Canon

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imageCLASS D1100 Series Service Manual

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Introduction

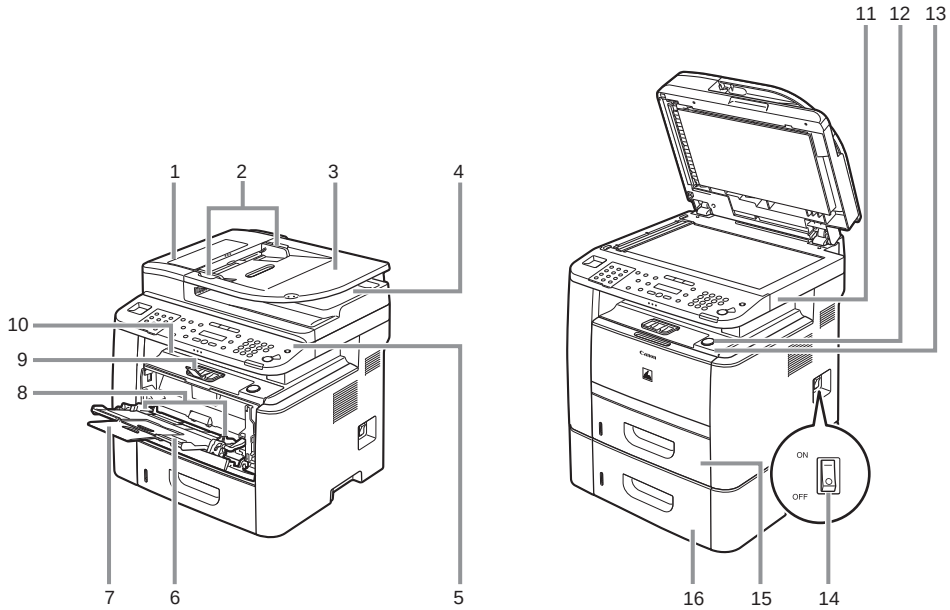
Product Specifications

1.1 Product Specifications

1.1.1 Names of Parts

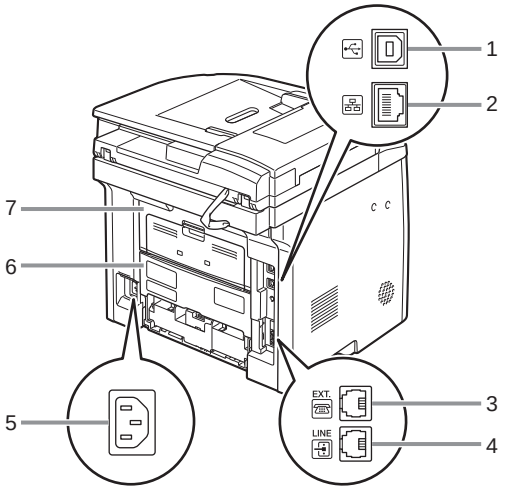
1.1.1.1 External View

Front View



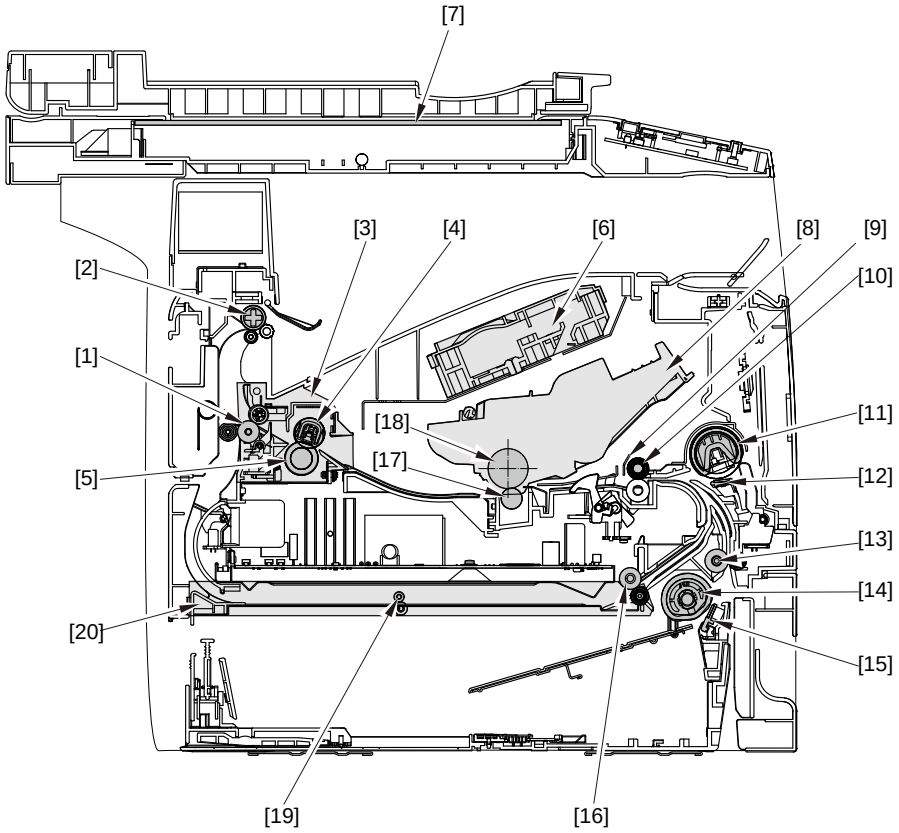
[1] DADF (Duplex Automatic Document Feeder)
[2] Slide guides
[3] Document feeder tray
[4] Document delivery tray
[5] Operation panel
[6] Multi-purpose tray
[7] Multi-purpose tray extension
[8] Slide guides for multi-purpose tray
[9] Paper stopper
[10] Output tray
[11] Scanning platform
[12] Open button
[13] Front cover
[14] Main power switch
[15] Paper cassette
[16] CASSETTE FEEDING UNIT-U1 (Optional)

Rear View



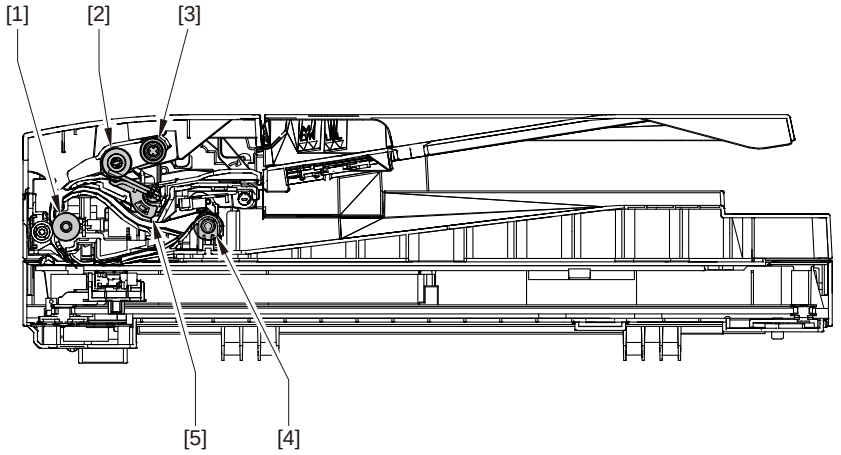
[1] USB port
[2] Ethernet port
[3] External device jack
[4] Telephone line jack
[5] Power socket
[6] Duplex unit cover
[7] Rear cover

1.1.1.2 Section View (Host Machine)



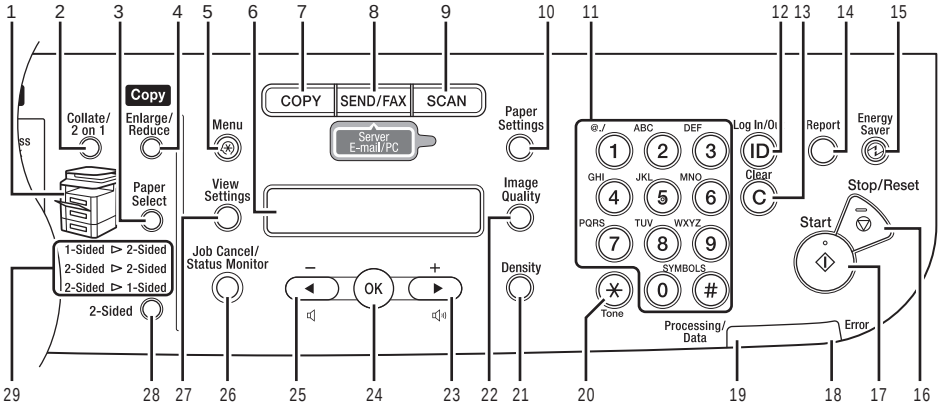
[1] Fixing delivery roller
[2] Face-down delivery roller
[3] Fixing unit
[4] Fixing film unit
[5] Pressure roller
[6] Laser scanner unit
[7] Copyboard glass (scanning glass)
[8] Cartridge
[9] Registration shutter
[10] Registration roller
[11] MP tray pickup roller
[12] MP tray separation pad
[13] Feed roller
[14] Cassette pickup roller
[15] Cassette separation pad
[16] Duplex re-pickup roller
[17] Transfer roller
[18] Photosensitive drum
[19] Duplex feed roller
[20] Duplex feed unit

1.1.1.3 Section View (DADF)

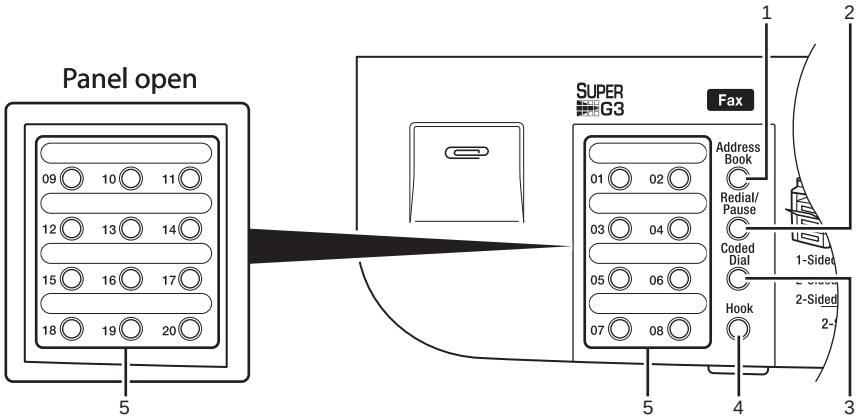


[1] Registration roller
[2] Pickup roller
[3] Separation roller
[4] Delivery roller
[5] Separation pad

1.1.1.4 Control Panel



[1] Paper Select indicator
[2] [Collate/2 on 1] key
[3] [Paper Select] key
[4] [Enlarge/Reduce] key
[5] [Menu] key
[6] Display
[7] [COPY] key
[8] [SEND/FAX] key (For the D1180/D1170/MF6680dn)
[FAX] key (For the D1150)
[SEND] key (For the MF6640dn)"
[9] [SCAN] key
[10] [Paper Settings] key
[11] Numeric keys
[12] [Log In/Out] key (ID key)
[13] [Clear] key
[14] [Report] key
[15] [Energy Saver] key
[16] [Stop/Reset] key
[17] [Start] key
[18] Error indicator
[19] Processing/Data indicator
[20] [Tone] key
[21] [Density] key
[22] [Image Quality] key
[23] [+] key
[24] [OK] key
[25] [-] key
[26] [Job Cancel/Status Monitor] key
[27] [View Settings] key
[28] [2-Sided] key
[29] 2-Sided mode indicator
[30]



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

1.1.2 Safety

1.1.2.1 Safety of the Host Machine's Laser Mechanism

Laser radiation can prove to be harmful to the human body. The host machine's laser scanning system is completely sealed by means of a protective housing and external covers so that its light will not leak outside the host machine as long as the host machine is used normally.

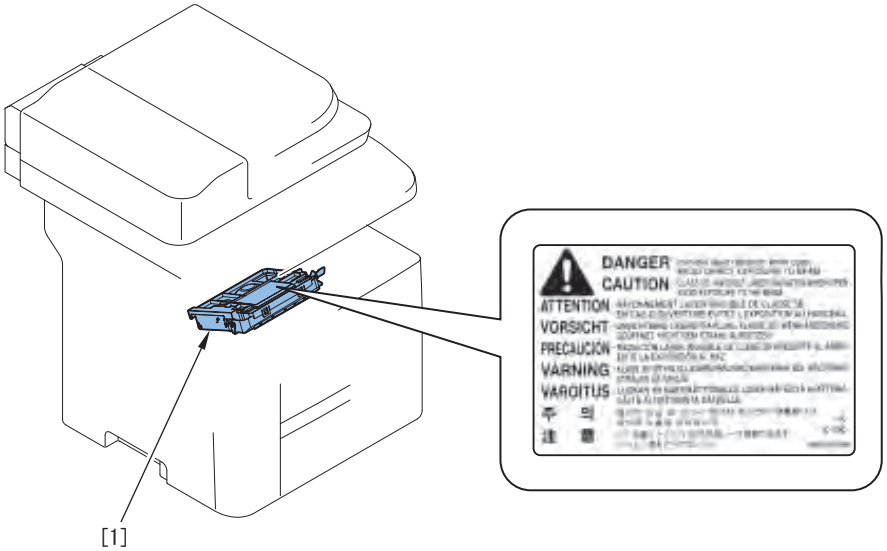
1.1.2.2 CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the US Food and Drug Administrator put into forth regulations that relate to laser products on August 2nd, 1976. These regulations apply to laser products produced on and after August 1st, 1976, and prohibit the sale of laser products without certification.
The following labels certify compliance with the CDRH regulations, and must be attached to all laser products that are sold in the US.

CANON
30-2, SHIMOMARUKO, 3-CHOME, OHTAKU, TOKYO,
146, JAPAN.
MANUFACTURED:
THIS PRODUCT CONFORMS WITH DHHS RADIATION
PERFORMANCE STANDARD 21CFR CHAPTER 1
SUBCHAPTER J.

1.1.2.3 Handling of the Laser Assembly

Invisible laser beam is radiated within the laser scanner unit. Laser beam radiation may pose damage to eyes. Be sure not to disassemble the laser scanner unit. The host machine's laser scanner unit cannot be adjusted in the field. The label [1] shown in the figure below is attached onto the cover of the laser scanner unit.



1.1.2.4 Safety of the Toner

Toner in General
Toner is a non-toxic material made up of plastic, iron, and small amounts of dye.

Do not throw toner into fire. Doing so can lead to explosion.

Contact with Toner

1. Toner on the skin or clothes must be removed by washing with water immediately.
2. The use of warm water must be avoided, doing so will cause the toner to turn gel-like and to permanently fuse with the fibers of the clothes.
3. Contact with vinyl must also be avoided, as toner can readily react.

1.1.2.5 Fire Attention

It is dangerous to throw the parts that include combustible materials such as lithium battery and toner cartridge etc., into fire. Any used battery must always be disposed according to the appropriate local regulations.

1.1.2.6 Notes when handling a lithium battery

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).

Wenn mit dem falschen Typ ausgewechselt, besteht Explosionsgefahr.
Gebrauchte Batterien gemäß der Anleitung beseitigen.

1.1.3 Product Specifications

1.1.3.1 Product Specifications

Copyboard	Fixed
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 diff er 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)
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	75 sheets (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 (referenve velue)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
PDL	BDL-Image, PCL5 / PCLXL
SEND	Yes

1.1.3.2 ADF Specifications

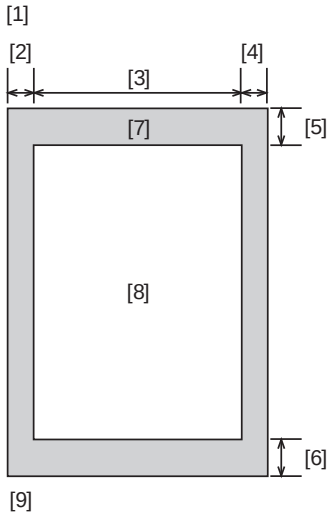
Original orientation	Face-up method
Original position	center reference
Original processing mode	1-sided to 1-sided copy, 2-sided to 2-sided copy, 1-sided to 2-sided copy, 2-sided to 1-sided copy
Original reading	stream reading method
Stack	[JJ] A4/LTR: 50 sheets, LGL: 30 sheets [LL/HH] A4/LTR: 30 sheets, LGL: 15 sheets
Mixed original sizes	Yes
Original AE detection	No
Original size recognition	No
Stamp	No
Operating environment	pursuant to the host machine

1.1.3.3 FAX Specifications

Applicable lines	PSTN
Transmission method	Half-duplex communication
Modulation method	G3
Transmission speed	33,600bps
Coding	JBIG, MMR, MR, MH,
Error correction	ECM
Minimum receive input level	V.17, V.27ter, V29: -6 to -43 dBm V.34: -10 to -43 dBm
Modem IC	CONEXANT DFX336
Scanning line density	Standard: 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 gradation sequence
Printing resolution	600 dpi x 600 dpi
Reduction for reception	Automatic reduction: 75 to 100%
FAX/TEL switching	Yes
Answering machine connection	Yes
Remote reception	Yes
Auto dialing	Yes
Delayed transmission	No
Broadcast transmission	Number of Destination: maximum 201
Dual access	Reservation Capacity: maximum 70
Image data backup	Yes

1.1.4 Function List

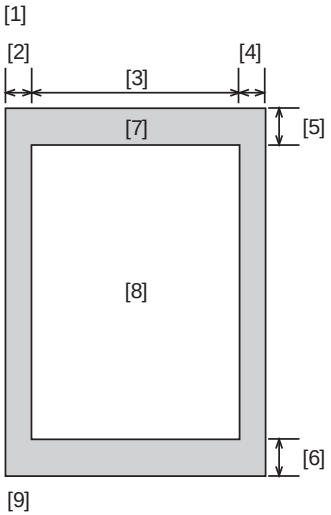
1.1.4.1 Scanning Range



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

item	A4	Letter	Legal
effective scanning width	206 +2.0/-2.0 mm	212 +2.0/-2.0 mm	212 +2.0/-2.0 mm
left margin	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm
right margin	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm
leading edge margin	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm
trailing edge margin	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm	2.0 +2.0/-2.0 mm

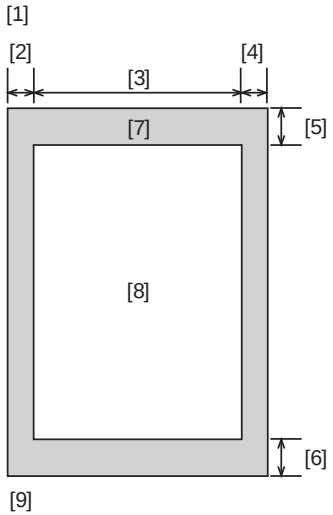
1.1.4.2 Recording Range (Copy)



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

item	A4	Letter	Legal
effective recording width	204 +1.0/-2.0 mm	210 +2.0/-2.0 mm	210 +2.0/-2.0 mm
effective recording left margin	3.0 +2.0/-2.0 mm	3.0 +2.0/-2.0 mm	3.0 +2.0/-2.0 mm
right margin	3.0 +2.0/-2.0 mm	3.0 +2.0/-2.0 mm	3.0 +2.0/-2.0 mm
leading edge margin	4.0 +2.0/-2.0 mm	4.0 +2.0/-2.0 mm	4.0 +2.0/-2.0 mm
trailing edge margin	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm

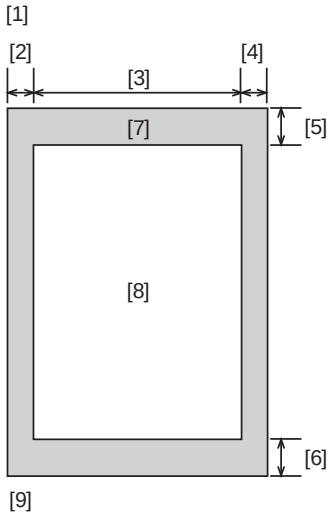
1.1.4.3 Recording Range (Reception)



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

item	A4	Letter	Legal
effective recording width	205 +3.0/-3.0 mm	210.9 +3.0/-3.0 mm	210 +3.0/-3.0 mm
left margin	3.0 +3.0/-3.0 mm	3.0 +3.0/-3.0 mm	3.0 +3.0/-3.0 mm
right margin	3.0 +3.0/-5.0 mm	3.0 +5.0/-5.0 mm	3.0 +5.0/-5.0 mm
leading edge margin	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm
trailing edge margin	6.0 +6.0/-6.0 mm	6.0 +6.0/-6.0 mm	6.0 +6.0/-6.0 mm

1.1.4.4 Recording Range (Printer)



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

item	A4	Letter	Legal
left margin	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm
right margin	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm	5.0 +2.0/-2.0 mm
leading edge margin	6.0 +2.0/-2.0 mm	6.0 +2.0/-2.0 mm	6.0 +2.0/-2.0 mm
trailing edge margin	6.0 +2.0/-2.0 mm	6.0 +2.0/-2.0 mm	6.0 +2.0/-2.0 mm

1.1.4.5 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, 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

1.1.4.6 Network Specifications

Connector	RJ45
Interface	Ethernet II
Communication speed	10Base-T/100Base-TX
Communication mode	FULL DUPLEX/half DUPLEX
Supported protocol	TCP/IP

1.1.4.7 SEND Specifications

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, MacOS X v10.2.8 or later, Red Hat Linux 7.2

Hardware environment

- Windows or IBM compatible PC

Protocol

- NetBIOS over TCP/IP (NetBT)

Mail forwarding/receiving server software

- Microsoft Exchange Server (Windows)
(Microsoft Exchange Server5.5 + Service Pack1 or later)
- Lotus Domino R4.6 or later (Windows)
- Sendmail8.93 or later (UNIX)
- Qpopper2.53 or later (UNIX)

E-mail sending/receiving functions

- Communication Protocol: SMTP, POP3
- Authentication at transmission: POP before SMTP
- Authentication at reception: POP3, SMTP
- Data Format: JPEG (color), PDF (B&W), PDF (compact) (color), TIFF
- Sending file by dividing it on a page basis is available
- Resolution: 100 x 100, 150 x 150, 200 x 100, 200 x 200, 300 x 300, 400 x 400, 600 x 600(dpi)
- Document size: A4, A5, A5R, B5, LTR, LGL, STMTR, STMT

I-Fax sending/receiving functions

- No I-FAX function

Faile sending function

- Communication Protocol: SMB (NetBios over TCP/IP)
- Data Format: TIFF (B&W), JPEG/PDF (color)
- Sending file by dividing it on a page basis is available
- Resolution:
  B&W: 150 x 150, 200 x 100, 200 x 200, 300 x 300, 400 x 400, 600 x 600(dpi)
  Color: 300 x 300(dpi)*
  *For JPEG transmission, resolution of 100 x 100, 150 x 150, 200 x 200 is available

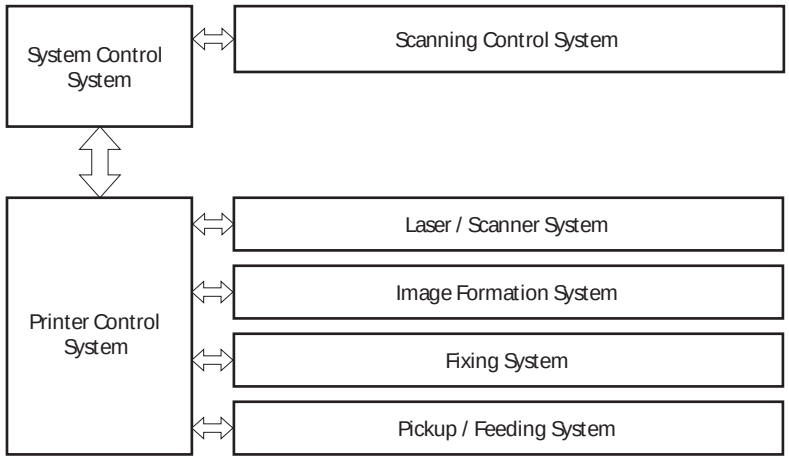
Basic Operation

- Construction
- Basic Sequence

2.1 Construction

2.1.1 Function Configuration

The functions of this host machine are mainly composed of the 7 blocks: System Control System, Scanning Control System, Printer Control System, Laser Scanner System, Image Formation System, Fixing System, Pickup/Feeding System.
Below is the block diagram.



2.2 Basic Sequence

2.2.1 Basic Operation Sequence

The operations of this host machine are controlled by CPUs of the SCNT board within the Reader Controller System and the engine controller board within the Engine Control System. The table below shows the purpose of each interval and the outline of the operations of reader unit and the engine from turnon of the power supply to stop of each motor after printing.

Period	Duration	Operation
WAIT	From the time the power switch is tumed on or the door is closeduntil the printer gets ready for a print operation.	Brings the printer to printable condition. The printer perform the following during this period: - Detects cartridge presence.
STBY (Standby)	From the end of WAIT or LSTR period until either the print command is received from the SCNT or the power switch is tumed off.	Maintains the printer in printable condition.
INTR (Initial rotation)	From the time the print command is received from the formatter untul the temperature of the fixing urti reaches is targeted temperature.	Starts up each high-voltage biases,laser scanner and fixing unit in preparing for a print operation.
PRINT	From the end of INTR period until the last media completes the fixing operation.	Forms the image on the photosensitive drum based on the VIDEO signals from the SCNT. Transfers and fuses the toner image to the print media.
LSTR	From the end of PRINT period until the motor stops rotationg.	Moves the last printed sheet out of the printer. Stop laster scanner operation and high-voltage biases output. The printer enters INTR period as soon as the LSTR period is completed if the SCNT sends another print command.

3 Main Controller

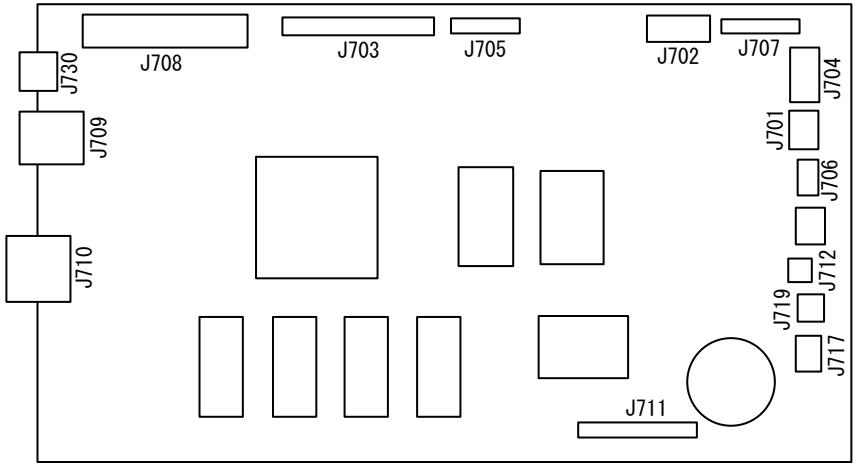
Power Control Outline

3.1 Power Control Outline

3.1.1 SCNT PCB

Main control feature for SCNT PCB showing under with connector type.

4in1 modle (Printer, Scaner, Copier,Fax)



Connector No.	Role
J701	ADF/Reader driver PCB I/F
J703	Engine controller PCB I/F
J704	Power suplly PCB I/F
J705	Laser scanner unit I/F
J706	Controller fan/Power suplly cooling fan i/F
J707	Control panel PCB I/F
J708	ADF/Reader driver PCB I/F
J709	USB I/F
J710	Network I/F
J711	NCU PCB I/F
J712	Capasitor PCB I/F
J717	Speaker
J719	Multi-purpose tray pickup sorenoid

4 Document Exposure System

- Basic constraction

4.1 Basic Construction

4.1.1 Specifications / Control / Function List

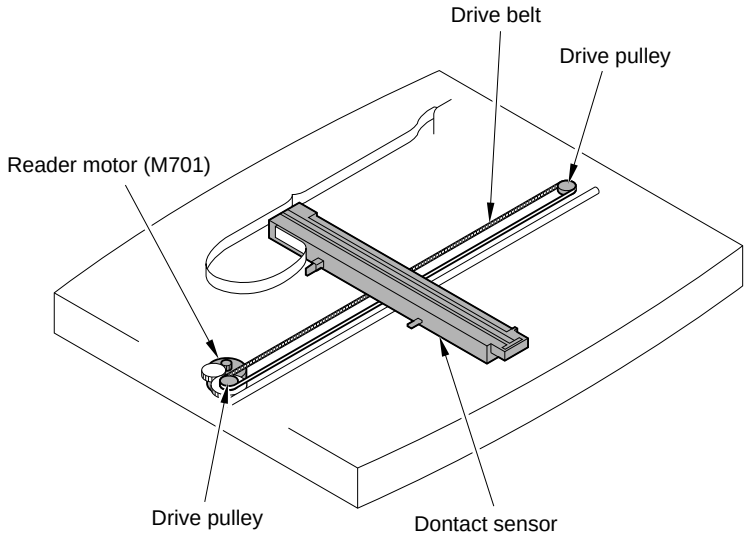
item	function / method
document exposure	LED
document scan	Book mode: scan by the shift of the contact Book mode: scan by the shift of the contact sensor (CS) ADF: document stream reading by fixed contact sensor (CS)
scanning resolution	600 dpi (horizontal scanner) X 600 dpi (vertical scanner)
number 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

4.1.2 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 SCNT 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.



5 Document Feeding System

- Basic Operation
- Detection Jams

5.1 Basic Operation

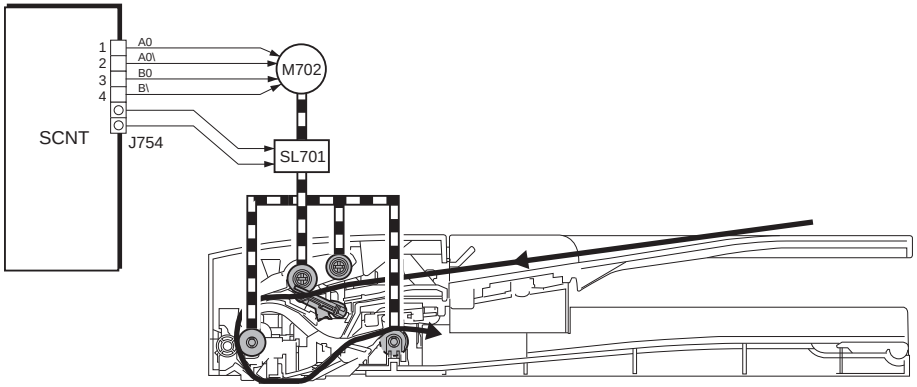
5.1.1 Basic Operation

Pickup/Feed/Delivery Operation

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

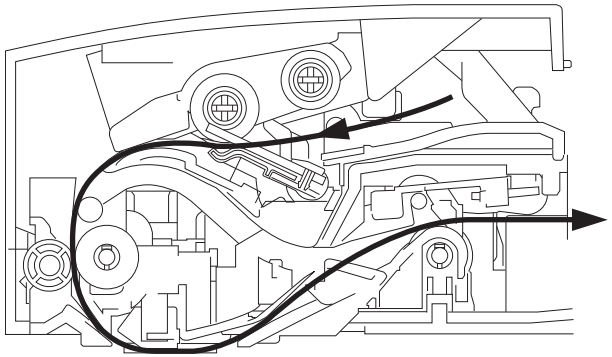
1 motor (DADF motor: M702) is engaged in pickup/feeding/delivery.

At the start of copy/fax/scan, the DADF motor (M702) is driven by the drive command from the SCNT 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.

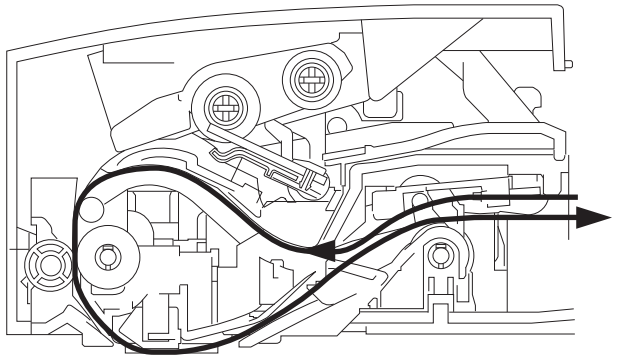


Operation at duplex reading

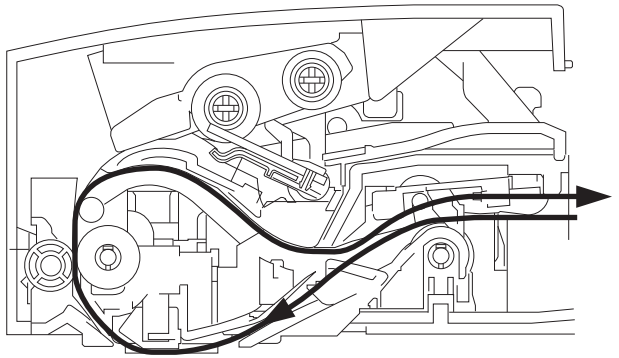
- Pickup to Reading of the 1st side



- Reverse to Reading of the 2nd side



- Delivery



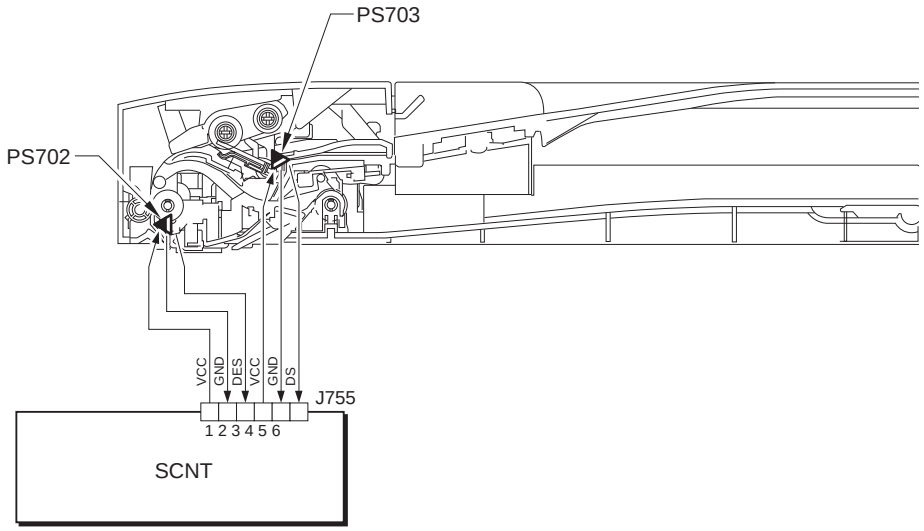
5.1.2 Original Detection

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.



5.2 Detection Jams

5.2.1 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

6 Laser Exposure

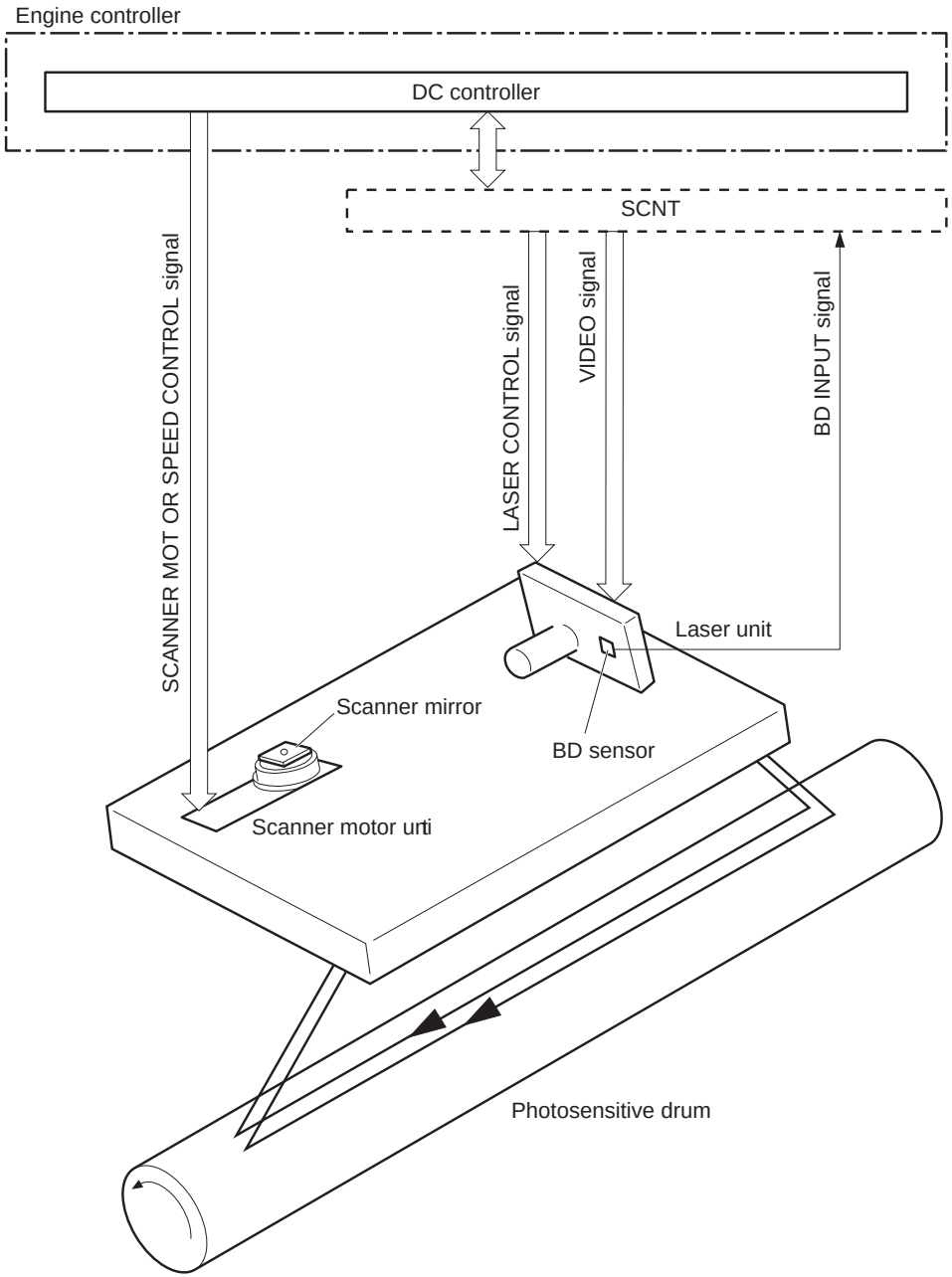
Basic Operation

6.1 Basic Operation

6.1.1 Laser Scanner System

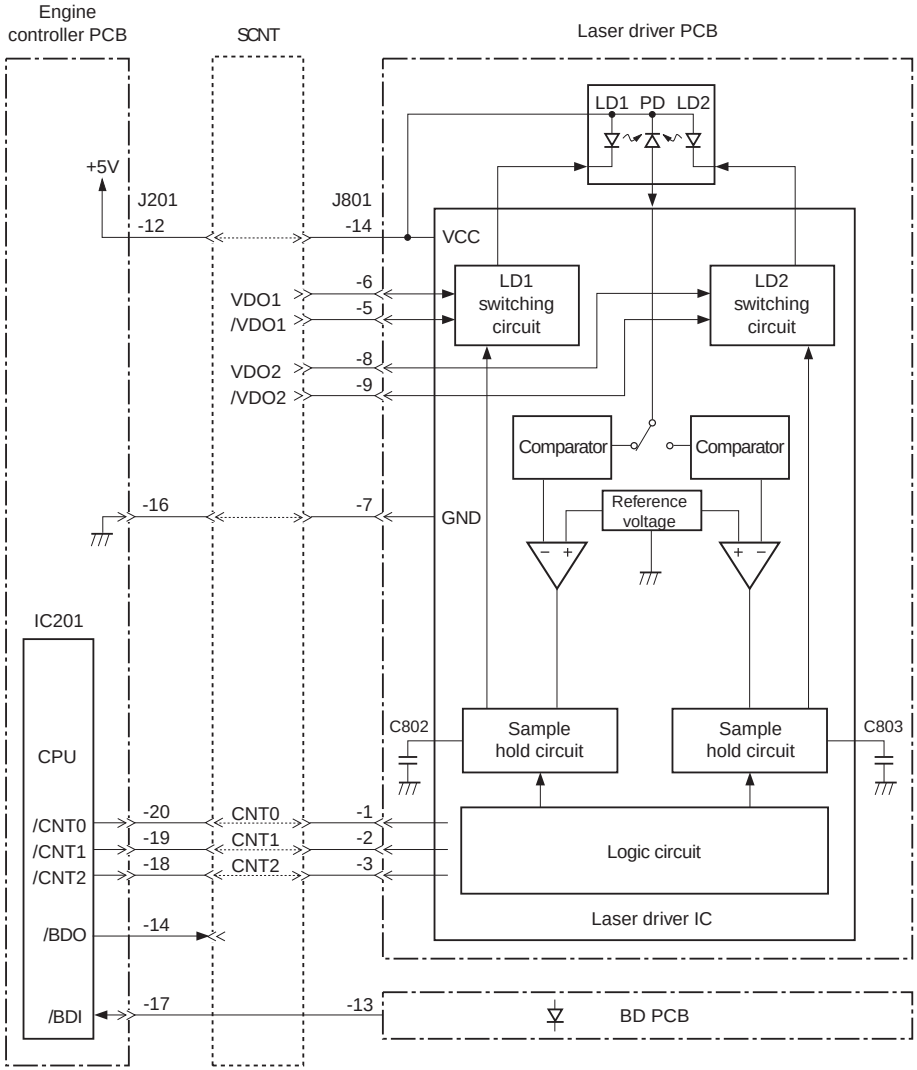
6.1.1.1. Outline

The laser scanner system forms a latent image on the photosensitive drum according to the VIDEO signals sent from the SCNT.
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 engine controller.



6.1.1.2 Laser Control Circuit

The laser control controls the laser driver to turn the two laser diodes (LD1, LD2) ON/OFF according to the LASER CONTROL signals sent from the engine controller.
The circuit diagram of the laser control is illustrated below.



The engine controller sends the VIDEO signals (VDO1, /VDO1, VDO2, /VDO2) and the LASER CONTROL signals (CNT0, CNT1, CNT2) to the logic circuit in the laser driver IC. The VIDEO signals are for image formation and the LASER CONTROL signals are for switching the operational modes of the laser. The laser driver IC controls the laser according to the combination of the CNT0, CNT1, and CNT2. The table below indicates combinations of the LASER CONTROL signals (CNT0, CNT1, CNT2).

Operation mode	CNT2	CNT1	CNT0	Remarks
Discharge mode	L	L	L	C802, C803 discharge
Data output mode	H	H	H	Used during normal printing
LD1 APC mode	L	H	L	Used during LD1 APC mode
LD2 APC mode	L	L	H	Used during LD2 APC mode
Force LD1, LD2 ON	H	L	L	Used during test printing
Force LD1, LD2 OFF	L	H	H	Used during image masking period

This control incorporates the LASER CONTROL signals for the following 4 controls:

1) Laser emission control
2) Automatic power control (APC)
3) Horizontal synchronization control
4) Image masking control

6.1.2 Controlling the Laser Activation Timing

6.1.2.1 Laser emission control

The laser emission control controls the laser diodes (LD1, LD2) to turn ON/OFF at constant light intensity according to the VIDEO signals (VDO1, /VDO1, VDO2,/VDO2) from the SCNT.
When the LASER CONTROL signals (CNT0, CNT1, CNT2) are put into print mode, the laser driver turns the laser diodes ON/OFF according to the VIDEO signals.

6.1.2.2 Horizontal synchronous control

The horizontal synchronous control is to horizontally align the starting position of writing the image.
The following is the sequence of this control.

1) The engine controller puts the LASER CONTROL signal into LD1APCON mode or LD2APCON mode during the unblanking interval (see Note). Accordingly,the laser driver allows the laser diode (LD1, LD2) to emit light with APC.
2) Each laser beam is sent to the BD PCB in the scanning optical path of the laser beam.
3) The BD PCB detects these laser beams, generates BD INPUT signal (/BDI), and sends it to the engine controller.

4) The engine controller generates the HORIZONTAL SYNCHRONOUS signal (/BDO) based on the /BDI signal and sends the /BPO signal to the video controller.
5) The video controller outputs the VIDEO signals (VDO1, /VDO1, VDO2, /VDO2) to the DC controller to horizontally align the starting position of writing the image, when it inputs the /BDO signal

Unblanking interval
The interval when a laser diode emits light in the non-image area.

6.1.3 Laser Control

6.1.3.1 Automatic power control (APC)

The automatic power control is to maintain the light intensity emitted from the laser diode to be constant.
There are two APCs, one is the initial APC (Note 1) and the other is the between-lines APC (Note 2). Both are controlled by the laser driver in the same way. Thefollowing is the sequence of this control.

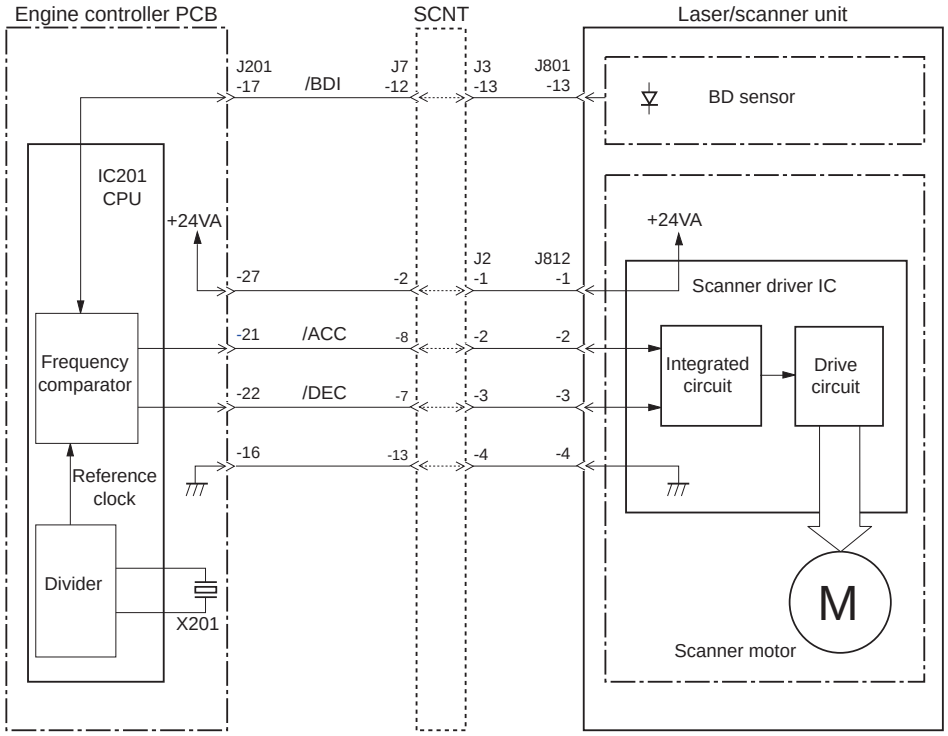
1) When the LASER CONTROL signals (CNT0, CNT1, CNT2) put into the LD1APC mode, the laser driver allows the LD1 to emit light.
2) The light intensity of the LD1 is detected by the photo diode (PD) and it is converted from current to voltage. Then it is compared with the reference voltage (voltage equivalent to the target laser light intensity).
3) The laser driver controls the laser current until it reaches the voltage level of the LD1's targeted light intensity.
4) The LD1 is turned OFF forcefully when the LASER CONTROL signal puts into the force LD OFF mode. The laser driver stores the adjusted light intensity in C802.
5) After the light intensity adjustment of LD1 is completed, the LASER CONTROL signal puts into the LD2APCON mode and the laser driver allows the LD2 toemit light with APC. The laser light intensity of LD2 is adjusted and stored in C803 as same as LD1.

1) Initial APC
Performed during the INTER period. It adjusts the laser light intensity by APC.
2) Between-lines APC
Performed during the printing period. It adjusts the laser light intensity for one line before the line starts to be written.

6.1.4 Laser Scanner Motor Control

6.1.4.1 Outline

The scanner motor control is to rotate the scanner motor in order to strike the laser beam at the correct position on the photosensitive drum.
The circuit diagram of the scanner motor control is illustrated below.



6.1.4.2 Scanner motor speed control

The scanner motor is 3-phase DC brushless motor unified with the hole effect device and it is unified with the drive circuit.
When the printer is turned ON, the CPU (IC201) divides the oscillated frequency of the crystal oscillator (X201) and generates the reference clock.
The CPU puts the SCANNER MOTOR ACCELERATION signal (/ACC) into "L" and the DECELERATION signal (/DEC) into "H", when the print command is sent from the video controller.
Then the scanner driver IC rotates the scanner motor when the /ACC signal puts into "L".

The scanner motor increases the rotational count only during the /ACC signal is "L".
The CPU allows the laser to emit light with APC during the scanner motor is rotating.
Accordingly, the BD INPUT signal (/BDI) is sent to the CPU from the BD sensor via the video controller. The CPU compares the intervals between the /BDI signal and the reference clock with the frequency comparator in the CPU, and controls the rotational count of the scanner motor by controlling the /ACC signal until the rotational count reaches its prescribed count.
The CPU decreases the rotational count of the scanner motor by putting the SCANNER MOTOR DECRELATION signal (/DEC) into "L" and the ACCELERATION signal (/ACC) into "H" to stop the scanner motor.

6.1.4.3 Optical Unit Failure Detection

The optical unit failure detection manages the laser scanner failure detection functions.
The engine controller determines an optical unit failure and notifies the SCNT if the laser scanner encounters the following conditions:

- If the scanner motor does not reach a specified rotation within a specified period of start-up.
- If the rotation of the scanner motor is out of specified range for a specified period during drive.
- If an out of specified BD interval is detected during a print operation.

7 Image Formation

Basic Operation

7.1 Basic Operation

7.1.1 Image-Formation System

7.1.1.1. Outline

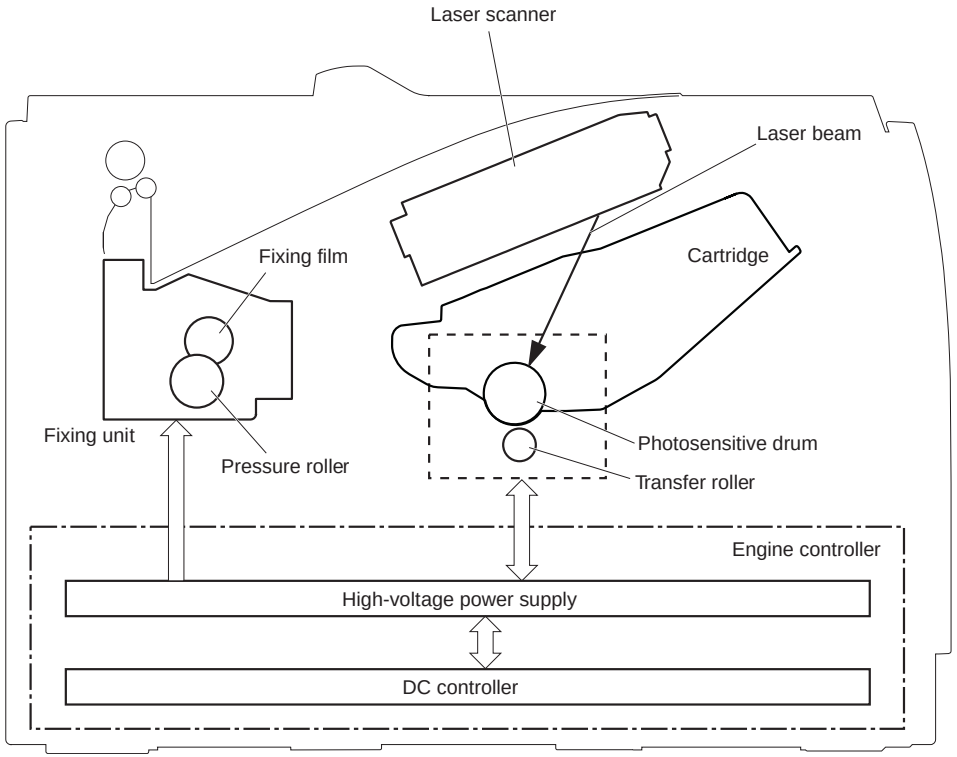
The image-formation system forms a toner image on print media.

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.

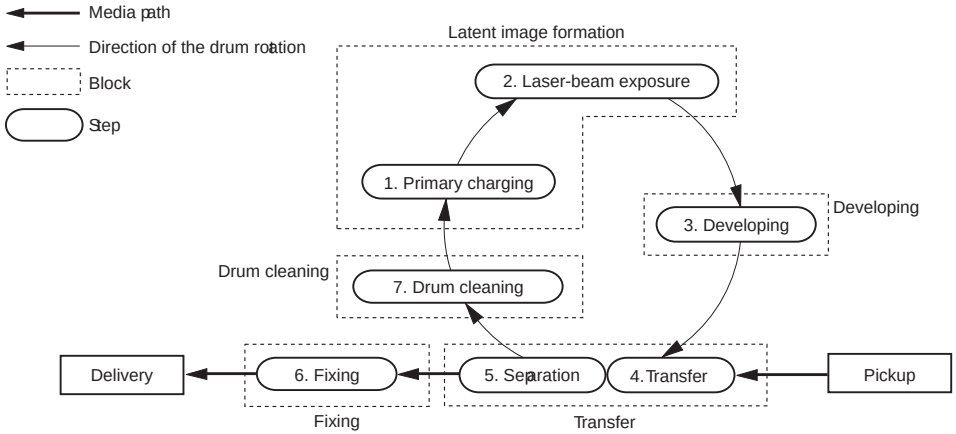
Figure below shows the image-formation system.



The print process shows the basic operation process for image formation by the printer.

The print process of this machine has the main 5 blocks and 7 steps. The toner image is formed on papers by following the steps of each block.

The following is the outline of the blocks and steps of the print process.



1) Electrostatic latent image formation block

Electrostatic images are formed on the photosensitive drum.

Step1: Primary charging (Charges negative potential evenly on the surface of the photosensitive drum)

Step 2: Laser beam exposure (Forms electrostatic images on the photosensitive drum)

2) Developing block

Put the toner on the electrostatic latent image on the surface of the photosensitive drum to visualize

Step 3: Development

3) Transfer block

The toner image on the surface of the photosensitive drum is transferred to papers.

Step 4: Transfer (Transfers the toner on the photosensitive drum to a paper)

Step 5: Separation (Separates the paper from the photosensitive drum)

4) Fixing block

The toner image is fixed on the paper.

Step 6: Fixing

5) Drum cleaning block

The residual toner on the photosensitive drum is removed.

Step 7: Drum cleaning (Removes the residual toner on the photosensitive drum)

7.1.2 High-voltage Power Supply

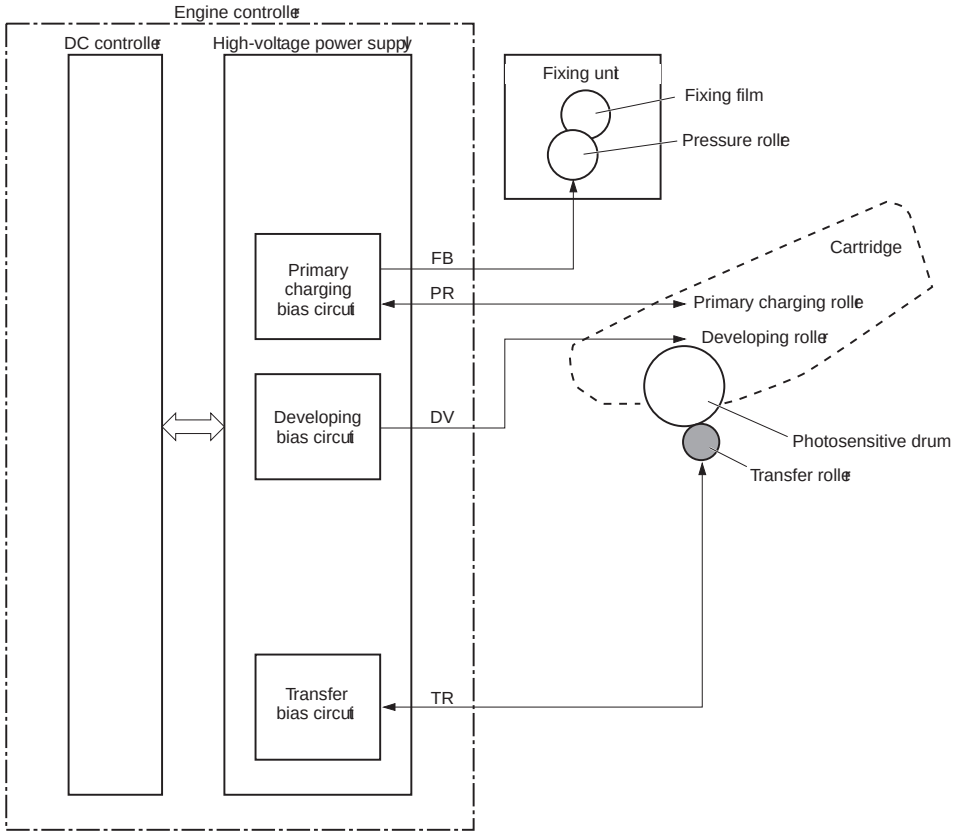
7.1.2.1 Outline

The high-voltage power supply applies biases to the following components:

- Primary charging roller
- Developing roller
- Transfer roller
- Fixing film

The DC controller controls the high-voltage power supply to generate biases. See "7.1.1. Image-Formation System" on Page 7-1 for detailed information.

Figure below shows the block diagram of the high-voltage power supply.



7.2.2.1 Toner Cartridge Presence Detection

After power ON, or after door open/close, print develop AC power pressure before first initial rotation start, ,determine the status of toner cartridge with average value in 1.25sec from power pressure value (PA value) of toner level detect PCB.

To get average value, sampling interval is 10 sec, sampling 125 times.

Table shows the determine result of the cartridge installation status determine from power pressure value of toner level detect PCB.

Average value over 2.65V	Cartridge unavailable/installed cartridge with out toner seal
Power pressure output value under 2.65V	Cartridge available

7.1.2.2 Toner Level Detection

Toner level is calculate with the average value from 1 rotation of stirring stick/2 sheet of paper that is the power pressure value (PA value) from toner level detect PCB in develop pressure printing status. Toner level detect is point level detect. There for, it only detect LOW point of toner level.

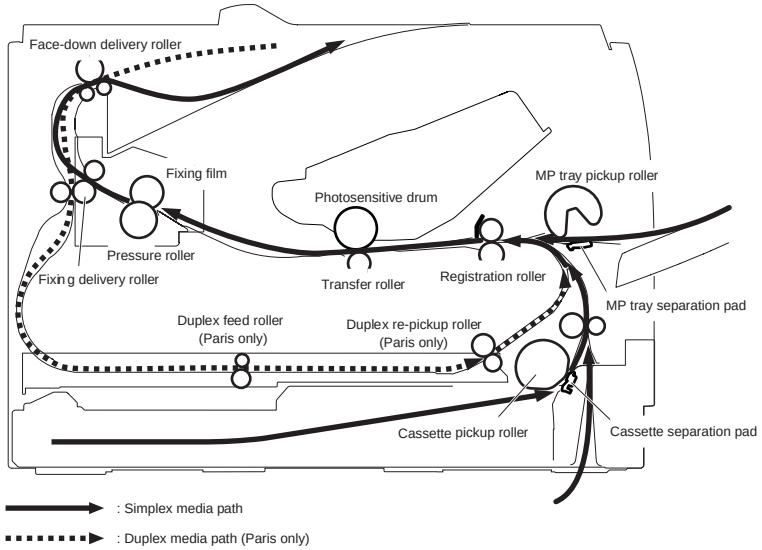
8 Pickup and Feed System

Media Feed System

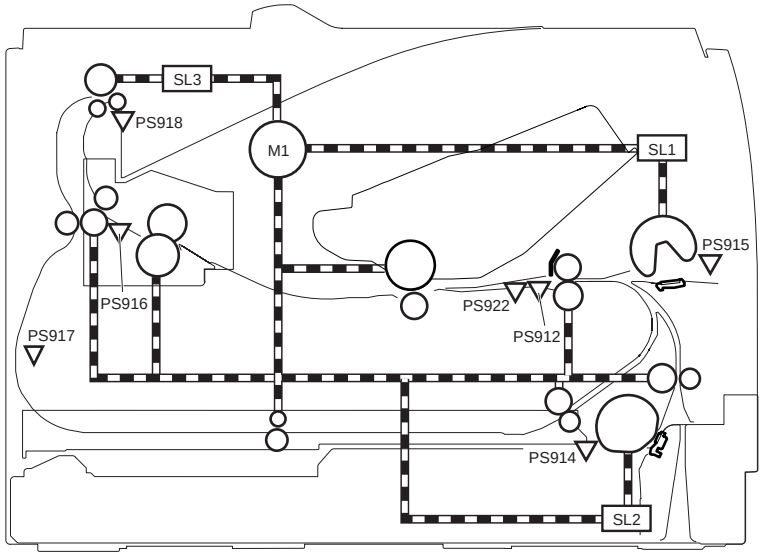
8.1 Media Feed System

8.1.1 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 (Paris) reverses and refeeds the print media to print on both sides of media.
Figure shows the media path.



The electrical components are shown in Figure and listed in Table.



Electrical component		Single
Main motor	M201	MAIN MOTOR CONTROL signal
Cassette pickup solenoid	SL201	CASSETTE PICKUP SOLENOID SONTROL signal
MP tray pickup solenoid	SL203	MP TRAY PICKUP SOLENOID CONTROL signal
Duplex reverse solenoid	SL202	DUPLEX REVERSE SOLENOID CONTROL signal
TOP sensor	PS204	TOP signal
Cassette media presence	PS203	CASSETTE MEDIA PRESENCE signal
MP tray media presence sensor	PS202	MP TRAY MEDIA PRESENCE signal
Fixing delivery sensor	PS915	FIXING DELIVERY signal
Duplex reverse sensor	PS201	DUPLEX REVERSE signal
FD tray media full sensor	PS206	FD TRAY MEDIA FULL signal
Media width sensor	PS205	MEDIA WIDTH signal

8.1.1.1 Paper Jam Detection

This machine will check paper jam from the status of TOP sensor, delivery sensor and reversing sensor at sequences describe later.

Monitor TOP sensor every 1msec, when detect paper 5 times continuously determines there is TOP sensor paper, when detect no paper 5 times continuously determines there is no TOP sensor paper, After power turned ON, check sensor status for 5 times, initial value will be the status that are detected for more then 3 times. For example, check status of sensor for 5 times, with the status of no paper for more then 3 times, no paper status fill be the initial value.

Monitor delivery sensor every 5msec, when detect paper 5 times continuously determines there is delivery sensor paper, when detect no paper 5 times continuously determines there is no delivery sensor paper, After power turned ON, check sensor status for 5 times, initial value will be the status that are detected for more then 3 times. For example, check status of sensor for 5 times, with the status of no paper for more then 3 times, no paper status fill be the initial value.

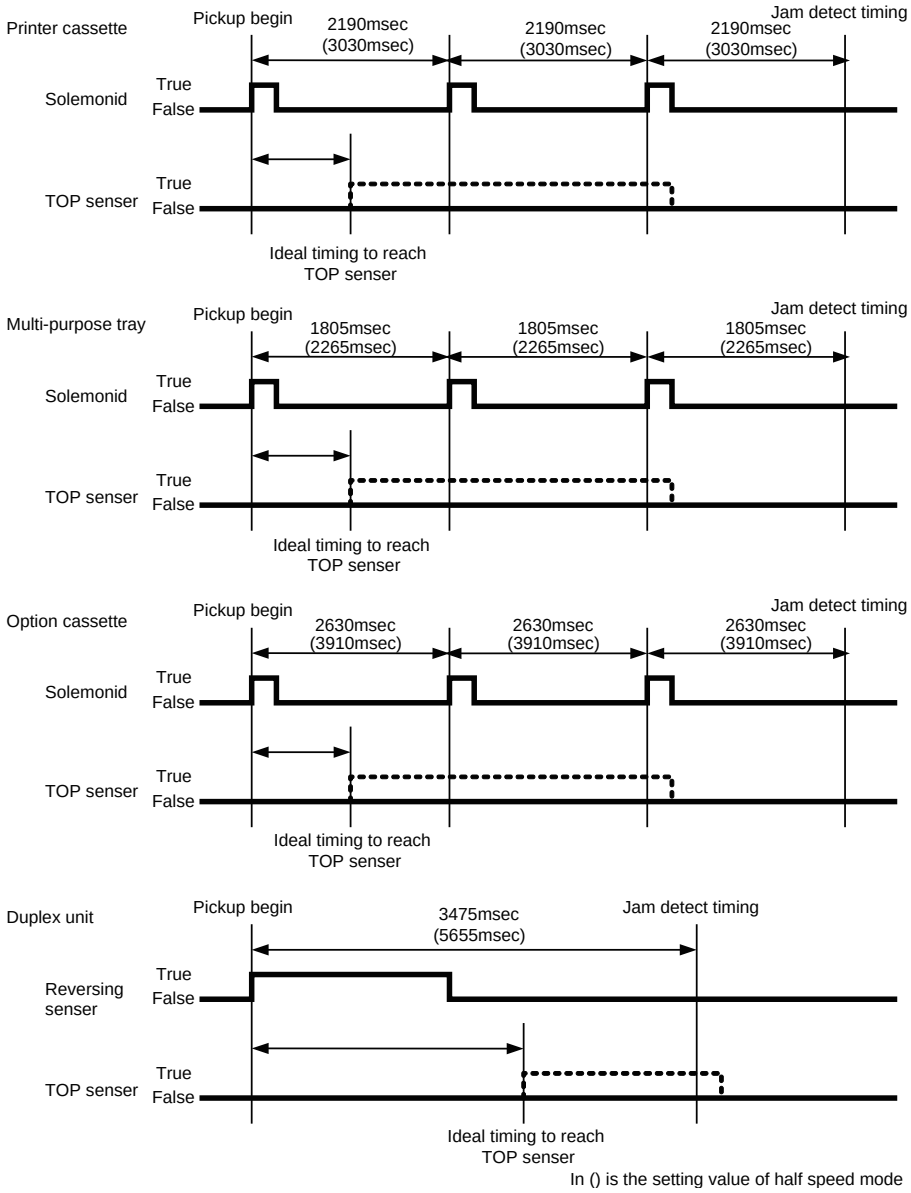
Monitor reversing sensor every 5msec, when detect paper 5 times continuously determines there is reversing sensor paper, when detect no paper 5 times continuously determines there is no reversing sensor paper, After power turned ON, check sensor status for 5 times, initial value will be the status that are detected for more then 3 times. For example, check status of sensor for 5 times, with the status of no paper for more then 3 times, no paper status fill be the initial value.

Jams has following types:

(1)	Pickup delay jam	------	No paper reach TOP sensor after Pickup
(2)	Pickup stationary jam	------	Paper stationary on TOP sensor.
(3)	Delivery delay jam	------	No paper reach delivery sensor.
(4)	Wrapping jam	------	Paper wrapped on pressure roller.
(5)	Delivery stationary jam	------	Paper stationary on delivery sensor.
(6)	Reversing delay jam	------	No paper reach reversing sensor.
(7)	Reversing stationary jam	------	Paper stationary on reversing sensor.
(8)	Door open jam	------	Paper on sensor when door open.
(9)	Residual media jam	------	Paper on sensor when initial rotation start, during initial rotation, or end of initial rotation.

(1) Pickup delay jam detection

After pickup starts, pickup delay jam detection sequence start.

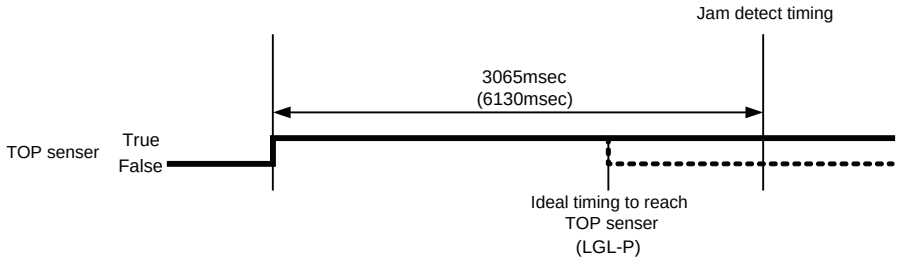


After pickup from printer cassette, if no paper detect in 2190msec (3030msec in half speed mode), pickup retry will function 2times. but, incase of detect preceding sheet with TOP sensor, retry will be hold until rear side of preceding sheet pass TOP sensor. After the final pickup retry, pickup delay jam will be determine if no paper detect on TOP sensor in 2190msec (3030msec in half speed mode).
After pickup from multi-purpose tray, if no paper detect in 1805msec (2265msec in half speed mode), pickup retry will function 2times. but, incase of detect preceding sheet with TOP sensor, retry will be hold until rear side of preceding sheet pass TOP sensor. After the final pickup retry, pickup delay jam will be determine if no paper detect on TOP sensor in 1805msec (2265msec in half speed mode).
After pickup from option cassette, if no paper detect in 2630msec (3910msec in half speed mode), pickup retry will function 2times. but, incase of detect preceding sheet with TOP sensor, retry will be hold until rear side of preceding sheet pass TOP sensor. After the final pickup retry, pickup delay jam will be determine if no paper detect on TOP sensor in 2630msec (3910msec in half speed mode).
Incase of duplex unit pickup, after detect top of paper with reversing sensor in 3475msec (5655msec in half speed mode) if no paper detect with TOP sensor, pickup delay jam will be determine.

Note : margin of pickup delay jam is 1.3sec for each pickup destination.

(2) Pickup stationary jam detection

After TOP sensor detect top of page, move to pickup stationary jam detection sequence.



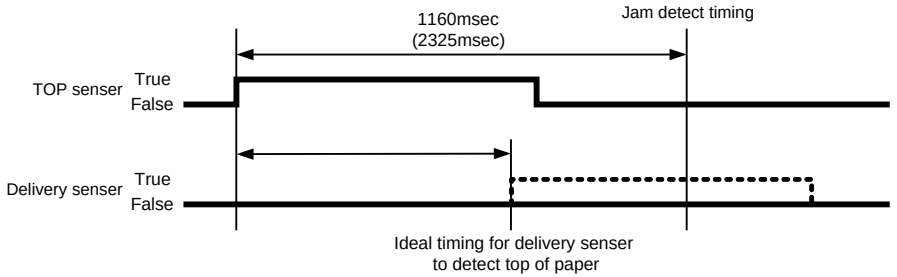
In () is the setting value of half speed mode

After top of paper pass TOP sensor, if no end of paper detect at TOP sensor in 3065msec (6130msec in half speed mode), pickup stationary jam will be determine.

Note : Setting time of pickup stationary jam is the time for 2 A4 sheets pass.

(3) Delivery delay jam detection

After TOP sensor detect top of page, delivery delay jam detection sequence start.



In () is the setting value of half speed mode

Time between TOP sensor detect top of paper until 1160msec (2325msec in half speed mode) after, if delivery sensor can not detect paper, delivery delay jam will be determine. (If there is preceding sheet, function after end of preceding sheet detection.)

1160msec= about 236.4mm

Note : Distance from top detect position of TOP sensor to the top detect position of delivery sensor is 212.1mm, so distance margin is 24mm. Distance from top detect position of TOP sensor to the fixing nip is 187.4mm, so it will wrap 49mm if wrapping from top. 1 rotation of film is 56.5mm, so it will not wrap for 1 rotation.

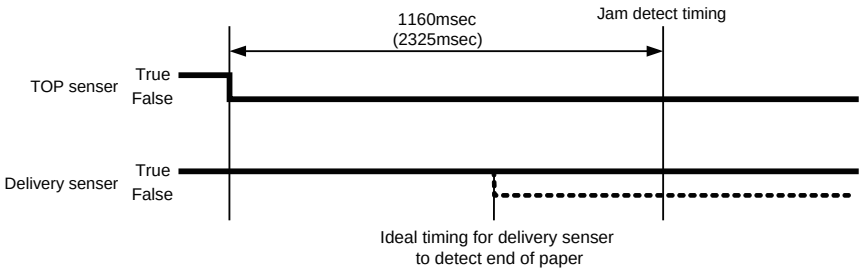
(4) Wrapping jam detection

100ms after determined that is not delivery delay jam, move to wrapping jam detection sequence.
Since100msec after top of paper been detect from delivery sensor, until 915msec (1835msec in half speed mode) after TOP sensor detect end of paper, if no paper detect from delivery sensor, wrapping jam will be determine.

Note : 100msec since delivery sensor detect leading edge, no wrapping jam detection, it is to prevent leading edge chattering. Incase of wrapping from top side of film, about 20mm of top edge and rear edge will be wrapped, lower stream side is hard to process jam, for upper stream 20mm is to be known as small amout, so no userbility will be impaired.

(5) Delivery stationary jam detection

After determined that is not wrapping jam, move to delivery stationary jam detection sequence.



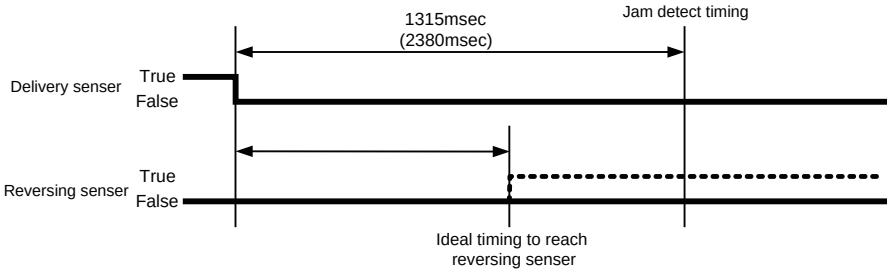
In () is the setting value of half speed mode

Time between TOP sensor detect top of paper until 1160msec (2325msec in half speed mode) after, if delivery sensor can not detect no paper for once, delivery stationary jam will be determine.

Note : Consider the influence of chattering when detect no paper, host machine set margin of 30mm. Set more then this is meaning less, because paper interval is 64mm.

(6) Reversing delay jam

Incase of duplex print, after determine that is not delivery stationary jam, move to reversing stationary jam detection.

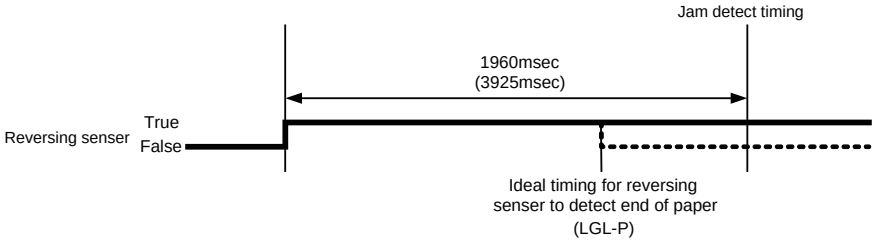


In () is the setting value of half speed mode

Time between delivery sensor detect end of paper until 1315msec (2380msec in half speed mode) after, if reversing sensor can not detect no paper for once, reversing stationary jam will be determine.

Note : Distance from delevery sensor to FD nip is 85mm, distance from FD nip to reversing sensor is 143.6mm. Since reversing stationary jam detection time is 1315msec (2380msec in half speed mode), so the maximam feed distance for detect reversing jam is about 268.0mm. Therefor, as long as the paper reachs reversing sensor, the paper will not be consider as jam , even if a paper reverses at FD nip. (Margin is about 30mm)

(7) Reversing sensor delay jam



In () is the setting value of half speed mode

After top of paper detect at reversing sensor, if no end of paper detect at reversing sensor in 1975msec (3955msec in half speed mode), reversing stationary jam will be determine.

(8) Door open jam detection

When detect door open, if paper feeding status is set, it will determine door open jam. But if detect any other jam status before that, the status will be hold.

(9) Residual media jam

It will be residual media jam if any following situation happen.

1. When initialization process starts, if detect paper on TOP sensor, delivery sensor, paper width sensor or reversing sensor, determine as residual media jam.

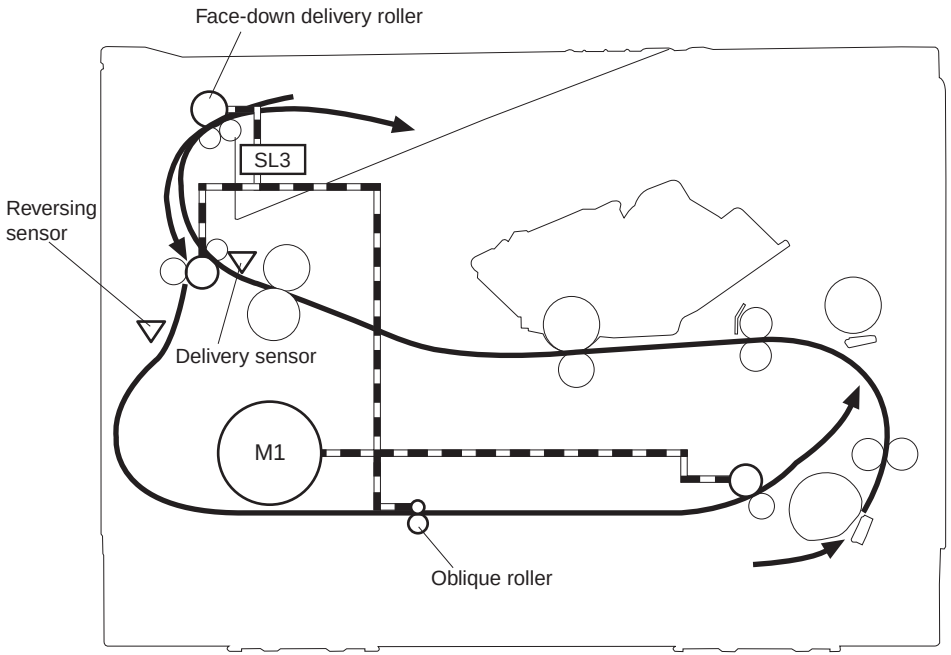
2. When initialization process is running, if paper is detect on TOP sensor or delivery sensor, determine as residual media jam.

3. When last rotation end, if paper detect on TOP sensor, delivery sensor, reversing sensor or paper width sensor, determine as residual media jam.

8.2.1 Duplex Feeding

8.2.1.1 Outline

This printer operates the duplex printing by switching the printing side of the paper. That is, after one side is printed, the print paper is fed to the face-down tray once and re-fed into the duplex feed unit.
The paper path of the duplex printing is illustrated below.



8.2.1.2 Operation

The duplex feed unit is driven by the main motor (M201).
When the first side of print paper is printed, the paper is once fed to the face-down tray.
The engine controller turns the reversing solenoid (SL202) ON after approx. 0.13 sec. from when the delivery sensor (PS915) detects the trailing edge of the print paper. It results that the delivery roller rotates reversely and feeds the print paper into the duplex feed unit.
Then the engine controller turns the SL202 OFF at same time of that the reversing sensor (PS201) detects the trailing edge of the paper.
The oblique roller feeds the print paper as its right side edge contacts with the standard plate. It allow the paper to be compensated its skew and fed to the registration roller from the duplex feed unit.
Then the second side of the paper is printed and the paper is delivered to the face-down tray.

9 Fixing System

Overview/Configuration

9.1 Overview/Configuration

9.1.1 Specification/Control/Function List

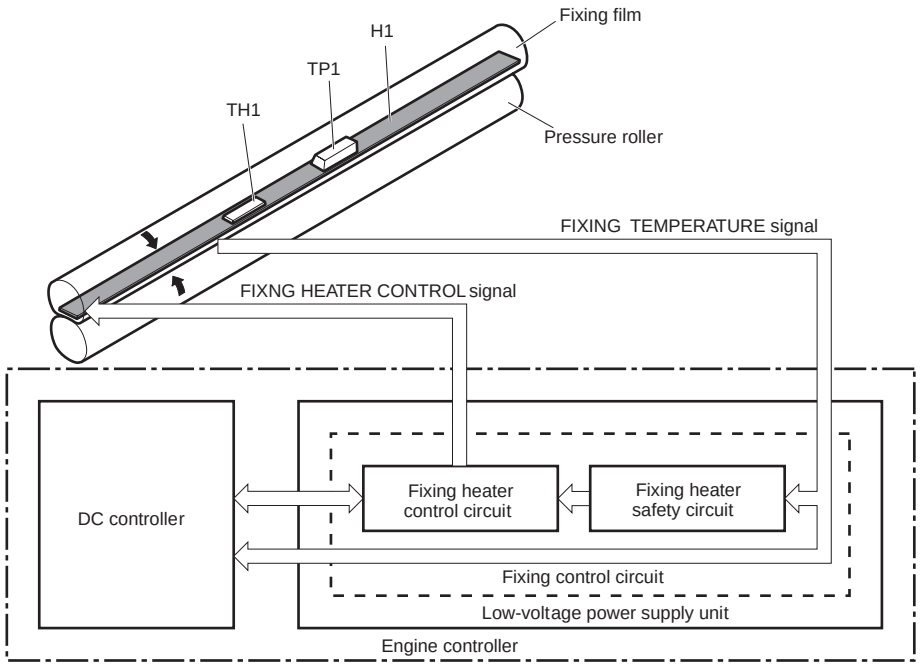
Item	Function/Method
Fixing method	On-demand fixing
Fixing heater	Flat heater
Fixing temperature detection	Thermistor (TH1): temperature control, detection of abnormality Temperature fuse (TP1): detection of abnormality
Fixing temperature control	Temperature control at startup Temperature control at normal times Temperature control at sheet-to-sheet interval
Protection function	Temperature error detection with the thermistor Temperature rise detection with the temperature fuse

9.1.2 Outline

The fixing control circuit controls the temperature in the fixing unit. The printer uses an on-demand

fixing method.

Figure below shows the configuration of the fixing control circuit.



- 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.

9.1.3 Fixing mode

This machine, has 12 fixing mode as showing under.

Fixing mode	Moving condition	
Normal mode	Feedin direction lengh is longer then -7.4mm on Letter size, and feeding paper has been determine as wide width, engine will move automatically.	Cange with video interface command. For detail, refer to [Video Interface Specification].
Heavy1 mode		
Heavy2 mode		
Light mode		
OHT mode		
Label mode		
Silent mode		
Small size rough mdoe (Envelope1 mode)	Feedin direction lengh is shorter then -7.4mm on Letter size, engine will move automatically.	When select either Heavy1 / Heavy2 / Envelope / Label mode on video interface command.
Small size mode (Envelope2 mode)		When select either Normal / Light / OHT / silent / Envelope2 mode on video interface command.
Small size rough mdoe (Envelope3 mode)		When select Envelope3 mode on video interface command.
Long narrow mode	Feedin direction lengh is longer then -7.4mm on Letter size, and feeding paper has been determine as narrow width, engine will move automatically.	
16K mode	When feeding 16K, engine move automatically.	When select either Normal / OHT / Light / Envelope2 mode on video interface command.
16K rough mode		When select either Heavy1 / Heavy2 / Label/ Envelope / Envelope3 mode on video interface command.

9.1.4 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

9.1.6 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 initial rotation 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.
- If an out of specified frequency of the FREQUENCY signal is detected after the printer is turned on and the signal is once detected.

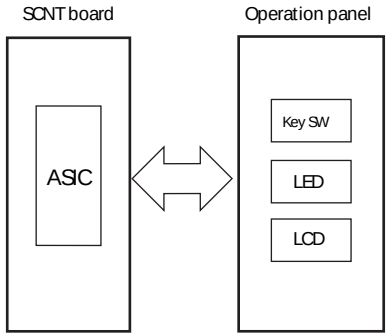
10 External and Controls

Control Panel

10.1 Control Panel

10.1.1 Outline

The machine's control panel consists of the following PCBs, and is controlled by the SCNT board.



10.1.2 Protective function

The low-voltage power supply has a protective function against overcurrent and overvoltage to prevent failures in the power supply circuit. If there flows an overcurrent or an overvoltage, the system automatically cuts off the output voltage.
If the DC power is not being supplied from the low-voltage power supply, the protective function may be running. In such case, turn off the power switch and unplug the power cord. Do not plug in the power cord or turn the power switch on again until the root cause is found.
In addition, two fuses in the low-voltage power supply protect against overcurrent. If overcurrent flows into the AC line, the fuse blows and cuts off the power distribution.

10.1.3 Safety

For user and service technician's safety, the printer has a function to interrupt 24V power supply to the fixing unit and the high-voltage power supply unit.
The door switch is turned off and 24V stops under the following condition:

- If the cartridge door is opened (SW301 is turned off)

The printer has the power switch on the DC line so the AC power flows even the power switch is turned off. Be sure to unplug the power cord before disassembling the printer.

10.1.5 Low-voltage power supply unit failure detection

The DC controller determines a low-voltage power supply unit failure, stops +24V1 output and notifies the formatter when it encounters the following condition:

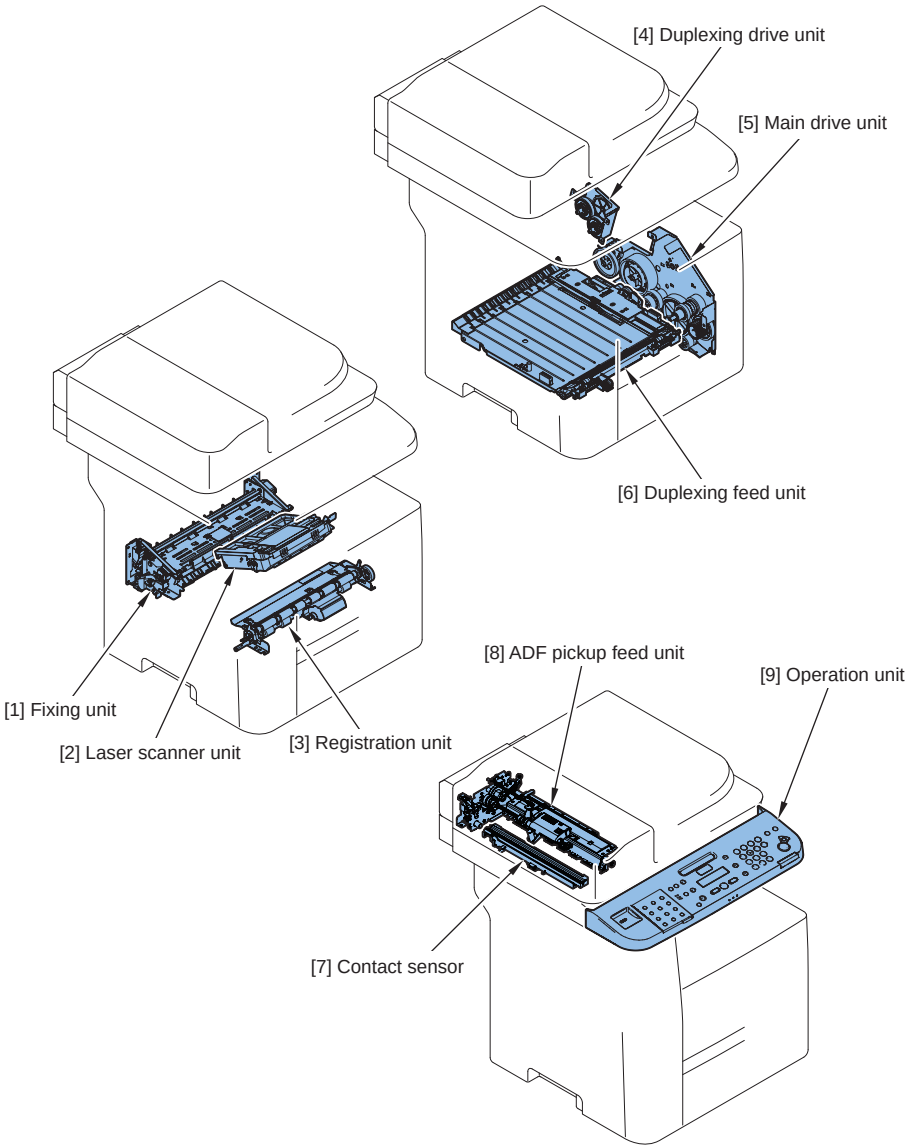
- +24V is higher than a specified voltage

Parts Replacement and Installation Procedure

- Outline of Electrical Components
- Parts Replacement Procedure

11.1 Outline of Electrical Components

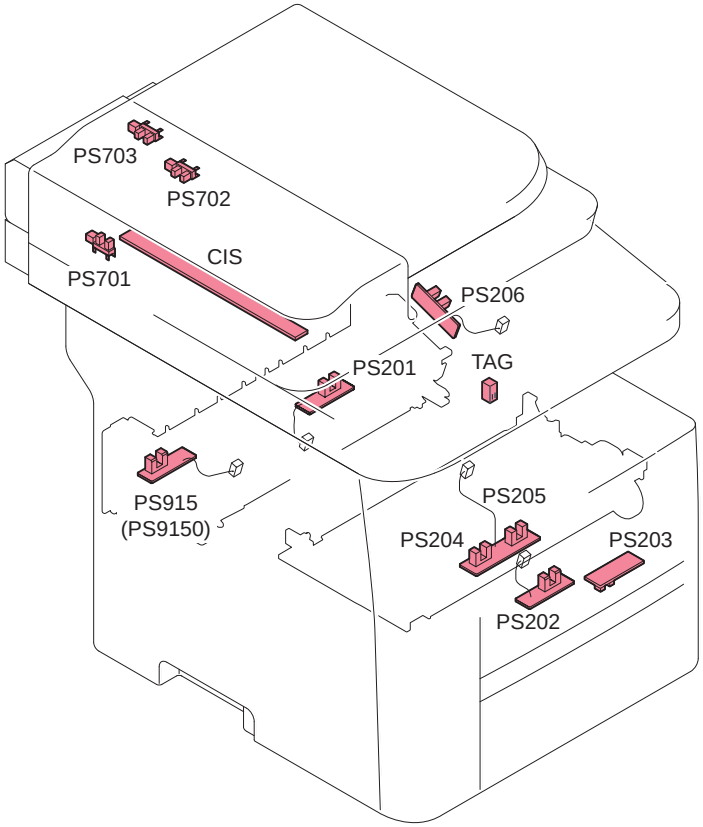
11.1.1 Main Unit



No.	Name
[1]	Fixing unit
[2]	Laser scanner unit
[3]	Registration unit
[4]	Duplexing drive unit
[5]	Main drive unit
[6]	Duplexing feed unit
[7]	Contact sensor
[8]	ADF pickup feed unit
[9]	Operation unit

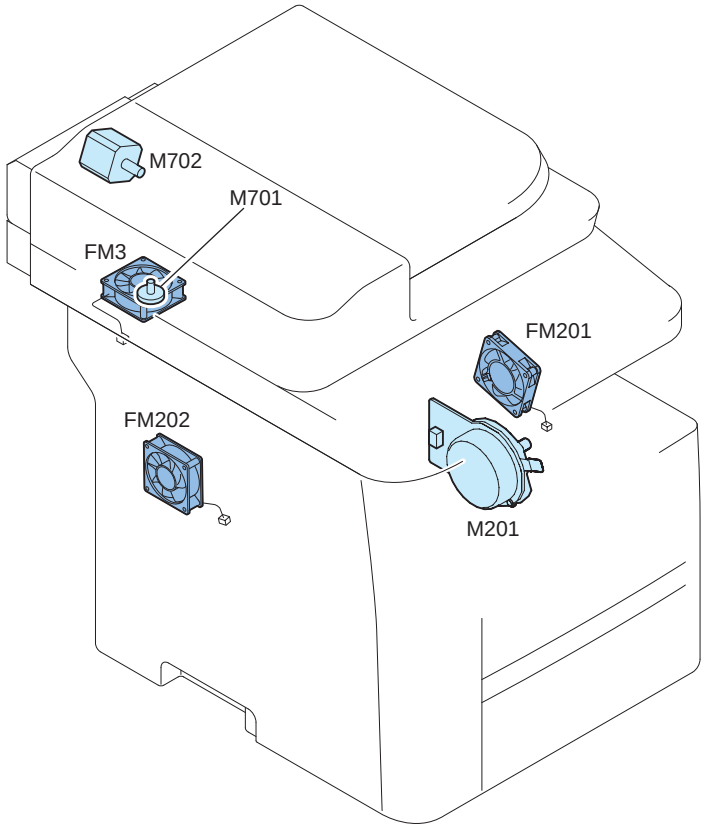
11.1.2 Main Parts

Sencer



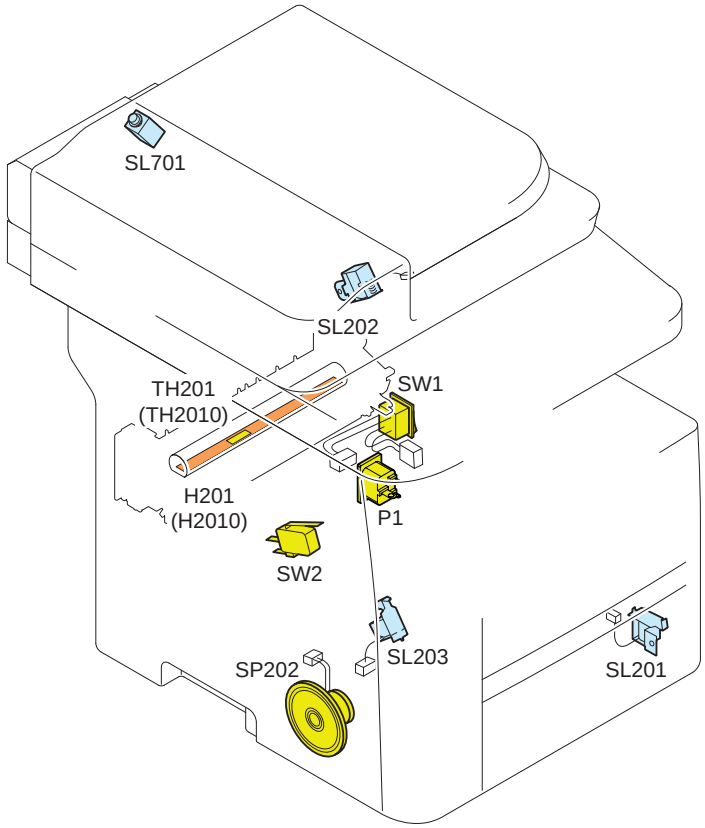
Symbol	Name
PS201	Duplex reverse sensor
PS202	MP tray media presence sensor
PS203	Cassette media presence sensor
PS204	Top sensor
PS205	Media full sensor
PS206	FD tray media full sensor
PS701	Scanner home position sensor
PS702	Document end sensor
PS703	Document sensor
PS915	Fixing delivery sensor (100V)
PS9150	Fixing delivery sensor (230V)
TAG	Cartridge sensor

Motor



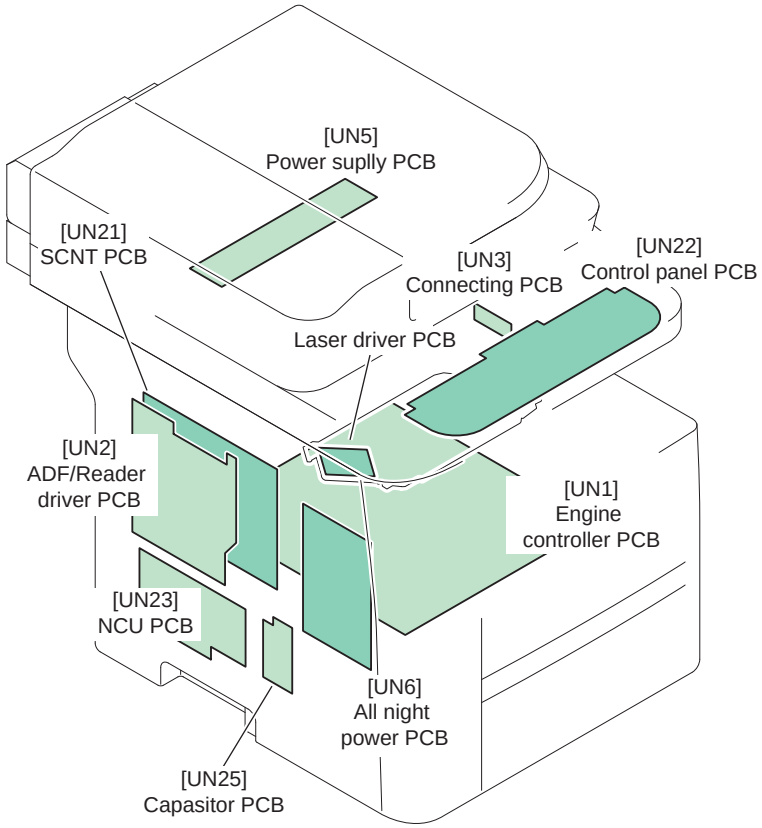
Symbol	Name
FM201	Main fan
FM202	Controller fan
FM3	Power suplly cooling fan
M201	Main motor
M701	Scanner motor
M702	ADF motor

Other



Symbol	Name
H201	Heater (100V)
H2010	Heater (230V)
P1	Power Cord Outlet
SL201	Cassette pickup sorenoid
SL202	Duplex reverse sorenoid
SL203	Multi-purpose tray pickup sorenoid
SL701	ADF delivery sorenoid
SP202	Speaker
SW1	Main switch
SW2	Door switch
TH201	Thermistor (100V)
TH2010	Thermistor (230V)

PCBs



Symbol	Name
UN1	Engine controller PCB
UN2	ADF/Reader driver PCB
UN3	Connecting PCB
UN5	Power suplly PCB
UN6	All night power PCB
UN21	SCNT PCB
UN22	Control panel PCB
UN23	NCU PCB
UN25	Capasitor PCB
-	Laser driver PCB

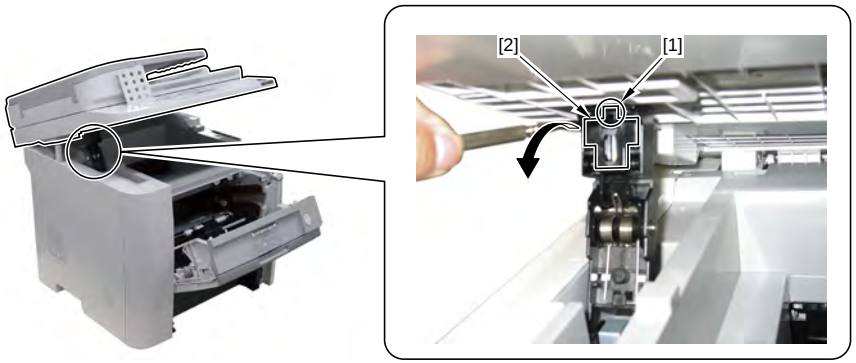
11.2 Parts Replacement Procedure

11.2.1 Removing the Left Cover

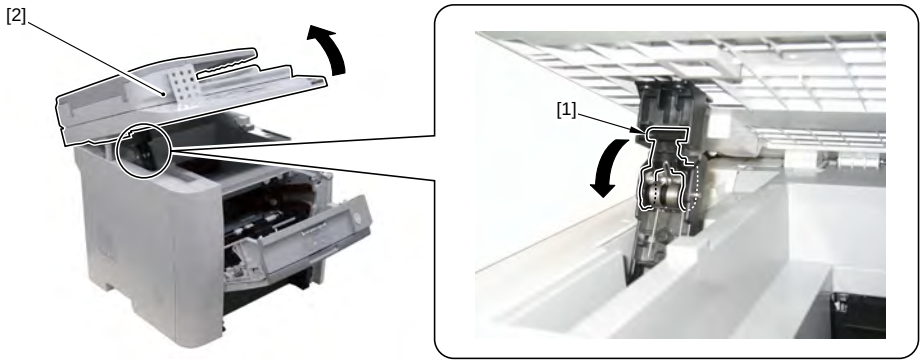
1. Open the cartridge cover [1].

2. Open the ADF unit + Reader unit [1].

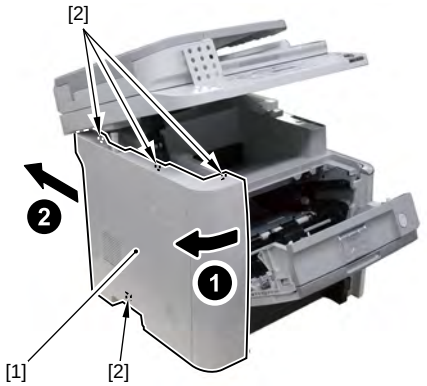
3. Remove the claw [1] and remove the reader shaft retainer [2].



4. Remove the reader support shaft [1] and open the reader unit [2].

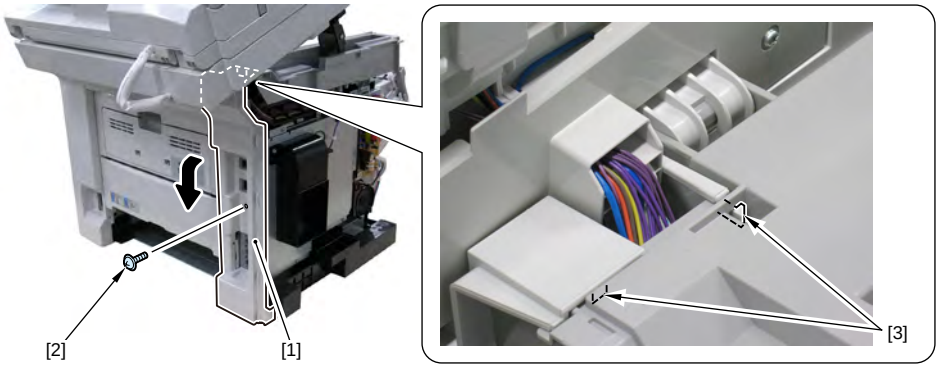


5. Remove the left cover [1].
   - 4 claws [2]



11.2.2 Removing the left cover (rear)

1. Remove the left cover.
2. Remove the left cover (rear) [1].
   - 1 screw [2]
   - 2 claws [3]



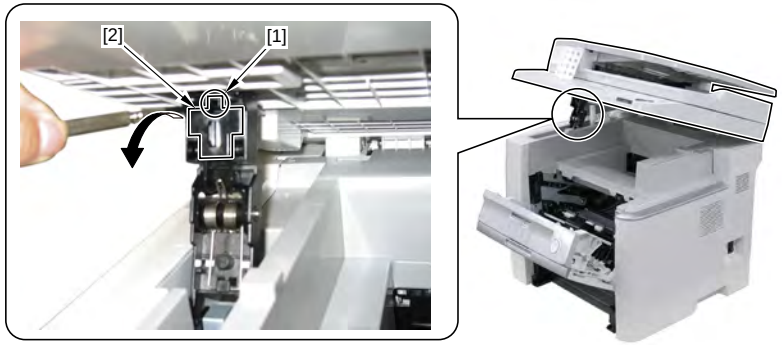
11.2.3 Removing the Right Cover

1. Remove the cassette [1].

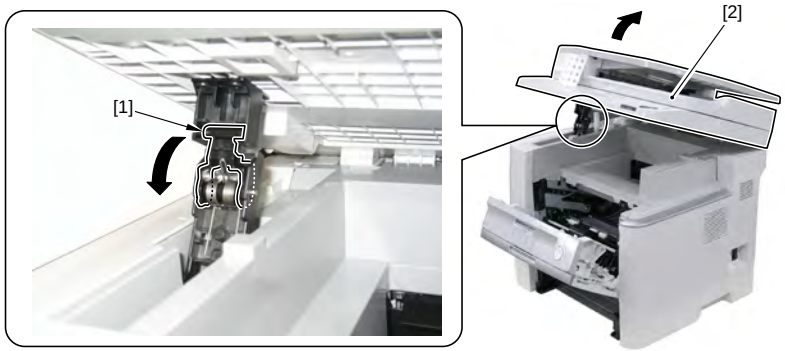
2. Open the front cover [1].

3. Open the reader unit (+ ADF unit) [1].

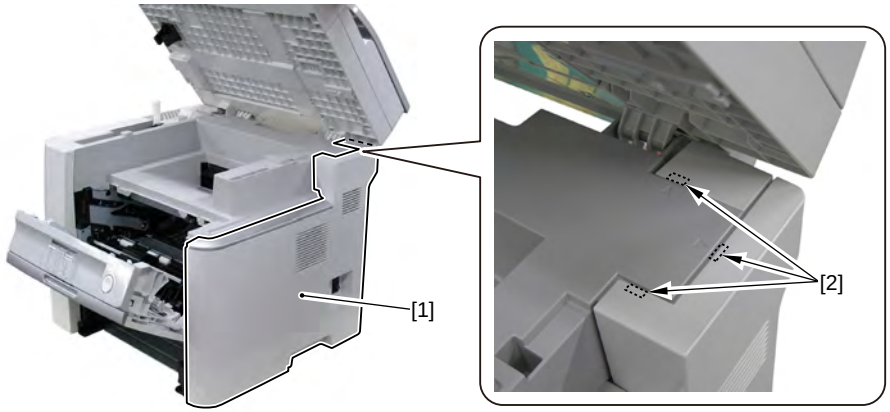
4. Remove the claw [1] and remove the reader shaft retainer [2].



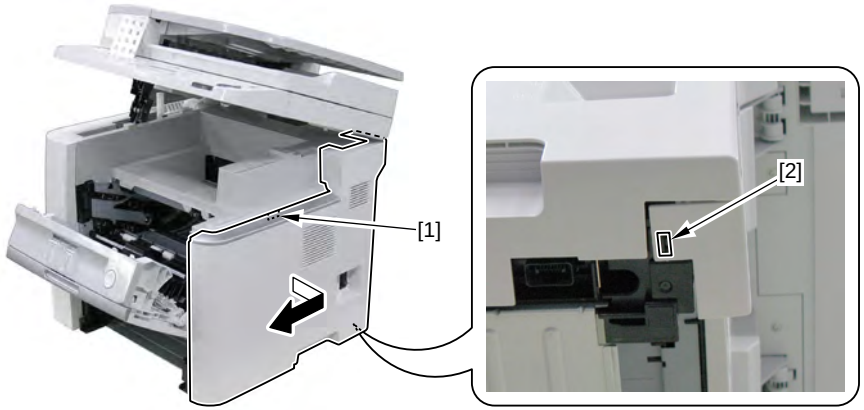
5. Remove the reader support shaft [1] and open the reader unit [2].



6. Remove the 3 claws [2] of the right cover unit [1].

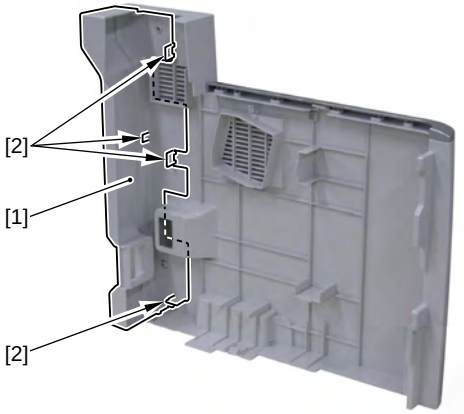


7. Remove the upper claw [1] of the right cover first and the lower claw [2], and remove the right cover unit[3].



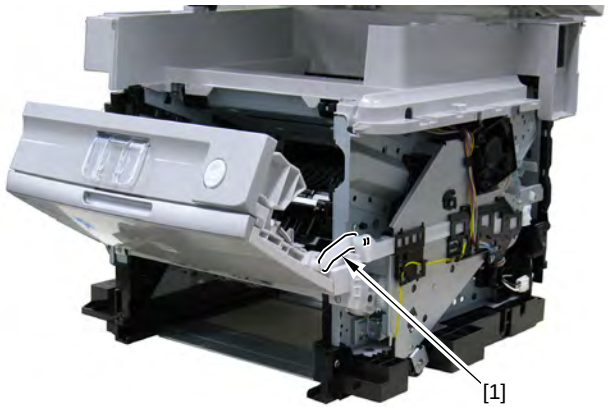
11.2.4 Removing the Right cover (rear)

1. Remove the right cover unit.
2. Remove the right cover (rear) [1].
   - 4 claws [2]

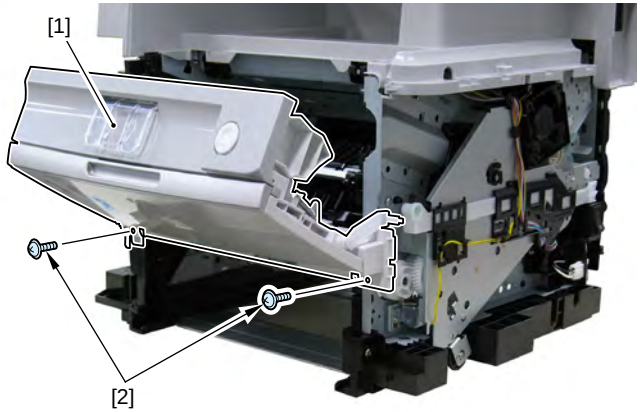


11.2.5 Removing the Front Cover

1. Remove the left cover.
2. Remove the right cover.
3. Remove the link [1].

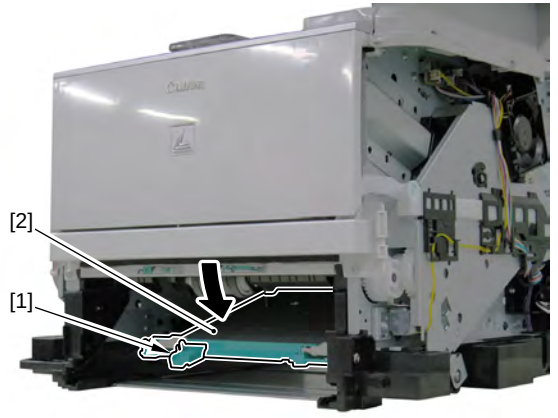


4. Remove the front cover [1].
   - 2 screws [2]

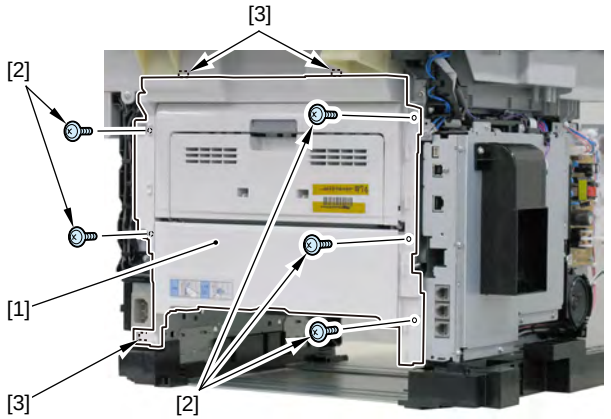


11.2.6 Removing rear cover unit Cover

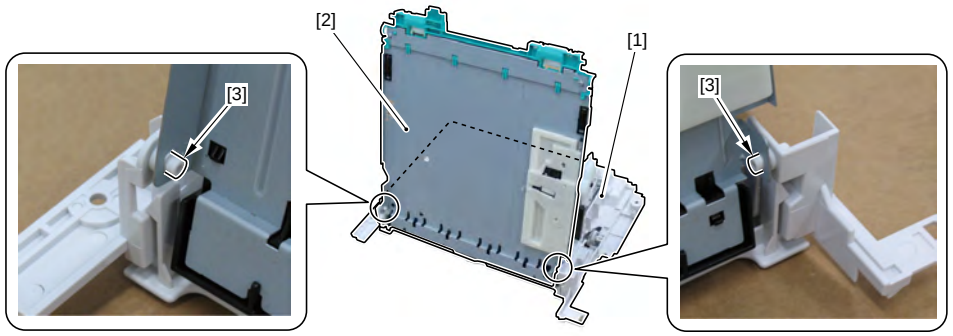
1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Push the grip [1] downward and open the duplex feed unit [2].



5. Remove the rear cover unit [1].
   - 5 screws [2]
   - 3 claws [3]



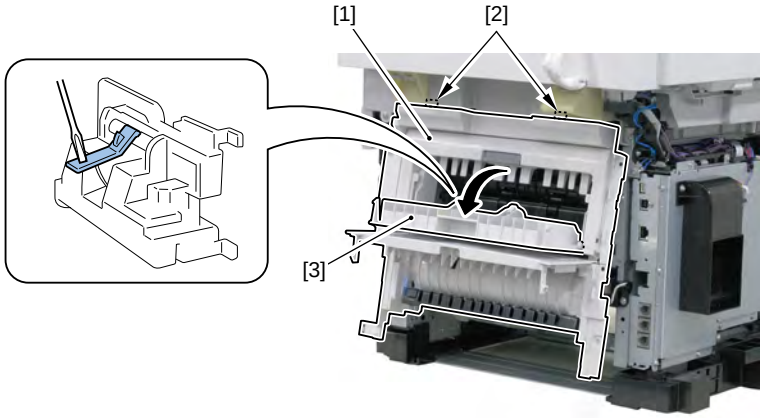
6. Remove the duplex feed unit [2] from the rear cover unit [1].
   - 2 bosses [3]



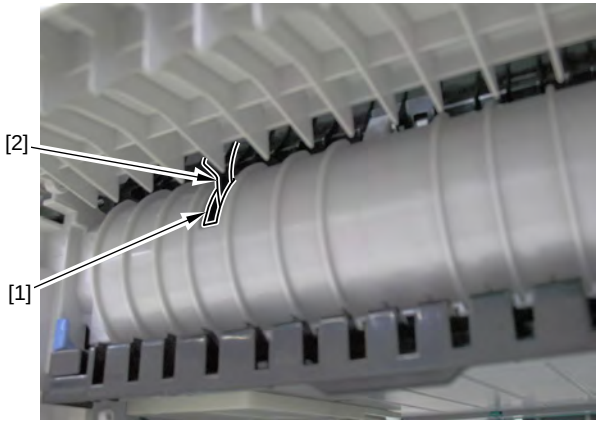
Caution :

Procedure at installation

7. Fit the upper claw [2] of the rear cover unit [1] with the upper cover unit.
8. Open the sub output tray [3] and while pushing the duplex reverse sensor flag [4] downward, install the rear cover unit.

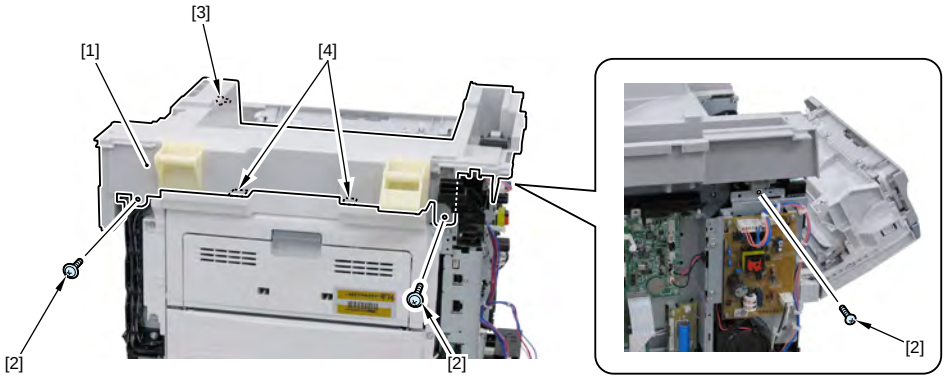


9. Check that the sensor flag [2] protrudes through the hole [1] of the guide assembly on the back of the duplex unit cover.



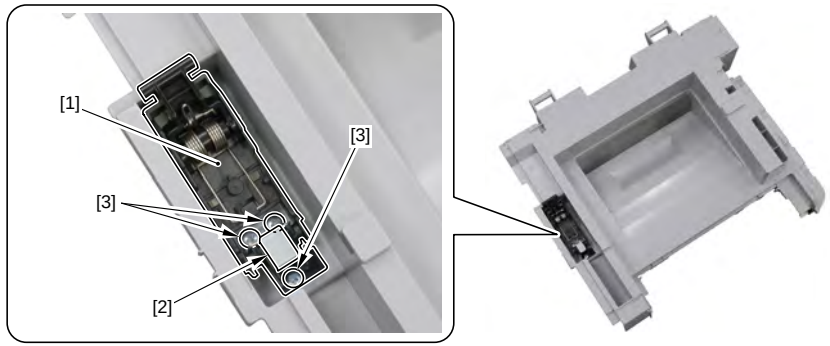
11.2.7 Removing the upper cover unit

1. Remove the right cover unit.
2. Remove the left cover unit.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the ADF + the reader unit.
6. Remove the upper cover unit [1].
   - 3 screws [2]
   - 1 screw [3] (loosen)
   - 2 claws [4]



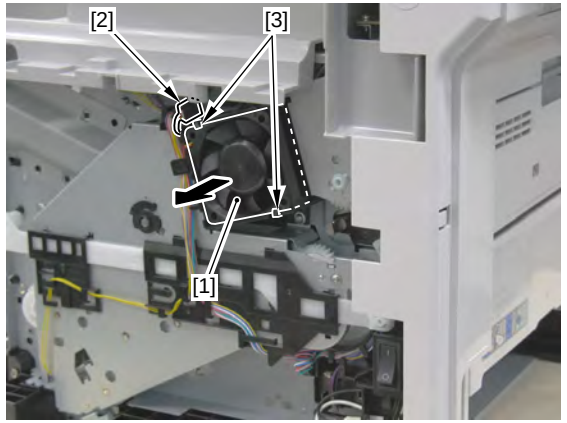
MEMO :
When removing the upper cover independently, remove the reader support shaft [1] and the reader shaft retaining plate [2].

- 3 screws



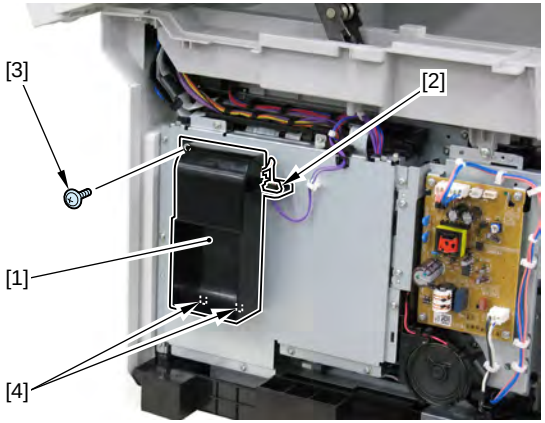
11.2.8 Removing the Main Fan

1. Remove the right cover.
2. Remove the main fan [1].
   - 1 connector [2]
   - 2 claws [3]

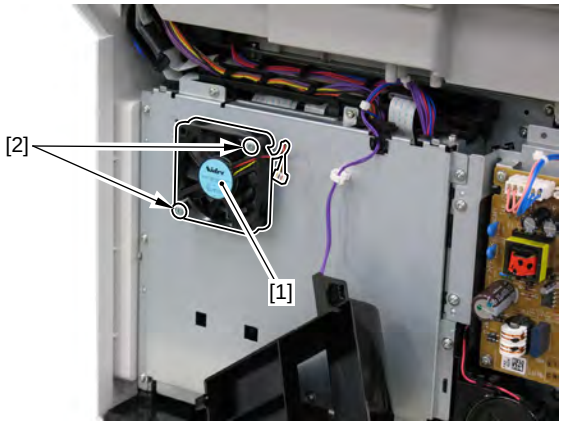


11.2.9 Removing the Power Cooling Fan

1. Remove the left cover.
2. Remove the fan duct [1].
   - 1 connector [2]
   - 1 screw [3]
   - 2 claws [4]

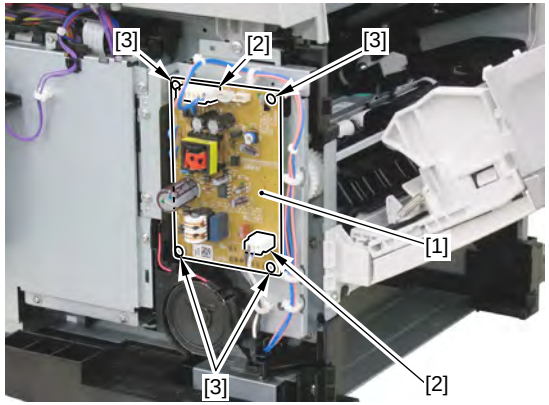


3. Remove the power cooling fan [1]
   - 2 screws [2]



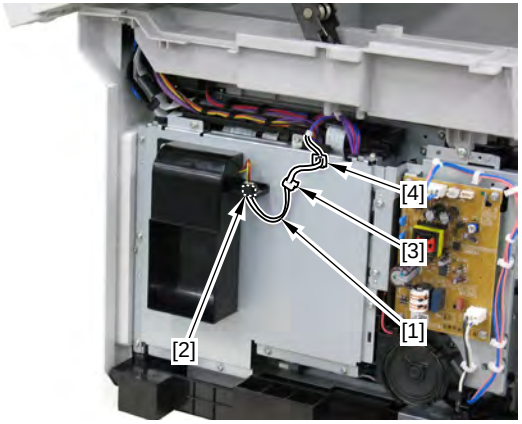
11.2.10 Removing the All-Night Power PCB

1. Remove the left cover.
2. Remove the all-night power PCB [1].
   - 2 connectors [2]
   - 4 screws [3]

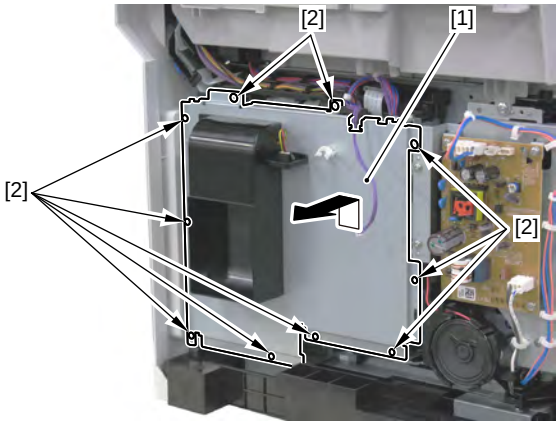


11.2.11 Removing the Power Cooling Fan Mount

1. Remove the left cover.
2. Remove the harness [1].
   - 1 connector [2]
   - 1 wire saddle [3]
   - 1 edge saddle [4]

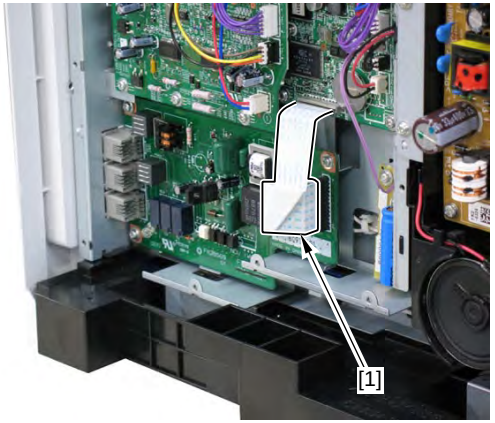


3. Remove the power cooling fan mount [1].
   - 10 screws [2]

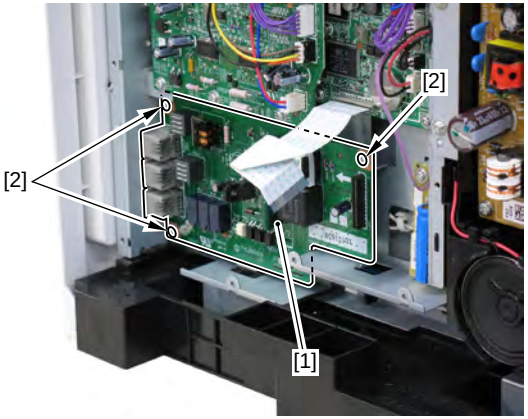


11.2.12 Removing the NCU PCB

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the flat cable [1].

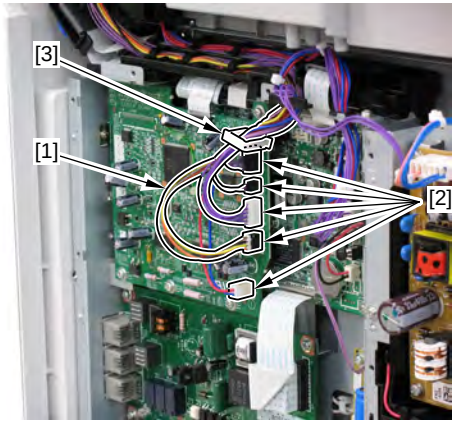


4. Remove the NUC PCB [1].
   - 3 screws [2]

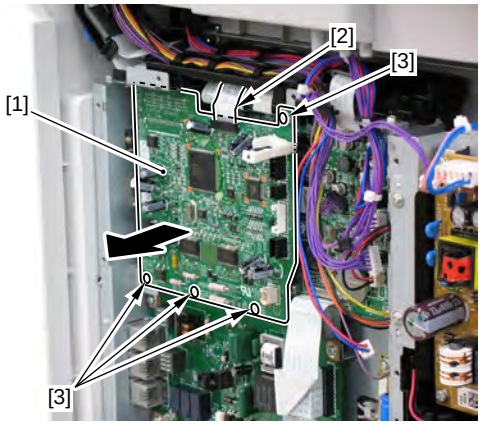


11.2.13 Removing the ADF/Reader driver PCB

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the harness [1].
   - 5 connectors [2]
   - 1 wire saddle [3]

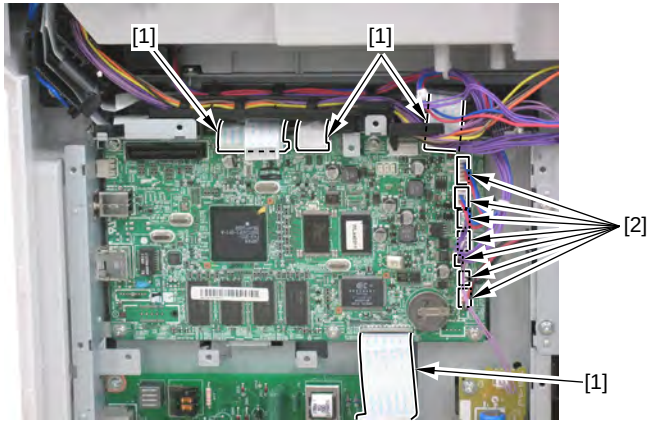


4. Remove the ADF/reader driver PCB [1].
   - 1 flat cable [2]
   - 4 screws [3]

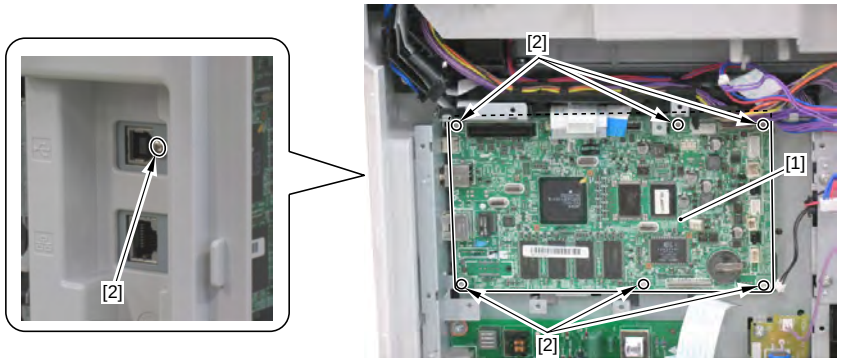


11.2.14 Removing SCNT PCB

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the ADF/reader driver PCB.
4. Remove the 4 flat cables [1] and the 7 connectors [2].



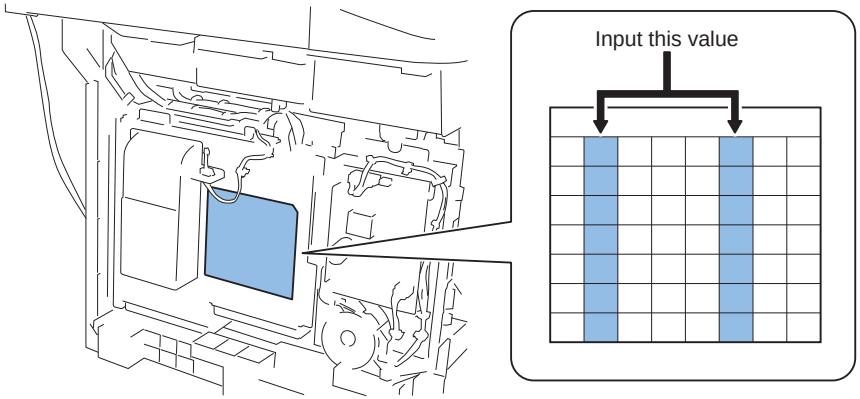
5. Remove the SCNT PCB [1].
   - 7 screws [2]



■ [Operation after replacing the SCNT PCB]

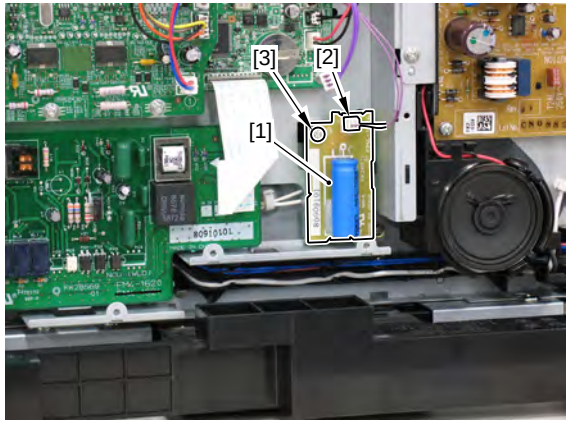
After replacing the SCNT PCB, perform the following procedure.

1. Enter the service mode.
2. Input the value of the service label affixed on the power cooling fan mount.
   - SCAN>PRINT NUMERIC each value
   - SCAN>SCAN NUMERIC each value



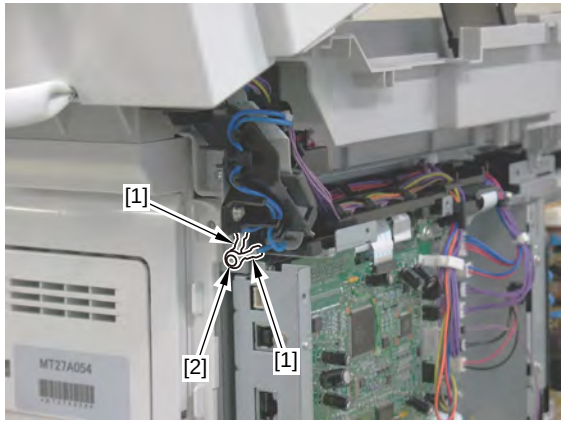
11.2.15 Removing the Capacitor PCB

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the capacitor PCB [1].
   - 1 connector [2]
   - 1 screw [3]

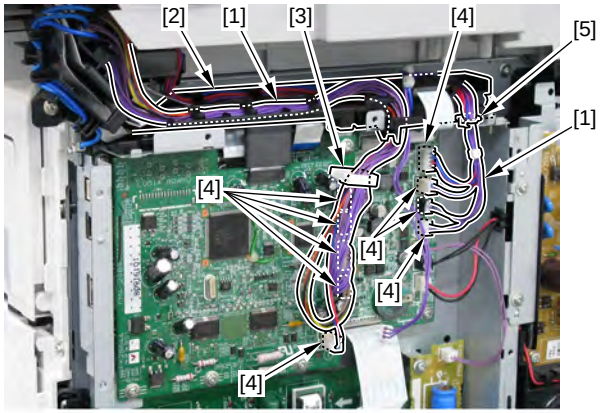


11.2.16 Removing the ADF Unit + Reader Unit

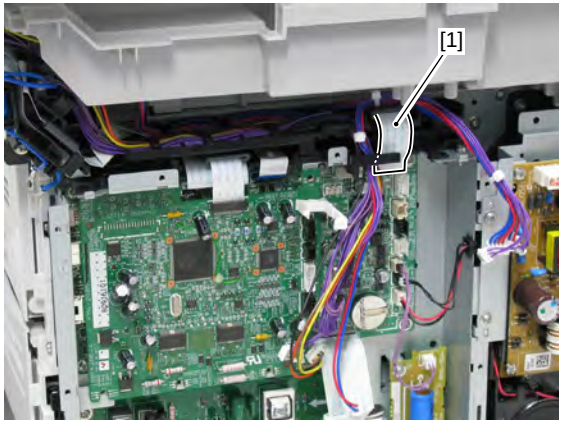
1. Remove the left cover unit.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the 2 grounding wires [1].
   - 1 screw [2].



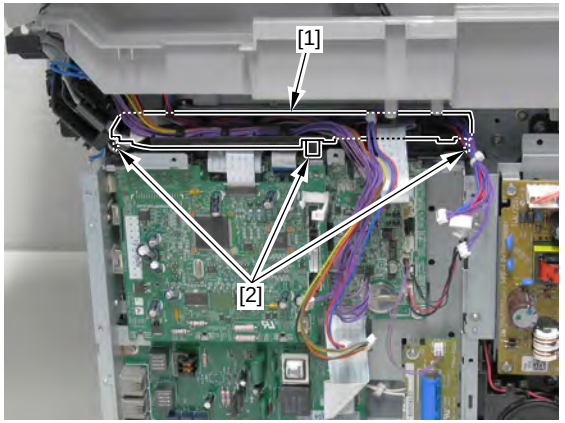
5. Remove the harness [1] from the harness guide [2].
   - 1 wire saddle [3]
   - 9 connectors [4]
   - 1 edge saddle [5]



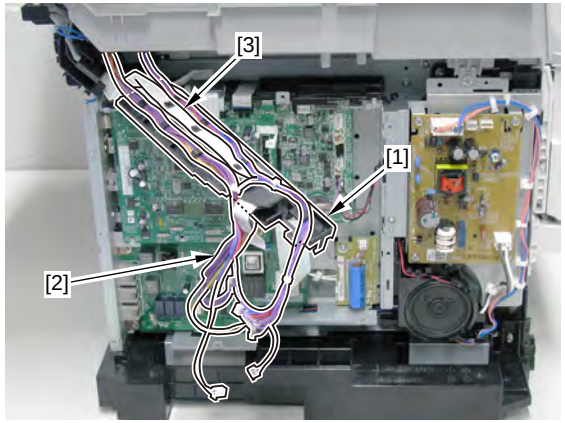
6. Remove the flat cable [1].



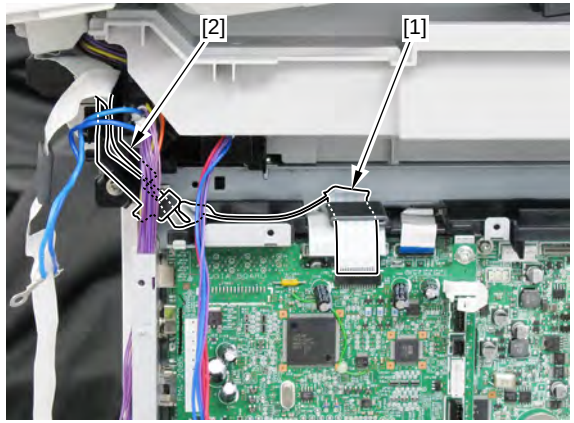
7. Remove the harness guide [1].
   - 3 claws [2]



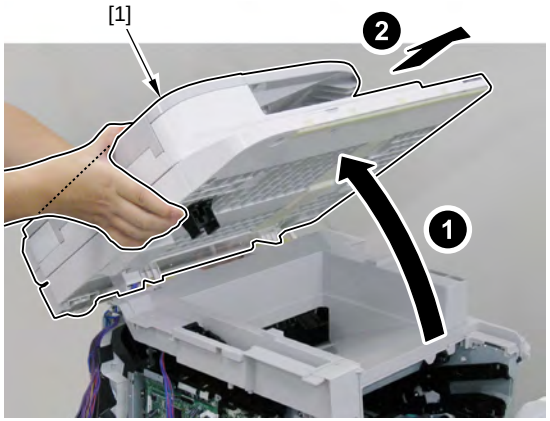
8. Remove the harness [2] and the flat cable [3] from the harness guide [1].



9. Remove the flat cable [1] and remove it from the harness guide [2].

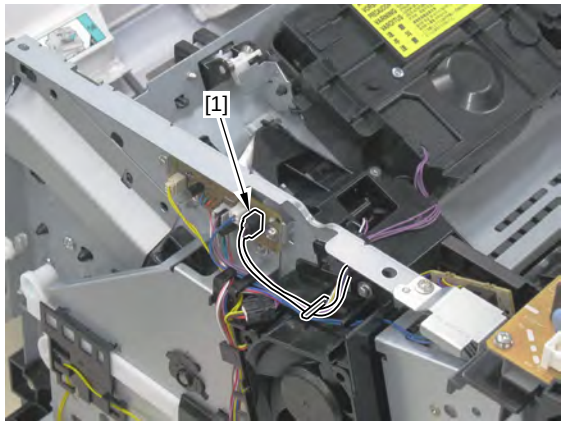


10. Remove the reader support shaft and lift and remove the ADF unit + the reader unit [1] in the direction of the arrow.

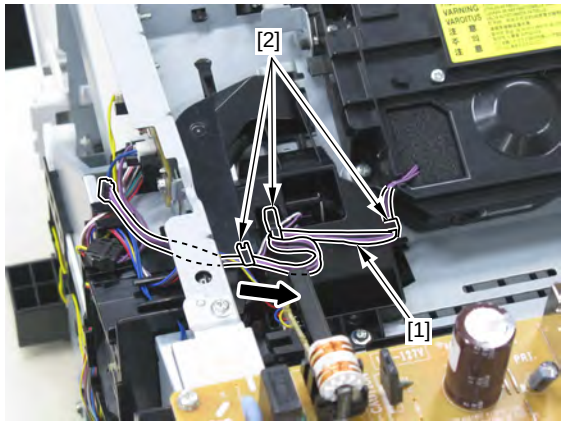


11.2.17 Removing the Laser Scanner Unit

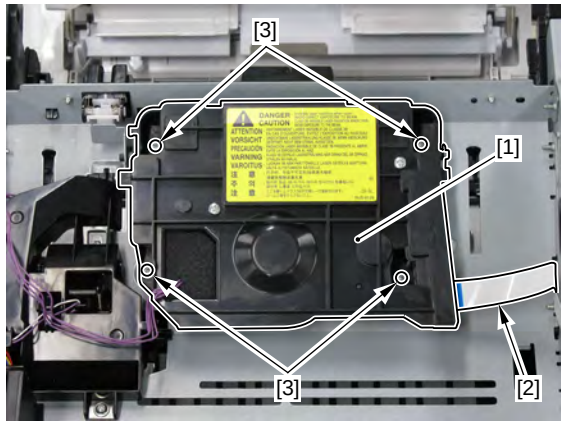
1. Remove the right cover unit.
2. Remove the left cover unit.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the ADF + the reader unit.
6. Remove the upper cover unit.
7. Remove the connector [1]



8. Put the removed harness [1] to the laser scanner side and remove it from the harness guide [2].



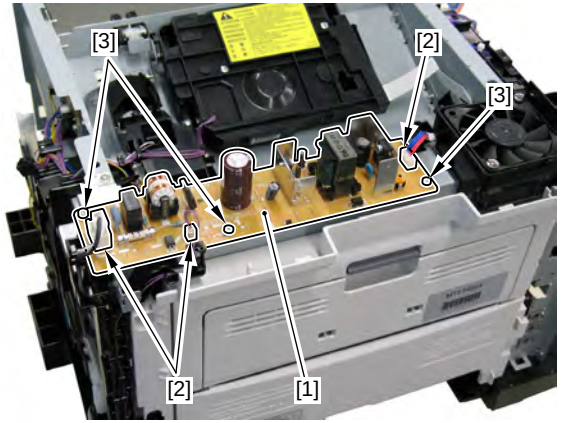
9. Remove the laser scanner unit [1].
   - 1 flat cable [2]
   - 4 screw [3]



MEMO :
Do not disassemble the laser scanner unit in the field. If it is disassembled, malfunction may occur.

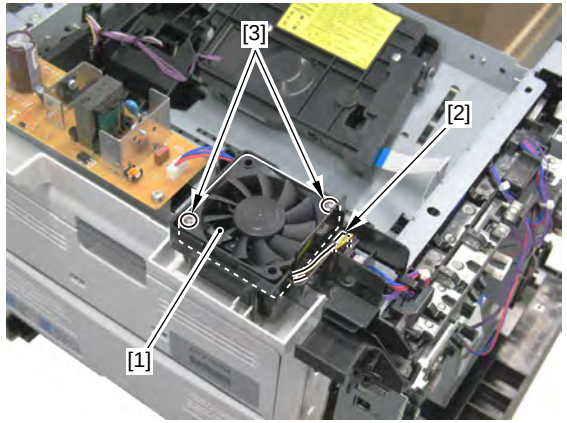
11.2.18 Removing the Power PCB

1. Remove the right cover unit.
2. Remove the right cover (rear).
3. Remove the left cover unit.
4. Remove the power cooling fan mount.
5. Remove the left cover (rear).
6. Remove the reader unit.
7. Remove the upper cover unit.
8. Remove the power PCB [1].
    - 3 connectors [2]
    - 3 screws [3]



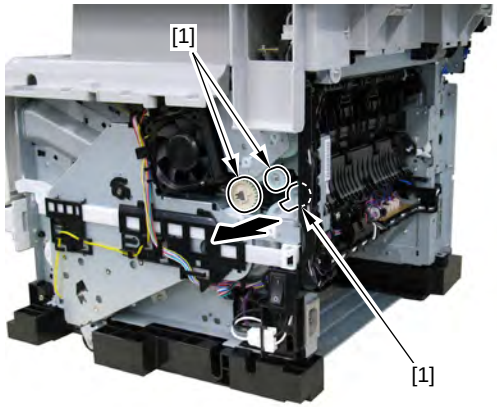
11.2.19 Removing the Controller Fan

1. Remove the right cover unit.
2. Remove the right cover (rear).
3. Remove the left cover unit.
4. Remove the power cooling fan mount.
5. Remove the left cover (rear).
6. Remove the reader unit.
7. Remove the upper cover unit.
8. Remove the controller fan [1].
    - 1 connector [2]
    - 2 screws [2]



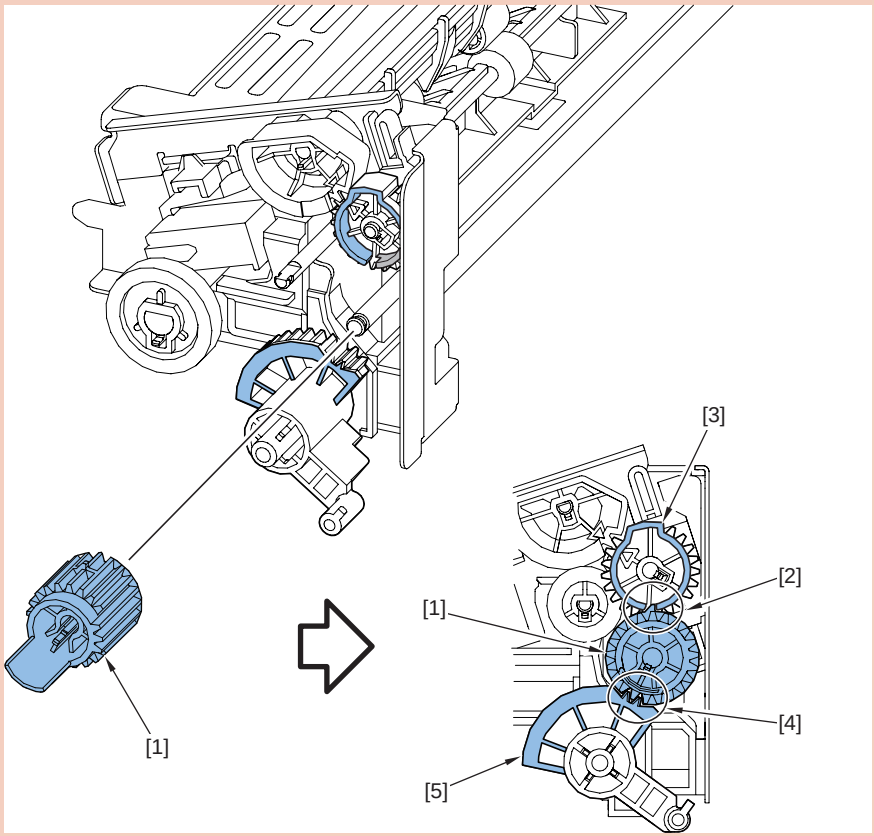
11.2.20 Removing the fixing assembly

1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Remove the duplex unit cover.
5. Close the front cover and move the gear in the position where it can be removed.
6. Remove the 3 gears [1].

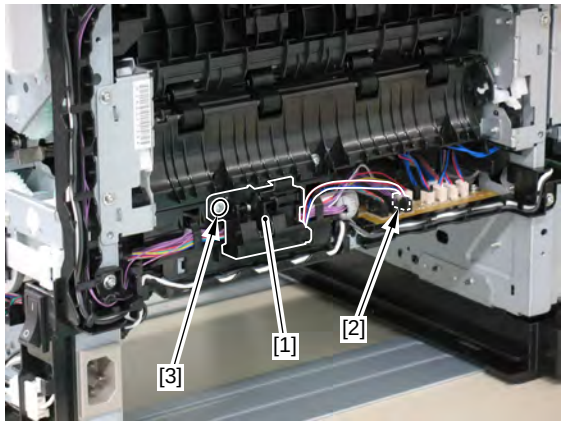


Caution : Points to note at installation

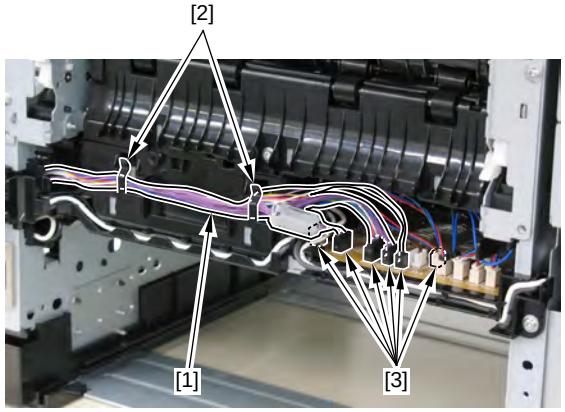
- Fit the protrusion [2] of the gear (21T) [1] with the cut-off of the gear [3] and install it.
- Fit the cut-off [4] of the gear (21T) [1] with the teeth of the fan gear [5] and install it.



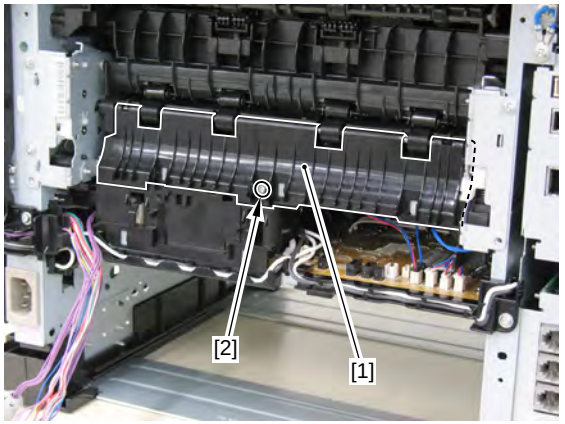
7 Remove the duplex feed sensor unit [1].
- 1 connector [2]
- 1 screw [3]



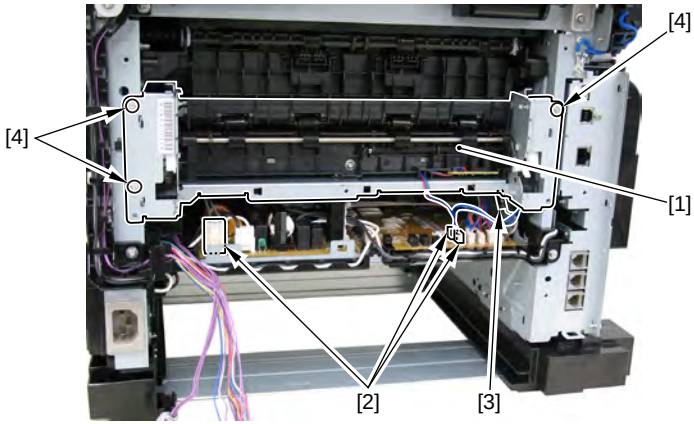
8. Remove the harness [1] from the harness guide [2].
- 6 connectors [3]



9. Remove the feed guide [1].
- 1 screw [2]

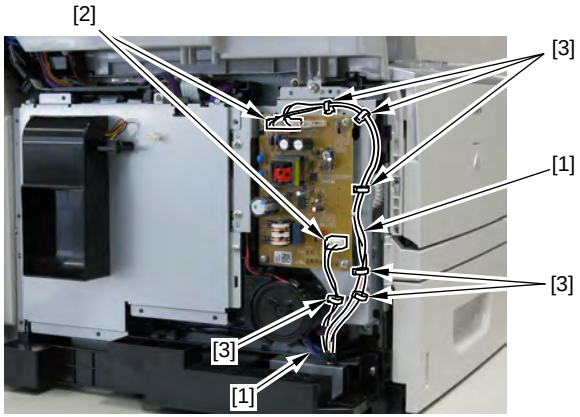


10. Remove the fixing assembly [1].
- 3 connectors [2]
- 1 terminal [3]
- 3 screws [4]

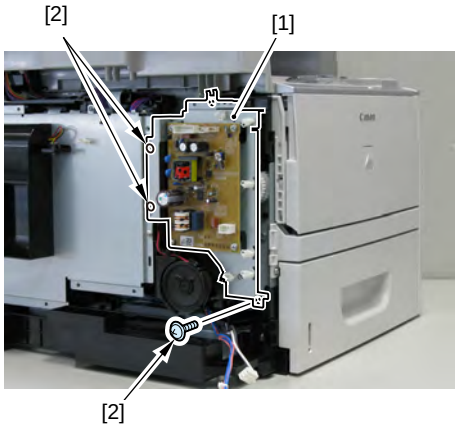


11.2.21 Removing the All-Night Power PCB Mount

1. Remove the left cover unit.
2. Remove the 2 harnesses [1].
   - 2 connectors [2]
   - 6 wire saddles [3]

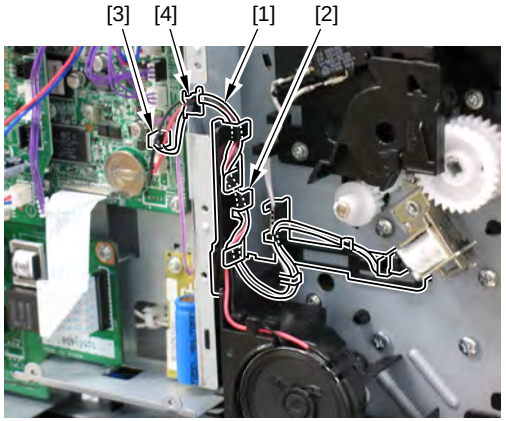


3. Remove the all-night power PCB mount [1].
   - 4 screws [2]

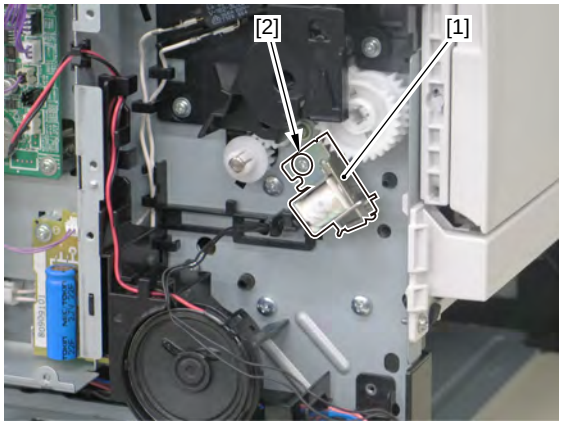


11.2.22 Removing the Manual Tray Pickup Solenoid

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the all-night power PCB.
4. Remove the harness [1] from the harness guide [2].
   - 1 connector [3]
   - 1 edge saddle [3]

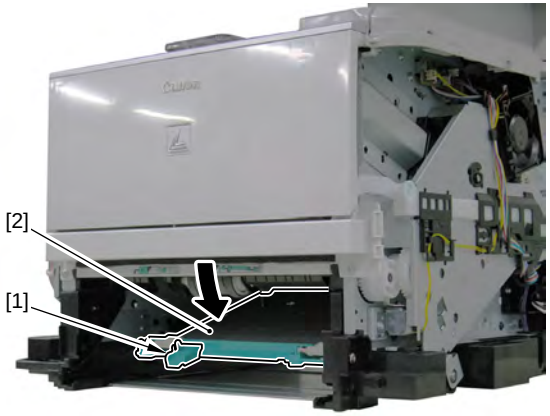


5. Remove the manual tray pickup solenoid [1].
   - 1 screw [2]

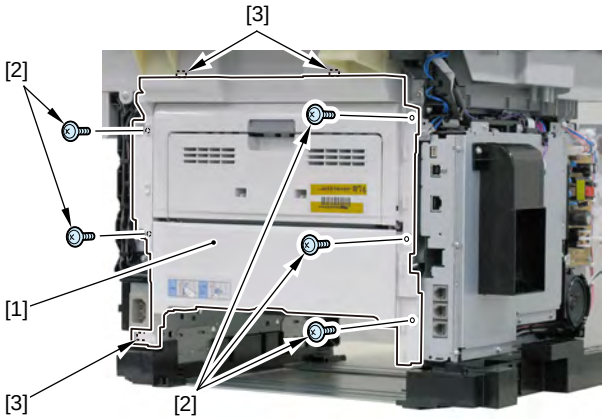


11.2.23 Removing the Duplex Feed Unit

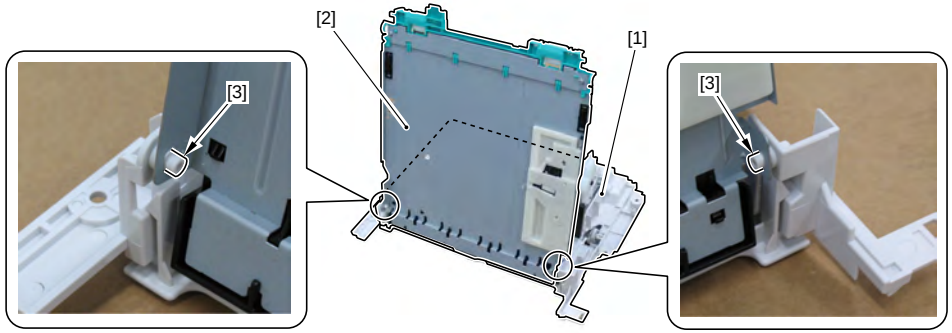
1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Push the grip [1] downward and open the rear cover unit [2].



5. Remove the duplex feed unit cover [1].
   - 5 screws [2]
   - 3 screws [3]

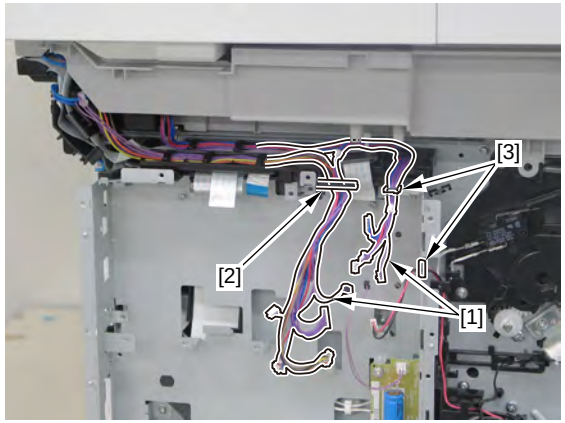


6. Remove the rear cover unit [2] from the duplex feed unit cover [1].
   - 2 bosses [3]

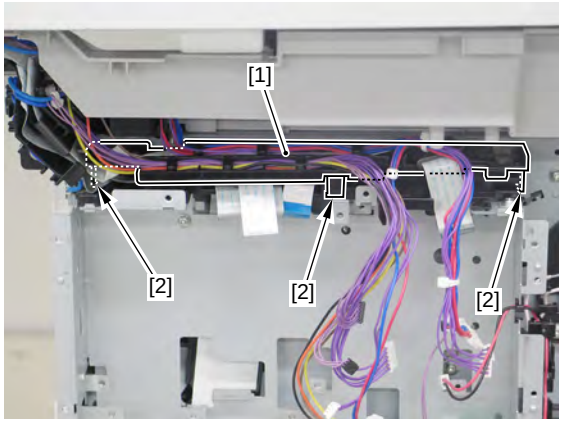


11.2.24 Removing the Controller Box

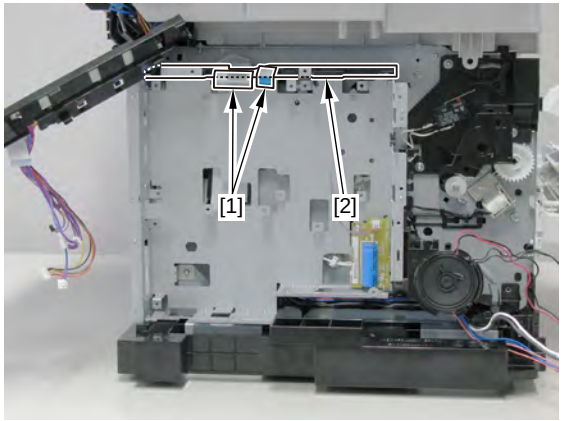
1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the left cover (rear).
4. Remove the power cooling fan mount.
5. Remove the NCU PCB.
6. Remove the ADF/reader driver PCB.
7. Remove the SCNT PCB.
8. Remove the all-night power mount.
9. Remove the 2 harnesses [1] from the harness guide [2].
   - 2 edge saddle [3]



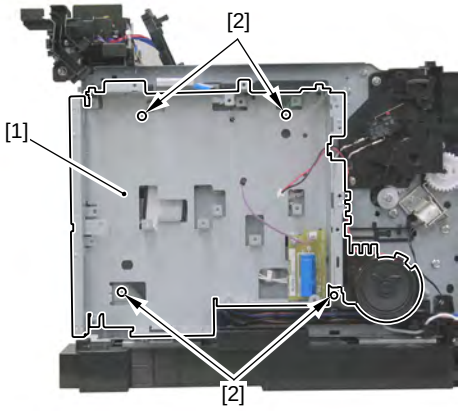
10. Remove the harness guide [1].
    - 3 claws [2]



11. Remove the flat cable [1] from the harness guide [2].

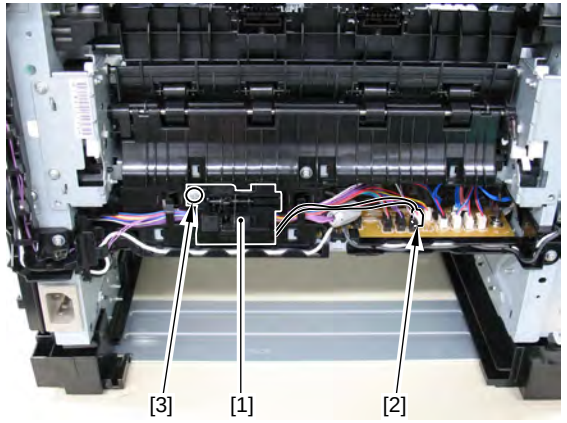


12. Remove the controller box [1].
    - 4 screws [2]

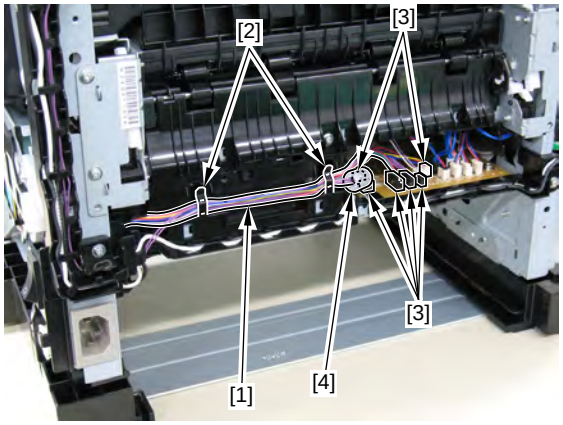


11.2.25 Removing the Main Drive Unit

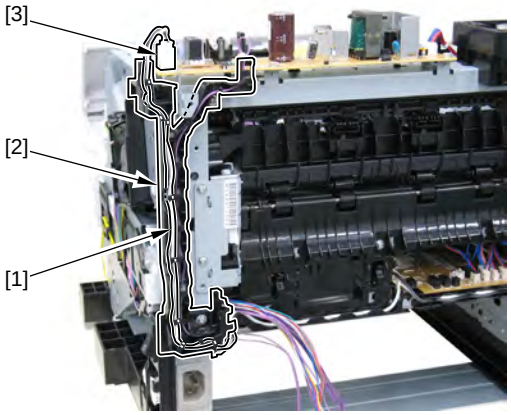
1. Remove the right cover unit.
2. Remove the left cover unit.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the reader unit.
6. Remove the upper cover unit.
7. Remove the duplex reverse sensor unit [1].
    - 1 connector [2]
    - 1 screw [3]



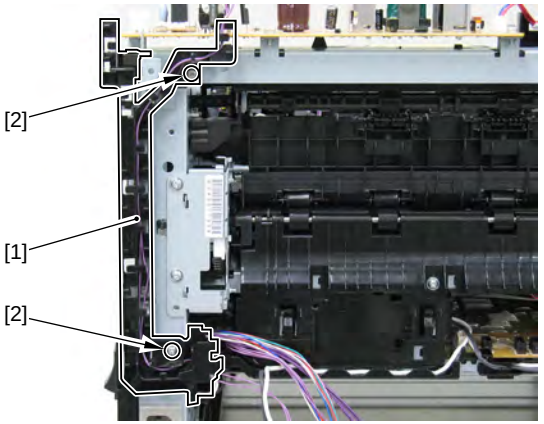
8. Remove the harness [1] from the harness guide [2].
   - 6 connectors [3]
   - 1 ferrite core [4]



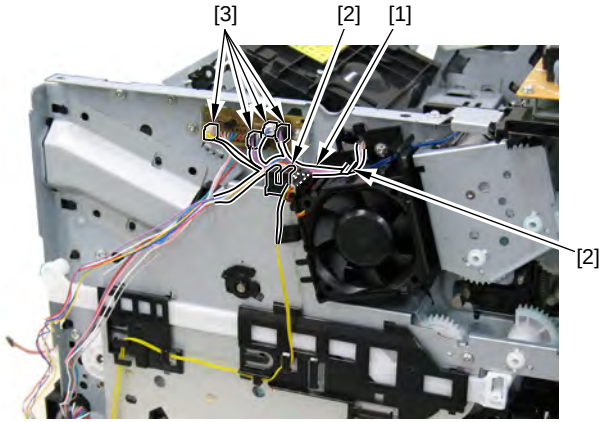
9. Remove the harness [1] from the harness guide [2].
   - 1 connector [3]



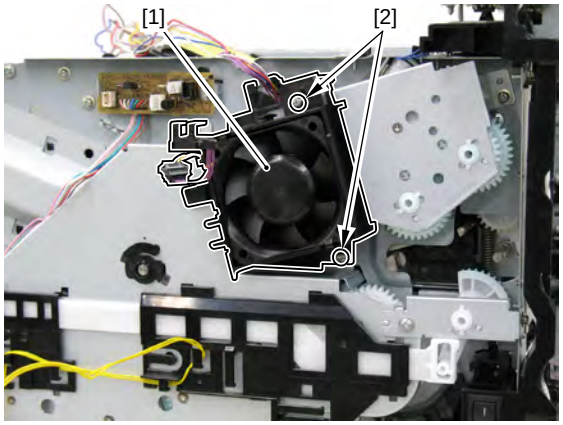
10. Remove the harness guide [1].
    - 1 screw [2]



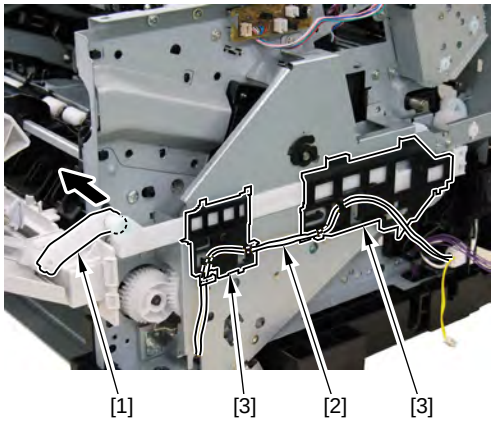
11. Remove the harness [1] from the harness guide [2].
    - 4 connectors [3]



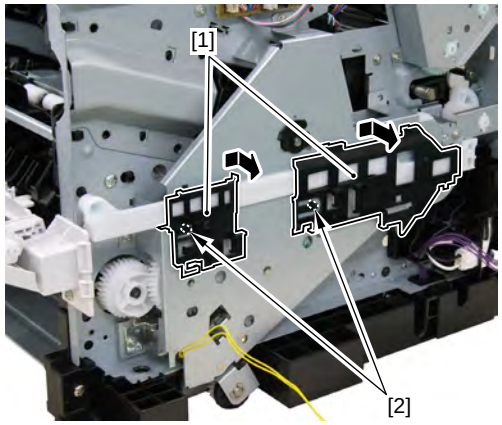
12. Remove the main fan holder [1].
    - 2 screws [2]



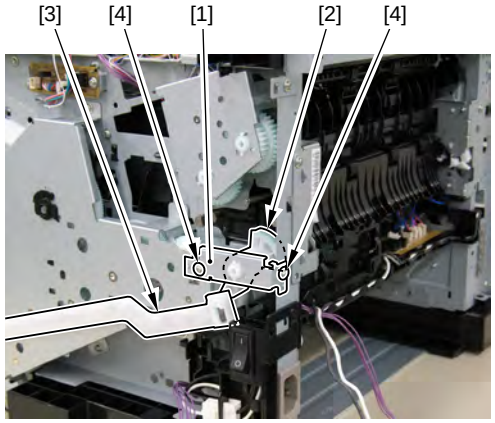
13. Remove the link [1] and remove the harness [2] from the harness guide [3].



14. Remove the 2 harness guides [1].
    - 2 bosses [2]



15. Remove the plate [1], the fixing gear [2] and the link arm [3].
    - 2 screws [4]



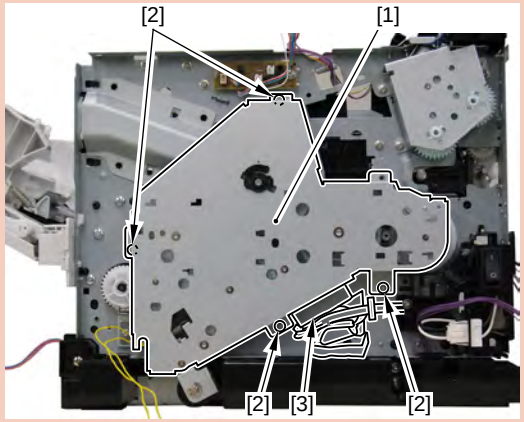
Caution : Points to note when removing the main drive unit

Since the gear of the main drive unit is not fixed, be careful not to drop it when removing it.

16. Remove the main drive unit [1].
    - 4 screws [2]

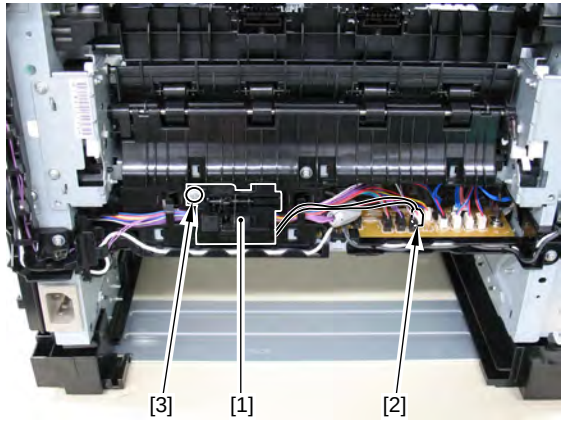
Caution :

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.

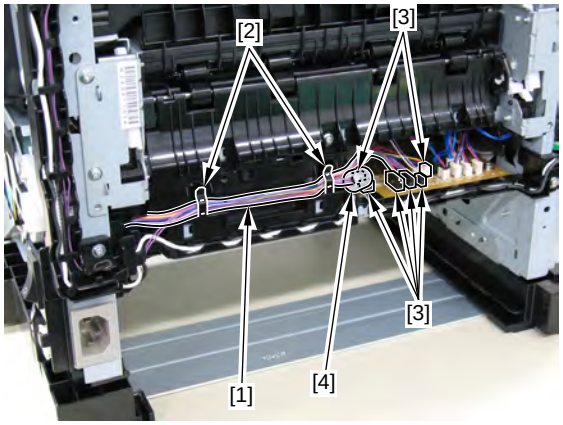


11.2.26 Removing the duplex drive unit

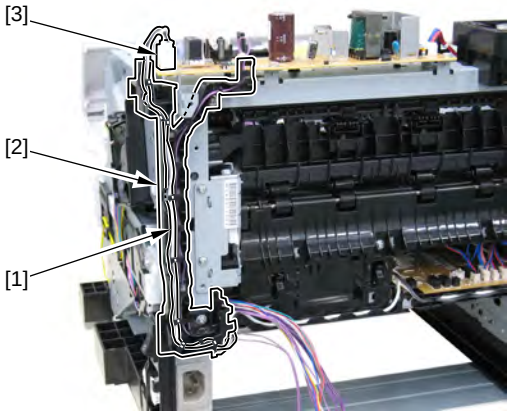
1. Remove the right cover unit.
2. Remove the right cover (rear).
3. Remove the left cover.
4. Remove the power cooling fan mount.
5. Remove the left cover (rear).
6. Remove the reader unit.
7. Remove the upper cover unit.
8. Remove the duplex reverse sensor unit [1].
    - 1 connector [2]
    - 1 screw [3]



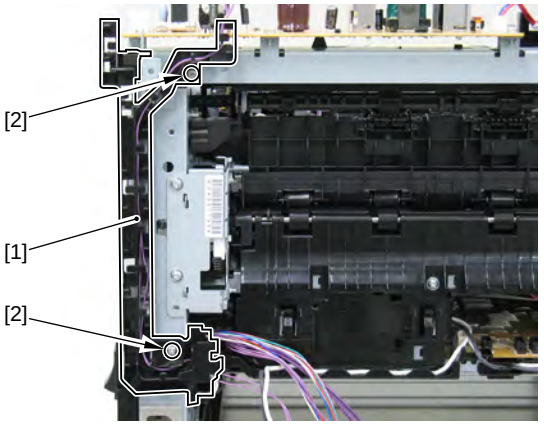
9. Remove the harness [1] from the harness guide [2].
   - 6 connectors [3]
   - 1 ferrite core [4]



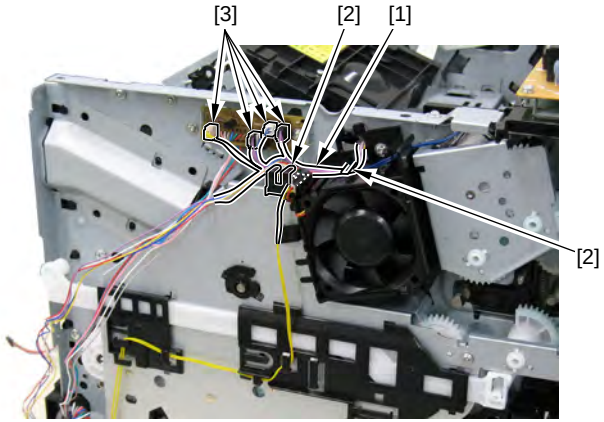
10. Remove the harness [1] from the harness guide [2].
    - 1 connector [3]



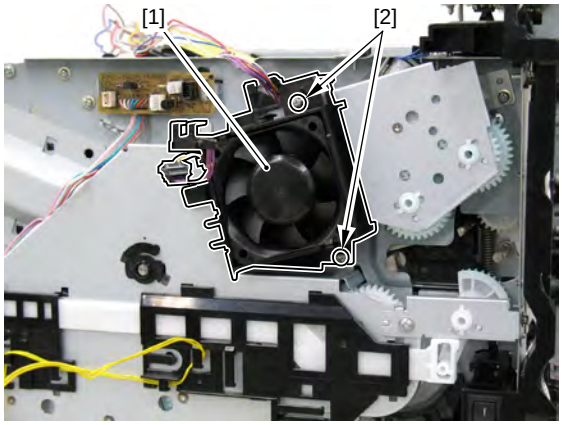
11. Remove the harness guide [1].
    - 2 screws [2]



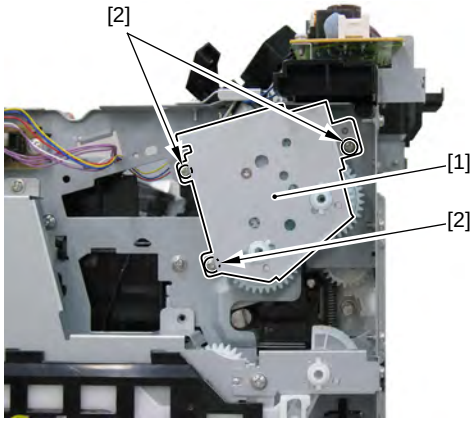
12. Remove the harness [1] from the harness guide [2].
    - 4 connectors [3]



13. Remove the main fan holder [1].
    - 2 screws [2]



14. Remove the duplex drive unit [1].
    - 3 screws [2]

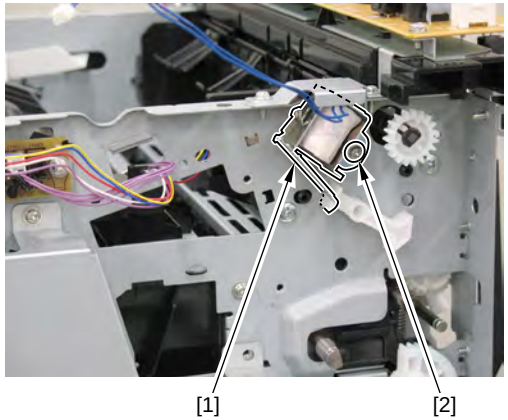


Caution :

Since the gear of the duplex drive unit is not fixed, be careful not to drop or lose it when removing it.

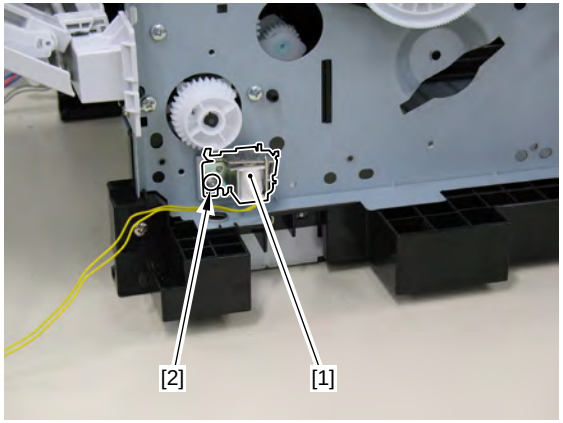
11.2.27 Removing the Duplex Reverse Solenoid

1. Remove the right cover unit.
2. Remove the right cover (rear).
3. Remove the left cover.
4. Remove the power cooling fan mount.
5. Remove the left cover (rear).
6. Remove the reader unit.
7. Remove the upper cover unit.
8. Remove the duplex drive unit.
9. Remove the duplex reverse solenoid [1].
    - 1 screw



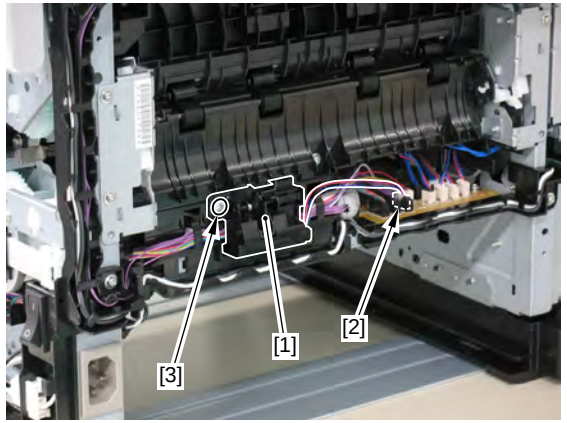
11.2.28 Removing the Cassette Pickup Solenoid

1. Remove the right cover unit.
2. Remove the left cover unit.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the reader unit.
6. Remove the upper cover unit.
7. Remove the main drive unit.
8. Remove the cassette pickup solenoid [1].
    - 1 screw [2]

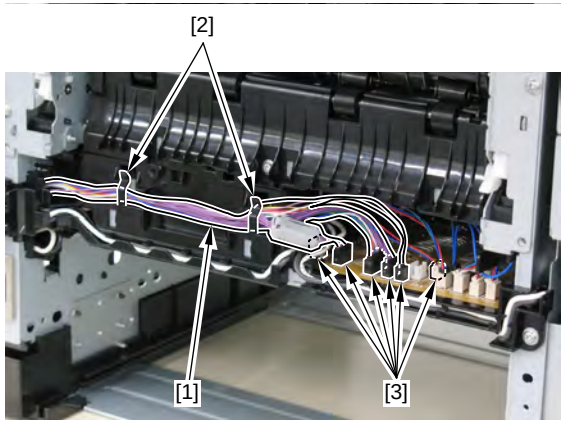


11.2.29 Removing the Engine Controller Unit

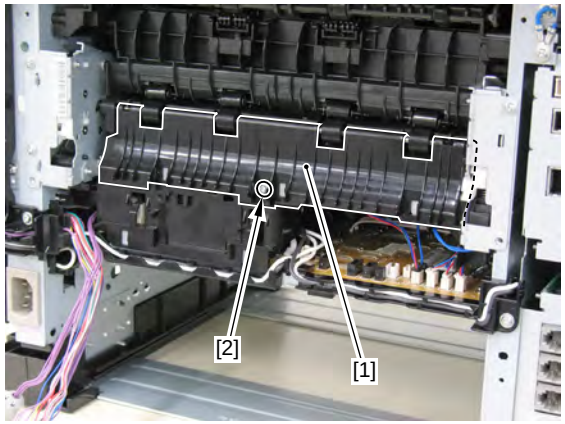
1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the left cover (rear).
4. Remove the power cooling fan mount.
5. Remove the ADF + reader unit.
6. Remove the upper cover unit.
7. Remove the NCU PCB.
8. Remove the ADF/reader driver PCB.
9. Remove the SCNT PCB.
10. Remove the all-night power PCB mount.
11. Remove the controller box.
12. Remove the rear cover unit.
13. Remove the duplex reverse sensor unit [1].
    - 1 connector [2]
    - 1 screw [3]



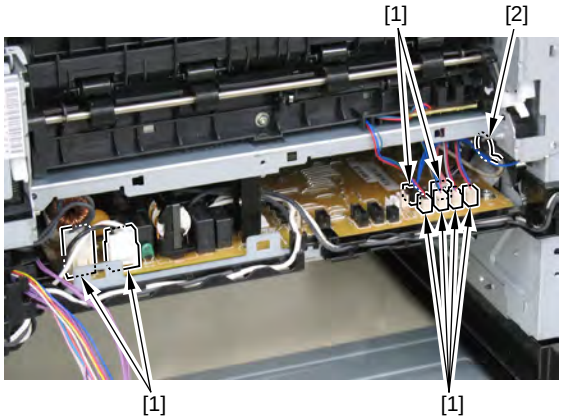
14. Remove the harness [1] from the harness guide [2].
    - 6 connectors [3]



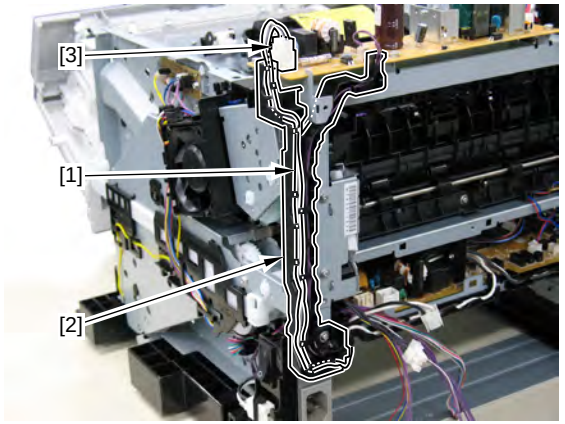
15. Remove the feed guide [1].
    - 1 screw [2]



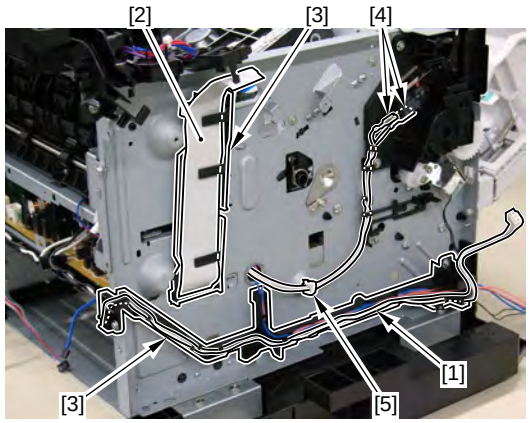
16. Remove the 8 connectors [1] and the terminal [2].



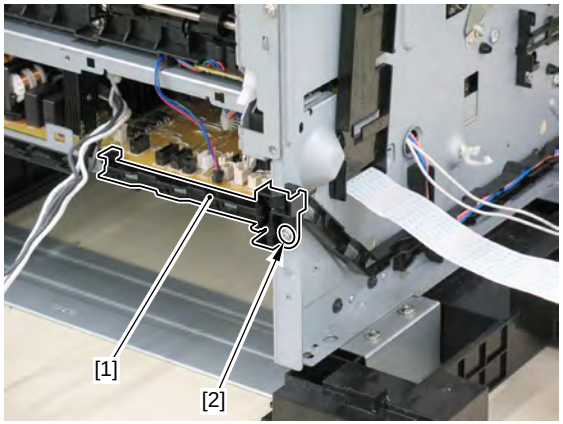
17. Remove the harness [1] from the harness guide [2].
    - 1 connector [3]



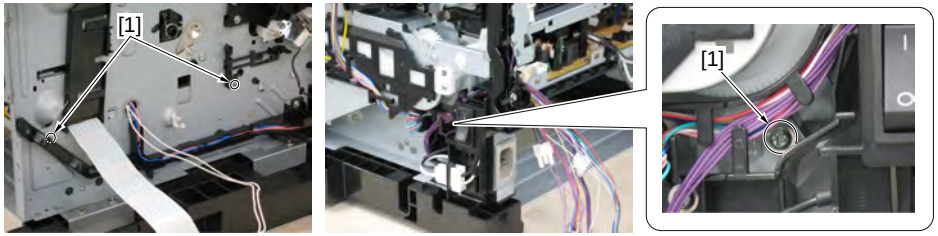
18. Remove the harness [1] and the flat cable [2] from the harness guide [3].
    - 2 terminals [4]
    - 1 wire saddle [5]



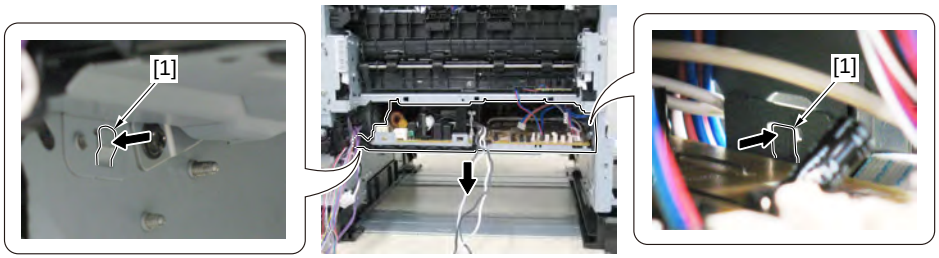
19. Remove the harness guide [1].
    - 1 screw [2]



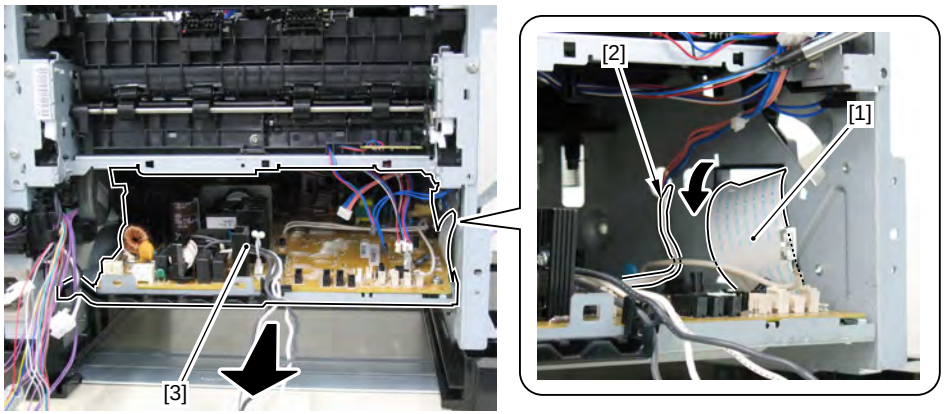
20. Remove the 3 mounting screws [1] of the engine controller unit.



21. Push the 2 claws [1] and displace the engine controller unit [2] in the direction of the arrow.

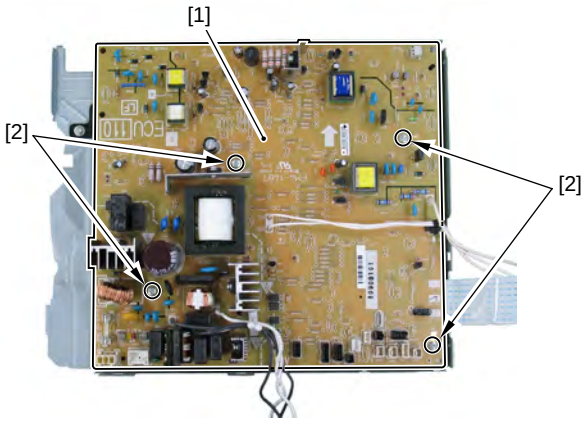


22. While pulling out the flat cable [1] and the harness [2] from the hole of the host machine, remove the engine controller unit [3].



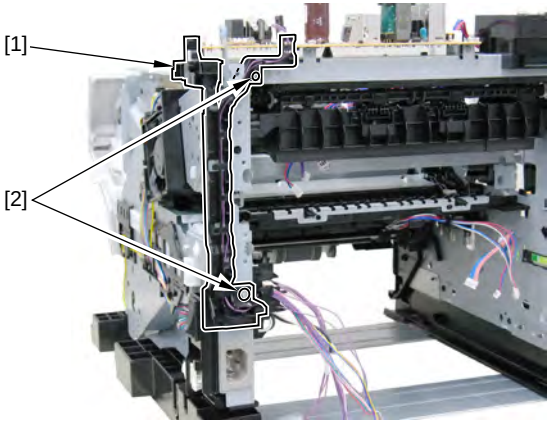
11.2.30 Removing the Engine Controller PCB

1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the left cover (rear).
4. Remove the power cooling fan mount.
5. Remove the reader unit.
6. Remove the upper cover unit.
7. Remove the NCU PCB.
8. Remove the ADF/reader driver PCB.
9. Remove the SCNT PCB.
10. Remove the all-night power PCB mount.
11. Remove the controller box.
12. Remove the engine controller unit.
13. Remove the engine controller PCB [1].
    - 4 screws [2]

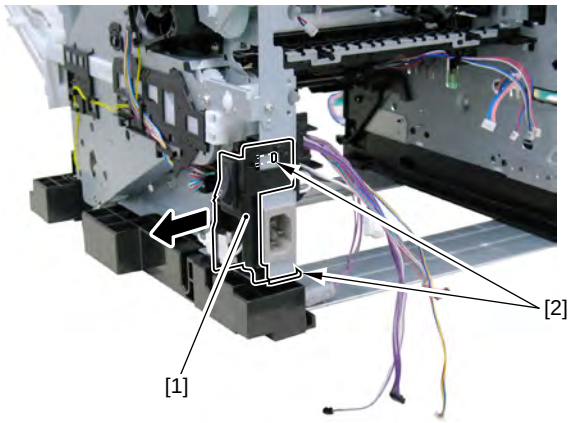


11.2.31 Removing the Main Motor

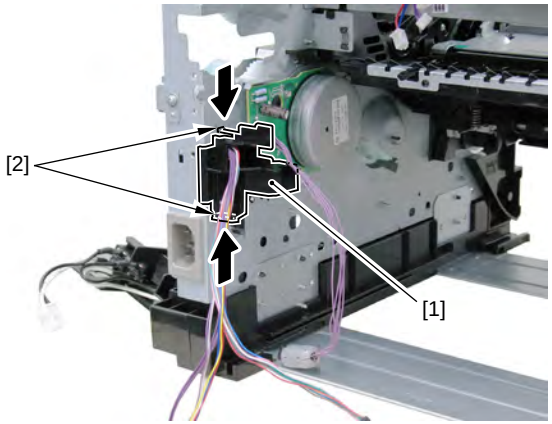
1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the reader unit.
6. Remove the upper cover unit.
7. Remove the NCU PCB.
8. Remove the ADF/reader driver PCB.
9. Remove the SCNT PCB.
10. Remove the all-night power PCB mount.
11. Remove the controller box.
12. Remove the fixing assembly.
13. Remove the engine controller unit [1].
14. Remove the harness guide [1].
    - 2 claws [2]



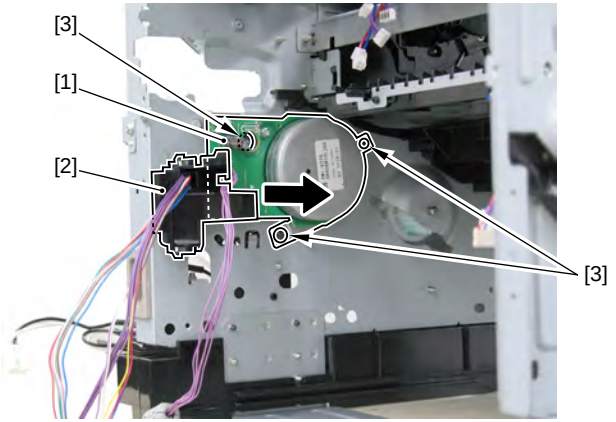
15. Remove the main switch mount [1].
    - 2 claws [2]



16. Displace the harness guide [1].
    - 2 claws [2]

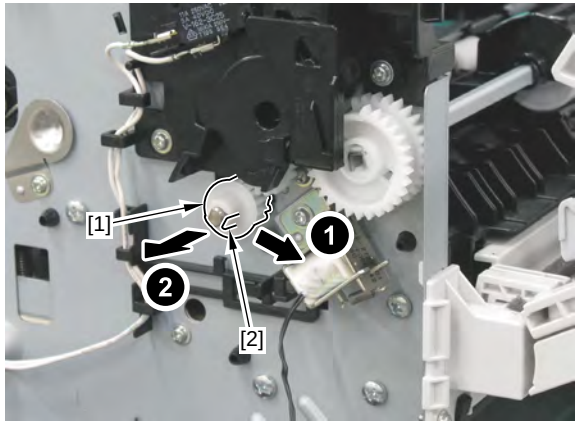


17. Remove the main motor [1] together with the harness guide [2].
    - 3 screws [3]

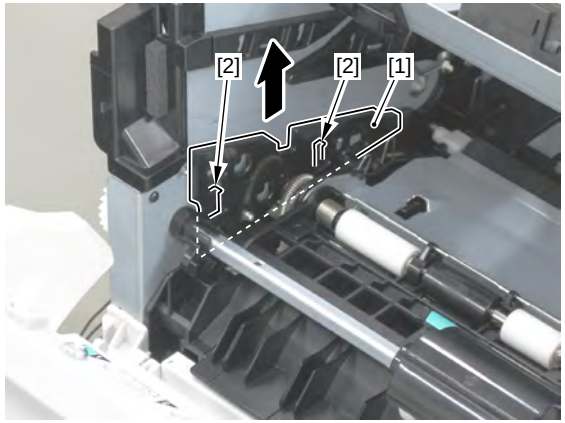


11.2.32 Removing the Registration Unit

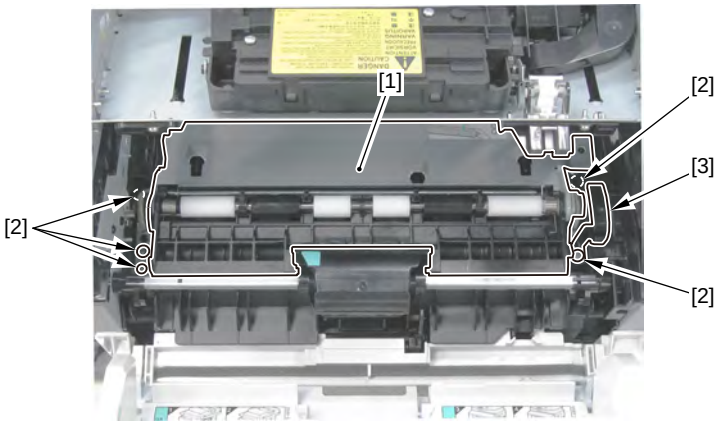
1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the ADF + reader unit.
6. Remove the upper cover unit.
7. Remove the all-night power PCB mount.
8. Remove the gear [1].
   - 1 claw [2]



9. Remove the guide [1].
   - 2 claws [2]

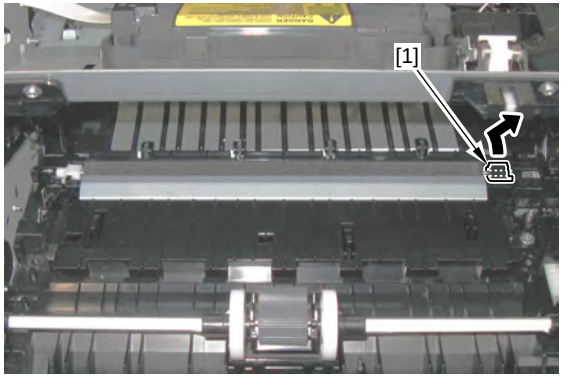


10. Remove the registration unit [1].
    - 5 screws [2]
    - 1 gear cover [3]

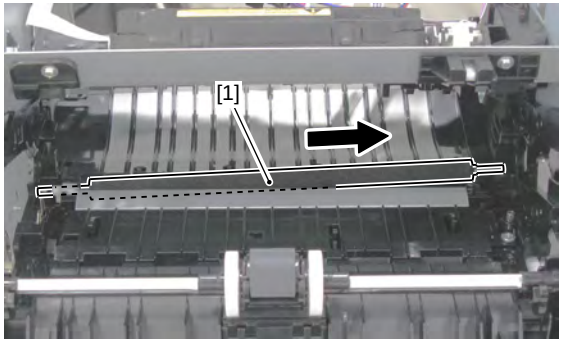


11.2.33 Removing the Transfer Roller

1. Remove the right cover unit.
2. Remove the left cover.
3. Remove the power cooling fan mount.
4. Remove the left cover (rear).
5. Remove the ADF + reader unit.
6. Remove the upper cover unit.
7. Remove the all-night power PCB mount.
8. Remove the registration unit.
9. Pinch the holder [1] and remove it in the direction of the arrow.

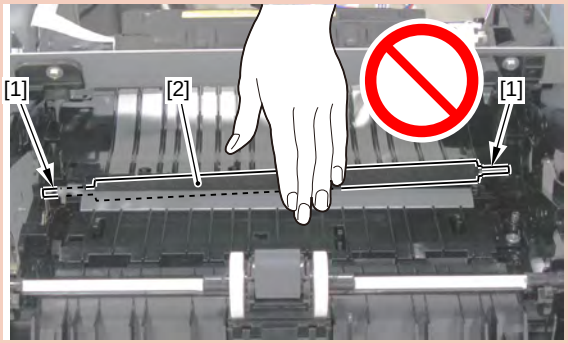


10. Remove the transfer roller [1] in the direction of the arrow.



Caution :

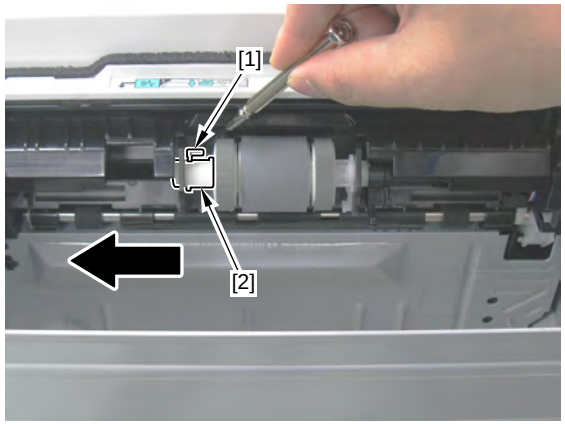
At installation, make sure to hold the shaft [1] of the transfer roller and be careful not to touch the sponge part [2] of the roller.



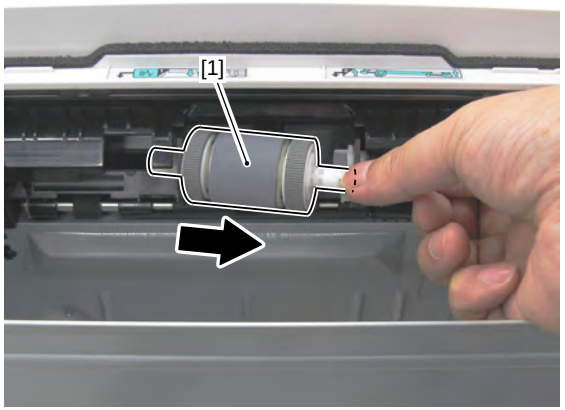
11.2.34 Removing the Pickup Roller

1. Remove the cassette [1].

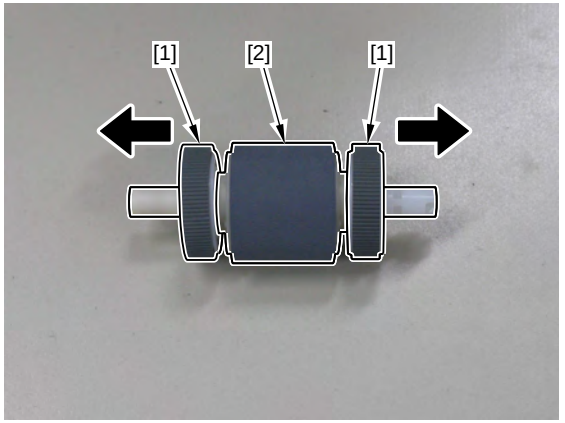
2. Release the stopper [1] and displace the shaft support [2].



3. Remove the pickup roller unit [1].

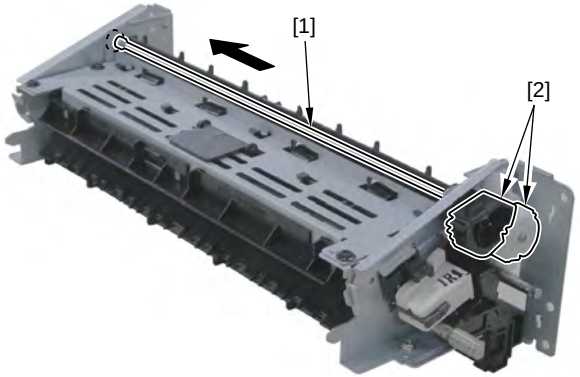


4. Remove the rubber roller [1] on both edges from the shaft and remove the pickup roller [2].

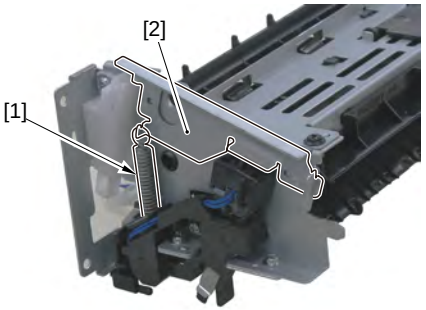


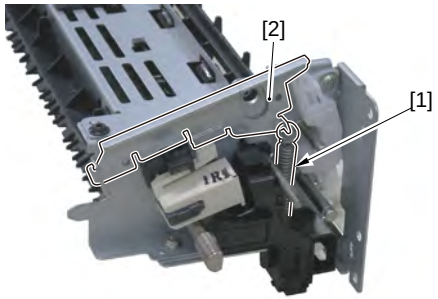
11.2.35 Removing the Fixing Film Unit

1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Remove the duplex unit cover.
5. Remove the fixing assembly.
6. Remove the shaft [1].
   - 2 gears [2]

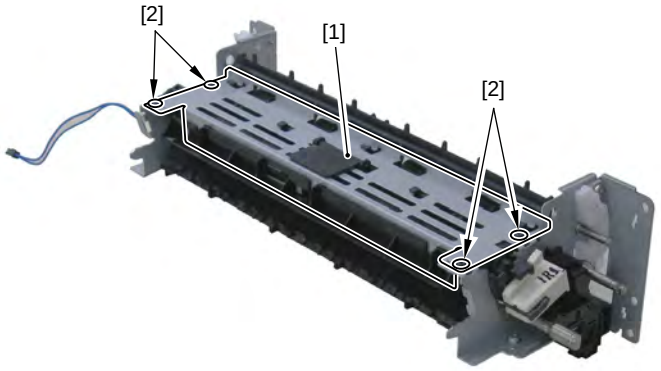


7. Remove the front and rear pressure springs [1] and the pressure plate [2].

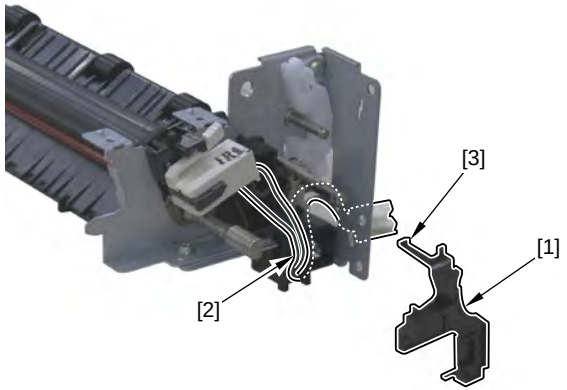




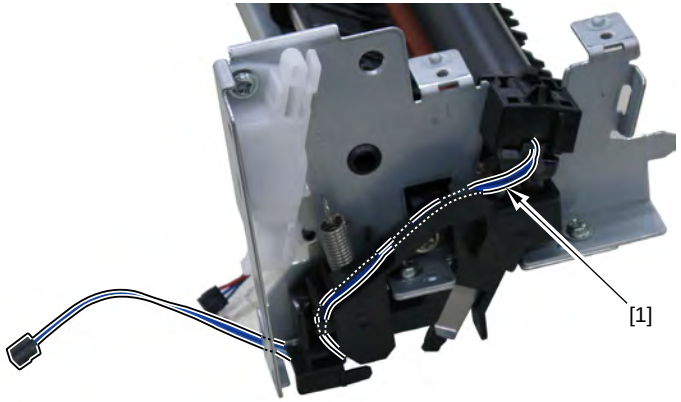
8. Remove the fixing upper cover [1].
   - 4 screws [2]



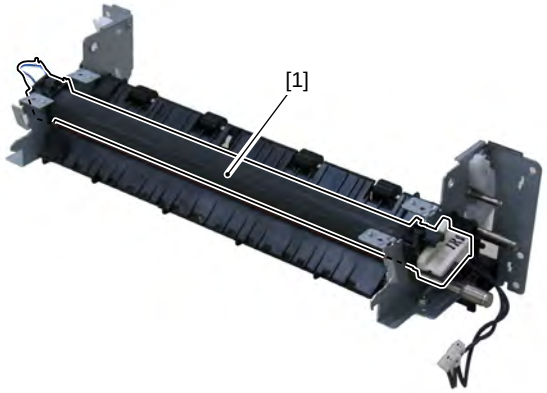
9. Remove the harness cover [1] and the harness [2].
   - 1 claw [3]



10. Remove the harness [1] from the guide.

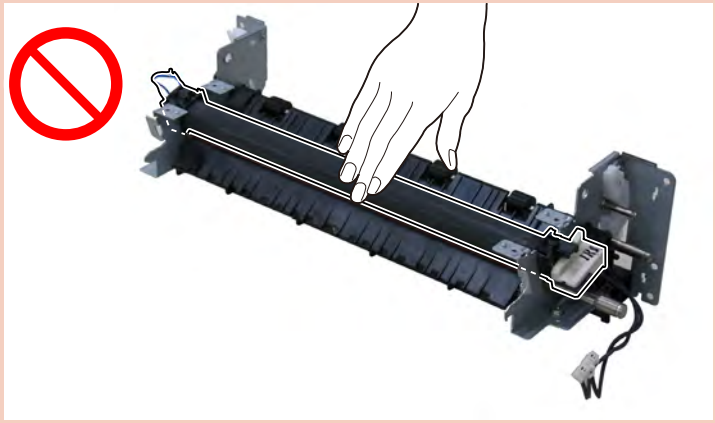


11. Remove the fixing film unit [1].



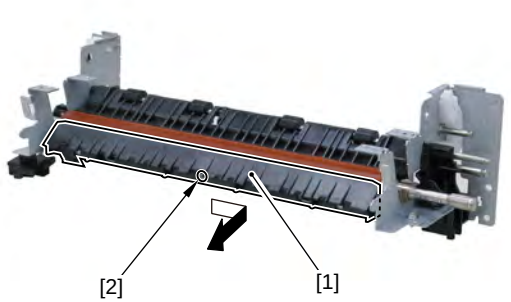
Caution :

When removing/installing it, be careful not to touch the surface of the fixing film.

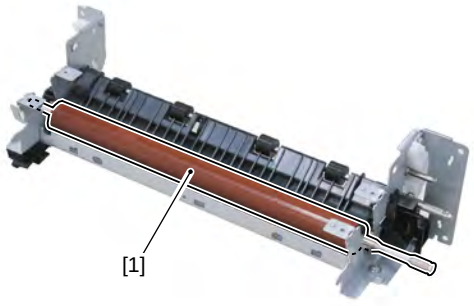


11.2.36 Removing the Fixing Pressure Roller

1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Remove the duplex unit cover.
5. Remove the fixing assembly.
6. Remove the fixing film unit.
7. Remove the inlet guide [1] in the direction of the arrow.
   - 1 screw [2]

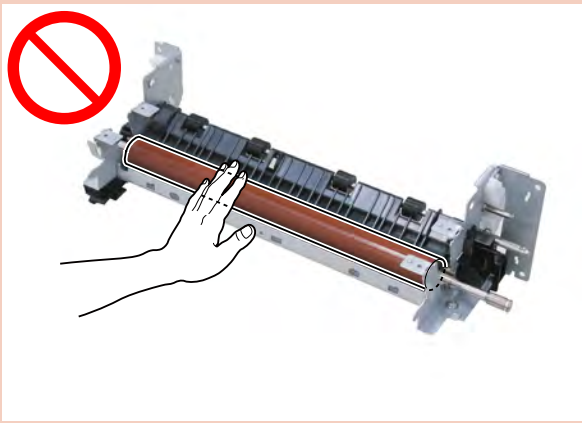


8. Remove the fixing pressure roller [1].



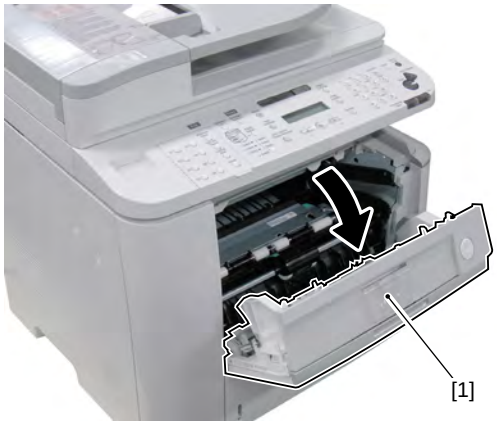
Caution :

When removing/installing it, be careful not to touch the surface of the fixing pressure roller.

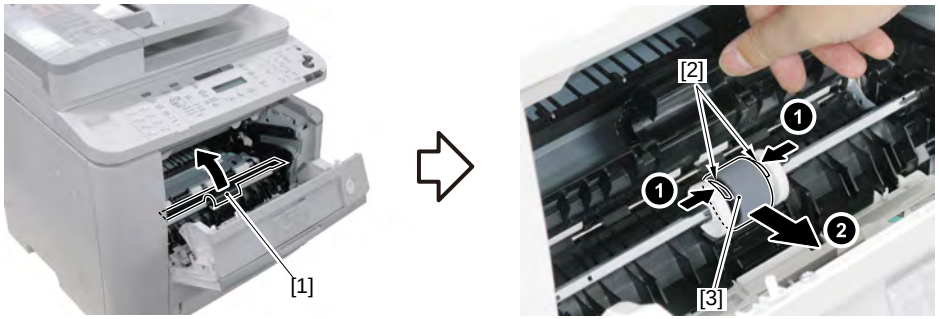


11.2.37 Removing the Manual Pickup Roller

1. Open the front cover [1].



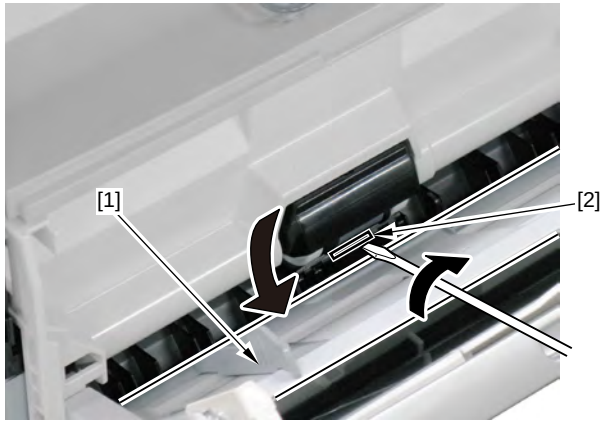
2. Open the pickup roller cover [1], move the roller holder [2] in the direction of the arrow and remove the manual pickup roller [3].



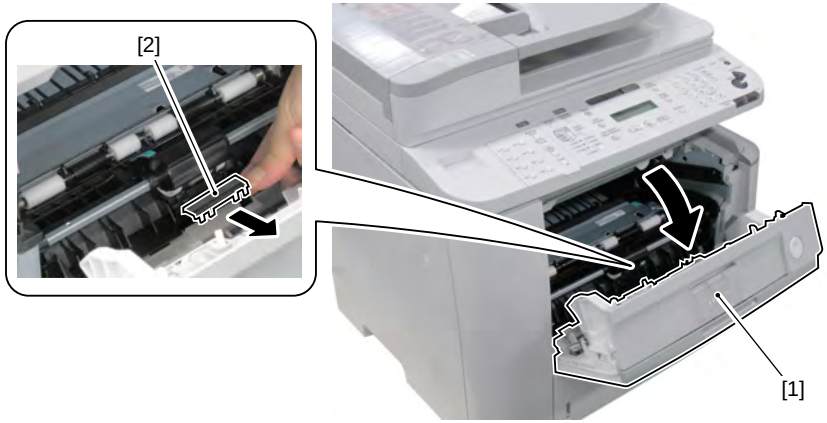
11.2.38 Removing the Manual Separation Pad

1. Open the manual pickup cover [1].

2. Lower the manual guide [1], insert the precision flat-screwdriver into the clearance [2] of the separation pad and displace it in the direction of the arrow.



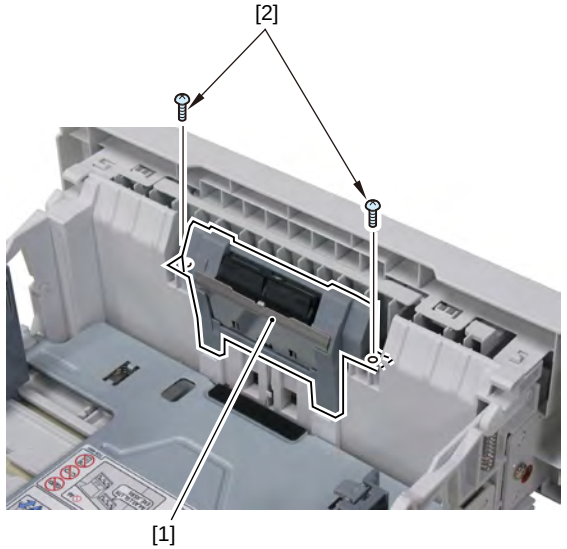
3. Open the front cover [1] and remove the separation pad [2].



11.2.39 Removing the Cassette Separation Pad

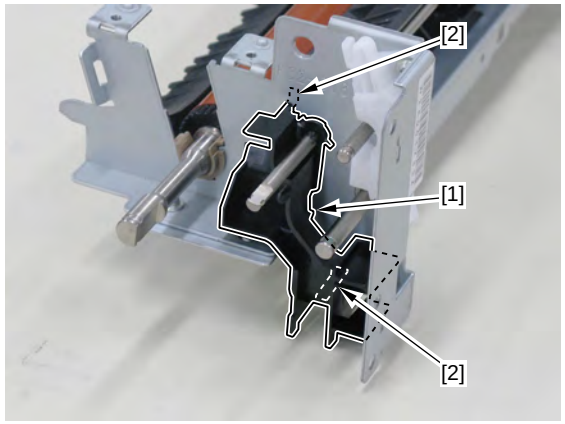
1. Remove the cassette [1].

2. Remove the separation pad [1].
   - 2 screws [2]

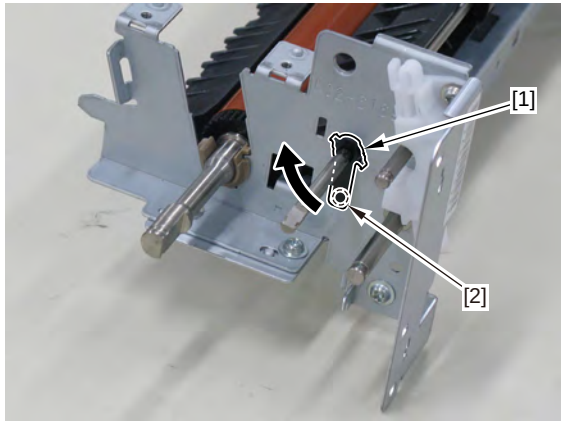


11.2.40 Removing the Fixing Delivery Roller

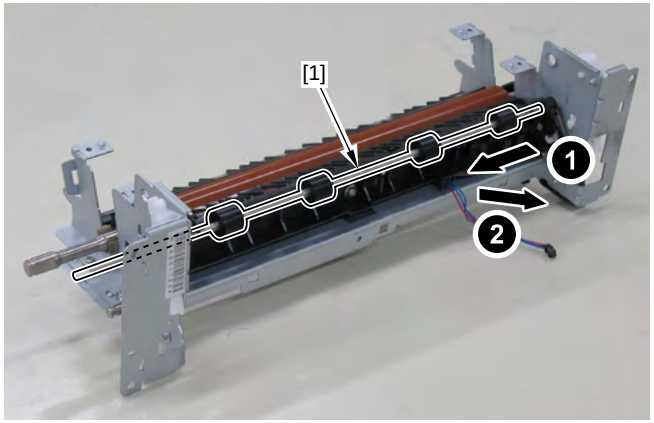
1. Remove the left cover unit.
2. Remove the left cover (rear).
3. Remove the right cover unit.
4. Remove the duplex unit cover.
5. Remove the fixing assembly.
6. Remove the fixing film unit.
7. Remove the harness guide [1].
   - 2 claws [2]



8. Remove the rotation plate [1].
   - 1 boss [2]

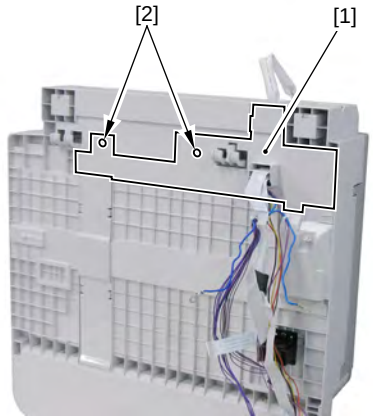


9. Remove the fixing delivery roller [1] in the direction of the arrow.

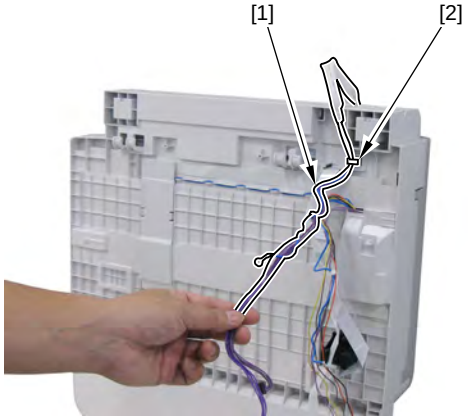


11.2.41 Separating the ADF unit + Reader Unit

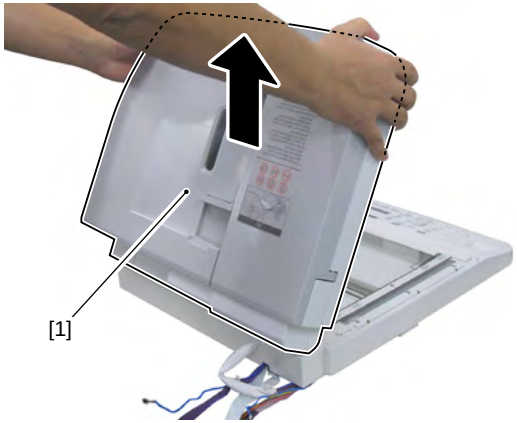
1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the ADF unit + reader unit.
5. Remove the reader unit lower cover [1].
   - 2 screws [2]



6. Remove the harness [1] from the harness guide [2].



7. Lift the ADF unit [1] and remove it upward.



[Operation after replacing the reader unit]

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

- [Operation after replacing the reader scanner unit]
- [Operation after replacing the copyboard glass]

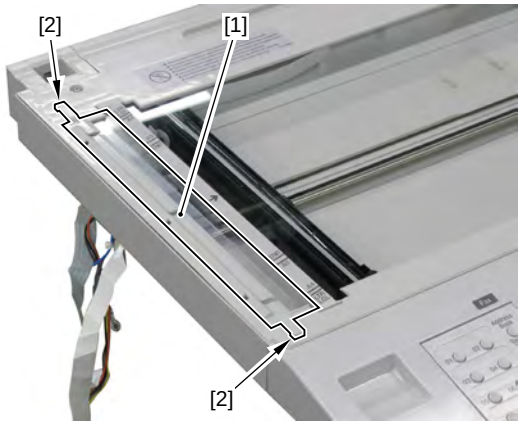
After replacing the reader unit, if the registration position is displaced, go through the following adjustment.

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

11.2.42 Removing the Reader Unit Upper Cover

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the ADF unit + reader unit.
5. Separate the ADF unit + reader unit.
6. Remove the 2 screws [1] on the bottom of the reader unit.

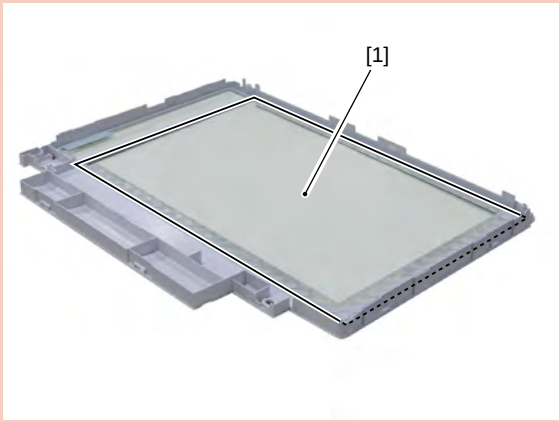
7. Remove the standard white plate [1].
   - 2 claws [2]



8. Remove the reader unit upper cover [1].
   - 2 screws [2]
   - 7 claws [3]

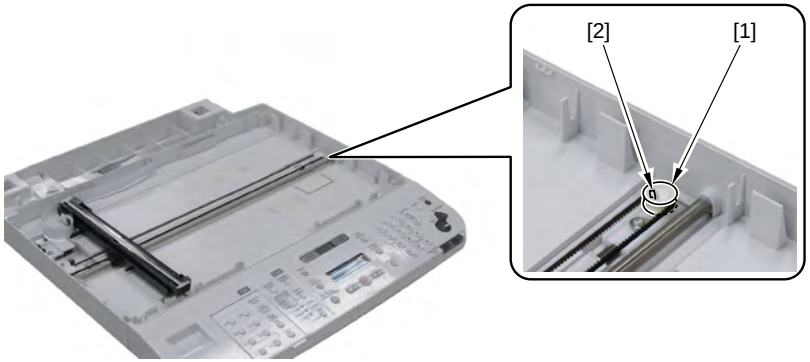
Caution :

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

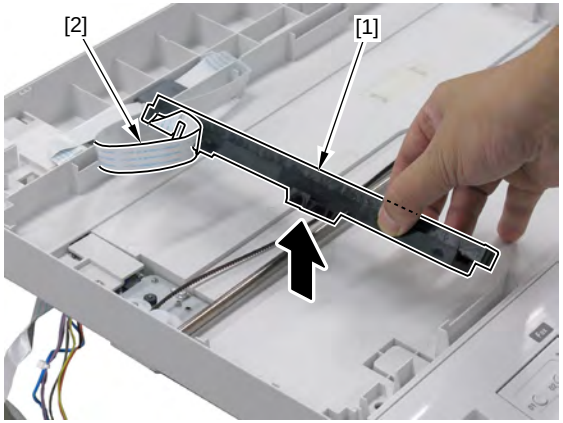


11.2.43 Removing the Reader Scanner Unit

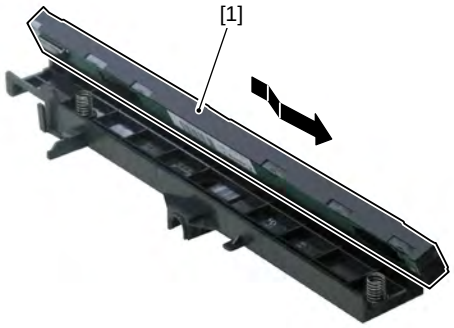
1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the ADF unit + reader unit.
5. Separate the ADF unit + reader unit.
6. Remove the reader upper cover unit.
7. Remove the belt pulley [1].
   - 1 claw [2]



8. Remove the contact sensor mount [1] upward and remove the flat cable [2].



9. Lift the contact sensor [1] and remove it in the direction of the arrow.



■ [Operation after replacing the contact sensor]

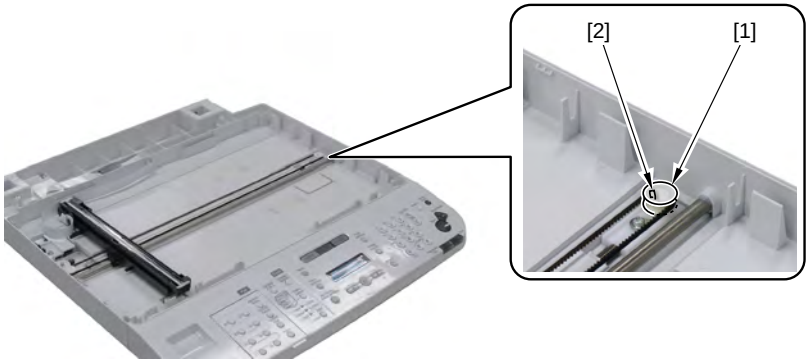
After replacing the contact sensor, go through the following procedure and make sure to adjust the output between channels.

1. Enter the service mode.
2. Press additional function key > 2 key > 8 key > additional function key on the control panel.
3. Press the arrow key on the control panel to display “TEST MODE”.
4. Press OK key.
5. Press 2 key and “SCAN TEST” is displayed.
6. Press 1 key and “SHADING” is displayed.

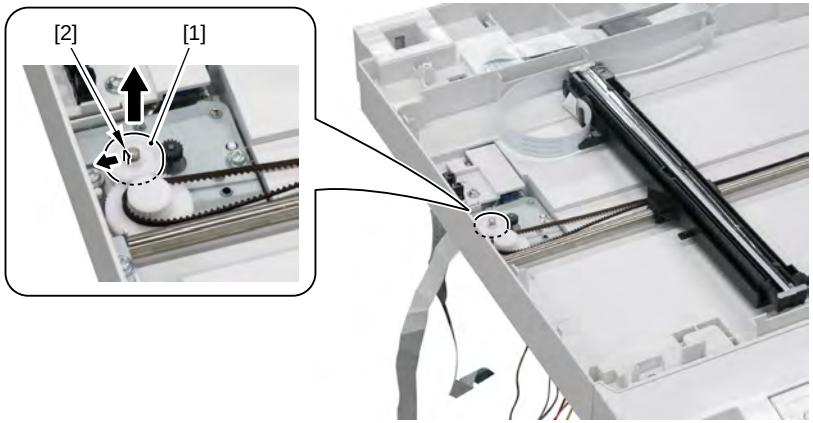
After this operation, the output adjustment of the contact sensor and the parameter are automatically performed.
When the auto adjustment is complete, OK is displayed.

11.2.44 Removing the Reader Motor

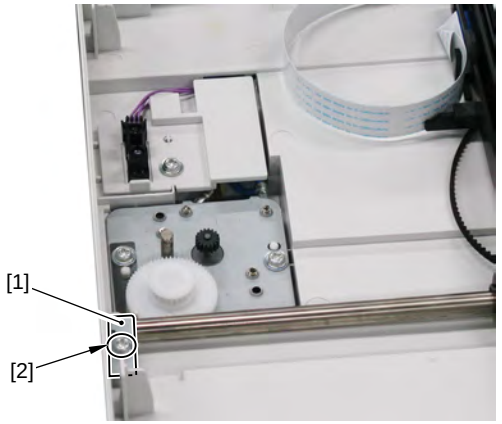
1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the ADF unit + reader unit.
5. Separate the ADF unit + reader unit.
6. Remove the reader upper cover unit.
7. Remove the belt pulley [1].
   - 1 claw [2]



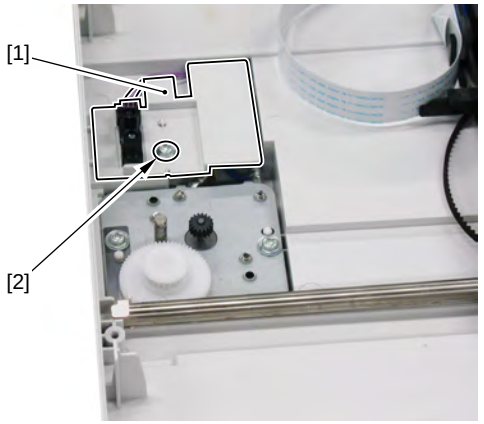
8. Remove the gear [1].
   - 1 claw [2]



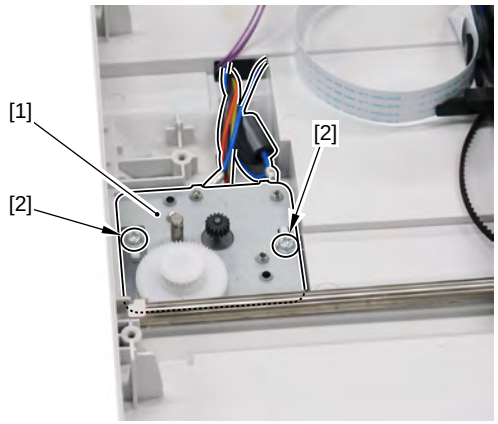
9. Remove the shaft retaining plate [1].
   - 1 screw [2]



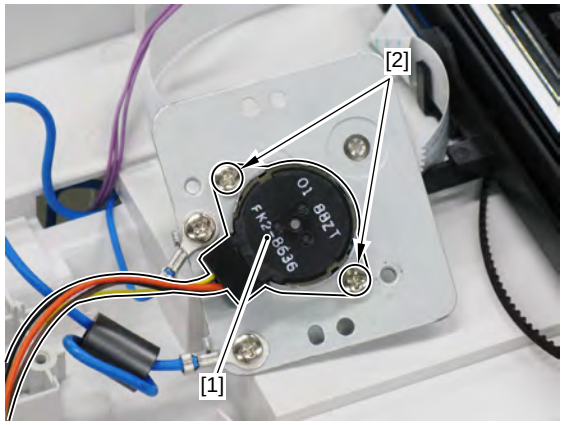
10. Remove the sensor mount [1].
    - 1 screw [2]



11. Remove the motor mounting plate [1].
    - 2 screws [2]



12. Turn over the motor mounting plate and remove the reader motor [1].
    - 2 screws [2]

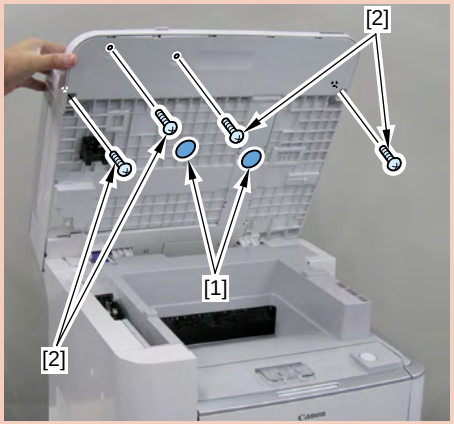


11.2.45 Removing the Control Panel

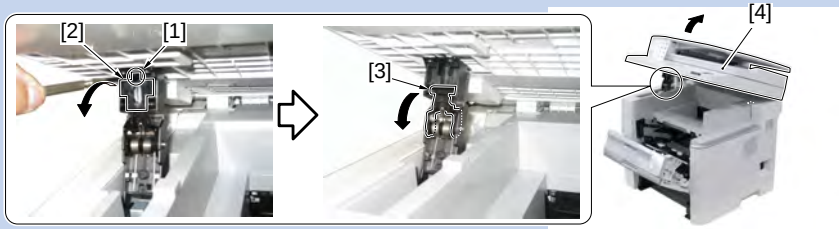
1. Remove the 2 blanking sheets [1] and 4 screws [2] on the bottom of the reader unit.

Caution :

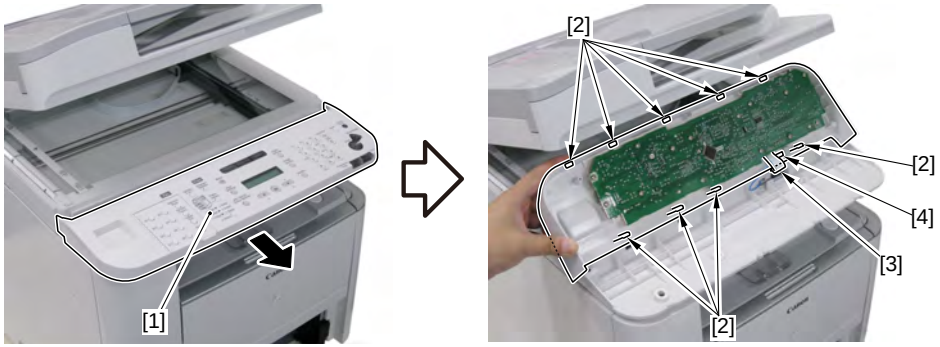
Since the blanking sheet [1] needs to be purchased separately, be careful not to lose it after removing it.



Memo :
When removing the screw on the bottom of the reader unit, remove the claw [1] and the reader shaft retainer [2] and then, remove the reader support shaft [3] so that it is easy to open the reader unit [4].

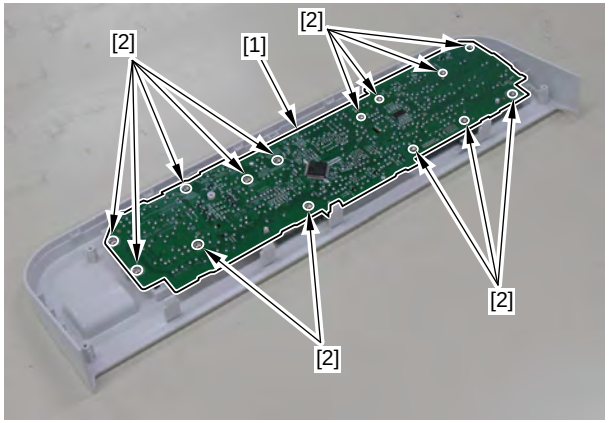


2. Remove the control panel [1].
   - 9 claws [2]
   - 1 flat cable [3]
   - 1 terminal [4]



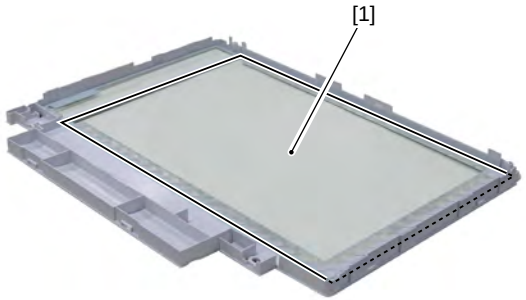
11.2.46 Removing the Control Panel PCB

1. Remove the control panel.
2. Remove the control panel PCB [1].
   - 14 screws [2]



11.2.47 Removing the Copyboard Glass

1. Remove the left cover.
2. Remove the power cooling fan mount.
3. Remove the left cover (rear).
4. Remove the ADF unit + reader unit.
5. Separate the ADF unit + reader unit.
6. Remove the reader unit upper cover.
7. Remove the copyboard glass [1].



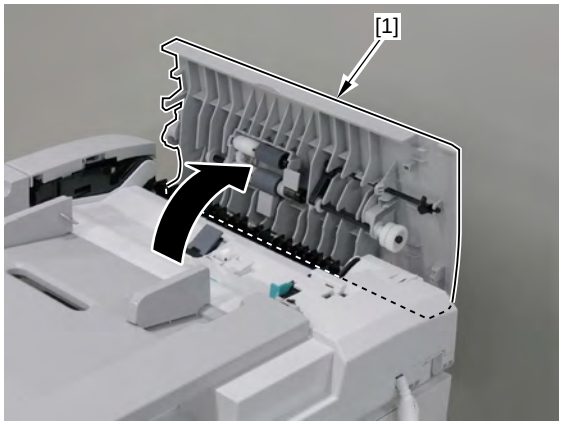
[Operation after replacing the copyboard glass]

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

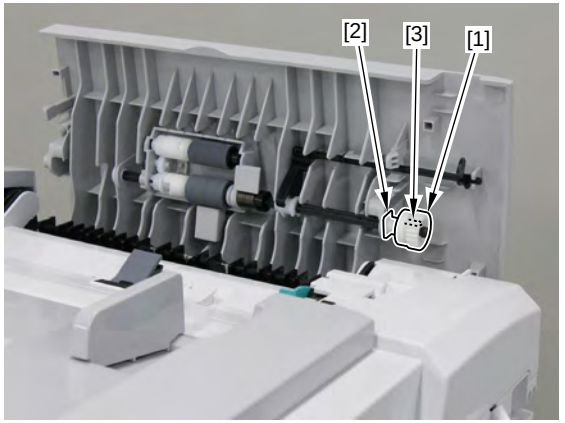
1. Enter the service mode.
   - SCAN>SCAN NUMERIC
2. Input the value on the bar-code label (4 digit each) to [213], [214] and [215] items.

11.2.48 Removing the ADF Roller Unit

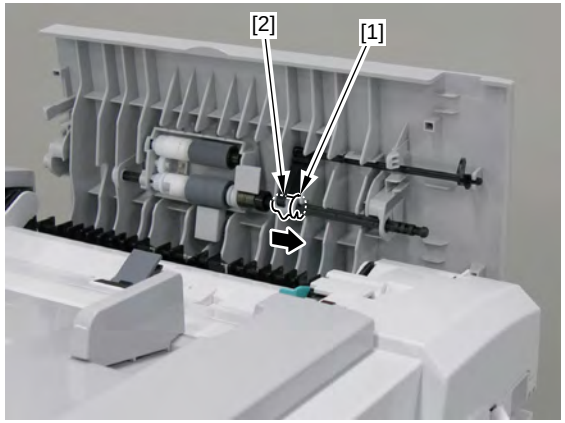
1. Open the ADF upper cover [1].



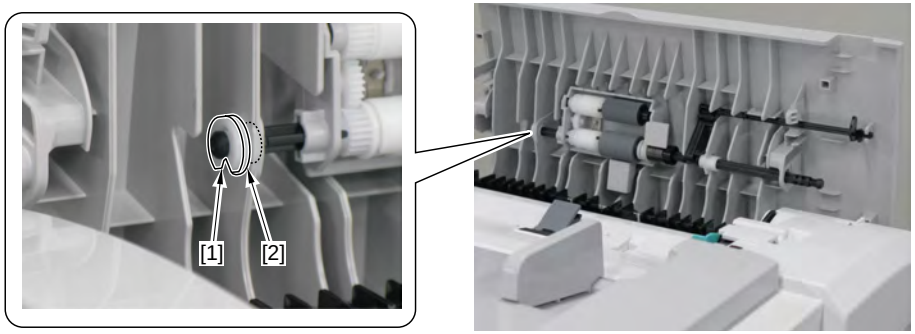
2. Remove the gear [1] and the bushing [2].
   - 1 claw [3]



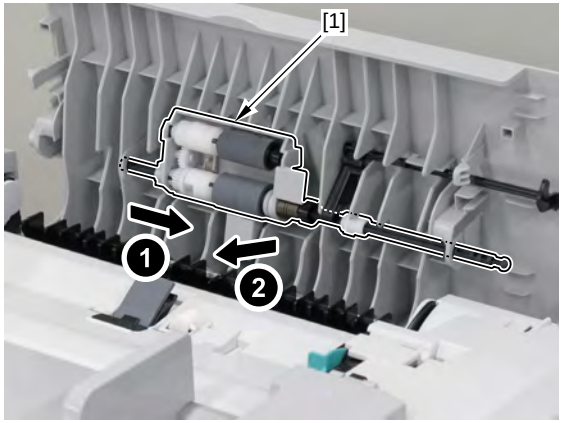
3. Remove the resin E-ring [1] and displace the bushing [2].



4. Remove the resin E-ring [1] and the bushing [2].

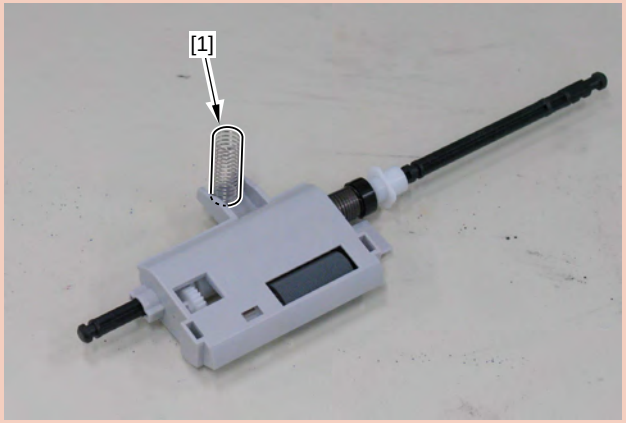


5. Remove the ADF roller unit [1].



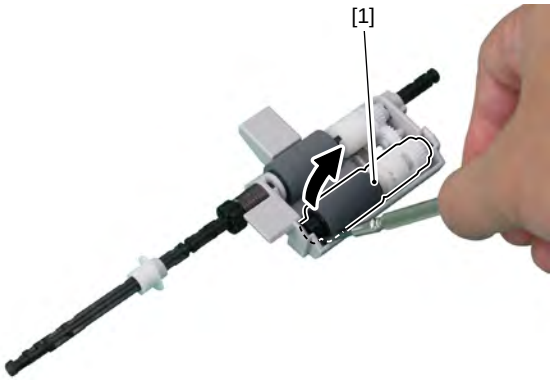
Caution :

When removing it, be careful not to lose the spring [1] attached to the ADF roller unit.

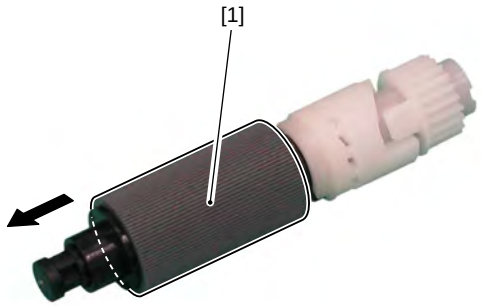


11.2.49 Removing the ADF Pickup Roller

1. Remove the ADF roller unit.
2. Insert the precision flat-screwdriver and remove the pickup roller [1] together with the shaft.



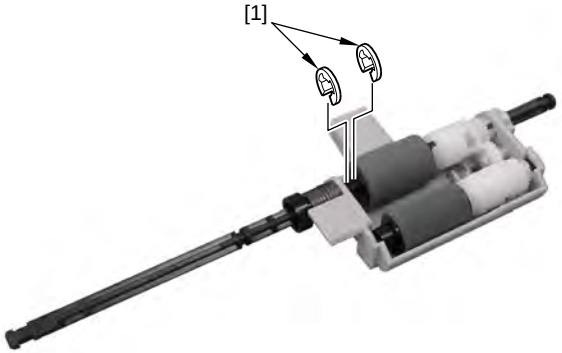
3. Remove the pickup roller [1].



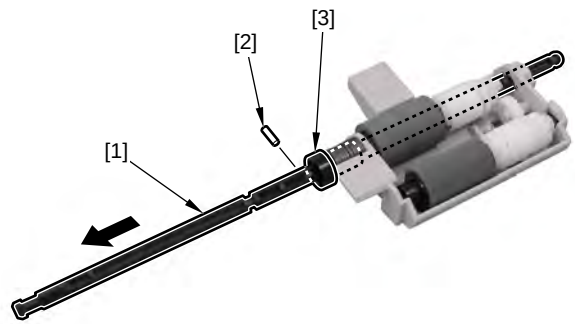
11.2.50 Removing the ADF Separation Roller

1. Remove the ADF roller unit.
2. Remove the bushing [1].

3. Remove the 2 resin E-rings [1].



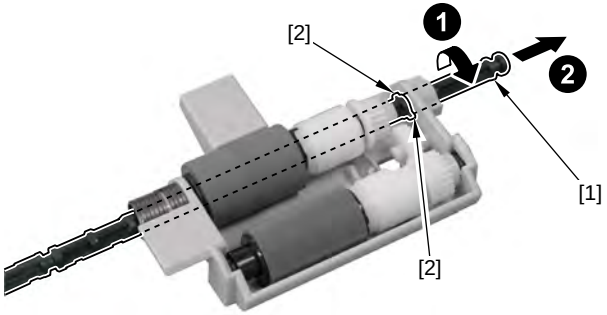
4. Displace the roller shaft [1] and remove the parallel pin [2] and the bushing [3].



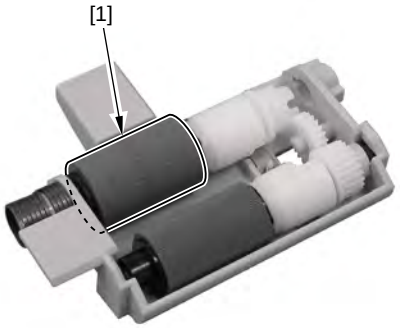
Caution :

Since the parallel pin is very tiny, be careful not to lose it.

5. 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.

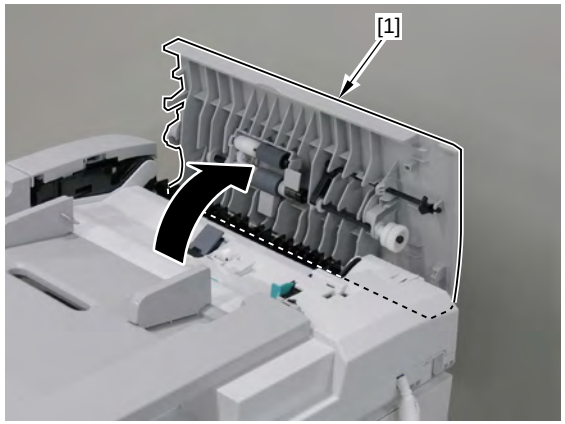


6. Remove the ADF separation roller [1].

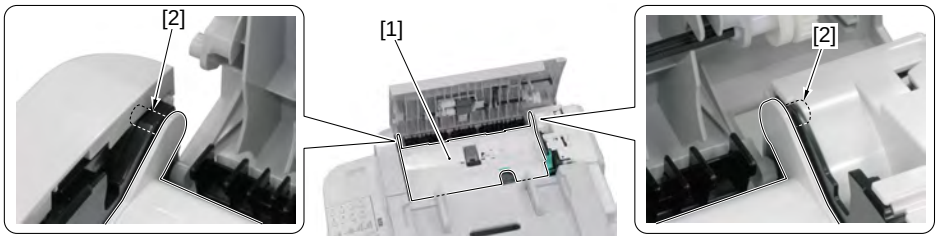


11.2.51 Removing the ADF Separation Pad

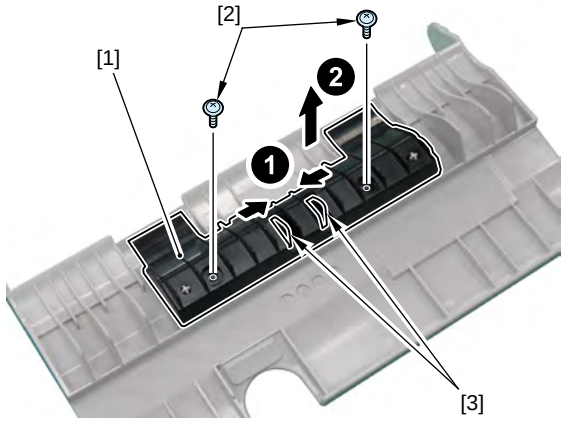
1. Open the ADF upper cover [1].



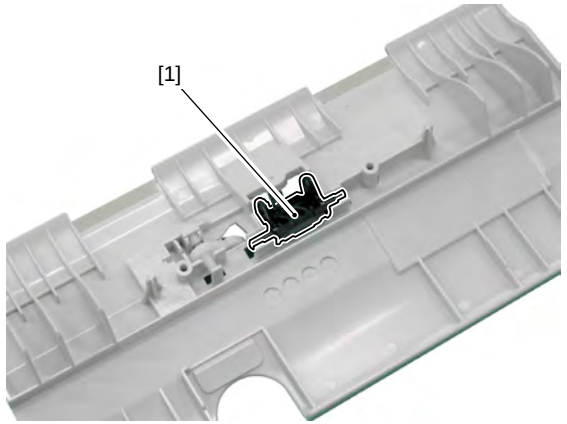
2. Remove the feed guide [1].
   - 2 bosses [2]



3. Remove the retaining plate [1] on the back of the feed guide.
   - 2 screws [2]
   - 2 tabs [3] of the separation pad holder

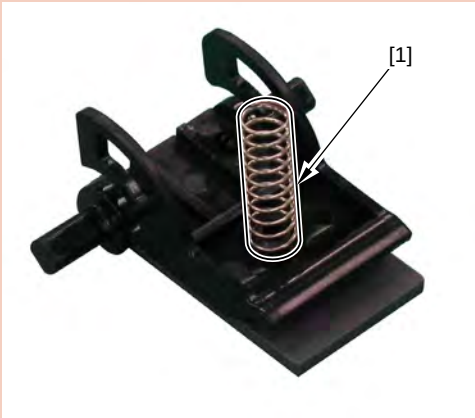


4. Remove the separation pad holder [1].

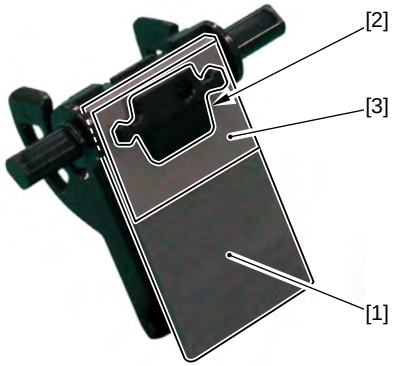


Caution :

Be careful not to lose the spring [1] on the separation pad holder.

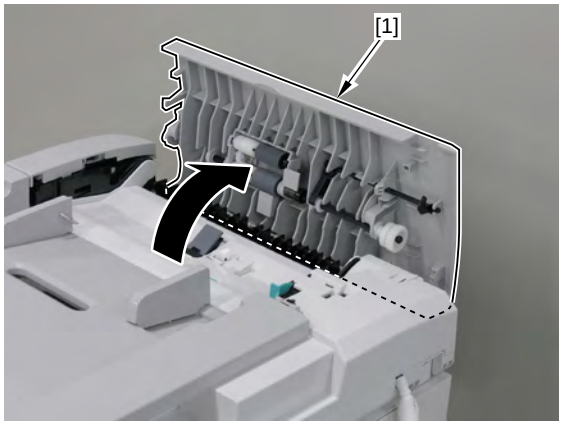


5. Remove the separation pad [1].
   - Pad retainer [2]
   - Sheet [3]

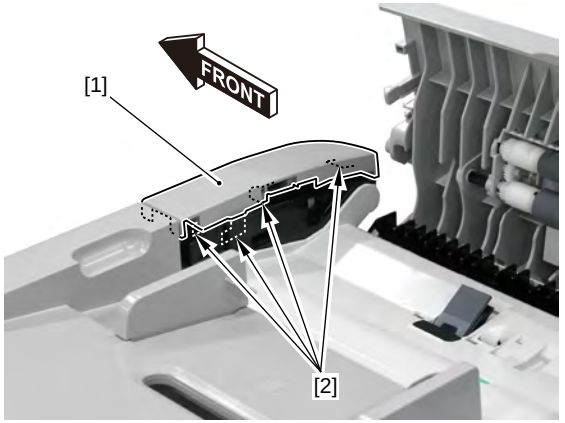


11.2.52 Removing the ADF Pickup Feed Unit

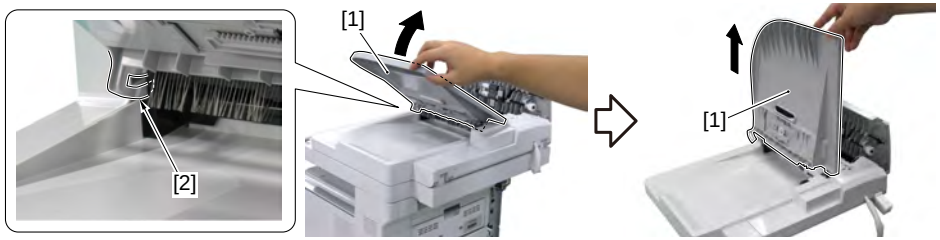
1. Open the ADF upper cover [1].



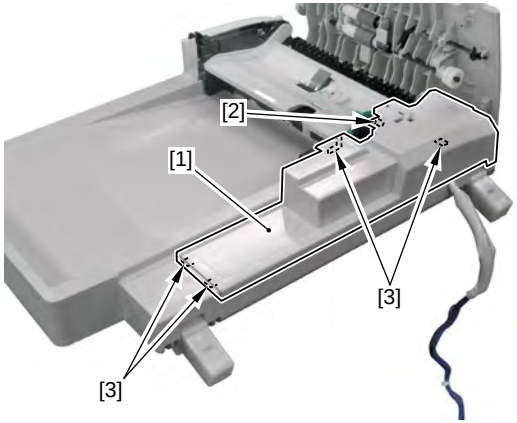
2. Remove the ADF front cover [1].
   - 4 claws [2]



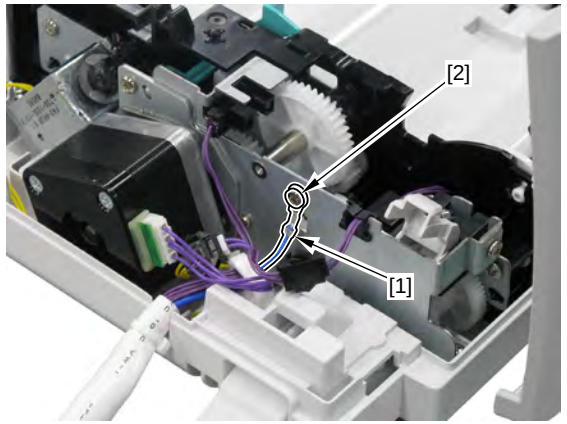
3. Slightly lift the ADF tray [1] and after removing the claw [2], lift it by 90 degree and remove it upward.



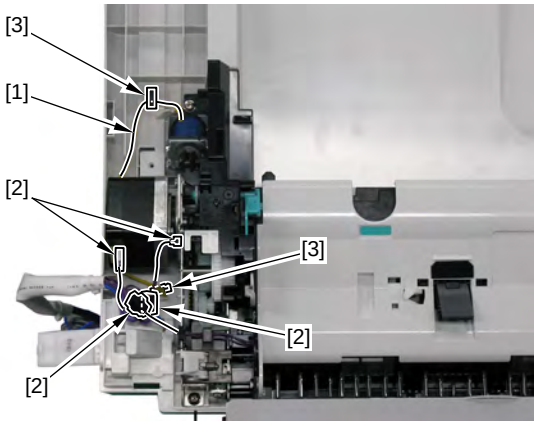
4. Remove the ADF rear cover [1].
   - 1 boss [2]
   - 4 claws [3]



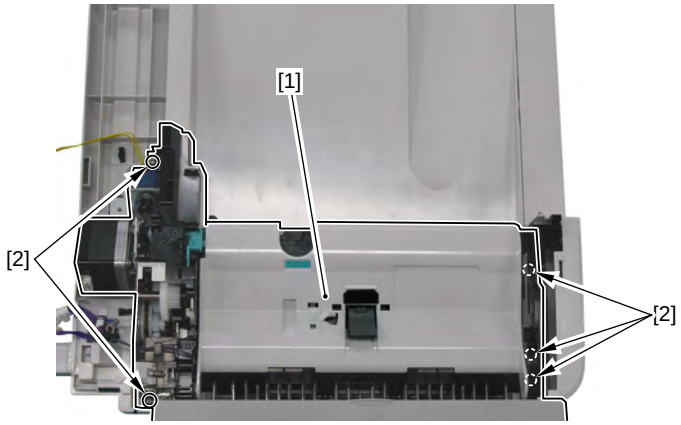
5. Remove the grounding wire [1].
   - 1 screw [2]



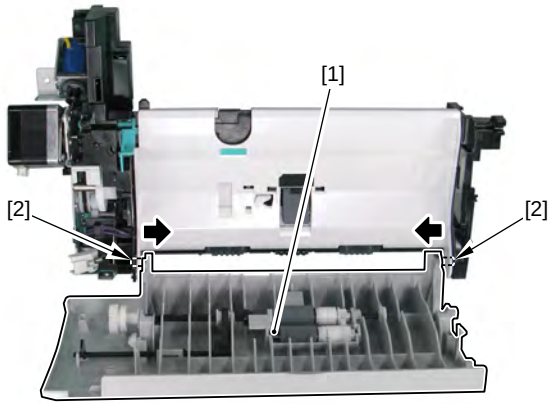
6. Remove the harness [1].
   - 4 connectors [2]
   - 2 wire saddles [3]



7. Remove the ADF pickup feed unit [1].
   - 5 screws [2]



8. Remove the ADF upper cover unit [1].
   - 2 bosses [2]

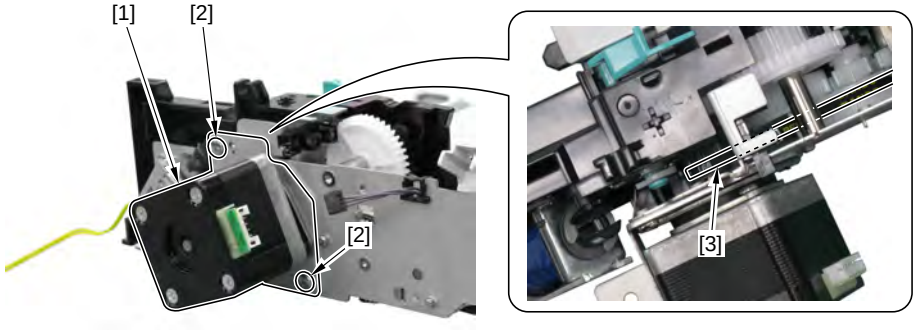


11.2.53 Removing the ADF Pickup Motor

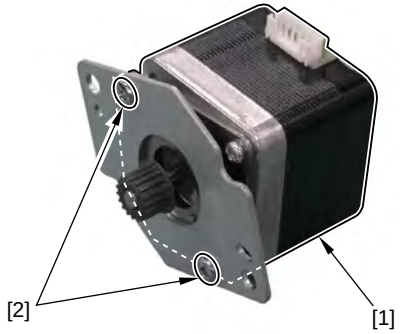
1. Remove the ADF pickup feed unit.

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

2. Remove the ADF motor unit [1].
   - 2 screws [2]
   - 1 belt [3]

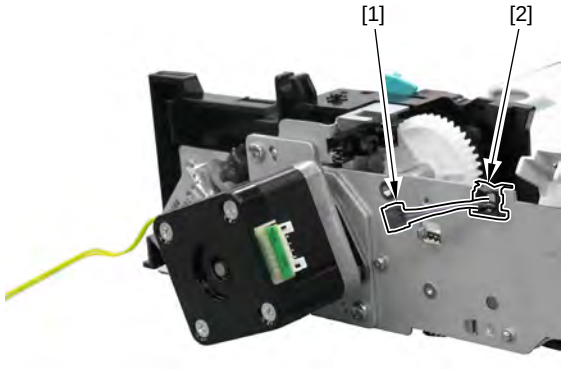


3. Remove the ADF motor [1].
   - 2 screws [2]

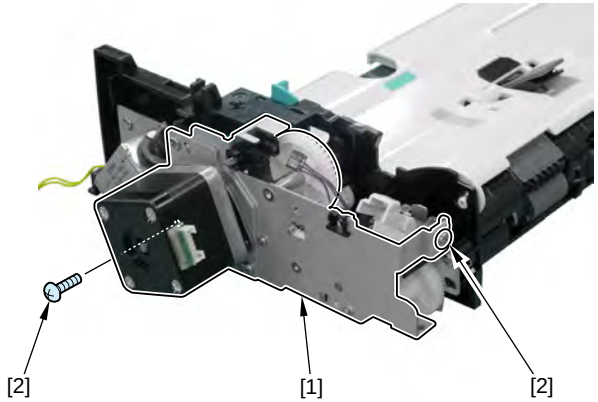


11.2.54 Removing the ADF Delivery Solenoid

1. Remove the ADF pickup feed unit.
2. Remove the harness [1] from the edge saddle [2].

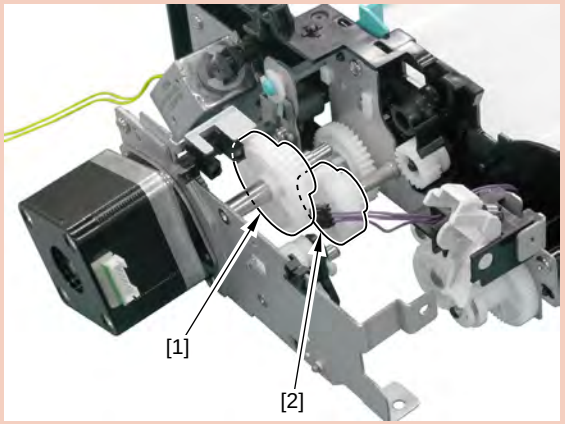


3. Remove the ADF motor unit mount [1].
   - 2 screws [2]

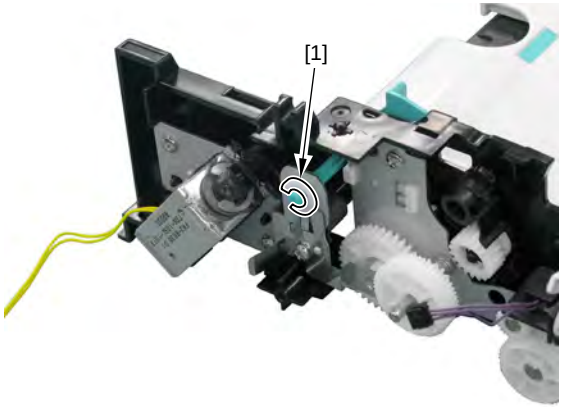


Caution :

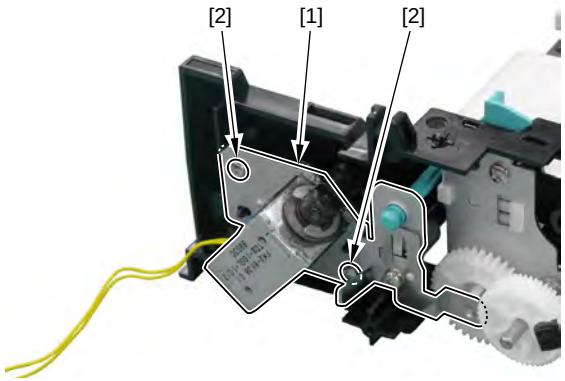
Since the gear [1] of the ADF motor unit and the gear [2] on the frame side of the pickup feed unit are not fixed, be careful not to drop or lose them.



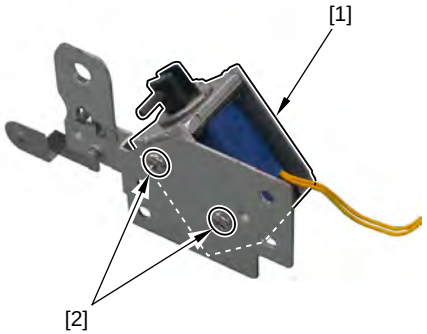
4. Remove the resin E-ring [1].



5. Remove the solenoid mount [1].
   - 2 screws [2]



6. Remove the ADF delivery solenoid [1].
   - 2 screws [2]



12 Maintenance and Inspection

- Periodically Replace Parts
- Periodically Service
- Cleaning

12.1 Periodically Replace Parts

12.1.1 Periodically Replace Parts

There are no periodically replace parts with this machine.

12.1.2 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		1	50,000 sheets	
ADF separation roller		1	50,000 sheets	

*1) Expected service life, to be average preparation value.
Unit of expected service life, for imagin system is image, for feed system with out picup unit is page, for pickup system is "sheet" for fan is "time".

12.2 Periodically Service

Periodically Service

There are no periodically service items with this machine.

12.3 Cleaning

12.3.1 Cleaning items

Responsible by: Cleaning area	Cleaning area	Cleaning timing
User	External covers	When they are smudged
	Scanning area	When the image read from the copyboard is smudged
	ADF	When the image read from the ADF has a black line in vertical direction
	Fixing unit	When there are irregular black lines in vertical direction in the paper
Service Technician	MP tray pickup roller	When paper pickup performance drops away
	MP tray separation pad	When paper separating performance drops away
	Cassette pickup roller	When paper pickup performance drops away
	Cassette separation pad	When paper separating performance drops away
	Transfer guide unit	When there is smudge in the paper, when there are irregular black lines in vertical direction, when there is paper jam, when there are wrinkles in the paper
	Feed guide unit	When there is smudge in the paper, when there are irregular black lines in vertical direction, when there is paper jam, when there are wrinkles in the paper
	Fixing inlet guide	When there is smudge in the paper, when there are irregular black lines in vertical direction, when there is paper jam, when there are wrinkles in the paper

Caution:

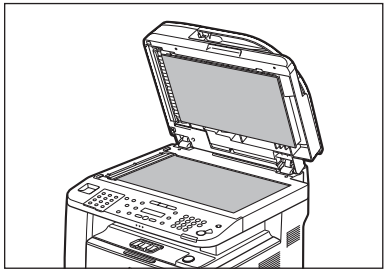
Make sure to turn off the power and disconnect the power supply plug upon cleaning. It may cause fire/electric shock if failing turning off the power.

■ Cleaning Method (External Covers)

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

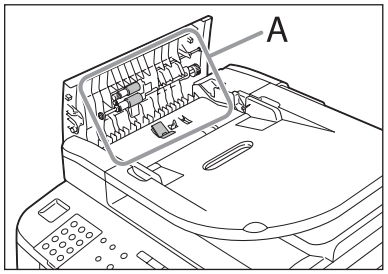
■ Cleaning Method (Scanning area)

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.

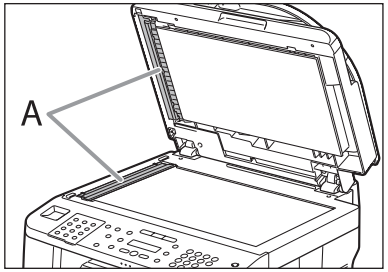


■ Cleaning Method (ADF)

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



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.



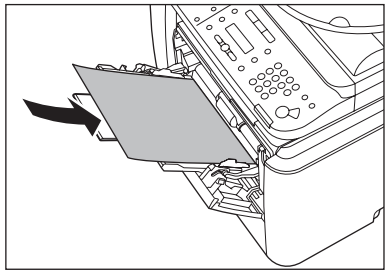
Fixing unit

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.



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.

13 Measurement and Adjustments

- Scanning System
- Electrical Adjustment

13.1 Scanning System

13.1.1 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.

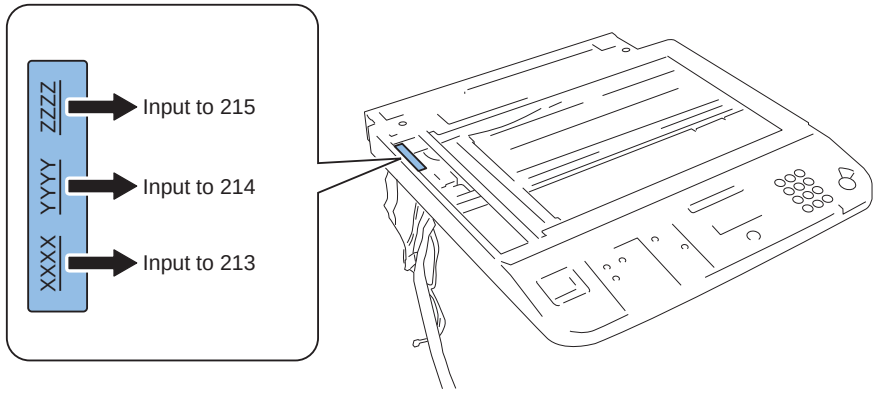
1) Enter the service mode.
2) Press additional function key > 2 key > 8 key > additional function key on the control panel.
3) Press the arrow key on the control panel to display “TEST MODE”.
4) Press OK key.
5) Press 2 key and “SCAN TEST” is displayed.
6) Press 1 key and “SHADING” is displayed.

13.1.2 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.



13.1.3 Procedure after replacing the reader unit

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

1) [Procedure after replacing the reader scan unit] (refer to XXXX)
2) [Procedure after replacing the copyboard glass] (refer to XXXX)

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)

13.2 Electrical Adjustment

13.2.1 Procedure after Replacing the SCNT board

If you have replaced the SCNT board with a new one, perform the following operations:

Outputting report

Before replacing the SCNT board, output and record the report for the information such as the user setting and the setting of the service mode.

Service mode > REPORT

Additional functions > Report setting > Report output

After replacing the SCNT board, enter the user data and the service data according to the report.

Changing the jumper connector

When replacing the SCNT board, change the position of the jumper connector to ON.

* The SCNT board is shipped with the jumper connector of the lithium battery OFF.

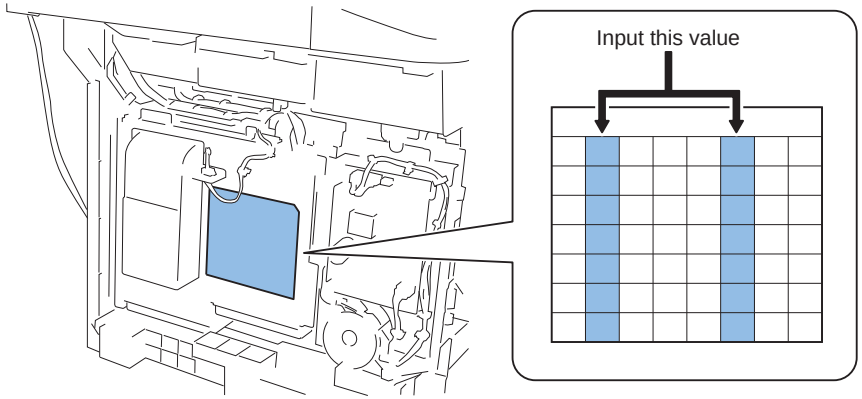
Make the following adjustments:

- Correction of output between CS channels

1) Enter the service mode.

Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.

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



2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".

5) Press the [1] key to display "SHADING".
6) Press [OK].

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

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.

14 Error Code

- Error Code
- Fax Error Code

14.1 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.
E196	1	Flash ROM write/read error	- Replace the SCNT board.
		The write/read of Flash ROM in the SCNT board is faulty.	
	2	PCL ROM write/read error	- Replace the SCNT board.
		The write/read of PCL ROM in the SCNT board is faulty.	
E197	0	Printer engine communication error	
		Erroneous communication between the Engine controller PCB and SCNT board was detected.	- Check the connectors of the Engine controller PCB and SCNT board. - Replace the Engine controller PCB for normal connection. - Replace the SCNT 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 SCNT board (PDL system error)	- Replace the SCNT board.
		The inside of the SCNT board is faulty.	
E733	0	Erroneous communication between controller and printer	
		Cannot communicate with the printer at startup.	- Check the connectors of the Engine controller PCB and SCNT board for normal connection. - Check the power supply of the printer (Check whether initialization is performed at startup). - Replace the Engine controller PCB or SCNT board.
E736	0	CCU communication error	
		The installed modem PCB is incompatible.	- Check the connectors of the SCNT board and modem. - Replace the modem PCB. - Replace the SCNT board.
E739	0	Erroneous communication between controller and network board	
		The installed network board is incompatible.	- Replace the SCNT board.

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E805	0	Fan failure	
		The fan is faulty.	- Check the fan connector. - Replace the fan. - Replace the Engine controller PCB.
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.

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

14.2.1 Outline

14.2.1.1 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)

14.2.2 User Error Code

14.2.2.1 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.

14.2.3 Service Error Code

14.2.3.1 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.

No.	Tx/Rx	Description
##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.
##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.

No.	Tx/Rx	Description
##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.
##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.

No.	Tx/Rx	Description
##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.
##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.

15 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)

15.1 Outline

15.1.1 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.

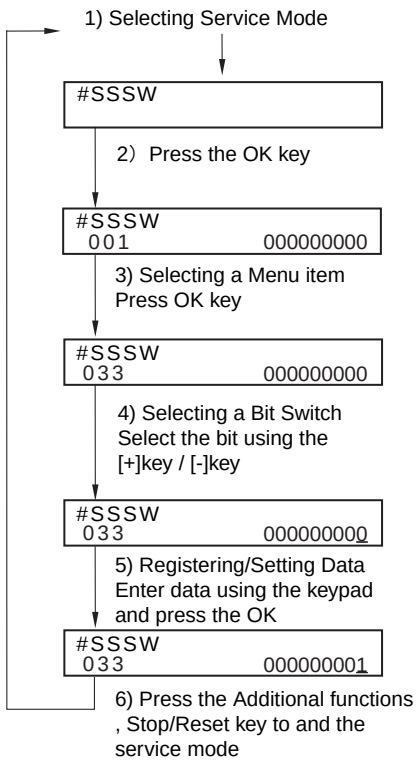
#ERROR DISPLAY
An error code is displayed when a service error has occurred.

#ROM
Displays ROM information, such as version numbers and checksums.

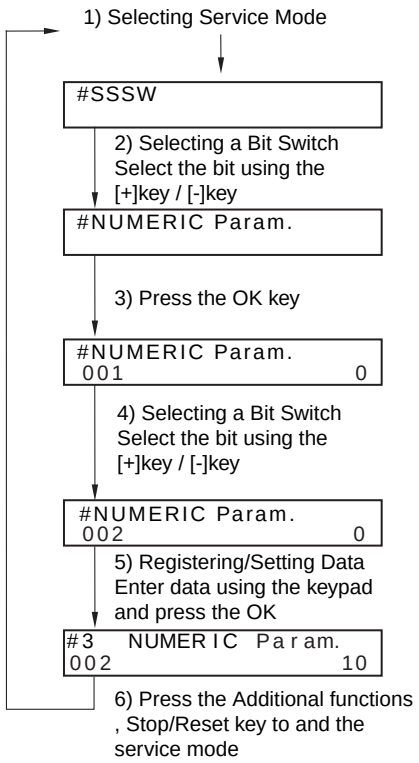
#TEST MODE
Makes various status checks, such as contact sensor, sensor and print status.

15.1.2 Using the Mode

<Operation at the of Bit SW>



<Operation at the time of Parameter>



15.2 Default Settings

15.2.1 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

#MENU			
No.	Initial setting	Range of setting	Function
01: - 04:			not used
05:	0	ON/OFF	NL equalizer setting
06:	0	0: DIAL 1: SERVICEMAN [1] 2: SERVICEMAN [2] 3: OFF	line monitor setting
07:	10	0-15	transmission level setting
08:	0	0: 3429 1: 3200 2: 3000 3: 2800 4: 2743 5: 2400	V.34 baud rate
09:	0	0: 33.6kbs 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	V.34 transmission speed
10:	1	0: 50Hz 1: 25Hz 2: 17Hz 3: 20Hz	pseudo CI signal frequency setting
11: - 20:			not used

#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

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

#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

#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 - 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

#NETWORK	Not used.
#CODEC	Not used.

#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

#ACC	Not used

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

#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

#DOWNLOAD	Download mode

#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 form 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.
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).

#ERROR DISPLAY	Not used.

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

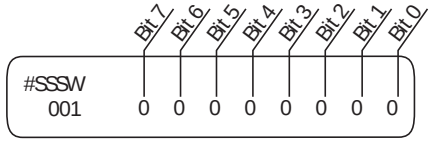
#TEST MODE [1] - [9]	
Item	Function
(1) DRAM [1] - [2]	Data check in D-RAM
(2) SCAN TEST [1] - [8]	CS automatic correction and document scan position adjustment
(3) PRINT TEST [1] - [9]	Output of test prints
(4) MODEM TEST [1] - [9]	modem/NCU related tests
(5) AGING TEST	not used
(6) FACULTY TEST [1]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

15.3 Service Soft Switch Settings (SSSW)

15.3.1 Outline

15.3.1.1 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.



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

15.3.2 SSSW-SW01:

15.3.2.1 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	-	-

15.3.2.2 Detailed Discussions of Bit 0

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

15.3.3 SSSW-SW03

15.3.3.1 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

15.3.3.2 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

15.3.4 SSSW-SW04

15.3.4.1 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

15.3.4.2 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

15.3.4.3 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.

15.3.4.4 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.'

15.3.4.5 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.

15.3.4.6 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.

15.3.5 SSSW-SW05

15.3.5.1 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	-	-

15.3.5.2 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.

15.3.5.3 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.

15.3.6 SSSW-SW12

15.3.6.1 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	-	-
7	Respective page timer settings for transmission and for reception	enable	do not enable

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

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	*	*	*	*

15.3.7 SSSW-SW13

15.3.7.1 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	-	-

15.3.7.2 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.

15.3.8 SSSW-SW14

15.3.8.1 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	-	-

15.3.8.2 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'.

15.3.8.3 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.

15.3.9 SSSW-SW18

15.3.9.1 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	-	-

15.3.9.2 Detailed Discussions of Bit 0

It is possible to select whether or not to detect carrieir 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 siganl and a reception error occurs, set this bit to "1".
If thw error still occurs, set bit 1 of #SSSW SW18 to "1".

15.3.9.3 Detailed Discussions of Bit 1

It is possible to select the detection time for caarrier 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."

15.3.10 SSSW-SW25

15.3.10.1 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	-	-

15.3.10.2 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.

15.3.10.3 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.

15.3.11 SSSW-SW28

15.3.11.1 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	-	-

15.3.11.2 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.

15.3.11.3 Detailed Discussions of Bit 1

Select whether to use the V.8 protocol when called. If NO is selected, the V8 protocol is inhibited when called and the V.21 protocol is used.

15.3.11.4 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.

15.3.11.5 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.

15.3.11.6 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.

15.3.11.7 Detailed Discussions of Bit 5

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

15.3.12 SSSW-SW30

15.3.12.1 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	-	-

15.3.12.2 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.

15.4 Menu Switch Settings (MENU)

15.4.1 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

15.4.2 <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

15.4.3 <No.006 telephone line monitor>

Use it to s 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.

15.4.4 <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

15.4.5 <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.

15.4.6 <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).

15.4.7 <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.

15.5 Numeric Parameter Settings (NUMERIC Param.)

15.5.1 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

15.5.2 <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.

15.5.3 <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.

15.5.4 <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.

15.5.5 <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.

15.5.6 <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).

15.5.7 <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).

15.5.8 <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.

15.5.9 <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.

15.5.10 <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.

15.5.11 <023: CNG detention level for fax/tel switchover>

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

15.5.12 <024: pseudo RBT transmission level at time of fax/tel switchover>

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

15.5.13 <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.

15.5.14 <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.

15.5.15 <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 a follows in terms of input numbers:
100s: total
200s: copy
300s: print
400s: copy + print
500s: scan
700s: received file print
800s: report pint
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		1	1	1
139	TotalA2 (2-sided)										2	2	2		1	1	1
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								
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		1	1	1
163	TotalB2 (2-sided)										2	2	2		1	1	1
164	LB (2-sided)										1	1	1				
165	SB (2-sided)														1	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											

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
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											
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										

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
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								
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)																

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
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

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	E-mail FileShare DB scan	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												

15.6 Scanner Function Settings (SCANNER)

15.6.1 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.

15.6.2 <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.

15.6.3 <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.

15.6.4 <035: - 036:Reader motor speed change>

Though no market adjustment work needs to be carried out, enter factory defaults at image processor PCB replacement.

15.6.5 <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.

15.6.6 <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.

15.6.7 <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.

15.7 Printer Function Settings (PRINTER)

15.7.1 Service Soft Switch Settings (SSSW)

15.7.1.1 SSSW-SW15

14.7.115.1.1 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	-	-

15.7.1.1.2 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.

15.7.2 Numeric Parameter Settings (NUMERIC Param.)

15.7.2.1 <034: Left-end registration adjustment (malti-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.

15.7.2.2 <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.

15.7.2.3 <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.

15.7.2.4 <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.

15.7.2.5 <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.

15.7.2.6 <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.

15.7.2.7 <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.

15.8 Setting of System Functions (SYSTEM)

15.8.1 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	-	-

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.

15.9 Counter Indication (COUNTER)

15.9.1 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
	SCAN	Scan counter
PICK-UP (Paper pickup 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

15.9.2 Clearing Counters

- Maintenance counter all clear

Execute service mode > CLEAR > COUNTER to clear all maintenance counters.

15.10 Report Output (REPORT)

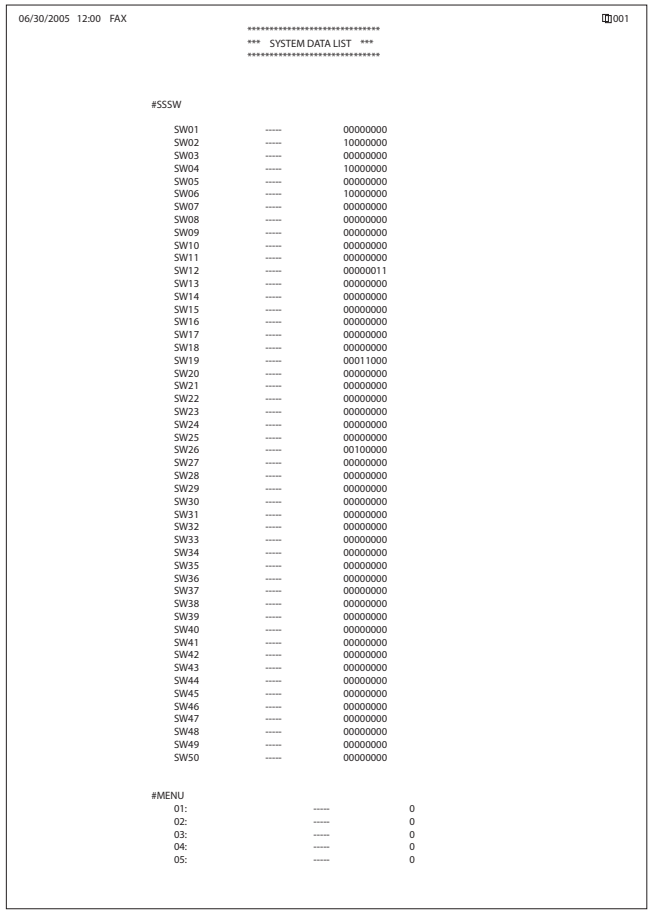
15.10.1 Report Output

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

15.10.2 System Data List

Use it to check the settings associated with the service soft switch and service parameters.



06/30/2005 12:00 FAX 001

****
*** SYSTEM DATA LIST ***
****

#SSSW

SW01	-----	00000000
SW02	-----	10000000
SW03	-----	00000000
SW04	-----	10000000
SW05	-----	00000000
SW06	-----	10000000
SW07	-----	00000000
SW08	-----	00000000
SW09	-----	00000000
SW10	-----	00000000
SW11	-----	00000000
SW12	-----	00000011
SW13	-----	00000000
SW14	-----	00000000
SW15	-----	00000000
SW16	-----	00000000
SW17	-----	00000000
SW18	-----	00000000
SW19	-----	00011000
SW20	-----	00000000
SW21	-----	00000000
SW22	-----	00000000
SW23	-----	00000000
SW24	-----	00000000
SW25	-----	00000000
SW26	-----	00100000
SW27	-----	00000000
SW28	-----	00000000
SW29	-----	00000000
SW30	-----	00000000
SW31	-----	00000000
SW32	-----	00000000
SW33	-----	00000000
SW34	-----	00000000
SW35	-----	00000000
SW36	-----	00000000
SW37	-----	00000000
SW38	-----	00000000
SW39	-----	00000000
SW40	-----	00000000
SW41	-----	00000000
SW42	-----	00000000
SW43	-----	00000000
SW44	-----	00000000
SW45	-----	00000000
SW46	-----	00000000
SW47	-----	00000000
SW48	-----	00000000
SW49	-----	00000000
SW50	-----	00000000

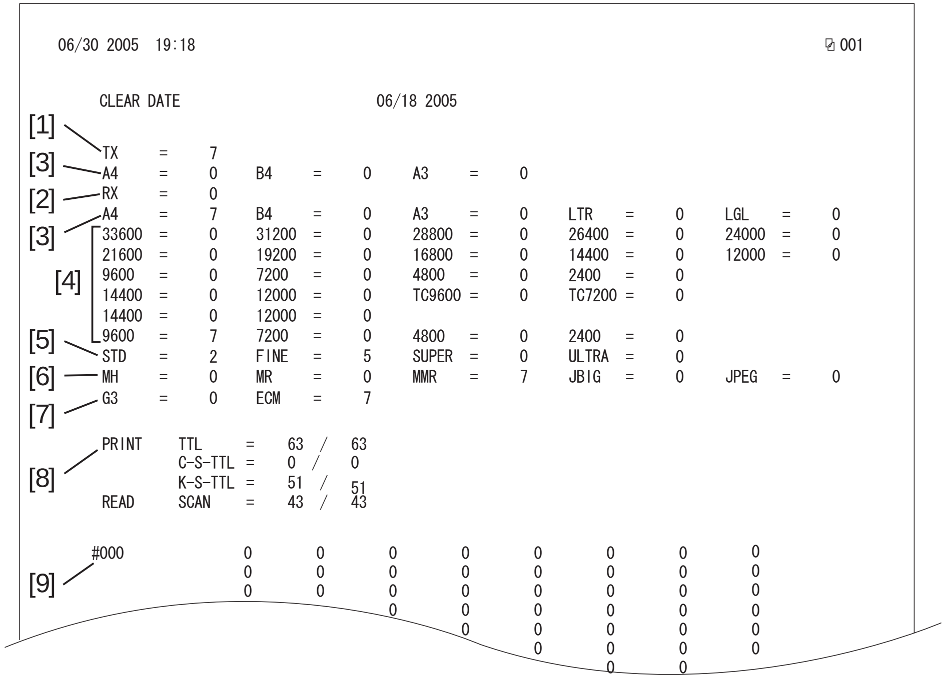
#MENU

01:	-----	0
02:	-----	0
03:	-----	0
04:	-----	0
05:	-----	0

15.10.3 System Dump List

- System Dump List

Use it to check the history of communications, both successful and error.



*1: TX, number of total pages transmission.

*2: Total number of pages transmitted/received according to original size.

*3: RX, number of total pages reception.

*4: Total number of pages transmitted and received for each modem speed

*5: Total number of pages transmitted/received in connection with different modem speeds (Standard, Fine, Super Fine, Ultra Fine).

*6: Total number of pages transmitted and received for each coding method

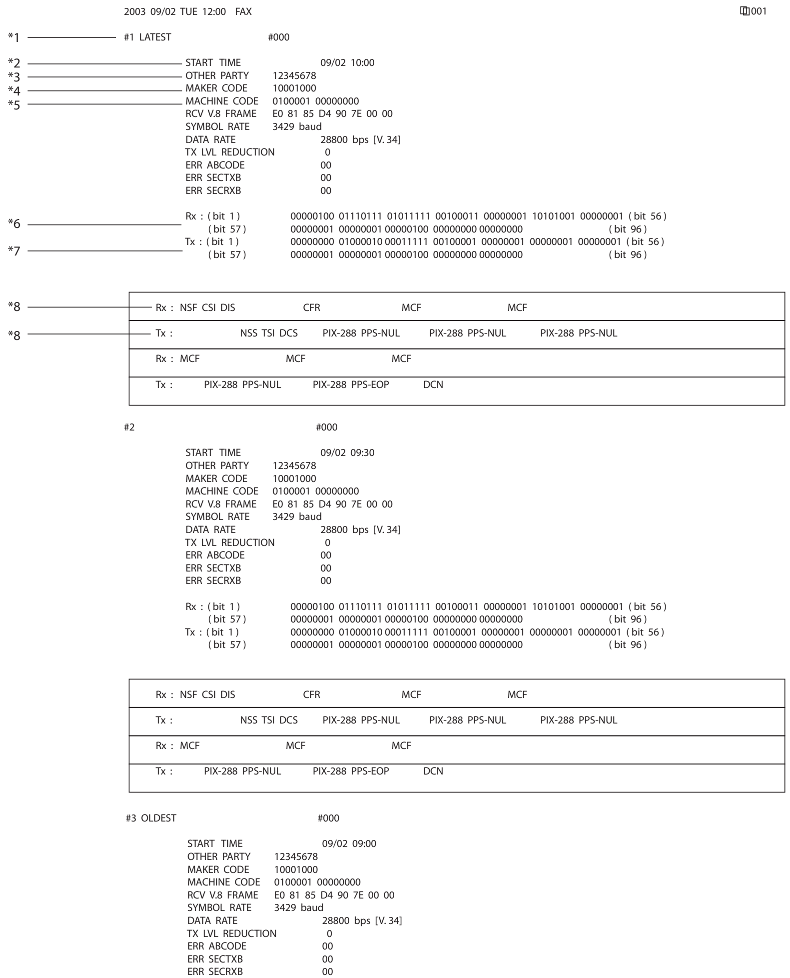
*7: Total number of pages transmitted and received in each mode

*8: Total number of pages printed/scanned

*9: Total number of occurrences for error code

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.

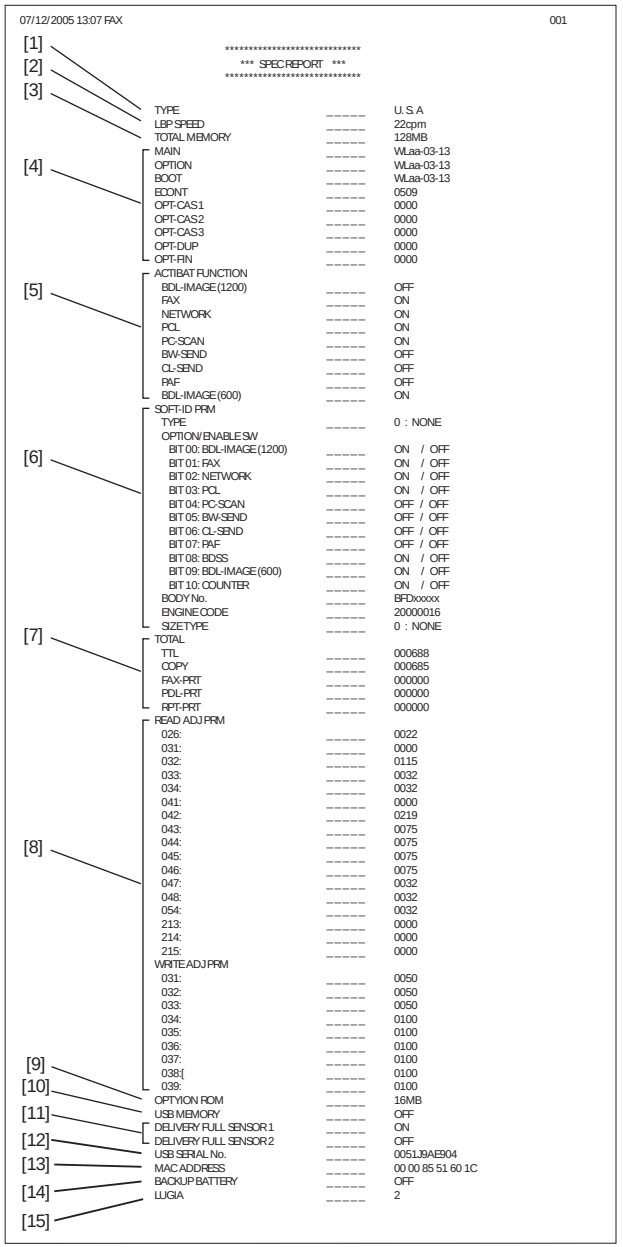


*1: service error code.
*2: START TIME, date and time (in 24-hr notation).
*3: OTHER PARTY, telephone number sent by the other party.
*4: MAKER CODE, manufacturer code.
*5: MACHINE CODE, model code.
*6: bit 1 through bit 96 of DIS, DCS, or DTC that has been received.
*7: bit 1 through bit 96 of DIS, DCS, or DTC that has been transmitted.
*8: RX, procedural signal received; TX, procedural signal transmitted.

15.10.4 Counter List

Explanation: Maintenance counter output.
(For more detailed information about the maintenance counter output, execute service mode > Display counter information > Counters.)

15.10.5 Spec List



[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

15.11 Data Initialization Mode (CLEAR)

15.11.1 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.

15.12 ROM Management (ROM)

15.12.1 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

15.13 Test Mode (TEST)

15.13.1 Overview

15.13.1.1 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.

15.13.1.2 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]					D-RAM data check
	(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

(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]		Frequency test
		(0) FREQ TEST 462Hz	
		(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]		G3 signal transmission test
		(0) G3 SIGNAL TX TEST 300bps	
		(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], * , #		DTMF transmission test
		(0) G3 SIGNAL TX TEST 300bps	
		(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		Tonal sign reception test
	(8) G3 V.34 Tx TEST		V34 G3 signal transmission test
	(9)		Not used
(5) AGING TEST			Not used

(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			Printer and ADF roller cleaning
	(0) PRT ROL CLEAN Press start key		Not used
	(1) ADF ROL CLEAN Press start key		

15.13.2 DRAM Test

15.13.2.1 D-RAM Test<(1) D-RAM TEST>

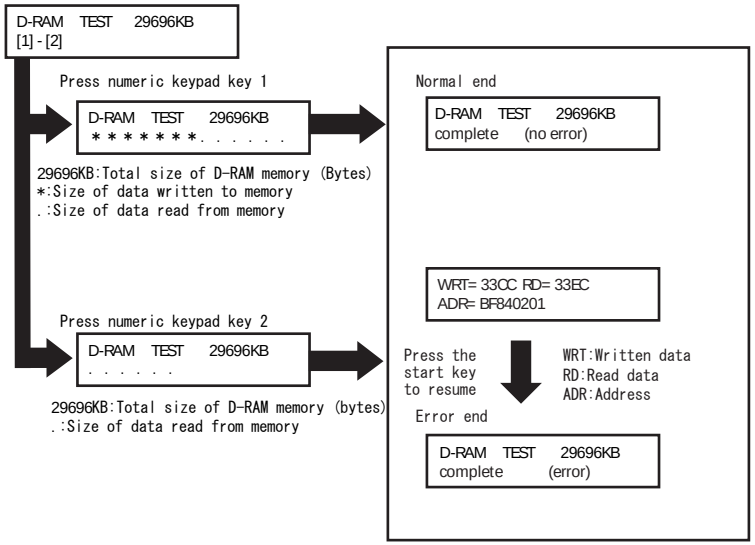
D-RAM Test((1) D-RAM)
Press the numeric keypad key 1 on the test mode menu to select the D-DRAM test.
Press numeric keypad keys 1 and 2 during the D-DRAM test to carry out the individual tests described below.

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).



15.13.3 Scan Test

15.13.3.1 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)

15.13.4 Print Test

15.13.4.1 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 line.s

15.13.5 Modem Test

15.13.5.1 MODEM Test ((4) MODEM TEST)

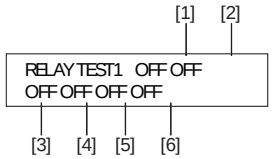
MODEM test((4) MODEM TEST)
These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem.
End this test by pressing the Stop key.

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.

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

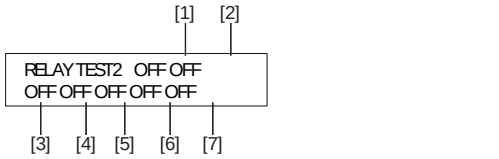
The input key and relay are shown below:



	[1]	[2]	[3]	[4]	[5]	[6]
Relay	CML	P	S	H	D	R
Keypad	0	1	2	3	4	5

Numeric keypad key 2

The input key and relay are shown below:



	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Relay	CITS2	C1	NORG	DCSEL	DCLIM	IPSEL1	IPSEL2
Keypad	0 1	2	3	4	5	6	

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

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

MEMO:
The output level of individual signals is in keeping with the setting made in service mode.

DTMF Signal Transmission Test

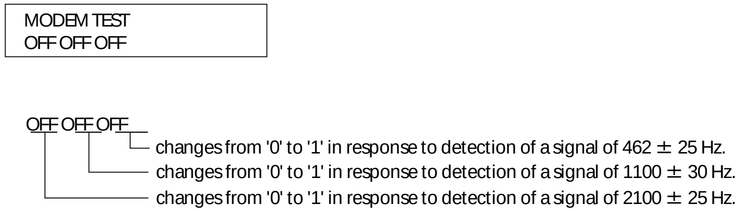
A press on '5' on the MODEM test menu selects the DTMF signal transmission test. In the test, the following DTMF signals from the modem are transmitted using the telephone line terminal and the speaker. The number pressed on the keypad selects a specific DTMF signal.

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



DTMF signal reception test

The received DTMF signals are indicated starting from the right using the 2nd character of the display.

V.34 G3 Signal Transmission Test

A press on '8' on the keypad from the MODEM test menu selectes 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

Left/right arrow key	Transmission speed
	2400bps
	4800bps
	7200bps
	9600bps
<	12000bps
	14400bps
	16800bps
	19200bps
	21600bps
>	24000bps
	26400bps
	28800bps
	31200bps
	33600bps

15.13.6 Faculty Test

15.13.6.1 FUNCTION TEST <(6) FUNCTION TEST>

Function test ((6) FUNCTION TEST)

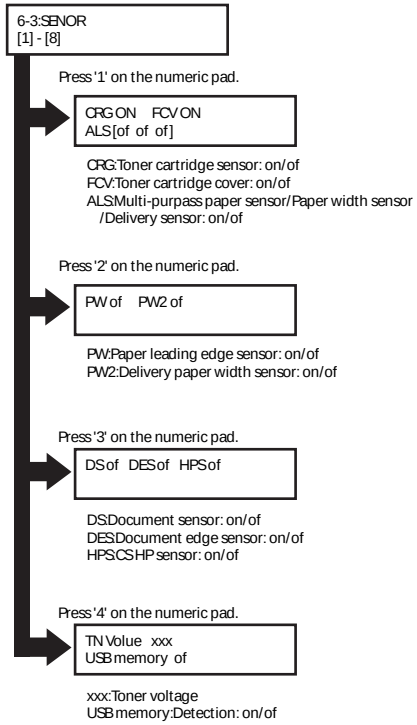
Press the numeric keypad key 6 on the test mode menu to select the function test.

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

G3 signal transmission test (6-1: G3 480 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.

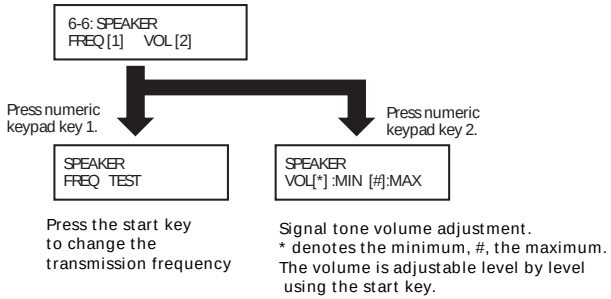
Sensor test (6-3: SENSOR)
This mode is used to verify the status of the unit sensors from LCD indications. Press numeric keypad key 3 on the FUNCTION TEST menu to select the sensor test. LCD indications change as the associated sensors turn on and off.



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.



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.

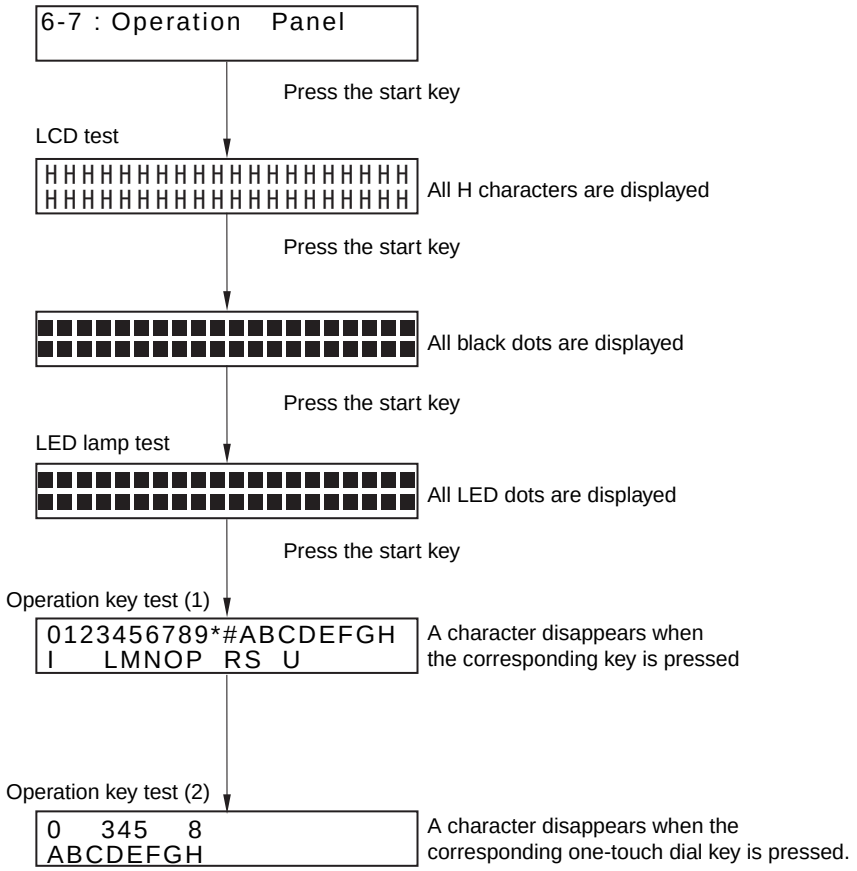
Operation key test (1) correspondence diagram

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		

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

The flow of operation panel testing is shown below.



The test is finished when the stop key is pressed after deleting all characters

Lamp test (6-8: LAMP TEST)
Press numeric keypad key 8 on the FACULTY menu to select the scan lamp illumination mode. The test checks to see if the scan lamp is on or not.
Numeric keypad key 1 selects LAMP TEST ALL. Press the start key to turn on all scan lamps. LAMP TEST AGC is not used.
Line signal reception test (9: LINE DETECT)
Press numeric keypad key 9 on the FACULTY menu to select the line signal reception test. In this test, verify the successful operations of the NCU signal sensor and the frequency counter. Menu 1 detects the CI state, while menu 3 detects the CNG signal.

Test menu 1
Press numeric keypad key 1 on the LINE DETECT menu to select test menu 1. When CI is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD also displays the on-hook or off-hook state of an external telephone set as detected. The LCD displays, from left to right, CI, CI frequency, hook port and FC with indications of 1:ON and 0: OFF.

Test menu 2
Press numeric keypad key 2 on the LINE DETECT menu to select test menu 2. When the CNG signal is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications.
Numeric keypad key 2 turns on the CML relay to detect CNG.

Test menu 3
Press numeric keypad key 3 on the LINE DETECT menu to select test menu 3. When the CNG signal is detected on the telephone line connection terminal, the LCD display changes from OFF to ON, indicating the received frequency. The LCD displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications.
Numeric keypad key 3 turns off the CML relay to detect CNG.

15.13.7 Cleaning Mode

15.13.7.1 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.

16 Service Tool

Service Tool

16.1 Service Tool

16.1.1 G. Solvents and Oil List

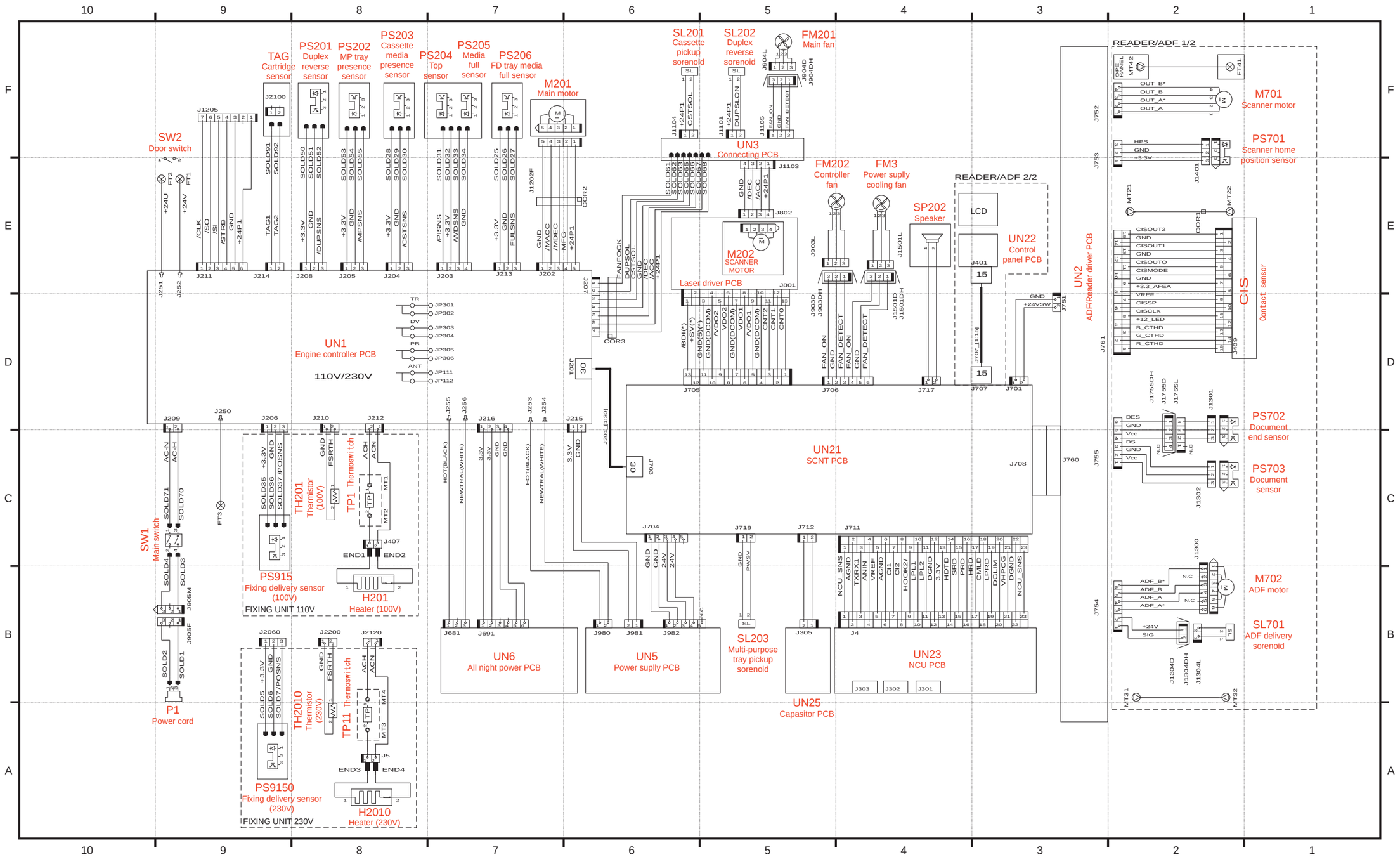
No.	Type	Purpose	Remark
1	Alcohol	Cleaning: Plastic Rubber Metal part Oil stain Toner stain	* Keep away from flame * Purchase locally
2	Grease	Apply between gear and shaft	* SHELL TELLUS 68 (Showa Shell Sekiyu K.K.) * Tool No. CK-8003
3	Lubricant	Apply to gear	* MOLYKOTE® EM-50L (Dow Corning Corporation) * Tool No. HY9-0007

Appendix

- General Circuit Diagram

General Circuit Diagram

General Circuit Diagram



imageCLASS D1100 Series

PARTS CATALOG

Canon

FEBRUARY 20, 2009

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NUMERICAL INDEX

imageCLASS D1180/1170/1150/1120/i-SENSYS MF6680dn/6640dn(Numerical Ind

PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
FC7-0496-000	100 - 1	FC9-2167-000	102 - 1	FL3-1437-000	162 - 11
FC7-3788-000	001 - 2	FC9-2168-000	102 - 2	FL3-1439-000	160 - 20
FC7-6052-000	162 - 1	FC9-4891-000	106 - 4	FL3-1504-000	300 - 13
FC7-6182-000	162 - 2	FC9-4892-000	100 - 13	FM3-9525-000	400 -
FC7-6189-000	160 - 1	FC9-4893-000	100 - 14	FM3-9527-000	400 - 8
FC7-6278-000	162 - 3	FC9-4894-000	100 - 15	FM3-9534-000	160 - 21
FC7-6281-000	162 - 4	FC9-4895-000	100 - 16	FM3-9536-000	160 - 22
FC7-6297-000	162 - 5	FC9-4896-000	100 - 18	FM3-9538-000	160 - 23
FC7-6299-000	162 - 7	FC9-4897-000	100 - 17	FM3-9539-000	162 -
FC7-6300-000	162 - 8	FC9-4916-000	100 - 7	FM3-9540-000	162 - 12
FC7-6320-000	160 - 2	FC9-4919-000	100 - 4	FM3-9541-000	162 - 13
FC7-6321-000	160 - 3	FC9-4990-000	160 - 14	FM3-9542-000	162 - 14
FC7-6322-000	160 - 4	FC9-4991-000	160 - 14	FM3-9543-000	162 - 15
FC9-1162-000	400 - 1	FC9-4992-000	160 - 14	FM3-9791-000	100 - 21
FC9-1486-000	160 - 7	FC9-5109-000	160 - 7	FM3-9793-000	100 - 22
FC9-1493-000	400 - 2	FC9-5110-000	160 - 7	FM3-9794-000	100 - 23
FC9-1494-000	160 - 8	FC9-5111-000	160 - 8	FM3-9795-000	100 - 24
FC9-1496-000	160 - 5	FC9-5654-000	162 - 6	FM3-9797-000	101 - 1
FC9-1497-000	160 - 6	FC9-5660-000	160 - 15	FM3-9798-000	300 -
FC9-1499-000	160 - 9	FC9-5661-000	160 - 16	FM3-9800-000	300 - 14
FC9-1500-000	160 - 10	FC9-6977-000	100 - 10	FM3-9801-000	300 - 15
FC9-1501-000	160 - 11	FC9-6978-000	100 - 19	FM3-9802-000	300 - 16
FC9-1502-000	160 - 12	FC9-6979-000	100 - 20	FM3-9803-000	100 - 25
FC9-1504-000	160 - 13	FH2-7080-000	001 - 6	FM3-9816-000	100 - 26
FC9-1512-000	162 - 9	FH2-7082-000	001 - 5	FM3-9817-000	100 - 25
FC9-1999-000	100 - 2	FH2-7192-000	001 - 3	FM3-9818-000	100 - 25
FC9-2007-000	100 - 3	FK2-0472-010	105 - 1	FM3-9819-000	100 - 25
FC9-2008-000	100 - 4	FK2-2064-000	104 - 1	FM4-1487-000	104 - 8
FC9-2017-000	100 - 5	FK2-6324-000	105 - 2	FM4-1488-000	104 - 8
FC9-2018-000	100 - 6	FK2-6325-000	105 - 2	FM4-1605-000	104 - 9
FC9-2020-000	100 - 7	FK2-6604-000	001 - 4	FM4-1607-000	102 - 11
FC9-2032-000	300 - 1	FK2-8524-000	103 - 1	FM4-1613-000	105 - 7
FC9-2034-000	300 - 2	FK2-8572-000	105 - 3	FM4-1614-000	105 - 7
FC9-2035-000	300 - 3	FK2-8573-000	400 - 4	FM4-1615-000	105 - 7
FC9-2055-000	100 - 8	FK2-8574-000	105 - 4	FM4-1616-000	105 - 7
FC9-2056-000	100 - 9	FK2-8629-000	105 - 5	FM4-1620-000	105 - 8
FC9-2057-000	100 - 10	FK2-8630-000	105 - 5	FM4-1621-000	105 - 8
FC9-2068-000	106 - 1	FK2-8634-000	400 - 5	FM4-1622-000	105 - 8
FC9-2069-000	106 - 2	FK2-8635-000	400 - 6	FM4-1624-000	105 - 9
FC9-2071-000	106 - 3	FK2-9069-000	001 - 1	FM4-1647-000	100 - 25
FC9-2072-000	300 - 4	FK2-9070-000	001 - 1	FM4-1648-000	100 - 25
FC9-2074-000	300 - 5	FK2-9071-000	001 - 1	FM4-1649-000	100 - 25
FC9-2075-000	300 - 6	FK2-9072-000	001 - 1	FM4-1651-000	100 - 25
FC9-2076-000	300 - 7	FK2-9073-000	001 - 1	FM4-1656-000	102 - 3
FC9-2077-000	300 - 8	FK2-9075-000	001 - 1	FM4-1872-000	162 - 16
FC9-2078-000	300 - 9	FK2-9076-000	001 - 1	FM4-1873-000	162 - 17
FC9-2089-000	300 - 10	FK2-9077-000	001 - 1	FM4-1875-000	162 - 18
FC9-2090-000	300 - 11	FL2-6637-000	160 - 17	FM4-2085-000	105 - 10
FC9-2091-000	300 - 12	FL3-1420-000	400 - 7	FM4-2669-000	105 - 7
FC9-2101-000	400 - 3	FL3-1421-000	160 - 18	FM4-3436-000	101 - 2
FC9-2120-000	100 - 11	FL3-1430-000	160 - 19	FM4-3437-000	101 - 2
FC9-2166-000	100 - 12	FL3-1431-000	162 - 10	FS7-0980-000	300 - 17

PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
FU5-6992-000	162 - 19	RM1-6423-000	104 - 7		
FU6-2998-000	162 - 20	RM1-6424-000	103 - 4		
FU6-2999-000	162 - 21	RM1-6427-000	100 - 30		
FU7-0667-000	162 - 22	RM1-6441-000	100 - 32		
FU7-0668-000	162 - 23	RM1-6445-000	101 - 4		
FU7-0669-000	162 - 24	RM1-6450-000	103 - 7		
FU7-0671-000	162 - 25	RM1-6454-000	300 - 20		
FU7-0672-000	160 - 24	RU5-2327-000	300 - 21		
FU7-0676-000	162 - 26	RU5-2895-000	100 - 31		
FU7-0678-000	162 - 27	VS1-7177-002	162 - 33		
FU7-2016-000	162 - 28	VS1-7177-003	104 - 14		
FU7-2018-000	160 - 25	VS1-7177-003	105 - 11		
FU7-2021-000	162 - 29	VS1-7207-004	162 - 34		
FU8-0895-000	160 - 26	WC4-5171-000	104 - 10		
FU8-2007-000	160 - 27	WG8-5696-000	162 - 35		
FU8-2008-000	162 - 30	WG8-5696-000	400 - 9		
HC1-0586-000	160 - 28	XA9-0476-000	160 - 30		
HC1-0586-000	162 - 31	XA9-0476-000	400 - 10		
HH2-2824-000	001 - 8	XA9-0831-000	160 - 31		
HK1-0547-000	001 - 9	XA9-0994-000	102 - 10		
HK1-0550-000	001 - 10	XA9-1420-000	103 - 5		
HK1-0551-000	001 - 11	XA9-1420-000	104 - 11		
HK1-0559-000	001 - 7	XA9-1420-000	105 - 12		
HU1-1022-000	160 - 29	XA9-1503-000	101 - 5		
HU1-1022-000	162 - 32	XA9-1503-000	104 - 12		
NPN	001 -	XA9-1503-000	106 - 6		
NPN	100 -	XA9-1671-000	100 - 33		
NPN	101 -	XA9-1671-000	101 - 6		
NPN	102 -	XA9-1671-000	102 - 9		
NPN	103 -	XA9-1671-000	103 - 6		
NPN	104 -	XA9-1671-000	104 - 13		
NPN	105 -	XA9-1671-000	105 - 6		
NPN	106 -	XA9-1671-000	106 - 5		
NPN	160 -	XD1-3100-407	102 - 501		
RC1-3507-000	300 - 18	XD3-2300-322	101 - 501		
RC1-3508-000	300 - 19				
RC2-0314-000	100 - 27				
RC2-6273-000	100 - 28				
RC2-8291-000	100 - 29				
RK2-2729-000	104 - 2				
RK2-2731-000	104 - 3				
RK2-2733-000	104 - 4				
RL1-2115-000	102 - 4				
RL1-2120-000	104 - 5				
RM1-1301-000	102 - 5				
RM1-4275-000	104 - 6				
RM1-6350-000	102 - 6				
RM1-6378-000	102 - 7				
RM1-6401-000	101 - 3				
RM1-6402-000	103 - 2				
RM1-6414-000	102 - 8				
RM1-6419-000	103 - 3				

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imageCLASS D1180

US	**F15-7031-000**	**ETZ02001-**	FAX model

imageCLASS D1170

US	**F15-7032-000**	**ETY02001-**	FAX model

imageCLASS D1150

US	**F15-7033-000**	**ETQ02001-**	FAX model
CA,LTN	**F15-7033-000**	**ETR02001-**	FAX model
LTN,SG	**F15-7043-000**	**ETS02001-**	FAX model
KR	**F15-7063-000**	**ETV02001-**	FAX model
AU	**F15-7083-000**	**ETT02001-**	FAX model

imageCLASS D1120

US	**F15-7035-000**	**ETN02001-**	
CA,LTN	**F15-7035-000**	**ETP02001-**	

i-SENSYS MF6680dn

EUR1	**F15-7091-000**	**EUA02001-**	FAX model
EUR2	**F15-7091-000**	**EUD02001-**	FAX model
EUR3	**F15-7091-000**	**EUE02001-**	FAX model

i-SENSYS MF6640dn

EUR1	**F15-7094-000**	**ETW02001-**
EUR2	**F15-7094-000**	**ETX02001-**

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FIGURE A1
ASSEMBLY LOCATION DIAGRAM

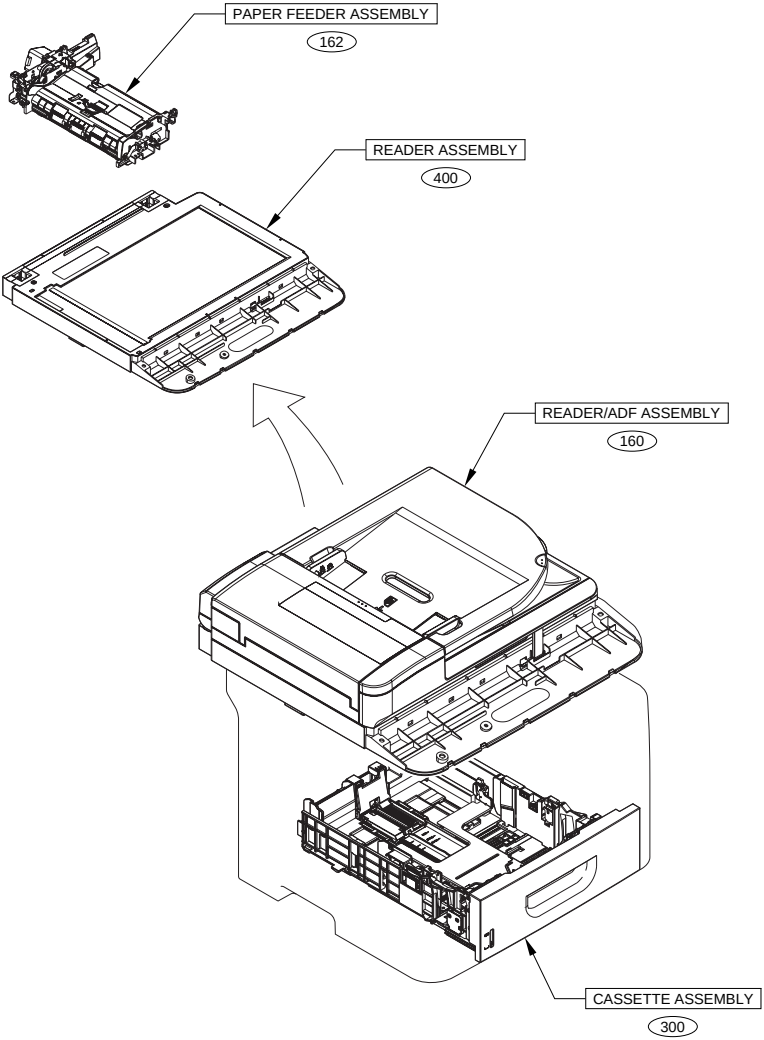


FIGURE A2
OPTION PARTS CATALOG LIST

This is the table of the machine's options whose parts catalog is issued.

No.	Model Name(English)	Model Name(Japanese)
1	Cassette Feeding Module-U1	1段カセットユニット・U1

FIGURE 001
ACCESSORIES

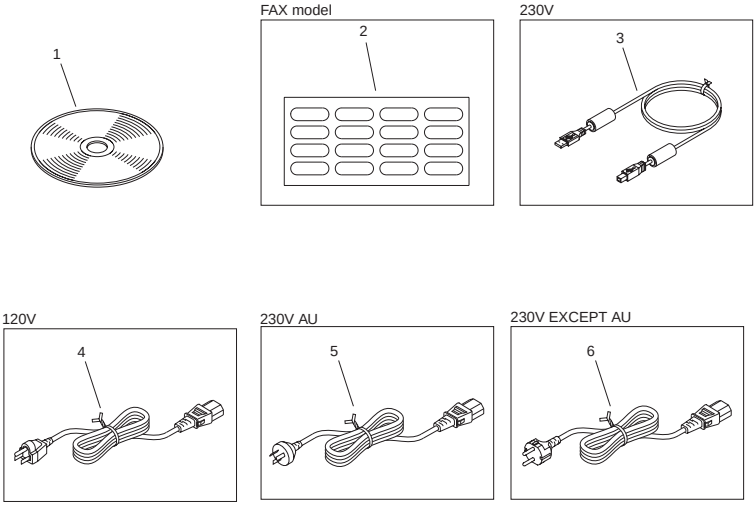
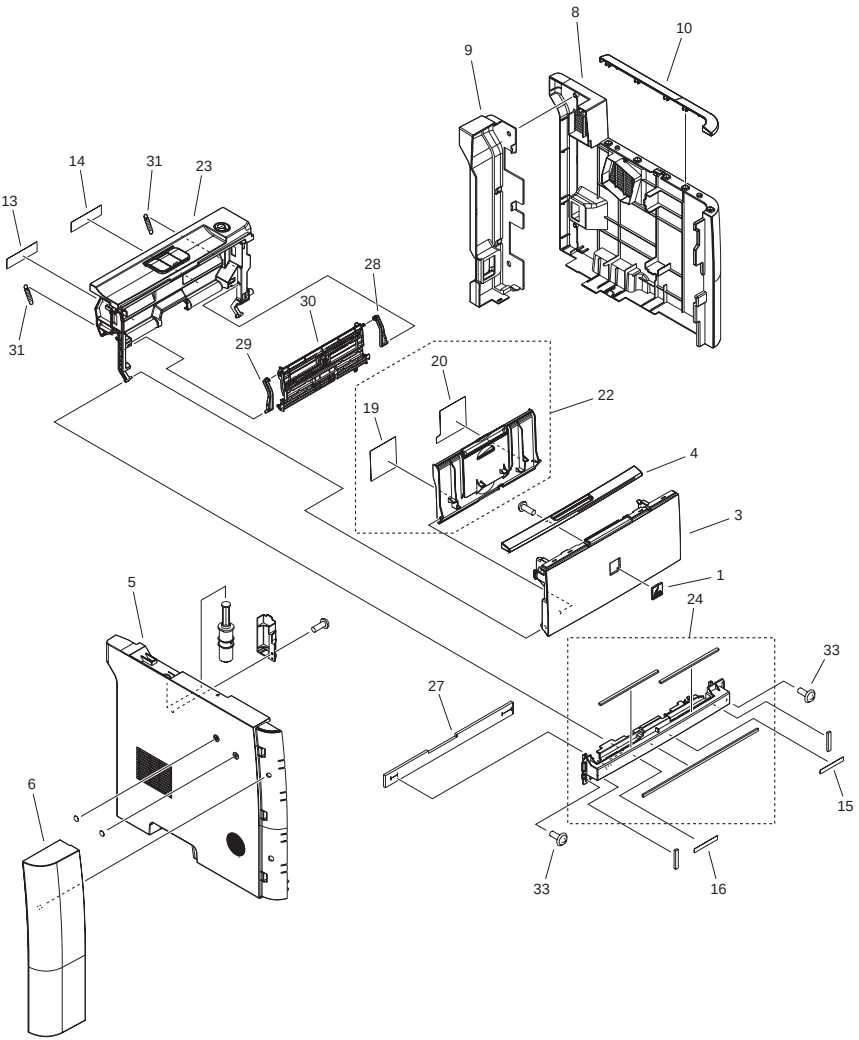


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.001	NPN		RF	ACCESSORIES		
1	FK2-9075-000		1	CD-ROM, USER SOFTWARE	D1180	
1	FK2-9069-000		1	CD-ROM, USER SOFTWARE	D1170,D1150 US,D1120	
1						
1						
1						
1						
1						
1						
2	FC7-3788-000		1	LABEL, DESTINATION	FAX model	
3	FH2-7192-000		1	CABLE,USB	230V	
4	FK2-6604-000		1	CORD, POWER SUPPLY	120V	
5						
6						
7						
8	HH2-2824-000		1	MODULAR CORD, 2P	FAX model EXCEPT AU	
9						
10						
11						

FIGURE 100
EXTERNAL COVERS, PANELS, ETC.



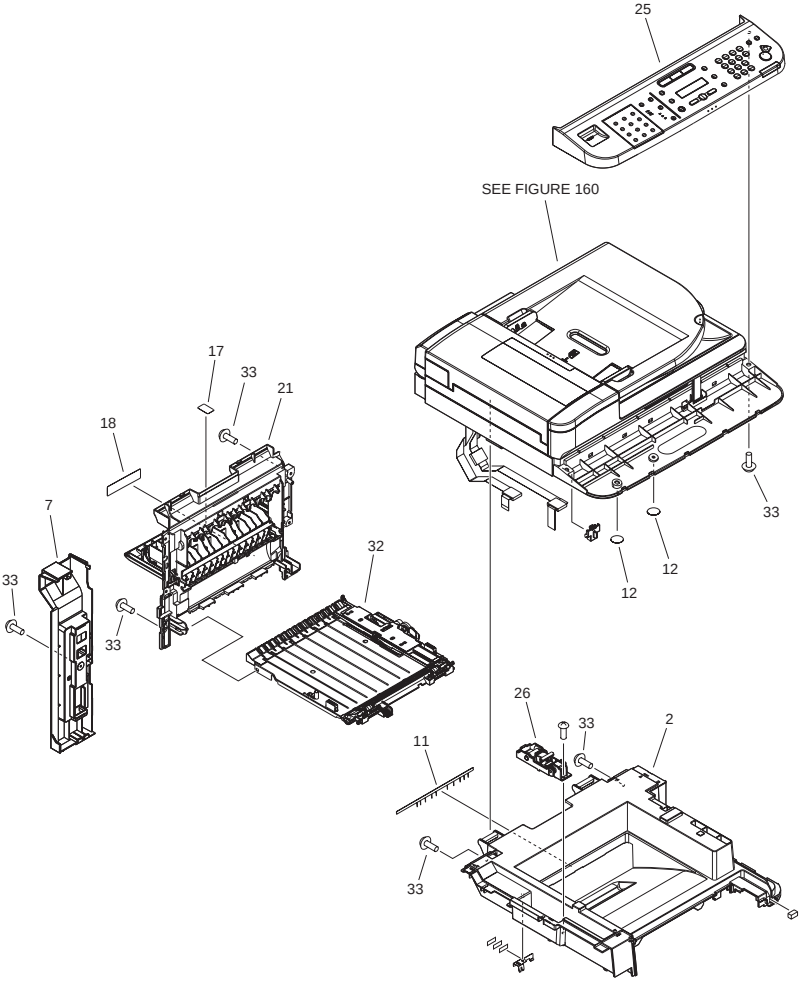

25
SEE FIGURE 160
17
33
21
18
7
33
33
32
12
12
33
26
33
2
11
33

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.100	NPN		RF	EXTERNAL COVERS, PANELS, ETC.		
1	FC7-0496-000		1	EMBLEM		
2	FC9-1999-000		1	COVER, UPPER		
3	FC9-2007-000		1	COVER, MULTI FEED		
4	FC9-2008-000		1	COVER, FRONT UPPER	FAX model	
4	FC9-4919-000		1	COVER, FRONT UPPER	EXCEPT FAX model	
5	FC9-2017-000		1	COVER, LEFT		
6	FC9-2018-000		1	COVER, FRONT, LEFT		
7	FC9-2020-000		1	COVER, REAR LEFT	FAX model	
7	FC9-4916-000		1	COVER, REAR LEFT	EXCEPT FAX model	
8	FC9-2055-000		1	COVER, RIGHT		
9	FC9-2056-000		1	COVER, REAR RIGHT		
10	FC9-2057-000		1	COVER, RIGHT UPPER	FAX model	
10	FC9-6977-000		1	COVER, RIGHT UPPER	EXCEPT FAX model	
11	FC9-2120-000		1	ELIMINATOR, STATIC CHARGE		
12	FC9-2166-000		2	SHEET, ELES. PREVENTION		
13	FC9-4892-000		1	LABEL, PRESSURE RELEASE		
14	FC9-4893-000		1	LABEL, JAM CLEARING		
15	FC9-4894-000		1	LABEL, PREVENTION		
16	FC9-4895-000		1	LABEL, RELEASE LEVER		
17	FC9-4897-000		1	LABEL, PAPER SIZE SETTING		
18	FC9-4896-000		1	LABEL, HIGH TMP. CAUTION		
19	FC9-6978-000		1	LABEL, SET		
20	FC9-6979-000		1	LABEL, SIZE INSTRUCTION		
21	FM3-9791-000		1	REAR COVER ASSEMBLY		
22	FM3-9793-000		1	EXPANSION TRAY ASSEMBLY		
23	FM3-9794-000		1	INNER COVER ASSEMBLY		
24	FM3-9795-000		1	FRONT COVER ASSEMBLY		
25	FM3-9803-000		1	CONTROL PANEL ASSEMBLY	D1180	
25	FM3-9817-000		1	CONTROL PANEL ASSEMBLY	D1170	
25	FM3-9818-000		1	CONTROL PANEL ASSEMBLY	D1150 US,CA,LTN	
25						

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
25						
25	FM3-9819-000		1	CONTROL PANEL ASSEMBLY	D1120	
25						
25						
26	FM3-9816-000		1	HINGE, ASSMBLY		
27	RC2-0314-000		1	SHEET, INSULATOR		
28	RC2-6273-000		1	HINGE, MULTI-PURPOSE, RIGHT		
29	RC2-8291-000		1	HINGE, MULTI-PURPOSE, LEFT		
30	RM1-6427-000		1	MP LIFTING PLATE ASSMBLY		
31	RU5-2895-000		2	SPRING, TENSION		
32	RM1-6441-000		1	DUPLEXING PAPER FEED ASS'Y		
33	XA9-1671-000		AR	SCREW, D, M3X8		

FIGURE 101
INTERNAL COMPONENTS 1

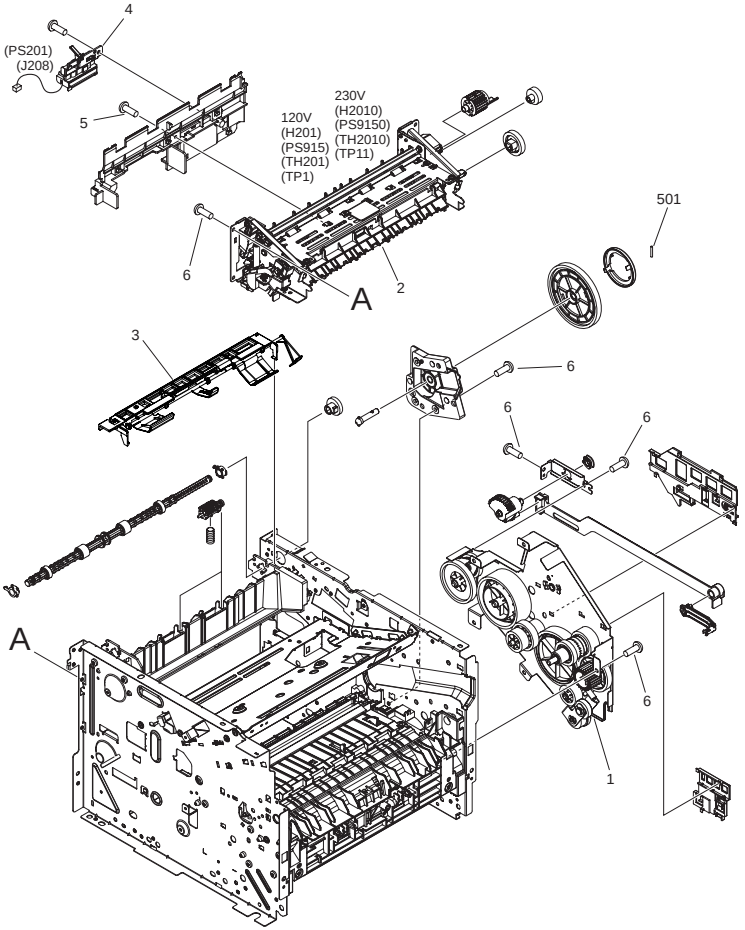


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.101	NPN		RF	INTERNAL COMPONENTS 1		
1	FM3-9797-000		1	MAIN DRIVE ASSEMBLY		
2	FM4-3436-000		1	FIXING ASS'Y	120V H201,PS915,TH201,TP1	
2						
3	RM1-6401-000		1	PAPER RETAINING DELIVERY ASS'Y		
4	RM1-6445-000		1	REVERSE SENSOR ASS'Y	PS201	
5	XA9-1503-000		3	SCREW, TAP, M3X6		
6	XA9-1671-000		AR	SCREW, D, M3X8		
501	XD3-2300-322		1	PIN		

FIGURE 102
INTERNAL COMPONENTS 2

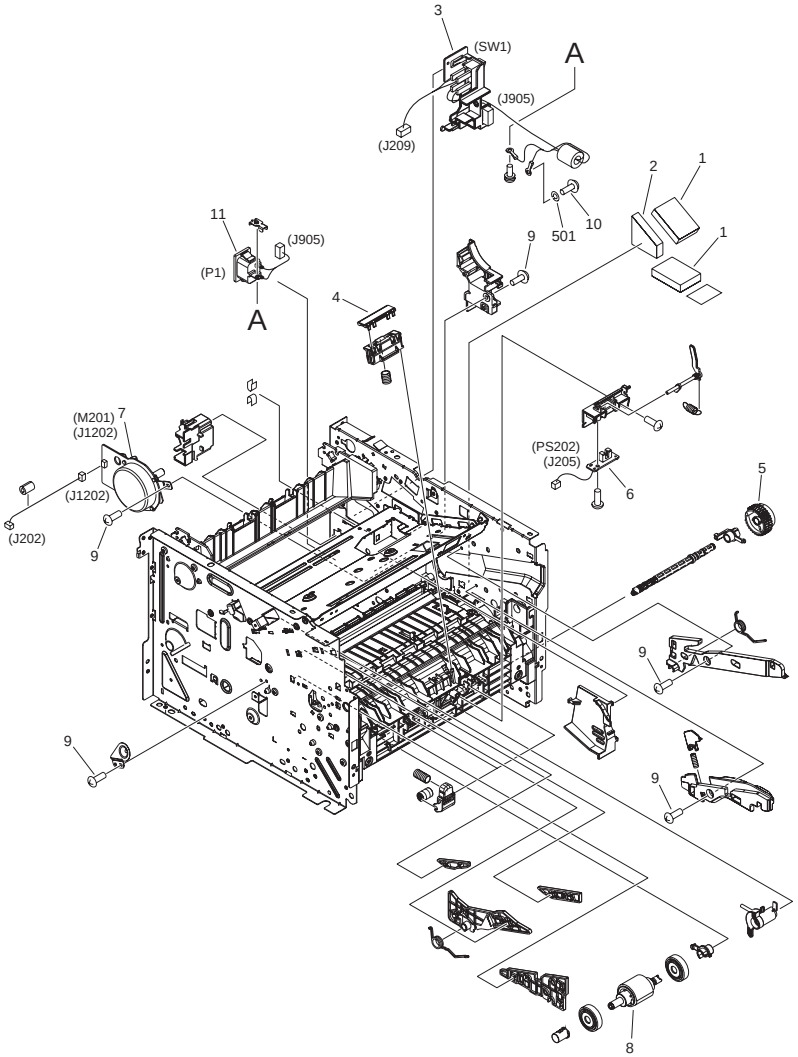


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.102	NPN		RF	INTERNAL COMPONENTS 2		
1	FC9-2167-000		2	CUSHION, 1		
2	FC9-2168-000		1	CUSHION, 2		
3	FM4-1656-000		1	MAIN SWITCH UNIT	SW1	
4	RL1-2115-000		1	PAD, MULTI-PURPOSE SEPARATION		
5	RM1-1301-000		1	PAPER PICK-UP GEAR ASSEMBLY		
6	RM1-6350-000		1	MULTI-PURPOSE SENSOR PCB ASS'Y	PS202	
7	RM1-6378-000		1	MAIN MOTOR ASSEMBLY	M201	
8	RM1-6414-000		1	PAPER PICK-UP ROLLER ASS'Y		
9	XA9-1671-000		AR	SCREW, D, M3X8		
10	XA9-0994-000		1	SCREW, TP, M4X6		
11	FM4-1607-000		1	INLET CABLE ASSEMBLY	P1	
501	XD1-3100-407		1	LOCK-WASHER, SPRING		

FIGURE 103
INTERNAL COMPONENTS 3

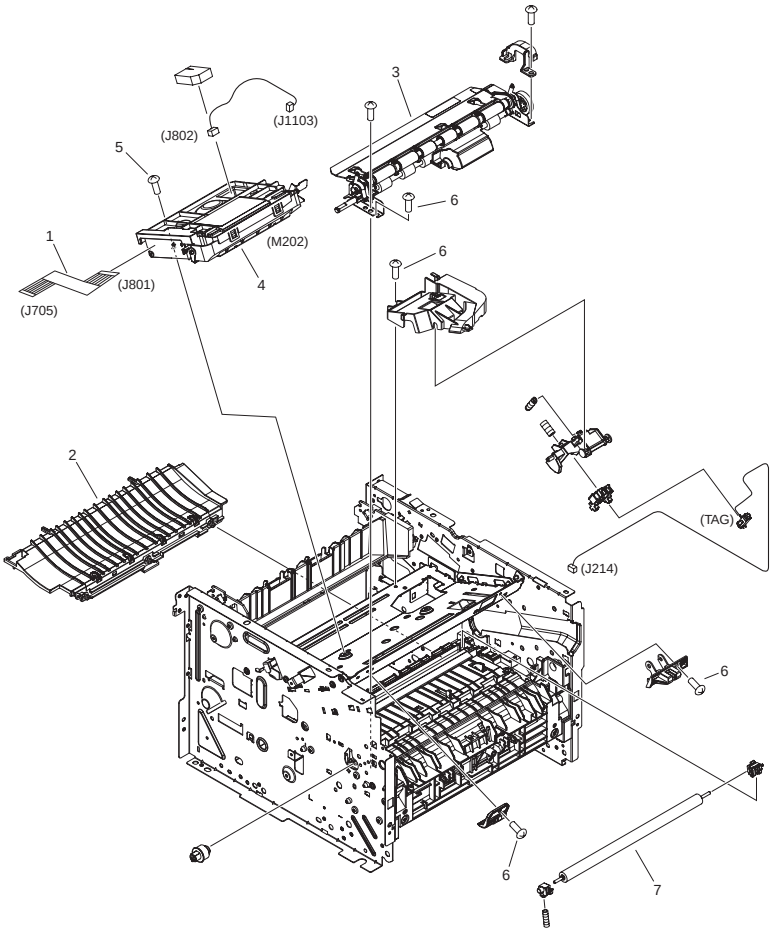


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.103	NPN		RF	INTERNAL COMPONENTS 3		
1	FK2-8524-000		1	CABLE, FLAT		
2	RM1-6402-000		1	PAPER FEED GUIDE ASS'Y		
3	RM1-6419-000		1	REGISTRATION ASS'Y		
4	RM1-6424-000		1	SCANNER ASS'Y	M202	
5	XA9-1420-000		4	SCREW, W/WASHER, M3X8		
6	XA9-1671-000		4	SCREW, D, M3X8		
7	RM1-6450-000		1	TRANSFER ROLLER ASS'Y		

FIGURE 104
INTERNAL COMPONENTS 4

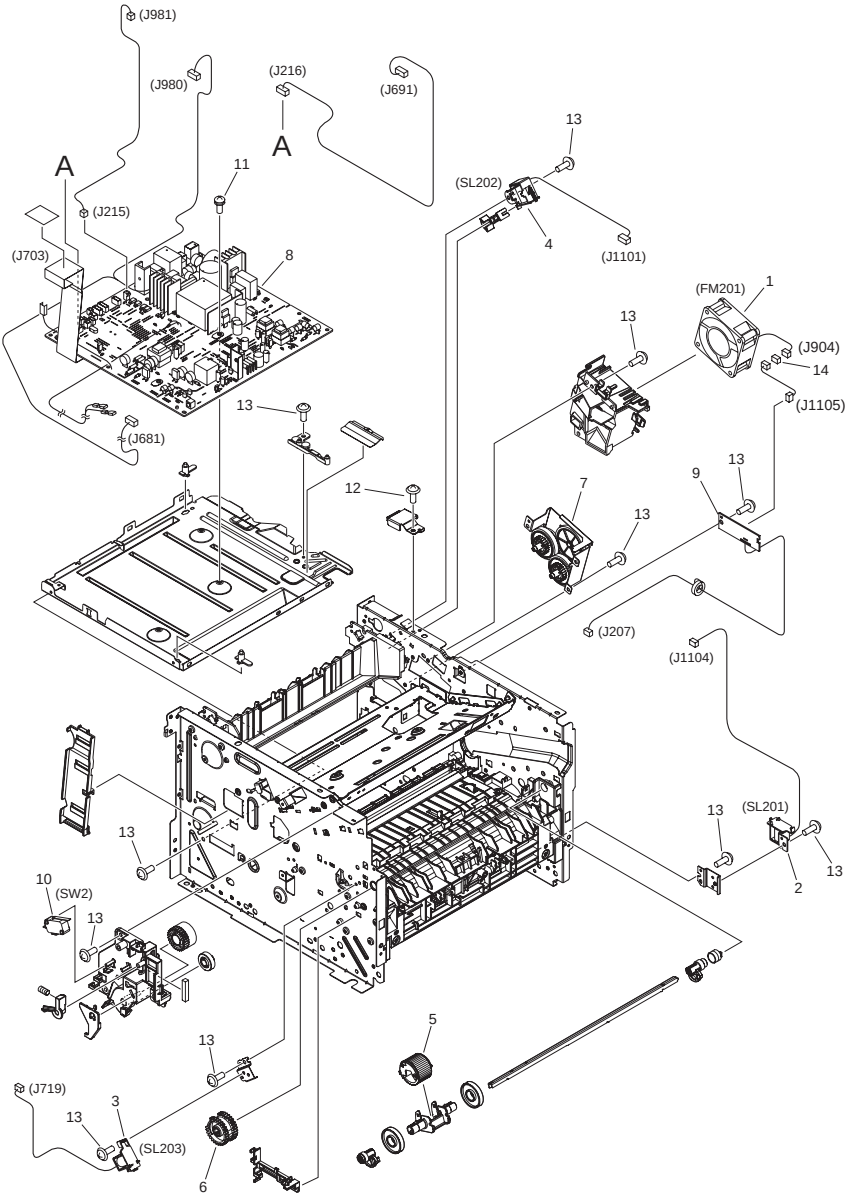


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.104	NPN		RF	INTERNAL COMPONENTS 4		
1	FK2-2064-000		1	FAN	FM201	
2	RK2-2729-000		1	SOLENOID	SL201	
3	RK2-2731-000		1	SOLENOID	SL203	
4	RK2-2733-000		1	SOLENOID	SL202	
5	RL1-2120-000		1	ROLLER,MULTI-PURPOSE PICK-UP		
6	RM1-4275-000		1	PAPER PICK-UP GEAR ASS'Y		
7	RM1-6423-000		1	REVERSE DRIVE ASS'Y		
8	FM4-1487-000		1	ENGINE CONTROLLER PCB ASS'Y	120V	
8						
9	FM4-1605-000		1	CONNECTING PCB ASS'Y		
10	WC4-5171-000		1	MICROSWITCH	SW2	
11	XA9-1420-000		4	SCREW, W/WASHER, M3X8		
12	XA9-1503-000		3	SCREW, TAP, M3X6		
13	XA9-1671-000		AR	SCREW, D, M3X8		
14	VS1-7177-003		1	CONNECTOR, SNAP TIGHT, BK		

FIGURE 105
INTERNAL COMPONENTS 5

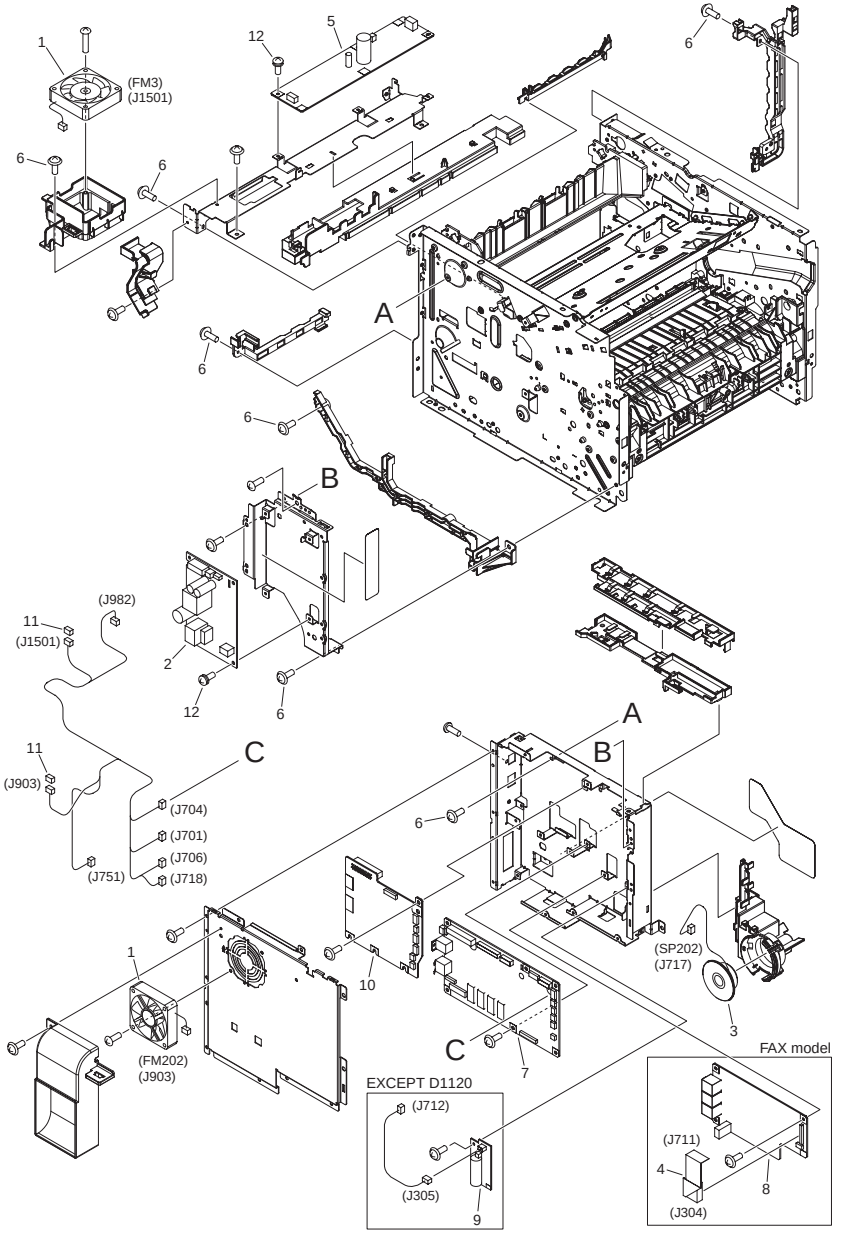


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.105	NPN		RF	INTERNAL COMPONENTS 5		
1	FK2-0472-010		2	FAN	FM3,FM202	
2	FK2-6324-000		1	ALL DAY POWER PCB ASSEMBLY	120V	
2						
3	FK2-8572-000		1	SPEAKER	SP202	
4	FK2-8574-000		1	CABLE, FLAT	FAX model	
5	FK2-8629-000		1	POWER SUPPLY PCB ASSEMBLY	120V	
5						
6	XA9-1671-000		7	SCREW, D, M3X8		
7	FM4-1613-000		1	SCNT PCB ASSEMBLY	D1180,	
7	FM4-1614-000		1	SCNT PCB ASSEMBLY	D1170	
7	FM4-1615-000		1	SCNT PCB ASSEMBLY	D1150	
7	FM4-2669-000		1	SCNT PCB ASSEMBLY	D1120	
7						
8	FM4-1620-000		1	NCU BOARD PCB ASS'Y	FAX model US	
8						
8						
9	FM4-1624-000		1	CAPASITOR PCB ASS'Y	EXCEPT D1120	
10	FM4-2085-000		1	ADF/READER DRIVER PCB ASS'Y		
11	VS1-7177-003		2	CONNECTOR, SNAP TIGHT, BK		
12	XA9-1420-000		8	SCREW, W/WASHER, M3X8		

FIGURE 106
INTERNAL COMPONENTS 6

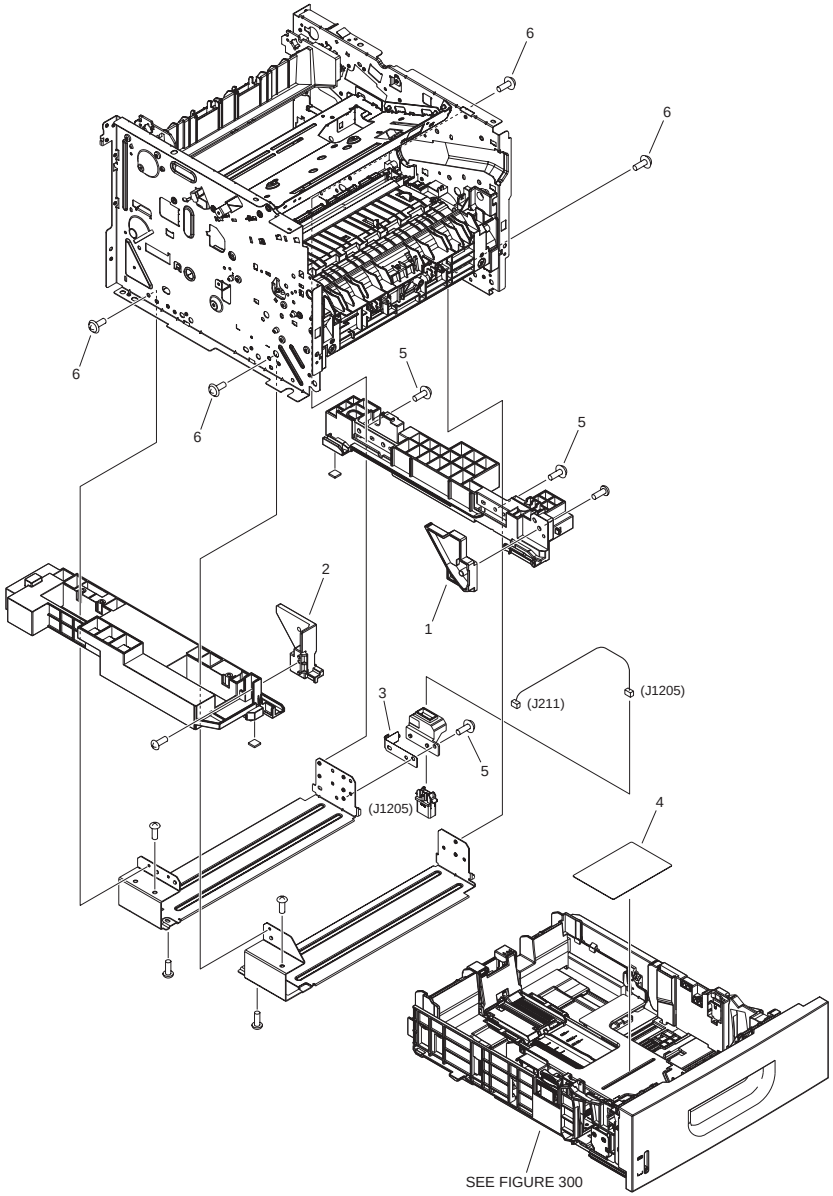


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.106	NPN		RF	INTERNAL COMPONENTS 6		
1	FC9-2068-000		1	GUIDE, CASSETTE, RIGHT		
2	FC9-2069-000		1	GUIDE, CASSETTE, LEFT		
3	FC9-2071-000		1	SPRING, LEAF		
4	FC9-4891-000		1	LABEL, PAPER EXCHANGE		
5	XA9-1671-000		4	SCREW, D, M3X8		
6	XA9-1503-000		6	SCREW, TAP, M3X6		

FIGURE 160
READER/ADF ASSEMBLY

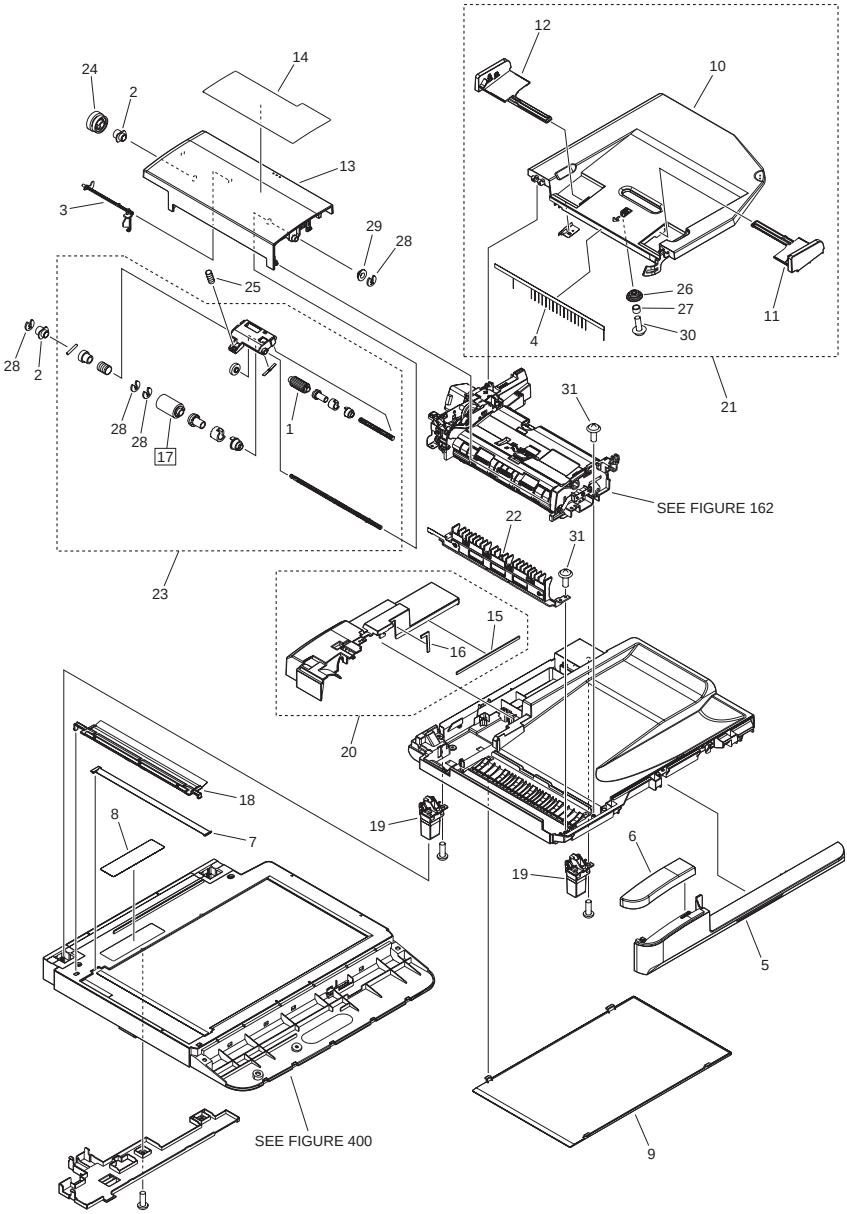


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.160	NPN		RF	READER/ADF ASSEMBLY		
1	FC7-6189-000		1	ROLLER, PICK-UP		
2	FC7-6320-000		2	BUSHING		
3	FC7-6321-000		1	FLAG, DOCUMENT SCANNER		
4	FC7-6322-000		1	ELIMINATOR, STATIC CHARGE		
5	FC9-1496-000		1	COVER, ADF, FRONT LOWER		
6	FC9-1497-000		1	COVER, ADF, FRONT UPPER		
7	FC9-1486-000		1	PLATE, PAPER SIZE	A/INCH SIZE	
7						
7						
8	FC9-1494-000		1	LABEL, COPY PROHIBITION	US,CA,LTN,EUR	
8						
9	FC9-1499-000		1	SHEET, WHITE		
10	FC9-1500-000		1	TRAY, DOCUMENT		
11	FC9-1501-000		1	GUIDE, DOCUMENT, FRONT		
12	FC9-1502-000		1	GUIDE, DOCUMENT, REAR		
13	FC9-1504-000		1	PANEL, OPEN/CLOSE		
14	FC9-4990-000		1	LABEL, GLASS CLEANING	A/INCH SIZE	
14						
14						
15	FC9-5660-000		1	CUSHION		
16	FC9-5661-000		1	CUSHION		
17	FL2-6637-000		1	ROLLER, SEPARATION	[DP]	
18	FL3-1421-000		1	HOLDER, DOCUMENT,RELEASE SHEET		
19	FL3-1430-000		2	HINGE, ADF		
20	FL3-1439-000		1	ADF REAR COVER ASS'Y		
21	FM3-9534-000		1	DOCUMENT TRAY ASSEMBLY		
22	FM3-9536-000		1	PAPER FEED GUIDE ASSEMBLY		
23	FM3-9538-000		1	SEPARATION ROLLER ASSEMBLY		
24	FU7-0672-000		1	GEAR, 24T		
25	FU7-2018-000		1	SPRING, COMPRESSION		
26	FU8-0895-000		1	GEAR, 18T		

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
27	FU8-2007-000		1	SPRING, COMPRESSION		
28	HC1-0586-000		4	RETAINING RING		
29	HU1-1022-000		1	BUSHING		
30	XA9-0476-000		1	SCREW,TP M3X8		
31	XA9-0831-000		7	SCREW, P, M3X10		

FIGURE 162
PAPER FEEDER ASSEMBLY

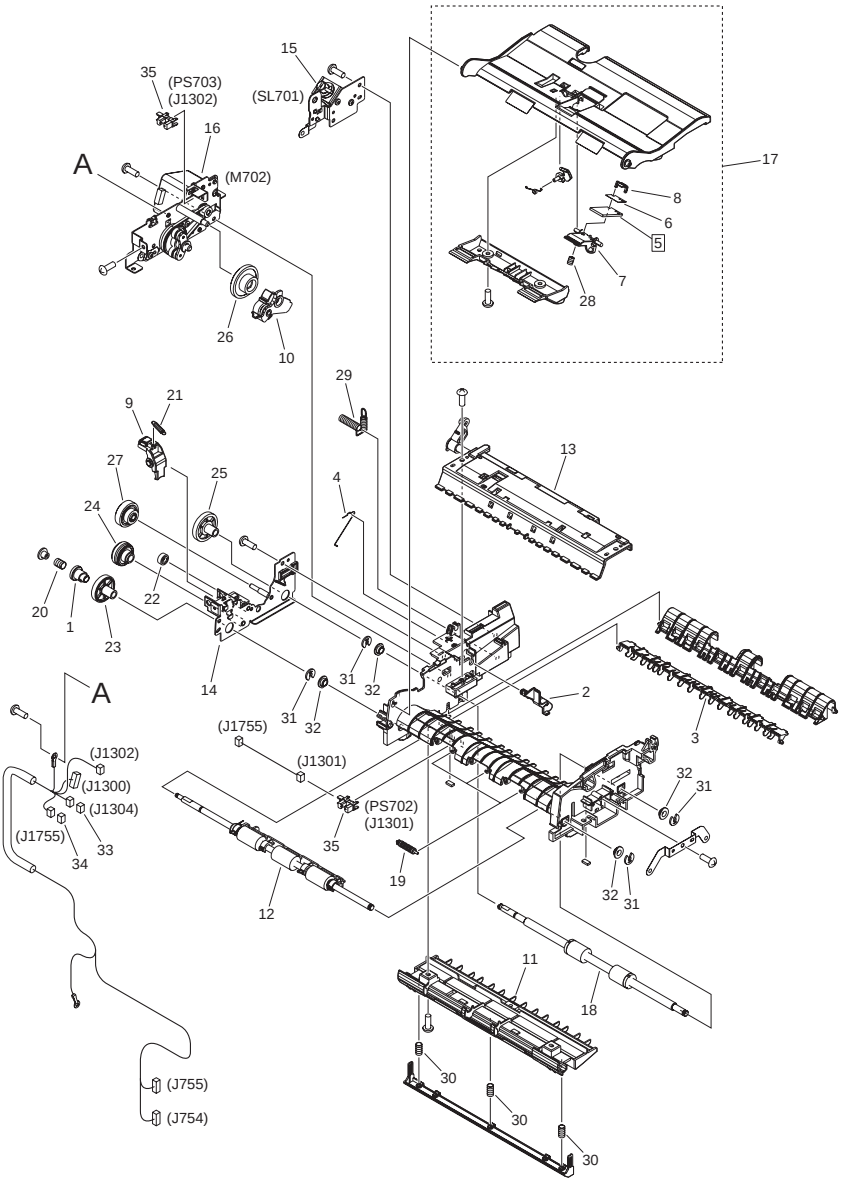


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.162	FM3-9539-000		1	PAPER FEEDER ASSEMBLY		
1	FC7-6052-000		1	RATCHET, PAPER FEED ROLLER		
2	FC7-6182-000		1	LEVER, ROLLER RELEASE		
3	FC7-6278-000		1	FLAPPER, PAPER DELIVERY		
4	FC7-6281-000		1	SPRING, ARM		
5	FC7-6297-000		1	PAD, SEPARATION	[DP]	
6	FC9-5654-000		1	SHEET, SEPARATION PAD		
7	FC7-6299-000		1	HOLDER, SEPARATION PAD		
8	FC7-6300-000		1	CLAMP, SEPARATION PAD		
9	FC9-1512-000		1	LEVER, RELEASE		
10	FL3-1431-000		1	ARM, SEPARATION SWING		
11	FL3-1437-000		1	GUIDE, LOWER ASSEMBLY		
12	FM3-9540-000		1	PAPER FEED ROLLER ASSEMBLY		
13	FM3-9541-000		1	PAPER DELIVERY ASSEMBLY		
14	FM3-9542-000		1	DRIVE PLATE ASSEMBLY		
15	FM3-9543-000		1	SOLENOID ASSEMBLY	SL701	
16	FM4-1872-000		1	MOTOR DRIVE ASSEMBLY	M702	
17	FM4-1873-000		1	GUIDE ASSEMBLY, UPPER		
18	FM4-1875-000		1	PAPER DELIVERY ROLLER ASS'Y		
19	FU5-6992-000		3	ROLLER, AUXILIARY		
20	FU6-2998-000		1	SPRING, COMPRESSION		
21	FU6-2999-000		1	SPRING, TENSION		
22	FU7-0667-000		1	GEAR, 20T		
23	FU7-0668-000		1	GEAR, 54T		
24	FU7-0669-000		1	GEAR, 46T/23T		
25	FU7-0671-000		1	GEAR, 36T		
26	FU7-0676-000		1	GEAR, 21T/42T		
27	FU7-0678-000		1	GEAR, 51T/17T		
28	FU7-2016-000		1	SPRING, COMPRESSION		
29	FU7-2021-000		1	SPRING, COMPRESSION		
30	FU8-2008-000		3	SPRING, COMPRESSION		
31	HC1-0586-000		5	RETAINING RING		

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
32	HU1-1022-000		4	BUSHING		
33	VS1-7177-002		1	CONNECTOR, SNAP TIGHT, BK		
34	VS1-7207-004		1	CONNECTOR, SNAP TIGHT, BK		
35	WG8-5696-000		2	PHOTO INTERRUPTER, TLP1243	PS702,PS703	

FIGURE 300
CASSETTE ASSEMBLY

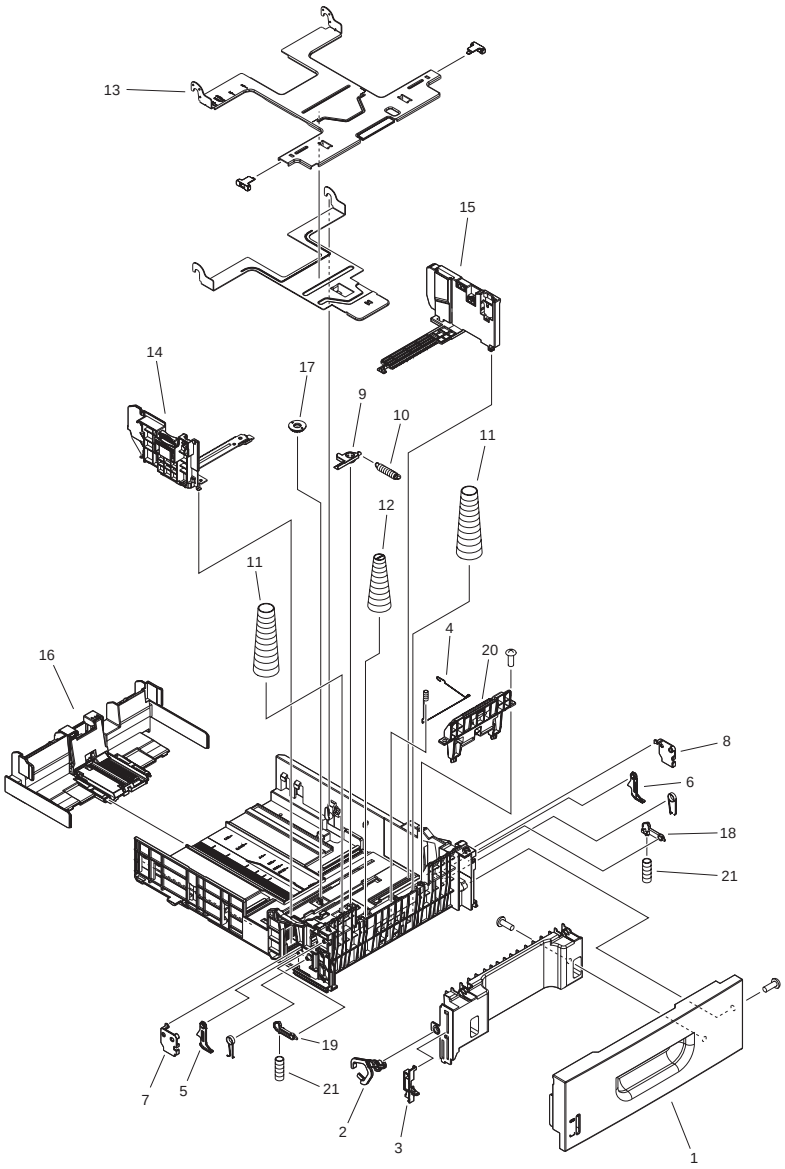


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.300	FM3-9798-000		1	CASSETTE ASSEMBLY		
1	FC9-2032-000		1	COVER, FRONT		
2	FC9-2034-000		1	ARM, REMNANT INDICATION		
3	FC9-2035-000		1	LEVER, REMNANT INDICATION		
4	FC9-2072-000		1	SPRING, GROUNDING		
5	FC9-2074-000		1	STOPPER, LEFT		
6	FC9-2075-000		1	STOPPER, RIGHT		
7	FC9-2076-000		1	COVER, STOPPER, LEFT		
8	FC9-2077-000		1	COVER, STOPPER, RIGHT		
9	FC9-2078-000		1	LEVER, LOCK		
10	FC9-2089-000		1	SPRING, TENSION		
11	FC9-2090-000		2	SPRING, COMPRESSION		
12	FC9-2091-000		1	SPRING, COMPRESSION		
13	FL3-1504-000		1	PLATE, PAPER LIFTING		
14	FM3-9800-000		1	PAPER SIDE END LEFT ASSEMBLY		
15	FM3-9801-000		1	PAPER SIDE END RIGHT ASSEMBLY		
16	FM3-9802-000		1	BACK END LIMIT ASSEMBLY		
17	FS7-0980-000		1	GEAR,16T		
18	RC1-3507-000		1	STOPPER, CASSETTE, RIGHT		
19	RC1-3508-000		1	STOPPER, CASSETTE, LEFT		
20	RM1-6454-000		1	SEPARATION PAD ASSEMBLY		
21	RU5-2327-000		2	SPRING, COMPRESSION		

FIGURE 400
READER ASSEMBLY

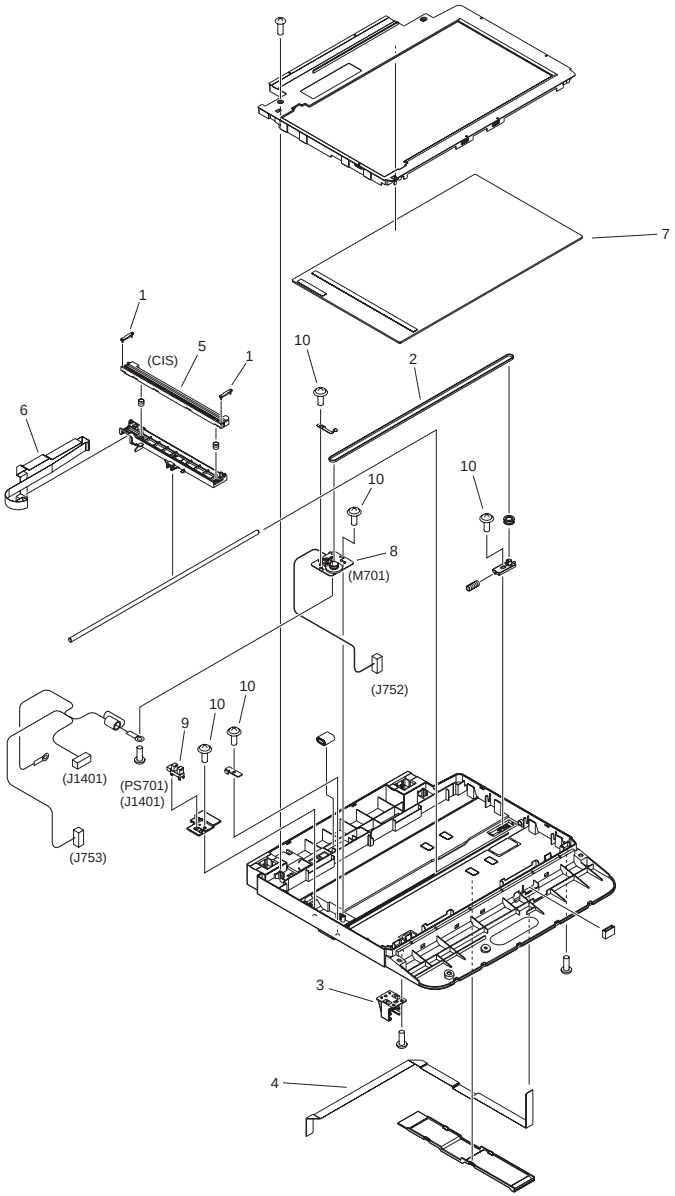


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.400	FM3-9525-000		1	READER ASSEMBLY		
1	FC9-1162-000		2	SPACER, CIS		
2	FC9-1493-000		1	BELT, TIMING		
3	FC9-2101-000		1	MOUNT, SUPPORTER		
4	FK2-8573-000		1	CABLE, FLAT		
5	FK2-8634-000		1	CONTACT IMAGE SENSOR	CIS	
6	FK2-8635-000		1	CABLE, FLAT		
7	FL3-1420-000		1	COPYBOARD GLASS ASSEMBLY		
8	FM3-9527-000		1	DC MOTOR ASSEMBLY	M701	
9	WG8-5696-000		1	PHOTO INTERRUPTER, TLP1243	PS701	
10	XA9-0476-000		5	SCREW,TP M3X8		

FIGURE ZZA
MECHANICAL STANDARD PARTS (HOW TO USE)

Mechanical standard parts
機械標準部品

About a mechanical standard parts

A Mechanical standard parts is a mechanical part which not parts peculiar to a product.
They are parts which are common to a Canon product and are used, such as a screw and a washer.
The Fig No. and parts number of the mechanical standard parts are not listed in the product parts catalog.
Refer to the parts catalog of mechanical standard parts when checking the parts number for screw or washer etc. and identify them by part shape or size.

機械標準部品とは

機械標準部品とは、製品特有の部品ではなく、ねじやワッシャなどキヤノン製品共通で使用されている機械部品（メカ部品）のことです。
製品のパーツカタログには、機械標準部品のFig No.や部品番号は記載しておりません。
ねじや、ワッシャ等の部品番号を調べるときは、機械標準部品のパーツカタログを参照し、部品の形状や大きさから判断し、使用している部品を調べてください。

Material and surface treatment of a mechanical standard parts

Material and surface treatment of mechanical standard parts are assigned commonly for each part.
Refer to the Table 1 for the parts which material and surface treatment are assigned as numbers.

機械標準部品の材料および表面処理

機械標準部品の材料および表面処理については、各種部品共通で決められています。
材料および表面処理が番号で決められている部品については、表1を参照してください。

Table 1 Material and Surface treatment
表1 材料および表面処理

No. 番号	Material 材料	Surface treatment 表面処理	Color 色
1	Stainless steel ステンレス	Stainless steel black coloring (BC4) ステンレス黒着色(BC4)	Black 黒
2		not to be given なし	White 白
3	Brass 黄銅	Regular nickel plating (NL) 普通ニッケルメッキ(NL)	White 白
4		Black nickel plating (BN) 黒色ニッケルメッキ(BN)	Black 黒
5	Steel 鋼	White zinc trivalent chromate treating (ZC3) 白色亜鉛3価クロメート(ZC3)	White 白
6		Regular nickel chromium plating (NC) 普通ニッケルクロムメッキ(NC)	White 白
7		Regular nickel plating (NL) 普通ニッケルメッキ(NL)	White 白
8		Iron and steel phosphating (P1) 鉄鋼燐酸塩処理(P1)	Black 黒
9		Black zinc trivalent chromate treating (BZ3) 黒色亜鉛3価クロメート(BZ3)	Black 黒

FIGURE ZZB
MECHANICAL STANDARD PARTS (SCREWS)

1. Screws
ねじ

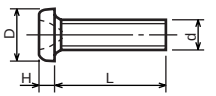
How to read Parts Numbers
部品番号の見方

Screws
ねじ

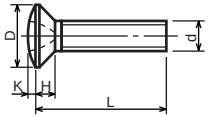
XB1-2400-609

Type No. 類別番号	XB1-2 expresses Binding head machine screw. XB1−2は、バインドねじを表す
Normal designation (d) ねじの呼び(d)	40 expresses M4.0. 40は、M4.0を表す
Length (L) ねじの長さ(L)	0-60 expresses a length of 6.0mm. 0−60は、6.0mmの長さを表す
Material and Surface treatment 材料および表面処理	9 expresses Steel (Black zinc trivalent chromate treating) from Table 1. 9は、表1より鋼(黒色亜鉛3価クロメート)を表す

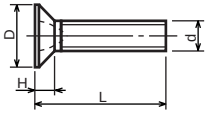
1-1. Cross Recessed Head Screws for Precision Equipments
精密機器用十字穴付き小ねじ



XA1-1, 6, 7



XA1-4

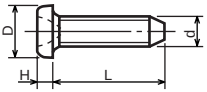


XA1-3

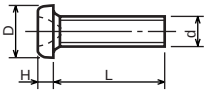
Type No. 類別番号	Type 類別
XA1−1	Pan head Class 1 なべ1種
XA1−3	Countersunk head Class 1 さら1種
XA1−4	Oval countersunk head Class 1 丸さら1種
XA1−6	Pan head Class 3 なべ3種
XA1−7	Pan head Class 2 なべ2種

		Head size (mm) 頭部寸法 (mm)					
		M1.4	M1.6	M1.7	M2	M2.5	M2.6
D	XA1−1	2	2.4	2.5	3	3.8	4
H	XA1−1	0.5	0.55	0.5	0.6	0.9	0.8
D	XA1−3	2	2.4	2.5	3	3.8	4
H	XA1−3	0.48	0.55	0.58	0.73	0.85	0.93
D	XA1−4	2	2.4	2.5	3	3.8	4
H + K	XA1−4	0.68	0.8	0.88	1	1.25	1.3
D	XA1−6	2.5	2.8	3	3.5	4.3	4.5
H	XA1−6	0.8	0.85	0.9	1	1.3	1.2
D	XA1−7	2.5	2.8	3	3.5	4.3	4.5
H	XA1−7	0.5	0.55	0.5	0.6	0.9	0.8

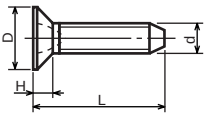
1-2. Precision Tapping Screws
精密用タッピンねじ



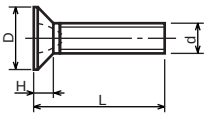
XA4-1, 2, 4



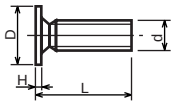
XA4-6, 7, 9



XA4-3



XA4-8

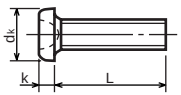


XA4-5

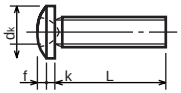
Type No. 類別番号	Type 類別
XA4−1	With tatered end pan head Class 1 絞り−なべ1種
XA4−2	With tatered end pan head Class 3 絞り−なべ3種
XA4−3	With tatered end countersunk head 絞り−さら
XA4−4	With tatered end pan head Class 2 絞り−なべ2種
XA4−5	With parallel end ultra thin head ストレート−超薄頭
XA4−6	With parallel end pan head Class 1 ストレート−なべ1種
XA4−7	With parallel end pan head Class 3 ストレート−なべ3種
XA4−8	With parallel end countersunk head ストレート−さら
XA4−9	With parallel end pan head Class 2 ストレート−なべ2種

	Head size (mm) 頭部寸法 (mm)					
	M1.4	M1.6	M1.7	M2	M2.5	M2.6
D XA4−1	2	2.4	2.5	3	3.8	4
H XA4−1	0.5	0.55	0.5	0.6	0.9	0.8
D XA4−2	2.5	2.8	3	3.5	4.3	4.5
H XA4−2	0.8	0.85	0.9	1	1.3	1.2
D XA4−3	2	2.4	2.5	3	3.8	4
H XA4−3	0.48	0.55	0.58	0.73	0.85	0.93
D XA4−4	2.5	2.8	3	3.5	4.3	4.5
H XA4−4	0.5	0.55	0.5	0.6	0.9	0.8
D XA4−5	2.5	2.8	3	-	-	-
H XA4−5	0.2	0.2	0.2	-	-	-
D XA4−6	2	2.4	2.5	3	3.8	4
H XA4−6	0.5	0.55	0.5	0.6	0.9	0.8
D XA4−7	2.5	2.8	3	3.5	4.3	4.5
H XA4−7	0.8	0.85	0.9	1	1.3	1.2
D XA4−8	2	2.4	2.5	3	3.8	4
H XA4−8	0.48	0.55	0.58	0.73	0.85	0.93
D XA4−9	2.5	2.8	3	3.5	4.3	4.5
H XA4−9	0.5	0.55	0.5	0.6	0.9	0.8

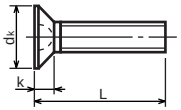
1-3. Cross Recessed Head Screws
一般用十字穴付き小ねじ



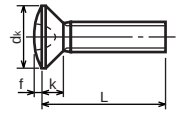
XB1-1



XB1-2



XB1-3

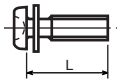


XB1-4

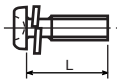
Type No. 類別番号	Type 類別
XB1-1	Pan head なべ
XB1-2	Binding head バインド
XB1-3	Countersunk head さら
XB1-4	Oval countersunk head 丸さら

		Head size (mm) 頭部寸法 (mm)					
		M2	M2.5	M2.6	M3	M4	M5
d_k	XB1-1	3.5	4.5	4.5	5.5	7	9
k	XB1-1	1.3	1.7	1.7	2	2.6	3.3
d_k	XB1-2	4.3	5.3	5.5	6.3	8.3	10.3
k+f	XB1-2	1.2	1.5	1.6	1.9	2.5	3.1
d_k	XB1-3	4	5	-	6	8	10
k	XB1-3	1.2	1.45	-	1.75	2.3	2.8
d_k	XB1-4	4	5	-	6	8	10
k+f	XB1-4	1.6	2	-	2.45	3.2	4
Screw part length b ねじ部長さ b		8	12	12	12	16	20

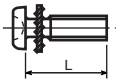
1-4. Cross Recessed Head Screws with Captive Washer
座金組込み十字穴付き小ねじ



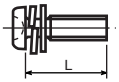
XB2-1



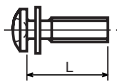
XB2-2



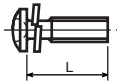
XB2-3



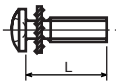
XB2-4



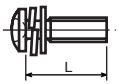
XB2-5



XB2-6



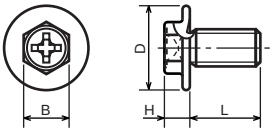
XB2-7



XB2-8

Type No. 類別番号	Type 類別
XB2−1	Pan head + Plain washer (circular bright) なべねじ+平座金
XB2−2	Pan head + Spring washer なべねじ+ばね座金
XB2−3	Pan head + Toothed lock washer なべねじ+歯付座金
XB2−4	Pan head + Spring washer and plain washer (circular bright) なべねじ+(ばね+平)座金
XB2−5	Binding head + Plain washer (circular bright) バインドねじ+平座金
XB2−6	Binding head + Spring washer バインドねじ+ばね座金
XB2−7	Binding head + Toothed lock washer バインドねじ+歯付座金
XB2−8	Binding head + Spring washer and plain washer (circular bright) バインドねじ+(ばね+平)座金

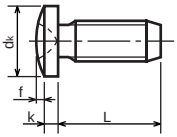
1-5. Hexagon Head Tapping Screws for Matallic Materials
金属用六角タッピンねじ



Type No. 類別番号	Type 類別
XB3−6	For metallic materials 金属用タッピン
XB3−7	For metallic materials with clawed 金属用タッピン−つめ付き

	Head size (mm) 頭部寸法 (mm)	
	M3	M4
D	8	10
B	5.5	5.5
H XB3−6	3.1	3.1
H XB3−7	3.2	3.2

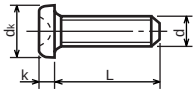
1-6. Special Tapping Screws
特殊タッピンねじ



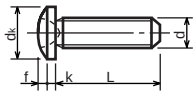
Type No. 類別番号	Type 類別
XB4−5	Binding head バインド

	Head size (mm) 頭部寸法 (mm)	
	M3	M4
d_k	6.3	8.3
k	1.3	1.7
k+f	1.9	2.5

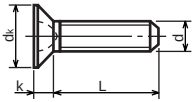
1-7. General Head Tapping Screws
一般用タッピンねじ



XB4-6



XB4-7

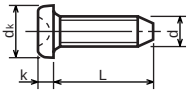


XB4-8

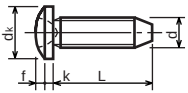
Type No. 類別番号	Type 類別
XB4−6	Pan head なべ
XB4−7	Binding head バインド
XB4−8	Countersunk head さら

		Head size (mm) 頭部寸法 (mm)					
		M2	M2.5	M2.6	M3	M4	M5
d_k	XB4−6	3.5	4.5	4.5	5.5	7	9
k	XB4−6	1.3	1.7	1.7	2	2.6	3.3
d_k	XB4−7	4.3	5.3	5.5	6.3	8.3	10.3
k+f	XB4−7	1.2	1.5	1.6	1.9	2.5	3.1
d_k	XB4−8	4	5	5.2	6	8	10
k	XB4−8	1.2	1.45	1.5	1.75	2.3	2.8

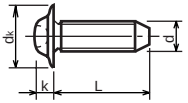
1-8. Tapping Screws for Metallic Materials
金属用タッピンねじ



XB5-1



XB5-2

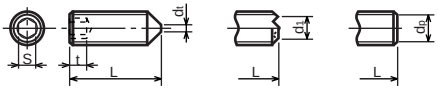


XB5-6

Type No. 類別番号	Type 類別
XB5−1	Pan head なべ
XB5−2	Binding head バインド
XB5−6	Flanged pan head つば付きなべ

		Head size (mm) 頭部寸法 (mm)				
		M2.5	M2.6	M3	M4	M5
d_k	XB5−1	4.5	4.5	5.5	7	9
k	XB5−1	1.7	1.7	2	2.6	3.3
d_k	XB5−2	5.5	5.5	6.3	8.3	10.3
k+f	XB5−2	1.6	1.6	1.9	2.5	3.1
d_k	XB5−6	6.5	6.5	8	10	12
k	XB5−6	2.1	2.1	1.75	3.2	4

1-9. Hexagon Socket Set Screws
六角穴付き止めねじ

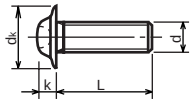


XB6-1　　XB6-2　　XB6-3

Type No. 類別番号	Type 類別
XB6-1	Cone point とがり先
XB6-2	Double point ダブルポイント
XB6-3	Flat point 平先

	Head size (mm) 頭部寸法 (mm)						
	M1.6 M1.7	M2	M2.5 M2.6	M3	M5	M5	M6
S	0.7	0.9	1.3	1.5	2	2.5	3
t	1.5	1.7	2	2	2.5	3	3.5
$d_{t\,max}$ XB6-1	0.4	0.5	0.65	0.75	1	1.25	1.5
$d_{1\,max}$ XB6-2	-	1.2	1.5	1.7	2.2	2.8	3.3
$d_{1\,min}$ XB6-2	-	1	1.2	1.4	1.9	2.4	2.9
$d_{p\,max}$ XB6-3	0.8	1	1.5	2	2.5	3.5	4
$d_{p\,min}$ XB6-3	0.55	0.75	1.25	1.75	2.25	3.2	3.7

1-10. Flanged Pan Head Machine Screws
つば付きなべ小ねじ



Type No. 類別番号	Type 類別
XB6-7	Flanged pan head つば付きなべ

	Head size (mm) 頭部寸法 (mm)				
	M2	M2.5 M2.6	M3	M5	M5
d_k	5	6.5	8	10	12
k	1.7	2.1	2.5	3.2	4

FIGURE ZZC
MECHANICAL STANDARD PARTS (BOLTS)

2. Bolts (Socket head cap screw)
ボルト

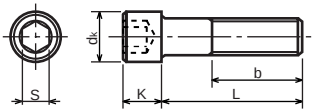
How to read Parts Numbers
部品番号の見方

Bolt (Socket head cap screw)
ボルト

XB7-1080-409

Type No. 類別番号	XB7-1 expresses Hexagon socket head cap screws. XB7−1は、六角穴付きボルトを表す
Normal designation (d) ねじの呼び(d)	080 expresses M8.0. 080は、M8.0を表す
Length (L) ねじの長さ(L)	40 expresses a length of 40mm. 40は、40mmの長さを表す
Material and Surface treatment 材料および表面処理	9 expresses Steel (Black zinc trivalent chromate treating) from Table 1. 9は、表1より鋼(黒色亜鉛3価クロメート)を表す

2-1. Hexagon socket head cap screws
六角穴付きボルト



Type No. 類別番号	Type 類別
XB7−1	Hexagon socket head cap screws 六角穴付きボルト

	Head size (mm) 頭部寸法 (mm)						
	M3	M4	M5	M6	M8	M10	M12
S	2.5	3	4	5	6	8	10
d_k	5.5	7	8.5	10	13	16	18
K	3	4	5	6	8	10	12
Screw part length b ねじ部長さ b_{max}	18	20	22	24	28	32	36

FIGURE ZZD
MECHANICAL STANDARD PARTS (NUTS)

3. Nuts
ナット

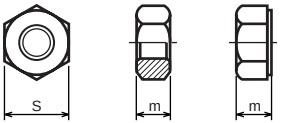
How to read Parts Numbers
部品番号の見方

Nuts
ナット

XB7-2100-309

Type No. 類別番号	XB7-210 expresses Hexagon nut class 1. XB7−210は、六角ナット1種を表す
Normal designation (d) ねじの呼び(d)	0-30 expresses M3.0. 0−30は、M3.0を表す
Material and Surface treatment 材料および表面処理	9 expresses Steel (Black zinc trivalent chromate treating) from Table 1. 9は、表1より鋼(黒色亜鉛3価クロメート)を表す

3-1. Hexagon Nuts and Hexagon Thin Nuts
六角ナット



Type No. 類別番号	Type 類別
XB7−210	Hexagon nut Class 1 六角ナット−1種
XB7−220	Hexagon nut Class 3 六角ナット−3種
XB7−230	Hexagon nut Style 1 double chamfered 六角ナット−スタイル1−両面とり
XB7−231	Hexagon nut Style 1 washer faced 六角ナット−スタイル1−座付き
XB7−240	Hexagon nut Style 2 double chamfered 六角ナット−スタイル2−両面とり
XB7−241	Hexagon nut Style 2 washer faced 六角ナット−スタイル2−座付き
XB7−250	Hexagon nut 六角ナット
XB7−260	Hexagon thin nut double chamfered 六角低ナット−両面とり
XB7−270	Hexagon thin nut not chamfered 六角低ナット−面とり無し

	Head size (mm) 頭部寸法 (mm)						
	M2	M2.5	M3	M4	M5	M6	M8
S	4	5	5.5	7	8	10	13
m XB7−210	1.6	2	2.4	3.2	4	5	6.5
m XB7−220	1.2	1.6	1.8	2.4	3.2	3.6	5
m XB7−230, 231	1.6	2	2.4	3.2	4.7	5.2	6.8
m XB7−240, 241	-	-	-	-	5.1	5.7	7.5
m XB7−250	-	-	-	-	5.6	6.1	7.9
m XB7−260	1.2	1.6	1.8	2.2	2.7	3.2	4
m XB7−270	1.2	1.6	1.8	2.2	2.7	3.2	4

FIGURE ZZE
MECHANICAL STANDARD PARTS (RETAINING RINGS)

5. Retaining Rings
止め輪

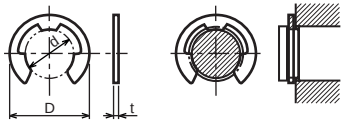
How to read Parts Numbers
部品番号の見方

Retaining Rings
止め輪

XD2-1100-202

Type No. 類別番号	XD2-110 expresses retaining ring-E type (Type1). XD2−110は、E形止め輪（1種）を表す
Nominal designation 呼び	0-20 expresses a 020 of nominal designation. (See Table 5) 0−20は、呼び020を表す（表5参照）
Material and Surface treatment 材料および表面処理	2 expresses Stainless steel (Surface treatment is not to be given) from Table 1. 2は、表1よりステンレス（表面処理なし）を表す

5-1. Retaining Rings - E type
E形止め輪

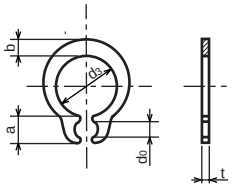


Type No. 類別番号	Type 類別
XD2−110	Retaining ring - E type (Type 1) E形止め輪（1種）
XD2−120	Retaining ring - E type (Type 2) E形止め輪（2種）

Table 5　表5

Type 種類	Nominal designation 呼び	d (mm)	D (mm)	t (mm)
Type 1 1種	007	0.65	2	0.2
	010	0.95	2.8	0.2
	013	1.25	3.3	0.3
	017	1.65	4.2	0.4
	020	1.95	4.6	0.5
	024	2.35	6	0.6
	028	2.74	6.5	0.6
	032	3.14	7.2	0.6
	037	3.64	8	0.7
	040	3.93	10	0.7
	042	4.13	10	0.7
	050	4.93	11	0.7
	058	5.73	12	0.7
	060	5.93	12.7	0.9
	064	6.32	13.5	0.9
	074	7.31	15	0.9
	080	7.91	16.5	1
Type 2 2種	008	0.8	2	0.2
	012	1.2	3	0.3
	015	1.5	4	0.4
	020	2	5	0.4
	025	2.5	6	0.4
	030	3	7	0.6
	040	4	9	0.6
	050	5	11	0.6
	060	6	12	0.8
	070	7	14	0.8
	080	8	16	0.8
	090	9	18	0.8
	100	10	20	1

5-2. Grip Rings
グリップ止め輪

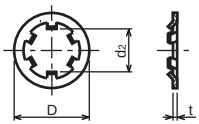


Type No. 類別番号	Type 類別
XD2−210	Grip ring グリップ止め輪

Table 5　表5

Nominal designation 呼び	d_3 (mm)	t (mm)	b (mm)	a (mm)	d_0 (mm)
020	1.9	0.5	1	1.8	0.8
025	2.35	0.5	1.2	1.9	0.9
030	2.85	0.6	1.4	1.9	0.9
035	3.3	0.6	1.6	2	0.9
040	3.8	0.8	1.8	2.8	1.2
045	4.25	0.8	2	2.9	1.3
050	4.75	0.8	2.2	2.9	1.3
060	5.7	1	2.4	3.1	1.4
070	6.7	1	2.7	3.3	1.4
080	7.7	1	3	3.5	1.4
090	8.65	1.2	3.3	4.7	1.5
100	9.65	1.2	3.5	4.7	2

5-3. Toothed Retaining Rings
歯付き形止め輪

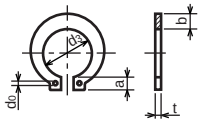


Type No. 類別番号	Type 類別
XD2−230	Toothed retaining ring 歯付き形止め輪

Table 5　表5

Nominal designation 呼び	d_2 (mm)	D (mm)	t (mm)	No of teeth 歯数
015	1.4	5.2	0.25	3
020	1.9	6	0.25	3
024	2.3	6.4	0.25	3
030	2.8	8	0.25	4
040	3.8	9	0.25	4
050	4.8	10	0.25	5
060	5.8	11	0.25	5
080	7.8	13	0.25	5
100	9.8	15.4	0.25	6

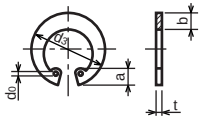
5-4. Retaining Rings - C Type
C形止め輪



Type No. 類別番号	Type 類別
XD2-310	Retaining ring - C type for shaft C形止め輪　軸用

Table 5　表5

Nominal designation 呼び	d3 (mm)	t (mm)	b (mm)	a (mm)	do (mm)
010	9.3	1	1.6	3	1.2
012	11.1	1	1.8	3.2	1.5
014	12.9	1	2	3.4	1.7
015	13.8	1	2.1	3.5	1.7
016	14.7	1	2.2	3.6	1.7
017	15.7	1	2.2	3.7	1.7
018	16.5	1.2	2.6	3.8	1.7
020	18.5	1.2	2.7	3.9	2
022	20.5	1.2	2.7	4.1	2
025	23.2	1.2	3.1	4.3	2
028	25.9	1.5	3.1	4.6	2
030	27.9	1.5	3.5	4.8	2
032	29.6	1.5	3.5	5	2.5
035	32.2	1.5	4	5.4	2.5



Type No. 類別番号	Type 類別
XD2-320	Retaining ring - C type for hole C形止め輪　穴用

Table 5　表5

Nominal designation 呼び	d3 (mm)	t (mm)	b (mm)	a (mm)	do (mm)
010	10.7	1	1.8	3.1	1.2
011	11.8	1	1.8	3.2	1.2
012	13	1	1.8	3.3	1.5
014	15.1	1	2	3.6	1.7
016	17.3	1	2	3.7	1.7
018	19.5	1	2.5	4	1.7
019	20.5	1	2.5	4	2
020	21.5	1	2.5	4	2
022	23.5	1	2.5	4.1	2
025	26.9	1.2	3	4.4	2
028	30.1	1.2	3	4.6	2
030	32.1	1.2	3	4.7	2
032	34.4	1.2	3.5	5.2	2.5
035	37.8	1.5	3.5	5.2	2.5
037	39.8	1.5	3.5	5.2	2.5
040	43.5	1.8	4	5.7	2.5
042	45.5	1.8	4	5.8	2.5
045	48.5	1.8	4.5	5.9	2.5
047	50.5	1.8	4.5	6.1	2.5
050	54.2	2	4.5	6.5	2.5
052	56.2	2	5.1	6.5	2.5
055	59.2	2	5.1	6.5	2.5
060	64.2	2	5.1	6.8	2.5
062	66.2	2	5.5	6.9	2.5
068	72.5	2.5	6	7.4	2.5
072	76.5	2.5	6.6	7.4	2.5
075	79.5	2.5	6.6	7.8	2.5
080	85.5	2.5	7	8	2.5
085	90.5	3	7	8	3
090	95.5	3	7.6	8.3	3
095	100.5	3	8	8.5	3

Cassette Feeding Module-U1

PARTS CATALOG

Canon

FEBRUARY 20, 2009

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Cassette Feeding Module-U1(Parts Catalog)

NUMERICAL INDEX
Cassette Feeding Module-U1(Numerical Index)

PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
FC9-2182-000	F10 - 1				
FC9-2183-000	F10 - 2				
FC9-2184-000	F10 - 3				
FM3-9809-000	F12 - 3				
NPN	F10 -				
NPN	F11 -				
NPN	F12 -				
RK2-0426-000	F11 - 2				
RM1-1261-000	F12 - 2				
RM1-1267-000	F12 - 5				
RM1-1301-000	F11 - 1				
RM1-6454-000	F12 - 4				
RM1-6467-000	F12 - 1				
VS1-7257-007	F12 - 6				
XA9-1671-000	F11 - 3				
XA9-1671-000	F12 - 7				

Cassette Feeding Module-U1(Parts Catalog)

Cassette Feeding Module-U1

F32-5511-000 FCV02001-

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FIGURE F10
EXTERNAL COVERS, PANELS, ETC.

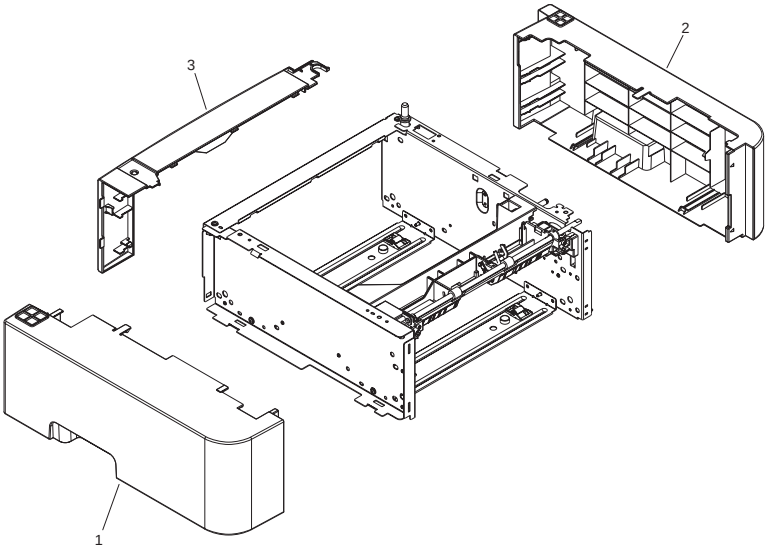

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.F10	NPN		RF	EXTERNAL COVERS, PANELS, ETC.		
1	FC9-2182-000		1	COVER, LEFT		
2	FC9-2183-000		1	COVER, RIGHT		
3	FC9-2184-000		1	COVER, REAR		

FIGURE F11
PAPER FEEDER MAIN BODY 1

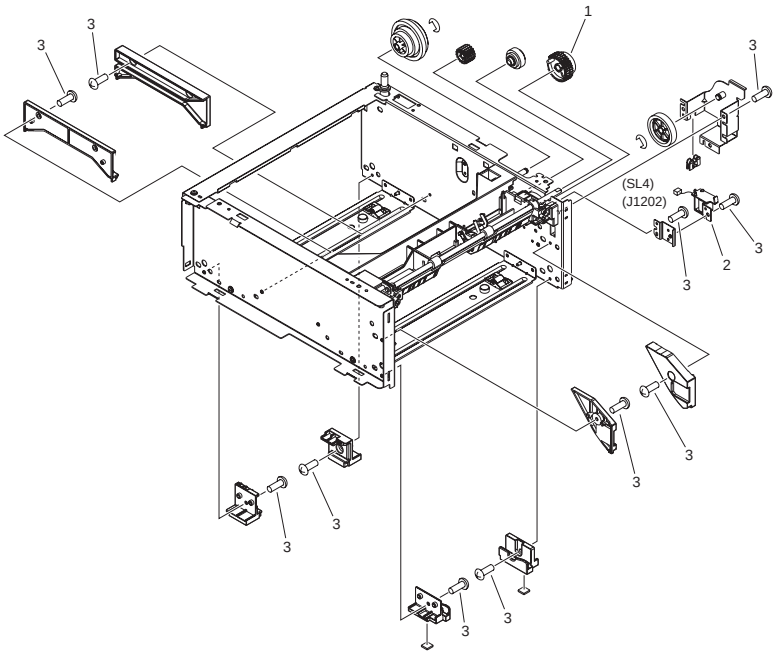

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.F11	NPN		RF	PAPER FEEDER MAIN BODY 1		
1	RM1-1301-000		1	PAPER PICK-UP GEAR ASS'Y		
2	RK2-0426-000		1	SOLENOID	SL4	
3	XA9-1671-000		AR	SCREW, D, M3X8		

FIGURE F12
PAPER FEEDER MAIN BODY 2

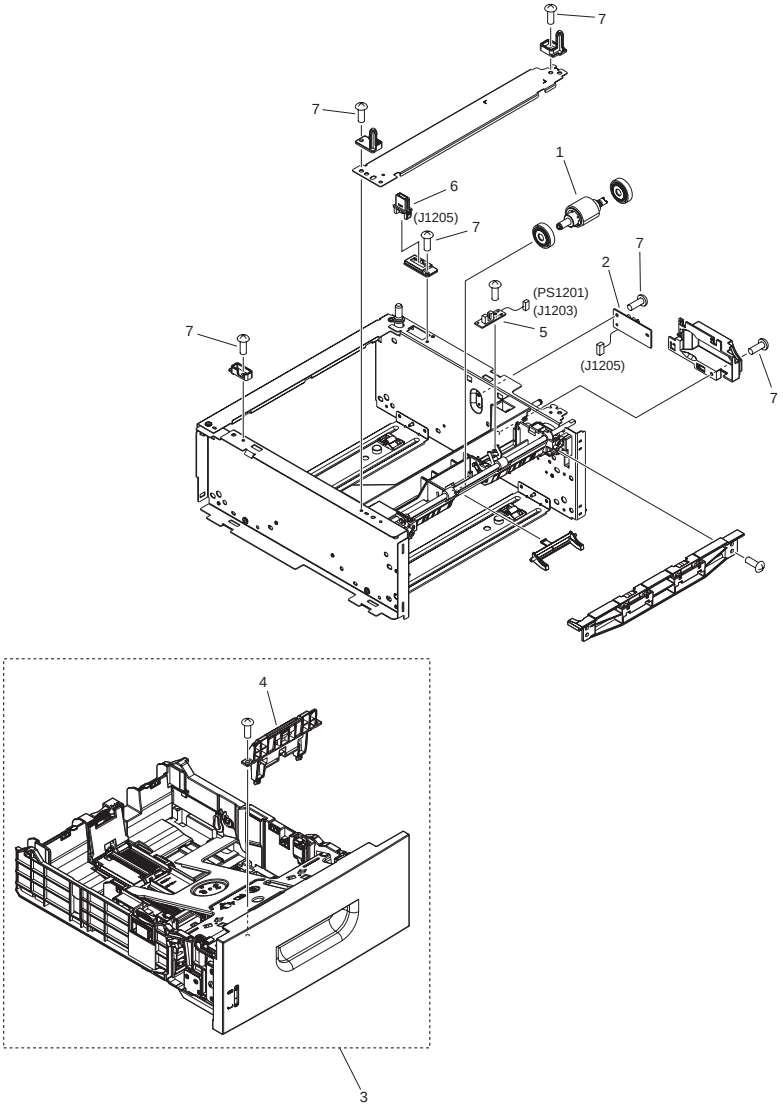

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.F12	NPN		RF	PAPER FEEDER MAIN BODY 2		
1	RM1-6467-000		1	PAPER PICK-UP ROLLER ASS'Y		
2	RM1-1261-000		1	PAPER FEEDER DRIVER PCB ASS'Y		
3	FM3-9809-000		1	CASSETTE ASS'Y		
4	RM1-6454-000		1	SEPARATION PAD ASS'Y		
5	RM1-1267-000		1	PAPER SENSOR PCB ASS'Y	PS1201	
6	VS1-7257-007		1	CONNECTOR, DRAWER		
7	XA9-1671-000		8	SCREW, D, M3X8		

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