brother®

Brother Laser MFC

SERVICE MANUAL

MODEL:
FAX-2840/2845/2890
FAX-2940/2950/2990
MFC-7240/7290
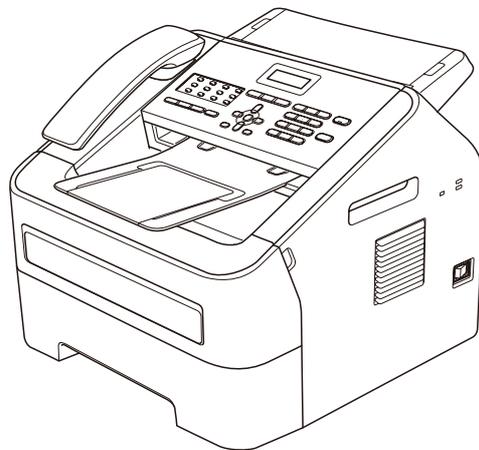
Read this manual thoroughly before maintenance work.
Keep this manual in a convenient place for quick and easy reference at all times.

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

Model	FAX-2840	FAX-2845	FAX-2890	FAX-2940
LCD Back Light	—	—	✓	✓
Handset	✓ (N/A for EU models)	✓	✓	✓ (N/A for EU models)
Scanner Function	—	—	—	✓

Model	FAX-2950	FAX-2990	MFC-7240	MFC-7290
LCD Back Light	✓	✓	—	✓
Handset	✓	✓	✓	✓
Scanner Function	✓	✓	✓	✓

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REGULATION

■ Approval Information

THIS EQUIPMENT IS DESIGNED TO WORK WITH A TWO WIRE ANALOGUE PSTN LINE FITTED WITH THE APPROPRIATE CONNECTOR.

Brother advises that this product may not function correctly in a country other than where it was originally purchased, and does not offer any warranty in the event that this product is used on public telecommunication lines in another country.

■ Declaration of Conformity (Europe only)
(FAX-2840 / FAX-2845 / FAX-2940 only)

We, Brother Industries, Ltd. of 15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that this product is in compliance with the essential requirements of Directives 1999/5/EC and 2009/125/EC.

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

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

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

■ IEC60825-1:2007 Specification (For 220-240V models only)

This product is a Class 1 laser product as defined in IEC60825-1:2007 specifications. The label shown below is attached in countries where required.

This product has a Class 3B Laser Diode which emits invisible laser radiation in the Scanner Unit. The Scanner Unit should not be opened under any circumstances.

<div style="text-align:center; border:1px solid;">
CLASS 1 LASER PRODUCT
APPAREIL À LASER DE CLASSE 1
LASER KLASSE 1 PRODUKT
</div>

Internal laser radiation

Wave length: 770 - 800 nm
Output: 25 mW max.
Laser Class: Class 3B

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

■ **Disconnect Device**

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

■ **Wiring Information (U.K. only)**

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

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

Warning -This product must be earthed.

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

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

■ **Radio Interference**

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

■ **EU Directive 2002/96/EC and EN50419**

European
Union only

This equipment is marked with the above recycling symbol. It means that at the end of the life of the equipment you must dispose of it separately at an appropriate collection point and not place it in the normal domestic unsorted waste stream.

Confidential

For USA and Canada

■ **Standard telephone and FCC notices**

<u>These notices are in effect on models sold and used in the United States only.</u>
<u>This equipment is hearing-aid compatible.</u>

When programming emergency numbers or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call before hanging up.
- Perform these activities in the off-peak hours, such as early morning or late evening.

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the backside of this equipment is a label that contains, among other information, a product identifier in the format US: AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

You may safely connect this equipment to the telephone line by means of a standard modular jack, USOC RJ11C.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. (See installation instructions for details.)

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 06 is a REN of 0.6). For earlier products, the REN is separately shown on the label.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact Brother Customer Service. (See Brother numbers in the Basic User's Guide.) If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, call your telephone company or a qualified installer.

If you are not able to solve a problem with your product, call Brother Customer Service. (See Brother numbers in the Basic User's Guide.)

⚠ **WARNING**

For protection against the risk of electrical shock, always disconnect all cables from the wall outlet before servicing, modifying or installing the equipment.

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

Responsible Party: Brother International Corporation
100 Somerset Corporate Boulevard
P.O. Box 6911
Bridgewater, NJ 08807-0911 USA
Telephone: (908) 704-1700

declares, that the products

Product name:	FAX-2840 / FAX-2940 / MFC-7240
Model numbers:	FAX-2840 / FAX-2940 / MFC-7240

complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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❶ IMPORTANT

- Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.
- A shielded interface cable should be used to ensure compliance with the limits for a Class B digital device.

■ **Industry Canada Compliance Statement (For Canada)**

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

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

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

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes:

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

■ **Equipment Attachment Limitations (Canada only) (MFC only)**

NOTICE: This product meets the applicable Industry Canada technical specifications.

            Le présent materiel est conforme aux specifications techniques applicables d'Industrie Canada.

NOTICE: The Ringer Equivalence Number is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

            L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

■ **Laser Safety (110 to 120 volt model only)**

This machine is certified as a Class 1 laser product under the USA. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the machine does not produce hazardous laser radiation.

Since radiation emitted inside the machine is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

■ **FDA Regulations (110 to 120 volt model only)**

The USA Food and Drug Administration (FDA) has implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. The following label on the back of the machine indicates compliance with the FDA regulations and must be attached to laser products marketed in the United States.

MANUFACTURED:

BROTHER INDUSTRIES (VIETNAM) LTD.

Phuc Dien Industrial Zone Cam Phuc Commune, Cam giang Dist Hai Duong Province, Vietnam.

This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

MANUFACTURED:

Brother Technology (Shenzhen) Ltd.

NO6 Gold Garden Ind., Nanling Nanwan, Longgang, Shenzhen, China

This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated Jun 24, 2007.

■ **Internal laser radiation**

Maximum radiation power: 25 mW

Wave length: 775 - 810 nm

Laser class: Class 3B

■ **For use in the USA or Canada only**

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

We cannot recommend using them overseas because the power requirements of your product may not be compatible with the power available in foreign countries. Using USA or Canada models overseas is at your own risk and may void your warranty.

■ **International ENERGY STAR[®] Qualification Statement**

The purpose of the International ENERGY STAR[®] Program is to promote the development and popularization of energy-efficient office equipment.

As an ENERGY STAR[®] Partner, Brother Industries, Ltd. has determined that this product meets the ENERGY STAR[®] specifications for energy efficiency.

SAFETY INFORMATION

■ **Caution for Laser Product (WARNHINWEIS fur Laser drucker)**

⚠ 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.

⚡
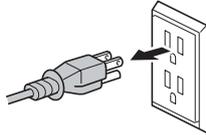
DO NOT handle the plug with wet hands.

⚡
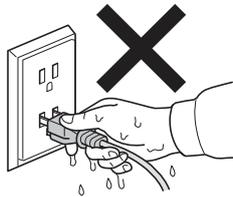
DO NOT use this product during an electrical storm.

🔥

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 defeat the purpose of the grounded plug.
- Use only the power cord supplied with this product.
- DO NOT allow anything to rest on the power cord. DO NOT place this product where people can walk on the cord. DO NOT place this product in a position where the cord is stretched or strain is otherwise put on the cord. Doing so may cause the cord to become worn or frayed.
- We DO NOT advise using an extension cord.
- If an extension cord is used with this product, make sure that the total ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating.
  Also, make sure that the total of all products plugged into the AC power outlet does not exceed 15 amperes. DO NOT plug one extension cord into another.

⚡ 🔥

- 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.

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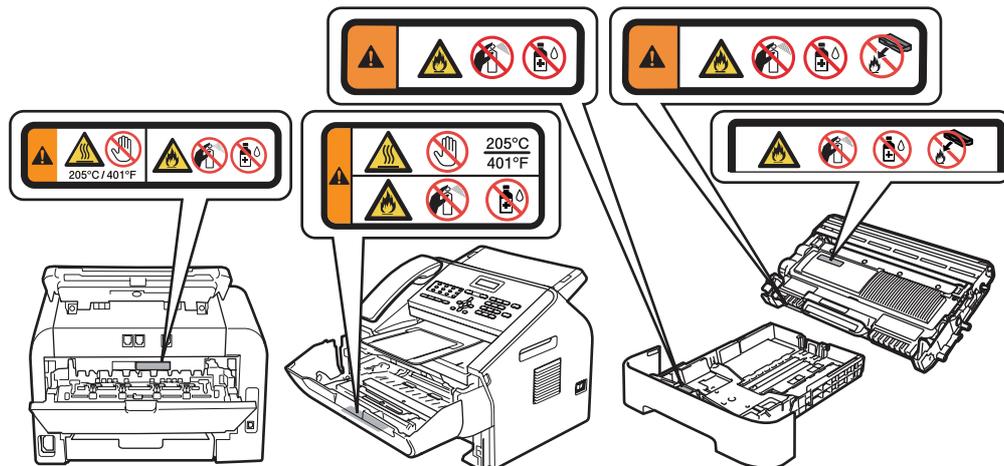
DO NOT attempt to operate this product with a paper jam or with stray pieces of paper inside the product. Prolonged contact of the paper with the drum unit could cause a fire.

🔥

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 10 minutes for the product to cool down before you touch the internal parts of the product.
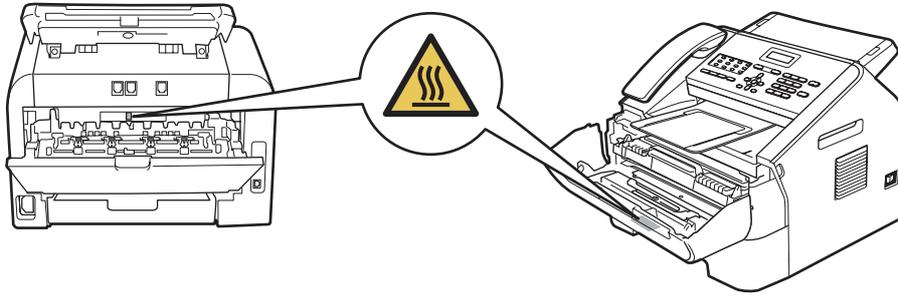
When moving the product, grasp the side handholds firmly from the front of the product.
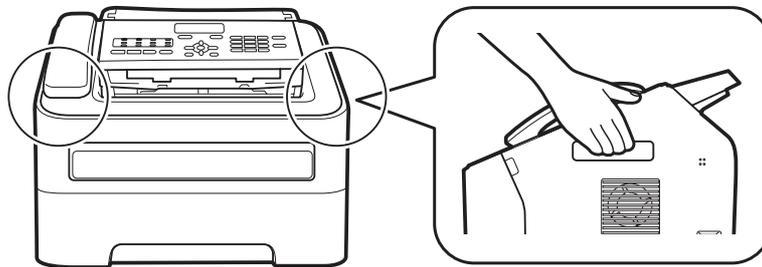
■ **Caution for Laser Product (WARNHINWEIS fur Laser drucker)**

CAUTION: When the machine during servicing is operated with the cover open, the regulations of VBG 93 and the performance instructions for VBG 93 are valid.

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>

Confidential
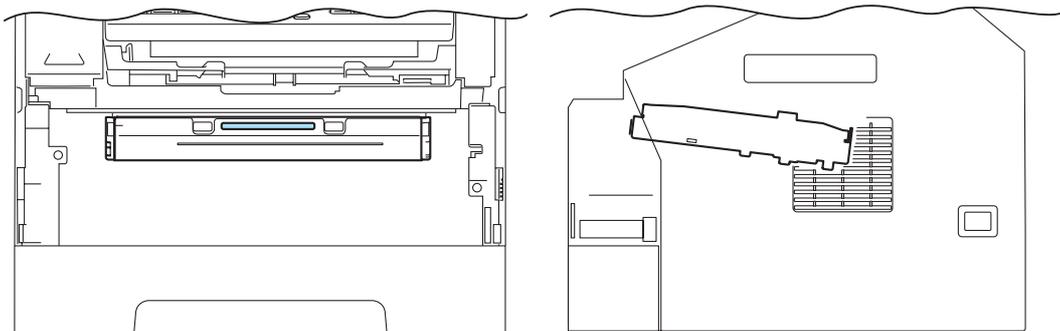
■ Additional Information

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 label is attached on the laser unit.

DANGER — WARNING INVISIBLE LASER RADIATION WHEN COVER OPEN AND INTER-LOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.CLASS 3B LASER PRODUCT.

GEFAHR — UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND VERRIEGELUNG GELÖST. DIREKTEN KONTAKT MIT DEM LASERSTRAHL VERMEIDEN.KLASSE 3B LASERPRODUKT.

DANGER — RAYONNEMENT LASER INVISIBLE LORSQUE L'APPAREIL EST OUVERT OU ENDOMMAGE. EVITER TOUTES EXPOSITIONS DIRECTES AU FASCEAU.PRODUCT LASER DE CLASS 3B.

FARA — OSYNLIG LASERSTRÅLNING NÄR LUCKAN ÄR ÖPPEN OCH LÅSEN TILL DENNA ENHET ÄR FORSERADE. UNDVIK DIREKT EXPONERIG FRÅN LASERSTRÅLEN. KLASS 3B LASER PRODUKT.

FARE — USYNLIG LASERSTRÅLE NÅR MASKINEN ER ÅPEN OG DELKSELBRYTERE AKTIVERT, UNNGÅ DIREKTE EKSPONERING AV LASERSTRÅLEN KLASSE 3B LASER PRODUKT.

GEVAAR — ONZICHTBARE LASER STRALING BIJ OPENING EN OMZEILDE BEVEILIGING. VOORKOM DIRECTE BLOOTSTELLING AAN STRAAL.KLASSE 3B LASER PRODUCT.

FARE — USYNLIG LASERSTRÅLER, HVIS DU ÅBNER OG SAMTIDIGT BLOKERER LASEREN. UNDGÅ LASERSTRÅLERNE KLASSE 3B LASERPRODUKT.

PELIGRO — EMISIÓN DE RADIACIÓN LÁSER INVISIBLE CUANDO LA CUBIERTA SE ENCUENTRA ABIERTA Y DESBLOQUEADA. EVITE LA EXPOSICIÓN DIRECTA AL HAZ. PRODUCTO LÁSER DE CATEGORÍA 3B.

VAARA — LAITETTA AVATTAESSA JA SUOJALUKITUSTA PURKAESSA, LAITTEESTA LÄHTEE NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VÄLTÄ SUORAA ALTISTUMISTA SÄTEELLE. LUOKAN 3 LASERLAITE.

危险 — 3B类激光产品。避免激光直接照射。开盖或盖锁失效，可能有激光外溢！

危険 — セーフティインターロックを解除すると不可視レーザー光が出ます。ビームを直接見たり触れたりしないでください。

CHAPTER 1
SPECIFICATIONS

CHAPTER 1 SPECIFICATIONS

This chapter lists the specifications of each model.

CONTENTS

1. SPECIFICATIONS LIST

1.1 General

Model		FAX-2840	FAX-2845	FAX-2890	FAX-2940
Print method		Electrophotographic/Laser			
Resolution		600 x 600 dpi, HQ1200 (2400 x 600 dpi) quality			
Print speed	One-sided	Up to 20/21 ppm	N/A	Up to 24/24 ppm (for U.S.A. and China) Up to 20/21 ppm (for Europe)	
		* When loading A4 or Letter-size paper from the paper tray.			
	Two-sided	N/A			
		* When loading A4 or Letter-size paper from the paper tray.			
Warm-up time	From Sleep mode	Less than 7 seconds at 73.4F / 50% (23°C / 50%)			
	From Power OFF → ON	Less than 27 seconds at 73.4F / 50% (23°C / 50%)			
First print time	From Ready mode	Less than 10.0 seconds (for U.S.A.) N/A (for Europe)	N/A	Less than 8.5 seconds (for U.S.A. / China) Less than 10.0 seconds (for Europe)	
	From Sleep mode	Less than 19.0 seconds (for U.S.A.) N/A (for Europe)	N/A	Less than 16.5 (for U.S.A. / China) Less than 19.0 seconds (for Europe)	
CPU		ARM9 200 MHz			
Memory	Standard	16 MB			
	Option	N/A			
Interface		USB Hi-Speed 2.0 (FAX-2840/2845 for Europe: N/A)			
Power consumption	Peak	1080 W			
	Copying	Average: Approximately 420 W (for U.S.A., Asia and Oceania) Average: Approximately 360 W (for Europe)	Average: Approximately 445 W	Average: Approximately 420 W (for U.S.A.) Average: Approximately 360 W (for Europe)	
	Quiet Mode/ Copying	N/A			
	Ready	Average: Approximately 55 W			
	Sleep, Wireless LAN: ON	N/A			
	Deep Sleep	Average: Approximately 1.5 W			
	Auto Power Down Mode	N/A			

Specifications are subject to change without notice.

Model			FAX-2840	FAX-2845	FAX-2890	FAX-2940
Noise level	Sound pressure	Printing	LpAm = 53 dB(A)			
		Ready	LpAm = 30 dB(A)			
	Sound power	Printing	LWAd = 6.18 B(A)			
		Ready	LWAd = 4.25 B(A)			
		Printing (Quiet Mode)	N/A			
Environment	Temperature		Operating 50°F to 90.5°F (10 to 32.5°C) Storage 32°F to 104°F (0 to 40°C)			
	Humidity		Operating 20 to 80% (without condensation) Storage 10 to 90% (without condensation)			
Dimensions (W x D x H)	Carton Size		458 x 476 x 436 mm (180 x 187 x 172 inch)			
	Machine Size		360 x 368 x 311 mm (145 x 142 x 122 inch)			
Weights	Without Carton, With toner/drum		9.0 kg / 19.8 lb FAX-2840/2940 for Europe: 8.8 kg / 19.4 lb			
LCD Size			1.85 x 0.43 inch (16 characters x 2 lines) For China: 1.89 x 0.39 inch (10 characters x 2 lines)			

Specifications are subject to change without notice.

Model		FAX-2950	FAX-2990	MFC-7240	MFC-7290
Print method		Electrophotographic/Laser			
Resolution		600 x 600 dpi, HQ1200 (2400 x 600 dpi) quality			
Print speed	One-sided	Up to 24/24 ppm	Up to 24/24 ppm	Up to 20/21 ppm	Up to 24/24 ppm
		* When loading A4 or Letter-size paper from the paper tray.			
	Two-sided	N/A			
		* When loading A4 or Letter-size paper from the paper tray.			
Warm-up time	From Sleep mode	Less than 7 seconds at 73.4F / 50% (23°C / 50%)			
	From Power OFF → ON	Less than 27 seconds at 73.4F / 50% (23°C / 50%)			
First print time	From Ready mode	Less than 8.5 seconds		Less than 10.0 seconds	Less than 8.5 seconds
	From Sleep mode	Less than 16.5 seconds		Less than 19.0 seconds	Less than 16.5 seconds
CPU		ARM9 200 MHz			
Memory	Standard	16 MB			
	Option	N/A			
Interface		USB Hi-Speed 2.0			
Power consumption	Peak	1080 W			
	Copying	Average: Approximately 420 W (except for China) Average: Approximately 445 W (for China)			
	Quiet Mode/ Copying	N/A			
	Ready	Average: Approximately 55 W			
	Sleep, Wireless LAN: ON	N/A			
	Deep Sleep	Average: Approximately 1.5 W			
	Auto Power Down Mode	N/A			
Noise level	Sound pressure	Printing	LpAm = 53 dB(A)		
		Ready	LpAm = 30 dB(A)		
	Sound power	Printing	LWAd = 6.18 B(A)		
		Ready	LWAd = 4.25 B(A)		
		Printing (Quiet Mode)	N/A		
Environment	Temperature	Operating 50°F to 90.5°F (10 to 32.5°C) Storage 32°F to 104°F (0 to 40°C)			
	Humidity	Operating 20 to 80% (without condensation) Storage 10 to 90% (without condensation)			

Specifications are subject to change without notice.

Model		FAX-2950	FAX-2990	MFC-7240	MFC-7290
Dimensions (W x D x H)	Carton Size	458 x 476 x 436 mm (180 x 187 x 172 inch)			
	Machine Size	360 x 368 x 311 mm (145 x 142 x 122 inch)			
Weights	Without Carton, With toner/drum	9.0 kg / 19.8 lb			
LCD Size		1.85 x 0.43 inch (16 characters x 2 lines) For China: 1.89 x 0.39 inch (10 characters x 2 lines)			

Specifications are subject to change without notice.

<Computer requirements>

Computer Platform & Operating System Version [1]		Processor Minimum Speed	Minimum RAM	Recom-mended RAM	Hard Disk Space to install		Supported PC Software Functions	Supported PC Interface [2]
					For Drivers	For Appli-cations		
Windows® Operating System [1]	Windows® XP Home [1][4] Windows® XP Professional [1][4]	Intel® Pentium® II or equivalent	128 MB	256 MB	150 MB	500 MB	Printing, PC-Fax [3] Scanning	USB
	Windows® XP Professional x64 Edition [1][4]	64-bit (Intel® 64 or AMD 64) supported CPU	256 MB	512 MB				
	Windows Vista® [1][4]	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD 64) supported CPU	512 MB	1 GB	500 MB	1.2 GB		
	Windows® 7 [1][4]	Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD 64) supported CPU	1 GB (32-bit) 2 GB (64-bit)	1 GB (32-bit) 2 GB (64-bit)	650 MB			
Macintosh Operating System	OS X 10.5.8	PowerPC® G4/G5 Intel® Processor	512 MB	1 GB	80 MB	400 MB	Printing, PC-Fax Send [3], Scanning	USB
	OS X 10.6.x	Intel® Processor	1 GB	2 GB				
	OS X 10.7.x	Intel® Processor	2 GB	2 GB				

*1 For WIA, 1200 x 1200 resolution. Brother Scanner Utility enables to enhance up to 19200 x 19200 dpi.

*2 Third-party USB ports are not supported.

*3 PC-Fax supports black and white only.

*4 Nuance™ PaperPort™ 12SE supports Microsoft® SP3 or higher for Windows® XP and SP2 or higher for Windows Vista® and Windows® 7.

Specifications are subject to change without notice.

1.2 Network Connectivity

Model		All Models
Wired network	Network node type	N/A
	Network type	N/A
Wireless network	Network node type	N/A
	Network type	N/A
	Communication mode	N/A
	Network security	N/A

Specifications are subject to change without notice.

1.3 Service Information

Part		Approximate Life (pages)
Machine life		50,000 pages (A4/Letter size) or 5 years
MTBF		4,000 hours
MTTR		0.5 hours
Maximum monthly volume		Up to 10,000 pages
Periodical maintenance parts	Fuser Unit	50,000 pages
	Laser Unit	50,000 pages
	PF kit	50,000 pages

Specifications are subject to change without notice.

1.4 Supplies

Model		FAX-2840	FAX-2845	FAX-2890	FAX-2940
Toner cartridge	Starter Toner [*1]	Approximately 700 pages (for U.S.A. and Oceania) Approximately 1,000 pages (for Europe) Approximately 1,200 pages (for Asia)	Approximately 1,000 pages	Approximately 1,200 pages (for U.S.A. and China) Approximately 1,000 pages (for Europe)	
	Standard Toner	Approximately 1,200 pages			
	High Yield Toner	Approximately 2,600 pages			
	Super High Yield 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 12,000 pages (1 page / job) The life expectancy varies according to the use condition. Shelf life: 2 years			
The self life of toner cartridge and drum unit is guaranteed under the normal condition as below; (Temperature) Normal condition: 0 to 40°C * Storage condition at the temperature of 40 to 50°C: Up to 5 days * Storage condition at the temperature of -20 to 0°C: Up to 5 days (Humidity) Normal condition: 35 to 85% (without condensation) * Storage condition at the humidity of 85 to 95%: Up to 5 days (without condensation) * Storage condition at the humidity of 10 to 35%: Up to 5 days (without condensation)					

*1 Toner supplied with the machine.

Specifications are subject to change without notice.

Model		FAX-2950	FAX-2990	MFC-7240	MFC-7290
Toner cartridge	Starter Toner [1]	Approximately 1,200 pages (for Asia and China) Approximately 700 pages (for U.S.A. and Oceania)			
	Standard Toner	Approximately 1,200 pages			
	High Yield Toner	Approximately 2,600 pages			
	Super High Yield 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 12,000 pages (1 page / job) The life expectancy varies according to the use condition. Shelf life: 2 years			
The self life of toner cartridge and drum unit is guaranteed under the normal condition as below; (Temperature) Normal condition: 0 to 40°C * Storage condition at the temperature of 40 to 50°C: Up to 5 days * Storage condition at the temperature of -20 to 0°C: Up to 5 days (Humidity) Normal condition: 35 to 85% (without condensation) * Storage condition at the humidity of 85 to 95%: Up to 5 days (without condensation) * Storage condition at the humidity of 10 to 35%: Up to 5 days (without condensation)					

*1 Toner supplied with the machine.

Specifications are subject to change without notice.

1.5 Paper

1.5.1 Paper handling

Model		All Models
Paper Input	Paper tray 1	250 sheets
	Manual feed slot	1 sheet
	ADF	20 sheets 30 sheets (staggered) (for U.S.A. and Europe)
Paper Output	Face-down	100 sheets (80 g/m^2)
	Face-up	1 sheet (straight paper path)
Duplex		N/A

Specifications are subject to change without notice.

1.5.2 Media specifications

Model		All Models
Paper Input	Paper tray 1	Plain Paper, Thin Paper, Recycled Paper
	Manual feed slot	Plain Paper, Thin Paper, Thick Paper, Recycled Paper, Bond Paper, Labels and Envelopes
	Duplex	N/A
	ADF	Plain Paper, Recycled Paper
Paper weight	Paper tray 1	60 to 105 g/m^2 (16 to 28 lb)
	Manual feed slot	60 to 163 g/m^2 (16 to 43 lb)
	Duplex	N/A
	ADF	64 to 90 g/m^2 (17 to 24 lb)
Paper size	Paper tray 1	A4, Letter, B5(ISO/JIS), A5, A5(Long Edge), B6(ISO), A6, Executive, Legal [1], Folio (Except for EU, OCE, CHN)
	Manual feed slot	Width 76.2 to 216 mm, Length 116 to 406.4 mm (Width 3.0" to 8.5", Length 4.6" to 16")
	Duplex	N/A
	ADF	Width 147.3 to 215.9mm, Length 147.3 to 355.6 mm (Width 5.8" to 8.5", Length 5.8" to 14.0")

*1 Legal size paper is not available in some regions outside U.S.A. and Canada.

Specifications are subject to change without notice.

1.6 Printable & Scannable Area

The figures below show maximum unprintable and unscannable areas.
The unprintable and unscannable areas may vary depending on the paper size or settings in the application you are using.
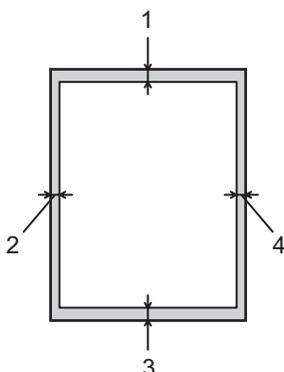
Usage	Document Size	Top (1) Bottom (3)	Left (2) Right (4)
FAX (Send)	Letter	3 mm (0.12 inch)	4 mm (0.16 inch)
	Legal	3 mm (0.12 inch)	4 mm (0.16 inch)
	A4	3 mm (0.12 inch)	1 mm (0.4 inch)
Copy	Letter	3 mm (0.12 inch)	4 mm (0.16 inch)
	Legal	3 mm (0.12 inch)	4 mm (0.16 inch)
	A4	3 mm (0.12 inch)	3 mm (0.12 inch)
Scan [*1]	Letter	3 mm (0.12 inch)	3 mm (0.12 inch)
	Legal	3 mm (0.12 inch)	3 mm (0.12 inch)
	A4	3 mm (0.12 inch)	3 mm (0.12 inch)
Print [*1]	Letter	4 mm (0.16 inch)	4 mm (0.16 inch)
	Legal	4 mm (0.16 inch)	4 mm (0.16 inch)
	A4	4 mm (0.16 inch)	4 mm (0.16 inch)

*1 For MFC-7240/7290/FAX-2950

Specifications are subject to change without notice.

1.7 Telephone

Model	All Models
Handset	Yes (Except for Europe of FAX-2840 and 2940)

Specifications are subject to change without notice.

1.8 FAX

Model	FAX-2840	FAX-2845	FAX-2890	FAX-2940
Modem Speed	33,600 bps (FAX)		14,400 bps (FAX)	33,600 bps (FAX)
Transmission speed	Approximately 2.5 seconds (ITU-T Test Chart #1, Std resolution, JBIG)		Approximately 7.0 seconds (ITU-T Test Chart #1, Std resolution, MMR)	Approximately 2.5 seconds (ITU-T Test Chart #1, Std resolution, JBIG)
ITU-T group	Super G3		G3	Super G3
Color FAX — Sending	N/A			
Color FAX — Receiving	N/A			
Internet FAX	N/A			

Specifications are subject to change without notice.

Model	FAX-2950	FAX-2990	MFC-7240	MFC-7290
Modem Speed	33,600 bps (FAX)		14,400 bps (FAX)	33,600 bps (FAX)
Transmission speed	Approximately 2.5 seconds (ITU-T Test Chart #1, Std resolution, JBIG)		Approximately 7.0 seconds (ITU-T Test Chart #1, Std resolution, MMR)	Approximately 2.5 seconds (ITU-T Test Chart #1, Std resolution, JBIG)
ITU-T group	Super G3		G3	Super G3
Color FAX — Sending	N/A			
Color FAX — Receiving	N/A			
Internet FAX	N/A			

Specifications are subject to change without notice.

1.9 Copy

Model	FAX-2840	FAX-2845	FAX-2890	FAX-2940
Copy Speed (A4/Letter)	Up to 20/21 ppm		Up to 24/24 ppm (for U.S.A. and China) Up to 20/21 ppm (for Europe)	
First copy out time / From Ready mode and Paper tray	Less than 12 seconds		Less than 11 seconds (for U.S.A. and China) Less than 12 seconds (for Europe)	
First copy out time / From Sleep mode and Paper tray	Less than 29 seconds		Less than 28 seconds (for U.S.A. and China) Less than 29 seconds (for Europe)	
Resolution (dpi)	300 x 600 dpi			
Auto duplex scanning copy	N/A			

Specifications are subject to change without notice.

Model	FAX-2950	FAX-2990	MFC-7240	MFC-7290
Copy Speed (A4/Letter)	Up to 24/24 ppm		Up to 20/21 ppm	Up to 24/24 ppm
First copy out time / From Ready mode and Paper tray	Less than 11 seconds		Less than 12 seconds	Less than 11 seconds
First copy out time / From Sleep mode and Paper tray	Less than 28 seconds		Less than 29 seconds	Less than 28 seconds
Resolution (dpi)	300 x 600 dpi			
Auto duplex scanning copy	N/A			

Specifications are subject to change without notice.

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1.10 Scanner

Model	FAX-2940	FAX-2950	FAX-2990	MFC-7240	MFC-7290
Resolution	Maximum scanning 600 (main scanning) x 600 (sub scanning) dpi				
Resolution (Interpolated)	Maximum scanning 19200 (main scanning) x 19200 (sub scanning) dpi				
Scanning speed — Monochrome	A4: 2.63 seconds Letter: 2.47 seconds				
Scanning speed — Color	N/A				

Specifications are subject to change without notice.

1.11 USB Direct Interface

Model	All Models
PictBridge	N/A
Direct print	N/A

Specifications are subject to change without notice.

CHAPTER 2
TROUBLESHOOTING

CHAPTER 2 TROUBLESHOOTING

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

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

CONTENTS

1. INTRODUCTION

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

1.1 Precautions

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

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

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

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

(4) Follow the warning by all means.

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

⚠ **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) Verify again that the repaired portion works properly.

1.2   Initial Check

Check the following items before attempting to repair the machine.

■ **Operating environment**

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

(2) The machine is used in a clean environment where the temperature is between 10°C (50°F) and 32.5°C (90.5°F) and the relative humidity is maintained between 20% and 80%.

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

(4) When you move the machine, grasp the side handholds that are under the scanner. DO NOT carry the machine by holding it at the bottom.
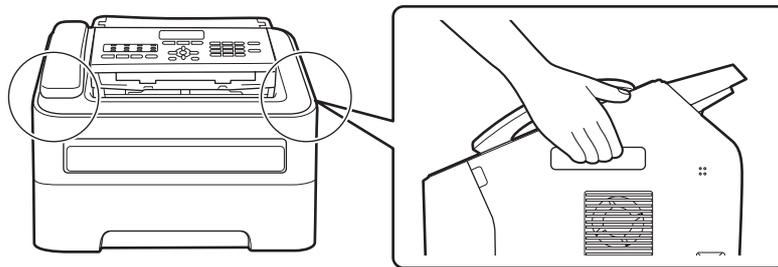
(5) The machine should be installed 10 cm or more from a wall or other objects to avoid the ventilation port of the fan being blocked.

■ **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. (Refer to the User's Guide.)

(2) The paper is not damp.

(3) Short-grained paper or acid paper is not used.

■ **Consumable parts**

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

■ Others

(1) Condensation

When the ambient temperature of the machine varies from low to high during cold seasons or due to the effect of air conditioning, condensation may occur inside the machine, causing various problems as listed below.

- Condensation on the surface of optical devices such as the laser scanner windows, 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 contrast when printing.
- Condensation on the charge unit may cause corona charge leakage.
- Condensation on the plate and separation pad may cause paper feed problems.

If condensation has occurred, leave the machine for at least two hours to allow it to reach room temperature.
If the drum unit is unpacked soon after it is moved from a cold place to a warm room, condensation may occur inside the drum unit which may cause incorrect images. Instruct the user to allow the drum unit to come to room temperature before unpacking it. This will take one or two hours.

(2) Low temperature

The motor may not drive normally under the low temperature environment. This is due to there being too much load to drive each unit. In this case, increase the room temperature.

■ Cleaning

Use a soft dry lint-free cloth.

⚠ **WARNING**

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

---

2. OVERVIEW

2.1 Cross-section Drawing

2.1.1 Printer part
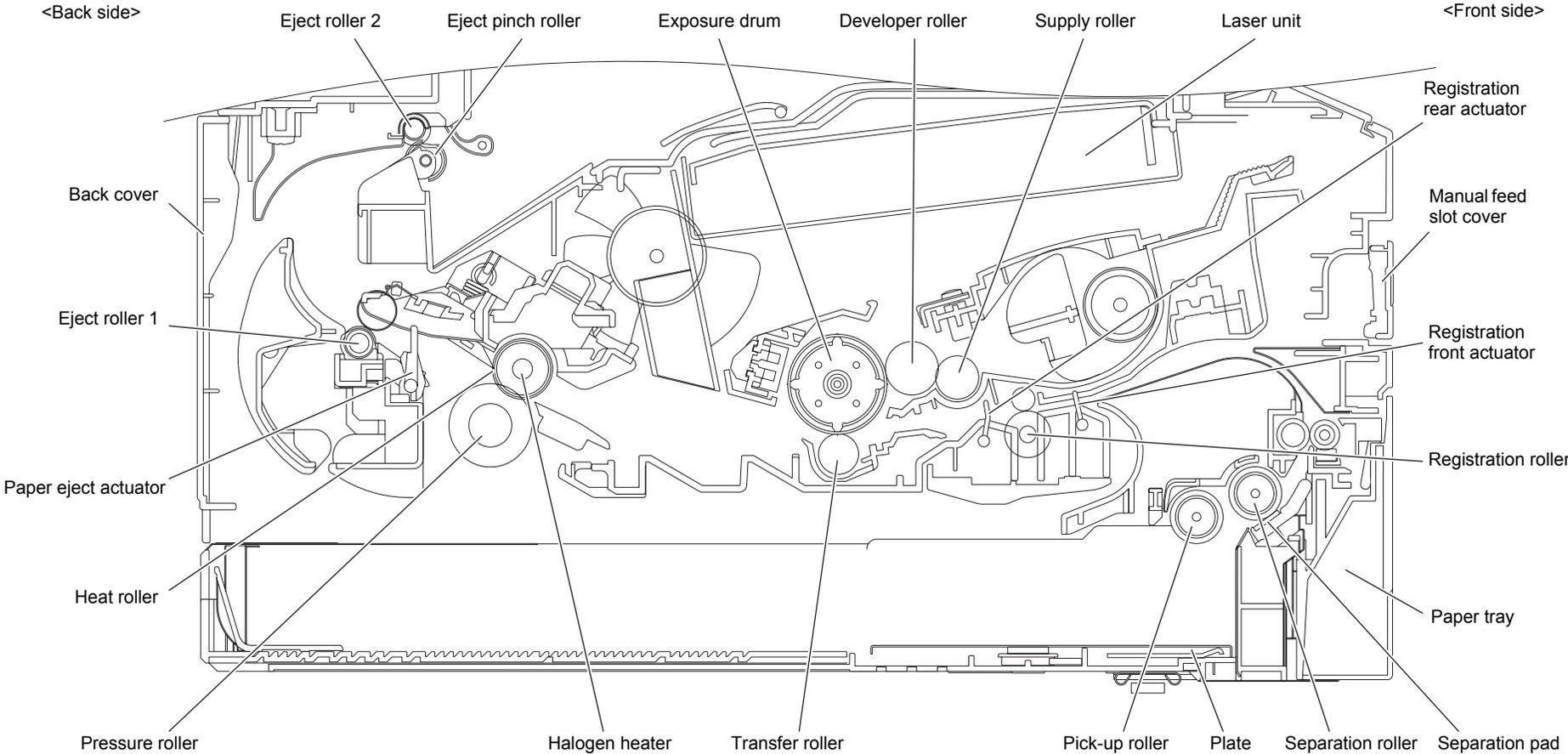
Fig. 2-1

2.1.2 Scanning part
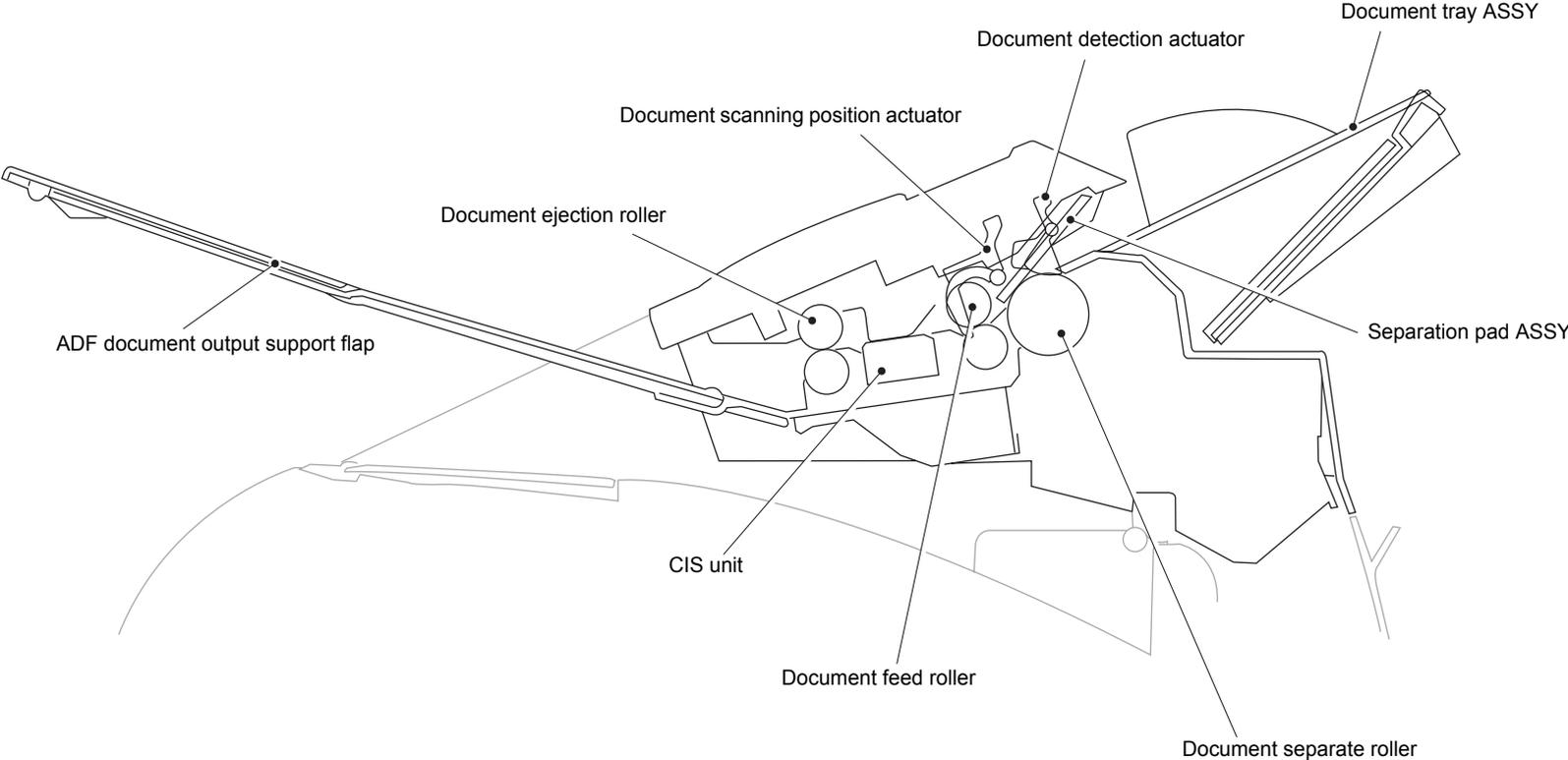
Fig. 2-2

2.2   Paper Feeding

2.2.1   Printer part

<Back side>   <Front side>

Rear paper eject path

Manual feed
slot path

Paper tray path

Fig. 2-3

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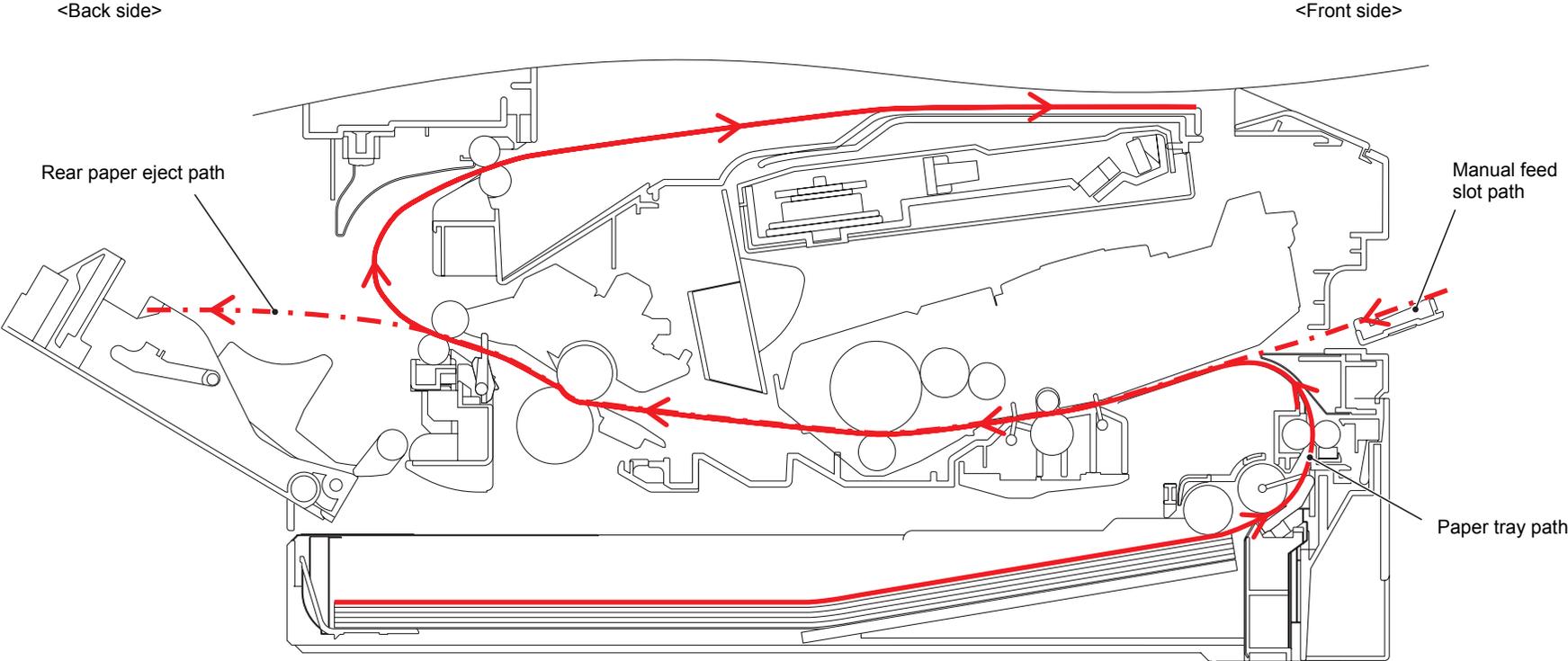
2.2.2   Scanning part
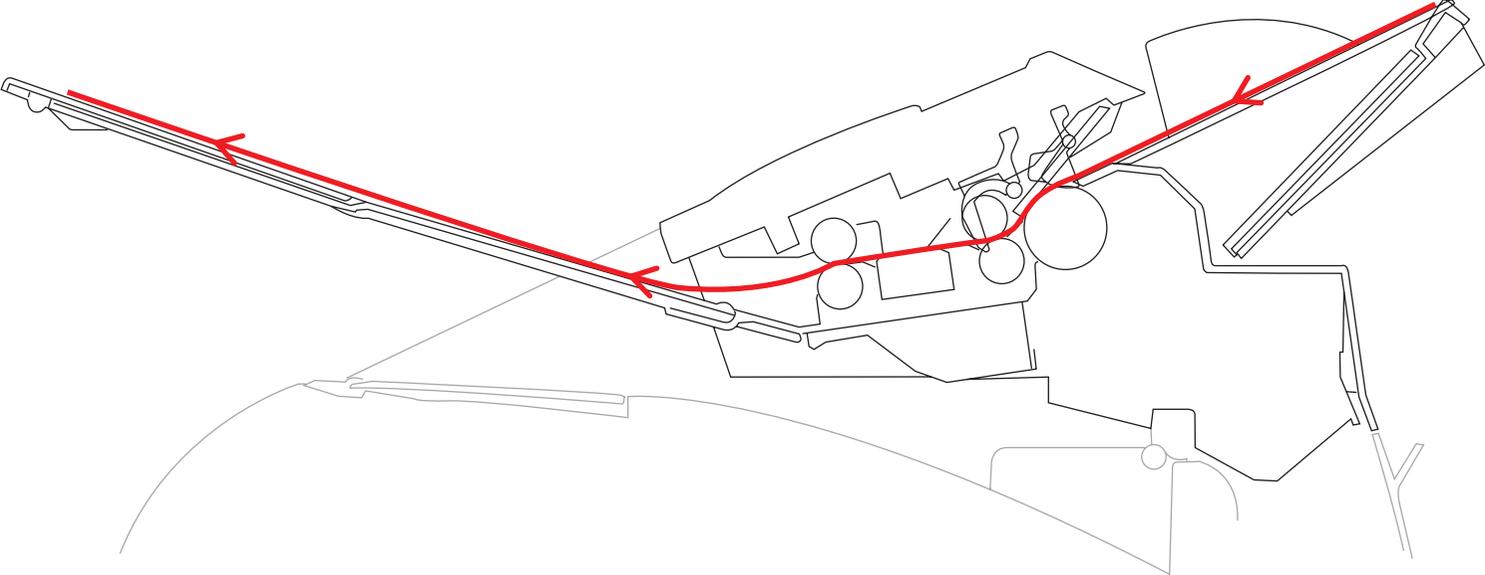
Fig. 2-4

2.3 Operation of Each Part

■ **Printer part**

Part name	Operation
Pick-up roller	Feed the paper from the paper tray.
Separation roller, separation pad	Separate the paper fed from the paper tray into single sheets.
Registration front actuator	Detect the front edge of paper, and control the drive of registration roller. Detect the paper pass when feeding from the manual feed slot. Detect the paper jam at the front part of the machine. Detect the paper size.
Registration roller	Correct the paper alignment when the front edge of the paper makes contact with the stopped registration roller. After correction, the registration roller rotates to feed the paper to the transfer roller.
Registration rear actuator	Detect the paper pass and adjust the starting position for writing on a sheet of paper.
Transfer roller	Transfer the toner adhered to the exposure drum to the paper by applying a minus charge, and feed the paper to the fuser unit.
Heat roller, pressure roller	Fuse the toner transferred to the paper by heat and pressure, and feed the paper to the eject roller 1.
Paper eject actuator	Detect whether or not the paper is ejected from the fuser unit.
Eject roller 1	Feed the paper ejected from the fuser unit to the eject roller 2.
Eject roller 2	Eject the paper to the face-down output tray.

■ **ADF part**

Part name	Operation
Document detection actuator	Detect the document set in the document tray.
Document separate roller, separation pad ASSY	Feed the document while separating the document set in the document tray into single sheets.
Document feed roller	Feed the document to the CIS unit.
Document scanning position actuator	Detect the front edge of the document, and adjust the surface reading position. Detect the document jam inside the ADF.
Document ejection roller	Eject the document on the document cover after the surface has been read.

2.4   Block Diagram

Fig. 2-5

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2.5 Main Components

Document tray ASSY

Cord hook

Control panel ASSY

Control panel cover link

pressure bar

Cord hook

Upper back cover

Document chute ASSY

Upper cover R

Modem PCB ASSY

Control panel cover link

Handset holder

Unfold support flap

Hook actuator

Side cover R

Eject pinch roller R ASSY

Eject pinch roller L ASSY

Inner chute cover ASSY

High voltage power supply PCB ASSY

Hook switch PCB ASSY

Laser unit

Fuser unit cover

Inner chute cover ASSY

Main fan

Fuser unit

Back cover

Low voltage power supply PCB ASSY

Outer chute ASSY

Front cover ASSY

Main PCB ASSY

Internal temperature thermistor

New toner sensor PCB ASSY

Side cover L

Paper tray

Fig. 2-6

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2.6　Life of Toner Cartridge and Drum Unit

<Life of Toner Cartridge>

This machine detects the remaining toner only by the dot count and the number of rotations of the developer roller. The function to detect by the light sensor is not installed. As this machine is not equipped with a toner sensor as conventional models are, it manages the level of remaining toner by dot count during printing and the number of rotations of the developer roller. Therefore printing may stop with the error message "Replace Toner" even though some toner remains. Even if "Replace Toner" is displayed on the machine, printing can be continued if the user chooses to change the mode to Continue Mode. In Continue Mode, however, the printing result when the toner runs out is not assured, meaning that the user shall be responsible for it. In addition to this, even when the mode is set to Continue Mode, printing stops when the number of rotations of the developer roller reaches the upper limit, and remains stopped until the toner cartridge is replaced to prevent any problems, such as toner leakage.

The life of the toner cartridge varies according to the average number of pages printed per job. (See the table below.) The number of printable pages is larger when making continuous prints in one job because deterioration of the developer roller is low.

Relationship between average pages printed per job and life of toner cartridges

Average pages printed (page/job)	1	2	3	• • •	Continuance
Cartridge life (Starter)	630	950	1200		2100
Cartridge life (High-capacity)	2340	3500	4300		7800

Page

The developer roller also rotates for the warm-up operation when the power is turned ON and when the cover is opened or closed. Therefore, when these operations are frequently performed, the life of toner cartridges is shortened. (The table below shows the worst case in which the warm-up operation is performed when the power is turned ON.)

Life of the toner cartridges in the case that the power is turned OFF/ON for every print job

Average pages printed (page/job)	1	2	3	• • •	Continuance
Cartridge life (Starter)	380	640	850		2100
Cartridge life (High-capacity)	1400	2400	3100		7800

Page

The life in Continue Mode is shown below. However, print may became light within the use upper limit value on the way.

Relationship between average pages printed per job in Continue Mode and life of toner cartridges

Average pages printed (page/job)	1	2	3	• • •	Continuance
Cartridge life (Starter)	4500	6800	8300		15000
Cartridge life (High-capacity)	4500	6800	8300		15000

Page

Life of the toner cartridges in the case that the power is turned OFF/ON for every print job in Continue Mode

Average pages printed (page/job)	1	2	3	• • •	Continuance
Cartridge life (Starter)	2700	4600	6000		15000
Cartridge life (High-capacity)	2700	4600	6000		15000

Page

The numeral values provided on this page are current as of April 2012. These values are subject to change without notice.

<Life of Drum Unit>

The end of life of the drum unit is determined based on the "drum counter" or the "number of drum rotations", whichever is larger. Printing does not stop even when the drum unit reaches the end of life.
The drum counter is based on the total printed pages on each drum unit. The drum counter should be reset every time you replace the drum unit with a new one.
(Refer to <How to reset the drum counter> below.)

However, if the power switch is turned OFF/ON frequently or if you print few pages per job, only the number of drum rotations increases. Then, the number of drum rotation exceeds the "drum counter" based on the total printed pages and the drum unit may reach the end of life.

Relationship between average pages printed per job and life of drum unit

Average pages printed (page/job)	1	2	3	• • •	Continuance
Drum unit	12000	18000	22000		40000

Page

Drum rotations are required for the warm-up operation when the power is turned ON or when the cover is opened or closed. Therefore, when these operations are frequently performed, the life of drum unit is shortened. (The table below shows the worst case in which the warm-up operation is performed when the power is turned ON.)

Life of the drum unit in the case that the power is turned OFF/ON for every print job

Average pages printed (page/job)	1	2	3	• • •	Continuance
Drum unit	7000	12000	16000		40000

Page

The numeral values provided on this page are current as of April 2012. These values are subject to change without notice.

<How to reset the drum counter>

Reset the drum counter in accordance with "2.2 Parts Life Reset Function (Drum)" in Chapter 5.

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3. ERROR INDICATIONS

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

3.1 Error Codes

The errors shaded in the table below do not occur in the normal operation. They might occur due to noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

Error codes	Problem	Refer to	Error codes	Problem	Refer to
0B	An unidentified error occurred.	2-24	2F	An unidentified error occurred.	2-26
0E	An unidentified error occurred.	2-24	30	An unidentified error occurred.	2-26
0F	An unidentified error occurred.	2-24	31	An unidentified error occurred.	2-26
10	An unidentified error occurred.	2-24	32	An unidentified error occurred.	2-26
11	An unidentified error occurred.	2-24	33	An unidentified error occurred.	2-26
12	An unidentified error occurred.	2-24	34	An unidentified error occurred.	2-26
16	An unidentified error occurred.	2-24	35	An unidentified error occurred.	2-26
17	An unidentified error occurred.	2-24	36	An error occurred in the high voltage power supply PCB in the ready state.	2-26
18	An unidentified error occurred.	2-24	37	An unidentified error occurred.	2-27
19	The drum reached the end of life while the WSW 78 selector 1 was set to ON.	2-24	38	An unidentified error occurred.	2-27
1A	An unidentified error occurred.	2-25	39	An unidentified error occurred.	2-27
1B	An unidentified error occurred.	2-25	3A	An unidentified error occurred.	2-27
1C	An unidentified error occurred.	2-25	3B	An error occurred during access to the DRAM in the main PCB.	2-27
1D	An unidentified error occurred.	2-25	3C	An unidentified error occurred.	2-27
1E	The drum unit will reach the end of life soon.	2-25	3D	An unidentified error occurred.	2-27
1F	An unidentified error occurred.	2-25	3E	An unidentified error occurred.	2-27
20	An unidentified error occurred.	2-25	3F	An unidentified error occurred.	2-27
21	An unidentified error occurred.	2-25	40	An unidentified error occurred.	2-27
22	An unidentified error occurred.	2-25	42	An unidentified error occurred.	2-27
23	An unidentified error occurred.	2-25	43	An unidentified error occurred.	2-27
24	An error occurred in the internal temperature thermistor.	2-26	44	The new toner sensor detected that the toner cartridge was not set.	2-28
25	An unidentified error occurred.	2-26	45	An unidentified error occurred.	2-28
26	An unidentified error occurred.	2-26	46	An unidentified error occurred.	2-28
27	An unidentified error occurred.	2-26	47	An unidentified error occurred.	2-28
28	An unidentified error occurred.	2-26	48	An unidentified error occurred.	2-28
29	An unidentified error occurred.	2-26	49	An unidentified error occurred.	2-28
2A	An unidentified error occurred.	2-26	4A	An unidentified error occurred.	2-28
2B	An unidentified error occurred.	2-26	4B	An unidentified error occurred.	2-28
2C	An unidentified error occurred.	2-26	4C	An unidentified error occurred.	2-28
2D	An unidentified error occurred.	2-26	4D	An unidentified error occurred.	2-28
2E	An unidentified error occurred.	2-26	4E	An unidentified error occurred.	2-28

Error codes	Problem	Refer to	Error codes	Problem	Refer to
4F	An unidentified error occurred.	2-28	65	An unidentified error occurred.	2-31
50	The number of rotations of the drum unit has reached the life limit. (Printing does not stop.)	2-28	66	An unidentified error occurred.	2-31
51	An unidentified error occurred.	2-29	67	The number of rotations of the developer roller will reach the upper limit when Stop Mode is set for the toner cartridge.	2-32
52	An unidentified error occurred.	2-29	68	An unidentified error occurred.	2-32
53	An unidentified error occurred.	2-29	69	An unidentified error occurred.	2-32
54	An unidentified error occurred.	2-29	6A	The center thermistor of the fuser unit does not reach the specified temperature within the specified time.	2-33
55	An unidentified error occurred.	2-29	6B	The center thermistor of the fuser unit does not reach the specified temperature within the specified time.	2-33
56	The eject sensor detected that the fuser unit cover was open.	2-29	6C	The center thermistor of the fuser unit detected a temperature higher than the specified value.	2-33
57	An unidentified error occurred.	2-29	6D	After the heat unit was heated normally, the center thermistor of the fuser unit detected a temperature lower than the specified value.	2-33
58	Any of errors 6A to 6D, 6F, 76 or 78 occurred when the power was turned ON or the machine goes back to the ready state from sleep mode.	2-30	6E	An unidentified error occurred.	2-33
59	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected by the center thermistor of the fuser unit.	2-30	6F	The center thermistor or the side thermistor of the fuser unit detected a temperature error.	2-34
5A	An unidentified error occurred.	2-31	70	An unidentified error occurred.	2-34
5B	An unidentified error occurred.	2-31	71	Detected an error in the synchronized signal of the polygon motor for the laser unit.	2-35
5C	An unidentified error occurred.	2-31	72	Cannot detect the signal from the beam sensor for the laser unit.	2-35
5D	An unidentified error occurred.	2-31	73	An unidentified error occurred.	2-35
5E	An unidentified error occurred.	2-31	74	An unidentified error occurred.	2-35
5F	An unidentified error occurred.	2-31	75	The internal temperature thermistor detected a temperature higher than the specified value.	2-36
60	An unidentified error occurred.	2-31	76	The center thermistor of the fuser unit detected a temperature rise greater than the specified value within the specified time.	2-36
61	An unidentified error occurred.	2-31	78	The center thermistor of the fuser unit detected a temperature fall greater than the specified value within the specified time.	2-36
62	An unidentified error occurred.	2-31	7A	Cannot detect the synchronized signal of the main motor. The speed of the main motor does not stabilize within the specified time.	2-36
63	The number of rotations of the developer roller reached the upper limit when Stop Mode is set for the toner cartridge.	2-31	7B	An unidentified error occurred.	2-37
64	An unidentified error occurred.	2-31	7C	An unidentified error occurred.	2-37

Error codes	Problem	Refer to	Error codes	Problem	Refer to
7D	Detected discharge that may be attributable to dirty corona wire on the drum unit.	2-37	90	An unidentified error occurred.	2-42
7E	An unidentified error occurred.	2-37	91	An unidentified error occurred.	2-42
7F	The paper size set on the machine is smaller than the specified fax size.	2-38	92	An unidentified error occurred.	2-42
80	The registration front sensor detected that the paper set in the paper tray was smaller than the specified size.	2-38	93	An unidentified error occurred.	2-42
81	An unidentified error occurred.	2-38	94	An unidentified error occurred.	2-42
82	An unidentified error occurred.	2-38	95	An unidentified error occurred.	2-42
83	Detected discharge when the number of rotations of the drum has exceeded twice the life limit.	2-39	96	An unidentified error occurred.	2-42
84	The eject sensor remains ON (paper pass detected) for more than the specified time even after the registration rear sensor detected the end of paper pass.	2-39	97	An unidentified error occurred.	2-42
85	An unidentified error occurred.	2-40	98	An unidentified error occurred.	2-42
86	An unidentified error occurred.	2-40	99	An unidentified error occurred.	2-42
87	An unidentified error occurred.	2-40	9A	The registration front sensor detected that there was no paper set in the manual feed slot when feeding from the manual feed slot was set.	2-43
88	The eject sensor does not detect paper pass after the registration rear sensor detected the end of paper pass.	2-40	9B	The number of rotations of the developer roller reached the upper limit when Continue Mode is set for the toner cartridge.	2-43
89	An unidentified error occurred.	2-40	9C	The number of rotations of the developer roller will reach the upper limit soon when Continue Mode is set for the toner cartridge.	2-44
8A	The registration front sensor does not detect paper pass within the specified time.	2-41	9D	An unidentified error occurred.	2-44
8B	An unidentified error occurred.	2-41	9E	An unidentified error occurred.	2-44
8C	An unidentified error occurred.	2-41	9F	The registration front sensor detected that the paper has run out when faxing or printing a list or report.	2-45
8D	When the power switch was turned ON, the eject sensor detected paper pass or detected that the fuser unit cover was open.	2-42	A0	An unidentified error occurred.	2-45
8E	An unidentified error occurred.	2-42	A1	The front cover sensor detected that the front cover was open.	2-46
8F	An unidentified error occurred.	2-42	A2	The document scanning position sensor detected that the document length was 90 cm or more while scanning the document.	2-46

Error codes	Problem	Refer to	Error codes	Problem	Refer to
A3	The document scanning position sensor does not detect the leading edge of the document although the document has been fed for the specified distance.	2-47	BC	An unidentified error occurred.	2-51
A4	The control panel cover sensor detected that the control panel cover was open.	2-47	BD	A black level not within the standard was scanned when function code 55 was executed.	2-51
A5	When scanning the fax, white or black compensation data for the CIS was not within the correct range.	2-48	BE	An unidentified error occurred.	2-52
A6	Although operation was retried due to error A5 that occurred while scanning the fax, white or black compensation data for the CIS was not within the correct range.	2-48	BF	An unidentified error occurred.	2-52
A7	Color parameter in the ROM does not match the CIS.	2-48	C0	The new toner sensor could not detect the new toner cartridge correctly.	2-52
A8	An error was detected in the color parameter in the ROM during image processing.	2-48	C1	An unidentified error occurred.	2-52
A9	An unidentified error occurred.	2-49	C2	An unidentified error occurred.	2-52
AA	An unidentified error occurred.	2-49	C3	An unidentified error occurred.	2-52
AB	An unidentified error occurred.	2-49	C4	An unidentified error occurred.	2-52
AC	An unidentified error occurred.	2-49	C5	An unidentified error occurred.	2-52
AD	Image processing cannot be completed correctly because the number of pixels required for image processing is insufficient in the scanned data.	2-49	C6	An unidentified error occurred.	2-52
AE	An unidentified error occurred.	2-49	C7	There is insufficient memory to expand PC-print data.	2-53
AF	An unidentified error occurred.	2-49	C8	An unidentified error occurred.	2-53
B0	Detected that the CIS harness was not inserted correctly.	2-49	C9	An unidentified error occurred.	2-53
B1	Dark level offset data adjustment error for scanning.	2-50	CA	An unidentified error occurred.	2-53
B2	Gain control data adjustment error for scanning.	2-50	CB	An unidentified error occurred.	2-53
B3	An unidentified error occurred.	2-50	CC	An unidentified error occurred.	2-53
B4	An unidentified error occurred.	2-50	CD	An unidentified error occurred.	2-53
B5	An unidentified error occurred.	2-50	CE	An unidentified error occurred.	2-53
B6	An unidentified error occurred.	2-50	CF	An unidentified error occurred.	2-53
B7	The voltage value was above the upper limit during scanning.	2-50	D1	An error occurred while initializing the modem.	2-53
B8	The voltage value was below the lower limit during scanning.	2-50	D2	An unidentified error occurred.	2-54
B9	The white level does not increase during scanning although the light intensity was increased.	2-50	D3	An unidentified error occurred.	2-54
BA	An unidentified error occurred.	2-51	D4	An unidentified error occurred.	2-54
BB	A white level not within the standard was scanned when function code 55 was executed.	2-51	D5	An unidentified error occurred.	2-54

Error codes	Problem	Refer to	Error codes	Problem	Refer to
D6	An unidentified error occurred.	2-54	EB	An unidentified error occurred.	2-57
D7	An unidentified error occurred.	2-54	EC	Detected a main fan failure.	2-57
D8	An unidentified error occurred.	2-54	ED	An unidentified error occurred.	2-58
D9	An unidentified error occurred.	2-54	EE	An unidentified error occurred.	2-58
DA	An unidentified error occurred.	2-54	EF	Unstable power supply was detected.	2-58
DB	An unidentified error occurred.	2-54	F0	Malfunction of the flash memory on the main PCB	2-58
DC	An unidentified error occurred.	2-54	F1	An unidentified error occurred.	2-59
DD	Fuser unit error (except error codes 6A to 6E, 76, 78, DE and E2)	2-54	F2	An unidentified error occurred.	2-59
DE	When the center thermistor of the fuser unit is higher than the idle temperature, the side thermistor detected a temperature lower than the specified temperature.	2-55	F3	An unidentified error occurred.	2-59
DF	An unidentified error occurred.	2-55	F4	An unidentified error occurred.	2-59
E0	An error occurred in the ROM checksum.	2-55	F5	An unidentified error occurred.	2-59
E1	Software bug	2-56	F6	An unidentified error occurred.	2-59
E2	When the center thermistor of the fuser unit is higher than the idle temperature, the side thermistor detected a temperature higher than the specified temperature.	2-56	F8	An unidentified error occurred.	2-59
E3	An unidentified error occurred.	2-56	F9	The country code was not entered properly.	2-59
E4	An unidentified error occurred.	2-56	FA	An unidentified error occurred.	2-59
E6	Write error in the EEPROM of the main PCB	2-57	FB	An unidentified error occurred.	2-59
E7	An unidentified error occurred.	2-57	FC	An unidentified error occurred.	2-59
E8	An unidentified error occurred.	2-57	FD	An unidentified error occurred.	2-59
E9	An unidentified error occurred.	2-57	FE	An unidentified error occurred.	2-59
EA	An unidentified error occurred.	2-57	FF	An unidentified error occurred.	2-59

3.2 Error Messages

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

Error Message	Description	Error codes	Refer to:
Access Error	The device was removed during data processing.	---	
Cartridge Error	The new toner sensor could not detect the new toner cartridge correctly.	C0	2-52
Cooling Down	The internal temperature thermistor detected a temperature higher than the specified value.	8A	2-41
Cover is Open	The eject sensor detected that the fuser unit cover was open.	56	2-29
	When the power switch was turned ON, the eject sensor detected paper pass or detected that the fuser unit cover was open.	8D	2-42
	The front cover sensor detected that the front cover was open.	A1	2-46
	The control panel cover sensor detected that the control panel cover was open.	A4	2-47
Document Jam	The document scanning position sensor detected that the document length was 90 cm or more while scanning the document.	A2	2-46
	The document scanning position sensor does not detect the leading edge of the document although the document has been fed for the specified distance.	A3	2-47
Drum End Soon	The drum unit will reach the end of life soon.	1E	2-25
Drum Error	Detected discharge that may be attributable to dirty corona wire on the drum unit.	7D	2-37
Drum Stop	Detected discharge when the number of rotations of the drum has exceeded twice the life limit.	83	2-39
Fuser Error	Error related to the fuser unit. Check the error code to check the details.	58 59 6A 6B 6C 6D 6F 76 78 DD DE E2	2-30 2-30 2-33 2-33 2-33 2-33 2-34 2-36 2-36 2-54 2-55 2-56
Jam Inside	The eject sensor does not detect paper pass after the registration rear sensor detected the end of paper pass.	88	2-40
Jam Rear	The eject sensor remains ON (paper pass detected) for more than the specified time even after the registration rear sensor detected the end of paper pass.	84	2-39
Jam Tray	The registration front sensor does not detect paper pass within the specified time.	8A	2-41

Error Message	Description	Error codes	Refer to:
Machine Error **	Refer to the error code for details. (** indicates the error code.)	---	
Manual Feed	The registration front sensor detected that there was no paper set in the manual feed slot when feeding from the manual feed slot was set.	9A	2-43
No Paper	There is no paper set in the paper tray.	---	
No Toner	The new toner sensor detected that the toner cartridge was not set.	44	2-28
Out of Memory	There is insufficient memory to expand PC-print data.	C7	2-53
	The memory size allotted for Secure Print was exceeded when saving Secure Print data.	C8	2-53
Print Unable **	Refer to the error code for details. (** indicates the error code.)	---	
Replace Drum	The drum reached the end of life while the WSW 78 selector 1 was set to ON.	19	2-24
	The number of rotations of the drum unit has reached the life limit. (Printing does not stop.)	50	2-28
Replace Toner	The number of rotations of the developer roller reached the upper limit when Stop Mode is set for the toner cartridge.	63	2-31
	The number of rotations of the developer roller will reach the upper limit soon when Continue Mode is set for the toner cartridge.	9C	2-44
Scan Unable **	Refer to the error code for details. (** indicates the error code.)	---	
Scanner Error	Error related to the scanner unit. Check the error code to check the details.	B0 to BD	2-49 to 2-51
Self-Diagnostic	Rechecking the error after the power switch was turned OFF and then ON again because an error was detected by the center thermistor of the fuser unit.	59	2-30
Size Mismatch	The paper size set on the machine is smaller than the specified fax size.	7F	2-38
	The registration front sensor detected that the paper set in the paper tray was smaller than the specified size.	80	2-38
Toner Ended	The number of rotations of the developer roller reached the upper limit when Continue Mode is set for the toner cartridge.	9B	2-43
Toner Low	The number of rotations of the developer roller will reach the upper limit when Stop Mode is set for the toner cartridge.	67	2-32

3.3 Communication Error Codes

Code 1	Code 2	Cause	Refer to:
10	07	No document detected when calling.	2-82
10	08	Wrong number called.	2-82
11	01	No dial tone detected before start of dialing.	2-82
11	02	Busy tone detected before dialing.	2-82
11	03	2nd dial tone not detected.	2-82
11	05	No loop current detected.	2-82
11	06	Busy tone detected after dialing or called.	2-82
11	07	No response from the remote station in sending.	2-82
11	10	Unobtainable tone detected after dialing.	2-82
17	07	No response from the calling station in receiving.	2-82
20	01	Unable to detect a flag field.	2-82
20	02	Carrier was OFF for 200 ms or longer.	2-82
20	03	Abort detected ("1" in succession for 7 bits or more).	2-82
20	04	Overrun detected.	2-82
20	05	A frame for 3 seconds or more received.	2-82
20	06	CRC error in answerback.	2-82
20	07	Echo command received.	2-82
20	08	Invalid command received.	2-82
20	09	Command ignored once for document setting or for damping-out at turn-around transmission.	2-82
20	0A	T5 time-out error	2-82
20	0B	CRP received.	2-82
20	0C	EOR or NULL received.	2-82
20	0D	Corresponding command not received although the FIF command sending bit is ON.	2-82
20	0E	EOR command received.	2-82
32	01	Remote terminal only with V.29 capability in 2,400 or 4,800 bps transmission.	2-82
32	02	Remote terminal not ready for polling.	2-82
32	10	Remote terminal not equipped with password function or its password switch OFF.	2-82
40	02	Illegal coding system requested.	2-82
40	03	Illegal recording width requested.	2-82
40	05	ECM requested although not allowed.	2-82
40	06	Polled while not ready.	2-82
40	07	No document to be sent when polled.	2-82
40	10	Nation code or manufacturer code not correct.	2-82
40	12	Retrieval attempted while not ready for retrieval.	2-82

Code 1	Code 2	Cause	Refer to:
40	13	Polled by any other manufacturers' terminal while waiting for secure polling.	2-82
40	14	Common key not registered although it needs to be used.	2-82
40	17	Invalid resolution selected.	2-82
63	02	Password not correct	2-82
63	03	Polling ID not correct	2-82
74	XX	DCN received	2-82
80	01	Fallback impossible	2-82
90	01	Unable to detect video signals or commands within 6 seconds after CFR is transmitted.	2-82
90	02	Received PPS containing invalid page count or block count.	2-82
A0	03	Error correction sequence not terminated even at the final transmission speed for fallback.	2-82
A0	11	Receive buffer empty (5-second time-out)	2-82
A0	12	Receive buffer full during operation except receiving into memory.	2-82
A0	13	Decoding error continued on 500 lines or more.	2-82
A0	14	Decoding error continued for 15 seconds or more.	2-82
A0	15	Time-out: 13 seconds or more for one-line transmission.	2-82
A0	16	RTC not found or carrier OFF detected for 6 seconds.	2-82
A0	17	RTC found but no command detected for 60 seconds or more.	2-82
A0	19	No video data to be sent.	2-82
A8	01	RTN, PIN, or ERR received (sending terminal).	2-82
A9	01	RTN, PIN, or ERR sent (receiving terminal).	2-82
AA	18	Receive buffer full during receiving into memory.	2-82
B0	01	Polarity reversion detected.	2-82
B0	02	Unable to receive the next-page data.	2-82
B0	04	PC interface error.	2-82
C0	01	No common modulation mode or failed to poll.	2-82
C0	02	Unable to detect JM.	2-82
C0	03	Unable to detect CM.	2-82
C0	04	Unable to detect CJ.	2-82
C0	10	Cannot finish V. 34 negotiation or training.	2-82
C0	11	Modem error detected during V. 34 negotiation or training.	2-82
C0	20	Modem error detected during sending of commands.	2-82
C0	21	Modem error detected during receiving of commands.	2-82
C0	22	Control channel connection time-out.	2-82
C0	30	Modem error detected during sending of video signals.	2-82

Code 1	Code 2	Cause	Refer to:
C0	31	Modem error detected during receiving of video signals.	2-82
FF	XX	Equipment error. (For XX, refer to "3.1 Error Codes" in this chapter.)	2-82

Establishment of
FAX communication:　FAX communication is established when the calling station receives a DIS (reception capability) signal from the called station and the called station receives a NSS or DCS (communications test) signal from the calling station.

3.4 Error Cause and Remedy

Check the User Check items first. If an error cannot be resolved, follow the procedures in numerical order in the Step field.

■ **Error code 0B, 0E and 0F**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 10 to 18**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 19**

```
Replace Drum
Open the Front Cover, replace the Drum Unit. Refer to the User's Guide for instructions.
```

The drum reached the end of life while the WSW 78 selector 1 was set to ON.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code 1A to 1D

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 1E

```
Drum End Soon
```

The drum unit will reach the end of life soon.

<User Check>

• Prepare a new drum unit.

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

■ Error code 1F to 23

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 24**

```
Print Unable 24
Turn the power off and then back on again.
```

An error occurred in the internal temperature thermistor.

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

■ **Error code 25 to 35**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 36**

```
Print Unable 36
Turn the power off and then back on again.
```

An error occurred in the high-voltage power supply PCB in the ready state.

Step	Cause	Remedy
1	Connection failure of the high voltage power supply PCB harness	Reconnect the high voltage power supply PCB harness.
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 37 to 3A

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 3B

```
Print Unable 3B
Turn the power off and then back on again.
```

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

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

■ Error code 3C to 43

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 44

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

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

<User Check>

• Install the toner cartridge.

Step	Cause	Remedy
1	Connection failure of the new toner sensor harness	Reconnect the new toner sensor harness.
2	New toner sensor failure	Check the sensor performance following the procedure in "Function code 32". If any problem occurs, replace the new toner sensor PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 45 to 4F

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 50

```
Replace Drum
```

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

<User Check>

• Prepare a new drum unit.

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

■ Error code 51 to 55

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 56

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

The eject sensor detected that the fuser unit cover was open.

<User Check>

• Close the fuser unit cover properly.

Step	Cause	Remedy
1	Paper eject actuator catching on some position	Correct the position of the paper eject actuator.
2	Eject sensor PCB failure	Check the sensor performance following the procedure in "Function code 32". If any problem occurs, replace the eject sensor PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code 57

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ **Error code 58**

```
Print Unable 58
Turn the power off and then back on again.
```

Any of errors 6A to 6D, 6F, 76 or 78 occurred when the power was turned ON or the machine goes back to the ready state from sleep mode.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

Step	Cause	Remedy
1	Any fuser error occurs when started in the ready state.	Follow the "Remedy" of the error code that has reoccurred.

■ **Error code 59**

```
Self-Diagnostic
Will Automatically Restart within 15 minutes.
```

Rechecking the error after the power switch was turned OFF and then ON again because an error was detected by the center thermistor of the fuser unit.
(Displayed for approximately 15 minutes when the power was turned OFF and then ON again after occurrence of error code 58)

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

CAUTION:

• Turn OFF the power switch once, and after checking that the fuser unit sufficiently cools down, turn ON the power switch again and leave the machine for ten minutes. Then, this problem may be cleared.

■ Error code 5A to 62

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 63

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

The number of rotations of the developer roller reached the upper limit when Stop Mode is set for the toner cartridge.

<User Check>

• Replace the toner cartridge with a new one.

• Press the [Menu] button. Next, press the [1] button and [7] button to clear the Stop Mode*, and shift to the Continue Mode.

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

CAUTION:

• When the machine is in the Stop Mode, LCD shows "REPLACE TONER" to guarantee the print quality. On the other hand, when the Continue Mode is turned ON, the end user can choose either to continue printing or replace the toner cartridge with a new one.

■ Error code 64 to 66

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

◼ Error code 67

```
Toner Low
Prepare New Toner Cartridge.
```

The number of rotations of the developer roller will reach the upper limit when Stop Mode is set for the toner cartridge.

<User Check>

• Prepare a new toner cartridge.

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

◼ Error code 68 and 69

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 6A**

```
Print Unable 6A
Turn the power off and then back on again.
```

The center thermistor of the fuser unit does not reach the specified temperature within the specified time.

Error code 6B

```
Print Unable 6B
Turn the power off and then back on again.
```

The center thermistor of the fuser unit does not reach the specified temperature within the specified time.

Error code 6C

```
Print Unable 6C
Turn the power off and then back on again.
```

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

Error code 6D

```
Print Unable 6D
Turn the power off and then back on again.
```

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

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

■ **Error code 6E**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code 6F

```
Print Unable 6F
Turn the power off and then back on again.
```

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

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

■ Error code 70

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 71**

```
Print Unable 71
Turn the power off and then back on again.
```

Detected an error in the synchronized signal of the polygon motor for the laser unit.

Error code 72

```
Print Unable 72
Turn the power off and then back on again.
```

Cannot detect the signal from the beam sensor for the laser unit.

<User Check>

• There is a possibility that the condensation has occurred. Turn OFF the power, and leave the machine at least one hour in a well-ventilated place. And then turn ON the power.

Step	Cause	Remedy
1	Correction value error of the laser unit	Enter the correction value of the laser unit correctly.
2	Connection failure of the laser unit flat cable	Reconnect the laser unit flat cable.
3	Main PCB failure	Replace the main PCB ASSY.
4	Laser unit failure	Replace the laser unit.

■ **Error code 73 and 74**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 75**

```
Cooling Down
Wait for a while
```

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

<User Check>

• Leave the machine for a while as the power remains ON.

Step	Cause	Remedy
1	Internal temperature thermistor failure	Replace the internal temperature thermistor.
2	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 76**

```
Print Unable 76
Turn the power off and then back on again.
```

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

Error code 78

```
Print Unable 78
Turn the power off and then back on again.
```

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

Step	Cause	Remedy
1	Fuser unit failure	Replace the fuser unit.
2	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
3	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 7A**

```
Print Unable 7A
Turn the power off and then back on again.
```

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

Step	Cause	Remedy
1	Connection failure of the main motor flat cable	Reconnect the main motor flat cable.
2	Main motor failure	Replace the main motor.
3	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 7B and 7C

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 7D

```
Drum Error
Open the Front Cover and slide the blue tab across the Drum Unit several times.
```

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

<User Check>

• Clean the corona wire of the drum unit.

• Turn OFF the power switch, and turn it ON again after a while.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
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 7E

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 7F

```
Size mismatch
Fax received. Set correct paper size in menu.
```

The paper size set on the machine is smaller than the specified fax size.

<User Check>

• Reset the paper size setting in menu.

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

■ Error code 80

```
Size mismatch
Reload correct paper, then press Start.
```

The registration front sensor detected that the paper set in the paper tray was smaller than the specified size.

<User Check>

• Set the A4 size paper.

Step	Cause	Remedy
1	Registration front sensor failure	Replace the regist frame ASSY.
2	Main PCB failure	Replace the main PCB ASSY.

■ Error code 81 and 82

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 83**

```
Drum Stop
Replace the Drum Unit. Refer to the instructions in the carton of the new drum.
```

Detected discharge when the number of rotations of the drum has exceeded twice the life limit.

<User Check>

• Replace the drum unit with a new one and reset the drum counter.
  (Refer to "2.2 Parts Life Reset Function (Drum)" in Chapter 5.)

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

■ **Error code 84**

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

The eject sensor remains ON (paper pass detected) for more than the specified time even after the registration rear sensor detected the end of paper pass.

<User Check>

• Check that the paper is not jammed. If jammed, remove it.

Step	Cause	Remedy
1	Foreign object in the feed system at the rear section of the machine	Remove the foreign object in the feed system at the rear section of the machine.
2	Paper eject actuator attachment failure	Reattach the paper eject actuator.
3	Coming off of the eject pinch roller R or L ASSY	Reattach the eject pinch roller R or L ASSY.
4	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

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■ **Error code 85 to 87**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 88**

```
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 end of paper pass.

<User Check>

• Check that the paper is not jammed. If jammed, remove it.

Step	Cause	Remedy
1	Connection failure of the eject sensor PCB ASSY harness	Reconnect the eject sensor PCB ASSY harness.
2	Paper eject actuator catching on some position	Correct the position of the paper eject actuator.
3	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
4	Fuser unit gear damaged	Replace the fuser unit.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 89**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code 8A

```
Jam Tray
Remove the jammed paper from Tray, then press Start.
```

The registration front sensor does not detect paper pass within the specified time.

<User Check>

- Check that the paper is not jammed at the paper tray and the front cover.
- Adjust the paper guide corresponding to the paper size.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Check that there is not too much paper set in the tray.

Step	Cause	Remedy
1	Coming off of the registration front actuator	Correct the position of the registration front actuator.
2	Connection failure of the registration front/rear sensor PCB ASSY harness	Reconnect the registration front/rear sensor PCB ASSY harness.
3	Registration front/rear sensor PCB failure	Check the performance of the registration front sensor and the registration rear sensor following the procedure in "Function code 32". If any problem occurs, replace the regist frame ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 8B and 8C

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

- Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 8D**

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

When the power switch was turned ON, the eject sensor detected paper pass or detected that the fuser unit cover was open.

<User Check>

• Close the fuser unit cover.

• Remove the jammed paper around the back cover.

Step	Cause	Remedy
1	Paper eject actuator catching on some position	Correct the position of the paper eject actuator.
2	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code 8E to 99**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code 9A

```
Manual Feed
Load Paper.
```

The registration front sensor detected that there was no paper set in the manual feed slot when feeding from the manual feed slot was set.

<User Check>

• Load the paper into the manual feed slot.

Step	Cause	Remedy
1	Connection failure of the registration front/rear sensor PCB ASSY harness	Reconnect the registration front/rear sensor PCB ASSY harness.
2	Main PCB failure	Replace the main PCB ASSY.
3	Registration front sensor failure	Check the performance of the registration front sensor following the procedure in "Function code 32". If any problem occurs, replace the regist frame ASSY.

■ Error code 9B

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

The number of rotations of the developer roller reached the upper limit when Continue Mode is set for the toner cartridge.

<User Check>

• Replace the toner cartridge.

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

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■ Error code 9C

```
Replace Toner
Received faxes are also stored in memory until the toner cartridge is replaced
or the memory is full.
```

The number of rotations of the developer roller will reach the upper limit soon when Continue Mode is set for the toner cartridge.

<User Check>

• Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	New toner actuator catching on some position (when the error message does not disappear)	Correct the position of the new toner actuator.
2	Connection failure of the new toner sensor PCB harness (when the error message does not disappear)	Reconnect the new toner sensor PCB harness.
3	New toner sensor PCB failure (when the error message does not disappear)	Replace the new toner sensor PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code 9D and 9E

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code 9F**

```
---
```

The registration front sensor detected that the paper has run out when faxing or printing a list or report.

   <User Check>

• Set the paper in the paper tray.

Step	Cause	Remedy
1	Registration front actuator catching on some position	Correct the position of the registration front actuator.
2	Connection failure of the registration front/rear sensor PCB ASSY harness	Reconnect the registration front/rear sensor PCB ASSY harness.
3	Registration front/rear sensor PCB failure	Replace the regist frame ASSY.
4	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Error code A0**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

   <User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code A1

```
Cover is Open
Close the Front Cover.
```

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

<User Check>

• Check that the front cover is closed correctly.

Step	Cause	Remedy
1	Connection failure of the high voltage power supply PCB ASSY harness (Front cover sensor is mounted in high voltage power supply PCB ASSY.)	Reconnect the high voltage power supply PCB ASSY harness.
2	Part pressing the front cover sensor is broken, which is provided at inside of front cover	Replace the front cover ASSY.
3	Front cover sensor failure	Check the performance of the front cover sensor following the procedure in "Function code 32". If any problem occurs, replace the high voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code A2

```
Document Jam
Clear the scanner jam, then press the Stop Key.
```

The document scanning position sensor detected that the document length was 90 cm or more while scanning the document.

<User Check>

• Check that the document or the foreign object is not jammed in the ADF. If jammed, remove it.

Step	Cause	Remedy
1	Document scanning position actuator catching on some position	Correct the position of the document scanning position actuator.
2	Document scanning position sensor failure	Replace the panel PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Error code A3

```
Document Jam
Clear the scanner jam, then press the Stop Key.
```

The document scanning position sensor does not detect the leading edge of the document although the document has been fed for the specified distance.

<User Check>

• Check that the document is not jammed in the ADF. If jammed, remove it.

Step	Cause	Remedy
1	Document scanning position actuator catching on some position	Correct the position of the document scanning position actuator.
2	Connection failure of the document scanning position sensor harness	Reconnect the document scanning position sensor harness.
3	Document scanning position sensor failure	Replace the panel PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ Error code A4

```
Cover is Open
Close the Control Panel Cover.
```

The control panel cover sensor detected that the control panel cover was open.

<User Check>

• Close the control panel cover.

Step	Cause	Remedy
1	Coming off of the control panel cover sensor	Reattach the control panel cover sensor.
2	Connection failure of the control panel cover sensor harness	Reconnect the control panel cover sensor harness.
3	Control panel cover sensor failure	Replace the control panel cover sensor.
4	Deformation and/or breakage of the control panel cover	Replace the control panel cover ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

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■ **Error code A5**

```
Scan Unable
Remove the original document. Turn the power off, then on again.
```

When scanning the fax, white or black compensation data for the CIS was not within the correct range.

Error code A6

```
Scan Unable A6
See Troubleshooting and routine maintenance chapter in User's Guide.
```

Although operation was retried due to error A5 that occurred while scanning the fax, white or black compensation data for the CIS was not within the correct range.

 <User Check>
 • Turn OFF the power switch, and turn it ON again after a while.

Step	Cause	Remedy
1	Incorrect white level data	Execute "Function code 55".
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code A7**

```
Print Unable A7
Turn the power off and then back on again.
```

Color parameter in the ROM does not match the CIS.

Error code A8

```
Scan Unable
See Troubleshooting and routine maintenance chapter in User's Guide.
```

An error was detected in the color parameter in the ROM during image processing.

Step	Cause	Remedy
1	Incorrect white level data	Execute "Function code 55".
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code A9 to AC**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code AD**

```
Scan Unable
Remove the original document. Turn the power off, then on again.
```

Image processing cannot be completed correctly because the number of pixels required for image processing is insufficient in the scanned data.

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

■ **Error code AE to AF**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code B0**

```
Scanner Error
```

Detected that the CIS harness was not inserted correctly.

Step	Cause	Remedy
1	Connection failure of the CIS unit harness	Reconnect the CIS unit harness.
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code B1**

```
Scanner Error
```

Dark level offset data adjustment error for scanning.
* This error is indicated on the LCD in the maintenance mode.

Error code B2

```
Scanner Error
```

Gain control data adjustment error for scanning.
* This error is indicated on the LCD in the maintenance mode.

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

■ **Error code B3 to B6**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>
• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code B7**

```
Scanner Error
```

The voltage value was above the upper limit during scanning.

Error code B8

```
Scanner Error
```

The voltage value was below the lower limit during scanning.

Error code B9

```
Scanner Error
```

The white level does not increase during scanning although the light intensity was increased.

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

■ **Error code BA**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code BB**

```
Scanner Error
```

A white level not within the standard was scanned when function code 55 was executed.

Step	Cause	Remedy
1	Dirt on the pressure bar	Clean the pressure bar.
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Error code BC**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code BD**

```
Scanner Error
```

A black level not within the standard was scanned when function code 55 was executed.

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

■ Error code BE and BF

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code C0

```
Scanner Error
```

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

<User Check>

• Install a new toner cartridge.

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

■ Error code C1 to C6

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code C7**

```
Out of Memory
Press Stop key
```

There is insufficient memory to expand PC-print data.

Error code C8

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code C9 to CF**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code D1**

```
Print Unable D1
See Troubleshooting and routine maintenance chapter in User's Guide.
```

An error occurred while initializing the modem.

<User Check>

• Turn OFF and ON the power and check that the machine recovers.

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

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■ Error code D2 to DC

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>
• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code DD

```
Print Unable DD
See Troubleshooting and routine maintenance chapter in User's Guide.
```

Fuser unit error (except error codes 6A to 6E, 76, 78, DE and E2)

<User Check>
• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code DE**

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

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

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

Step	Cause	Remedy
1	Connection failure of the center thermistor or side thermistor harness of the fuser unit	Reconnect the center thermistor or side thermistor harness.
2	Side thermistor or center thermistor failure	Replace the fuser unit.
3	Eject sensor PCB failure	Replace the eject sensor PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Error code DF**

This error does not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code E0**

```
Print Unable E0
Turn the power off and then back on again.
```

An error occurred in the ROM checksum.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code E1

```
Print Unable E1
Turn the power off and then back on again.
```

Software bug

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code E2

```
Print Unable E2
Turn the power off and then back on again.
```

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

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code E3 and E4

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code E6**

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

Write error in the EEPROM of the main PCB

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code E7 to EB**

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ **Error code EC**

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

Detected a main fan failure.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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■ Error code ED to EE

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code EF

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

Unstable power supply was detected.

Step	Cause	Remedy
1	Irregular power supply detected	Replace the low voltage power supply PCB ASSY. Reset the irregular power supply detection counter following the procedure described in "3. IF YOU REPLACE THE LOW VOLTAGE POWER SUPPLY PCB ASSY" in Chapter 4.
2	Main PCB failure	Replace the main PCB ASSY.

CAUTION:

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

■ Error code F0

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

Malfunction of the flash memory on the main PCB

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

Confidential

■ Error code F1 to F8

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

■ Error code F9

```
Machine Error F9
```

The country code was not entered properly.

Step	Cause	Remedy
1	Power turned OFF while the function code 74 is being executed and "PARAMETER INTI" is being displayed.	Re-enter the country code. (Refer to "1.3.19 Setting by country (Function code: 74)" in Chapter 5).

■ Error code FA to FF

These errors do not usually occur in the normal use. The conceivable causes are noise around the installation site, fluctuation of the power supply voltage, and failures in the software.

```
---
```

An unidentified error occurred.

<User Check>

• Turn OFF the power switch, and turn it ON again after a while.

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

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3.5 Paper Feeding Problems

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

3.5.1 Pickup function of paper tray does not work

Step	Cause	Remedy
1	Link arm catching on some position	Correct the position of the link arm.
2	Pick-up roller ASSY catching on some position	Correct the position of the pick-up roller ASSY.
3	Connection failure of the main motor harness	Reconnect the main motor harness.
4	Plate-up gear (gear Z19M10 or lift gear 46) failure	Replace the plate-up gear (gear Z19M10 or lift gear 46).
5	Main motor failure	Replace the main motor.
6	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

3.5.2 No feeding

Cannot detect paper when feeding.

<User Check>

- Check that the paper tray is loaded correctly.
- Check that the paper is loaded into the paper tray correctly.
- Check that the paper smaller than the specified size is not loaded.
- Adjust the paper guide corresponding to the position of paper guide.
- Check that there is not too much paper set in the tray.
- Clean the surface of the separation pad or pick-up/separate roller.

Step	Cause	Remedy
1	Attachment failure of the link arm and pick-up roller ASSY	Reattach the link arm and pick-up roller ASSY.
2	Connection failure of the T1 clutch ASSY harness	Reconnect the T1 clutch ASSY harness.
3	Connection failure of the registration front sensor PCB harness.	Reconnect the registration front sensor PCB harness.
4	Pick-up roller failure	Replace the paper feeding kit.
5	Plate-up gear (gear Z19M10 or lift gear 46) failure	Replace the plate-up gear (gear Z19M10 or lift gear 46).
6	T1 clutch ASSY failure	Replace the T1 clutch ASSY.
7	Main PCB failure	Replace the main PCB ASSY.
8	Registration front sensor PCB failure	Check the sensor performance following the procedure in "Function code 32". If any problem occurs, replace the regist frame ASSY.

3.5.3 Double feeding

<User Check>

- Check that the paper is loaded into the paper tray correctly.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Clean the separation pad.
- Check that too much paper is not loaded in each tray.
- Check that the backside of used paper or damp (wet) paper is not used.

Step	Cause	Remedy
1	Pick-up roller failure	Replace the paper feeding kit.

3.5.4 Dirt on paper

<User Check>

- Replace the toner cartridge with a new one.
- Check that the drum unit or corona wire is not dirty, installation environment is appropriate, and the corona wire cleaning lever is at the specified position.

Step	Cause	Remedy
1	Fuser unit dirty	Clean the entrance of the fuser unit, or clean the pressure roller.
2	Paper eject roller dirty	Clean the eject roller.

3.5.5 Paper feeding at an angle

<User Check>

- Check that the paper is loaded into the paper tray correctly.
- Adjust the paper guide corresponding to the paper size.
- Check that there is not too much paper set in the tray.
- Check that the thickness of the paper is 60 to 105 g/m^2.
- Remove the protective sheet of the bottom side of the drum unit.
- Check that the backside of used paper or damp (wet) paper is not used.

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

3.5.6 Wrinkles or creases

<User Check>

- Check that the paper is not damp.

- Check that the paper is loaded into the paper tray correctly.

- Check that the thickness of the paper is 60 to 105 g/m^2.

- Turn over the stack of paper in the paper tray, or try rotating the paper 180° in the paper tray.

- Turn the green envelope levers in the direction of the black arrow. (Refer to Fig. 2-7.)

Step	Cause	Remedy
1	Foreign object inside the fuser unit	Remove the foreign object inside the fuser unit.
2	Fuser unit failure	Replace the fuser unit.
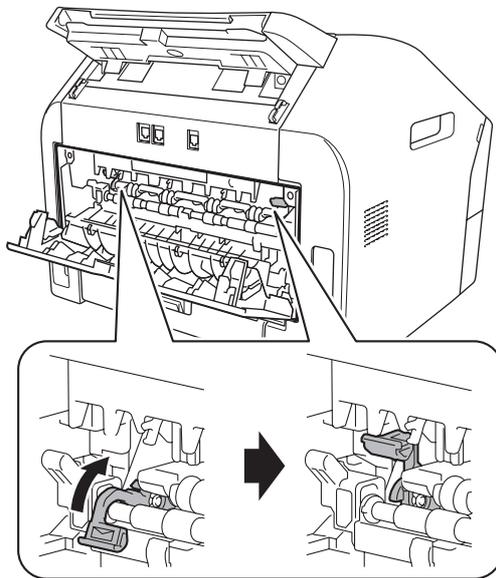
Fig. 2-7

3.5.7 Curl in the paper

<User Check>

- Choose Reduce Paper Curl mode in the driver.

- Turn the anti-curl levers in the direction of the black arrow. (Refer to Fig. 2-8.)

Step	Cause	Remedy
1	Fuser unit failure	Replace the fuser unit.

Anti-curl lever

Anti-curl lever

Fig. 2-8

Confidential
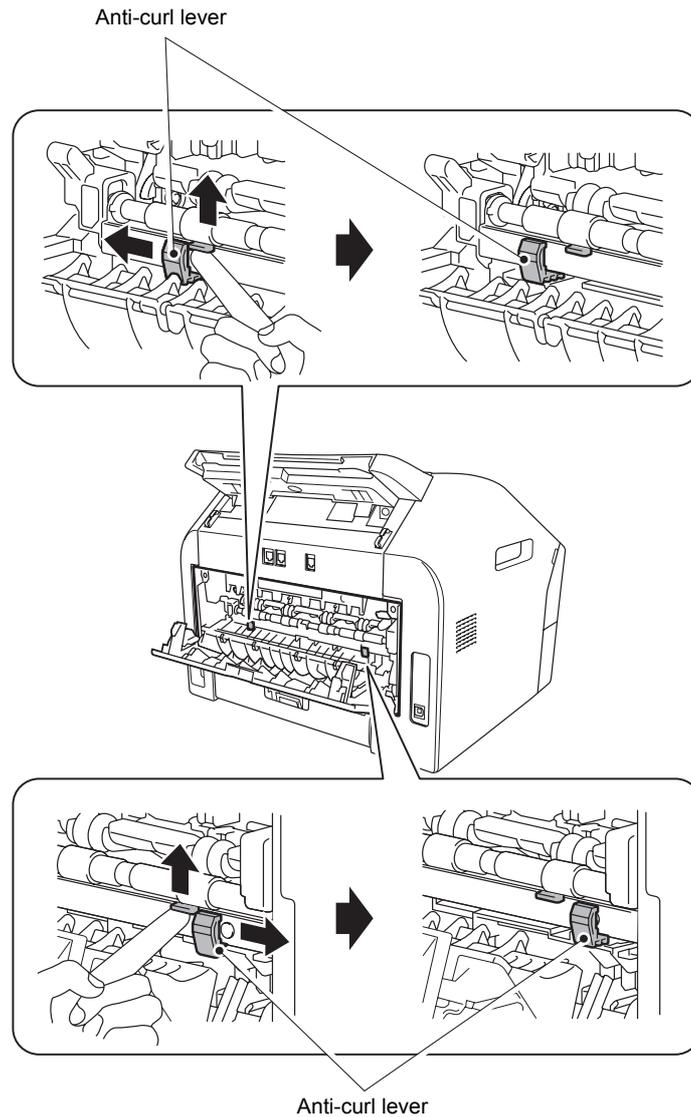
3.6 Image Defect Troubleshooting

3.6.1 Image defect examples

Light (2-65)

Faulty registration (2-67)

Dark (2-67)

Poor fixing (2-68)

Completely blank (2-68)

Image distortion (2-69)

All black (2-69)

Dirt on the back of paper (2-69)

Vertical streaks (2-70)

Black vertical streaks in a light background (2-70)

Black horizontal stripes (2-71)

White vertical streaks (2-72)

White horizontal streaks (2-72)

Faint print (2-72)

White spots (2-73)

Black spots (2-73)

Black band (2-74)

Downward fogging of solid color (2-74)

Horizontal lines (2-74)

Ghost (2-75)

Fogging (2-75)

Fig. 2-9

3.6.2 Troubleshooting according to image defect

Image defect related problems are user recoverable if following the User Check items. If the same problem occurs, follow each procedure in the order of the number described in the Step column in the tables below.
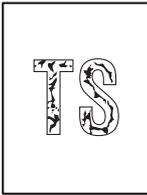
■ **Light**
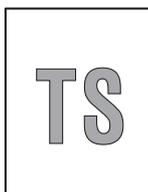
<User Check>
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- If the whole page is light, toner save mode may be ON. Turn OFF the toner save mode.
- Adjust the density by the Density Adjustment.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
  Replacing the used toner cartridge with a relatively new used toner cartridge can cause this problem
- Check that condensation has not formed in the machine or the installation location is appropriate.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	Developing bias failure	Reset the counter for the developer roller.
3	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
4	Laser unit failure	Replace the laser unit.
5	Main PCB failure	Replace the main PCB ASSY.

■ **Electrodes location of the toner cartridge and drum unit**

Side surface of
Drum unit
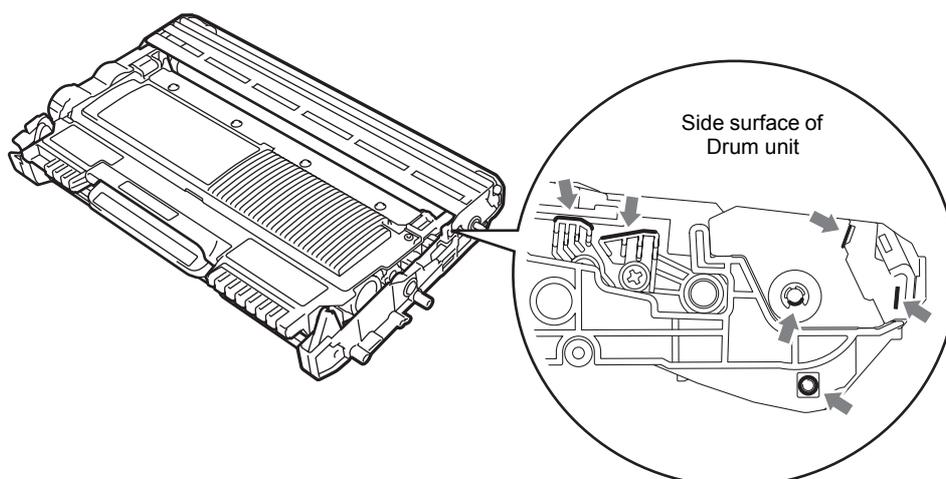
Fig. 2-10

■ **Electrodes location of the machine**
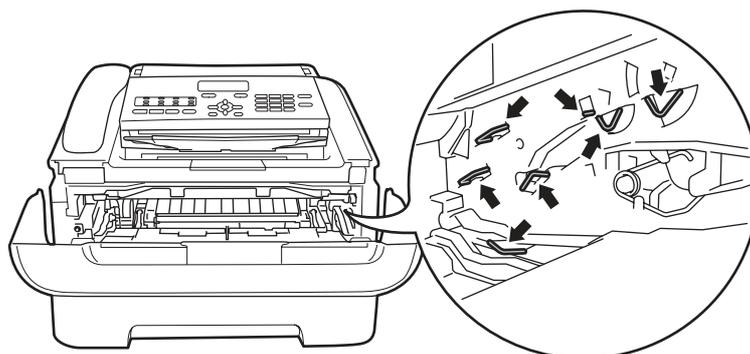
Fig. 2-11

\<How to clean the electrodes\>

Turn OFF the power switch. Unplug the power cord from the AC power outlet, and leave the machine for a few minutes. Then, wipe the electrodes above carefully with a dry lint-free cloth. Be careful not to change the shapes of the electrodes.

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■ Faulty registration
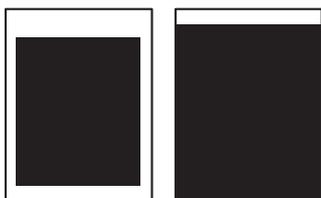
<User Check>
- Check that the appropriate media type is selected in the driver.

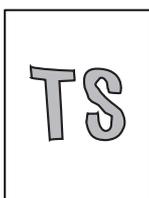| Step	Cause	Remedy
1	Adjusted value of the laser unit is incorrect.	Refer to "2.1 Entering the Adjusted Value of the Laser Unit" in Chapter 4, and enter the adjusted value of the laser unit again.
2	Registration rear actuator catching on some position	Correct the position of the registration rear actuator.

■ Dark

<User Check>
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- Adjust the density by the Density Adjustment.
- Clean the corona wire of the drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one. Replacing the relatively new toner cartridge with a used toner cartridge can cause this problem.
- If this problem occurs immediately after deep sleep mode is released, install the firmware to the latest version. If updating the firmware is not possible, open and close the front cover, and then retry printing after the main motor has stopped.

| Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
3	Laser unit failure	Replace the laser unit.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Poor fixing**

<User Check>
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- Clean the corona wire of drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Return the green envelope levers to the home position. (Refer to Fig. 2-7.)
- Remove the elastic band from the drum unit.

Step	Cause	Remedy
1	Fuser unit failure	Replace the fuser unit.
2	Laser unit failure	Replace the laser unit.
3	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
4	Main PCB failure	Replace the main PCB ASSY.

■ **Completely blank**

<User Check>
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- Clean the corona wire of drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Remove the elastic band from the drum unit.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	Connection failure of the scanner harness of the laser unit	Reconnect the scanner harness of the laser unit.
3	Laser unit attachment failure	Reattach the laser unit.
4	Laser unit failure	Replace the laser 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.

■ **Image distortion**

Step	Cause	Remedy
1	Laser unit attachment failure	Attach the laser unit correctly and secure the screw.
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 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. 2-10 and Fig. 2-11.)
2	Connection failure of the scanner harness of the laser unit	Reconnect the scanner harness of the laser unit.
3	Earth plate connection failure	Reconnect the earth plate between the laser unit and develop drive sub ASSY securely, and secure the screw.
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 back of paper**

<User Check>
- This problem may disappear after printing
  approximately 10 pages of completely blank sheets.

Step	Cause	Remedy
1	Dirt on the fuser unit	Replace the fuser unit.
2	Dirt in the paper feed system	Wipe off the dirt.

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■ **Vertical streaks**
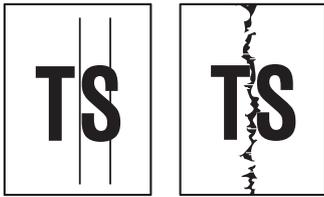
<User Check>
- This problem may occur with noise which is caused by dirt on the corona wire in the drum unit. In this case, clean the corona wire.
- If the same problem occurs after printing a few pages, the adhesive of the label or the like, paper powder or dirt may be attached on the surface of the exposure drum. Wipe off the dirt on the exposure drum. (Refer to User's Guide, and perform the Drum Cleaning.)
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- The corona wire cleaning lever is not at the specified position.

Step	Cause	Remedy
1	Dirt in the paper feed system	Wipe off the dirt.
2	Dirt on the heat roller	Clean the heat roller in the following procedures.
3	Scratch on the heat roller	Replace the fuser unit.

CAUTION:
• If the machine prints the same pattern, especially including vertical streaks, continuously, black vertical streaks may appear on the paper since the electrostatic performance of the exposure drum is decreased temporally.

■ **How to clean the heat roller**

1) Create a completely black pattern as shown below using Microsoft Word, PowerPoint or other application, and print it on the paper set in the paper tray.

100% black
All-black

2) Set this paper in the paper tray with the printed surface (all black) facing down.
3) Print a completely white pattern on it.

100% white
All-white (no data)
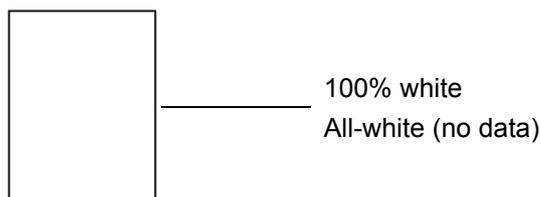
4) Print any image on another sheet of paper and check that there is no dirt on the paper.
5) If there is dirt on the paper, repeat steps 2) to 4).
6) When dirt still appears even after steps 2) to 4) are repeated several times, replace the fuser unit.

■ **Black vertical streaks in a light background**
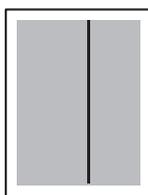
<User Check>
- Clean inside the machine and the corona wire of the drum unit.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

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◼ Black horizontal stripes

<User Check>
- Clean inside the machine and the corona wire of the drum unit.
- When the horizontal stripes appear at intervals of 94.2 mm, replace the drum unit with a new one.
- The paper tray earth spring on the machine side may be dirty. Clean it with a dry cloth.
- Toner attached on the developer roller (horizontal stripes at intervals of 32.5 mm) This problem will disappear by printing approximate 10 pages. If the same problem occurs, replace the toner cartridge.

| Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	Bend of tray earth spring	(1) Correct bending of the tray earth spring. (2) Replace the paper tray.
3	Scratch or dirt on the heat roller (horizontal stripes at intervals of 53.4 mm)	Replace the fuser unit.
4	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

Bottom surface of Paper tray

Tray earth spring
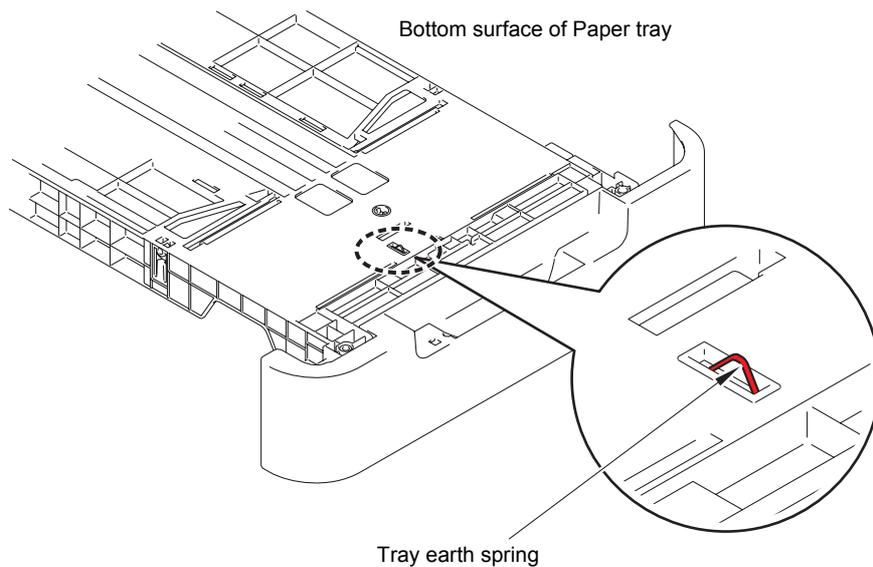
Fig. 2-12

CAUTION:
- 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 in the image.

No.	Parts name	Diameter	Pitch at which defects appear in the image
1	Developer roller	ø 16 mm	32.5 mm
2	Exposure drum	ø 30 mm	94.2 mm
3	Heat roller in the fuser unit	ø 17 mm	53.4 mm
4	Pressure roller in the fuser unit	ø 25 mm	78.5 mm

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■ White vertical streaks

<User Check>
- Check that there is no dust in the clearance between the toner cartridge and the drum unit.
- Replace the toner cartridge with a new one.
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- Damp (wet) paper may be used. Change the paper with undamped one.
- Replace the drum unit with a new one.
- Leave the machine for a while with the power switch ON.

Step	Cause	Remedy
1	Laser unit failure	Replace the laser unit.

■ White horizontal streaks

<User Check>
- This problem may disappear after printing several sheets of paper. When the machine has not been used for a long time, try printing several sheets of paper.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)

■ Faint print

<User Check>
- Check that the machine is installed on a level surface.
- Replace the toner cartridge with a new one.

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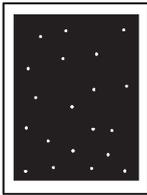
Confidential

■ White spots

<User Check>
- When the white spots appear at intervals of 32.5 mm, replace the toner cartridge with a new one.
- If the same problem occurs after printing a few pages, the adhesive of the label or the like, paper powder or dirt may be attached on the surface of the exposure drum. Wipe off the dirt on the exposure drum. (Refer to User's Guide, and perform the Drum Cleaning.)
- When the white spots appear at intervals of 94.2 mm, replace the drum unit with a new one.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
3	Main PCB failure	Replace the main PCB ASSY.

■ Black spots

<User Check>
- When the black spots appear at intervals of 32.5 mm, replace the toner cartridge with a new one.
- If the same problem occurs after printing a few pages, the adhesive of the label or the like, paper powder or dirt may be attached on the surface of the exposure drum. Wipe off the dirt on the exposure drum. (Refer to User's Guide, and perform the Drum Cleaning.)
- When the black spots appear at intervals of 94.2 mm, replace the drum unit with a new one.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	Dirt on the heat roller	Refer to "2-70 How to clean the heat roller" to clean the heat roller.
3	Scratch on the heat roller (black spots at intervals of 53.4 mm)	Replace the fuser unit.
4	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

■ Black band

<User Check>
- Clean inside the machine and the corona wire of the drum unit. If the same problem occurs after cleaning, replace the drum unit with a new one.
- The paper tray earth spring on the machine side may be dirty. Clean it with a dry cloth.

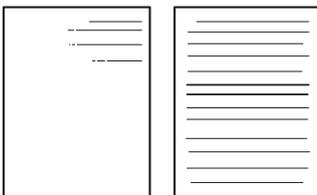| Step	Cause	Remedy
1	Bend of tray earth spring	(1) Correct bending of the tray earth spring. (2) Replace the paper tray.

■ 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>
- The paper tray earth spring on the machine side may be dirty. Clean it with a dry cloth.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.

Step	Cause	Remedy
1	Dirt on 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. 2-10 and Fig. 2-11.)
2	Bend of tray earth spring	(1) Correct bending of the tray earth spring. (2) Replace the paper tray.
3	Laser unit failure	Replace the laser unit.
4	Scratch and dirt on the heat roller (horizontal lines at intervals of 53.4 mm)	Replace the fuser unit.

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■ **Ghost**

<User Check>
- Check the machine's environment. High temperature and high humidity or low temperature and low humidity conditions can cause this problem.
- Choose Reduce Ghosting mode in the driver.
- 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.

■ **Fogging**

<User Check>
- This problem may disappear after printing approximately 10 pages of completely blank sheets.
- Replace the drum unit with a new one.
- Replace the toner cartridge with a new one.
- Do not use acid paper.

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.

CAUTION:

• This problem often occurs when the drum unit or toner cartridge is nearly at the end of life.

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3.7 Software Setting Problems

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

3.7.1 Cannot print data

<User Check>

- Check that the USB cable or LAN cable is not damaged.
- Check that the correct machine is selected if you have an interface switching device.
- Check the descriptions on the software setting in the User's Guide.
- Reset the machine back to its default printer settings. (Refer to the following operations.)

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

* Check the product ID on a Macintosh as follows:

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

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

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

(4) Select the "MFC-XXXX" or "FAX-XXXX" in the "USB Device Tree".

(5) Check the "Product ID" under "MFC-XXXX" or "FAX-XXXX".

Product ID (hexadecimal)

- FAX-2840　: 02A3h
- FAX-2845　: 02A4h
- MFC-7240　: 02A5h
- FAX-2940　: 02A6h

- FAX-2950　: 02A7h
- MFC-7290　: 02A8h
- FAX-2890　: 02AAh
- FAX-2990　: 02ABh

3.8 Document Feeding Problems

3.8.1 No feeding

<User Check>

- Set the document so that it contacts the rear of the tray, and check that LCD display varies.
- Check that the number of the documents complies with the specifications in the specification list.
- Close the control panel cover properly.
- Check that the document is within the specifications.

Step	Cause	Remedy
1	Document detection actuator catching on some position	Correct the position of the document detection actuator.
2	Connection failure of the ADF motor harness	Reconnect the ADF motor harness.
3	Control panel cover sensor malfunction	Check the sensor performance following the procedure in "Function code 32". If any problem occurs, replace the control panel cover sensor.
4	Document separation roller failure	Replace the document separation roller.
5	ADF motor failure	Replace the ADF motor.
6	Main PCB failure	Replace the main PCB ASSY.

3.8.2 Double feeding

<User Check>

- Check that the paper thinner than the specification is not used for the document.
- Flip through the paper and reset it.
- Check that the backside of used paper or damp (wet) paper is not used.

Step	Cause	Remedy
1	Separation pad ASSY worn out	Replace the separation pad ASSY.

3.8.3 Wrinkles

<User Check>

- Check that the document is loaded into the ADF correctly.
- Check that the document guide matches the document size.
- Check that the document is not curled.

Step	Cause	Remedy
1	Separation pad ASSY failure	Replace the separation pad ASSY.
2	Document feed roller failure	Replace the document feed roller.

3.9 Scanning Image Defect Troubleshooting

3.9.1 Image defect examples

Light (2-78)   Faulty registration (2-79)   Dark or Bluish white (2-79)

Completely blank (2-80)   Vertical streaks (2-80)   White vertical streak (2-80)
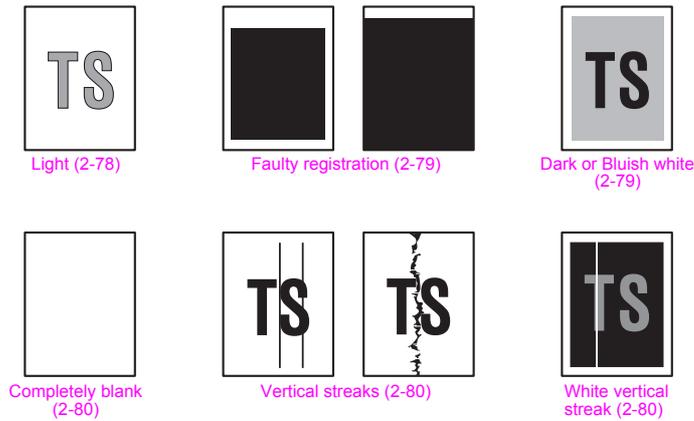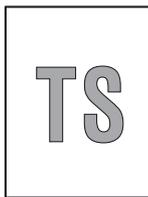
Fig. 2-13

3.9.2 Troubleshooting according to scanning image defect

■ **Light**

<User Check>
- Check that the setting of the contrast does not become light.
- Clean the CIS glass.

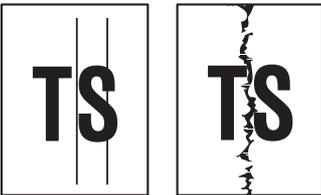| Step	Cause	Remedy
1	Incorrect white level data	Perform the acquisition of white level data. (Function code 55)
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ Faulty registration
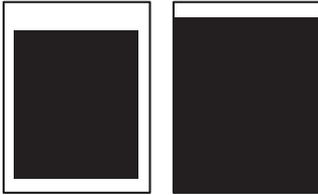
Step	Cause	Remedy
1	Scan start position misalignment	Perform the fine adjustment of scan start position. (Function code 54)
2	Document scanning position actuator catching on some position	Correct the position of the document scanning position actuator.

■ Dark or Bluish white

<User Check>
- Check that the setting of the contrast does not become dark.
- If this problem occurs immediately after deep sleep mode is released, install the firmware to the latest version. If updating the firmware is not possible, open and close the front cover, and then retry printing after the main motor has stopped.

Step	Cause	Remedy
1	Incorrect white level data	Perform the acquisition of white level data. (Function code 55)
2	CIS unit failure	Replace the CIS unit.
3	Main PCB failure	Replace the main PCB ASSY.

■ **Completely blank**

<User Check>
- Check that the document is not reversed.

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

■ **Vertical streaks**

<User Check>
- Check that the CIS glass is not stained.

Step	Cause	Remedy
1	CIS unit failure	Replace the CIS unit.

■ **White vertical streak**

<User Check>
- Check that the CIS glass is not stained.

Step	Cause	Remedy
1	Incorrect white level data	Perform the acquisition of white level data. (Function code 55)
2	CIS unit failure	Replace the CIS unit.

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3.10   Control Panel Problems

3.10.1 Nothing is displayed on the LCD

<User Check>

- Check that the power switch is turned ON.

Step	Cause	Remedy
1	AC cord failure	Replace the AC cord.
2	Connection failure of the panel PCB harness	Reconnect the panel PCB ASSY harness.
3	Connection failure of the LCD harness	Reconnect the LCD harness.
4	LCD failure	Replace the LCD.
5	Low voltage power supply PCB failure	Replace the low voltage power supply PCB ASSY.
6	Panel PCB failure	Replace the panel PCB ASSY.
7	Main PCB failure	Replace the main PCB ASSY.

3.10.2 The control panel does not work

<User Check>

- Turn the power OFF and ON.

Step	Cause	Remedy
1	Panel unit attachment failure	Reattach the panel unit.
2	Connection failure of the panel PCB harness	Reconnect the panel PCB harness.
3	Rubber key failure	Replace the rubber key.
4	Panel PCB failure	Replace the panel PCB ASSY.
5	Main PCB failure	Replace the main PCB ASSY.

3.10.3 Lamp malfunction

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

3.11 Troubleshooting of FAX/Telephone Problems

3.11.1 FAX cannot be sent

<User Check>

- Check that the telephone cord is securely inserted into the socket.

Step	Cause	Remedy
1	Connection failure of the modem PCB flat cable	Reconnect the modem PCB flat cable.
2	Connection failure of the panel PCB harness	Reconnect the panel PCB harness.
3	Rubber key connection failure	Replace the rubber key.
4	Modem PCB failure	Replace the modem PCB ASSY.
5	Panel PCB failure	Replace the panel PCB ASSY.
6	Main PCB failure	Replace the main PCB ASSY.

3.11.2 FAX cannot be received

<User Check>

- Check that the telephone cord is securely inserted into the socket.
- Check that the reception mode setting is correct.
- Check that the paper is loaded into the paper tray correctly.

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

3.11.3 Communication error occurs

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

3.11.4 Caller ID is not displayed

Step	Cause	Remedy
1	Modem PCB failure	Replace the modem PCB ASSY.

3.11.5 Cannot talk on the handset

<User Check>

- Check that the handset curled cord is securely inserted into the socket.
- Adjust the handset volume.

Step	Cause	Remedy
1	Curled cord failure	Replace the curled cord ASSY.
2	Handset failure	Replace the handset
3	Hook switch PCB failure	Replace the hook switch PCB ASSY.
4	Modem PCB failure	Replace the modem PCB ASSY.

3.12 Other Problems

3.12.1 The machine is not turned ON or the LCD indication does not appear

Step	Cause	Remedy
1	AC cord failure	Replace the AC cord.
2	Connection failure of the panel PCB ASSY harness	Reconnect the panel PCB ASSY harness.
3	Connection failure of the LCD harness	Reconnect the LCD harness.
4	LCD failure	Replace the LCD.
5	Low voltage power supply PCB ASSY failure	Replace the low voltage power supply PCB ASSY.
6	Panel PCB failure	Replace the panel PCB ASSY.
7	High voltage power supply PCB failure	Replace the high voltage power supply PCB ASSY.
8	Main PCB failure	Replace the main PCB ASSY.

3.12.2 Main fan does not rotate

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

3.12.3 The room temperature is high or low

<User Check>

 - Adjust the room temperature to 10°C to 30°C.

 - Check that the exhaust opening is not blocked.

Step	Cause	Remedy
1	Internal temperature thermistor failure	Replace the internal temperature thermistor.
2	Main PCB failure	Replace the main PCB ASSY.

CHAPTER 3
DISASSEMBLY/REASSEMBLY

CHAPTER 3 DISASSEMBLY/REASSEMBLY

This chapter describes procedures for disassembling and reassembling the machine with related notes.

The provided disassembly order flow enables you to take in the disassembly procedure of related part at a glance.

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

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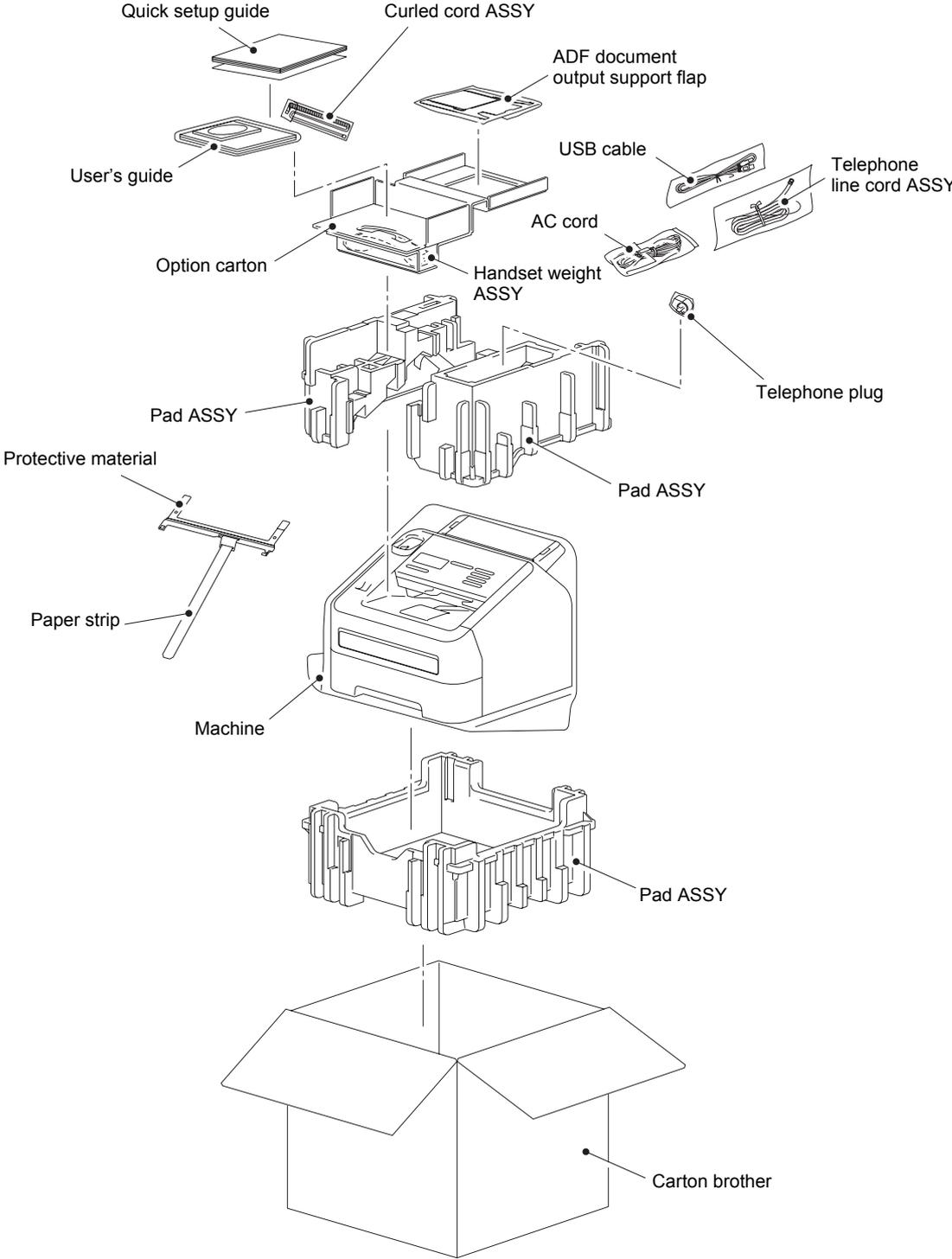
CONTENTS

1. SAFETY PRECAUTIONS

To avoid creating secondary problems by mishandling, follow the warnings and pre-cautions 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.
>
>
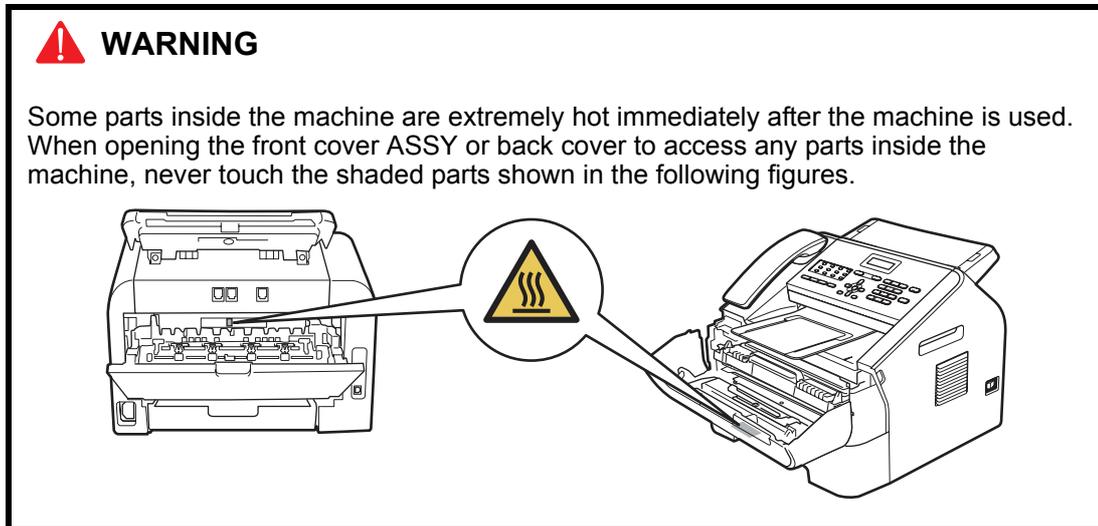
- Be careful not to lose screws, washers, or other parts removed.
- Be sure to apply grease to applicable positions specified in this chapter.
- When using soldering irons or other heat-generating tools, take care not to accidentally damage parts such as wires, PCBs and covers.
- Static electricity charged 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 connectors, 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.
- Violently closing the front cover without mounting the toner cartridge and the drum unit can damage the machine.
- After assembly, it is recommended to conduct dielectric strength test and continuity test.
- When mounting the power switch, check that the tabs are secured to the frame firmly and that the harness is not caught in the frame.
- When mounting the inlet, check that the inlet is housed in the frame completely and that the harness is not caught in the frame.

2. PACKING

Quick setup guide

Curled cord ASSY

ADF document
output support flap

USB cable

Telephone
line cord ASSY

User's guide

AC cord

Option carton

Handset weight
ASSY

Telephone plug

Pad ASSY

Pad ASSY

Protective material

Paper strip

Machine

Pad ASSY

Carton brother

3. SCREW CATALOGUE

Taptite bind B

Taptite bind B M3x10	
Taptite bind B M4x12	

Taptite cup B

Taptite cup B M3x10	

Taptite cup S

Taptite cup S M3x6 SR	
Taptite cup S M3x8 SR	
Taptite cup S M3x12	

Taptite flat B

Taptite flat B M3x10	

Screw bind

Screw bind M3x4	

Taptite pan

Taptite pan B M4x14	

Screw pan (S/P washer)

Screw pan (S/P washer) M3x6	
Screw pan (S/P washer) M3x12 DB	
Screw pan (S/P washer) M3.5x6	
Screw pan (S/P washer) M3.5x8	

Confidential
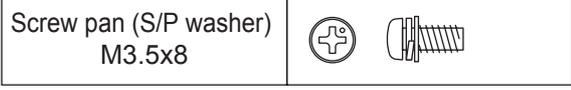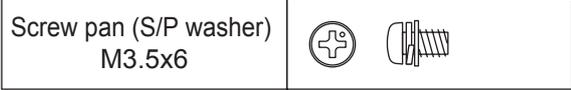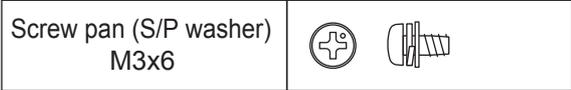
4. SCREW TORQUE LIST

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

Location of screw	Screw type	Q'ty	Tightening torque N.m (kgf.cm)
Paper tray cover	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Document tray ASSY	Taptite cup B M4x12	2	0.8±0.1 (8±1)
Side cover L	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Side cover R	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Handset holder (Upper cover L)	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Upper cover R	Taptite bind B M4x12	1	0.8±0.1 (8±1)
ADF earth harness	Taptite cup S M3x6 SR	1	0.5±0.05 (5±0.5)
Document chute ASSY	Taptite bind B M4x12	4	0.8±0.1 (8±1)
Document chute upper ASSY	Taptite cup B M3x10	3	0.35±0.05 (3.5±0.5)
Separation pad ASSY	Taptite cup B M3x8	1	0.5±0.1 (5±1)
Document lower cover	Taptite cup B M3x10	3	0.35±0.05 (3.5±0.5)
ADF drive frame	Taptite cup B M3x10	3	0.5±0.1 (5±1)
ADF motor	Screw pan (S/P washer) M3x6	1	0.6±0.1 (6±1)
Modem earth harness R	Screw pan (S/P washer) M3.5x6	2	0.5±0.05 (5±0.5)
Modem earth harness L	Screw pan (S/P washer) M3.5x6	1	0.5±0.05 (5±0.5)
Modem unit	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Modem shield cover	Screw pan (S/P washer) M3.5x6	1	0.5±0.05 (5±0.5)
Modem PCB ASSY	Taptite cup S M3x6 SR	2	0.5±0.1 (5±1)
Inner chute cover ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Inner chute ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Fuser unit	Taptite pan B M4x14	2	0.8±0.1 (8±1)
LVPS shield plate cover	Taptite bind B M4x12	3	0.8±0.1 (8±1)
	Screw pan (S/P washer) M3.5x6	1	0.5±0.05 (5±0.5)
	Screw pan (S/P washer) M3X12 DB	1	0.5±0.1 (5±1)
Low voltage power supply PCB ASSY	Screw pan (S/P washer) M3.5x6	1	0.5±0.05 (5±0.5)
	Taptite flat B M3x10	1	0.45±0.05 (4.5±0.5)
	Taptite bind B M4x12	1	0.8±0.1 (8±1)
High voltage power supply PCB ASSY	Taptite bind B M4x12	1	0.8±0.05 (8±0.5)
New toner sensor PCB ASSY	Taptite bind B M3x10	1	0.5±0.05 (5±0.5)

Location of screw	Screw type	Q'ty	Tightening torque N.m (kgf.cm)
Laser unit	Taptite cup S M3x8 SR	4	0.8±0.05 (8±0.5)
Main PCB ASSY	Taptite cup S M3x6 SR	3	0.6±0.1 (6±1)
Front chute ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
Under bar	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Chute earth plate	Taptite cup S M3x6 SR	1	0.55±0.05 (5.5±0.5)
PF frame ASSY	Taptite bind B M4x12	1	0.8±0.1 (8±1)
Earth plate laser L	Taptite cup S M3x6 SR	1	0.8±0.1 (8±1)
Main frame L ASSY	Taptite bind B M4x12	2	0.8±0.1 (8±1)
	Taptite cup S M3x6 SR	2	0.8±0.1 (8±1)
Develop drive sub ASSY	Taptite cup S M3x6 SR	1	0.8±0.1 (8±1)
	Taptite bind B M4x12	3	0.8±0.1 (8±1)
Motor drive sub ASSY	Taptite bind B M4x12	6	0.8±0.1 (8±1)
Main motor	Screw bind M3x4	3	0.65±0.05 (6.5±0.5)
Main PCB shield calking ASSY	Taptite cup S M3x6 SR	1	0.6±0.1 (6±1)
	Taptite bind B M4x12	3	0.8±0.1 (8±1)

5. LUBRICATION

There are no applicable parts for lubrication.

6. OVERVIEW OF GEARS

■ **Paper feeder part**
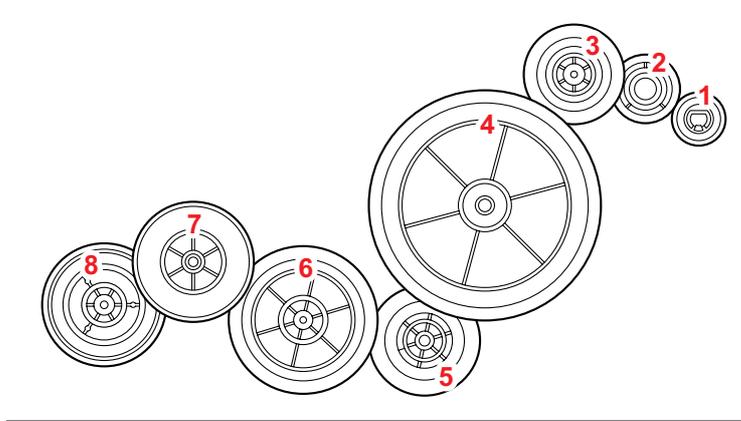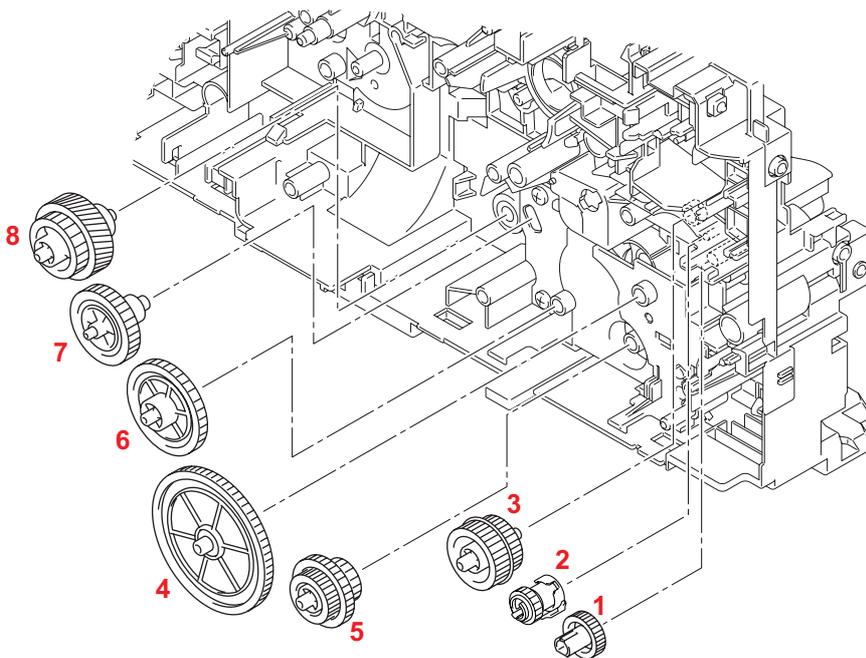
<Layout view>

Fig. 3-1

<Development view>

Fig. 3-2

<Name of gears>

1	LY2584	Feeder gear 17	4	LY2046	Feeder gear idle 65
	LY2047	Feeder gear	5	LY2045	Feeder gear 21/30/17
2	LY2581	Feeder gear holder	6	LY2044	Feeder gear 41
	LY2582	Feeder gear spring	7	LY2043	Feeder gear 31 pendulum
	LY2583	Feeder holder spring	8	LY2042	Feeder gear 26/52R
3	LY2048	Feeder gear 24/27			

* These parts are subject to change without notice.

■ Development part

<Layout view>
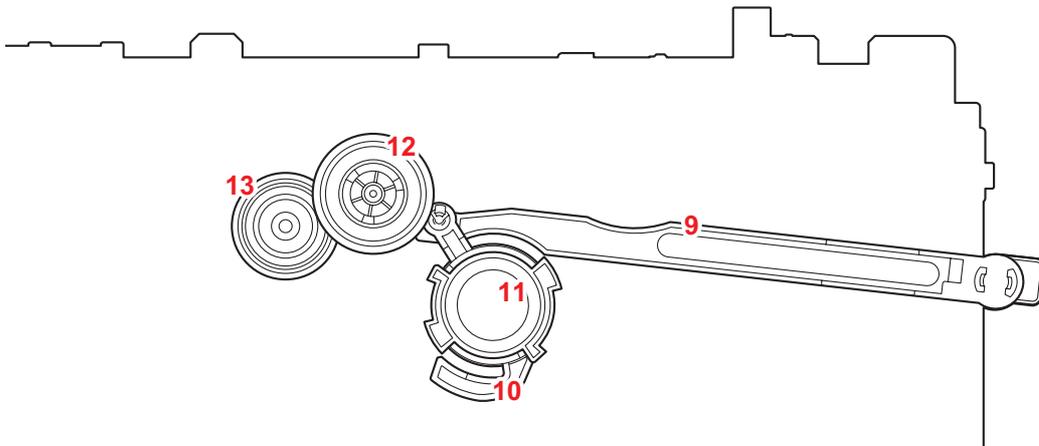
Fig. 3-3

<Development view>
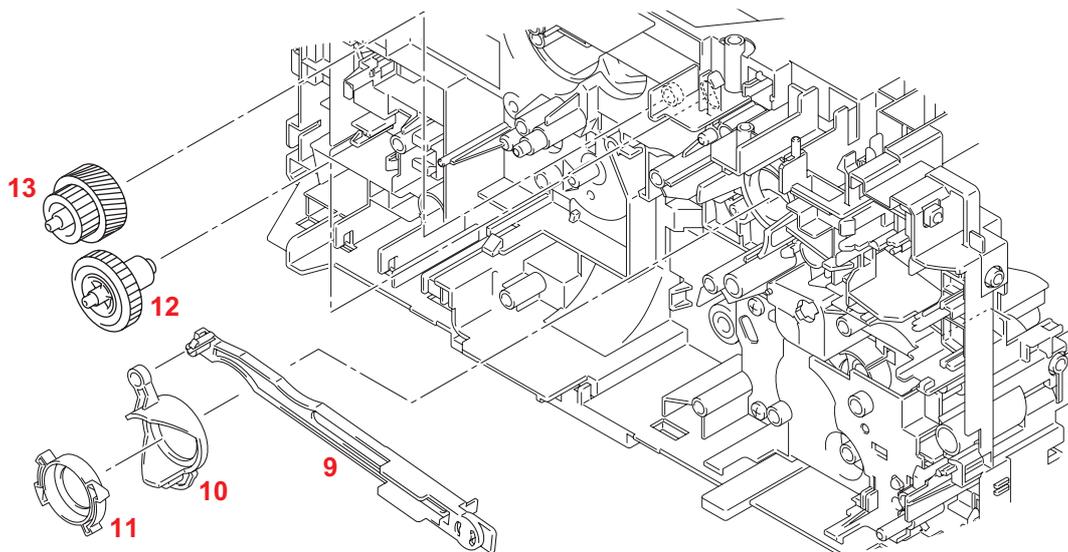
Fig. 3-4

<Name of gears>

9	LY2064	Develop joint link	12	LY2063	DEV gear 33
10	LY2458	Develop joint lift cam	13	LY2062	DEV gear 21/45R
11	LU2041	Develop joint lift disk			

* These parts are subject to change without notice.

■ Paper eject part

<Layout view>
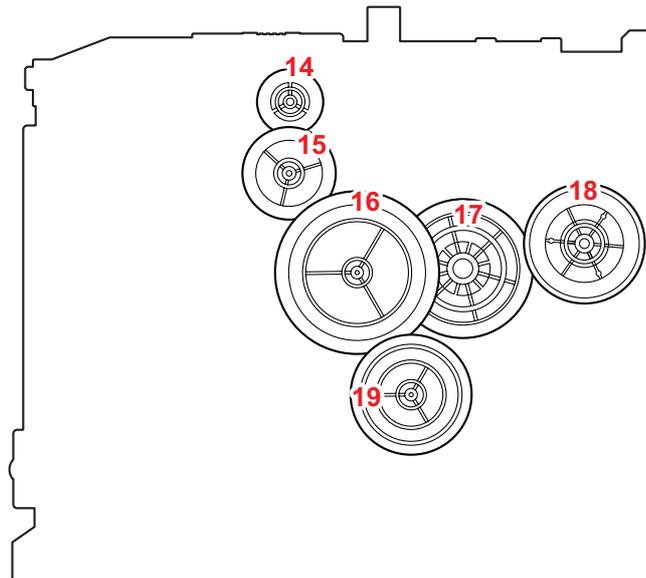
Fig. 3-5
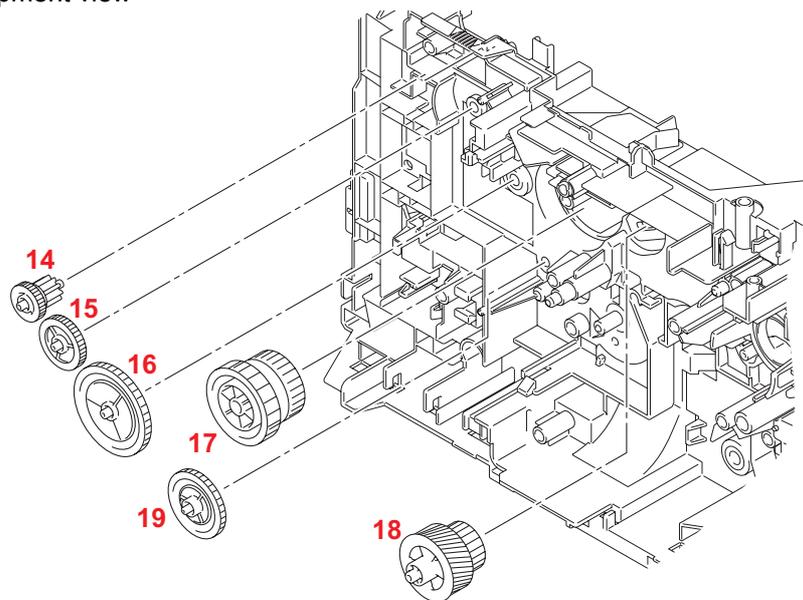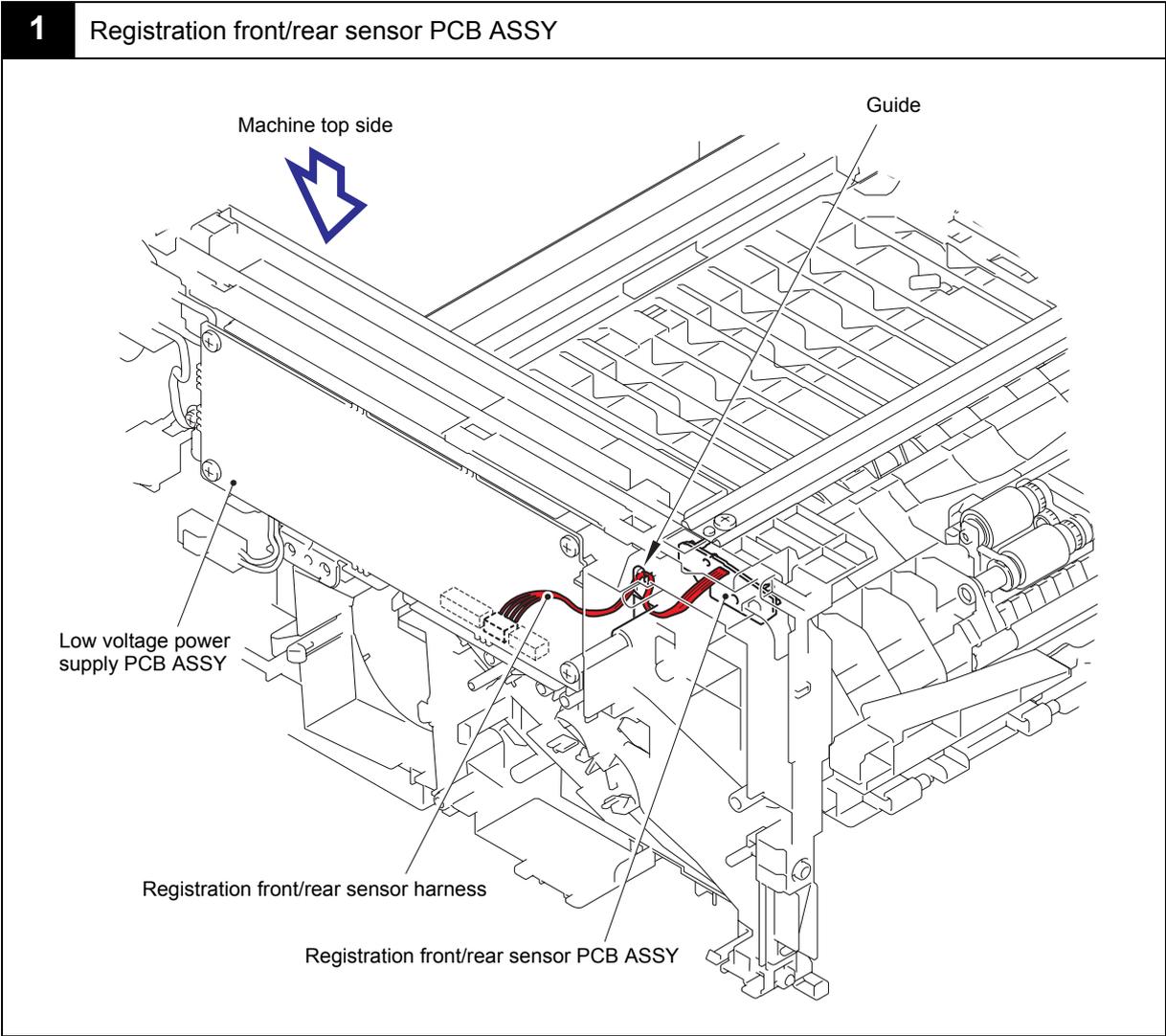
<Development view>

Fig. 3-6

<Name of gears>

14	LY2011	Ejector gear 10/15	17	LY2010	Fuser gear 28/34
15	LY2012	Ejector gear 22	18	LY2066	Fuser gear 20/54R pendulum
16	LY2013	Ejector gear 40	19	LY2014	Ejector gear 29

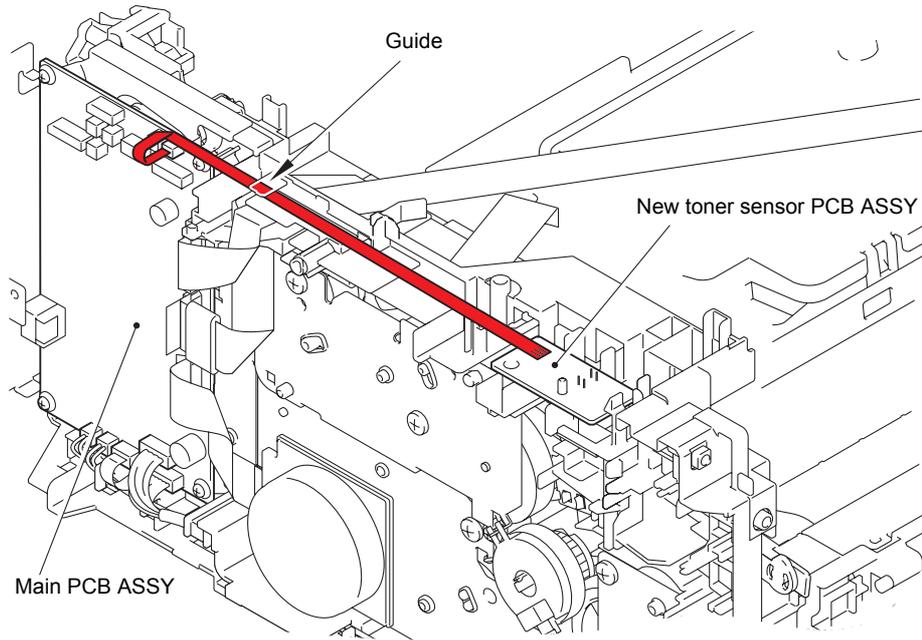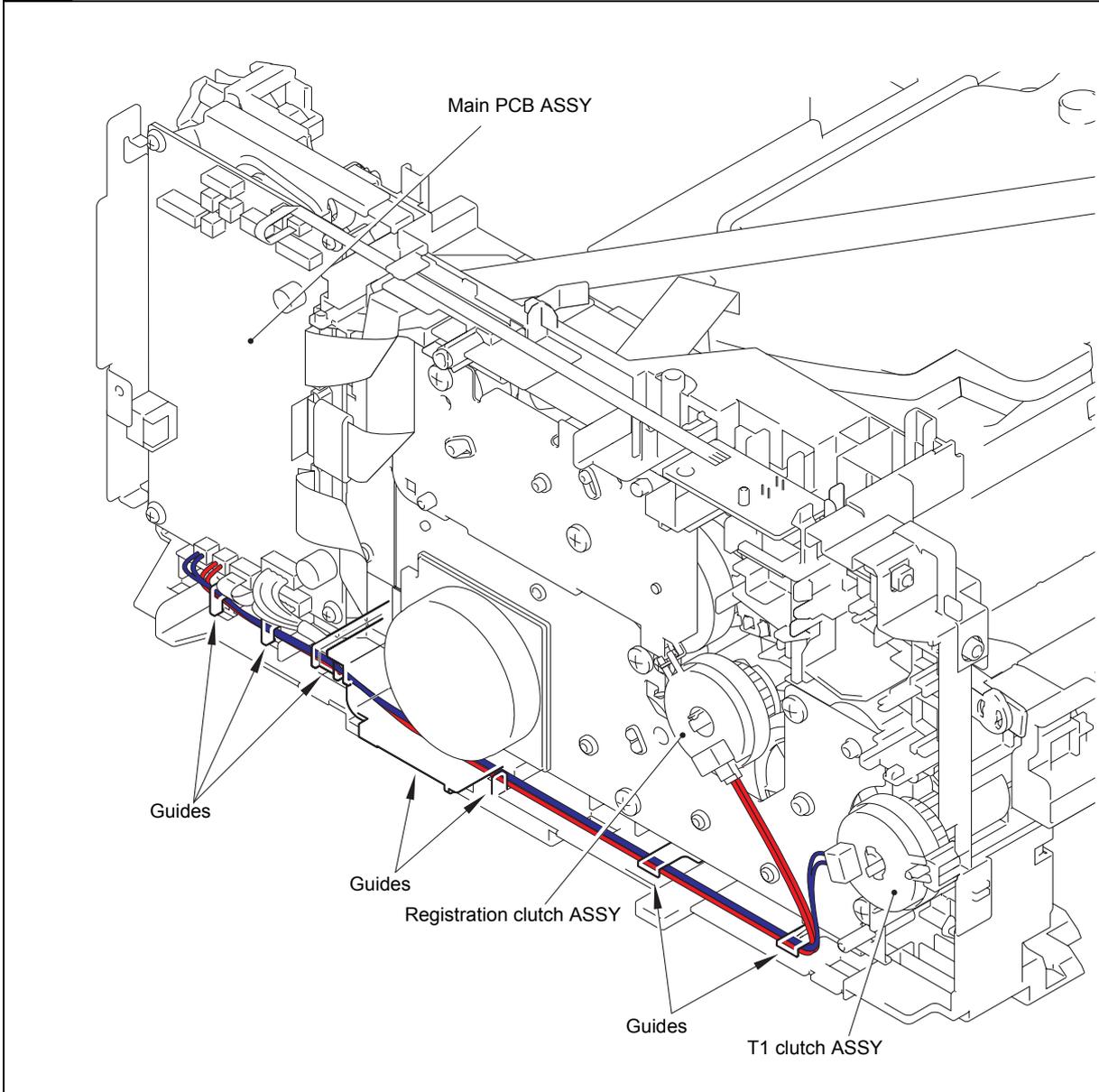***** These parts are subject to change without notice.

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7. HARNESS ROUTING

1	Registration front/rear sensor PCB ASSY

Machine top side

Guide

Low voltage power
supply PCB ASSY

Registration front/rear sensor harness

Registration front/rear sensor PCB ASSY

Internal temperature thermistor

Main PCB ASSY

Guides

Internal temperature thermistor

Guide

Guide

Back side view

3 New toner sensor PCB ASSY

Guide

New toner sensor PCB ASSY

Main PCB ASSY

Confidential

Main PCB ASSY

Guides

Guides

Registration clutch ASSY

Guides

T1 clutch ASSY

5   Eject sensor PCB ASSY

Back cover sensor

Eject sensor PCB ASSY

Guide

Back cover
sensor harness

Hooks

Main PCB ASSY

Main frame L ASSY

Main PCB shield calking ASSY

Main PCB sheet

Main-eject sensor flat cable harness

6	Main motor

Main PCB ASSY

Main motor

7	Laser unit

8　Main fan

Hole of guide

Hole of guide

Tape

High voltage power
supply PCB ASSY

Guide

Main fan

9 Low voltage power supply PCB ASSY

Low voltage power supply harness ASSY

Low voltage power supply PCB ASSY

<Right side>

Main PCB ASSY

Guide

<Left side>

10 High voltage power supply PCB ASSY

Guide

Guide

Guide

Main-HVPS flat cable harness

Guide

Guide

High voltage power
supply PCB ASSY

Main PCB ASSY

11 Fuser unit

Heater harness

Guides

Fuser unit

Guides

Main frame L ASSY

Main frame R ASSY

Side thermistor
harness ASSY

Center thermistor
harness ASSY

12 Speaker unit

Confidential

Control panel ASSY

Panel PCB ASSY

Core

Control panel harness

Guide

ADF earth harness

Guide

ADF motor

ADF motor harness

Control panel harness

Main PCB ASSY

16 CIS unit

CIS unit

CIS flat cable

Core

Main PCB ASSY

17 Hook switch PCB ASSY/Control panel cover sensor

Handset holder

Hook switch PCB ASSY

Control panel cover
sensor harness

Guides

Hook switch PCB harness

Guide

Control panel cover
sensor

Guide

Main PCB ASSY

8. DISASSEMBLY FLOW CHART

Disassembly / Re-Assembly (second)

```
9.2 Paper tray          9.3 Cord hook       9.14 Unfold support        9.10 Side cover R        9.8 Document tray        9.34 Pick-up roller
5/5                     5/5                  flap                       20/15                    ASSY                     ASSY
                                             5/5                                                 10/10                    5/10

9.35 Rubber foot                             9.9 Side cover L           9.28 LVPS shield plate
20/10                                        10/15                      cover                    9.11 Upper back cover
                                                                        30/45                    5/5

9.4 Back cover          9.36 Main PCB ASSY                              9.28 Low voltage power       Ⓑ
5/5                     15/20                                      Ⓐ   supply PCB ASSY
                                                                        30/30

9.5 Outer chute ASSY            Ⓖ           9.25 Inner chute        9.15 Control panel       9.12 Handset holder
5/5                                          cover                   cover link               (Upper cover L for no
                                             25/20                   5/10                     Handset model) /
                                                                                              Upper cover R
9.6 Fuser unit cover    9.37 T1 clutch ASSY                              Ⓑ                   25/35
5/5                     15/20                    Ⓒ

9.26 Inner chute ASSY                        9.37 Registration        9.16 Document chute      9.13 Hook switch PCB
15/20                                         clutch                   ASSY                     ASSY / Hook actuator
                                              15/20                    30/50                    5/5

9.26 Eject pinch roller L            Ⓓ  Ⓕ   9.24 Modem PCB          9.19 Control panel
ASSY / Eject pinch                            ASSY                     ASSY
roller R ASSY                                 25/30                    5/5
5/15

9.27 Fuser unit                              9.20 Document lower      9.17 Document chute      9.19 Panel PCB ASSY      9.21 Document eject      9.22 CIS unit
30/65                                         cover / Document        upper ASSY              15/10                    roller                   10/10
                                              separate roller gear    20/20                                            5/10
            Ⓔ   Ⓒ                           shaft / Document
                                              separate roller         9.18 Separation pad     9.19 Rubber key L /      9.21 ADF drive frame
                                              25/35                    ASSY                     Rubber key R / LCD       35/30
9.32 Filter                                                           10/15                     holder / Panel sub
5/5                                          9.20 Document feed                                 cover
                                              roller                                           10/15                   9.21 ADF motor           9.23 Control panel
                        Ⓐ                     5/5                                                                       10/10                    cover sensor
                                                                                                                                                5/5
9.33 Laser unit         9.30 High voltage
30/45                   power supply PCB
                        ASSY
                        10/15
                                             9.7 Front cover ASSY                                           Ⓕ
9.29 Main fan           9.31 New toner sensor 5/10
10/20                   PCB ASSY
                        10/15                                                                  9.39 Develop drive sub
                                                                                              ASSY
                                             9.38 Front chute ASSY    Ⓒ  Ⓓ  Ⓔ                20/25
                                              10/15

                                                                      9.38 Main frame L        9.40 Motor drive sub     9.39 Develop gear joint/
                                                                       ASSY                     ASSY                     52
                                                                       55/75                    30/40                    5/5

                                                                      9.41 Internal                                     9.40 Main motor
                                                                       temperature thermistor                           10/15
                                                                       15/20                     Ⓖ

                                                                                               9.42 Eject sensor PCB
                                                                                               ASSY
                                                                                               20/30

                                                                                               9.43 Fuser gear 28/34
                                                                                               5/5
```
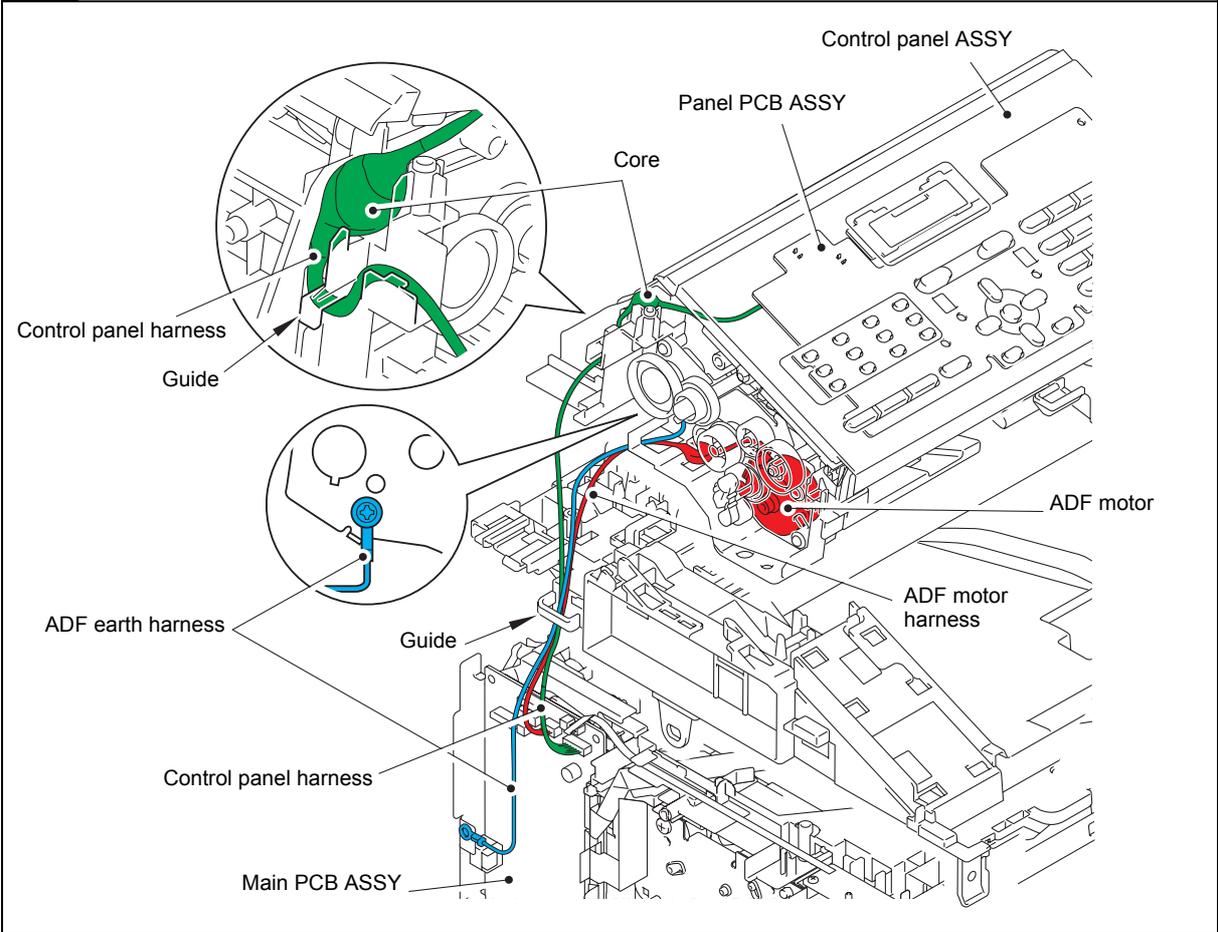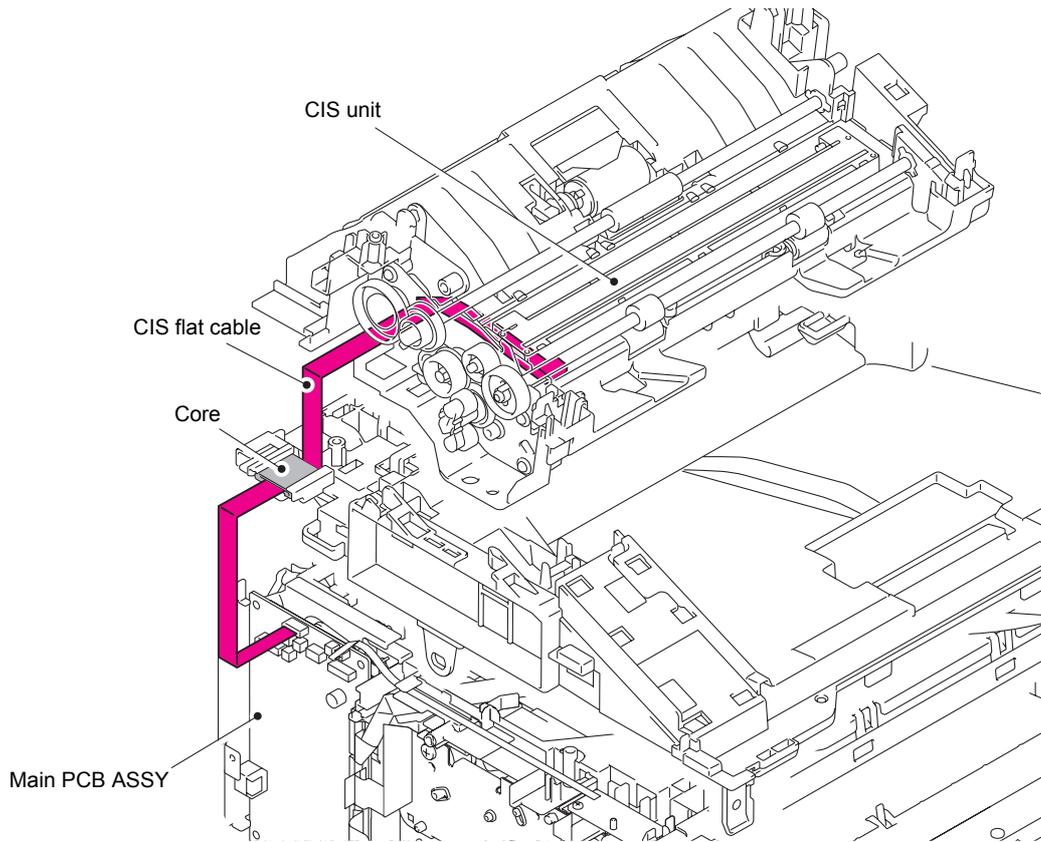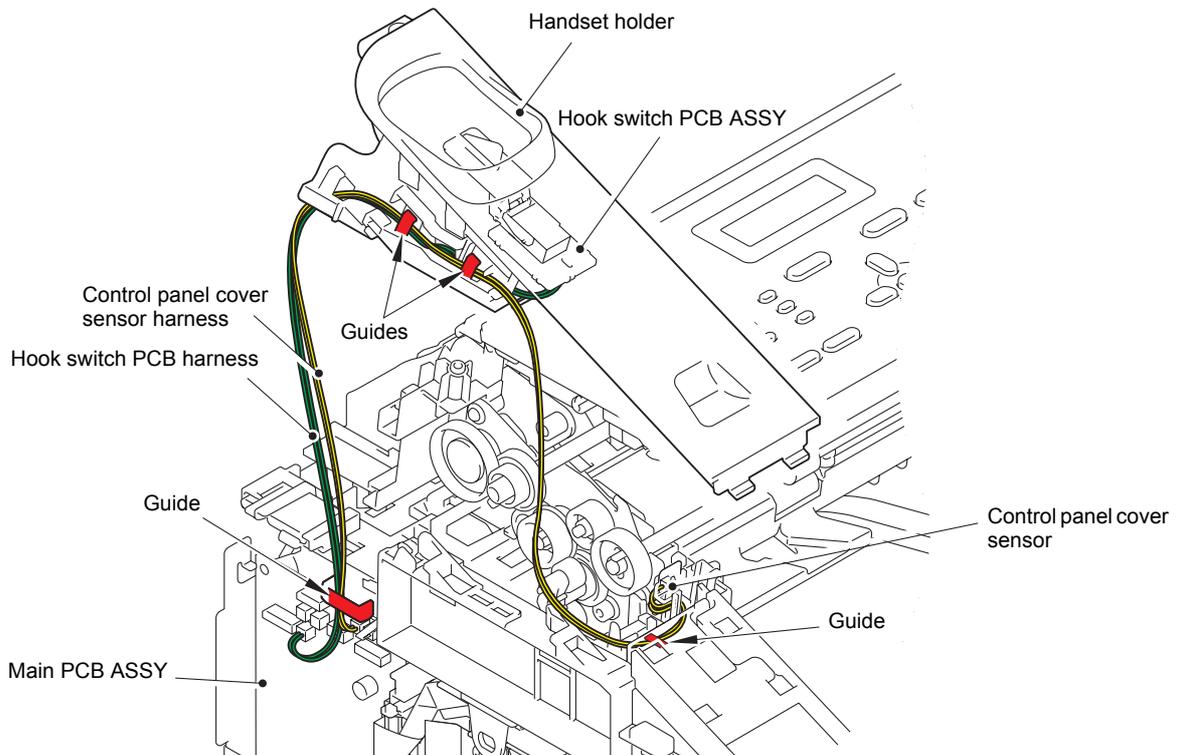
9. DISASSEMBLY PROCEDURE

9.1 Preparation

■ Transferring Received Fax Data

When the machine at the user site requires to be repaired, unplugging the power cord from the electrical outlet for sending the machine for repair may lose received fax data if left in the machine.

To prevent such data loss, the service personnel should instruct end users (e.g., by telephone) to transfer data to another fax machine or PC using the procedure below.

> **Note :**
> • The number of files that can be transferred at a time is 99. To transfer 100 files or more, carry out the following procedure more than one time.

> **Tip :**
> • If there are both color and monochrome data in a file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

<Transferring faxes to another fax machine>

■ Operating Procedure

(1) If the error message is displayed, press the [Stop/ Exit] button to close it.

(2) Press the [Menu] button.

(3) Choose [Service] by using the [▲] or [▼] button.

(4) Press the [OK] button.

(5) Choose [Data transfer] by using the [▲] or [▼] button.

(6) Press the [OK] button.

(7) Choose [Fax transfer] by using the [▲] or [▼] button.

(8) Press the [OK] button.

(9) If [No data] appears on the LCD, there are no faxes left in the machine's memory. Then, press the [Stop/Exit] button.
If a fax number entry screen appears, there are faxes in the machine's memory. Then enter the fax number to which faxes will be forwarded.

(10) Press the [Start] button.

■ 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)
- Curled cord ASSY (if connected)

(2) Remove the following:
- Paper tray
- Toner cartridge and drum unit
- LAN port cap
- Handset weight ASSY
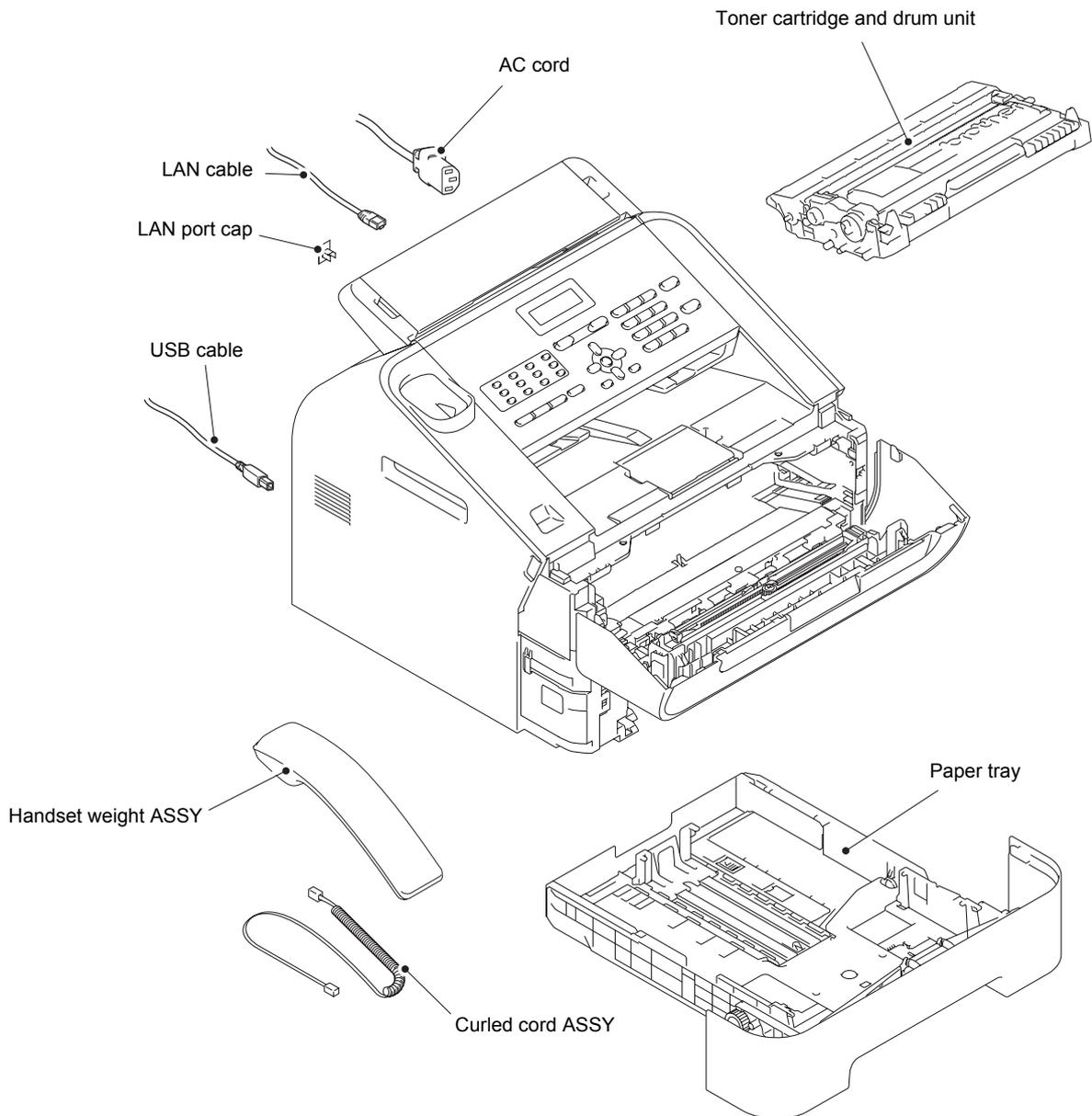
Fig. 3-7

9.2 Paper tray

(1) Remove the two taptite bind B M4x12 screws and the four bosses, and then remove the paper tray cover from the paper tray.

Taptite bind B M4x12

Paper tray cover

Bosses

Back side view

Back side view

Bosses

Paper tray
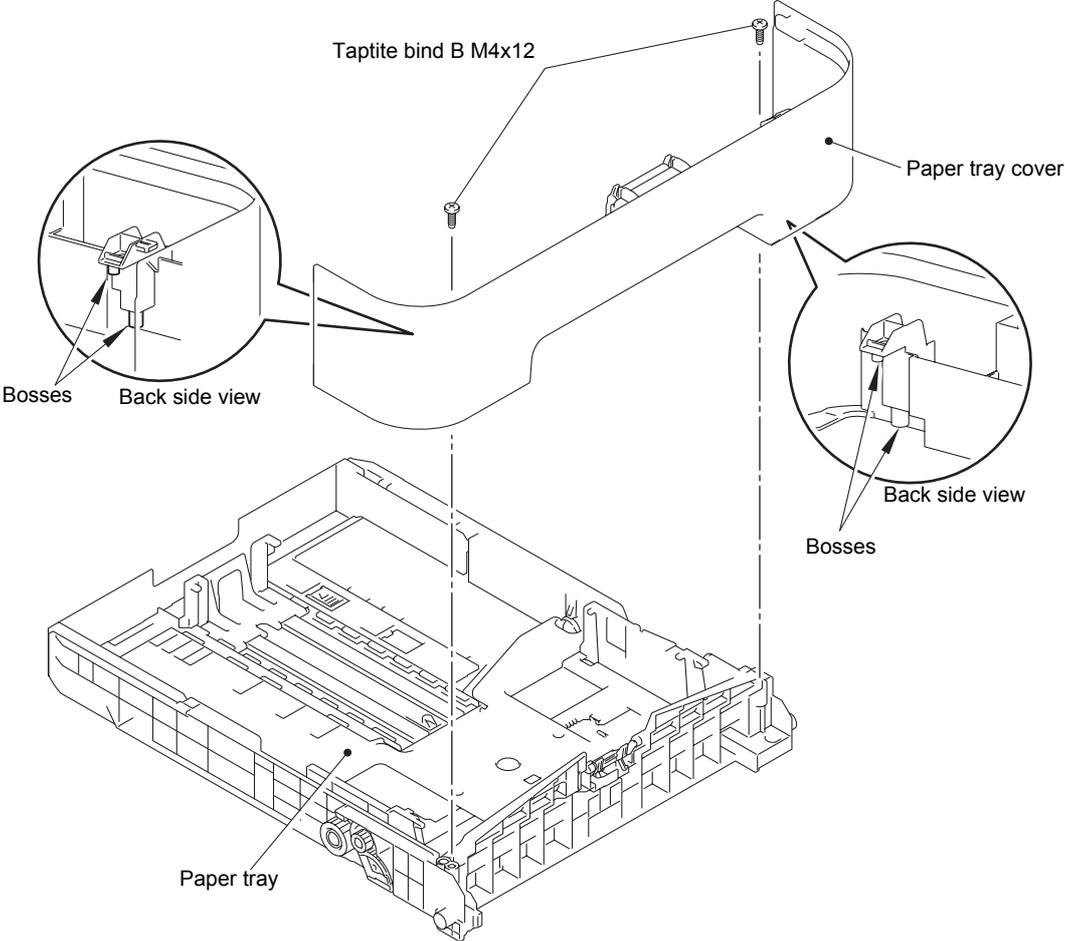
Fig. 3-8

(2) Release the two hooks of the separation pad ASSY.

(3) Press both side arms of the separation pad ASSY to remove the pins, and remove the separation pad ASSY.

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

Note :
- Be careful not to lose the separation pad spring.
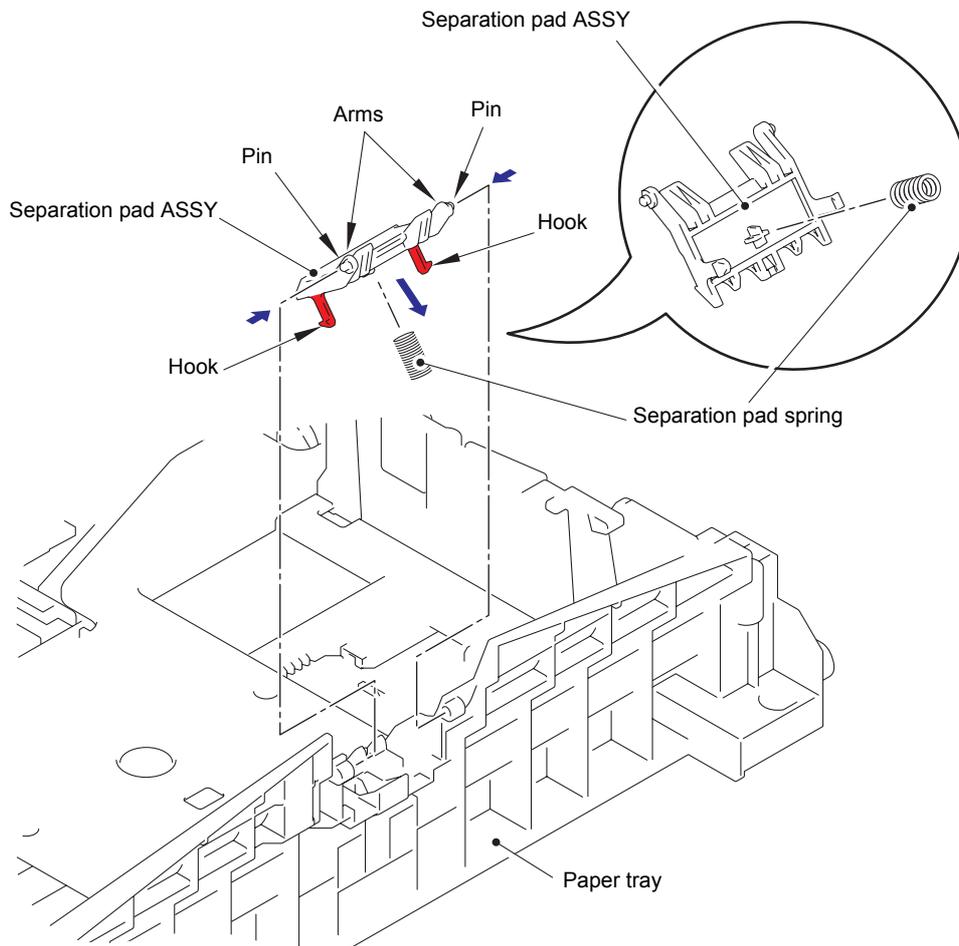
Fig. 3-9

(5) Push the hook of the lift gear 46 while pushing up the plate up plate, and remove the lift gear 46.
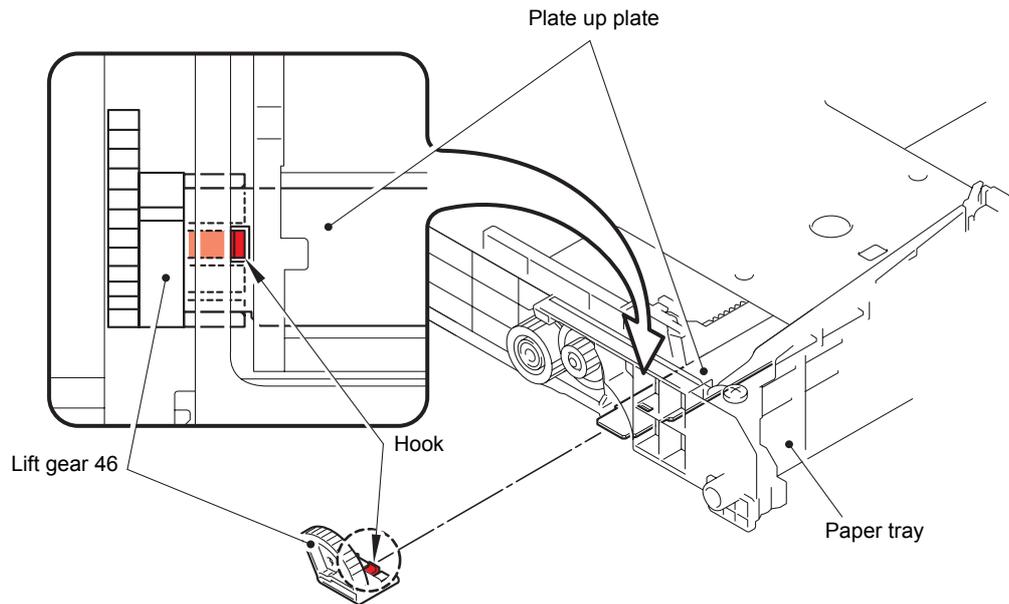
Fig. 3-10

(6) Remove the gear Z23M10Z14M75 and the gear Z19M10.

Fig. 3-11

Confidential
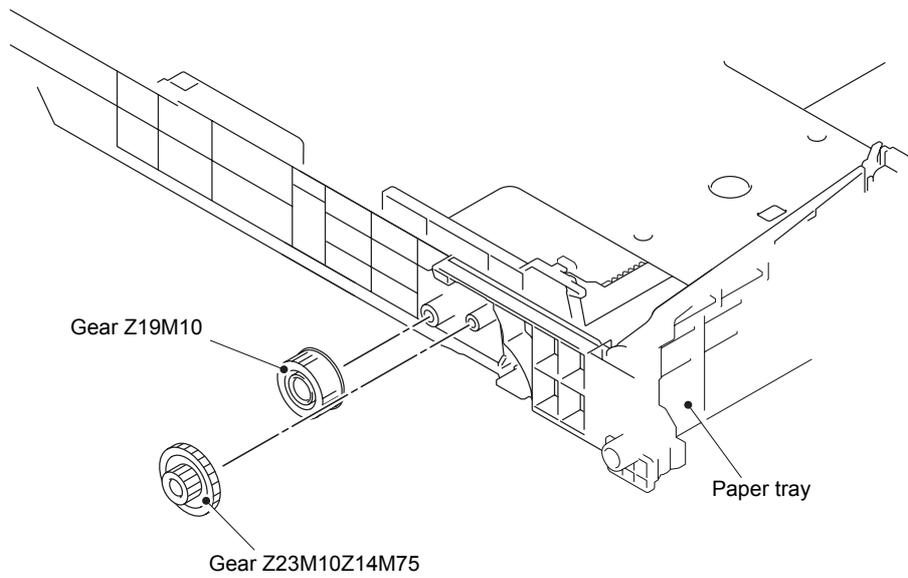
9.3 Cord hook

(1) Turn the two cord hooks, and then remove them from the machine.

Cord hooks
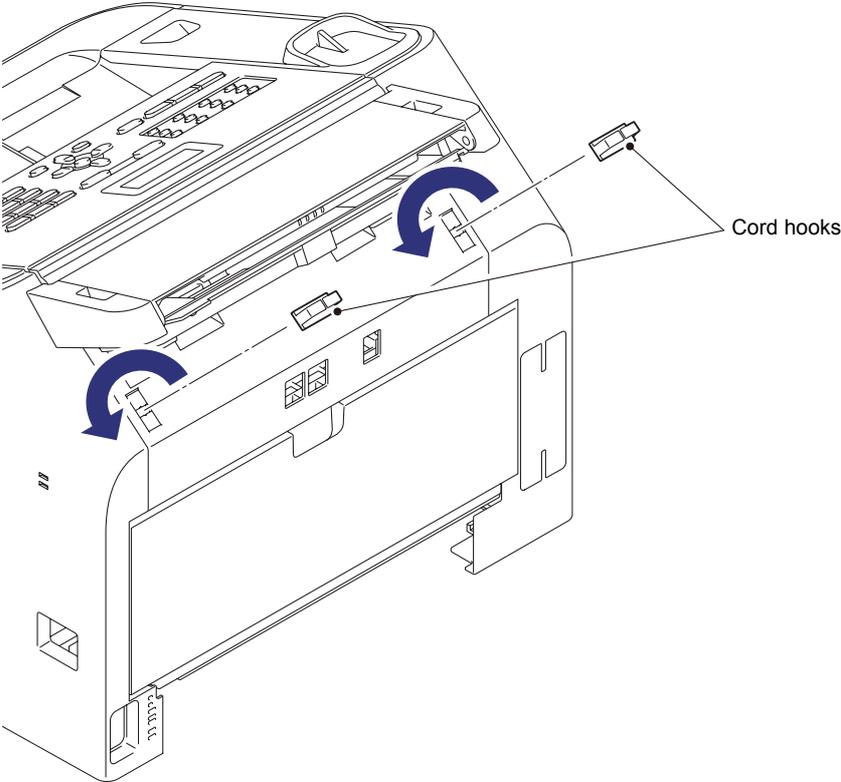
Fig. 3-12

9.4 Back cover

(1) Open the back cover.

(2) Push the both side ribs of the back cover outward, and release the two bosses of the outer chute ASSY.

(3) Pull the back cover in the direction of 3a, and remove it from the pin, and then slide it in the direction of 3b to remove it from the machine.

(4) Release the hook, and remove the back cover sensor lever from the back cover.
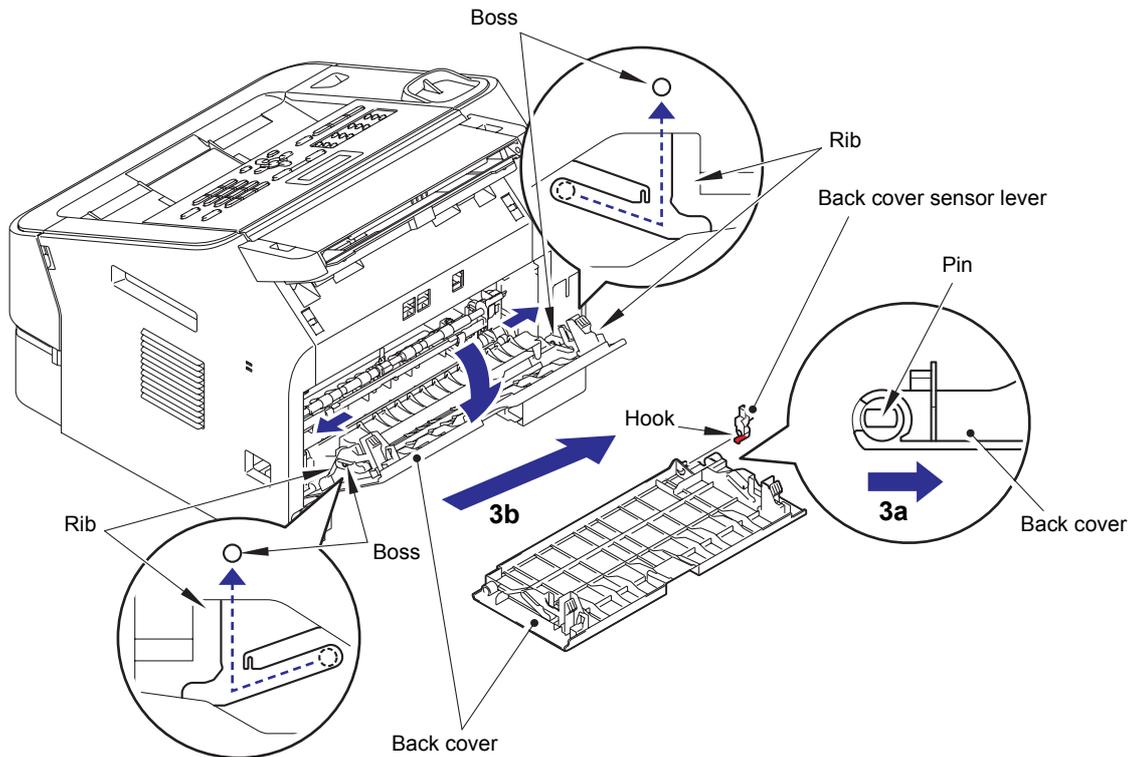
Fig. 3-13

Assembling Note :

• When assembling the back cover, close the back cover with engaging the boss of the outer chute ASSY with the groove of both side ribs of the back cover.

9.5 Outer chute ASSY

(1) Pull the outer chute ASSY in the direction of 1a, and release the boss A. Slide the outer chute ASSY in the direction of 1b, and release the boss B, and then remove the outer chute ASSY from the machine.
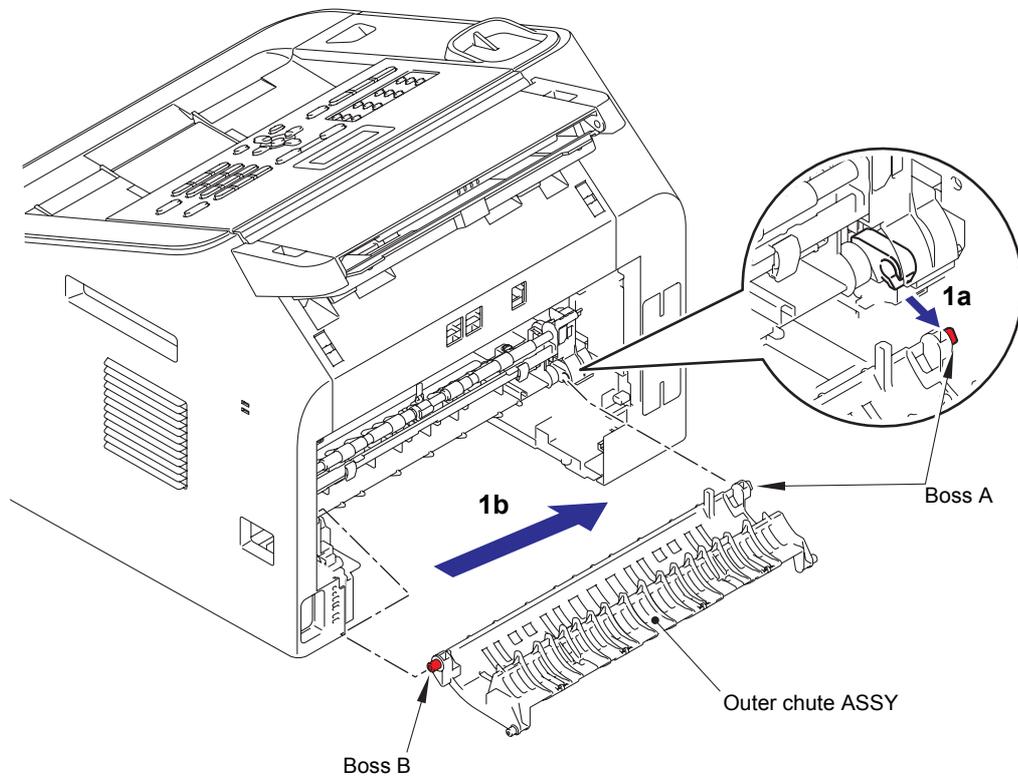
Fig. 3-14

9.6　Fuser unit cover

(1) Hold the knobs on the fuser unit cover, and pull down the fuser unit cover to your side.

(2) Pull the fuser unit cover in the direction of the arrow to remove it from the two bosses, and then remove it from the machine.
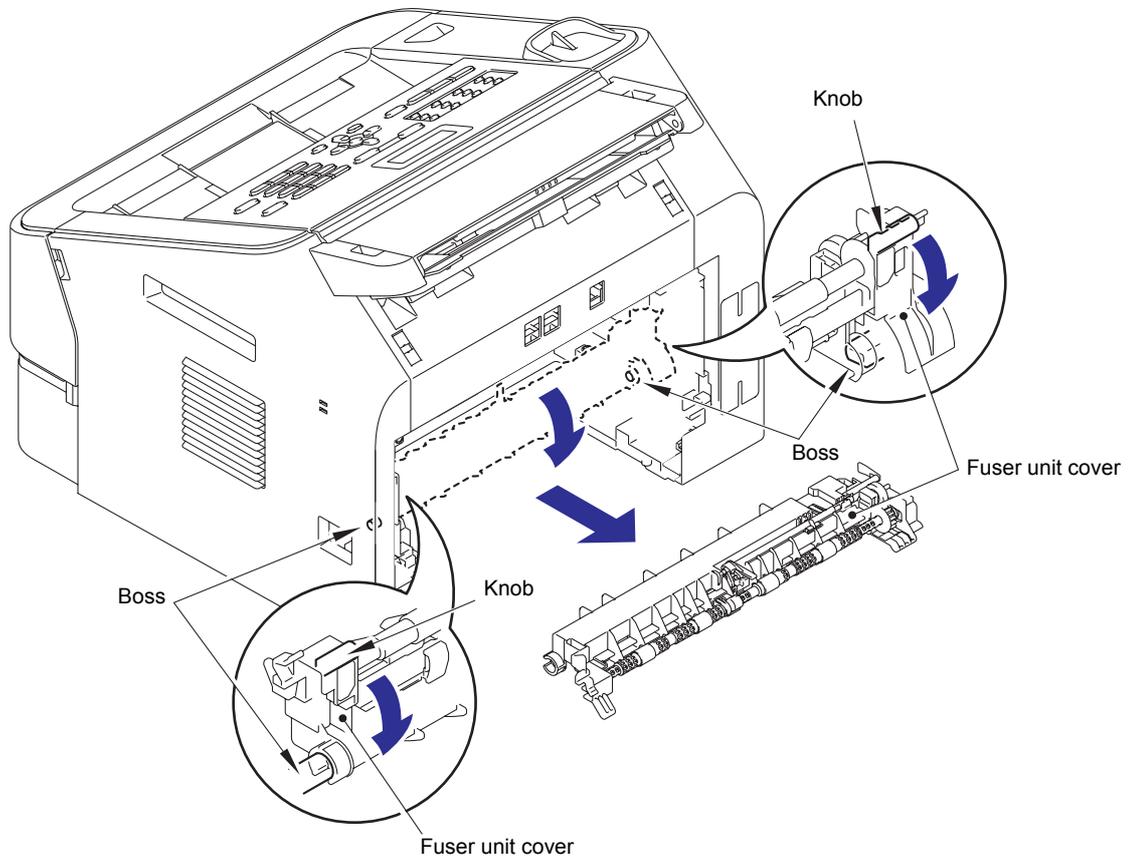
Fig. 3-15

Assembling Note :
- When attaching the fuser unit cover, set the roller parallel. (Check the position of anti-curl levers. Refer to Fig. 2-8 in Chapter 2.)

9.7　Front cover ASSY

(1) Open the front cover ASSY.

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

(3) Pull up the rib on the front chute ASSY, and slide the front cover ASSY in the direction of the arrow 3, and then remove it from the machine.
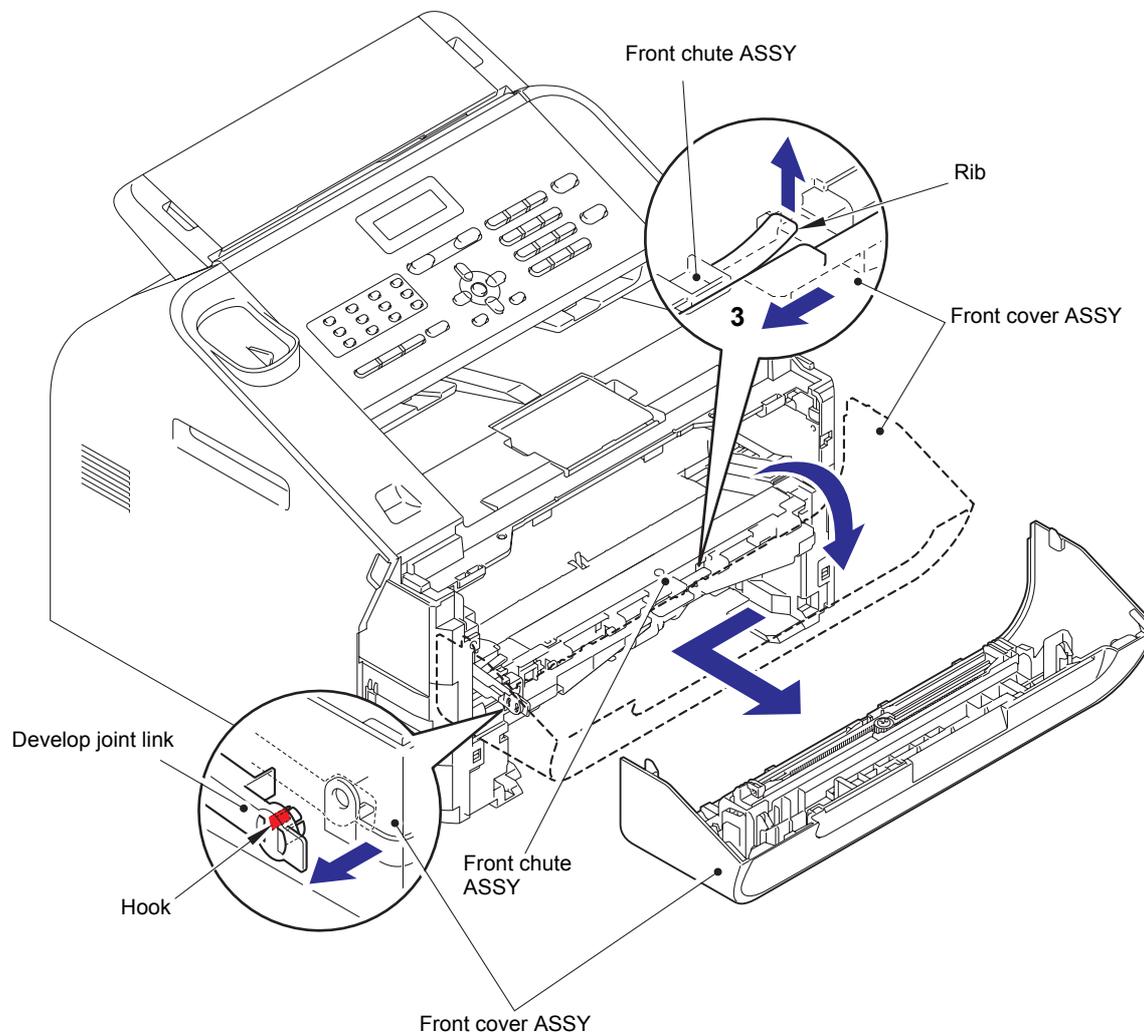
Fig. 3-16

9.8 Document tray ASSY

(1) Remove the two taptite cup B M4x12 screws. And release the two hooks of the document tray ASSY, and remove the document tray ASSY from the machine.

Hooks

Document tray ASSY

Taptite cup B M4x12
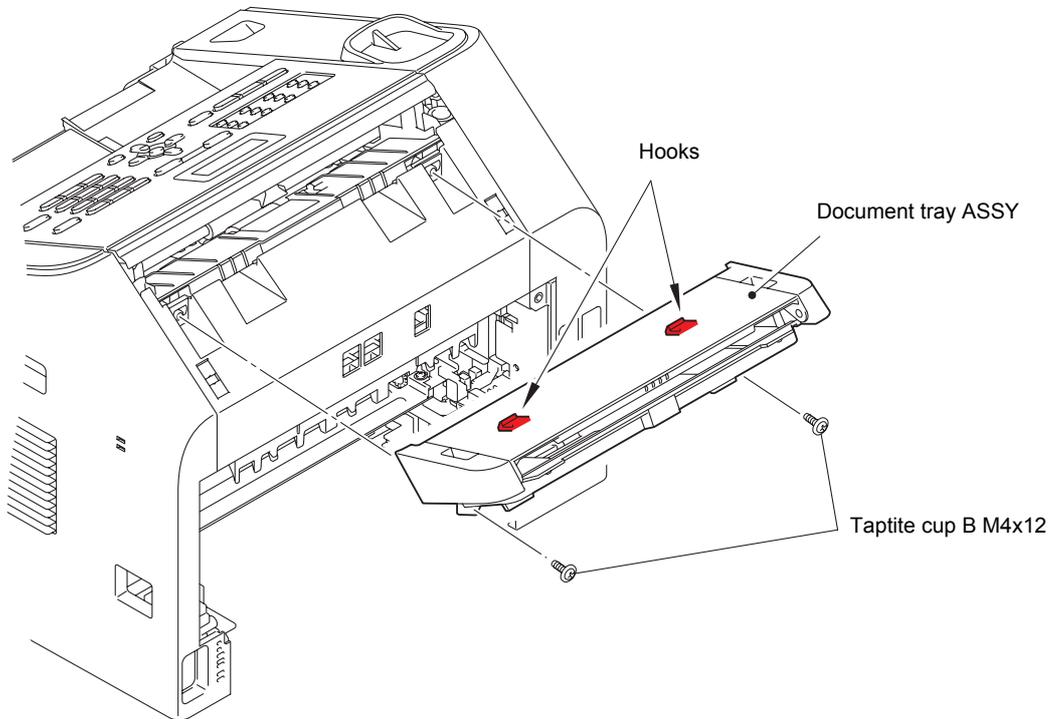
Fig. 3-17

9.9 Side cover L

(1) Remove the taptite bind B M4x12 screw. And release the hooks (17 locations) to remove the side cover L from the machine.
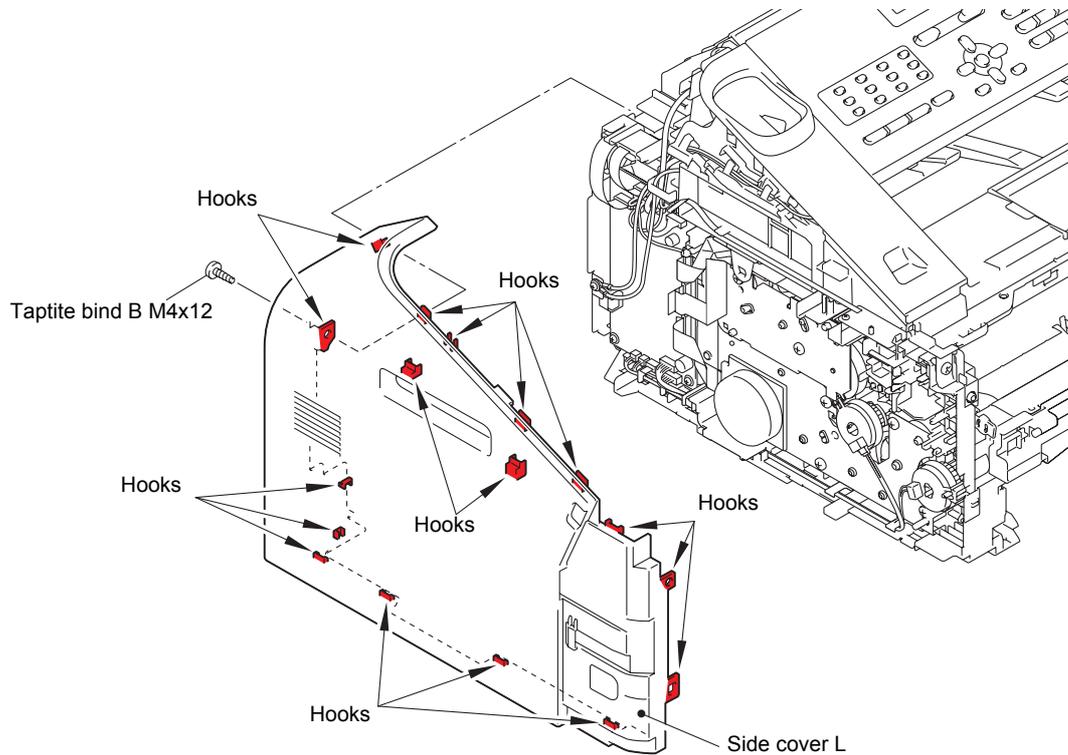
Fig. 3-18

9.10 Side cover R

(1) Remove the taptite bind B M4x12 screw. And release the hooks (16 locations) to remove the side cover R from the machine.

Fig. 3-19

Confidential
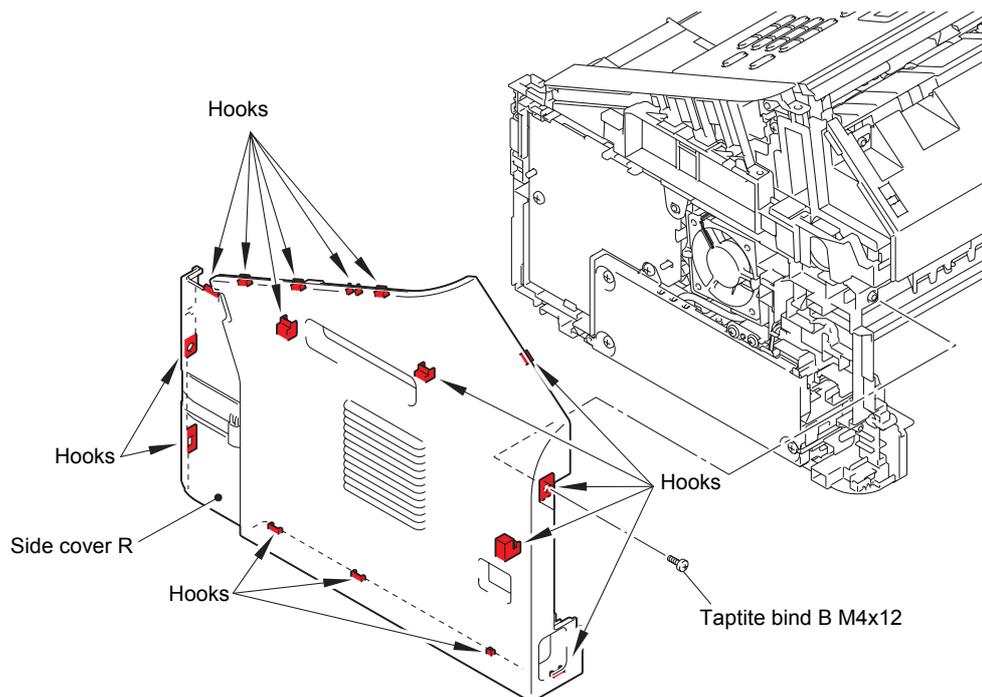
9.11 Upper back cover

(1) Float section A, and remove the boss. And slide the upper back cover to release the three hooks, and then remove the upper back cover from the machine.

Upper back cover

Hooks

Boss

Section A
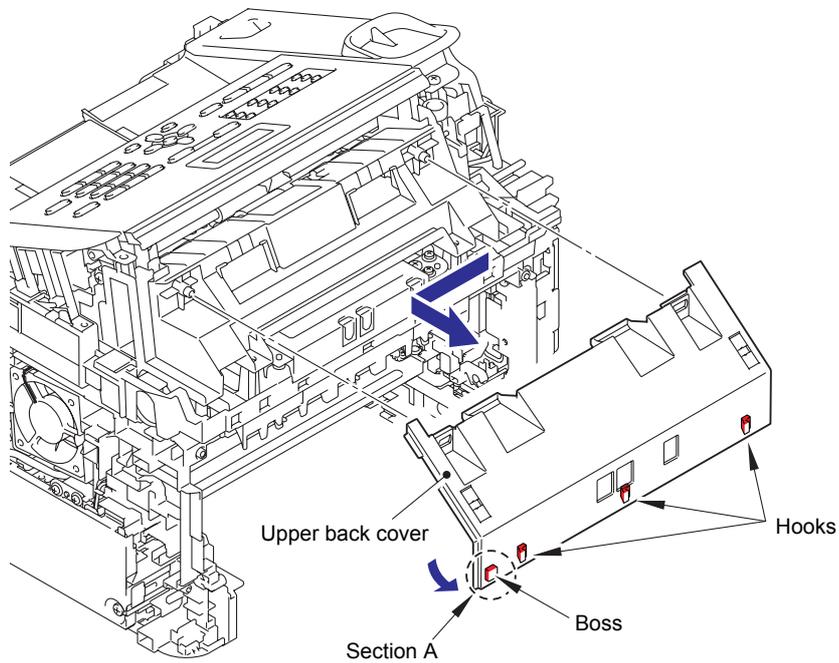
Fig. 3-20

9.12 Handset holder (Upper cover L for no Handset model) / Upper cover R

(1) Open the control panel ASSY.

(2) Disconnect the hook switch PCB harness and the control panel cover sensor harness from the main PCB ASSY, and release them from the guide.

(3) Release the wiring of the control panel cover sensor harness from the guide of the handset holder.

(4) Remove the taptite bind B M4x12 screw from the handset holder. And release the hook, and slide the handset holder in the direction of the arrow to remove it from the machine.

(5) Remove the taptite bind B M4x12 screw from the upper cover R. And release the hook, and slide the upper cover R in the direction of the arrow to remove it from the machine.
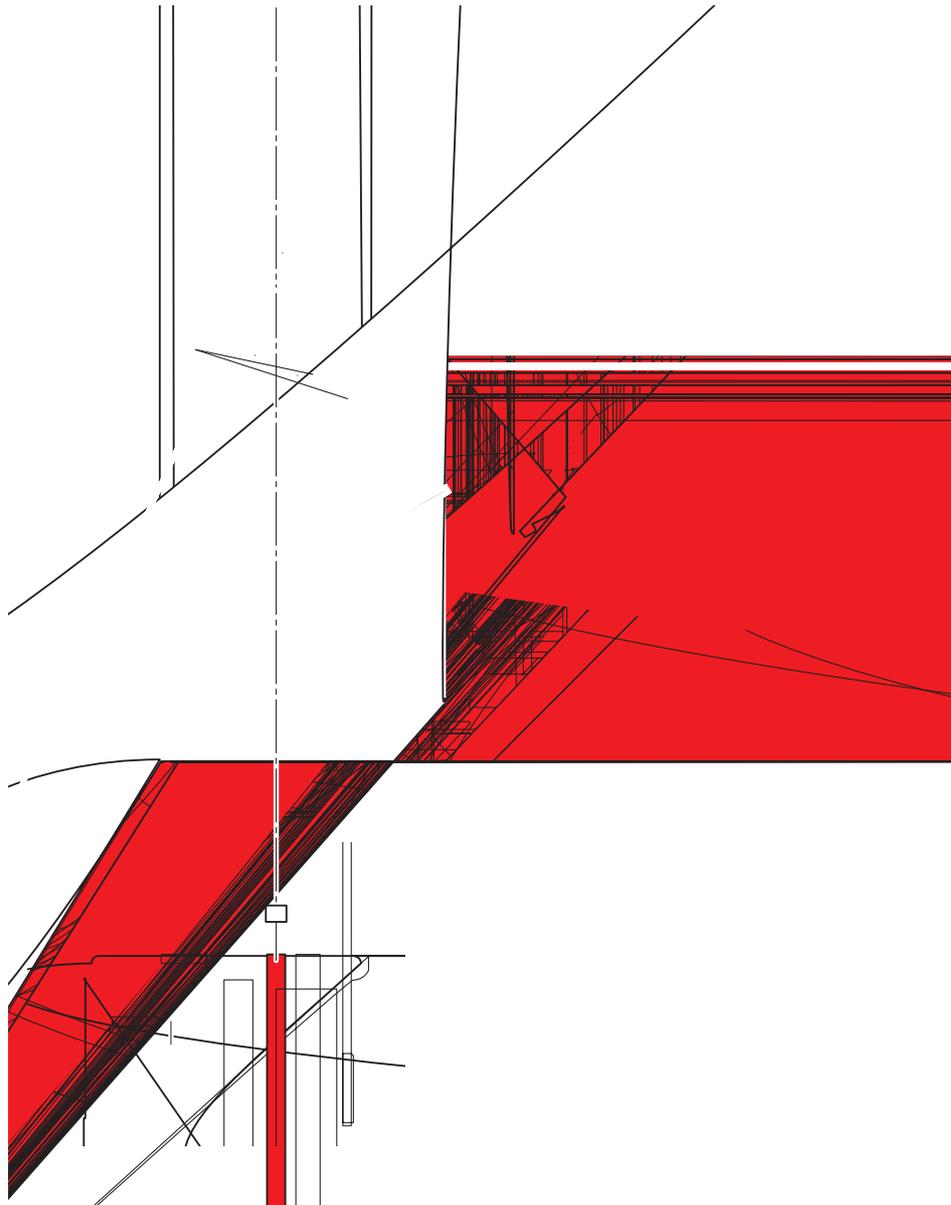
Fig. 3-21

Harness routing : Refer to "17. Hook switch PCB ASSY/Control panel cover sensor".

9.13 Hook switch PCB ASSY / Hook actuator

(1) Release the hook switch PCB harness from the securing fixtures.

(2) Release the hook, and remove the hook switch PCB ASSY from the handset holder.

(3) Remove the hook actuator from the hook switch PCB ASSY.
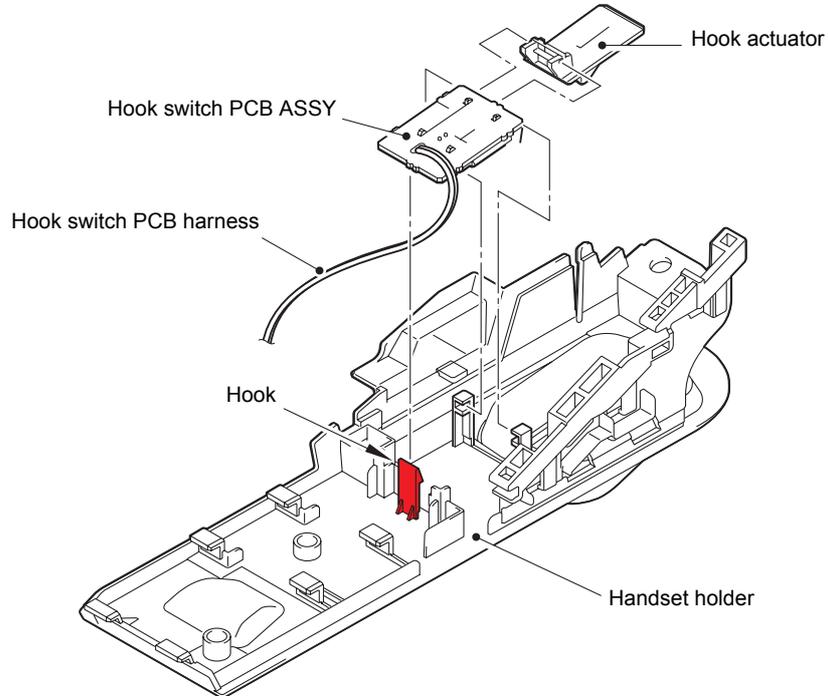
Fig. 3-22

Harness routing : Refer to "17. Hook switch PCB ASSY/Control panel cover sensor".

9.14 Unfold support flap

(1) Remove the two bosses to remove the unfold support flap from the machine.

9.15 Control panel cover link

(1) Remove the two control panel cover link from the machine.

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9.16 Document chute ASSY

(1) Release the wiring of the control panel cover sensor harness from the guide of the machine.

(2) Remove the taptite cup S M3x6 SR screw, and remove the ADF earth harness and the modem earth harness L.

(3) Remove the CIS flat cable, the ADF motor harness and the control panel harness from the main PCB ASSY. And release the ADF motor harness, the control panel harness and the ADF earth harness from the guide, and then pull out the CIS flat cable from the core of the machine.

(4) Remove the four taptite bind B M4x12 screws, and remove the document chute ASSY from the machine.

Fig. 3-23

Assembling Note :

• When assembling the ADF earth harness and the modem earth harness L to the machine, place them inside of width of the metal where screw is fastened.

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(5) Release the control panel harness from the securing fixtures.

(6) Open the control panel ASSY at an angle of 45, and remove it from the document chute ASSY in the direction of the arrow.

Control panel ASSY

Control panel harness

An angle of 45

Document chute ASSY
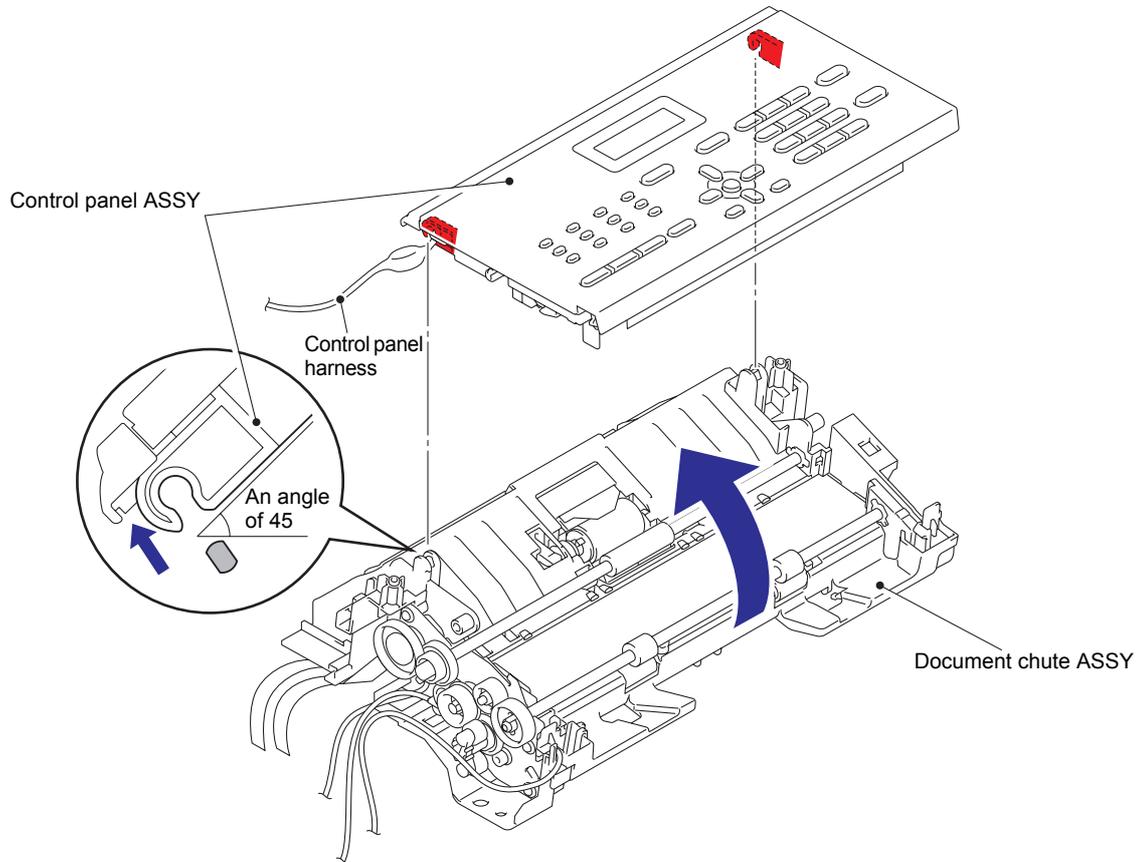
Fig. 3-24

Harness routing : Refer to "15. Panel unit/ADF motor".

9.17 Document chute upper ASSY

(1) Remove the three taptite cup B M3x10 screws. And release the two hooks to remove the document chute upper ASSY from the control panel ASSY.

Taptite cup B M3x10

Taptite cup B M3x10

Document chute upper ASSY

Hook

Hook

Control panel ASSY

Fig. 3-25

Confidential
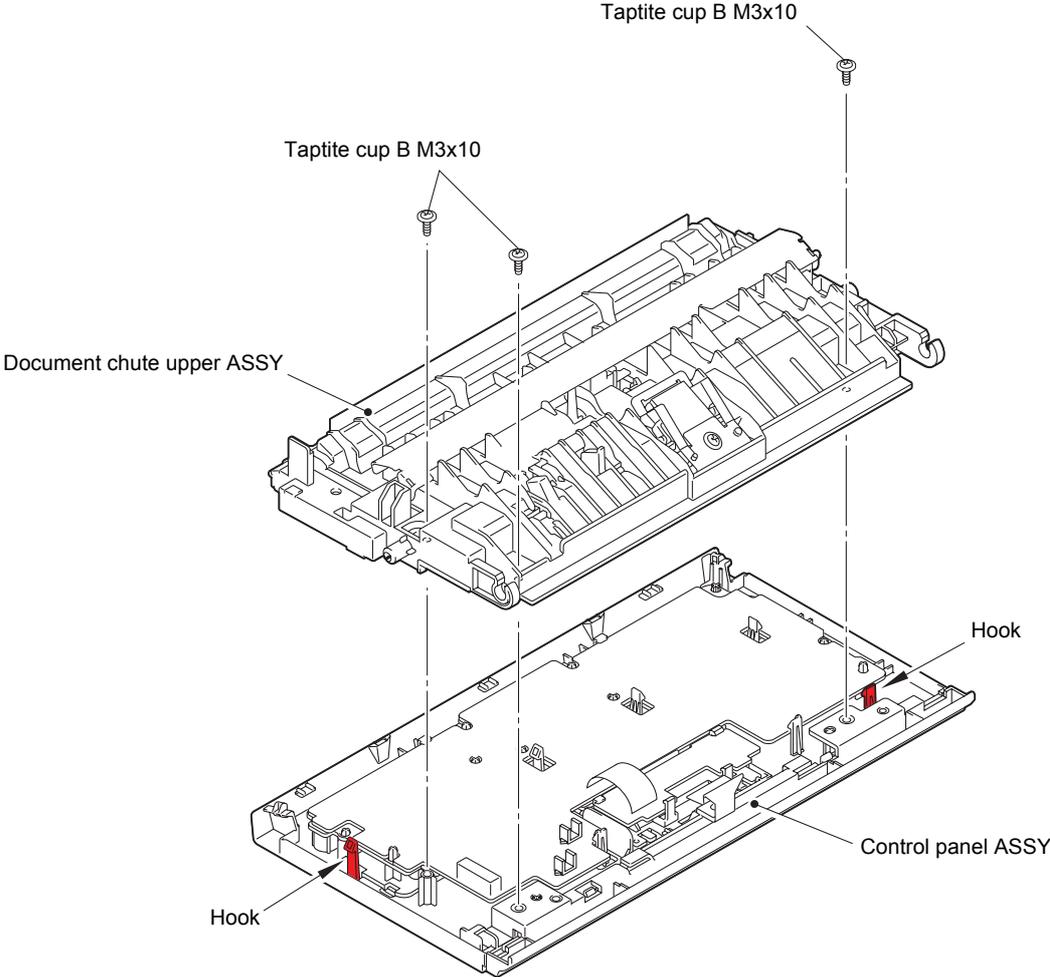
9.18 Separation pad ASSY

(1) Remove the taptite cup B M3x8 screw, and remove the front plate spring ASSY and the separation pad ASSY.

(2) Push the both side arms of the separation pad holder inside to release the two bosses, and remove the separation pad holder from the document chute upper ASSY. Then remove the separation pad spring from the separation pad holder.
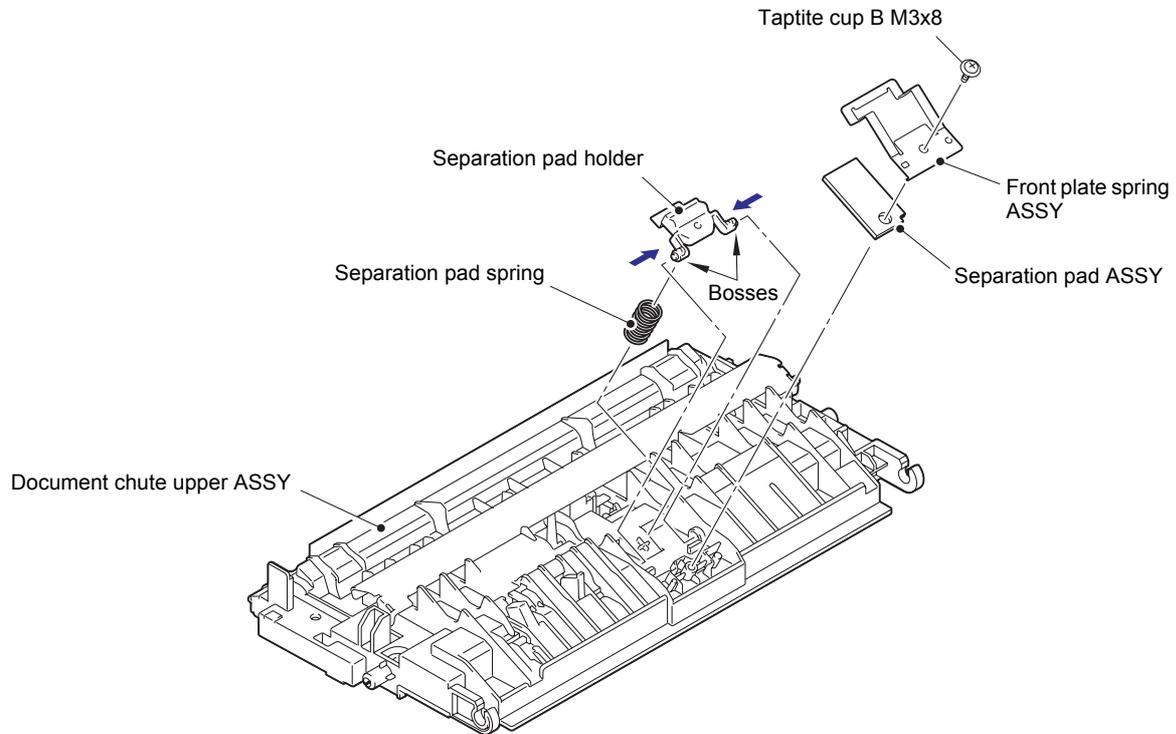
Fig. 3-26

9.19 Control panel ASSY

(1) Remove the control panel harness from the guide of the panel sub cover.

(2) Release the two hooks, and float the panel PCB ASSY.

(3) Release the two hooks, and slide the LED PCB ASSY in the direction of the arrow.

(4) Release the lock, and remove the LCD flat cable from the LED PCB ASSY. Then remove the panel PCB ASSY and LED PCB ASSY from the control panel cover.

(5) Disconnect the control panel harness from the panel PCB ASSY.
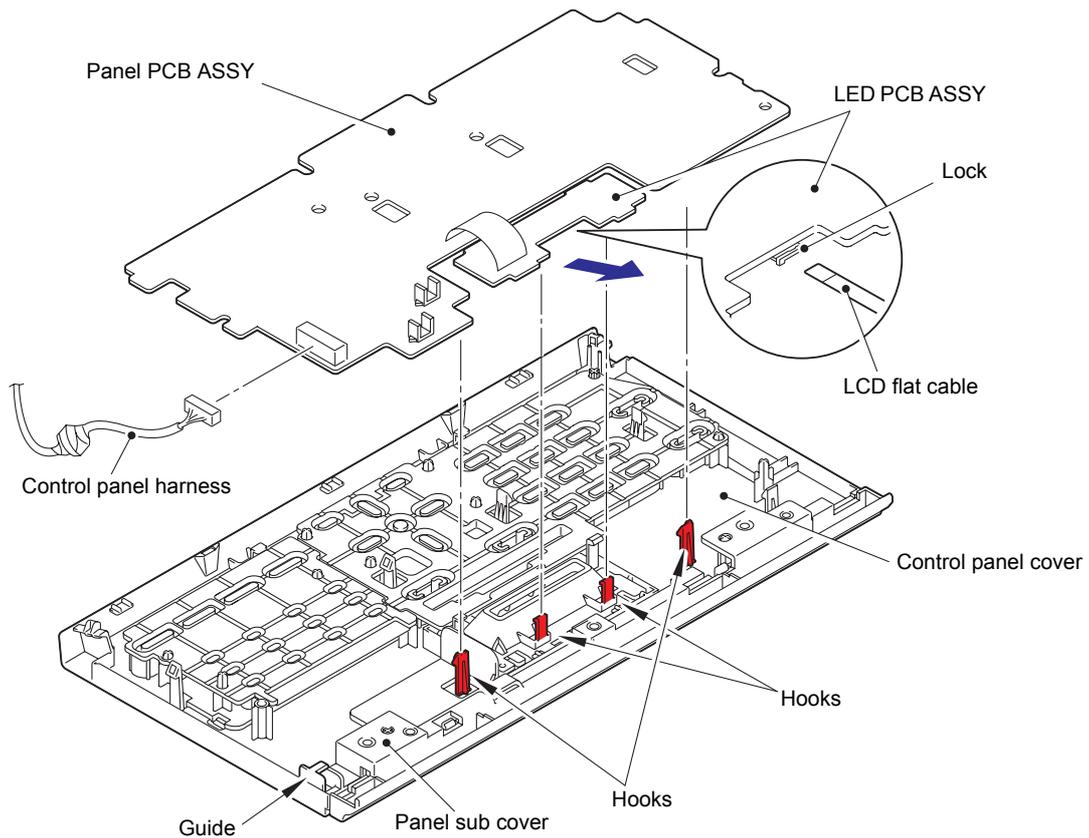
Fig. 3-27

(6)   Remove the rubber key R and the rubber key L from the control panel cover.

(7)   Release the two hooks, and slide the LCD holder in the direction of the arrow to remove it from the control panel cover.

(8)   Release the two hooks, and remove the LCD from the LCD holder.

(9)   Release the two hooks, and remove the panel sub cover from the control panel cover.

Hooks

LCD holder

Rubber key R

LCD

Rubber key L

LCD holder

Hook

Control panel cover

Panel sub cover

Hook

Hooks

LCD holder

Assembling N

• Assemble   ubb

9.20 Document separate roller

(1) Turn the bushing in the direction of the arrow 1a to unlock, and pull it out in the direction of the arrow 1b to remove the document feed roller from the document chute ASSY.
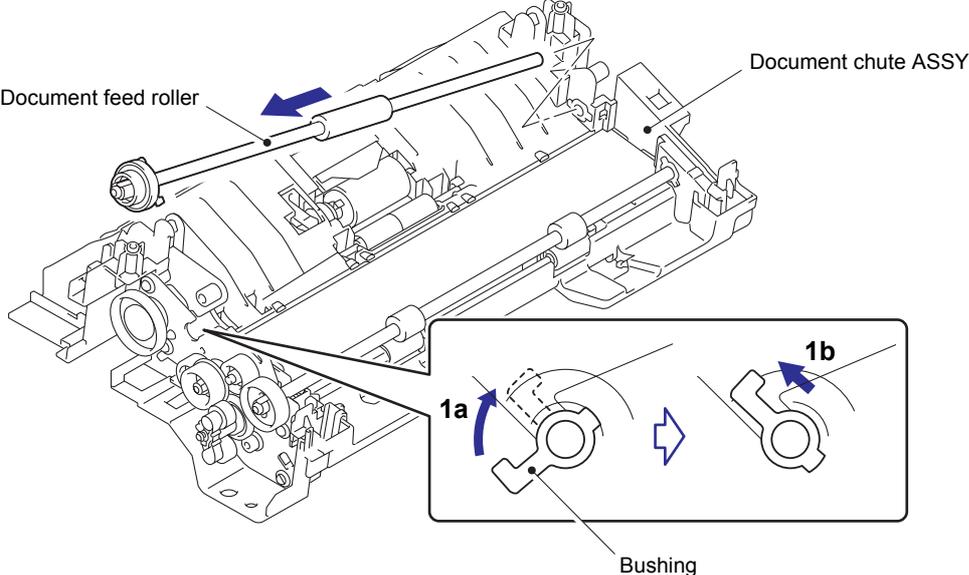

Fig. 3-29

(2) Remove the three taptite cup B M3x10 screws, and remove the document lower cover from the document chute ASSY.

(3) While pushing down the hook, hold up the center of the document separate roller gear shaft, and slide it in the direction of the arrow to release the lock part from the rib. Then remove the document separate roller gear shaft from the document chute ASSY.

(4) Remove the bushing (large) from the document separate roller gear shaft.

(5) Move the document separate roller in the direction of the arrow to remove the shaft A, and slide in the direction of the arrow to remove the shaft B. Then remove the document separate roller from the document chute ASSY.

(6) Remove bushing (small) from the document separate roller.
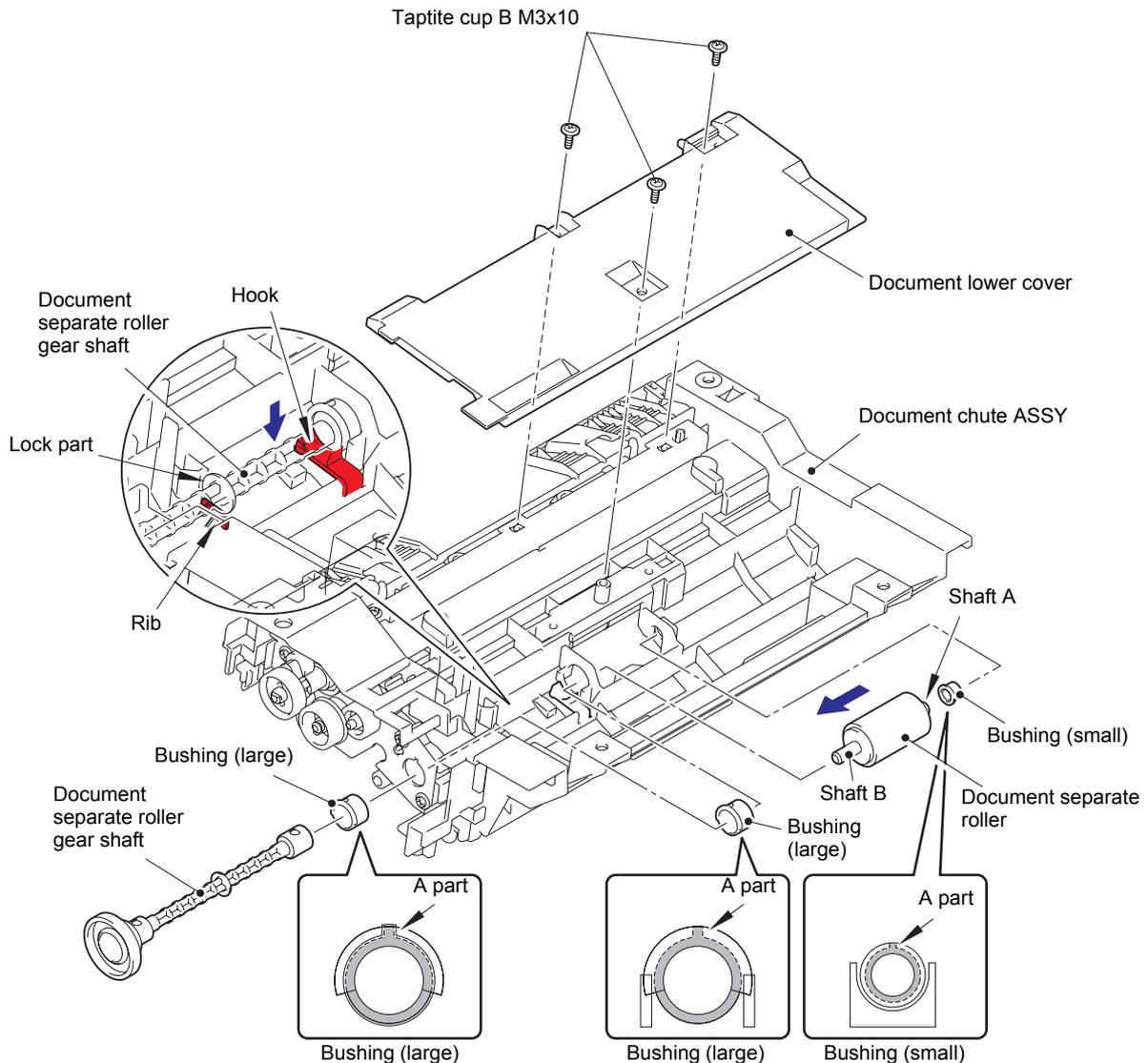
Fig. 3-30

Assembling Note :
• When assembling each bushing, place "A part" as shown in the above figures.

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9.21 ADF motor

(1) Turn the bushing in the direction of the arrow 1a to unlock, and pull out in the direction of 1b. Then remove the document eject roller from the document chute ASSY.
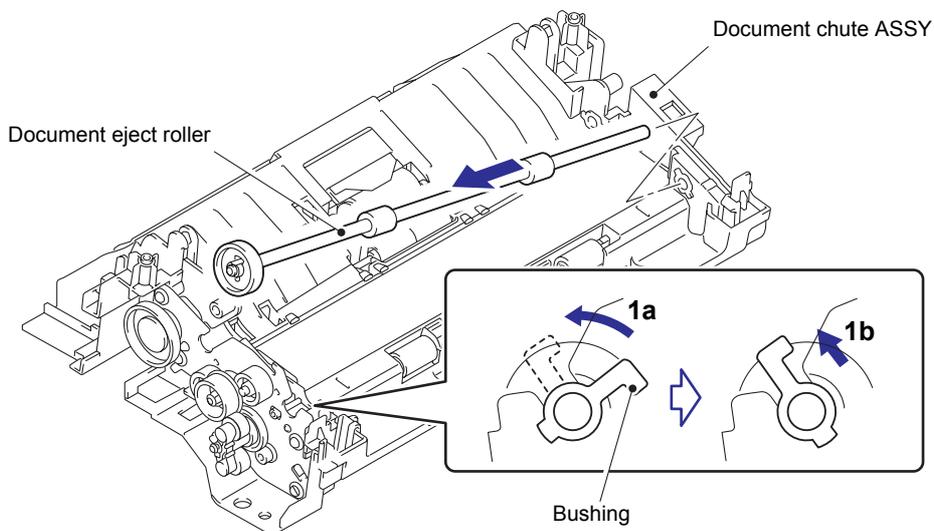
Fig. 3-31

(2) Remove the three taptite cup B M3x10 screws, and remove ADF earth harness and the ADF drive frame from the document chute ASSY. Then pull out the ADF earth harness and ADF motor harness from the hole of the document chute.

(3) Release the hook, and remove the core of the ADF motor harness from the housing of the document chute ASSY.

(4) Remove the screw pan (S/P washer) M3x6 screw. Turn the ADF motor in the direction of the arrow to release it from the hook, and then remove it from the ADF drive frame.
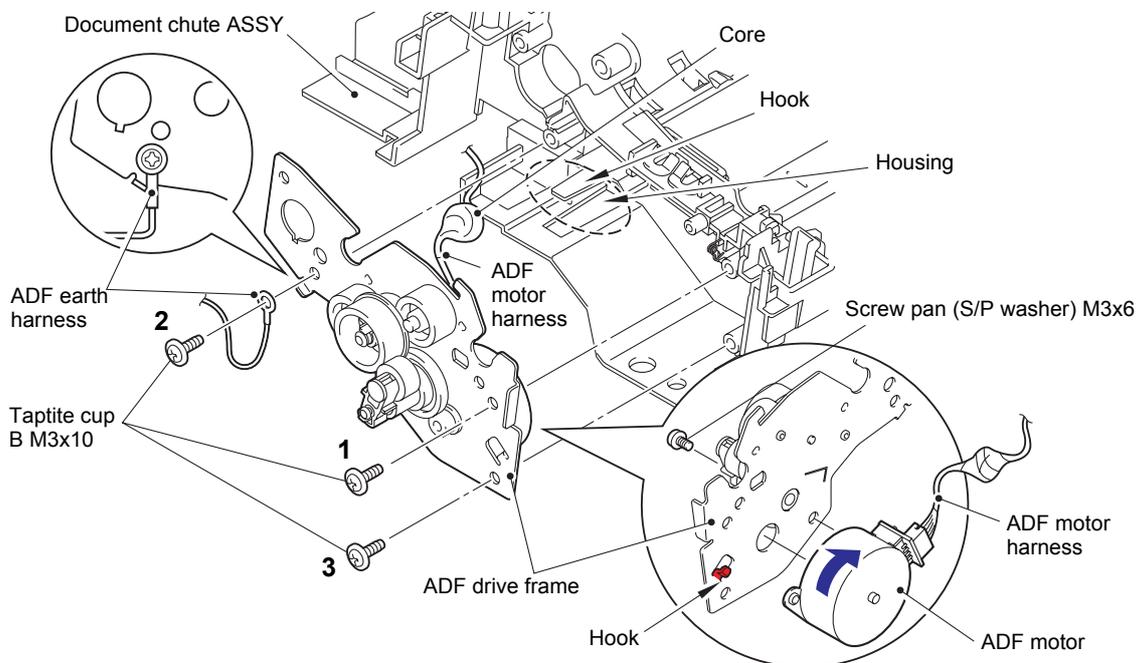
Fig. 3-32

Assembling Note :

• When assembling the ADF earth harness, attach it as shown in above figure.

• When assembling the ADF drive frame, tighten the screws in the sequence of the numbers engraved.

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9.22 CIS unit

(1) Release the two hooks of the CIS glass stopper, and slide the CIS glass stopper to remove it from the document chute ASSY.

(2) Remove the CIS glass from the document chute ASSY.

(3) Hold up the CIS unit to disconnect the CIS flat cable.

(4) Remove the two CIS spacers from the CIS unit.

(5) Remove the two CIS springs from the document chute ASSY.

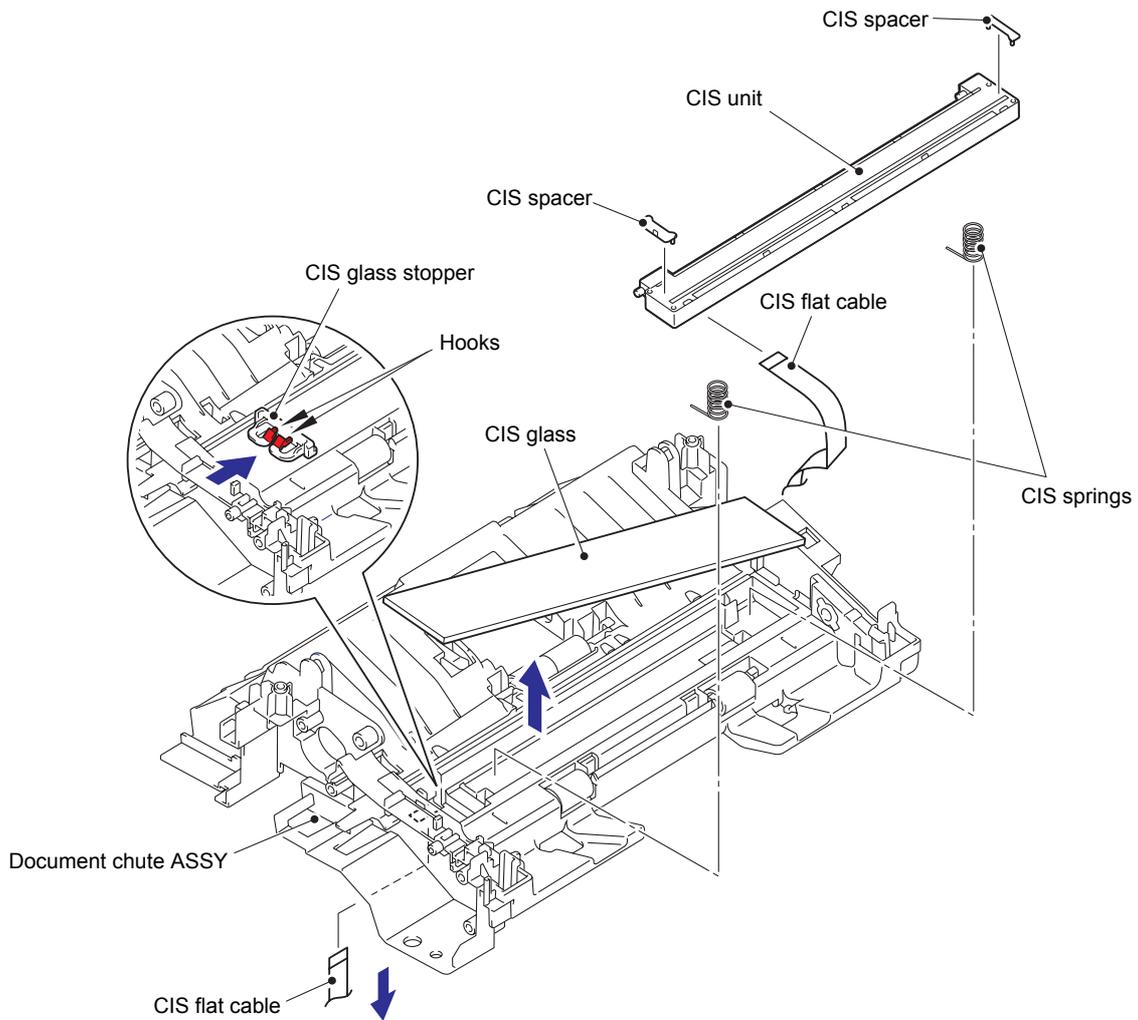(6) Disconnect the CIS flat cable from the document chute ASSY.

Fig. 3-33

Harness routing : Refer to "13. Modem unit".

Assembling Note :

• When replacing the CIS flat cable, fold it in advance as shown in the following figure.

Fig. 3-34

Confidential
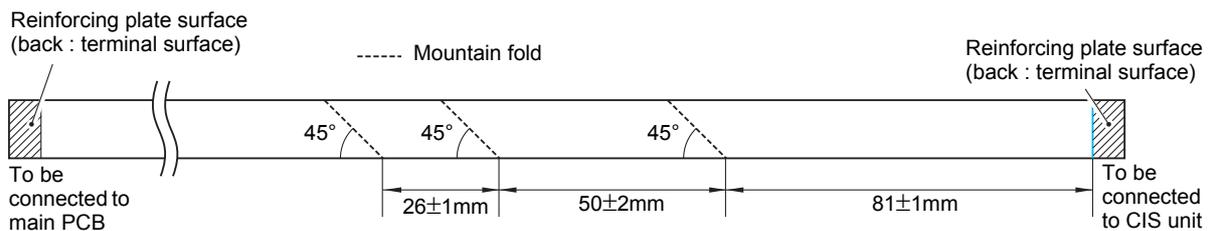
9.23 Control panel cover sensor

(1) Release the two hooks, and remove the control panel cover sensor from the document chute ASSY.
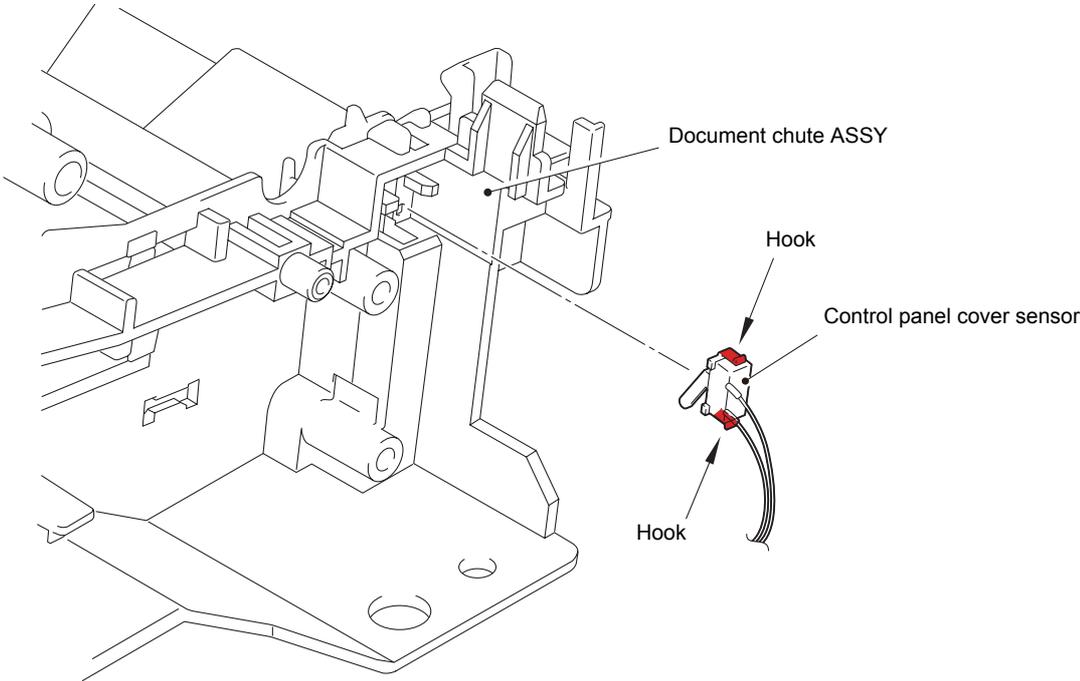
Fig. 3-35

9.24 Modem PCB ASSY

(1) Remove the two screw pan (S/P washer) M3.5x6 screws. And release the modem earth harness R from the securing fixtures to remove it from the machine.

(2) Remove the screw pan (S/P washer) M3.5x6 screw. And release the modem earth harness L from the securing fixture to remove it from the machine.

(3) Disconnect the modem PCB flat cable from the main PCB ASSY, and then disconnect it from the core of the machine.

(4) Remove the two taptite bind B M4x12 screws, and remove the modem unit from the machine.

(5) Remove the screw pan (S/P washer) M3.5x6 screw, and remove the modem shield cover from the modem unit.

(6) Remove the two taptite cup S M3x6 SR screws, and remove the modem PCB ASSY from the modem unit.

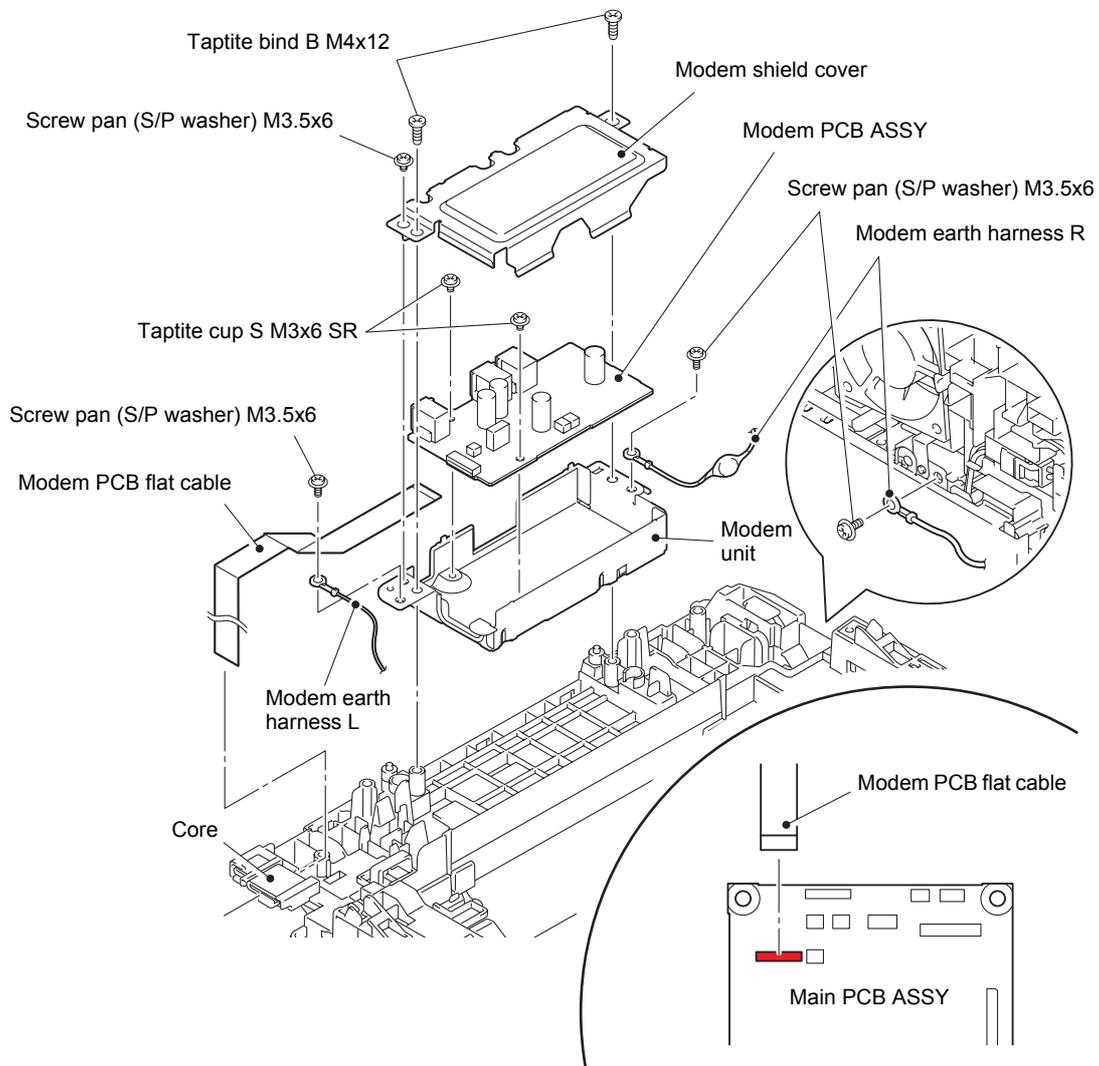(7) Disconnect the modem PCB flat cable from the modem PCB ASSY.

Fig. 3-36

Harness routing : Refer to "13. Modem unit" and "14. Modem earth harness R".

Assembling Note :

• When assembling the modem earth harness to the machine, attach it as shown in the above figure.

9.25 Inner chute cover

(1) Disconnect the speaker harness from the main PCB ASSY.

(2) Remove the two taptite bind B M4x12 screws. And release the six hooks, and hold up the front side of the inner chute cover, and then slide it in the direction of the arrow to remove.
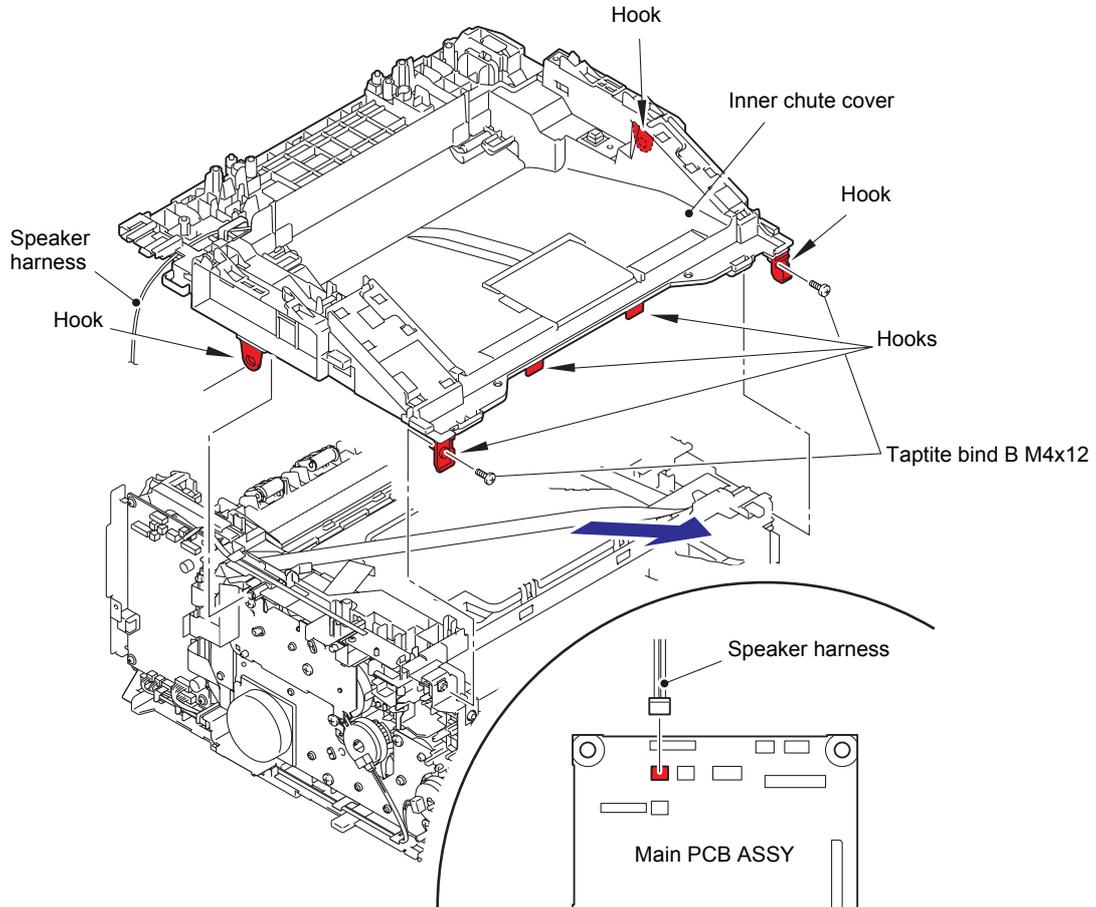

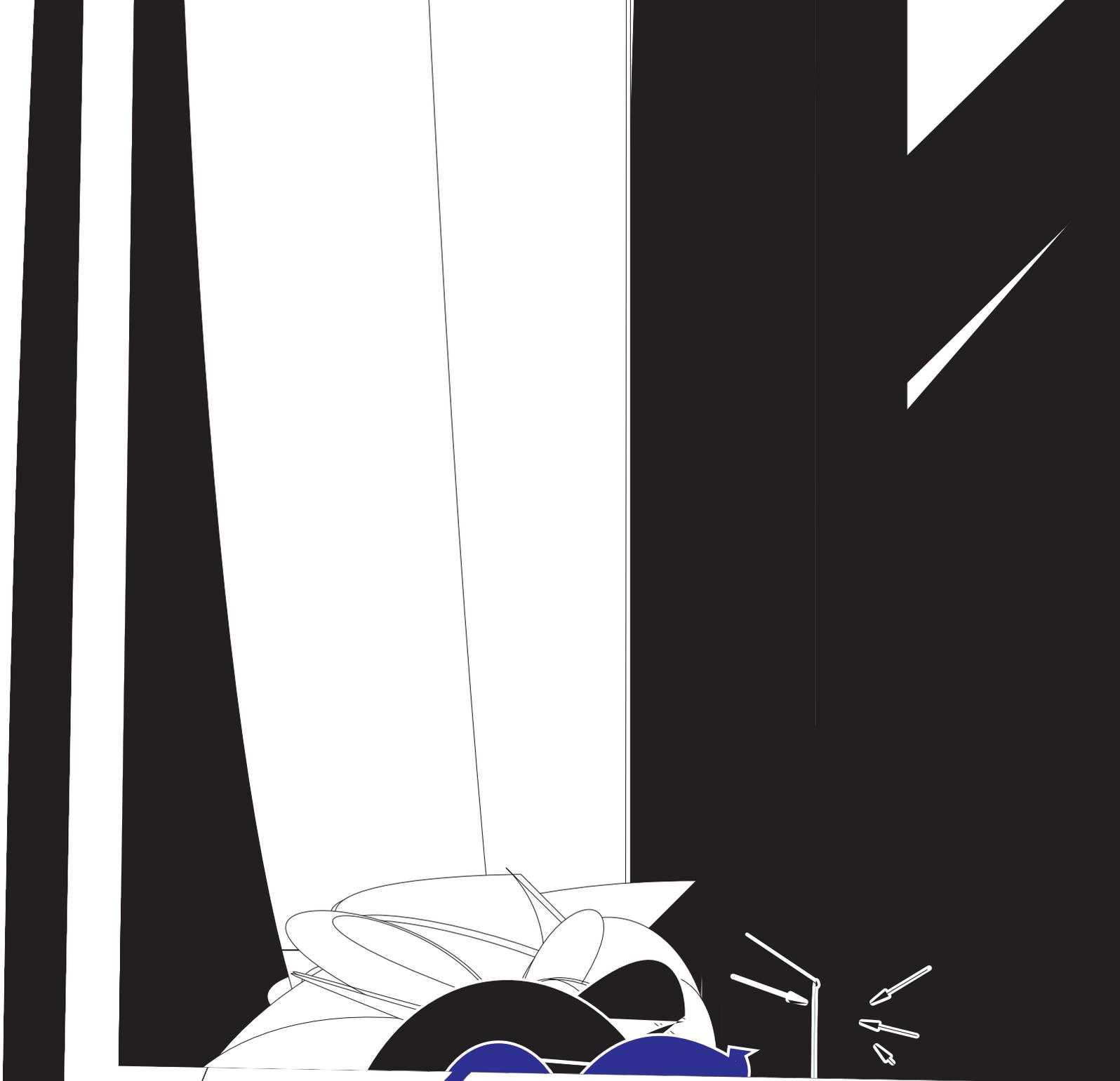**Fig. 3-37**

Harness routing : Refer to "12. Speaker unit".

Fig. 3-39

9.27 Fuser unit

(1) Release the harness of the fuser unit from the guide of the main frame R ASSY.

(2) While pushing the hook of the connector of the fuser unit, disconnect the connector on the low voltage power supply PCB ASSY.
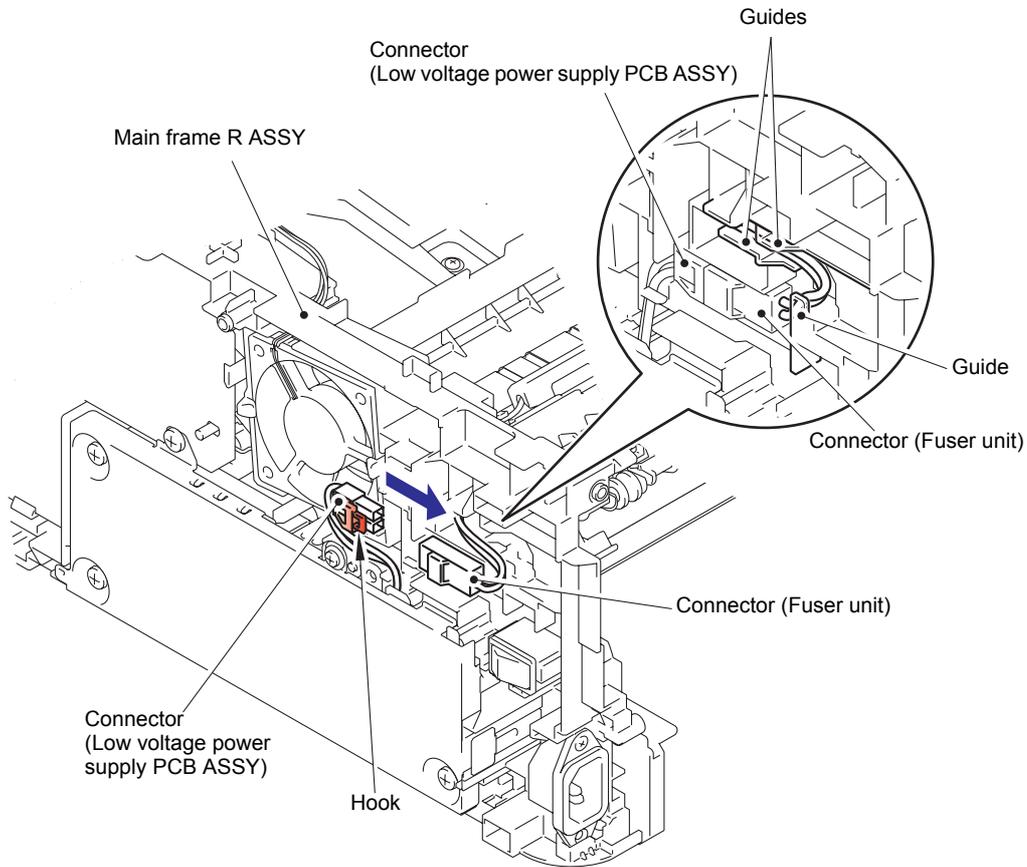

Fig. 3-40

(3) Put the connector of the fuser unit through the hole of the main frame R ASSY, and send it inside.
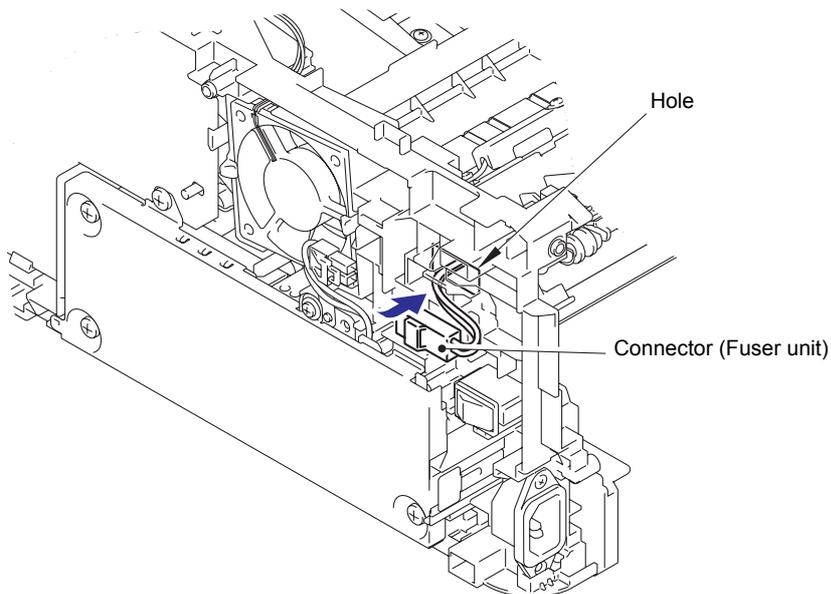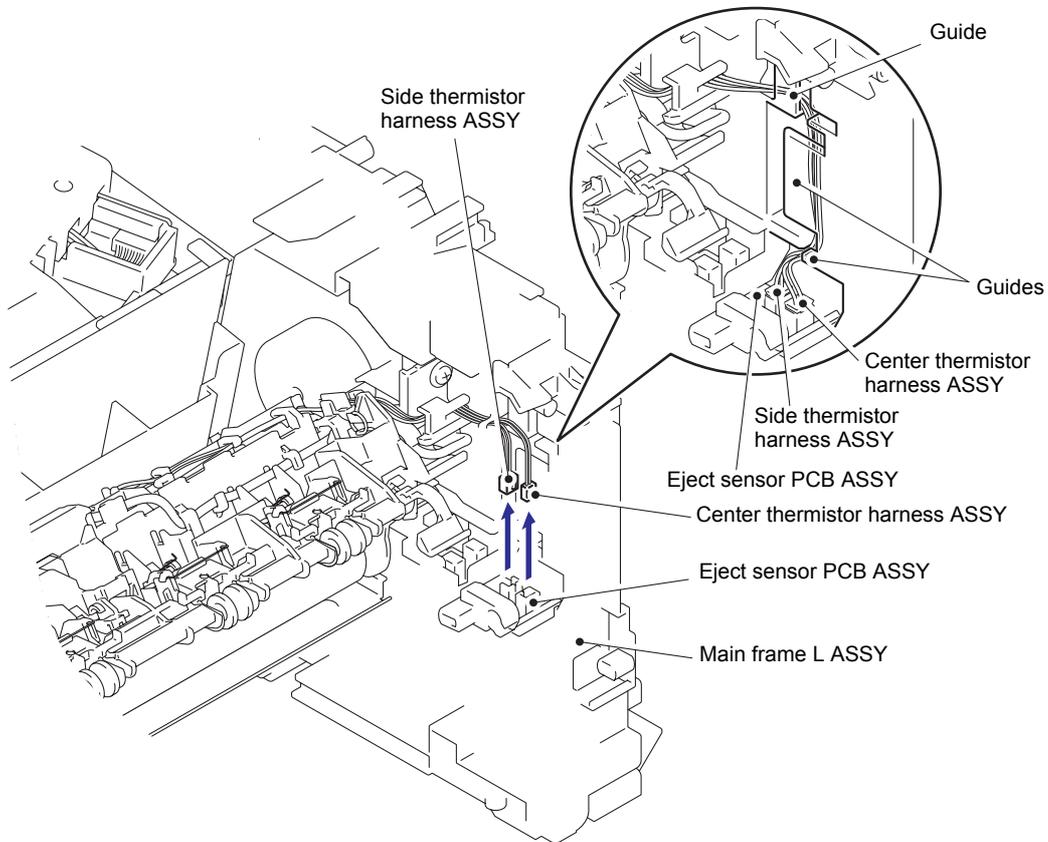

Fig. 3-41

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(4) Disconnect the connectors of the center thermistor harness ASSY and side thermistor harness ASSY from the eject sensor PCB ASSY.

(5) Release the harnesses of the center thermistor harness ASSY and side thermistor harness ASSY from the guide of the main frame L ASSY.
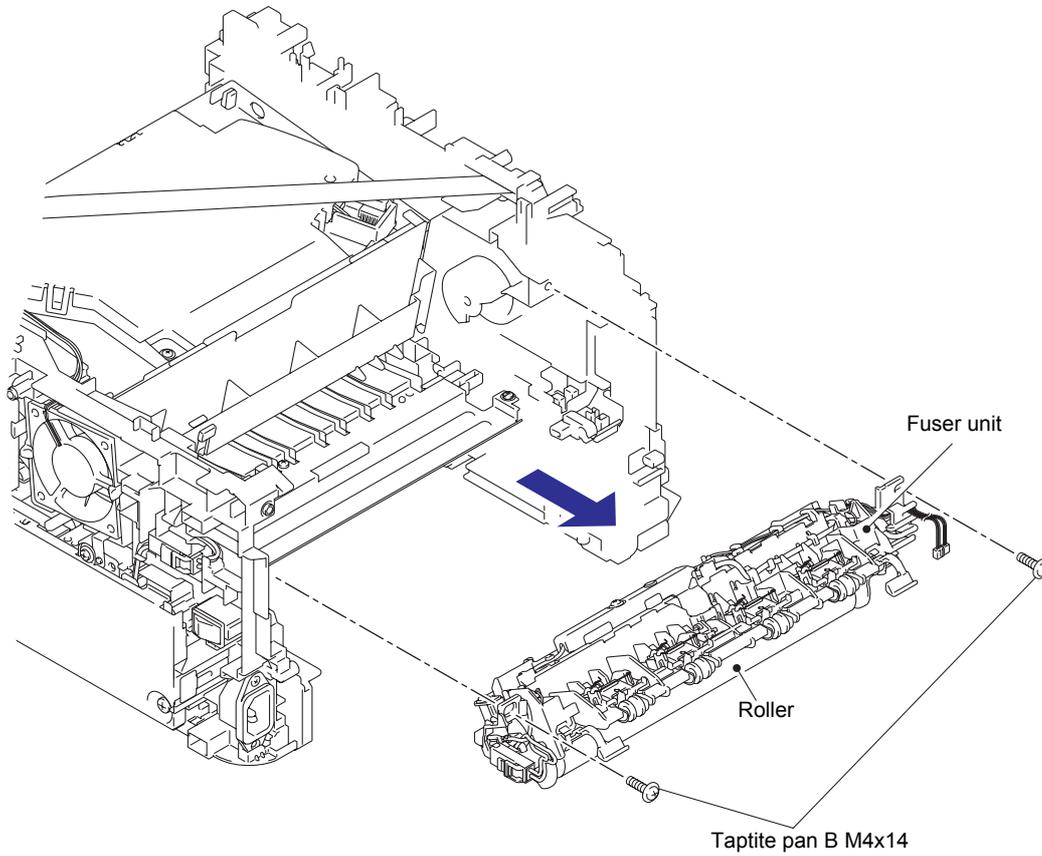

Fig. 3-42

Harness routing : Refer to "11. Fuser unit".

(6) Remove the two taptite pan B M4x14 screws to remove the fuser unit.

> **Note :**
>
> • Do not apply a physical impact or vibration on the fuser unit.
>
> • Do not touch the roller to prevent breakage of the fuser unit.

Fuser unit

Roller

Taptite pan B M4x14

Fig. 3-43

Confidential

9.28 Low voltage power supply PCB ASSY

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

(2) Remove the hook part of the earth harness under R from the LVPS shield plate cover.

(3) Remove the three taptite bind B M4x12 screws, the screw pan (S/P washer) M3.5x6 screw and the screw pan (S/P washer) M3x12 DB screw to remove the LVPS shield plate cover.
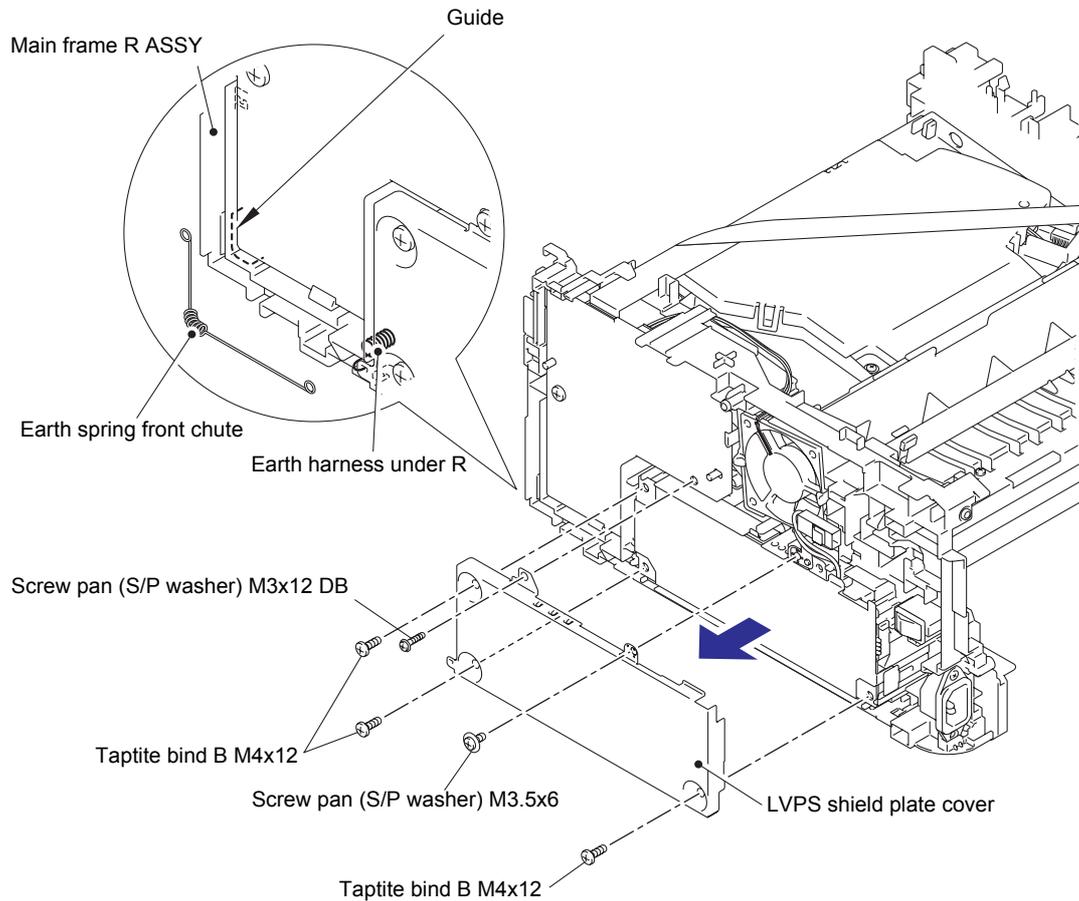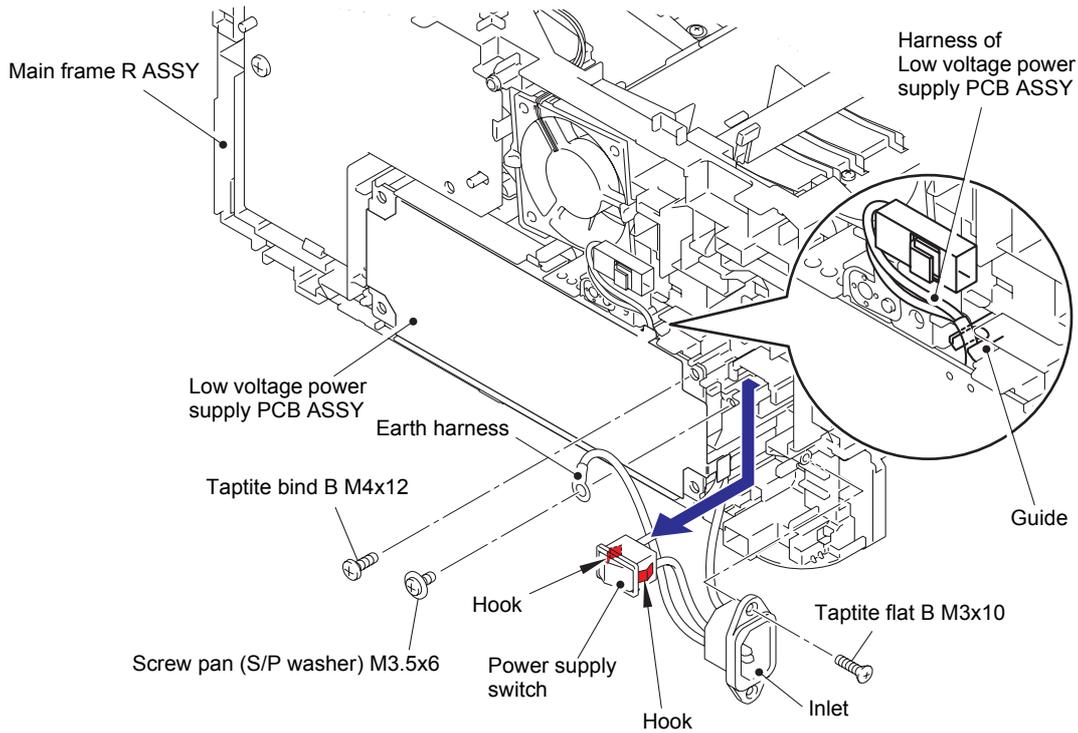

Fig. 3-44

Assembling Note :

• Hanging the earth spring front chute on the guide of the main frame R ASSY.

(4) Remove the screw pan (S/P washer) M3.5x6 screw to remove the earth harness from the low voltage power supply PCB ASSY.

(5) Remove the taptite flat B M3x10 screw to remove the inlet of the low voltage power supply PCB ASSY.

(6) Release the two hooks, and remove the power supply switch of the low voltage power supply PCB ASSY.

(7) Remove the taptite bind B M4x12 screw.

(8) Release the harness of the low voltage power supply PCB ASSY from the guide on the main frame R ASSY.

Fig. 3-45

Assembling Note :
• Attach the inlet as shown in the figure below.
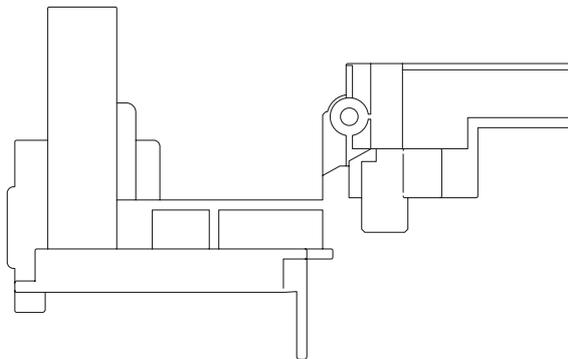
Fig. 3-46

(9) Remove the low voltage power supply PCB ASSY, and disconnect the three connectors from the rear side.

(10) Remove the LVPS insulation sheet.

Connectors

Low voltage power supply PCB ASSY

LVPS insulation sheet
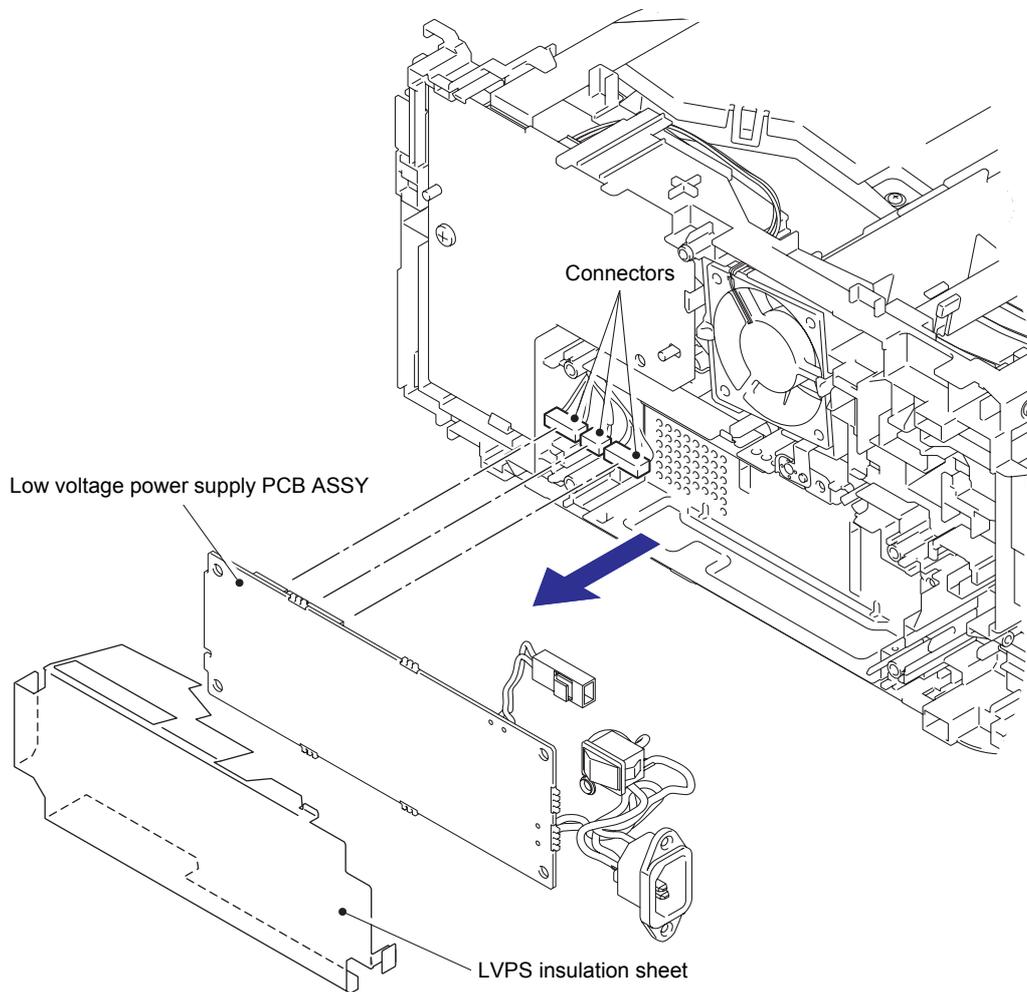
Fig. 3-47

Harness routing : Refer to "1. Registration front/rear sensor PCB ASSY".

9.29 Main fan

(1) Disconnect the connector of the main fan from the high voltage power supply PCB ASSY.

(2) Release the harness of the main fan from the guide of the main frame R ASSY.

(3) Release the two hooks, and remove the main fan.
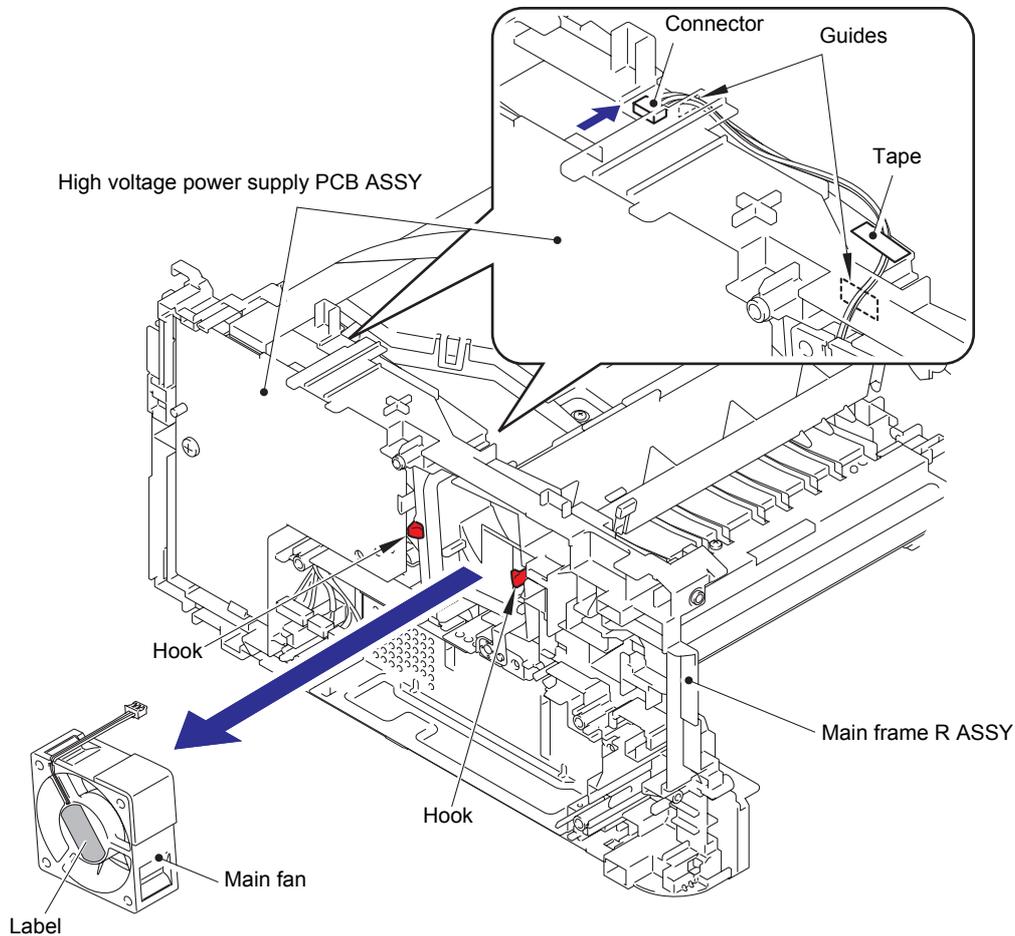
Fig. 3-48

Harness routing : Refer to "8. Main fan".

Assembling Note :

- When assembling the main fan, put the harness through the guide of the main frame R ASSY before attachment.

- When assembling the main fan, place the attached label outward.

- When assembling the main fan, secure the harness to the position of above figure with the tape.

9.30 High voltage power supply PCB ASSY

(1) Remove the flat cable from the guides of the main frame R ASSY, and disconnect it from the high voltage power supply PCB ASSY.

(2) Remove the taptite bind B M4x12 screw.

(3) Release the three hooks to remove the high voltage power supply PCB ASSY.
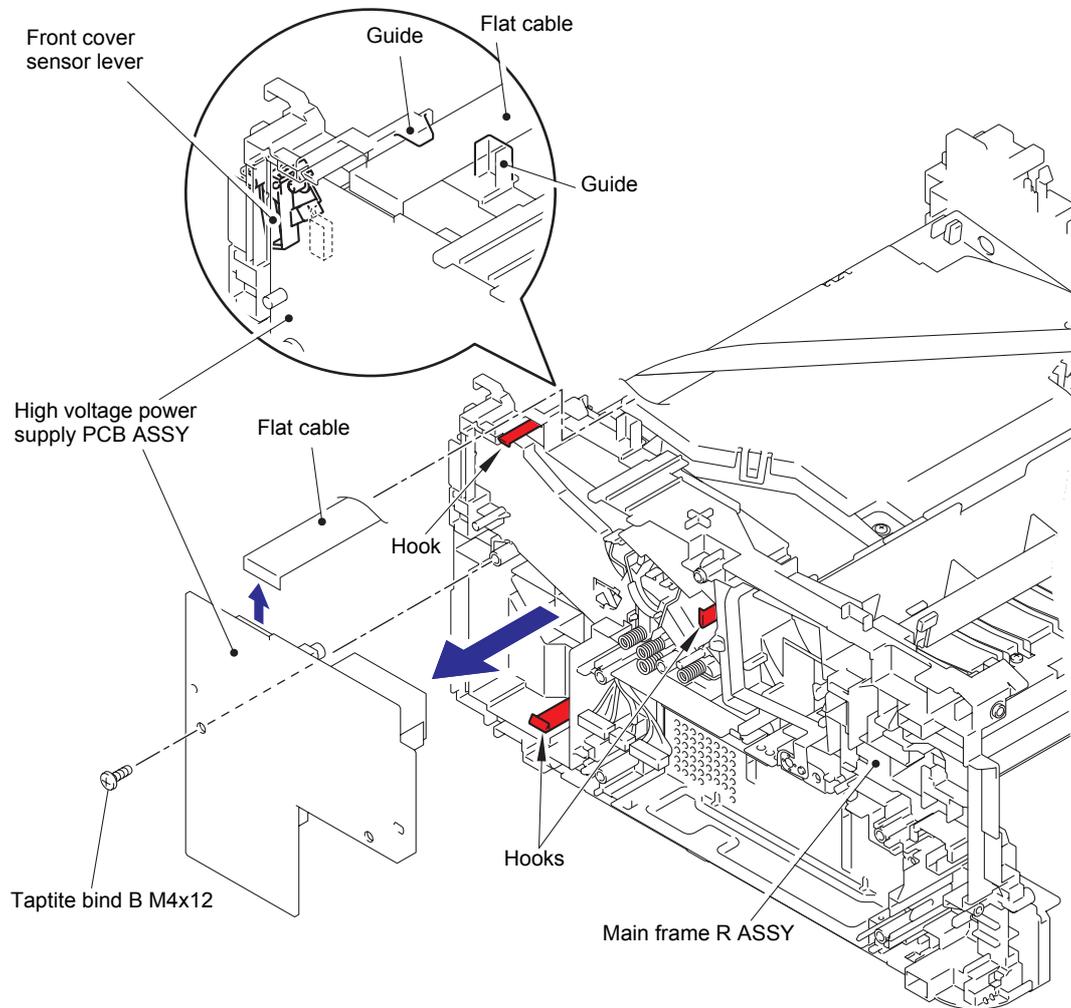
Fig. 3-49

Harness routing : Refer to "10. High voltage power supply PCB ASSY".

Assembling Note :

• Assemble the front cover sensor lever after assembling the high voltage power supply PCB ASSY.

9.31 New toner sensor PCB ASSY

(1) Rotate the machine 180 degrees to the side of main frame L ASSY.

(2) Disconnect the new toner sensor harness from the main PCB ASSY, and release it from the guide of the main frame L ASSY.

(3) Remove the taptite bind B M3x10 screw.

(4) Release the hook to remove the new toner sensor PCB ASSY.
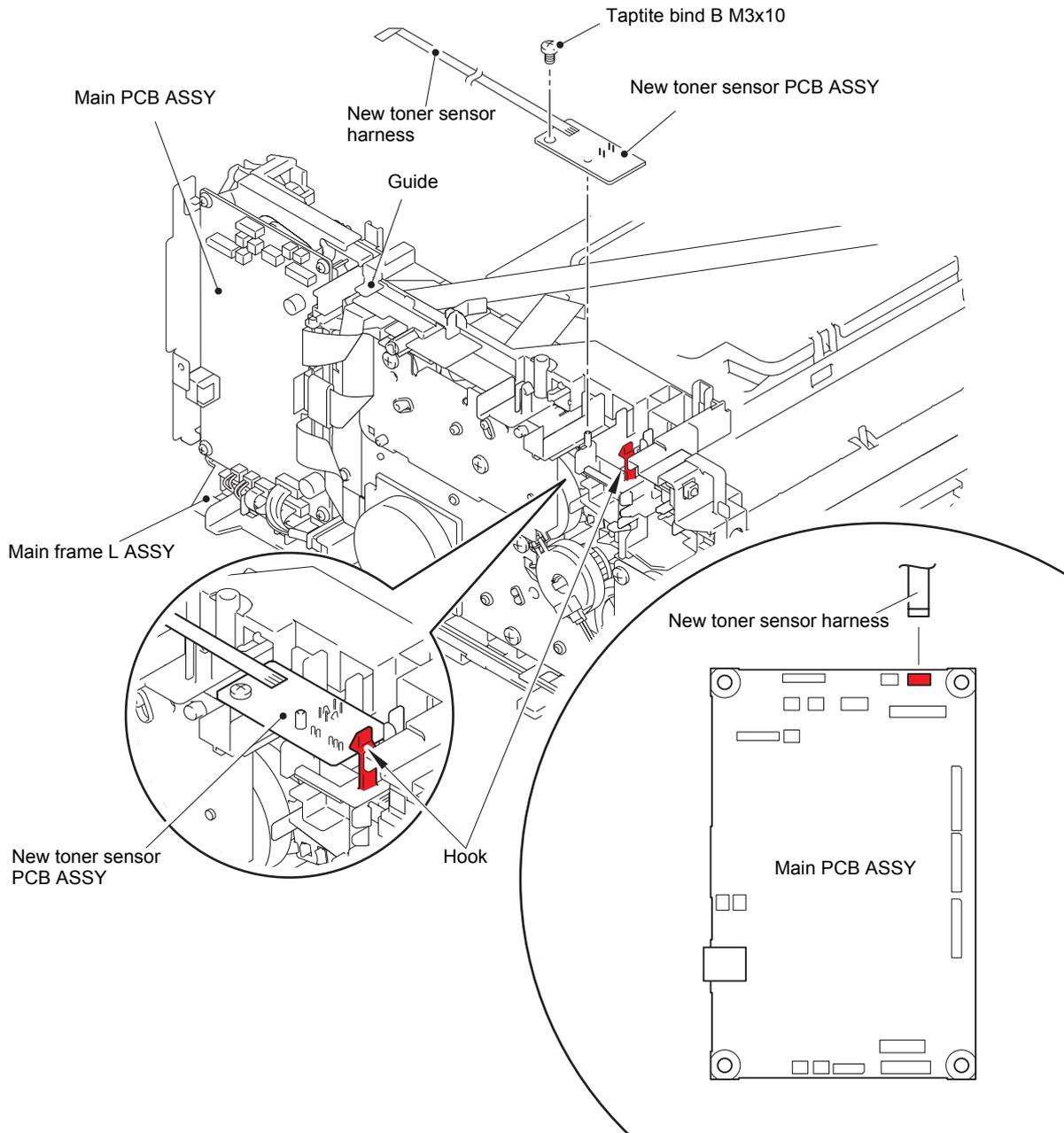
Fig. 3-50

Harness routing : Refer to "3. New toner sensor PCB ASSY".

9.32 Filter

(1) Release the two hooks to remove the air duct.

(2) Pull the rib of the air duct in the direction of the arrow 2, and remove the filter.
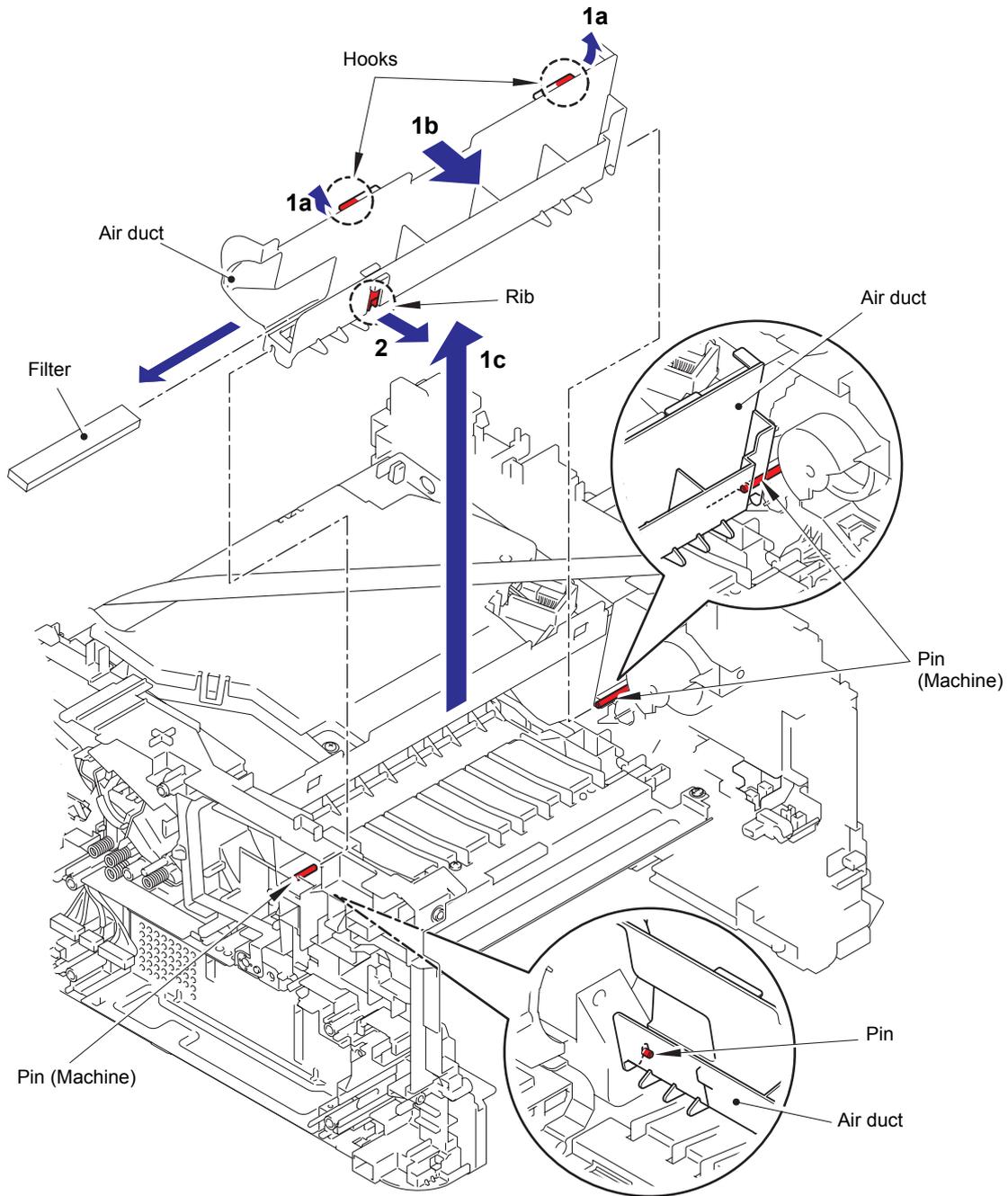
Fig. 3-51

Assembling Note :

• When assembling the air duct, align the notch part of the air duct with the pins of the machine.

9.33 Laser unit

(1) Disconnect the flat cable of the high voltage power supply PCB ASSY from the main PCB ASSY, and remove it from the guide on the main frame L ASSY.

(2) Disconnect the flat cable of the laser unit from the laser unit.

(3) Remove the flat cable of the laser unit from the guide of the main frame L ASSY, and disconnect the flat cable of the laser unit from the main PCB ASSY.

(4) Remove the four taptite cup S M3x8 SR screws, and remove the laser unit.
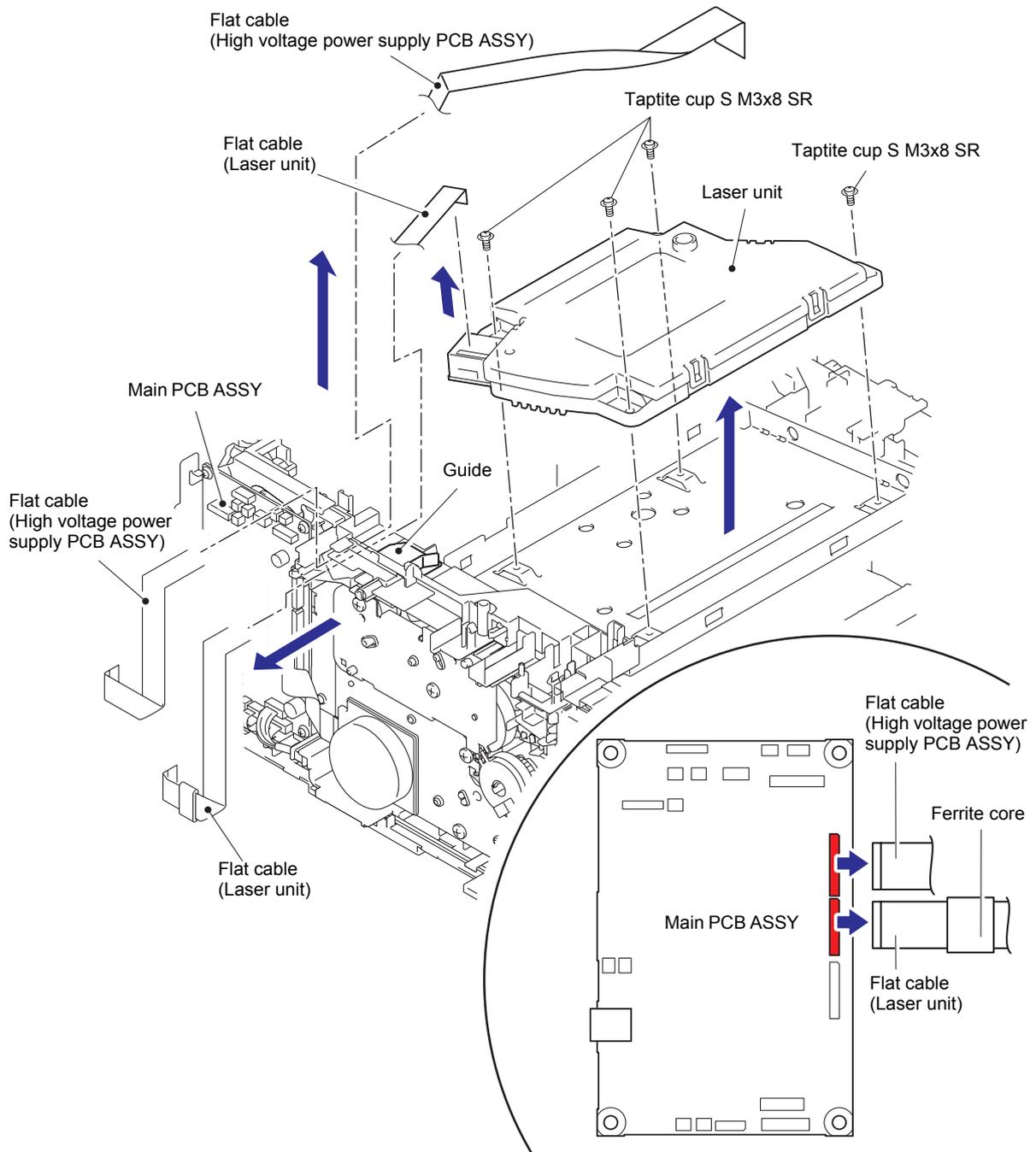
Fig. 3-52

Harness routing : Refer to "7. Laser unit".

Note :

• Be careful not ot touch the lens of the laser unit.

Laser unit

Lens
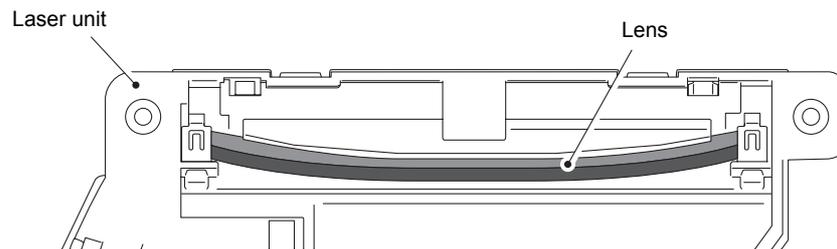
Fig. 3-53

Note :

• Attach the laser serial label as shown in the figure below (on laser plate) after replacing the laser unit.

Laser serial label

Laser plate

Laser unit
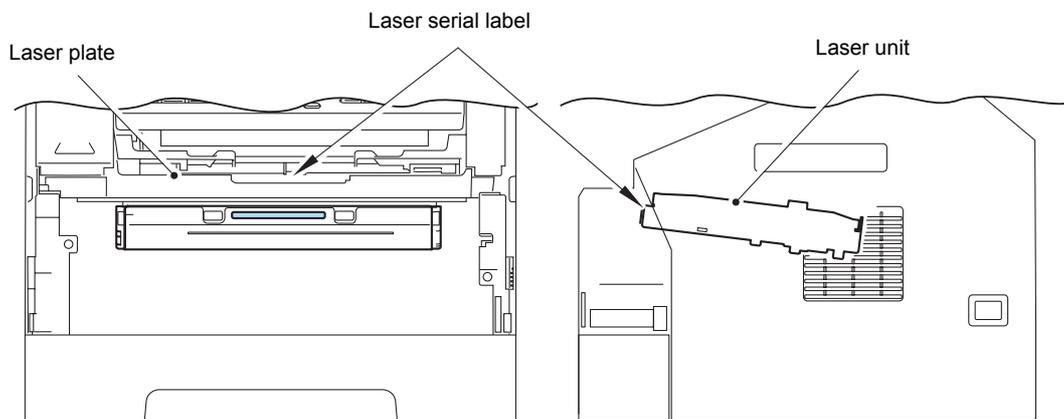
Fig. 3-54

9.35 Rubber foot

(1) Remove the two rubber foots from the machine.
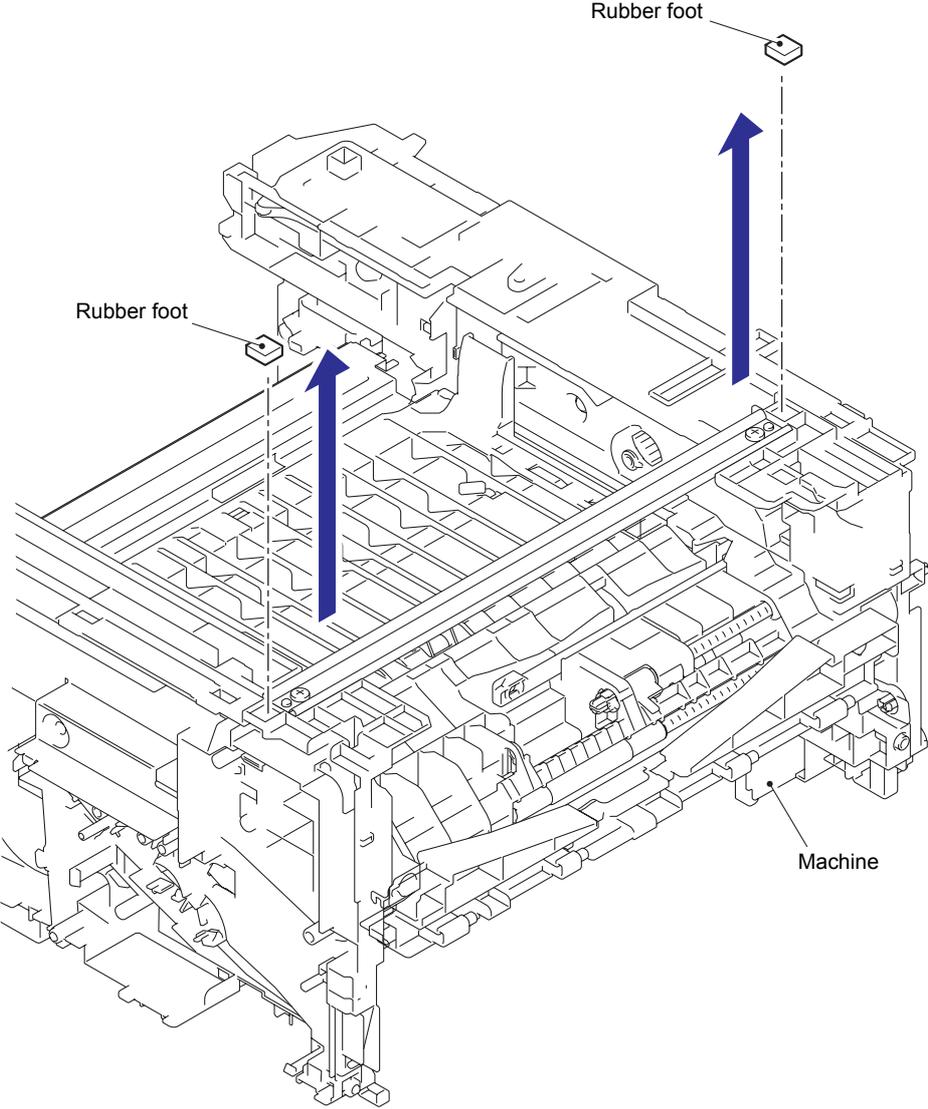
Fig. 3-56

9.36 Main PCB ASSY

(1) Turn the machine upside down, and put it as shown in the figure below.

(2) Disconnect the two flat cables and the five connectors.

(3) Remove the three taptite cup S M3x6 SR screws.

(4) Release the hook to remove the main PCB ASSY and the main PCB sheet.
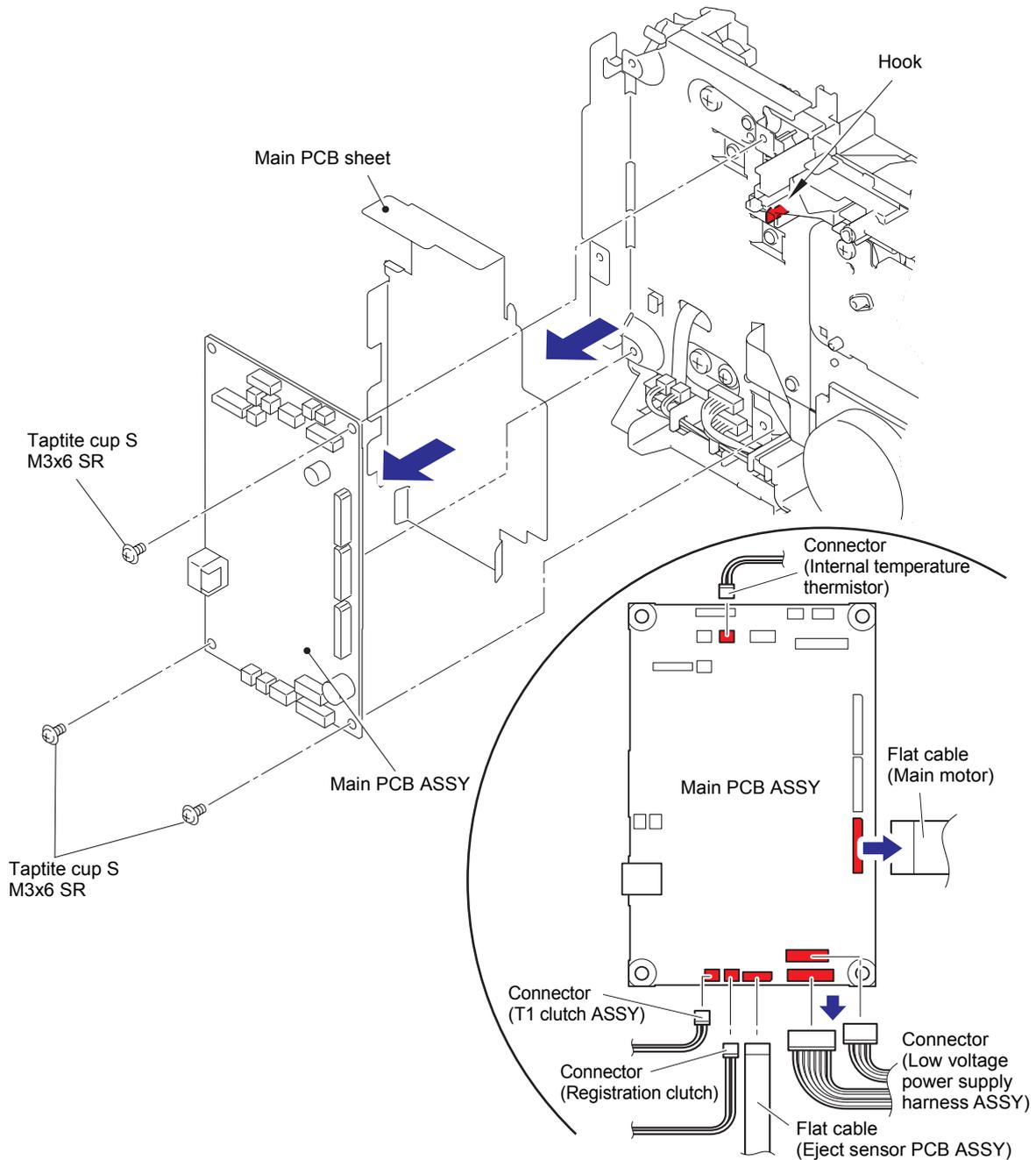
Fig. 3-57

Harness routing : Refer to "1. Registration front/rear sensor PCB ASSY", "4. T1 clutch ASSY, Registration clutch ASSY", "5. Eject sensor PCB ASSY", "6. Main motor" and "9. Low voltage power supply PCB ASSY".

9.37 T1 clutch ASSY, Registration clutch ASSY

(1) Remove the harness of the T1 clutch ASSY and the registration clutch ASSY from the guides of the main frame L ASSY.

(2) Release the hook to remove the T1 clutch ASSY.

(3) Release the hook to remove the registration clutch ASSY.
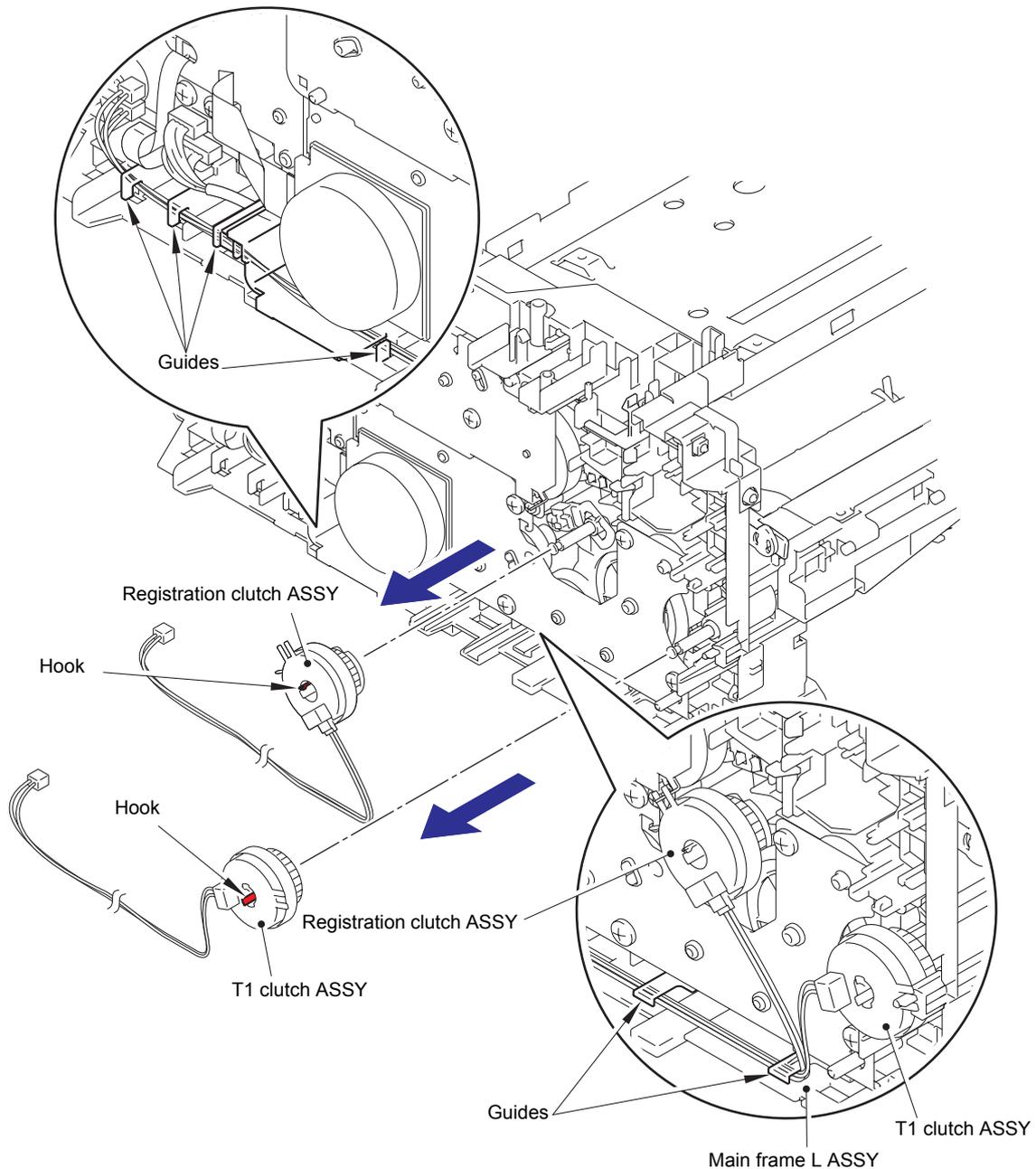
Fig. 3-58

Harness routing : Refer to "4. T1 clutch ASSY, Registration clutch ASSY".

Assembling Note :

• When wiring the harness of the T1 clutch ASSY and the registration clutch ASSY to the guides of the main frame L ASSY, check that there is no slack in the harness.

(4) Remove the registration earth spring from the motor drive sub ASSY and the conductive bearing 5.

(5) Remove the conductive bearing 5 from the pin of the main frame L ASSY, and turn it to the direction of the arrow 5 until the releasing position, and then pull out the conductive bearing 5 from the registration roller shaft 2.

(6) Pull out the registration roller shaft 2.

Registration earth spring

Pin

5

Registration earth spring

Registration roller shaft 2

Conductive bearing 5

Motor drive sub ASSY
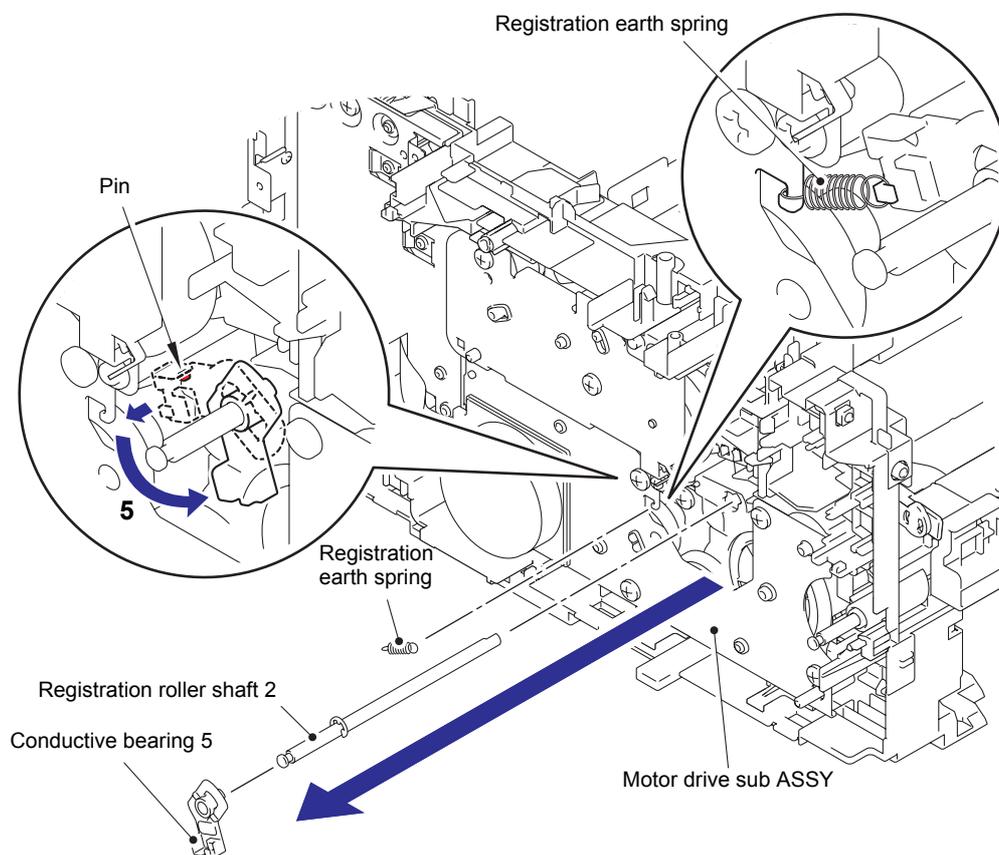
Fig. 3-59

Assembling Note :

• Assemble the registration earth spring as shown in the above figure.

9.38 Main frame L ASSY

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

Front chute ASSY

Taptite bind B M4x12
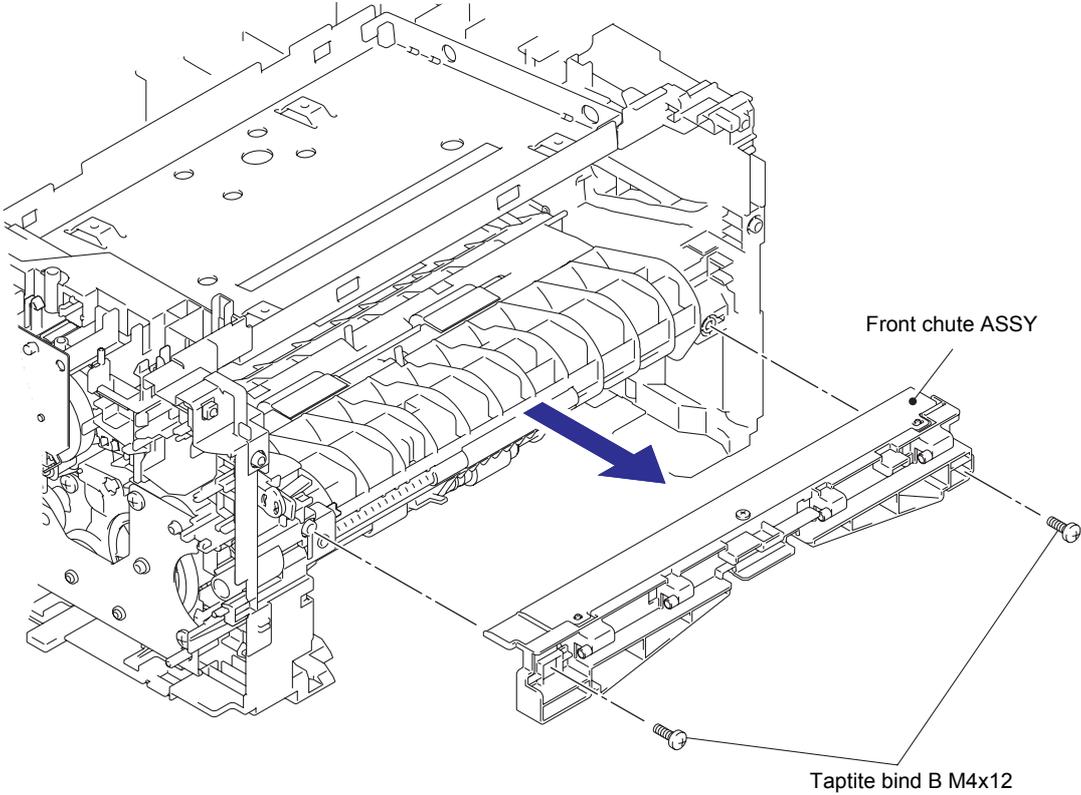
Fig. 3-60

(2) Place the machine so that the main frame L ASSY is at the top.

(3) Remove the low voltage power supply harness ASSY from the guide of the main frame L ASSY.

(4) Remove the taptite bind B M4x12 screw 4a (for Under bar).

(5) Remove the taptite cup S M3x6 SR screw 5a (for Chute earth plate) , the taptite bind B M4x12 screw 5b (for PF frame ASSY) and the taptite cup S M3x6 SR screw 5c (for Earth plate laser L) .

(6) Release the hook to remove the feeder gear 17.

(7) Turn the feeder cam lever in the direction of the arrow, and remove the taptite bind B M4x12 screw 7.

(8) Remove the taptite bind B M4x12 screw 8a and the two taptite cup S M3x6 SR screws 8b to remove the main frame L ASSY.
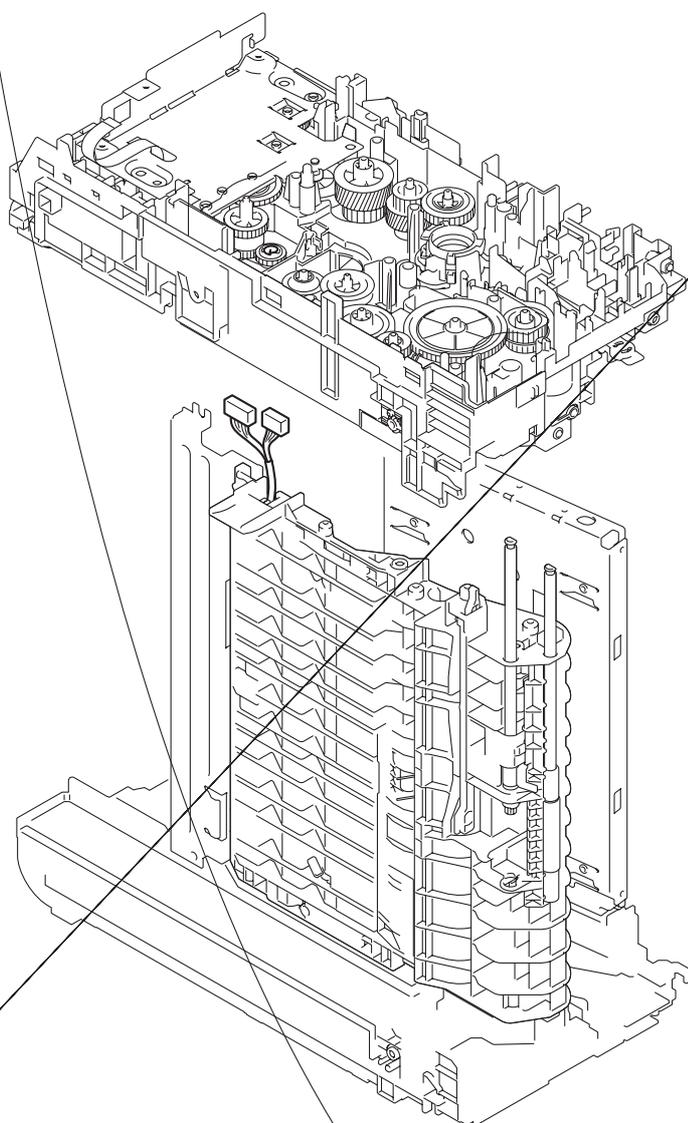
Fig. 3-61

Assembling Note :

• When assembling the main frame L ASSY, check that there is the chute earth plate on the upper side of the earth plate main PCB.

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9.39 Develop drive sub ASSY, Develop gear joint/52

(1) Remove the taptite cup S M3x6 SR screw and three taptite bind B M4x12 screws to remove the develop drive earth harness and the develop drive sub ASSY.
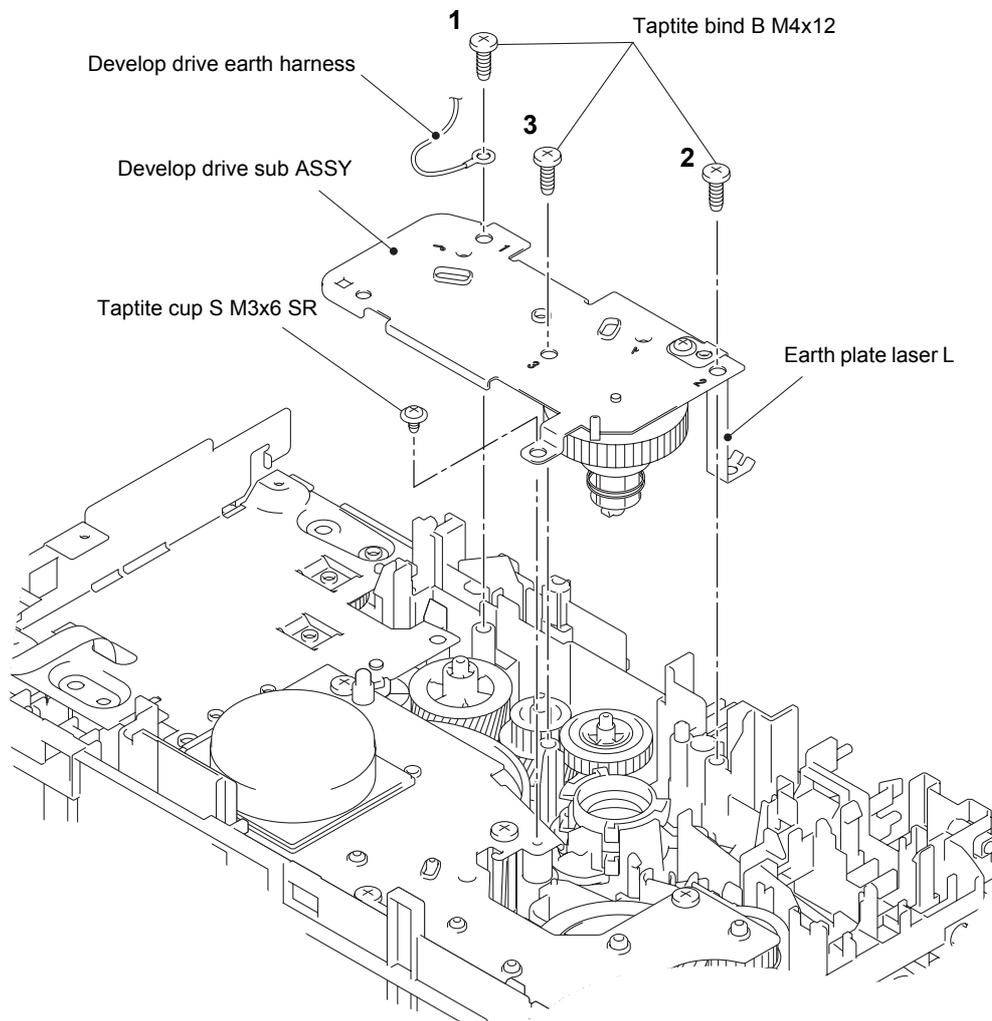
Fig. 3-62

Assembling Note :

- When assembling the develop drive sub ASSY, tighten the three taptite bind B M4x12 screws in numerical order written on the plate.

- Be careful not to bend the earth plate laser L.

(2) Place the develop drive sub ASSY as shown in the figure below.

(3) Release the two hooks of the develop joint with being careful not to damage them, and then remove the develop joint spring and the develop gear joint/52.
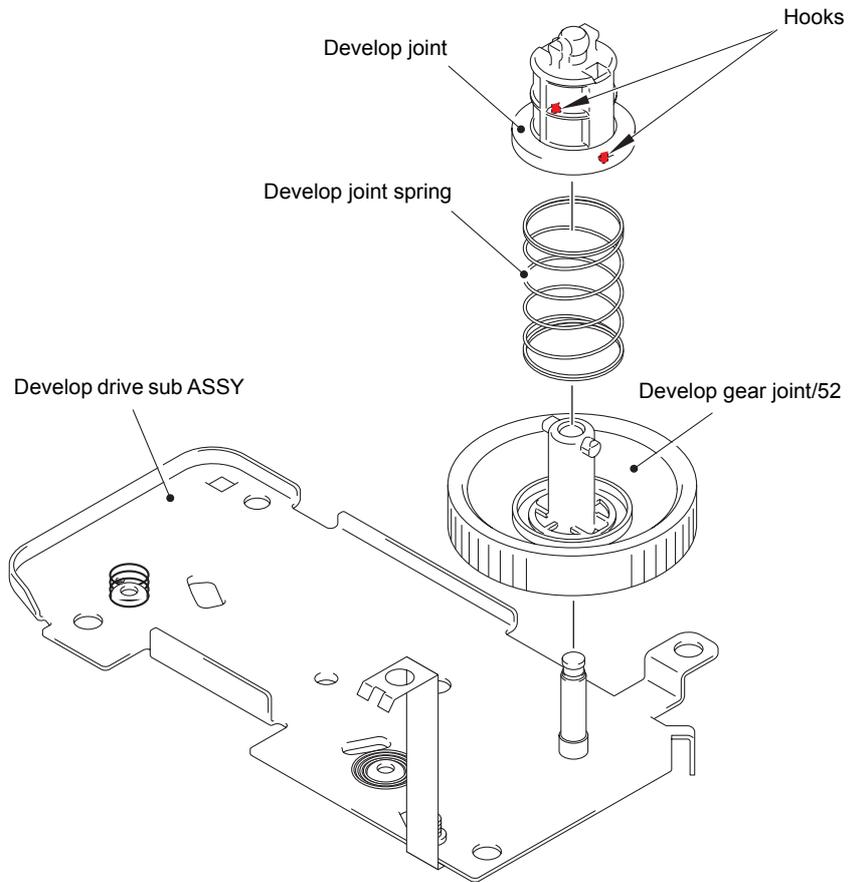
Fig. 3-63

9.40 Motor drive sub ASSY, Main motor

(1) Remove the six taptite bind B M4x12 screws to remove the stopper and the motor drive sub ASSY.

Taptite bind B M4x12

Taptite bind B M4x12

Stopper

Motor drive sub ASSY
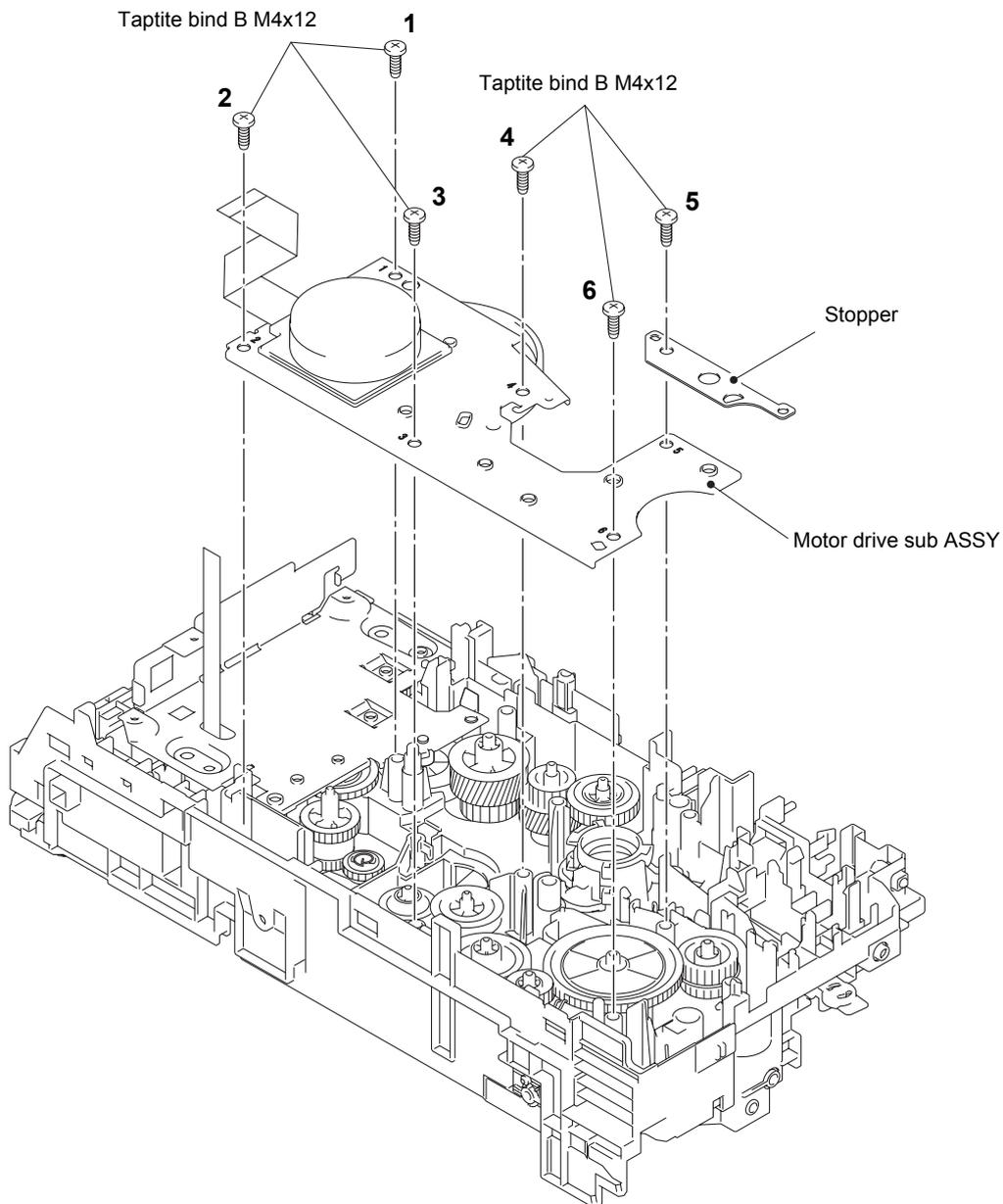
Fig. 3-64

Harness routing : Refer to "6. Main motor".

Assembling Note :
• When assembling the motor drive sub ASSY, tighten the six taptite bind B M4x12 screws in numerical order written in the plate.

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(2) Place the motor drive sub ASSY as shown in the figure below.

(3) Remove the drum gear 26L/131L.

(4) Remove the three screw bind M3x4 screws to remove the main motor.

Drum gear 26L/131L

Motor drive sub ASSY

Screw bind M3x4

Screw bind M3x4

Main motor
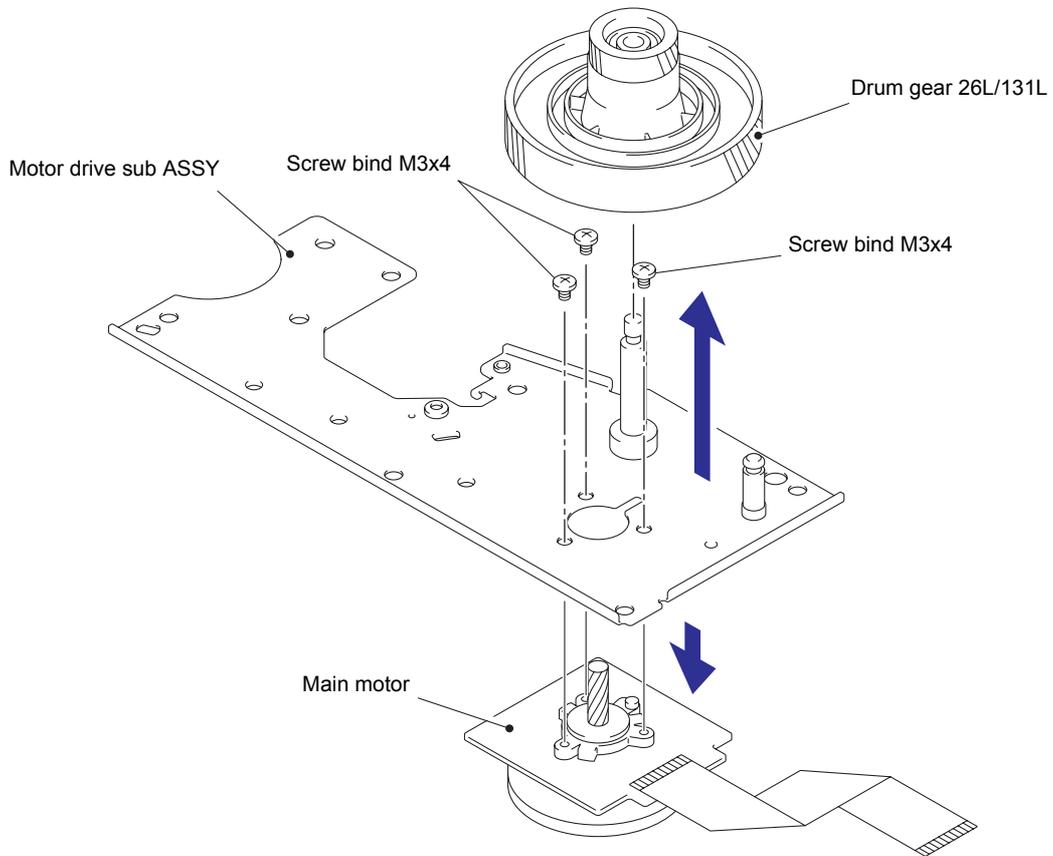
Fig. 3-65

9.41 Internal temperature thermistor

(1) Release the harness of the internal temperature thermistor from the guide to remove the internal temperature thermistor.

Internal temperature thermistor

Guide
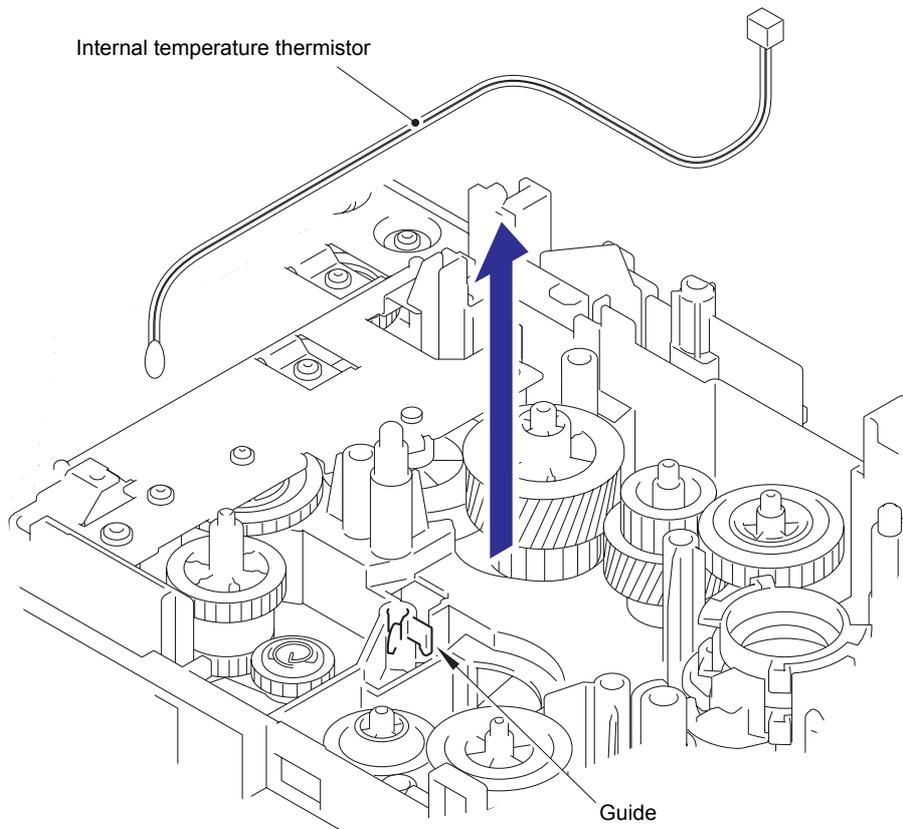
Fig. 3-66

Harness routing : Refer to "2. Internal temperature thermistor".

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9.42 Eject sensor PCB ASSY

(1) Remove the taptite bind B M4x12 screw to remove the develop drive earth harness.

(2) Remove the taptite cup S M3x6 SR screw and the taptite bind B M4x12 screws.

(3) Release the two hooks to remove the main PCB shield calking ASSY.
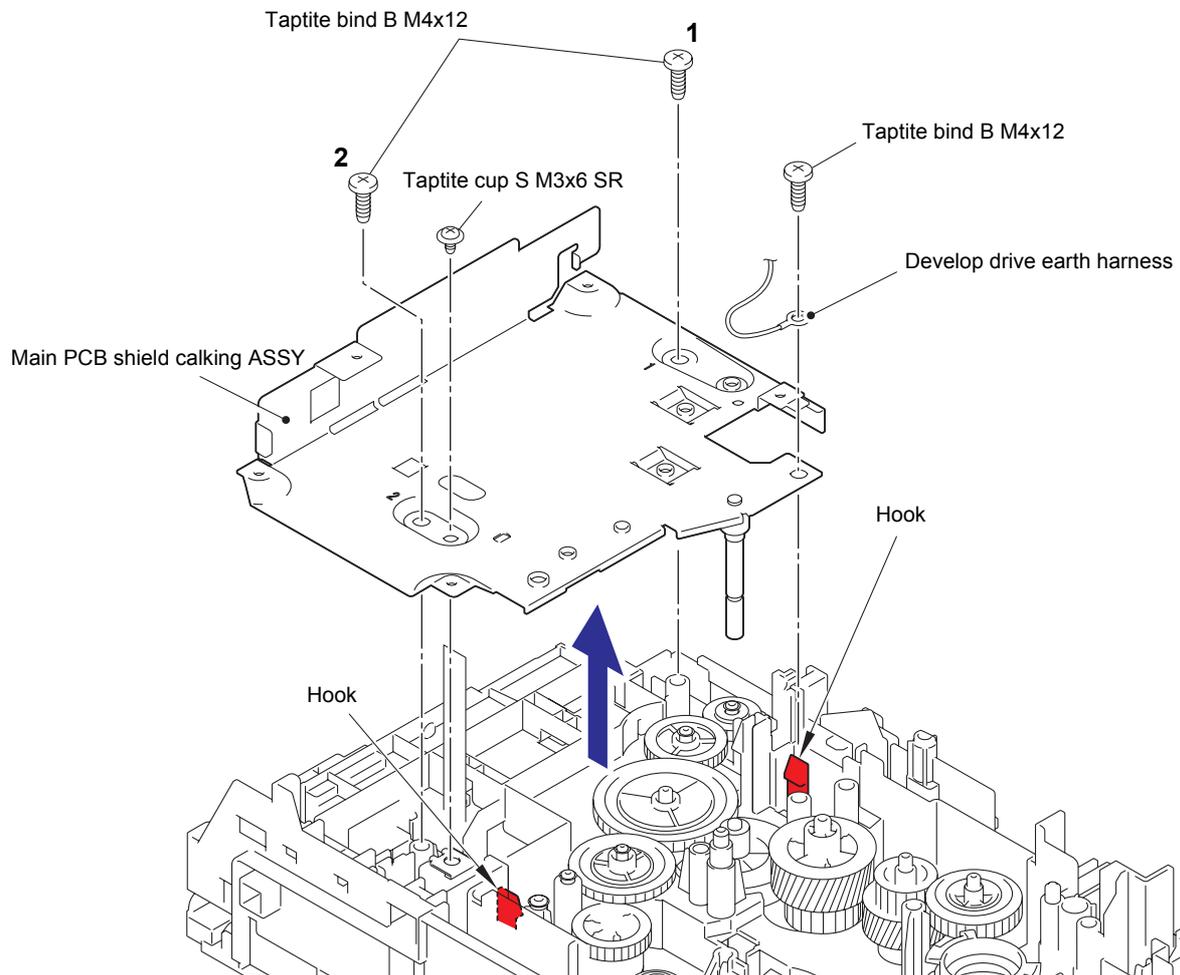
Fig. 3-67

Assembling Note :

• When assembling the main PCB shield calking ASSY, insert the flat cable of the eject sensor PCB ASSY into the hole of the main PCB shield calking ASSY.

• When assembling the main PCB shield calking ASSY, tighten the two bind B M4x12 screws in numerical order written on the plate.

(4) Release the hook to remove the eject sensor PCB ASSY from the pin of the main frame L ASSY.

(5) Release the harness of the eject sensor PCB ASSY from the guides of the main frame L ASSY.

(6) Release the two hooks to remove the back cover sensor.
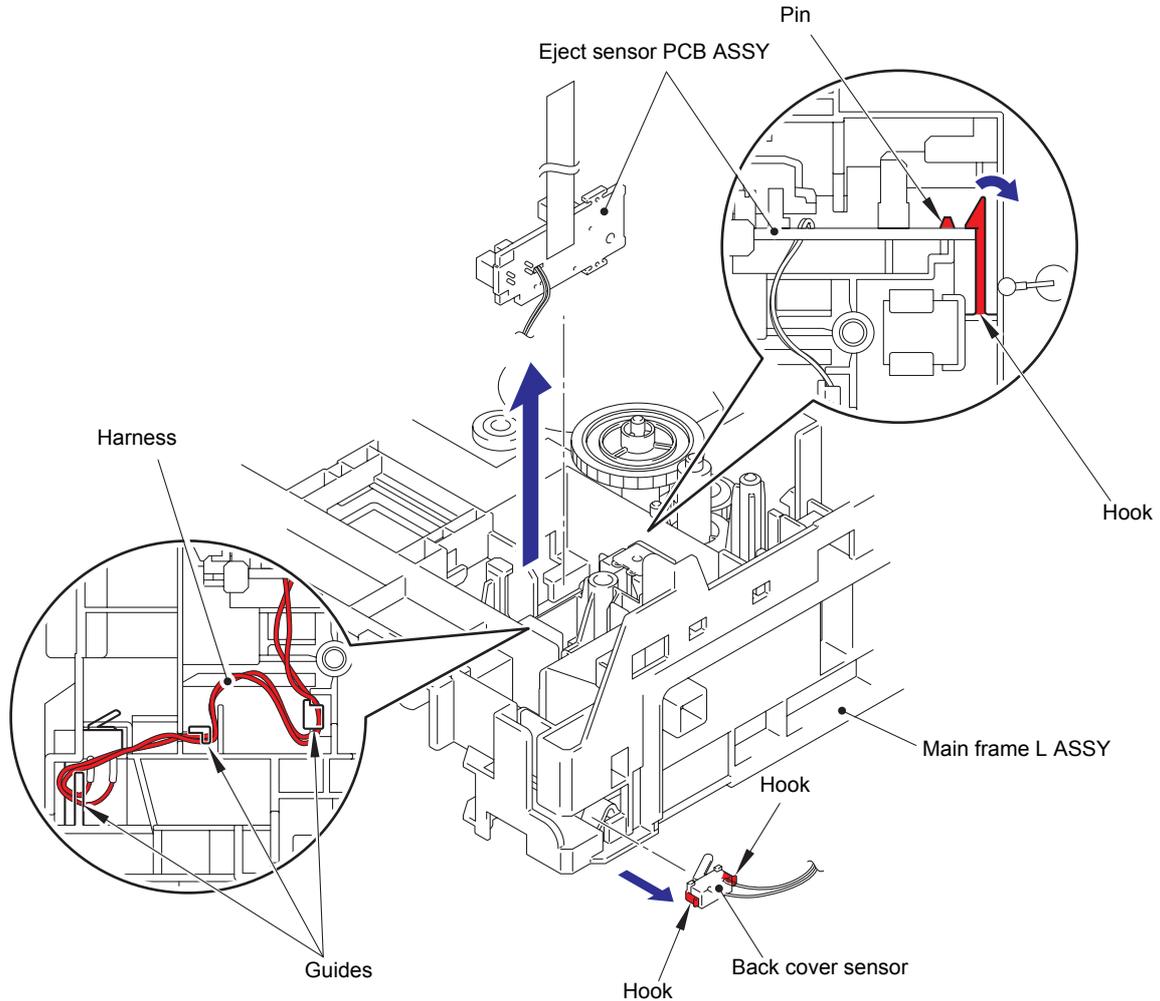
Fig. 3-68

Harness routing : Refer to "5. Eject sensor PCB ASSY".

Assembling Note :

• When assembling the back cover sensor, attach it while pushing the center of the rear side of the back cover sensor.

9.43 Fuser gear 28/34

(1) Remove the ejector gear 40.

(2) Remove the fuser gear 28/34.

Ejector gear 40

Fuser gear 28/34
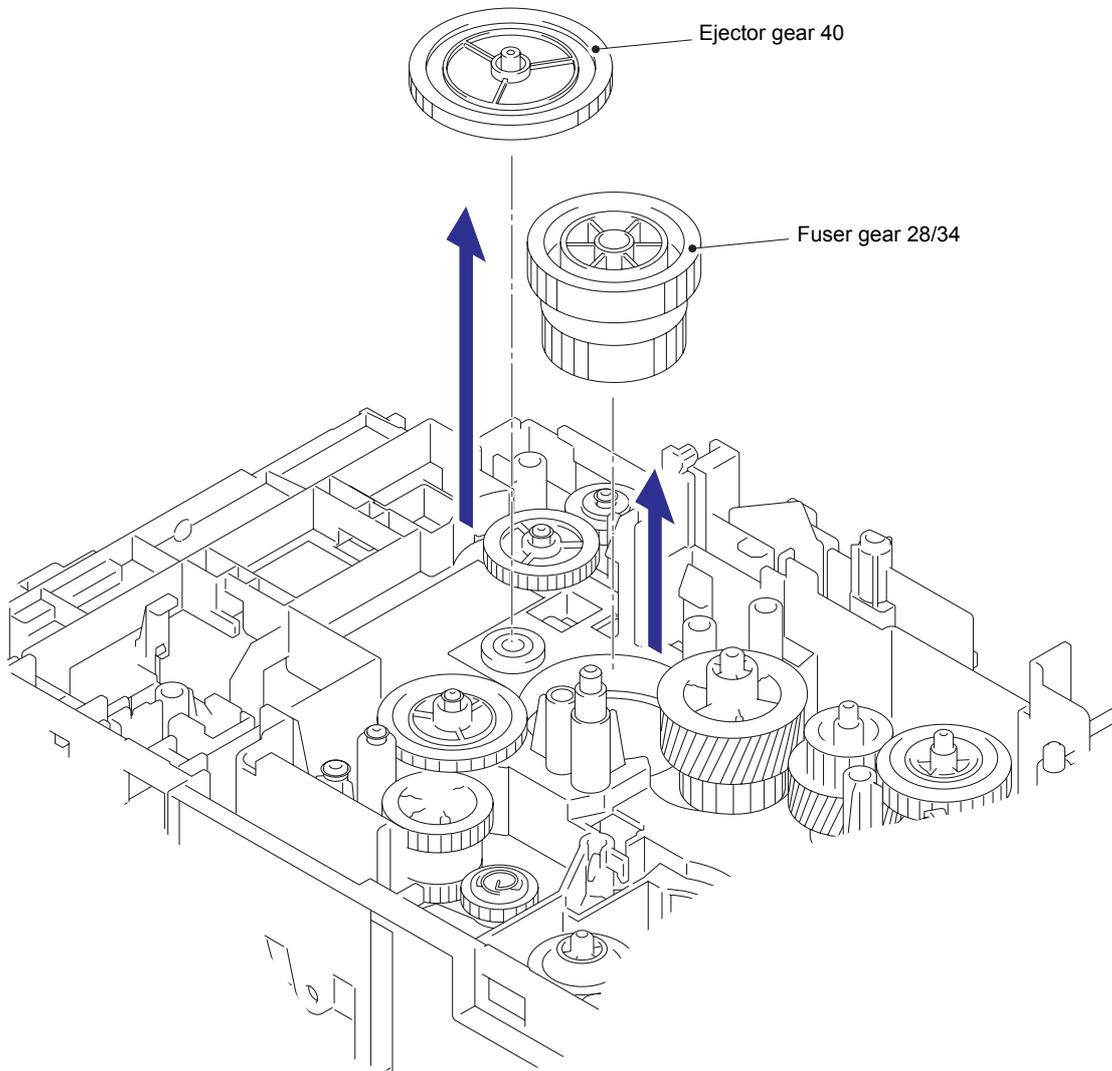
Fig. 3-69

Gear position : Refer to "Paper eject part".

CHAPTER 4

ADJUSTMENTS AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

CHAPTER 4 ADJUSTMENTS AND UPDATING SETTINGS AS REQUIRED AFTER PARTS REPLACEMENT

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

CONTENTS

1. IF YOU REPLACE THE MAIN PCB ASSY

\<What to do after replacement\>

- Rewriting the firmware (main firmware, demo firmware)
- Initialization of EEPROM of main PCB ASSY (function code: 01)
- Setting by country (function code: 74)
- Entering the adjusted value of the laser unit
- Setting the serial number
- Acquisition of white level data (function code: 55)
- Operational check of sensors (function code: 32)

> **Note:**
> - Since the counters are reset when the main PCB ASSY is replaced, the consumables and/or periodical replacement parts may reach the end of life before the message is displayed.

■ What you need to prepare

(1) One USB cable

(2) Create a temporary folder on the C drive of the computer (Windows$^®$ XP/2000 or higher).

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

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

(5) Brother maintenance USB printer driver (Maintenance_Driver.zip)
Copy it into the temporary folder that has been created in the C drive. Extract the copied file.

(6) Firmware

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

* upd: Used to rewrite the firmware via a computer.

(7) Installing the maintenance driver (Refer to "APPENDIX 3 INSTALLING MAINTENANCE DRIVER".)

1.1 Rewriting the firmware (main firmware, demo firmware)

1.1.1 Checking firmware version

Check if the firmware written on the main PCB is the latest version or not. If it is the latest version, there is no need to write the firmware. If it is not, make sure to write the firmware to the main PCB ASSY in accordance with "1.1.2 Rewriting the firmware using computer" in this chapter.

\<How to check firmware version\>

Press the [*] and [#] buttons at the same time in the ready state. Then, the firmware version information is displayed on the LCD.

1.1.2 Rewriting the firmware using computer

Note:

- Be sure to rewrite 1) demo firmware and 2) main firmware in this order.
- DO NOT unplug the power cord of the machine or your computer or disconnect the USB cable while rewriting the program files.

\<Procedures\>

(1) Turn OFF the power switch of the machine, and press the [5] button to turn it ON again (For models without numeric keys; Press the [Number of Copies] button.). Check that "▌▌▌▌▌▌▌" appears on the LCD.

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

(3) Double-click the "FILEDG32.EXE" file to start it. Select the "Brother Maintenance USB Printer".

(4) Drag and drop a program file that you want to rewrite (for instance, LZXXXX_$.upd) onto the Brother Maintenance USB Printer icon.

Note:

- After rewriting main firmware or demo firmware is completed, the machine returns to the ready state. To continue rewriting other program files, turn OFF the power switch of the machine, and press the [5] button to turn it on again. Check that "▌▌▌▌▌▌▌" appears on the LCD, and then start rewriting.

(5) Upon completion of rewriting, the machine restarts and returns to the ready state automatically.

1.2   Initialization of EEPROM of Main PCB ASSY (Function Code: 01)

Initialize the EEPROM in accordance with "1.3.1 EEPROM parameter initialization (Function code: 01, 91)" in Chapter 5.

1.3   Setting by Country (Function Code: 74)

Make appropriate settings by country in accordance with "1.3.19 Setting by country (Function code: 74)" in Chapter 5.

1.4 Setting the Serial Number and Entering the Adjusted Value of the Laser Unit

Note:

- After replacing the laser unit, be sure to attach the serial number label provided with the new laser unit to the laser plate.
- When entering the adjusted value, be sure to enter the serial number of the new laser unit.

<Procedures>

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

(2) Double-click the "Brusbsn.exe" file that was copied to the temporary folder to start it.
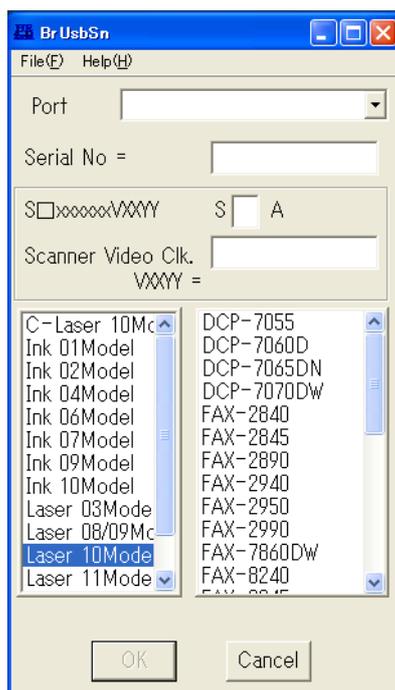
(3) Click "Laser 10Model".

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

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

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

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

   4) Click the [Ports] tab.

   5) Check the port number assigned to the Brother Maintenance USB Printer.

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

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(6) Enter the number (2nd digit from the left) on the laser serial number label attached to the location shown in the illustration below in the [S☐xxxxxxVXXYY] field.

Laser plate   Laser serial number label   Laser unit
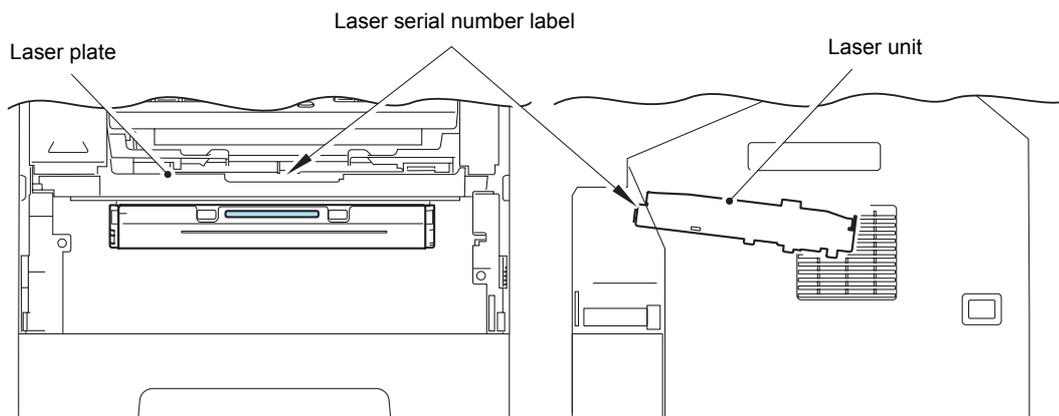
(7) Enter the number (last five digits) on the laser serial number label in the [Scanner Video Clk] field.

(8) The serial number and the adjusted value of the laser unit are written to the machine.

1.5 Acquisition of White Level Data (Function Code: 55)

Acquire the white level data in accordance with "1.3.16 Acquisition of white level data (Function code: 55)" in Chapter 5.

1.6 Operational Check of Sensors (Function Code: 32)

Check performance of the sensors in accordance with "1.3.10 Operational check of sensors (Function code: 32)" in Chapter 5.

2. IF YOU REPLACE THE LASER UNIT

2.1   Entering the Adjusted Value of the Laser Unit

Note:

• After replacing the laser unit, be sure to attach the serial number label provided with the new laser unit to the laser plate.

• When entering the adjusted value of the laser unit, be sure to enter the serial number of the new laser unit.

Laser plate

Laser serial number label

Laser unit

<Procedures>
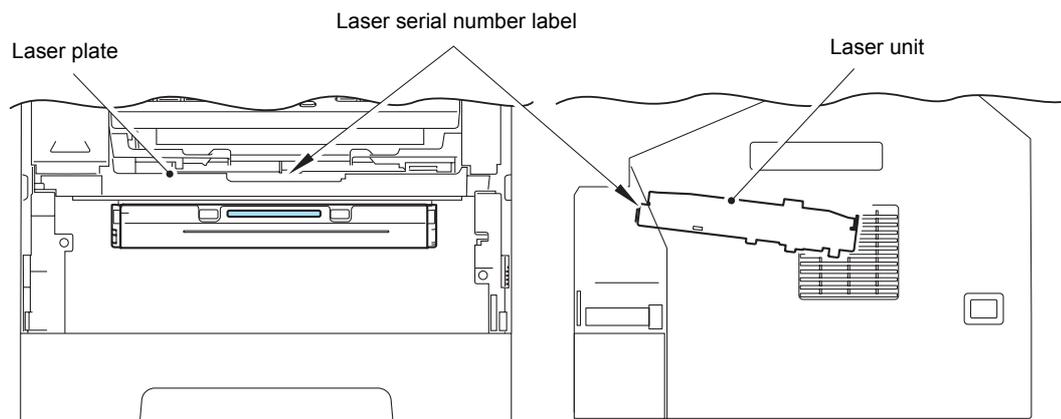
(1) Double-click the "Brusbsn.exe" file to start it.
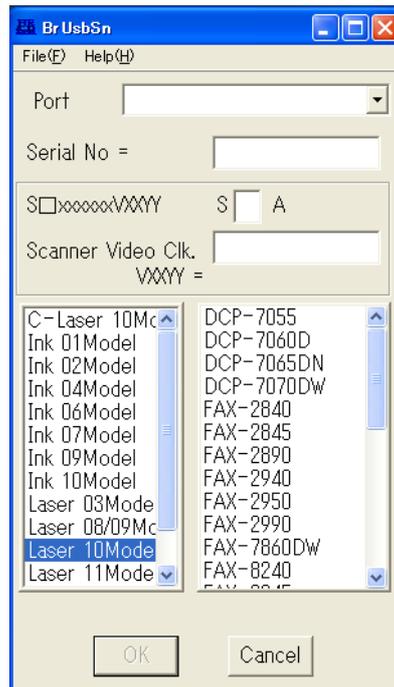
(2) Click "Laser 10Model".

(3) In the [Port] field, select the port number assigned to the Brother Maintenance USB Printer.

(4) Enter the number (2nd digit from the left) on the laser serial number label attached to the location shown in the illustration below in the [S□xxxxxxVXXYY] field.
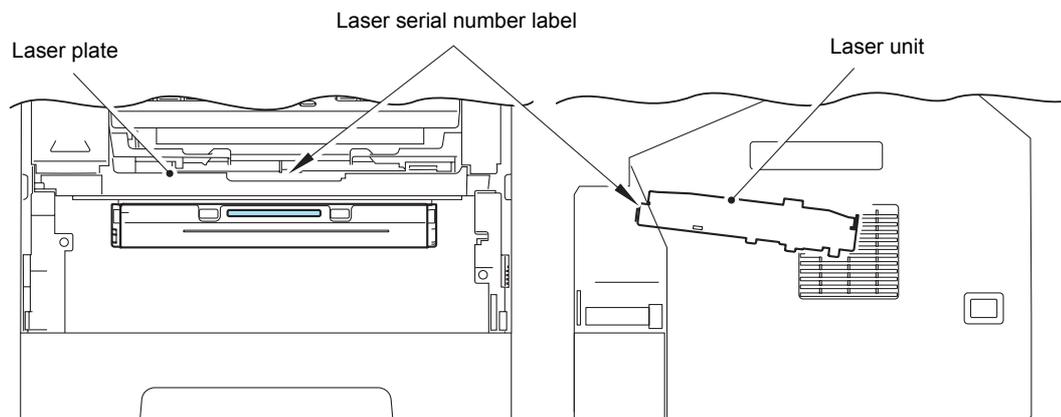
(5) Enter the number (last five digits) on the laser serial number label in the [Scanner Video Clk] field.

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

3. IF YOU REPLACE THE LOW VOLTAGE POWER SUPPLY PCB ASSY

3.1 Reset of Irregular Power Supply Detection Counter

The irregular power supply detection counter increases by one when the machine detects irregular power supply. When the counter reaches the limit and the irregular power supply detection error is displayed, replace the low-voltage power supply PCB ASSY, which may have been damaged by repeated irregular power supply, and reset the irregular power supply detection counter.

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.

Note:
- The maintenance driver must have been installed. (Refer to "APPENDIX 3 INSTALLING MAINTENANCE DRIVER".)

(1) Press the [Menu] button and then the [Start] button while the machine is in the ready state. Next, press the [▲] button four times to enter the maintenance mode. " ▮▮ MAINTENANCE ▮▮▮ " appears on the LCD, indicating that the machine is in the initial state of the maintenance mode.

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

(3) Double-click the "FILEDG32.EXE" file to start it. Select the "Brother Maintenance USB Printer".

(4) Drag and drop the "SQWAVE.PJL" file onto the "Brother Maintenance USB Printer" icon.

4. IF YOU REPLACE THE CIS UNIT

\<What to do after replacement\>

- Acquisition of white level data (function code: 55)

- Scanning and printing check

- Scanning lock (function code: 06)

4.1 Acquisition of White Level Data (Function Code: 55)

Perform the acquisition of white level data in accordance with "1.3.16 Acquisition of white level data (Function code: 55)" in Chapter 5.

4.2 Scanning and Printing Check

Scan the test chart TC-023 with the ADF, and check that there are no problems in the printed image.

Check that there are no problems in operations of the ADF, scanner unit and recording part.

4.3 Scanning Lock (Function Code: 06)

Move the document scanner unit to the transportation position in accordance with "1.3.3 Scanning lock (Function code: 06)" in Chapter 5.

5. IF YOU REPLACE THE PANEL UNIT

\<What to do after replacement\>

- Operational check of LCD (function code: 12)

- Operational check of control panel buttons (function code: 13)

5.1 Operational Check of LCD (Function Code: 12)

Check performance of the LCD in accordance with "1.3.7 Operational check of LCD (Function code: 12)" in Chapter 5.

5.2 Operational Check of Control Panel Buttons (Function Code: 13)

Check performance of the control panel buttons in accordance with "1.3.8 Operational check of control panel buttons (Function code: 13)" in Chapter 5.

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6. IF YOU REPLACE THE LCD UNIT

<What to do after replacement>

- Operational check of LCD (function code: 12)

6.1 Operational Check of LCD (Function Code: 12)

Check performance of the LCD in accordance with "1.3.7 Operational check of LCD (Function code: 12)" in Chapter 5.

CHAPTER 5
SERVICE FUNCTIONS

CHAPTER 5 SERVICE FUNCTIONS

Describes the maintenance mode which is exclusively designed for the purpose of checking the settings and adjustments using the buttons on the control panel.

This chapter also covers not-disclosed-to-users function menus, which activate settings and functions or reset the parts life.

CONTENTS

1. MAINTENANCE MODE

The maintenance mode is exclusively designed for the checking, setting and adjustments of the machine by using the buttons on the control panel. In the maintenance mode, the operational check of the LCD, control panel PCB and sensors, print test, display of the log information and error codes, and change of the worker switches (WSW) can be performed.

1.1 How to Enter the Maintenance Mode

1.1.1 How to enter the end user-accessible maintenance mode

Basically, the maintenance-mode functions should be accessed by service personnel only. However, you can allow end users to access some of these under the guidance of service personnel by phone.

The end user-accessible functions are shaded in the table in "1.2 List of Maintenance Mode Functions". (Function codes 06, 09, 10, 11, 12, 25, 43, 45, 53, 54, 77, 80, 82, 87 and 91)

<Operating Procedure>

(1) Press the [Menu], [Start], [Menu], and [▲] buttons in this order while the machine is in the ready state. "MAINTENANCE 06" appears on the LCD.

(2) Press the [▲] or [▼] button until the desired maintenance-mode function code appears on the LCD, and press the [OK] button.

(3) When each of the user-accessible functions is completed, the machine automatically returns to the ready state.

1.1.2 How to enter the maintenance mode for service personnel

<Operating Procedure>

(1) Press the [Menu] button and then the [Start] button while the machine is in the ready state. Next, press the [▲] button four times to enter the maintenance mode.

> **Memo:**
> • For models with numeric keys, operation using [Menu], [*], [2], [8], [6], and [4] buttons is also available.

(2) The machine beeps for one second and displays "■■MAINTENANCE■■■" on the LCD, indicating that the machine has moved into the initial state of the maintenance mode, a mode in which the machine is ready to accept entry via the buttons.

(3) To select any of the maintenance mode functions shown in "1.2 List of Maintenance Mode Functions", enter the desired function code using the buttons.

> **Memo:**
> • To exit the maintenance mode and return to the ready state, press the [9] button twice in the initial state of the maintenance mode. For models without numeric keys, press the [▲] or [▼] button until "MAINTENANCE 99" appears on the LCD. Then press the [OK] button, and the machine returns to the ready state.
> • When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode.
> • When an incorrect function code is entered, the machine beeps for one second and returns to the initial state of the maintenance mode.

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1.2 List of Maintenance Mode Functions

Function Code	Function	Refer to:
01	EEPROM parameter initialization	1.3.1 (5-3)
05	Printout of scanning compensation data	1.3.2 (5-4)
06	Scanning lock	1.3.3 (5-6)
08	ADF performance test	1.3.4 (5-6)
09	Monochrome image quality test pattern	1.3.5 (5-7)
10	Worker switch (WSW) setting	1.3.6 [1] (5-8)
11	Printout of worker switch data	1.3.6 [2] (5-11)
12	Operational check of LCD	1.3.7 (5-12)
13	Operational check of control panel buttons	1.3.8 (5-13)
25	Software version check	1.3.9 (5-15)
32	Operational check of sensors	1.3.10 (5-16)
33	LAN connection status display	1.3.11 (5-18)
43	PC print function	1.3.12 (5-19)
45	Changing return value of USB No.	1.3.13 (5-22)
53	Received data transfer function	1.3.14 (5-23)
54	Fine adjustment of scan start/end positions	1.3.15 (5-25)
55	Acquisition of white level data	1.3.16 (5-26)
57	Automatic scanning position adjustment	1.3.17 (5-27)
67	Continuous print test	1.3.18 (5-28)
74	Setting by country	1.3.19 (5-29)
77	Printout of maintenance information	1.3.20 (5-32)
78	Operational check of fan	1.3.21 (5-34)
80	Display of machine log history	1.3.22 (5-35)
82	Error code indication	1.3.23 (5-38)
87	Sending communication error list	1.3.24 (5-38)
91	EEPROM parameter initialization	1.3.1 (5-3)
99	Exit the maintenance mode	1.3.25 (5-39)

* The functions shaded in the table above are user-accessible.

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1.3 Detailed Description of Maintenance-mode Functions

1.3.1 EEPROM parameter initialization (Function code: 01, 91)

<Function>

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

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

Data item	Function code 01	Function code 91
Counter information	These will not be initialized.	These will not be initialized.
Error history		
MAC Address (Ethernet Address)		
Operation lock of the control panel password	These will be initialized.	
Secure function lock		
Worker switch		
Telephone function registration One-touch dialing Speed dialing Group dialing		
User switches (items to be initialized when resetting to the factory default settings)		These will be initialized.
Function settings except user switches (items except the factory default settings) - Languages - Reprint - Secure Print - Interfaces		
LAN area (Network settings)		
PCL core area (Emulation settings)		

<Operating Procedure>

(1) Press the [0] and [1] buttons (or the [9] and [1] buttons according to your need) in this order in the initial state of the maintenance mode. "PARAMETER INIT" appears on the LCD.

(2) Upon completion of parameter initialization, the machine returns to the initial state of the maintenance mode.

> **Note:**
> • Function code 01 is for service personnel. Function code 91 is for user support.

1.3.2 Printout of scanning compensation data (Function code: 05)

<Function>

This function is used to print the brightness level data for scanning compensation.

<Operating Procedure>

> **Note:**
> • Be sure to execute this operating procedure not immediately after the power is turned ON, but after conducting the document scanning operation at least once in scanning. Since the machine initializes the brightness level data and obtains the standard value for document scanning compensation when starting scanning the document, the correct data for compensation cannot be printed even if this operation is implemented without scanning the document.
>
> • The print result varies depending on whether color scanning or black and white scanning is performed immediately before this operating procedure. Check the brightness level data you want to print and then implement the procedure below.

(1) For white and black scanning, copy the document. For color scanning, implement color scanning of the document.

(2) Press the [0] and [5] buttons in this order in the initial state of the maintenance mode. "PRINTING" appears on the LCD, and the machine prints the scanning compensation data list (refer to Fig. 5-1) containing the following:

■ Black and white/color scanning

> **Note:**
> • In the case of the black and white scanning, the output data (B) and (R) are invalid.

a)	LED CURRENT DATA	1 byte
b)	LED pulse data 1 (UP) (G)	2 bytes
c)	LED pulse data 1 (DOWN) (G)	2 bytes
d)	LED pulse data 1 (UP) (B)	2 bytes
e)	LED pulse data 1 (DOWN) (B)	2 bytes
f)	LED pulse data 1 (UP) (R)	2 bytes
g)	LED pulse data 1 (DOWN) (R)	2 bytes
h)	REFH data	1 byte
i)	Background color compensation data	1 byte
j)	Black level data	Based on previous scanning pixel count
k)	White level data (G)	Based on previous scanning pixel count
l)	White level data (B)	Based on previous scanning pixel count
m)	White level data (R)	Based on previous scanning pixel count

■ Black and white scanning

Fig. 5-1

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1.3.3 Scanning lock (Function code: 06)

\<Function\>

This function is used to disable the scanning operation until the power is turned OFF and then ON again.

\<Operating Procedure\>

(1) Press the [0] and [6] buttons in this order in the initial state of the maintenance mode. "SCAN LOCKED" appears on the LCD, and scanning operation is disabled.

1.3.4 ADF performance test (Function code: 08)

\<Function\>

This function is used to test the performance of the automatic document feeder (ADF). The machine counts the documents fed by the ADF and displays the result on the LCD.

\<Operating Procedure\>

(1) Load the documents. (Do not exceed the paper capacity of the ADF.) "DOC.READY" appears on the LCD.

(2) Press the [0] and [8] buttons in this order.

(3) The documents are fed and ejected while the scanned pages are counted, displaying the number of pages on the LCD as shown below.

ADF CHECK P.01

Current count (1st page in this example)

(4) When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode.

1.3.5 Monochrome image quality test pattern (Function code: 09)

<Function>

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

<Operating Procedure>

(1) Press the [0] and [9] buttons in this order in the initial state of the maintenance mode.

(2) Printing of the monochrome image quality test pattern (see the figure below) starts. When printing is completed, the machine beeps for one second and returns to the initial state of the maintenance mode.
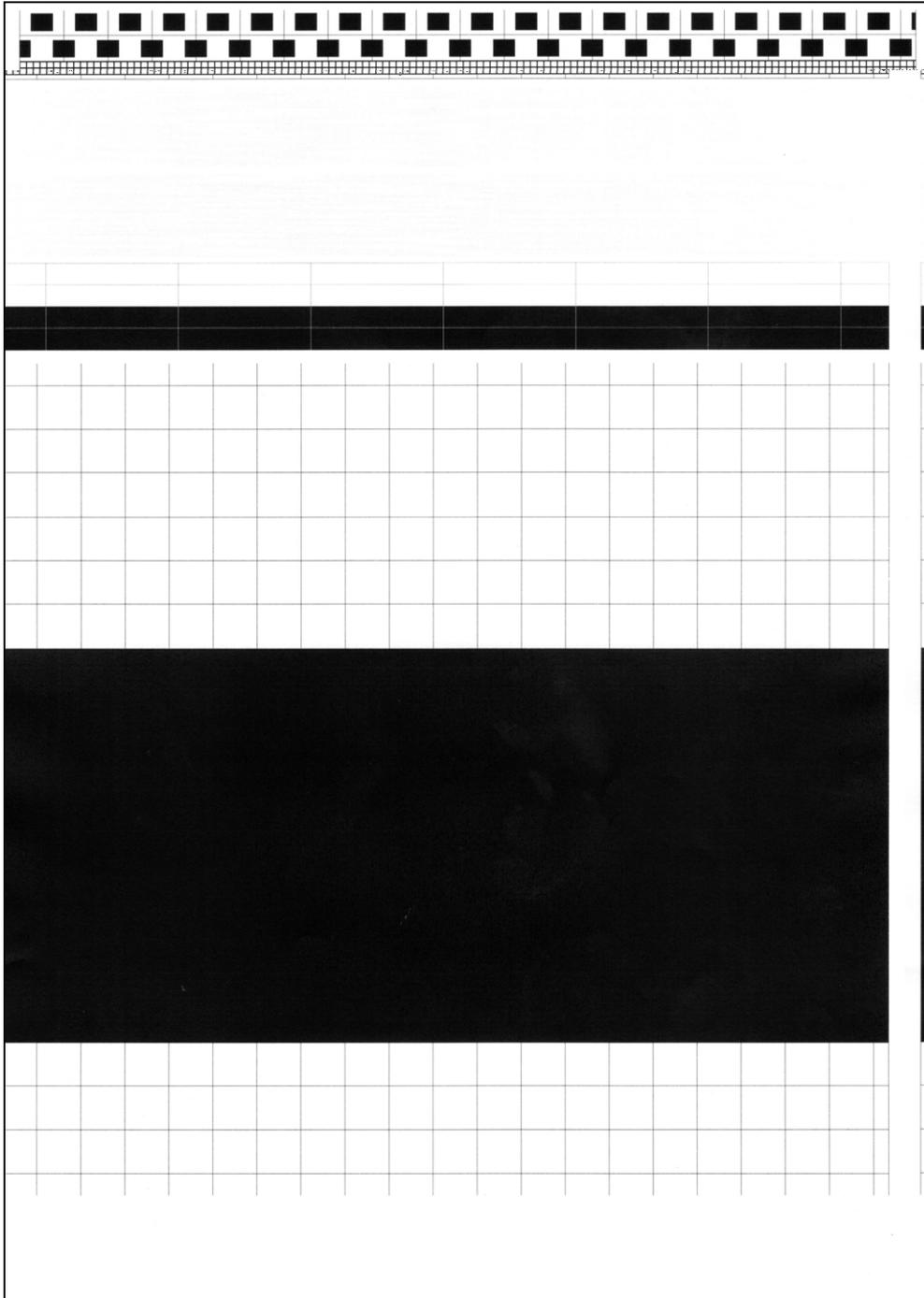
Fig. 5-2

1.3.6 Worker switch (WSW) setting and printout (Function code: 10, 11)

[1] Worker switch setting (Function code: 10)

The machine incorporates the following worker switch functions which may be activated with the procedures using the buttons on the control panel. The worker switches have been set at the factory in conformity to the codes of each country. Do not disturb them unless necessary. Some of these switches are disabled according to the model and specifications.

■ List of worker switches

WSW No.	Function
WSW01	Dial pulse setting
WSW02	Tone signal setting
WSW03	PABX mode setting
WSW04	Transfer facility setting
WSW05	1st dial tone and busy tone detection
WSW06	Redial/Pause button setting and 2nd dial tone detection
WSW07	Dial tone setting 1
WSW08	Dial tone setting 2
WSW09	Protocol definition 1
WSW10	Protocol definition 2
WSW11	Busy tone setting
WSW12	Signal detection condition setting
WSW13	Modem setting
WSW14	AUTO ANS facility setting
WSW15	Redial facility setting
WSW16	Function setting 1
WSW17	Function setting 2
WSW18	Function setting 3
WSW19	Transmission speed setting
WSW20	Overseas communications mode setting
WSW21	TAD setting 1
WSW22	ECM and call waiting caller ID
WSW23	Communications setting
WSW24	TAD setting 2
WSW25	TAD setting 3
WSW26	Function setting 4
WSW27	Function setting 5
WSW28	Function setting 6
WSW29	Function setting 7
WSW30	Function setting 8
WSW31	Function setting 9
WSW32	Function setting 10

WSW No.	Function
WSW33	Function setting 11
WSW34	Function setting 12
WSW35	Function setting 13
WSW36	Function setting 14
WSW37	Function setting 15
WSW38	V.34 transmission settings
WSW39	V.34 transmission speed
WSW40	V.34 modem settings
WSW41	ON-duration of the scanning light source
WSW42	Internet mail settings
WSW43	Function setting 16
WSW44	Speeding up scanning-1
WSW45	Speeding up scanning-2
WSW46	Monitor of power ON/OFF state and parallel port kept at high
WSW47	Switching between high-speed USB and full-speed USB
WSW48	USB setup latency
WSW49	End-of-copying beep
WSW50	SDAA settings
WSW51	Function setting 17
WSW52	Function setting 18
WSW53	Function setting 19
WSW54	Function setting 20
WSW55	Interval of time required for the developing bias voltage correction
WSW56	Function setting 21
WSW57	Function setting 22
WSW58	Function setting 23
WSW59	Function setting 24
WSW60	Function setting 25
WSW61	Scanning light intensity to judge to be stable 1
WSW62	Scanning light intensity to judge to be stable 2
WSW63	Function setting 26
WSW64	Setting the language/Default paper size
WSW65	Setting the paper support
WSW66	Reserved (Change of the setting is prohibited)
WSW67	Reserved (Change of the setting is prohibited)
WSW68	Reserved (Change of the setting is prohibited)
WSW69	Reserved (Change of the setting is prohibited)
WSW70	Reserved (Change of the setting is prohibited)
WSW71	Reserved (Change of the setting is prohibited)

WSW No.	Function
WSW72	Reserved (Change of the setting is prohibited)
WSW73	Reserved (Change of the setting is prohibited)
WSW74	ADF stop control
WSW75	Paper ejecting distance of the switch back
WSW76	The limited number of the documents in reverse for paper ejection of the simplex scanning from ADF
WSW77	The limited number of the documents in reverse for paper ejection of the duplex scanning from ADF
WSW78	Recording stop function when the drum reaches the end of life

 * Refer to the separate manual for details of worker switches.

<Operating Procedure>

(1) Press the [1] and [0] buttons in this order in the initial state of the maintenance mode. "WSW00" appears on the LCD, indicating that the machine is ready to accept worker switch number entry.

(2) Enter the desired number from the worker switch numbers (01 through 78). The following display appears on the LCD.

Selector 1   Selector 8

WSWXX = 0 0 0 0 0 0 0 0

(3) Enter a value to be set (0 or 1) using the [0] and [1] buttons.

(4) Press the [OK] button. The new selector values are saved in the EEPROM, and the LCD returns to the ready state for worker switch number entry.

(5) Repeat steps (2) through (4) until the modification for the desired worker switches is completed.

(6) When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode.

Note:

• To cancel the operation and return the machine to the initial state of the maintenance mode during the above procedure, press the [Stop/Exit] button.

• If there is a pause of more than one minute after a single-digit number is entered for double-digit worker switch numbers, the machine will automatically return to the initial state of the maintenance mode.

[2] Printout of worker switch data (Function code: 11)

\<Function\>

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

\<Operating Procedure\>

(1) Press the [1] button twice in the initial state of the maintenance mode. "PRINTING" appears on the LCD.

(2) Printing of CONFIGURATION LIST (see the figure below) starts.
When printing is completed, the machine beeps for one second and returns to the initial state of the maintenance mode.

```
                    CONFIGURATION LIST

                              MODEL : 8X5-E33
                              TIME  : 03/01/2012 00:07
                              REV.  : U1202031245VER.V
                              PCI   : 5.00
                              SUM   : FBB6
                              SER.# : X12345B2J000104

WSW01 = 00000010
  1-2. DIAL FORMAT                        : NORMAL
  3-4. BREAK TIME                         : 60 MS
  5-6. INTERDIGIT PAUSE                   : 800 MS
  7.   DP/PB CHANGE IN USER SW            : NO
  8.   DP/PB FIXING SELECTION             : PB
WSW02 = 11111010
  1-2. ON TIME                            : 100 MS
  3-4. OFF TIME                           : 140 MS
  5-8. LINE BEEP ATTENUATOR               : 10 DB
WSW03 = 10111000
  1.   PARA. CNG DETECTION1               : B
  2-4. NOT USED
  5.   PARA. CNG DETECTION2               : B
  6-8. NOT USED
WSW04 = 00010110
  1-4. NOT USED
  5.   OGM DELAY +4SEC                    : OFF
  6-8. FLASHING TIME                      : 500 MS
WSW05 = 00000110
  1-3. DIAL TONE DETECTION                : 3.5 SEC WAITING
  4.   REMOTE ID DETECTION TIMEOUT        : 2 SEC
  5-6. BUSY TONE DETECTION (CALLING)      : AFTER DIALING
  7.   BUSY TONE DETECTION (CALLED)       : OFF
  8.   NOT USED
WSW06 = 00101100
  1-3. PAUSE KEY                          : 3.5 SEC WAITING
  4-6. 2ND DT DETECTION TIME              : 620 MS
  7.   2ND DT DETECTION CYCLE             : 1 CYCLE
  8.   2ND DT INTERRUPT DETECTION TIME    : 30 MS
WSW07 = 01001100
  1-2. FREQUENCY RANGE                    : INITIAL DATA
  3.   NOT USED
  4-6. 2ND DT DETECTION LEVEL             : -30 DBM
  7.   1ST DT INTERRUPT DETECTION TIME    : 30 MS
  8.   NOT USED
WSW08 = 01100111
  1-3. 1ST DT DETECTION TIME              : 620 MS
  4-5. 1ST/2ND DT TIME OUT                : 10 SEC
  6-8. 1ST DT DETECTION LEVEL             : -42 DBM
WSW09 = 00000000
  1.   ECM FRAME                          : 256 OCTET
  2.   NON STANDARD FACILITIES            : ON
  3-4. TIMES OF FALL BACK                 : 4
  5.   T5 TIMER                           : 300 SEC
  6.   T1 TIMER                           : 35 SEC
  7-8. CALLING TIMEOUT                    : 55 SEC
WSW10 = 00010100
  1.   NOT USED
  2.   TIMING OF LAST DIGIT-MODEM CHANGE  : 100 MS
  3.   TIMING OF CML ON CNG TRANSMISSION  : 2 SEC
  4.   TIMING OF CML ON CED TRANSMISSION  : 2 SEC
  5-6. TRAINING RETRIES                   : 2
  7.   CODING METHOD MR                   : ON
  8.   CODING METHOD MMR                  : ON
WSW11 = 01011000
  1-2. FREQUENCY RANGE                    : INITIAL DATA
  3-8. ON/OFF TIME                        : 175 - 600 / 175 - 600 MS
WSW12 = 10011001
  1-2. OFF DETECTION TIME                 : 700 MS
  3-4. AUTO ANS OFF DETECTION TIME        : 7 SEC
  5-6. ON DETECTION TIME                  : 250 MS
  7-8. NOT USED
```

Fig. 5-3

1.3.7 Operational check of LCD (Function code: 12)

<Function>

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

<Operating Procedure>

(1) Press the [1] and [2] buttons in this order in the initial state of the maintenance mode. The LCD appears as in <Display 1> in the table below.

(2) Each press of the [Start] button cycles through the displays as shown below.

(3) When the [Stop/Exit] button is pressed regardless of the display, the operation is canceled, and the machine beeps for one second and returns to the initial state of the maintenance mode.

Display 1

Backlight : Not lit

Display 2

Backlight : Not lit

Display 3

Backlight : Not lit

Display 4

Backlight : Lit

Display 5

Backlight : Lit

Display 6

Backlight : Lit
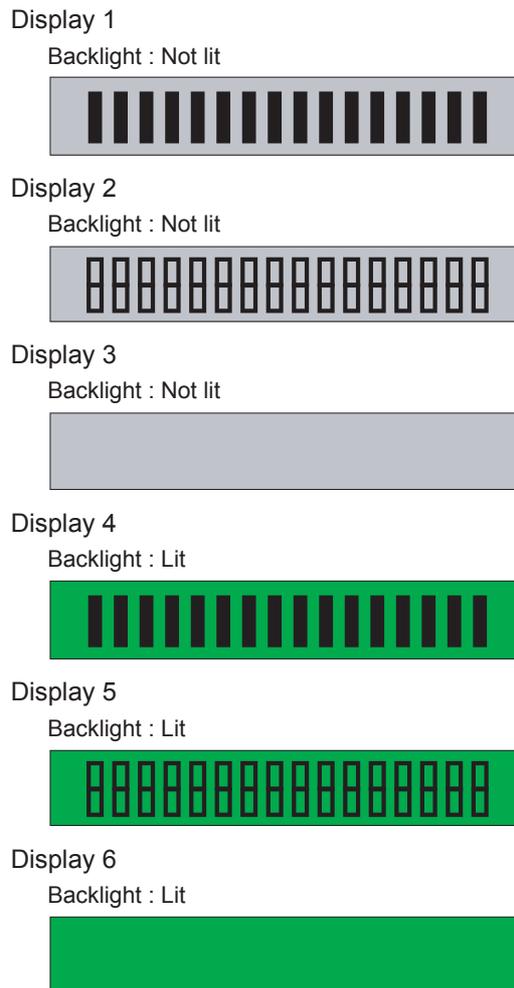
Fig. 5-4

1.3.8 Operational check of control panel buttons (Function code: 13)

\<Function\>

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

\<Operating Procedure\>

(1) Press the [1] and [3] buttons in this order in the initial state of the maintenance mode. "00" appears on the LCD.

(2) Press the buttons in the order designated in the illustration shown below.
The LCD shows the corresponding number in decimal notation each time a button is pressed. Check that the displayed number is correct by referring to the illustration below. When the buttons are pressed in an incorrect order, a warning beep goes off and "INVALID OPERATE" appears on the LCD at the same time. Press the [Stop/Exit] button, and then press the correct buttons.

(3) When button operation is normal, the machine beeps for one second and returns to the initial state of maintenance mode when the last button is pressed.

> **Memo:**
> • When the [Stop/Exit] button is pressed during button operation, the machine beeps for one second and returns to the initial state of the maintenance mode.

■ **MFC-7240 / 7290 / FAX-2950**
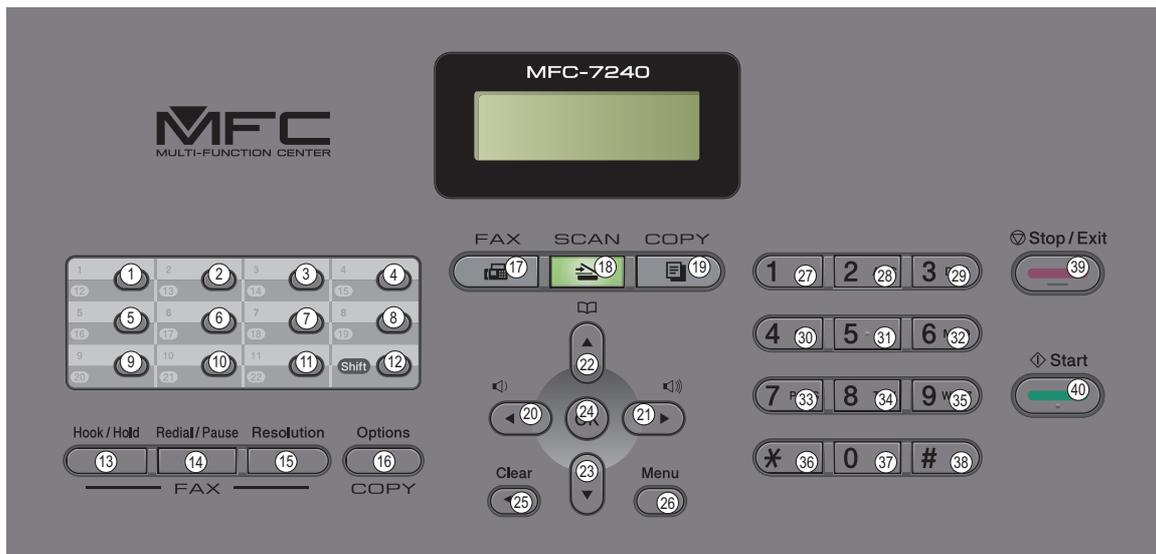
Fig. 5-5

■ **FAX-2840 / 2845 / 2890 / 2940/ 2990**

Fig. 5-6

1.3.9 Software version check (Function code: 25)

<Function>

This function is used to check the management information of the software programs such as version information and check sum.

<Operating Procedure>

(1) Press the [2] and [5] buttons in this order in the initial state of the maintenance mode. The machine displays each of items described below on the LCD.

(2) Press the [▲] or [▼] button to change the display item.

(3) When the [Stop/Exit] button is pressed regardless of the display, the operation is canceled, and the machine beeps for one second and returns to the initial state of the maintenance mode.

LCD	Description
TOTAL: Ver A [*1]	Main firmware version information (A): Revision information
ENG: Ver1.00	Engine firmware version information
B09014151027: AF57 [*1]	Boot program creation date
U09040911553: A668 [*1]	Main firmware creation date
D09041191021: 2E8F [*1]	Demo firmware data creation date
ROM Check Sum	Check sum self-diagnosis function [*2]

[*1] How to display the check sum information
Press the [OK] button when each version is displayed on the LCD to display the check sum information. Press the [OK] button again to go back to the version information display. Press the [▲] or [▼] button to change the display item.

> **Note:**
> - Regarding the version information (Network and I-FAX) of which check sum information cannot be obtained, the check sum information is not displayed even if you press the [OK] button.

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

1.3.10 Operational check of sensors (Function code: 32)

<Function>

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

<Operating Procedure>

(1) Press the [3] and [2] buttons in this order in the initial state of the maintenance mode.

(2) Check mode is entered. The speaker emits 1,100 Hz and 400 Hz tones cyclically through the following volumes. To stop tones, press the [OK] button.

```
            ┌──────────────────────┐
      ┌────▶│       400 Hz         │────┐
      │     │ Low→Medium→High      │    │
      │     └──────────────────────┘    ▼
    OFF                               OFF
      ▲     ┌──────────────────────┐    │
      │     │      1,100 Hz        │    │
      └─────│ High←Medium←Low      │◀───┘
            └──────────────────────┘
```
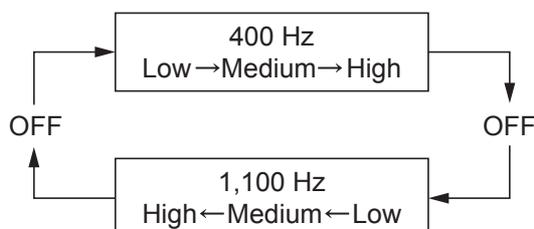
"**RCNTRMRAPOCV25" appears on the LCD, and the sensor operating conditions defined in the table below are applied.

When the [Start] button is pressed, the display changes to "DFDR****AC****".

The table below shows the relationship between the LCD display, sensor names and detection status.

LCD	Sensor name	Sensor name displayed	-- displayed
RC	Back cover sensor	Cover closed	Cover open
NT	New toner sensor	ON	OFF
RM	Registration front sensor	No paper	Paper set
RA	Registration rear sensor	No paper	Paper set
PO	Eject sensor	No paper	Paper set
CV	Front cover sensor	Cover closed	Cover open
25 (last two digits)	Internal temperature thermistor	Measured value displayed	NG
DF	Document detection sensor	No paper	Paper set
DR	Document scanning position sensor	No paper	Paper set
AC	Control panel cover sensor	Cover closed	Cover open

Note:

• "*" appears on the LCD if the parts are not installed or there is no item.

(3) Change the detection condition of each sensor and check that the display on the LCD changes depending on the sensor status.
For instance, insert the paper through the document detection sensor or the registration front / registration rear sensor, open the front cover or the back cover, etc.

(4) When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode.

■ **Location of sensors**
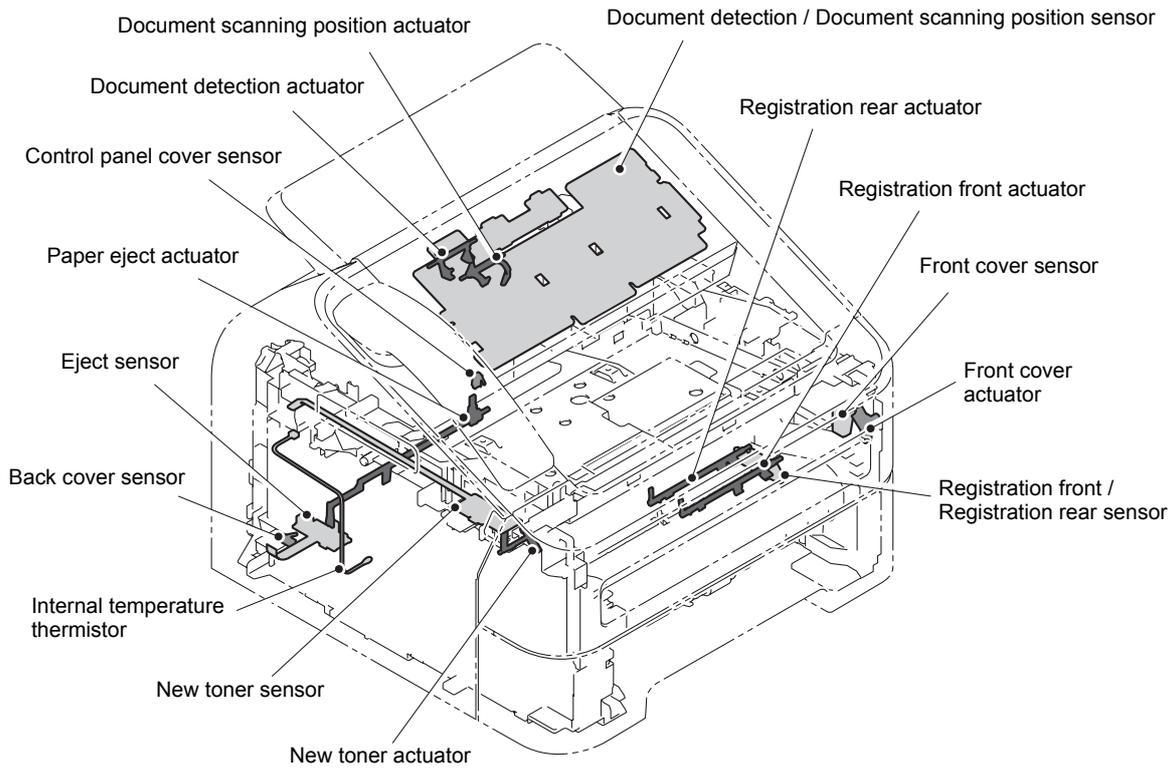
Fig. 5-7

1.3.11 LAN connection status display (Function code: 33)

<Function>

This function is used to check the connection status of the wired LAN. The display items are shown in the table below.

LCD	LAN connection status
Active 100B-FD	100BASE-T Full Duplex
Active 100B-HD	100BASE-T Half Duplex
Active 10B-FD	10BASE-T Full Duplex
Active 10B-HD	10BASE-T Half Duplex
Inactive	Not connected.

<Operating Procedure>

(1) Press the [3] button twice in the initial state of the maintenance mode.
The wired LAN connection status as shown in the table above is displayed on the LCD.

(2) When the [Stop/Exit] button is pressed, the operation is canceled, and the machine returns to the initial state of the maintenance mode.

1.3.12 PC print function (Function code: 43)

\<Function\>

This function is used to change the settings of the various print functions summarized in the table below.

\<Operating Procedure\>

(1) Press the [4] and [3] buttons in this order in the initial state of the maintenance mode. "Manual Feed" appears on the LCD.

(2) Press the [▲] or [▼] button to select the function you want to change the setting and press the [OK] button.

(3) When you select a fixed (On/Off) parameter, press the [▲] or [▼] button to change the parameter setting, and press the [OK] button.
When you select a parameter requiring numerical value entry, use the keypad to enter a numerical value, and press the [OK] button.

(4) When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode.

■ Function setting

LCD	Description	Set value	Initial value
Manual Feed	Switching of the Manual Feed	On/Off	Off
Resolution	Resolution to print	300/600/1,200 dpi	600
Toner Save	Switching of the Toner Save	On/Off	Off
Density	Switching of the Density level	-6 to 6	0
JB-Can Time	Setting of the time until the host time-out at the Job Cancel	0 to 225 (seconds)	4
Sleep Time	Setting of the time until enter the Sleep Mode	0 to 99 (minutes)	5
Page Protection	Switching of the protection of the page memory	Off/Letter/A4/Legal/Auto	Off
Emulation	Switching of the emulation	Auto/HP/PS	Auto
Auto I/F Time	Switching of the I/F open time	1 to 99 (seconds)	5
Media Type	Switching of the recording paper type	Thin/Plain/Thick/ Thicker/Transparency/ Recycled/Bond/ Envelopes/EnvThin/ EnvThick	Plain or Thin
Paper Size	Switching of the area of develop the image	Letter/Legal/A4/ Executive/B5/JISB5/A5/ B6/A6/Monarch/C5/ COM10/DL/DLL/A4Long /PostCard/Folio	Letter or A4
Copies	Switching of the print copies	1 to 99 (pages)	1
Orientation	Switching of the print direction	Portrait/Landscape	Portrait
P-Pos X-Offset	Switching of the offset print position of the landscape orientation	-500 to 500 (1/300 dpi)	0
P-Pos Y-Offset	Switching of the offset print position of the portrait orientation	-500 to 500 (1/300 dpi)	0

LCD	Description	Set value	Initial value
AutoFF	Switching of the auto form feed	On/Off	Off
AutoFF Time	Switching of the time-out period of the auto form feed	1 to 99 (seconds)	5
FF Suppress	Switching of the FF Suppress	On/Off	Off
Auto LF	Switching of the auto LF	On/Off	Off
Auto CR	Switching of the auto CR	On/Off	Off
Auto WRAP	Switching of the auto CRLF at the print width	On/Off	Off
Auto Skip	Switching of the Skip at the backend/tip of the paper	On/Off	On
Left Margin	Switching of the margin at the left end	0 to 145 (columns)	0
Right Margin	Switching of the margin at the right end	10 to 155 (columns)	80
Top Margin	Switching of the margin at the upper end	0 to 2.00 (inches)	0.5
Bottom Margin	Switching of the margin at the bottom end	0 to 2.00 (inches)	0.5
Lines	Number of the text lines in the page	5 to 128 (lines)	60
Error Print	Switching of the ErrorPrint of the PostScript	On/Off	On

■ **Detail description**

LCD	Detail description
Manual Feed	Effective for the print from the computer, or for the print of the NetWorkConfig/TestPrint/Fontlist/Configuration from the panel. When select the tray on the computer, the setting becomes effective. And this setting is ignored.
Resolution	Effective only for the print from the computer. When set the Resolution on the computer, the setting becomes effective. And this setting is ignored.
Toner Save	Effective for all print, and change the setting of the Function Menu. However, as for the Copy, this setting becomes invalid. When set the Toner Save or the computer, the setting becomes effective. And this setting is ignored.
Density	Effective for the print from the computer, or for the print of the NetWorkConfig/TestPrint/FontList/Configuration from the panel. Link the setting of the Toner Save. Judge the both setting, and decide the density. When set the Density or the computer, the setting becomes effective. And this setting is ignored.
JB-Can Time	Configure the setting for until the host time-out at the Job Cancel. The setting value is the second time scale.
Sleep Time	Configure the setting for the time until shift to the Sleep Time. Change the setting of the Function Menu.
Page Protection	Configure the setting to protect the page memory, when recording in computer. Set in the PCL-Core. There is not the influence of the memory management problem of the MFC.

LCD	Detail description
Emulation	Configure the setting for the Emulation. Change the setting of the Function Menu. When the data include the ENTER LANGUAGE, the setting becomes effective. And this setting is ignored.
Auto I/F Time	Configure the setting for the interface open time. The function is in the PC-Print. When the PC-Scan/Remote-SetUp works on the way, the setting becomes invalid.
Media Type	Effective for the print from the computer. When set the type of the recording paper on the computer, the setting becomes effective. And this setting is ignored. The default value is different by the country setting. China is the Thin, and others are the Plain.
Paper Size	Switching of the area of develop the image. Does not set the Paper Size of the Menu, set the drawing size of the PC-Print. When set the size of the recording paper on the computer, the setting becomes effective. And this setting is ignored. The default value is different by the country setting. U.S.A/Canada are the Letter, and others are the A4.
Copies	Effective for the print from the computer. When set the number of the copies on the computer, the setting becomes effective. And this setting is ignored.
Orientation	Configure the switching for the print direction. Effective for the print from the computer.
P-Pos X-Offset	Configure the setting for the offset print position of the landscape orientation. Effective for the print from the computer. When set the X-Offset on the computer, the setting becomes effective. And this setting is ignored.
P-Pos Y-Offset	Configure the setting for the offset print position of the portrait orientation. Effective for the print from the computer. When set the Y-Offset on the computer, the setting becomes effective. And this setting is ignored.
AutoFF	Configure the setting for the ON/OFF of the Auto Form Feed. Effective for the print from the computer.
AutoFF Time	Configure the setting for the Time Out, when the Auto Form Feed is ON.
FF Suppress	Configure the setting for the skip of the blank page. Effective for the print from the computer. The blank data in the Copy/Fax cannot be turned ON/OFF in this setting.
Auto LF	Configure the setting for the auto line feed.
Auto CR	Configure the setting for the auto Carriage Return.
Auto WRAP	Configure the setting for the auto CRLF at the print width.
Auto Skip	Configure the setting for the skip at the back-end/tip of the recording paper and add the blank space.
Left Margin	Configure the setting for the column space at the left end.
Right Margin	Configure the setting for the column space at the right end.
Top Margin	Configure the setting for the space at the upper end.
Bottom Margin	Configure the setting for the space at the bottom end.
Lines	Configure the setting for the number of the lines in the PCL.
Error Print	Configure the setting for the Error Print of the BR-Script 3.

1.3.13 Changing return value of USB No. (Function code: 45)

<Function>

When the operating system (OS) installed on the computer is Windows Vista®, and the machine is connected to this computer using USB 2.0 FULL, the OS may fail to obtain the serial number of the USB device depending on the computer and USB device. If the serial number cannot be obtained, the return value may continue to increase every time the device is connected to the computer. To avoid this problem, this function is used to fix the return value of the serial number to "0".

LCD	Detail description
USBNo. =ON	Returns the serial number of the machine. (Default)
USBNo. =OFF	Returns "0".

<Operating Procedure>

(1) Press the [4] and [5] buttons in this order in the initial state of the maintenance mode. "USBNo." appears on the LCD.

(2) Press the [OK] button. "USB No. = ON*" appears on the LCD.

(3) Press the [▲] or [▼] button to select "USB No. = ON" or "USB No. = OFF", and then press the [OK] or [Start] button. The machine returns to the initial state of the maintenance mode.

(4) Turn OFF the power switch of the machine.

Note:

• The setting is applied after the power of the machine is turned OFF and then ON again.

1.3.14 Received data transfer function (Function code: 53)

\<Function\>

This function is used to transfer the received FAX data to another machine. It is useful when the machine cannot print the received data due to an error current in the printing mechanism. The maintenance information of the machine can also be faxed.

> **Note:**
> - The number of files that can be transferred in one operation is up to 99. When there are 100 or more files, the operation procedure below must be performed several times to transfer all files.
> - If there are both color and monochrome data in a FAX file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

\<Operating Procedure\>

(1) Press the [5] and [4] buttons in this order in the initial state of the maintenance mode. "FAX TRANSFER" appears on the LCD.
- To check the number of received files, press the [1] button.
  "1.NO. OF JOBS" appears on the LCD.
  Press the [OK] button, and the number of received files appears, for example, "NO. OF. JOBS: 10".
- To transfer only the activity report, press the [2] button.
  "2.ACTIVITY" appears on the LCD.
- To transfer the received files (together with the activity report), press the [3] button.
  "3.DOCUMENTS" appears on the LCD. If there are no received files, the "NO DOCUMENTS" appears.
- To transfer the communication list for the latest communication, press the [4] button.
  "4.COM.LIST (NEW)" appears.
- To transfer the communication list for the last three errors, press the [5] button.
  "5.COM.LIST (ERR3)" appears on the LCD.
- Press the [6] button to transfer the maintenance information (list printed by function code 77).
  "6.MNT77 LIST" appears on the LCD.

(2) While the "2.ACTIVITY", "3.DOCUMENTS", "4.COM.LIST (NEW)", "5.COM.LIST (ERR3)", or "6.MNT77 LIST" is displayed, press the [OK] button. The "ENTER NO & SET" appears on the LCD.

(3) Enter the telephone number of the receiver machine, and press the [OK] button again.

(4) The machine displays "ACCEPTED" for approximately two seconds and starts dialing to transfer the data.

> **Note:**
> - Be sure to type the telephone number with the numerical buttons. One-touch dialing is not allowed in this procedure.
> - No station ID will be attached to the data to be transferred. Instead, a cover page and end page as shown on the next page will be automatically attached.

Confidential

■ **Cover page sample**

```
=== FAX TRANSFER COVER PAGE ===

NO. OF JOBS    :001                    ←——————— Job number to identify the transmission
TOTAL PAGE[S] :001                     ←——————— Total number of pages to be transferred
NAME           :BROTHER                ←——————— Station ID registered in the sender machine
FAX            :052 824 2330           ←——————— Fax number of the sender machine
TEL            :                       ←——————— Telephone number of the sender machine
TIME           :03/01/2012 22:21       ←——————— Transfer date and time

8X5-E11                                ←——————— Model code
B0403261602                            ←——————— Boot ROM information
U0404221449 VER.0                      ←——————— ROM information
G01234567890                           ←——————— Serial number
```

Fig. 5-8

■ **End page sample**

```
=== FAX TRANSFER END PAGE ===

NO. OF JOBS   :001                     ←——————— Job number to identify the transmission
TOTAL PAGE[S] :001                     ←——————— Total number of pages to be transferred
NAME          :BROTHER                 ←——————— Station ID registered in the sender machine
FAX           :052 824 2330            ←——————— Fax number of the sender machine
TEL           :                        ←——————— Telephone number of the sender machine

MACHINE STATUS 1    AF:0906062216  ←⎫
MACHINE STATUS 2    43:0906062216  ←⎪
MACHINE STATUS 3    48:0906022216  ←⎪
MACHINE STATUS 4    AF:0906062017  ←⎪
MACHINE STATUS 5    43:0906062017  ←⎬  Error codes
MACHINE STATUS 6    48:0906062017  ←⎪
MACHINE STATUS 7    AF:0906061756  ←⎪
MACHINE STATUS 8    43:0906061756  ←⎪
MACHINE STATUS 9    48:0906061756  ←⎭
```

Fig. 5-9

Confidential

1.3.15 Fine adjustment of scan start/end positions (Function code: 54)

<Function>

This function is used to adjust the scan start/end positions on the ADF.

<Operating Procedure>

(1) Press the [5] and [4] buttons in this order in the initial state of the maintenance mode. "SCAN START ADJ." appears on the LCD.

(2) After two seconds, "SUB" appears. Press the [OK] button. The present setting is displayed on the LCD. ("0" is the default.)

(3) Press the [▲] button to increase the value or the [▼] button to decrease the value to adjust the setting in the range of +50 and -50.
When the [Stop/Exit] button is pressed, the machine beeps for one second and returns to the initial state of the maintenance mode without changing the setting.

(4) When the desired value is set, press the [OK] button. "ACCEPTED" appears on the LCD.

(5) When adjustment is completed, press the [Stop/Exit] button. The machine beeps for one second and returns to the initial state of the maintenance mode.

1.3.16 Acquisition of white level data (Function code: 55)

<Function>

This function is used to acquire the white level of the scanner unit and save it in the EEPROM of the main PCB.

> **Note:**
> - After Deep Sleep mode is released, execute this function code. If the correct white level data is not yet acquired, install the firmware to the latest version. If updating the firmware is not possible, open and close the front cover, and then retry acquisition after the main motor has stopped.

<Operating Procedure>

(1) Press the [5] button twice in the initial state of the maintenance mode.

(2) "Press START" appears on the LCD. Press the [Start] button.
"SCANNER AREA SET" appears on the LCD.

(3) After a few seconds, the machine saves the compensation value for the white level data/ scanning width in the EEPROM, beeps for one second, and returns to the initial state of the maintenance mode.

1.3.17 Automatic scanning position adjustment (Function code: 57)

<Function>

This function is used to automatically adjust the scanning start position.

<Operating Procedure>

(1) Connect the computer to the machine in the initial state of the maintenance mode.

(2) Double-click the "FILEDG32.EXE" file to start it. Select "Brother Maintenance USB Printer".

(3) Drag and drop the "XXXX.prn" file onto the "Brother Maintenance USB Printer" icon. Document data is printed.

(4) Cut the printed document data along the cutoff line to the A5 size.

(5) After cutting, set this in the document tray and adjust the document guide to the document width.

> **Note:**
> • Fit the document guide to the document completely. Otherwise, the scanning start position cannot be adjusted correctly.

(6) Press the [5] and [7] buttons in this order. "*********" appears on the LCD.

(7) Press the [Start] button. The scanning start position is automatically adjusted.

(8) When adjustment is completed, "*********" appears on the LCD.
Press the [Stop/Exit] button, and the machine returns to the initial state of the maintenance mode.

1.3.18 Continuous print test (Function code: 67)

<Function>

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

<Operating Procedure>

(1) Press the [6] and [7] buttons in this order in the initial state of the maintenance mode. "PAPER FEED TEST" appears on the LCD, and continuous printing starts using a grid pattern.

(2) When the [Stop/Exit] button is pressed, the operation is canceled, and the machine returns to the initial state of the maintenance mode.

> **Note:**
> • Test printing continues until there is no paper in the tray. When the correct operation is confirmed, press the [Stop/Exit] button to stop printing. (Printing is resumed when paper is loaded in the tray.)
>
> • In the event that an error occurs during test printing, continuous printing is suspended. (If you do not press the [Stop/Exit] button, printing is resumed when the error is cleared.)
>
> • To clear the error, remove the error factors, and then press the [Start] button.

1.3.19 Setting by country (Function code: 74)

\<Function\>

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

> **Note:**
> • Be sure to perform this procedure after replacing the main PCB ASSY or rewriting the firmware.

\<Operating Procedure\>

(1) Press the [7] and [4] buttons in this order in the initial state of the maintenance mode. The country code currently set is displayed on the LCD.

(2) Enter the country code you want to set. This country code is displayed on the LCD.

> **Note:**
> • The machine does not work normally when an incorrect country code is entered.

(3) Press the [Start] button. The new setting is saved and "PARAMETER INIT" is displayed on the LCD. The machine beeps for one second and returns to the initial state of the maintenance mode.

> **Memo:**
> • When the [Stop/Exit] button is pressed during the above procedure or when no button is pressed for one second, the operation is canceled, and the machine beeps for one second and returns to the initial state of the maintenance mode. In this case, the modified setting data is not saved.

<Country code list>

Country	FAX-2840	FAX-2845	FAX-2890	FAX-2940	FAX-2950	FAX-2990	MFC-7240	MFC-7290
U.S.A.	0001	—	—	0101	—	—	0201	—
Canada	0002	—	—	0102	—	—	0202	—
Germany	2053 (2003)	2153 (2103)	—	2053 (2003)	—	—	—	—
U.K.	2004	—	—	2004	—	—	—	—
France	2005	2105	—	2005	—	—	—	—
Australia	2056 (2006)	—	—	—	2056 (2006)	—	2256 (2206)	—
Norway	2057 (2007)	—	—	—	—	—	—	—
Belgium	2008	2108	—	—	—	—	—	—
Netherlands	2009	—	—	2009	—	—	—	—
Switzerland	2010	2110	—	2010	—	—	—	—
Ireland	2004	—	—	2004	—	—	—	—
Finland	2057 (2012)	—	—	—	—	—	—	—
Denmark	2057 (2013)	—	—	—	—	—	—	—
Austria	2053 (2014)	2153 (2114)	—	2053 (2014)	—	—	—	—
Spain	2065 (2015)	2165 (2115)	—	2065 (2015)	—	—	—	—
Italy	2016	2116	—	2016	—	—	—	—
Israel	2004	—	—	—	—	—	—	—
Portugal	2065 (2018)	2165 (2118)	—	2065 (2018)	—	—	—	—
China	—	—	2020	—	—	2020	—	2120
Taiwan	0023	—	—	—	—	—	—	0223
South Africa	0024	—	—	—	2074 (2024)	—	—	—
Turkey	0075 (0025)	—	—	—	2074 (2025)	—	—	—
Sweden	2057 (2026)	—	—	—	—	—	—	—
New Zealand	2056 (2027)	—	—	—	2056 (2027)	—	2256 (2277)	—
Slovakia	—	2188 (2130)	—	—	—	—	—	—
Argentina	—	—	—	—	—	—	0236	—

Country	FAX-2840	FAX-2845	FAX-2890	FAX-2940	FAX-2950	FAX-2990	MFC-7240	MFC-7290
Bulgaria	—	2188 (2132)	—	—	—	—	—	—
Rumania	—	2188 (2133)	—	—	—	—	—	—
Chile	—	—	—	—	—	—	0236	—
Czech	—	2188 (2137)	—	—	—	—	—	—
Hungary	—	2188 (2138)	—	—	—	—	—	—
Poland	—	2188 (2139)	—	—	—	—	—	—
Asia	0040	—	—	—	0040	—	—	0240
Gulf	0075 (0041)	—	—	—	0075 (0041)	—	—	—
Brazil	0042	—	—	—	—	—	—	—
Korea	0040	—	—	—	—	—	—	—
India	0045	—	—	—	—	—	—	—
Russia	—	2148	—	2048	—	—	—	—
CCE	—	2188 (2150)	—	—	—	—	—	—

Note:

• The information on this page is current as of April 2012.
  For information on the latest code settings, see the ROM/firmware information provided by Brother.

1.3.20 Printout of maintenance information (Function code: 77)

<Function>

This function is used to print the log information.

<Operating Procedure>

(1) Press the [7] button twice in the initial state of the maintenance mode.

(2) The machine prints a list of log information. When printing is completed, the machine returns to the initial state of the maintenance mode. The example of the log information is shown below.

■ **Maintenance information**

```
    <<MAINTENANCE>>

① FAX-2940          ② Date  03/01/2012
③ 8X5-E33                ④0101⑤9A ⑥01
⑦ B1112261502            ⑧D----------
⑨ U1202031245    ⑩ VER.V FBB6
⑪ RTC               OK    OK  00:09 00:18
⑫ WHQL              02A6  X12345B2J000104
⑬ 55                      NG 00
⑭ MEMORY VERSION          a
⑮ RAM SIZE                16M
⑯ FUNC CHECKER            OK
⑰ HV CHECKER              NG
⑱   7107000100147001
       0412000000000000        00000042
    00000F48 00007140 00000000 00000000
    00000000 00000000 00000000 00000000
    REMAINING LIFE
⑲  TONER CARTRIDGE         97%
⑳  DRUM UNIT               0011977  100%
    AVERAGE COVERAGE
㉑  TOTAL                   5.51%
㉒  CURRENT                 5.51%
㉓ TOTAL PAGES PRINTED      0000023
㉔  COPY PAGE COUNT         0000003
㉕  PRINT PAGE COUNT        0000000
㉖  LIST/FAX PAGE COUNT     0000020
㉗ TOTAL PAGES PICKUP
    T1/MN/DX                0000023/0000000/0000000
    A4+LTR/LGL+FOL          0000023/0000000
    B5+EXE/ENVELOPE         0000000/0000000
    A5/OTHER                0000000/0000000
    PLN+THI+REC             0000023
    THK+TKR+BND/ENVLP       0000000/0000000
    LABEL/HAGAKI            0000000/0000000
㉘ TOTAL PAPER JAMS         000000
㉙  T1/INSIDE/REAR/DX       00000/00000/00000/00000
    TONER CARTRIDGE
㉚  REPLACE COUNT           000
㉛  REPLACE DATE            00/00/00
㉜  PAGE COUNT1             0000023
㉝  PAGE COUNT2             0000000
    DRUM UNIT
㉞  REPLACE COUNT           000
㉟  REPLACE DATE            00/00/00
㊱  PAGE COUNT              0000023
㊲  ROUND COUNT             00000234
㊳ DEVELOPING ROLLER COUNT  00000234
㊴ DEVELOPING BIAS          415V
㊵ MAC ERROR 1/2            00:0401010000:0000000/00:0401010000:0000000
          3/4              00:0401010000:0000000/00:0401010000:0000000
          5/6              00:0401010000:0000000/00:0401010000:0000000
          7/8              00:0401010000:0000000/00:0401010000:0000000
          9/10             00:0401010000:0000000/00:0401010000:0000000
㊶ ADF PAGE COUNT           0000003
㊷ ADF JAM COUNT            000000
㊸ COM ERROR 1              00000000:0401010000
          2               00000000:0401010000
          3               00000000:0401010000
㊹ HODN_ER:000 FUSR_ER:000 MTLK_ER:000
㊺ POWER ON TIME            00000000
㊻ POWER ON COUNT           00000004
㊼ KO:000000/009000  MN:002110/000915
   RS:002095/001130  EJ:002100/002380
```

Fig. 5-10

Display information

1	Model name	25	Total printed PC pages
2	The date of printing the maintenance list	26	Total printed list/fax pages
3	Model code	27	Total fed pages per paper size/type
4	Country code	28	Total number of paper jams
5	Switch check sum (Factory management item)	29	Paper jams that have occurred in each section in the machine
6	Toner type [*1]	30	The number of times that toner cartridges have been replaced
7	Boot firmware creation date	31	The latest date of toner cartridge replacement
8	Demo firmware creation date	32	Printed pages of currently set toner cartridge
9	Main firmware creation date	33	Printed pages of previously set toner cartridge
10	Main firmware version / Main ROM check sum	34	The number of times that drum units have been replaced
11	Result of RTC[*2] backup / Time before backup / Time after backup	35	The latest date of drum unit replacement
12	WHQL / USB product ID / Serial number of machine	36	Printed pages by the drum unit which is currently used
13	Result of function code 55	37	Rotations of the drum
14	Memory version	38	Rotations of the developer roller
15	RAM size	39	Developing bias voltage value
16	Result of function check	40	Machine error log (The last 10 errors)
17	Result of high-voltage PCB check	41	Pages of ADF scanning
18	Not necessary for maintenance (Factory management item)	42	Document jams that have occurred in ADF
19	Estimated remaining toner amount	43	Communication error log
20	Count value and remaining ratio of drum unit	44	The number of times that discharge error / fuser unit error / ** error occurred
21	Accumulated average coverage	45	Total power distribution time
22	Average coverage by the toner cartridge which is currently used	46	The number of times that the power is turned ON
23	Total printed pages	47	Not necessary for maintenance (Factory management item)
24	Total copied pages		

[*1] 00 : Starter toner
    01 : Standard toner
    02 : High yield toner
    03 : Super high yield toner

[*2] RTC: Real Time Clock

1.3.21 Operational check of fan (Function code: 78)

<Function>

This function is used to check that the fan is operating normally.

<Operating Procedure>

(1) Press the [7] and [8] buttons in this order in the initial state of the maintenance mode. "FAN:100%" is displayed on the LCD.

(2) Pressing the [Start] button changes the display according to the sequence shown below. Check the fan operation.

(3) When the [Stop/Exit] button is pressed, the operation is canceled, and the machine beeps for one second and returns to the initial state of the maintenance mode.

```
┌──────────────────┐
│  FAN: 100%       │
│  ──────────────  │
└──────────────────┘
        ↓
┌──────────────────┐
│  FAN: 50%        │
│  ──────────────  │
└──────────────────┘
        ↓
┌──────────────────┐
│  FAN: OFF        │
│  ──────────────  │
└──────────────────┘
```
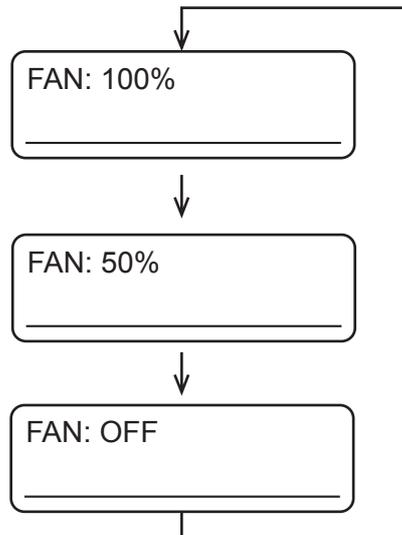
Fig. 5-11

■ **Location of fans**

Fan
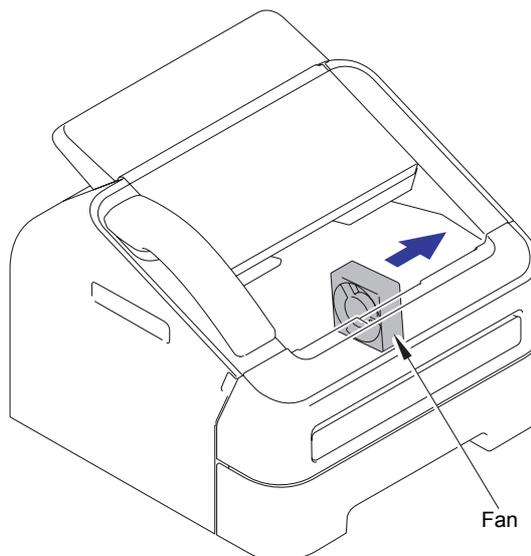
Fig. 5-12

1.3.22 Display of machine log history (Function code: 80)

\<Function\>

This function is used to view the machine's history (log). The display items are shown in the table below.

	LCD	Description
Serial [*1]	USB:	Serial number
PCB Serial	PCB:	Main PCB serial number
Drum related items	DRUM:	Number of drum rotations
	DRUM_PG:	Number of printed pages per drum
	DRUM_CH: [*2]	Number of times the drum unit has been replaced/ Date of last replacement
Toner related items	KTN_PG1:	Printed pages with the current toner cartridge
	KTN_PG2:	Printed pages with the previous toner cartridge
	KTN_ERM:	Remaining toner amount (value calculated based on dots)
	KTN_RRM:	Remaining toner amount (based on rotations of the developer roller)
	KTNR_CH: [*2]	Number of times the toner has been replaced/ Date of last replacement
	KTNR_RND:	Toner developer roller count
Average print rate related items [*3]	KCVRGUSI:	Average black coverage% (Toner in use)
	KCVRGACC:	Average black coverage% (Accumulated)
Print pages related items	TTL_PG:	Total printed pages
	TTLCOPY:	Copied pages
	TTLPCPT:	Pages printed via PC
	TTLFAX:	Printed lists and faxed pages
Picked-up pages by tray	TR1_PG:	Pages fed from paper tray 1
	MN_PG:	Pages fed from the manual feed slot

	LCD	Description
Picked-up pages by paper size	A4+LTR:	Pages of A4 or Letter size paper that have been fed
	LG+F0L:	Pages of Legal or Folio size paper that have been fed
	B5+EXE:	Pages of B5 or Executive size paper that have been fed
	ENVLOP:	Envelops that have been fed
	A5:	Pages of A5 size paper (including A5R) that have been fed
	OTHER:	Pages of other size paper (including JIS B6) that have been fed
Print pages by paper types *4	PLTNRE:	Printed pages of plain, thin, and recycled paper
	TKTRBD:	Printed pages of thick, ultra-thick and bond paper
	ENVTYP:	Printed pages of envelope, thick envelope, and thin envelope
	HAGAKI:	Printed post cards
	LABEL:	Printed labels
Number of scanned pages	ADSX_PG	Pages scanned in single-side scanning from ADF
Developing bias related time	KDEV_BIAS:	Black developing bias voltage (unit:V)
Power distribution time	POWER:	Total power distribution time
	PWRCNT:	Number of times that the power is turned ON
Jam related items	TTL_JAM	Total paper jams that have occurred
	TR1_JAM	Paper jams that have occurred in paper tray 1
	MN_JAM	Paper jams that have occurred in the manual feed slot
	IN_JAM	Paper jams that have occurred in the machine
	RE_JAM	Paper jams that have occurred around the back cover
	ADSX_JAM	Paper jams that have occurred in single-side scanning from ADF

	LCD	Description
Number of error occurrences	HODN_ER:	Number of errors caused by dirt on the corona wire
	FUSR_ER:	Number of fuser unit errors
	MTLK_ER:	Number of laser scanner motor lock errors
Error log related items	MACHINEERR_##:[*5]	Error history ## displayed for users:Error code/Page count when occurred
	COMERR##:	Last communication error code

[*1] The serial number can be changed using the steps below.

(1) While the serial number is displayed on the LCD, press the [9], [4], [7], and [5] buttons in this order. The first digit of the serial number flashes.

(2) Use the numeric keys to enter the first digit of the machine's serial number, and press the [▶] button to change the flashing digit. Repeat this operation until the nine-digit serial number is entered.

<Entry method of alphabetical characters>

Press the corresponding numeric keys in the table below until the desired alphabetical character is displayed.

Numeric key	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) When serial number entry is completed, press the [OK] button.
The new setting is stored, and the machine returns to the initial state of the maintenance mode.

To abort serial number entry, press the [Stop/Exit] button. Setting is canceled, and the machine returns to the initial state of the maintenance mode.

[*2] Press the [OK] button while the number of times the consumable part has been replaced is displayed, and the date the consumable part was replaced last is displayed.
Press the [OK] button again, and the number of times the consumable part has been replaced is displayed again.

[*3] Average print rate = Print area / printable area

[*4] Paper type according to the printer driver settings. It does not necessarily match the type of paper actual fed.

[*5] 01 to 10 are entered in ## in chronological order. When you press the [OK] button with the machine error history displayed, the page counter value when the error occurred is displayed.

<Operating Procedure>

(1) Press the [8] and [0] buttons in this order in the initial state of the maintenance mode.

(2) Pressing the [Start] or [▼] button displays the next item.
Pressing the [▲] button displays the previous item.

(3) When the [Stop/Exit] button is pressed, the operation is canceled, and the machine returns to the initial state of the maintenance mode.

Note:

• Regarding "MACHINEERR" and "COMERR", when you press the [OK] button with the error history displayed, the page counter value when the error occurred is displayed. Press the [OK] button again to return the LCD to the error history display.

1.3.23 Error code indication (Function code: 82)

<Function>

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

<Operating Procedure>

(1) Press the [8] and [2] buttons in this order in the initial state of the maintenance mode. "MACHINE ERROR X X" is displayed on the LCD.

(2) When the [Stop/Exit] button is pressed, the operation is canceled, and the machine returns to the initial state of the maintenance mode.

1.3.24 Sending communication error list (Function code: 87)

<Function>

This function is used to send the error list to service personnel at a remote service station when a fax communication problem has occurred in the user's machine. Receiving the error list allows the service personnel to analyze the problem current in the user's machine.

<Operating Procedure>

- Service side

(1) The service personnel connects the phone line to the user in question.

- User side

(1) Press the [Menu] button and then the [Start] button while the machine is in the ready state.

(2) Press the [0] button to display "0" on the LCD.

(3) Press the [8] and [7] buttons in this order. "SENDING P.01" is displayed on the LCD, and the error list is sent.

(4) When sending the error list is completed, the machine beeps for one second and returns to the initial state of the maintenance mode.

Note:

• Error list sending operation does not start if the phone line is not connected. Be sure to perform the above operation while the phone line is connected (i.e., while making a call using the built-in H/S, using the additional telephone set, or using the line monitor).

1.3.25 Exit the maintenance mode (Function code: 99)

<Function>

This function is used to exit the maintenance mode. If a fuser error is occurring, this is cleared.

<Operating Procedure>

(1) Press the [9] button twice in the initial state of the maintenance mode. The machine exits the maintenance mode and returns to the ready state.

> **Note:**
> • When a fuser error was occurring, be sure to cool the halogen heater sufficiently before turning ON the power.

2. OTHER SERVICE FUNCTIONS

2.1 Developer Roller Counter Reset Function

This function allows you to manually perform the same operation as when the toner cartridge is replaced with a new one. The purpose of this function is to provide an error resetting method when the toner life display cannot be cleared because the new toner is not recognized by the machine.

(1) Open the front cover.

(2) Press the [Clear] button.
"Replace Drum? Yes No" appears on the LCD.

(3) Reset the counter as described below depending on the type of toner.
Starter toner: Press the [*], [1] and [0] buttons in this order.
Standard toner: Press the [*], [1] and [1] buttons in this order.
High capacity toner: Press the [*], [1] and [2] buttons in this order.
When the type of toner is not clear: Press the [*], [0] and [0] buttons in this order.
(Regarded as the same type as the toner previously set.)
The entered numbers and "Accepted" appear on the LCD for 2 seconds.

(4) After 2 seconds, "Cover is open" appears on the LCD.

(5) Close the front cover.

Note:
• If there is no operation for 30 seconds or more, the machine automatically returns to step (1).

2.2 Parts Life Reset Function (Drum)

This function is used to reset the relevant part counter when the user replaced a periodical replacement part with the correct procedure, and also used to forcibly reset the relevant part counter when an error cannot be reset because the user did not replace a consumable part with the correct procedure.

(1) Press the [3] and [9] buttons at the same time while the machine is in the ready state.

(2) Reset Menu Drum" appears on the LCD. Press the [OK] button.

(3) "Drum 1.Reset 2.Exit" appears on the LCD. Press the [1] or [2] button.

(4) When the [1] button is pressed, the counter is cleared.

Note:

• All replacement parts are always displayed on the LCD even though they have not yet reached the end of life.

• The machine returns to the ready state automatically if no panel operation is performed for 30 seconds.

2.3 Deletion of User Setting Information, etc.

In this machine, the user setting information is stored in the EEPROM and flash memory of the main PCB. You can delete all the data listed below at a time with the procedure given below.

• Information related to Net

• User setting information

<Operating Procedure>

(1) Press the [Menu] button while the machine is in the ready state.

(2) Press the [▲] or [▼] button to display "Initial Setup" on the LCD, and press the [OK] button.

(3) Press the [▲] or [▼] button to display "Reset" on the LCD, and press the [OK] button.

(4) Press the [▲] or [▼] button to display "All Settings" on the LCD, and press the [OK] button.

(5) "1.Reset 2.Exit" appears on the LCD.

(6) Press the [1] button, and "Reboot OK? 1.Yes 2.No" appears on the LCD.

(7) Press the [1] button, and "Accepted" appears on the LCD. The user setting information is deleted, and the machine returns to the ready state.

Note:

• The machine returns to the ready state automatically if no panel operation is performed for 30 seconds.

2.4 Continue Mode / Stop Mode Settings of Toner Cartridge

You can set the machine to Continue Mode after "Replace Toner" is displayed on the LCD. The machine will continue printing until "Toner Ended" is displayed on the LCD. "Stop" is the default setting.

(1) Press the [Menu] button while the machine is in the ready state.

(2) Press the [▲] or [▼] button to display "General Setup" on the LCD, and press the [OK] button.

(3) Press the [▲] or [▼] button to display "Replace Toner" on the LCD, and press the [OK] button.

(4) "Continue" or "Stop" appears on the LCD. (The mode currently set is displayed.)

(5) Press the [▲] or [▼] button to select "Continue" or "Stop".

(6) Press the [OK] button.

(7) Press the [Stop/Exit] button, and the machine returns to the ready state.

Note:
- Printing is not guaranteed when Continue Mode is set.
- The machine returns to the default setting when the toner cartridge is replaced.

2.5 Drum Cleaning

■ Drum cleaning function overview
Insert the plain paper into the manual feed slot to perform drum cleaning.

\<Operating Procedure\>

(1) Open the back cover while the machine is in the ready state.

(2) Press the [Clear] and [Menu] buttons at the same time. "Drum Cleaning" appears on the LCD.

(3) Insert the paper into the manual feed slot.

(4) Drum cleaning is performed with "Please Wait" displayed on the LCD.

(5) The paper is ejected from the back cover, and drum cleaning is completed.

(6) Close the back cover, and the machine returns back to the ready state.

Note:
- When the paper is jammed during drum cleaning, drum cleaning mode is canceled automatically and the error is displayed.

2.6 ON/OFF Setting of Deep Sleep Function

In addition to the sleep function with the normal specifications, the Deep Sleep function is prepared to reduce the power consumption.

The Deep Sleep function is used to stop the operation of the following functions whereas they are available in the normal sleep mode.

- Operation of the wireless LAN
- Operation of all fans

<Transition conditions>

The machine enters the Deep Sleep mode when the user has not operated the machine (from a computer) and no warning such as an error has been issued after it entered the normal sleep mode and all fans stopped. When Secure Print exists, the machine does not enter the Deep Sleep mode.

<How to Exit>

The machine exits the Deep Sleep mode when it receives an input from the external device, for instance when print data is sent from a computer, any button on the control panel is operated, or the front cover is opened or closed.

■ Setting of ON/OFF of the Deep Sleep function

You can set ON/OFF of the Deep Sleep function to avoid the machine from entering the Deep Sleep mode even when the aforementioned conditions are satisfied.

<Operating Procedure>

(1) Press the [Menu] button while the machine is in the ready state.

(2) Press the [▲] or [▼] button to display "General Setup" on the LCD, and press the [OK] button.

(3) Press the [▲] or [▼] button to display "Ecology" on the LCD, and press the [OK] button.

(4) Press the [▲] or [▼] button to display "Sleep Time" on the LCD, and press the [OK] button.

(5) Press the [Start] button and the [▼] button at the same time while "Sleep Time/ *Min" is displayed on the LCD. "Deep Sleep/On*" is displayed on the LCD.

(6) Press the [▲] or [▼] button to change Deep Sleep function between On and Off to display the status you want to set, and press the [OK] button.

(7) The LCD returns to "Sleep Time/ *Min".

Note:
- When no operation is performed for 30 seconds during setting change, the machine returns to the ready state.
- Deep Sleep is default set to On.
- In the procedure (5), the present setting (On or Off) of Deep Sleep is displayed on the LCD.
- "*" is displayed on the right side of the present setting (On or Off) of Deep Sleep.

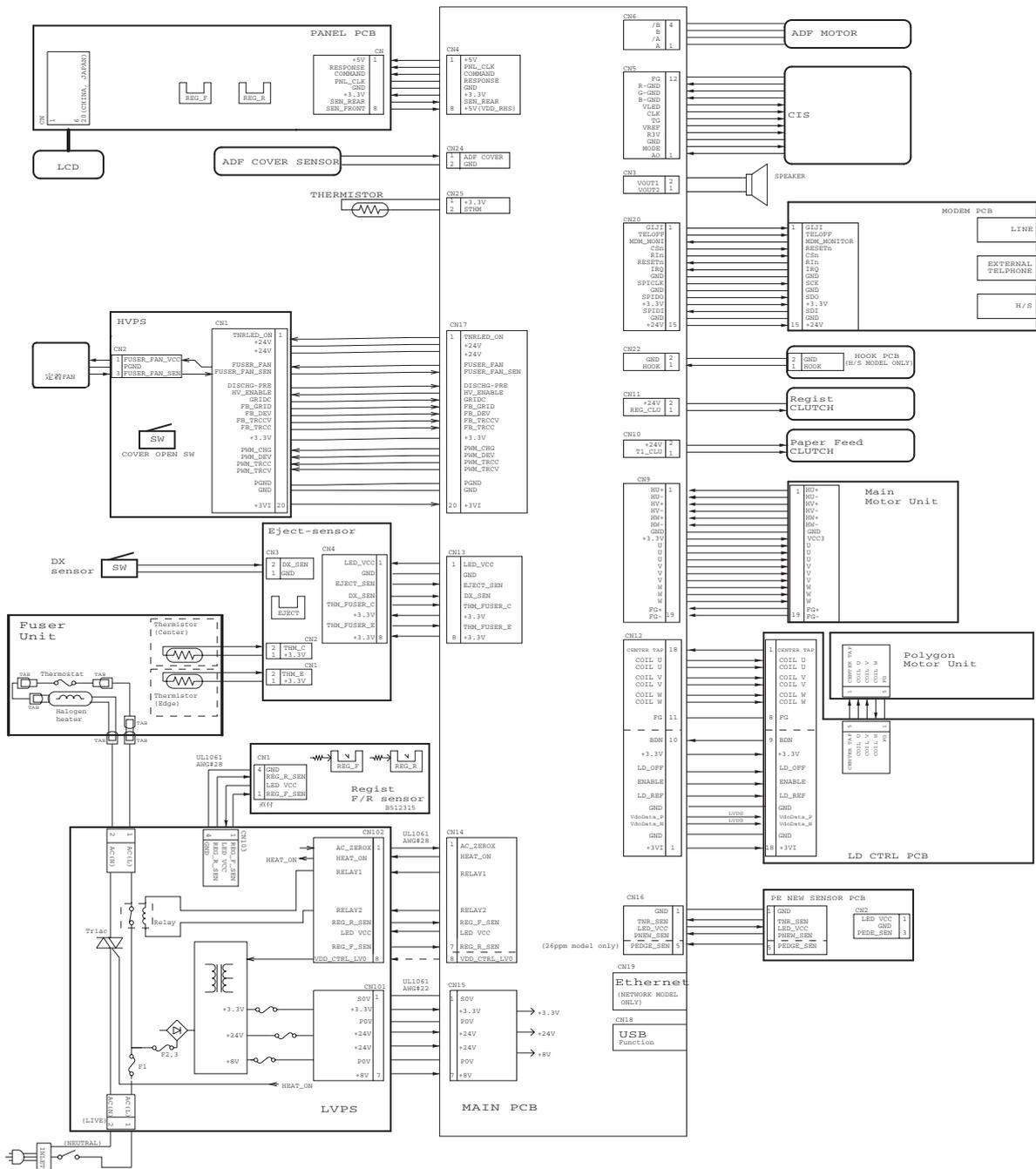
CHAPTER 6
WIRING DIAGRAM

CHAPTER 6 WIRING DIAGRAM

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

CONTENTS

1. WIRING DIAGRAM

■ **Wiring diagram**

PANEL PCB

CN4
+5V
PNL_CLK
COMMAND
RESPONSE
GND
+3.3V
SEN_REAR
+5V(VDD_RHS)

CN24 ADF COVER
GND

CN25 +3.3V
STHM

CN6
/B
B
/A
A

ADF MOTOR

CN5
FG
R-GND
B-GND
G-GND
VLED
CLK
TG
VREF
R3V
MODE
AO

CIS

CN3
VOUT1
VOUT2

SPEAKER

MODEM PCB

CN20
GIJI
TELOFF
MDM_MONI
RESETn
CSn
RIn
RESETn
IRQ
GND
SPICLK
GND
SPIDO
+3.3V
SPIDI
GND
+24V

GIJI
TELOFF
MDM_MONITOR
RESETn
CSn
RIn
IRQ
GND
SCK
GND
SDO
+3.3V
SDI
GND
+24V

LINE

EXTERNAL
TELPHONE

H/S

CN22 GND
HOOK

HOOK PCB
(H/S MODEL ONLY)
HOOK

CN11 +24V
REG_CLU

Regist
CLUTCH

CN10 +24V
T1_CLU

Paper Feed
CLUTCH

HVPS

CN1
TNRLED_ON
+24V
+24V
FUSER_FAN
FUSER_FAN_SEN
DISCHG-PRE
HV_ENABLE
GRIDC
FB_GRID
FB_DEV
FB_TRCCV
FB_TRCC
+3.3V
PWM_CHG
PWM_DEV
PWM_TRCC
PWM_TRCV
PGND
GND
+3VI

CN2
FUSER_FAN_VCC
PGND
FUSER_FAN_SEN

定着FAN

SW
COVER OPEN SW

CN17
TNRLED_ON
+24V
+24V
FUSER_FAN
FUSER_FAN_SEN
DISCHG-PRE
HV_ENABLE
GRIDC
FB_GRID
FB_DEV
FB_TRCCV
FB_TRCC
+3.3V
PWM_CHG
PWM_DEV
PWM_TRCC
PWM_TRCV
PGND
GND
+3VI

CN9
HU+
HU-
HV+
HV-
HW+
HW-
GND
+3.3V
U
U
U
U
V
V
V
V
W
W
W
FG+
FG-

Main
Motor Unit

HU+
HU-
HV+
HV-
HW+
HW-
GND
VCC3
U
U
U
U
V
V
V
V
W
W
FG+
FG-

Eject-sensor

CN3
DX_SEN
GND

DX sensor SW

CN4
LED_VCC
GND
EJECT_SEN
DX_SEN
THM_FUSER_C
+3.3V
THM_FUSER_E
+3.3V

EJECT

CN2
THM_C
+3.3V

CN1
THM_E
+3.3V

CN13
LED_VCC
GND
EJECT_SEN
DX_SEN
THM_FUSER_C
+3.3V
THM_FUSER_E
+3.3V

CN12
CENTER TAP
COIL U
COIL U
COIL V
COIL V
COIL W
COIL W
FG
BDN
+3.3V
LD_OFF
ENABLE
LD_REF
GND
VdoData_P
VdoData_N
GND
+3VI

CENTER TAP
COIL U
COIL U
COIL V
COIL V
COIL W
COIL W
FG
BDN
+3.3V
LD_OFF
ENABLE
LD_REF
GND
VdoData_P
VdoData_N
GND
+3VI

Polygon
Motor Unit

LD CTRL PCB

LVDS
LVDS

Fuser Unit

Thermistor
(Center)

TAB Thermostat TAB

TAB
Halogen heater TAB

TAB TAB

Thermistor
(Edge)

Regist
F/R sensor
BS12315

CN1
GND
REG_R_SEN
LED_VCC
REG_F_SEN
前付

UL1061
AWG#28

REG_F   REG_R

CN102
AC_ZEROX
HEAT_ON
RELAY1
RELAY2
REG_R_SEN
LED_VCC
REG_F_SEN
VDD_CTRL_LV0

CN103
REG_F_SEN
LED_VCC
REG_R_SEN
GND

HEAT_ON

CN14
AC_ZEROX
HEAT_ON
RELAY1
RELAY2
REG_F_SEN
LED_VCC
REG_R_SEN
VDD_CTRL_LV0

UL1061
AWG#28

(26ppm model only)

CN16
GND
TNR_SEN
LED_VCC
PNEW_SEN
PEDGE_SEN

GND
TNR_SEN
LED_VCC
PNEW_SEN
PEDGE_SEN

PE NEW SENSOR PCB

CN2
LED VCC
GND
PEDE_SEN

Triac

Relay

F2,3

F1

CN101
SSV
+3.3V
P0V
+24V
+24V
P0V
+8V

HEAT_ON

CN15
S0V
+3.3V
P0V
+24V
+24V
P0V
+8V

UL1061
AWG#22

+3.3V
+24V
+8V

CN19
Ethernet
(NETWORK MODEL ONLY)

CN18
USB
Function

AC (N)   AC (L)

LVPS

MAIN PCB

AC (L)

(LIVE)

(NEUTRAL)

LCD

ADF COVER SENSOR

THERMISTOR

Confidential

CHAPTER 7
PERIODICAL MAINTENANCE

CHAPTER 7 PERIODICAL MAINTENANCE

CONTENTS

1. PERIODICAL REPLACEMENT PARTS

There are no parts to be replaced periodically.

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APPENDIX 1
SERIAL NUMBERING SYSTEM

APPENDIX 1   SERIAL NUMBERING SYSTEM

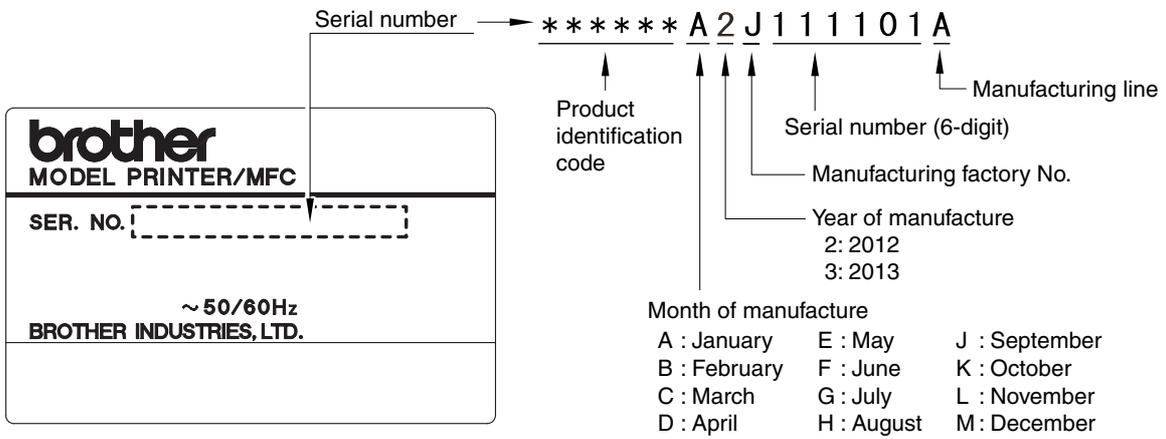■ **Serial number labels attached on the machine (2 locations)**

<How to Read>

Serial number → ✻✻✻✻✻✻ A 2 J 1 1 1 1 0 1 A

- Product identification code
- Month of manufacture
- Year of manufacture
  2: 2012
  3: 2013
- Manufacturing factory No.
- Serial number (6-digit)
- Manufacturing line

Month of manufacture

A : January	E : May	J : September
B : February	F : June	K : October
C : March	G : July	L : November
D : April	H : August	M : December

MODEL PRINTER/MFC
SER. NO.
~50/60Hz
BROTHER INDUSTRIES, LTD.

Fig. App. 1-1
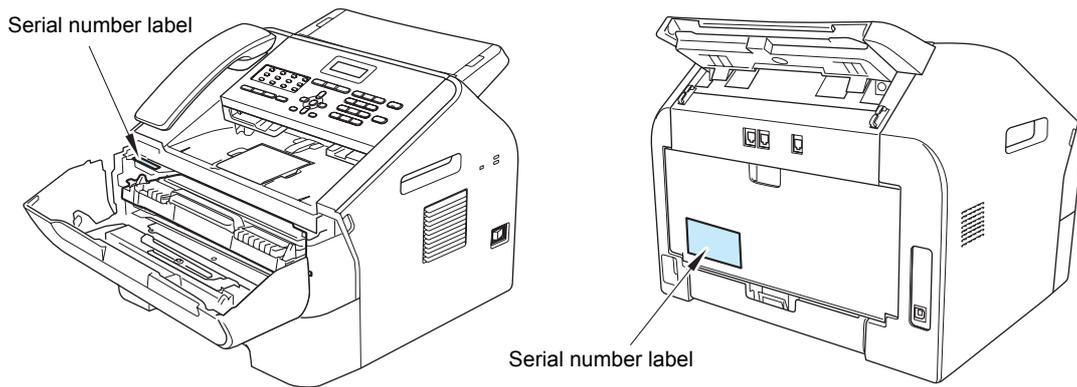
<Location>

Serial number label

Serial number label

Fig. App. 1-2

APPENDIX 2
DELETING USER SETTING INFORMATION

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

APPENDIX 2   DELETING USER SETTING INFORMATION

In this machine, the user setting information is stored in the EEPROM and flash memory of the main PCB ASSY. You can delete all the data listed below at a time with the procedure given below.

- Information related to Net
- User setting information

<Operating Procedure>

(1) Press the [Menu] button while the machine is in the ready state.

(2) Press the [▲] or [▼] button to display "Initial Setup" on the LCD, and press the [OK] button.

(3) Press the [▲] or [▼] button to display "Reset" on the LCD, and press the [OK] button.

(4) Press the [▲] or [▼] button to display "All Settings" on the LCD, and press the [OK] button.
"1.Reset / 2.Exit" appears on the LCD.

(5) Press the [1] button, and "Reboot OK? 1.Yes 2.No" appears on the LCD.

(6) Press the [1] button, and "Accepted" appears on the LCD. The user setting information is deleted, and the machine returns to the ready state.

Note:

- The machine returns to the ready state automatically if no panel operation is performed for 30 seconds.

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APPENDIX 3
INSTALLING MAINTENANCE DRIVER

APPENDIX 3   INSTALLING MAINTENANCE DRIVER

To identify multiple machines connected to the computer via USB, the computer needs to configure the corresponding number of virtual USB devices by a driver or software. If you connect a multiple number of machines to your computer, the same number of virtual USB devices will be automatically configured on your computer.

To prevent virtual USB devices from being configured without limitation, use the unique driver installation procedure described below that enables your computer to identify multiple machines via one single virtual USB device.

\<Procedures\>

(1) While the machine is in the ready state, press the [OK] button and then the [Start] button. Next, press the [▲] button 4 times to enter the maintenance mode.

(2) "▮▮MAINTENANCE▮▮▮" appears on the LCD, and the machine goes into the maintenance mode.

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

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

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

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

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

(8) The Found New Hardware Wizard startup window appears. Select "No, not this time" and click [Next].

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

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

(11) When the driver is installed successfully, the Found New Hardware Wizard completion window appears. Click [Finish].
Repeat steps from (9) to (11) three times to complete the driver installation procedure.

(12) Disconnect the USB cable.

(13) Press the [▲] or [▼] button to display "MAINTENANCE 99" on the LCD. Then, press the [OK] button. The machine exits the maintenance mode and returns to the ready state.
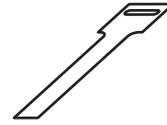
APPENDIX 4

HOW TO MAKE PROTECTIVE MATERIAL FOR DRUM UNIT

APPENDIX 4   HOW TO MAKE PROTECTIVE MATERIAL FOR DRUM UNIT

Protective material   Paper strip

Follow the procedure below to make the protective material for the drum unit, and use it when packing the machine.

<Procedures>

(1) Pass the paper strip through the hole on the protective material with the white surface of paper facing down.

(2) Pass the tip of the paper strip through the hole on the paper strip, and then pull the tip in the direction of the arrow.
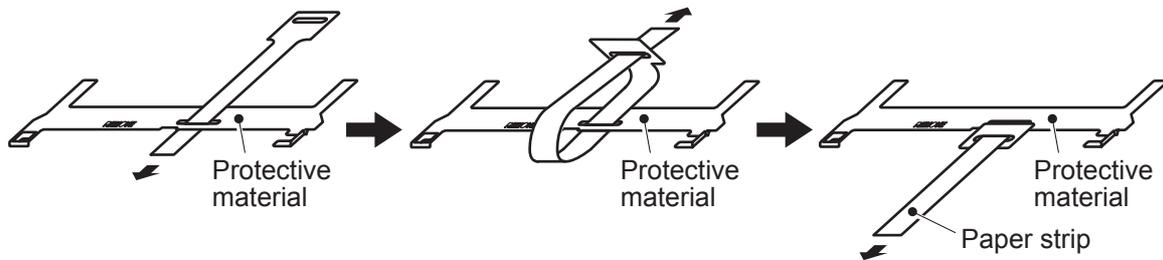

Fig. APP. 4-1