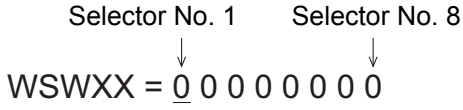
Non touch panel models

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

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

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

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



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

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

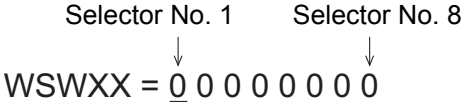
(7) Press the [OK] key. The new selector setting value is stored in the EEPROM, and the LCD returns to the ready state for worker switch number entry ([WSW00]).

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

Touch panel models

(1) Press the [1], and then the [0] key in the initial state of maintenance mode. "WSW00" is displayed on the LCD.

(2) Enter the worker switch number that you want to change the setting. The following display appears on the LCD.



(3) Press the [◀] or [▶] key to move the cursor to the desired selector, and change the setting by pressing the [1] or [0] key.

(4) When changing the setting is completed, press the [SET] key. The new selector setting value is stored in the EEPROM, and the LCD returns to the ready state for worker switch number entry ("WSW00").

(5) When all switch setting is completed, press the [X] key to return the machine to the initial state of maintenance mode.

Note:

- To cancel operation and return to the initial state of maintenance mode, press the [X] key.
- If there is no entry for one minute or longer on 2-digit worker switch number selection after the first digit was entered, the machine returns to the initial state of maintenance mode automatically.

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

<Function>

This function is used to print the worker switch settings and details.

<Operating Procedure>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [1] key twice in the initial state of maintenance mode. "PRINTING" is displayed on the LCD, and printing the CONFIGURATION LIST (refer to the figure below) starts.

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

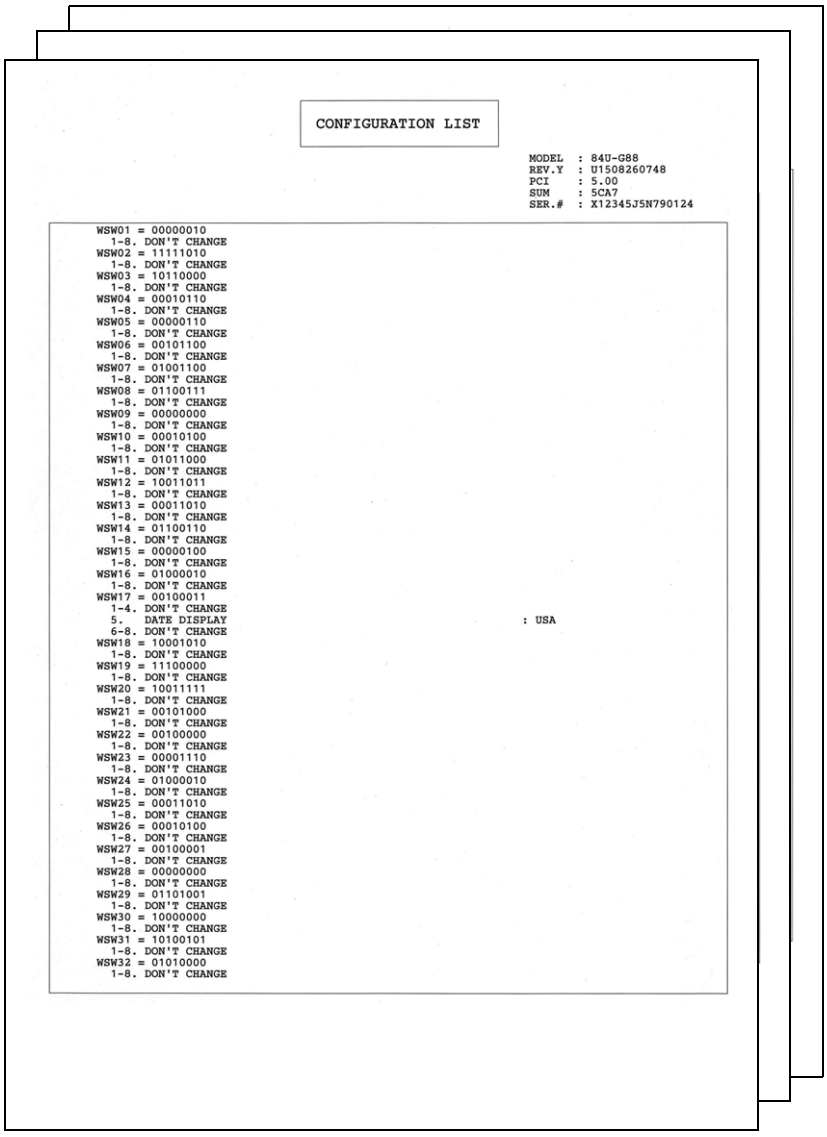


Fig. 5-3

1.3.4 Check LCD operation (function code: 12)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [1], and then the [2] key in the initial state of maintenance mode.

(2) Each press of the [^] key cycles through the displays as shown in Fig. 5-5. Also, pressing the [v] key returns the LCD display to the previous state. Pressing the [^] key at the end of display returns the display to Display 1.

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

■ **LCD**

<Non touch panel models>

<Display 1>	
Back light:	OFF
LCD:	Displays all dots
<Display 2>	
Back light:	OFF
LCD:	Displays 16 frames in a line
<Display 3>	
Back light:	OFF
LCD:	Displays no dots
<Display 4>	
Back light:	ON (white)
LCD:	Hides all dots

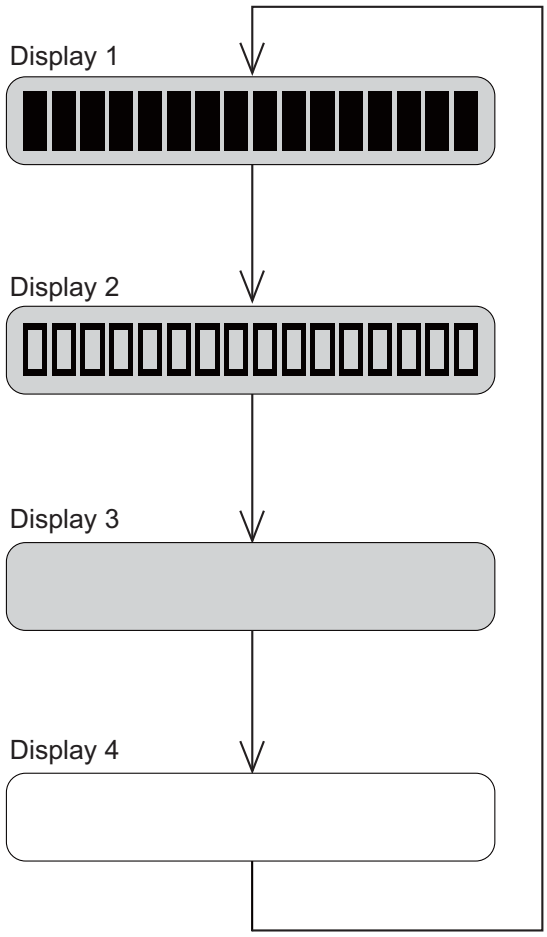


Fig. 5-4

<Touch panel models>

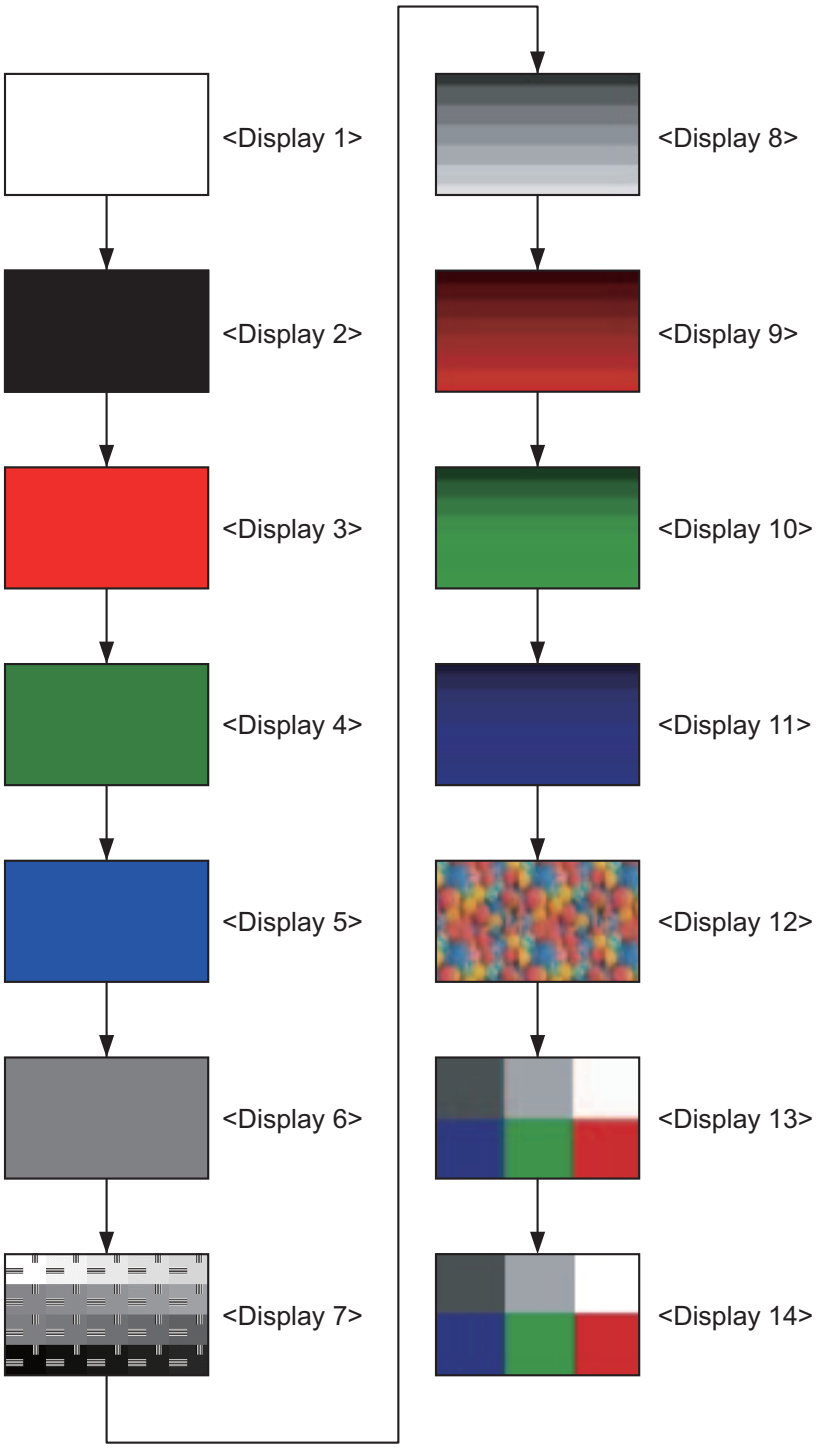


Fig. 5-5

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

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [1], and then the [3] key in the initial state of maintenance mode. "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 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 the [X] key and try again with the correct key.

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

■ **Order of pressing keys**

<Non touch panel models>

Fig. 5-6

<Touch panel models>

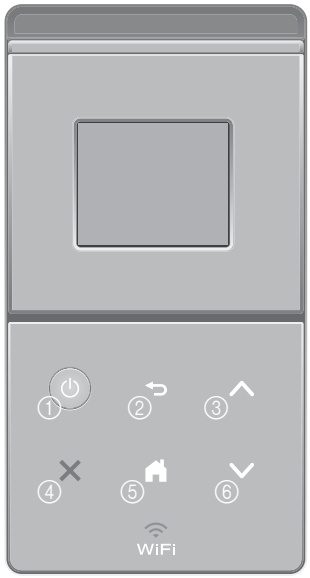


Fig. 5-7

1.3.6 Display software version (function code: 25)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [2], and then the [5] key in the initial state of maintenance mode. "MAIN:Ver*.** (#)" is displayed on the LCD.

(2) Pressing the [▲], [^], or [Mono] key changes the display to the next item.

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

LCD	Description
MAIN: Ver1.00 (A) *1	Main firmware version information ((A): Revision information)
SUB1 : Ver1.00 (P) *1	Sub firmware version information ((P): Identifier for PCL/PS) *2
ENG: Ver.1.00	Do not refer to this item because it has nothing to do with DL.
NET : Ver1.00	Network program version information
MX :Ver1.00	MX firmware version information
TT :Ver1.00	TT firmware version information
LT1 :Ver1.00	LT1 firmware version information
LT2 :Ver1.00	LT2 firmware version information
LT3 :Ver1.00	LT3 firmware version information
B0608071049:5708 *1	Boot program creation date
U0612271600:7B0A *1	Main firmware creation date
D----------:---- *4	Demo firmware data creation date
F0612312359:1234 *5	Font firmware creation date
P0612271602:BD40 *1	Sub firmware (PCL/PS) creation date
ROM Check Sum	Check sum self-diagnosis function *3

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

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

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

*4 This is displayed on the LCD even no firmware is installed.

*5 Displayed only for font firmware support model.

1.3.7 Change OnePushDemo function setting (function code: 28)

<Function>

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

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

The setting currently selected is marked "*".

<Operating Procedure>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [2], and then the [8] key in the initial state of maintenance mode. "OnePushDemo=ON" is displayed on the LCD.

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

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

Note:

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

1.3.8 Check sensor operation (function code: 32)

<Function>

This function is used to check whether the sensors, solenoids, and clutches are operating normally.

<Operating Procedure>

Non touch panel models

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 32" on the LCD, and press the [OK] key. "TNNT--C2P2****" is displayed on the LCD. The machine makes buzzing sound continuously. Information related to the LT, TT, and MX are not displayed on the LCD when those are not connected.

Note:
- Press the [OK] key to stop the buzzing sound.

(2) Pressing the [Go] key changes the display to the next item.

(3) Change the conditions subject to sensor detection shown below 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.

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

Touch panel models

(1) Press the [3], and then the [2] key in the initial state of maintenance mode. Either of the following examples is displayed on the LCD
e.g. TNNTSTC2P2**TT**
e.g. TNNTST----MCTT
The machine makes buzzing sound continuously.
Information related to the LT, TT, and MX are not displayed on the LCD when those are not connected.

Note:
- Press the [SET] key to stop the buzzing sound.

(2) Pressing the [Mono] key changes the display to the next item.

(3) Change the conditions subject to sensor detection shown below 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.

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

<Sensor check>

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

LCD	Sensor name	Detection status	
		With display	No display
TN	Toner amount detection sensor	Beam obstructed	Beam not obstructed
NT	New toner sensor	Sensor not pressed	Sensor pressed
ST	Output tray stack sensor	Ejected paper not yet full	Ejected paper full
C2	T2LT Paper feed sensor	Paper tray 2 closed	Paper tray 2 open
P2	T2LT paper empty sensor	No paper	Paper set
MC	MX back cover sensor	MX back cover closed	MX back cover open
TT	TT connection sensor	TT connected	TT not connected

LCD	Sensor name	Detection status	
		With display	No display
C1	T1 paper feed sensor	Paper tray 1 closed	Paper tray 1 open
P1	T1 paper empty sensor	No paper	Paper set
MP	MP paper empty sensor	No paper	Paper set
CV	Front cover sensor	Front cover closed	Front cover open
RC	Back cover/duplex tray sensor	Back cover closed	Back cover open
PO	Eject sensor	No paper	Paper set
RM	Registration front sensor	No paper	Paper set
RA	Registration rear sensor	No paper	Paper set
MACxx	Internal temperature sensor	XX°C	NG
OTxx	External temperature sensor	XX°C	NG
OHxx	External humidity sensor	XX%	NG
S1	MX 1bin stack sensor	Ejected paper not yet full	Ejected paper full
S2	MX 2bin stack sensor	Ejected paper not yet full	Ejected paper full
S3	MX 3bin stack sensor	Ejected paper not yet full	Ejected paper full
S4	MX 4bin stack sensor	Ejected paper not yet full	Ejected paper full
B2	MX 2bin sensor	MX 2bin paper set	MX 2bin no paper
B4	MX 4bin sensor	MX 4bin paper set	MX 4bin no paper
ML	MX JAM lower sensor	No paper	Paper set
MU	MX JAM upper sensor	No paper	Paper set
C2	T2LT paper feed sensor (When LT is in use)	Paper tray 2 closed	Paper tray 2 open
P2	T2LT paper empty sensor (When LT is in use)	No paper	Paper set
C3	T3LT paper feed sensor (When LT is in use)	Paper tray 3 closed	Paper tray 3 open
P3	T3LT paper empty sensor (When LT is in use)	No paper	Paper set
C4	T4LT paper feed sensor (When LT is in use)	Paper tray 4 closed	Paper tray 4 open

LCD	Sensor name	Detection status	
		With display	No display
E2	T2TT paper feed sensor	TT paper tray 2 closed and No paper	TT paper tray 2 open and Paper set
D2	T2TT paper empty sensor	No paper	Paper set
E3	T3TT paper feed sensor	TT paper tray 3 closed and No paper	TT paper tray 3 open and Paper set
D3	T3TT paper empty sensor	No paper	Paper set
E4	T4TT paper feed sensor	TT paper tray 4 closed and No paper	TT paper tray 4 open and Paper set
D4	T4TT paper empty sensor	No paper	Paper set
E5	T5TT paper feed sensor	TT paper tray 5 closed and No paper	TT paper tray 5 open and Paper set
D5	T5TT paper empty sensor	No paper	Paper set
J2	T2 JAM sensor	No paper	Paper set
J3	T3 JAM sensor	No paper	Paper set
J4	T4 JAM sensor	No paper	Paper set
J5	T5 JAM sensor	No paper	Paper set
AL	TT balance sensor L	With attachment	No attachment
AR	TT balance sensor R	With attachment	No attachment

<Solenoid and clutch check>

Check the corresponding solenoid and clutch by activating the sensor below.
Both solenoid and clutch can not detect error or fault. They only check if they are functioning.

Sensor operation	Solenoid/clutch operation
Change the status of the T1 paper feed sensor from Paper tray 1 open to Paper tray 1 closed.	The T1 pickup clutch remains ON for the specified time.
Change the status of the T2LT paper feed sensor from Paper tray 2 open to Paper tray 2 closed.	The T2LT pickup clutch remains ON for the specified time.
Change the status of the T2LT paper empty sensor from No paper to Paper set.	The T2LT release clutch remains ON for the specified time.
Change the status of the T3LT paper feed sensor from Paper tray 3 open to Paper tray 3 closed.	The T3LT pickup clutch remains ON for the specified time.
Change the status of the T3LT paper empty sensor from No paper to Paper set.	The T3LT release clutch remains ON for the specified time.
Change the status of the T4LT paper feed sensor from Paper tray 4 open to Paper tray 4 closed.	The T4LT pickup clutch remains ON for the specified time.
Change the status of the T4LT paper empty sensor from No paper to Paper set.	The T4LT release clutch remains ON for the specified time.
Change the status of the MP paper empty sensor from No paper to Paper set.	The MP solenoid remains ON for the specified time.

Sensor operation	Solenoid/clutch operation
Change the status of the registration rear sensor from No paper to Paper set.	The registration clutch remains ON for the specified time.
Change the status of the new toner sensor from Not pressed to Pressed.	The develop clutch remains ON for the specified time. Erase Lamp is ON (keep the develop clutch ON until the new toner sensor gets pressed)
Change the status of the MX 1bin stack sensor from Not full to Full.	MX solenoid is moved to MX 1bin side.
Change the status of the MX 2bin stack sensor from Not full to Full.	MX solenoid is moved to MX 2bin side.
Change the status of the MX 3bin stack sensor from Not full to Full.	MX solenoid is moved to MX 3bin side.
Change the status of the MX 1bin stack sensor from Full to Not full.	MX solenoid is moved to the side which does not eject paper to the MX 1bin.
Change the status of the MX 2bin stack sensor from Full to Not full.	MX solenoid is moved to the side which does not eject paper to the MX 2bin.
Change the status of the MX 3bin stack sensor from Full to Not full.	MX solenoid is moved to the side which does not eject paper to the MX 3bin.
Change the status of the T2TT paper feed sensor from TT paper tray 2 open to TT paper tray 2 closed.	The T2TT pickup clutch remains ON for the specified time.
Change the status of the T3TT paper feed sensor from TT paper tray 3 open to TT paper tray 3 closed.	The T3TT pickup clutch remains ON for the specified time.
Change the status of the T4TT paper feed sensor from TT paper tray 4 open to TT paper tray 4 closed.	The T4TT pickup clutch remains ON for the specified time.
Change the status of the T5TT paper feed sensor from TT paper tray 5 open to TT paper tray 5 closed.	The T5TT pickup clutch remains ON for the specified time.
Change the status of the T3TT paper empty sensor from No paper to Paper set.	The T3TT release clutch remains ON for the specified time.
Change the status of the T4TT paper empty sensor from No paper to Paper set.	The T4TT release clutch remains ON for the specified time.
Change the status of the T5TT paper empty sensor from No paper to Paper set.	The T5TT release clutch remains ON for the specified time.

Note:

- LCD display changes by activating the sensors above. However, it does not affect to the operation of the solenoid and clutch. If the sensors to operate the solenoid and clutch are faulty, they are inoperable.

■ Location of sensors

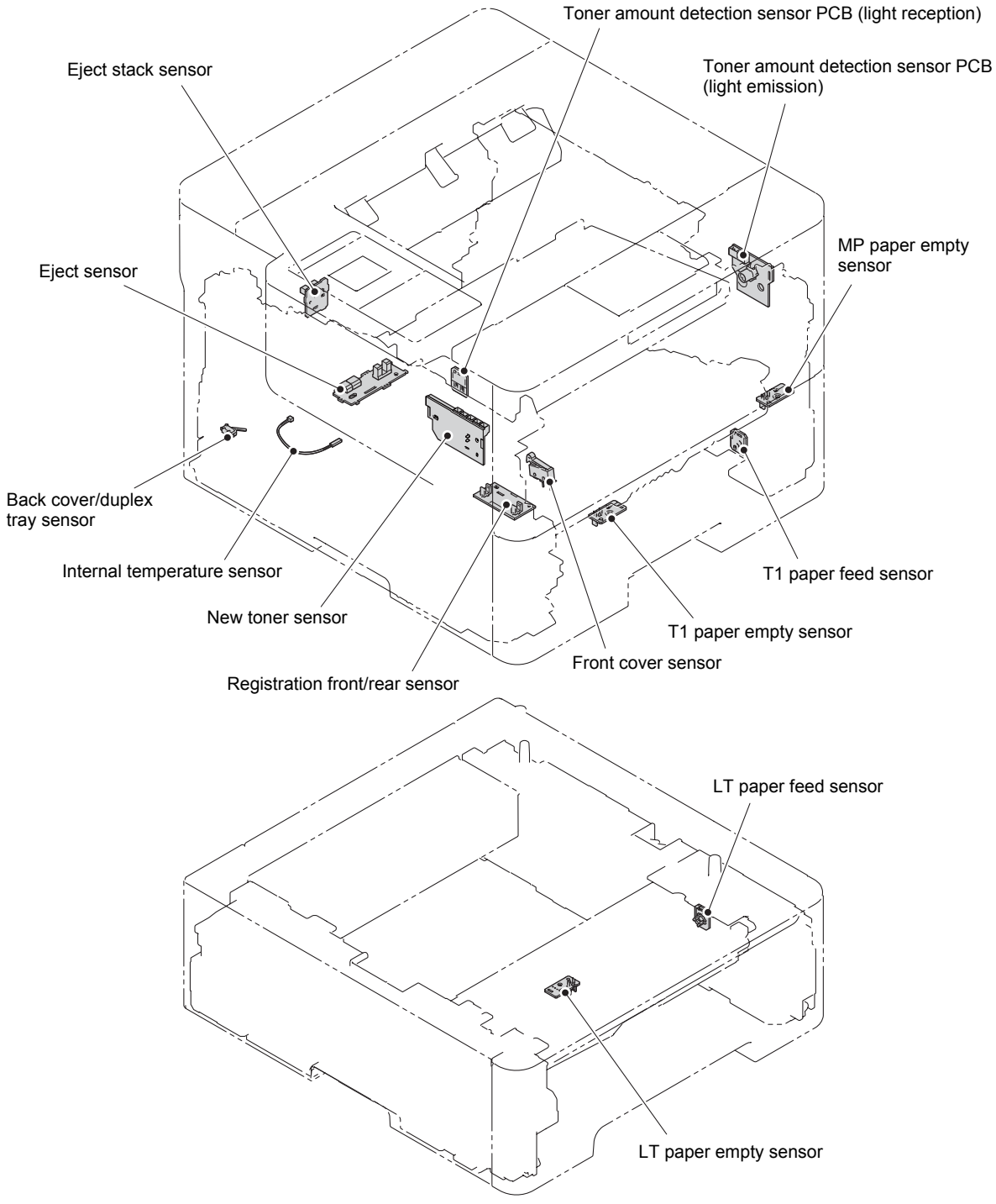


Fig. 5-8

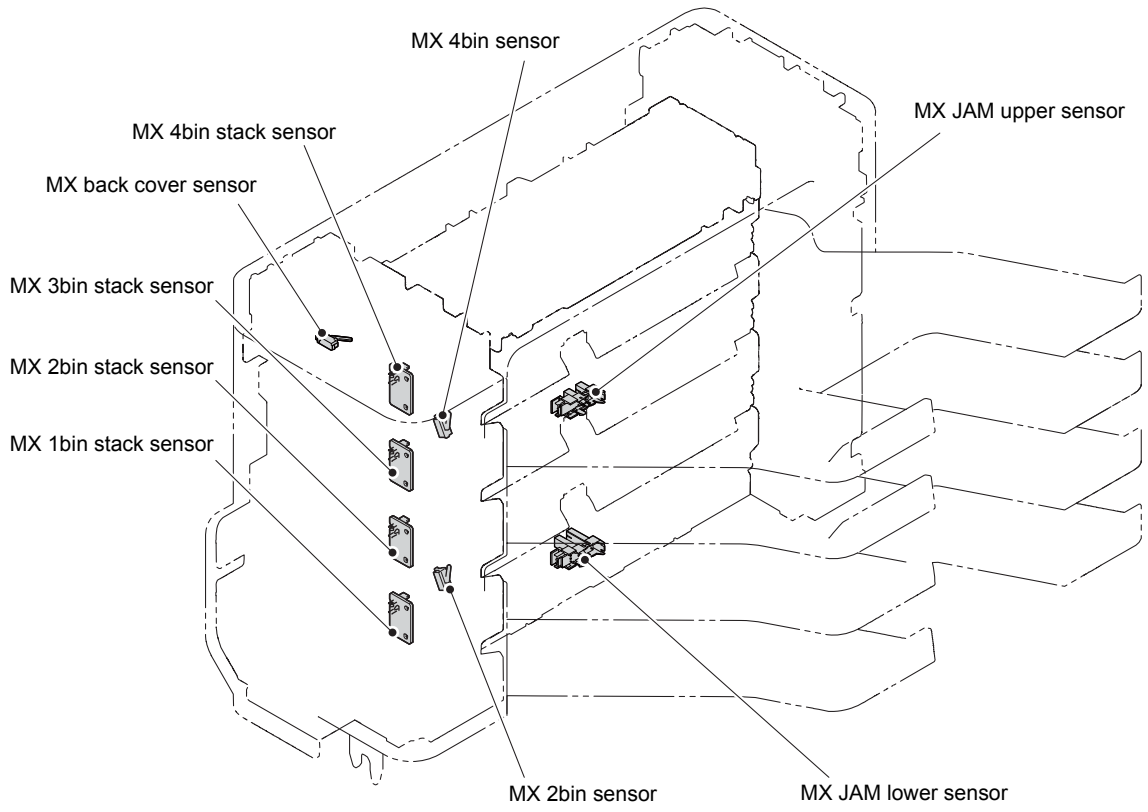


Fig. 5-9

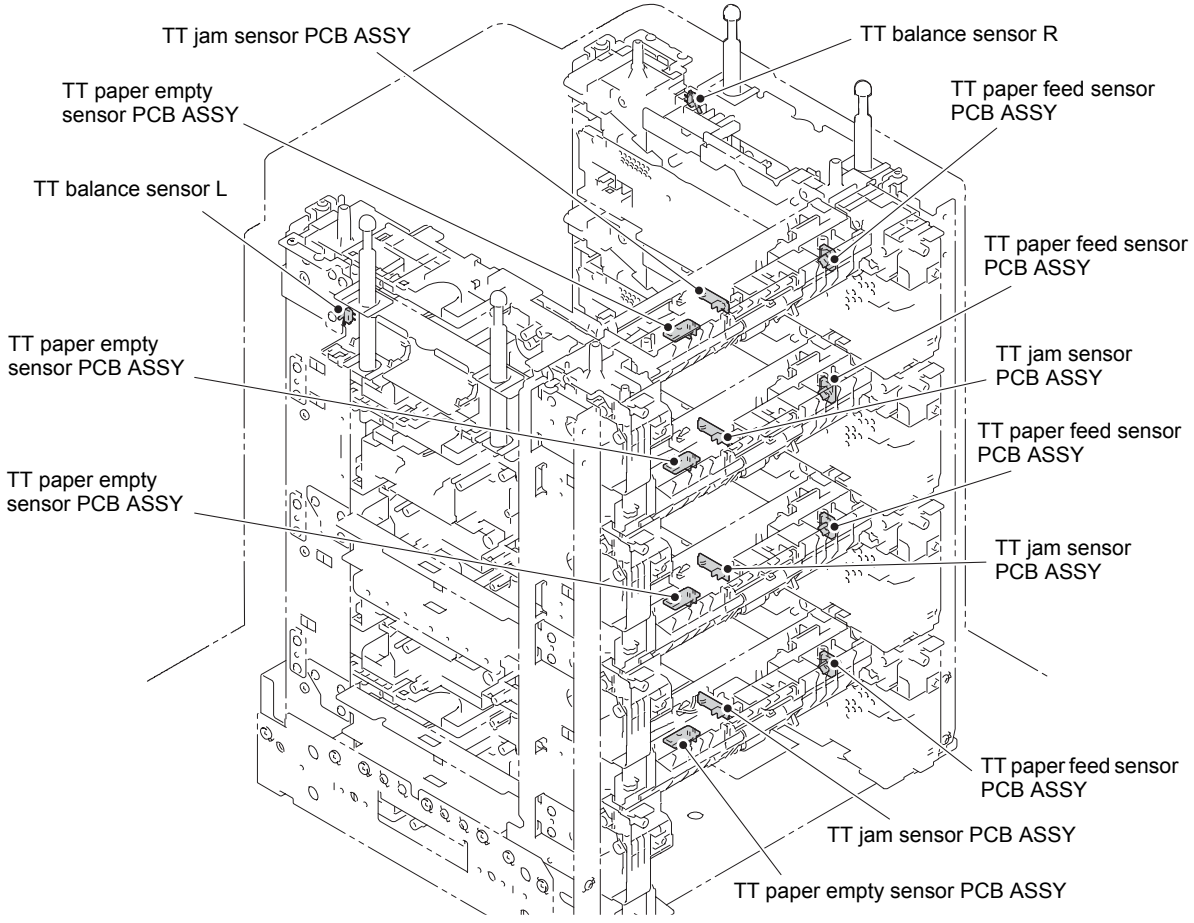


Fig. 5-10

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>

Non touch panel models

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

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

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

Touch panel models

(1) Press the [3] key twice in the initial state of maintenance mode. One of the following items is displayed on the LCD depending on the wired LAN connection of the machine.

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

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

1.3.10 Change USB No. return value / Adjust left-end print position / Adjust upper-end print position / Set HEXDUMP mode (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.
USBNo. = OFF	Returns "0".

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

<Operating Procedure>

Non touch panel models

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

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

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

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

(5) Turn the power switch OFF.

Touch panel models

(1) Press the [4], and then the [5] key in the initial state of maintenance mode. "USBNo." is displayed on the LCD.

(2) Press the [Mono] or [SET] key. "USBNo.=ON" or "USBNo.=OFF" is displayed on the LCD.

(3) Press the [^] or [v] key to select "USBNo.=ON" or "USBNo.=OFF", and then press the [Mono] or [SET] key.

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

(5) Turn OFF the power switch.

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 the left when the value is negative)

<Operating Procedure>

Non touch panel models

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

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

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

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

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

Touch panel models

(1) Press the [4], and then the [5] key in the initial state of maintenance mode. "USBNo." is displayed on the LCD.

(2) Press the [^] or [v] key to display "X Adjust" on the LCD, and press the [Mono] or [SET] key. "XAdjust MP" is displayed on the LCD.

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

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

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

<Adjustment option table>

Adjustment option	LCD
MP tray first side	*Adjust MP
Paper tray 1 first side	*Adjust T1
Paper tray 2 first side	*Adjust T2
Paper tray 3 first side	*Adjust T3
Paper tray 4 first side	*Adjust T4
Paper tray 5 first side	*Adjust T5
Duplex tray	*Adjust DX

Adjustment option	LCD
MP tray second side	*Adjust DXMP
Paper tray 1 second side	*Adjust DXT1
Paper tray 2 second side	*Adjust DXT2
Paper tray 3 second side	*Adjust DXT3
Paper tray 4 second side	*Adjust DXT4
Paper tray 5 second side	*Adjust DXT5

"X" or "Y" is shown for *.

■ 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>

Non touch panel models

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

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

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

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

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

Touch panel models

(1) Press the [4], and then the [5] key in the initial state of maintenance mode. "USBNo." is displayed on the LCD.

(2) Press the [▲] or [▼] key to display "Y Adjust" on the LCD, and press the [Mono] or [SET] key. "YAdjust MP" is displayed on the LCD.

(3) Refer to <Adjustment option table> on the last page, press the [▲] or [▼] key to select from the adjustment options, and press the [Mono] or [SET] key. "YAdj. **= 0*" is displayed on the LCD. (Selected option is shown for **.)

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

(5) Press the [Mono] or [SET] key after adjusting the value. "Accepted" is displayed on the LCD.

(6) Press the [X] key to return the machine to the initial state of maintenance mode.

■ Set HEXDUMP mode

<Function>

This function is used to enter HEXDUMP mode (hexadecimal mode) or not when the machine starts next time.

Note:

- Do not turn this ON, otherwise the machine enters HEXDUMP mode when it starts. If it is ON and the machine starts in HEXDUMP mode, you can return the machine to the ready state by turning the power OFF then ON again.

1.3.11 Adjust printable range for each speed level (Full speed / Half speed for thick paper / Quiet Mode) (function code: 46)

<Function>

This function is to adjust the printing position in horizontal / vertical direction when it's misaligned on Full speed, Half speed for thick paper, or Quiet Mode.

Position can be adjusted in 11 steps from -0.5% to 0.5% (Printing width gets smaller when the value is negative).

<Operating Procedure>

Non touch panel models

(1) Press the [▲] or [▼] key in the initial state of maintenance mode to display "MAINTENANCE 46" on the LCD, and press the [OK] key. "1.PrtSzAdj Nomal" is displayed on the LCD.

(2) Press the [▲] or [▼] key to display desired speed on the LCD.
- Full speed → "1.PrtSzAdj Nomal"
- Half speed for thick paper → "2.PrtSzAdj THalf"
- Quiet Mode → "3.PrtSzAdj QHalf"

Press the [OK] key. "*.1 *:Main" is displayed on the LCD.
Selected speed is displayed for "*".

(3) Press the [▲] or [▼] key to display "*.3 *:Print" on the LCD, and press the [OK] key. "PRINTING" is displayed on the LCD, and the print adjustment test pattern (refer to the next page) is printed on a sheet of paper.

(4) Adjust the line so that the width is 10mm in horizontal / vertical direction. Press the [▲] or [▼] key to display desired direction on the LCD.
- Horizontal direction → "*.1 *:Main"
- Vertical direction → "*.2 *:Sub"

Press the [OK] key. "0.0 %" is displayed on the LCD.

(5) To make the print width smaller, press the [▼] key to decrease the value. Press the [OK] key after adjusting the value.

(6) Press the [X] key to return the machine to the initial state of maintenance mode after adjusting the value.

Touch panel models

(1) Press the [4], and then the [6] key in the initial state of maintenance mode. "1.PrtSzAdj Nomal" is displayed on the LCD.

(2) Press the [^] or [v] key to display desired speed on the LCD.
- Full speed → "1.PrtSzAdj Nomal"
- Half speed for thick paper → "2.PrtSzAdj THalf"
- Quiet Mode → "3.PrtSzAdj QHalf"

Press the [Mono] key. "*.1 *:Main" is displayed on the LCD.
Selected speed is displayed for "*".

(3) Press the [^] or [v] key to display "*.3 *:Print" on the LCD, and press the [Mono] key. "PRINTING" is displayed on the LCD, and the print adjustment test pattern (refer to the next page) is printed on a sheet of paper.

(4) Adjust the line so that the width is 10mm in horizontal / vertical direction. Press the [^] or [v] key to display desired direction on the LCD.
- Horizontal direction → "*.1 *:Main"
- Vertical direction → "*.2 *:Sub"

Press the [Mono] key. "0.0 %" is displayed on the LCD.

(5) To make the print width smaller, press the [v] key to decrease the value. Press the [Mono] key after adjusting the value.

(6) Press the [X] key to return the machine to the initial state of maintenance mode after adjusting the value.

■ Print adjustment test pattern

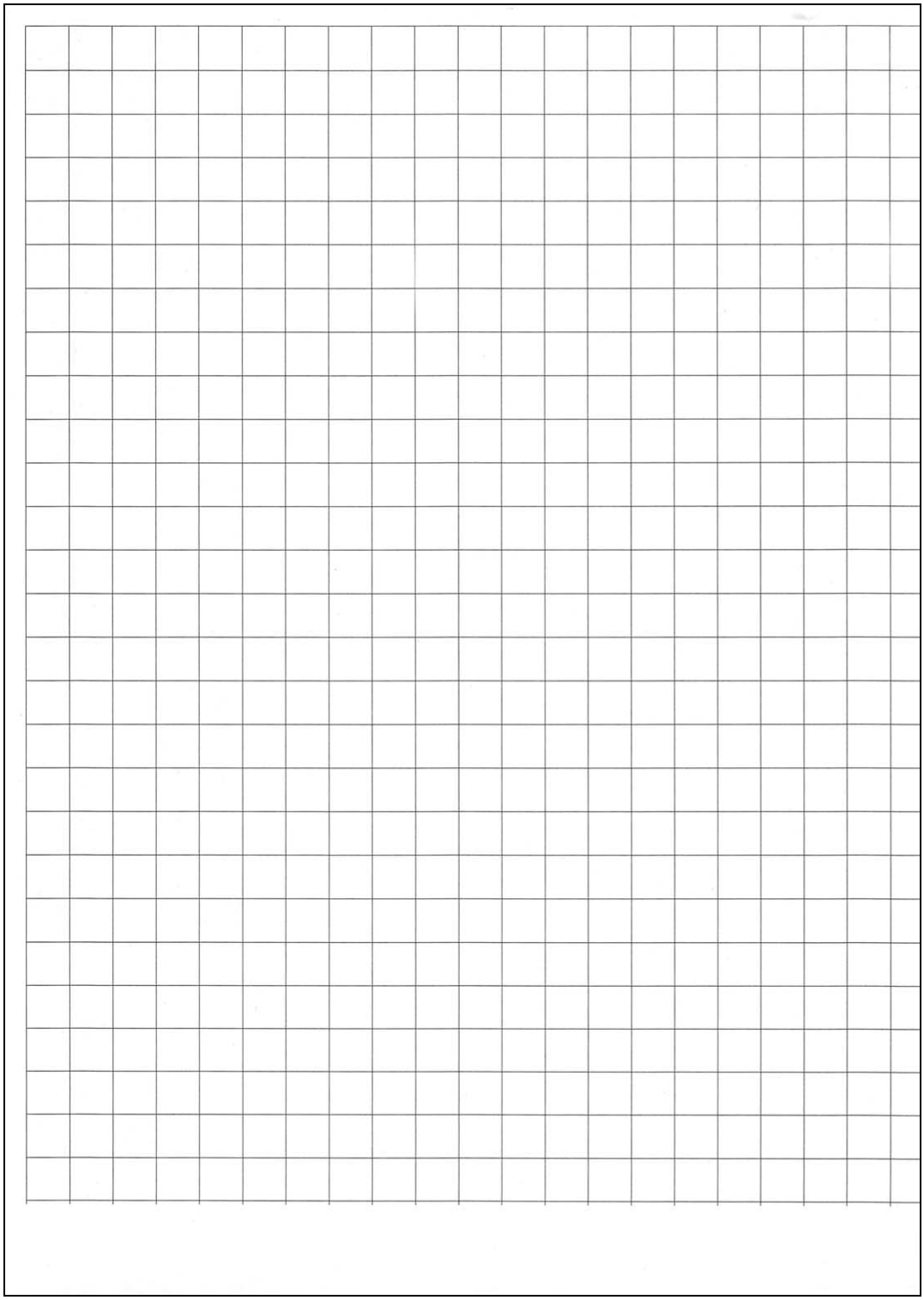


Fig. 5-11

1.3.12 Adjust touch panel (function code: 61) (Touch panel models only)

<Function>

This function is used to adjust the touch panel.

Note:

- This adjustment requires a touch pen with a thin tip. A commercially available touch pen designed for electronic dictionaries or personal digital assistance (PDA) can be used. If one is not available at hand, order a "Touch pen" from Brother's parts list.

<Operating Procedure>

(1) Press the [6], and then the [1] key in the initial state of maintenance mode. The adjustment screen shown below appears on the LCD.

(2) Use a touch pen and touch the center on the mark at the upper left corner of the screen. The mark disappears when touched, then touch the mark at the lower left. Similarly touch the mark at the lower right, upper right and center.

Note:

- Do not use any tools other than a touch pen. In particular, never use a pointed tool (e.g. screwdriver). Using such a tool will damage the touch panel.
- Do not touch the touch panel with your fingers. The contact area of a finger is too large to adjust the touch panel precisely.
- If no operation is performed for one minute or the [X] key is pressed, the machine returns to the initial state of maintenance mode.

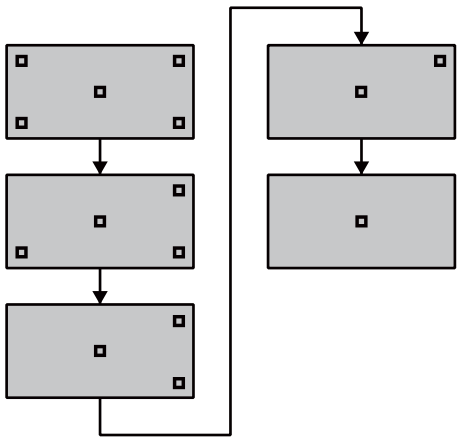


Fig. 5-12

(3) When the center (the 5th mark) is touched, "OK" is displayed on the LCD if the specified area is adjusted correctly. The machine returns to the initial state of maintenance mode.

Note:

- If "NG" is still displayed on the LCD even after this operation is repeated two to three times, check the connection of the panel flat cable. If the LCD keeps displaying "NG" even there is no problem, replace the LCD panel ASSY.

1.3.13 Continuous print test (function code: 67)

<Function>

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

<Operating Procedure>

Non touch panel models

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

(2) Refer to the <Print pattern> table, press the [▲] or [▼] key to select the print pattern, and press the [OK] key. For total pattern printing, proceed to the procedure (9). Otherwise, "SELECT: A4" is displayed on the LCD.

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

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

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

(6) Refer to the <Output tray> table, press the [▲] or [▼] key to select the output tray, and press the [OK] key. "SELECT: 1PAGE" is displayed on the LCD. (MX supported models only)

(7) Refer to the <Print page> table, press the [▲] or [▼] key to select the pages printing, and press the [OK] key. For intermittent pattern printing, "SELECT: 1P/JOB" is displayed on the LCD. For other printings, or move on to the procedure (9).

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

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

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

Touch panel models

(1) Press the [6], and then the [7] key in the initial state of maintenance mode. "SELECT: K 100%" is displayed on the LCD.

(2) Refer to the <Print pattern> table, press the [^] or [v] key to select the print pattern, and press the [SET] key. For total pattern printing, proceed to the procedure (9). Otherwise, "SELECT: A4" is displayed on the LCD.

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

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

(5) Refer to the <Print type> table, press the [^] or [v] key to select the print type, and press the [SET] key. "SELECT: STD" is displayed on the LCD.

(6) Refer to the <Output tray> table, press the [^] or [v] key to select the output tray, and press the [SET] key. "SELECT: 1PAGE" is displayed on the LCD. (MX supported models only)

(7) Refer to the <Print page> table, press the [^] or [v] key to select the pages printing, and press the [SET] key. For intermittent pattern printing, "SELECT: 1P" is displayed on the LCD. For other printings, or move on to the procedure (9).

(8) Refer to the <Number of pages per job> table, press the [^] or [v] key to select the number of pages for 1 job, and press the [SET] key. (Only for intermittent pattern printing)

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

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

<Print pattern>

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

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

<Paper size>

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

<Print specification>

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

<Print type>

LCD	Description
SELECT:TRAY1 SX	Single-side printing from paper tray 1
SELECT:TRAY1 DX	Duplex printing from paper tray 1
SELECT:TRAY2 SX	Single-side printing from paper tray 2
SELECT:TRAY2 DX	Duplex printing from paper tray 2
SELECT:TRAY3 SX	Single-side printing from paper tray 3
SELECT:TRAY3 DX	Duplex printing from paper tray 3
SELECT:TRAY4 SX	Single-side printing from paper tray 4
SELECT:TRAY4 DX	Duplex printing from paper tray 4
SELECT:TRAY5 SX	Single-side printing from paper tray 5
SELECT:TRAY5 DX	Duplex printing from paper tray 5
SELECT:MP SX	Single-side printing from MP tray
SELECT:MP DX	Duplex printing from MP tray
SELECT:AUTO SX	Single-side printing to automatically selected tray
SELECT:AUTO DX	Double-side printing to automatically selected tray

<Output tray>

LCD	Description
SELECT:STD	Eject to output tray
SELECT:MX1	Eject to MX 1bin
SELECT:MX2	Eject to MX 2bin
SELECT:MX3	Eject to MX 3bin
SELECT:MX4	Eject to MX 4bin
SELECT:STACKER	Eject to an MX automatically selected based on the free space
SELECT:SORTER	Collating output according to the number of bins *

* For 4-bin models, 1 copy for each bin, 5 copies in total.
  For 2-bin models, 1 copy for each bin, 3 copies in total.

<Print page>

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

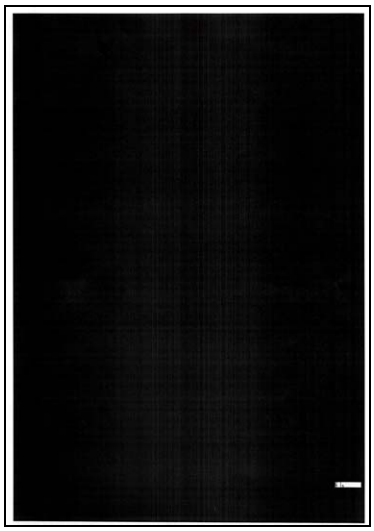
* Selectable only when the printing pattern is set to "K1%" or "K5%", and the print type is not set to the manual feed slot.

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

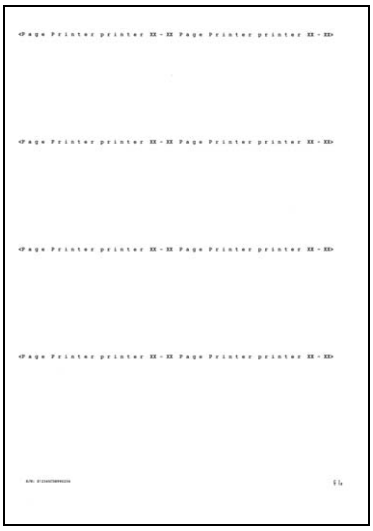
LCD	Description
SELECT:1P/JOB	Prints 1 page per job *1
SELECT:2P/JOB	Prints 2 pages per job *1
SELECT:5P/JOB	Prints 5 pages per job *1
SELECT:10P/JOB	Prints 10 pages per job *1
SELECT:2I/JOB	Prints 2 images per job *2
SELECT:5I/JOB	Prints 5 images per job *2 *3
SELECT:10I/JOB	Prints 10 images per job *2
SELECT:20I/JOB	Prints 20 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.

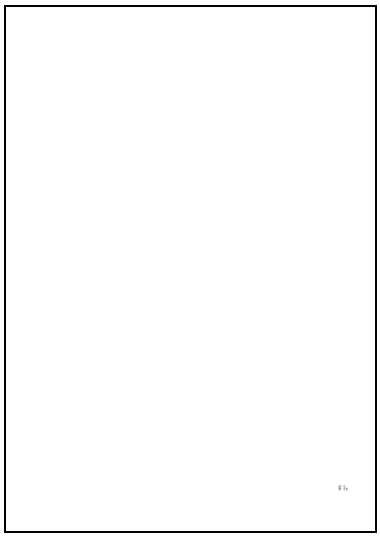
K 100%



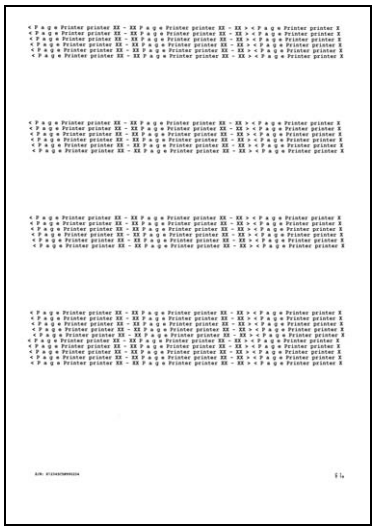
K 1%



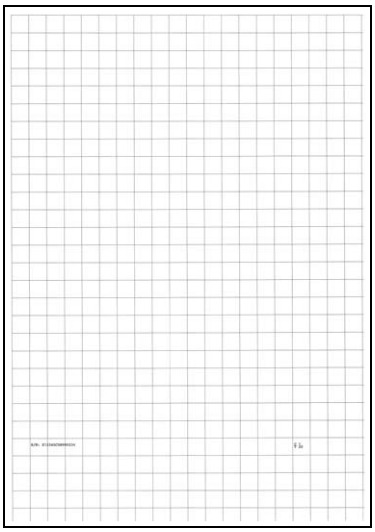
W 100%



K 5%



Lattice



Total

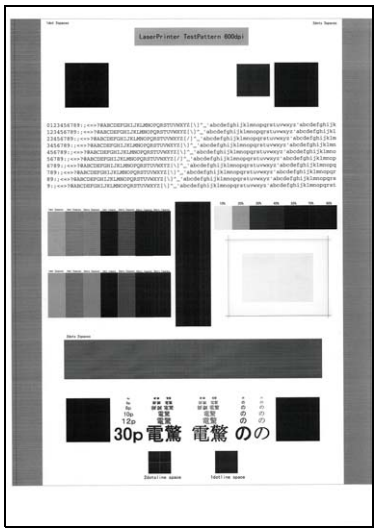


Fig. 5-13

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

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

(3) When printing is completed, "WAKU SX" is displayed on the LCD.

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

Touch panel models

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

(2) Press the [6], and then the [9] key in the initial state of maintenance mode. "PRINTING" is displayed on the LCD, and the frame pattern (refer to the figure below) is printed on single side of the paper.

(3) When printing is completed, "WAKU SX" is displayed on the LCD.

(4) When the [X] key is pressed, the machine stops this operation and 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 and eliminate the error cause. "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 to release the error.
Cover is Open	Close the front cover.
No Paper	Refill the paper and close the paper tray to release the error.
Jam Tray1	Remove the jammed paper, and then close the paper tray and all covers to release the error.
Jam Rear	

■ Frame pattern

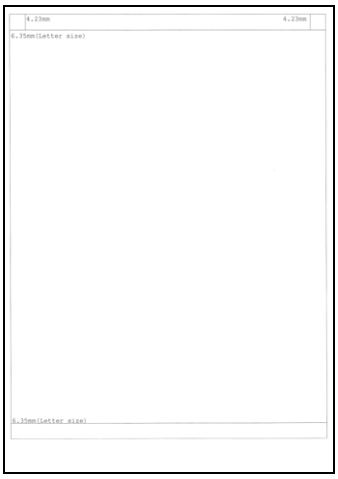


Fig. 5-14

1.3.15 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>

Non touch panel models

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

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

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

Touch panel models

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

(2) Press the [7], and then the [0] key in the initial state of maintenance mode. "PRINTING" is displayed on the LCD, and the frame pattern (refer to the figure below) is printed on both sides of the paper.

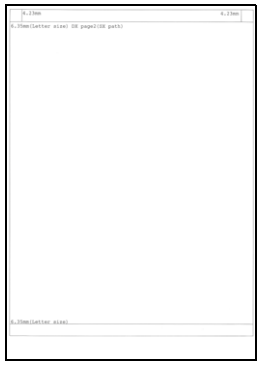
(3) When printing is completed, "WAKU DX" is displayed on the LCD. When you press the [X] key, this operation is finished and the machine returns to the initial state of maintenance mode.

Note:

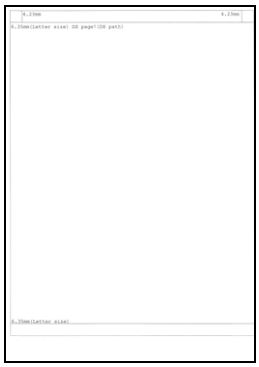
- If printing fails, printing is stopped with displaying any of the errors shown in the table below. To retry printing, refer to the "Remedy" in the table below and eliminate the error cause. "PRINTING" is displayed on the LCD, and the frame pattern is printed on both sides of a sheet of paper.

Error display	Remedy
Replace Toner	Replace the toner cartridge to release the error.
Cover is Open	Close the front cover.
No Paper	Refill the paper and close the paper tray to release the error.
Jam Tray1	Remove the jammed paper, and then close the paper tray and all covers to release the error.
Jam Rear	Remove the jammed paper, and then close all covers to release the error.
Jam 2-sided	Remove the jammed paper, and then close the duplex tray and all covers to release the error.
2-sided Disabled	Refill the paper, and then close the paper tray and all covers to release the error.

■ **Frame pattern**



(First side)



(Second side)

Fig. 5-15

1.3.16 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>

Non touch panel models

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

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

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

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

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

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

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

Touch panel models

(1) Press the [7], and then the [1] key in the initial state of maintenance mode. "SELECT: LETTER" is displayed on the LCD.

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

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

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

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

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

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

Note:

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

<Paper size>

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

<Print specification>

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

<Print type>

LCD	Description
SELECT:SX	Single-side printing from paper tray 1
SELECT:DX	Duplex printing from paper tray 1

<Print page>

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

<Error display>

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

■ Test pattern

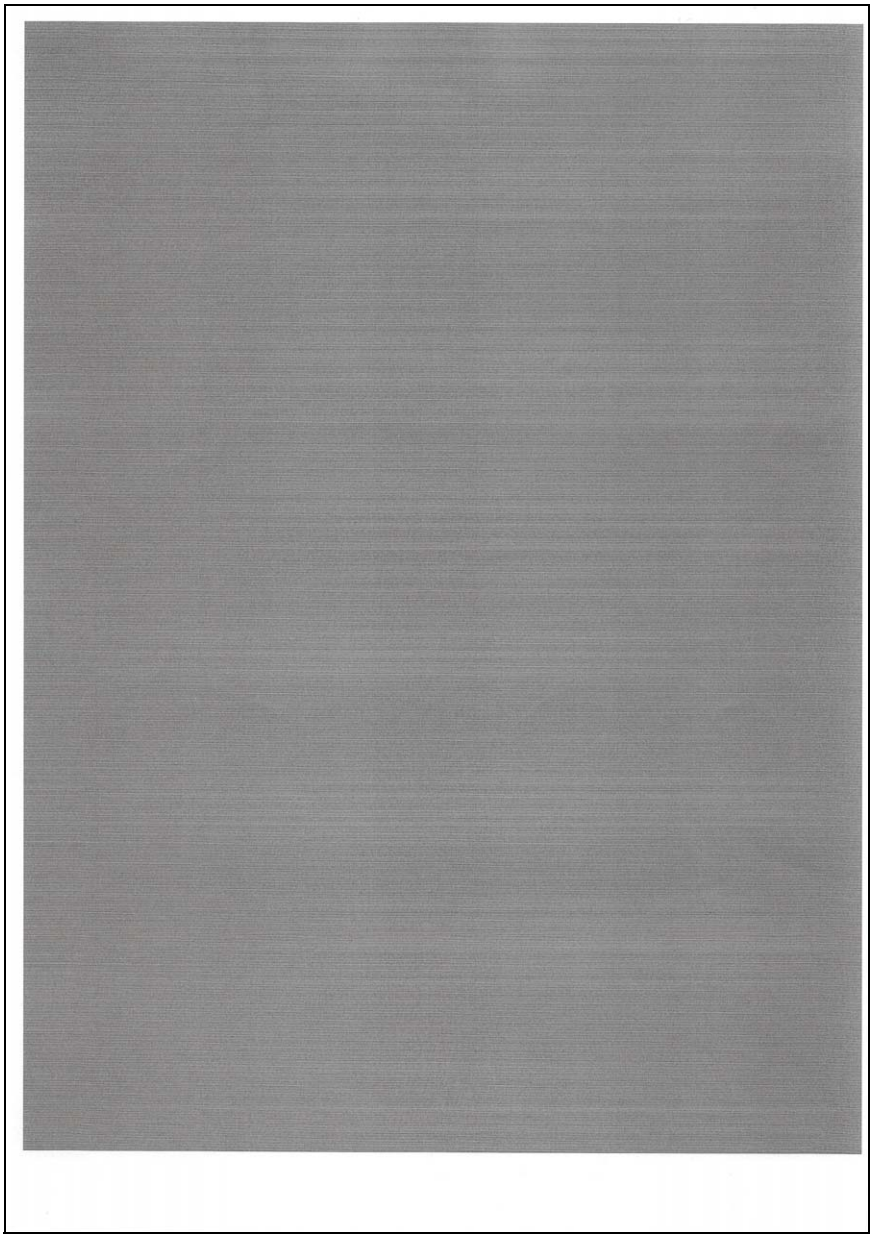


Fig. 5-16

1.3.17 Configure for country/region and model (function code: 74)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

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

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

Touch panel models

(1) Press the [7], and then the [4] key in the initial state of maintenance mode. The spec code currently set is displayed on the LCD.

(2) Enter the spec code (four digits) you want to set.

(3) Press the [Mono] key to save the new setting, 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	Spec code	
HL-5580D	China	0120
HL-5585D	China	0020
HL-5590DN	China	0120
HL-5595DN	China	0320
HL-L5000D	Canada	0101
	CEE-General	0103
	France/Belgium/ Netherlands	0103
	Germany	0103
	India	0140
	Iran	0035
	Israel	0117
	Italy/Iberia	0103
	Pan-Nordic	0103
	Russia	0103
	Singapore	0140
	Switzerland	0103
	U.S.A	0101
	UK	0103
HL-L5100DN (T)	Argentina	0136
	Australia	0106
	CEE-General	0103
	Chile	0136
	France/Belgium/ Netherlands	0103
	Germany	0103
	India	0140
	Israel	0117
	Italy/Iberia	0103
	Korea	0140
	New Zealand	0127
	Pan-Nordic	0103
	Philippines	0121
	Russia	0103
	Singapore	0140
	Switzerland	0103
	Taiwan	0123
	U.S.A	0101
	UK	0103
HL-L5102DW	Brazil	0042

Model	Spec code	
HL-L5200DW (T)	Australia	0206
	Canada	0201
	CEE-General	0203
	France/Belgium/ Netherlands	0203
	Germany	0203
	Gulf	0241
	Italy/Iberia	0203
	New Zealand	0227
	Pan-Nordic	0203
	Russia	0203
	Switzerland	0203
	U.S.A	0201
	UK	0203
HL-L5202DW	Brazil	0242
HL-L6200DW (T)	Argentina	0336
	Australia	0306
	Canada	0301
	Gulf	0341
	India	0340
	New Zealand	0327
	Singapore	0340
	U.S.A	0301
HL-L6202DW	Brazil	0342
HL-L6250DN	CEE-General	0303
	GENERIC	0303
	Germany	0303
	Italy/Iberia	0303
	Switzerland	0303
	UK	0303
HL-L6250DW	U.S.A	0401
HL-L6300DW (T)	CEE-General	0003
	GENERIC	0003
	Germany	0003
	Israel	0017
	Italy/Iberia	0003
	Pan-Nordic	0003
	Russia	0003
	Switzerland	0003
	U.S.A	0001
	UK	0003

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 March 2016.
- Please contact Brother distributors for the latest information.

Model	Spec code	
HL-L6400DW (T)	Argentina	0136
	Australia	0106
	Canada	0101
	CEE-General	0103
	Chile	0136
	GENERIC	0103
	Germany	0103
	Gulf	0141
	Israel	0117
	Italy/Iberia	0103
	Korea	0144
	New Zealand	0127
	Pan-Nordic	0103
	Philippines	0121
	Russia	0103
	Singapore	0140
	Switzerland	0103
	Taiwan	0123
	U.S.A	0101
	UK	0103
HL-L6402DW	Brazil	0142

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 March 2016.
- Please contact Brother distributors for the latest information.

1.3.18 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>

Non touch panel models

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

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

Touch panel models

(1) Press the [7] key twice in the initial state of maintenance mode. Printing maintenance information starts.

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

■ Maintenance information

```
MAINTENANCE
①HL-L6400DW series ②Serial No.=X12345J5N790124 ③Model=84U-G88④Country=0101 ⑤SW CheckSum=7D /NG
⑥Main ROM: Ver.0.73 U1510051007  ⑯ROM ChkSum: E730     ⑲36 00 00 00 01 ⑳03 03
⑦Sub ROM: Ver.0.19 P1507091752                          ㉑OKNG   00 00 00 00 00 01
⑧Boot ROM: B1510050722                                  ㉒0000000000000000
⑨Font ROM: ?                                              0000000000000000  00000000
⑩Engine Version: 0.88
⑪LT1 Main ROM: _
⑫LT2 Main ROM: _                ⑰USB Prod.ID: 0088
⑬LT3 Main ROM: _                ⑱RAM Size =  512Mbyte
⑭TT Main ROM: _
⑮MX Main ROM: _
 Remaining life of :
㉓*Toner Cartridge: 99%    ㉗Toner Warn Threshold: OFF
㉔**Drum Unit: 49887 (100%)㉘PF Kit MP: 50000 (100%)
㉕Fuser Unit: 199972 (100%)㉙PF Kit 1: 199989 (100%)
㉖Laser Unit: 199972 (100%)
  <Device Status(Total/2-sided)>
㉛Total Page Count: 28/13
㉚PC-Print Count: 0/0
㉜Other Count: 28/13

㉝***Average Coverage(Total): 13.34%
㉞***Average Coverage(Current)*: 14.26%
㉟***Average Coverage(Previous): 1.39%
㊱***Average Coverage(Latest): 4.52%

  <Drum Information>
㊲Drum Page Count: 113
㊳Drum Count: 735

㊴<Developing Roller Count(Current/Previous)>
    738/131

  <Total Pages Printed>
㊵MP Tray: 0              2-sided: 6
  Tray 1: 16              Tray 2: 0
  Tray 3: 0               Tray 4: 0
  Tray 5: 6               Std.Output: 0
㊶MX1.Output: 0           MX2.Output: 0
  MX3.Output: 0           MX4.Output: 0
㊷A4/Letter: 28           Envelope: 0
  Legal/Folio: 0          A5: 0
  B5/Executive: 0         Others: 0
  Plain/Thin/Recycled: 28
  Thick/Thicker/Bond: 0
  Envelope/Env.Thick/Env.Thin: 0
  Color: 0                Letterhead: 0
  Label Paper: 0          Hagaki: 0
㊸Toner(Current/Previous): 26/2
㊹Developing Roller Count(Current/Previous)
    315/21


㊺Coverage 0% - 1%: 12
  Coverage 1% - 10%: 10
  Coverage 10% - 255%: 6

㊻<Total Paper Jams: 0>
   Jam Tray1: 0           Jam Rear: 0
   Jam Tray2: 0           Jam 2-sided: 0
   Jam Tray3: 0           Jam MX Rear: 0
   Jam Tray4: 0           Jam MX1: 0
   Jam Tray5: 0           Jam MX2: 0
   Jam MP Tray: 0         Jam MX3: 0
   Jam Inside: 0          Jam MX4: 0

㊼<Error History (last 10 errors)>            Page (C)   %
   1:
   2:
   3:
   4:
   5:
   6:
   7:
   8:
   9:
  10:

㊽<Replace Count>
   Toner Cartridge: 1
   Drum Unit: 0      Fuser Unit: 0     Laser Unit: 0
   PF Kit MP: 0      PF Kit 1: 0       PF Kit 2: 0
   PF Kit 3: 0       PF Kit 4: 0       PF Kit 5: 0

㊾<Developing Bias: 390V>

㊿<Engine Sensor Log>
   KO: 000210/002085      MN: 000955/002125
   RS: 001205/002145      EJ: 002410/002215

  <Status Log>
   830100  830100  830100  830100  830100
   830100  830100  830100  830100  830100

(51)<Temperature/Humidity>
   Temperature: 27 degrees(C)  (MAX: 30 MIN: 22)
   Humidity: 32%               (MAX: 69 MIN: 27)

(52)<Power On Time: 6 hours>
(53)<Power On Count: 41>

(54)<First Date PC-Prn: --/--/-->

(55)<Last Media Type: Plain>


(56)1:3,0,57,173,56,337,0,0,0
   2:0,0,0,0,0,0,0,0,0,0
   3:0,0,0,0,0,0,0,0,0,0

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

Fig. 5-17

1	Model name	29	Remaining life of PF kit 1
2	Serial number	30	Total printed pages
3	Model code	31	Total PC printed pages
4	Spec code	32	Total pages printed by other methods
5	Switch check sum (factory use) and comparison of default / current value	33	Accumulated average coverage
6	Main firmware version	34	Average coverage by the current toner cartridge
7	Sub firmware version	35	Average coverage by the previous toner cartridge
8	Boot ROM version	36	Latest job average coverage
9	Font ROM version	37	Drum page count
10	Engine archive version	38	Rotations of the drum
11	ROM version for LT2 control PCB	39	Total rotations of the developer roller (currently use/previously used toner cartridge)
12	ROM version for LT3 control PCB	40	Total printed pages per paper tray
13	ROM version for LT4 control PCB	41	Total printed pages per output tray
14	TT firmware version	42	Total printed pages per paper size / paper type
15	MX firmware version	43	Printed pages per (currently / previously used) toner cartridge
16	ROM check sum	44	Total number of rotations of the developer roller per toner cartridge (currently / previously used toner cartridge)
17	USB ID code	45	Pages printed per specified coverage range
18	RAM size	46	Paper jams by sections of the product
19	First digit of main PCB serial number / Wireless LAN setting by country / Wireless LAN output peak / WLAN Setup YES/NO setting / One Push Demo setting	47	Machine error log / Total pages printed at the time of the error / Temperature and humidity
20	Toner type of currently set toner cartridge / Toner type of previously set toner cartridge	48	Number of times each consumable has been replaced
21	Main PCB inspection log / High voltage inspection log / The number of times that the discharge error, fuser unit error, polygon motor lock error, irregular power supply detection error occurred / Process status	49	Developing bias voltage value
22	Next Power On setting for Power Button / Process status / Process checksum	50	Engine sensor log / Status log (Not necessary for maintenance)
23	Estimated remaining toner amount	51	Current temperature and humidity / Highest and lowest temperature and humidity in the past
24	Remaining life of drum unit	52	Total power distribution time
25	Remaining life of fuser unit	53	The number of times that the power is turned ON
26	Remaining life of laser unit	54	Start date for machine operation
27	Toner Low threshold setting	55	Latest paper type used
28	Remaining life of PF kit MP	56	New toner cartridge detection log

1.3.19 Check main fan operation (function code: 78)

<Function>

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

LCD	Name	Description
F	Main fan	Emits the heat in the fuser unit.

<Operating Procedure>

Non touch panel models

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

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

(3) By pressing the [Go] key again, "F 0" is displayed on the LCD and the main fan stops.

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

Touch panel models

(1) Press the [7], and then the [8] key in the initial state of maintenance mode. "F100" is displayed on the LCD and the main fan rotates at 100% speed.

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

(3) By pressing the [Mono] key, "F 0" is displayed on the LCD and the main fan stops.

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

1.3.20 Display machine log information (function code: 80)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

Touch panel models

(1) Press the [8], and then the [0] key in the initial state of maintenance mode.
"MACERR_01:****" is displayed on the LCD (**** indicates error code).

(2) Pressing the [▲] or [▼] key changes the display item.

(3) Press the [X] key, 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
PFK2_PG:00000000	Pages fed from PF kit 2
PFK3_PG:00000000	Pages fed from PF kit 3
PFK4_PG:00000000	Pages fed from PF kit 4
PFK5_PG:00000000	Pages fed from PF kit 5
FUSR_PG:00000000	Printed pages for fuser unit
LASR_PG:00000000	Printed pages for laser unit
TTL_PG:00000000	Total number of pages printed
DX_PG:00000000	Paper input for duplex tray
TTLPCPT:00000000	Total pages printed via PC
DX_PCPT:00000000	Total two-sided pages printed via PC
TTL_OTH:00000000	Total pages printed by other methods
DX_OTH:00000000	Total two-sided pages printed by other methods

LCD	Description
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 develop roller
MP_PG:00000000	Paper input for MP tray
TR1_PG:00000000	Paper input for paper tray
TR2_PG:00000000	Paper input for paper tray 2
TR3_PG:00000000	Paper input for paper tray 3
TR4_PG:00000000	Paper input for paper tray 4
TR5_PG:00000000	Paper input for paper tray 5
STDEJ:00000000	Paper output for machine output tray
MX1EJ:00000000	Total paper output for MX 1 bin
MX2EJ:00000000	Total paper output for MX 2 bin
MX3EJ:00000000	Total paper output for MX 3 bin
MX4EJ:00000000	Total paper output for MX 4 bin
DX_PG:00000000	Paper passed through duplex tray
A4+LTR:00000000	Total paper input for A4 and Letter
LG+FOL:00000000	Total paper input for Legal and Folio
B5+EXE:00000000	Total paper input for B5 and Execute
ENVLOP:00000000	Paper input for Envelope
A5 :00000000	Paper input for A5 (including A5 Landscape)
OTHER :00000000	Paper input for other sizes
PLTNRE:00000000	Total printed pages of plain, thin, and recycled paper
TKTRBD:00000000	Total printed pages of thick, thicker, and bond paper
ENVTYP:00000000	Total printed pages of envelope, thick envelope, and thin envelope
LABEL:00000000	Printed labels
HAGAKI:00000000	Printed postcards
COLOR:00000000	Full-color printed pages
LTHD:00000000	Printed pages per letter head
TTL_JAM:00000000	Total paper jams that have occurred
MP_JAM:00000	Paper jams that have occurred in the MP tray
TR1_JAM:00000000	Paper jams that have occurred in paper tray 1
TR2_JAM:00000	Paper jams that have occurred in paper tray 2
TR3_JAM:00000	Paper jams that have occurred in paper tray 3
TR4_JAM:00000	Paper jams that have occurred in paper tray 4

LCD	Description
TR5_JAM:00000	Paper jams that have occurred in paper tray 5
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
MXR_JAM 00000000	Paper jams that have occurred in the MX rear side
MX1_JAM 00000000	Paper jams that have occurred in the MX 1 bin
MX2_JAM 00000000	Paper jams that have occurred in the MX 2 bin
MX3_JAM 00000000	Paper jams that have occurred in the MX 3 bin
MX4_JAM 00000000	Paper jams that have occurred in the MX 4 bin
POWER:00000375	Total power distribution time (unit: 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
FUSR_CH:0000	The number of times that the fuser unit has been replaced
LASR_CH:0000	The number of times that the laser unit has been replaced
PFMP_CH:000	The number of times that the PF kit MP has been replaced
PFK1_CH:000	The number of times that the PF kit 1 has been replaced
PFK2_CH:000	The number of times that the PF kit 2 has been replaced
PFK3_CH:000	The number of times that the PF kit 3 has been replaced
PFK4_CH:000	The number of times that the PF kit 4 has been replaced
PFK5_CH:000	The number of times that the PF kit 5 has been replaced
KTN_PG1:00000000	Pages printed with the current toner cartridge
KTN_PG2:00000000	Pages printed with the previous toner cartridge
KDEV_BIAS:400V	Black developing bias voltage value
ENGERR##:000000	Engine error log (last ten errors) *3
HODN_ER:0000	The number of discharge errors occurred
FUSR_ER:0000	The number of fuser unit errors occurred
MTLK_ER:0000	The number of polygon motor lock errors occurred in the laser scanner
DEVSTATUS__##:00	Log for design analysis *4

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

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

Non touch panel models

1) Press the [▲] or [▼] key while the serial number is displayed to display "9" on the LCD, and press the [OK] key. LCD displays the serial number again.
2) Enter the "4", "7" and "5" in this order as described in the procedure 1). Serial number is displayed on the LCD. The first digit starts flashing to indicate that it is editable.
3) Press the first digit of the serial number on the keypad, [▲] or [▼] to display the first number of the serial number on the LCD, and press the [OK] key. The second digit starts to flash. Enter the second digit to the 15th digit similarly.
4) Press the [Go] key, and the new serial number is saved. The machine returns to the initial state of maintenance mode.

Touch panel models

1) While the serial number is displayed, press the [9], [4], [7], and [5] key in this order to enter the edit mode.
2) Use the keypad to enter the first digit of the serial number. Enter the second digit to the 15th digit similarly.
<Entry method of alphanumeric characters>
See the table below and press the corresponding key until the desired character is displayed.

Keypad	Assigned characters
2	2→A→B→C
3	3→D→E→F
4	4→G→H→I
5	5→J→K→L
6	6→M→N→O
7	7→P→Q→R→S
8	8→T→U→V
9	9→W→X→Y→Z

3) Press the [SET] or [Mono] key. The serial number is saved and the machine returns to the initial state of maintenance mode.

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

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

1.3.21 Display machine error code (function code: 82)

<Function>

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

<Operating Procedure>

Non touch panel models

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

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

Touch panel models

(1) Press the [8], and then the [2] key in the initial state of maintenance mode. "MACHINE ERR XXXX" is displayed on the LCD.

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

1.3.22 Reset counters for consumable parts (function code: 88)

<Function>

This function is performed to reset the counter for each consumable part in the main PCB after that has been replaced.

<Operating Procedure>

Non touch panel models

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

(2) Press the [▲] or [▼] key to display the part with the counter to be reset on the LCD, and press the [OK] key.

(3) "*******OK?" is displayed on the LCD. Press the [OK] key to reset the counter for the selected part and return the display to the procedure (2). (******* represents the name of the selected part)

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

Touch panel models

(1) Press the [8] key twice in the initial state of maintenance mode. "Reset-Laser Unit" is displayed on the LCD.

(2) Press the [^] or [v] key to display the part with the counter to be reset on the LCD, and press the [Mono] key.

(3) "*******OK?" is displayed on the LCD. Press the [Mono] key to reset the counter for the selected part and return the display to the procedure (2). (******* represents the name of the selected part)

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

Selectable parts are shown in the table below.

LCD	Part name	Counter to be reset
Reset-Laser Unit	Laser unit	Printed pages counter
Reset-Fuser Unit	Fuser unit	Printed pages counter
Reset-PF Kit T1	PF kit 1	Printed pages counter
Reset-PF Kit T2	PF kit 2	Printed pages counter
Reset-PF Kit T3	PF kit 3	Printed pages counter
Reset-PF Kit T4	PF kit 4	Printed pages counter
Reset-PF Kit T5	PF kit 5	Printed pages counter
Reset-PF Kit MP	PF kit MP	Printed pages counter
Reset-LVPS	Low-voltage power supply PCB ASSY	Irregular power supply detection counter

1.3.23 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>

Non touch panel models

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

Touch panel models

(1) Press the [9] key twice in the initial state of maintenance mode. The machine quits the maintenance mode and returns to the ready state.

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 as common items. 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>

Non touch panel models

(1) Press the [OK] key three times while the machine is in the ready state. "Printing" appears on the LCD and the Print Settings is printed.

(2) When printing Print Settings is completed, "Select ?? or OK" appears on the LCD.

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

(4) When any printing has been executed, it returns to the procedure (2). When any display has been executed, it returns to the previous state by pressing the [Back] key.

(5) When the [X] key is pressed, the machine returns to the ready state.

Printing operable from Non touch panel models

LCD	Description
Printer settings	Prints setting list and 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 Reset the Drum Unit Counter

<Function>

This function is performed to reset the drum unit counter.

<Operating Procedure>

Non touch panel models

(1) Make sure the machine is turned on and the front cover is open.

(2) Press and hold [OK] key for about two seconds to display “Drum Unit”, and then press [OK] key.

(3) Press [▲] key to select Reset.

(4) Close the front cover.

Touch panel models

(1) Make sure the machine is turned on.

(2) Press [Settings] > [Machine Information] > [Parts Life].

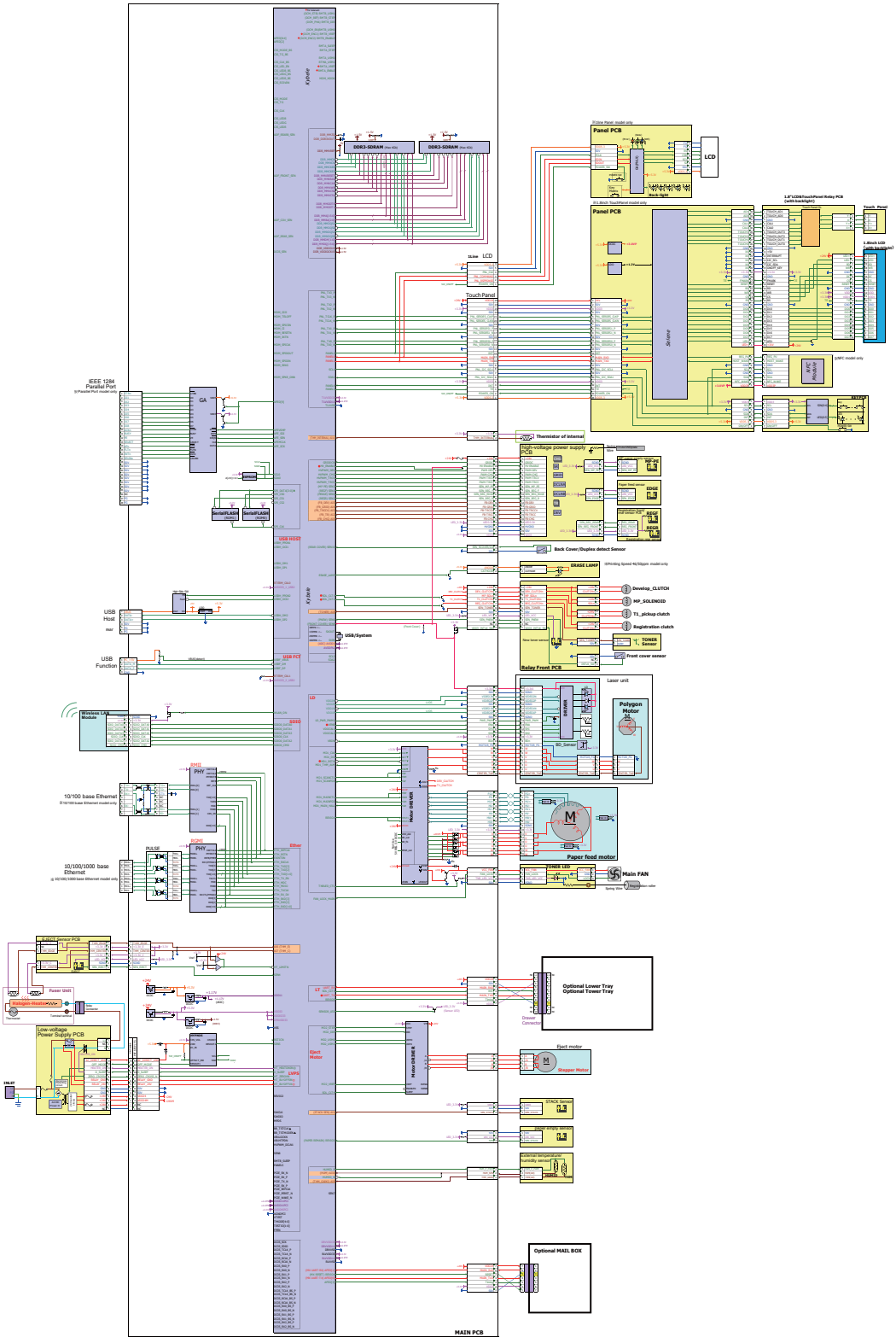
(3) Press [Drum Life] until the Touchscreen message changes, and then press [Yes].

(4) Press the [Home] key.

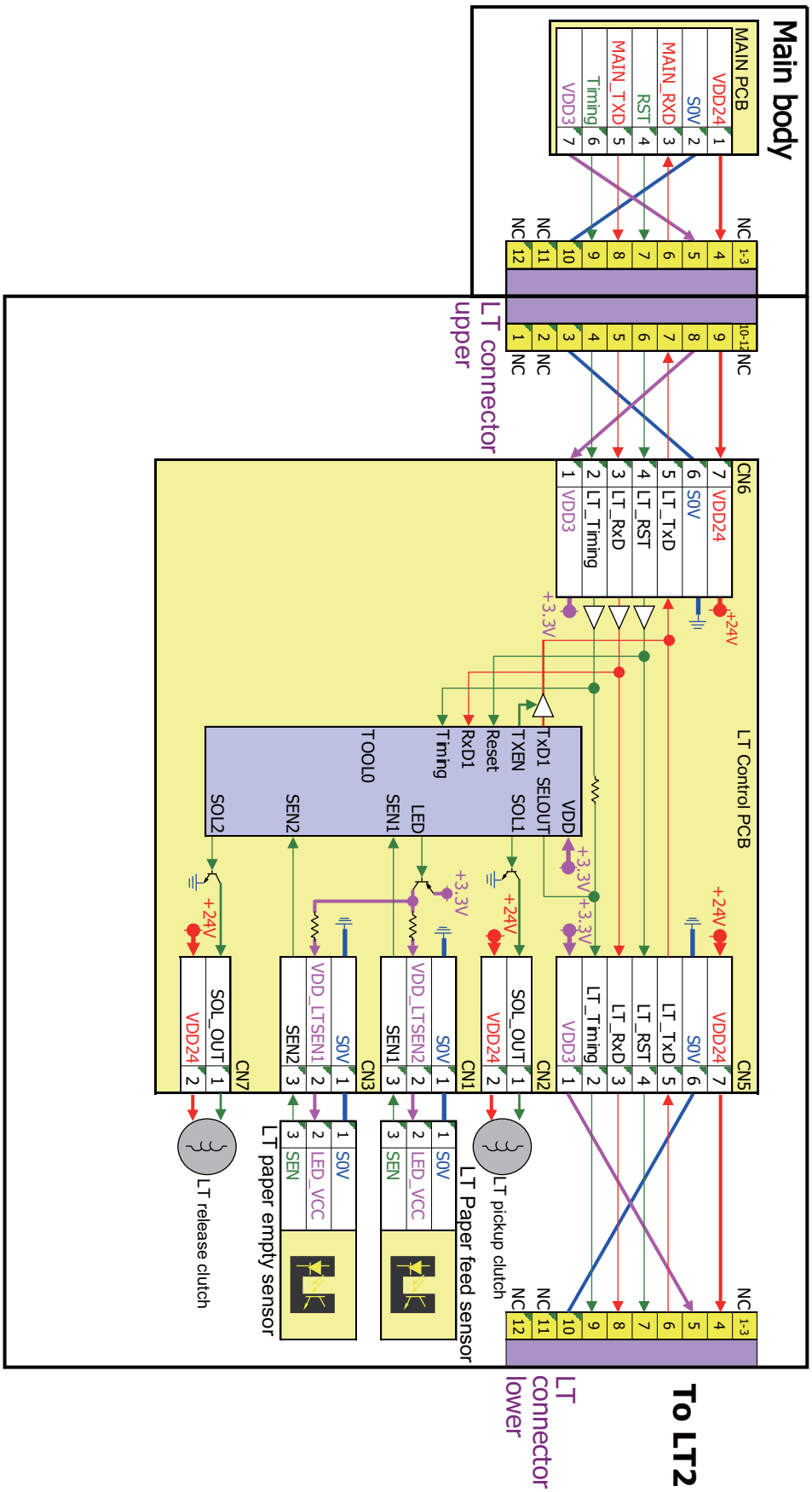
CHAPTER 6 WIRING DIAGRAM

1. WIRING DIAGRAM

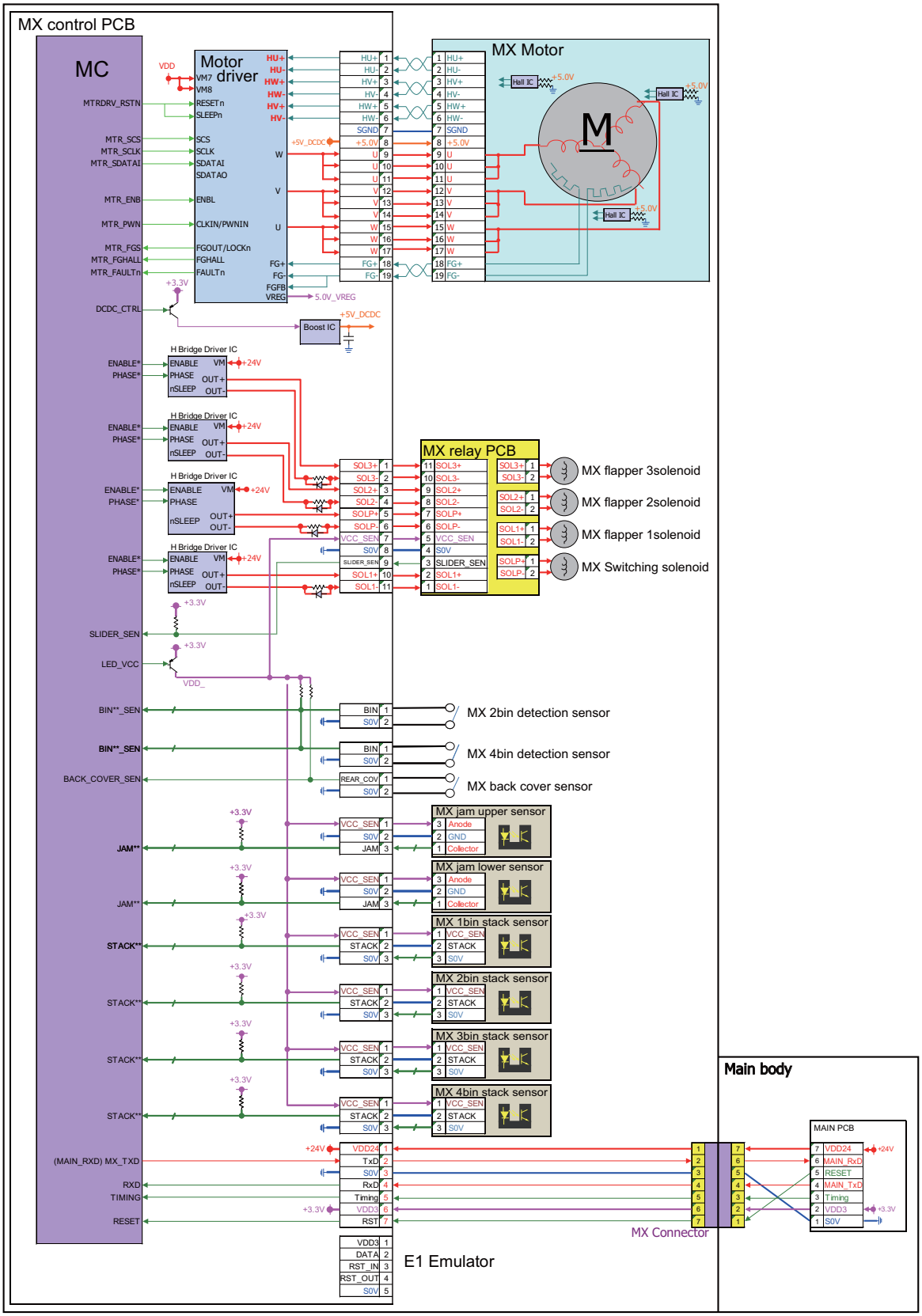
■ **Machine**



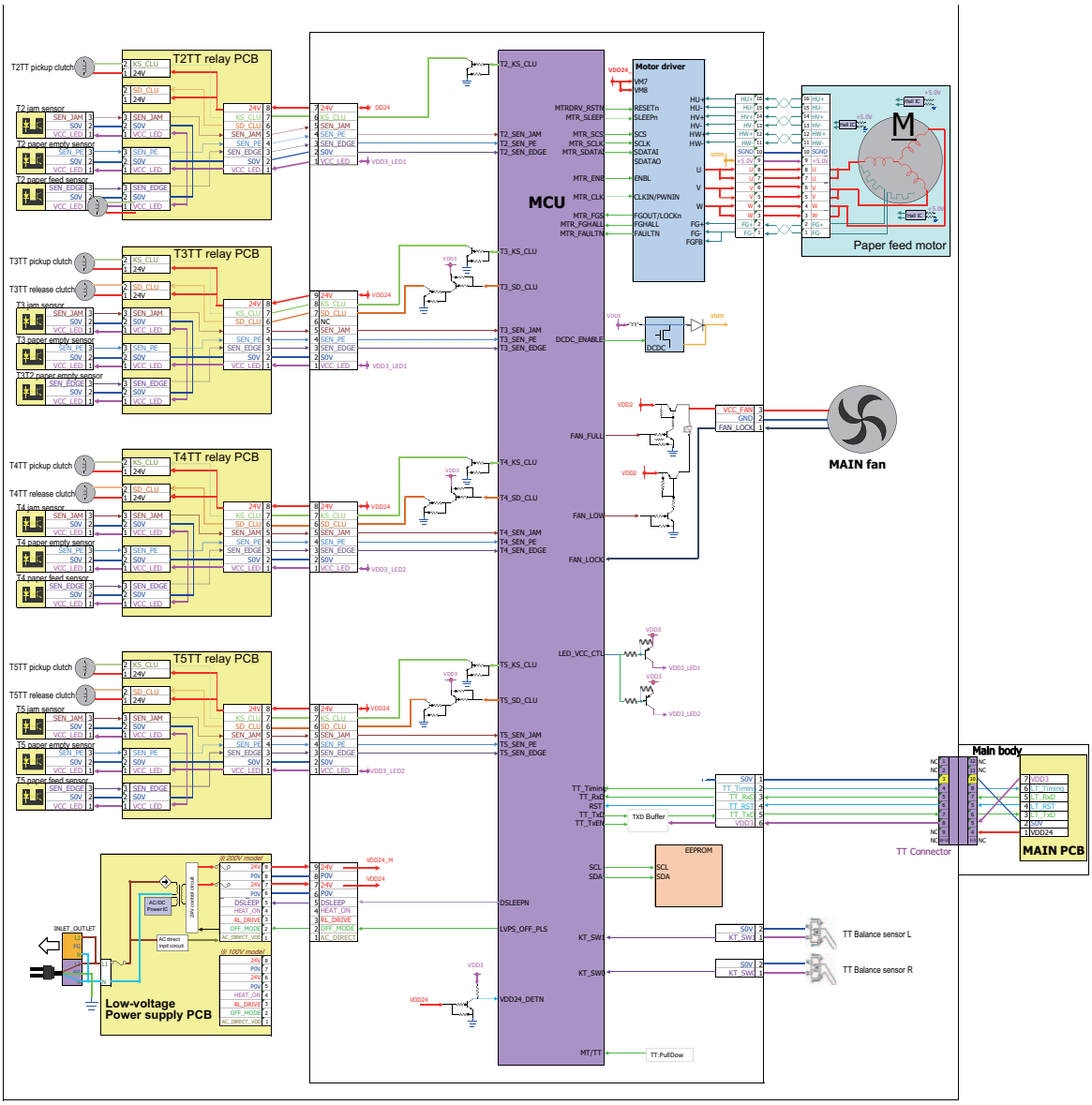
■ **LT**



■ MX



■ TT



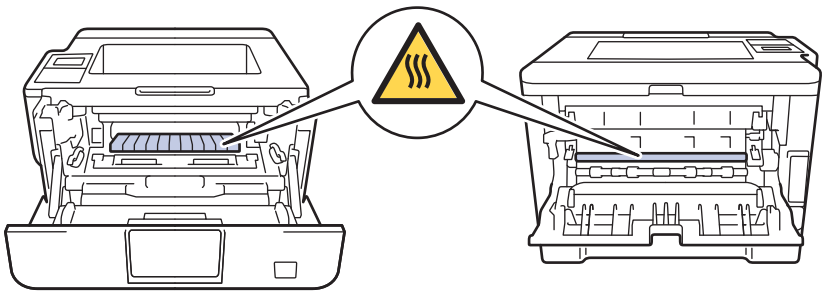
CHAPTER 7 PERIODICAL MAINTENANCE

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.
- If there are grease application parts, apply grease refer to Chapter 3.
- 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.
- The insulation sheet should not be damaged.
- When replacing the PCB, clear the component side and solder side from foreign objects.

2. PERIODICAL REPLACEMENT PARTS

2.1 Preparation

■ Disconnecting Cables and removing Accessories

Prior to proceeding with the disassembly procedure,

(1) Disconnect the following:

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

(2) Remove the following:

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

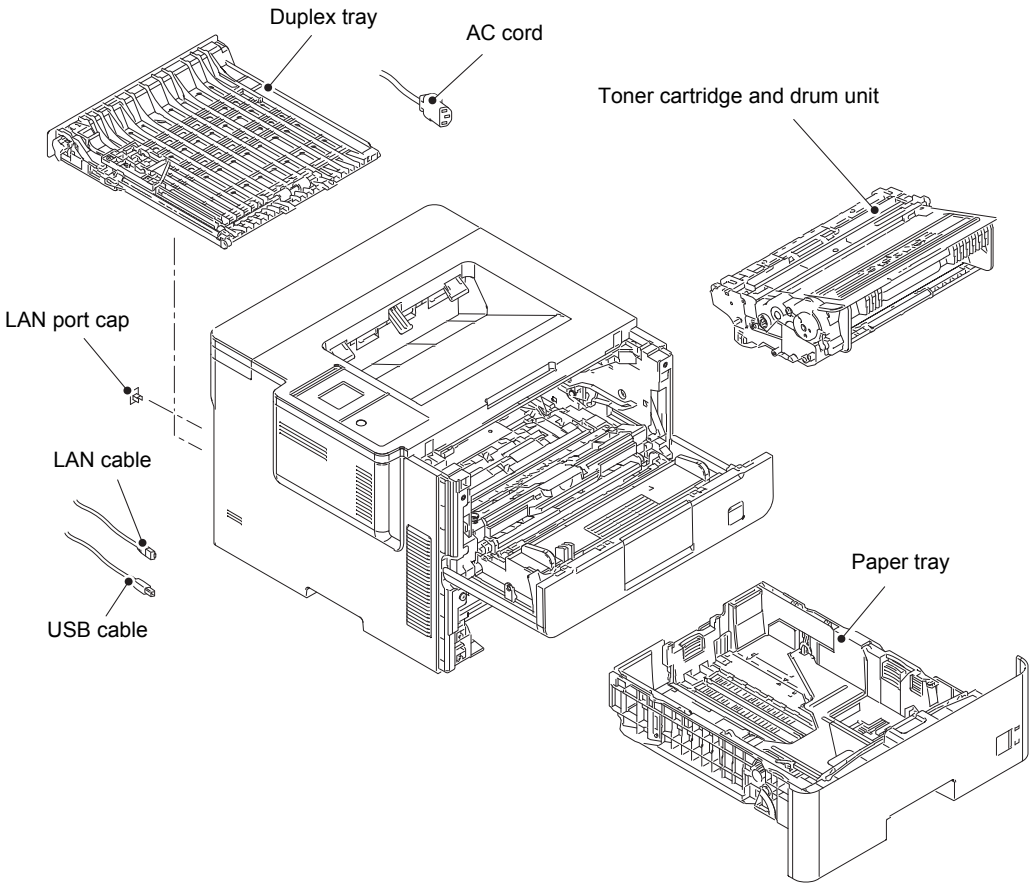


Fig. 7-1

2.2 Fuser unit

(1) Open the back cover.

(2) Push both ribs of the back cover in the direction of the arrows, and remove the two bosses on the outer chute.

Note:

- Be careful not to damage the ribs inside the back cover.

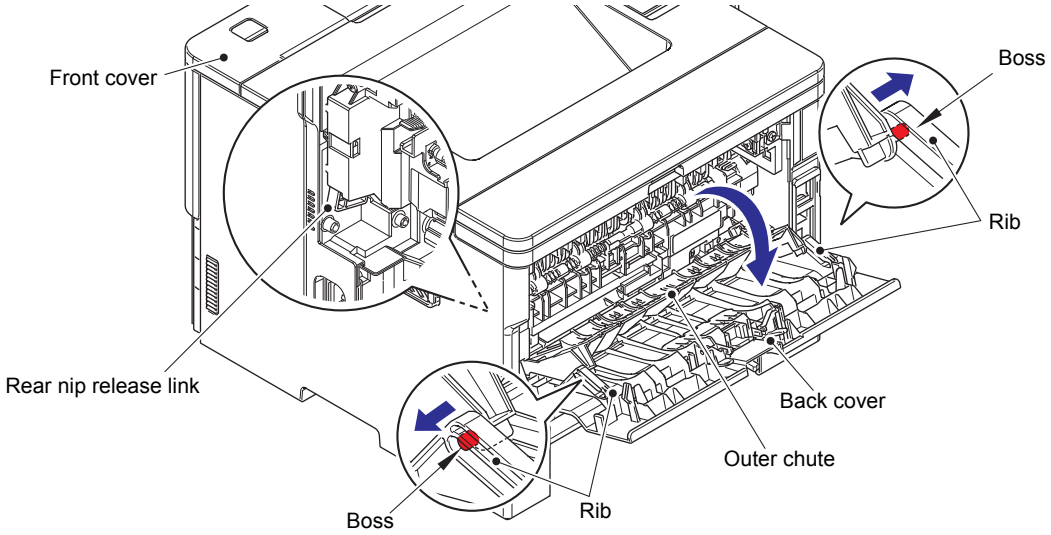


Fig. 7-2

Assembling Note:

- When attaching the back cover, open the front cover and attach the back cover while lifting the rear nip release link.

(3) Remove the back cover from the boss A, and remove the back cover.

(4) Open the outer chute approximately 80 degrees. Remove the outer chute from boss B, and remove the outer chute from the machine.

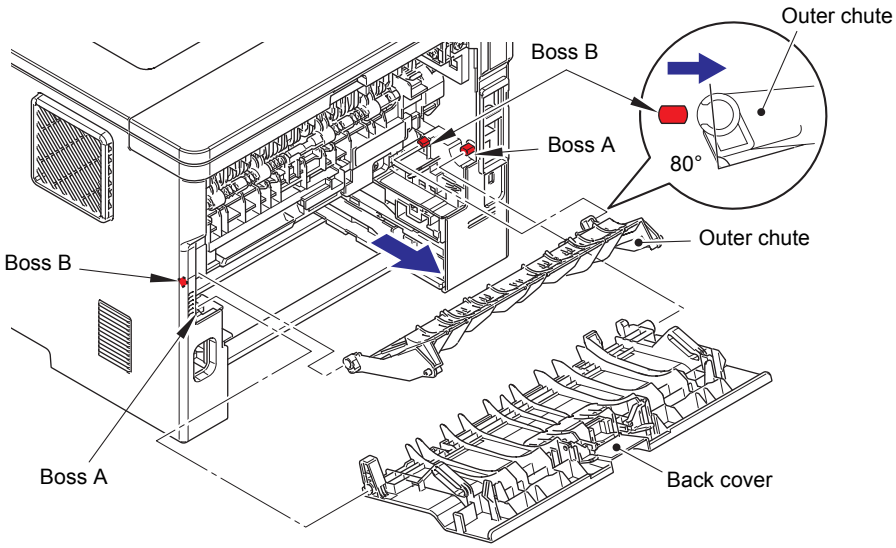


Fig. 7-3

(5) Push the two knobs on the fuser cover, and pull the fuser cover down in the direction of the arrow.

(6) Remove the fuser cover from the bosses on the fuser unit, and remove the fuser cover.

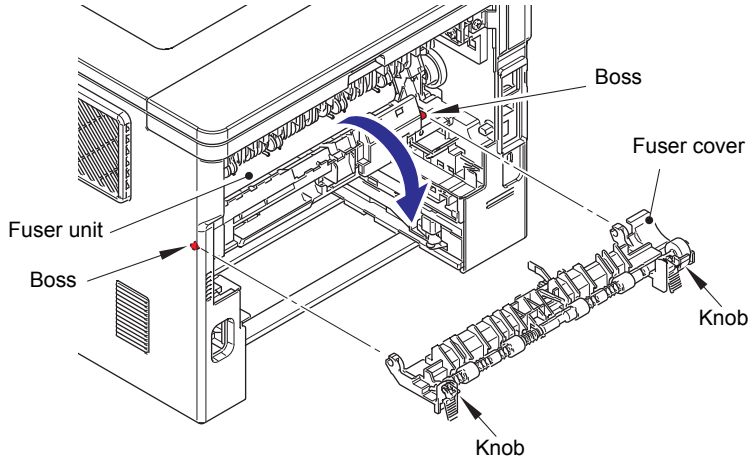


Fig. 7-4

(7) Remove the taptite bind B M4x12 screw, and remove the fuser unit line cover R.

(8) Open the front cover, and release the nip of the pressure roller.

(9) Slide the lower rear nip release link in the direction of the arrow 9b while pulling it in the direction of the arrow 9a to remove the rear nip release link.

(10) Remove the taptite pan B M4x14 screw. Release the hook, and remove the fuser unit line cover L.

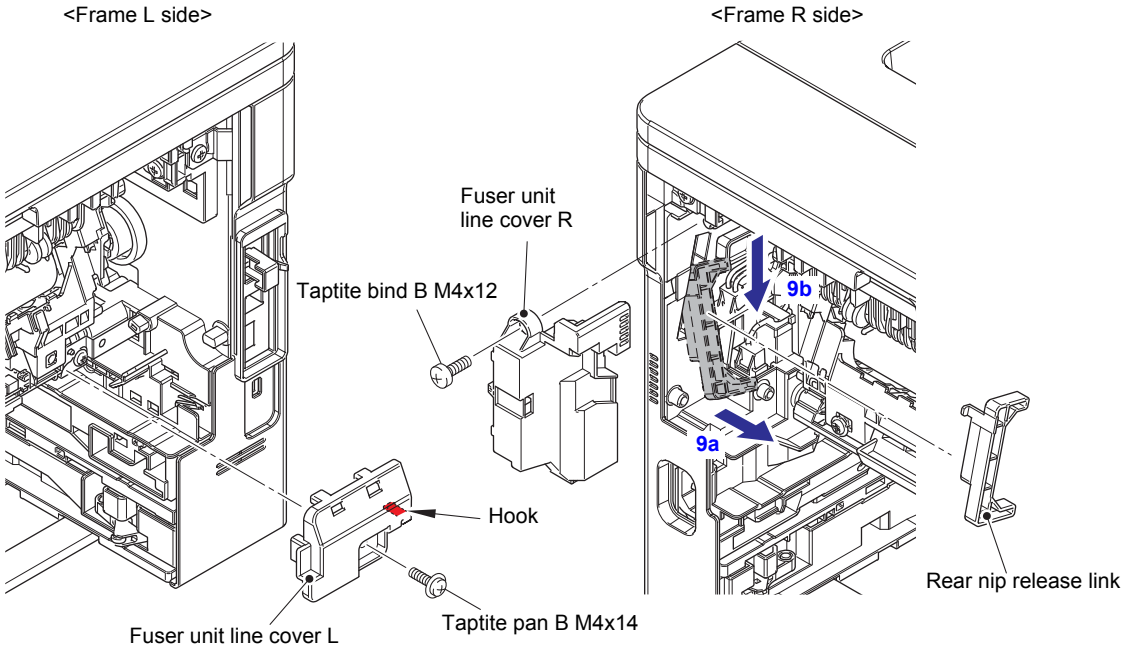


Fig. 7-5

(11) Release the heater harness of the fuser unit from the securing fixtures, and disconnect it from the low-voltage heater harness.

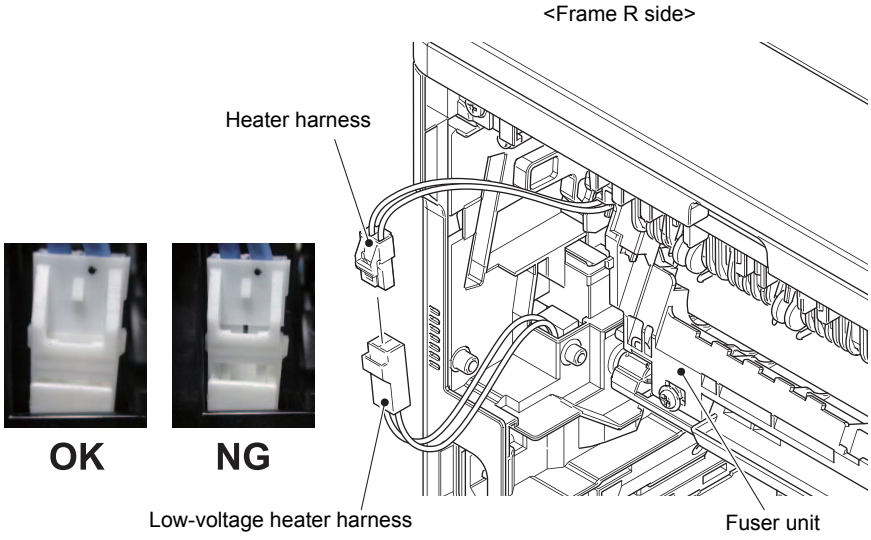


Fig. 7-6

Assembling Note:

- After connecting the heater harness, pull the connector on the heater harness side while holding the connector on the low-voltage heater harness side to make sure it is locked.

Harness routing: Refer to "6. Rear side of the machine".

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

Note:

- When disconnecting the harness, hold the top of the PCB connector to prevent the PCB connector being damaged.

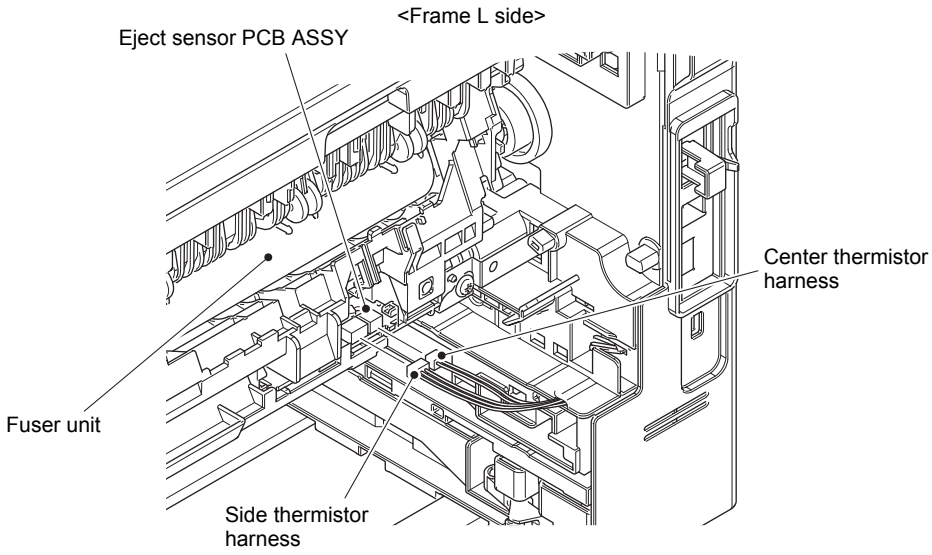


Fig. 7-7

Harness routing: Refer to "6. Rear side of the machine".

(13) Close the front cover and return the pressure roller nip.

(14) Remove the taptite pan B M4x14 screw, and remove the fuser unit.

Note:

- Make sure that the front cover is closed when removing the fuser unit.

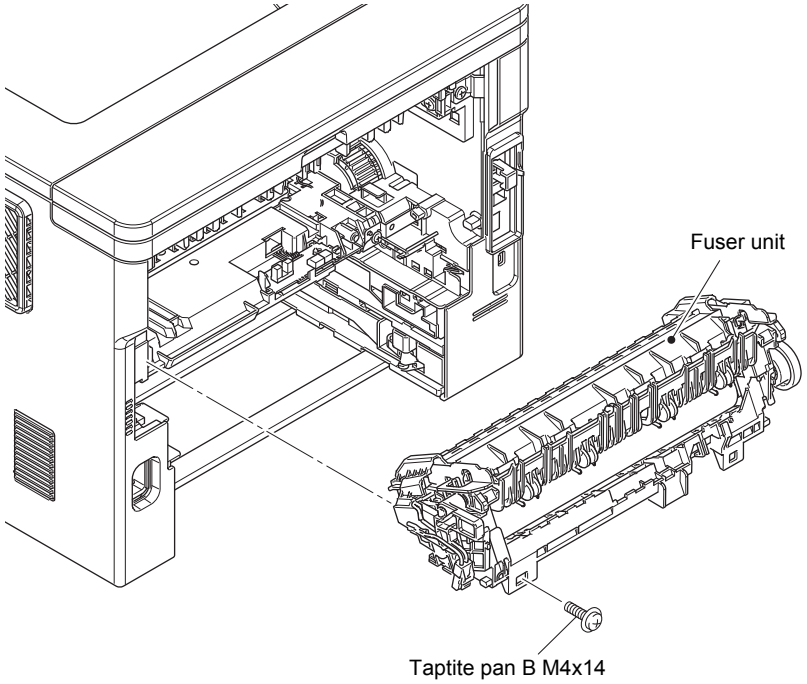


Fig. 7-8

2.3 Laser unit

(1) Open the back cover.

(2) Remove the two taptite bind B M4x12 screws.

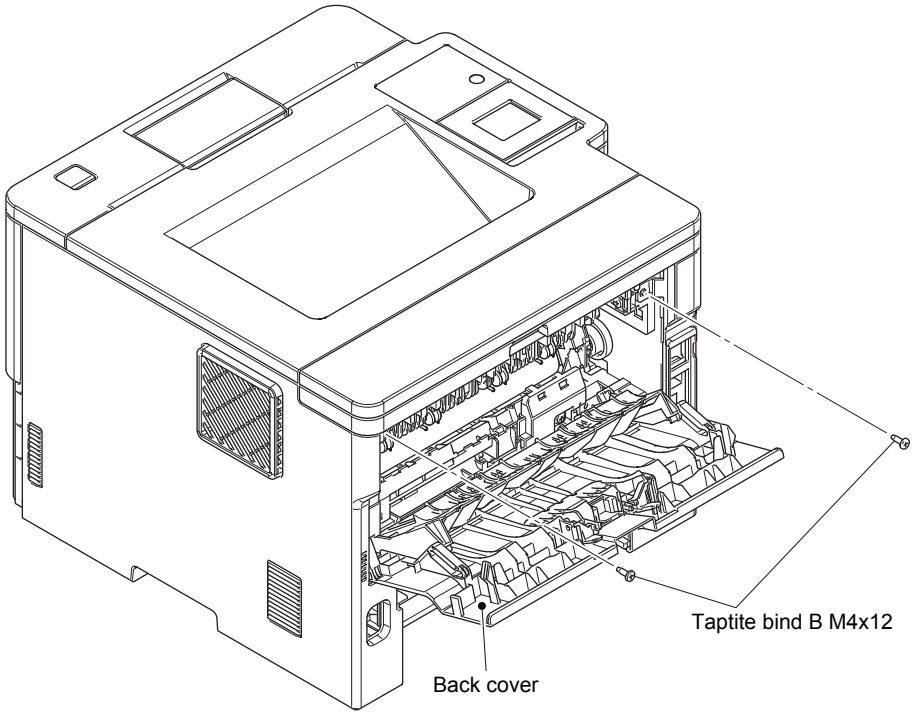


Fig. 7-9

(3) Remove the two taptite bind B M4x12 screws.

(4) Push the front cover release button, and open the front cover.

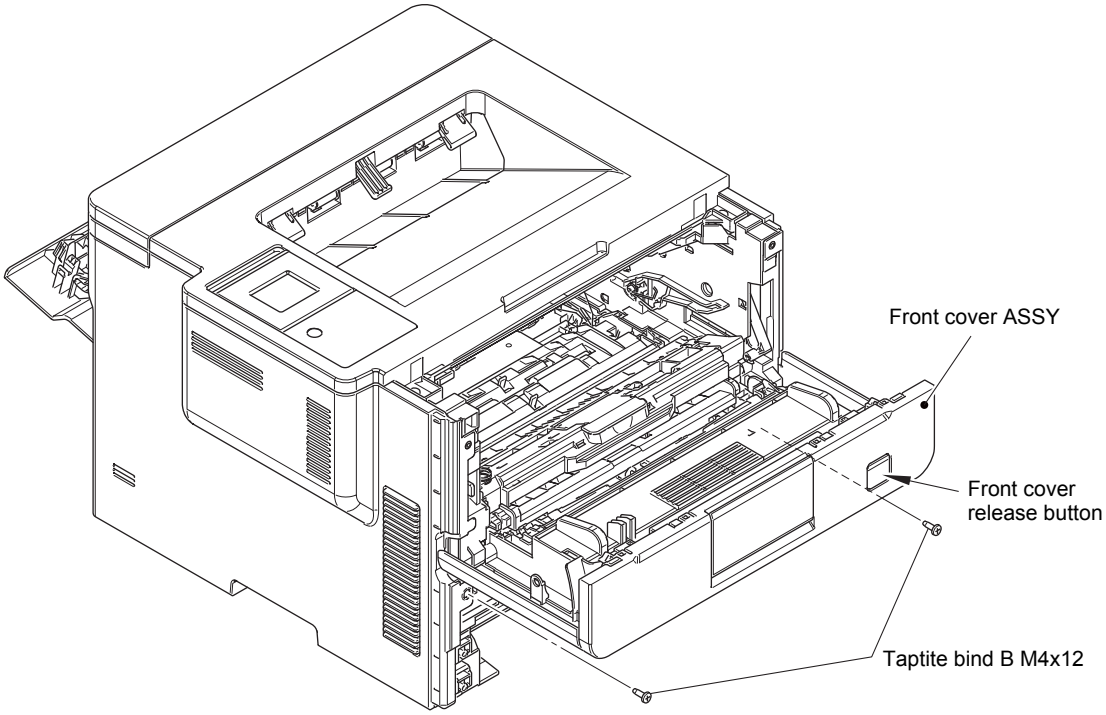


Fig. 7-10

(5) Release the hook A, B and C of the arrow A to C in this order, and remove the side cover L.

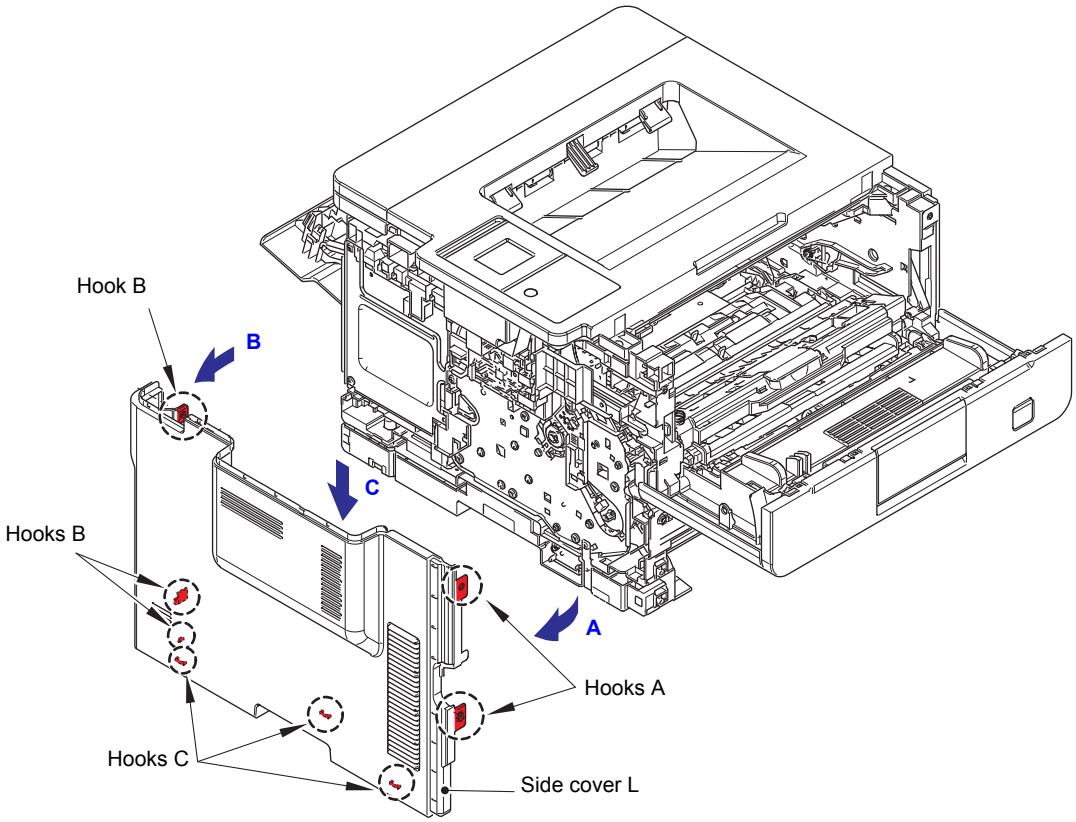


Fig. 7-11

(6) Release the hook A, B and C of the arrow A to C in this order, and remove the side cover R.

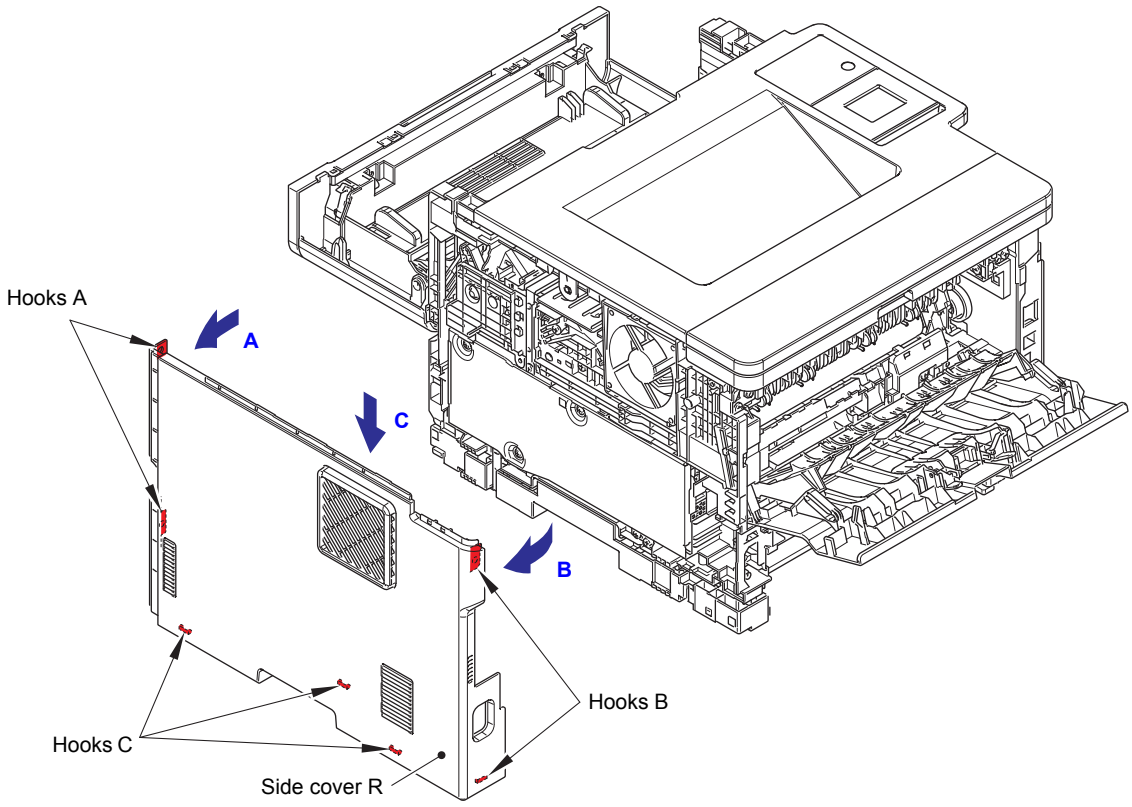


Fig. 7-12

■ Touch panel models

(7) Disconnect all flat cables from the panel PCB ASSY.

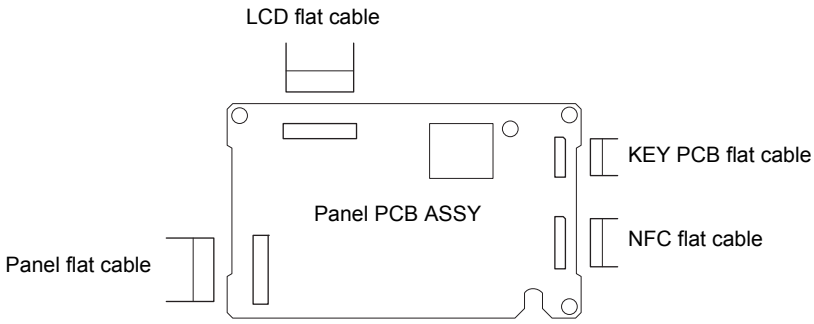


Fig. 7-13

(8) Release the two hooks A, and remove the panel PCB ASSY from the panel FFC holder.

(9) Remove the taptite cup S M3x8 SR screw to disconnect the FG harness A.

(10) Release each flat cable and the FG harness A from the securing fixtures of panel FFC holder.

(11) Release the hook B, slide the panel FFC holder in the direction of the arrow to release each tab, and remove the panel FFC holder.

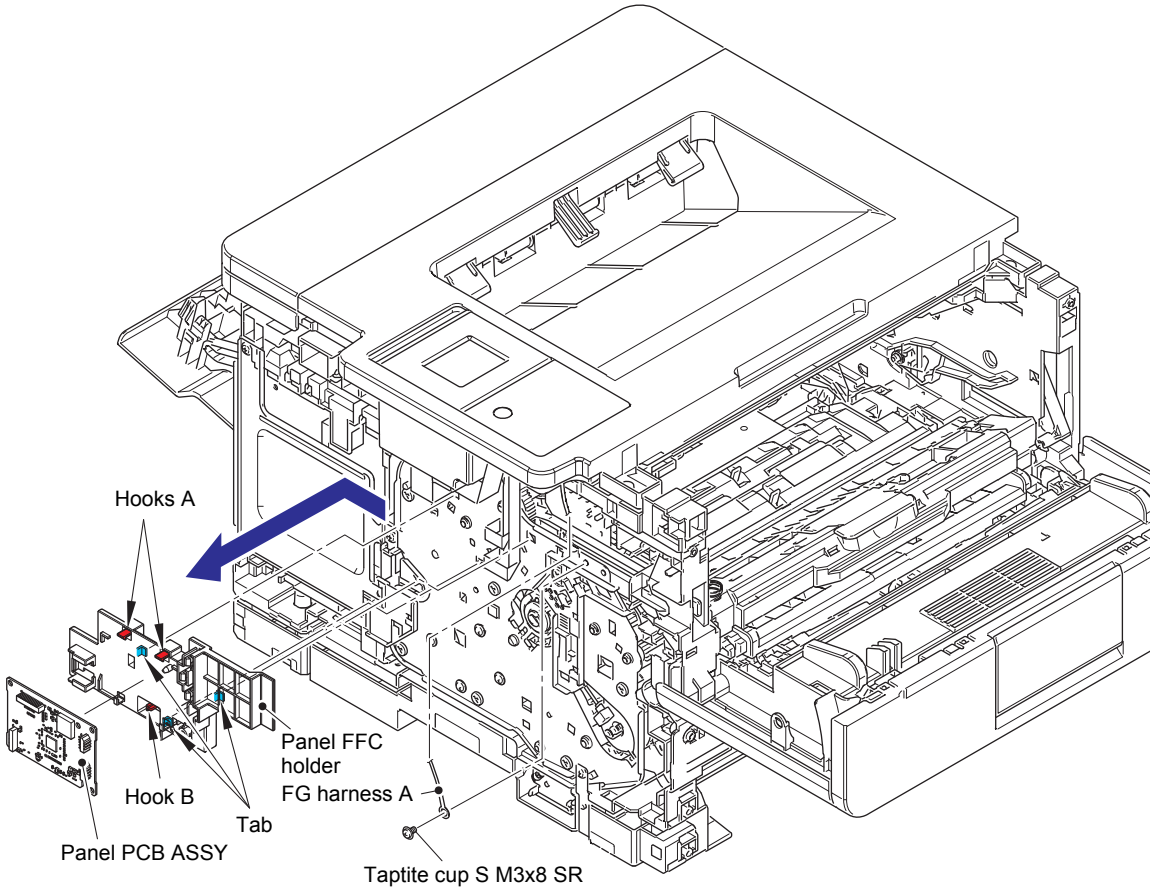


Fig. 7-14

Harness routing: Refer to “1. Left side of the machine (Touch panel models)”.

(12) Disconnect the stack sensor harness from the main PCB ASSY, and release it from the securing fixtures.

(13) Remove the four taptite bind B M4x12 screws.

(14) Release the hook A first, and then release the hook B. Remove the top cover ASSY.

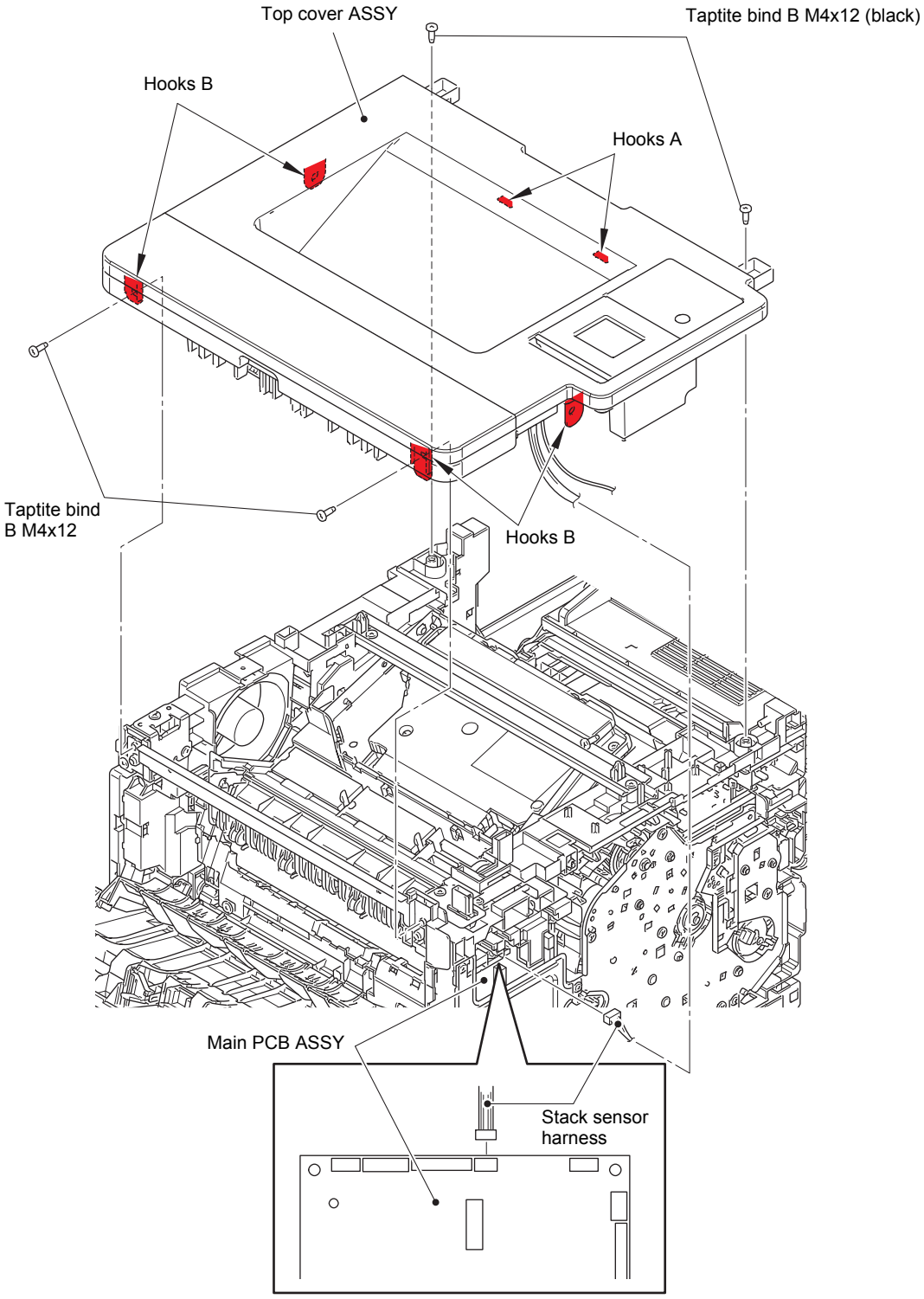


Fig. 7-15

Harness routing: Refer to “1. Left side of the machine (Touch panel models)”.

■ Non touch panel models

(15) Disconnect the panel harness ASSY from the main PCB ASSY, and release it from the securing fixtures.

(16) Remove the four taptite bind B M4x12 screws.

(17) Release the hook A first, and then release the hook B. Remove the top cover ASSY.

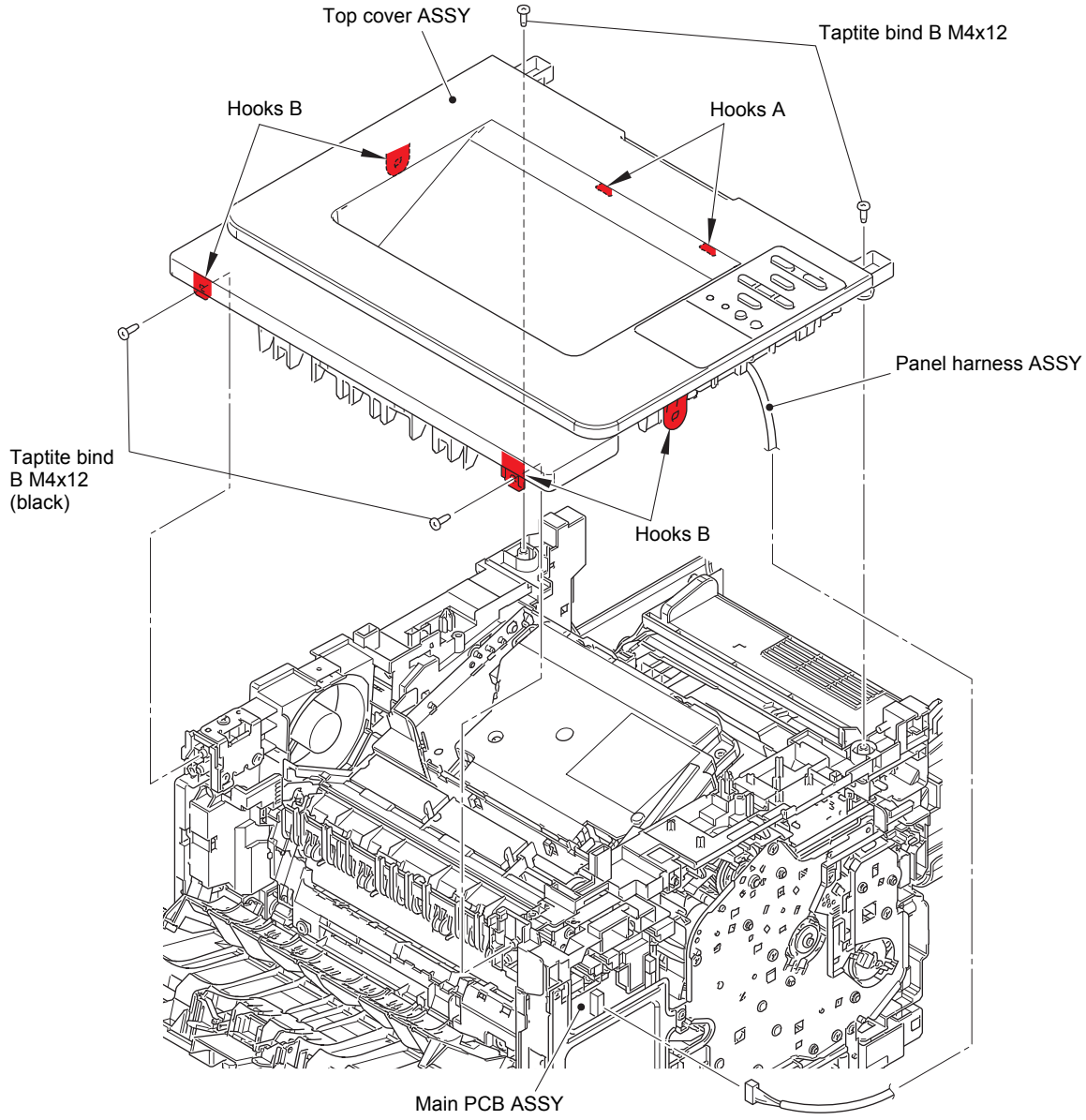


Fig. 7-16

Harness routing: Refer to “2. Left side of the machine (Non touch panel models)”.

■ Common to all models

(18) Remove the two taptite bind B M4x12 screws, and remove the top bar. (Touch panel models)

(19) Disconnect the laser unit flat cable from the laser unit, and release it from the securing fixtures.

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

Note:

- Be careful not to touch the lens of the laser unit.

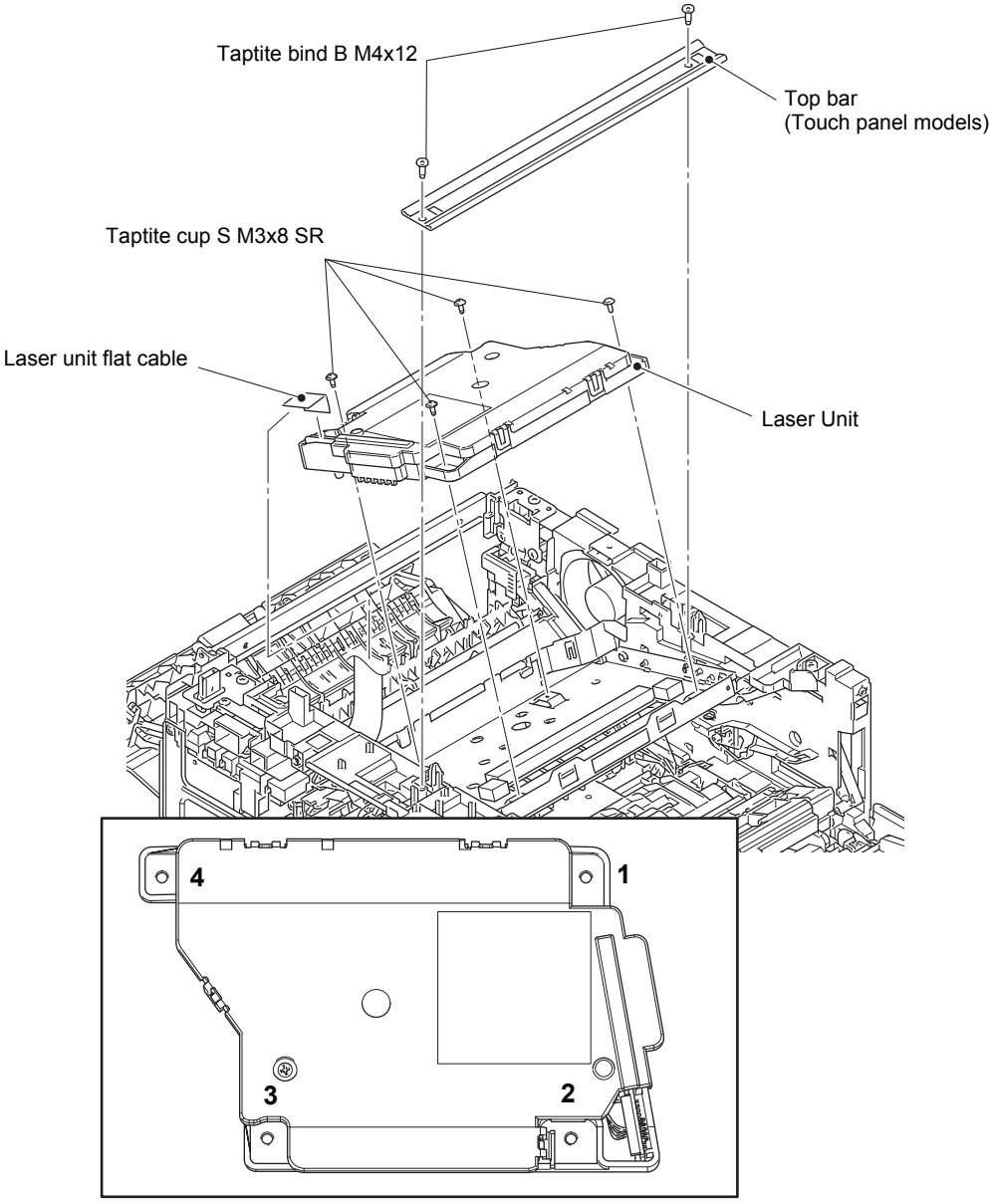


Fig. 7-17

Harness routing:
Refer to “3. Left side of the machine (Common to all models), 6. Rear side of the machine”.

Assembling Note:

- When attaching the laser unit, tighten the screws in the following order: upper right, lower right, lower left and upper left.
- When connecting flat cables, do not insert them at an angle. After insertion, check that the cable is not at an angle.

< Location of the laser serial number label on the laser unit >

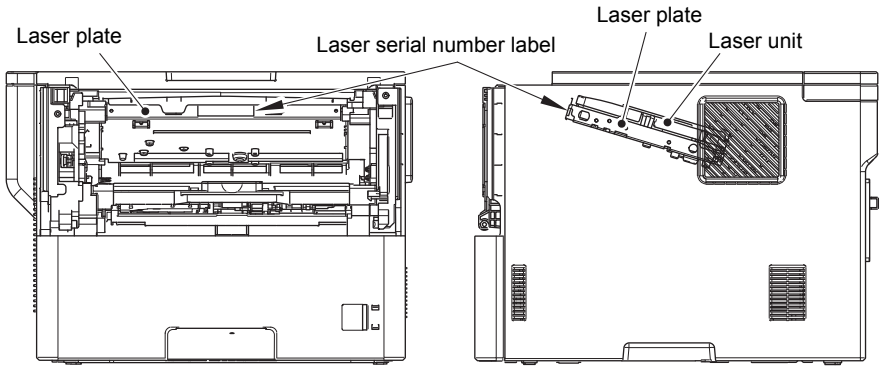


Fig. 7-18

Note:

- Attach the laser serial label to the position (on the laser plate) shown in the figure above after replacing the laser unit.

2.4 PF kit MP

(1) Push the front cover release button, and open the front cover ASSY.

(2) Open the MP roller cover. Release the hook on the MP holder bushing, and slide the MP holder bushing in the direction of the arrow 2.

(3) Slide the MP roller holder ASSY in the direction of the arrow 3 to remove it from the MP separation roller shaft. Then remove the MP roller holder ASSY.

(4) Raise the MP separation pad ASSY to the 50-degree position, and remove it in the direction of the arrow 4.

(5) Remove the MP separation pad spring.

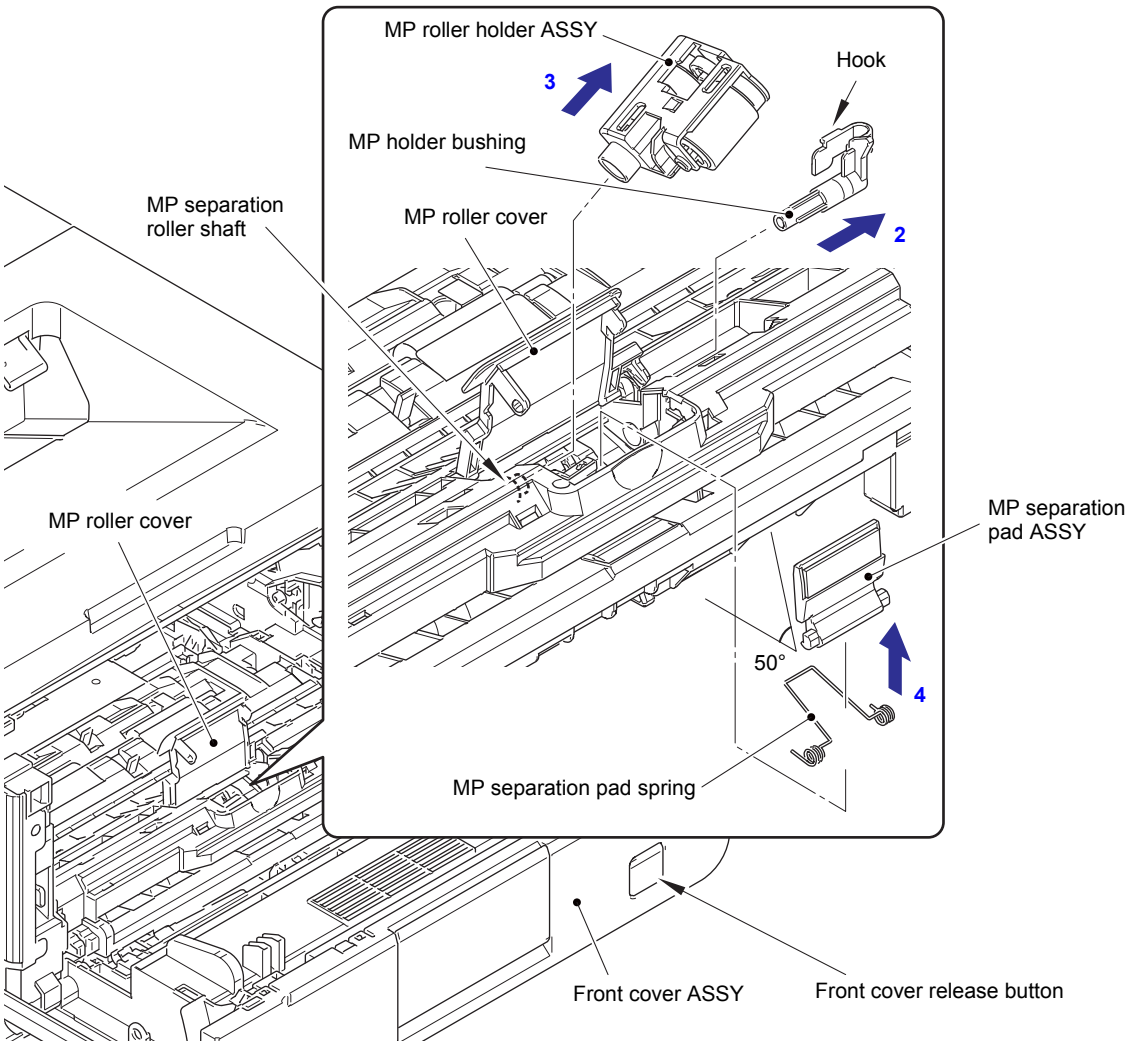


Fig. 7-19

Assembling Note:

- Attach the MP roller holder ASSY while pushing the MP separation pad ASSY.

2.5 PF kit 1

(1) Release the two hooks on the T1 separation pad ASSY from paper tray.

(2) Push both arms on the T1 separation pad ASSY inwards to remove both pins, and remove the T1 separation pad ASSY from the paper tray.

(3) Remove the T1 separation pad spring from the T1 separation pad ASSY.

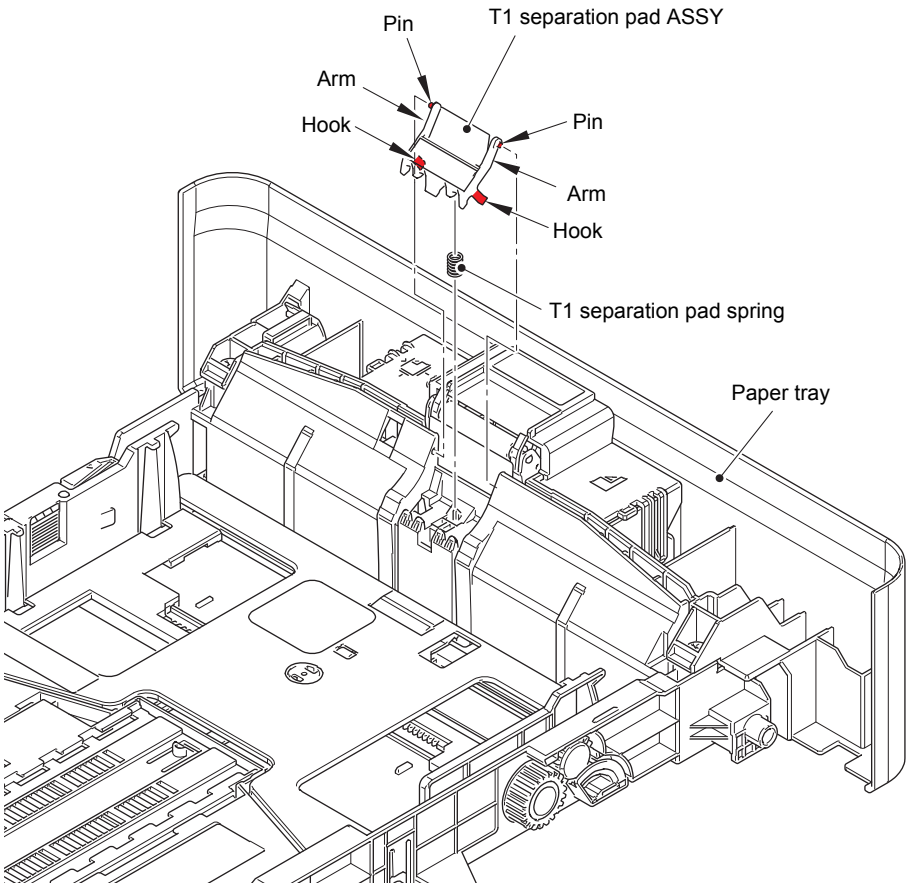


Fig. 7-20

(4) Push the link arm in the direction of the arrow A, and turn the T1 roller holder ASSY to remove the boss.

(5) Slide the T1 roller holder ASSY in the direction of the arrow B to remove it from the shaft, and remove the T1 roller holder ASSY.

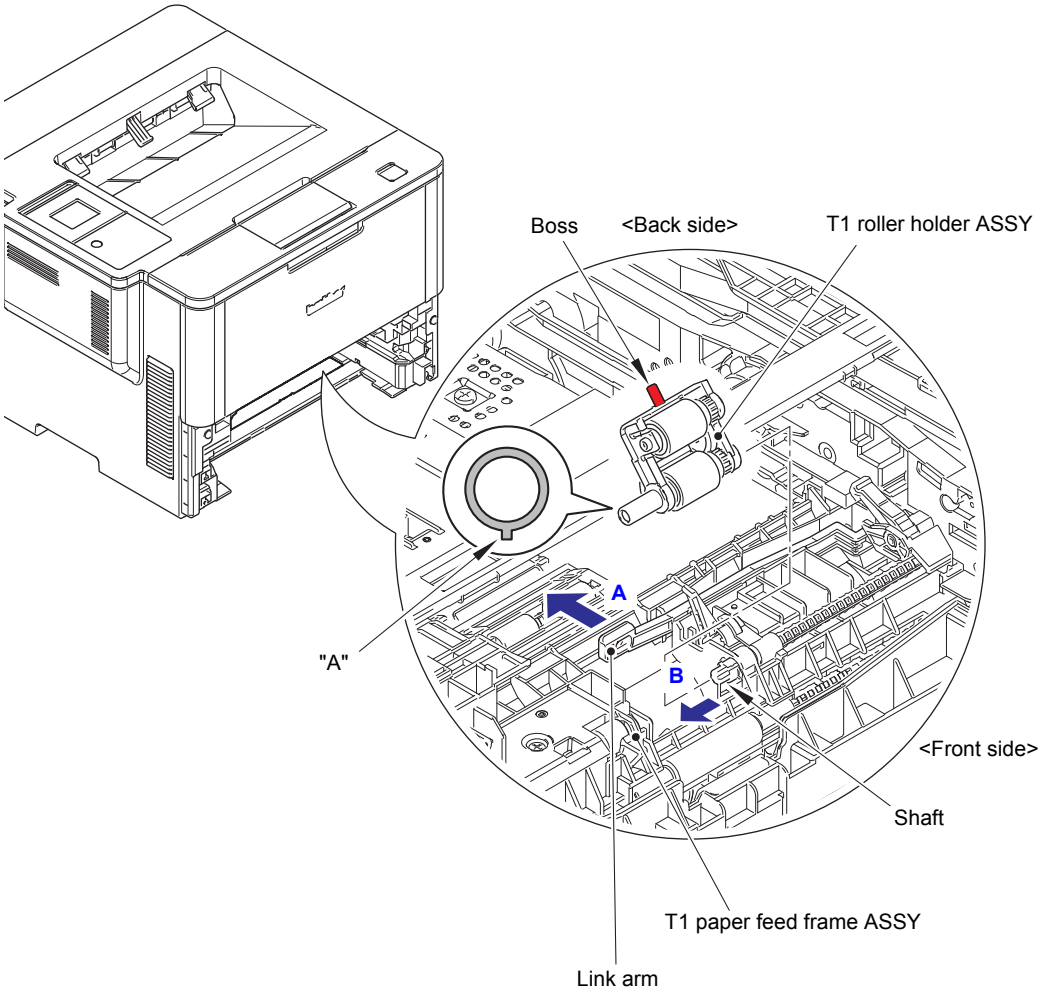


Fig. 7-21

Assembling Note:

- When attaching the T1 roller holder ASSY, engage "A" on the shaft of the T1 roller holder ASSY with the hole on the T1 paper feed frame ASSY, and insert the shaft into the hole.

2.6 PF kit 2/3/4/5

Note:
- Disassembly procedures of the PF kit are common to LT and TT.

(1) Release the two hooks on the separation pad ASSY from the paper tray.

(2) Push both side arms on the separation pad ASSY inwards to remove the pins, and remove the separation pad ASSY from the paper tray.

(3) Remove the separation pad spring from the separation pad ASSY.

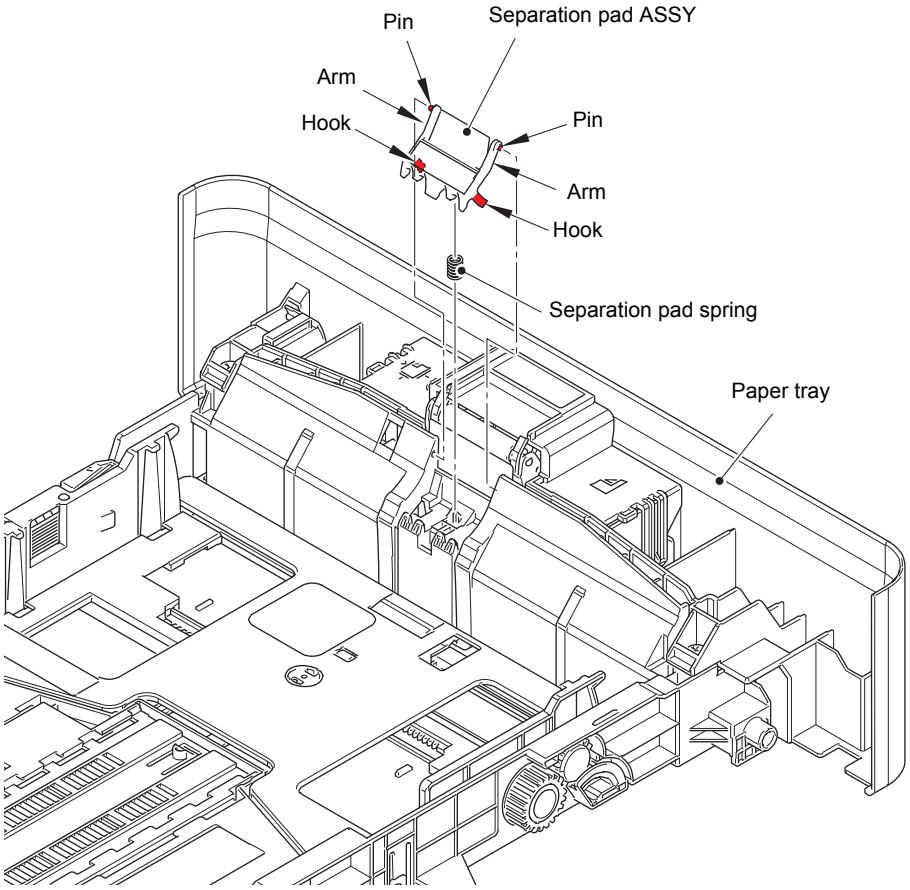


Fig. 7-22

(4) Push the link arm in the direction of the arrow A, and turn the roller holder ASSY to remove the boss.

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

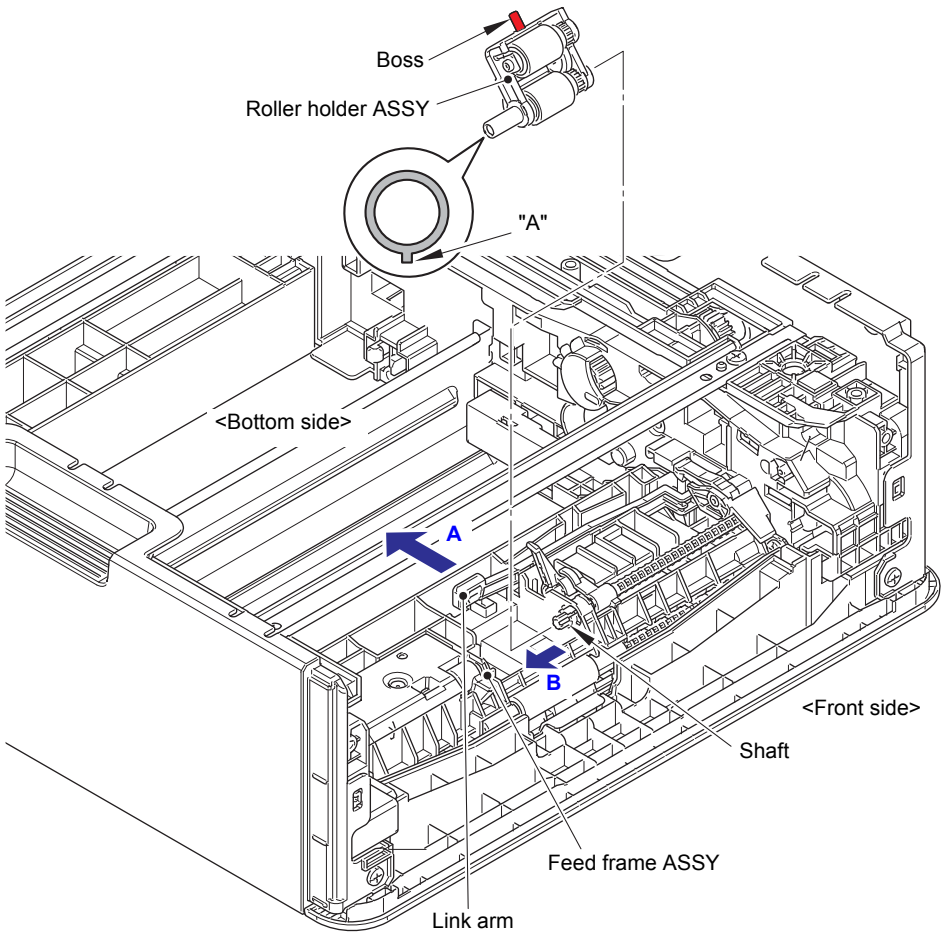


Fig. 7-23

Assembling Note:

- When attaching the roller holder ASSY, engage "A" on the shaft of the roller holder ASSY with the hole on the feed frame ASSY, and insert the shaft into the hole.

APPENDIX 1 SERIAL NUMBERING SYSTEM

■ Serial number labels on the printer

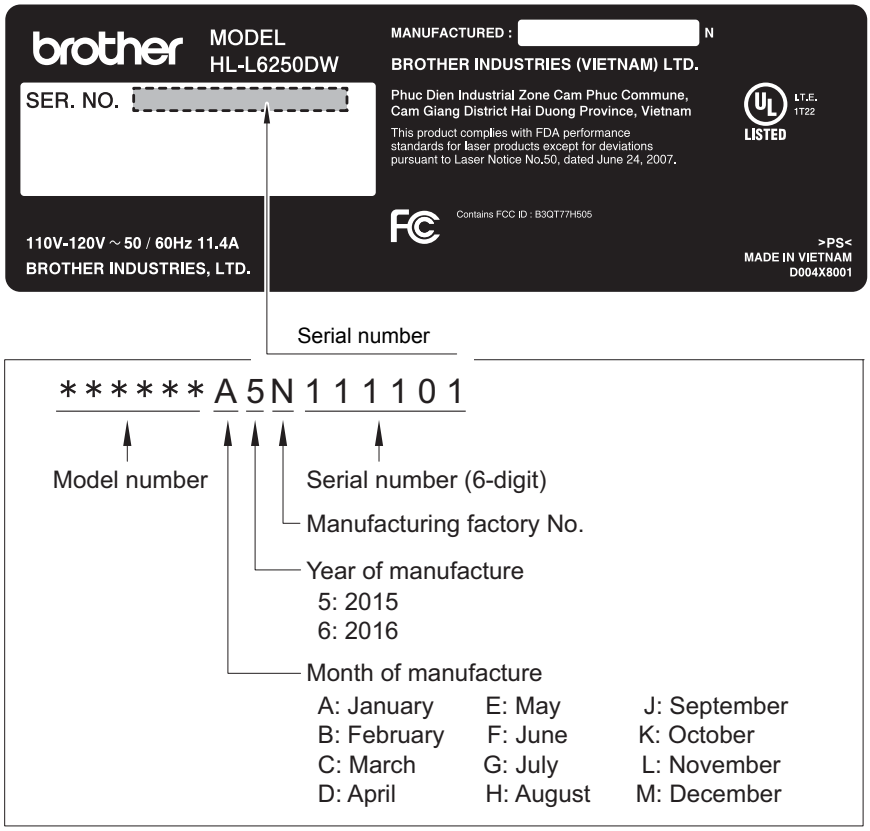


Fig. App. 1-1

<Location>

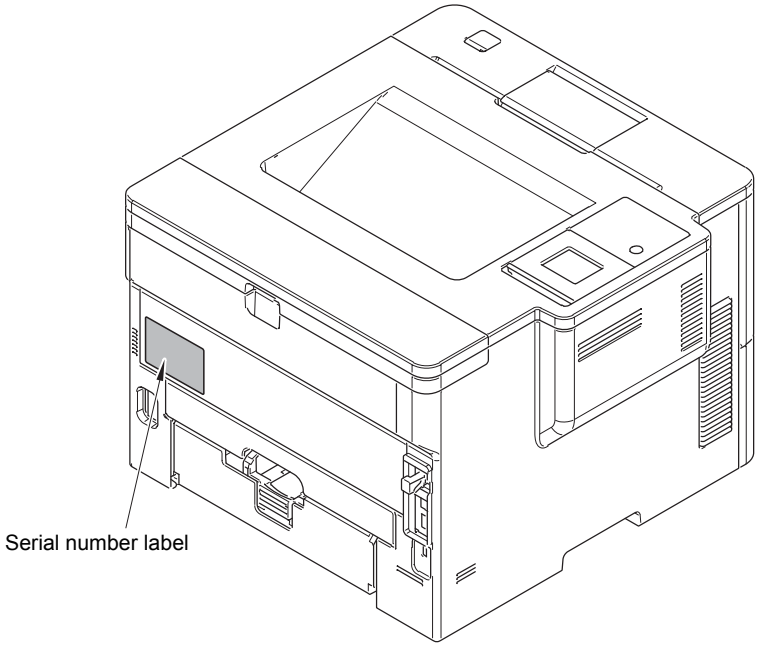


Fig. App. 1-2

■ Serial number labels on the MX

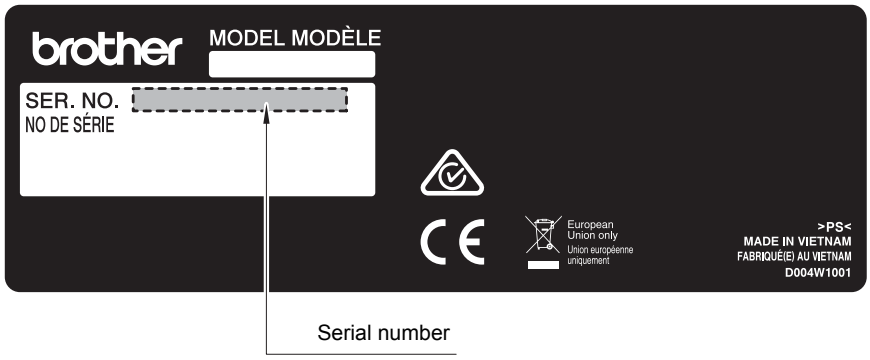


Fig. App. 1-3

<Location>

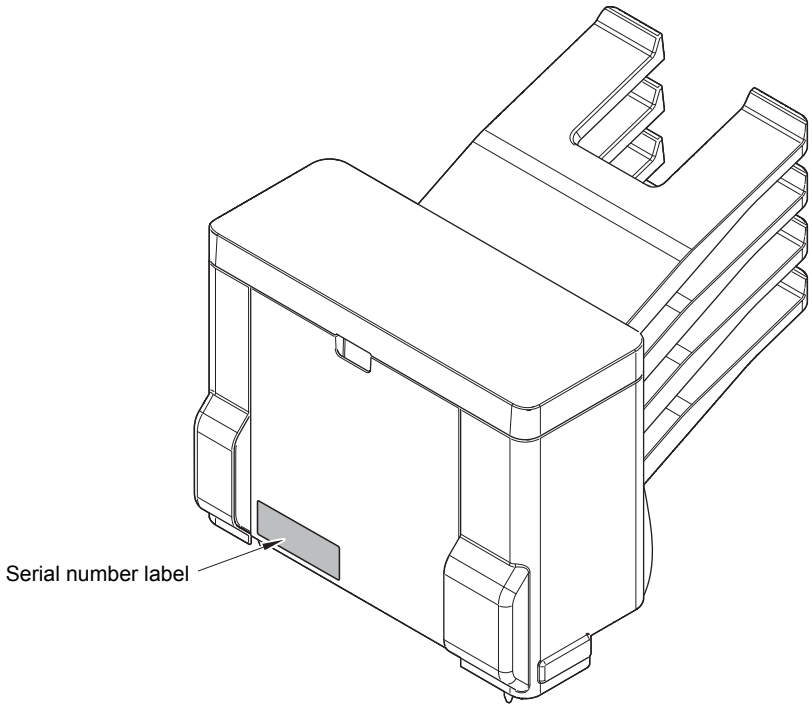


Fig. App. 1-4

■ Serial number labels on the TT

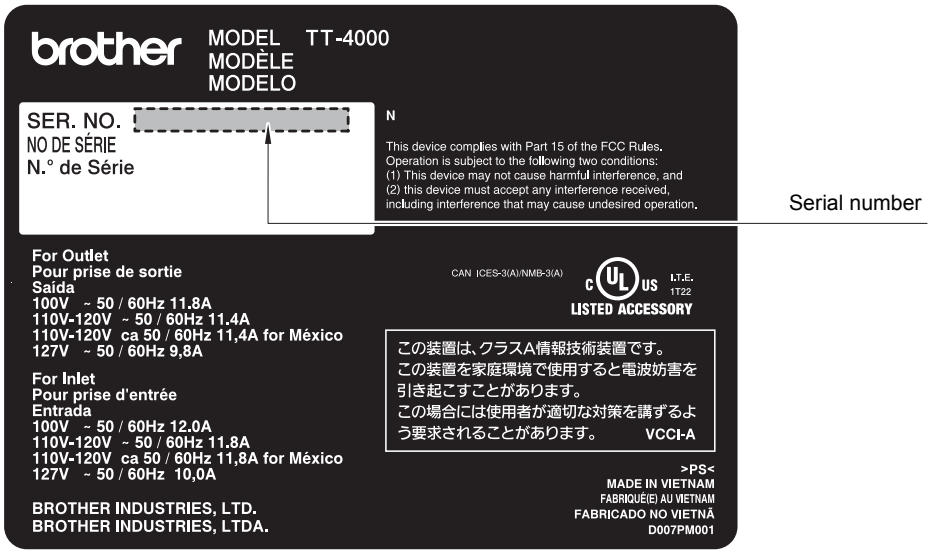


Fig. App. 1-5

<Location>

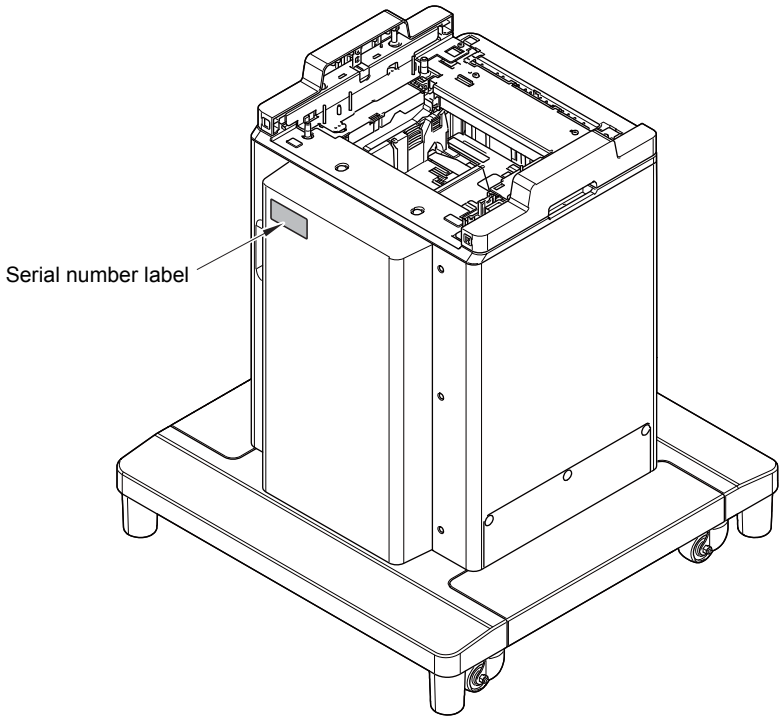


Fig. App. 1-6

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>

Non touch panel models

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

(2) Press the [▲] or [▼] key to display "Factory Reset" on the LCD, and press the [OK] key.

(3) Press the [▲] key. User setting information is deleted and the machine returns to the ready state.

Touch panel models

(1) Press the [Settings] key while the machine is in the ready state.

(2) Press the [∧] or [∨] key to display "Reset Menu" key on the LCD, and press the [Reset Menu] key.

(3) Press the [Factory Reset] key on the LCD.
"Factory Reset? It may take time to complete." is displayed on the LCD.

(4) Press the [Yes] key. "Reboot OK? Press [Yes] for 2 seconds to confirm" is displayed on the LCD.

(5) Press and hold the [Yes] key for two seconds or longer.
User setting information is deleted and the machine returns 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 XP

(1) Check that the power switch of the machine is turned OFF. Disconnect the USB cable that connects the machine with your computer.

(2) Turn ON your computer.

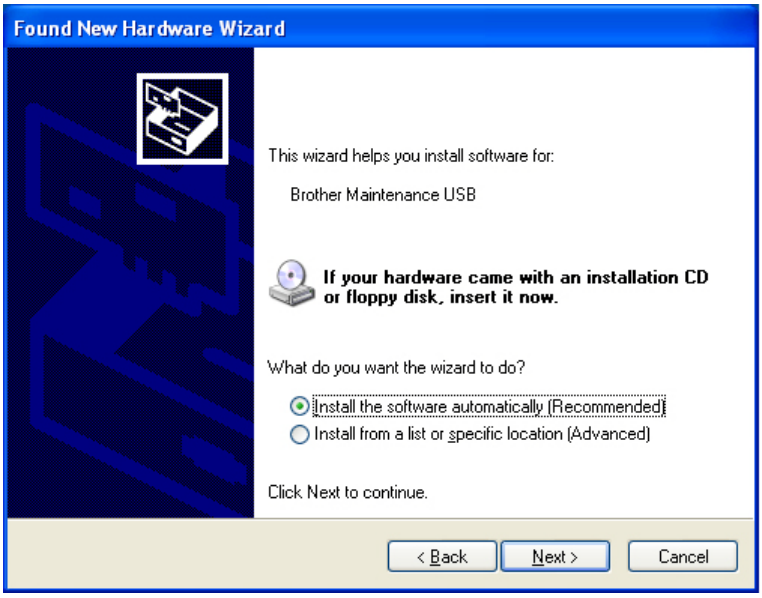
(3) Turn ON the power switch of the machine.

(4) Enter the maintenance mode.
(Refer to “1.1 How to Enter Maintenance Mode” in Chapter 5.)

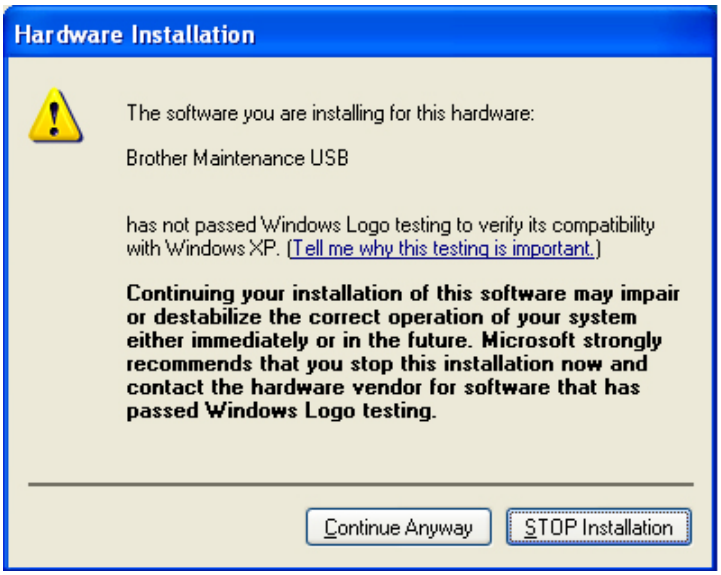
(5) Connect the machine to your computer using a USB cable.
The following window appears.

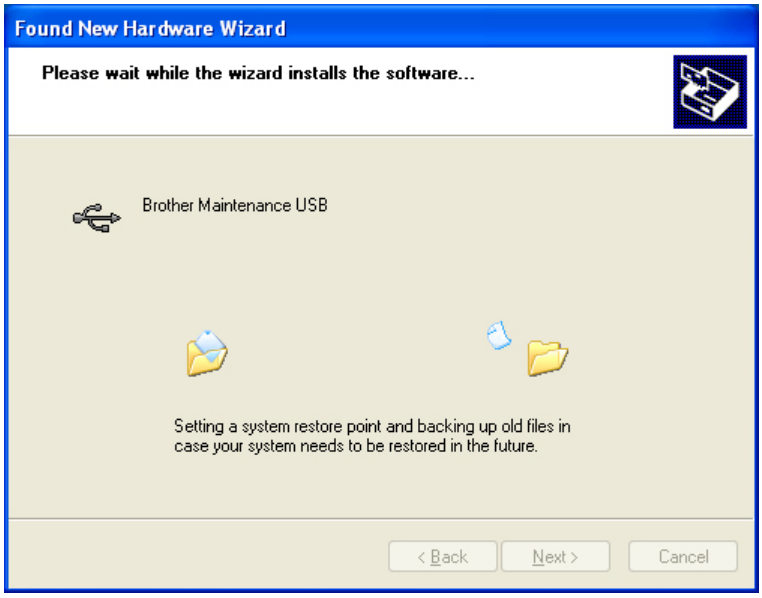
(6) The following screen appears, indicating the detection of new hardware device by the system. Select “No, not this time.” And click [Next].

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



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



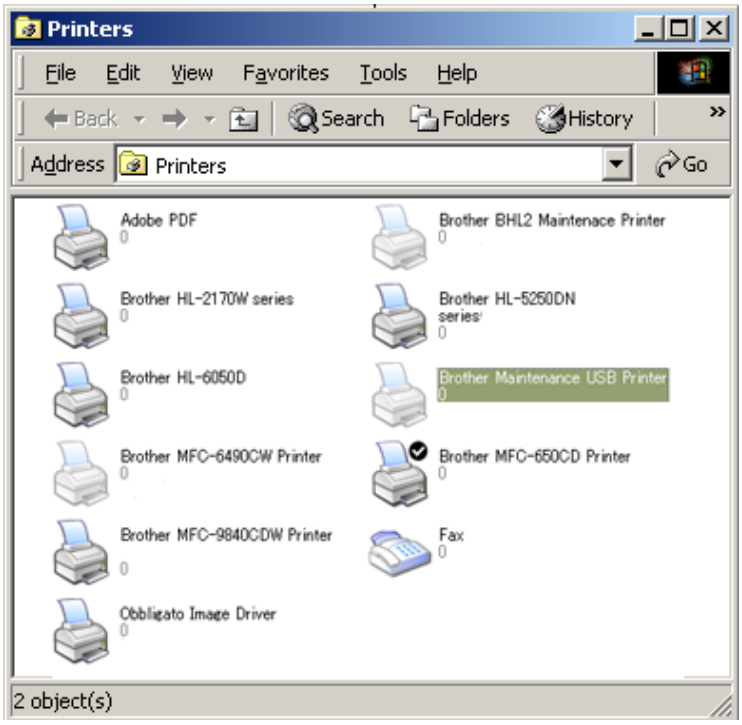


(9) Repeat steps (6) to (8) three times. Installation is completed.

(10) If the Brother Maintenance USB Printer driver is successfully installed, the following message screen appears. Click [Finish] to return.

Note:

In order to check whether the printer driver is successfully installed, click [Start], [Settings], [Printers] to select the Printers window. Then, check that the Brother Maintenance USB Printer icon is shown.

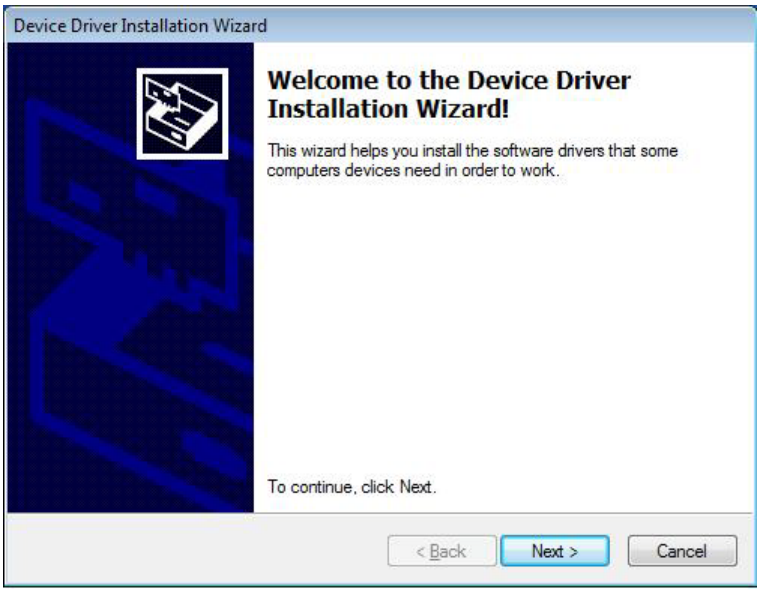


■ Windows Vista/Windows 7/Windows 8/Windows 8.1/Windows 10

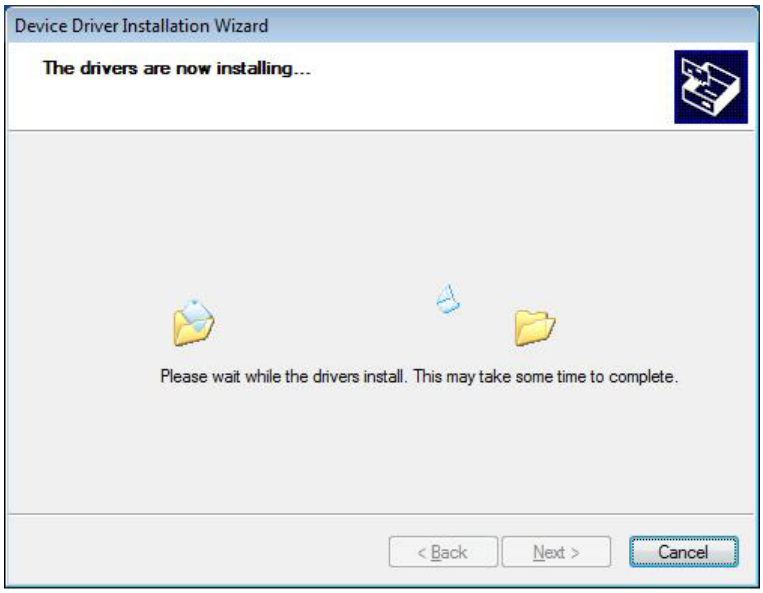
(1) Check that the AC cord of the machine is unplugged from the electrical outlet. Disconnect the USB cable that connects the machine with your computer.

(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.