



# MF6600/D1100 Series Service Manual



F-0-1



### Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

### Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

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of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

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### Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

## Explanation of Symbols

The following symbols are used throughout this Service Manual.

Symbols	Explanation		Symbols	Explanation
	Used to show permission.			Remove the screw.
	Used to show prohibition.			Tighten the screw.
	Check.			Remove the claw.
	Check visually.			Insert the claw.
	Check the noise.			Use the bundled part.
	Disconnect the connector.			Push the part.
	Connect the connector.			Plug the power cable.
	Remove the cable/wire from the cable guide or wire saddle.			Turn on the power.
	Set the cable/wire to the cable guide or wire saddle.			

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The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

In the diagrams,  represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow  indicates the direction of the electric signal.

The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.

2. In the digital circuits, '1' is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low". (The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (\*) as in "DRMD\*" indicates that the DRMD signal goes on when '0'.

In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine.



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# Safety Precautions

- CDRH Provisions
- Laser Safety
- Toner Safety
- Notes When Handling A Battery
- Notes On Assembly/Disassembly



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MF6600/D1100 Series

## CDRH Provisions

Food and Drug CDRH (Center for Devices and Radiological Health) under FDA (Food and Drug Administration) enforced provisions of the section for laser and laser products on August 2, 1976. These provisions are applicable to all laser products manufactured or assembled after August 1, 1976 and allow only products certified their compliance with the provisions to market in the US. Each product shall have affixed the applicable label as shown below to follow the labeling requirements prescribed in CDRH provisions.

Note that the wording included in labels is different depending on laser product classifications.

### CAUTION:

Note that the wording included in labels is different depending on laser product classifications.



## Laser Safety

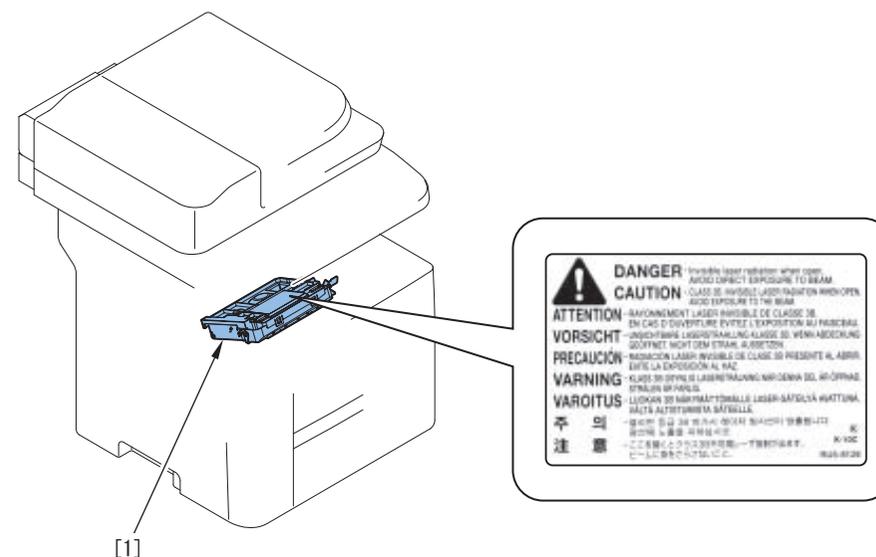
### About Laser Beams

Laser radiation may be hazardous to human. The laser scanner unit mounted in this device is sealed in the protective housing and the external cover to prevent laser beams from leaking to the environment. As long as the device is operated under normal conditions, users are safely arded from laser leaks.

### Handling Laser Scanner Unit

Before providing service works for the laser scanner unit and its peripherals, ensure to turn off the power of the device.

Any cover with potential dangers of laser beam reflection has affixed the caution label at the position shown in the figure below.



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## Toner Safety

### About Toner

Toner is a nontoxic matter composed of plastic, iron and a trace of pigments.

Never throw toner in flames to avoid explosion.

#### CAUTION:

Never throw toner in flames to avoid explosion.

### Handling Adhered Toner

- Use dry tissue paper to wipe off toner adhered to skin or clothes and wash in water.
- Never use warm water for cleaning up toner to prevent toner particles from being gelated to soak into fibers permanently.
- Toner particles are reactive with vinyl polymers. Avoid contacting these materials.

## Notes When Handling A Battery

#### CAUTION:

Risk Of Explosion If Battery Is Replaced By An Incorrect Type.

Dispose Of Used Batteries According To The Instructions.

The following warnings are given to comply with Safety Principles (EN60950).

#### CAUTION:

Wenn mit dem falschen Typ ausgewechselt, besteht Explosionsgefahr.

Gebrauchte Batterien gemäß der Anleitung beseitigen.

## Notes On Assembly/Disassembly

Follow the items below to assemble/disassemble the device.

1. Disconnect the power plug to avoid any potential dangers during assembling/disassembling works.
2. If not specially instructed, reverse the order of disassembly to reinstall.
3. Ensure to use the right screw type (length, diameter, etc.) at the right position when assembling.
4. To keep electric conduction, binding screws with washers are used to attach the grounding wire and the varistor. Ensure to use the right screw type when assembling.
5. Unless it is specially needed, do not operate the device with some parts removed.
6. Never remove the paint-locked screws when disassembling.

CAUTION

DOUBLE POLE/NEUTRAL FUSING

F-04



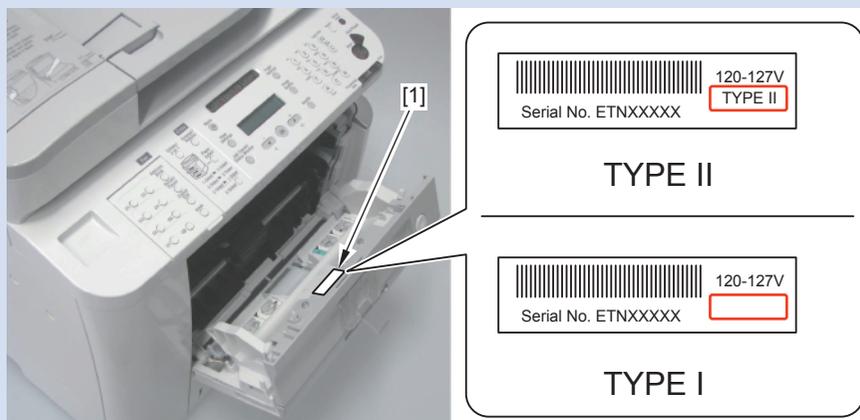
# Product Overview

- Product Lineups
- Product Features
- Specifications
- Name of Parts

## Product Lineups

### MEMO:

This product has two model types according to the country: TYPE I and TYPE II.  
The way of distinguishing TYPE I and TYPE II is written in the Label [1] inside the Cartridge Cover.



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Be sure to check the type, and then refer to the Service Manual.

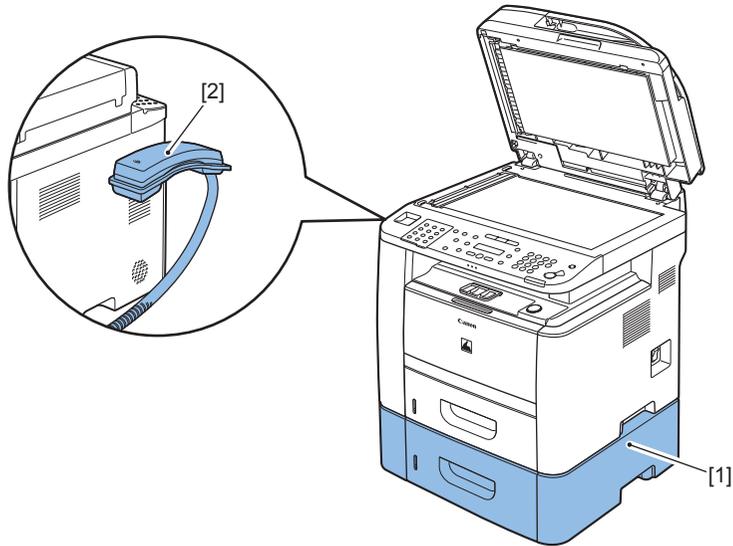


## Main Unit

Function	Canon i-SENSYS Series	Canon imageCLASS Series			
	MF6680dn	D1120	D1150	D1170	D1180
Appearance	 F-1-2				
Copy	○	○	○	○	○
Print	○	○	○	○	○
Fax	○	-	○	○	○
USB Scan	-	-	-	-	-
Network Scan	○	○	○	○	○
Remote UI	○	○	○	○	○
DADF	○	○	○	○	○
Automatic 2-sided Print	○	○	○	○	○

T-1-1

## Options



F-1-3

No.	Name	Description	Remarks
[1]	Canon Cassette Feeding Unit-U1	Approx. 500 Sheets (Plain paper 80g/ m2)	-
[2]	TELEPHONE 6 KIT Long cord Cool White		MF6680dn

T-1-2

## Product Features

### Features

#### ■ Compact MFP

The product compactified with lower height.



F-1-4

#### ■ High-speed MFP

This compact A4 color MFP can prints at high speeds of up to 30 pages per minute (A4/LTR).

#### ■ Power-saving MFP

This product employed SURF fixing method with a ceramic heater and 3W sleep mode to achieve electric power saving.

## Specifications

### Main Unit Specifications

Item	Specification/function
Body	Desktop (DADF standard type)
Light Source Type	LED
Photosensitive Medium	OPC drum
Image Reading Method	Contact Sensor Reading Method
Reproduction Method	Indirect electrostatic copying method
Exposure Method	Semiconductor laser
Charging Method	Roller contact charging method
Development Method	Dry system - element jumping development method
Transfer Method	Roller transfer method
Separation Method	Electrostatic separation (neutralizing needle) and curvature separation
Pickup Method	Cassette pick-up: 1 cassette Multi manual feeding pick-up
Cassette Pickup Method	Pad separation method
Multifeeder Pickup Method	Pad separation method
Drum Cleaning Method	Rubber blade
Fixing Method	On-demand
Toner Type	Magnetic negative toner
Toner Supply Type	By drum style toner cartridge
Toner Save Mode	Yes
Original Type	Sheets, books, solids (up to 2 kg)
Maximum Original Size	Fixed: 216mm x 356mm ADF: 216mm x 356mm
Reproduction Ratio	Zoom: 0.50 to 2.00 (specified by the percent)
Warm-up Time	16.0 seconds or less* (temperature: 20 deg C, humidity: 65%; from when the machine turns ON the main power switch until the standby display appears) * Warm-up time may differ depending on the condition and environment of the machine.
Reading Resolution	<TEXT/PHOTO>: 300 dpi x 600 dpi <TEXT>, <PHOTO>, <TEXT/PHOTO+>: 600 dpi x 600 dpi
Printing Resolution	600 x 600 dpi
First Print Time	6 seconds or less (A4/LTR)

Item	Specification/function
First Copy Time	8 seconds or less (A4/LTR)
Print Speed	Approximately 30 sheets / minute (A4/LTR)
Cassette Paper Size	LTR, LGL, A4, B5, A5, Executive, Oficio, Brazil-Oficio, Mexico-Oficio, FLSP, A-FLS, Government-LTR, Government-LGL
Multifeeder Paper Size	76 × 127 to 216 × 356 mm
Cassette Paper Type	Plain Paper (80g / m2), Plain Paper (60 to 80 g/m2) recycled paper (64 to 80 g/m2), Color (64 g/m2), Heavy Paper 1 (90 to 120 g/m2),
Multifeeder Tray Paper Type	Plain Paper (80g / m2), Plain Paper (60 to 80 g/m2), recycled paper (64 to 80 g/m2), Color (64 g/m2), Heavy Paper 1 (90 to 150 g/m2), Heavy Paper 2 (151 to 163 g/m2), Transparency, Labels, Envelopes
Cassette Capacity	500 sheets (80g / m2)
Multifeeder Tray Capacity	50 sheets (80g / m2)
Delivery Tray Stack	65 sheets (60 - 80g / m2)
Continuous Reproduction	1 to 99 sheets
Duplex Method	Auto Duplexing
Life of Cartridge	Approx.5000 sheets (Starter Cartridge:Approx.2,300 sheets)
Interface	Standard:USB2.0, option:No
Hard Disk	Standard:No, option:No
Memory	128MB
Energy Save Mode	Yes. (Manual ON / OFF, automatically OFF after a set period of time, automatically ON when receiving facsimile / print data)
Operating Environment (Temperature Range)	10 to 30 degrees C
Operating Environment (Humidity Range)	20 to 80 %
Operating Environment (Atmospheric Pressure)	0.16 to 1.01 hPa (0.6 to 1 bar)
Power Supply Rating	120V-127V (60Hz) 220-240V, 50/60Hz
Power Consumption (Maximum)	Maximum consumption: Less than 1090 W
Power Consumption	During operation: approximately 550W or less (reference value) At standby: approximately 18W (reference value)In sleep mode: approximately 3W (reference value)
Dimensions	464 mm (H) × 472 mm (D) × 450 mm (W)
Weight	Approximately 20.6 kg (including the toner cartridge)
Network	Yes

Item	Specification/function
PDL	BDL-Image, PCL5 / PCLXL
SEND	Yes

T-1-3

## ADF Specifications

Item	Specification/function
Original position	center reference
Original processing mode	1-sided to 1-sided copy, 2-sided to 2-sided copy, 1-sided to 2-sided copy, 2-sided to 1-sided copy
Original reading	stream reading method
Stack	A4/LTR: 50 sheets, LGL: 30 sheets
Mixed original sizes	Yes
Original AE detection	No
Original size recognition	No
Stamp	No
Operating environment	pursuant to the host machine

T-1-4

## FAX Specifications

Item	Specification/function
Suitable Line	Public Switched Telephone Network (PSTN) Up to 28.8Kbps in modem speed is currently available in PSTN. Note that available modem speed is telephone-line dependent. Telephone line connection: 1
Communication Protocol	Super G3
Modulation Method	Image modulation : V.34/V.8/V.17/V.29/V.27ter Transmission procedure : V.21
Transmission Speed	33,600 bps
Coding	Compression method: JBIG, MMR, MR, MH
Error Correction	ECM
Minimum Receivable Input Level	V.17, V.27ter, V.29: -6 to -43 dBm V.34: -10 to -43 dBm
Modem IC	CONEXANT DFX336
Scanning Line Density	Normal : 8 dots/mm x 3.85 lines/mm Fine : 8 dots/mm x 7.7 lines/mm Super fine : 8 dots/mm x 15.4 lines/mm Ultra fine : 16 dots/mm x 15.4 lines/mm
Half Tone	256 tones
Reproduction Resolution	600 x 600 dpi
Receivable Reduction Setting	Automatic reduction: 75-100% (1% increment)
FAX/TEL Switching	Available
Answering Machine Transfer Setting	Available
Remote Reception	Available
Auto-dialing	Available
Delayed Transmission	Available
Broadcast Transmission	Destinations: up to 201
Dual Access	Up to 70 schedules
Image Data Backup	Available

T-1-5

## Print Speed.

(Unit: page/minute)

Paper type	Cassette		MP Tray		OP Cassette	
	1-sided	2-sided	1-sided	2-sided	1-sided	2-sided
A4	30	16.4	30	16.4	30	16.4
LTR	30	16.7	30	16.7	30	16.7
LGL	25.3	13.1	25.3	13.1	25.3	13.1
B5	13>12>8>6	-	16>12>8>6	-	10>10>8>6	-
A5	15>12>8>6	-	17>12>8>6	-	11>11>8>6	-
Strip of paper (90 to 297 mm)	-	-	2>1	-	-	-
Postcard	-	-	17>12>8>6	-	-	-
Envelope	-	-	17>12>8>6	-	-	-

T-1-6



## Paper types

( : available -: not available)

Paper types		Printer driver setting	Cassette	Multi-purpose Tray
Plain	From 16 to 21 lb (60 to 80 g/m2)	Plain Paper		
	From 16 to 21 lb (60 to 80 g/m2)	Plain Paper L		
Color	17 lb (64 g/m2)	Color		
Recycled*	From 17 to 21 lb (64 to 80 g/m2)	Recycled		
Thick	From 24 to 32 lb (90 to 120 g/m2)	Heavy Paper 1		-
	From 24 to 40 lb (90 to 150 g/m2)		-	
	From 40 to 43 lb (151 to 163 g/m2)	Heavy Paper 2	-	
Transparency		Transparency *1	-	
Label		Label	-	
Envelope		Envelope	-	

T-1-7

\*1: Use only LTR or A4 transparencies made especially for this machine.

## Paper size

( : available -: not available)

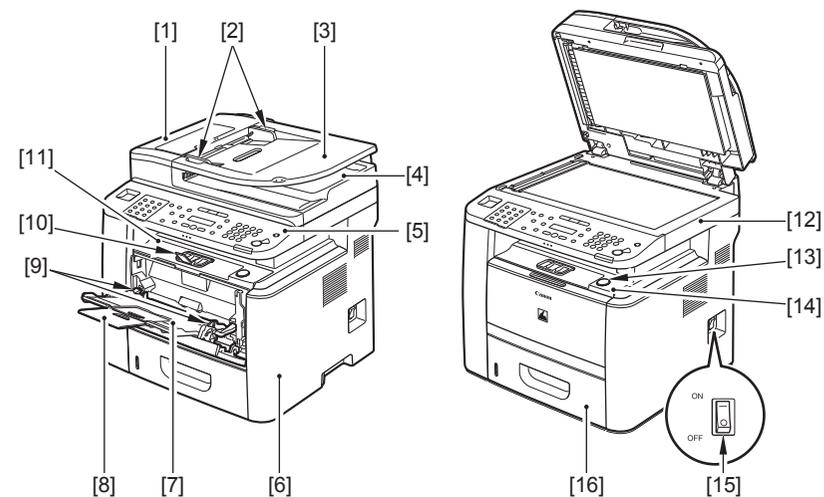
Paper size	Cassette	Multi-purpose Tray
A4 (210.0 mm × 297.0 mm)		
B5 (182.0 mm × 257.0 mm)		
A5 (148.0 mm × 210.0 mm)		
Legal (LGL) (215.9 mm × 355.6 mm)		
Letter (LTR) (215.9 mm × 279.4 mm)		
Executive (EXEC) (184.0 mm × 266.7 mm)		
Officio (215.9 mm × 317.5 mm)		
Brazil Officio (215.9 mm × 355.6 mm)		
Mexico Officio (215.9 mm × 341 mm)		
Government Letter (203.2 mm × 266.7 mm)		
Government Legal (203.2 mm × 330.2 mm)		
FOOLSCAP (215.9 mm × 330.2 mm)		
A-FLS (205.7 mm × 337.82mm)		
3"×5" to Legal (76 × 127 to 216 mm× 356 mm)	-	

T-1-8

## Name of Parts

### External View

#### Front Side

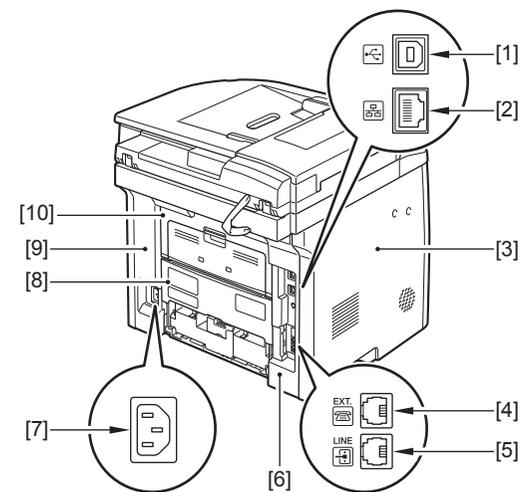


F-1-5

Key	Name	Service Pars No.	Remarks	Reference
[1]	DADF (Duplex Automatic Document Feeder)	-	-	(Refer to page 4-30)
[2]	Slide Guides	FC9-1501	Front	-
		FC9-1502	Rear	-
[3]	Document Feeder Tray	FM3-9534	-	-
[4]	Document Delivery Tray	-	-	-
[5]	Control Panel	FM3-9803	(D1180 TYPE I)	(Refer to page 4-70)
		FM4-6439	(D1180 TYPE II)	
		FM3-9817	(D1170 TYPE I)	
		FM4-6440	(D1170 TYPE II)	
		FM3-9818	(D1150 US,CA,LTN TYPE I)	
		FM4-6441	(D1150 US,CA,LTN TYPE II)	
		FM4-1649	(D1150 LTN,SG,AU TYPE I)	
		FM4-6443	(D1150 LTN,SG,AU TYPE II)	
		FM4-1651	(D1150 KR TYPE I)	
		FM4-6445	(D1150 KR TYPE II)	
		FM4-6444	(D1150 CN TYPE II)	
		FM3-9819	(D1120 TYPE I)	
		FM4-6442	(D1120 TYPE II)	
		FM4-1647	(MF6680dn TYPE I)	
FM4-6446	(MF6680dn TYPE II)			
FM4-1648	(MF6640dn TYPE I)			
[6]	Right Cover	FC9-2055	-	(Refer to page 4-23)
[7]	Multi-purpose Tray	-	-	-
[8]	Multi-purpose Tray Extension	-	-	-
[9]	Slide Guides for Multi-purpose Tray	-	-	-
[10]	Paper Stopper	-	-	-
[11]	Upper Cover	FC9-1999	-	(Refer to page 4-28)
[12]	Reader Unit	FM3-9525	-	(Refer to page 4-35)
[13]	Open Button	-	-	-
[14]	Front Cover	-	-	(Refer to page 4-26)
[15]	Main Power Switch	FM4-1656	(TYPE I)	-
		FM4-5367	(TYPE II)	-
[16]	Paper Cassette	FM3-9798	-	-

T-1-9

## Rear Side



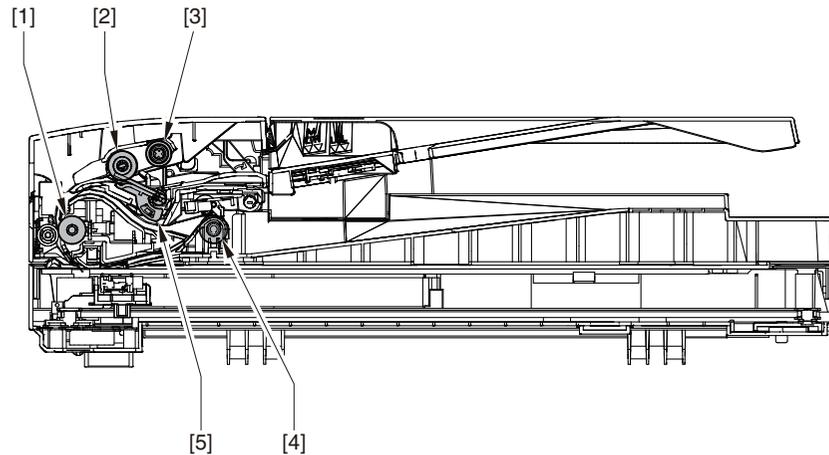
F-1-6

Key	Name	Service Pars No.	Remarks	Reference
[1]	USB Port	-	-	-
[2]	Ethernet Port	-	-	-
[3]	Left Cover	FC9-2017	-	(Refer to page 4-19)
[4]	External Device Jack	-	-	-
[5]	Telephone Line Jack	-	-	-
[6]	Left Rear Cover	FC9-2020	(FAX Model)	(Refer to page 4-22)
		FC9-4916	(Except FAX Model)	-
[7]	Power Socket	FM4-1607	(TYPE I)	-
		FM4-5386	(TYPE II)	-
[8]	Duplex Unit Cover	-	-	-
[9]	Right Rear Cover	FC9-2056	-	(Refer to page 4-26)
[10]	Rear Cover	FM3-9791	-	-

T-1-10

## Cross Sectional View

### ADF/Reader Unit



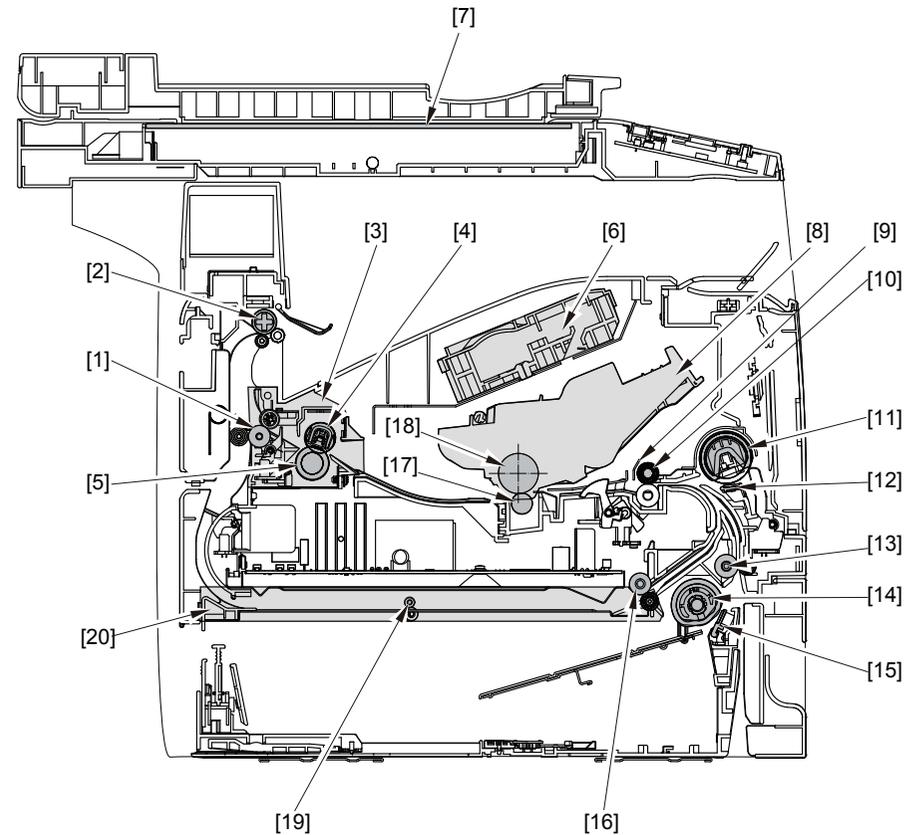
F-1-7

Key	Name	Service Pars No.	Reference
[1]	ADF Paper Feed Roller	FM3-9540	-
[2]	ADF Separation Roller	FL2-6637	(Refer to page 4-39)
[3]	ADF Pickup Roller	FC7-6189	(Refer to page 4-38)
[4]	ADF Delivery roller	FM4-1875	-
[5]	ADF Separation Pad	FC7-6297	(Refer to page 4-41)

T-1-11



### Printer



F-1-8

Key	Name	Service Pars No.	Reference
[1]	Fixing delivery roller	-	-
[2]	Face-down delivery roller	FM4-1875	-
[3]	Fixing unit	RM1-6405 (120V) RM1-6406 (230V)	(Refer to page 4-98)
[4]	Fixing film unit	-	-
[5]	Pressure roller	-	-
[6]	Laser scanner unit	RM1-6424	(Refer to page 4-93)
[7]	Copyboard glass (scanning glass)	-	(Refer to page 4-46)
[8]	Cartridge	-	-
[9]	Registration shutter	-	-
[10]	Registration roller	RM1-6419	-

Key	Name	Service Pars No.	Reference
[11]	Multi-purpose tray pickup roller	RL1-2120	(Refer to page 4-108)
[12]	Multi-purpose tray separation pad	RL1-2115	(Refer to page 4-108)
[13]	Feed roller	-	-
[14]	Cassette pickup roller	RM1-6414	(Refer to page 4-106)
[15]	Cassette separation pad	RM1-6454	(Refer to page 4-107)
[16]	Duplex re-pickup roller	-	-
[17]	Transfer roller	RM1-6450	(Refer to page 4-95)
[18]	Photosensitive drum	-	-
[19]	Duplex feed roller	-	-
[20]	Duplex feed unit	RM1-6441	(Refer to page 4-104)

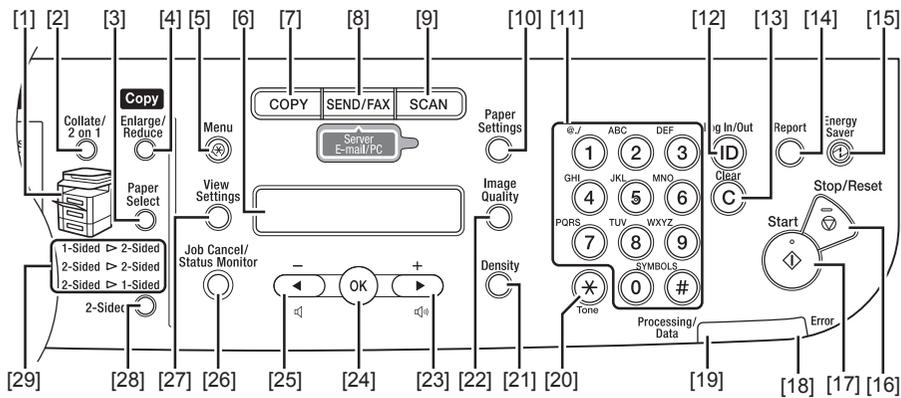
T-1-12

Key	Name	Key	Name
[7]	[COPY] key	[22]	[Image Quality] key
[8]	[SEND/FAX] key (For the D1180/D1170/MF6680dn) [FAX] key (For the D1150) [SEND] key (For the MF6640dn)"	[23]	[+] key
[9]	[SCAN] key	[24]	[OK] key
[10]	[Paper Settings] key	[25]	[-] key
[11]	Numeric keys	[26]	[Job Cancel/Status Monitor] key
[12]	[Log In/Out] key (ID key)	[27]	[View Settings] key
[13]	[Clear] key	[28]	[2-Sided] key
[14]	[Report] key	[29]	2-Sided mode indicator
[15]	[Energy Saver] key		

T-1-13

## Operation Panel

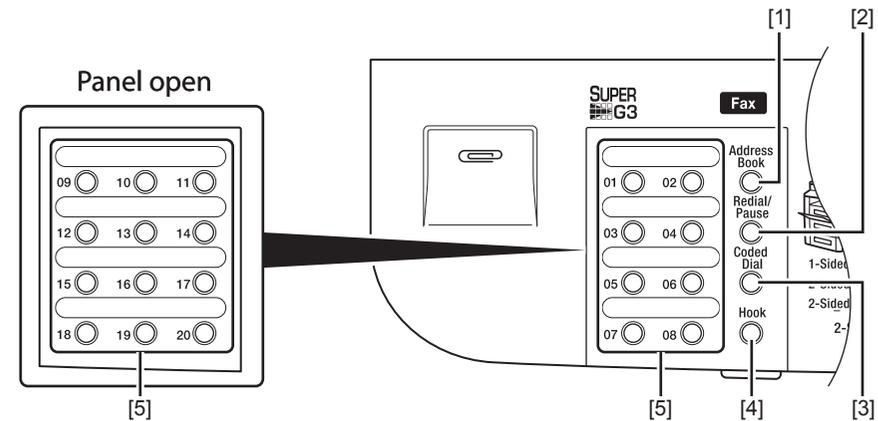
### Main Operation Panel



F-1-9

Key	Name	Key	Name
[1]	Paper Select indicator	[16]	[Stop/Reset] key
[2]	[Collate/2 on 1] key	[17]	[Start] key
[3]	[Paper Select] key	[18]	Error indicator
[4]	[Enlarge/Reduce] key	[19]	Processing/Data indicator
[5]	[Menu] key	[20]	[Tone] key
[6]	Display	[21]	[Density] key

### Send Operation Panel

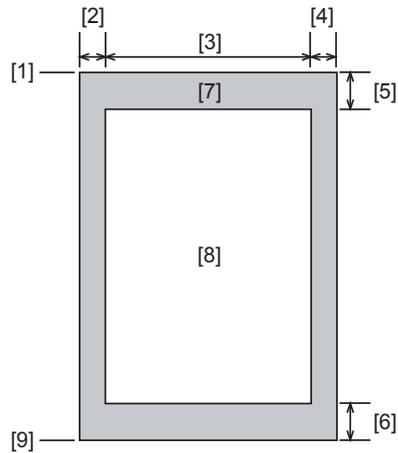


F-1-10

Key	Name	Key	Name
[1]	[Address Book] key	[4]	[Hook] key
[2]	[Recall/Pause] key (For the D1180/D1170/MF6680dn) [Redial/Pause] key (For the D1150)"	[5]	[Coded Dial] key
[3]	[Coded Dial] key		

T-1-14

## Function List



F-1-11

Key	Item	Key	Item
[1]	leading edge of original	[6]	trailing edge margin
[2]	left margin	[7]	non-scanning area
[3]	effective scanning width	[8]	scanning range
[4]	right margin	[9]	trailing edge of original
[5]	leading edge margin		

### Copy Area

Item	Size
left margin	5.0 mm
right margin	5.0 mm
leading edge margin	5.0 mm
trailing edge margin	5.0 mm

### Reception Print Area

Item	Size
left margin	4.0 mm
right margin	4.0 mm
leading edge margin	5.0 mm
trailing edge margin	5.0 mm

### BDL Print Area

Item	Size
left margin	5.0 mm
right margin	5.0 mm
leading edge margin	5.0 mm
trailing edge margin	5.0 mm

### PCL Print Area

Item	Size
left margin	4.2 mm
right margin	4.2 mm
leading edge margin	4.2 mm
trailing edge margin	4.2 mm

## Operation Environment of the Printer Driver

### Operation environment

Microsoft Windows 98/98SE/Me, Windows 2000 Server, Windows 2000 Professional, Windows XP Professional, Windows XP Home Edition, Windows Server 2003, Windows Vista, Windows 7, MacOS X v10.2.8 or later

### Hardware environment

- IBM PC or IBM compatible PC
- CD-ROM drive or network environment accessible to CD-ROM
- PC equipped with USB port and installed with USB class driver

### Network Specifications

Name	Item
Connector	RJ45
Interface	Ethernet II
Communication Speed	10Base-T/100Base-TX
Communication Mode	FULL DUPLEX/half DUPLEX
Supported Protocol	TCP/IP

## SEND Specifications

The Send function is available for the MF6680dn/D1170/D1180.

Send to file server	
Communication Protocol	SMB (TCP/IP)
Data Format	TIFF (B&W), PDF (B&W), JPEG (Color), PDF (Compact) (Color)
Resolution	100 x 100 dpi, 150 x 150 dpi, 200 x 100 dpi, 200 x 200 dpi, 300 x 300 dpi, 400 x 400 dpi, 600 x 600 dpi
System Environment	Windows 2000 Server/Professional (SP1 or later), Windows XP Professional/Home Edition, Windows Vista, Windows 7, Windows Server 2003, Windows Server 2008, Mac OS X, Red Hat Linux 7.2
Interface	100BASE-TX, 10BASE-T
Color Mode	Color, B&W (black and white)
Original Type	Text, Text/Photo, Photo

T-1-15

E-mail	
Communication Protocol	SMTP, POP3
Resolution	100 x 100 dpi, 150 x 150 dpi, 200 x 100 dpi, 200 x 200 dpi, 300 x 300 dpi, 400 x 400 dpi, 600 x 600 dpi
Format	TIFF (B&W), PDF (B&W), JPEG (Color), PDF (Compact) (Color)
Original Size	LTR, LGL, STMTR, STMT, A4, A5, B5
Server Software	Microsoft Exchange Server 5.5 (SP2), Sendmail 8.11.2, Lotus Domino R4.5/R5

T-1-16

Facsimile	
Applicable Line	Public Switched Telephone Network (PSTN)*1
Compatibility	G3
Data Compression Schemes	MH, MR, MMR, JBIG
Modem Speed	33.6 Kbps Automatic fallback
Transmission Speed	Approx. 3 seconds/page*2 at 33.6 Kbps, ECM-MMR, transmitting from the memory
Transmission/Reception Memory	Maximum approx. 512 pages*2 (total pages of transmission/reception)
Fax Resolution	FINE: 203 pels/inch x 196 lines/inch (8 pels/mm x 7.7 lines/mm) PHOTO: 203 pels/inch x 196 lines/inch (8 pels/mm x 7.7 lines/mm) SUPER FINE: 203 pels/inch x 392 lines/inch (8 pels/mm x 15.4 lines/mm) ULTRA FINE: 406 pels/inch x 392 lines/inch (16 pels/mm x 15.4 lines/mm) STANDARD: 203 pels/inch x 98 lines/inch (8 pels/mm x 3.85 lines/mm)

T-1-17

# 2

## Technical Overview

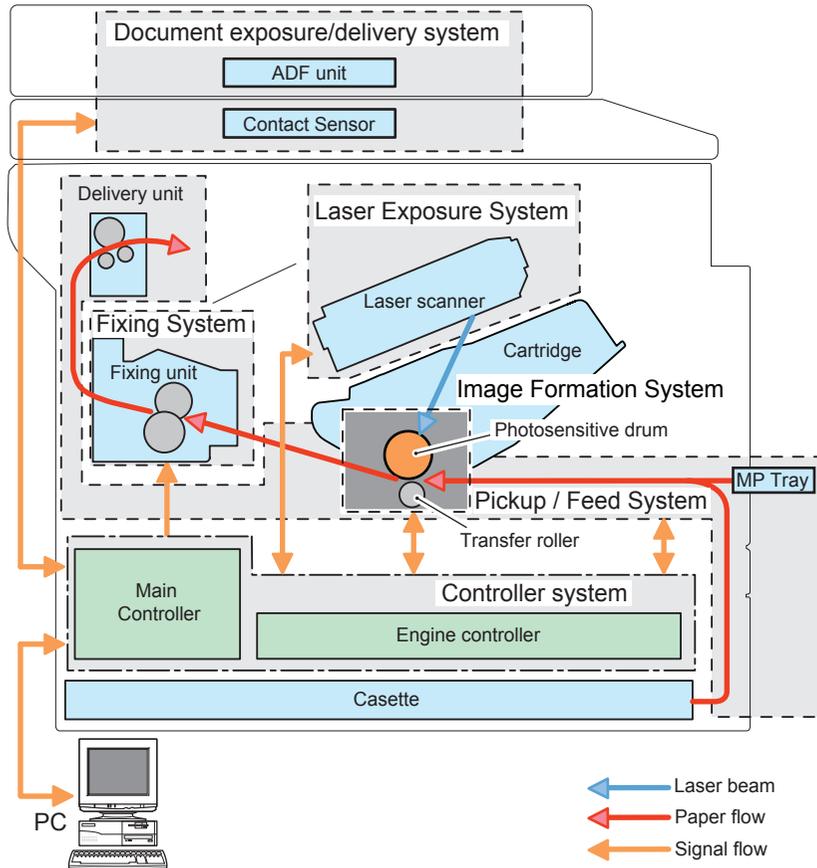
- Basic Configuration
- Document Exposure/  
feeder System
- Engine Control System
- Laser Scanner System
- Image-formation System
- Fixing Unit System
- Media Feed System

# Basic Configuration

## Configuration Function

This device is roughly composed of the 6 functional blocks as shown in the figure below

• Document Exposure/Delivery System	• Image Formation System
• Controller System	• Fixing System
• Laser Exposure System	• Pickup / Feed System



F-2-1

## Basic Sequence

### Basic Operational Sequence

The CPU on the DC Controller PCB controls the operational sequence. The table below shows the operation and the purposes in each status from start-up of the device and to last rotation after print job completion.

Status	Operation
WAIT (Wait)	Interval from power-ON or reactivation from sleep mode upon shutting the door(s) to entering the print-ready status Activate the printer to be ready for printing. During WAIT time, the following operations are done: pressure is applied to the pressure roller of the Fixing Unit; check cartridges and units being in place; move the developing unit to the home position; and, clean the ITB. When needed, color displacement is corrected and the image is stabilized.
STBY (STBY)	Interval from the wait time or the last rotation to issuance of a print command from the main controller or power-OFF. Maintain the print-ready status. The printer enters the sleep mode upon receiving a "sleep" command from the main controller during the stand-by status. The printer executes color displacement correction or image stabilization upon receiving corresponding commands from the main controller.
INTR (IINTR)	Interval from issuance of a print command from the main controller during the stand-by status to warming up the Fixing Unit to the target temperature. To make the printer ready for print jobs, activate high-voltage bias PCBs, the Laser Scanner Unit and the Fixing Unit.
PRINT (Print)	Interval from the initial rotation to completion of last page fixation. Based on the video signals input from the main controller, form the static latent image on the photosensitive drum to transfer and fix the toner image on paper. When a certain pages are printed after power-ON, the device undergoes color displacement correction and/or image stabilization.
LSTR (Last rotation)	Interval from print job completion to Motor deactivation. The last page of the print job is completely delivered. In this status, the Laser Scanner Unit and high-voltage bias PCBs are inactive. The printer starts the initial rotation upon receiving a print command from the main controller during this status.

T-2-1





## Print Mode

Print modes	Feeding speed	Media type	Print speed	Remarks
Normal speed mode	1/1 speed	Speed for plain paper A4 width (60 to 90g) Transparencies	30 ppm	
1/2 speed mode	1/2 speed	Plain paper A4 width (60 to 90g) Plain paper less than A4 width (60 to 90g) Heavy paper (90 to 150g) Heavy paper (151 to 163g) Bond paper (60 to 104g) Bond paper (105 to 163g) Label paper Postcard, Tab paper Envelope	15 ppm	

T-2-2

\*1: Normal mode is recommended for Neenah Bond 60g/m2



## Document Exposure/feeder System

### Document Exposure System

#### Specifications / Control / Function List

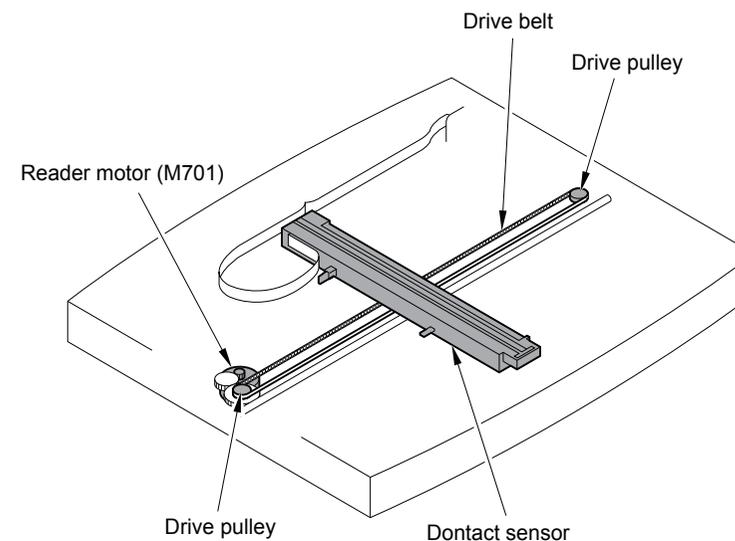
item	function / method
Document Exposure	LED
Document Scan	Book mode: scan by the shift of the contact Book mode: scan by the shift of the contact sensor (CS) ADF: document stream reading by fixed contact sensor (CS)
Scanning Resolution	600 dpi (horizontal scanner) X 600 dpi (vertical scanner)
Number Of Gradations	256 gradations
Magnification	50% to 200% horizontal: image processing by SCNT PCB vertical: change of carriage shift speed, image processing by SCNT PCB
Lens	rod lens array
CMOS Sensor	number of lines: 1 line number of pixels: 5184 pixels as total pixels (5107 pixels as effective pixels) maximum document scanning width: 216 mm
CS Drive Control	drive control by Reader Motor (M701)
CS HP Detection	Yes
Document Size Detection	None
Dirt Sensor Detection	Yes

T-2-3

#### Major Components

Followings are the major components for Document Exposure System.

- The Contact Sensor to scan document
  - The Reader Motor (M701), the Drive Pulley, the Drive Belt, to shift the Contact Sensor
- In image scanning control, the Contact Sensor is shifted by rotating the Reader Motor based on the drive signal from the DCNT PCB and scan the original on the Copyboard Glass. When ADF is in use, image is scanned by feeding the originals by ADF instead of shifting the Contact Sensor.



F-2-2

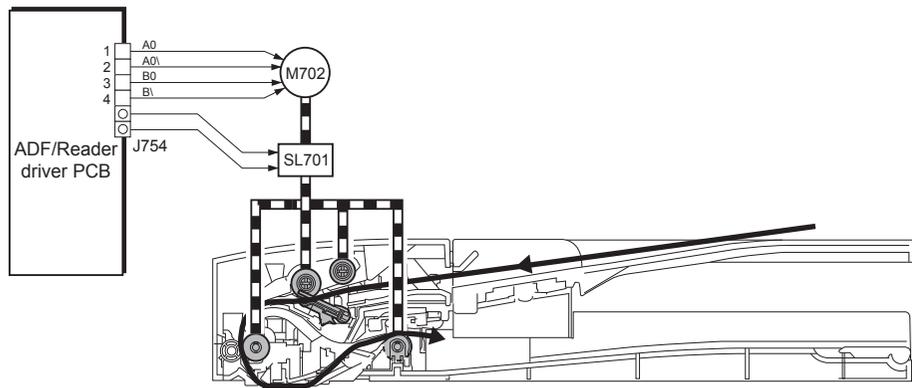
## Document Feeder System

### Pickup/Feed/Delivery Operation

The Auto Document Feeder (ADF) mounted onto this host machine is dedicated to stream-reading.

1 Motor (DADF Motor: M702) is engaged in pickup/feeding/delivery.

At the start of copy/fax/scan, the DADF Motor (M702) is driven by the drive command from the ADF/Reader driver PCB to pickup/feed the originals set face up on the original tray one by one in order from the top. The original is scanned by the Contact Sensor when moving through the Copyboard Glass, and then delivered face down to the original delivery assembly.

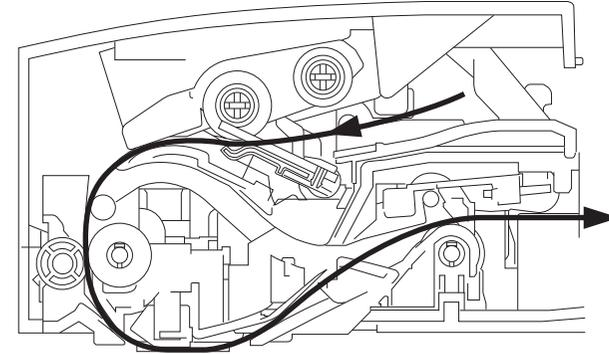


F-2-3



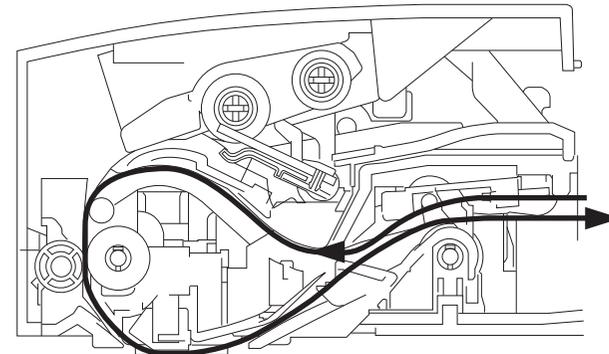
Operation at Duplex Reading

- Pickup to Reading of the 1st side



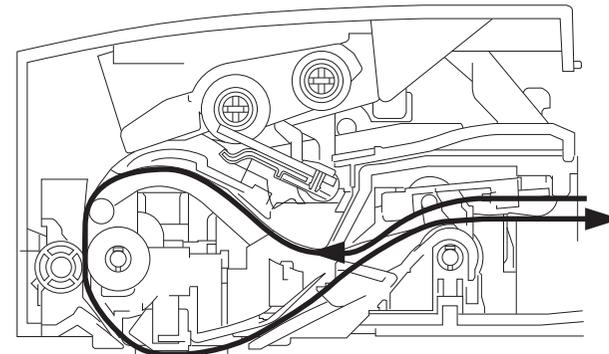
F-2-4

- Reverse to Reading of the 2nd side



F-2-5

- Delivery



F-2-6

## Original Detection

There are two types of Original Detection in this Equipment.

### 1. Original Presence / Absence Detection

Detected by DS (Document Sensor: PS703)

Setting the original onto the original tray pushes up the actuator, activating (light shielded =>light transmitted) the DS (PS703), and resulting in detection of the presence of original.

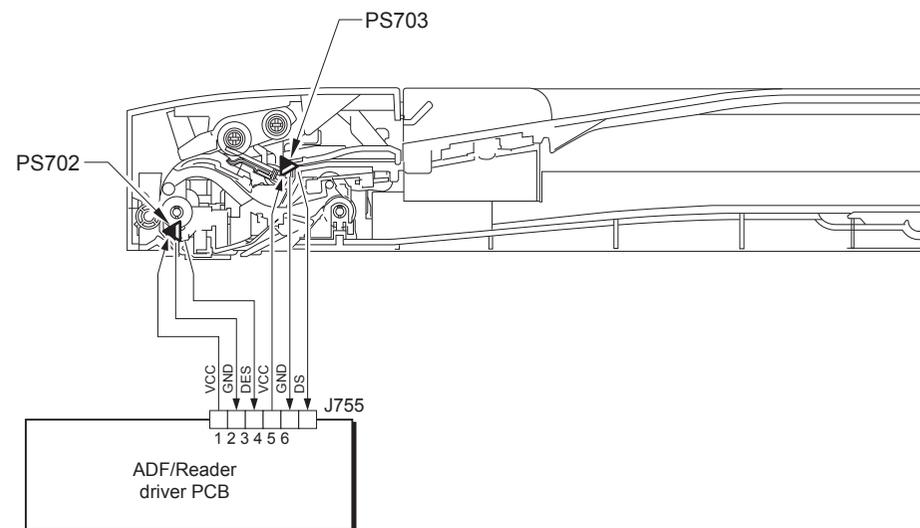
### 2. Detection of the End of the Original

Detected by the DES (Document End Sensor: PS702)

The leading edge of the original that is fed pushes up the actuator, activating the DES (PS702) (light shielded =>light transmitted) and resulting in detection of the reach of the leading edge of original. Furthermore, when the trailing edge of the original passes the actuator position, the actuator returns to the original position, inactivating the DES (PS702) (light transmitted => light shielded). The trailing edge of the original is detected by this mechanism. The original length that can be scanned with this equipment is less than 400 mm. Passing of the original longer than this results in jam stop. The original length is calculated by the time it takes from detection of the leading edge of the original to detection of the trailing edge of the original..

#### MEMO:

There is no function to detect the original size (original width, length) in this equipment.



F-2-7

## Jam Detection

The following cases are judged as jam.

1. In case of delay in reaching DS/DES or stationary during scanning of original
  2. In case DS/DES is detected as ON at power-on (residual paper jam)
  3. In case of detecting original of which length is 400 mm or longer
- Operation after Detection of Jam  
The host machine stops scanning operation and displays "CHECK DOCUMENT" on the control panel. No jam code is displayed.  
In case of the model equipped with fax function (with built-in speaker), the warning beep occurs at the detection of jam.
  - How to release Jam.  
Remove the jammed paper and open / close the ADF upper cover



## Service Tasks

### Action for Parts Replacement

Outline of the measures is described in this section. For the detailed procedure, refer to the "SCANNING SYSTEM ADJUSTMENT (Refer to page 5-2)".

### Reader Unit

- 1) Enter the setting value of the Standard White Plate.
- 2) Execute the color/B&W AGC adjustment.
- 3) Execute the reading position adjustment.
- 4) Execute the white level adjustment.
- 5) Enter the value on the label packed with the part in the service mode item.
- 6) Execute the image reading adjustment at ADF reading.

### Reader Unit Upper Cover (Copyboard Glass)

- 1) Enter the value on the label affixed on the glass in the service mode item.
- 2) Execute the reading position adjustment.
- 3) Execute the white level adjustment.

### Contact Sensor Unit

- 1) Execute the color/B&W AGC adjustment.
- 2) Execute the auto detection of the reading position at DF stream reading.
- 3) Execute the white level adjustment.
- 4) Execute the image reading position adjustment.
- 5) Execute the image reading adjustment at ADF reading.

### Maintenance

No periodically replaced parts, durable parts or periodical service is set for this product.

### Service Notes

None

## Engine Control System

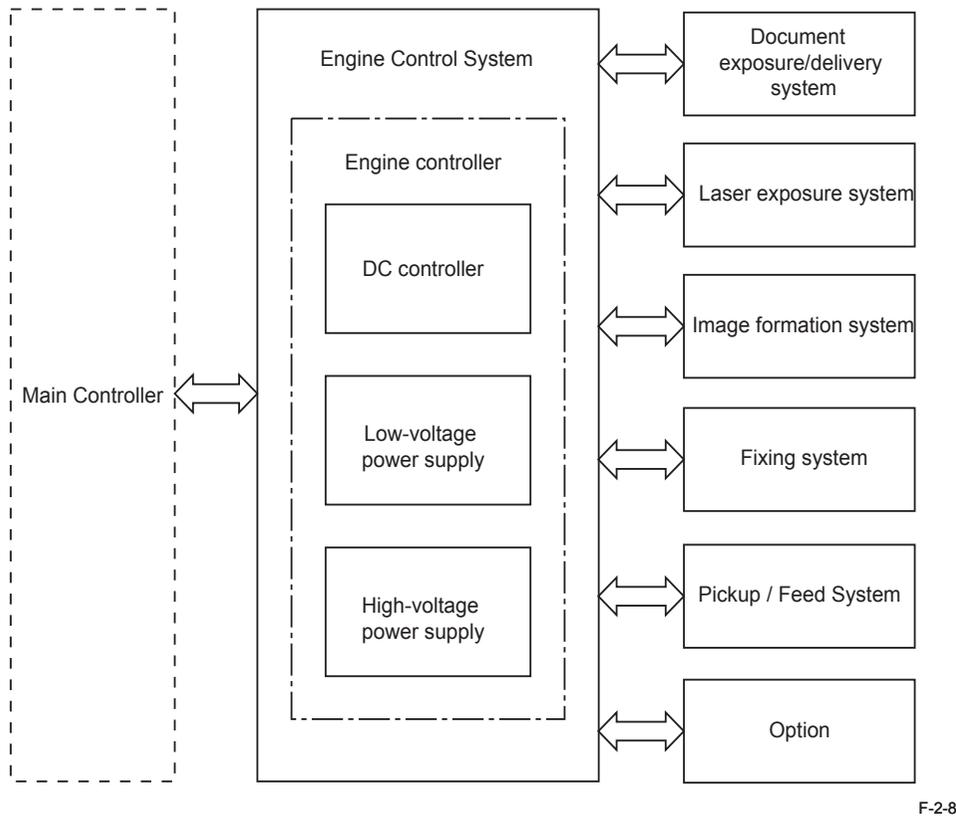
### Outline

The Engine Control System controls all the other systems according to commands from the Main Controller.

The Engine Control System contains the following components:

- DC Controller
- Low-voltage Power Supply
- High-voltage Power Supply

Block diagram of the Engine Control System is shown below.

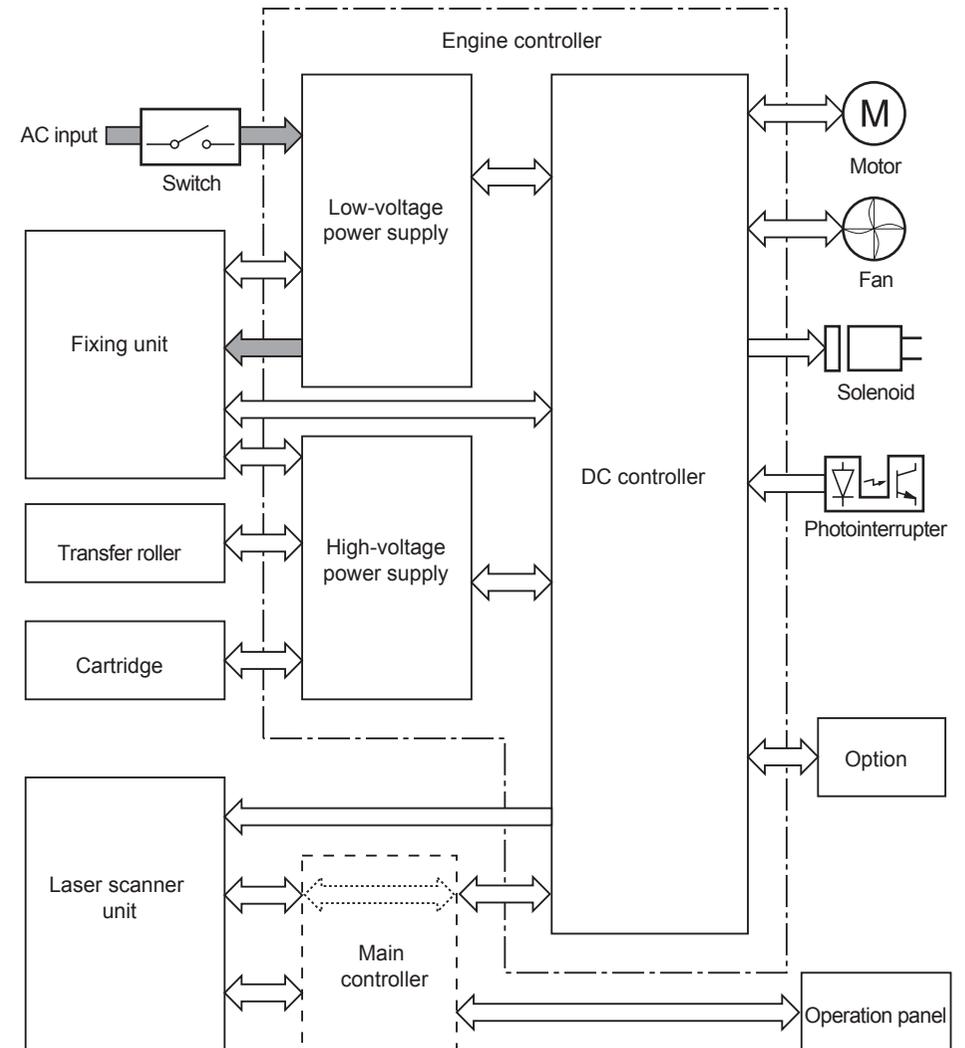


### Controls

#### Outline

The DC Controller controls the operational sequence of the printer.

Block diagram of the DC Controller and table of the electrical components are shown below.

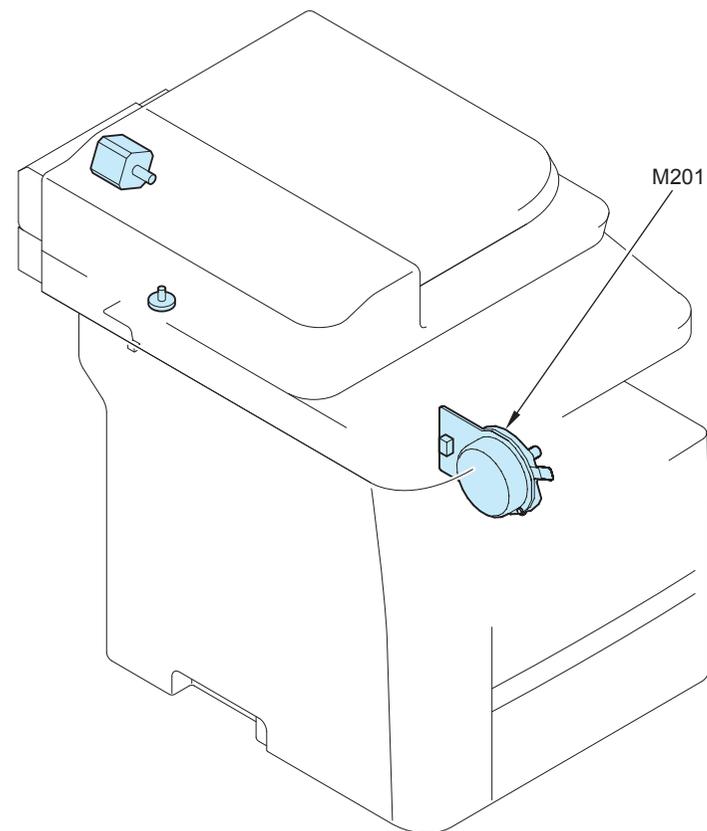


Symbol for component	Component	Remarks	
Fan	FM3	Controller Fan	TYPE I
	FM201	Main Fan	-
	FM202	Power Suply Cooling Fan	TYPE I
	FM203	Controller Fan	TYPE II
Motor	M201	Main Motor	-
Solenoid	SL201	Cassette Pickup Solenoid	-
	SL202	Duplex Reverse Solenoid	-
	SL203	Multi-purpose Tray Pickup Solenoid	-
Switch	SW1	Power Switch	-
	SW2	Door Switch	-
Photointerrupter	PS201	Duplex Reverse Sensor	-
	PS202	Multi-purpose Tray Media Presence Sensor	-
	PS203	Cassette Media Presence Sensor	-
	PS204	TOP Sensor	-
	PS205	Media Width Sensor	-
	PS206	FD Tray Media Full Sensor	-
	PS915	Fixing Delivery Sensor	-

T-2-4

## Motor Control

The printer has one Motor for media feed and image formation. Arrangement of Motor and the specifications are shown below.



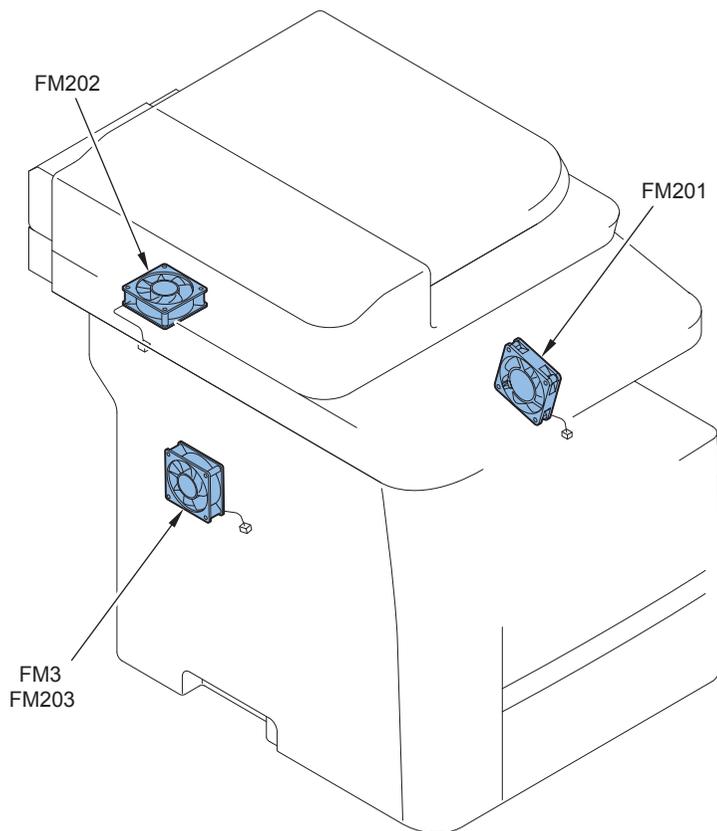
F-2-10

Description	Driving part	Failure detection
M201   Main Motor	Roller in the printer and rollers in the paper feeder	Yes

T-2-5

## Fan Control

The printer has one fan for preventing a temperature rising inside the printer. Arrangement of Fan Motor and the specifications are shown below.



F-2-11

Description		Cooling Area	Type	Speed	Remarks
Controller Fan	FM3	Controller Box	Exhaust	Full	TYPE I
Main Fan	FM201	Inside the Printer	Intake	Full	-
Power Supply Cooling Fan	FM202	Power Supply	Exhaust	Full	TYPE I
Controller Fan	FM203	Controller Box	Exhaust	Full	TYPE II

T-2-6

## Failure Detection

Failure Point	Cause of Failure
Main Motor	In the case that the speed of Motor does not reach the specified speed after the specified time has passed since the startup of the Main Motor.
Main Fan	In the case that the Fan has been locked continuously for the specified period of time since the startup of the Main Fan Motor.

T-2-7

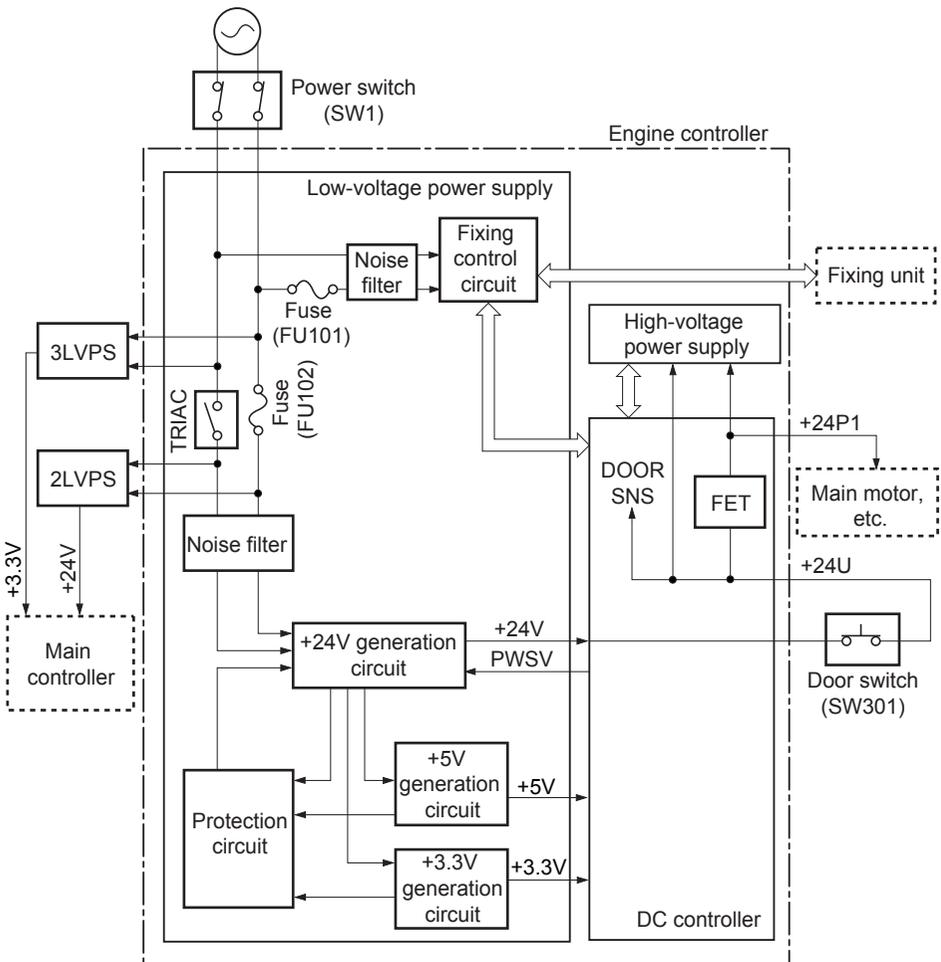
# Low-voltage Power Supply

## Outline

The Low-voltage power supply converts AC Power from the power receptacle into DC Power to cover the DC loads.

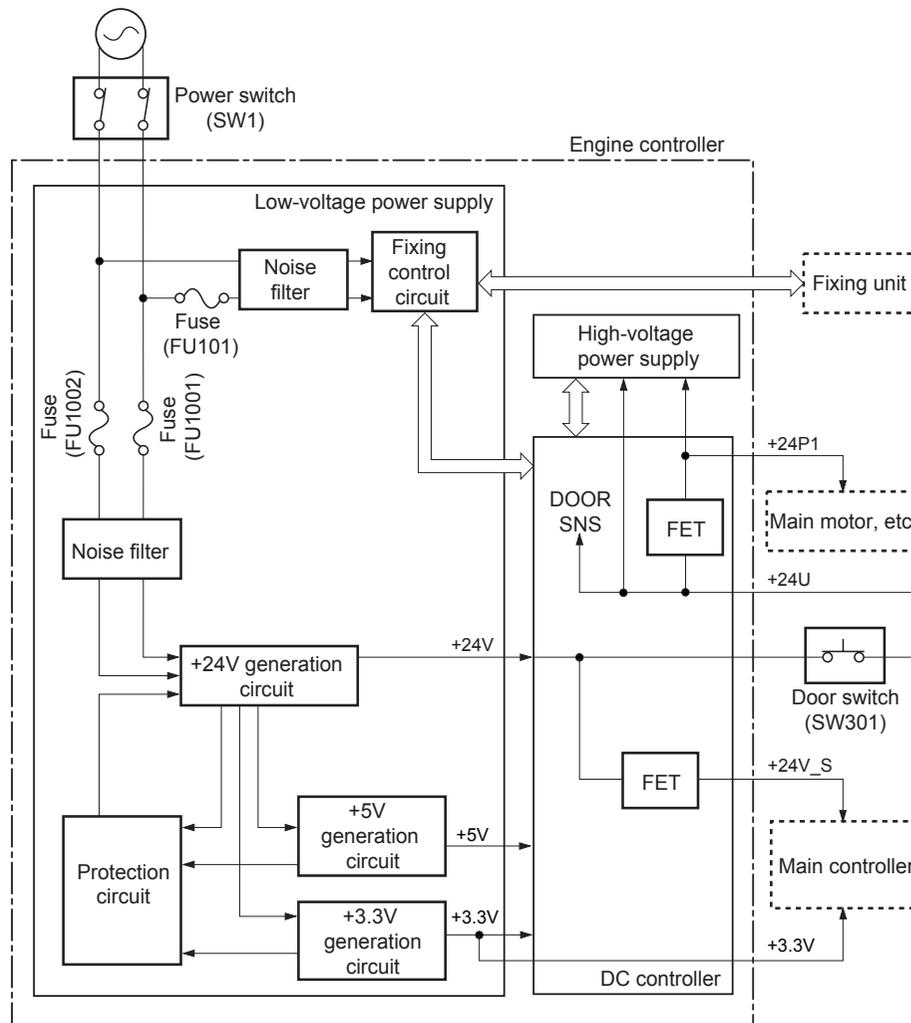
Block diagram of the Low Voltage Power Supply is shown below.

### TYPE I



F-2-12

### TYPE II



F-2-13



## Service Tasks

### ■ Action for Parts Replacement

Outline of the measures is described in this section. For the detailed procedure, refer to the "ELECTRICAL ADJUSTMENT (Refer to page 5-3)."

### ● After Replacing Main Controller PCB

- Before replacing PCBs

Back up user data (settings / registered data, etc.) and Service mode data for setting / registration after replacing PCBs. Take notes of data unable to back up.

- After replacing PCBs

1) Setting of destination / paper size groups

2) Clearing setting / registered data

3) Adjustment and input of default values

### ■ Maintenance

No periodically replaced parts, durable parts or periodical service is set for this product.

### ■ Service Notes

None

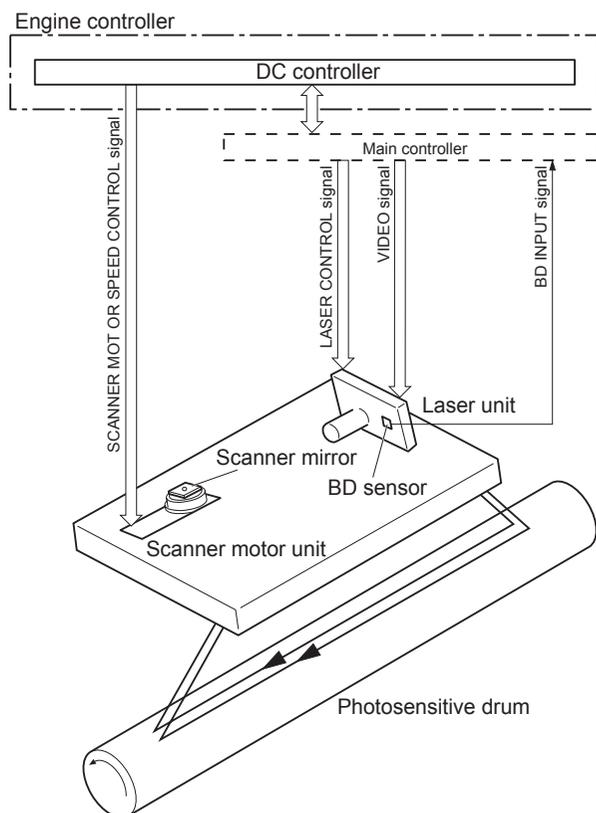
## Laser Scanner System

### Outline

The Laser Scanner System forms a latent image on the photosensitive drum according to the VIDEO signals sent from the Main Controller.

The main components of the Laser Scanner are the Laser Unit and the Scanner Motor Unit, which are controlled by the signals sent from the DC Controller.

Diagram of the Laser Scanner Unit is shown below.



F-2-15

### Optical Unit Failure Detection

The Optical Unit failure detection manages the Laser Scanner failure detection functions.

The DC Controller determines an Optical Unit failure and notifies the Main Controller if the Laser Scanner encounters the following conditions:

- After the drive of Scanner Motor, BD within a specified period is not detected.
- If the Scanner Motor does not reach a specified rotation within a specified period of start-up.
- If an out of specified BD interval is detected during a print operation.

### Service Tasks

#### Action for Parts Replacement

No work is required at parts replacement of this product.

#### Maintenance

No periodically replaced parts, durable parts or periodical service is set for this product.

#### Service Notes

##### Point to Note When Replacing the Laser Scanner Unit

Do not disassemble the Laser Scanner Unit in the field because it has been adjusted in the factory.

Otherwise, it may cause image fault such as color displacement. (You need to replace the Laser Scanner Unit in that case.)

## Image-formation System

### Outline

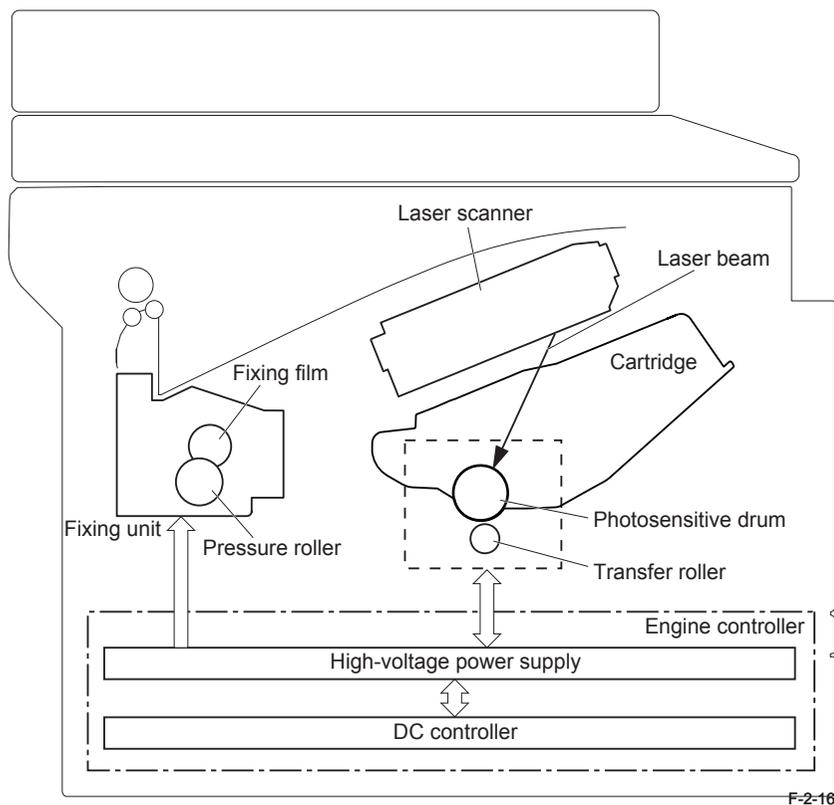
The Image-Formation System forms a toner image on print media.

The following are the main components of the Image-Formation system:

- Cartridge
- Transfer Roller
- Fixing Unit
- Laser Scanner

The DC Controller controls the Laser Scanner and High-voltage power supply to form the toner image on the photosensitive drum. The image is transferred to the print media and fixed.

Diagram of the image formation system is shown below.



## Image-formation Process

### Outline

The Image-Formation process consists of the following seven steps divided among five functional blocks:

Latent Image Formation Block

Step 1: Primary charging

Step 2: Laser-beam exposure

Developing Block

Step 3: Developing

Transfer Block

Step 4: Transfer

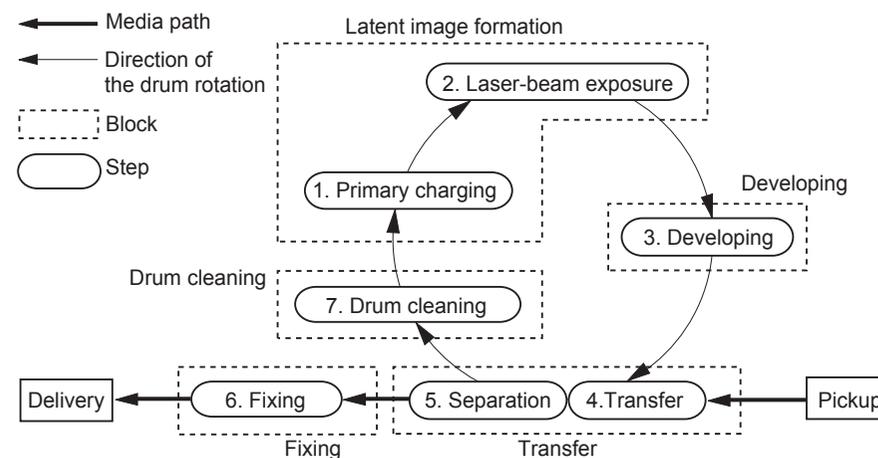
Step 5: Separation

Fixing Block

Step 6: Fixing

Drum Cleaning Block

Step 7: Drum cleaning

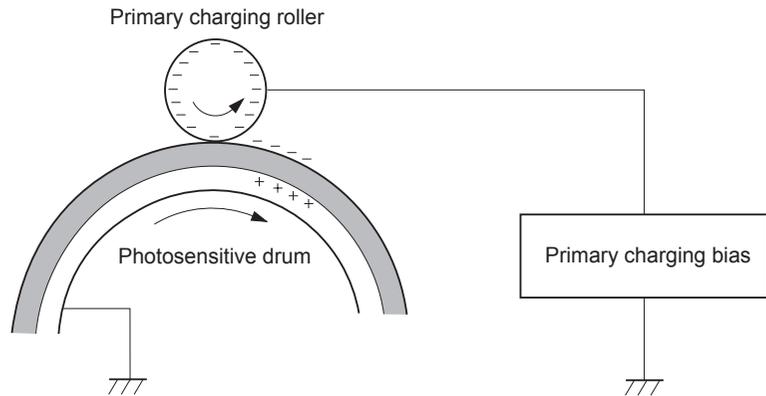


## Latent Image Formation Block

During the two steps that comprise this block, an invisible latent image is formed on the photosensitive drum.

### Step 1: Primary Charging

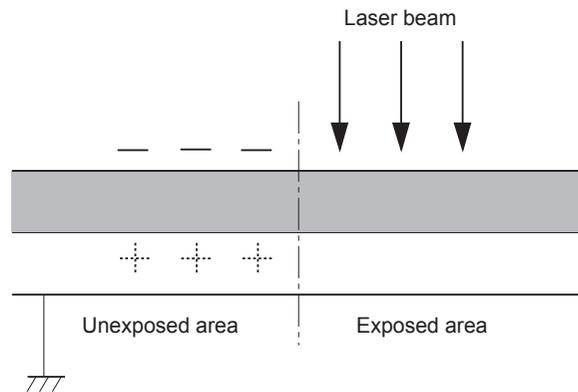
To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative potential. The primary charging bias is applied to the primary charging roller and the roller charges the drum directly.



F-2-18

### Step 2: Laser-beam Exposure

The laser beam scans the photosensitive drum to neutralize the negative charge on portions of the drum surface. An electrostatic latent image forms where the negative charge was neutralized.



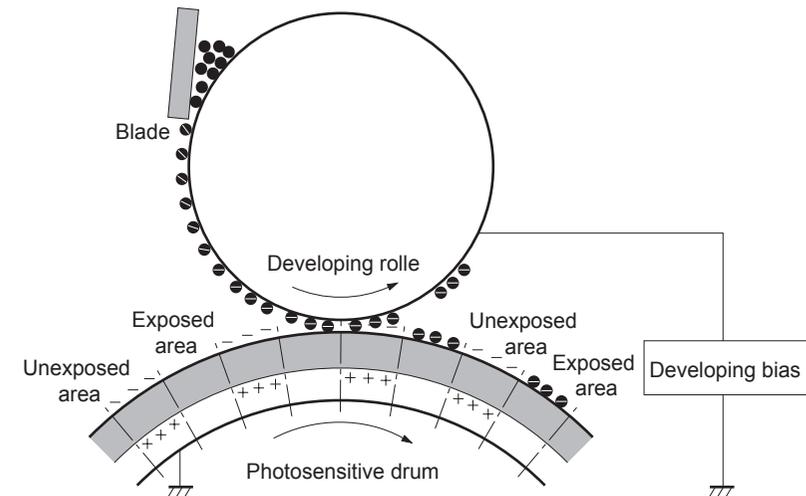
F-2-19

## Developing Block

Toner adheres to the electrostatic latent image on the photosensitive drum, which becomes visible.

### Step 3: Developing

Toner acquires a negative charge from the friction that occurs when the developing roller rotates against the developing blade. The negatively charged toner is attracted to the latent image on the photosensitive drum surface because the drum surface has a higher potential. The developing bias is applied to the developing roller.



F-2-20

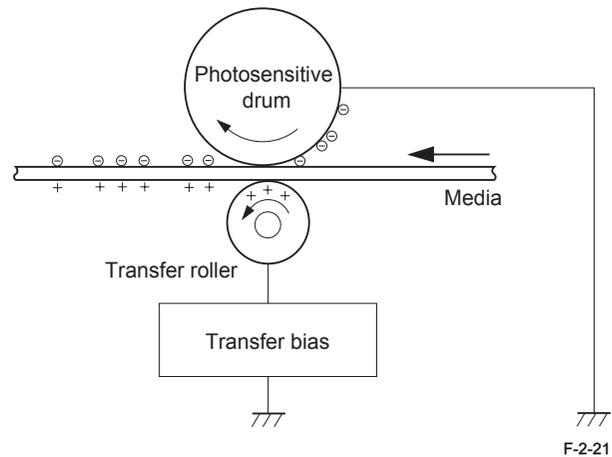


## Transfer Block

During the two steps that comprise this block, a toner image on the photosensitive drum is transferred to the print media.

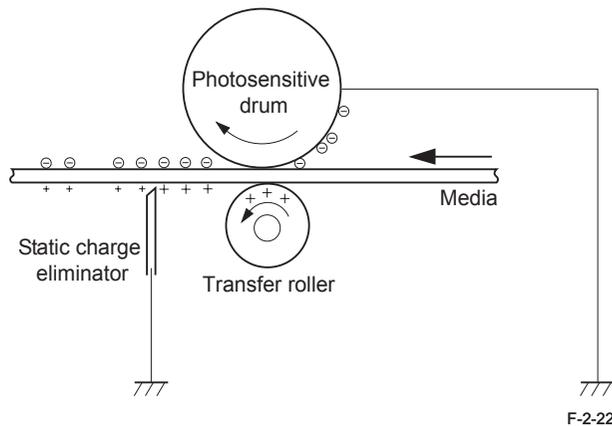
### Step 4: Transfer

The transfer bias is applied to the transfer roller to charge the print media positive. The positively charged media attracts the negatively charged toner from the photosensitive drum surface.



### Step 5: Separation

The elasticity of the print media and the curvature of the photosensitive drum cause the media to separate from the drum surface. The static charge eliminator reduces back side static discharge of the media for stable media feed and image quality.

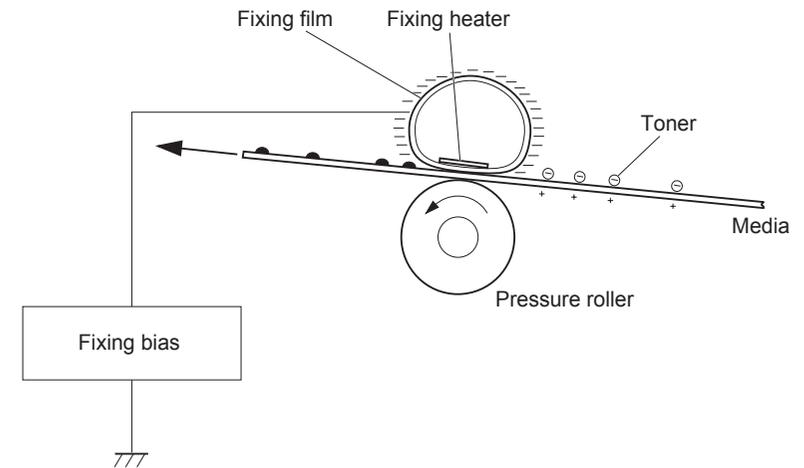


## Fixing Block

The toner image is fixed onto the print media.

### Step 6: Fixing

The printer uses an on-demand Fixing method. The toner image is permanently affixed to the print media by heat and pressure. The Fixing bias is applied to the Fixing Film to improve image quality.

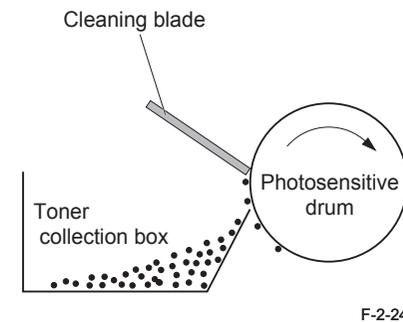


## Drum Cleaning Block

The residual toner is cleared from the photosensitive drum surface.

### Step 7: Drum Cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum. The residual toner is deposited in the toner collection box.



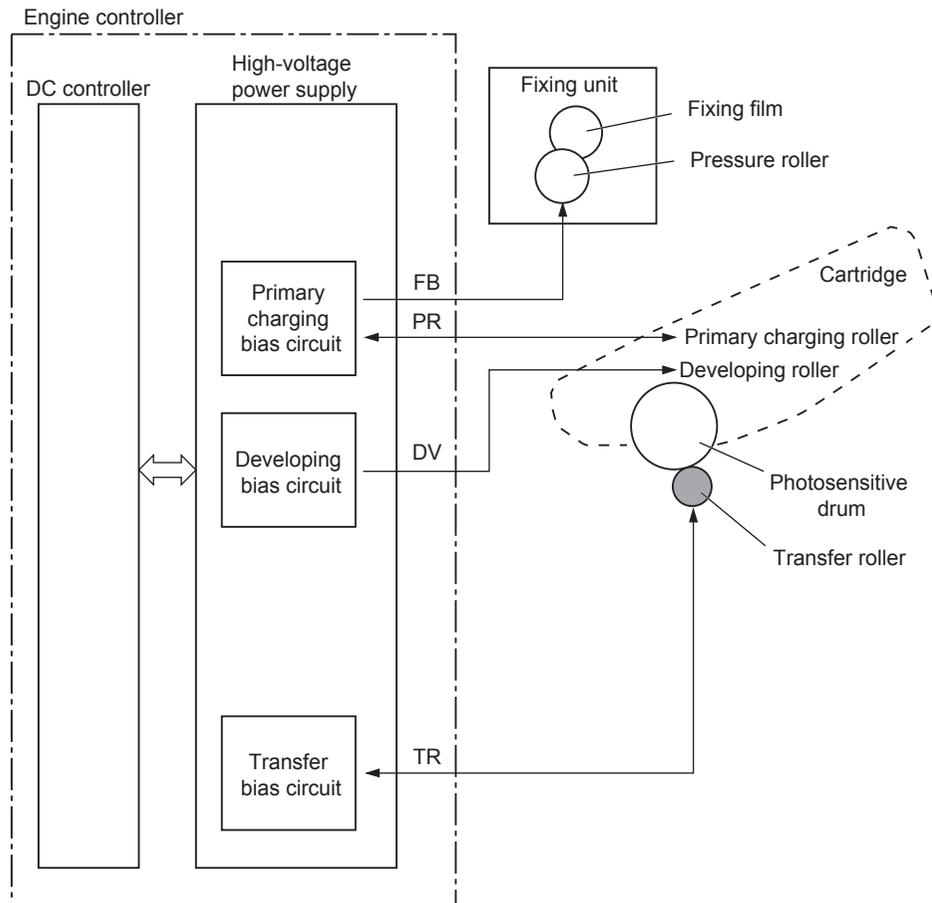
## High-voltage Power Supply

### Outline

The High-voltage Power Supply applies biases to the following components:

- Primary Charging Roller
- Developing Roller
- Transfer Roller
- Fixing Flm

The DC Controller controls the High-voltage Power Supply to generate biases.



## Service Tasks

### Action for Parts Replacement

No work is required at parts replacement of this product.

### Maintenance

No periodically replaced parts, durable parts or periodical service work is set for this product.

### Notes on Field Service

None

## Fixing Unit System

### Outline

The Fixing/Delivery Unit fixes the toner onto a print paper and delivers it to the Delivery Tray. The operation of the Fixing/Delivery Unit is explained in the following.

- 1) The print paper fed from the Pickup/Feed Unit is fused the toner by the Fixing Film and the pressure roller.
- 2) The print paper delivered from the Fixing Unit is delivered to the face-down Delivery Tray or the face-up Delivery slot. When the engine controller detects that the heater temperature reaches 50 deg C after the last rotation is completed, it drives the main Motor for 50 msec. and dislocates the nip part. This prevents the toner adhering to the pressure roller.

The Fixing Unit of this printer utilizes the on-demand Fixing method. It is structured as shown below.

- Heater:

This Fixing Unit incorporates one heater.

Fixing Heater (H1): To heat the Fixing Film (ceramic heater)

- Thermistor:

This Fixing Unit incorporates one thermistor.

Thermistor (TH1): Sit almost at the center of the Fixing Film. (contact type)

To control the temperature of the Fixing Film

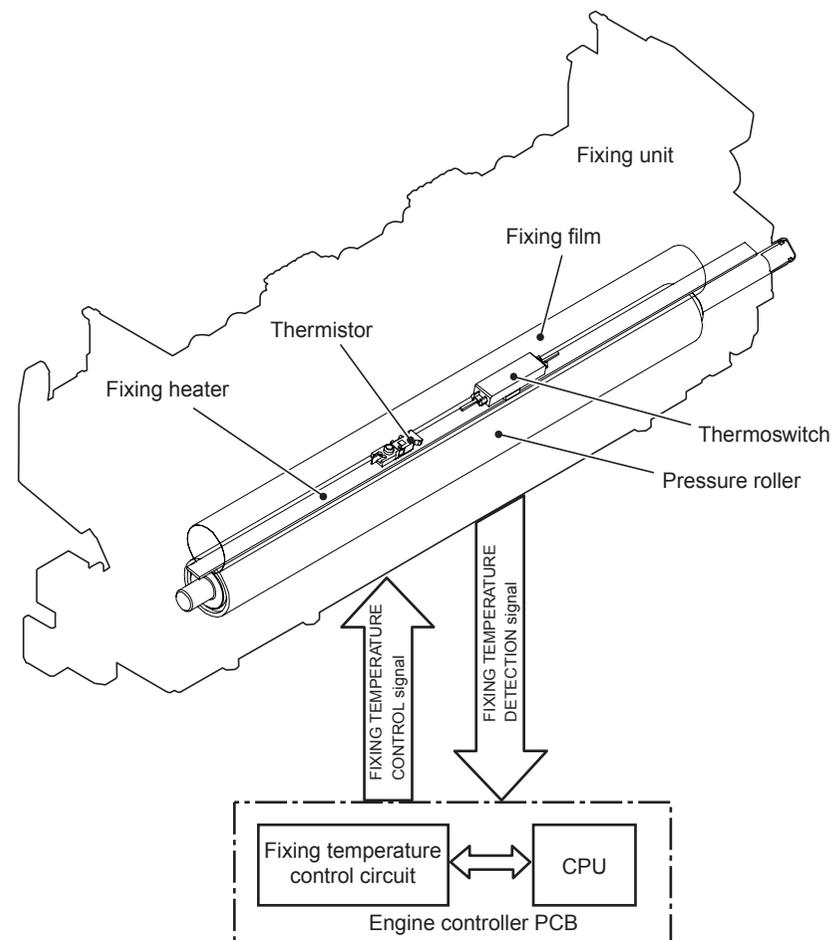
- Thermal switch:

Thermoswitch (TP1): Sit almost at the center of the Fixing Film (contact type)

If the temperature of the heater rises abnormally high, the contact gets broken and cuts off the AC Voltage Supply to the Fixing Heater to interrupt the power supply to the heater.

The temperature control of the Fixing Unit incorporated as above is operated by the Fixing temperature control circuit according to the command from the CPU (IC201) on the DC Controller.

The followings describe the each circuit and function of the temperature control of the Fixing Unit.

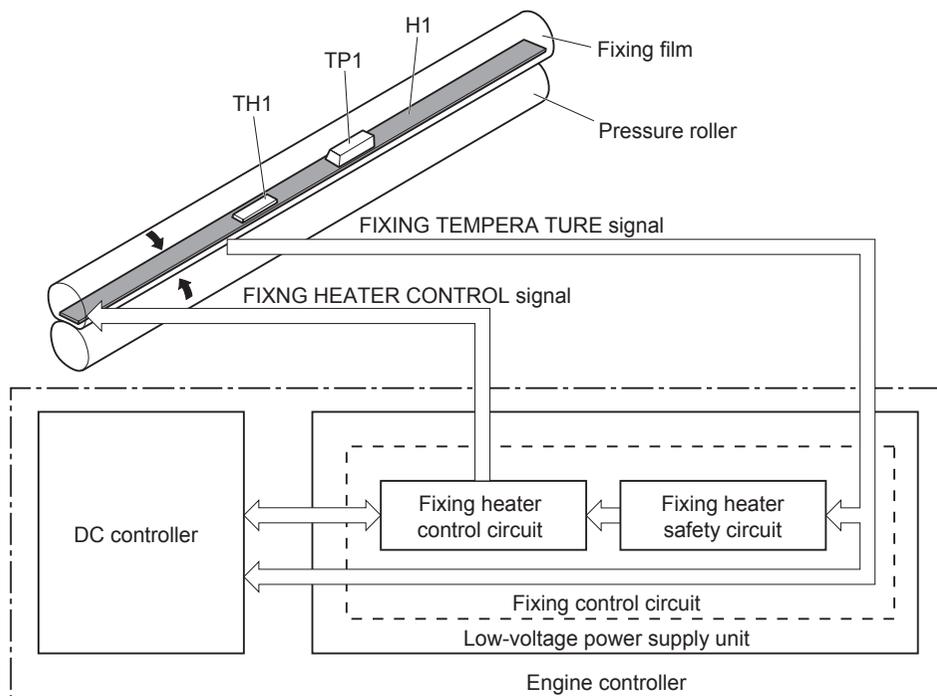


F-2-25

## Fixing Control Circuit

The Fixing control circuit controls the temperature in the Fixing Unit. The printer uses an on-demand Fixing method.

The figure below shows the configuration of the Fixing control circuit.



F-2-26

- Fixing Heater (H1): Heats the Fixing Film
- Thermistor (TH1): Detects Fixing temperature (Contact type)
- Thermoswitch (TP1): Prevents an abnormal temperature rise of the Fixing Heater (Contact type)

These temperature controls in the Fixing Unit are performed by the Fixing Heater control circuit and the Fixing Heater safety circuit according to the commands from the DC Controller.

## Throughput Reduction Control

During continuous printing, the throughput is changed to reduce heat buildup on parts not in contact with paper, to improve Fixing characteristics and reduce curling.

The throughput reduction is implemented according to the following conditions.

### Small Size Paper Speed Control

Fixing Mode	Throughput			
ENVELOPE	1 - 2 imprints 17 ppm	3 - 4 imprints 12 ppm	5 imprints 8 ppm	6 imprints or more 6 ppm
ENVELOPE2	1 - 3 imprints 17 ppm	4 - 7 imprints 12 ppm	8 - 22 imprints 8 ppm	23 imprints or more 6 ppm
ENVELOPE3	1 - 3 imprints 12 ppm	4 - 5 imprints 8 ppm	6 imprints or more 6 ppm	
Postcard	1 - 3 imprints 12 ppm	4 - 5 imprints 8 ppm	6 imprints or more 6 ppm	
Long Narrow				
Normal/Light/OHT	1 - 280 imprints 2 ppm	281 imprints or more 1 ppm		
Label/Heavy1/Heavy2 Envelope/Envelope2/ Envelope3	1 imprints or more 3 ppm			

T-2-9

### 16K Paper Speed Control

Fixing Mode	Throughput				
Normal/Light/OHT (Normal mode)	1 - 27 imprints 16 ppm	28 - 39 imprints 14 ppm	40 - 79 imprints 12 ppm	80 - 199 imprints 10 ppm	200 imprints or more 8 ppm
Normal/Light/OHT When specifying full speed (Measures against remaining paper)	1 imprints or more 6 ppm				
Envelope2/ Quiet	1 - 89 imprints 17 ppm	90 imprints or more 14 ppm			

Fixing Mode	Throughput				
Label/ Envelope/ Envelope3 Heavy1/ Heavy2/ Postcard	1 - 34 imprints 17 ppm	35 imprints or more 8 ppm			

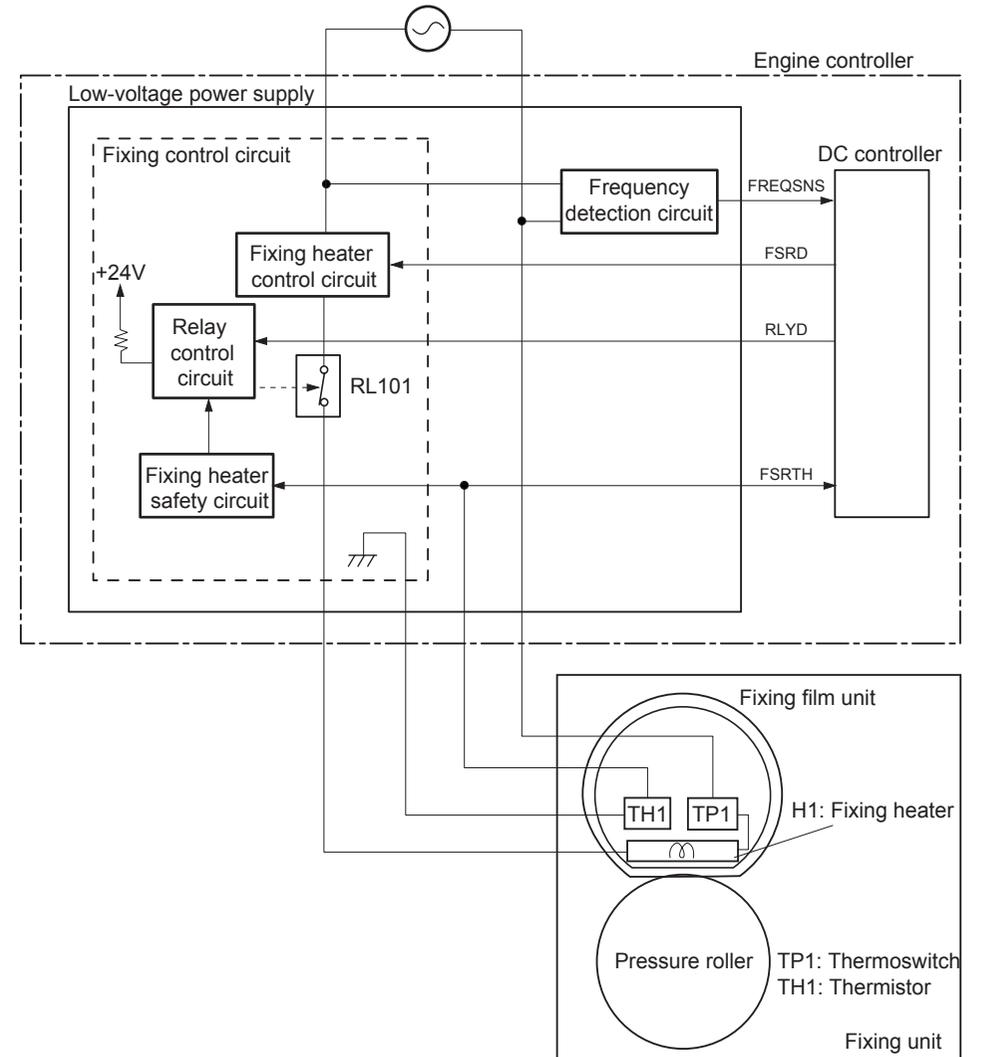
T-2-10



## Fixing Temperature Control

The Fixing temperature control maintains the temperature of the Fixing Heater at its targeted temperature.

Block diagram of this control is shown below.



F-2-27

The DC Controller monitors the FIXING TEMPERATURE (FSRTH) signal and sends the FIXING HEATER CONTROL (FSRD) signal according to the detected temperature. The Fixing Heater control circuit controls the Fixing Heater depending on the signal so that the heater remains at the targeted temperature.

## ■ Protective Function

The protective function detects an abnormal temperature rise in the Fixing Unit and interrupts power supply to the Fixing Heater.

The following three protective components prevent an abnormal temperature rise of the Fixing Heater:

- DC Controller
- Fixing Heater safety circuit
- Thermoswitch

### 1) DC Controller

The DC Controller monitors the detected temperature of the thermistor. The DC Controller makes the FIXING HEATER CONTROL signal inactive and releases the relay to interrupt power supply to the Fixing Heater under the following condition:

- Thermistor: 240°C (464°F) or higher

### 2) Fixing Heater safety circuit

The Fixing Heater safety circuit monitors the detected temperature of the thermistor. The Fixing Heater safety circuit releases the relay control circuit to interrupt power supply to the Fixing Heater under the following condition:

- Thermistor: 270°C (518°F) or higher

### 3) Thermoswitch

The contact of the thermoswitch is broken to interrupt power supply to the Fixing Heater under the following condition:

- Temperature fuse: 228°C (442.4°F) or higher

## ■ Failure Detection

The DC Controller determines a Fixing Unit failure, makes the FIXING HEATER CONTROL signal inactive, releases the relay to interrupt power supply to the Fixing Heater and notifies the formatter of a failure state when it encounters the following conditions:

### 1) Start-up failure

- If the detected temperature of the thermistor is kept a specified degrees or higher for a specified period of heater start-up during the wait period.
- If the detected temperature of the thermistor is kept a specified degrees or lower for a specified period under the heater temperature control during the print period.
- If the detected temperature of the thermistor does not reach its targeted temperature within a specified period under the heater temperature control during the initial rotation period.

### 2) Abnormal low temperature

- If the detected temperature of the thermistor is kept a specified degrees or lower for a specified period under the heater temperature control.

### 3) Abnormal high temperature

- If the detected temperature of the main thermistor is kept a specified degrees or higher for a specified period.

### 4) Drive circuit failure

- If a specified frequency of the FREQUENCY signal is not detected within a specified period after the printer is turned on.

## Service Tasks

### ■ At Parts Replacement

No work is required for this product at parts replacement.

### ■ Maintenance

No periodically replaced parts, durable parts or periodical service is set for this product.

### ■ Notes On Service Works

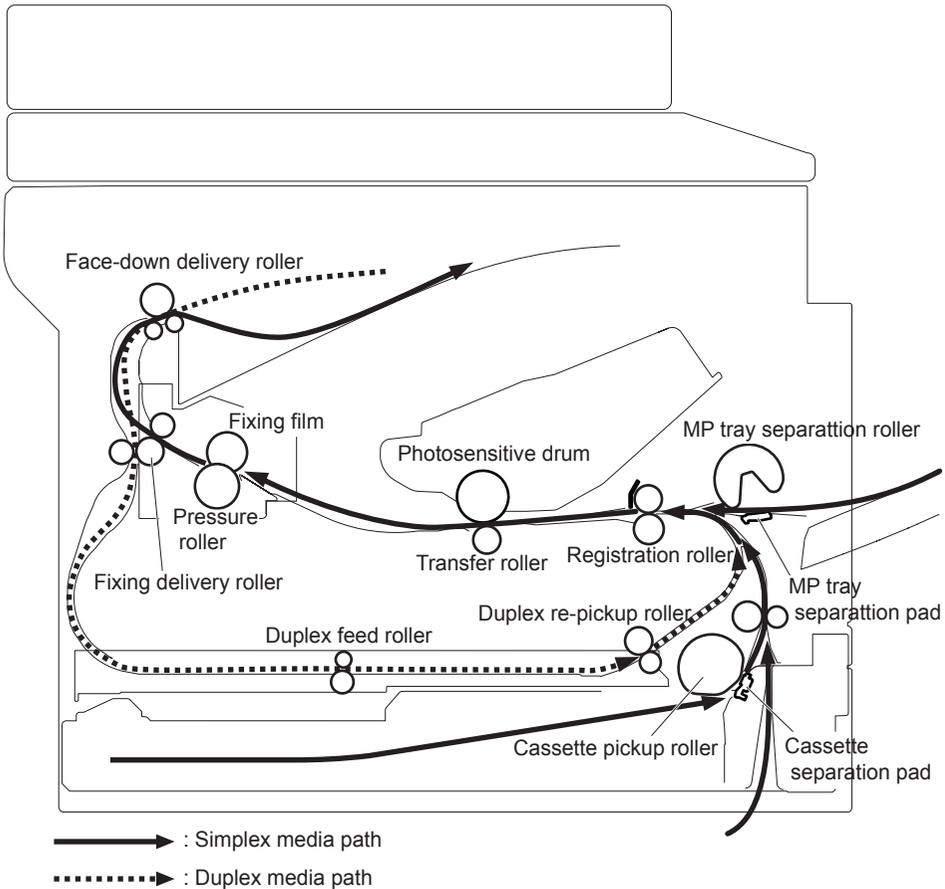
- When removing the Fixing Unit, perform the operation after the Fixing Unit is surely cooled.  
The Fixing Unit just after printing may cause burn injury.
- Do not disassemble the Fixing Unit at a field. It may cause a malfunction.

# Media Feed System

## Outline

The Media Feed System picks up, feeds and delivers the print media. It consists of several types of rollers.  
 The Duplex Feed Unit in the Duplex model reverses and Refeeds the print media to print on both sides of media.

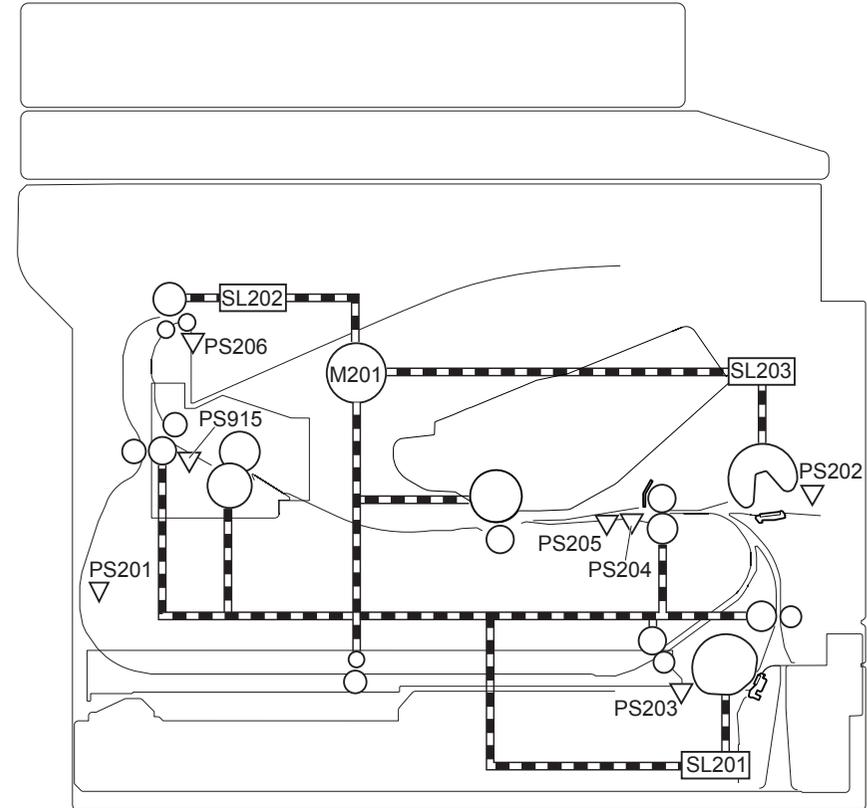
The media path is shown below.



F-2-28

## Drive Configuration

Diagram and table of the electrical components are shown below.



F-2-29

Electrical component	Symbol	Signal
Main Motor	M201	Main Motor Control Signal
Cassette Pickup Solenoid	SL203	Cassette Pickup Solenoid Control Signal
Multi-purpose Tray Pickup Solenoid	SL201	Multi-purpose Tray Pickup Solenoid Control Signal
Duplex Reverse Solenoid	SL202	Duplex Reverse Solenoid Control Signal
TOP Sensor	PS204	TOP Signal
Cassette Media Presence Sensor	PS203	Cassette Media Presence Signal
Multi-purpose Tray Presence Sensor	PS202	Multi-purpose Tray Media Presence Signal
Fixing Delivery Sensor	PS915	Fixing Delivery Signal (100V)
	PS9150	Fixing Delivery Signal (230V)
Duplex Reverse Sensor	PS201	Duplex Reverse Signal

Electrical component	Symbol	Signal
FD Tray Media Full Sensor	PS206	FD Tray Media Full Signal
Media Width Sensor	PS205	Media Width Signal

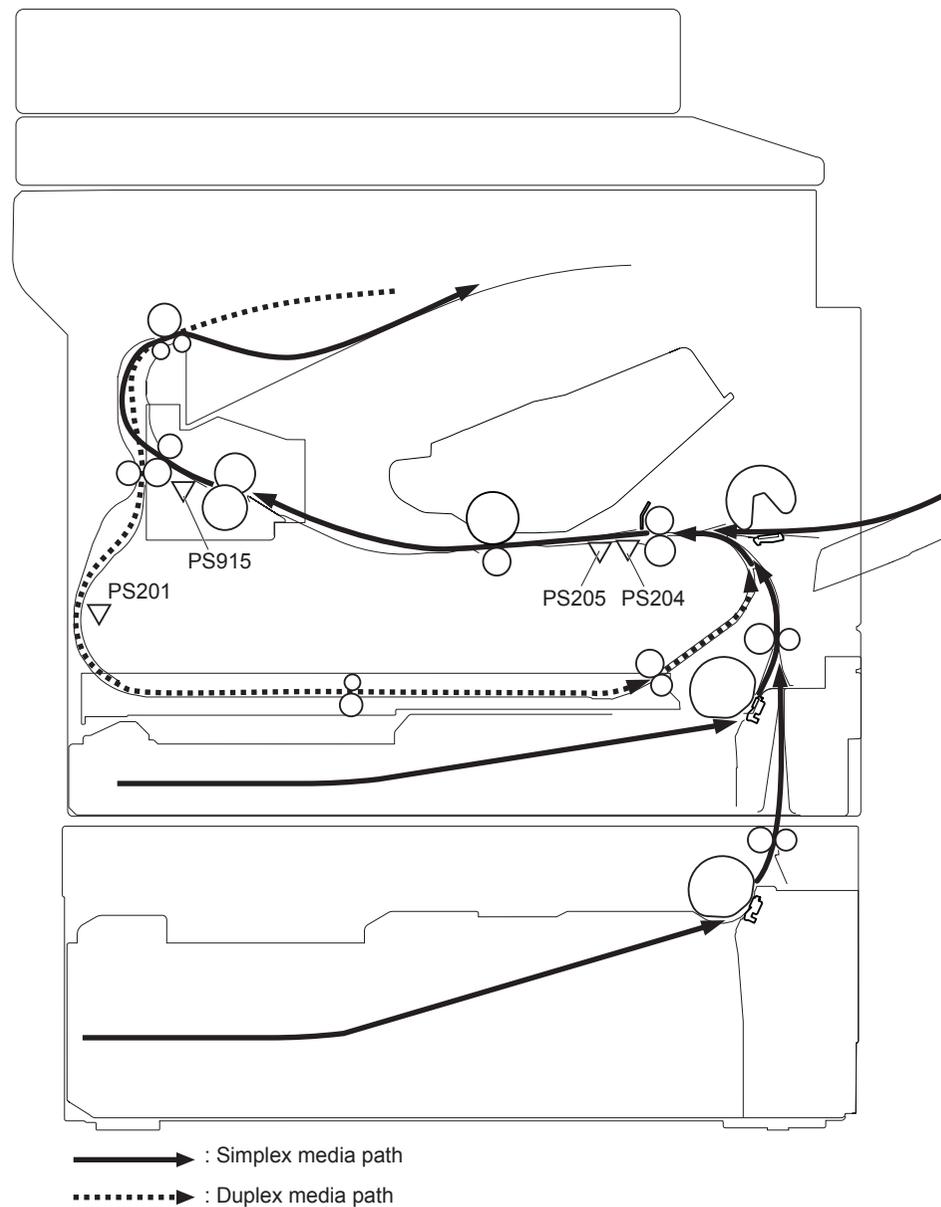
T-2-11

## Jam Detection

### Outline

The printer uses the following sensors to detect the presence of media and to check whether media is being fed correctly or has jammed:

- TOP Sensor (PS204)
- Fixing Delivery Sensor (PS915)
- Duplex Reverse Sensor (PS201)
- Media Width Sensor (PS205)



F-2-30

## ■ Pickup Delay Jam

When the TOP Sensor (PS204) cannot detect the leading edge of paper within the specified time after starting pickup from a cassette, pickup retry is executed twice. After that, the sensor still cannot detect the leading edge of paper within the specified time, it is judged as a pickup jam.

## ■ Pickup Stationary Jam

When the TOP Sensor (PS204) cannot detect the trailing edge of paper after the specified time has passed since it detected the leading edge of paper, it is judged as a pickup stationary jam.

## ■ Delivery Delay Jam

When the Fixing Delivery Sensor (100V:PS915, 230V:PS9150) cannot detect the leading edge of paper after the specified time has passed since the TOP Sensor (PS204) detected the leading edge of paper, it is judged as a delivery delay jam.

## ■ Delivery Stationary Jam

After judging that it is not a Fixing paper wrap, execute the detection of delivery stationary jam.

When the Fixing Delivery Sensor (100V:PS915, 230V:PS9150) does not detect no paper within the specified time since the TOP Sensor (PS204) detected the trailing edge of paper, it is judged as a delivery stationary jam.

## ■ Fixing Paper Wrap Jam

After judging that it is not a delivery delay jam, execute the detection of Fixing paper wrap jam.

It is judged as a Fixing paper wrap jam when all of the following conditions are met: after the specified time had passed since the Fixing Delivery Sensor (100V:PS915, 230V:PS9150) detected the leading edge of paper, after the specified time had passed since the TOP Sensor (PS204) detected the leading edge of paper, and the Fixing Delivery Sensor (100V:PS915, 230V:PS9150) detects no paper.

## ■ Reverse Delay Jam

After judging that it is not a delivery stationary jam, execute the detection of reverse stationary jam.

When the Duplex Reverse Sensor (PS201) does not detect paper after the specified time has passed since the Fixing Delivery Sensor (100V:PS915, 230V:PS9150) detected the trailing edge of paper, it is judged as a reverse delay jam.

## ■ Reverse Stationary Jam

When the Duplex Reverse Sensor (PS201) cannot detect the trailing edge of paper after the specified time has passed since the sensor detected the leading edge of paper, it is judged as a reverse stationary jam.

## ■ Internal Residual Jam

When a paper is detected by the TOP Sensor (PS204), Fixing Delivery Sensor (100V:PS915, 230V:PS9150), Paper Width Sensor (PS205), or Duplex Reverse Sensor (PS201) at the time of starting initial rotation, it is judged as an internal residual jam.

## ■ Door Open Jam

When a door-open is detected while feeding papers, it is judged as a door open jam.

## ● Service Tasks

### ■ At Parts Replacement

No work is accompanied with parts replacement.

### ■ Maintenance

No periodically replaced parts, durable parts or periodical service is set for this product.

### ■ Notes On Service Works

No periodically



# Periodical Services

- Periodically Replaced Parts
- Consumable Parts
- Periodical Service
- Cleaning

## Periodically Replaced Parts

### Periodically Replaced Parts

Periodic replacement parts should be replaced at regular intervals, even if they are functioning properly and show no signs of wear. The failure of these parts can seriously affect the printer performance. Replace these parts at regular service visit closest to the life expectancy.

- Periodic replacement parts are not required in this printer.

### Consumables Expected Replacement Timing

Consumables : Change parts when there is fault in a machine.

Parts name	Product No.	Q'ty	Expected service life (*1)	Remarks
ADF Separation Pad	FC7-6297	1	50,000 sheets	(Refer to page 4-41)
ADF Separation Roller	FL2-6637	1	50,000 sheets	(Refer to page 4-39)

T-3-1

\*1) Expected service life, to be average preparation value.

Unit of expected service life, for imaging system is image, for feed system with out picup unit is page, for pickup system is "sheet" for fan is "time".

## Consumable Parts

### Durables Replaced by the User

- This machine does not have parts that require periodical replacement.

### Durables Replaced by the Service Person

Deteriorated or damaged consumable parts might need to be replaced at least once before the warranty expires. Replace these parts only that are faulty.

- Consumable parts are not required in this printer.

## Periodical Service

### Periodical Service

- No periodic services are required to this printer.

## Cleaning

### Cleaning at Service Visit

Follow the procedure blow when cleaning the printer during service visit.

Component	Cleaning method
External Covers	Wipe With a Soft, Dry Cloth.
Scanning Area	Wipe With a Soft, Dry Cloth.
ADF	Wipe With a Soft, Dry Cloth.
Multi-purpose Tray Pickup Roller, Multi-purpose Tray Separation Pad, Cassette Pickup Roller, Cassette Separation Pad, Pf Pickup Roller And Pf Separation Pad	Wipe With a Lint-free Cloth.
Registration Roller And Registration Arm Unit	Wipe With a Lint-free Cloth.
Transfer Guide Unit	Wipe With a Soft And Dry Flannel Cloth.
Media Feed Belt And Media Feed Guide Unit	Wipe With a Lint-free Cloth.
Fixing Inlet Guide	Wipe With Alcohol Dampened Flannel Cloth.

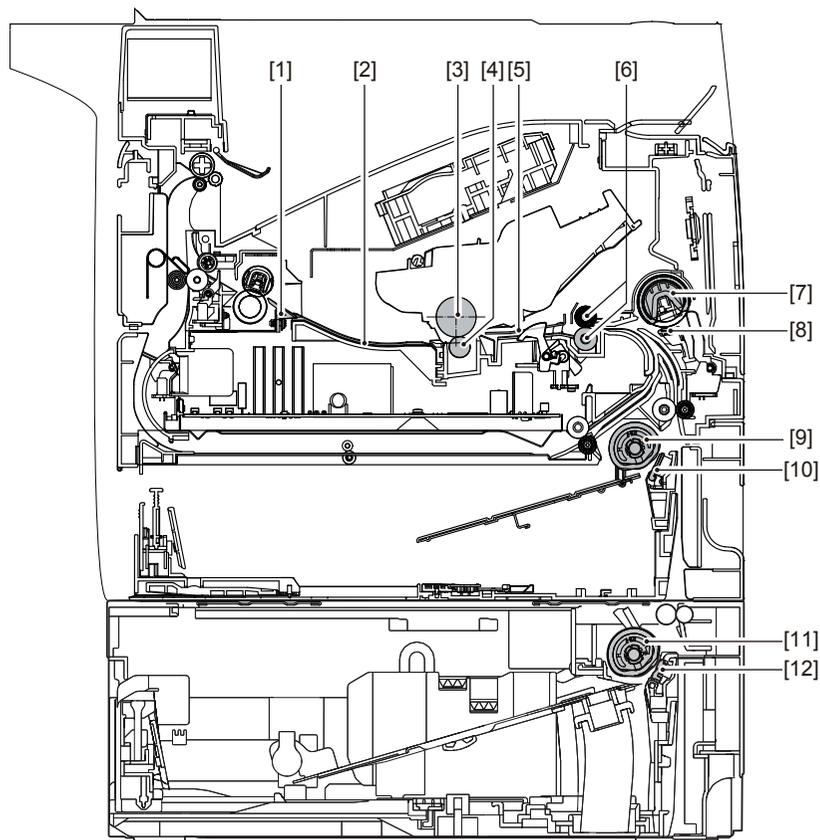
T-3-2

#### CAUTION:

Make sure to turn off the power and disconnect the power supply plug upon cleaning. It may cause fire/electric shock if failing turning off the power.

Do not clean the following components:

- Photosensitive Drum
- Transfer Roller



F-3-1

No.	Name	No.	Name
[1]	Fixing Inlet Guide	[7]	Multi-purpose Tray Pickup Roller
[2]	Media Feed Guide	[8]	Multi-purpose Tray Separation Pad
[3]	Photosensitive Drum	[9]	Cassette Pickup Roller
[4]	Transfer Roller	[10]	Cassette Separation Pad
[5]	Transfer Guide Unit	[11]	PF Pickup Roller
[6]	Registration Roller Unit	[12]	PF Separation Pad

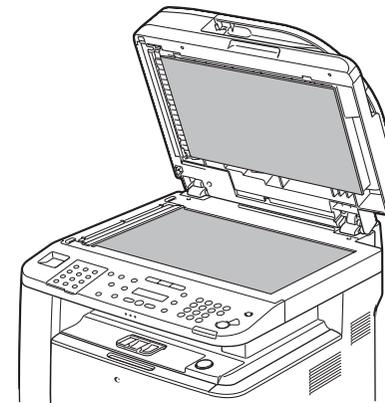
T-3-3

### ■ Cleaning Method (External Covers)

Wipe the machine's exterior with a clean, soft, lint-free cloth dampened with water or diluted dishwashing detergent solution.

### ■ Cleaning Method (Scanning Area)

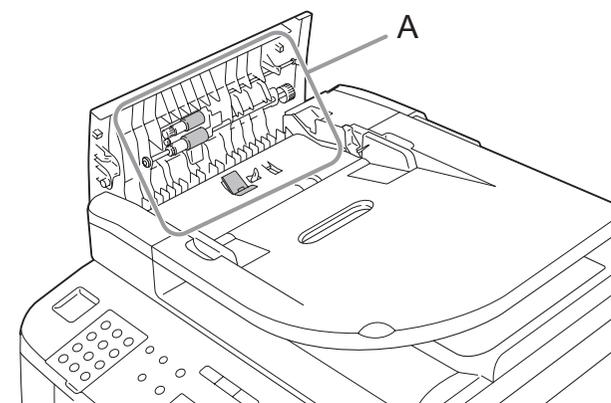
Clean the platen glass and the underside of the ADF with a cloth dampened with water. Then, wipe the area with a soft, dry cloth.



F-3-2

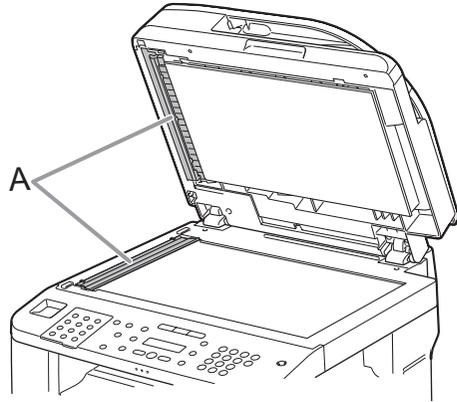
### ■ Cleaning Method (ADF)

Clean the rollers (A) inside the ADF with a cloth dampened with water. Then wipe the area with a soft, dry cloth.



F-3-3

Clean the ADF scanning area (on the left side of the platen glass (A)) with a cloth dampened with water. Then wipe the area with a soft, dry cloth.



F-3-4

## Fixing unit

### MEMO:

Cleaning the Fixing Unit takes approximately 150 seconds.

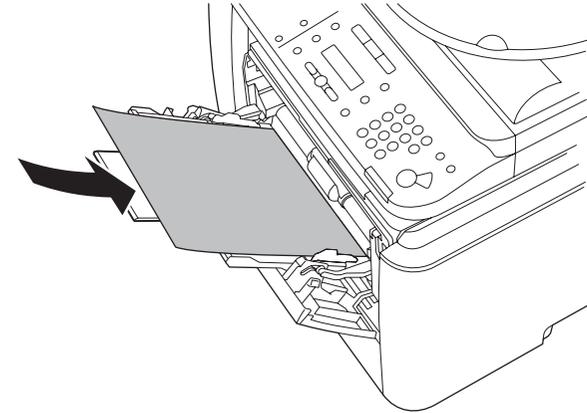
1. Press [Menu] key.
2. Press [ - ] key or [ + ] key to select <ADJUST./CLEANING>, then press [OK].
3. Press [ - ] key or [ + ] key to select <FIX. UNIT CLEANING>, then press [OK].
4. Press [ - ] key or [ + ] key to select <CLEAN PAPER PRT>, then press [OK].

### MEMO:

Make sure that LTR paper is loaded in a paper source.

5. Press [ - ] key to select [YES].  
The cleaning page is printed.

6. Load the cleaning page in the multipurpose tray with the printed side facing down.



F-3-5

7. Perform from step 1 to step 3 again.
8. Press [ - ] key or [ + ] key to select <START CLEANING>, then press [OK].
9. Press [ - ] key to select [YES].  
Cleaning starts. When finished, the display returns to the standby mode.

# 4

## Disassembly/ Assembly

- List of Parts
- External Cover, Internal Cover
- Document Exposure, Feed System
- Controller System
- Laser Exposure System
- Image Forming System
- Fixing System
- Paper Feed/Transport/Output System

## PREFACE

### Outline

This chapter describes disassembly and reassembly procedures of the printer.

The service technician is to identify the cause of printer failures according to the "Chapter 6 TROUBLESHOOTING" on (Refer to page 6-1) and to follow the disassembly procedures of each part to replace the defective parts or the consumable parts.

Note the following precautions when working on the printer.

1. CAUTION: Before disassembling or reassembling the printer, be sure to disconnect its power cord from the electrical outlet
2. During disassembly, reassembly or transportation of the printer, remove the cartridge if required.

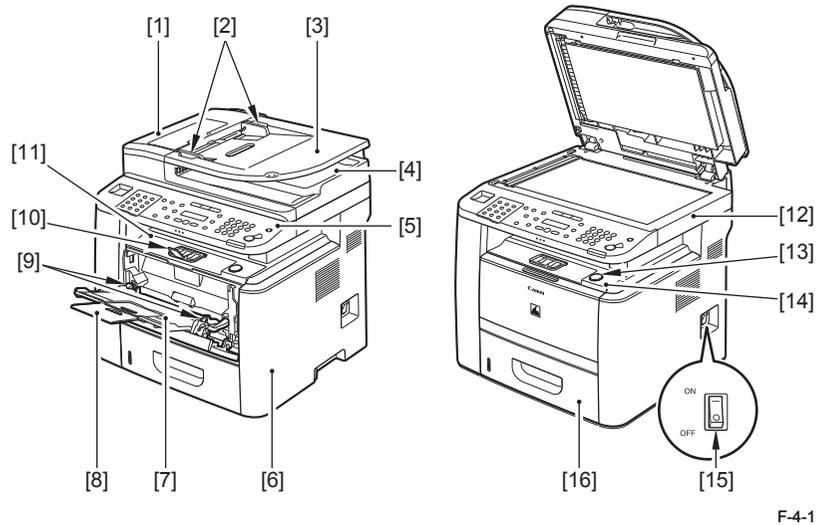
When the cartridge is out of the printer, put it in a protective bag even in a short period of time to prevent the adverse effect of light.

3. Reassembling procedures are followed by the reverse of disassembly unless otherwise specified.
4. Note the length, diameters, and locations of screws as you remove them. When reassembling the printer, be sure to use them in their original locations.
5. Do not run the printer with any parts removed as a general rule.
6. Ground yourself by touching the metal part of the printer before handling the PCB to reduce the possibility of damage caused by static electricity.
7. When you replace the part that the rating plate or the product code label is attached, be sure to remove the rating plate or the product code label and put it to the new part.

## List of Parts

## External View

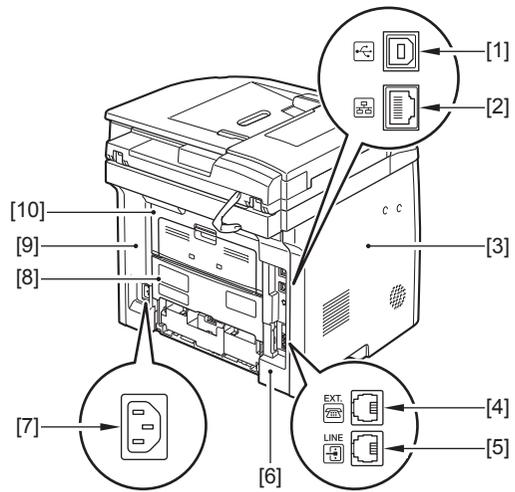
## Front Side



Key	Name	Service Pars No.	Remarks	Reference
[1]	DADF (Duplex Automatic Document Feeder)	-	-	(Refer to page 4-30)
[2]	Slide Guides	FC9-1501	Front	-
		FC9-1502	Rear	-
[3]	Document Feeder Tray	FM3-9534	-	-
[4]	Document Delivery Tray	-	-	-
[5]	Control Panel	FM3-9803	(D1180 TYPE I)	(Refer to page 4-70)
		FM4-6439	(D1180 TYPE II)	
		FM3-9817	(D1170 TYPE I)	
		FM4-6440	(D1170 TYPE II)	
		FM3-9818	(D1150 US,CA,LTN TYPE I)	
		FM4-6441	(D1150 US,CA,LTN TYPE II)	
		FM4-1649	(D1150 LTN,SG,AU TYPE I)	
		FM4-6443	(D1150 LTN,SG,AU TYPE II)	
		FM4-1651	(D1150 KR TYPE I)	
		FM4-6445	(D1150 KR TYPE II)	
		FM4-6444	(D1150 CN TYPE II)	
		FM3-9819	(D1120 TYPE I)	
		FM4-6442	(D1120 TYPE II)	
		FM4-1647	(MF6680dn TYPE I)	
		FM4-6446	(MF6680dn TYPE II)	
		FM4-1648	(MF6640dn TYPE I)	
[6]	Right Cover	FC9-2055	-	(Refer to page 4-23)
[7]	Multi-purpose Tray	-	-	-
[8]	Multi-purpose Tray Extension	-	-	-
[9]	Slide Guides for Multi-purpose Tray	-	-	-
[10]	Paper Stopper	-	-	-
[11]	Upper Cover	FC9-1999	-	(Refer to page 4-28)
[12]	Reader Unit	FM3-9525	-	(Refer to page 4-35)
[13]	Open Button	-	-	-
[14]	Front Cover	-	-	(Refer to page 4-26)
[15]	Main Power Switch	FM4-1656	(TYPE I)	-
		FM4-5367	(TYPE II)	-
[16]	Paper Cassette	FM3-9798	-	-

T-4-1

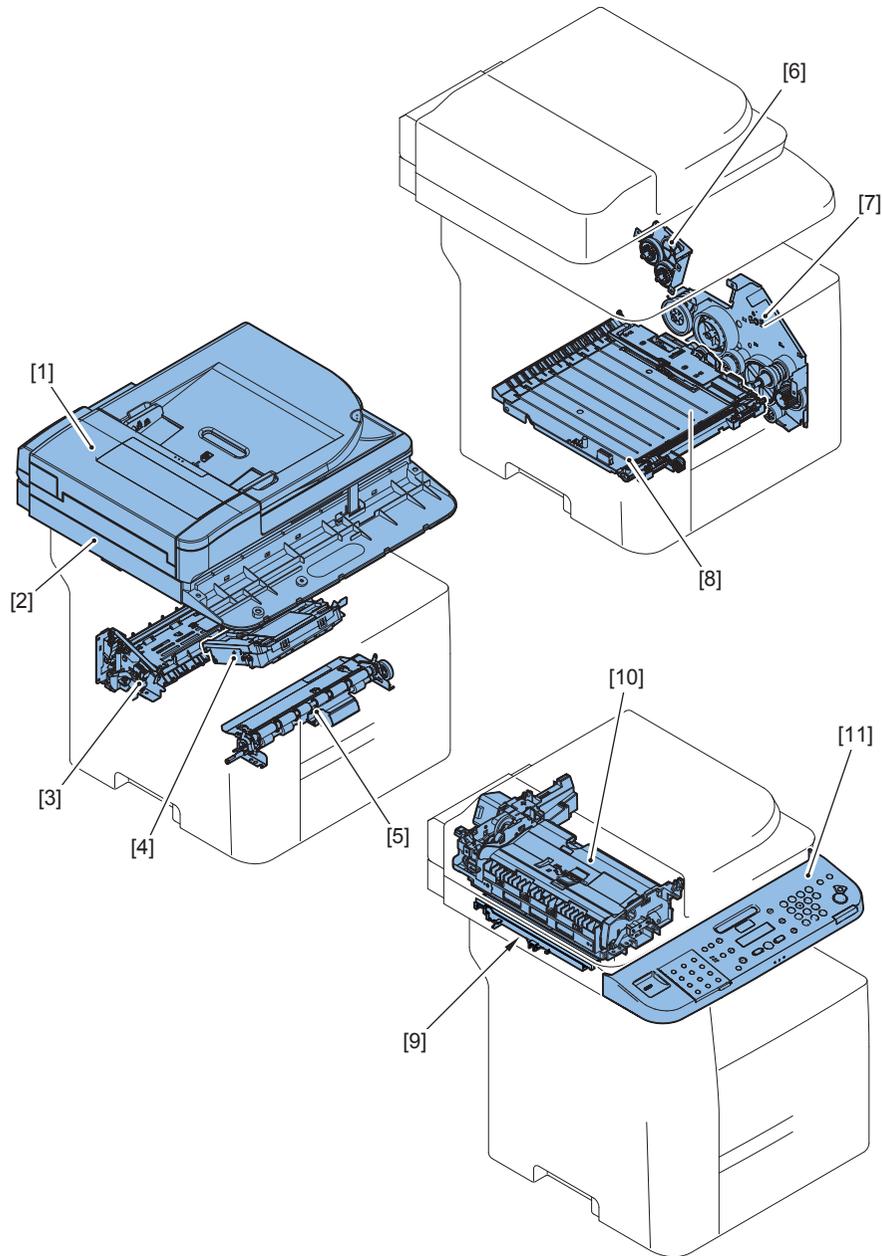
Rear Side



F-4-2

Key	Name	Service Pars No.	Remarks	Reference
[1]	USB Port	-	-	-
[2]	Ethernet Port	-	-	-
[3]	Left Cover	FC9-2017	-	(Refer to page 4-19)
[4]	External Device Jack	-	-	-
[5]	Telephone Line Jack	-	-	-
[6]	Left Rear Cover	FC9-2020 FC9-4916	(FAX Model) (Except FAX Model)	(Refer to page 4-22)
[7]	Power Socket	FM4-1607 FM4-5386	(TYPE I) (TYPE II)	-
[8]	Duplex Unit Cover	-	-	-
[9]	Right Rear Cover	FC9-2056	-	(Refer to page 4-26)
[10]	Rear Cover	FM3-9791	-	-

T-4-2

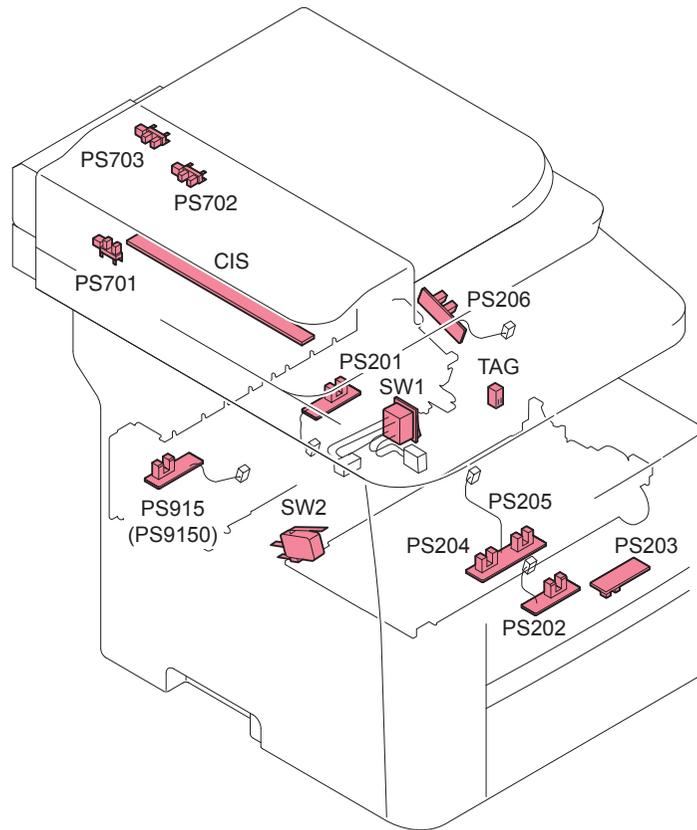
F-4-3

Key	Name	Service Parts No.	Remarks	Reference
[1]	DADF (Duplex Automatic Document Feeder)	-	-	(Refer to page 4-30)
[2]	Reader Unit	FM3-9525	-	(Refer to page 4-35)
[3]	Fixing Unit	RM1-6405	(120V)	(Refer to page 4-98)
		RM1-6406	(230V)	
[4]	Laser Scanner Unit	RM1-6424	-	(Refer to page 4-93)
[5]	Registration Unit	RM1-6419	-	(Refer to page 4-96)
[6]	Duplex Drive Unit	RM1-6423	-	(Refer to page 4-84)
[7]	Main Drive Unit	FM3-9797	(TYPE I)	(Refer to page 4-77)
			(TYPE II)	(Refer to page 4-81)
[8]	Duplex Feed Unit	RM1-6441	-	(Refer to page 4-27)
[9]	Contact Sensor	FK2-8634	-	(Refer to page 4-48)
[10]	ADF Pickup Feed Unit	FM3-9539	-	(Refer to page 4-42)
[11]	Control Panel	FM3-9803	(D1180 TYPE I)	(Refer to page 4-70)
		FM4-6439	(D1180 TYPE II)	
		FM3-9817	(D1170 TYPE I)	
		FM4-6440	(D1170 TYPE II)	
		FM3-9818	(D1150 US,CA,LTN TYPE I)	
		FM4-6441	(D1150 US,CA,LTN TYPE II)	
		FM4-1649	(D1150 LTN,SG,AU TYPE I)	
		FM4-6443	(D1150 LTN,SG,AU TYPE II)	
		FM4-1651	(D1150 KR TYPE I)	
		FM4-6445	(D1150 KR TYPE II)	
		FM4-6444	(D1150 CN TYPE II)	
		FM3-9819	(D1120 TYPE I)	
		FM4-6442	(D1120 TYPE II)	
		FM4-1647	(MF6680dn TYPE I)	
		FM4-6446	(MF6680dn TYPE II)	
		FM4-1648	(MF6640dn TYPE I)	

T-4-3

## Main Parts

### Sensor / Switc



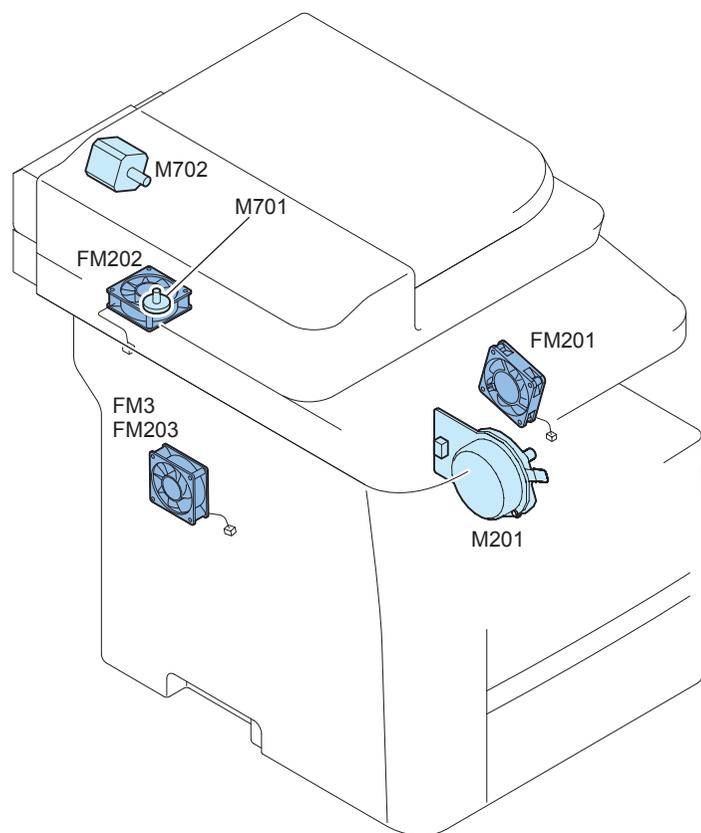
F-4-4

Symbol	Name	Service Parts No.	Remarks	Reference
CIS	CIS Unit	FK2-8634	-	(Refer to page 4-48)
PS201	Duplex Reverse Sensor	-	-	-
PS202	Multi-purpose Tray Media Presence Sensor	RM1-6350	-	-
PS203	Cassette Media Presence Sensor	-	-	-
PS204	Top Sensor	-	-	-
PS205	Media Width Sensor	-	-	-
PS206	FD Tray Media Full Sensor	-	-	-
PS701	Scanner Home Position Sensor	WG8-5696	-	-
PS702	Document End Sensor	WG8-5696	-	-
PS703	Document Sensor	WG8-5696	-	-
PS915	Fixing Delivery Sensor	-	(100V)	-
PS9150		-	(230V)	-
SW1	Main Switch	-	-	-
SW2	Door Switch	WC4-5171	-	-
TAG	Cartridge Sensor	-	-	-

T-4-4



## Motor / Fan

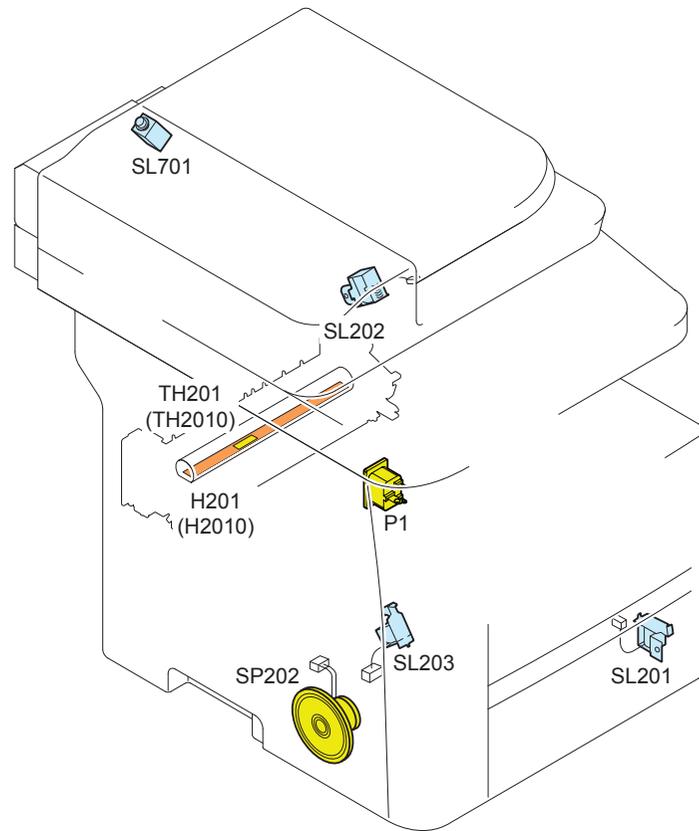


F-4-5

Symbol	Name	Service Parts No.	Remarks	Reference
FM201	Main Fan	FK2-2064	-	(Refer to page 4-75)
FM202	Power Cooling Fan	FK2-0472	(TYPE I)	(Refer to page 4-75)
FM3	Controller Fan	FK3-0472	(TYPE I)	(Refer to page 4-77)
FM203		FK3-0732	(TYPE II)	
M201	Main Motor	RM1-6378	(TYPE I)	(Refer to page 4-71)
			(TYPE II)	(Refer to page 4-73)
M701	Scanner Motor	-	-	(Refer to page 4-93)
M702	ADF Motor	-	-	(Refer to page 4-45)

T-4-5

## Other

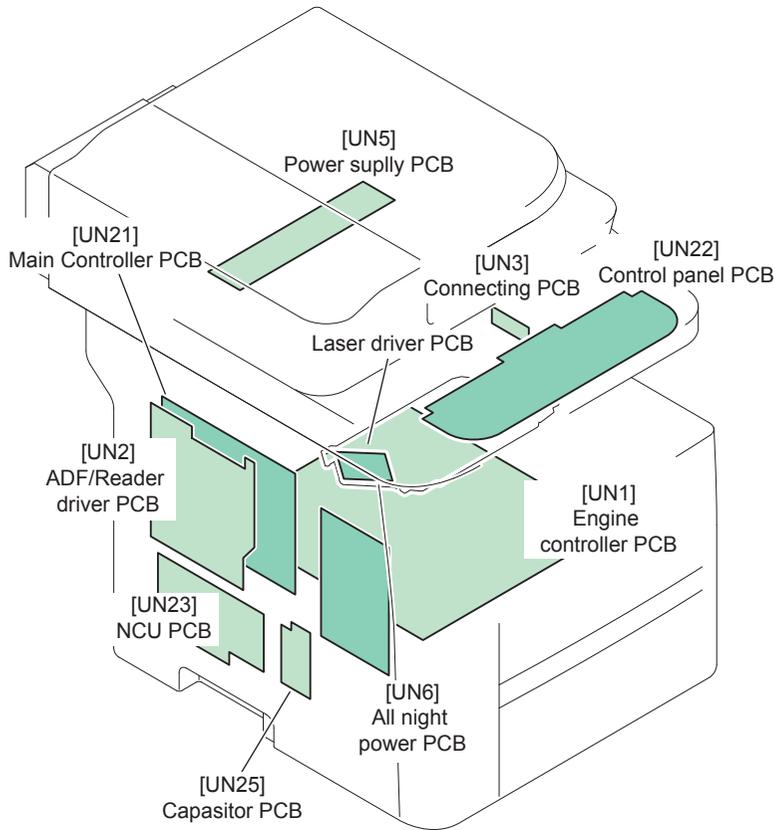


F-4-6

Symbol	Name	Service Parts No.	Remarks	Reference
H201	Heater	-	(100V)	-
H2010			(230V)	-
P1	Power Cord Outlet	FM4-1607	(TYPE I)	-
			(TYPE II)	-
SL201	Cassette Pickup Sorenoide	RK2-2729	-	(Refer to page 4-90)
SL202	Duplex Reverse Sorenoide	RK2-2733	-	(Refer to page 4-90)
SL203	Multi-purpose Tray Pickup Sorenoide	RK2-2731	(TYPE I)	(Refer to page 4-88)
			(TYPE II)	(Refer to page 4-89)
SL701	ADF Delivery Sorenoide	-	-	(Refer to page 4-46)
SP202	Speaker	FK2-8572	(TYPE I)	(Refer to page 4-91)
			(TYPE II)	(Refer to page 4-92)
TH201	Thermistor	-	(100V)	-
TH2010			(230V)	-

T-4-6

PCB

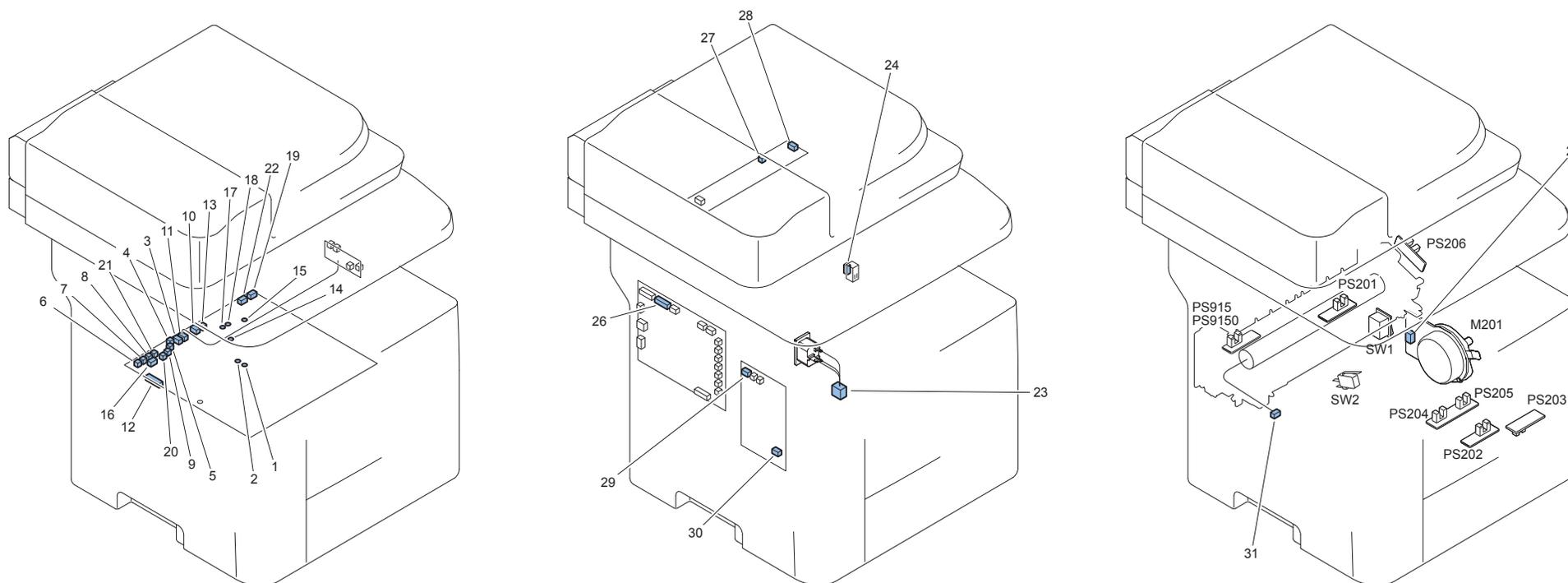


Symbol	Name	Service Parts No.	Remarks	Reference
UN1	Engine Controller PCB	FM4-1487	(TYPE I 120V)	(Refer to page 4-64)
		FM4-1488	(TYPE I 230V)	
		FM4-5724	(TYPE II 120V)	(Refer to page 4-67)
		FM4-5725	(TYPE II 230V)	
UN2	ADF/Reader Driver PCB	FM4-6078	-	(Refer to page 4-55)
UN3	Connecting PCB	FM4-1605		
UN5	Power supply PCB	FK2-8629	(TYPE I 120V)	(Refer to page 4-60)
		FK2-8630	(TYPE I 230V)	
UN6	All Night Power PCB	FK2-6324	(TYPE I 120V)	(Refer to page 4-60)
		FK2-6325	(TYPE I 230V)	
UN21	Main Controller PCB	FM4-1613	(TYPE I D1180, MF6680dn)	(Refer to page 4-56)
		FM4-1614	(TYPE I D1170)	
		FM4-1615	(TYPE I D1150)	
		FM4-2669	(TYPE I D1120)	
		FM4-1616	(TYPE I MF6640dn)	
		FM4-3215	(TYPE II D1180, MF6680dn)	
		FM4-3216	(TYPE II D1170)	
		FM4-3217	(TYPE II D1150)	
FM4-2678	(TYPE II D1120)			
UN22	Control Panel PCB	-	-	(Refer to page 4-70)
UN23	NCU PCB	FM4-1620	(FAX Model US)	(Refer to page 4-58)
		FM4-1621	(FAX Model AU)	
		FM4-1622	(FAX Model EUR,LTN,SG,CN,KR)	
UN25	Capasitor PCB	FM4-1624	(Except D1120)	(Refer to page 4-58)
-	Laser driver PCB	-	-	(Refer to page 4-93)

T-4-7

## Connector Layout Drawing (TAYPE I)

### Internal 1

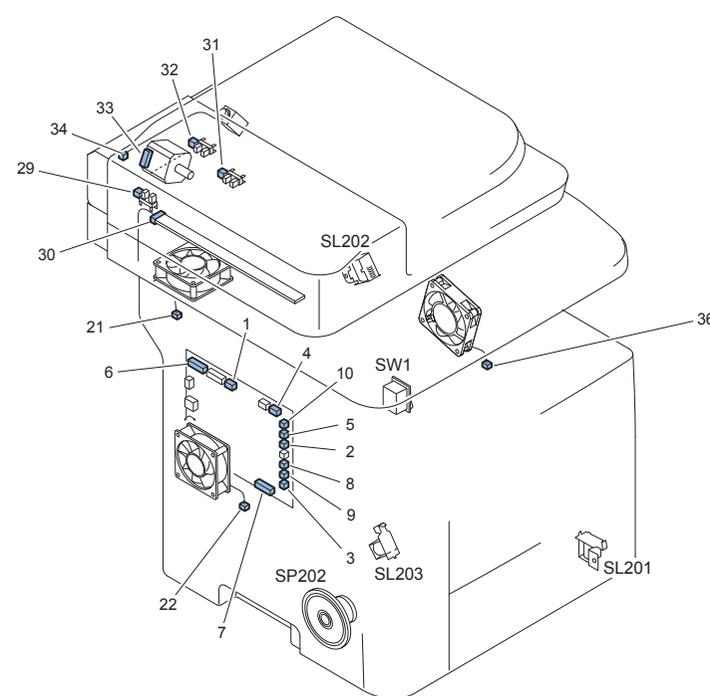
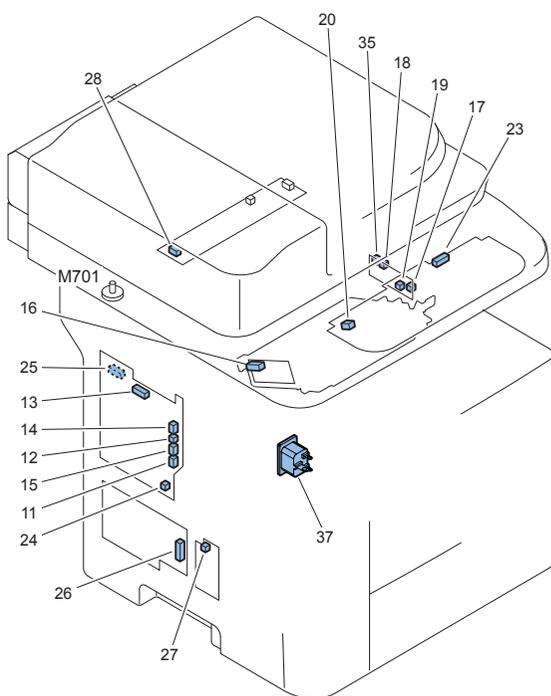


F-4-7

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
1	UN1	J251	Engine Controller Board			-	SW2	Door Switch	
2	UN1	J252	Engine Controller Board			-	SW2	Door Switch	
3	UN1	J211	Engine Controller Board		23	J1205	-	Paper Feeder	
4	UN1	J214	Engine Controller Board		24	J2100	-	TAG	
5	UN1	J208	Engine Controller Board			-	PS201	Duplex Reverse Sensor	
6	UN1	J205	Engine Controller Board			-	PS202	Multi-purpose Tray Media Presence Sensor	
7	UN1	J204	Engine Controller Board			-	PS203	Cassette Media Presence Sensor	
8	UN1	J203	Engine Controller Board			-	PS204	Top Sensor	
8	UN1	J203	Engine Controller Board			-	PS205	Media Full Sensor	
9	UN1	J213	Engine Controller Board			-	PS206	FD Tray Media Full Sensor	
10	UN1	J202	Engine Controller Board		25	J1202	M201	Main Motor	
11	UN1	J207	Engine Controller Board			-	UN3	Connecting PCB	
12	UN1	J201	Engine Controller Board		26	J703	UN21	Main Controller Board	

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
13	UN1	J215	Engine Controller Board		27	J981	UN5	Power Suplly PCB	
14	UN1	J254	Engine Controller Board		28	J980	UN5	Power Suplly PCB	
15	UN1	J253	Engine Controller Board		28	J980	UN5	Power Suplly PCB	
16	UN1	J216	Engine Controller Board		29	J691	UN6	All Night Power PCB	
17	UN1	J256	Engine Controller Board		30	J681	UN6	All Night Power PCB	
18	UN1	J255	Engine Controller Board		30	J681	UN6	All Night Power PCB	
19	UN1	J212	Engine Controller Board		31	J407	H201	Heater	110V
20	UN1	J210	Engine Controller Board			-	TH201	Thermistor	110V
21	UN1	J206	Engine Controller Board			-	PS915	Fixing Delivery Sensor	110V
19	UN1	J2120	Engine Controller Board		31	J5	H2010	Heater	230V
20	UN1	J2200	Engine Controller Board			-	TH2010	Thermistor	230V
21	UN1	J2060	Engine Controller Board			-	PS9150	Fixing Delivery Sensor	230V
22	UN1	J209	Engine Controller Board			-	SW1	Main Power Switch	

## Internal 2



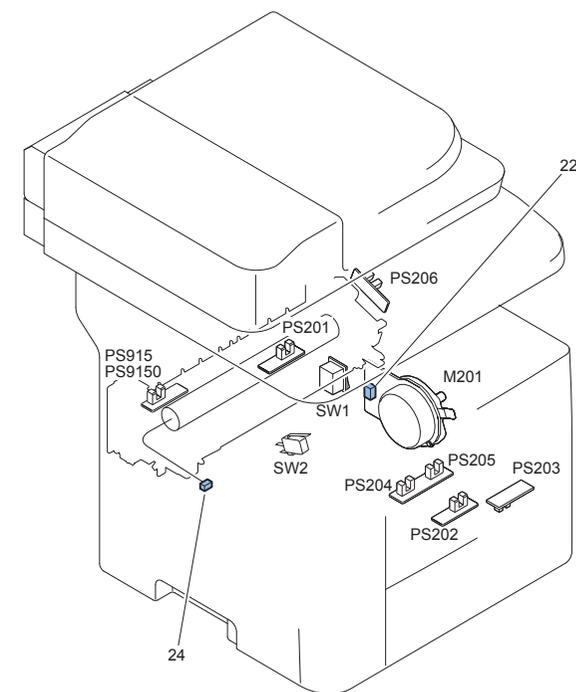
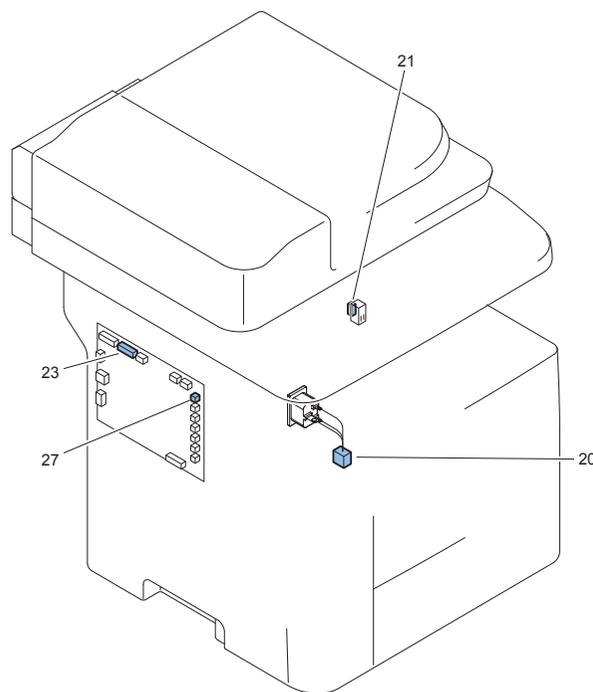
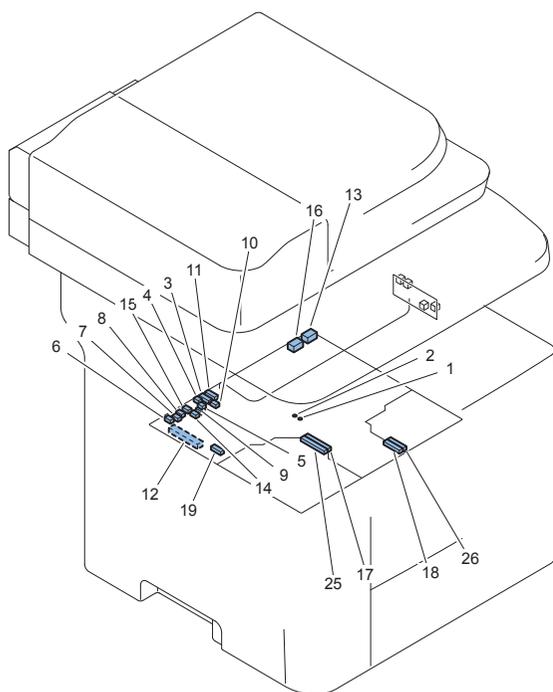
F-4-8

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
1	UN12	J705	Main Controller Board		20	J801	-	Laser Driver PCB	
2	UN12	J706	Main Controller Board		21	J903	FM202	Power Cooling Fan	
2	UN12	J718	Main Controller Board		22	J1501	FM3	Controller Fan	
3	UN12	J717	Main Controller Board		-	SP202	SP202	Speaker	
4	UN12	J707	Main Controller Board		23	J401	UN22	Control Panel PCB	
5	UN12	J701	Main Controller Board		24	J751	UN2	ADF/Reader Driver PCB	
6	UN12	J708	Main Controller Board		25	J760	UN2	ADF/Reader Driver PCB	
7	UN12	J711	Main Controller Board		26	J4	UN23	NCU PCB	
8	UN12	J712	Main Controller Board		27	J305	UN25	Capasitor PCB	
9	UN12	J719	Main Controller Board		-	SL203	SL203	Multi-purpose Tray Pickup Sorenoid	
10	UN12	J704	Main Controller Board		28	J982	UN5	Power Suplly PCB	
11	UN2	J752	ADF/Reader Driver PCB		-	M701	M701	Scanner Motor	
12	UN2	J753	ADF/Reader Driver PCB		29	J1401	PS701	Scanner Home Position Sensor	
13	UN2	J761	ADF/Reader Driver PCB		30	J409	-	CIS	
14	UN2	J755	ADF/Reader Driver PCB	J1755	31	J1310	PS702	Document End Sensor	
14	UN2	J755	ADF/Reader Driver PCB		32	J1302	PS703	Document Sensor	
15	UN2	J754	ADF/Reader Driver PCB		33	J1300	M702	ADF Motor	
15	UN2	J754	ADF/Reader Driver PCB		34	J1304	SL701	ADF Delivery Sorenoid	

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
16	LASER	J802	Scanner Motor		35	J1103	UN3	Connecting PCB	
17	UN3	J1104	Connecting PCB			-	SL201	Cassette Pickup Sorenoid	
18	UN3	J1101	Connecting PCB			-	SL202	Duplex Reverse Sorenoid	
19	UN3	J1105	Connecting PCB		36	J904	FM201	Main Fan	
	SW1		Main Power Switch		37	J905	P1	Power Cord	

## Connector Layout Drawing (TAYPE II)

### Internal 1

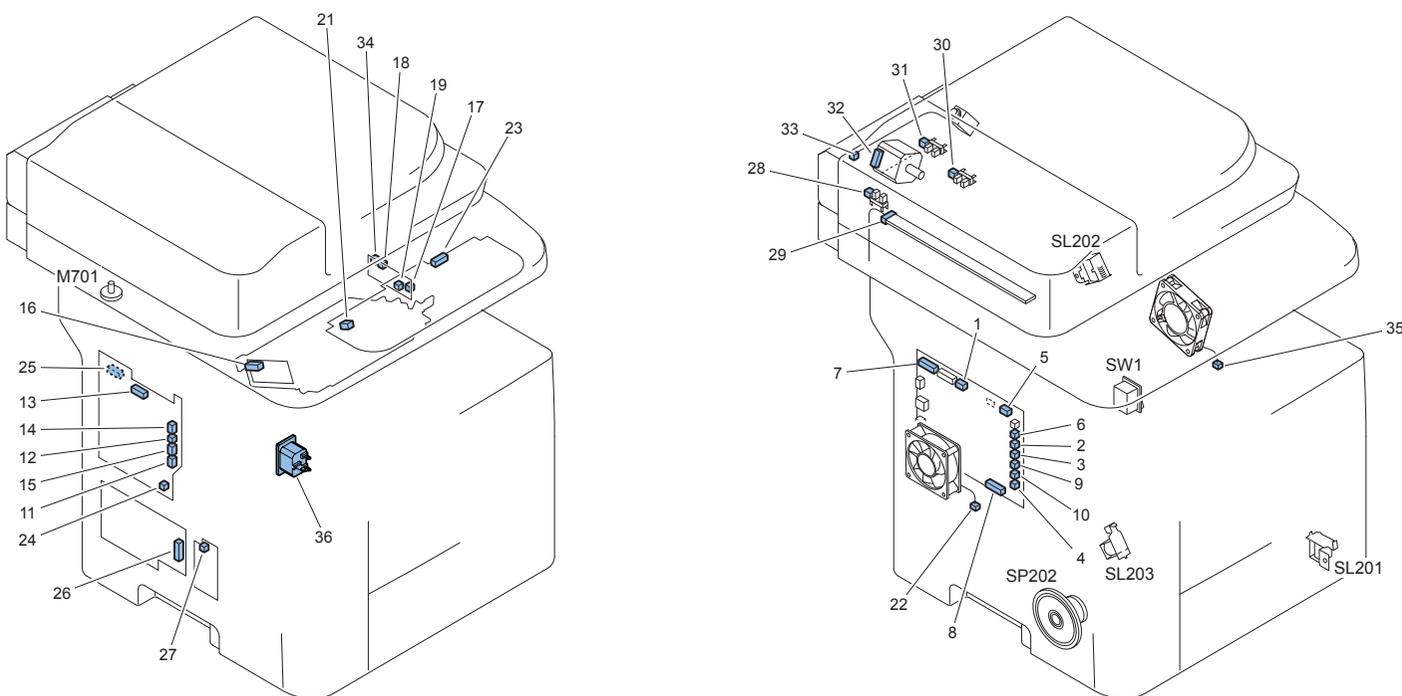


F-4-9

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
1	UN1	J251	Engine Controller Board			-	SW2	Door Switch	
2	UN1	J252	Engine Controller Board			-	SW2	Door Switch	
3	UN1	J211	Engine Controller Board		20	J1205	-	Paper Feeder	
4	UN1	J214	Engine Controller Board		21	J2100	-	TAG	
5	UN1	J208	Engine Controller Board			-	PS201	Duplex Reverse Sensor	
6	UN1	J205	Engine Controller Board			-	PS202	Multi-purpose Tray Media Presence Sensor	
7	UN1	J204	Engine Controller Board			-	PS203	Cassette Media Presence Sensor	
8	UN1	J203	Engine Controller Board			-	PS204	Top Sensor	
8	UN1	J203	Engine Controller Board			-	PS205	Media Full Sensor	
9	UN1	J213	Engine Controller Board			-	PS206	FD Tray Media FuLL Sensor	
10	UN1	J202	Engine Controller Board		22	J1202	M201	Main Motor	
11	UN1	J207	Engine Controller Board			-	UN3	Connecting PCB	
12	UN1	J201	Engine Controller Board		23	J703	UN21	Main Controller Board	
13	UN1	J212	Engine Controller Board		24	J407	H201	Heater	110V
14	UN1	J210	Engine Controller Board			-	TH201	Thermistor	110V
15	UN1	J206	Engine Controller Board			-	PS915	Fixing Delivery Sensor	110V

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
13	UN1	J2120	Engine Controller Board		24	J5	H2010	Heater	230V
14	UN1	J2200	Engine Controller Board			-	TH2010	Thermistor	230V
15	UN1	J2060	Engine Controller Board			-	PS9150	Fixing Delivery Sensor	230V
16	UN1	J209	Engine Controller Board			-	SW1	Main Power Switch	
17	UN1	J271	Engine Controller Board		25	J257	-	HVT DV PCB	
18	UN1	J270	Engine Controller Board		26	J256	-	HVT TR PCB	
19	UN1	J255	Engine Controller Board		27	J704	-	Main Controller Board	

## Internal 2



F-4-10

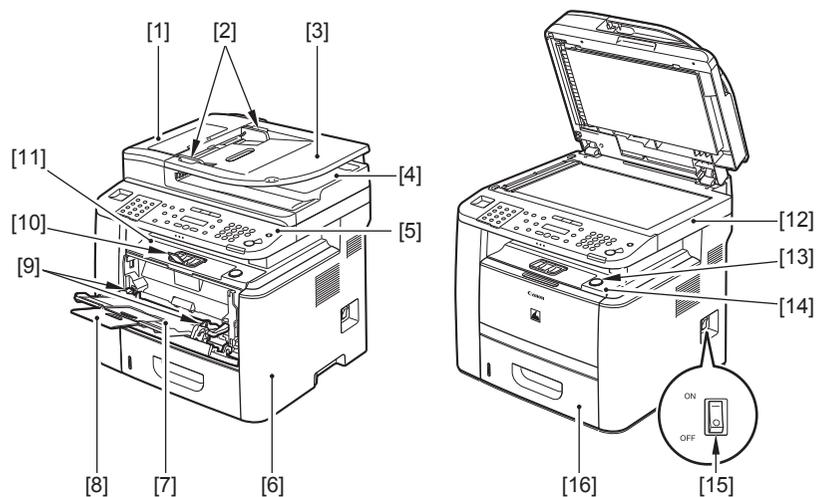
Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
1	UN12	J705	Main Controller Board		21	J801	-	Laser Driver PCB	
2	UN12	J706	Main Controller Board			-	-	-	
3	UN12	J718	Main Controller Board		22	J1501	FM203	Controller Fan	
4	UN12	J717	Main Controller Board			-	SP202	Speaker	
5	UN12	J707	Main Controller Board		23	J401	UN22	Control Panel PCB	
6	UN12	J701	Main Controller Board		24	J751	UN2	ADF/Reader Driver PCB	
7	UN12	J708	Main Controller Board		25	J760	UN2	ADF/Reader Driver PCB	
8	UN12	J711	Main Controller Board		26	J4	UN23	NCU PCB	
9	UN12	J712	Main Controller Board		27	J305	UN25	Capasitor PCB	
10	UN12	J719	Main Controller Board			-	SL203	Multi-purpose Tray Pickup Sorenoind	
11	UN2	J752	ADF/Reader Driver PCB			-	M701	Scanner Motor	
12	UN2	J753	ADF/Reader Driver PCB		28	J1401	PS701	Scanner Home Position Sensor	
13	UN2	J761	ADF/Reader Driver PCB		29	J409	-	CIS	
14	UN2	J755	ADF/Reader Driver PCB	J1755	30	J1310	PS702	Document End Sensor	
14	UN2	J755	ADF/Reader Driver PCB		31	J1302	PS703	Document Sensor	
15	UN2	J754	ADF/Reader Driver PCB		32	J1300	M702	ADF Motor	
15	UN2	J754	ADF/Reader Driver PCB		33	J1304	SL701	ADF Delivery Sorenoind	
16	LASER	J802	Scanner Motor		34	J1103	UN3	Connecting PCB	

Key No.	Symbol	Jack No.	Name	Relay Connector	Key No.	Jack No.	Symbol	Name	REMARKS
17	UN3	J1104	Connecting PCB			-	SL201	Cassette Pickup Sorenoid	
18	UN3	J1101	Connecting PCB			-	SL202	Duplex Reverse Sorenoid	
19	UN3	J1105	Connecting PCB		35	J904	FM201	Main Fan	
	SW1		Main Power Switch		36	J905	P1	Power Cord	

## External Cover, Internal Cover

### External View

#### Front Side



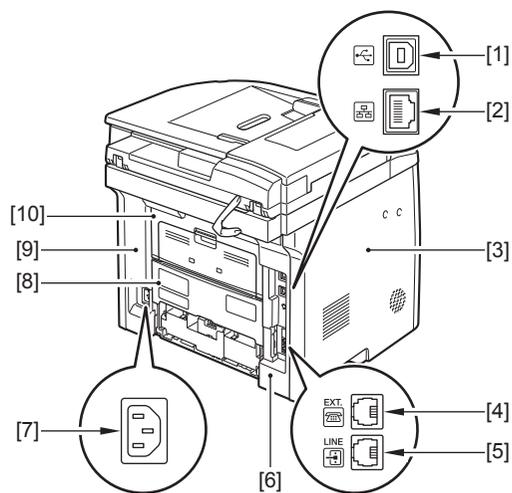
F-4-11



Key	Name	Service Pars No.	Remarks	Reference
[1]	DADF (Duplex Automatic Document Feeder)	-	-	(Refer to page 4-30)
[2]	Slide Guides	FC9-1501	Front	-
		FC9-1502	Rear	
[3]	Document Feeder Tray	FM3-9534	-	-
[4]	Document Delivery Tray	-	-	-
[5]	Control Panel	FM3-9803	(D1180 TYPE I)	(Refer to page 4-70)
		FM4-6439	(D1180 TYPE II)	
		FM3-9817	(D1170 TYPE I)	
		FM4-6440	(D1170 TYPE II)	
		FM3-9818	(D1150 US,CA,LTN TYPE I)	
		FM4-6441	(D1150 US,CA,LTN TYPE II)	
		FM4-1649	(D1150 LTN,SG,AU TYPE I)	
		FM4-6443	(D1150 LTN,SG,AU TYPE II)	
		FM4-1651	(D1150 KR TYPE I)	
		FM4-6445	(D1150 KR TYPE II)	
		FM4-6444	(D1150 CN TYPE II)	
		FM3-9819	(D1120 TYPE I)	
		FM4-6442	(D1120 TYPE II)	
		FM4-1647	(MF6680dn TYPE I)	
		FM4-6446	(MF6680dn TYPE II)	
FM4-1648	(MF6640dn TYPE I)			
[6]	Right Cover	FC9-2055	-	(Refer to page 4-23)
[7]	Multi-purpose Tray	-	-	-
[8]	Multi-purpose Tray Extension	-	-	-
[9]	Slide Guides for Multi-purpose Tray	-	-	-
[10]	Paper Stopper	-	-	-
[11]	Upper Cover	FC9-1999	-	(Refer to page 4-28)
[12]	Reader Unit	FM3-9525	-	(Refer to page 4-35)
[13]	Open Button	-	-	-
[14]	Front Cover	-	-	(Refer to page 4-26)
[15]	Main Power Switch	FM4-1656	(TYPE I)	-
		FM4-5367	(TYPE II)	
[16]	Paper Cassette	FM3-9798	-	-

T-4-8

## Rear Side



F-4-12

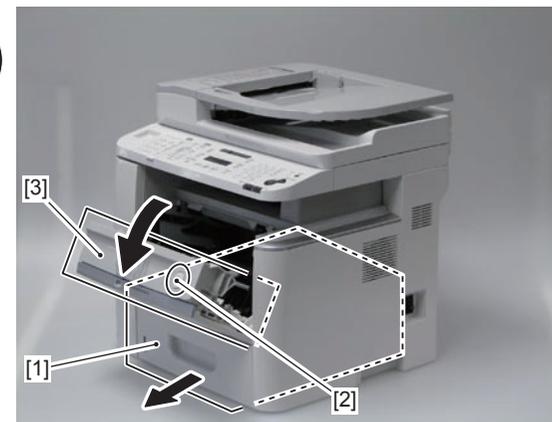
Key	Name	Service Pars No.	Remarks	Reference
[1]	USB Port	-	-	-
[2]	Ethernet Port	-	-	-
[3]	Left Cover	FC9-2017	-	(Refer to page 4-19)
[4]	External Device Jack	-	-	-
[5]	Telephone Line Jack	-	-	-
[6]	Left Rear Cover	FC9-2020 FC9-4916	(FAX Model) (Except FAX Model)	(Refer to page 4-22)
[7]	Power Socket	FM4-1607 FM4-5386	(TYPE I) (TYPE II)	-
[8]	Duplex Unit Cover	-	-	-
[9]	Right Rear Cover	FC9-2056	-	(Refer to page 4-26)
[10]	Rear Cover	FM3-9791	-	-

T-4-9

## Removing the Left Cover

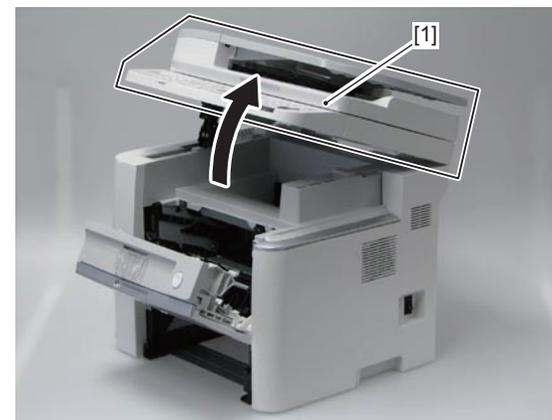
## Procedure

- 1) Remove the cassette [1].
- 2) Press the Open button [2], and open the Cartridge Door Unit [3].



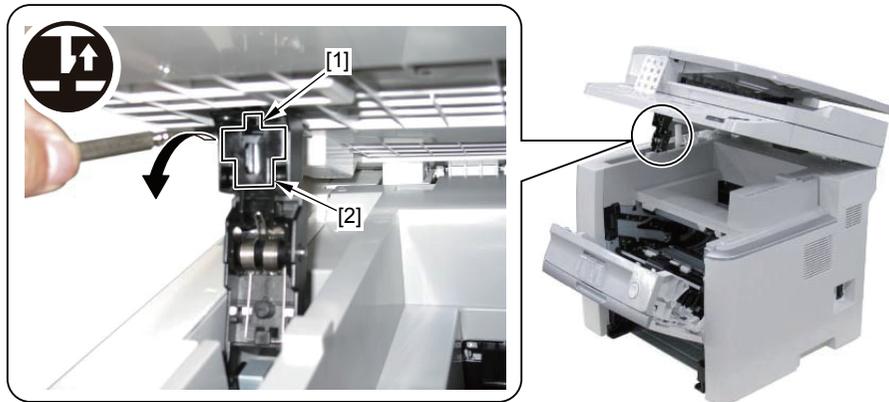
F-4-13

- 3) Open the ADF Unit + Reader Unit [1].



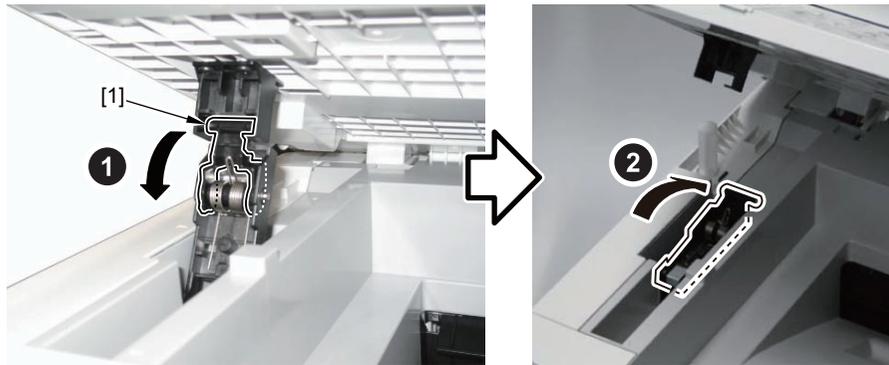
F-4-14

4) Release the claw [1], and remove the Arm Cover [2].



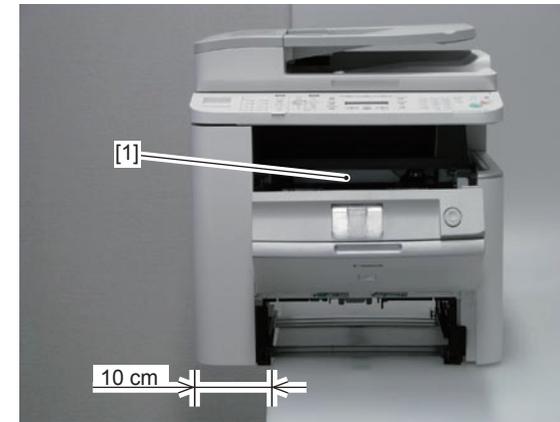
F-4-15

5) Release the Connection of Arm [1] and turn it toward the rear.



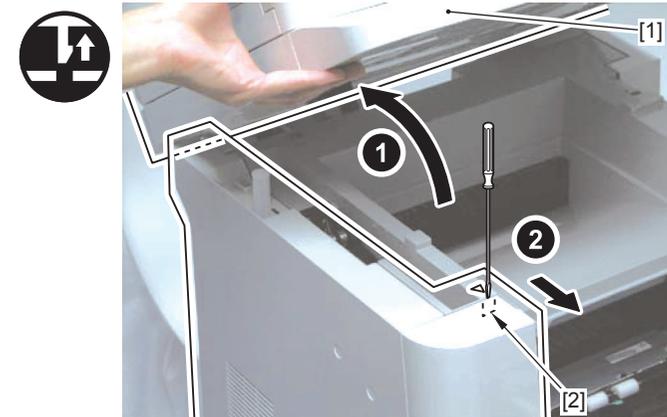
F-4-16

6) Place the host machine [1] while shifting the left side of it approx. 10cm from the working table.



F-4-17

7) Open the ADF Unit + Reader Unit [1], and release the claw [2].



F-4-18

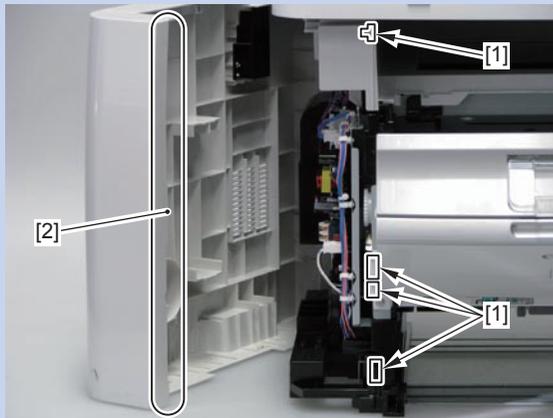
8) Open the ADF Unit + Reader Unit [1], and release the claw [3] while pulling the Left Cover [2] in the direction of the arrow.



F-4-19

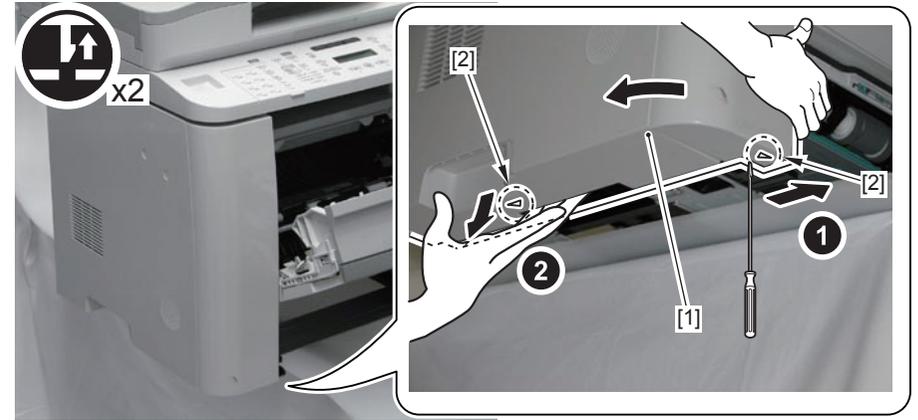
## MEMO :

Be sure to release it while releasing the edge area [2] of the Left Cover from 4 Hooks [1] of the Upper Cover and Front Cover.



F-4-20

9) While opening the Left Cover [1] in the direction of the arrow, release the 2 Claws [2] at lower side.

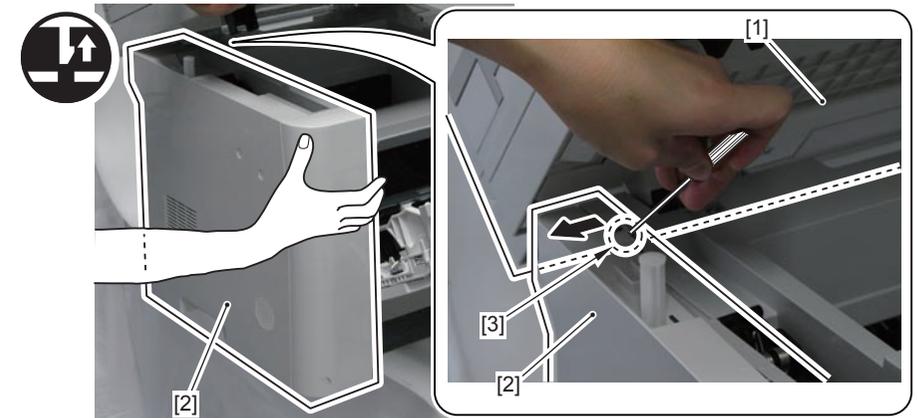


F-4-21

10) Open the ADF Unit + Reader Unit [1], and release the claw [3].

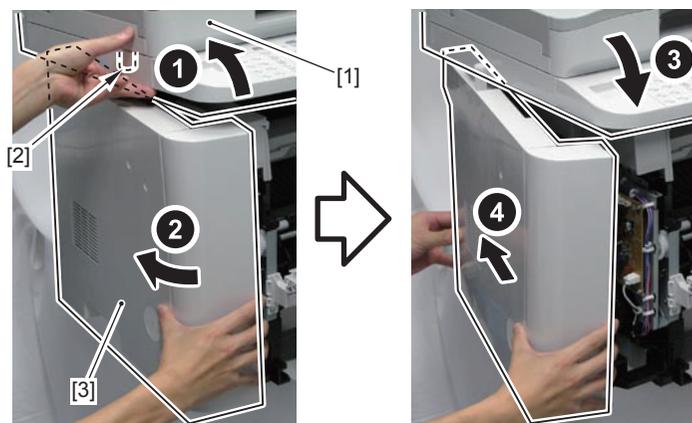
## MEMO :

Be sure to release the claw [3] while holding the Left Cover [2].



F-4-22

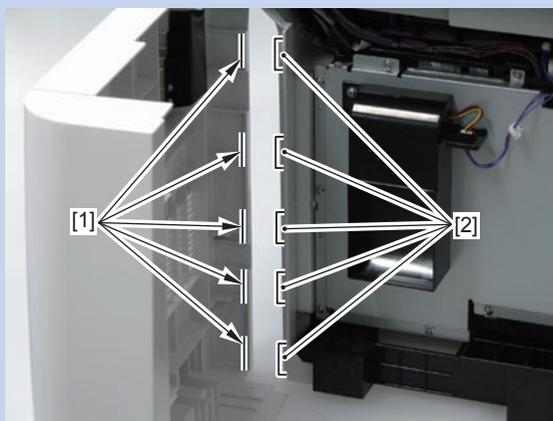
- 11) Open the ADF Unit + Reader Unit [1], and remove the boss [2] from the Left Cover [3].
- 12) Remove the Left Cover [3].



F-4-23

## MEMO :

At installation, be sure to fit the Left Cover [1] to the 5 Protrusions [2] of the Left Rear Cover.



F-4-24

- 13) After removing the Left Cover, place the host machine in the center of working table.

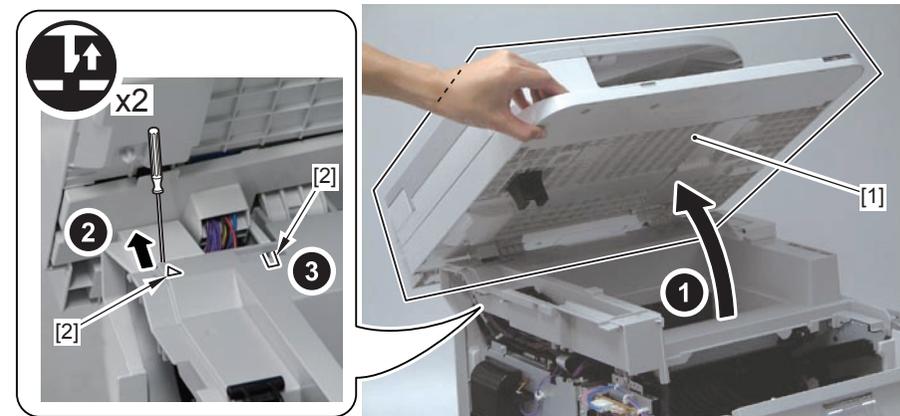
## Removing the Left Rear Cover

### Preparations

- 1) Removing the Left Cover. (Refer to page 4-19)

### Procedure

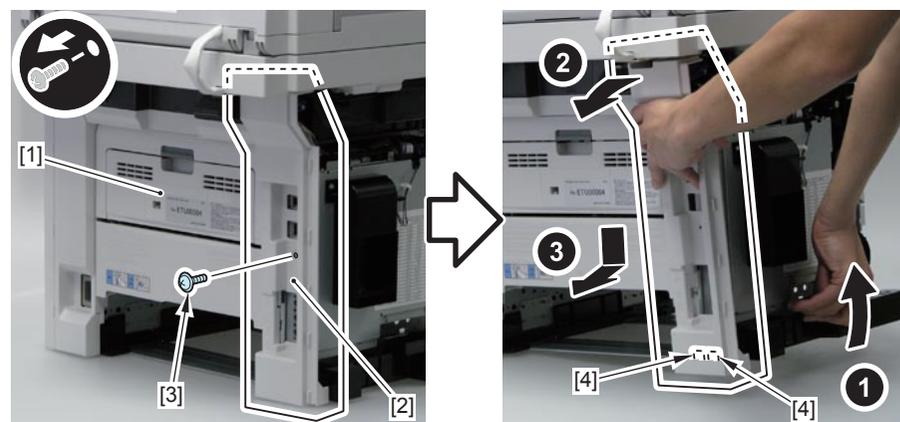
- 1) Open the ADF Unit + Reader Unit [1], and release the 2 Claws [2].



F-4-25

- 2) While lifting left side of the host machine [1], remove the Left Rear Cover [2].

- 1 Screw [3]
- 2 Hooks [4]

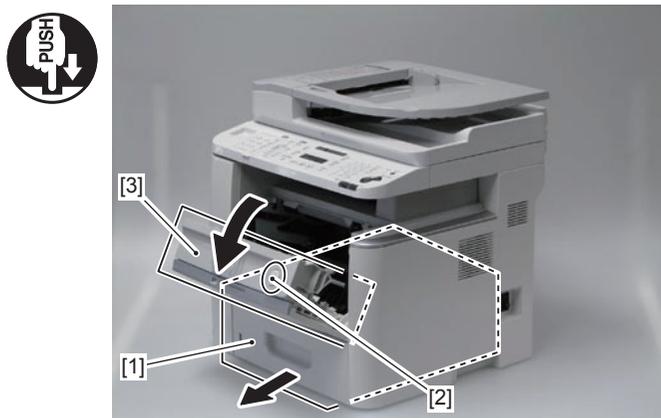


F-4-26

## Removing the Right Cover

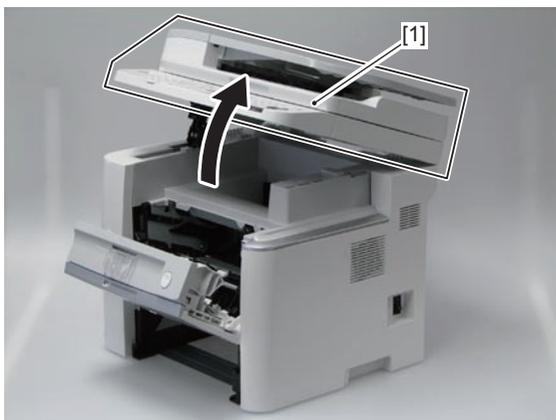
### Procedure

- 1) Remove the cassette [1].
- 2) Press the Open button [2], and open the Cartridge Door Unit [3].



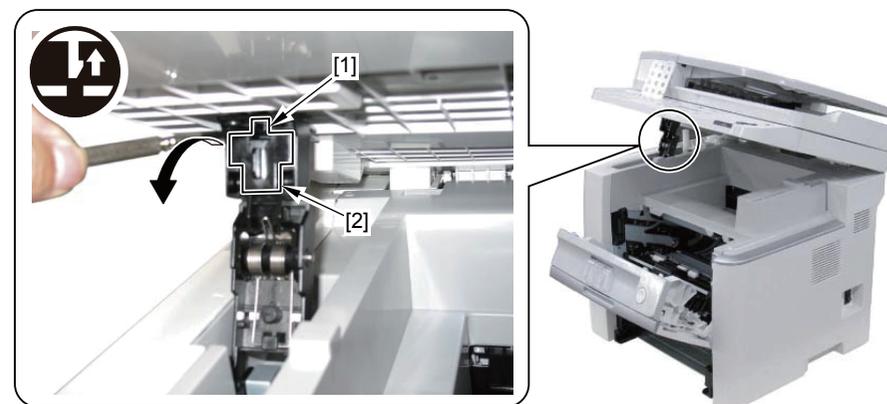
F-4-27

- 3) Open the ADF Unit + Reader Unit [1].



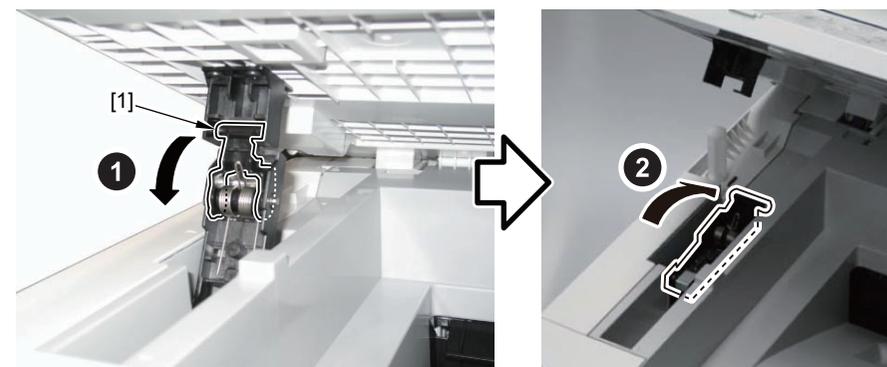
F-4-28

- 4) Release the claw [1], and remove the Arm Cover [2].



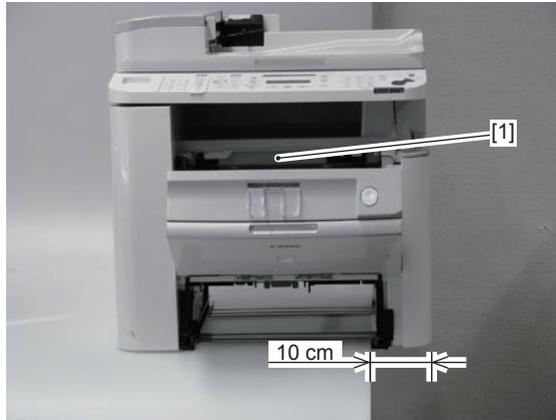
F-4-29

- 5) Release the Connection of Arm [1] and turn it toward the rear.



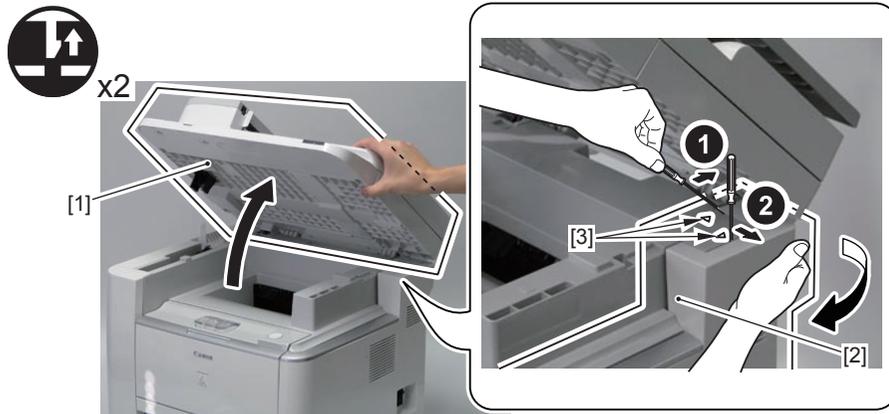
F-4-30

- 6) Place the host machine [1] while shifting the right side of it approx. 10cm from the working table.



F-4-31

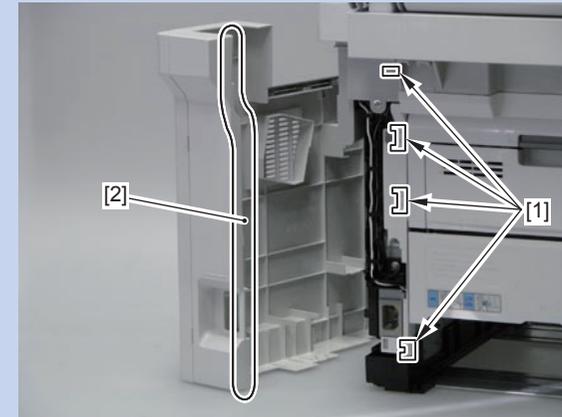
- 7) Open the ADF Unit + Reader Unit [1], and release the 2 Claws [3] while pulling the Right Cover [2] in the direction of the arrow.



F-4-32

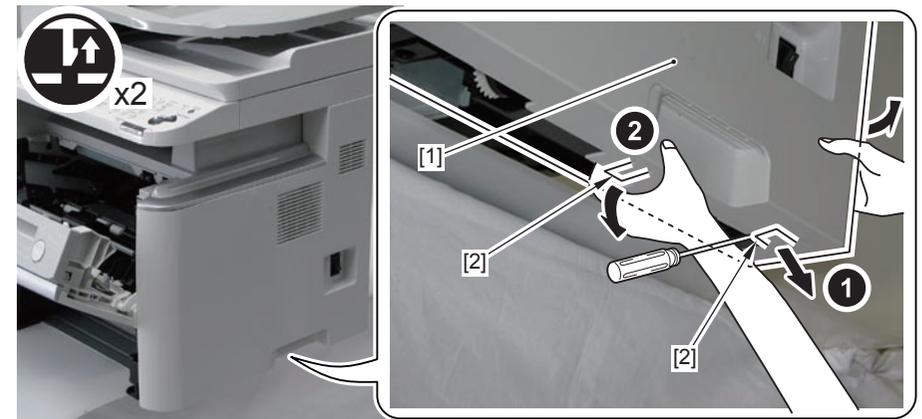
## MEMO :

Be sure to release it while releasing the edge area [2] of the Right Cover from 4 Hooks [1] of the Rear Cover.



F-4-33

- 8) Close the ADF Unit + Reader Unit, and release the 2 Claws [2] at lower side while pulling the Right Cover [1] in the direction of the arrow.



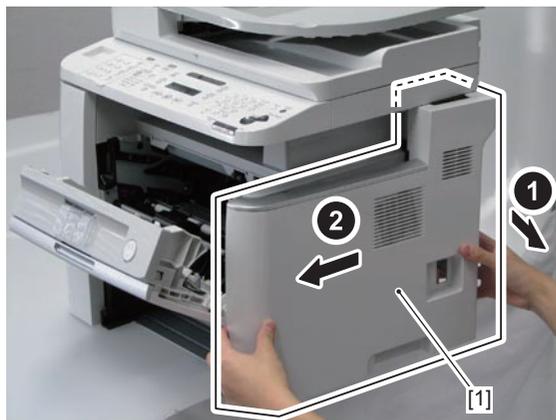
F-4-34

- 9) Open the ADF Unit + Reader Unit [1], and release the claw [3] while pulling the Right Cover [2] in the direction of the arrow.



F-4-35

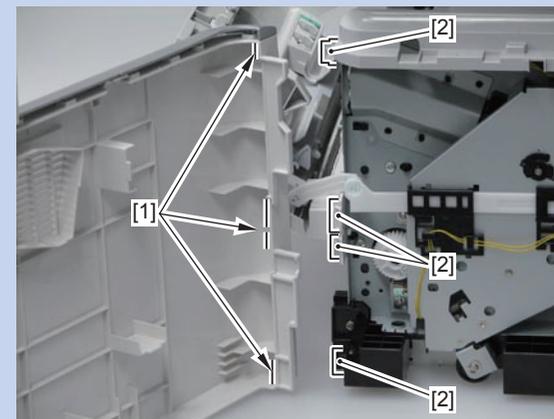
- 10) Remove the Right Cover [1].



F-4-36

## MEMO :

At installation, be sure to fit the Right Cover [1] to the 4 Protrusions [2] at front side of the host machine.



F-4-37

- 11) After removing the Right Cover, place the host machine in the center of working table.

## Removing the Right Rear Cover

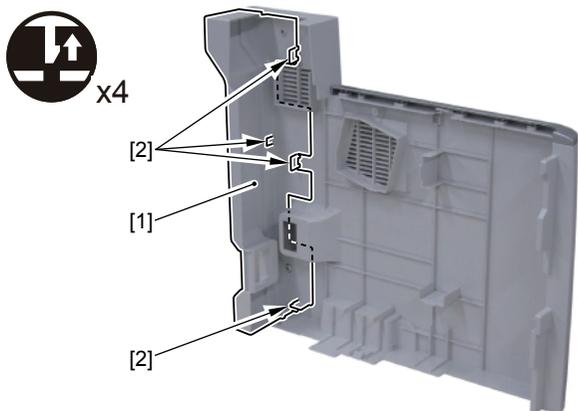
### Preparations

1) Removing the Right Cover.(Refer to page 4-23)

### Procedure

1) Remove the Right Rear Cover [1].

- 4 Claws [2]



F-4-38

## Removing the Front Cover

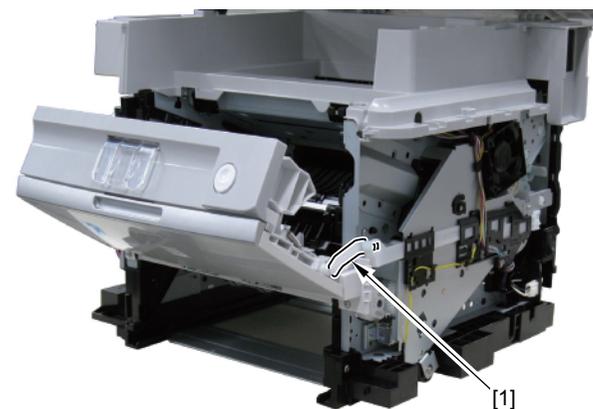
### Preparations

1) Removing the Left Cover.(Refer to page 4-19)

2) Removing the Right Cover.(Refer to page 4-23)

### Procedure

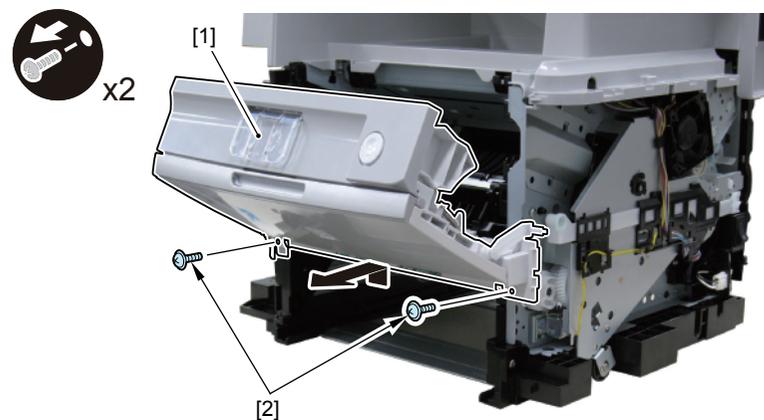
1) Remove the Link [1].



F-4-39

2) Remove the Front Cover [1].

- 2 Screws [2]



F-4-40

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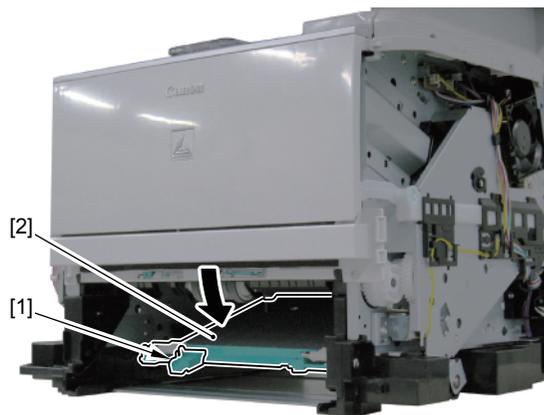
## Removing the Rear Cover Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Left Rear Cover.(Refer to page 4-22)
- 3) Removing the Right Cover.(Refer to page 4-23)

### Procedure

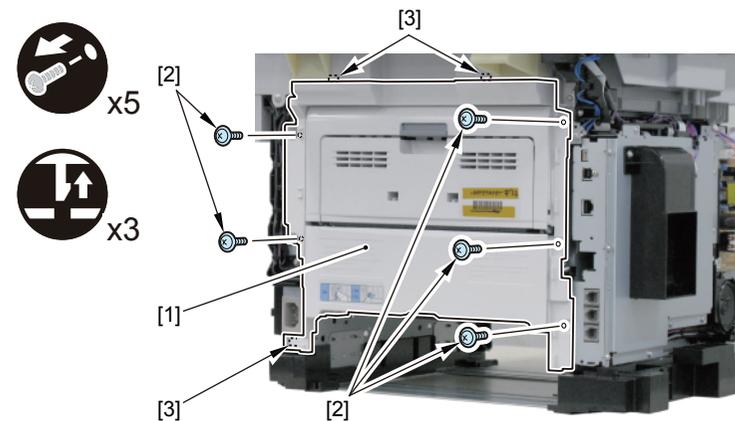
- 1) Push the Grip [1] Downward and Open the Duplex Feed Unit [2].



F-4-41

- 2) Remove the Rear Cover Unit [1].

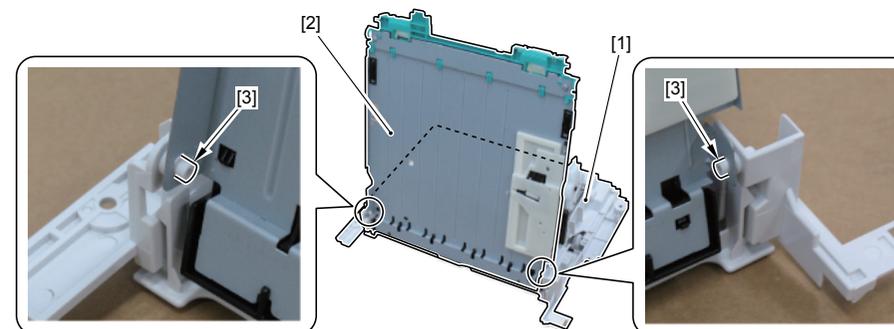
- 5 Screws [2]
- 3 Claws [3]



F-4-42

- 3) Remove the Duplex Feed Unit [2] from the Rear Cover Unit [1].

- 2 Bosses [3]

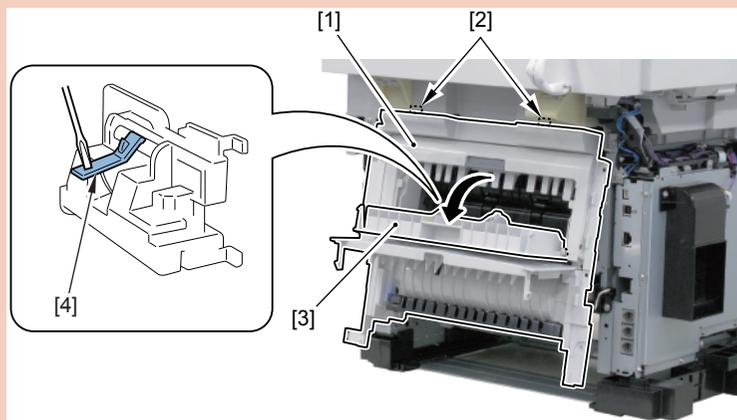


F-4-43

**CAUTION :**

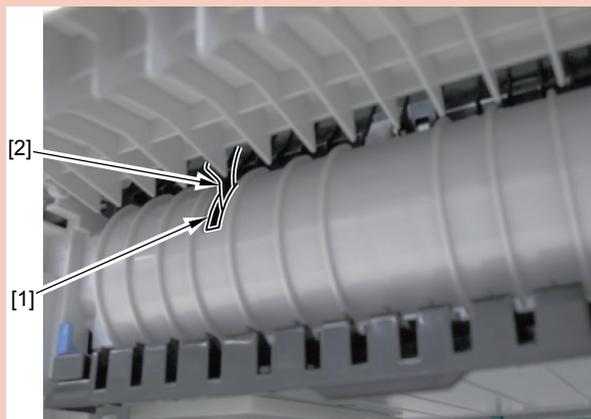
## Procedure at installation

- 1) Fit the 2 Upper Claw [2] of the Rear Cover Unit [1] With the Upper Cover Unit.
- 2) Open the Sub Output Tray [3] and While Pushing the Duplex Reverse Sensor Flag [4] Downward, Install the Rear Cover Unit.



F-4-44

- 3) Check That the Sensor Flag [2] Protrudes Through the Hole [1] of the Guide Unit On the Back of the Duplex Unit Cover.



F-4-45

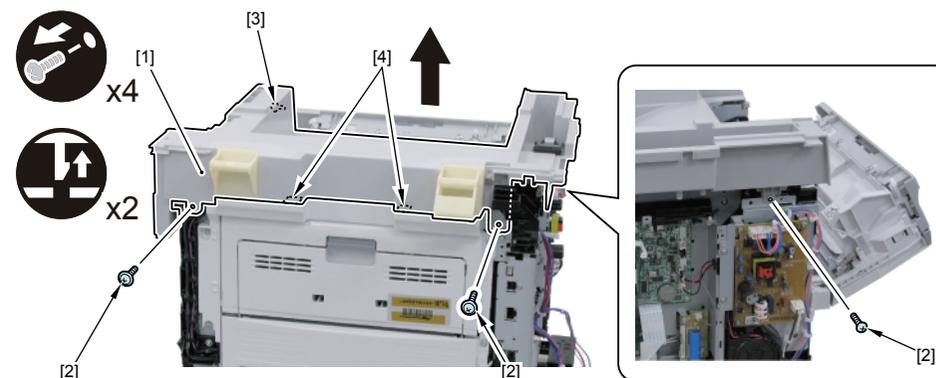
## Removing the Upper Cover Unit

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF + the Reader Unit.(Refer to page 4-33)

### Procedure

- 1) Remove the Upper Cover Unit [1].
  - 3 Screws [2]
  - 1 Screw [3] (Loosen)
  - 2 Claws [4]

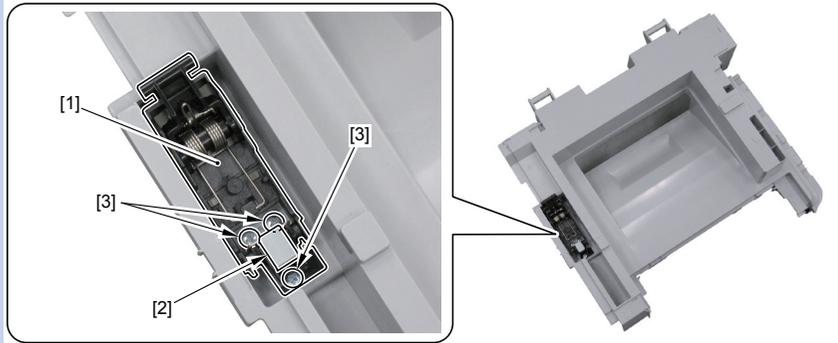


F-4-46

MEMO :

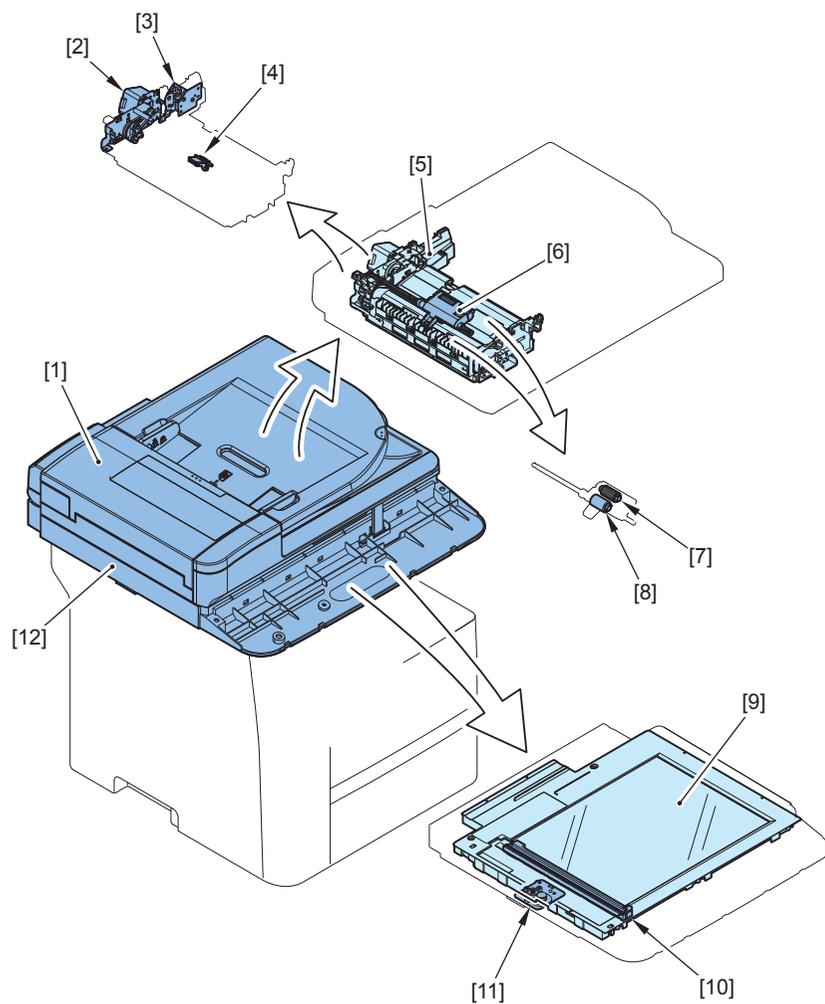
When Removing the Upper Cover Independently, Remove the Connection of Arm [1] and the Reader Shaft Retaining Plate [2].

- 3 Screws [3]



## Document Exposure, Feed System

### Location



F-4-47

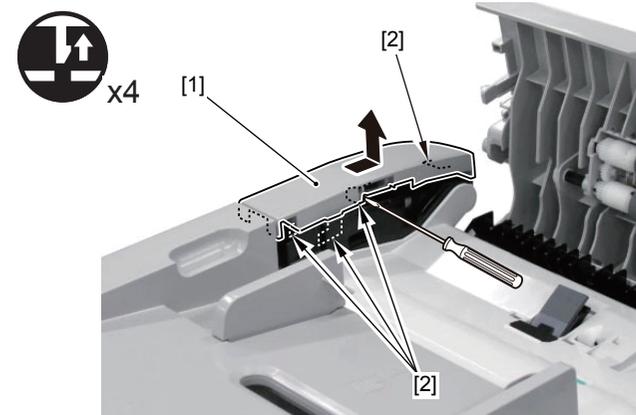
Key	Name	Service Pars No.	Reference
[1]	ADF Unit	-	(Refer to page 4-30)
[2]	ADF Pickup Motor Unit	FM4-1872	(Refer to page 4-45)
[3]	ADF Delivery Solenoid Unit	FM3-9543	(Refer to page 4-46)
[4]	ADF Separation Pad	FC7-6297	(Refer to page 4-41)
[5]	ADF Pickup Feed Unit	FM3-9539 (TYPE I) FM4-1884 (TYPE II)	(Refer to page 4-42)
[6]	ADF Roller Unit	FM3-9538	(Refer to page 4-37)
[7]	ADF Pickup Roller	FC7-6189	(Refer to page 4-38)
[8]	ADF Separation Roller	FL2-6637	(Refer to page 4-39)
[9]	Reader Unit Upper Cover	FM4-6597	(Refer to page 4-46)
[10]	CIS Unit	FK2-8634	(Refer to page 4-48)
[11]	Reader Motor Unit	FM3-9527	(Refer to page 4-51)
[12]	Reader Unit	FM3-9525	(Refer to page 4-35)

T-4-10

### Removing the ADF Unit

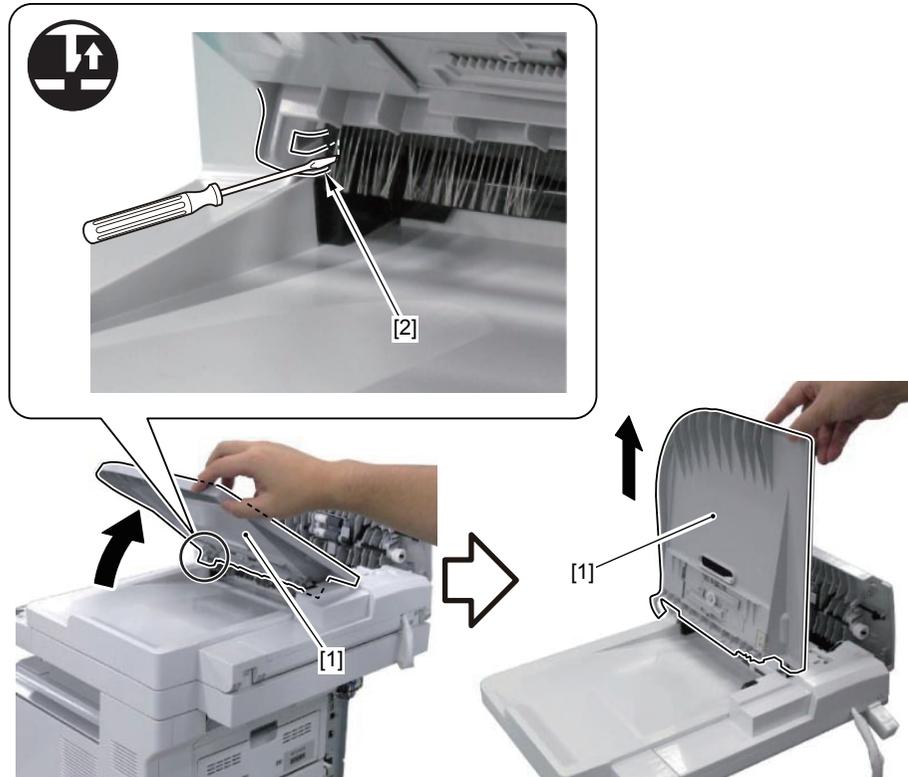
#### Procedure

- 1) Open the ADF Upper Cover.
- 2) Remove the ADF Front Cover [1].
  - 4 Claws [2]



F-4-48

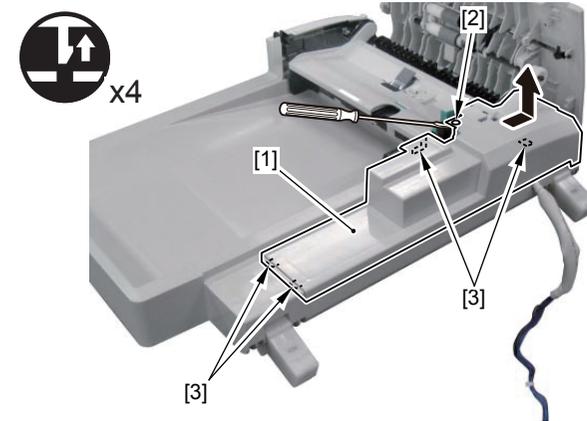
- 3) Slightly Lift the ADF Tray [1] and After Removing the Claw [2], Lift It By 90 Degree and Remove It Upward.



F-4-49

- 4) Remove the ADF Rear Cover [1].

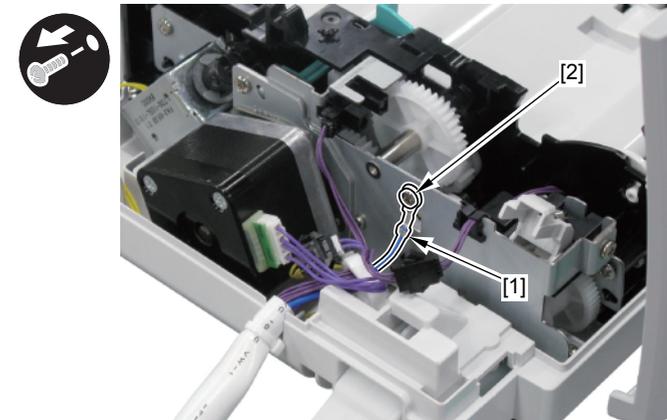
- 1 Boss [2]
- 4 Claws [3]



F-4-50

- 5) Remove the Grounding Wire [1].

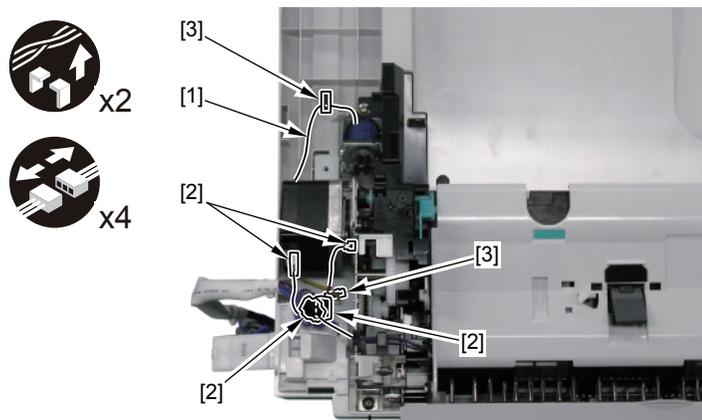
- 1 Screw [2]



F-4-51

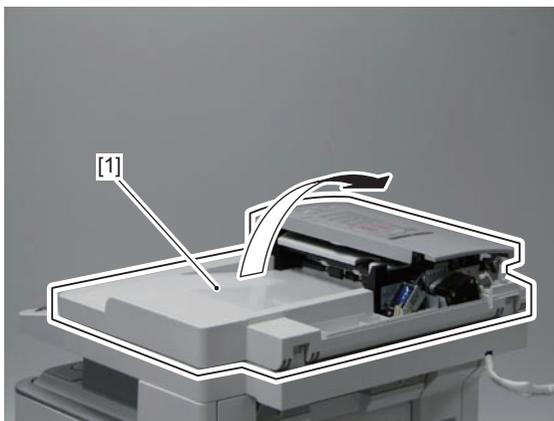
6) Remove the Harness [1].

- 4 Connectors [2]
- 2 Wire Saddles [3]



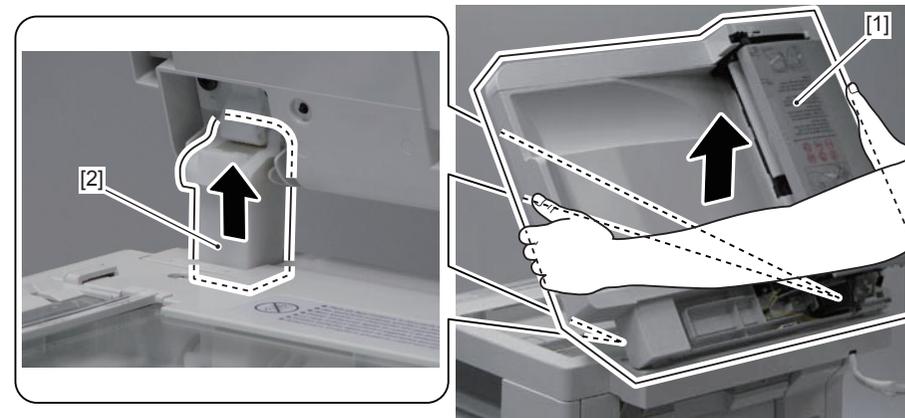
F-4-52

7) Open the ADF Unit [1].



F-4-53

8) Remove ADF Unit [1] while applying pressure to the rear side of the unit. 2 Hinges [2]



F-4-54

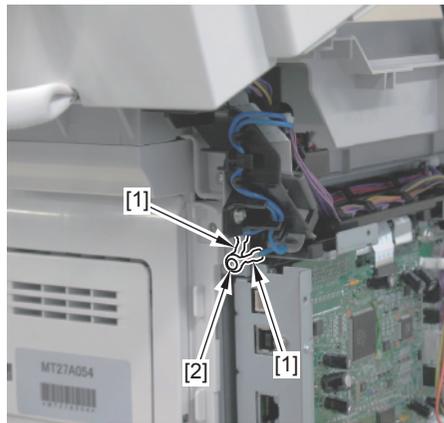
## Removing the ADF Unit + Reader Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)

### Procedure

- 1) Remove the 2 Grounding Wires [1].
  - 1 Screw [2].



F-4-55

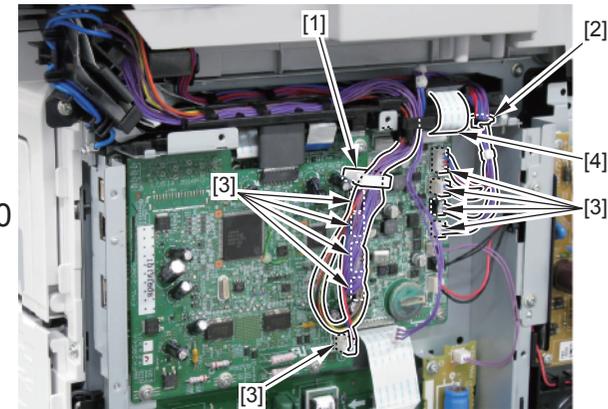
#### MEMO:

The step 2 is different between TYPE I and TYPE II.

- For TYPE I, execute step 2-1).
- For TYPE II, execute step 2-2).

- 2-1) Remove the 9 Connectors [3] and the Flat Cable [4].

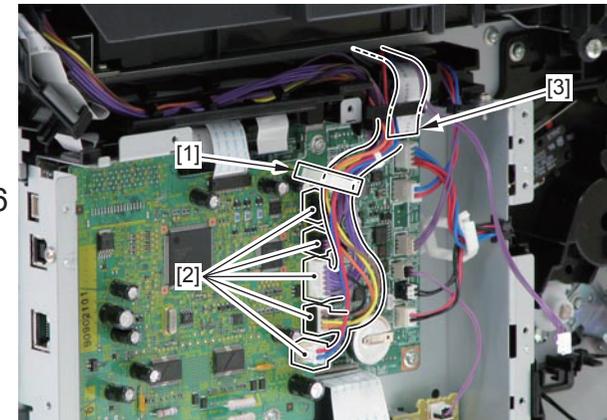
- 1 Wire Saddle [1]
- 1 Edge Saddle [2]



F-4-56

- 2-2) Remove the 5 Connectors [2] and the Flat Cable [3].

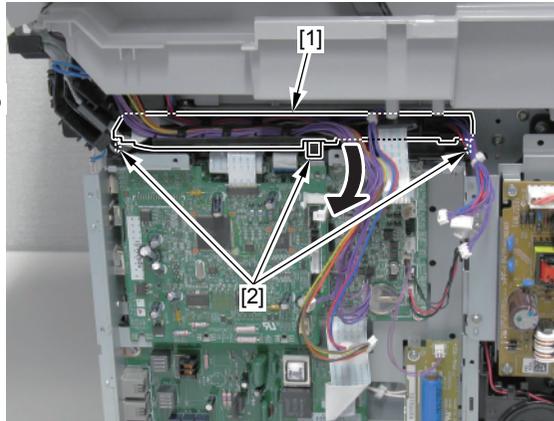
- 1 Wire Saddle [1]



F-4-57

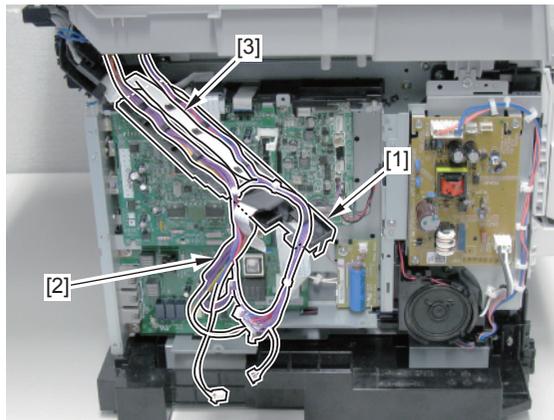
3) Remove the Harness Guide [1].

- 3 Claws [2]



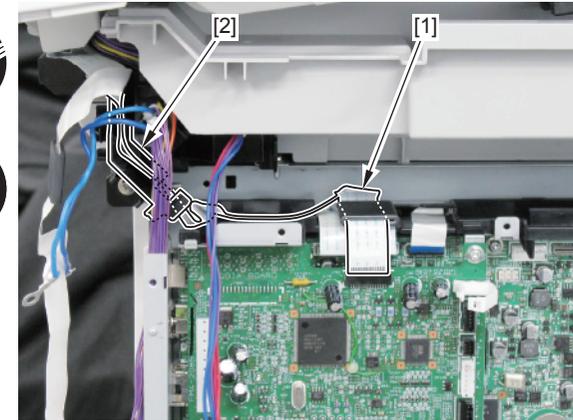
F-4-58

4) Remove the Harness [2] and the Flat Cable [3] from the Harness Guide [1].



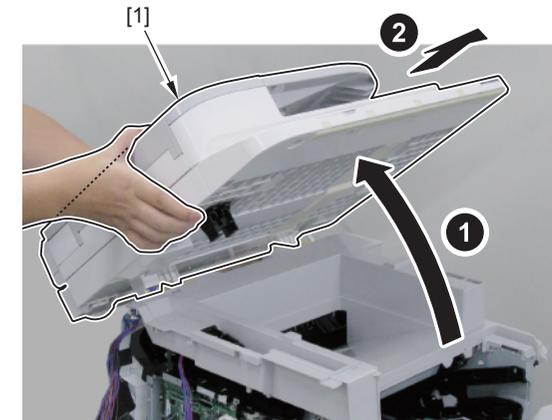
F-4-59

5) Remove the Flat Cable [1] and Remove It from the Harness Guide [2].



F-4-60

6) Remove the Connection of Arm and Lift and Remove the ADF Unit + the Reader Unit [1] In the Direction of the Arrow.



F-4-61

Procedure after replacing the reader unit.

After replacing the reader unit, go through the following procedure.

- 1) [Procedure after replacing the copyboard glass] (Refer to page 5-2)
- 2) [Procedure after replacing the reader scanner unit] (Refer to page 5-2)
- 3) [Procedure after replacing the ADF unit] (Refer to page 5-2)

After replacing the reader unit, if the registration position is displaced, go through the following adjustment.

- 1) Enter the service mode.
  - SCAN>SCAN NUMERIC>031 Reader left edge registration position adjustment
  - SCAN>SCAN NUMERIC>032 Reader leading edge registration position adjustment
  - SCAN>SCAN NUMERIC>041 ADF left edge registration position adjustment
  - SCAN>SCAN NUMERIC>042 ADF leading edge registration position adjustment
  - SCAN>SCAN NUMERIC>219 ADF BW density adjustment
  - SCAN>SCAN NUMERIC>239 Vertical scanning magnification adjustment (reader)
  - SCAN>SCAN NUMERIC>240 Vertical scanning magnification adjustment (ADF)

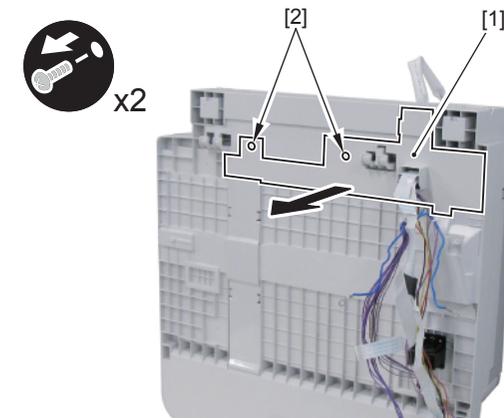
## Separating the ADF Unit + Reader Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)

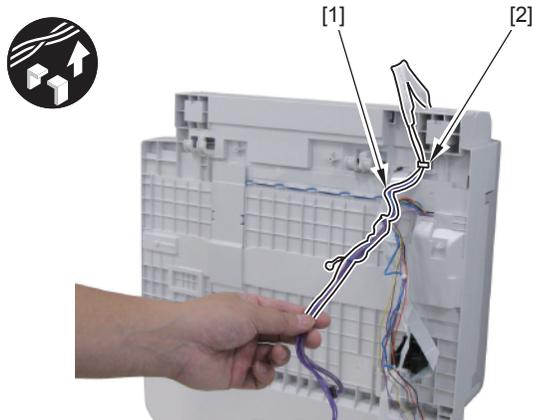
### Procedure

- 1) Remove the Reader Unit Lower Cover [1].
  - 2 Screws [2]



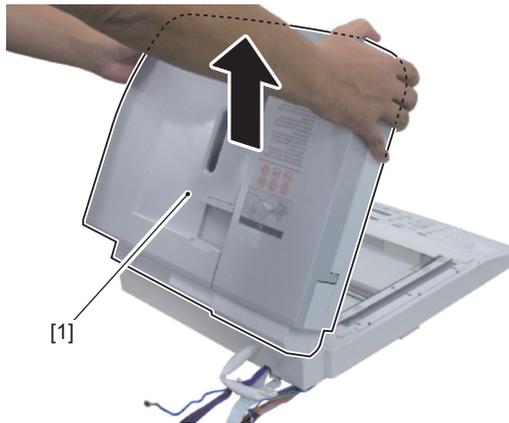
F-4-62

2) Remove the Harness [1] from the Harness Guide [2].



F-4-63

3) Lift the ADF Unit [1] and Remove It Upward.



F-4-64

Procedure after replacing the ADF unit

After replacing the ADF unit, go through the following procedure.

- 1) Enter the service mode from the Control Panel.
- 2) Select TEST MODE > 2 (SCAN TEST).
- 3) On the screen of the Control Panel, "FV WHITE LVL ADJ" "BW;--- CL;---" is displayed.

Adjust the white level of the Copyboard.

- 4) Place a blank paper on the Copyboard and press OK key.
- 5) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.
- 6) When the adjustment result shows "OK", press OK key to go to the ADF white level adjustment. (To step 7)

When the adjustment result shows "NG", complete the operation without performing the further adjustments and return to the "SCAN TEST" menu by pressing Stop key.

Adjust the ADF white level.

- 7) On the screen of the Control Panel, "ADF WHITE LVL ADJ" "BW;--- CL;---" is displayed.
- 8) Place a paper on the ADF Pickup Tray and press OK key.
- 9) Place a paper on the ADF Pickup Tray and press OK key.
- 10) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.

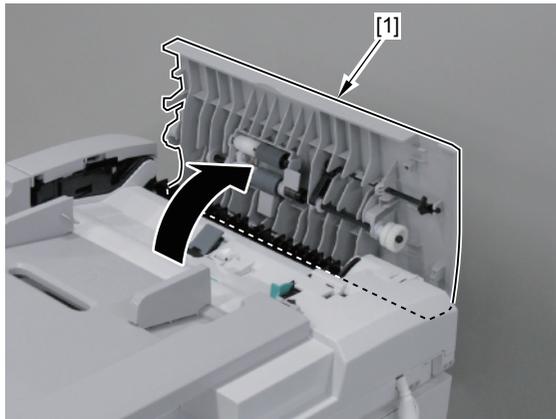
When the adjustment result shows "OK", adjustment is completed.

When the adjustment result shows "NG", complete the operation without performing the further adjustments.

## Removing the ADF Roller Unit

### Procedure

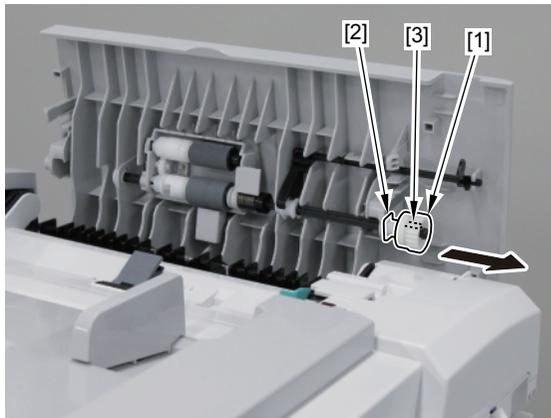
1) Open the ADF Upper Cover [1].



F-4-65

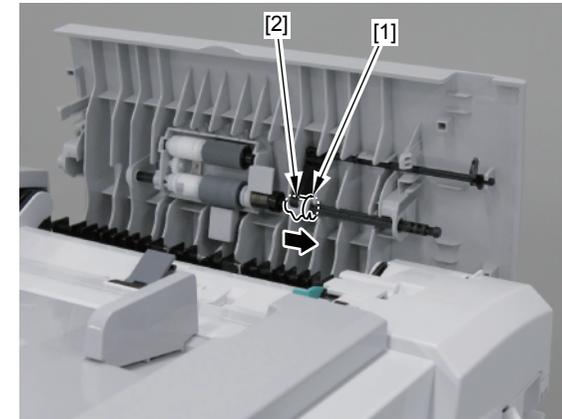
2) Remove the Gear [1] and the Bushing [2].

- 1 Claw [3]



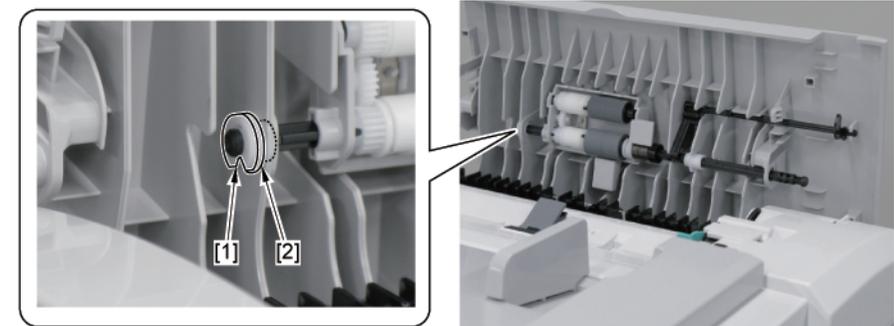
F-4-66

3) Remove the Resin E-ring [1] and Displace the Bushing [2].



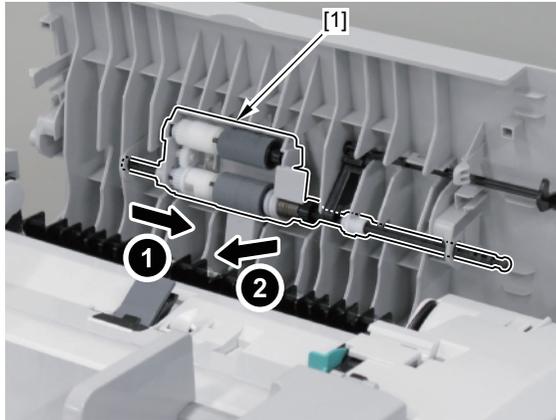
F-4-67

4) Remove the Resin E-ring [1] and the Bushing [2].



F-4-68

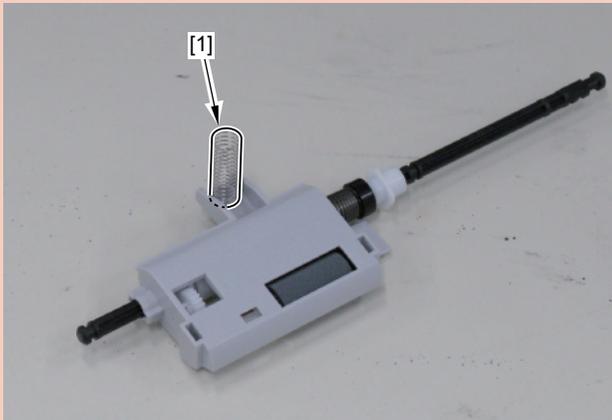
5) Remove the ADF Roller Unit [1].



F-4-69

**CAUTION :**

When Removing It, be Careful Not to Lose the Spring [1] Attached to the ADF Roller Unit.



F-4-70

## Removing the ADF Pickup Roller

### Preparations

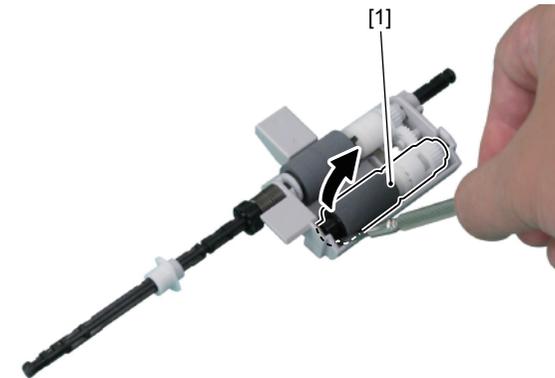
1) Removing the ADF Roller Unit. (Refer to page 4-37)

### Procedure

**CAUTION:**

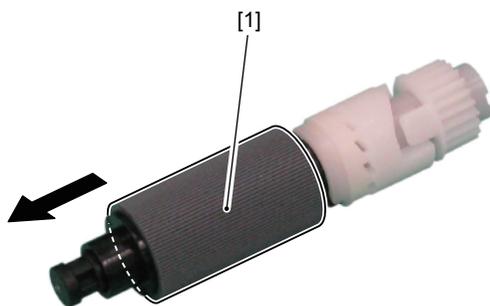
Do Not Touch the Surface of the ADF Pickup Roller When Removing or Mounting it.

1) Insert the Precision Flat-screwdriver and Remove the Pickup Roller [1] Together With the Shaft.



F-4-71

2) Remove the Pickup Roller [1].



F-4-72

## Removing the ADF Separation Roller

### Preparations

1) Removing the ADF Roller Unit. (Refer to page 4-37)

### Procedure

#### CAUTION:

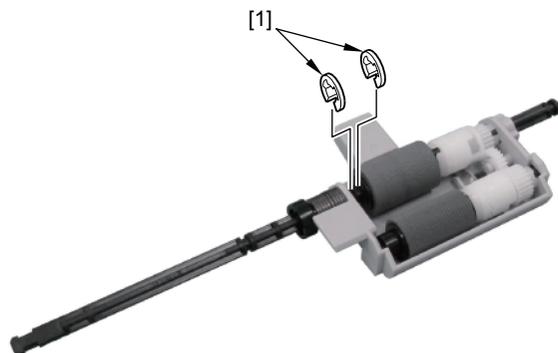
Do Not Touch the Surface of the ADF Separation Roller When Removing or Mounting it.

1) Remove the Bushing [1].



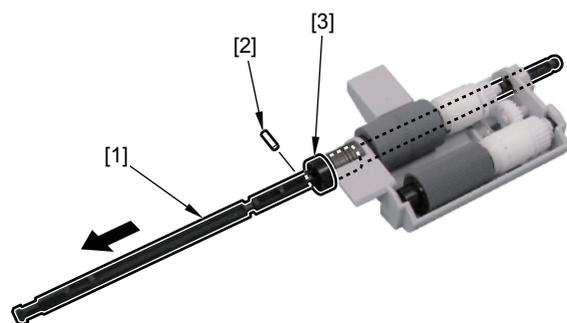
F-4-73

2) Remove the 2 Resin E-rings [1].



F-4-74

3) Displace the Roller Shaft [1] and Remove the Parallel Pin [2] and the Bushing [3].

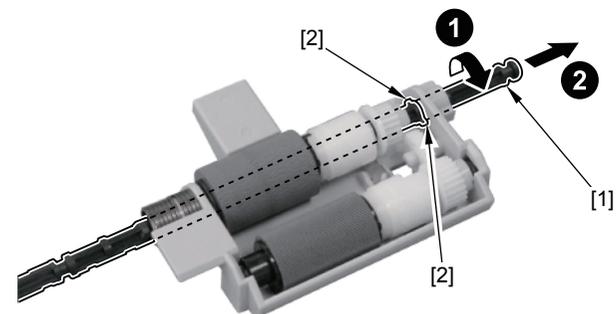


F-4-75

**CAUTION :**

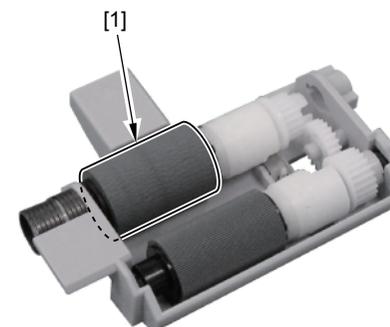
Since the Parallel Pin is very tiny, be Careful not to Lose it.

4) Turn the Shaft [1] In the Direction of the Arrow, Fit the Protrusion [2] With the Hole of the Roller Holder and Pull It Out.



F-4-76

5) Remove the ADF Separation Roller [1].



F-4-77

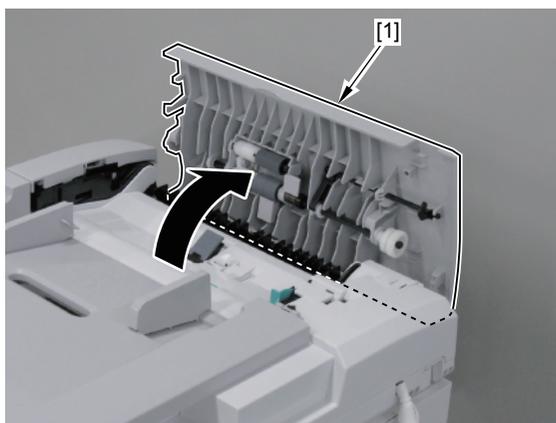
## Removing the ADF Separation Pad

### Procedure

#### CAUTION:

Do Not Touch the Surface of the ADF Separation Pad When Removing or Mounting it.

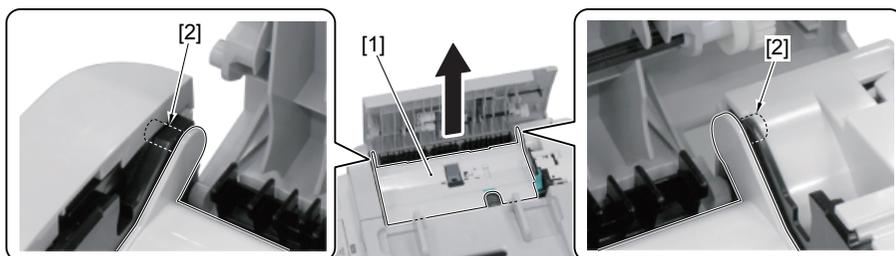
1) Open the ADF Upper Cover [1].



F-4-78

2) Remove the Feed Guide [1].

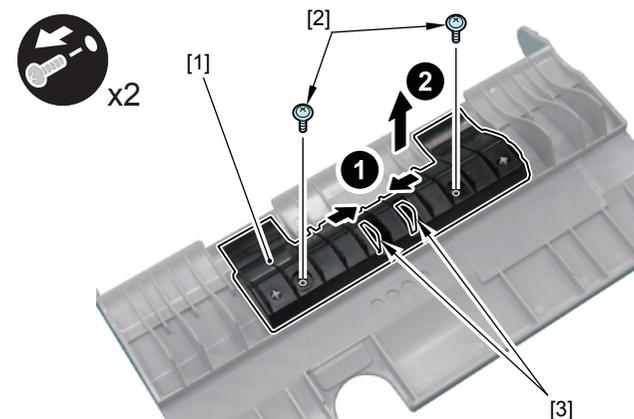
- 2 Bosses [2]



F-4-79

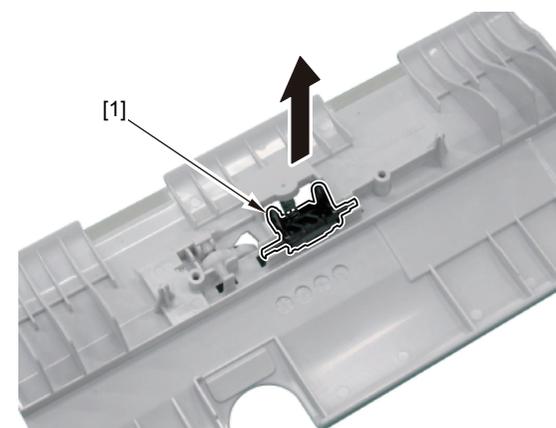
3) Remove the Retaining Plate [1] On the Back of the Feed Guide.

- 2 Screws [2]
- 2 Tabs [3] of the Separation Pad Holder



F-4-80

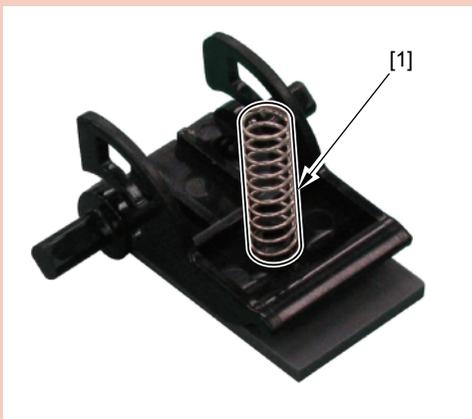
4) Remove the Separation Pad Holder [1].



F-4-81

**CAUTION :**

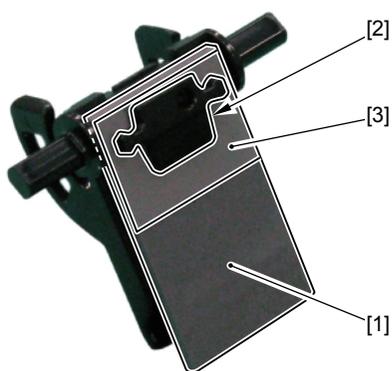
Be careful not to lose the Spring [1] on the Separation Pad Holder.



F-4-82

5) Remove the ADF Separation Pad [1].

- Pad Retainer [2]
- Sheet [3]

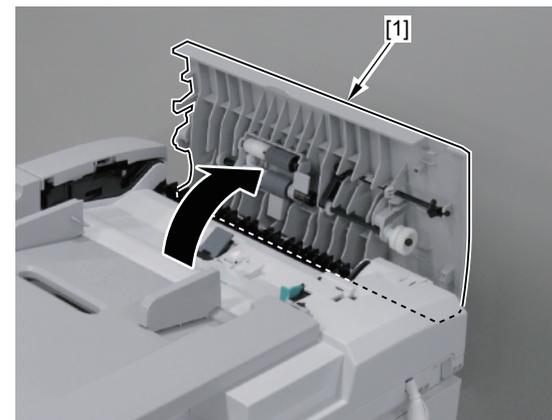


F-4-83

## Removing the ADF Pickup Feed Unit

### Procedure

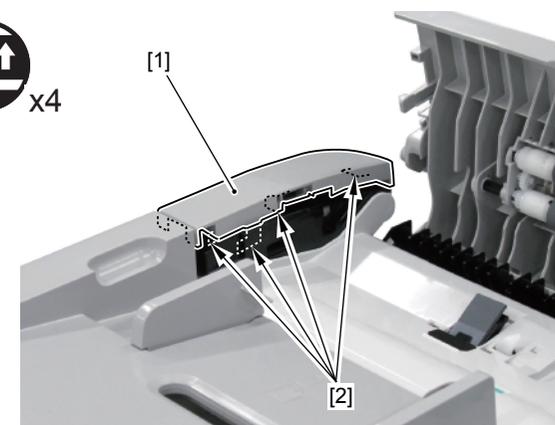
1) Open the ADF Upper Cover [1].



F-4-84

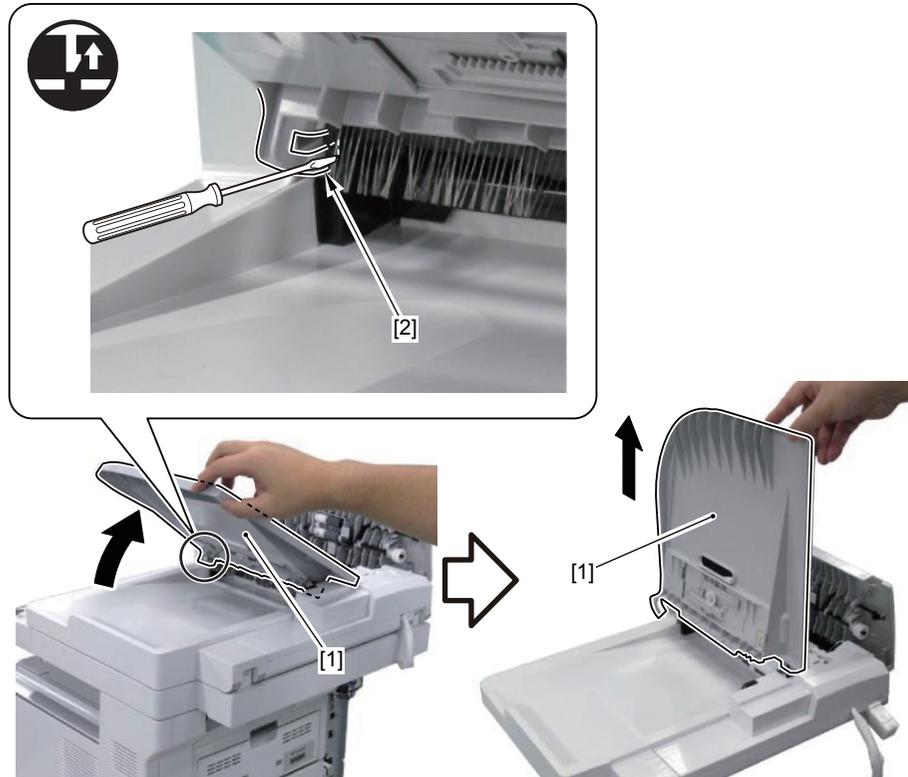
2) Remove the ADF Front Cover [1].

- 4 Claws [2]



F-4-85

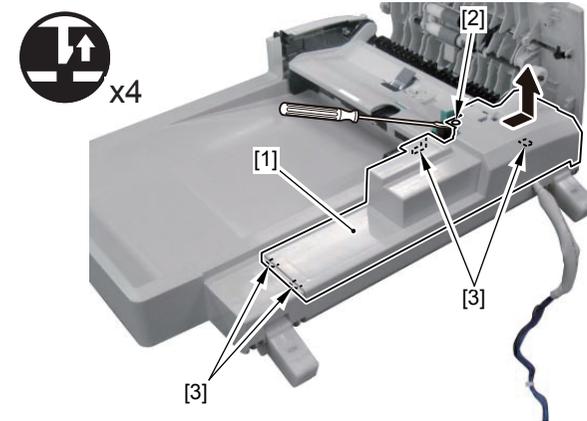
- 3) Slightly Lift the ADF Tray [1] and After Removing the Claw [2], Lift It By 90 Degree and Remove It Upward.



F-4-86

- 4) Remove the ADF Rear Cover [1].

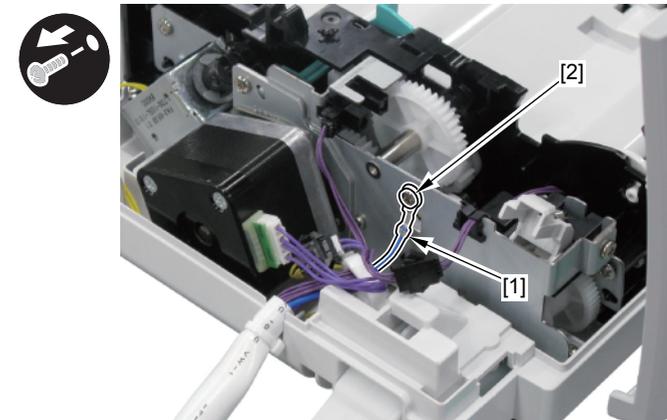
- 1 Boss [2]
- 4 Claws [3]



F-4-87

- 5) Remove the Grounding Wire [1].

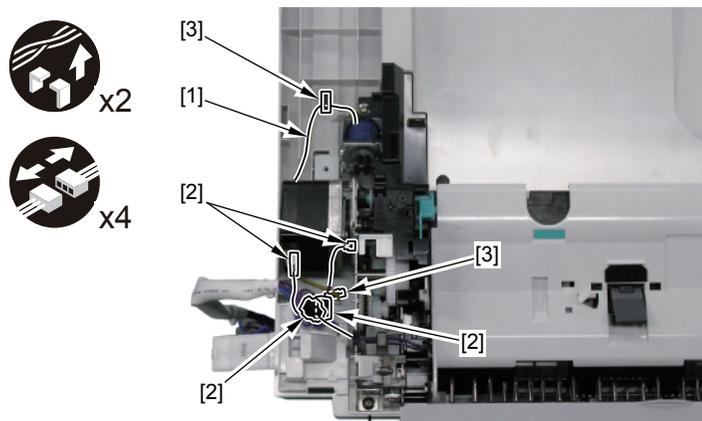
- 1 Screw [2]



F-4-88

## 6) Remove the Harness [1].

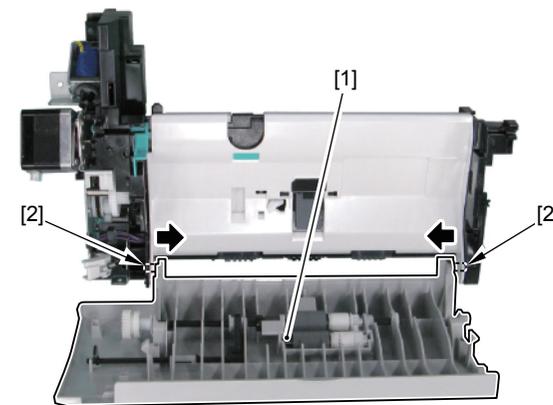
- 4 Connectors [2]
- 2 Wire Saddles [3]



F-4-89

## 8) Remove the ADF Upper Cover Unit [1].

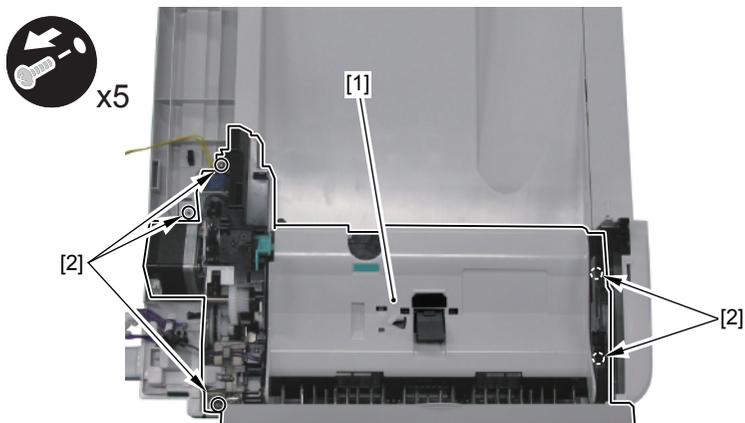
- 2 Bosses [2]



F-4-91

## 7) Remove the ADF Pickup Feed Unit [1].

- 5 Screws [2]



F-4-90

## Removing the ADF Pickup Motor Unit

### Preparations

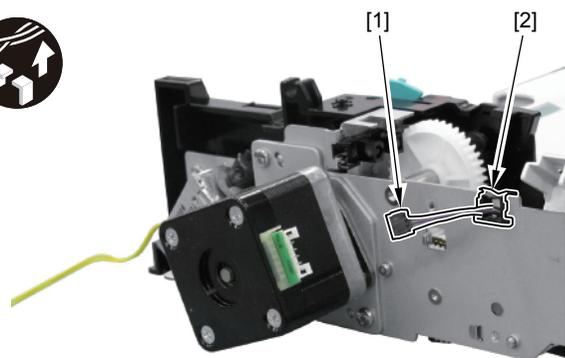
1) Removing the ADF Pickup Feed Unit. (Refer to page 4-42)

MEMO:

It is not necessary to remove the ADF upper cover unit in the step [Removing the ADF Pickup Feed Unit].

### Procedure

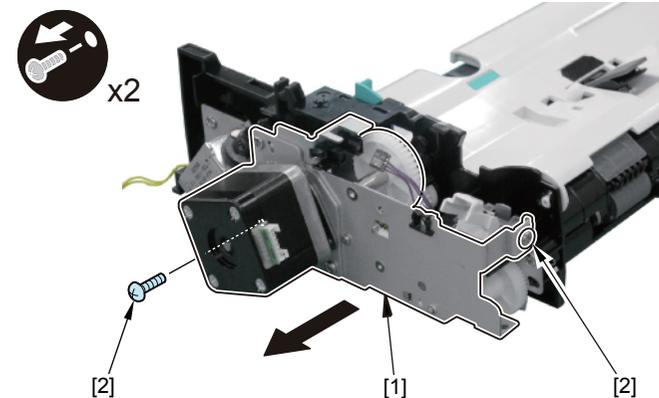
1) Remove the Harness [1] from the Edge Saddle [2].



F-4-92

2) Remove the ADF Motor Unit [1].

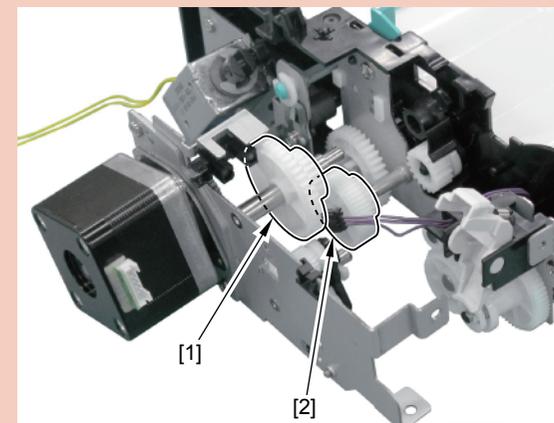
- 2 Screws [2]



F-4-93

CAUTION :

Since the Gear [1] of the ADF Motor Unit and the Gear [2] on the Frame Side of the Pickup Feed Unit are not Fixed, be Careful not to Drop or Lose Them.



F-4-94

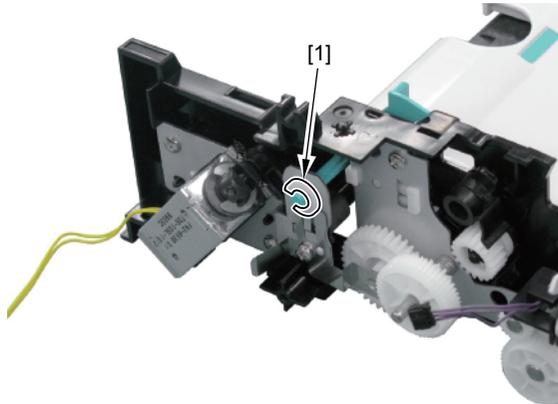
## Removing the ADF Delivery Solenoid Unit

### Preparations

1) Removing the ADF Pickup Feed Unit. (Refer to page 4-42)

### Procedure

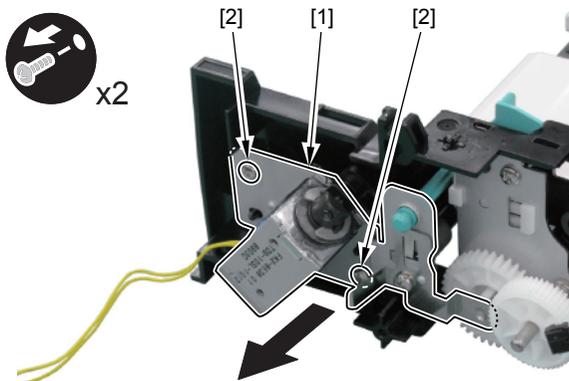
1) Remove the Resin E-ring [1].



F-4-95

2) Remove the Solenoid Unit [1].

- 2 Screws [2]



F-4-96

## Removing the Reader Unit Upper Cover

### Preparations

1) Removing the Left Cover. (Refer to page 4-19)

2) Removing the Controller Cover. (Refer to page 4-55)

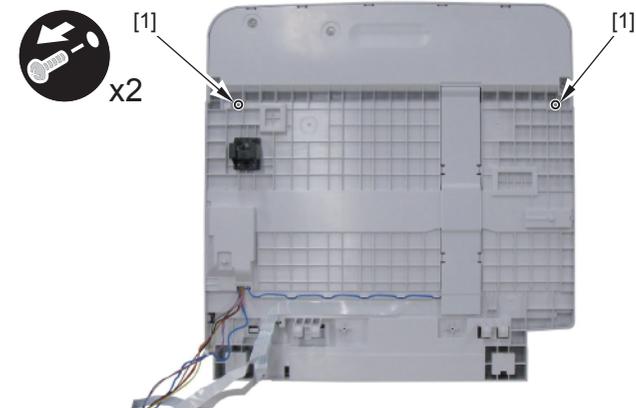
3) Removing the Left Rear Cover. (Refer to page 4-22)

4) Removing the ADF Unit + Reader Unit. (Refer to page 4-33)

5) Separate the ADF Unit + Reader Unit. (Refer to page 4-35)

### Procedure

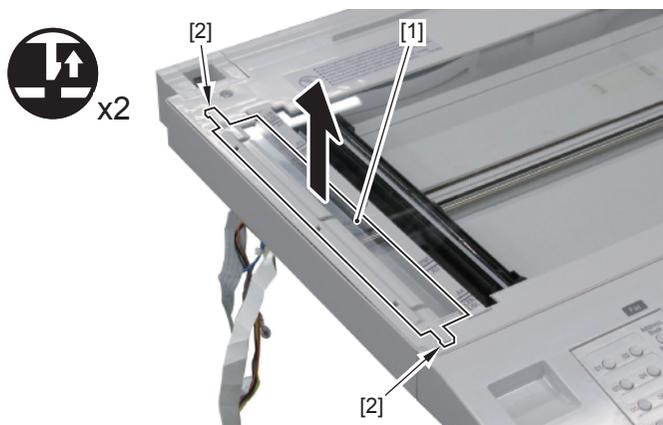
1) Remove the 2 Screws [1] On the Bottom of the Reader Unit.



F-4-97

## 2) Remove the Standard White Plate [1].

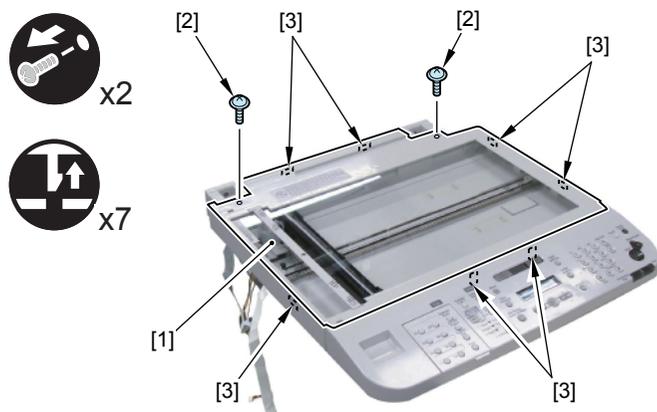
- 2 Claws [2]



F-4-98

## 3) Remove the Reader Unit Upper Cover [1].

- 2 Screws [2]
- 7 Claws [3]



F-4-99

**CAUTION:**

Since the copyboard glass is attached to the upper cover, handle it carefully to prevent dropping or breakage.

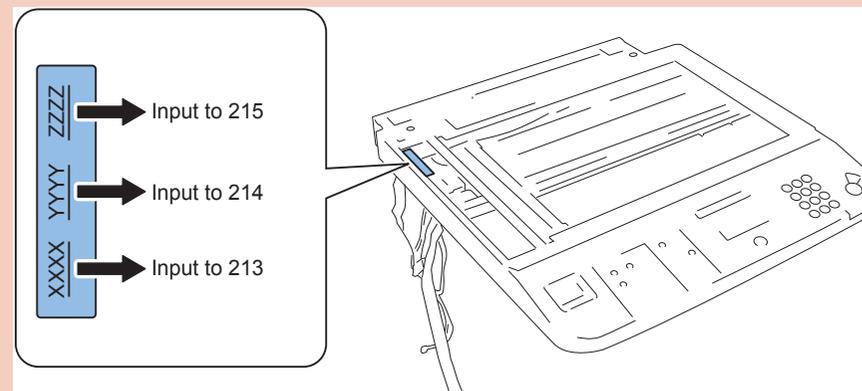
## Procedure After Replacing the Copyboard Glass:

After replacing the copyboard glass, go through the following procedure.

## 1) Enter the service mode.

- SCAN>SCAN NUMERIC

## 2) Input the value on the bar-code label (4 digit each) to [213], [214] and [215] items.



F-4-100

## After replacing CIS Units:

After replacing the contact sensor, go through the following procedure and make sure to adjust the output between channels.

## 1) Enter the service mode.

## 2) Press the arrow key on the control panel to display "TEST MODE".

## 3) Press OK key.

## 4) Press 2 key and "SCAN TEST" is displayed.

## 5) Press 1 key and "SHADING" is displayed.

### Procedure after replacing the ADF Unit

After replacing the ADF unit, go through the following procedure.

- 1) Enter the service mode from the Control Panel.
- 2) Select TEST MODE > 2 (SCAN TEST).
- 3) On the screen of the Control Panel, "FV WHITE LVL ADJ" "BW;--- CL;---" is displayed.

Adjust the white level of the Copyboard.

- 4) Place a blank paper on the Copyboard and press OK key.
- 5) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.
- 6) When the adjustment result shows "OK", press OK key to go to the ADF white level adjustment. (To step 7)

When the adjustment result shows "NG", complete the operation without performing the further adjustments and return to the "SCAN TEST" menu by pressing Stop key.

Adjust the ADF white level.

- 7) On the screen of the Control Panel, "ADF WHITE LVL ADJ" "BW;--- CL;---" is displayed.
- 8) Place a paper on the ADF Pickup Tray and press OK key.
- 9) Place a paper on the ADF Pickup Tray and press OK key.
- 10) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.

When the adjustment result shows "OK", adjustment is completed.

When the adjustment result shows "NG", complete the operation without performing the further adjustments.

### CAUTION:

If automatic adjustment fails, "NG" appears. Perform the following procedure:  
Clean the scanning area of the ADF and the Backside of copyboard cover of the host machine, and then retry auto adjustment.

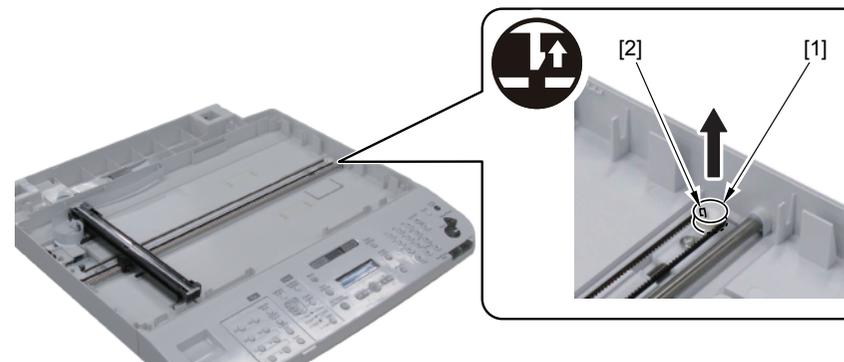
## Removing the CIS Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 5) Separate the ADF Unit + Reader Unit.(Refer to page 4-35)
- 6) Removing the Reader Unit Upper Cover .(Refer to page 4-46)

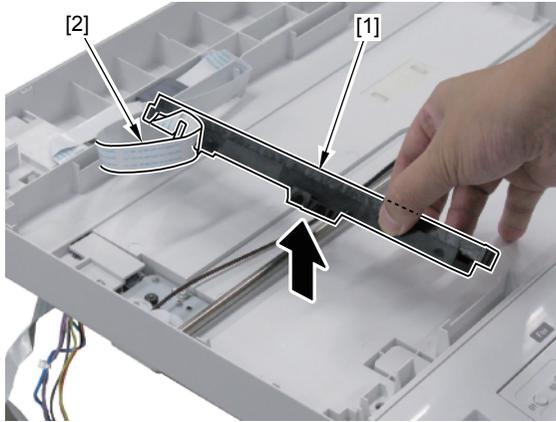
### Procedure

- 1) Remove the Belt Pulley [1].
  - 1 Claw [2]



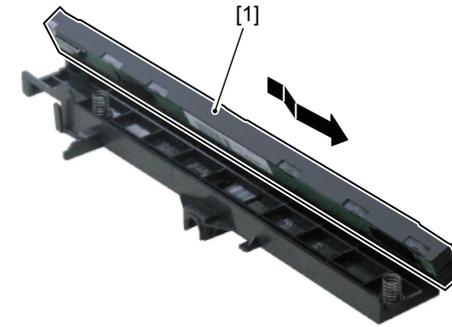
F-4-101

2) Remove the CIS Mount [1] Upward and Remove the Flat Cable [2].



F-4-102

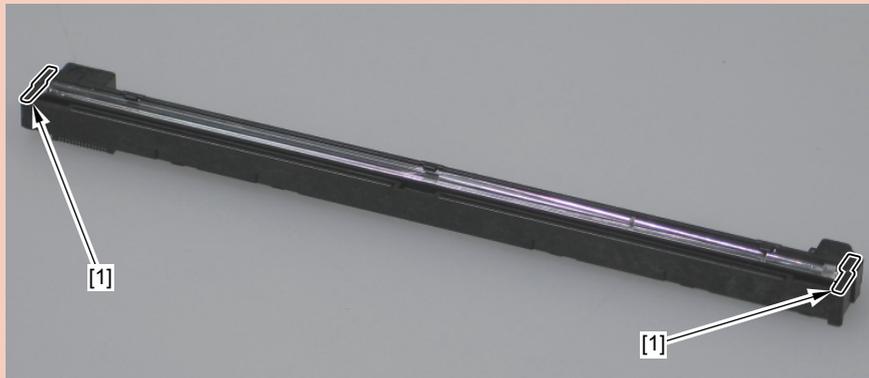
3) Lift the CIS [1] and Remove It In the Direction of the Arrow.



F-4-104

**CAUTION:**

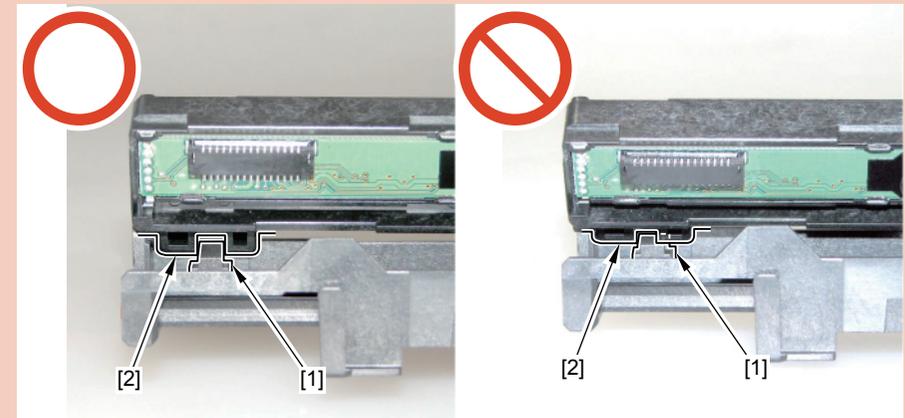
When CIS Unit Mount is tilt, CIS spacers[1] are removed. Do not lost the CIS spacers.



F-4-103

**CAUTION:**

When installing the CIS Unit, be sure to check that the projection [1] is fitted to the dent [2] to install.



F-4-105

After replacing CIS units:

After replacing the contact sensor, go through the following procedure and make sure to adjust the output between channels.

- 1) Enter the service mode.
- 2) Press the arrow key on the control panel to display "TEST MODE".
- 3) Press OK key.
- 4) Press 2 key and "SCAN TEST" is displayed.
- 5) Press 1 key and "SHADING" is displayed.

Procedure after replacing the ADF unit

After replacing the ADF unit, go through the following procedure.

- 1) Enter the service mode from the Control Panel.
- 2) Select TEST MODE > 2 (SCAN TEST).
- 3) On the screen of the Control Panel, "FV WHITE LVL ADJ" "BW;--- CL;---" is displayed.

Adjust the white level of the Copyboard.

- 4) Place a blank paper on the Copyboard and press OK key.
- 5) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.
- 6) When the adjustment result shows "OK", press OK key to go to the ADF white level adjustment. (To step 7)

When the adjustment result shows "NG", complete the operation without performing the further adjustments and return to the "SCAN TEST" menu by pressing Stop key.

Adjust the ADF white level.

- 7) On the screen of the Control Panel, "ADF WHITE LVL ADJ" "BW;--- CL;---" is displayed.
- 8) Place a paper on the ADF Pickup Tray and press OK key.
- 9) Place a paper on the ADF Pickup Tray and press OK key.
- 10) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.

When the adjustment result shows "OK", adjustment is completed.

When the adjustment result shows "NG", complete the operation without performing the further adjustments.

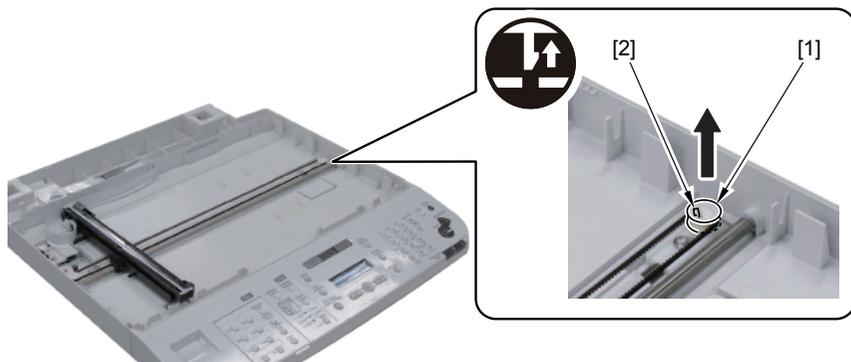
## Removing the Reader Motor Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 5) Separate the ADF Unit + Reader Unit.(Refer to page 4-35)
- 6) Removing the Reader Unit Upper Cover .(Refer to page 4-46)

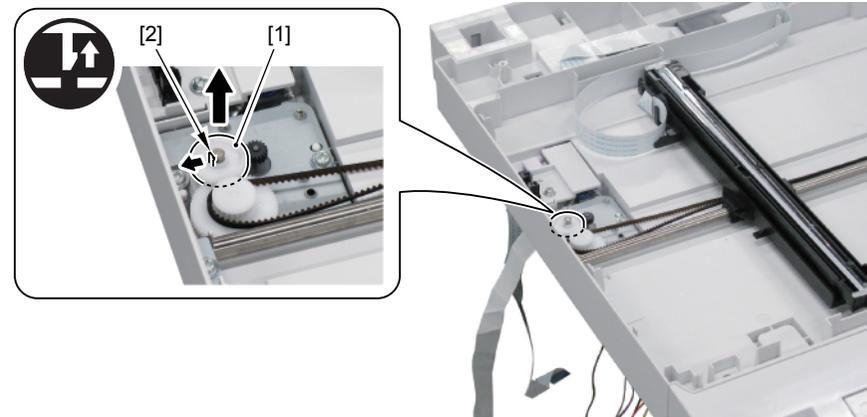
### Procedure

- 1) Remove the Belt Pulley [1].
  - 1 Claw [2]



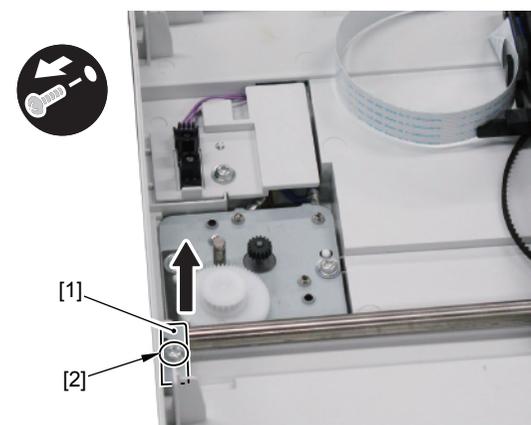
F-4-106

- 2) Remove the Gear [1].
  - 1 Claw [2]



F-4-107

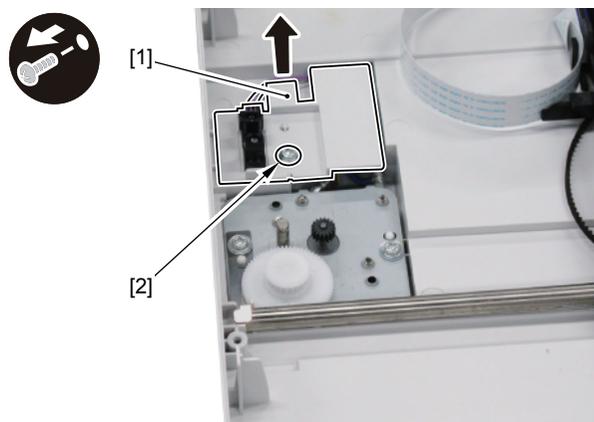
- 3) Remove the Shaft Retaining Plate [1].
  - 1 Screw [2]



F-4-108

4) Remove the Sensor Mount [1].

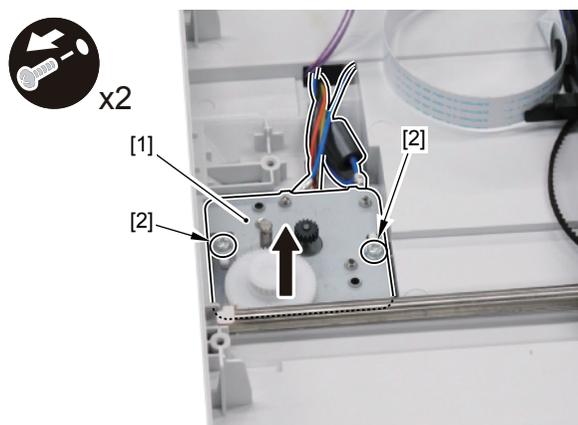
- 1 Screw [2]



F-4-109

5) Remove the Reader Motor Unit [1].

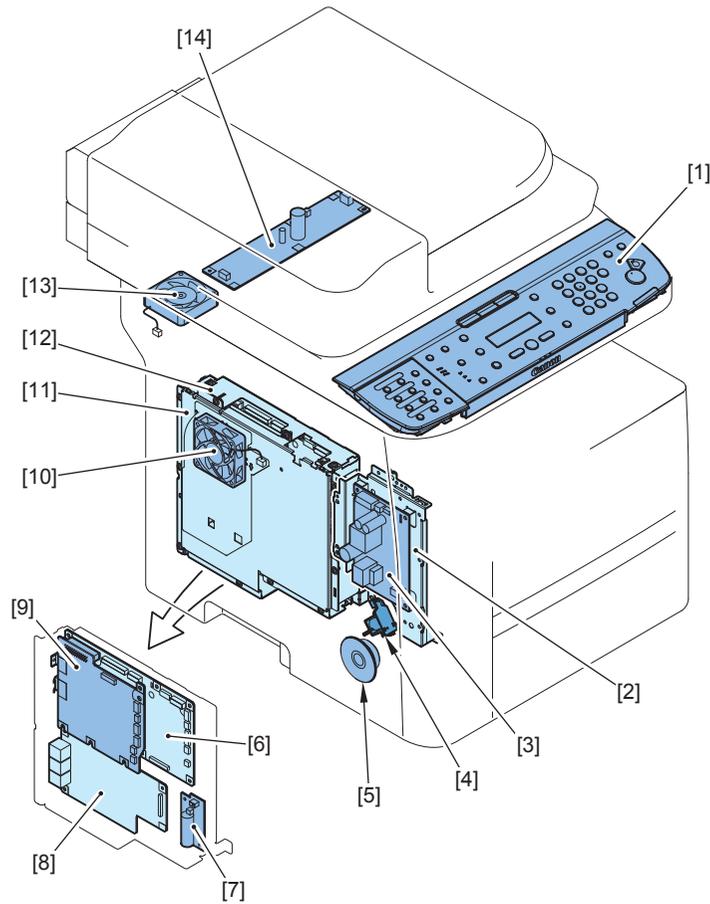
- 2 Screws [2]



F-4-110

# Controller System

## Location1

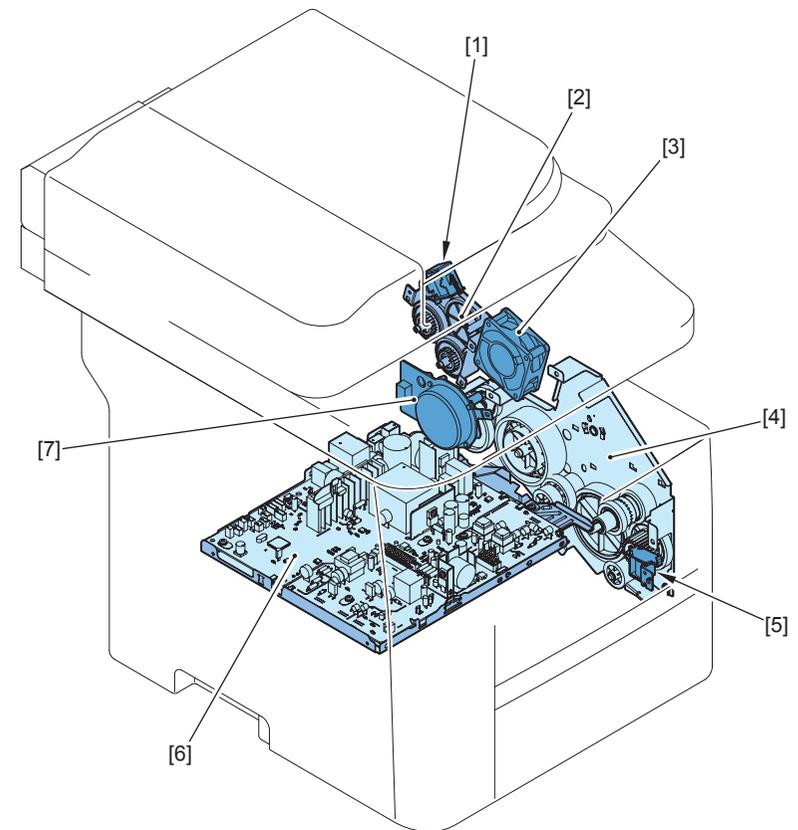


F-4-111

Key	Name	Service Pars No.	Remarks	Reference
[1]	Control Panel	FM3-9803	(D1180 TYPE I)	(Refer to page 4-70)
		FM4-6439	(D1180 TYPE II)	
		FM3-9817	(D1170 TYPE I)	
		FM4-6440	(D1170 TYPE II)	
		FM3-9818	(D1150 US,CA,LTN TYPE I)	
		FM4-6441	(D1150 US,CA,LTN TYPE II)	
		FM4-1649	(D1150 LTN,SG,AU TYPE I)	
		FM4-6443	(D1150 LTN,SG,AU TYPE II)	
		FM4-1651	(D1150 KR TYPE I)	
		FM4-6445	(D1150 KR TYPE II)	
		FM4-6444	(D1150 CN TYPE II)	
		FM3-9819	(D1120 TYPE I)	
		FM4-6442	(D1120 TYPE II)	
		FM4-1647	(MF6680dn TYPE I)	
FM4-6446	(MF6680dn TYPE II)			
FM4-1648	(MF6640dn TYPE I)			
[2]	All-night Power PCB Mount	-	(TYPE I)	(Refer to page 4-59)
[3]	All-night Power PCB	FK2-6324	(TYPE I 120V)	(Refer to page 4-60)
		FK2-6325	(TYPE I 230V)	
[4]	Manual Tray Pickup Solenoid	RK2-2731	(TYPE I)	(Refer to page 4-88)
			(TYPE II)	(Refer to page 4-89)
[5]	Speaker	FK2-8572	(TYPE I)	(Refer to page 4-91)
			(TYPE II)	(Refer to page 4-92)
[6]	Main Controller Board	FM4-1613	(TYPE I D1180, MF6680dn)	(Refer to page 4-56)
		FM4-1614	(TYPE I D1170)	
		FM4-1615	(TYPE I D1150)	
		FM4-2669	(TYPE I D1120)	
		FM4-1616	(TYPE I MF6640dn)	
		FM4-3215	(TYPE II D1180, MF6680dn)	
		FM4-3216	(TYPE II D1170)	
		FM4-3217	(TYPE II D1150)	
FM4-2678	(TYPE II D1120)			
[7]	Capacitor PCB	FM4-1624	(EXCEPT D1120)	(Refer to page 4-59)
[8]	NCU PCB	FM4-1620	(FAX Model US)	(Refer to page 4-58)
		FM4-1621	(FAX Model AU)	
		FM4-1622	(FAX Model EUR,LTN,SG,CN,KR)	

Key	Name	Service Pars No.	Remarks	Reference
[9]	ADF/Reader Driver PCB	FM4-6078	-	(Refer to page 4-55)
[10]	Controller Fan	FK3-0472	(TYPE I)	(Refer to page 4-75)
		FK3-0732	(TYPE II)	(Refer to page 4-75)
[11]	Controller Cover	-	-	(Refer to page 4-55)
[12]	Controller Box	-	(TYPE I)	(Refer to page 4-61)
		-	(TYPE II)	(Refer to page 4-62)
[13]	Power Cooling Fan	FK2-0472	(TYPE I)	(Refer to page 4-77)
[14]	Power PCB	FK2-8629	(TYPE I 120V)	(Refer to page 4-60)
		FK2-8630	(TYPE I 230V)	(Refer to page 4-60)

T-4-11

 Location2


F-4-112

Key	Name	Service Pars No.	Remarks	Reference
[1]	Duplex Reverse Solenoid	RK2-2733	-	(Refer to page 4-90)
[2]	Duplex Drive Unit	FM3-9797	(TYPE I)	(Refer to page 4-84)
			(TYPE II)	(Refer to page 4-86)
[3]	Main Fan	FK2-2064	-	(Refer to page 4-75)
[4]	Main Drive Unit	FM3-9797	(TYPE I)	(Refer to page 4-77)
			(TYPE II)	(Refer to page 4-81)
[5]	Cassette Pickup Solenoid	RK2-2729	-	(Refer to page 4-90)
[6]	Engine Controller Unit	FM4-1487	(TYPE I 120V)	(Refer to page 4-64)
		FM4-1488	(TYPE I 230V)	
		FM4-5724	(TYPE II 120V)	(Refer to page 4-67)
		FM4-5725	(TYPE II 230V)	
[7]	Main Motor	RM1-6378	(TYPE I)	(Refer to page 4-71)
			(TYPE II)	(Refer to page 4-73)

T-4-12

## Removing the Controller Cover

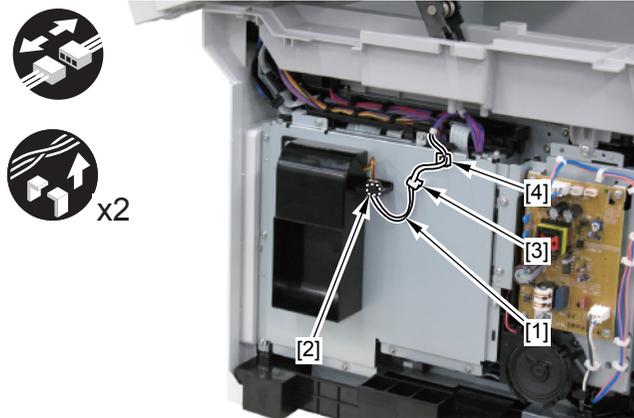
### Preparations

1) Removing the Left Cover.(Refer to page 4-19)

### Procedure

1) Remove the Harness [1].

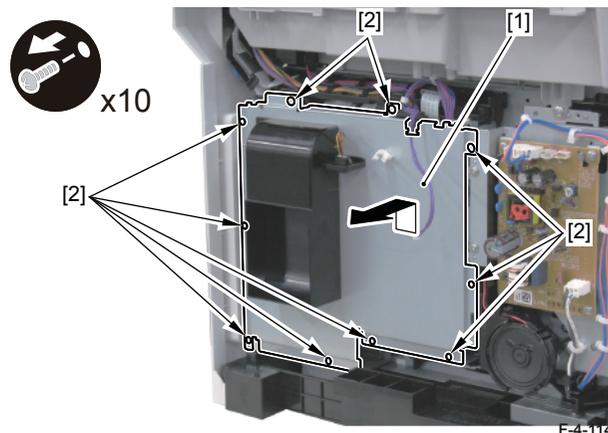
- 1 Connector [2]
- 1 Wire Saddle [3]
- 1 Edge Saddle [4]



F-4-113

2) Remove the Controller Cover [1].

- 10 Screws [2]



F-4-114

## Removing the ADF/Reader Driver PCB

### Preparations

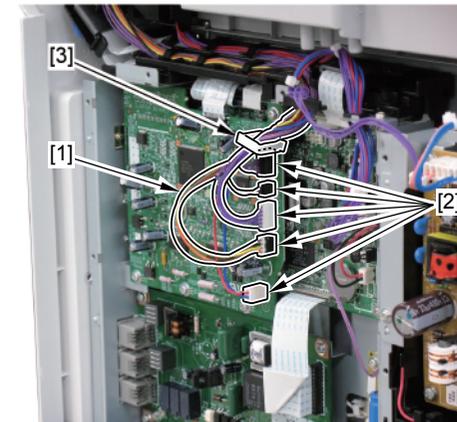
1) Removing the Left Cover.(Refer to page 4-19)

2) Removing the Controller Cover.(Refer to page 4-55)

### Procedure

1) Remove the Harness [1].

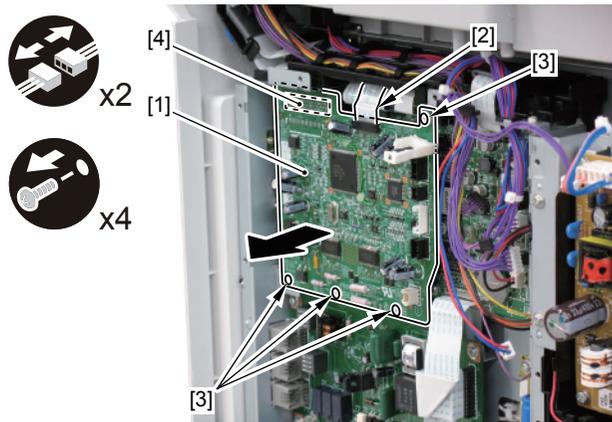
- 5 Connectors [2]
- 1 Wire Saddle [3]



F-4-115

2) Remove the ADF/Reader Driver PCB [1].

- 1 Flat Cable [2]
- 4 Screws [3]
- 1 Connector [4]



F-4-116

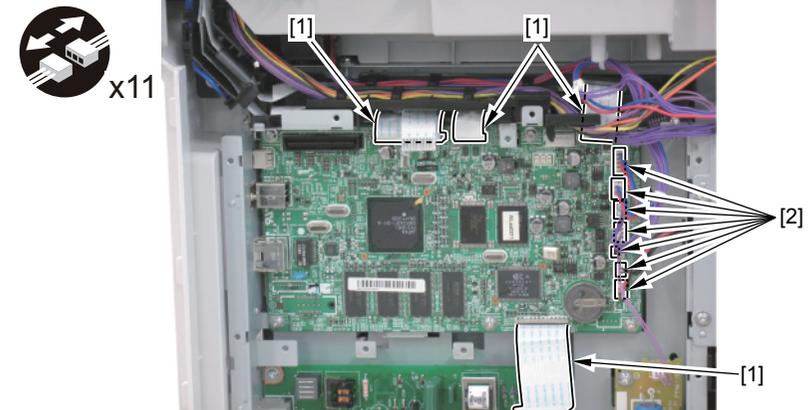
## Removing the Main Controller Board

### Preparations

- 1) Removing the Left Cover. (Refer to page 4-19)
- 2) Removing the Controller Cover. (Refer to page 4-55)
- 3) Removing the ADF/Reader Driver PCB. (Refer to page 4-55)

### Procedure (TYPE I)

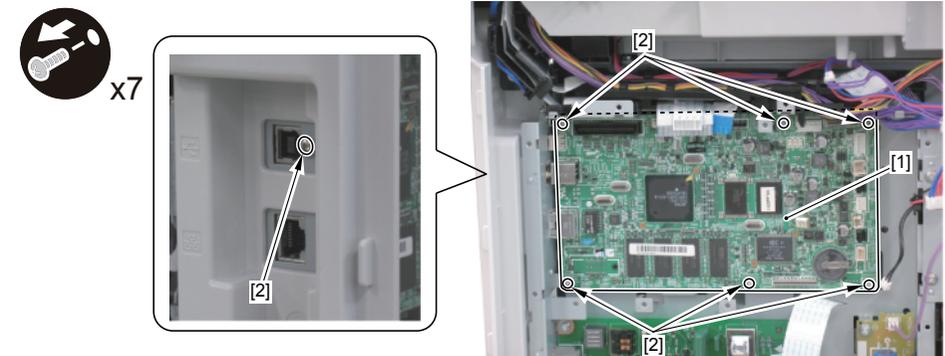
- 1) Remove the 4 Flat Cables [1] and the 7 Connectors [2].



F-4-117

2) Remove the Main Controller Board [1].

- 7 Screws [2]

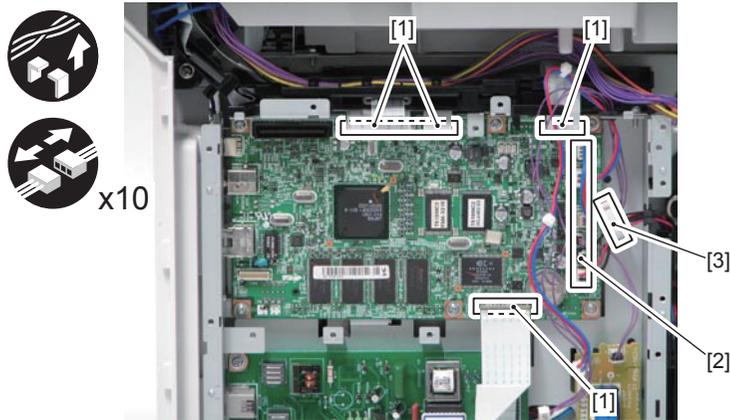


F-4-118

## Procedure (TYPE II)

1) Remove the 4 Flat Cables [1] and the 6 Connectors [2].

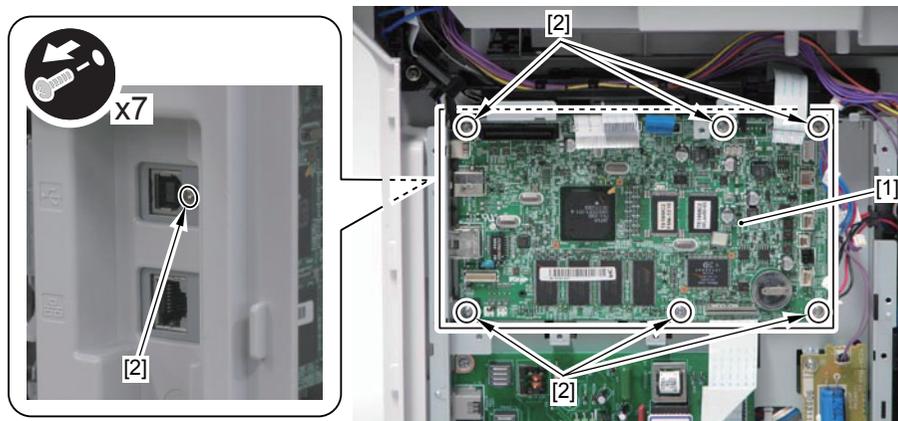
- 1 Wire Saddle [3]



F-4-119

2) Remove the Main Controller Board [1].

- 7 Screws [2]



F-4-120

### Operation After Replacing the Main Controller Board

If you have replaced the Main Controller Board with a new one, perform the following operations:

#### Outputting report

- 1) If report can be output before replacement of PCB, be sure to get approval from the user in advance and output the user data list and address book list.
- 2) If possible, backup the user data and address book using the export function of RUI.
- 3) Turn OFF the power, and replace the PCB.
- 4) Turn ON the power, and clear all data. (Either at first power ON, it is executed automatically, or DATA ERROR is displayed and by pressing the OK key, it is cleared.)
- 5) Reboot the machine. (The machine is automatically rebooted after step 4. If it is not rebooted, wait for 5 minutes, and turn OFF and then ON the power.)
- 6) Set the location. #CLEAR->TYPE->USA\* \* Change the setting value depending on the location.

Here, USA is indicated as an example.

battery OFF.

- 7) Wait for 10 seconds, and turn OFF and then ON the power.
- 8) Select language and country. (Depending on the location selected in step 7, there is no language and country selection. Confirm the user about language and country to be selected.)
- 9) Wait for 10 seconds, and turn OFF and then ON the power. (Execute this step only language and country are selected in step 8.)
- 10) Enter the value of the service label attached to the host machine.
- 11) If export is performed normally in step 2, import the data.
- 12) If the user data list and address book list output in step 1 are available, give them to the user.

Be sure to ask the user to enter the user data list to prevent making mistakes by manual entry.

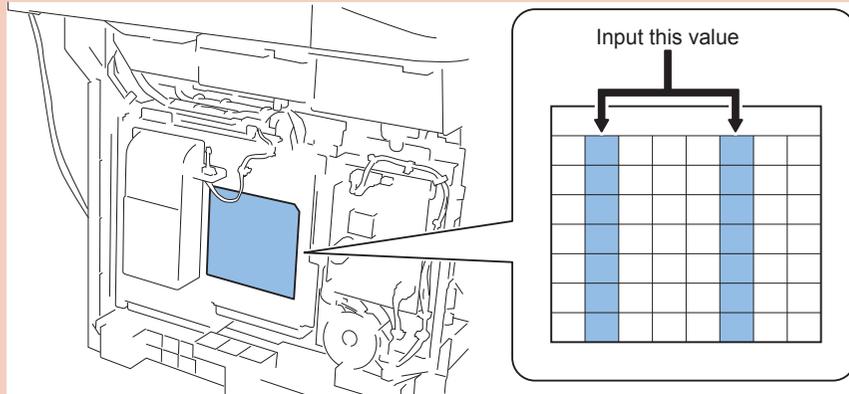
#### Changing the jumper connector

When replacing the Main Controller Board, change the position of the jumper connector to ON.

\* The Main Controller Board is shipped with the jumper connector of the lithium battery OFF.

Make the following adjustments:

- Correction of output between CS channels
- 1) Enter the service mode.
  - 2) Input values on the service label attached to the controller exhaust fan mount.



F-4-121

After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.

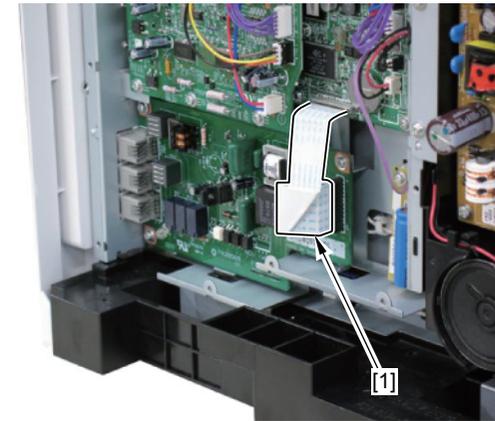
## Removing the NCU PCB

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)

### Procedure

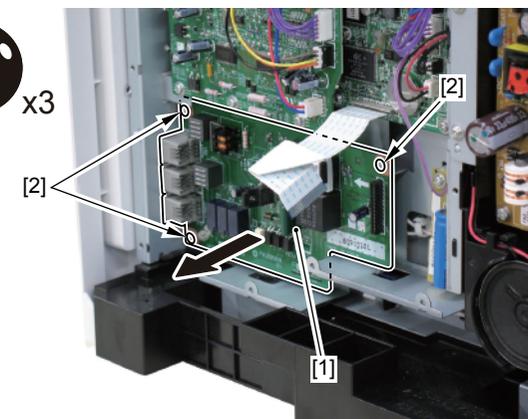
- 1) Remove the Flat Cable [1].



F-4-122

- 2) Remove the NCU PCB [1].

- 3 Screws [2]



F-4-123

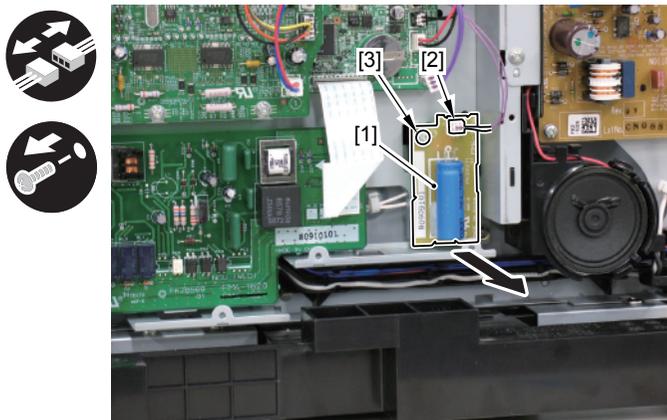
## Removing the Capacitor PCB

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)

### Procedure

- 1) Remove the Capacitor PCB [1].
  - 1 Connector [2]
  - 1 Screw [3]



F-4-124

## Removing the All-night Power PCB Mount (TYPE I)

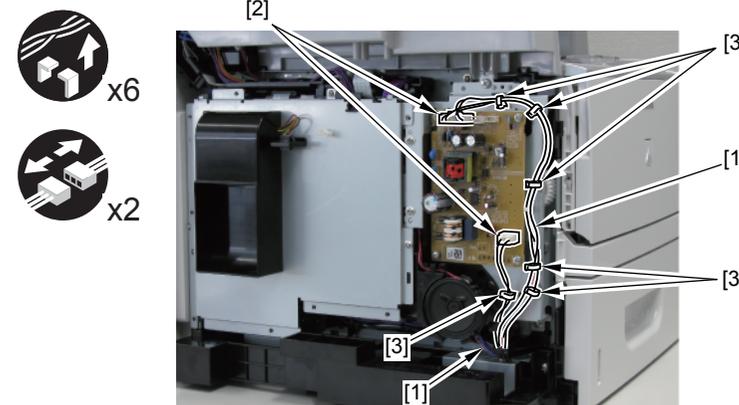
### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)

### Procedure

- 1) Remove the 2 Harnesses [1].

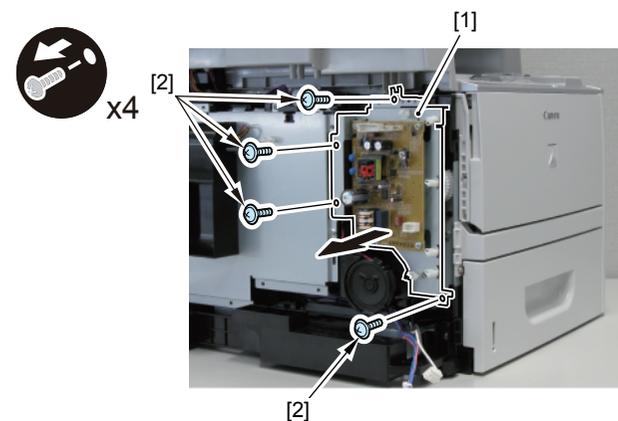
- 2 Connectors [2]
- 6 Wire Saddles [3]



F-4-125

- 2) Remove the All-night Power PCB Mount [1].

- 4 Screws [2]



F-4-126

## Removing the All-night Power PCB (TYPE I)

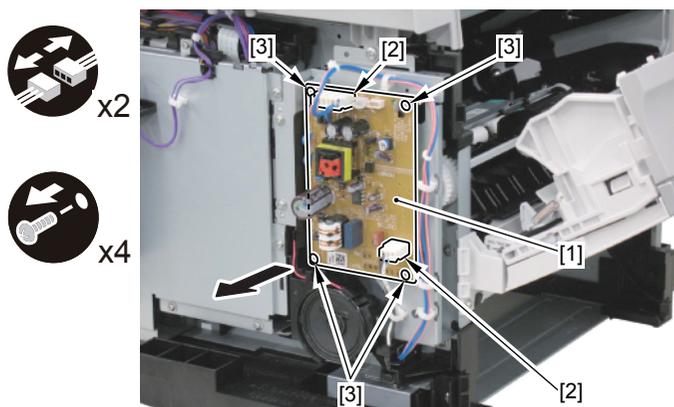
### Preparations

1) Removing the Left Cover.(Refer to page 4-19)

### Procedure

1) Remove the All-night Power PCB [1].

- 2 Connectors [2]
- 4 Screws [3]



F-4-127

## Removing the Power PCB (TYPE I)

### Preparations

1) Removing the Right Cover.(Refer to page 4-23)

2) Removing the Right Rear Cover.(Refer to page 4-26)

3) Removing the Left Cover.(Refer to page 4-19)

4) Removing the Controller Cover.(Refer to page 4-55)

5) Removing the Left Rear Cover.(Refer to page 4-22)

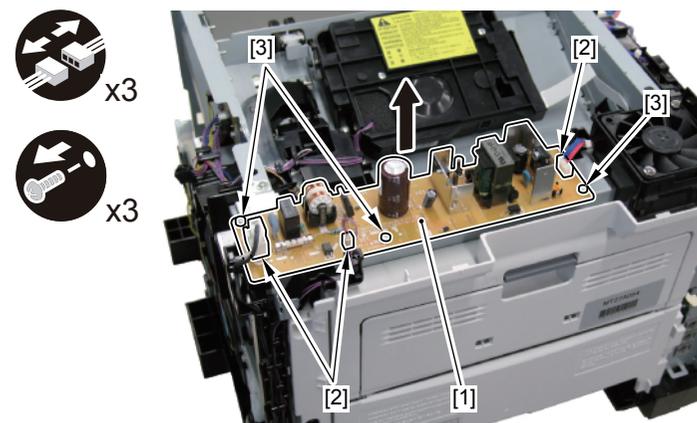
6) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)

7) Removing the Upper Cover Unit.(Refer to page 4-28)

### Procedure

1) Remove the Power PCB [1].

- 3 Connectors [2]
- 3 Screws [3]



F-4-128

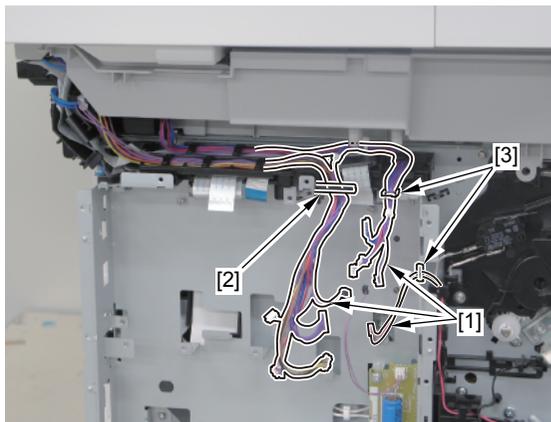
## Removing the Controller Box (TYPE I)

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the NCU PCB.(Refer to page 4-58)
- 6) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 7) Removing the Main Controller Board.(Refer to page 4-56)
- 8) Removing the All-night Power PCB Mount.(Refer to page 4-59)

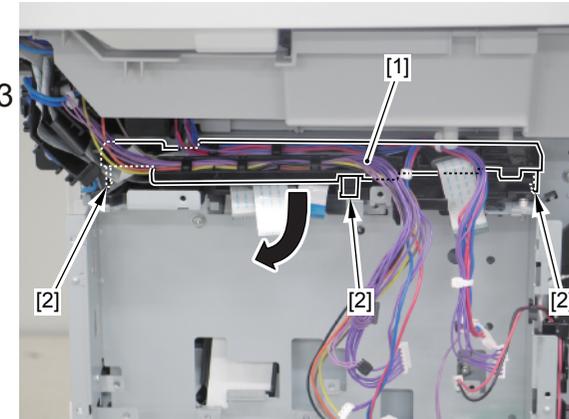
### Procedure

- 1) Remove the 3 Harnesses [1] from the Harness Guide [2].
  - 2 Edge Saddle [3]



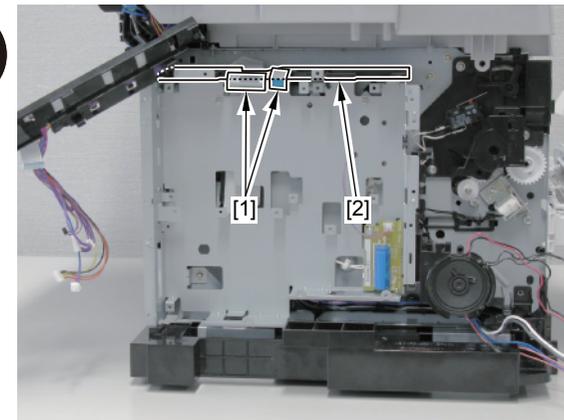
F-4-129

- 2) Remove the Harness Guide [1].
  - 3 Claws [2]



F-4-130

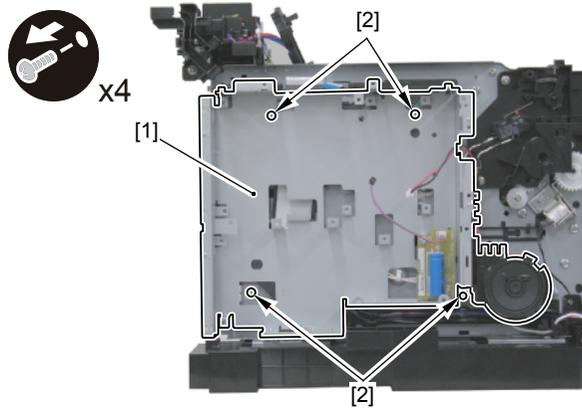
- 3) Remove the 2 Flat Cable [1] from the Harness Guide [2].



F-4-131

4) Remove the Controller Box [1].

- 4 Screws [2]



F-4-132

## Removing the Controller Box (TYPE II)

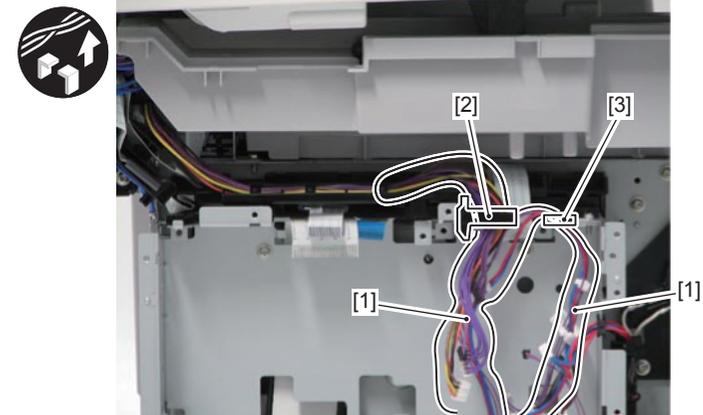
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the NCU PCB.(Refer to page 4-58)
- 6) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 7) Removing the Main Controller Board.(Refer to page 4-56)

### Procedure

- 1) Remove the 2 Harnesses [1] from the Harness Guide [2].

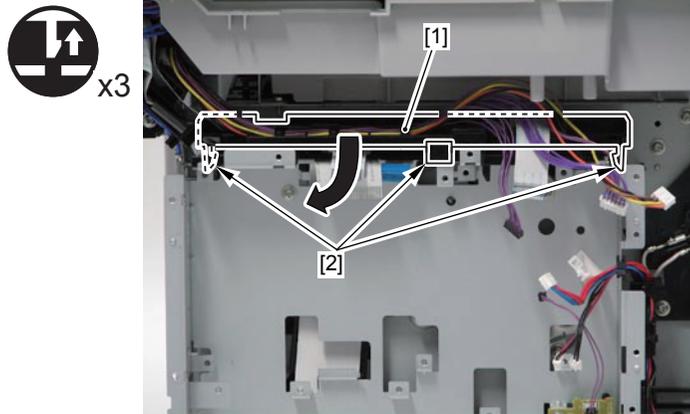
- 1 Edge Saddle [3]



F-4-133

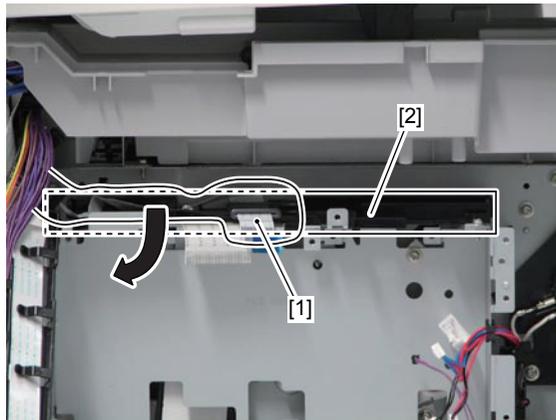
2) Remove the Harness Guide [1].

- 3 Claws [2]



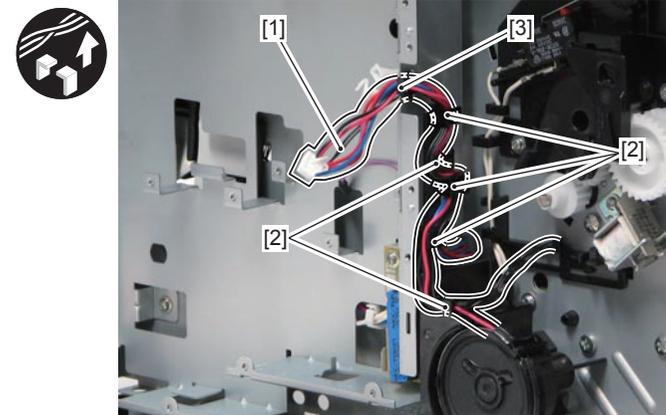
F-4-134

3) Remove the Flat Cable [1] from the Harness Guide [2].



F-4-135

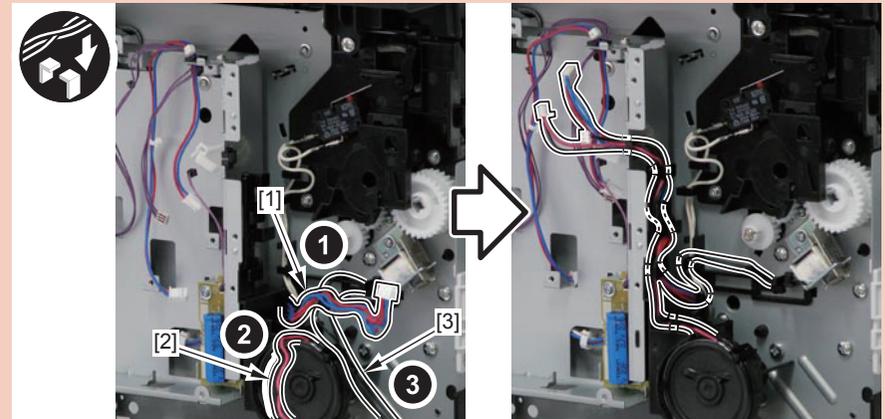
4) Remove the Harness [1] from the Harness Guide [2] and the Edge Saddle [3].



F-4-136

CAUTION:

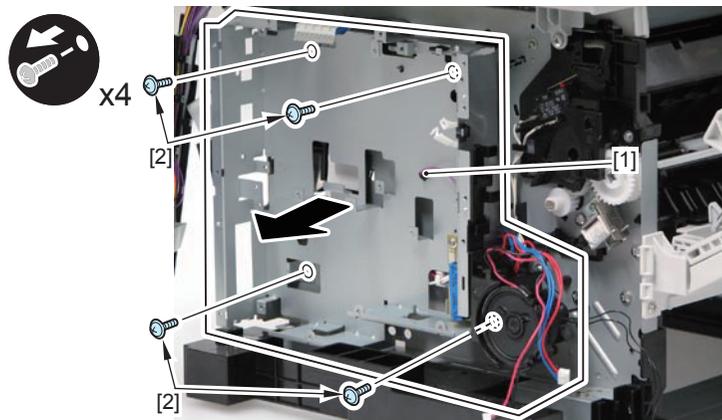
Attach the Engine Controller PCB Harness [1], the Speaker Harness [2], and the Manual Tray Pickup Solenoid Harness [3] in this order. When install the Controller Box.



F-4-137

5) Remove the Controller Box [1].

- 4 Screws [2]



F-4-138

#### MEMO:

When the Power Cooling Fan needs to be removed from the Controller Box, see "Removing the Power Cooling Fan".

## Removing the Engine Controller Unit (TYPE I)

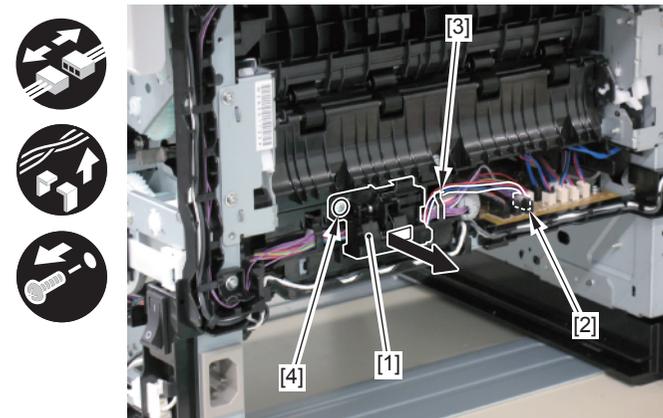
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the ADF + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)
- 7) Removing the NCU PCB.(Refer to page 4-58)
- 8) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 9) Removing the Main Controller Board.(Refer to page 4-56)
- 10) Removing the All-night Power PCB Mount.(Refer to page 4-59)
- 11) Removing the Controller Box.(Refer to page 4-61)
- 12) Removing the Rear Cover Unit.(Refer to page 4-27)

### Procedure

1) Remove the Duplex Reverse Sensor Unit [1].

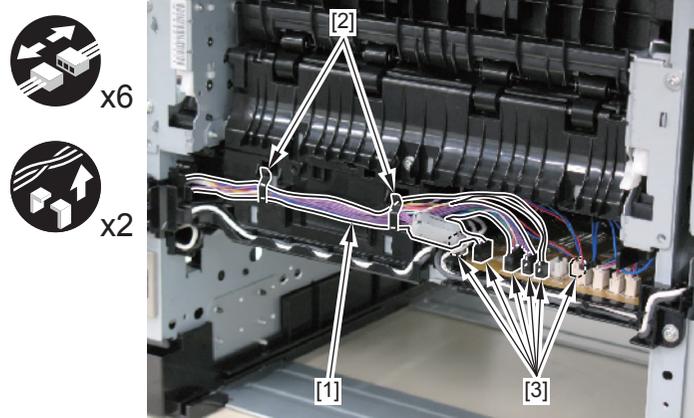
- 1 Connector [2]
- 1 Guide [3]
- 1 Screw [4]



F-4-139

2) Remove the Harness [1] from the 2 Harness Guide [2].

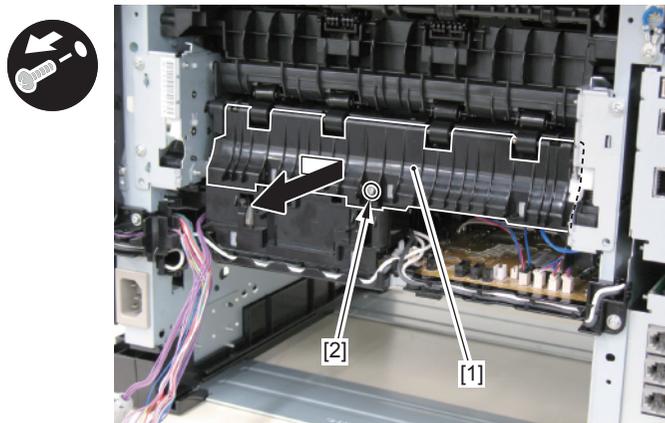
- 6 Connectors [3]



F-4-140

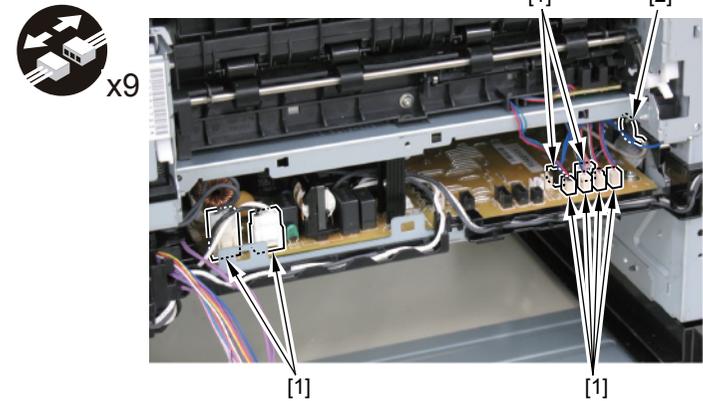
3) Remove the Feed Guide [1].

- 1 Screw [2]



F-4-141

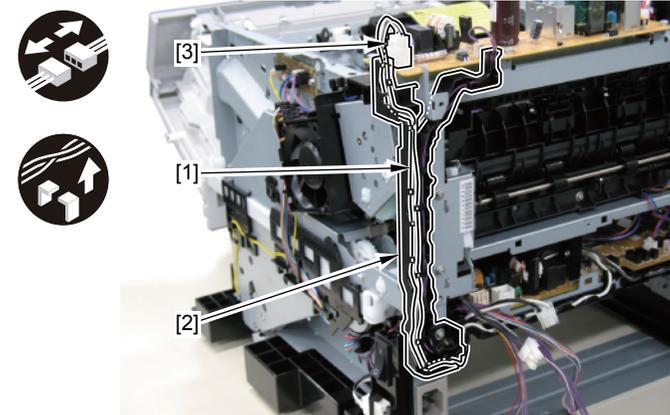
4) Remove the 8 Connectors [1] and the Terminal [2].



F-4-142

5) Remove the Harness [1] from the Harness Guide [2].

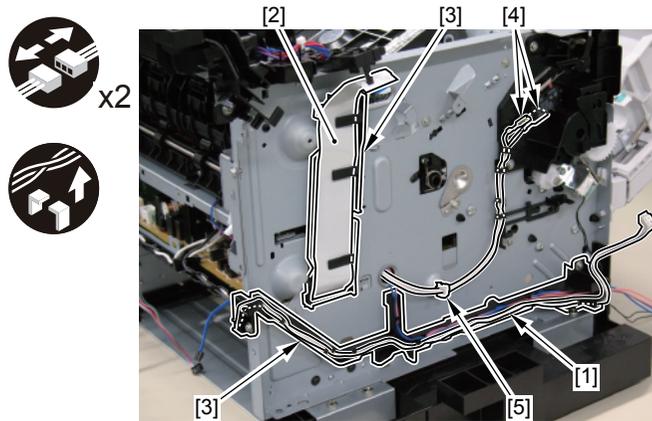
- 1 Connector [3]



F-4-143

6) Remove the Harness [1] and the Flat Cable [2] from the Harness Guide [3].

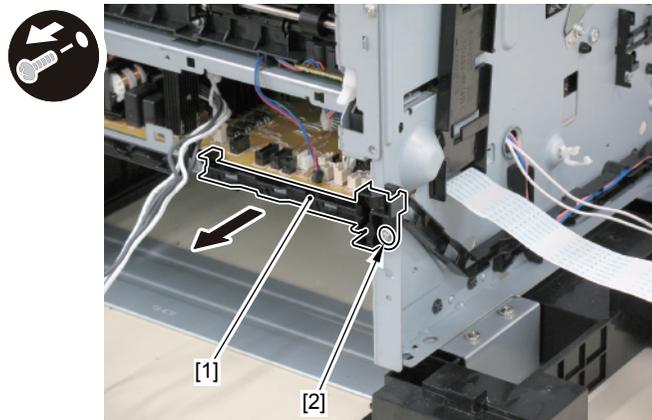
- 2 Terminals [4]
- 1 Wire Saddle [5]



F-4-144

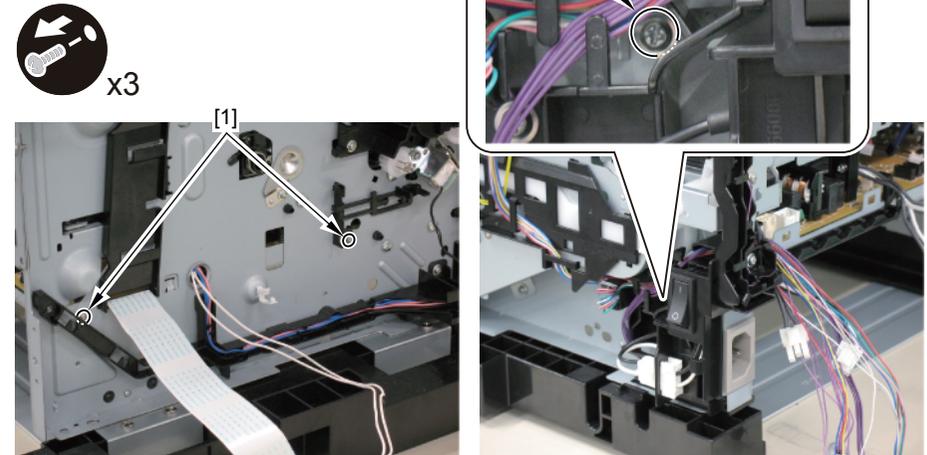
7) Remove the Harness Guide [1].

- 1 Screw [2]



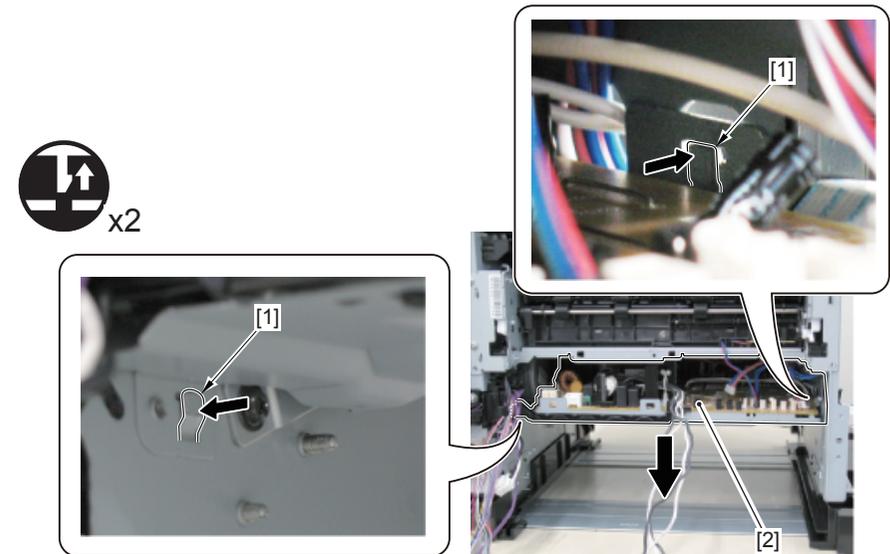
F-4-145

8) Remove the 3 Mounting Screws [1] Of the Engine Controller Unit.



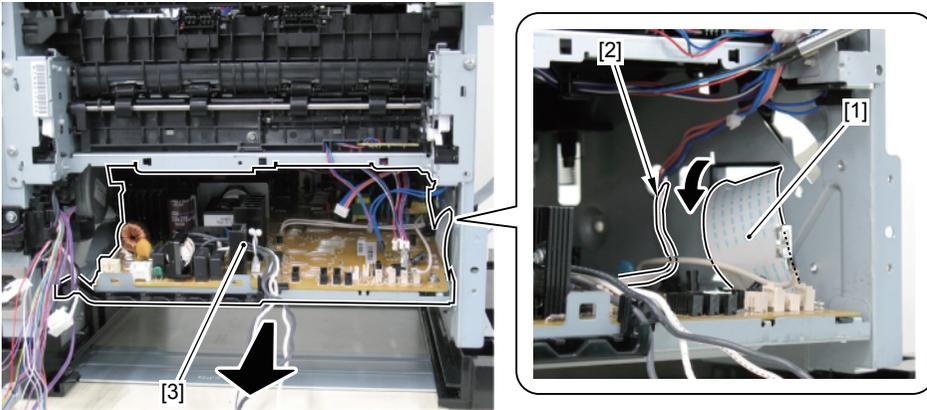
F-4-146

9) Push the 2 Claws [1] and Displace the Engine Controller Unit [2] In the Direction Of the Arrow.



F-4-147

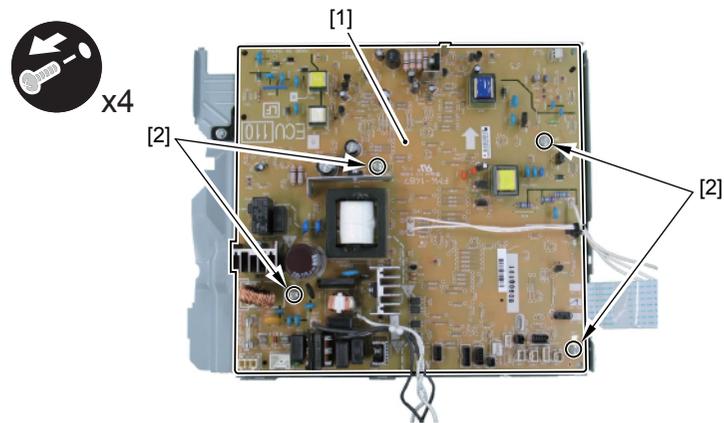
10) While Pulling Out the Flat Cable [1] and the Harness [2] from the Hole Of the Host Machine, Remove the Engine Controller Unit [3].



F-4-148

11) Remove the Engine Controller PCB [1].

- 4 Screws [2]



F-4-149

## Removing the Engine Controller Unit (TYPE II)

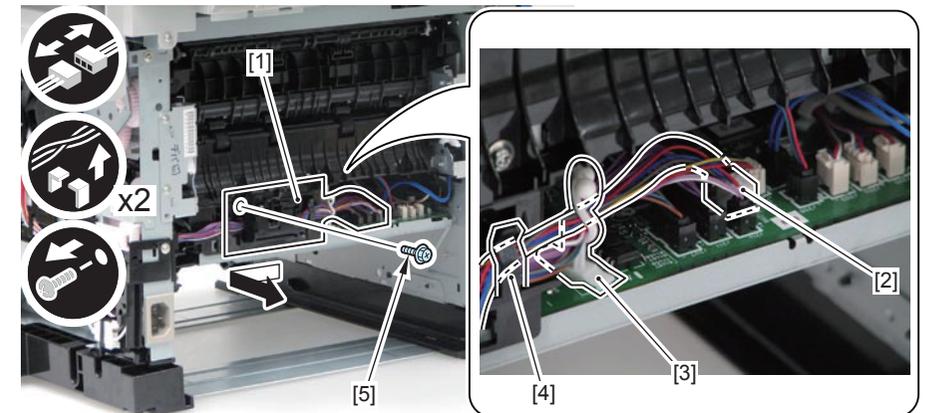
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Left Rear Cover.(Refer to page 4-22)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the NCU PCB.(Refer to page 4-58)
- 6) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 7) Removing the Main Controller Board.(Refer to page 4-56)
- 8) Removing the Controller Box.(Refer to page 4-62)
- 9) Removing the Rear Cover Unit.(Refer to page 4-27)

### Procedure

1) Remove the Duplex Reverse Sensor Unit [1].

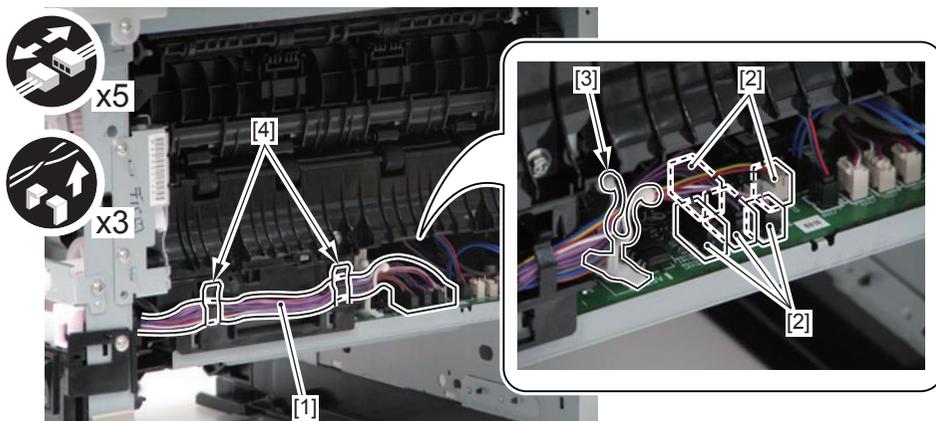
- 1 Connector [2]
- 1 Cable Clip [3]
- 1 Guide [4]
- 1 Screw [5]



F-4-150

2) Remove the Harness [1] from the Harness Guide [4].

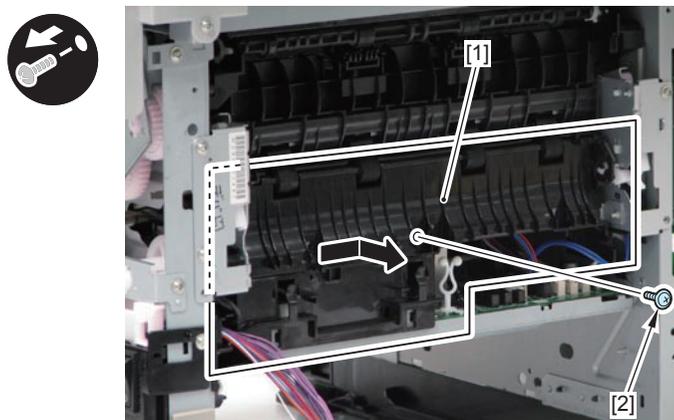
- 5 Connectors [2]
- 1 Cable Clip [3]



F-4-151

3) Remove the Feed Guide [1].

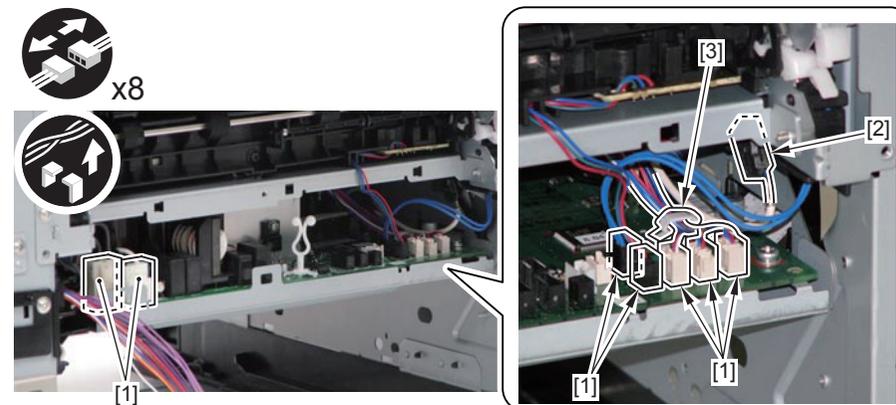
- 1 Screw [2]



F-4-152

4) Remove the 7 Connectors [1] and the Terminal [2].

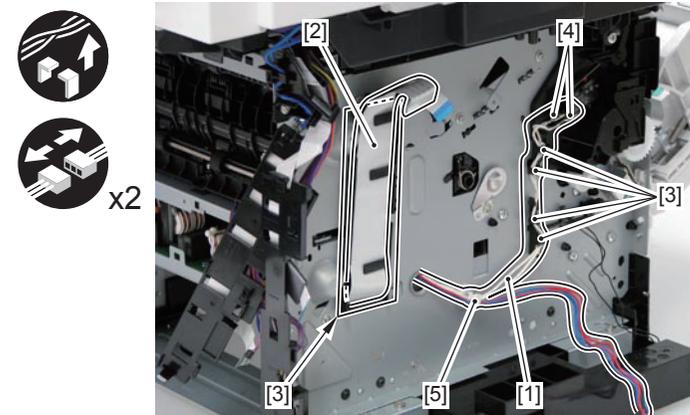
- 1 Wire Saddle [3]



F-4-153

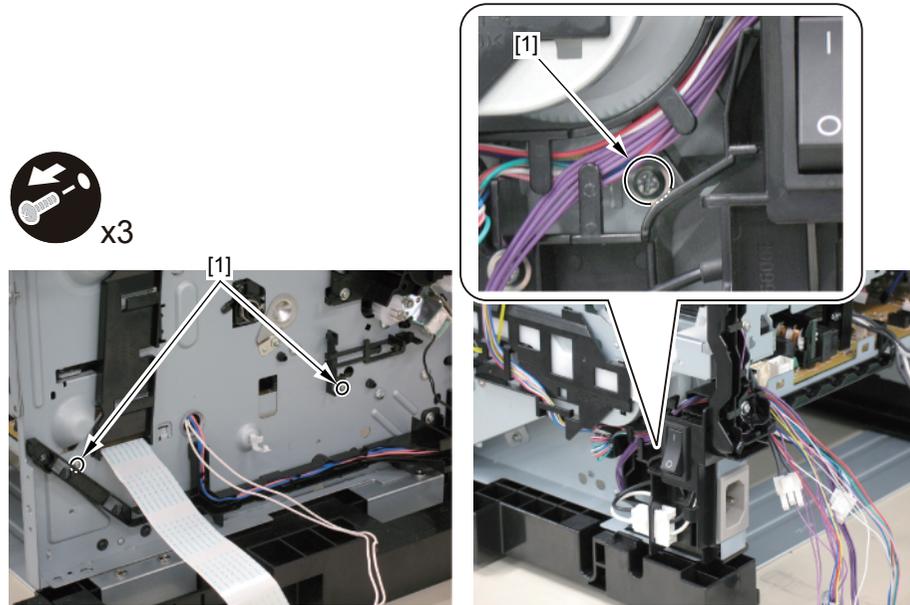
5) Remove the Harness [1] and the Flat Cable [2] from the Harness Guide [3].

- 2 Terminals [4]
- 1 Wire Saddle [5]



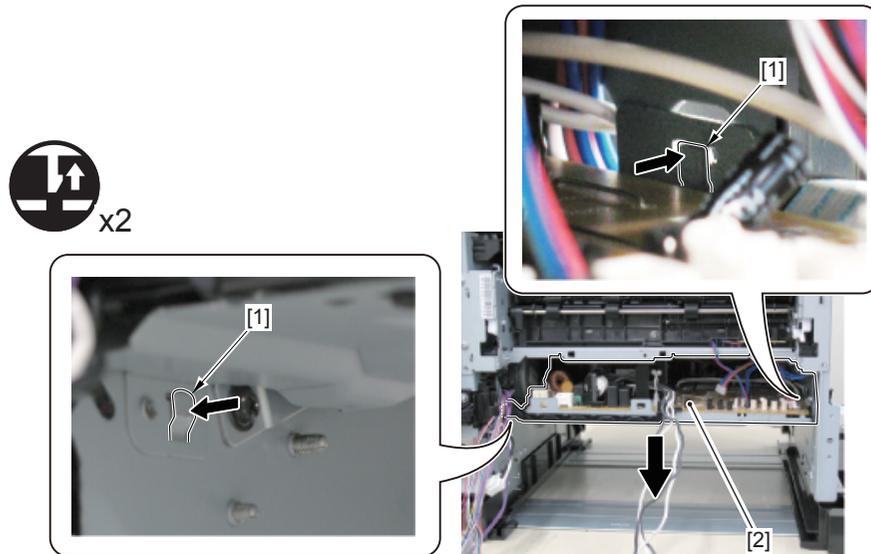
F-4-154

6) Remove the 3 Mounting Screws [1] Of the Engine Controller Unit.



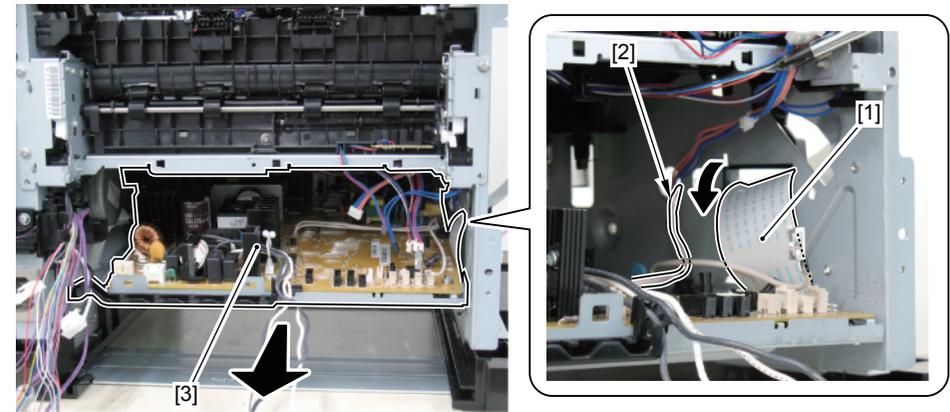
F-4-155

7) Push the 2 Claws [1] and Displace the Engine Controller Unit [2] In the Direction Of the Arrow.



F-4-156

8) While Pulling Out the Flat Cable [1] and the Harness [2] from the Hole Of the Host Machine, Remove the Engine Controller Unit [3].

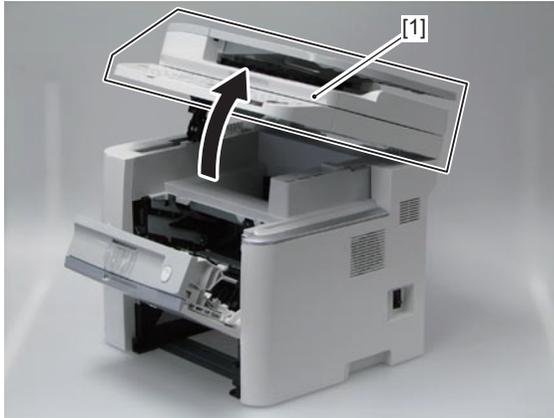


F-4-157

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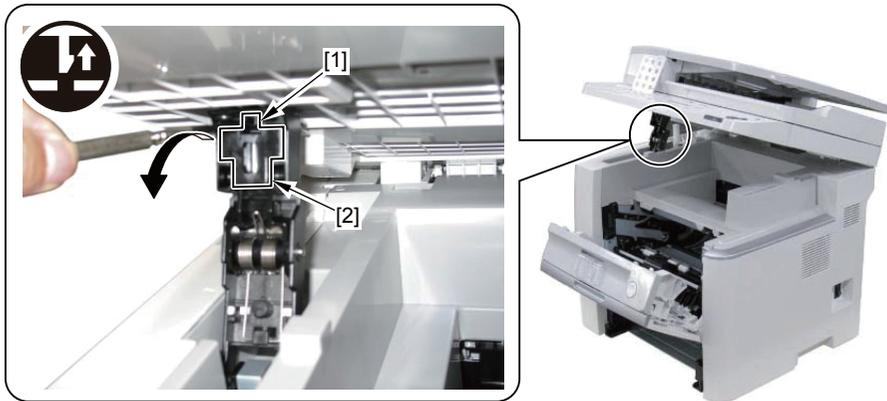
## Removing the Control Panel

1) Open the ADF Unit + Reader Unit [1].



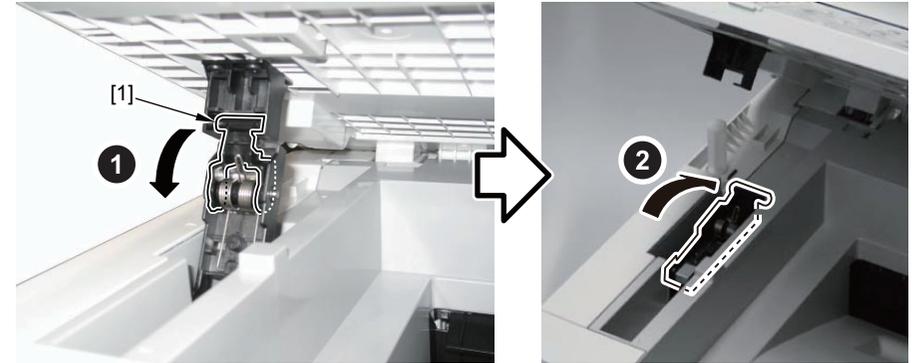
F-4-158

2) Release the claw [1], and remove the Arm Cover [2].



F-4-159

3) Release the Connection of Arm [1] and turn it toward the rear.



F-4-160

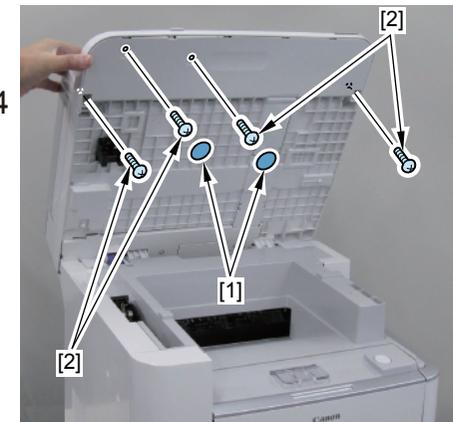
4) Remove the 2 Blanking Sheets [1] and 4 Screws [2] On the Bottom Of the Reader Unit.

### CAUTION:

Since the Blanking Sheet [1] Needs to be Purchased Separately, be Careful Not to Lose it After Removing It.



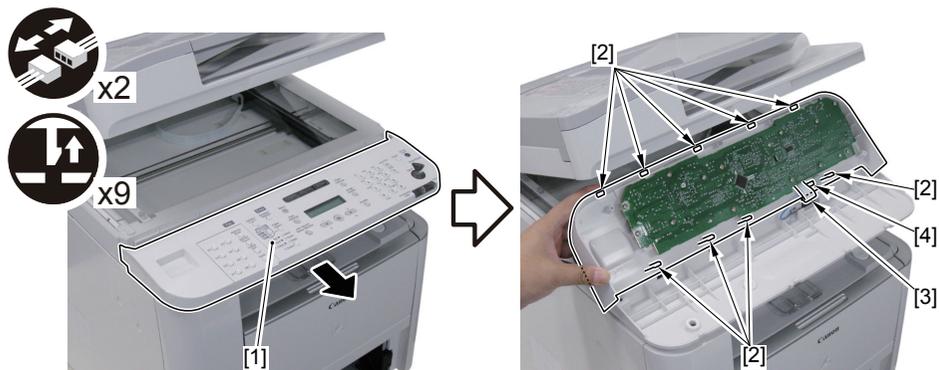
x4



F-4-161

5) Remove the Control Panel [1].

- 9 Claws [2]
- 1 Flat Cable [3]
- 1 Terminal [4]



F-4-162

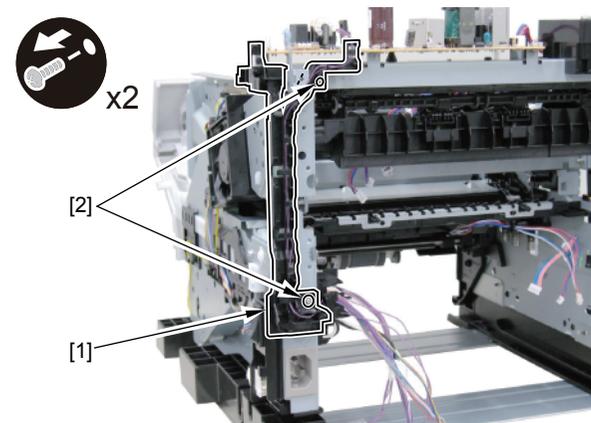
## Removing the Main Motor (TYPE I)

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)
- 7) Removing the NCU PCB.(Refer to page 4-58)
- 8) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 9) Removing the Main Controller Board.(Refer to page 4-56)
- 10) Removing the All-night Power PCB Mount.(Refer to page 4-59)
- 11) Removing the Controller Box.(Refer to page 4-55)
- 12) Removing the Fixing Unit.(Refer to page 4-98)

### Procedure

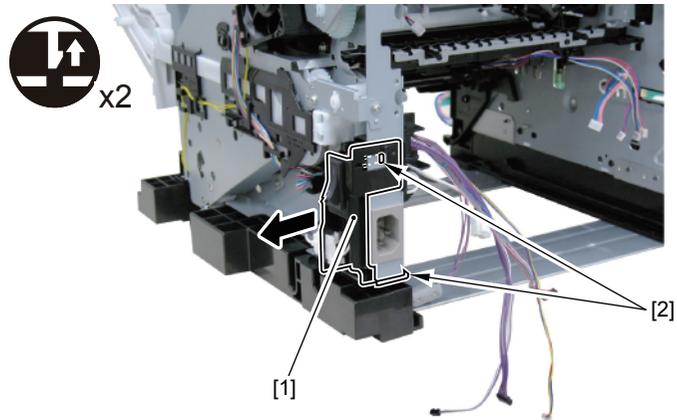
- 1) Remove the Engine Controller Unit [1].
  - 2 Screws [2]



F-4-163

2) Remove the Main Switch Mount [1].

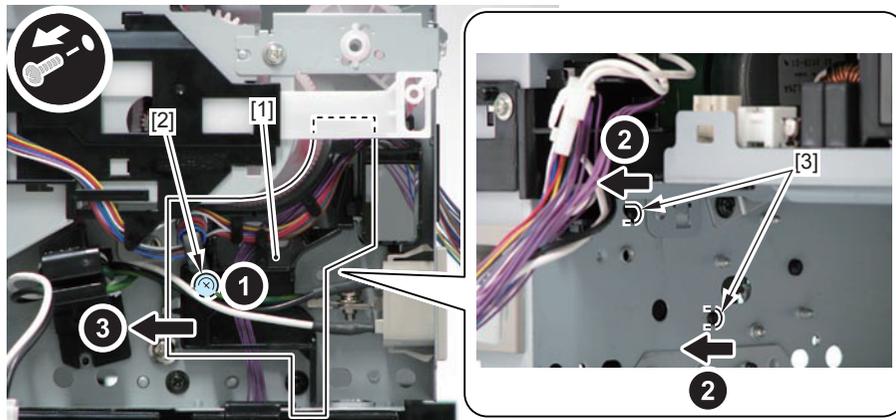
- 2 Claws [2]



F-4-164

3) Shift the Harness Guide [1] to the left.

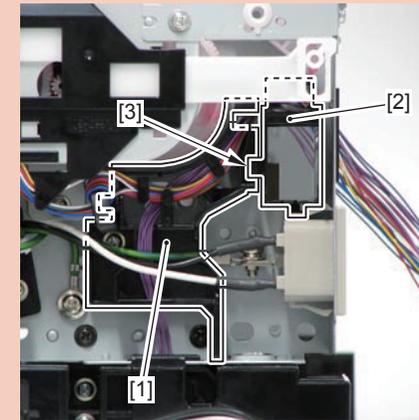
- 1 Screw [2]
- 2 Bosses [3]



F-4-165

CAUTION:

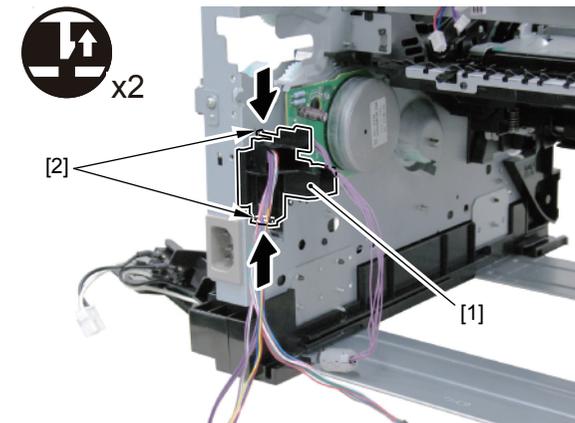
When installing the Harness Guide [1], be sure to place it at rear side of the hook [3] of the Harness Guide [2].



F-4-166

4) Displace the Harness Guide [1].

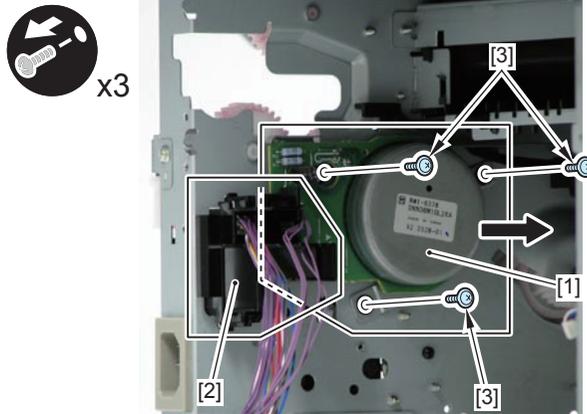
- 2 Claws [2]



F-4-167

5) Remove the Main Motor [1] Together With the Harness Guide [2].

- 3 Screws [3]



F-4-168

## Removing the Main Motor (TYPE II)

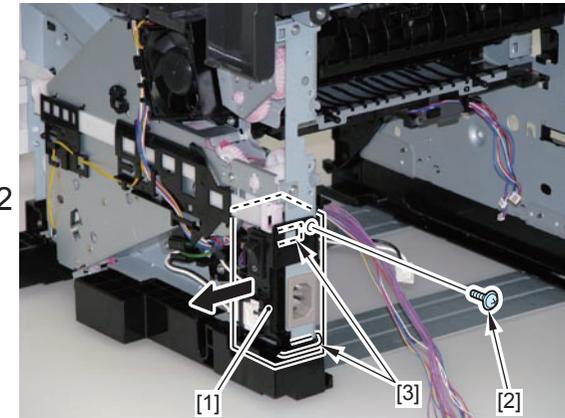
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the NCU PCB.(Refer to page 4-58)
- 6) Removing the ADF/Reader Driver PCB.(Refer to page 4-55)
- 7) Removing the Main Controller Board.(Refer to page 4-56)
- 8) Removing the Controller Box.(Refer to page 4-62)
- 9) Removing the Fixing Unit.(Refer to page 4-98)
- 10) Removing the Engine Controller Unit.(Refer to page 4-67)

### Procedure

1) Remove the Main Switch Mount [1].

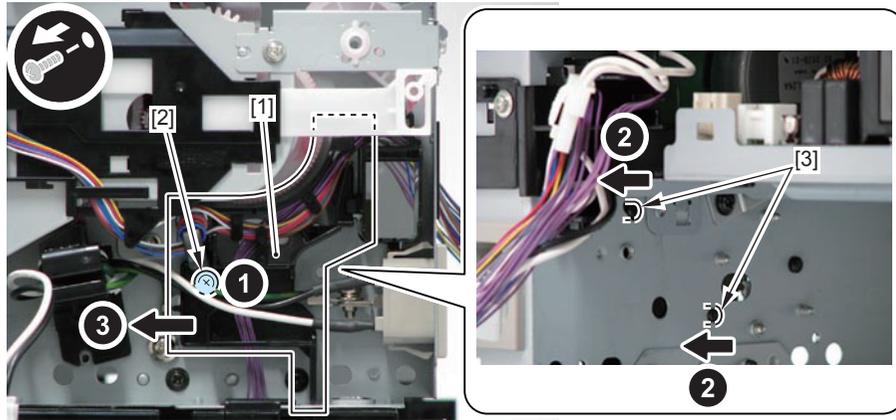
- 1 Screw [2]
- 2 Claws [3]



F-4-169

2) Shift the Harness Guide [1] to the left.

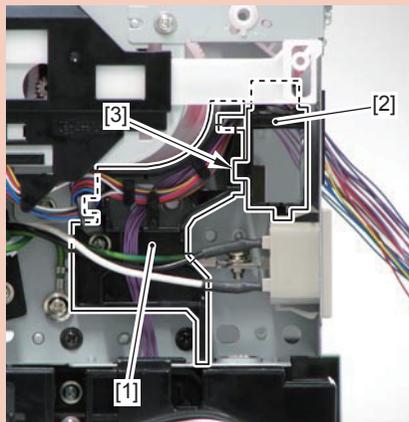
- 1 Screw [2]
- 2 Bosses [3]



F-4-170

**CAUTION:**

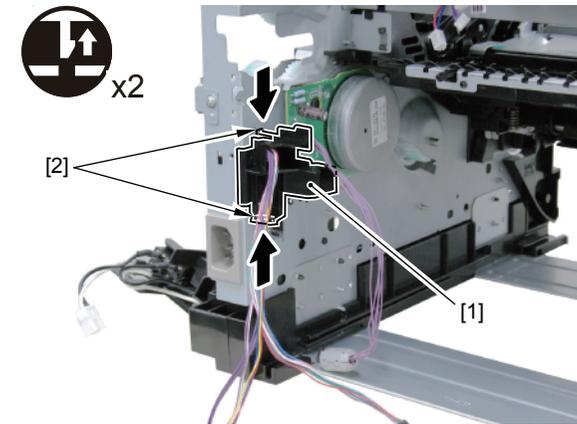
When installing the Harness Guide [1], be sure to place it at rear side of the hook [3] of the Harness Guide [2].



F-4-171

3) Displace the Harness Guide [1].

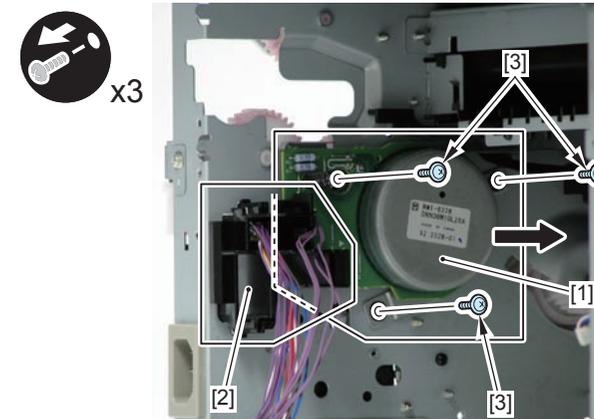
- 2 Claws [2]



F-4-172

4) Remove the Main Motor [1] Together With the Harness Guide [2].

- 3 Screws [3]



F-4-173

## Removing the Main Fan

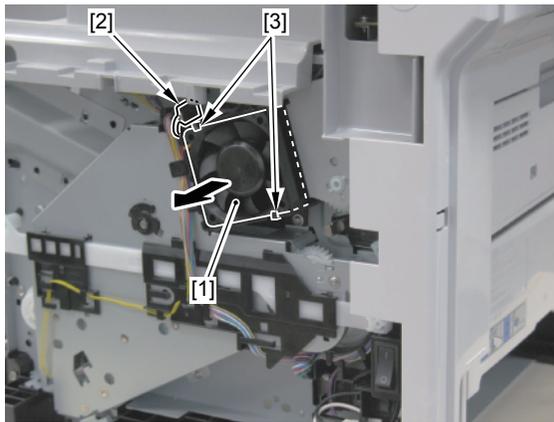
### Preparations

1) Removing the Right Cover.(Refer to page 4-23)

### Procedure

1) Remove the Main Fan [1].

- 1 Connector [2]
- 2 Claws [3]



F-4-174

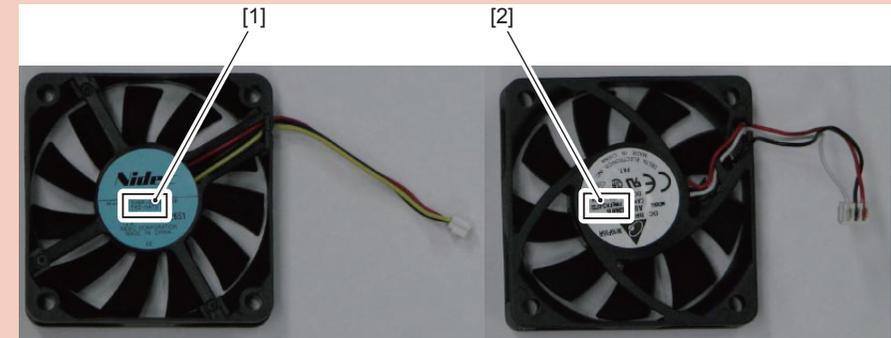
## Removing the Power Cooling Fan

### Preparations

1) Remove the Left Cover.(Refer to page 4-19)

#### CAUTION:

- For TYPE I, either [1] FK2-0472 or [2] FK3-0732 can be used.
- For TYPE II, be sure to install [2] FK3-0732.

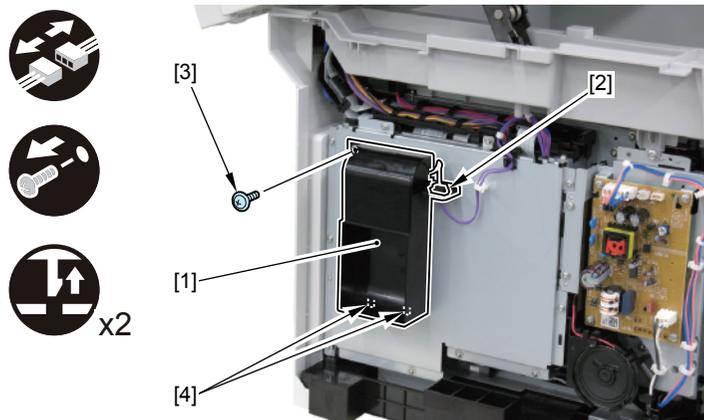


F-4-175

## Procedure

1) Remove the Fan Duct [1].

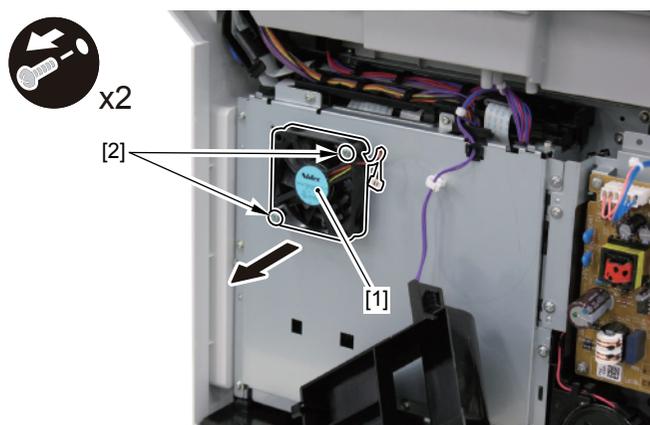
- 1 Connector [2]
- 1 Screw [3]
- 2 Claws [4]



F-4-176

2) Remove the Power Cooling Fan [1].

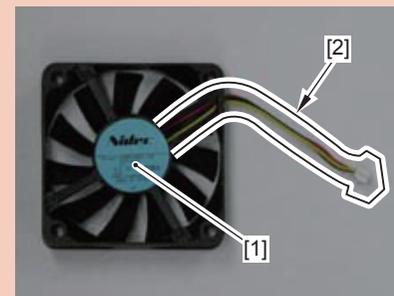
- 2 Screws [2]



F-4-177

### CAUTION:

At installation, be sure to affix the Label [1] to the front side and install the harness [2] to the right upper side.



F-4-178

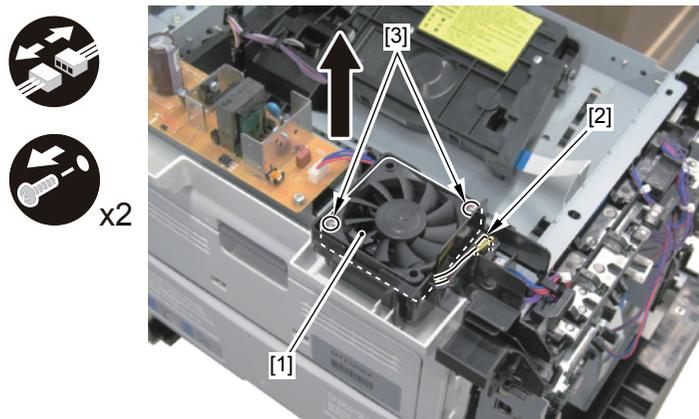
## Removing the Controller Fan (TYPE I)

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Right Rear Cover.(Refer to page 4-26)
- 3) Removing the Left Cover.(Refer to page 4-19)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the Left Rear Cover.(Refer to page 4-22)
- 6) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 7) Removing the Upper Cover Unit.(Refer to page 4-28)

### Procedure

- 1) Remove the Controller Fan [1].
  - 1 Connector [2]
  - 2 Screws [3]



F-4-179

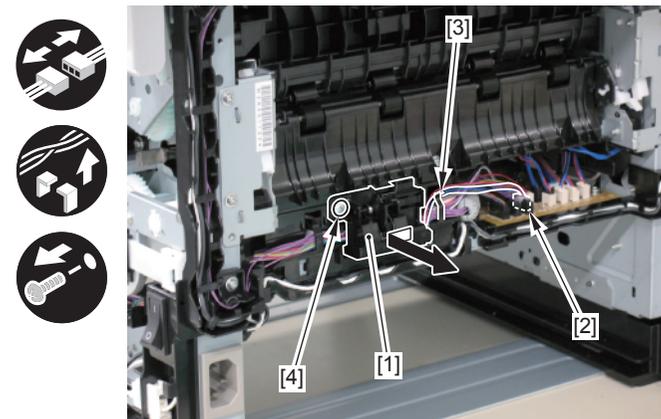
## Removing the Main Drive Unit (TYPE I)

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)

### Procedure

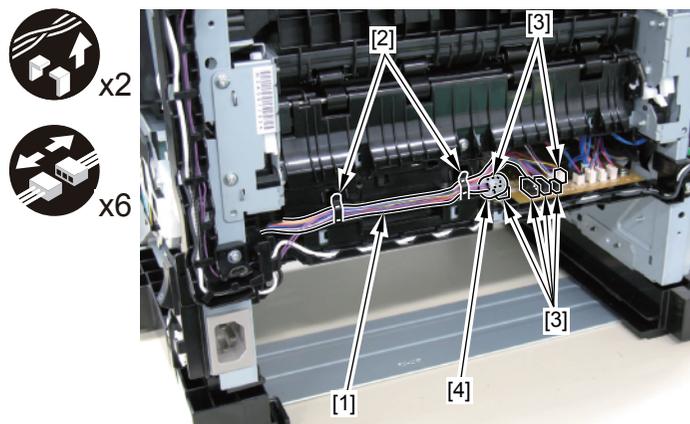
- 1) Remove the Duplex Reverse Sensor Unit [1].
  - 1 Connector [2]
  - 1 Guide [3]
  - 1 Screw [4]



F-4-180

2) Remove the Harness [1] from the 2 Harness Guide [2].

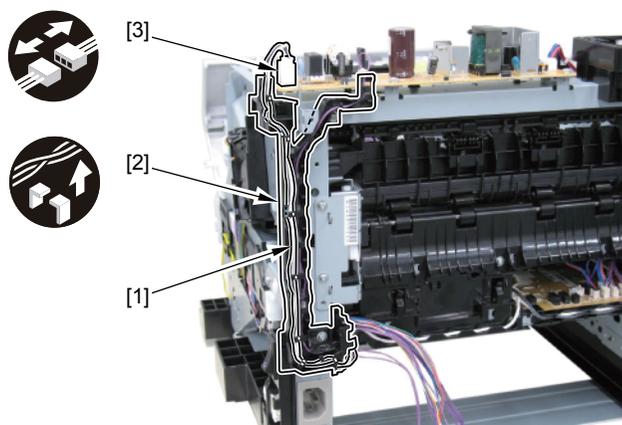
- 6 Connectors [3]
- 1 Ferrite Core [4]



F-4-181

3) Remove the Harness [1] from the Harness Guide [2].

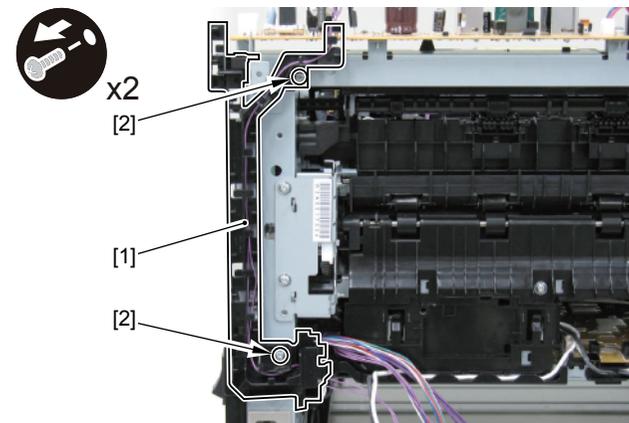
- 1 Connector [3]



F-4-182

4) Remove the Harness Guide [1].

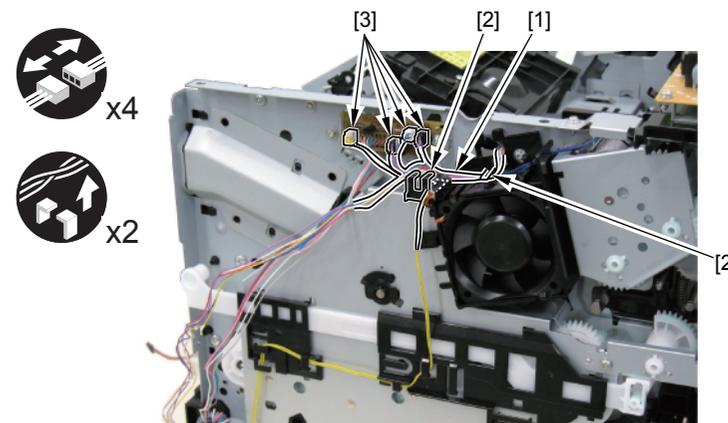
- 2 Screws [2]



F-4-183

5) Remove the Harness [1] from the Harness Guide [2].

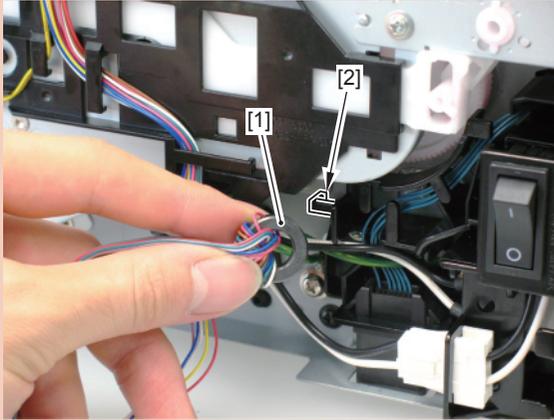
- 4 Connectors [3]



F-4-184

**CAUTION:**

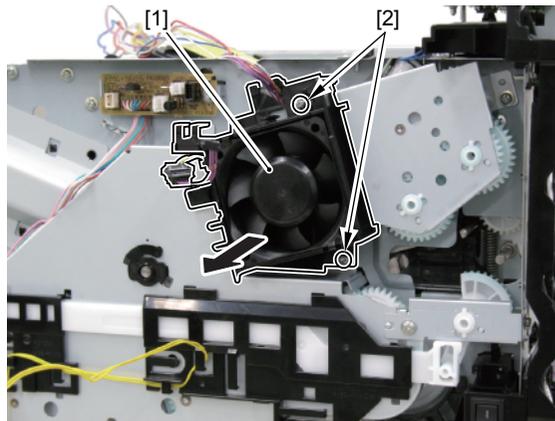
When setting the harness back to the harness guide, do not forget to hook Ferrite Core [1] to Hook [2].



F-4-185

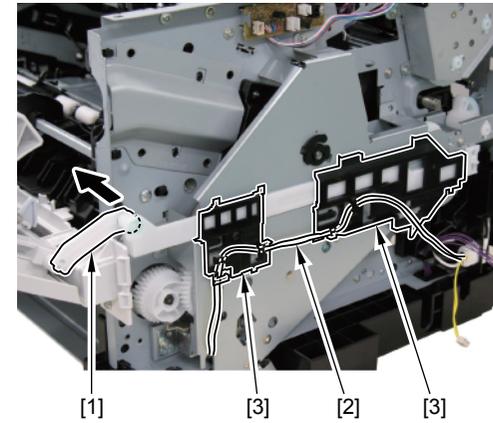
6) Remove the Main Fan Holder [1].

- 2 Screws [2]



F-4-186

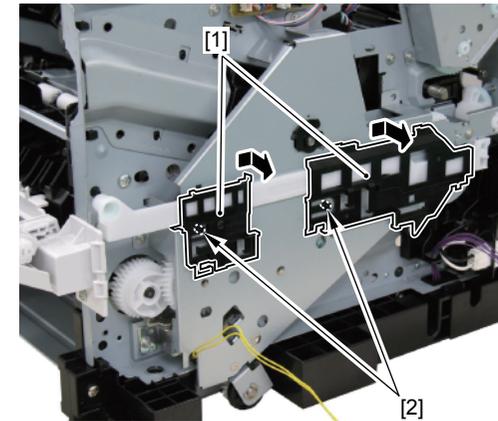
7) Remove the Link [1] and Remove the Harness [2] from the Harness Guide [3].



F-4-187

8) Remove the 2 Harness Guides [1].

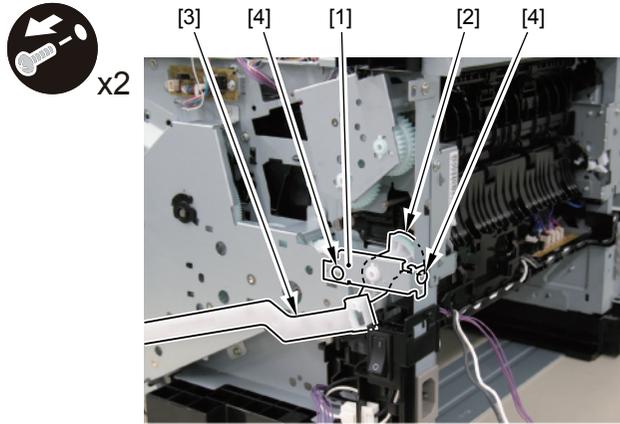
- 2 Bosses [2]



F-4-188

9) Remove the Plate [1], the Fan Gear [2] and the Link Arm [3].

- 2 Screws [4]



F-4-189

CAUTION :

Points to Note When Removing the Main Drive Unit.

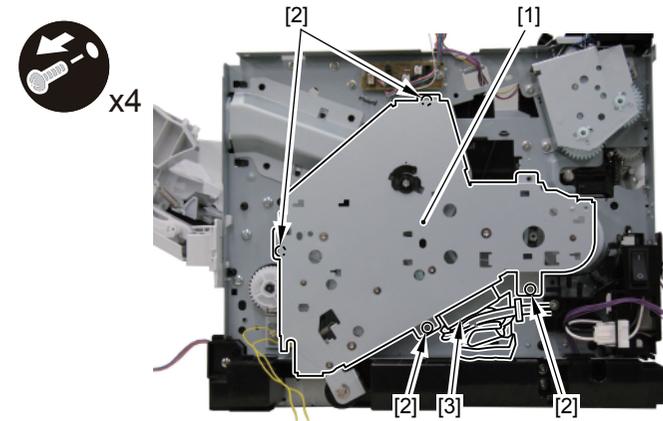
Since the Gear of the Main Drive Unit is not Fixed, be Careful Not to Drop it When Removing it.

10) Remove the Main Drive Unit [1].

- 4 Screws [2]

CAUTION :

Cushion Sheet [3] Attached to the Main Drive Unit Needs to be Purchased Separately at Replacement; Thus, Check the Affixing Position After Removing the Unit.



F-4-190

## Removing the Main Drive Unit (TYPE II)

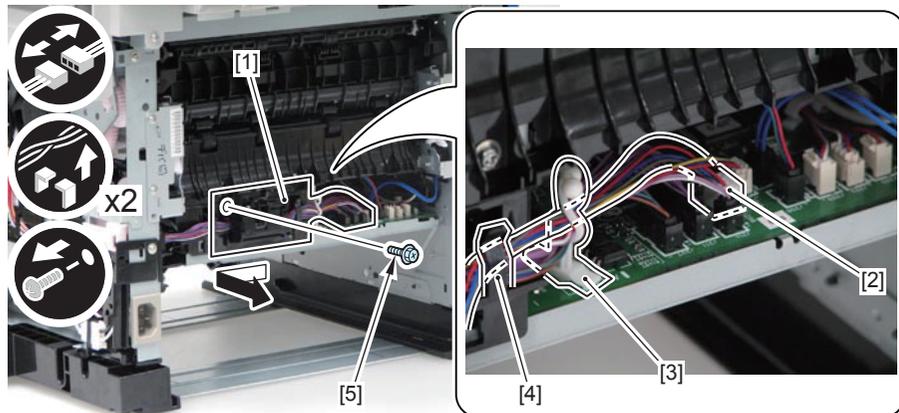
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)
- 7) Removing the Rear Cover Unit.(Refer to page 4-27)

### Procedure

- 1) Remove the Duplex Reverse Sensor Unit [1].

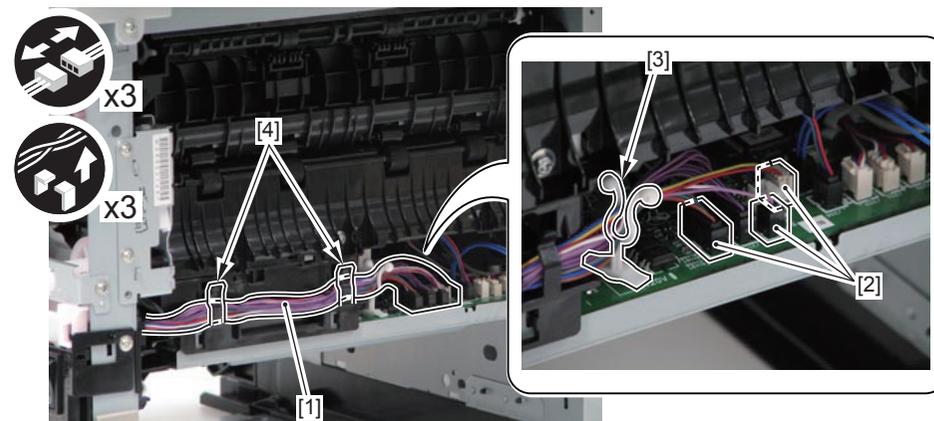
- 1 Connector [2]
- 1 Wire Saddles [3]
- 1 Harness Guide [4]
- 1 Screw [5]



F-4-191

- 2) Remove the Harness [1] from the 2 Harness Guide [4].

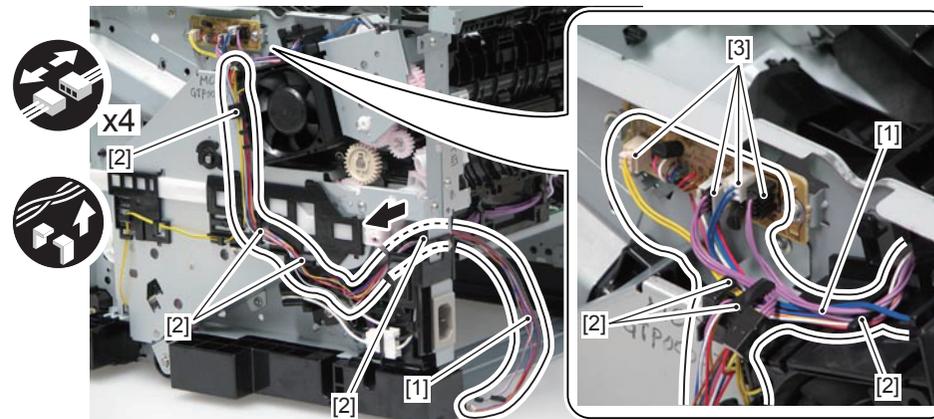
- 3 Connectors [2]
- 1 Cable Clip [3]



F-4-192

- 3) Remove the Harness [1] from the Harness Guide [2].

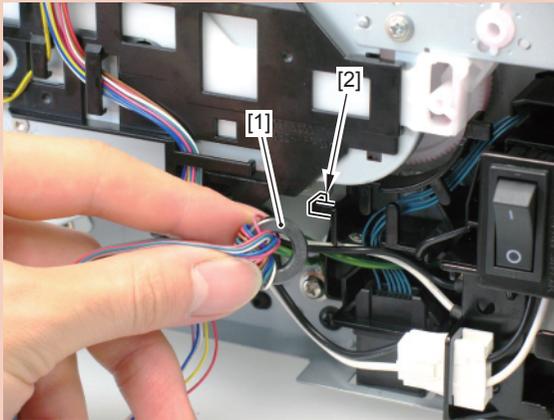
- 4 Connectors [3]



F-4-193

**CAUTION:**

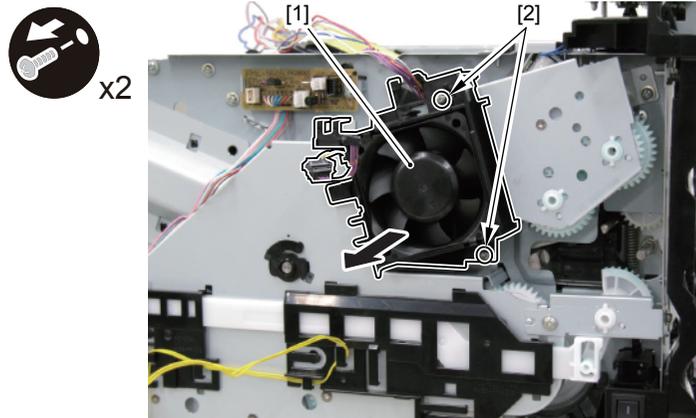
When setting the harness back to the harness guide, do not forget to hook Ferrite Core [1] to Hook [2].



F-4-194

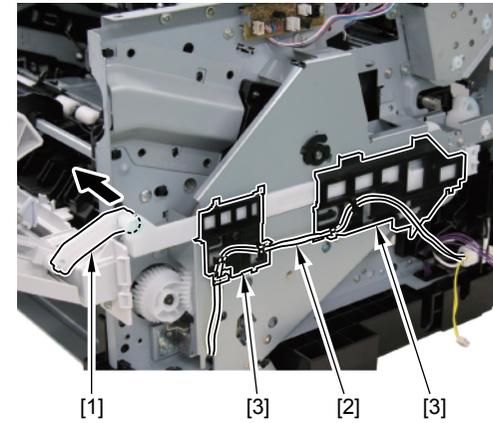
## 4) Remove the Main Fan Holder [1].

- 2 Screws [2]



F-4-195

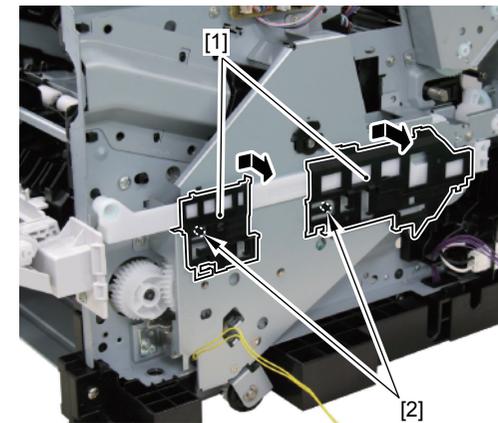
## 5) Remove the Link [1] and Remove the Harness [2] from the Harness Guide [3].



F-4-196

## 6) Remove the 2 Harness Guides [1].

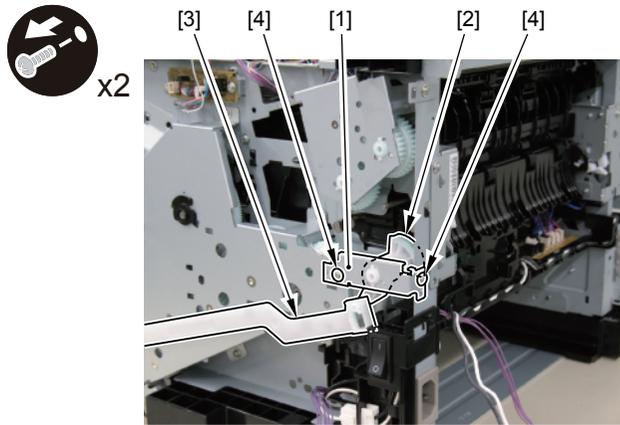
- 2 Bosses [2]



F-4-197

7) Remove the Plate [1], the Fixing Gear [2] and the Link Arm [3].

- 2 Screws [4]



F-4-198

**CAUTION:**

Points to Note When Removing the Main Drive Unit.

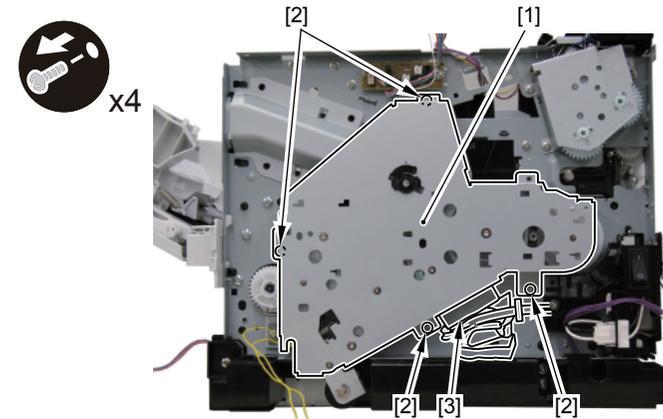
Since the Gear of the Main Drive Unit is not Fixed, be Careful Not to Drop it When Removing it..

8) Remove the Main Drive Unit [1].

- 4 Screws [2]

**CAUTION :**

Cushion Sheet [3] Attached to the Main Drive Unit Needs to be Purchased Separately at Replacement; Thus, Check the Affixing Position After Removing the Unit.



F-4-199

## Removing the Duplex Drive Unit (TYPE I)

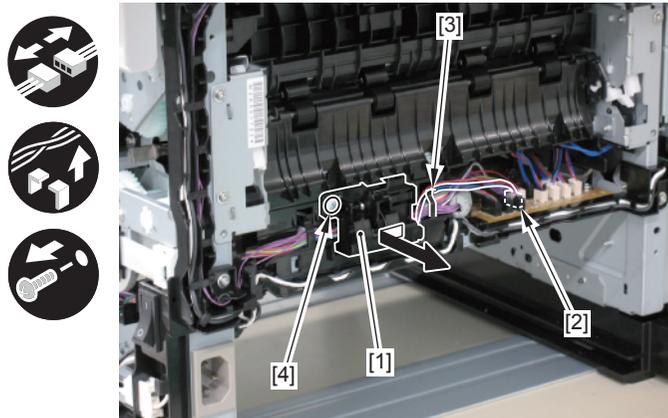
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Right Rear Cover.(Refer to page 4-26)
- 3) Removing the Left Cover.(Refer to page 4-19)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the Left Rear Cover.(Refer to page 4-22)
- 6) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 7) Removing the Upper Cover Unit.(Refer to page 4-28)

### Procedure

- 1) Remove the Duplex Reverse Sensor Unit [1].

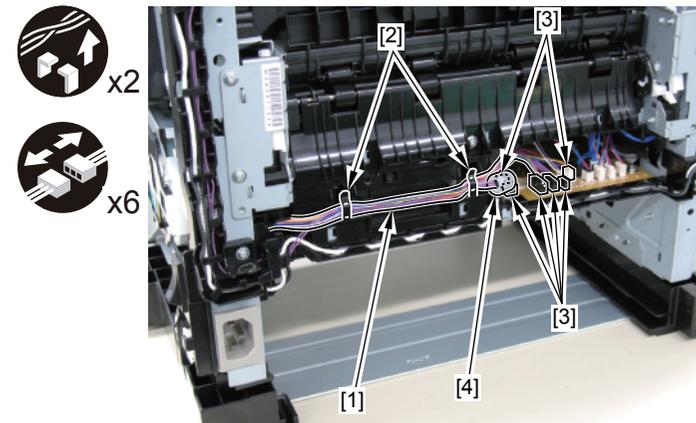
- 1 Connector [2]
- 1 Guide [3]
- 1 Screw [4]



F-4-200

- 2) Remove the Harness [1] from the 2 Harness Guide [2].

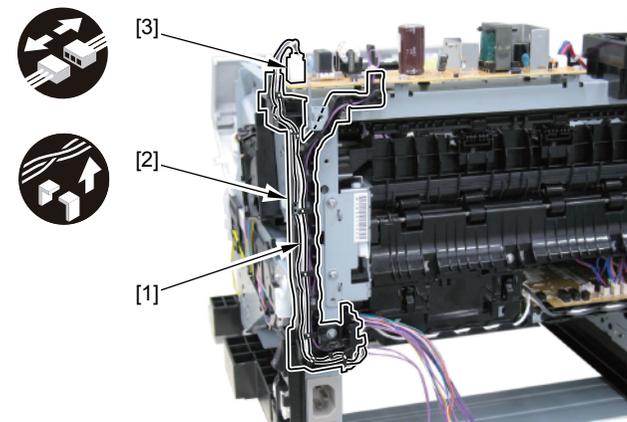
- 6 Connectors [3]
- 1 Ferrite Core [4]



F-4-201

- 3) Remove the Harness [1] from the Harness Guide [2].

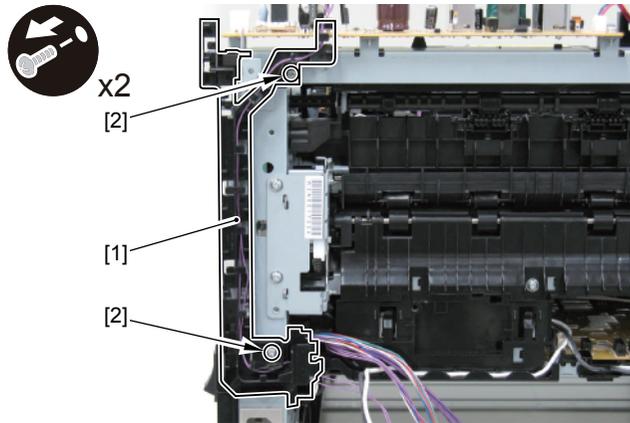
- 1 Connector [3]



F-4-202

4) Remove the Harness Guide [1].

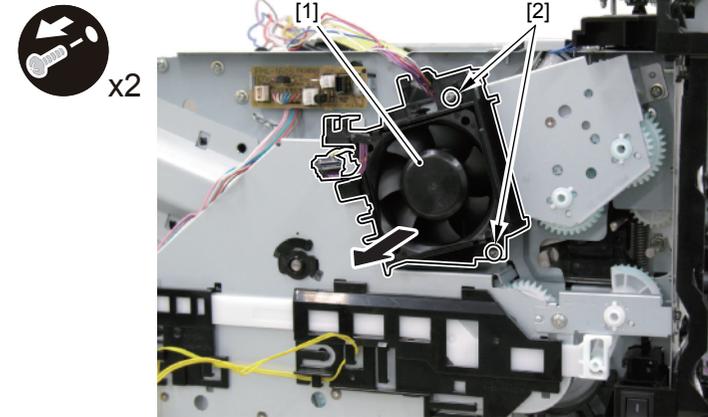
- 2 Screws [2]



F-4-203

6) Remove the Main Fan Holder [1].

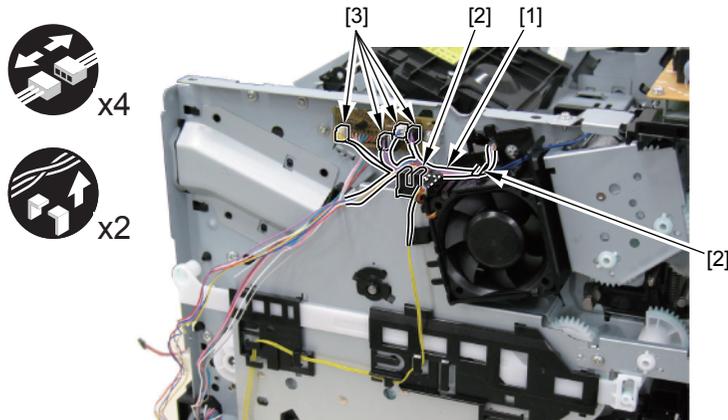
- 2 Screws [2]



F-4-205

5) Remove the Harness [1] from the 2 Harness Guide [2].

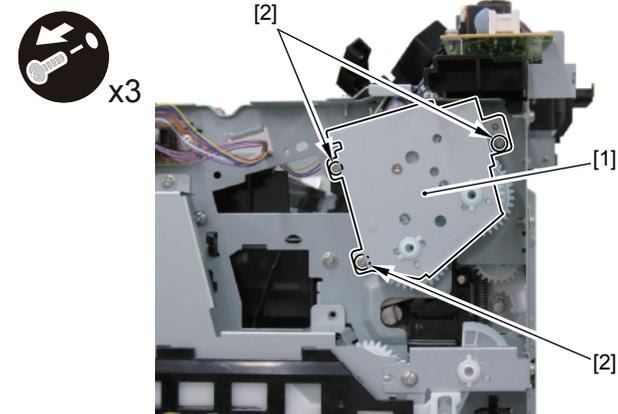
- 4 Connectors [3]



F-4-204

7) Remove the Duplex Drive Unit [1].

- 3 Screws [2]



F-4-206

**CAUTION :**

Since the Gear of the Duplex Drive Unit is Not Fixed, be Careful Not to Drop or Lose it When Removing it.

## Removing the Duplex Drive Unit (TYPE II)

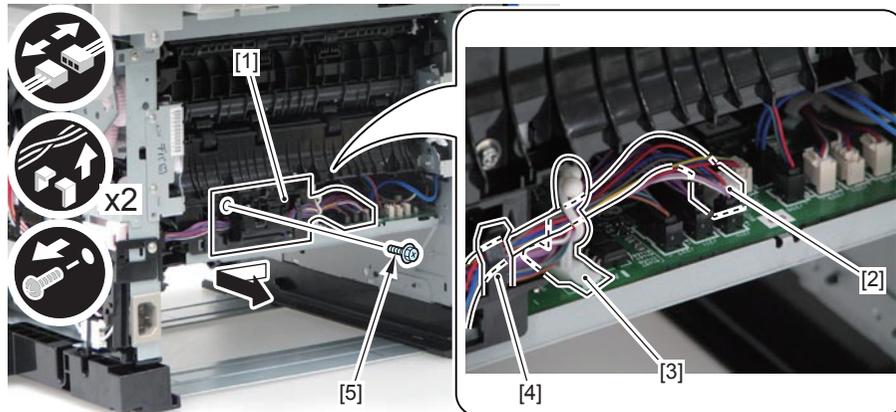
### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)
- 7) Removing the Rear Cover Unit.(Refer to page 4-27)

### Procedure

- 1) Remove the Duplex Reverse Sensor Unit [1].

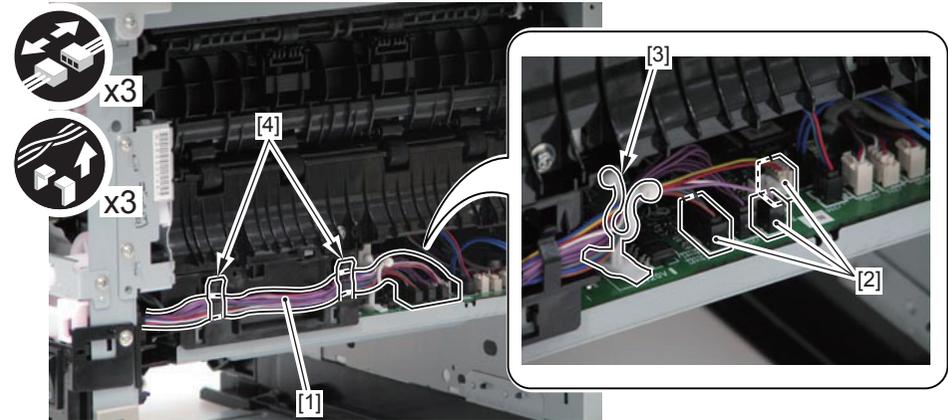
- 1 Connector [2]
- 1 Wire Saddles [3]
- 1 Harness Guide [4]
- 1 Screw [5]



F-4-207

- 2) Remove the Harness [1] from the 2 Harness Guide [4].

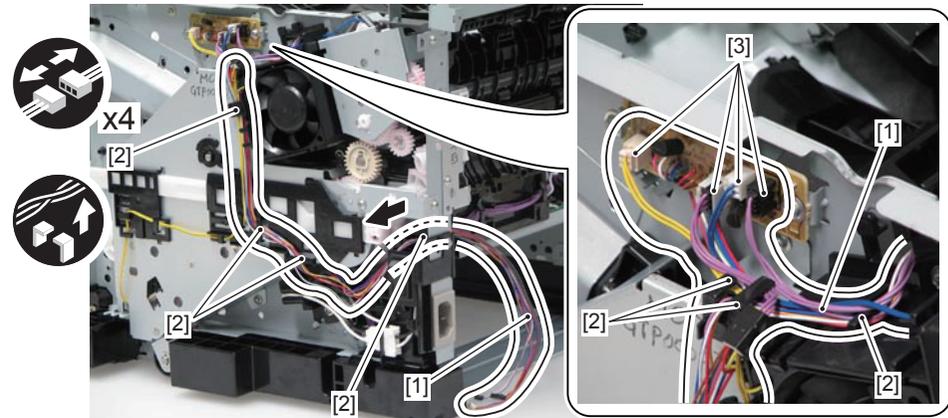
- 3 Connectors [2]
- 1 Cable Clip [3]



F-4-208

- 3) Remove the Harness [1] from the Harness Guide [2].

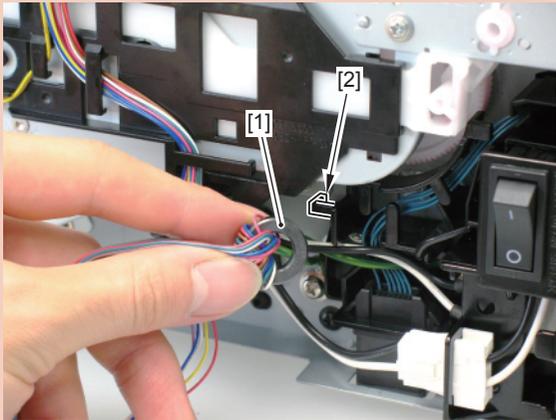
- 4 Connectors [3]



F-4-209

**CAUTION:**

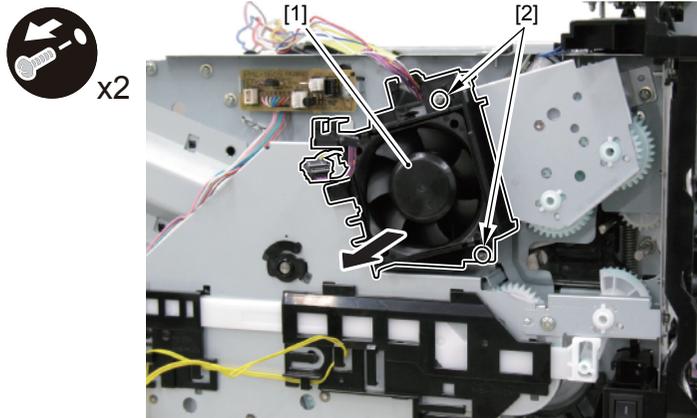
When setting the harness back to the harness guide, do not forget to hook Ferrite Core [1] to Hook [2].



F-4-210

## 4) Remove the Main Fan Holder [1].

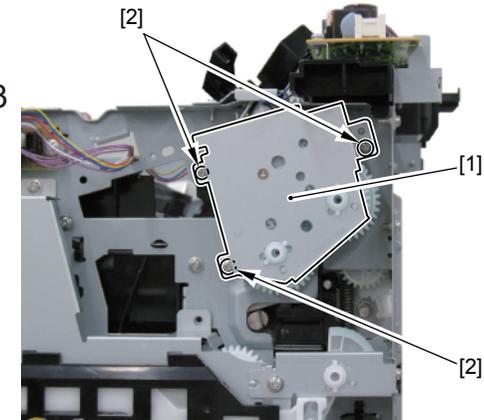
- 2 Screws [2]



F-4-211

## 5) Remove the Duplex Drive Unit [1].

- 3 Screws [2]



F-4-212

**CAUTION :**

Since the Gear of the Duplex Drive Unit is Not Fixed, be Careful Not to Drop or Lose it When Removing it.

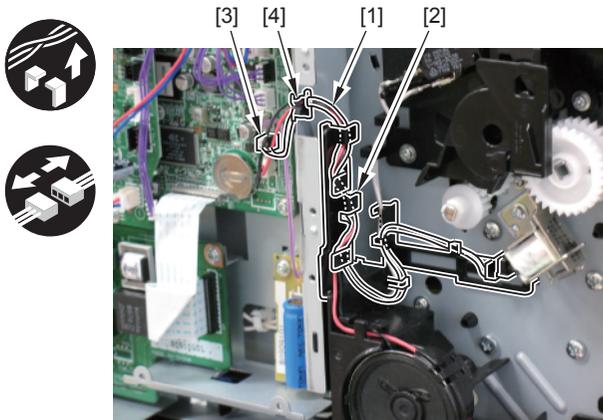
## Removing the Manual Tray Pickup Solenoid (TYPE I)

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the All-night Power PCB.(Refer to page 4-60)

### Procedure

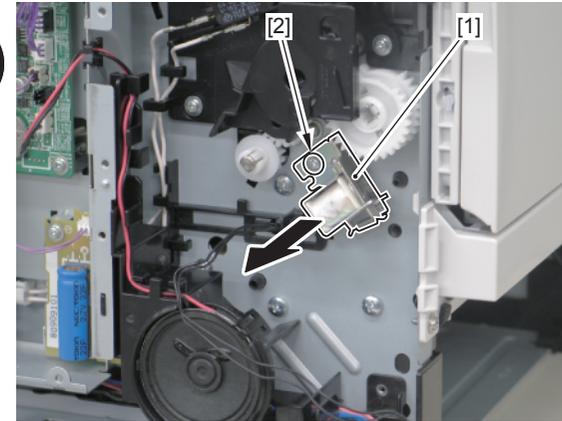
- 1) Remove the Harness [1] from the Harness Guide [2].
  - 1 Connector [3]
  - 1 Edge Saddle [4]



F-4-213

- 2) Remove the Manual Tray Pickup Solenoid [1].

- 1 Screw [2]



F-4-214

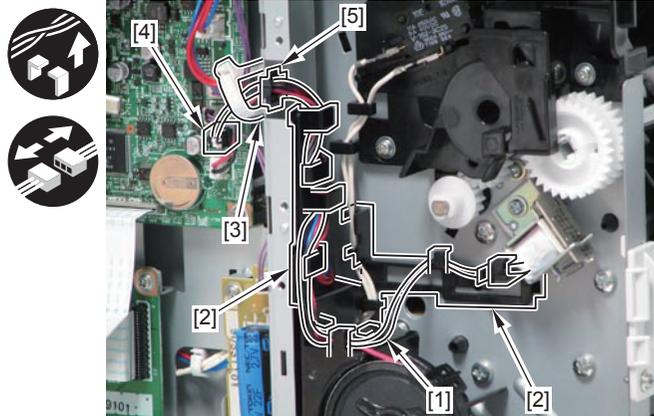
## Removing the Manual Tray Pickup Solenoid (TYPE II)

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)

### Procedure

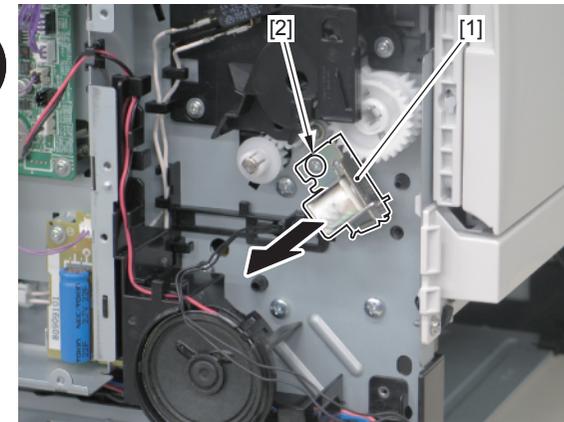
- 1) Remove the Harness [1] from the Harness Guide [2].
  - 1 Wire Saddle [3]
  - 1 Connector [4]
  - 1 Edge Saddle [5]



F-4-215

- 2) Remove the Manual Tray Pickup Solenoid [1].

- 1 Screw [2]



F-4-216

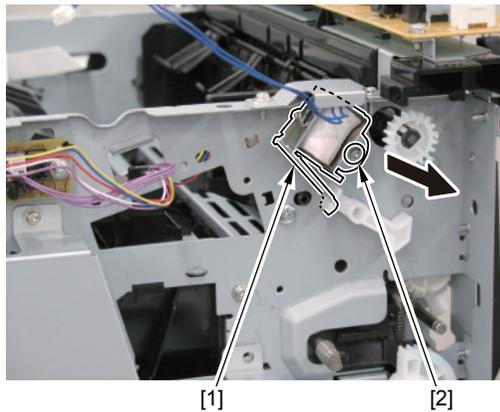
## Removing the Duplex Reverse Solenoid

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Right Rear Cover.(Refer to page 4-26)
- 3) Removing the Left Cover.(Refer to page 4-19)
- 4) Removing the Controller Cover.(Refer to page 4-55)
- 5) Removing the Left Rear Cover.(Refer to page 4-22)
- 6) Removing the ADF Unit + Reader Unit.(Refer to page 4-33)
- 7) Removing the Upper Cover Unit.(Refer to page 4-28)
- 8) Removing the Duplex Drive Unit.(Refer to page 4-84) (Refer to page 4-86)

### Procedure

- 1) Remove the Duplex Reverse Solenoid [1].
  - 1 Screw [2]



F-4-217

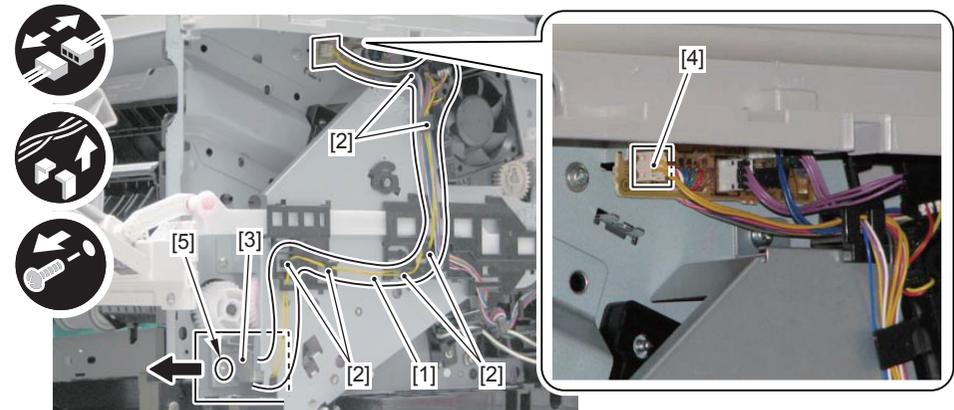
## Removing the Cassette Pickup Solenoid

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)

### Procedure

- 1) Free the harness [1] from the Harness Guides [2], and remove the Cassette Pickup Solenoid [3].
  - 1 Connector [4]
  - 1 Screw [5]



F-4-218

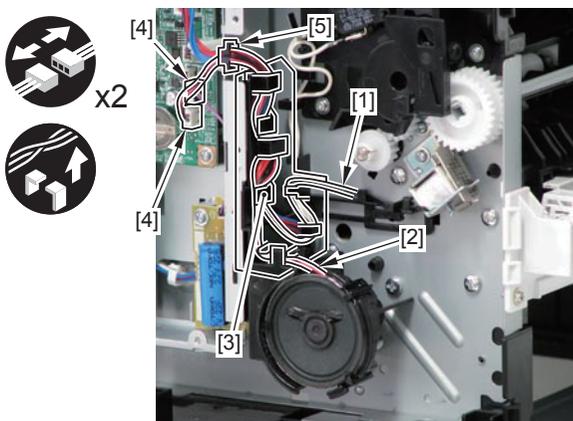
## Removing the Speaker (TYPE I)

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)
- 3) Removing the All-night Power PCB.(Refer to page 4-60)

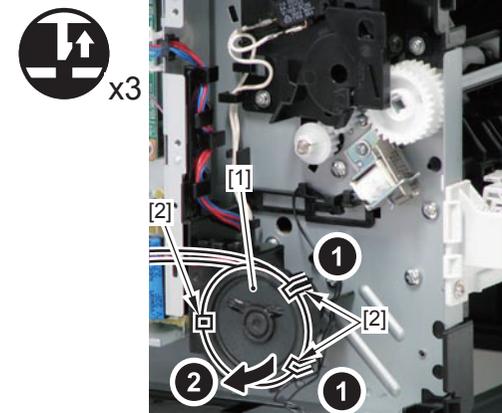
### Procedure

- 1) Remove the harness [1] of the Multi-purpose Tray Pickup Solenoid and the harness [2] of the Speaker from the Harness Guide [3].
  - 2 Connectors [4]
  - 1 Edge Saddle [5]



F-4-219

- 2) Remove the Speaker [1].
  - 3 Claws [2]



F-4-220

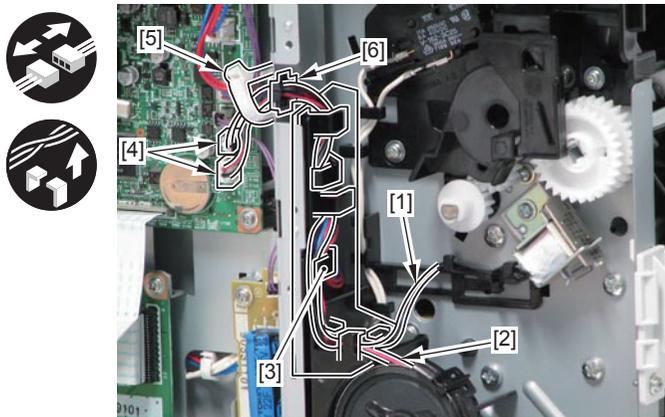
## Removing the Speaker (TYPE II)

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Controller Cover.(Refer to page 4-55)

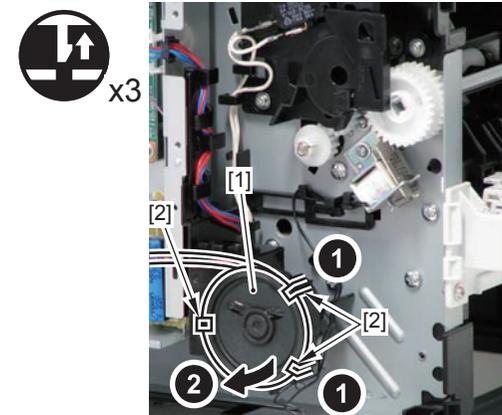
### Procedure

- 1) Remove the harness [1] of the Multi-purpose Tray Pickup Solenoid and the harness [2] of the Speaker from the Harness Guide [3].
  - 2 Connectors [4]
  - 1 Wire Saddle [5]
  - 1 Edge Saddle [6]



F-4-221

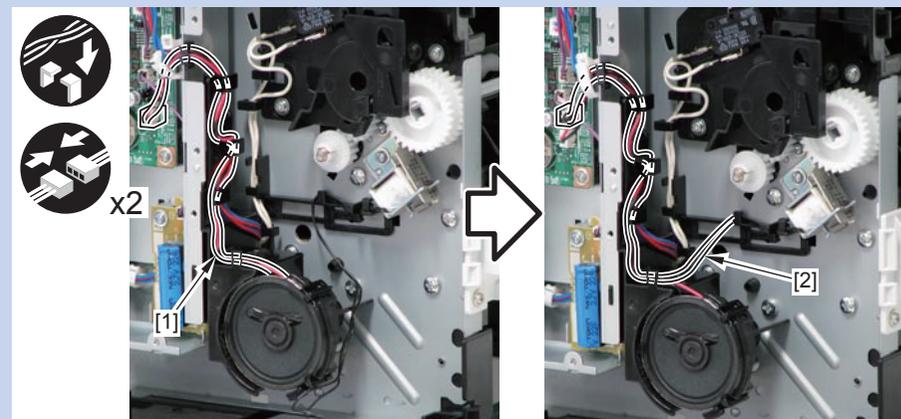
- 2) Remove the Speaker [1].
  - 3 Claws [2]



F-4-222

#### MEMO:

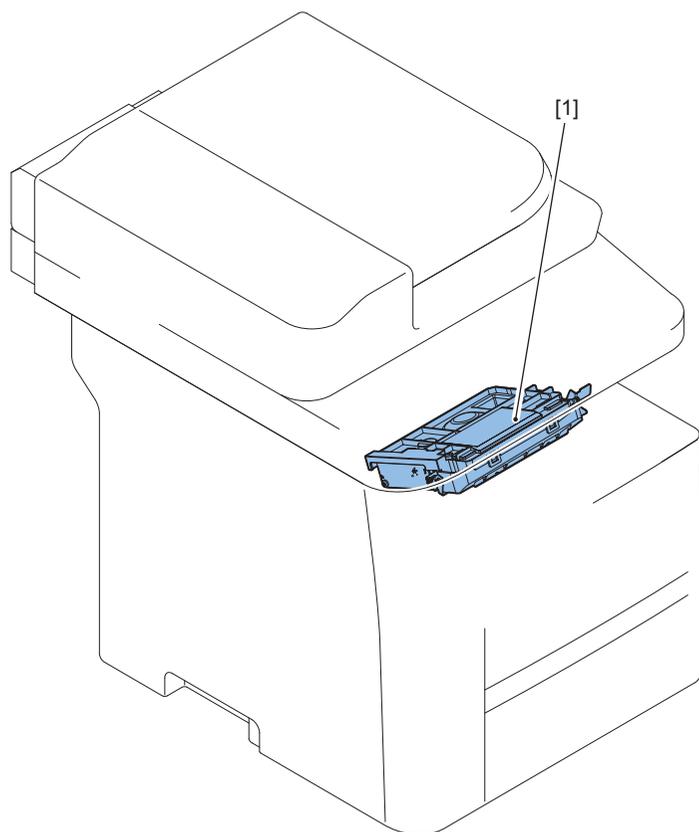
At installation, be sure to install the harness [1] of the Speaker followed by the harness [2] of the Multi-purpose Tray Pickup Solenoid.



F-4-223

## Laser Exposure System

### Location



F-4-224

Key	Name	Service Pars No.	Remarks	Reference
[1]	Laser Scanner Unit	RM1-6424	-	(Refer to page 4-93)

T-4-13

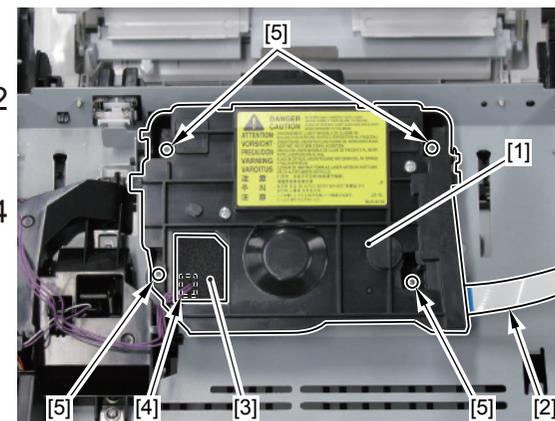
## Removing the Laser Scanner Unit

### Preparations

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF + the Reader Unit.(Refer to page 4-33)

### Procedure

- 1) Remove the Laser Scanner Unit [1].
  - 1 Flat Cable [2]
  - 1 Sponge Cover [3]
  - 1 Connector [4]
  - 4 Screws [5]



F-4-225

**CAUTION:**

Do Not Disassemble the Laser Scanner Unit at a Field.

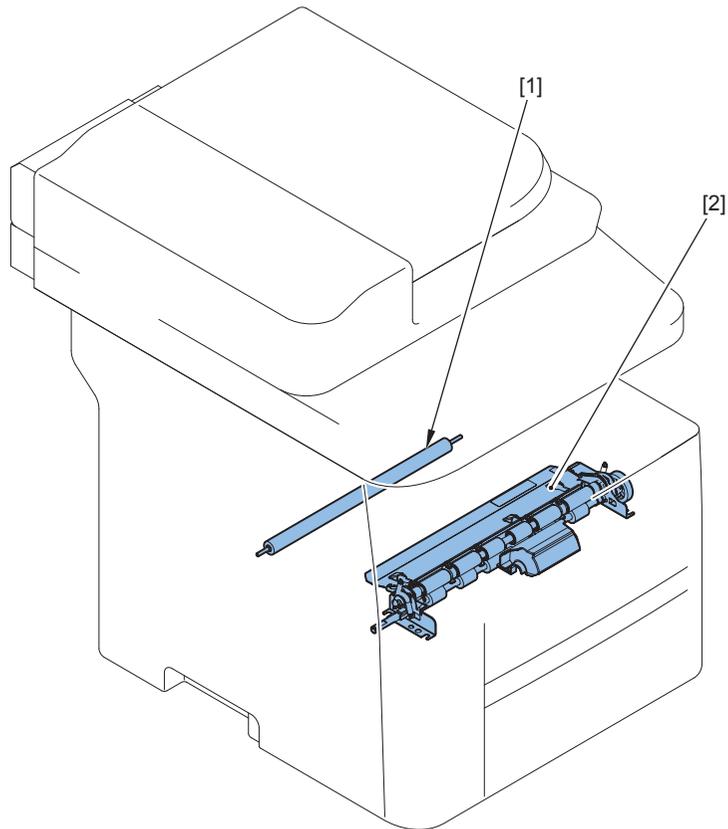
It May Cause a Malfunction.



F-4-226

## Image Forming System

### Location



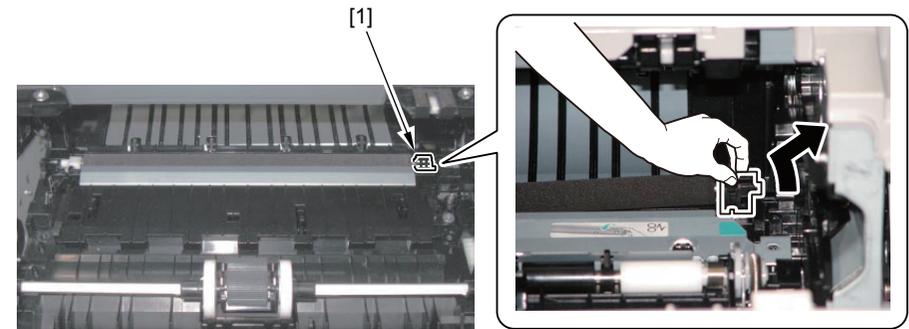
F-4-227

Key	Name	Service Pars No.	Remarks	Reference
[1]	Transfer Roller	RM1-6450	-	(Refer to page 4-95)
[2]	Registration Unit	RM1-6419	-	(Refer to page 4-96)

T-4-14

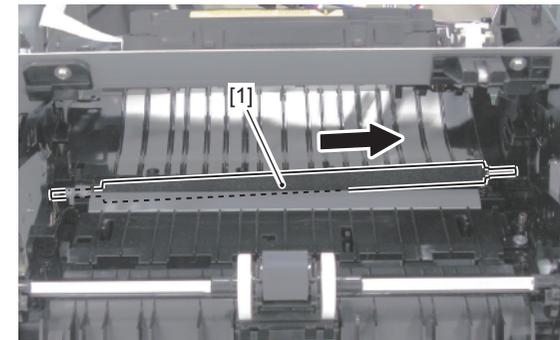
### Removing the Transfer Roller

- 1) Open the Cartridge Cover.
- 2) Pinch the Holder [1] and Remove It In the Direction Of the Arrow.



F-4-228

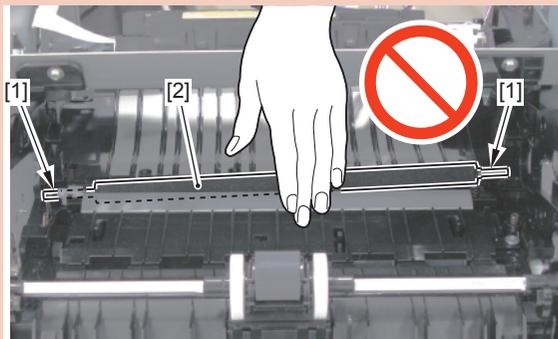
- 3) Remove the Transfer Roller [1] In the Direction Of the Arrow.



F-4-229

**CAUTION :**

At Installation, Make Sure to Hold the Shaft [1] of the Transfer Roller and be Careful Not to Touch the Sponge Part [2] of the Roller.



F-4-230

## Removing the Registration Unit

### Preparations (TYPE I)

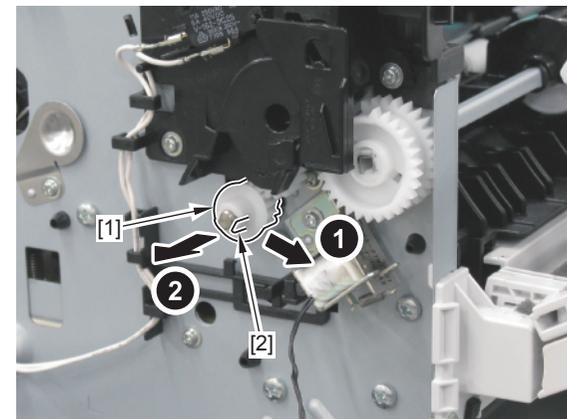
- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)
- 7) Removing the All-night Power PCB Mount.(Refer to page 4-59)

### Preparations (TYPE II)

- 1) Removing the Right Cover.(Refer to page 4-23)
- 2) Removing the Left Cover.(Refer to page 4-19)
- 3) Removing the Controller Cover.(Refer to page 4-55)
- 4) Removing the Left Rear Cover.(Refer to page 4-22)
- 5) Removing the ADF + Reader Unit.(Refer to page 4-33)
- 6) Removing the Upper Cover Unit.(Refer to page 4-28)

### Procedure

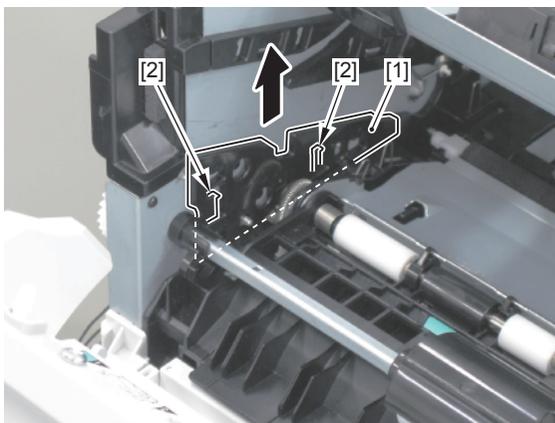
- 1) Remove the Gear [1].
  - 1 Claw [2]



F-4-231

2) Remove the Guide [1].

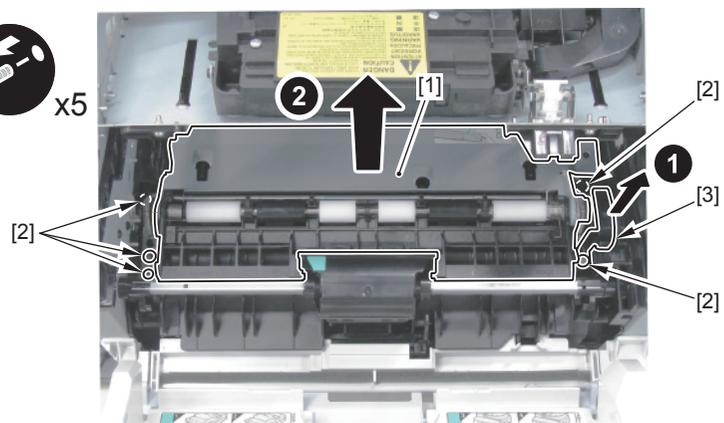
- 2 Claws [2]



F-4-232

3) Remove the Registration Unit [1].

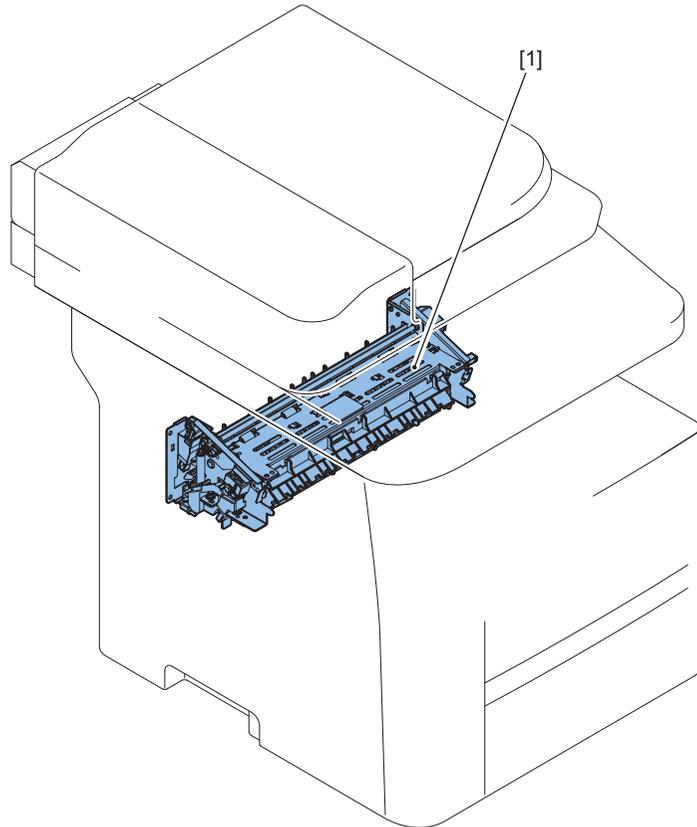
- 5 Screws [2]
- 1 Gear Cover [3]



F-4-233

## Fixing System

### Location



F-4-234

Key	Name	Service Pars No.	Remarks	Reference
[1]	Fixing Unit	RM1-6405 RM1-6406	(120V) (230V)	(Refer to page 4-98)

T-4-15

## Removing the Fixing Unit

### Preparations

- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Left Rear Cover.(Refer to page 4-22)
- 3) Removing the Right Cover.(Refer to page 4-23)
- 4) Removing the Rear Cover Unit.(Refer to page 4-27)

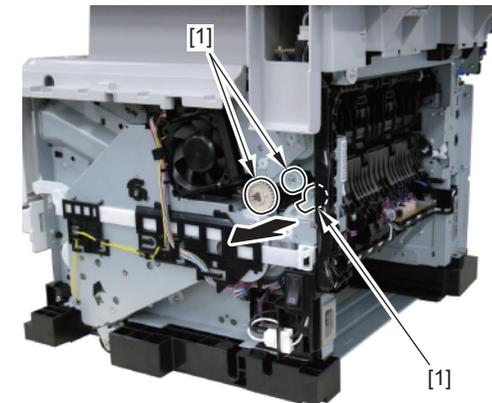
### Procedure (TYPE I)

#### CAUTION:

When Removing the Fixing Unit, Perform the Operation After the Fixing Unit is Surely Cooled.

The Fixing Unit Just After Printing May Cause Burn Injury.

- 1) Close the Front Cover and Move the Gear In the Position Where It Can Be Removed.
- 2) Remove the 3 Gears [1].

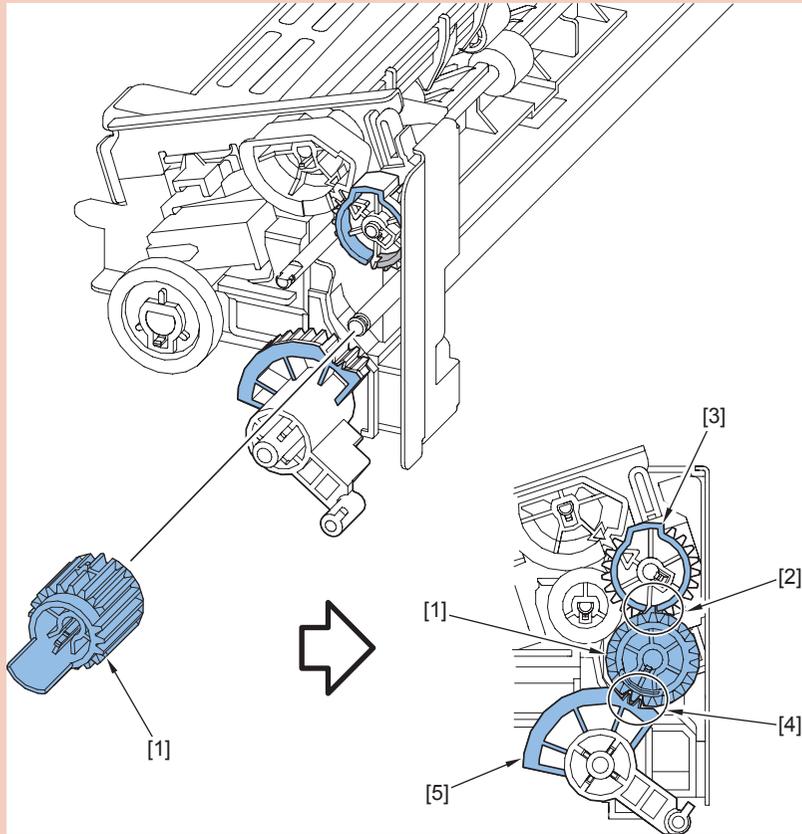


F-4-235

## CAUTION:

## Points to Note at Installation

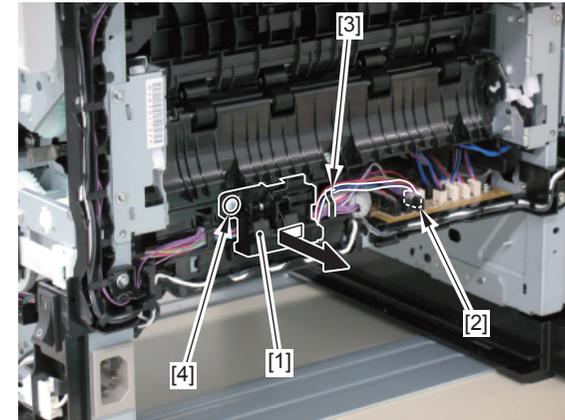
- Fit the Protrusion [2] of the Gear (21T) [1] With the Cut-off of the Gear [3] and Install it.
- Fit the Cut-off [4] of the Gear (21T) [1] With the Teeth of the Fan Gear [5] and Install it.



F-4-236

## 3) Remove the Duplex Feed Sensor Unit [1].

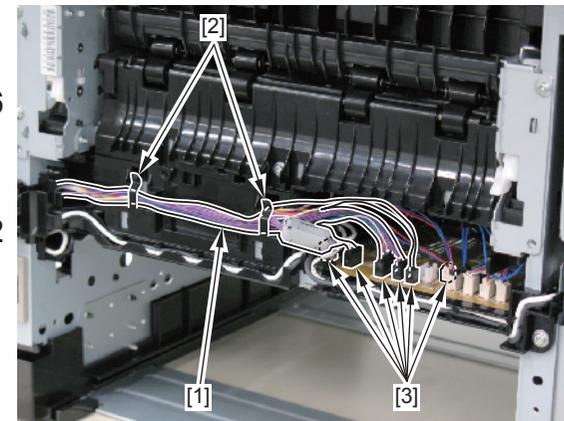
- 1 Connector [2]
- 1 Guide [3]
- 1 Screw [4]



F-4-237

## 4) Remove the Harness [1] from the 2 Harness Guide [2].

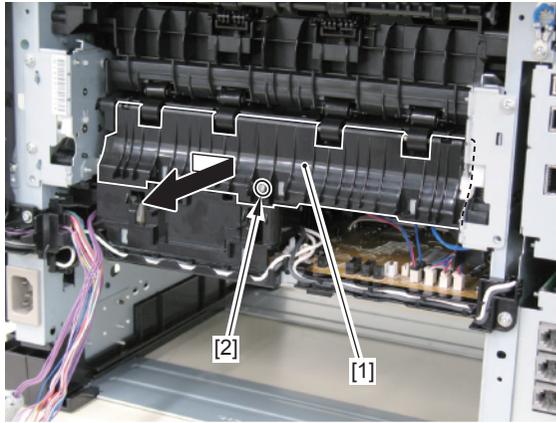
- 6 Connectors [3]



F-4-238

## 5) Remove the Feed Guide [1].

- 1 Screw [2]



F-4-239

## 6) Remove the Fixing Unit [1].

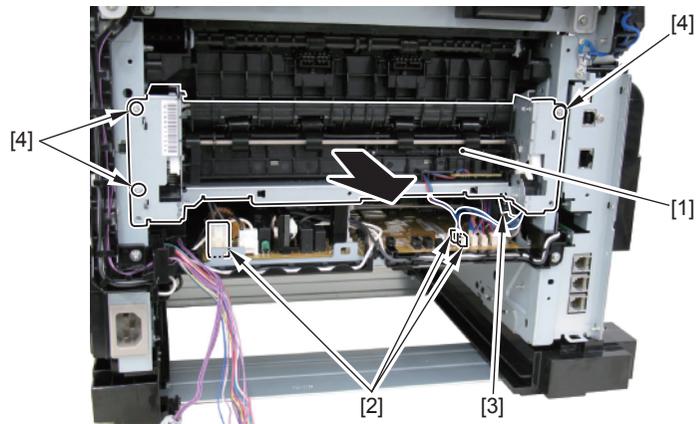
- 3 Connectors [2]
- 1 Terminal [3]
- 3 Screws [4]



x4



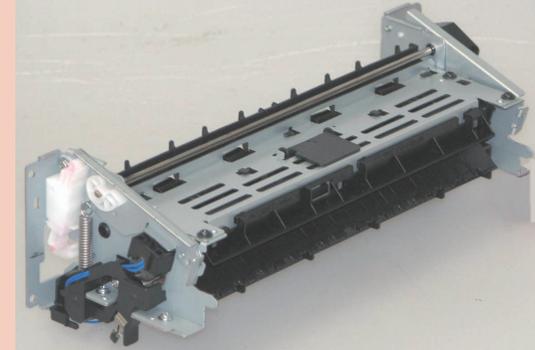
x3



F-4-240

## CAUTION:

Do Not Disassemble the Fixing Unit at a Field.  
It May Cause a Malfunction.



F-4-241

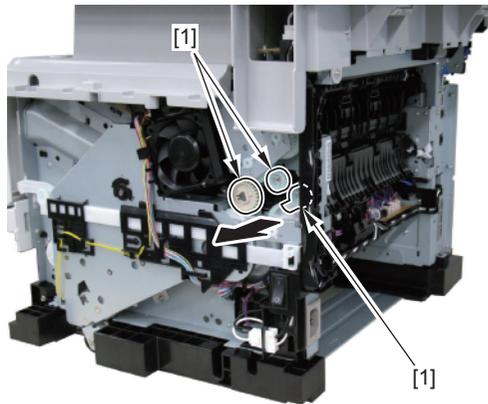
## Procedure (TYPE II)

### CAUTION:

When Removing the Fixing Unit, Perform the Operation After the Fixing Unit is Surely Cooled.

The Fixing Unit Just After Printing May Cause Burn Injury.

- 1) Close the Front Cover and Move the Gear In the Position Where It Can Be Removed.
- 2) Remove the 3 Gears [1].

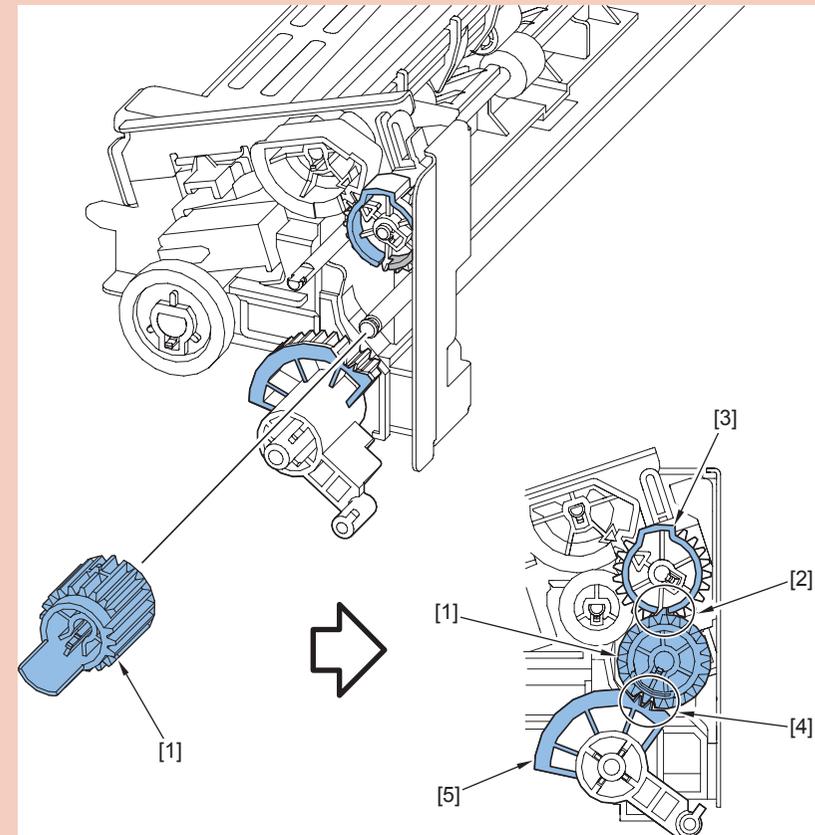


F-4-242

### CAUTION:

#### Points to Note at Installation

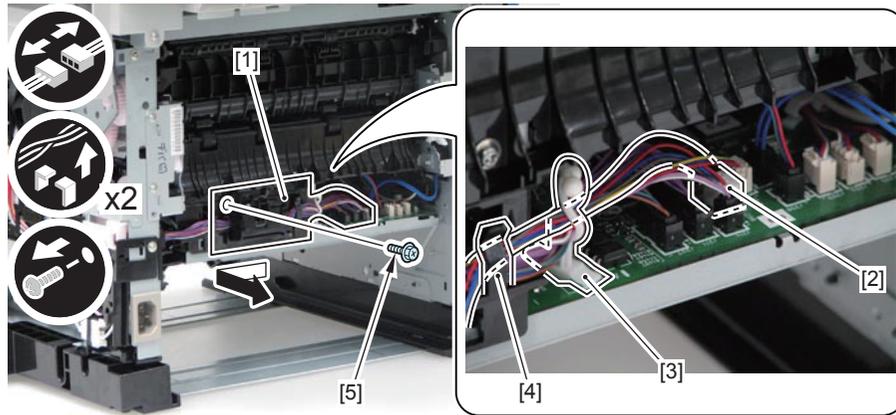
- Fit the Protrusion [2] of the Gear (21T) [1] With the Cut-off of the Gear [3] and Install it.
- Fit the Cut-off [4] of the Gear (21T) [1] With the Teeth of the Fan Gear [5] and Install it.



F-4-243

## 3) Remove the Duplex Reverse Sensor Unit [1].

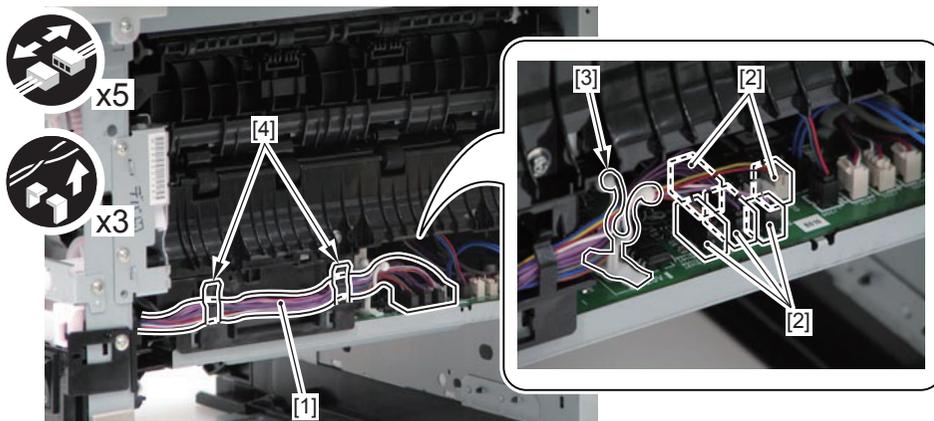
- 1 Connector [2]
- 1 Cable Clip [3]
- 1 Guide [4]
- 1 Screw [5]



F-4-244

## 4) Remove the Harness [1] from the 2 Harness Guide [4].

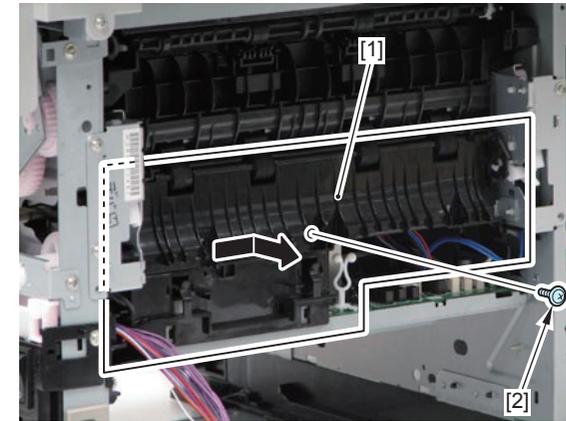
- 5 Connectors [2]
- 1 Cable Clip [3]



F-4-245

## 5) Remove the Feed Guide [1].

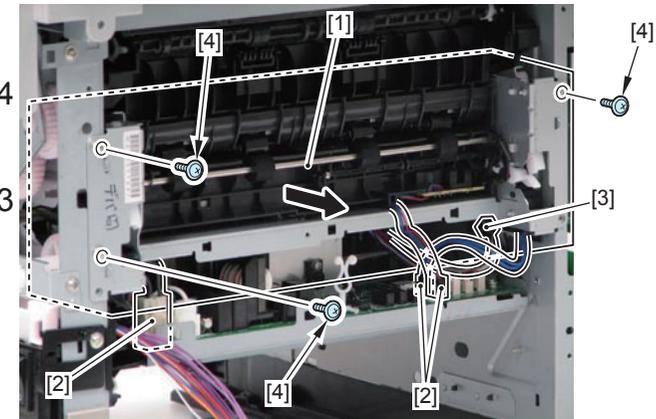
- 1 Screw [2]



F-4-246

## 6) Remove the Fixing Unit [1].

- 3 Connectors [2]
- 1 Terminal [3]
- 3 Screws [4]

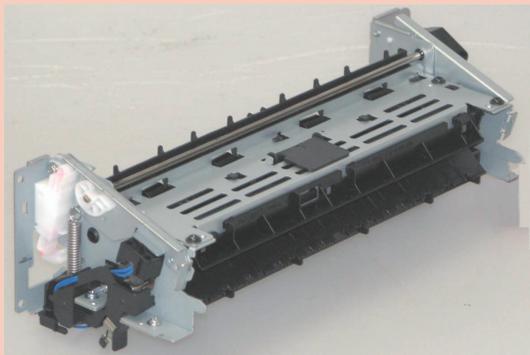


F-4-247

**CAUTION:**

Do Not Disassemble the Fixing Unit at a Field.

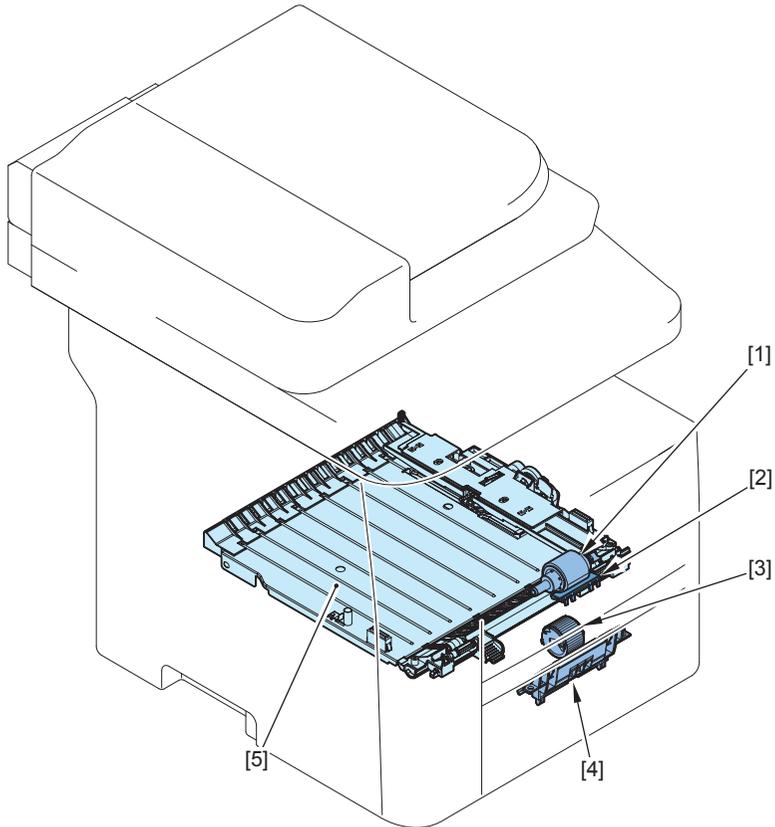
It May Cause a Malfunction.



F-4-248

## Paper Feed/Transport/Output System

### Location



F-4-249

Key	Name	Service Pars No.	Remarks	Reference
[1]	Multi-purpose Pickup Roller	RL1-2120	-	(Refer to page 4-108)
[2]	Multi-purpose Separation Pad	RL1-2115	-	(Refer to page 4-108)
[3]	Cassette Pickup Roller	RM1-6414	-	(Refer to page 4-108)
[4]	Cassette Separation Pad	RM1-6454	-	(Refer to page 4-107)
[5]	Duplex Feed Unit	RM1-6441	-	(Refer to page 4-104)

T-4-16

### Removing the Duplex Feed Unit

#### Preparations

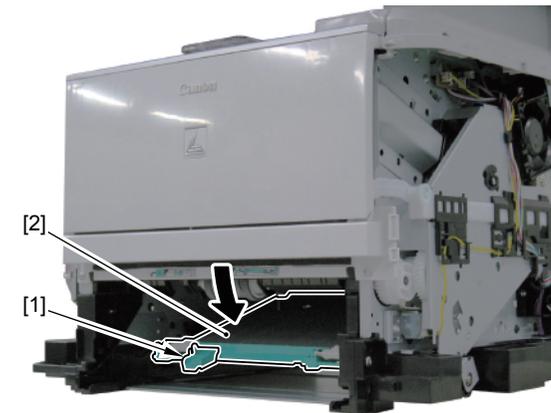
- 1) Removing the Left Cover.(Refer to page 4-19)
- 2) Removing the Left Rear Cover.(Refer to page 4-22)
- 3) Removing the Right Cover.(Refer to page 4-23)

#### Procedure

##### CAUTION:

Do Not Touch the Surface of the Cassette Feed Roller When Removing or Mounting it.

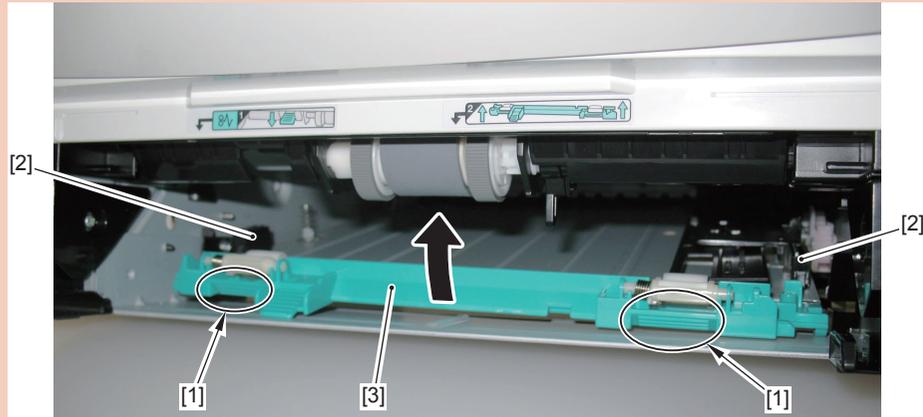
- 1) Push the Grip [1] Downward and Open the Rear Cover Unit [2].



F-4-250

**CAUTION:**

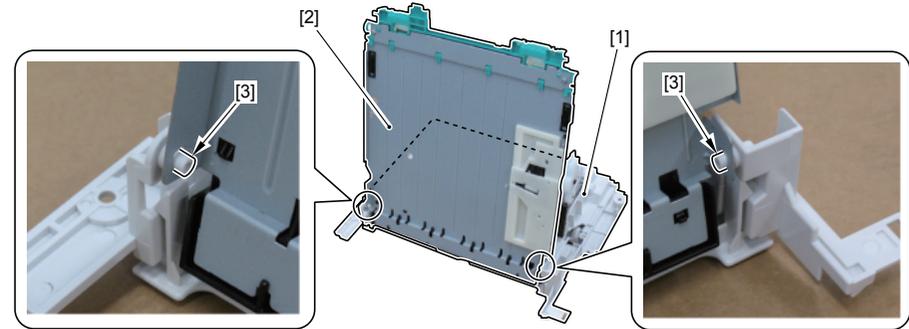
During Reassembly, 2 Raise Lever [1] of Duplex Transport Unit and Attach Duplex Transport Unit [3] to Main Unit by Using 2 Magnet [2] on Each Side.



F-4-251

3) Remove the Rear Cover Unit [1] from the Duplex Feed Unit [2].

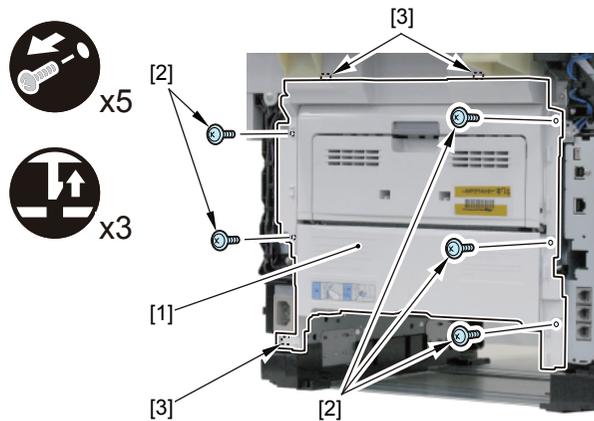
- 2 Bosses [3]



F-4-253

2) Remove the Duplex Feed Unit Cover [1].

- 5 Screws [2]
- 3 Claws [3]



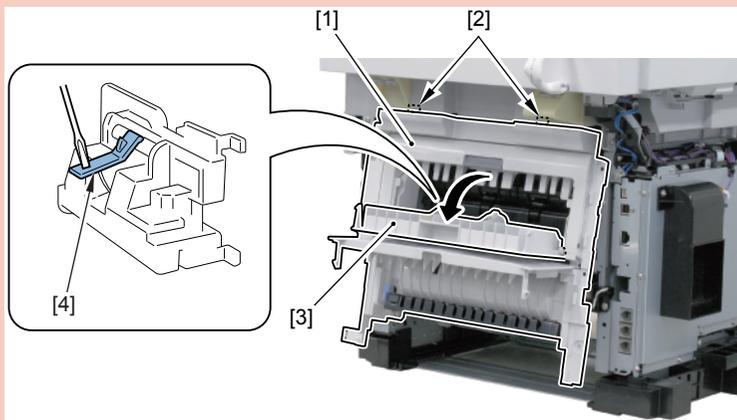
F-4-252

**TONER**  
www.tonerplus.com.ua

## CAUTION :

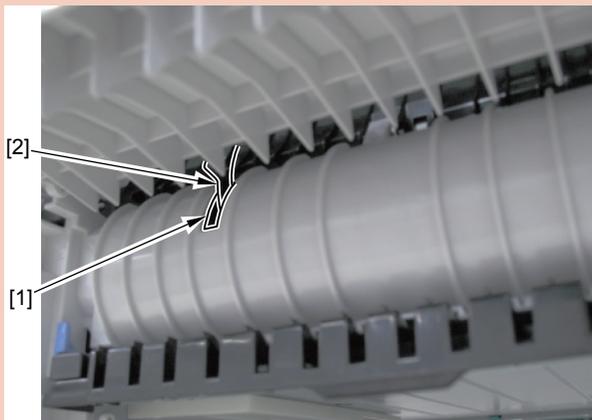
Procedure at installation

- 1) Fit the 2 Upper Claw [2] of the Rear Cover Unit [1] With the Upper Cover Unit.
- 2) Open the Sub Output Tray [3] and While Pushing the Duplex Reverse Sensor Flag [4] Downward, Install the Rear Cover Unit.



F-4-254

- 3) Check That the Sensor Flag [2] Protrudes Through the Hole [1] of the Guide Unit On the Back of the Duplex Unit Cover.



F-4-255

## Removing the Cassette Pickup Roller

## CAUTION:

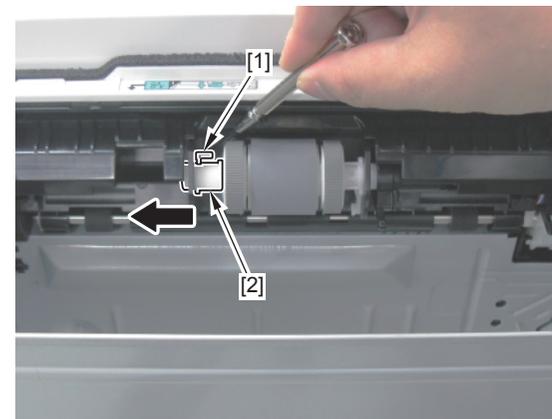
Do Not Touch the Surface of the Cassette Pickup Roller When Removing or Mounting it.Cassette

- 1) Remove the Cassette [1].



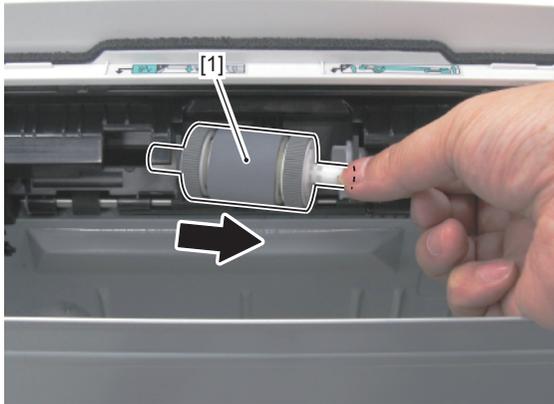
F-4-256

- 2) Release the Stopper [1] and Displace the Shaft Support [2].



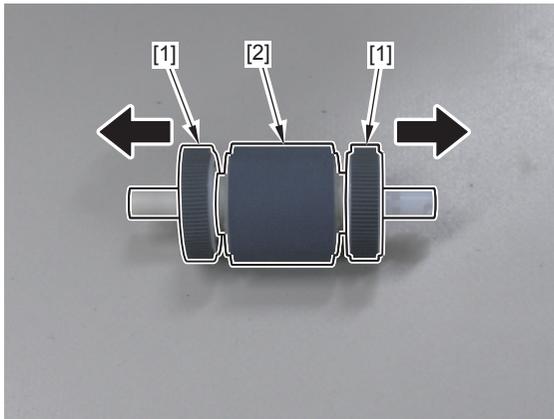
F-4-257

3) Remove the Cassette Pickup Roller Unit [1].



F-4-258

4) Remove the 2 Rubber Roller [1] On Both Edges from the Shaft and Remove the Pickup Roller [2].



F-4-259

## Removing the Cassette Separation Pad

### CAUTION:

Do Not Touch the Surface of the Cassette Separator Pad When Removing or Mounting it.

1) Remove the Cassette [1].



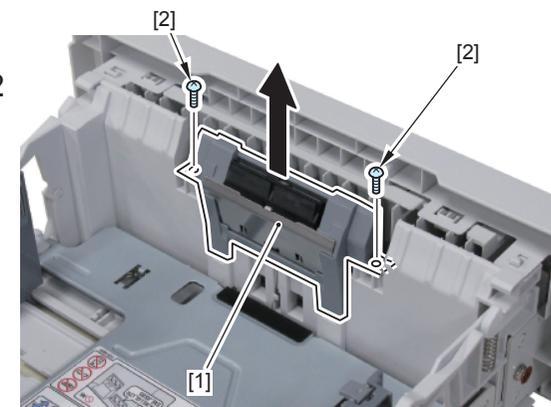
F-4-260

2) Remove the Separation Pad [1].

- 2 Screws [2]



x2



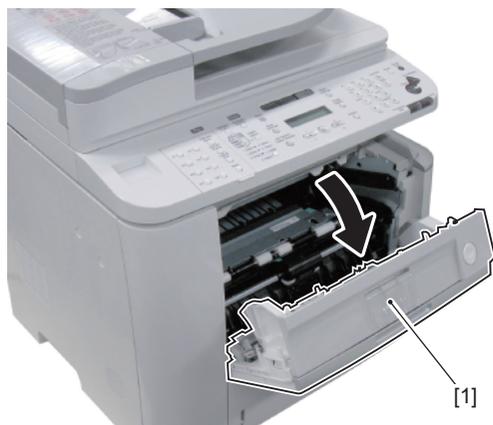
F-4-261

## Removing the Multi-purpose Pickup Roller

### CAUTION:

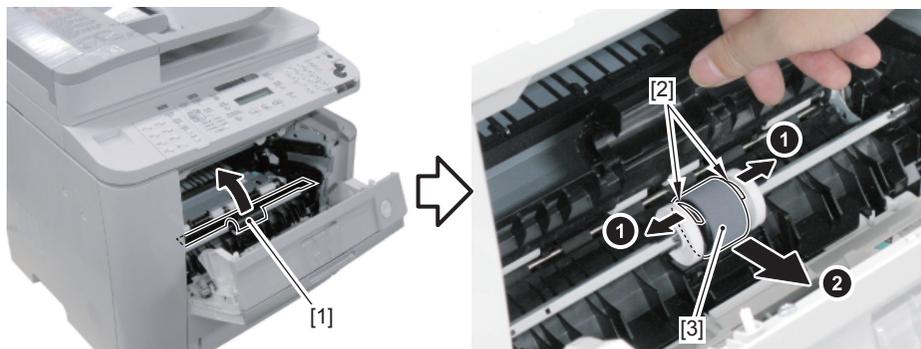
Do Not Touch the Surface of the Multi-purpose Pickup Roller When Removing or Mounting it.

1) Open the Cartridge Cover [1].



F-4-262

2) Open the Pickup Roller Cover [1], Move the Roller Holder [2] In the Direction Of the Arrow and Remove the Multi-purpose Pickup Roller [3].



F-4-263

## Removing the Multi-purpose Separation Pad

### CAUTION:

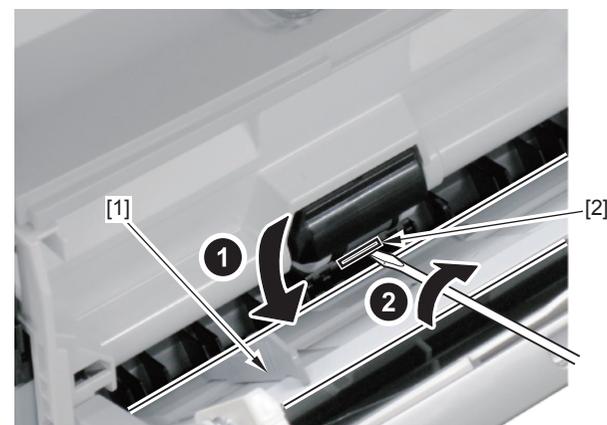
Do Not Touch the Surface of the Multi-purpose Separation Pad When Removing or Mounting it.

1) Open the Manual Pickup Cover [1].



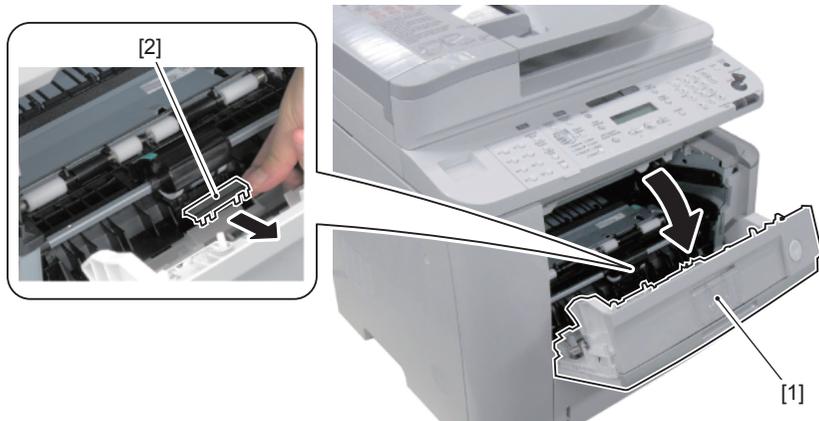
F-4-264

2) Lower the Multi-purpose Guide [1], Insert the Precision Flat-screwdriver Into the Clearance [2] Of the Separation Pad and Displace It In the Direction Of the Arrow.



F-4-265

3) Open the Front Cover [1] and Remove the Multi-purpose Separation Pad [2].



F-4-266

# 5

## Adjustment

- Scanning System Adjustment
- Electrical Adjustment

## Scanning System Adjustment

### Procedure After Replacing the Reader Scanner Unit (the Contact Sensor)

After replacing the contact sensor, go through the following procedure and make sure to adjust the output between channels.

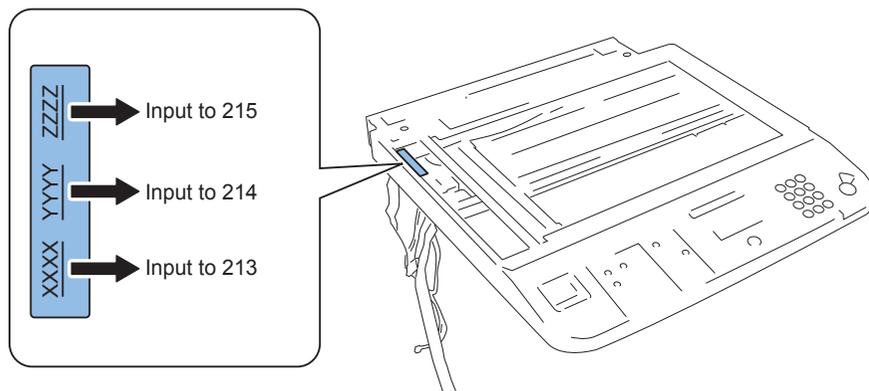
- 1) Enter the service mode.
- 2) Press the arrow key on the control panel to display "TEST MODE".
- 3) Press OK key.
- 4) Press 2 key and "SCAN TEST" is displayed.
- 5) Press 1 key and "SHADING" is displayed.

After procedure the following procedure adjustment , go to [Procedure after replacing the ADF unit] (Refer to page 5-2)

### Procedure After Replacing the Copyboard Glass

After replacing the copyboard glass, go through the following procedure.

- 1) Enter the service mode.
  - SCAN>SCAN NUMERIC
- 2) Input the value on the bar-code label (4 digit each) to [213], [214] and [215] items.



F-5-1

After procedure the following procedure adjustment , go to [Procedure after replacing the reader scanner unit] (Refer to page 5-2) and [Procedure after replacing the ADF unit] (Refer to page 5-2).

### Procedure After Replacing the Reader Unit

After replacing the reader unit, go through the following procedure.

- 1) [Procedure after replacing the copyboard glass] (Refer to page 5-2)
- 2) [Procedure after replacing the reader scanner unit] (Refer to page 5-2)
- 3) [Procedure after replacing the ADF unit] (Refer to page 5-2)

After replacing the reader unit, if the registration position is displaced, go through the following adjustment.

- 1) Enter the service mode.
  - SCAN>SCAN NUMERIC>031 Reader left edge registration position adjustment
  - SCAN>SCAN NUMERIC>032 Reader leading edge registration position adjustment
  - SCAN>SCAN NUMERIC>041 ADF left edge registration position adjustment
  - SCAN>SCAN NUMERIC>042 ADF leading edge registration position adjustment
  - SCAN>SCAN NUMERIC>219 ADF BW density adjustment
  - SCAN>SCAN NUMERIC>239 Vertical scanning magnification adjustment (reader)
  - SCAN>SCAN NUMERIC>240 Vertical scanning magnification adjustment (ADF)

### Procedure After Replacing the ADF Unit

After replacing the ADF unit, go through the following procedure.

- 1) Enter the service mode from the Control Panel.
- 2) Select TEST MODE > 2 (SCAN TEST).
- 3) On the screen of the Control Panel, "FV WHITE LVL ADJ" "BW;--- CL;---" is displayed.

Adjust the white level of the Copyboard.

- 4) Place a blank paper on the Copyboard and press OK key.
- 5) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.
- 6) When the adjustment result shows "OK", press OK key to go to the ADF white level adjustment. (To step 7)  
When the adjustment result shows "NG", complete the operation without performing the further adjustments and return to the "SCAN TEST" menu by pressing Stop key.

Adjust the ADF white level.

- 7) On the screen of the Control Panel, "ADF WHITE LVL ADJ" "BW;--- CL;---" is displayed.
- 8) Place a paper on the ADF Pickup Tray and press OK key.
- 9) Place a paper on the ADF Pickup Tray and press OK key.

10) On the screen of the Control Panel, "ACT" (adjusting) and "OK/NG" (adjustment result) are displayed.

When the adjustment result shows "OK", adjustment is completed.

When the adjustment result shows "NG", complete the operation without performing the further adjustments.

#### CAUTION:

If automatic adjustment fails, "NG" appears. Perform the following procedure:

Clean the scanning area of the ADF and the Backside of copyboard cover of the host machine, and then retry auto adjustment.

language and country are selected in step 8.)

10) Enter the value of the service label attached to the host machine.

11) If export is performed normally in step 2, import the data.

12) If the user data list and address book list output in step 1 are available, give them to the user.

Be sure to ask the user to enter the user data list to prevent making mistakes by manual entry.

#### Changing the jumper connector

When replacing the Main Controller Board, change the position of the jumper connector to ON.

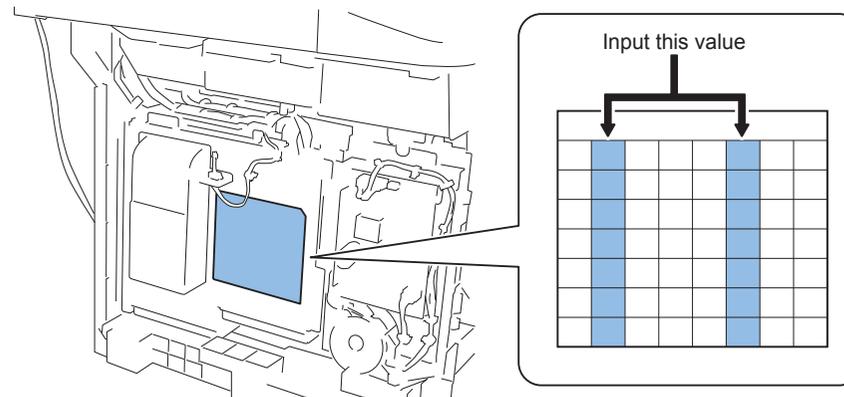
\* The Main Controller Board is shipped with the jumper connector of the lithium battery OFF.

#### Make the following adjustments:

- Correction of output between CS channels

1) Enter the service mode.

2) Input values on the service label attached to the controller exhaust fan mount.



F-5-2

After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.

## Electrical Adjustment

### Procedure After Replacing the Main Controller Board

If you have replaced the Main Controller Board with a new one, perform the following operations:

#### Outputting report

- 1) If report can be output before replacement of PCB, be sure to get approval from the user in advance and output the user data list and address book list.
- 2) If possible, backup the user data and address book using the export function of RUI.
- 3) Turn OFF the power, and replace the PCB.
- 4) Turn ON the power, and clear all data. (Either at first power ON, it is executed automatically, or DATA ERROR is displayed and by pressing the OK key, it is cleared.)
- 5) Reboot the machine. (The machine is automatically rebooted after step 4. If it is not rebooted, wait for 5 minutes, and turn OFF and then ON the power.)
- 6) Set the location. #CLEAR->TYPE->USA\* \* Change the setting value depending on the location.  
Here, USA is indicated as an example.
- 7) Wait for 10 seconds, and turn OFF and then ON the power.
- 8) Select language and country. (Depending on the location selected in step 7, there is no language and country selection. Confirm the user about language and country to be selected.)
- 9) Wait for 10 seconds, and turn OFF and then ON the power. (Execute this step only



# Trouble Shooting

- Test Print
- Trouble Shooting Items
- Version Up

## Test Print

### Test Pages

Printing test pages helps determine if the printer is functioning.

#### CAUTION:

There are two types of test pages: engine-test page and formatter-test page. Print a test page to make sure the printer engine and the formatter are functioning.

### Engine-test Page

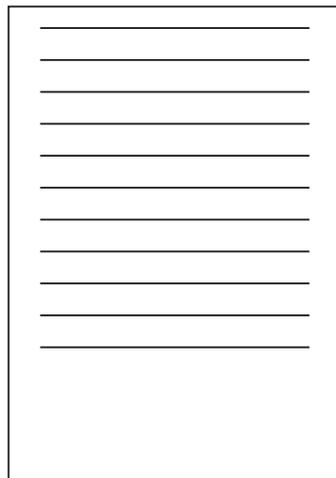
There are two types of engine-test pages simplex print and duplex print.

#### a. Simplex print

Open and close the cartridge door three times continuously within 2 seconds during the standby period. The engine-test page should have a test print pattern on one side of media as shown below.

#### b. Duplex print

Open and close the cartridge door five times continuously within 2 seconds during the standby period. The engine-test page should have a test print pattern on both sides of media as shown below.



F-6-1

### Controller Test Print

Refer to "TEST MODE (Refer to page 8-26)"

See "Service Mode List,"

## Trouble Shooting Items

### Image Defects

#### Light Print



F-6-2

Image is light in entire page

Cause	Solution
1) Print density is not adjusted properly	Adjust the print density by operating the external device.
Open the cartridge door during a print operation and remove the cartridge. Open the photosensitive drum shield of the cartridge to check the toner image on the drum surface. If the toner image is not fully transferred to the media, go to step 2. If the toner on the photosensitive drum is faint, go to step 5. Do not open the drum shield for longer than 10 seconds.	
2) The transfer roller is deformed or has deteriorated	Replace the transfer roller.
3) Poor contact exists between the transfer roller and its shaft	Clean the contact if dirty.
4) The high-voltage power supply is defective	Replace the engine controller unit.
5) The laser scanner unit is defective	Replace the laser scanner unit.

T-6-1

#### Dark Print



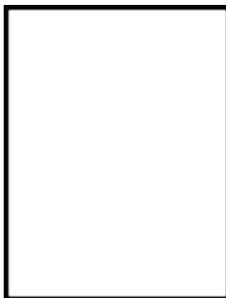
F-6-3

Image is obviously dark

Cause	Solution
1) Print density is not adjusted properly	Adjust the print density by operating the external device.
2) Poor drum grounding contact with the cartridge	Clean a contact point of the Cartridge. Clean a contact point of the main body. Replace the Cartridge.
3) Poor primary charging bias contact with the cartridge	Clean the contact if dirty.
4) The high-voltage power supply is defective	Replace the engine controller unit.
5) The laser scanner unit is defective	Replace the laser scanner unit.
6) The high-voltage power supply is defective	Replace the engine controller unit.

T-6-2

## ■ Completely Blank

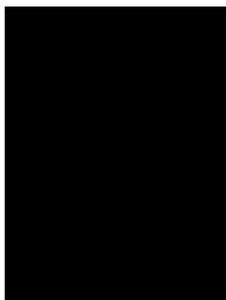


F-6-4

No image prints

Cause	Solution
1) The laser shutter open/close projection part of the cartridge is damaged	Replace the cartridge.
2) The laser shutter arm and laser shutter are malfunctioning or damaged	If the laser shutter arm or laser shutter does not move smoothly or if the part is damaged, replace any defective parts.
3) Poor developing bias contact with the cartridge	Clean the contact if dirty.
4) The high-voltage power supply is defective	Replace the engine controller unit.

## ■ All Black



F-6-5

Image is all black

Cause	Solution
1) Poor primary charging bias contact with the cartridge	Clean the contact if dirty.
2) The primary charging roller is defective	Replace the cartridge.
3) The high-voltage power supply is defective	Replace the engine controller unit.

T-6-3

## ■ White Spots



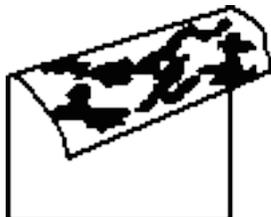
F-6-6

White spots appear in image

Cause	Solution
1) Poor contact exists to the static charge eliminator	Clean the contact if dirty.
2) The transfer roller is deformed or has deteriorated	Replace the transfer roller.
3) Poor contact exists between the transfer roller and its shaft	Clean the contact if dirty.
4) The high-voltage power supply is defective	Replace the engine controller unit.
5) Scratches/stain on the Drum	Replace the Cartridge.

T-6-4

## ■ Dirt On Back



F-6-7

The back of page is dirty

Cause	Solution
1) The print media is dirty	Replace the print media to new one. Advise the customer on how to store the print media.
2) Dirt on leading edge of image (cassette pickup roller)	Clean the cassette pickup roller. If the dirt does not come off, replace the roller.
3) Repetitive dirt (registration roller, transfer roller or pressure roller)	See "Repetitive image defects ruler" to identify the dirty roller. Clean the dirty roller. If the dirt does not come off, replace the roller.
4) The media feed belt, media feed guide or fixing inlet guide is dirty	Clean the dirty parts.

T-6-5

## ■ Vertical Lines



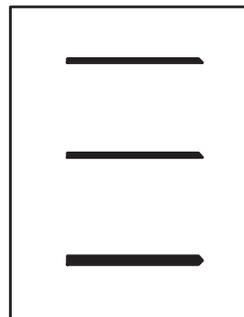
F-6-8

Vertical line appears in image

Cause	Solution
1) Scratches on the circumference of the photosensitive drum	Replace the cartridge.
2) The fixing inlet guide is dirty	Clean the fixing inlet guide.
3) Scratches on the fixing film	Replace the fixing unit.

T-6-6

## ■ Horizontal Lines



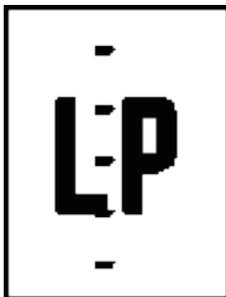
F-6-9

Horizontal line appears in image

Cause	Solution
1) Horizontal scratches on the photosensitive drum	Replace the cartridge.
2) The fixing film is dirty, deformed or worn	Replace the fixing unit.
3) Scratches/stain on the Secondary Transfer Roller	Replace the Cartridge.

T-6-7

## ■ Dirt On Front



F-6-10

The front of page is dirty.

Cause	Solution
1) The print media is dirty	Replace the print media to new one. Advise the customer on how to store the print media.
2) Dirt on leading edge of image (MP tray pickup roller)	Clean the MP tray pickup roller. If the dirt does not come off, replace the roller.
3) Repetitive dirt (Registration roller, fixing film unit or cartridge)	See "Repetitive image defects ruler" to identify the dirty roller. Clean the dirty part. If the dirt does not come off, replace the part.
4) The delivery roller is dirty	Clean the delivery roller.

T-6-8

## ■ Dropouts



F-6-11

Dropout appears in image

Cause	Solution
1) The transfer roller is dirty or deformed	Replace the transfer roller
2) Poor toner sensor contact with the cartridge	Clean the contact if dirty.
3) The photosensitive drum, primary charging roller, developing roller or toner sensor is defective	Replace the cartridge.
4) Scratches or foreign substance on the fixing film	Replace the fixing unit.
5) The high-voltage power supply is defective	Replace the engine controller unit.

T-6-9

## ■ Vertical White Lines



F-6-12

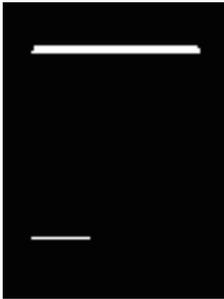
Vertical white line appears in image

Cause	Solution
1) Scratches on the circumference of the photosensitive drum	Replace the cartridge.
2) The developing roller is defective	Replace the cartridge.

Cause	Solution
3) Foreign substance adheres to the laser beam window of the printer or cartridge	Remove foreign substance from the laser beam window.
4) Foreign substance adheres to the fixing inlet guide or the guide is dirty	Clean the fixing inlet guide.
5) Scratches or foreign substance on the fixing film	Replace the fixing unit.
6) The mirror in the laser scanner unit is dirty	Replace the laser scanner unit.

T-6-10

## Horizontal White Lines



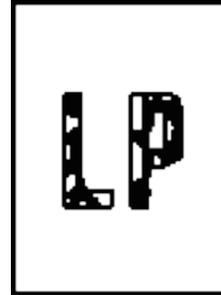
F-6-13

Horizontal white line appears in image

Cause	Solution
1) Horizontal scratches on the photosensitive drum	Replace the cartridge.
2) The fixing film is defective	Replace the fixing unit.
3) Scratches/stain on the Developing Sleeve	Replace the cartridge.

T-6-11

## Loose Toner



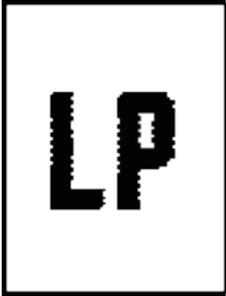
F-6-14

Toner image is not fully fixed on the media

Cause	Solution
1) The pressure roller is not within nip-width specifications	See "MAINTENANCE AND SERVICE" to check the nip-width specifications. If the pressure roller is not within the specifications, replace the fixing unit.
2) The pressure roller is dirty	Replace the fixing unit.
3) The pressure roller is scarred or dent	Replace the fixing unit.
4) Scratches or foreign substance on the fixing film	Replace the fixing unit.
5) The thermistor has deteriorated	Replace the fixing unit.

T-6-12

## Misformed Image



F-6-15

Image is misformed

Cause	Solution
1) Poor contact exists to the connectors on the laser scanner unit	Reconnect the connectors: J801 and J802
2) Poor contact exists to the connectors on the formatter	Reconnect the connectors: J3 and J7
3) The laser scanner unit is defective	Replace the laser scanner unit.
4) The high-voltage power supply is defective	Replace the engine controller unit.

T-6-13

## Repetitive Image Defects Ruler

Component	Distance between defects (mm)	Image defects			
		Dirt	Dropouts	Dirt on back	Loose toner
Registration roller	About 43				
Primary charging roller	About 38				
Photosensitive drum	About 75				
Developing roller	About 42				
Transfer roller	About 39				
Fixing film unit	About 57				
Pressure roller	About 63				

T-6-14

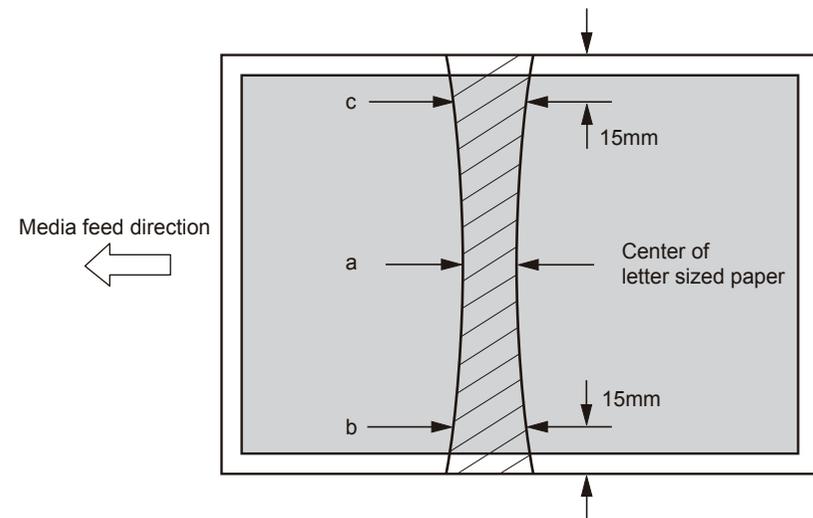
## Adjustment of Fixing System

### Nip-width Specifications

The nip-width of the fixing unit is not adjustable in this printer, however the improper nip-width may cause the poor fixing.

Follow the procedures below to check the nip width.

- 1) Prepare an all-black print of letter size that is printed with the cartridge for this printer before visiting the user.
- 2) Load the printed sheet facing UP in the printer cassette.
- 3) Open the face-up cover.
- 4) Print a test page.
- 5) Turn off the power switch when the leading edge of media comes out of the face-up delivery slot. Wait for 20 seconds and turn on the power switch. Then open the jam removal cover and pull the paper out.
- 6) Measure the width of the glossy band across the paper and check if it meets the requirements below:
  - Center (a): 6 to 9 mm
  - Left (b): 6 to 9 mm
  - Right (c): 6 to 9 mm



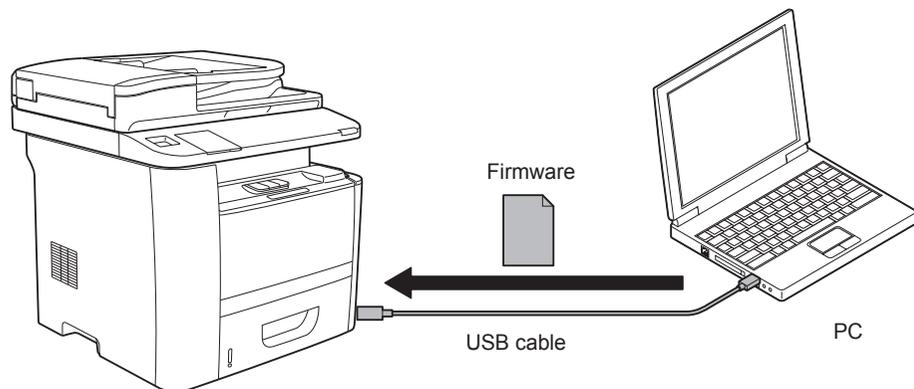
F-6-16

## Version Up

### Overview

#### Overview of Upgrading

Upgrading is performed by downloading firmware from a personal computer (hereinafter called PC) to this machine using a user support tool (hereinafter called UST).



F-6-17

#### Firmware Configuration

Firmware	Function	Storage area
BOOTROM	Startup of the main controller	Main controller PCB
BOOTABLE	Overall control	Main controller PCB

T-6-15

A number of firmware may be less than the above depending on the UST version.

### Preparation

#### Necessary System Environment

- OS (Any of the following)
  - Microsoft Windows 2000 Server/Professional
  - Microsoft Windows XP Professional/Home Edition
  - Microsoft Windows Server 2003
  - Microsoft Windows Vista
  - Microsoft Windows 7
- PC
  - The OS listed above operates.
  - Memory (RAM): 32MB or greater
  - Hard disk: 100MB or greater
  - Display: Resolution 640 x 480 pixel or greater, 256-color or greater
  - Equipped with USB port
- UST file\* of this machine
  - \* : Download the file from a system CD or website. (It differs depending on the sales company.)
- USB cable (USB1.1/2.0)

## Before Downloading the System Software

- 1) Start up the PC.
- 2) Connect the host machine and the PC with a USB cable.
- 3) Turn on the host machine, and place it in the standby status.
- 4) Place the machine in the off-line status by pressing the Off-line key, and select Firmware Upgrading in the user mode.  
MENU > SYSTEM SETTINGS > UPDATE FIRMWARE > YES
- 5) When pressing the OK key, the host machine automatically restarts up, and "WAITING" > "CONNECTED TO PC" is displayed in the display.

### MEMO :

Once the machine enters the upgrading mode, normal operation cannot be performed until upgrading is completed. To discontinue upgrading, turn the power OFF/ON.

## Downloading the System Software

### Downloading the System

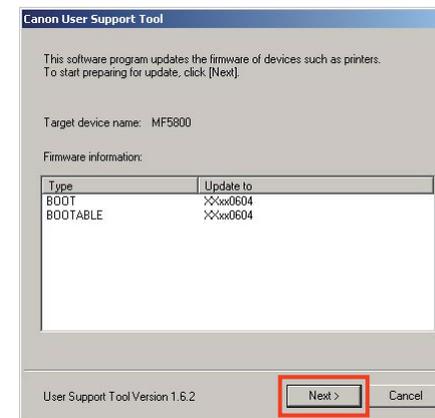
#### Procedure of Downloading

- 1) Open UST (XXXX.exe).  
XXXX: Firmware version



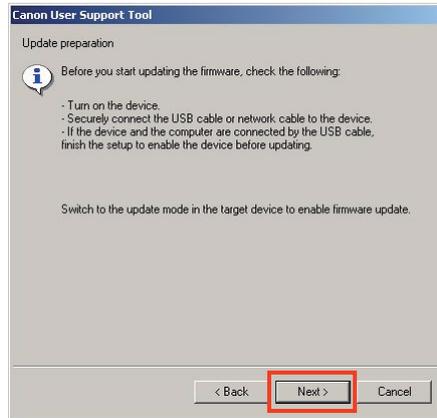
F-6-18

- 2) Write down the firmware version to upgrade, and click the "Next" button.



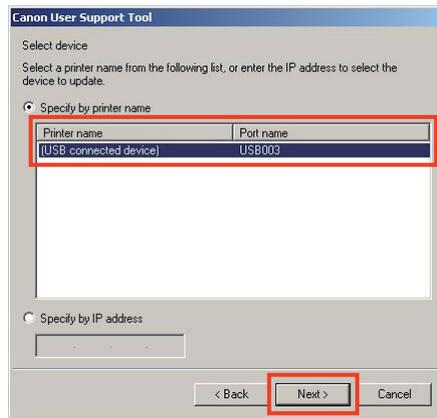
F-6-19

3) Click the "Next" button.



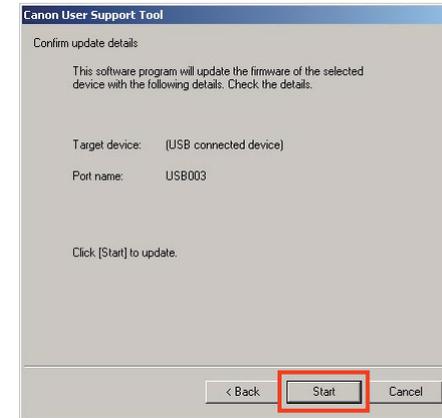
F-6-20

4) Select the USB connection device, and click the "Next" button.



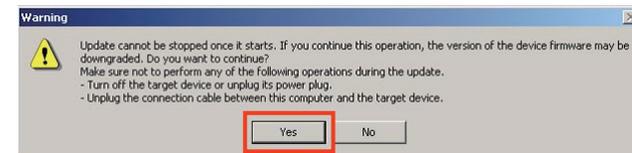
F-6-21

5) Click the "Start" button.



F-6-22

6) When the warning screen is displayed, click the "Yes" button.



F-6-23



F-6-24

7) When downloading is completed, click the "OK" button.

The host machine automatically restarts up.



F-6-25

8) Perform common status print via the user mode, and make sure that the firmware version matches the information written down in Procedure 2).

"USER DATA LIST>OK>YES"



# Error Codes

- Error Code
- Fax Error Code

## Error Code

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E000	0	Startup error	
		The temperature detected by the main or sub thermistor does not rise to the specified value during startup control.	- Check the fixing film connector. - Replace the fixing film unit. - Replace the Engine controller PCB.
E001	0	Abnormally high temperature (detected by main thermistor)	
		The main thermistor detected an abnormally high temperature during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the Engine controller PCB.
	1	Abnormally high temperature (detected by sub thermistor)	
		The sub thermistor detected an abnormally high temperature during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the Engine controller PCB.
E002	0	Low temperature during temperature control.	
		The target temperature is not reached during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the Engine controller PCB.
E003	0	Abnormally low temperature (detected by main thermistor)	
		After the temperature detected by the main thermistor has reached the specified value, it does not reach the specified value during initial rotation.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the Engine controller PCB.
	1	Abnormally low temperature (detected by sub thermistor)	
		After the temperature detected by the sub thermistor has reached the specified value, it does not reach the specified value during initial rotation.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the Engine controller PCB.
E010	0	Main motor failure	
		The main motor is faulty.	- Check the connector of the main motor. - Replace the main motor. - Replace the Engine controller PCB.
E100	0	BD detection PCB failure	
		The BD detection PCB is faulty.	- Replace the laser scanner unit. - Replace the Engine controller PCB.

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E196	1	Flash ROM write/read error	- Replace the Main Controller Board.
		The write/read of Flash ROM in the Main Controller Board is faulty.	
	2	PCL ROM write/read error	- Replace the Main Controller Board.
The write/read of PCL ROM in the Main Controller Board is faulty.			
E197	0	Printer engine communication error	
		Erroneous communication between the Engine controller PCB and Main Controller Board was detected.	- Check the connectors of the Engine controller PCB and Main Controller Board. - Replace the Engine controller PCB for normal connection. - Replace the Main Controller Board.
E716	0	Erroneous communication with optional cassette	
		Disconnection of the optional cassette was detected after power-on, detection of normal connection to the optional cassette, and start of communication.	- Check the connectors of the optional cassette PCB and Engine controller PCB. - Replace the optional cassette PCB for normal connection. - Replace the Engine controller PCB.
E730	0	inside error of the Main Controller Board (PDL system error)	- Replace the Main Controller Board.
E733	0	Erroneous communication between controller and printer	
		Cannot communicate with the printer at startup.	- Check the connectors of the Engine controller PCB and Main Controller Board for normal connection. - Check the power supply of the printer (Check whether initialization is performed at startup). - Replace the Engine controller PCB or Main Controller Board.
E736	0	CCU communication error	
		The installed modem PCB is incompatible.	- Check the connectors of the Main Controller Board and modem. - Replace the modem PCB. - Replace the Main Controller Board.
E739	0	Erroneous communication between controller and network board	
		The installed network board is incompatible.	- Replace the Main Controller Board.
E805	0	Fan failure	
		The fan is faulty.	- Check the fan connector. - Replace the fan. - Replace the Engine controller PCB.

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E808	0	Fixing drive circuit failure - The heater does not turn on. - A fixing drive motor failure was detected.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the fixing drive motor. - Replace the Engine controller PCB. - Replace the power supply PCB.

T-7-1

The following are the error codes used in the image transmission function with network.

Error Code	Send			Recive		Error detail
	SMTP	FTP	SMB	SMTP	POP3	
#705	Yes					Exceeded max. image size per document Exceeded max number of image pages (100 pages) in PDF transmission
#751		Yes				Failed to connect to server (Socket level) Disconnected the network (Socket is closed.)
#752	Yes			Yes	Yes	Failed to connect to server (Socket level) Disconnected the network (Socket is closed.)
#753	Yes	Yes	Yes	Yes	Yes	Occurred socket errors other than E751/E752
#755	Yes	Yes	Yes			It started beginning to transmit before the network was connected.
#801	Yes		Yes	Yes		Returned error from SMTP server SMTP protocol time out Exceeded the specified connecting time limit.
#802	Yes	Yes			Yes	Failed in name resolution using DNS server
#804		Yes	Yes			Returned error from FTP server (No access right to the folder)
#806	Yes	Yes	Yes			Returned error from FTP server (User name/Password)
#808		Yes				Returned error from FTP server (Other than E804/E806) FTP protocol time out Exceeded the specified connecting time limit.
#810					Yes	Returned error from POP3 server POP3 protocol time out Exceeded the specified connecting time limit.
#812					Yes	POP3 password error
#813					Yes	POP3 login name error
#819				Yes	Yes	MIME data error
#820				Yes	Yes	Base64/uuencode error
#821				Yes	Yes	TIFF analysis error
#827				Yes	Yes	non support MIME receive
#828				Yes	Yes	Type of HTML mail receive error
#829				Yes	Yes	Exceeded max receivable size
#839	Yes					SMTP AUTH authentication error (email and iFAX transmitt

T-7-2

## Fax Error Code

### Outline

#### ■ Error Code Outline

An error code is used to indicate a fault in a machine, and is indicated in the machine's LCD or reports, showing the nature (symptoms) of the fault. Using the error code, the user or the service man can readily find out how to correct the fault by simply referring to the User's Manual or service manual.

An error code may be either of the following two types:

User Error Codes

A fault indicated as a user error code is one that can easily be corrected by the user, as by operating the machine. It takes the form of "#+number."

Service Error Codes

If a fault calls for a service man for correction, it is indicated as a service man error code in the form of "##+number" or "SYSTEM ERROR E+number."

□

MEMO :

A service error code expressed in the form of "##+number" will not appear on the LCD, Error Tx Report, or Activity Report while the machine remains in factory default state. To check a service error code, shift bit 0 of service soft switch #1 SSSW SW01 to '1'.

MEMO :

Display only the error codes which are newly incorporated in this machine as well as which require remedies unique to the product. For the causes and countermeasures of other error codes, refer to the separate G3/G4 Facsimile Error Code List (Rev. 2)

## User Error Code

### ■ User Error Code

No.	Tx/Rx	Description
#0001	[Tx]	an original has jammed.
#0003	[Tx/Rx]	tine-out for copying or sending/receiving a single page has occurred.
#0005	[Tx/Rx]	time-out for initial identification (T0/T1) has occurred.
#0009	[Rx]	recording paper has jammed or is absent.
#0012	[Tx]	recording paper is absent at the other party.
#0018	[Tx/Rx]	auto call initiation has failed.
#0037	[Rx]	image memory overflow at time of reception has occurred.
#0059	[Tx]	The number you dial and connected number (CSI) does not match.
#0995/0099	[Tx/Rx]	a memory communication reservation has been cancelled.

T-7-3

## Service Error Code

### Service Error Code

No.	Tx/Rx	Description
##0100	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0101	[Tx/Rx]	the modem speed does not match that of the other party.
##0102	[Tx]	at time of transmission, fall-back cannot be used.
##0103	[Rx]	at time of reception, EOL cannot be detected for 5 sec (15 sec if CBT).
##0104	[Tx]	at time of transmission, RTN or PIN is received.
##0106	[Rx]	at time of reception, the procedural signal is received for 6 sec while in wait for the signal.
##0107	[Rx]	at time of reception, the transmitting party cannot use fall-back.
##0109	[Tx]	at time of transmission, a signal other than DIS, DTC, FTT, CFR, or CRP is received, and the procedural signal has been sent more than specified.
##0111	[Tx/Rx]	memory error has occurred.
##0114	[Rx]	at time of reception, RTN is transmitted.
##0200	[Rx]	at time of reception, no image carrier is detected for 5 sec.
##0201	[Tx/Rx]	DCN is received outside the normal parity procedure.
##0220	[Tx/Rx]	system error (main program out of control) has occurred.
##0232	[Tx]	encoding error has occurred.
##0237	[Rx]	decoding error has occurred.
##0261	[Tx/Rx]	system error has occurred.
##0280	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0281	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0282	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0283	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0284	[Tx]	at time of transmission, DCN is received after transmission of TCF.
##0285	[Tx]	at time of transmission, DCN is received after transmission of EOP.
##0286	[Tx]	at time of transmission, DCN is received after transmission of EOM.
##0287	[Tx]	at time of transmission DCN is received after transmission of MPS.
##0288	[Tx]	after transmission of EOP, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0289	[Tx]	after transmission of EOM, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0290	[Tx]	after transmission of MPS, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0670	[Tx]	at time of V.8 late start, the V.8 ability of DIS front the receiving party is expected to be detected, and the CI signal is expected to be transmitted in response; however, the procedure fails to advance, and the line is released because of T1 timeout.

No.	Tx/Rx	Description
##0671	[Rx]	at time of V.8 arrival, procedure fails to move to phase 2 after detection of CM signal from caller, causing T1 time-out and releasing line
##0672	[Tx]	at time of V.34 transmission, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0673	[Rx]	at time of V.34 reception, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0674	[Tx]	at time of V.34 transmission, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0675	[Rx]	at time of V.34 reception, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0750	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-NULL, causing the procedural signal to be transmitted more than specified.
##0752	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-NULL.
##0753	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPSNULL, or T5 time-out (60 sec) has occurred.
##0754	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPSNULL.
##0755	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-MPS, causing the procedural signal to be transmitted more than specified.
##0757	[Tx]	at time of ECM transmission, DCN is received after retransmission of PPS-MPS.
##0758	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0759	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS.
##0760	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOM, causing the procedural signal to be transmitted more than specified.
##0762	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOM.
##0763	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0764	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPSEOM.
##0765	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOP, causing the procedural signal to be transmitted more than specified.
##0767	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOP.

No.	Tx/Rx	Description
##0768	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP, or T5 time-out (60 sec) has occurred.
##0769	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP.
##0770	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-NULL, causing the procedural signal to be transmitted more than specified.
##0772	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-NULL.
##0773	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EORNULL, or T5 time-out (60 sec) has occurred.
##0774	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-NULL.
##0775	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-MPS, causing the procedural signal to be transmitted more than specified.
##0777	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-MPS.
##0778	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission EOR-MPS, or T5 time-out (60 sec) has occurred.
##0779	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-MPS.
##0780	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOM, causing the procedural signal to be transmitted more than specified.
##0782	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOM.
##0783	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOREOM, or T5 time-out (60 sec) has occurred.
##0784	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOM.
##0785	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOP, causing the procedural signal to be transmitted more than specified.
##0787	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOP.
##0788	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOREOP, or T5 time-out (60 sec) has occurred.
##0789	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOP.
##0790	[Rx]	at time of ECM reception, ERR is transmitted after transmission of EOR-Q.
##0791	[Tx/Rx]	while ECM mode procedure is under way, a signal other than a meaningful signal is received.
##0792	[Rx]	at time of ECM reception, PPS-NULL cannot be detected over partial page processing.

No.	Tx/Rx	Description
##0793	[Rx]	at time of ECM reception, no effective frame is received while high-speed signal reception is under way, thus causing timeout.
##0794	[Tx]	at time of ECM reception, PPR with all 0s is received.
##0795	[Tx/Rx]	a fault has occurred in code processing for communication.

T-7-4



# Service Mode

- Outline
- Default Settings
- Service Soft Switch Settings (SSSW)
- Menu Switch Settings (Menu)
- Numeric Parameter Settings (Numeric Param.)
- Scanner Function Settings (Scanner)
- Printer Function Settings (Printer)
- Setting of System Functions (System)
- Counter Indication (Counter)
- Report Output (Report)
- Data Initialization Mode (Clear)
- Rom Management (Rom)
- Test Mode (Test)

## Outline

### Outline of Service Mode

Service Mode contains the following service data items. Each service data can be viewed or modified using the menu items displayed on the screen.

#### #SSSW

Use it to register/set basic fax functions (e.g., error control, echo remedy, communication error correction).

Use it to make settings related counter functions.

#### #MENU

Use it to register/set items related to functions needed at time of installation (e.g., NL equalizer, transmission level).

#### #NUMERIC

These setting items are for inputting numeric parameters such as the various conditions for the RTN signal transmission.

#### #SPECIAL

These setting items are for telephone network control functions.

#### #NCU

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

#### #FAX

Do not use.

#### #SCAN

These setting items are for image adjustment in scanning.

#### #PRINT

These setting items are for image adjustment in printer assembly and for special mode for the field-related measures.

#### #NETWORK

Do not use.

#### #CODEC

Do not use.

#### #SYSTEM

These are used for the import/export of user information through USB.

#### #ACC

Do not use.

#### #COUNTER

Use it to check estimates for maintenance/parts replacement.

#### #REPORT

Use it to generate reports on various service data.

#### #DOWNLOAD

Use it to download firmware to the ROM of a PCB in question.

#### #CLEAR

Use it to reset various data to initial settings.

#### #ERROR DISPLAY

An error code is displayed when a service error has occurred.

#### #ROM

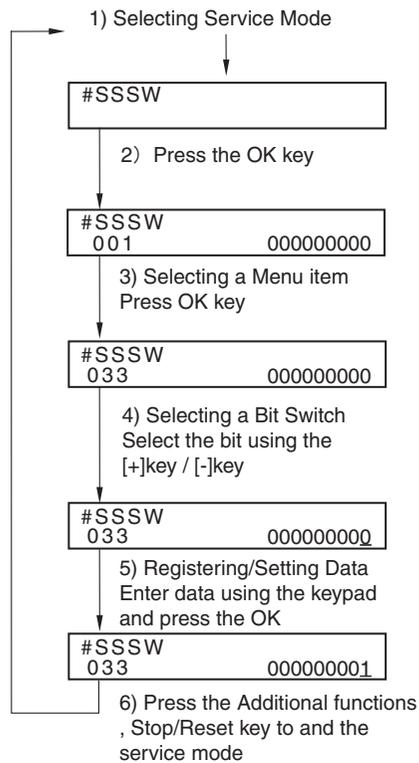
Displays ROM information, such as version numbers and checksums.

#### #TEST MODE

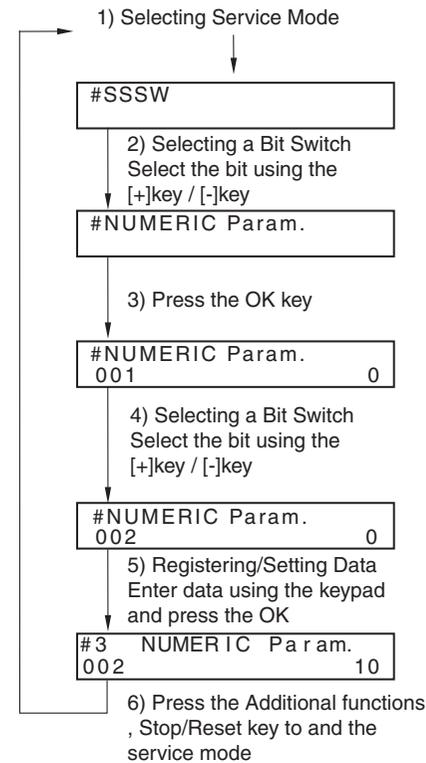
Makes various status checks, such as contact sensor, sensor and print status.

## Using the Mode

<Operation at the of Bit SW>



<Operation at the time of Parameter>



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## Default Settings

### Service Mode Menus

#SSSW		
No.	Initial setting	Function
SW01	00000000	error/copy control
SW02		not used
SW03	00000000	echo remedy setting
SW04	10000000	communication fault remedy setting
SW05	00000000	standard function (DIS signal) setting
SW06 - SW11		not used
SW12	00000010	page timer setting
SW13	00000000	meter/inch resolution setting
SW14	00000001	inch/meter resolution setting
SW15 - SW17		not used
SW18	00000000	communication fault remedy setting (2)
SW19 - SW24		not used
SW25	00000000	report display function settings
SW26 - SW27		not used
SW28	00000000	V.8/V.34 protocol settings
SW29		not used
SW30	0010000	Assigning a New Dial Tone Detection Method
SW31 - SW50		not used

T-8-1

#MENU			
No.	Initial setting	Range of setting	Function
01: - 04:			not used
05:	0	ON/OFF	NL equalizer setting
06:	0	0: DIAL	line monitor setting
		1: SERVICEMAN [1]	
		2: SERVICEMAN [2]	
		3: OFF	
07:	10	0-15	transmission level setting
08:	0	0: 3429	V.34 baud rate
		1: 3200	
		2: 3000	
		3: 2800	
		4: 2743	
		5: 2400	
09:	0	0: 33.6kbs	V.34 transmission speed
		1: 31.2kbs	
		2: 28.8kbs	
		3: 26.4kbs	
		4: 24.0kbs	
		5: 21.6kbs	
		6: 19.2kbs	
		7: 16.8kbs	
		8: 14.4kbs	
		9: 12.0kbs	
		10: 9.6kbs	
		11: 7.2kbs	
		12: 4.8kbs	
		13: 2.4kbs	
10:	1	0: 50Hz	pseudo CI signal frequency setting
		1: 25Hz	
		2: 17Hz	
		3: 20Hz	
11: - 20:			not used

T-8-2

#NUMERIC			
No.	Initial setting	Range of setting	Function
001:			not used
002:	10 (10%)	(1-99)	RTN signal transmission condition (1) setting
003:	15 (15lines)	(2-99)	RTN signal transmission condition (2) setting
004:	12 (12times)	(1-99)	RTN signal transmission condition (3) setting
005:	4 (4sec)	(1-60)	NCC pause time (pre-ID code) setting
006:	4 (4sec)	(1-60)	NCC pause time (post-ID code) setting
007: - 009:			not used
010:	5500 (55sec)	(0-9999)	line connection identification time length
011:	3500 (35sec)	(0-9999)	T.30 T1 timer (for reception)
012:			not used
013:	1300 (13sec)	(500-3000)	T30 EOL timer
014:			not used
015:	120 (1200ms)	(0-999)	hooking detection time setting
016:	4 (4sec)	(0-9)	fax/tel switch-over function: between line acquisition and pseudo RBTtransmission
017:	100 (1000ms)	(0-999)	pseudo RBT signal pattern: ON time setting
018:	0 (0ms)	(0-999)	pseudo RBT signal pattern: OFF time (short) setting
019:	200 (2000ms)	(0-999)	pseudo RBT signal pattern: OFF time (long) setting
020:	100 (1000ms)	(0-999)	pseudo CI signal pattern: ON time setting
021:	0 (0ms)	(0-999)	pseudo CI signal pattern: OFF time (short) setting
022:	200 (2000ms)	(0-999)	pseudo CI signal pattern: OFF time (long) setting
023:	4	(0-7)	fax/tel switch-over pseudo RBT transmission level
024:	20 (-20dBm)	(0-20)	fax/tel switch-over pseudo RBT transmission level
025:	60 (60sec)	(0-999)	Answering machine connection function signal detection time
026:			not used
027:	0	(0-20)	V21 low-speed flag preamble detection time length
028: - 055:			not used
056:	101	(0-999)	count type select 1
057:	201	(0-999)	count type select 2
058:	0	(0-999)	count type select 3
059:	0	(0-999)	count type select 4
060:	0	(0-999)	count type select 5
061:	0	(0-999)	count type select 6
062: - 080:			not used

T-8-3

#SPECIAL	Do not change.
#NCU	Do not change.
#FAX	Not used.

T-8-4

#SCAN				
	No.	Initial setting	Range setting	Explanation
#SCAN SW	SW1 - SW50			Not used
#SCAN NUMERIC	001: - 030:			Not used
	031:	0	0 to 70, one unit=0.1mm	Vertical scan start position adjustment
	032:			Not used
	033:	32	0 to 64, one unit=0.1%	Vertical scan magnification correction
	034:			Not used
	035: - 036:	423		Book motor speed adjustment
	037: - 040:			Not used
	041:	0	0 to 70, one unit=0.1mm	Vertical scan start position adjustment (scanning on ADF)
	042:- 046:			Not used
	047:	32	0 to 64, one unit=0.1%	Vertical scan magnification correction (scanning on ADF)
	048:	32	0 to 64, one unit=0.1%	Horizontal scan magnification correction (scanning on ADF)
	049: - 350:			Not used

T-8-5

#PRINT				
	No.	Initial setting	Range setting	Explanation
#PRINT SW	SW01 - SW014			Not used
	SW15	00000000		Delivery-related setting
	SW16 - SW50			Not used
#PRINT NUMERIC	01: - 33:			Not used
	34:	95	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (multi-purpose tray)
	35:	94	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (cassette)
	36	90	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (option)
	37 - 38:			Not used
	39:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (duplex unit)
	40 - 52:			Not used
	53:	80	0 to 9999, one unit = 0.1mm	Adjustment of margin at leading edge of copy
	54:	50	0 to 9999, one unit = 0.1mm	Adjustment of margin at trailing edge of copy
	55:	50	0 to 9999, one unit = 0.1mm	Adjustment of margin at right edge of copy
	56:	50	0 to 9999, one unit = 0.1mm	Adjustment of margin at left edge of copy
	57 - 70:			Not used
#PRINT CST	U1	0		Not used
	U2	0		Not used
	03	0		Not used

T-8-6

#NETWORK	Not used.
#CODEC	Not used.

T-8-7

#SYSTEM				
	No.	Initial setting	Range of setting	Function
#SYSTEM SW	SW01- SW02			not used
	SW03	00001000		Import/export of the user information via USB
	SW04 - SW50			not used
#SYSTEM NUMERIC	001: -100:			not used

T-8-8

#ACC	Not used
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T-8-9

#COUNTER	
Item	Function
TOTAL	total counter
PICK_UP	pickup-related counter
FEEDER	feeder counter
JAM	jam-related counter
MISC	not used

T-8-10

#REPORT		
	Setting	Function
#REPORT SW		Not used
#REPORT OUTPUT	SERVICE DATA LIST	Output of service data list
	SYSTEM DATA LIST	Output of system data list
	SYSTEM DUMP LIST	Output of system dump list
	COUNTER LIST	Output of counter list
	ERROR LOG LIST	Not used
	SPEC LIST	Output of spec list
	SERVICE LABEL	Not used
#REPORT NUMERIC		Not used

T-8-11

#DOWNLOAD	Download mode
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T-8-12

#CLEAR		
Item	Level2	Function
TEL & USER DATA		Use it to clear all areas under user registration/setting.
SERVICE DATA		Use it to clear the counters (numerator), date, and start data from the system dump list.
COUNTER		Use it to clear the maintenance counter data and each mode counter data.
SOFT-CNT		Not used.
TYPE		Use it to clear the user data and the service data by specified settings.
HST	ACTIVITY	Use it to clear the contents of the communications control report.
	ACCOUNT	Not used.
	JAM	Not used.
	ERR	Not used.
	ALARM	Not used.
CARD		Not used.
ERR	E355	Not used.
	E719	Not used.
PWD		Use it to clear the system administrator's password.

#CLEAR		
Item	Level2	Function
FILE SYSTEM		Delete unnecessary language files in the USB memory.
FORMAT	USB MEMORY	Format the USB memory. (This mode is used when the USB memory error is damaged and E744 occurs.)
	LICENSE DRIVE	Not used.
ALL		Use it to clear all settings/registration data except the counter (denominator, numerator).

T-8-13

#ERROR DISPLAY	Not used.
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T-8-14

#ROM	
Item	Function
MAIN	Use it to indicate the version of the ROM (SYSTEM) on the Main Controller Board.
MAIN2	Use it to indicate the version of the ROM (BOOT) on the Main Controller Board.
OPROM	Not used.
ECONT	Use it to indicate the version of the ROM on the DCNT board.

T-8-15

#TEST MODE [1] - [9]	
Item	Function
(1) DRAM [1] - [2]	Data check in D-RAM
(2) SCAN TEST [1] - [8]	CS automatic correction and document scan position adjustment
(3) PRINT TEST [1] - [9]	Output of test prints
(4) MODEM TEST [1] - [9]	modem/NCU related tests
(5) AGING TEST	not used
(6) FACULTY TEST [1] - [9]	Various functional tests
(0) ROLLER CLEAN	ADF roller cleaning

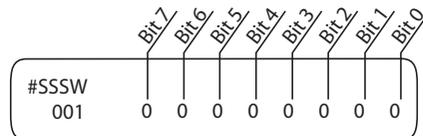
T-8-16

## Service Soft Switch Settings (SSSW)

### Outline

#### Bit Switch Composition

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.



F-8-2

Do not change service data identified as "not used"; they are set as initial settings.

### SSSW-SW01:

#### List of Functions

Bit	Function	1	0
0	service error code	output	not output
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

T-8-17

#### Detailed Discussions of Bit 0

Selects whether or not service error codes are output. When output is selected, service error codes is report.

### SSSW-SW03

#### List of Functions

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	tonal signal before CED signal transmission	transmit	do not transmit

T-8-18

#### Detailed Discussions of Bit 7

Use it to enable/disable transmission of a 1080-Hz tonal signal before transmission of the CED signal.

Select 'transmit' if errors occur frequently because of an echo when reception is from overseas.

#### MEMO:

Any of the following error code may be indicated because of an echo at time of reception

##0005, ##0101, ##0106, ##0107, ##0114, ##0200, ##0201, ##0790



## SSSW-SW04

### List of Functions

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	the number of final flag sequences of protocol signals	2	1
3	Reception mode after CFR signal transmission	high speed	high speed/low speed
4	the length of the period of ignoring low speed signals after CFR output	1500 ms	700 ms
5	not used	-	-
6	CNG signal for manual transmission	Not transmitted	Transmitted
7	CED signal for manual reception	Not transmitted	Transmitted

T-8-19

### Detailed Discussions of Bit 2

Use it to select the number of last flag sequences for a protocol signal (transmission speed at 300 bps). Select '2' if the other party fails to receive the protocol signal properly.

#### MEMO:

Any of the following error codes may be indicated at time of transmission

##0100, ##0280, ##0281, ##0750, ##0753, ##0754, ##0755, ##0758, ##0759, ##0760, ##0763, ##0764, ##0765, ##0768, ##0769, ##0770, ##0773, ##0775, ##0778, ##0780, ##0783, ##0785, ##0788

### Detailed Discussions of Bit 3

Use it to select an appropriate reception mode after transmission of the CFR signal.

If errors occur frequently at time of reception because of the condition of the line, select 'high speed' for reception mode and, at the same time, selects 'do not receive' for 'ECM reception.'

#### MEMO:

Any of the following error codes may be indicated at time of reception because of line condition

##0107, ##0114, ##0201

Be sure to change bit 4 before changing this bit; if errors still occur, change this bit.

When 'high speed' is selected, only high-speed signals (images) will be received after transmission of the CFR signal.

### Detailed Discussions of Bit 4

Use it to select the time length during which low-speed signals are ignored after transmission of the CFR signal.

If the condition of the line is not good and, therefore, the reception of image signals is difficult, select '1500 ms.'

### Detailed Discussions of Bit 6

Selects whether or not to transmit CNG signal during manual transmission.

In manual transmitting to a fax with the FAX/TEL switching mode, if there are frequent errors due to failure to switch to fax mode, select "Transmitted" for the CNG signal.

### Detailed Discussions of Bit 7

Selects whether or not to transmit CED signals during manual reception. If the other fax does not transmit even when you start manual reception, select "Transmitted" for the CED signal.

## SSSW-SW05

### List of Functions

Bit	Function	1	0
0	not used	-	-
1	Conversion from mm to inch (text mode)	convert	do not convert
2	Conversion from mm to inch (text/photo mode)	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

T-8-20

### Detailed Discussions of Bit 1

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text mode.

Scanning direction in conversion follows the Bit 2 setting of SW14.

### Detailed Discussions of Bit 2

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text/photo mode while bit 1 is set to '1'.

Scanning direction in conversion follows the Bit 2 setting of SW14.

## SSSW-SW12

### List of Functions

Bit	Function	1	0
0	Time-out period for one page upon transmission	1	0
1	Time-out period for one page upon transmission	1	0
2	not used	-	-
3	not used	-	-
4	Time-out period for one page upon reception	1	0
5	Time-out period for one page upon reception	1	0
6	not used	-	-

Bit	Function	1	0
7	Respective page timer settings for transmission and for reception	enable	do not enable

T-8-21

The machine will stop the ongoing communication if the transmission/reception of a single original page takes 32 min or more. To use the timer for a purpose other than this function, refer to the tables that follow, and select an appropriate time length.

When 'do not enable' is selected using bit 7, the time-out length for a single page for all modes will depend on the setting of bit 0 and bit 1.

Time-Out Length for Transmission/Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	0	*	*	*	*	*	0	0
16 min	0	*	*	*	*	*	0	1
32 min	0	*	*	*	*	*	1	0
64 min	0	*	*	*	*	*	1	1

T-8-22

Time-Out Length for Transmission (in text mode)	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	*	*	*	*	0	0
16 min	1	*	*	*	*	*	0	1
32 min	1	*	*	*	*	*	1	0
64 min	1	*	*	*	*	*	1	1

Time-Out Length for Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	0	0	*	*	*	*
16 min	1	*	0	1	*	*	*	*
32 min	1	*	1	0	*	*	*	*
64 min	1	*	1	1	*	*	*	*

T-8-23

## SSSW-SW13

### List of Functions

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	Convert "inch" into "mm" when transmitting the received image data	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

T-8-24

### Detailed Discussions of Bit 2

It converts "inch" into "mm" when transmitting the received image data. Scanning direction in conversion follows the Bit 2 setting of SW14.

## SSSW-SW14

### List of Functions

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	direction of scanning for inch/mm conversion	both main and sub scanning directions	sub scanning direction only
3	not used	-	-
4	inch-configuration resolution declaration	declare	do not declare
5	not used	-	-
6	not used	-	-
7	not used	-	-

T-8-25

### Detailed Discussions of Bit 2

Use it to specify whether to convert or not convert an inch-configuration resolution into a millimeter-configuration resolution for image read in G3 transmission: either in sub scanning direction only or in both main and sub scanning directions. The setting is valid only when bit 1 of SW05 of #SSSW is set to '1'.

### Detailed Discussions of Bit 4

Use it to specify whether to declare or not declare an inch-configuration resolution to the other machine for G3 communication: if 'declare' is selected, the machine will indicate that it reads and records at an inch-configuration resolution using the DIS, DCS, or DTC signal.

## SSSW-SW18

### List of Functions

Bit	Function	1	0
0	Detection of carrier disconnection between the DCS signal and the TCF signal	Yes	No*
1	Waiting time for carrier disconnection between the DCS signal and the TCF signal	600 msec	300 msec*
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

T-8-26

### Detailed Discussions of Bit 0

It is possible to select whether or not to detect carrier disconnection between the DCS signal and the TCF signal during reception.

If the receiving machine returns an FTT signal while the other machine (PC-FAX) is transmitting a TCF signal and a reception error occurs, set this bit to "1".

If the error still occurs, set bit 1 of #SSSW SW18 to "1".

### Detailed Discussions of Bit 1

It is possible to select the detection time for carrier disconnection between the DCS signal and TCF signal during reception.

This bit is available for use when #SSSW SW18 Bit0 is set to "1".

If the symptom is not resolved by setting SW18 Bit 0 to "1," set this bit to "1."

## SSSW-SW25

### List of Functions

Bit	Function	1	0
0	Transmission telephone numbers displayed on reports	Other fax number	Called number
1	not used	-	-
2	Action when receiving blank CSI	Disregard	Receive
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

T-8-27

### Detailed Discussions of Bit 0

Selects the transmission telephone number displayed on reports after the completion of transmission.

When "Called number" is selected, the telephone number the fax called is displayed on reports.

When "Other fax number" is selected, the telephone number sent from the other fax (the CSI signal data) is displayed on reports.

### Detailed Discussions of Bit 2

When "Disregard" is selected, the received blank CSI is disregarded and a dialed number, if any, is displayed on LCD/report.

When "Receive" is selected, LCD/report is blank if the dialed number is known.

## SSSW-SW28

### List of Functions

Bit	Function	1	0
0	Caller V.8 protocol	NO	YES
1	Called party V.8 protocol	NO	YES
2	Caller V.8 protocol late start	NO	YES
3	Called party V.8 protocol late start	NO	YES
4	V.34 reception fallback	Prohibited	Not prohibited
5	V.34 transmission fallback	Prohibited	Not prohibited
6	not used	-	-
7	not used	-	-

T-8-28

### Detailed Discussions of Bit 0

Select whether to use the V.8 protocol when calling. If NO is selected, the V.8 protocol is inhibited at calling and the V.21 protocol is used.

### Detailed Discussions of Bit 1

Select whether to use the V.8 protocol when called. If NO is selected, the V.8 protocol is inhibited when called and the V.21 protocol is used.

### Detailed Discussions of Bit 2

If ANSam signal is not received during transmission, select whether to use the V.8 protocol when the other fax machine declares the V.8 protocol in DIS signal. If NO is selected, the CI signal is not transmitted and the V.8 protocol is not used even if the DIS that specifies the V.8 protocol is received.

The V.8 late start is not executed during manual transmission regardless of this setting.

### Detailed Discussions of Bit 3

Select whether to declare the V.8 protocol in DIS signal for reception. If NO is selected, the V.8 protocol cannot be used because it is not declared in DIS signal.

The V.8 late start is not executed during manual reception regardless of this setting.

### Detailed Discussions of Bit 4

Select whether the receiver falls back during V.34 reception. If 'Prohibit' is selected, the receiver does not fall back.

### Detailed Discussions of Bit 5

Select whether the transmitter falls back during V.34 transmission. If 'Prohibit' is selected, the transmitter does not fall back.

## SSSW-SW30

### List of Functions

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	New dial tone detection method	Detect with the new method.	Detect with the existing method.
6	Not used	-	-
7	Not used	-	-

T-8-29

### Detailed Discussions of Bit 5

When "Detect with the new method" is selected, tone is detected for 3.5 seconds before call origination in order to discriminate between dial tone and voice. If dial tone is detected and the time since line seizure is 3.5 seconds or longer, call origination takes place immediately. If the time since line seizure is less than 3.5 seconds, call origination takes place after waiting for 1 second. (If the time since line seizure reaches 3.5 seconds during the 1-second waiting period, call origination takes place immediately. By default, "Detect with a new method" is assigned for this SW.

## Menu Switch Settings (Menu)

### Menu Switch Composition

No.	Function	Range of settings
005	NL equalizer	1: ON, 0: OFF
006	telephone line monitor	0:DIAL, 1:SERVICEMAN1, 2:SERVICEMAN2, 3:OFF
007	transmission level (ATT)	from 0 to 15 (ex: 15= -15 dBm)
008	V.34 modulation speed upper limit	0:3429, 1:3200, 2:3000, 3:2800, 4:2743, 5:2400
009	V34 data speed upper limit	0:33.6 kbps, 1:31.2 kbps, 2:28.8 kbps, 3:26.4 kbps, 4:24.0 kbps, 5:21.6 kbps, 6:19.2 kbps, 7:16.8 kbps, 8:14.4 kbps, 9:12.0 kbps, 10:9.6 kbps, 11:7.2 kbps, 12:4.8 kbps, 13:2.4 kbps
010	Frequency of pseudoring signal	0:50 Hz, 1:25 Hz, 2:17 Hz, 3:20 Hz

T-8-30

### <No.005 NL equalizer>

Use it to enable-disable the NL equalizer.

If errors occur often during communication because of the condition of the line, enable (ON) the NL equalizer.

Any of the following error codes may be indicated at time of transmission because of the line condition:

##100, ##101, ##102, ##104, ##201, ##281, ##282, ##283, ##750, ##755, ##765, ##774, ##779, ##784, ##789

Any of the following error codes may be indicated at time of transmission because of the line condition:

##103, ##107, ##114, ##201, ##790, ##793

T-8-31

### <No.006 telephone line monitor>

Use it to set the telephone line monitor function:

DIAL: generate the monitor sound of the telephone line using the speaker from the start of transmission to DIS.

SERVICEMAN [1]: generate the monitor sound of the telephone line using the speaker from the start of communication to the end of it.

SERVICEMAN [2]: generate the monitor sound of the telephone line2 (Option).

OFF: do not generate the monitor sound of the telephone line using the speaker.

### <No.007 ATT transmission level>

Use it to set the transmission level (ATT).

Raise the transmission level if errors occur frequently at time of communication because of the condition of the line. (It means close to 8)

Any of the following error codes may be indicated at time of transmission because of the line condition:

##100, ##101, ##102, ##104, ##201, ##280, ##281, ##282, ##283, ##284, ##750, ##752, ##754, ##755, ##757, ##759, ##760, ##762, ##764, ##765, ##767, ##769, ##770, ##772, ##774, ##775, ##777, ##779, ##780, ##782, ##784, ##785, ##787, ##789

Any of the following error codes may be indicated at time of reception because of the line condition:

##103, ##106, ##107, ##201, ##793

T-8-32

### <No.008 V.34 modulation speed upper limit>

Use it to set an upper limit to the modulation speed (baud rate) for the V.34 primary channel.

### <No.009 V.34 data speed upper limit>

Use it to set an upper limit to the data transmission speed for the V.34 primary channel between 2.4K and 33.6K bps in increments of 2400 bps. (0: 2.4K to 13: 33.6K bps).

### <No.010 Frequency of the pseudo CI signal>

You may select a frequency for the pseudo CI signal.

Some types of external telephones do not ring when the fax/tel switch-over function is ON. To sound the ring, change the pseudo CI signal.

## Numeric Parameter Settings (Numeric Param.)

### Numerical Parameter Composition

No.	Item	Range of settings
002	RTN transmission condition(1)	1% to 99%
003	RTN transmission condition (2)	2 to 99 item
004	RTN transmission condition (3)	1 to 99 lines
005	NCC pause time length (pre-ID code)	1 to 60 sec
006	NCC pause time length (post-ID code)	1 to 60 sec
010	line condition identification time length	0 to 9999 (10 msec)
011	T.30T1 timer (for reception)	0 to 9999 (10 msec)
013	T.30 EOL timer	500 to 3000 (10 msec)
015	hooking detection time length	0 to 999
016	time length to first response at time of fax/tel switchover	0 to 9
017	pseudo RBT signal pattern ON time length	0 to 999
018	pseudo RBT signal pattern OFF time length (short)	0 to 999
019	pseudo RBT signal pattern OFF time length (long)	0 to 999
020	pseudo CI signal pattern ON time length	0 to 999
021	pseudo CI signal pattern OFF time length (short)	0 to 999
022	pseudo CI signal pattern OFF time length (long)	0 to 999
023	CNG detection level at time of fax/tel switchover	0 to 7
024	pseudo RBT transmission level at time of fax/tel switchover	10 to 20 0 to 20 (120/230V)
025	Answering machine connection function signal detection time	0 to 999
027	preamble detection time length for V21 low-speed flag	20 (x 10ms)
056	display the type of soft counter 1	101 (Fixed)
057	Display the type of soft counter 2	0 to 999
058	Display the type of soft counter 3	0 to 999
059	Display the type of soft counter 4	0 to 999
060	Display the type of soft counter 5	0 to 999
061	Display the type of soft counter 6	0 to 999

T-8-33

### <002: RTN transmission condition (1)><003: RTN transmission condition (2)><004: RTN transmission condition (3)>

Use it to set RTN signal transmission conditions. Raise these parameters for more lenient conditions if errors occur frequently at time of reception because of transmission of the RTN signal.

#### MEMO:

Any of the following error codes may be indicated at time of reception because of RTN signal transmission

##0104, ##0107, ##0114, ##0201

RTN signal transmission condition (1) affects the ratio of error lines to the total number of lines per single page of received images.

RTN signal transmission condition (2) affects the standard value (\*2) of burst errors (\*1).

RTN signal condition (3) affects the number of errors not reaching the standard value of burst errors.

\*1: transmission error occurring cover several lines.

\*2: for instance, if '15' is set, a single burst error will represent an error occurring continuously cover 15 lines.

If any of these lines is detected while an image signal is being received, the RTN signal will be transmitted after receiving the protocol signal of the transmitting party. Higher parameters restrict the transmission of the RTN signal.

### <005: NCC pause length (pre-ID code)>

Use it to set the length of the pause automatically entered between access code and ID code when the NCC (New Common Carrier) line is used for dialing.

### <006: NCC pause length (post-ID code)>

Use it to set the length of the pause automatically entered between ID code and telephone number of the other party when the NCC (New Common Carrier) line is used for dialing.

### <010: line connection identification length>

Use it to set the time for identifying the line connection. Raise this parameter if errors occur frequently at time of communication because of the condition of the line.

#### MEMO:

Any of the following error codes may be indicated because of the condition of the line  
##0005, ##0018

The line condition identification time is between when the dial signal is transmitted and when the line condition is cut for the transmitting party, while it is between when the DIS signal is transmitted and when the line is cut for the receiving party.

### <011: T.30 T1 timer (for reception)>

Set the T1 timer for the receiver (wait time after DIS transmission starts until a significant signal is received).

### <013: T.30 EOL timer>

Set it so that the 1-line transmission time is longer for reception to prevent reception errors caused by a long data length per line (e.g., computer FAX).

### <016: time length to first response at time of fax/tel switchover>

Allows setting of the time from seizing the line till pseudo RBT is sent, when the Fax/ Tel switching function is operating.

### <017: pseudo RBT signal pattern ON time length><018: pseudo RBT signal pattern OFF time length (short)><019: pseudo RBT signal pattern OFF time length (long)>

Use it to set the pattern of the pseudo RBT signal transmitted at time of a fax/tel switchover.

### <020: pseudo CI signal pattern ON time length><021: pseudo CI signal pattern OFF time length (short)><022: pseudo CI signal pattern OFF time length (long)>

Use it to set the pseudo CI signal pattern transmitted at time of a fax/tel switchover.

### <023: CNG detention level for fax/tel switchover>

Use it to set the CNG detention level for a fax/tel switchover.

### <024: pseudo RBT transmission level at time of fax/tel switchover>

Use it to set the pseudo transmission level for a fax/tel switchover.

## <025: Answering machine connection function signal detection time>

Sets the signal detection time for the answering machine connection function operation. When the answering machine connection function is operating, if the function does not operate normally because the fax does not detect CNG signal sent from the line, raise this parameter to increase the signal detection time.

## <027: V.21 low-speed flag preamble identification length>

Use it to detect the time of detection after which command analysis is started after detecting V.21 low-speed command preambles continuously for a specific period of time.

## <056 - 061: Count type select >

Use it to confirm the count type indicated on the Counter Check screen, which appears in response to a press on the Counter key.

When '0' is selected, count type will not be indicated.

No.56: Use it to indicate the type of software counter 1 of the control panel. The type of soft counter 1 cannot be changed.

No.57: Use it to change the type of soft counter 2\* of the control panel to suit the needs of the user.

No.58: Use it to change the type of soft counter 3\* of the control panel to suit the needs of the user.

No.59: Use it to change the type of soft counter 4\* of the control panel to suit the needs of the user.

No.60: Use it to change the type of soft counter 5\* of the control panel to suit the needs of the user.

No.61: Use it to change the type of soft counter 6\* of the control panel to suit the needs of the user.

\*:The default type settings of soft counter is different from models.

### <Soft Counter Specifications>

The soft counters are classified as follows in terms of input numbers:

- 100s: total
- 200s: copy
- 300s: print
- 400s: copy + print
- 500s: scan
- 700s: received file print
- 800s: report print
- 900s: transmitted scan

### Guide to the Table

- 1:Count sheets of all sizes by one.
- 2:Count sheets of the large size by two.
- C:full color
- Bk:black mono
- L:large size (larger than A4/LTR)
- S:small size (A4/LTR or smaller)

## MEMO:

To make a change so that B4 papers (for print) will be counted as large-size, use service mode: make the following selections, and change bit 0 to '1': #SSSW>SW33.

To make a change so that B4 papers (for scan) will be counted as large-size, use service mode: make the following selections, and change bit 2 to '1': #SSSW>SW33.

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
101	Total1	1	1	1	1	1	1	1	1								
102	Total2	2	2	2	2	1	1	1	1								
103	Total (L)	1	1	1	1												
104	Total (S)					1	1	1	1								
108	Total (Bk1)	1	1	1	1	1	1	1	1								
109	Total (Bk2)	2	2	2	2	1	1	1	1								
112	Total (Bk/L)	1	1	1	1												
113	Total (Bk/S)					1	1	1	1								
114	Total1 (2-sided)									1	1	1	1	1	1	1	1
115	Total2 (2-sided)									2	2	2	2	1	1	1	1
116	L (2-sided)									1	1	1	1				
117	S (2-sided)												1	1	1	1	
126	TotalA1		1	1	1		1	1	1								
127	TotalA2		2	2	2		1	1	1								
128	TotalA (L)		1	1	1												
129	TotalA (S)						1	1	1								
132	TotalA (Bk1)		1	1	1		1	1	1								
133	TotalA (Bk2)		2	2	2		1	1	1								
136	TotalA (Bk/L)		1	1	1												
137	TotalA (Bk/S)						1	1	1								
138	TotalA1 (2-sided)										1	1	1				
139	TotalA2 (2-sided)										2	2	2				
140	L A (2-sided)										1	1	1				
141	S A (2-sided)													1	1	1	
150	TotalB1		1	1	1		1	1	1								
151	TotalB2		2	2	2		1	1	1								
152	TotalB (L)		1	1	1												
153	TotalB (S)						1	1	1								

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
156	TotalB (Bk1)		1	1	1		1	1	1								
157	TotalB (Bk2)		2	2	2		1	1	1								
160	TotalB (Bk/L)		1	1	1												
161	TotalB (Bk/S)						1	1	1								
162	TotalB1 (2-sided)												1	1	1		
163	TotalB2 (2-sided)												2	2	2		
164	LB (2-sided)												1	1	1		
165	SB (2-sided)															1	1
201	Copy(Total1)	1								1							
202	Copy(Total2)	2								1							
203	Copy(L)	1															
204	Copy(S)									1							
205	CopyA (Total1)	1								1							
206	CopyA (Total2)	2								1							
207	CopyA (L)	1															
208	CopyA (S)									1							
209	Local copy(Total1)	1								1							
210	Local copy(Total2)	2								1							
211	Local copy(L)	1															
212	Local copy(S)									1							
221	Copy(Bk1)	1								1							
222	Copy(Bk2)	2								1							
227	Copy(Bk/L)	1															
228	Copy(Bk/S)									1							
237	Copy(Bk/L/2-sided)												1				
238	Copy(Bk/S/2-sided)															1	
249	CopyA (Bk1)	1								1							
250	CopyA (Bk2)	2								1							
255	CopyA (Bk/L)	1															
256	CopyA (Bk/S)									1							
265	CopyA (Bk/L/2-sided)												1				
266	CopyA (Bk/S/2-sided)															1	
277	Local copy(Bk1)	1								1							
278	Local copy(Bk2)	2								1							

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
283	Local copy(Bk/L)	1															
284	Local copy(Bk/S)					1											
293	Local copy(Bk/L/2-sided)									1							
294	Local copy(Bk/S/2-sided)												1				
301	Print (Total1)		1		1		1		1								
302	Print (Total2)		2		2		1		1								
303	Print (L)		1		1												
304	Print (S)						1		1								
305	PrintA (Total1)		1		1		1		1								
306	PrintA (Total2)		2		2		1		1								
307	PrintA (L)		1		1												
308	PrintA (S)						1		1								
313	Print (Bk1)		1		1		1		1								
314	Print (Bk2)		2		2		1		1								
319	Print (Bk/L)		1		1												
320	Print (Bk/S)						1		1								
329	Print (Bk/L)									1		1					
330	Print (Bk/S/2-sided)													1		1	
331	PDL print (Total1)		1				1										
332	PDL print (Total2)		2				1										
333	PDL print (L)		1														
334	PDL print (S)						1										
339	PDL print (Bk1)		1				1										
340	PDL print (Bk2)		2				1										
345	PDL print (Bk/L)		1														
346	PDL print (Bk/S)						1										
355	PDL print (Bk/L/2-sided)									1							
356	PDL print (Bk/S)													1			
403	Copy+Print (Bk/L)	1	1		1												
404	Copy+Print (Bk/S)					1	1		1								
405	Copy+Print (Bk2)	2	2		2	1	1		1								
406	Copy+Print (Bk1)	1	1		1	1	1		1								
411	Copy+Print (L)	1	1		1												
412	Copy+Print (S)					1	1		1								

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
413	Copy+Print (2)	2	2		2	1	1		1								
414	Copy+Print (1)	1	1		1	1	1		1								
421	Copy+Print (Bk/L)												1	1		1	
422	Copy+Print (Bk/S)													1	1	1	
701	Recieved print (Total1)																
702	Recieved print (Total2)																
703	Recieved print (L)																
704	Recieved print (S)																
709	Recieved print (Bk1)																
710	Recieved print (Bk2)																
715	Recieved print (Bk/L)																
716	Recieved print (Bk/S)																
725	Recieved print (Bk/L/2-sided)													1			
726	Recieved print (Bk/S/2-sided)															1	
801	Report print (Total1)																
802	Report print (Total2)																
803	Report print (L)																
804	Report print (S)																
809	Report print (Bk1)																
810	Report print (Bk2)																
815	Report print (Bk/L)																
816	Report print (Bk/S)																
825	Report print (Bk/L)														1		
826	Report print (Bk/S)															1	

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Serial No. on counter check screen	Counter type	Scan system												
		Bk 1-sided L			Bk 1-sided S		Bk 2-sided L			Bk 2-sided S				
		Total scan	E-mail scan	FileShare DBscan	FileShare DB BoxF scan	E-mail FileShare DB Box	Total scan	Total scan	E-mail scan	FileShare DB scan	E-mail FileShare DB scan	FileShare DB scan	E-mail FileShare DB BOX scan	Total scan
501	Scan (Total1)	1					1							
505	Bk scan (Total1)	1				1								
506	Bk scan (Total2)	2				1								
507	Bk scan (L)	1												
508	Bk scan (S)					1								
509	C scanTotal (1)						1						1	
510	C scanTotal (2)						2							1
511	C scan (L)						1							
512	C scan (S)													1
915	Transmission scan total2 (C)												1	
916	Transmission scan total2 (Bk)				1									
917	Transmission scan total3 (C)									1				
918	Transmission scanTotal3 (Bk)			1										
921	Transmission scanTotal5 (C)								1					
922	Transmission scanTotal5 (Bk)			1										
929	Transmission scanTotal6 (C)											1		
930	Transmission scanTotal6 (Bk)				1									
945	Transmission scan/E-mail (C)							1						
946	Transmission scan/E-mail (Bk)	1												

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## Scanner Function Settings (Scanner)

### Numeric Parameter Functional Configuration

No.	Function	Default	Setting range	Unit
001: - 025:	Not used			
026:	Distance from the standby position of CIS to the shading start point.	10	6-48	one unit=0.1mm
027: - 030:	Not used			
031:	Vertical scan start position adjustment	0	0-70	one unit=0.1mm
032:	Not used			
033:	Vertical scan magnification correction	32	0-64	one unit=0.1%
034:	Not used			
035: - 036:	Reader motor speed adjustment	423		
037: - 040:	Not used			
041:	Vertical scan start position adjustment (scanning on ADF)	0	0-70	one unit=0.1mm
042: - 046:	Not used			
047:	Vertical scan magnification correction (scanning on ADF)	32	0-64	one unit=0.1%
048:	Horizontal scan magnification correction (scanning on ADF)	32	0-64	one unit=0.1%
049: - 053:	Not used			
054:	Pickup motor speed correction (when the ADF is used)	32	0-64	one unit=0.1%
055: - 350:	Not used			

If any operation error occurs after changing the setting value, change the setting value to the original one.

### <031Vertical scan start position adjustment>

Adjust the position at which vertical scanning of a book starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

### <033Vertical scan magnification correction>

Correct the magnification of vertical scanning of a book. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

## <035: - 036:Reader motor speed change>

Though no market adjustment work needs to be carried out, enter factory defaults at image processor PCB replacement.

## <041: Vertical scan start position adjustment (when scanning on a document fed from ADF)>

Adjust the position at which vertical scanning of a document fed from the ADF starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

## <047: Vertical scan magnification correction (when scanning on a document fed from ADF)>

Correct the magnification of vertical scanning of a document fed from the ADF. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

## <048: Horizontal scan magnification correction (when scanning on a document fed from ADF)>

Correct the magnification of horizontal scanning of a document fed from the ADF. The smaller the adjustment value, the more the image stretches in the horizontal scanning direction.

This menu is used to adjust the ADF feed motor speed. If you changed the adjustment value in this mode, the adjustment value selected for SCAN NUMERIC>54 must also be incremented/decremented by the same amount.

Do not change the adjustment value extremely.

## Printer Function Settings (Printer)

### Service Soft Switch Settings (SSSW)

#### SSSW-SW15

#### List of Function

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	IFAX Permission of split recording of text data	Enable	Disable
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

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#### Detailed Discussions of Bit 3

Select whether split recording is to be enabled when text data such as a header and body text is recorded. Selecting "Set" may split text data when a small paper size such as A5 is selected. In this case, a page may be split in the middle of a character string.

### Numeric Parameter Settings (NUMERIC Param.)

#### <034: Left-end registration adjustment (multi-purpose tray)>

Adjust the left-end registration margin of paper picked from a multi-purpose tray. The larger the adjustment value, the wider the left-end margin of the image becomes.

#### <035: Left-end registration adjustment (cassette)>

Adjust the left-end registration margin of paper picked from cassette. The larger the adjustment value, the wider the left-end margin of the image becomes.

### ■ <039: Left-end registration adjustment (duplex unit)>

Adjust the left-end registration margin of paper picked from a duplex unit. The larger the adjustment value, the wider the left-end margin of the image becomes.

### ■ <053: Margin adjustment at the leading edge of the copy>

Adjust the margin at the leading edge of the copy. Increasing the value makes the margin at the leading edge larger.

### ■ <054: Margin adjustment at the trailing edge of the copy>

Adjust the margin at the trailing edge of the copy. Increasing the value makes the margin at the trailing edge larger.

### ■ <055: Margin adjustment at the right edge of the copy>

Adjust the margin at the right edge of the copy. Increasing the value makes the margin at the right edge larger.

### ■ <056: Margin adjustment at the left edge of the copy>

Adjust the margin at the left edge of the copy. Increasing the value makes the margin at the left edge larger.

## Setting of System Functions (System)

### Bit Switch Settings

SSSW-SW03 functional configuration

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Imports and exports user information via USB.	Enable	Disable
7	Not used	-	-

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#### Bit 6 details

Select whether to enable the host machine to work as a USB storage device or not. If the host machine is plugged into a PC with this setting enabled, it allows user registration data (user data and telephone registration data) to be imported and exported to and from the PC, except for the data embedded in the department management information and user management IDs in the system management information.

## Counter Indication (Counter)

### Counters

This copier is furnished with a maintenance/supplies counter set (DRBL-1), which can be used to gain rough measures of when to replace supplies. The counter set increments by one on counting each sheet of small-sized paper (up to A4/LTR) and by two on counting each sheet of large-sized paper (larger than A4/LTR).

Maintenance counter list		
Item	Counter	Explanation
TOTAL (Total counter)	SERVICE1	Service total counter 1
	SERVICE2	Service total counter 2
	TTL	Total counter
	COPY	Total copy counter
	PDL-PRT	PDL print counter
	FAX-PRT	Fax print counter
	RPT-PRT	Report print counter
	2-SIDE	Double-sided copy/print counter
PICK-UP (Paper pickup counter)	SCAN	Scan counter
	C1	Cassette jam counter
	C2	Not used
	C3	Not used
	C4	Not used
	MF	Multi-purpose tray pickup total counter
	2-SIDE	Double-sided paper pickup total counter
FEEDER (Feeder related counters)	FEED	ADF pickup total counter
	DFOP-CNT	Not used
JAM (Jam counters)	TTL	Unit total jam count
	FEEDER	ADF total jam count
	SORTER	Not used
	2-SIDE	Duplex unit jam counter
	MF	Multi-purpose tray jam counter
	C1	Cassette jam counter
	C2	Not used
	C3	Not used
C4	Not used	
MISC (Other required counter)	WST-TNR	Not used

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### Clearing Counters

- Maintenance counter all clear

Execute service mode > CLEAR > COUNTER to clear all maintenance counters.

## Report Output (Report)

### Report Output

The table below lists the kinds of reports that are supported.

Item	Explanation
SERVICE DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date)
SYSTEM DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date)
System dump list output SYSTEM DUMP LIST	Transmission count, reception count, record chart count, error count and other outputs
COUNTER REPORT	Counter output
ERROR LOG LIST	Not used
SPEC LIST	Type setting, print speed, memory size, ROM indication, adjustment data and other outputs
SERVICE LABEL	Not used

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Indication sample					
##280	1	7	3	0	0
	##280 number of errors	##281 number of errors	##282 number of errors		

It provides error information on the 3 most recent communications.

```

2003 09/02 TUE 12:00 FAX                                0001
*1 ----- #1 LATEST                                     #000
*2 ----- START TIME                                09/02 10:00
*3 ----- OTHER PARTY                                12345678
*4 ----- MAKER CODE                                 10001000
*5 ----- MACHINE CODE                               0100001 00000000
RCV V.8 FRAME ED 81 85 D4 90 7E 00 00
SYMBOL RATE 3429 baud
DATA RATE 28800 bps [V.34]
TX LVL REDUCTION 0
ERR ABCODE 00
ERR SECTXB 00
ERR SECRXB 00

Rx : (bit 1) 00000100 01110111 01011111 00100011 00000001 10101001 00000001 (bit 56)
   (bit 57) 00000001 00000001 00000100 00000000 00000000 (bit 96)
Tx : (bit 1) 00000000 01000010 00011111 00100001 00000001 00000001 00000001 (bit 56)
   (bit 57) 00000001 00000001 00000100 00000000 00000000 (bit 96)

*8 -----
Rx : NSF CSI DIS CFR MCF MCF
*8 -----
Tx : NSS TSI DCS PIX-288 PPS-NUL PIX-288 PPS-NUL PIX-288 PPS-NUL
Rx : MCF MCF MCF
Tx : PIX-288 PPS-NUL PIX-288 PPS-EOP DCN

#2 ----- #000
START TIME 09/02 09:30
OTHER PARTY 12345678
MAKER CODE 10001000
MACHINE CODE 0100001 00000000
RCV V.8 FRAME ED 81 85 D4 90 7E 00 00
SYMBOL RATE 3429 baud
DATA RATE 28800 bps [V.34]
TX LVL REDUCTION 0
ERR ABCODE 00
ERR SECTXB 00
ERR SECRXB 00

Rx : (bit 1) 00000100 01110111 01011111 00100011 00000001 10101001 00000001 (bit 56)
   (bit 57) 00000001 00000001 00000100 00000000 00000000 (bit 96)
Tx : (bit 1) 00000000 01000010 00011111 00100001 00000001 00000001 00000001 (bit 56)
   (bit 57) 00000001 00000001 00000100 00000000 00000000 (bit 96)

Rx : NSF CSI DIS CFR MCF MCF
Tx : NSS TSI DCS PIX-288 PPS-NUL PIX-288 PPS-NUL PIX-288 PPS-NUL
Rx : MCF MCF MCF
Tx : PIX-288 PPS-NUL PIX-288 PPS-EOP DCN

#3 OLDEST #000
START TIME 09/02 09:00
OTHER PARTY 12345678
MAKER CODE 10001000
MACHINE CODE 0100001 00000000
RCV V.8 FRAME ED 81 85 D4 90 7E 00 00
SYMBOL RATE 3429 baud
DATA RATE 28800 bps [V.34]
TX LVL REDUCTION 0
ERR ABCODE 00
ERR SECTXB 00
ERR SECRXB 00

```

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\*1: service error code.

\*2: START TIME, date and time (in 24-hr notation).

\*3: OTHER PARTY, telephone number sent by the other party.

\*4: MAKER CODE, manufacturer code.

\*5: MACHINE CODE, model code.

\*6: bit 1 through bit 96 of DIS, DCS, or DTC that has been received.

\*7: bit 1 through bit 96 of DIS, DCS, or DTC that has been transmitted.

\*8: RX, procedural signal received; TX, procedural signal transmitted.

## Counter List

Explanation: Maintenance counter output.

(For more detailed information about the maintenance counter output, execute service mode > Display counter information > Counters.)

 Spec List

07/12/2005 13:07 FAX 001

```

*****
*** SPEC REPORT ***
*****

TYPE U.S.A
LBP SPEED 22cpm
TOTAL MEMORY 128MB
MAIN WLaa-03-13
OPTION WLaa-03-13
BOOT WLaa-03-13
ECONT 0509
OPT-CAS 1 0000
OPT-CAS 2 0000
OPT-CAS 3 0000
OPT-DUP 0000
OPT-FIN 0000
ACTIBAT FUNCTION
BDL-IMAGE (1200) OFF
FAX ON
NETWORK ON
PCL ON
PC-SCAN ON
BW-SEND OFF
CL-SEND OFF
PAF OFF
BDL-IMAGE (600) ON
SOFT-ID PRM
TYPE 0 : NONE
OPTION/ENABLE SW
BIT 00:BDL-IMAGE (1200) ON / OFF
BIT 01:FAX ON / OFF
BIT 02:NETWORK ON / OFF
BIT 03:PCL ON / OFF
BIT 04:PC-SCAN OFF / OFF
BIT 05:BW-SEND OFF / OFF
BIT 06:CL-SEND OFF / OFF
BIT 07:PAF OFF / OFF
BIT 08:BDSS ON / OFF
BIT 09:BDL-IMAGE (600) ON / OFF
BIT 10:COUNTER ON / OFF
BODY No. BFDxxxxx
ENGINE CODE 20000016
SIZE TYPE 0 : NONE
TOTAL
TTL 000688
COPY 000685
FAX-PRT 000000
PDL-PRT 000000
RPT-PRT 000000
READ ADJ PRM
026: 0022
031: 0000
032: 0115
033: 0032
034: 0032
041: 0000
042: 0219
043: 0075
044: 0075
045: 0075
046: 0075
047: 0032
048: 0032
054: 0032
213: 0000
214: 0000
215: 0000
WRITE ADJ PRM
031: 0050
032: 0050
033: 0050
034: 0100
035: 0100
036: 0100
037: 0100
038: 0100
039: 0100
OPTION ROM 16MB
USB MEMORY OFF
DELIVERY FULL SENSOR 1 ON
DELIVERY FULL SENSOR 2 OFF
USB SERIAL No. 00519AE904
MAC ADDRESS 00 00 85 51 60 1C
BACKUP BATTERY OFF
LUGIA 2

```

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[1]	Type setting
[2]	Print speed
[3]	Memory size
[4]	ROM version (MAIN/BOOT/ECONT/option cassette/duplex unit/finisher)
[5]	Activation function ON/OFF
[6]	Soft ID information
[7]	Total counter (TOTAL/COPY/FAX/PDL/REPORT record counts)
[8]	Adjustment data (factory scan/record adjustment values)
[9]	Option ROM availability
[10]	USB memory availability
[11]	No. 1/No. 2 paper full sensor sensor availability
[12]	USB serial number
[13]	MAC address
[14]	Backup battery availability
[15]	Anlog purocessor PCB version

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## Data Initialization Mode (Clear)

### Clear

Group	Item	Explanation
TEL & USER DATA		Clears all user-registered and -set areas of telephone registration data and user data. (Telephone registration refers to the registration of codes on one-touch dialing, abbreviated dialing, and group dialing.)
SERVICE DATA		Clears the system dump list, except for counters and clear dates.
COUNTER		Clears the maintenance counter, parts counter and mode-specific counters. Initializes the counter (numerator) in the system dump list.
TYPE		Initializes user data and service data to suit specified destination settings.
SOFT-CNT		Not used
HST	ACTIVITY	Initializes the activity report
	ACCOUNT	Not used
	JAM	Not used
	ERR	Not used
	ALARM	Not used
CARD		Not used
ERR	E355	Not used
	E719	Not used
PWD		Clears the system administrator's password.
FILE SYSTEM		Not used
FORMAT	USB MEMORY	Format the USB memory. (This mode is used when the USB memory error is damaged and E744 occurs.)
	LICENSE DRIVE	Not used
ERDS-DAT		Not used
ALL		Clears user and service data (except for some scan parameters and print parameters), and the counter setting/registration data in the system dump list, except for the print count.

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## Rom Management (Rom)

### ROM Display

The table below lists the items of ROM display mode that are supported.

Item	Explanation
MAIN	Displays the version number of the ROM (SYSTEM) mounted on the image processor PCB.
MAIN2	Displays the version of the ROM (BOOT) mounted on the image processor PCB.
ECONT	Displays the version number of the ROM mounted on the DC controller PCB.
OPROM	Not used

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## Test Mode (Test)

### Overview

#### Outline

Test mode must be executed by keeping track the flow of menu items appearing on the LCD. Menu items in test mode are organized into seven blocks as described below. Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.

#### 1. D-RAM test ((1) D-RAM)

Checks to see if data can be correctly written to and read from D-RAM.

#### 2. Scan test ((2) SCAN TEST)

Used to adjust contact sensor output and the position at which a document fed from the ADF is scanned.

#### 3. Print test ((3) PRINT TEST)

Used to generate service test patterns.

#### 4. Modem test ((4) MODEM TEST)

Performs relay actuation, modem DTMF and tonal signal transmission/reception tests.

#### 5. Aging test ((5) AGING TEST)

Not used.

#### 6. Function test ((6) FUNCTION TEST)

Used to verify the operations of microswitches, sensors, speakers and ADF functions.

#### 7. Roller cleaning mode ((0) ROLLER CLEAN)

Used to clean the delivery roller or ADF pickup roller by idling them.

## Test Mode Menu List

Test mode menu list

To invoke test mode, follow these steps:

1) Enter service mode.

Press the operation panel Additional functions key, 2 key, 8 key and Additional functions key in this order.

2) Press the operation panel arrow keys to show "TEST MODE."

3) Press the OK key.

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	Subgroup	Item 1	Item 2	Item 3	Explanation
TEST MODE [1] - [9], [#]					
(1) DRAM [1] - [2]					
	(1) D-RAM TEST	Write/read check			
	(2) D-RAM TEST	Read check			
(2) SCAN TEST [1] - [8]					
	(1) SHADING	Automatic gain adjustment			
	(3) SHEET POS ADJ	Not used			
	(4) TRASH DETECT	Not used			
	(5), (6), (9), (*)	Not used			
(3) PRINT TEST [1] - [9]					
	(1)	Not used			
	(2)	All-black output			
	(3)	Not used			
	(4)	Back belt output			
	(5), (6), (7), (8), (9), (*)	Not used			

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	Subgroup	Item 1	Item 2	Item 3	Explanation
(4) MODEM TEST [1] - [9]					
	(1) RELAY TEST [1] - [2]				
		(1) RELAY TEST 1			NCU relay (and switch) ON/OFF test
		(2) RELAY TEST 2			230 V common NCU test
	(2) FREQ TEST [0] - [6]				
		(0) FREQ TEST 462Hz			Frequency test
		(1) FREQ TEST 1100Hz			
		(2) FREQ TEST 1300Hz			
		(3) FREQ TEST 1500Hz			
		(4) FREQ TSST 1650Hz			
		(5) FREQ TEST 1850Hz			
		(6) FREQ TEST 2100Hz			
	(4) G3 SIGNAL TX TEST [0] - [8]				
		(0) G3 SIGNAL TX TEST 300bps			G3 signal transmission test
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
	(5) DTMF TEST [0] - [9], *, #				
		(0) G3 SIGNAL TX TEST 300bps			DTMF transmission test
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
		(9) G3 SIGNAL TX TEST TC9600bps			
		(*) G3 SIGNAL TX TEST 12000bps			
		# G3 SIGNAL TX TEST 14400bps			
	(6) MODEM TEST				
	(8) G3 V.34 Tx TEST				Tonal sign reception test
	(9)				V34 G3 signal transmission test
	(5) AGING TEST				Not used
					Not used

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	Subgroup	Item 1	Item 2	Item 3	Explanation
(6) FUNCTION TEST [1] - [9]					
	(1) FUNCTION TEST G3 4800bps				G3 4800 bps signal transmission test
	(3) 6-3 SENSOR [1] - [8]				Sensor checks
		(1) CRG ON FCV ON ALS [of of of]			
		(2) PW of PW2 of			
		(3) DS of DES of HPS of			
		(4) TN Value 125 USB memory of			
		(5) CRG ON FCV ON ALS [of of of]			
		(6), (7), (8)			Not used
	(4) ADF FEED TEST				ADF delivery operation test
	(5) BOOK FEED TEST				Book copy operation test
	(6) 6-6 SPEAKER FREQ:[1] VOL:[2]				Speaker volume and buzzer frequency test
	(7) Operation Panel				Operation panel key, LCD and LED test
	(8) FUNCTION TEST LAMP TEST ALL				Lamp test
	(9) LINE TEST [1] - [3]				Line signal reception test
(0) ROLLER CLEAN 0:PRT 1:ADF					
	(0) PRT ROL CLEAN Press start key				Not used
	(1) ADF ROL CLEAN Press start key				

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## DRAM Test

### D-RAM Test<(1) D-RAM TEST>

#### D-RAM Test((1) D-RAM)

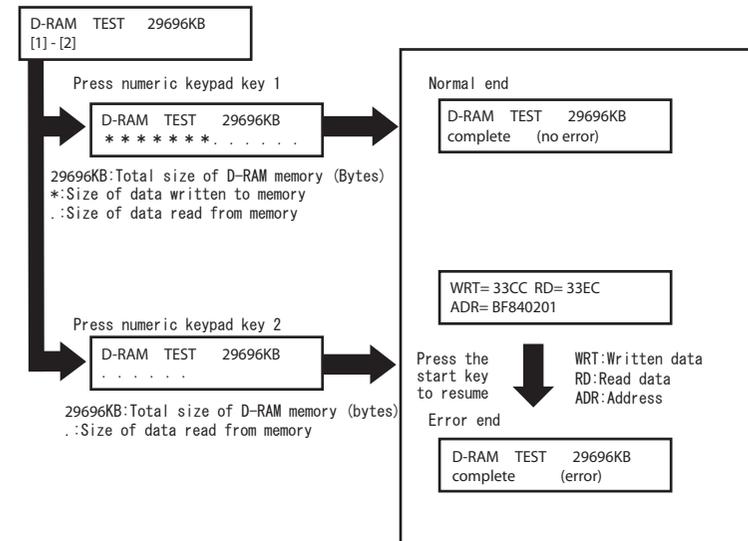
Press the numeric keypad key 1 on the test mode menu to select the D-DRAM test. Press numeric keypad keys 1 and 2 during the D-DRAM test to carry out the individual tests described below.

#### Numeric keypad key 1

Checks to see if data can be correctly written to and read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).

#### Numeric keypad key 2

Checks to see if data can be correctly read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).



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## Scan Test

### Scan Test ((2) SCAN TEST)

Scan test ((2) SCAN TEST)

Press the numeric keypad key 2 on the test mode menu to select the SCAN test.  
Press numeric keypad keys 1 during the SCAN test to carry out the individual tests described below.

Numeric keypad key 1

Corrects the LED output of the contact sensor and sets its parameters automatically. (AGC adjustment)

## Print Test

### Print Test ((3) PRINT TEST)

Print test ((3) PRINT TEST)

Press the numeric keypad key 3 on the test mode menu to select the print test.  
Press numeric keypad keys 2 and 4 during the print test to generate test patterns as described below. Two kinds of service test patterns are available. Other test patterns are reserved for factory/development purposes.

Numeric keypad key 2

(2) BLACK: All-black output

Numeric keypad key 4

(4) ENDURANCE: Black belt output

To cancel test printing, press the stop key.



Use it to make sure that the print pattern does not have white lines or uneven image.



Use it to make sure that the print pattern does not have contraction/elongation of an image or dirt/black lines.

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## Modem Test

### Modem Test ((4) MODEM TEST)

#### MODEM test((4) MODEM TEST)

These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem.

End this test by pressing the Stop key.

Keypad	Type	Description
1	Relay test	Use it to turn on/off a selected relay to execute a switch-over test
2	Frequency test	The modem sends tonal signals from the modular jack and the speaker.
	G3 signal transmission test	The modem sends G3 signals from the modular jack and the speaker.
5	DTMF signal reception test	Use it to generate the DTMF signal coming from the modem using the telephone line terminal and the speaker.
6	Tonal signal reception test	Use it to monitor a specific frequency and the DTMF signal received from the telephone line terminal by causing them to be indicated on the LCD (i.e., the presence/absence as detected). The reception signal is generated by the speaker.
8	V.34 G3 signal transmission test	The modem sends V.34 G3 signals from the modular jack and the speaker.

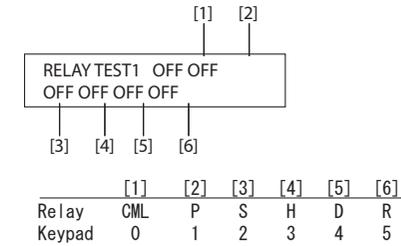
T-8-45

#### Relay Test

Press '1' or '2' on the keypad on the Modem test menu to select relay test mode. Use the keypad to operate the various relays of the NCU. '2' on the keypad is used for 230V machine.

#### Numeric keypad key 1

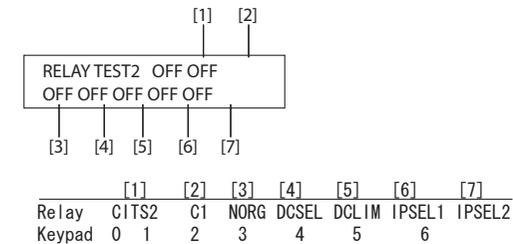
The input key and relay are shown below:



F-8-9

#### Numeric keypad key 2

The input key and relay are shown below:



F-8-10

The touch panel (LCD) is turned on or off in relation to the transmission of the relay operation signal as is operated on the keypad; for this reason, you cannot use the touch panel (LCD) to check a fault on a single relay.

#### Frequency Test

A press on '2' on the keypad from the MODEM test menu selects the frequency test. In this test, signals of the following frequencies from the modem are transmitted using the telephone line terminal and the speaker. To select a different frequency, use the keypad.

Keypad	Frequency
0	462Hz
1	1100Hz
2	1300Hz
3	1500Hz
4	1650Hz
5	1850Hz
6	2100Hz

T-8-46

## MEMO:

The frequency and the output level of individual frequencies are in keeping with the output level set in service mode.

## G3 Signal Transmission Test

A press on '4' on the keypad from the MODEM test menu selects the G3 signal transmission test. In this test, the following G3 signals from the modem are transmitted using the telephone line terminal and the speaker. To select a different transmission speed, use the keypad.

Keypad	Transmission speed
0	300bps
1	2400bps
2	4800bps
3	7200bps
4	9600bps
5	TC7200bps
6	TC9600bps
7	12000bps
8	14400bps

T-8-47

## MEMO:

The output level of individual signals is in keeping with the setting made in service mode.

## DTMF Signal Transmission Test

A press on '5' on the MODEM test menu selects the DTMF signal transmission test. In the test, the following DTMF signals from the modem are transmitted using the telephone line terminal and the speaker. The number pressed on the keypad selects a specific DTMF signal.

## MEMO:

The output level of individual signals is in keeping with the setting made in service mode.

## Tonal/DTMF Signal Reception Test

A press on '6' on the keypad from the MODEM test menu selects the tonal signal/DTMF signal reception 0 test. In this signal, the tonal signal/DTMF signal received from the telephone line terminal can be checked to find out if it was detected by the modem.

## Tonal signal reception test

```
MODEM TEST
OFF OFF OFF
```

```
OFF OFF OFF
```

changes from '0' to '1' in response to detection of a signal of  $462 \pm 25$  Hz.  
changes from '0' to '1' in response to detection of a signal of  $1100 \pm 30$  Hz.  
changes from '0' to '1' in response to detection of a signal of  $2100 \pm 25$  Hz.

## DTMF signal reception test

```
MODEM TEST
OFF OFF OFF 5
```

The received DTMF signals are indicated starting from the right using the 2nd character of the display.

F-8-11

## V.34 G3 Signal Transmission Test

A press on '8' on the keypad from the MODEM test menu selects the V.34 G3 signal transmission test. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the start key. The Baud rate can be changed with the keypad, and the Speed can be changed with the left/right arrow key.

Keypad	Baud rate
0	3429baud
1	3200baud
2	3000baud
3	2800baud
4	2743baud
5	2400baud

T-8-48

Left/right arrow key	Transmission speed
	2400bps
	4800bps
	7200bps
	9600bps
<	12000bps
	14400bps
	16800bps
	19200bps
	21600bps
>	24000bps
	26400bps
	28800bps
	31200bps
	33600bps

T-8-49

## Faculty Test

### Function Test <(6) FUNCTION TEST>

Function test ((6) FUNCTION TEST)

Press the numeric keypad key 6 on the test mode menu to select the function test.

Press numeric keypad keys 1 and 3 to 9 during the function test to enter the menus listed below.

Keypad	Item	Explanation
1	G3 signal transmission test	Transmits 4800-bps G3 signals to a telephone line and speaker.
2	Not used	
3	Sensor test	Sensor actuation test
4	ADF test	ADF operation test
5	Book test	Host machine operation test
6	Speaker test	Speaker operation test
7	Operation panel test	LCD, LED and control key operation test
8	Lamp test	Contact sensor illumination test
9	Line signal reception test	NCU board signal sensor and frequency counter operation test

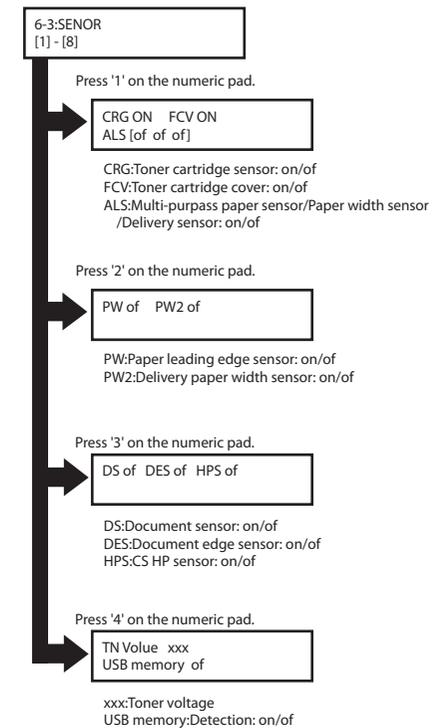
T-8-50

G3 signal transmission test (6-1: G3 4800 bps Tx)

Press numeric keypad key 1 on the FUNCTION TEST menu to select the G3 signal transmission test. This test transmits 4800-bps G3 signals from the telephone line connection terminal and speaker.

Sensor test (6-3: SENSOR)

This mode is used to verify the status of the unit sensors from LCD indications. Press numeric keypad key 3 on the FUNCTION TEST menu to select the sensor test. LCD indications change as the associated sensors turn on and off.



F-8-12



**ADF feed test (ADF FEED TEST)**

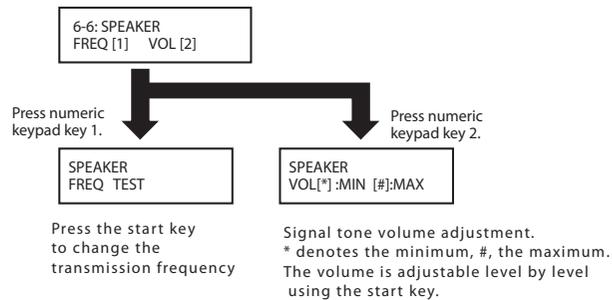
ADF operation verification mode. Press numeric keypad key 4 on the FUNCTION TEST menu to select the ADF feed test. Place a document on the document platen and press the start key to transfer the document at the speed matched to the scan resolution setting. In this test, enter a transfer speed between 500 and 2000 (mm/s) from the numeric keypad and verify the transfer speed. Select between the ON and OFF states with the left and right cursor keys to select between single-sided document feed (OFF) and double-sided document feed (ON).

**Book feed test (6-5: BOOK FEED TEST)**

Performs a book feed operation with a specified magnification and in a specified size.

**Speaker test (6-6: SPEAKER)**

Speaker operation verification mode. Press numeric keypad key 6 on the FUNCTION TEST menu to select the speaker test. In this test, the speaker generates tonal signals at 100 Hz intervals, from 200 Hz to 5 kHz, in varying sound volumes. Signal output from the speaker is thus verified.



F-8-13

**Operation panel test (6-7: OPERATION PANEL)**

Operation panel operation verification mode. Press numeric keypad key 7 on the FUNCTION TEST menu to select the OPERATION PANEL test menu. Functions that can be verified from this menu are listed below.

**- LCD test**

Start the OPERATION PANEL test by pressing the start key. The LCD test is carried out first, displaying all-H characters. Press the start key once again to produce a total black display.

**- LED lamp test**

Press the start key after the LCD test to select the LCD lamp test, turning on all lamps on the operation panel.

**- Operation key test**

Press the start key after the LCD lamp test to select operation key test (1). The test succeeds if the characters appearing in the LCD are erased when the corresponding keys are pressed.

When the entire character display is erased, operation key test (2) launches (only on models with the FAX feature installed). As in (1), the test succeeds if the characters appearing in the LCD are erased when the corresponding keys are pressed.

**Operation key test (1) correspondence diagram**

Character	Operation key	Character	Operation key
0-9,*,#	Numeric key	K	Collate/2 on 1 key
A	Enlarge/ Reduce key	L	Job Cancel/Status Monitor key
B	2-Sided key	M	View Settings key
C	OK key	N	Paper Select key
D	- key	O	Menu key
E	+ key	P	Clear key
F	Image Quality key	Q	Report key
G	Energy Saver key	R	Stop/Reset key
H	Copy key	S	Log In/Out key
I	SCAN key	T	Paper Settings key
J	Density key		

T-8-51

**Operation key test (2) correspondence diagram**

Character	Operation key	Character	Operation key
0	SEND/FAX key	5	Coded key
3	Recall/Pause key	8	Hook key
4	Address Book key	A - R	One-touch key

T-8-52



## Cleaning Mode

### ■ Roller Cleaning Mode ((0) ROLLER CLEAN)

Roller cleaning mode ((0) ROLLER CLEAN)

Press numeric keypad key 0 in test mode to select roller cleaning mode. Press numeric keypad keys 0 and 1 during this test to enter the following menus:

Numeric keypad key 1

Not used.

Numeric keypad key 2

Press the start key clean the unit transfer rollers by idling.

Press the stop key to exit this mode.

# Appendex

- Service Tools
- Solvents and Oil List
- General Timing Chart
- General Circuit Diagram

## Service Tools

The table below lists the standard tools required in service works for this product.

No.	Name of Tool	Tool No.	Use/Remarks
1	Tool bag	TKN-0001	
2	Jumper wire	TKN-0069	with clip
3	Gauge	CK-0057	0.02 - 0.03mm
4	Spring scale	CK-0058	To check cassette spring pressure
5	Phillips screwdriver	CK-0101	M4 and M5 Length: 363mm
6	Phillips screwdriver	CK-0104	M3 and M4 Length: 55mm
7	Phillips screwdriver	CK-0105	M4 and M5 Length: 191mm
8	Phillips screwdriver	CK-0106	M4 and M5 Length: 85mm
9	Flat-blade screwdriver	CK-0111	
10	Flat-blade screwdriver set	CK-0114	6 in a set
11	Hex key and wrench set	CK-0151	5 in a set
12	Fine metallic file	CK-0161	
13	Hex screwdriver	CK-0170	M4 Length: 107mm
14	Wire cutter	CK-0201	
15	Needle-nose pliers	CK-0202	
16	Pliers	CK-0203	
17	Stop ring pliers	CK-0205	for shaft rings
18	Pressing plate	CK-0218	
19	Tweezers	CK-0302	
20	Scale	CK-0303	for 150mm measurement
21	Plastic hammer	CK-0314	
22	Brush	CK-0315	
23	Penlight	CK-0327	
24	Plastic bottle	CK-0328	
25	Lint-free paper	CK-0336	500SH/PKG
26	Lubricant bottle	CK-0349	30cc
27	Plastic bottle	CK-0351	30cc
28	Digital multi-meter	FY9-2032	

T-9-1

## Solvents and Oil List

No.	Type	Purpose	Remark
1	Alcohol	Cleaning: Plastic Rubber Metal part Oil stain Toner stain	<ul style="list-style-type: none"> <li>Keep away from flame</li> <li>Purchase locally</li> </ul>
2	Grease	Apply between gear and shaft	<ul style="list-style-type: none"> <li>SHELL TELLUS 68 (Showa Shell Sekiyu K.K.)</li> <li>Tool No. CK-8003</li> </ul>
3	Lubricant	Apply to gear	<ul style="list-style-type: none"> <li>MOLYKOTE® EM-50L (Dow Corning Corporation)</li> <li>Tool No. HY9-0007</li> </ul>

T-9-2



# General Timing Chart

## General Timing Chart

Timing chart two consecutive prints on LTR paper

Power switch ON



Operation		WAIT	STBY	INTR	PRINT	LASTR	STBY
1	TOP sensor (PS204)				████████████████████		
2	Fixing delivery sensor (PS915)				████████████████████		
3	Print start command (EEC12)			█	████████████████████		
4	Scanner Motor (M202)	████████████████████		████████████████████	████████████████████		
5	Laser Diode	████████████████████		████████████████████	████████████████████		
6	BD Output signal (BDO)				████████████████████		
7	Main Motor (M201)	████████████████████		████████████████████	████████████████████		
8	Primary Charging Bias (AC)	████████████████████		████████████████████	████████████████████		
9	Primary Charging Bias (DC)	████████████████████		████████████████████	████████████████████		
10	Developing Bias	████████████████████		████████████████████	████████████████████		
11	Transfer Charging Bias	████████████████████		████████████████████	████████████████████		
12	Fixing Heater (H201/H2010)	████████████████████		████████████████████	████████████████████		
13	Cassette pickup solenoid (SL201)			█	█		
14	Main Fan (FM201)	████████████████████		████████████████████	████████████████████		
15							
16							
17							
18							
19							
20							



