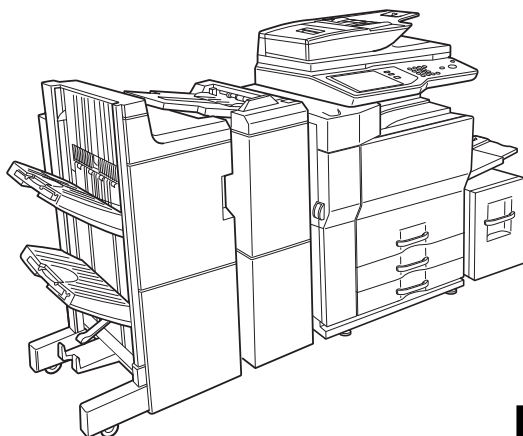


# SHARP SERVICE MANUAL

CODE: 00ZMXM753/S1E



## DIGITAL MULTIFUNCTIONAL SYSTEM

**MX-M623 N/U**  
**MODEL MX-M753 N/U**

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Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

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# NOTE FOR SERVICING

## 1. Precautions for servicing

- 1) When servicing, disconnect the power plug, the printer cable, the network cable, and the telephone line from the machine, except when performing the communication test, etc.  
It may cause an injury or an electric shock.
- 2) There is a high temperature area inside the machine. Use an extreme care when servicing.  
It may cause a burn.
- 3) There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.
- 4) Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.  
It may damage eyes by reflection of laser beams.
- 5) When servicing with the machine operating, be careful not to squeeze your hands by the chain, the belt, the gear, and other driving sections.
- 6) Do not leave the machine with the cabinet disassembled.  
Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.
- 7) When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.  
If toner, developer, or ink enters your eyes, wash it away with water immediately, and consult a doctor if necessary.
- 8) The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
- 9) Do not throw toner or a toner cartridge in a fire. Otherwise, toner may pop and burn you.
- 10) When replacing the lithium battery of the PWB, use a specified one only.  
If a battery of different specification is used, it may be broken, causing breakdown or malfunction of the machine.
- 11) When carrying a unit with PWB or electronic parts installed to it, be sure to put it in an anti-static-electricity bag.  
It may cause a breakdown or malfunctions.

CAUTION  
DOUBLE POLE/NEUTRAL FUSING

(200V series only)

- 12) When the machine is moved over a bump, hold the grip on the right side of the machine to lift and cross the bump over.  
This is because the casters may be broken for a big bump.

## 2. Warning for servicing

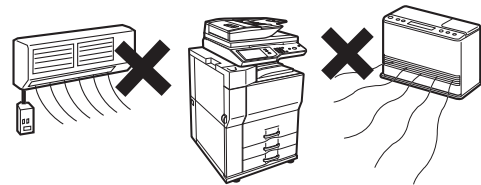
- 1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.  
Avoid complex wiring, which may lead to a fire or an electric shock.  
It may cause a fire or an electric shock.
- 2) If there is any abnormality such as a smoke or an abnormal smell, interrupt the job and disconnect the power plug.  
It may cause a fire or an electric shock.
- 3) Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.  
To protect the machine and the power unit from lightening, grounding must be made.

- 4) When connecting the grounding wire, never connect it to the following points.  
It may cause an explosion, a fire or an electric shock.
  - Gas tube
  - Lightning conductor
  - A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
  - Grounding wire for telephone line
- 5) Do not damage, break, or work the power cord.  
Do not put heavy objects on the power cable. Do not bend it forcibly or do not pull it extremely.  
It may cause a fire or an electric shock.
- 6) Keep the power cable away from a heat source.  
Do not insert the power plug with dust on it into a power outlet.  
It may cause a fire or an electric shock.
- 7) Do not put a receptacle with water in it or a metal piece which may drop inside the machine.  
It may cause a fire or an electric shock.
- 8) With wet or oily hands, do not touch the power plug, do not insert the telephone line jack, do not operate the machine, or do not perform servicing.  
It may cause an electric shock.

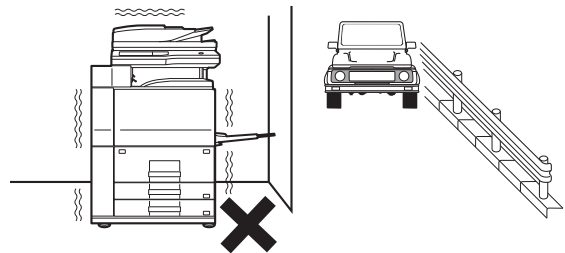
## 3. Note for installation site

Do not install the machine at the following sites.

- 1) **Place of high temperature, high humidity, low temperature, low humidity, place under an extreme change in temperature and humidity.**  
Paper may get damp and form dews inside the machine, causing paper jam or copy dirt.  
For operating and storing conditions, refer to the specifications described later.



- 2) **Place of much vibrations**  
It may cause a breakdown.



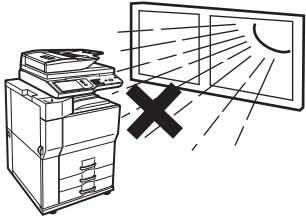
- 3) **Poorly ventilated place**  
An electrostatic type copier will produce ozone inside it. The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce a smell of ozone. Install the machine in a well ventilated place, and ventilate occasionally.



4) **Place of direct sunlight.**

Plastic parts and ink may be deformed, discolored, or may undergo qualitative change.

It may cause a breakdown or copy dirt.



5) **Place which is full of organic gases such as ammonium**

The organic photo-conductor (OPC) drum used in the machine may undergo qualitative change due to organic gases such as ammonium.

Installation of this machine near a diazo-type copier may result in dirt copy.



6) **Place of much dust**

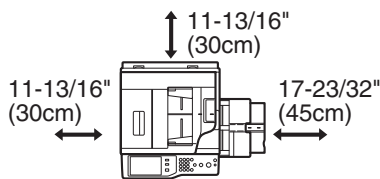
When dusts enter the machine, it may cause a breakdown or copy dirt.



7) **Place near a wall**

Some machine require intake and exhaust of air.

If intake and exhaust of air are not properly performed, copy dirt or a breakdown may be resulted.



8) **Unstable or slant surface**

If the machine drops or fall down, it may cause an injury or a breakdown.

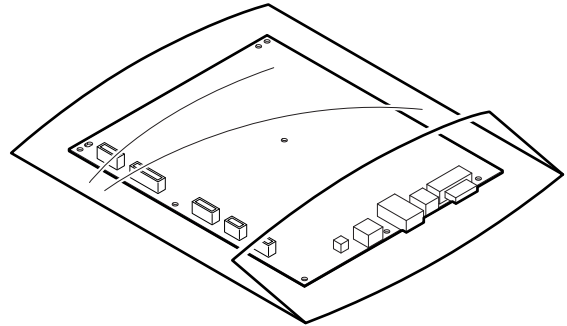
If there are optional paper desk and the copier desk specified, it is recommendable to use them.

When using the optional desk, be sure to fix the adjuster and lock the casters.

## 4. Note for handling PWB and electronic parts

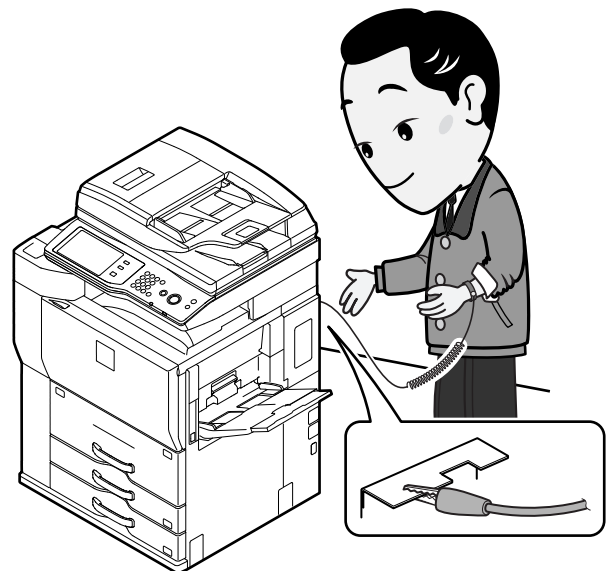
When handling the PWB and the electronic parts, be sure to observe the following precautions in order to prevent against damage by static electricity.

- 1) When in transit or storing, put the parts in an anti-static bag or an anti-static case and do not touch them with bare hands.

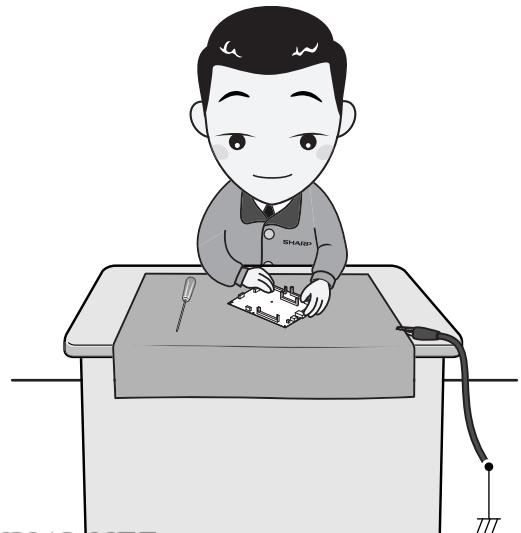


- 2) When and after removing the parts from an anti-static bag (case), use an earth band as shown below:

- Put an earth band to your arm, and connect it to the machine.



- When repairing or replacing an electronic part, perform the procedure on an anti-static mat.



## 5. Note for repairing/replacing the LSU

When repairing or replacing, be sure to observe the following items.

- 1) When repairing or replacing the LSU, be sure to disconnect the power plug from the power outlet.
- 2) When repairing or replacing the LSU, follow the procedures described in this Service Manual.
- 3) When checking the operations after repairing the LSU, keep all the parts including the cover installed and perform the operation check.
- 4) Do not modify the LSU.
- 5) When visually checking the inside of the machine for the operation check, be careful not to allow laser beams to enter the eyes.

If the above precaution is neglected or an undesignated work is performed, safety may not be assured.

## 6. Note for handling the drum unit, the transfer unit, the developing unit, and the fusing unit

When handling the OPC drum unit, the transfer unit, and the developing unit, strictly observe the following items.

If these items are neglected, a trouble may be generated in the copy and print image quality.

(Drum unit)

- 1) Avoid working at a place with strong lights.
- 2) Do not expose the OPC drum to lights including interior lights for a long time.
- 3) When the OPC drum is removed from the machine, cover it with light blocking material. (When using paper, use about 10 sheets of paper to cover it.)
- 4) Be careful not to attach fingerprints, oil, grease, or other foreign material on the OPC drum surface.

(Transfer unit)

- 1) Be careful not to attach fingerprints, oil, grease, or other foreign material on the transfer roller.

(Developing unit)

- 1) Be careful not to attach fingerprints, oil, grease, or other foreign material on the developing unit.

(Fusing unit)

- 1) Be careful not to put fingerprints, oil, grease, or other foreign material on the fusing roller and the external heating belt.
- 2) Do not leave the fusing roller in contact state for a long time.

## 7. Screw tightening torque

The screws used in this machine are largely classified into three kinds.

These kinds are classified according to the shape of the screw grooves and use positions.

The table below shows the kinds of the screws and the tightening torques depending on the use position.

When tightening the screws for repair or maintenance, refer to the table.

However, for the other conditions of tightening screws than specified on this table, or when a special care is required, the details are described on the separate page. Refer to the descriptions on such a case.

NOTE: Especially for the screw fixing positions where there is an electrode or a current flows, use enough care to tighten securely to avoid loosening.

### Screw kinds and tightening torques

#### Normal screws, set screws (including step screws)

Screw diameter	Material to be fixed	Tightening torque (N·m)	Tightening torque (kgf·cm)	Tightening torque (lbft)
M2.6	Steel plate	0.8 - 1.0	8 - 10	0.6 - 0.7
M3	Steel plate	1.0 - 1.2	10 - 12	0.7 - 0.9
M4	Steel plate	1.6 - 1.8	16 - 18	1.2 - 1.3

#### Tapping screws (for iron)

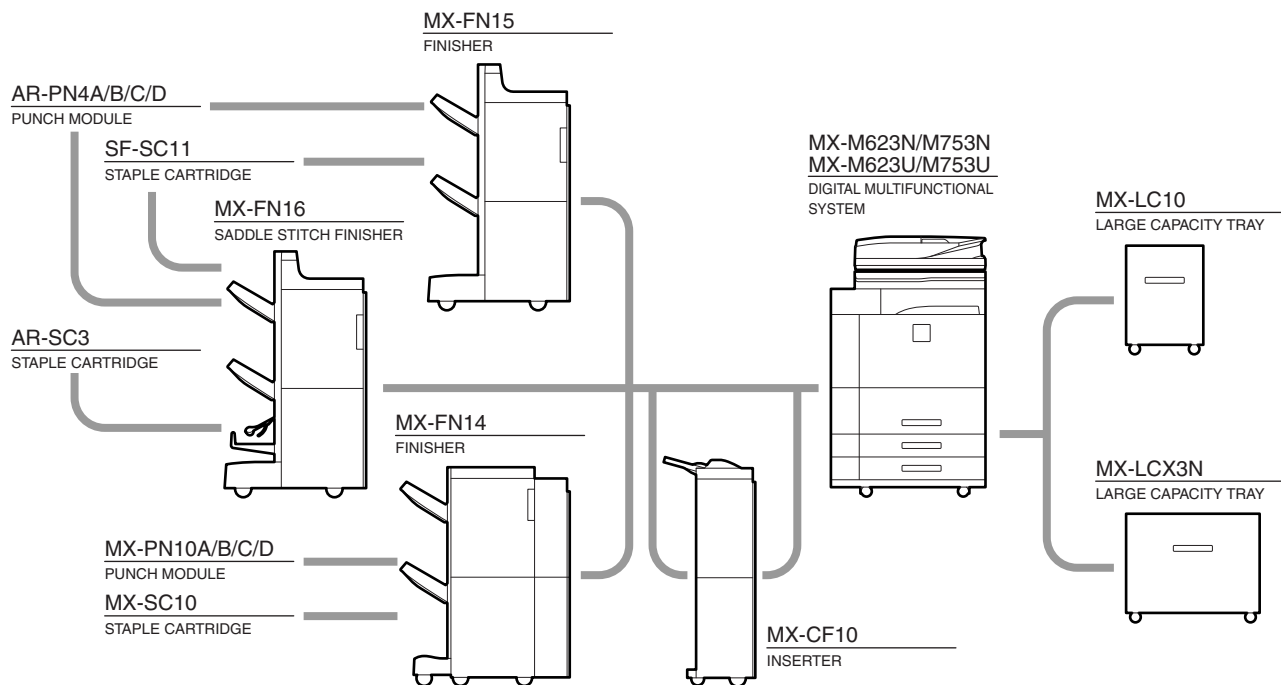
Screw diameter	Material to be fixed	Tightening torque (N·m)	Tightening torque (kgf·cm)	Tightening torque (lbft)
M3	Steel plate (Plate thickness 0.8mm or above)	1.0 - 1.2	10 - 12	0.7 - 0.9
M4	Steel plate (Plate thickness 0.8mm or above)	1.6 - 1.8	16 - 18	1.2 - 1.3
M3	Steel plate (Plate thickness less than 0.8mm)	0.6 - 0.8	6 - 8	0.4 - 0.6
M4	Steel plate (Plate thickness less than 0.8mm)	1.2 - 1.4	12 - 14	0.9 - 1.0

#### Tapping screw (for plastic)

Screw diameter	Material to be fixed	Tightening torque (N·m)	Tightening torque (kgf·cm)	Tightening torque (lbft)
M3	Plastic resin	0.6 - 0.8	6 - 8	0.4 - 0.6
M4	Plastic resin	1.0 - 1.2	10 - 12	0.7 - 0.9

# [1] PRODUCT OUTLINE

## 1. System configuration



## 2. Machine configuration

	MX-M623N/M753N	MX-M623U/M753U
Copier	STD	STD
PCL printer	STD	OPT*1
PS printer	OPT*1	OPT*1
Main body LCD	COLOR WVGA 8.5"	COLOR WVGA 8.5"
FAX	OPT	OPT
Scanner	STD	OPT*1
Filing (Print hold function)	STD	STD
HDD	STD	STD
DSPF	STD	STD
Automatic duplex	STD	STD
Security	OPT*1	OPT*1
Internet Fax	OPT*1	OPT*1

STD: Standard provision. OPT: Option

OPT\*1: Product key target.

### 3. Combination of options

Section	Name	Model name	MX-M623N MX-M753N	MX-M623U MX-M753U	Product key target	Remarks
Paper feed system	LARGE CAPACITY TRAY	MX-LC10	○	○		
	LARGE CAPACITY TRAY	MX-LCX3N	○	○		
Paper exit system	INSERTER	MX-CF10	○	○		
	FINISHER	MX-FN15	○	○		
	SADDLE STITCH FINISHER	MX-FN16	○	○		
	FINISHER	MX-FN14	○	○		100 sheets staple
	PUNCH MODULE	AR-PN4A/B/C/D	○	○		For finisher and saddle stitch finisher
	PUNCH MODULE	MX-PN10A/B/C/D	○	○		For 100 sheets staple finisher
	STAPLE CARTRIDGE	SF-SC11	○	○		For Finisher and Saddle Finisher
	STAPLE CARTRIDGE	AR-SC3	○	○		For saddle
Printer expansion	STAPLE CARTRIDGE	MX-SC10	○	○		For 100 sheets staple finisher
	PRINTER EXPANSION KIT	MX-PB13	STD	○	○	
	PS3 EXPANSION KIT	MX-PKX1	○	○	○	
	XPS EXPANSION KIT	MX-PUX1	○	○*1	○	The expansion memory board is required.
	EXPANSION MEMORY BOARD	MX-SMX3	○	○		1GB Required when the XPS expansion kit is used.
Image send expansion	BARCODE FONT KIT	AR-PF1	○	○		
	FACSIMILE EXPANSION KIT	MX-FXX2	○*2	○*2		
	STAMP UNIT	AR-SU1	○*2	○*2		
	STAMP CARTRIDGE	AR-SV1	○*2	○*2		
	INTERNET FAX EXPANSION KIT	MX-FWX1	○	○	○	
	NETWORK SCANNER EXPANSION KIT	MX-NSX1	STD	○	○	
Authentication/ Security	ENHANCED COMPRESSION KIT	MX-EBX3	○	○		
	DATA SECURITY KIT	MX-FR22U	○	○	○	Commercial version
Application/ Solution	DATA SECURITY KIT	MX-FR22	○	○	○	Authentication version
	SHARPPDESK 1 LICENSE KIT	MX-USX1	○	○		
	SHARPPDESK 5 LICENSE KIT	MX-USX5	○	○		
	SHARPPDESK 10 LICENSE KIT	MX-US10	○	○		
	SHARPPDESK 50 LICENSE KIT	MX-US50	○	○		
	SHARPPDESK 100 LICENSE KIT	MX-USA0	○	○		
	APPLICATION INTEGRATION MODULE	MX-AMX1	○	○	○	
	APPLICATION COMMUNICATION MODULE	MX-AMX2	STD*3/○	○	○	
	EXTERNAL ACCOUNT MODULE	MX-AMX3	STD*3/○	○	○	
	KEYBOARD	MX-KBX2	STD/○*4	○		

STD: Standard provision. ○: Installable. \*1: The printer expansion kit is required. \*2: No support for some destinations.

\*3: The SharpOSA Utility CD-ROM is not provided. \*4: Standard for North America.

## [2] SPECIFICATIONS

### 1. Basic specifications

#### A. Base engine

##### (1) Type

Type	Desktop
------	---------

##### (2) Engine composition

Photo-conductor kind	OPC (Drum diameter: $\phi$ 80mm)
Copying method	Electronic photo (Laser)
Developing system	Dry, 2-component magnetic brush development
Charging system	Charged saw-tooth method
Transfer system	Transfer belt
Cleaning system	Counter blade
Fusing system	Heat roller

##### (3) Dimension / Weight

Outer dimension (W x D x H)	728 x 683 x 1213mm
Machine dimension with the bypass tray extended (W x D)	1026 x 683mm
Weight   Main unit	Approx. 190kg

##### (4) Warm-up

Warm-up time	30 seconds or less
Pre-heat	Yes

\* It may differ depending on the machine conditions.

##### (5) First copy time

Engine	62 CPM model	75 CPM model
Platen	4.0 second	3.5 second
DSPF	6.4 second	5.9 second

\* It may differ depending on the environment.

\* Measuring conditions: A4 (8.5" x 11")

##### (6) Engine resolution

Resolution	Writing Copy: 600 x 600dpi Print: 600 x 600dpi 1200 x 1200dpi
Gradation	Equivalent to 256 gradation

##### (7) Printable area

A3	289 x 412mm	11" x 17"	271 x 424mm
B4	242 x 356mm	8.5" x 14"	208 x 348mm
A4	202 x 289mm	8.5" x 13.5"	208 x 335mm
B5	174 x 249mm	8.5" x 13.4"	208 x 332mm
A5	140 x 202mm	8.5" x 13"	208 x 322mm
Postcard	92 x 140mm	8.5" x 11"	208 x 271mm
8K	262 x 382mm	Executive (7.25" x 10.5)	183 x 259mm
16K	187 x 262mm	5.5" x 8.5"	132 x 208mm

Void area Image loss	Lead edge: 4mm or less Rear edge: 4 mm or less FR total: 8mm or less
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### (8) Engine speed (ppm)

#### a. Tray (1-4, LCC)

Paper type	Paper size	62 CPM model	75 CPM model
Plain paper	A3, 11" x 17", 8K	34	39
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	39	45
	A4R, 8.5" x 11"R, 16KR	45	48
	B5R, 7.25" x 10.5"R		
	A5R, 5.5" x 8.5"R	45	48
	A4, B5, 8.5" x 11", 16K	62	75
Heavy paper	Extra	34	39
	A4, B5, 8.5" x 11", 16K (Tray 3, 4)	43	43
	Extra (Tray 4)	22	22

#### b. Manual paper feed tray

Paper type	Paper size	62 CPM model	75 CPM model
Plain paper	A3, 11" x 17", 8K	34	39
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	39	45
	A4, 8.5" x 11", 16K, B5	62	75
	B5R, 7.25" x 10.5"R	45	48
	A4R, 16KR, 8.5" x 11"R		
	A5R, 5.5" x 8.5"R	45	48
Heavy paper	Extra	34	39
	A4, 8.5" x 11", 16K, B5	43	43
	Extra	22	22
	Postcard HIGH *1	32	32
OHP	Postcard LOW *2	21	21
	A4, 8.5" x 11"	43	43
	A4R, 8.5" x 11"R	31	31

\*1: Switched by the service simulation setting. Postcard is set Low before shipment.

\*2: After completion of discharge of paper outside of the machine, the next paper is fed. (The values are reference values.)

### (9) Power source

NOTE: Check the shape of the power plug of the machine, and insert it into a power outlet of the acceptable shape.

	100V series	200V series
Voltage / Current	100 - 127V 16A USA:20A	220 - 240V 8A
Frequency	50/60Hz	
Power source code	Fixed type (Direct connection)	Inlet
Power switch	2 switches (Primary switch: in the front cover; Secondary switch: the operation panel)	

### (10) Power consumption

	100V series	200V series
Max. Rated Power Consumption *1	1.8kW	1.84kW
Moving time to Pre-heat mode	1 minutes (default)	
Moving time to Sleep mode	1 minutes (default)	

\*1: When the power supply is turned on, when the dehumidification heater is OFF.

## B. Controller board

### (1) Controller board

CPU	Power QUICC III-MPC8533E (800MHz)	
Interface		
Ethernet	1 port	
	Interface	10Base-T, 100Base-TX, 1000Base-T
	Support Protocol	TCP/IP (IPv4, IPv6), IPX/SPX, NetBEUI, EtherTalk
USB 2.0 (Host) * Simultaneous connection is inhibited. The total current consumption must not exceed 500mA.	The ports on the front and on the side of the rear section cannot be used simultaneously. (Exclusive use)	
USB 2.0 (high speed) Device	1 port	
Scanner expansion I/F	Yes	
Memory	Refer to the section on "(2) Memory, hard disk".	
Memory slot	2 slots (one is empty slot)	

### (2) Memory, hard disk

Memory capacity, HDD capacity

Copier memory (Local Memory)	Standard Memory	512MB
	Expansion Memory	No
	Max.	512MB
Printer memory (System Memory)	Standard Memory	1GB
	Expansion Memory	1GB
	Max.	2GB
Codec memory	256MB	
HDD *4	80GB *1	

\*1: The HDD capacity may vary depending on the production date.

## C. Operation panel

### (1) Display device

Size/resolution	8.5inch WVGA
Type	Dot matrix LCD, touch panel
Display dot number	800 x 480 (WVGA)
Color	Color
LCD drive display area (W x D)	184.8 x 110.88mm
LCD back-light	Fluorescent lamp back-light system
LCD brightness adjustment	Yes

## D. Scanner section

### (1) Resolution/Gradation

Scanning Resolution (dpi)	Platen	600 x 600 dpi 600 x 400 dpi 600 x 300 dpi (Default)		
	DSPF	600 x 600 dpi 600 x 400 dpi 600 x 300 dpi (Default)		
In sending Resolution (dpi)	Scanner		Internet Fax / Direct SMTP	Fax
	100dpi x 100dpi		200dpi x 100dpi (halftone not allowed)	Standard (203.2 x 97.8 dpi) (halftone not allowed)
	200dpi x 200dpi		200dpi x 200dpi	Fine (203.2 x 195.6 dpi)
	300dpi x 300dpi		200dpi x 400dpi	Super Fine (203.2 x 391 dpi)
	400dpi x 400dpi		400dpi x 400dpi	Ultra Fine (406.4 x 391 dpi)
	600dpi x 600dpi		600dpi x 600dpi	---
Exposure lamp		Xenon		
Reading gradation		10bits		
Output gradation		B/W: 1bit Grayscale: 8bit Full color: RGB colors are 8bit each		

### (2) Document table

Type	Document table fixed system (Flat bed)
Scanning area	297 x 432mm
Original standard position	Left bottom reference
Detection	Yes
Detection size	Automatic detection
Dehumidifying heater (Scanner section)	Supplied as a service part

### (3) Automatic document feeder

Type	DSPF (Duplex single pass feeder)	
Scan speed	Monochrome (A4 / 8.5" x 11")	Color (A4 / 8.5" x 11") only
Copy	Single: 75-sheet/min. (600 x 300 dpi) 53-sheet/min. (600 x 400 dpi) 41-sheet/min. (600 x 600 dpi) Duplex: 75-page/min. (600 x 300 dpi) 53-page/min. (600 x 400 dpi) 41-page/min. (600 x 600 dpi)	N/A
Fax / Internet Fax	Single: 75-sheet/min. (200 x 200 dpi) Duplex: 75-page/min. (200 x 200 dpi)	N/A
Scanner	Single: 75-sheet/min. (200 x 200 dpi) Duplex: 75-page/min. (200 x 200 dpi)	Single: 75-sheet/min. (200 x 200 dpi, 8 bit) Duplex: 75-page/min. (200 x 200 dpi, 8 bit)
Original setup direction	Upward standard (1 to N feeding standard)	
Original standard position	Center standard (Rear one-side standard for random feeding) Face Up (1 to N Feeding standard)	
Original transport method	Sheet-through method	

Original size	Standard size: (Refer to the "paper detection size") Long paper: 1000 mm (Monochrome binary only) Internet Fax 600 x 600 dpi: Max. 800 mm. When scan 400 dpi or more, long paper is not available. Mix paper feed (Same series, same width paper) enabled Random paper feed combination Mix feeding available. (same system, same width) Random feeding (feeding of different types / different widths) Only the following combinations of 2 size types are allowed: either A3 or A4 and either B4 or B5; either B4 or B5 and either A4R or A5 and 11-inch and 8.5-inch. AMS available.																
Original copy weight	Single: (Thin paper) 9 - 13 lb bond (35 - 49 g/m <sup>2</sup> ), (plain paper) 13 - 34 lb bond (50 - 128 g/m <sup>2</sup> ) * Thin paper mode (36 pages/minute (A4, 8.5" x 11", 600dpi)) is set up for the thin paper. Duplex: 13 - 28 lb bond (50 - 34 g/m <sup>2</sup> )																
Max. loading capacity of documents	Max. 150 sheets (21lbs Bond, 80g/m <sup>2</sup> ), or Max. height: 1/2 inch, 19.5mm or less																
Un-acceptable originals for feeding.	OHP, second original paper, tracing paper, carbon paper, thermal paper, paper with wrinkles, folds, or breakage, pasted paper, cutout document, document printed with ink ribbon, documents with perforation other than 2- or 3-holes (Perforated document by punch unit is allowed.)																
Detection	Yes																
Paper detection size (DSPF)	Auto detection (Switching one type of detection unit) <table border="1"> <tr> <td>Inch-1</td><td>11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>Inch-2</td><td>11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>Inch-3</td><td>11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>AB-1</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"</td></tr> <tr> <td>AB-2</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"</td></tr> <tr> <td>AB-3</td><td>8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"</td></tr> <tr> <td>AB-4</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"</td></tr> <tr> <td>AB-5</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"</td></tr> </table> * 5.5" x 8.5"R, A5R cannot be detected.	Inch-1	11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4	Inch-2	11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4	Inch-3	11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4	AB-1	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"	AB-2	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"	AB-3	8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"	AB-4	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"	AB-5	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"
Inch-1	11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4																
Inch-2	11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4																
Inch-3	11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4																
AB-1	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"																
AB-2	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"																
AB-3	8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"																
AB-4	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"																
AB-5	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"																
Paper feeding direction	Right hand feeding																
Finish stamp	Option																
Power source	Provided from main unit																

## E. Paper feed section

### (1) Type

Type	4-stage paper feed tray (Parallel LCC + 2 tray + Multi manual paper feed)
Dehumidifying heater	Service parts (Supported by kit)

### (2) Tray 1 (Main unit: LCC left tray)

Paper capacity	Plain paper: 800 sheets (80 g/m <sup>2</sup> )
Paper size	8.5" x 11", A4
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper
Feedable paper weight	Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> )
Paper size setting when shipping	AB series: A4 Inch series: 8.5" x 11"
Paper remaining detection	Yes (Paper empty and 3 levels)

### (3) Tray 2 (Main unit: LCC right tray)

Paper capacity	Plain paper: 1200 sheets (80 g/m <sup>2</sup> )
Paper size	A4, 8.5" x 11", B5 (Setting by parts)
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper
Feedable paper weight	Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> )
Paper size setting when shipping	AB series: A4 Inch series: 8.5" x 11"
Paper remaining detection	Yes (Paper empty and 3 levels)

### (4) Tray 3 (Main unit: multi-purpose tray)

Paper capacity	Plain paper: 500 sheets (80 g/m <sup>2</sup> )
Paper size	A3, B4, A4, A4R, B5, B5R, A5R 11" x 17", 8.5" x 14" (216 x 356), 8.5" x 13.5 (216 x 343), 8.5" x 13.4" (216 x 340), 8.5" x 13" (216 x 330), 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper*1, OHP, label sheet*1, tab paper*2
Feedable paper weight	Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> )
Paper size setting when shipping	AB series: A3 Inch series: 11" x 17"
Paper remaining detection	Yes (Paper empty and 3 levels)

\*1: 8.5" x 11", A4, B5 only

\*2: 8.5" x 11", A4 only



### (5) Tray 4 (Main unit: 500 sheets paper feed tray)

Paper capacity	Plain paper: 500 sheets (80 g/m <sup>2</sup> )
Paper size	A3, B4, A4, A4R, B5, B5R 11" x 17", 8.5" x 14" (216 x 356), 8.5" x 13.5" (216 x 343), 8.5" x 13.4" (216 x 340), 8.5" x 13" (216 x 330), 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper*1
Feedable paper weight	Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> )
Paper size setting when shipping	AB series: A3 Inch series: 11" x 17"
Paper remaining detection	Yes (Paper empty and 3 levels)

\*1: 8.5" x 11", A4, B5 only

### (6) Manual paper feed tray (main unit)

Paper capacity	Plain paper: 100 sheets (80 g/m <sup>2</sup> ) postcard/OHP: 20 sheets
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 11" x 17", 8.5" x 14", 8.5" x 13.5", 8.5" x 13.4", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper*1, thin paper, OHP*1, label sheet*1, tab paper*2
Feedable Paper Weight	Thin paper: 13 lb bond -16 lb bond (56 - 59g/m <sup>2</sup> ) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> )

\*1: 8.5" x 11", A4, B5 only

\*2: 8.5" x 11", A4 only

## 2. Functional specifications

### A. Copy functions

#### (1) Copy magnification ratio

Copy magnification ratio	Normal ratio	1: 1 ±0.8%
	AB series	25%, 50%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 200%, 400%
	Inch series	25%, 50%, 64%, 77%, 100%, 121%, 129%, 200%, 400%
Zoom	25-400% (DSPF: 25-200%)	
Preset magnification ratio	4 (Reduction 2/Enlargement 2)	
XY zoom	Yes	

#### (2) Density

Exposure mode	Automatic, Text, Text/Printed Photo, Map (600 dpi) Printed Photo, Text/Photograph, Photograph (600 dpi)
Number of manual steps	9 steps
Toner save mode	Yes * Automatic (AE), Text/Printed Photo

### (3) Duplex

System	Non stack system
Paper size	11" x 17", 8.5" x 14" (216 x 356), 8.5" x 13.5" (216 x 343), 8.5" x 13.4" (216 x 340), 8.5" x 13" (216 x 330), 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR
Type and weight of paper which can be passed	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209 g/m <sup>2</sup> )
Paper type	Plain paper, recycled paper, colored paper, letter head, printed paper, punched paper, heavy paper*1

\*1: 8.5" x 11", A4, B5 only

### (4) Paper exit

Paper exit section	Center section of the main unit
Paper exit system	Face-down paper exit system
Paper exit capacity	250 sheets (80 g/m <sup>2</sup> )
Paper exit paper size/ weight	Thin paper: 13 lb bond -16 lb bond (56 - 59g/m <sup>2</sup> ) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> )
Shifter function	No
Paper exit detection	No
Paper exit full detection	Yes

### (5) Copy functions

Functions	
Automatic paper selection	Program call / registration
Automatic magnification ratio selection	Program name registration Document paper size input
Paper type selection	Document paper size registration
Paper type setting	Indeterminate paper size input
Auto tray switching	Indeterminate paper size registration
Rotation copy	2-sided copy direction switch
Large rotated copy over A4 width	Preview function
Electronic sort	Finish → Paper folding (Inside folding / Outside folding)
Job reservation	
Tray installation priority	

Special functions	
Binding margin (Left and Right/Top)	Stamp
Erase (Edge/Center/center + edge/ side erase)	Page print Watermark
Dual Page Copy (1 set 2 copy)	Image edit
Center binding	Photo repeat
Large volume document mode	Multi-page enlargement
Setting change for each bunch	Mirror image
Tandem copy	Centering
Cover paper insertion	B/W reverse (B/W copy) (UK not supported)
Tab paper insertion	Sharpness
* Tab Paper Insertion only. No copying on tabs allowed	Quick file
OHP insertion (Inserted paper is automatically selected.)	Filing
Multi shot (2 in 1 / 4 in 1)	Proof copy
Boundary line print	Original count
Layout	Mixed original
Page printing per original page	Random
Book copy	MIX
Tab copy	Combination with APS
Card shot	Combination with AMS
Stamp	Slow scan
Date print	Document control (When the Data Security Kit is installed)
Text print	Identification card copy (Limited to the destination)
Stamp	

## B. Printer function

### (1) Platform

<ul style="list-style-type: none"> <li>IBM PC/AT</li> <li>Macintosh</li> </ul>
--

### (2) Support OS

OS		Custom PCL6	Custom PS	PPD
Windows	2000	Yes	Yes	Yes
	XP			
	XP x 64	Yes	Yes	Yes
	Server 2003	Yes	Yes	Yes
	Server 2003 x 64	Yes	Yes	Yes
	Server 2008			
	Server 2008 x 64	Yes	Yes	Yes
	Vista			
	Vista x 64	Yes	Yes	Yes
	Windows 7			
	Windows 7 x 64			
Mac	9.0 - 9.2.2	No	No	Yes
	X 10.2.8			
	X 10.3.9			
	10.4.11			
	X 10.5 - 10.5.8			
	X10.6-10.6.1			

### (3) PDL emulation

PCL5e compatibility	Compatible with PCL of Hewlett-Packard.
PCL XL compatibility	Compatible with PCL of Hewlett-Packard.
PostScript 3 compatibility	Compatible with PS3 of Adobe Systems.

### (4) Font

Emulation	Built-in fonts	Option font
PCL5e compatibility, PCL6 compatibility	Roman outline fonts = 80 fonts Line printer font (BMP) = 1 font	Font for bar code = 28 fonts
PostScript 3 compatibility (Option)	Roman outline fonts = 136 fonts	—

### (5) Print channel

USB	USB 1.1: Windows 2000/Server 2003/XP/Vista/Server 2008/Windows 7 only USB 2.0 (High Speed): Window 2000/XP/Vista/Server 2003/Server 2008/Windows 7 only
PSERVER / RPRINT for NetWare environment	Print channel in PSERVER/PRINT mode to be used in netware environment
LPR	UNIX LPR/LPD command-compatible print channel
IPP	Print channel in compliance with IPP1.0
PAP: EtherTalk (AppleTalk)	Print channel to be used for Macintosh environment
FTP	Equipped with the function to print data received via built-in FTP server
NetBEUI	Microsoft NetBEUI compatible print channel
Raw Port (Port9100)	9100 TCP port (Raw Port) supported
HTTP (Web Submit Print)	
POP3 (E-Mail To Print)	

IPP, HTTP and POP3 support SSL.

### (6) Environment setting

Setting item	General
Default setting	Basic settings for using the printer such as the number of copies and the print direction
PCL	Setting of the PCL symbol and fonts
PS	Setting of enabling/disabling of print in case of a PS error, setting of binary data outputting

## C. Image send function

### (1) Mode

Scanner	<ul style="list-style-type: none"> <li>Scan to e-mail</li> <li>Scan to Desktop</li> <li>Scan to FTP</li> <li>Scan to Folder (SMB)</li> <li>Scan to USB memory</li> <li>Scan to e-mail with Meta</li> <li>Scan to Desktop with Meta</li> <li>Scan to FTP with Meta</li> <li>Scan to SMB with Meta</li> <li>Scan to e-mail/FTP/Desktop/SMB (Document Admin)</li> </ul>
Fax	<ul style="list-style-type: none"> <li>Fax to Fax (Manual)</li> <li>Fax to e-mail/Internet Fax/Fax (Relay transfer)</li> <li>Fax to e-mail/FTP/Desktop/SMB (Inbound routing)</li> <li>Fax to e-mail/FTP/Desktop/SMB (Document Admin)</li> </ul>
Internet Fax	<ul style="list-style-type: none"> <li>Internet Fax to Internet Fax (Manual)</li> <li>Internet Fax to e-mail/FTP/Desktop/SMB (Inbound routing)</li> <li>Internet Fax to e-mail/FTP/Desktop/SMB (Document Admin)</li> </ul>

### (2) Support system

Mode	Scanner	Internet Fax Direct SMTP	Fax
Corresponding server/protocol	SMTP FTP (TCP / IP) SMB HTTP/HTTPS	POP server SMTP server ESMTP server	N/A

Network environment in SMB

Windows:

Windows 2000, XP, XP x 64, Server 2003, Server 2003 x 64, Vista, Vista 64, Server 2008, Server 2008 x 64, Windows 7, Windows 7 x 64

Mac:

OS X10.2.8, X10.3.9, X10.4.11, X10.5-10.5.8, X10.6-10.6.1

### (3) Support image

Mode		Support image
Scanner	File format (Monochrome)	TIFF
		PDF
		Encrypted PDF
		XPS
	File format (Color/Grayscale)	Color TIFF
		JPEG
		PDF
		Encrypted PDF
	Compression system (Monochrome)	Non-compression
		G3 (1-dimensional) = MH (Modified Huffman)
Internet Fax Direct SMTP	File format	G4 = MMR (Modified MR)
		JPEG (High/Middle/Low)
	Compression system (Color/Grayscale)	High compression PDF (When MX-EBX3 is installed)
Fax	File format	TIFF-FX (TIFF-F, TIFF-S)
	Compression system	G3 (1-dimensional) = MH (Modified Huffman)
		G4 = MMR (Modified MR)
	File format	N/A
	Compression system	MH, MR, MMR, JBIG

#### (4) Item number of registration items

Item	No. of registration items
One-touch/Group	1000 items Max. number of registration items for one group (500 items)
Program	48 items
Memory box	Total of bulletin board / confidential letter / relay and broadcast: 100 items (Fax)
Sender registration	Fax, Internet Fax: 1 item
User list (Return address list)	Scanner: 1,000 items
Transfer table list	Fax, Internet Fax: 1 item
Sender selection	18 items
Item name list	30 items
File name list	30 items
Polling allow number	Fax: 10 items

### D. Document filing function/Print hold function




#### (1) Basic function

##### Document filing

Number of files that can be saved in the standard folder/user folder	<b>38GB</b> • 20,000 pages or 3,000 files (*1)
Number of files that can be saved in temporary file folders.	<b>12GB</b> • 10,000 pages or 1,000 files (*2)
Number of folders that can be made as user folders.	Max. 1,000 folders
Number of users which can be registered	Same as that of account users of the main unit (1,000)

(\*1): When the standard document (binary) is used.

(\*2): When the standard document (gray) is used.

	Color (N model only)	Gray	Monochrome (Binary mode)
Original	gregfruit 	test sheet C 	test sheet C 
38GB	2,500	5,500	20,000
12GB	800	1,700	10,000

#### (2) Data operation by each function

Job	Each folder in the standard folder /user folder		Temporary folder	
	Sharing storage	Confidential storage	Sharing storage	Confidential storage
Copy	Yes	Yes	Yes	No
Printer				
Direct print (FTP pull)	No	No		
Direct print (FTP push)				
Direct print (USB pull)				
Direct print (e-mail push)	Yes	No		
Direct print (Web push)	No	No		
Direct print (SMB pull)				
Scan to e-mail/FTP	Yes	No		
Scan to Desktop				
Scan to SMB				
Scan to USB memory	No	No	No	No
Scan to HDD	Yes	Yes		
Internet Fax reception	No	No		
Internet Fax send	Yes	No	Yes	No
Fax reception	No	No	No	No
Fax send	Yes	No	Yes	No
PC Fax / PC-Internet Fax send	Yes	Yes		
Data input	Yes	No		
Remote PC Scan	No	No	No	No

#### (3) Data operation contents

Operation content		WEB	Operation panel
Reprint		Yes	
Resend		Yes	
Delete		Yes	
Move		Yes	
Attribute change (Common/Confidential/Protection)		Yes	
Confidential file setting (Password: max. of 8 digit numbers)		Yes	
Confidential folder setting (Password: max. of 8 digit numbers)		Yes	
File name change		Yes	
Creation of a folder		Yes	
File transfer to Local PC, FTP server (Data backup)		Yes	No
Machine HDD occupying rate display		Yes	
Preview	Preview before storing in Scan to HDD	N/A	Yes
	Checking stored image data	Yes*1	
Retrieval		Yes	
Changing file format		Yes	
Batch print		Yes	
Delete with the time specified		Yes	
Multi file selection (print only)		Yes	

\* During the above setting on the operation panel, web access is disabled.

\*1: The print data displays only the first page.

**(4) Reprint / resend limitation items for each job**

User's selection section			Reprint
Mode	Job kind	Selected color mode	
Printer	Printer	No selection available	Yes
Copy	Copy	No selection available	Yes
Image send	Scan send	Full color Grayscale Binary B/W	Yes
	Internet Fax send	No selection available	Yes
	Fax send	No selection available	Yes
Document filing	Scan to HDD	<ul style="list-style-type: none"> <li>• Full color</li> <li>• Grayscale</li> <li>• Binary B/W (Send allowed mode)</li> <li>• Binary B/W (High capacity mode)</li> </ul>	Yes

Functional settings for reprint	Basic function	Number of copies, finishing, selecting paper, duplex
	Special modes	Saddle stitch, 2 in 1/4 in1, margin shift, stamp, document control (when data security kit is installed), tandem print

User's selection section			Resend
Mode	Job kind	Selected color mode	
Printer	Printer	No selection available	N/A
Copy	Copy	No selection available	Yes
Image send	Scan send	Full color	Yes: Full color/ Binary B/W
		Grayscale	Yes: Grayscale
		Binary B/W	Yes: Binary B/W
	Internet Fax send	No selection available	Yes
	Fax send	No selection available	Yes
Document filing	Scan to HDD	Full color	Yes: Full color/ Binary B/W
		Grayscale	Yes: Grayscale
		Binary B/W (Send allowed mode)	Yes
		Binary B/W (High capacity mode)	No

Functional settings for resend	Basic function	Format, resolution, image quality, transmission details settings, meta-data input
	Special modes	Time specification, sender print, sender selection, communication result table

## [3] CONSUMABLE PARTS

### 1. Supply system table

#### A. USA/Canada/South and Central America

No.	Item	Model Name	Content	Life	Remarks
1	Toner Cartridge (Black)	MX-753NT	Toner Cartridge with IC Chip (Toner: Net 1,700g) x 1	83K	Life: A4/Letter 6% document
2	Developer (Black)	MX-753NV	Developer (Developer: Net 1,050g) x 1	300K	
3	Drum	AR-620DR	OPC Drum x 1	300K	

#### B. Europe/Australia/New Zealand

No.	Item	Model Name	Content	Life	Remarks
1	Toner Cartridge (Black)	MX-753GT	Toner Cartridge with IC Chip (Toner: Net 1,700g) x 1	83K	Life: A4/Letter 6% document
2	Developer (Black)	MX-753GV	Developer (Developer: Net 1,050g) x 1	300K	
3	Drum	AR-620DM	OPC Drum x 1	300K	

#### C. Asia

No.	Item	Model Name	Content	Life	Remarks
1	Toner Cartridge (Black)	MX-753AT	Toner Cartridge with IC Chip (Toner: Net 1,700g) x 1	83K	Life: A4/Letter 6% document
2	Developer (Black)	MX-753AV	Developer (Developer: Net 1,050g) x 1	300K	
3	Drum	AR-620DR	OPC Drum x 1	300K	

#### D. Middle East/Agency

No.	Item	Model Name	Content	Life	Remarks
1	Toner Cartridge (Black)	MX-753FT	Toner Cartridge with IC Chip (Toner: Net 1,700g) x 1	83K	Life: A4/Letter 6% document
2	Developer (Black)	MX-753AV	Developer (Developer: Net 1,050g) x 1	300K	
3	Drum	AR-620DR	OPC Drum x 1	300K	

### 2. Maintenance parts list

#### A. USA/Canada/South and Central America

Part name	Model name	Content	Life	Remark
Maintenance kit 1	MX-753KA	Cleaner blade x 1	300K	
		Drum separation pawl x 4		
		Screen grid x 1		
		Toner reception seal x 1		
		Charging plate x 1		
		Paper dust removal unit x 1		
		Doctor cover unit x 1		
		DV side seal F x 1		
		DV side seal R x 1		
		Toner filter x 1		
		Side seal F x 1		
		Side seal R x 1		
		MC cleaner unit x 1		
Maintenance kit 2	MX-753KB	Transfer belt x 1	300K	
		Transfer roller x 1		
		Transfer gear x 1		
		Transfer CL roller x 1		
Upper heat roller kit	MX-753UH	Upper heat roller x 1	300K	
		Fusing separation pawl (Upper) x 6		
		Insulation spacer x 4		
		Insulation bush x 2		
Lower heat roller kit	MX-753LH	Lower heat roller x 1	300K	
		Fusing separation pawl (Lower) x 4		
Cleaner blade	AR-620CB	Cleaner blade x 10	300K	

Part name	Model name	Content	Life	Remark
Cleaning kit	MX-753CR	Web rollers x 1	300K	
		Pressure roller x 1		
		Web bearing x 2		
		Pressure bearing x 2		
		Pressure SP (long) x 2		
		Lower web rollers x 1		
		Lower web pressure roller x 1		
		Lower web pressure bearing x 2		
		Lower web pressure SP (short) x 2		
Fusing unit	MX-753FU1	Fusing UN (Heater lamp 120V) x 1	—	
	MX-753FU	Fusing UN (Heater lamp 230V) x 1	—	
DSPF roller kit	MX-753DF	DSPF paper feed roller x 1	100K	
		DSPF pickup roller x 1		
		DSPF reverse roller x 1		
Paper feed roller kit	AR-620RT	Main unit paper feed roller x 1	100K	
		Main unit paper feed pickup roller x 1		
		Main unit paper feed reverse roller x 1		
Staple cartridge	MX-SC10	100 sheets finisher staple x 3	5,000 times x 3	For MX-FN14
Staple cartridge	SF-SC11	Finisher staple x 3	5,000 times x 3	For MX-FN15/FN16
Staple cartridge	AR-SC3	Saddle finisher staple x 3	2,000 times x 3	For MX-FN16 (Saddle stitch)

## B. Europe/Australia/New Zealand/Asia/Middle East/Agency

Part name	Model name	Content	Life	Remark
Maintenance kit 1	MX-753KA	Cleaner blade x 1	300K	
		Drum separation pawl x 4		
		Screen grid x 1		
		Toner reception seal x 1		
		Charging plate x 1		
		Paper dust removal unit x 1		
		Doctor cover unit x 1		
		DV side seal F x 1		
		DV side seal R x 1		
		Toner filter x 1		
		Side seal F x 1		
		Side seal R x 1		
		MC cleaner unit x 1		
Maintenance kit 2	MX-753KB	Transfer belt x 1	300K	
		Transfer roller x 1		
		Transfer gear x 1		
		Transfer CL roller x 1		
Maintenance kit 3	MX-753KC	Upper heat roller x 1	300K	
		Crimping roller EX x 1		
		Insulation spacer x 4		
		Insulation bush x 2		
		Upper separation pawl x 6		
		Lower separation pawl x 4		
		Web rollers x 1		
		Pressure roller x 1		
		Web bearing x 2		
		Pressure bearing x 2		
		Pressure SP (long) x 2		
		Lower web rollers x 1		
		Lower web pressure roller x 1		
		Lower web pressure bearing x 2		
		Lower web pressure SP (short) x 2		
Fusing unit	MX-753FU	Fusing UN (Heater lamp 230V) x 1	—	
DSPF roller kit	MX-753DF	DSPF paper feed roller x 1	100K	
		DSPF pickup roller x 1		
		DSPF reverse roller x 1		
Paper feed roller kit	AR-620RT	Main unit paper feed roller x 1	100K	
		Main unit paper feed pickup roller x 1		
		Main unit paper feed reverse roller x 1		
Staple cartridge	MX-SC10	100 sheets finisher staple x 3	5,000 times x 3	For MX-FN14
Staple cartridge	SF-SC11	Finisher staple x 3	5,000 times x 3	For MX-FN15/FN16
Staple cartridge	AR-SC3	Saddle finisher staple x 3	2,000 times x 3	For MX-FN16 (Saddle stitch)

### 3. Definition of Developer and Drum life end

When the developer/drum counter reaches the specified level.

When the developer/drum rpm reaches the specified level.

When either of the above reached the specified level, it is judged as life end.

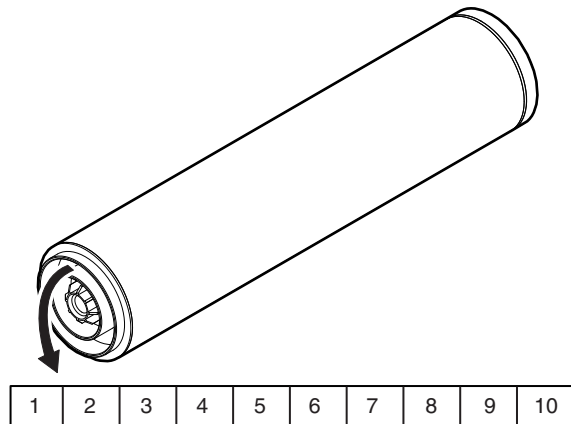
In an actual case, when correction or warm-up operation is performed as well as output operation, the developer and the drum rotates. Therefore, the developer/drum consuming level cannot be determined only by the copy/print quantity. When, therefore, the rpm reaches the specified level, it is judged as life end.

To check the drum life, use SIM22-1/22-13.

	Developer/drum counter	Developer/drum rpm
Developer/drum	300K	840K rotations

### 4. Production number identification

#### A. Drum cartridge

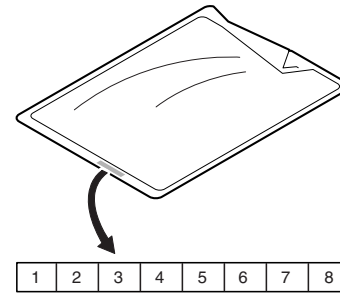


The lot number is of 10 digits. Each digit indicates the content as follows.

The number is printed on the flange on the front side.

- 1: Number  
For this model, this digit is 2.
- 2: Alphabet  
Indicates the model conformity code.
- 3: Number  
Indicates the end digit of the production year.
- 4: Number or X, Y, Z  
Indicates the production month.  
X stands for October, Y November, and Z December.
- 5/6: Number  
Indicates the day of the production date.
- 7: Number  
Indicates the day of the month of packing.  
X stands for October, Y November, and Z December.
- 8/9: Number  
Indicates the day of the packing date.
- 10: Alphabet  
Indicates the production factory.

#### B. Developer



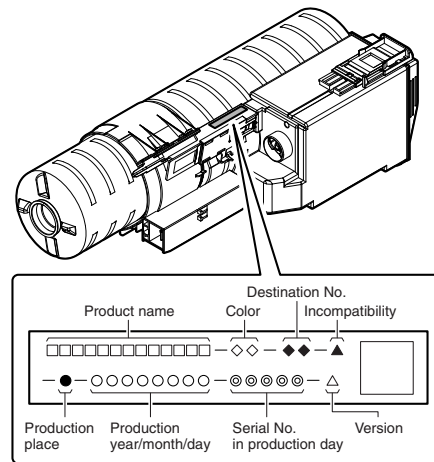
The lot number is of 8 digits. Each digit indicates the content as follows.

The number is printed on the right under side of the back surface of the developer bag.

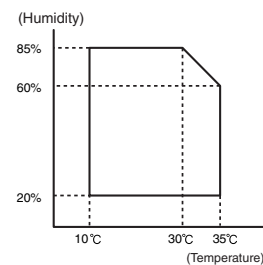
- 1: Alphabet  
Indicates the production factory.
- 2: Number  
Indicates the production year.
- 3/4: Number  
Indicates the production month.
- 5/6: Number  
Indicates the production day.
- 7: Hyphen
- 8: Number  
Indicates the production lot.

#### C. Toner cartridge

A label with the management number on it is attached to the top of the toner cartridge.



#### D. Environmental conditions

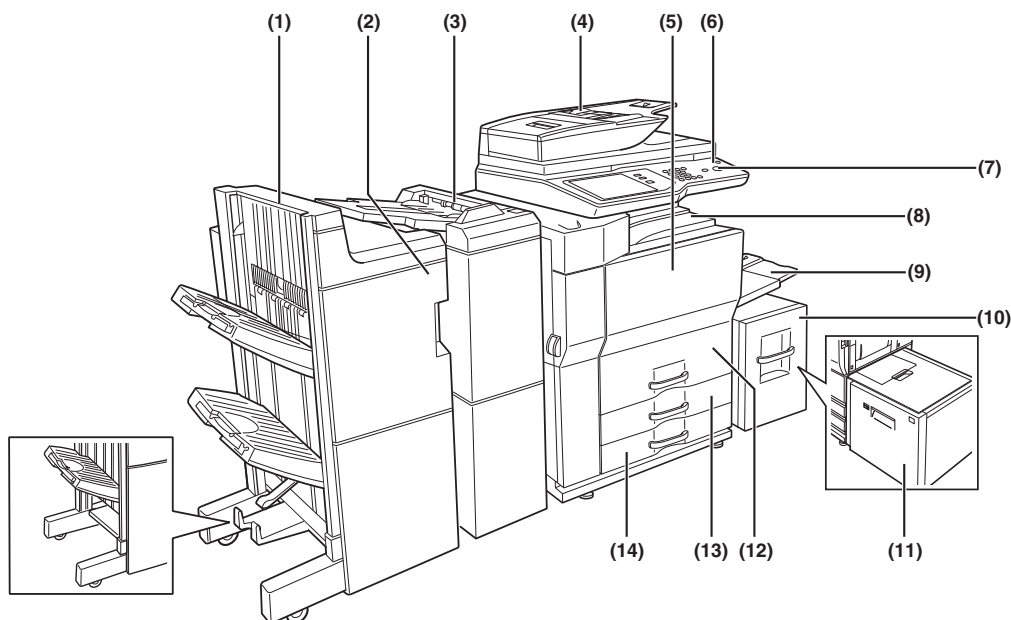


Standard environmental conditions	Temperature	20 – 25 °C
	Humidity	65 ± 5 %RH
Usage environmental conditions	Temperature	10 – 35 °C
	Humidity	20 – 85 %RH
Storage period	Toner/Developer: 24 months from the manufactured month (Production lot) under unsealed state Drum: 36 months from the manufactured month under unsealed state	

## [4] EXTERNAL VIEW AND INTERNAL STRUCTURE

### 1. Identification of each section and functions

#### A. External view

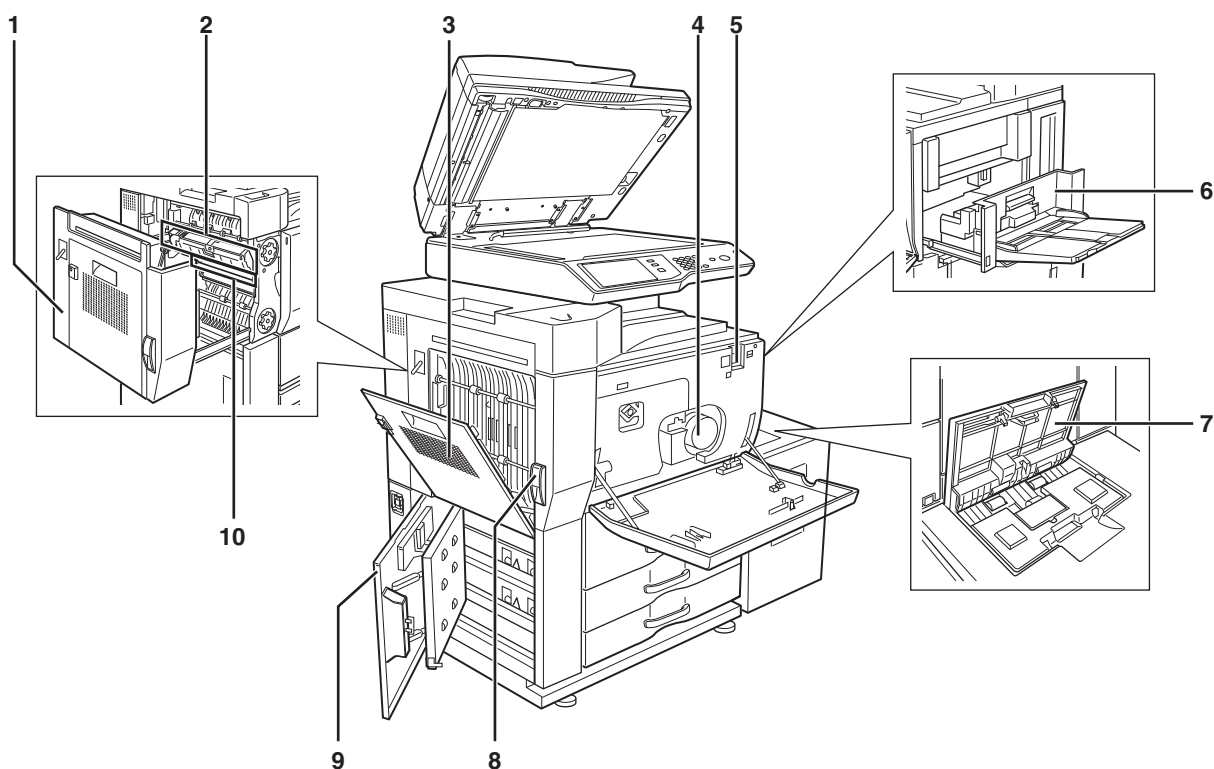


No.	Name	Function/Operation
1	Saddle stitch finisher (MX-FN16)*	Output device that enables the use of the staple function and offset function. To install the finisher (large stacker), a stand/1 x 500 sheet paper drawer or stand/2 x 500 sheet paper drawer is required.
	Finisher (MX-FN15)*	Output device that enables use of the staple function, offset function and pamphlet copy function. To install the saddle stitch finisher, a stand/1 x 500 sheet paper drawer or stand/2 x 500 sheet paper drawer is required.
2	Punch module (AR-PN4A/B/C/D)*	Punches holes in copies and other output. Requires finisher (MX-FN15) or saddle stitch finisher (MX-FN16).
3	Inserter (MX-CF10)*	Paper set in an inserter can be inserted into output as covers or inserts. The inserter can be used to staple output and punch holes manually.
4	Automatic document feeder	This automatically feeds and scans multiple sheet originals. Both sides of two-sided originals can be scanned at once.
5	Front cover	Open to replace toner cartridge.
6	Operation panel	This is used to select functions and enter the number of copies.
7	Power switch	Turns the power on and off. If the power does not come on when the power switch is turned on, check the main power switch to see if it is turned on.
8	Center tray	Finished sheets are deposited here.
9	Bypass tray	Special papers (including transparency film) and copy paper can be fed from the bypass tray.
10	Tray 5 (when A4 large capacity tray is installed) (MX-LC10)*	This holds paper.
11	Tray 5 (when A3 large capacity tray is installed) (MX-LCX3N)*	This tray stores max. 3,000 sheets of 8-1/2" x 11" - 11" x 17" (B5 - A3) paper (80g/m <sup>2</sup> ), eliminating the need for frequent supply of paper.
12	Tray 1-Tray 2	The trays hold paper. Approximately 800 sheets of standard 8-1/2" x 11" or A4 size paper (20 lbs. (80 g/m <sup>2</sup> )) can be loaded in tray 1, and approximately 1200 sheets of standard 8-1/2" x 11" or A4 size paper (20 lbs. (80 g/m <sup>2</sup> )) can be loaded in tray 2.
13	Tray 3	Tray 3 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m <sup>2</sup> )) paper can be loaded in this tray. Tabbed paper and transparencies can also be loaded.
14	Tray 4	Tray 4 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m <sup>2</sup> )) paper can be loaded in this tray.

\*1: 1, 2, 3, 10 and 11 are peripheral devices. For information on these devices, see the explanations of the devices in the manual.

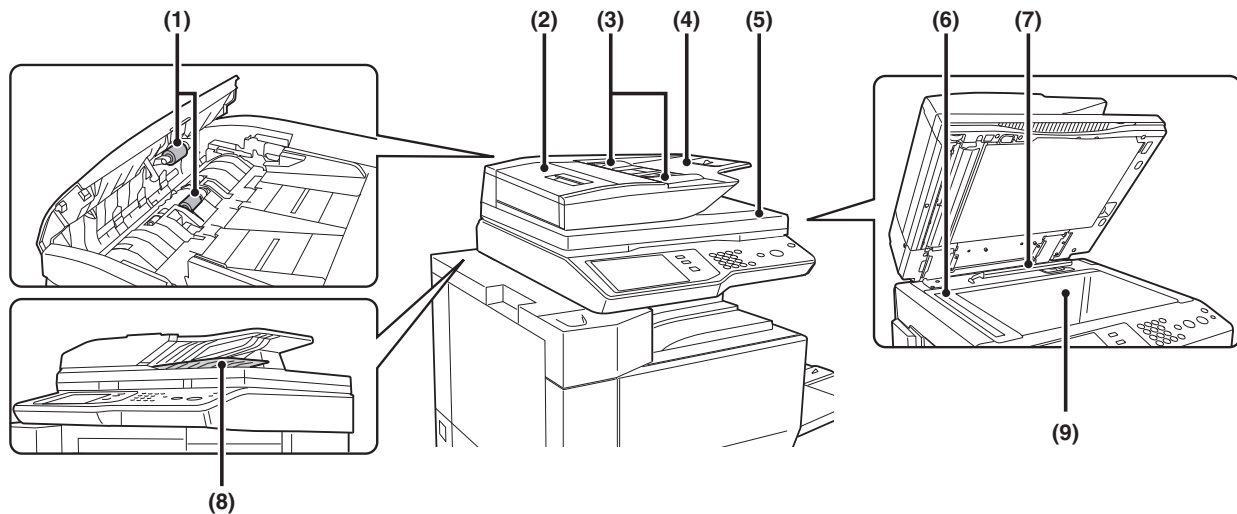


## B. Internal operation parts



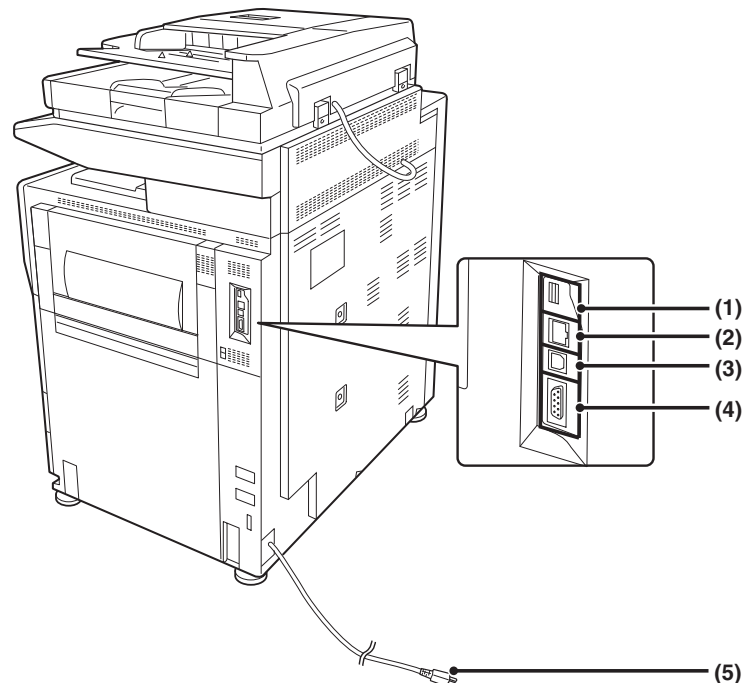
No.	Name	Function/Operation	NOTE
1	Duplex unit	Open this cover to remove a misfeed from the fusing unit area.	
2	Fusing unit	Toner images are fused here.	The fusing unit is hot. Take care in removing misfed paper.
3	Cover of the duplex unit	Open when a misfeed has occurred in duplex unit.	
4	Toner cartridge*	This holds toner for printing. The toner cartridge must be replaced when indicated on the operation panel.	
5	Main power switch	Keep this switch turned on when the fax option or Internet fax option is installed.	
6	Right side cover	Open when a misfeed has occurred in the bypass tray or large capacity tray.	
7	Upper cover of large capacity tray	Open when a misfeed has occurred in the large capacity tray.	
8	Left side cover release	Push this knob up to open the left side cover.	
9	Left cover of paper drawer	Open this cover to remove paper misfed in tray 3 or tray 4.	
10	Photoconductive drum	Images are formed on the photoconductive drum.	Do not touch or damage the photoconductive drum.

### C. Automatic document feeder and document glass



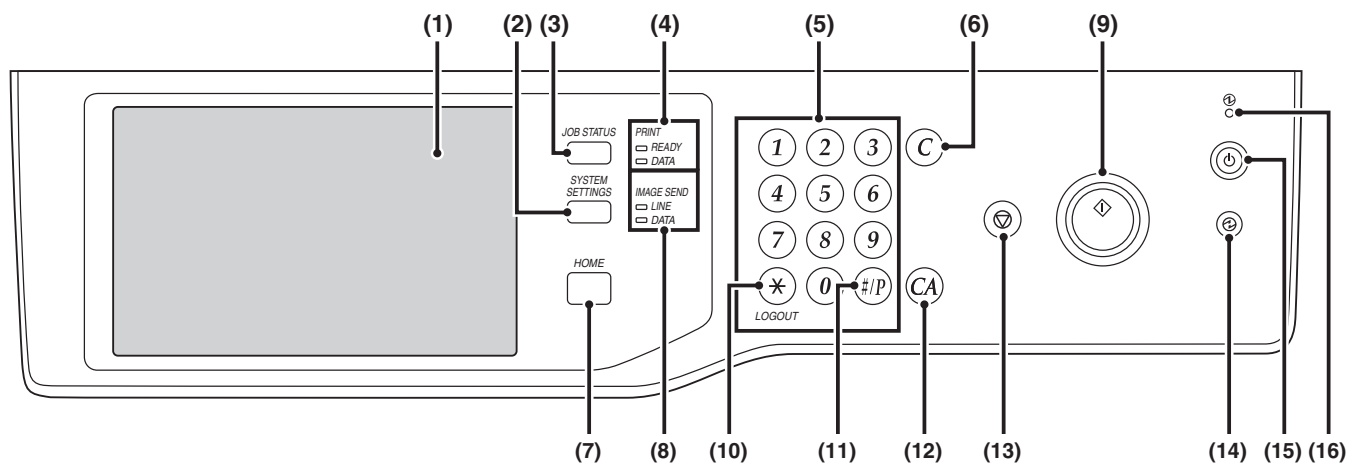
No.	Name	Function/Operation
1	Paper feed roller	This roller rotates to automatically feed the original.
2	Document feeding area cover	Open this cover to remove an original misfeed or clean the paper feed roller.
3	Original guides	These help ensure that the original is scanned correctly. Adjust the guides to the width of the original.
4	Document feeder tray	Place originals in this tray. 1-sided originals must be placed face up.
5	Original exit tray	Originals are delivered to this tray after scanning.
6	Scanning area	Originals placed in the document feeder tray are scanned here.
7	Original size detector	This detects the size of an original placed on the document glass.
8	Reversing tray	During scanning of a 2-sided original, the original is temporarily output to this tray in order to be turned over for scanning of the reverse side.
9	Document glass	Use this to scan a book or other thick original that cannot be fed through the automatic document feeder.

### D. Connectors



No.	Name	Function/Operation
1	USB connector (A type)	Supports USB 2.0 (Hi-Speed). This is used to connect a USB device such as USB memory to the machine.
2	LAN connector	Connect the LAN cable to this connector when the machine is used on a network. For the LAN cable, use a shielded type cable.
3	USB connector (B type)	Supports USB 2.0 (Hi-Speed). A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.
4	Service-only connector	
5	Power plug	

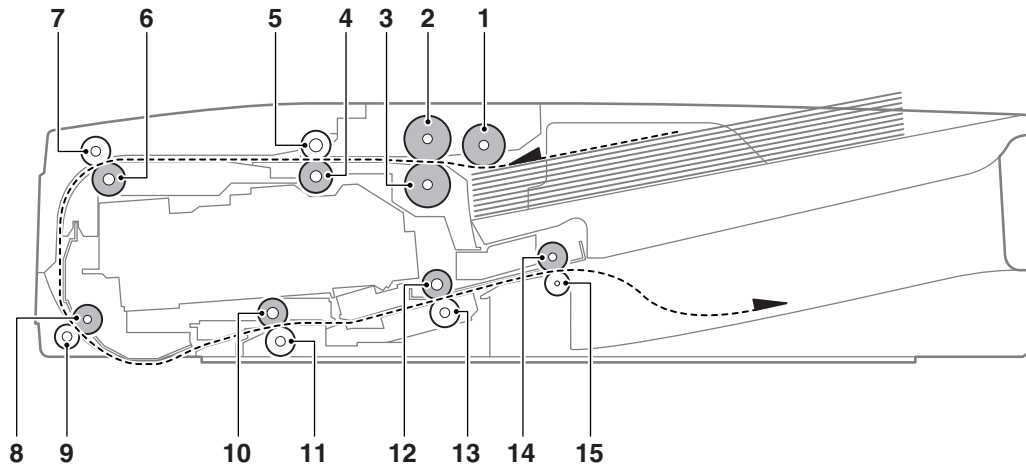
## E. Operation panel



No.	Name	Function/Operation
1	Touch panel	Messages and keys appear in the touch panel display. Touch the displayed keys to perform a variety of operations. When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation.
2	[SYSTEM SETTINGS] key	Press this key to display the system settings menu screen. The system settings are used to configure paper tray settings, store addresses for transmission operations, and adjust parameters to make the machine easier to use.
3	[JOB STATUS] key	Press this key to display the job status screen. The job status screen is used to check information on jobs and to cancel jobs.
4	PRINT mode indicators	<ul style="list-style-type: none"> <li>READY indicator Print jobs can be received when this indicator is lit.</li> <li>DATA indicator This blinks while print data is being received and lights steadily while printing is taking place.</li> </ul>
5	Numeric keys	These are used to enter the number of copies, fax numbers, and other numerical values. These keys are also used to enter numeric value settings (except for the system settings).
6	[CLEAR] key ( C )	Press this key to return the number of copies to "0".
7	[HOME] key	Touch this key to display the home screen. Frequently used settings can be registered in the home screen to enable quick and easy operation of the machine.
8	IMAGE SEND mode indicators	<ul style="list-style-type: none"> <li>LINE indicator This lights up during transmission or reception of a fax or Internet fax. This also lights during transmission of an image in scan mode.</li> <li>DATA indicator This blinks when a received fax or Internet fax cannot be printed because of a problem such as out of paper. This lights up when there is a transmission job that has not been sent.</li> </ul>
9	[START] key	Press this key to copy or scan an original. This key is also used to send a fax in fax mode.
10	[LOGOUT] key ( * )	Press this key to log out after you have logged in and used the machine. When using the fax function, this key can also be pressed to send tone signals on a pulse dial line.
11	[#/P] key ( #/P )	When using the copy function, press this key to use a job program. When using the fax function, this key can be used when dialing.
12	[CLEAR ALL] key ( CA )	Press this key to return to the initial operation state. Use this key when you wish to cancel all settings that have been selected and start operation from the initial state.
13	[STOP] key ( ⊗ )	Press this key to stop a copy job or scanning of an original.
14	[POWER SAVE] key ( ⊕ ) / indicator	Use this key to put the machine into auto power shut-off mode to save energy. The [POWER SAVE] key ( ⊕ ) blinks when the machine is in auto power shut-off mode.
15	[POWER] key ( ⊙ )	Use this key to turn the machine power on and off.
16	Main power indicator	This lights up when the machine's main power switch is in the "on" position.

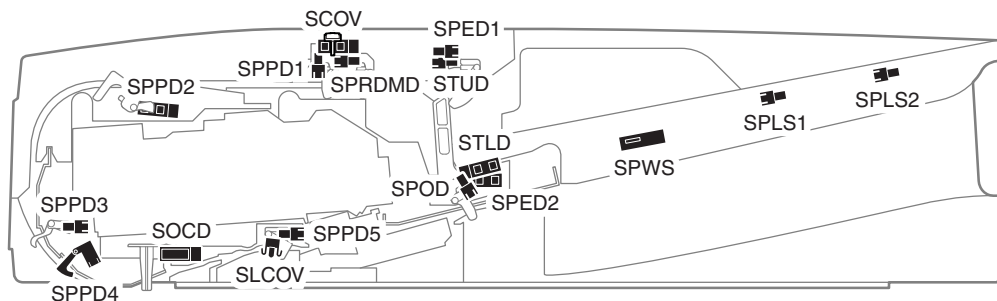
## F. DSPF

### (1) Internal structure



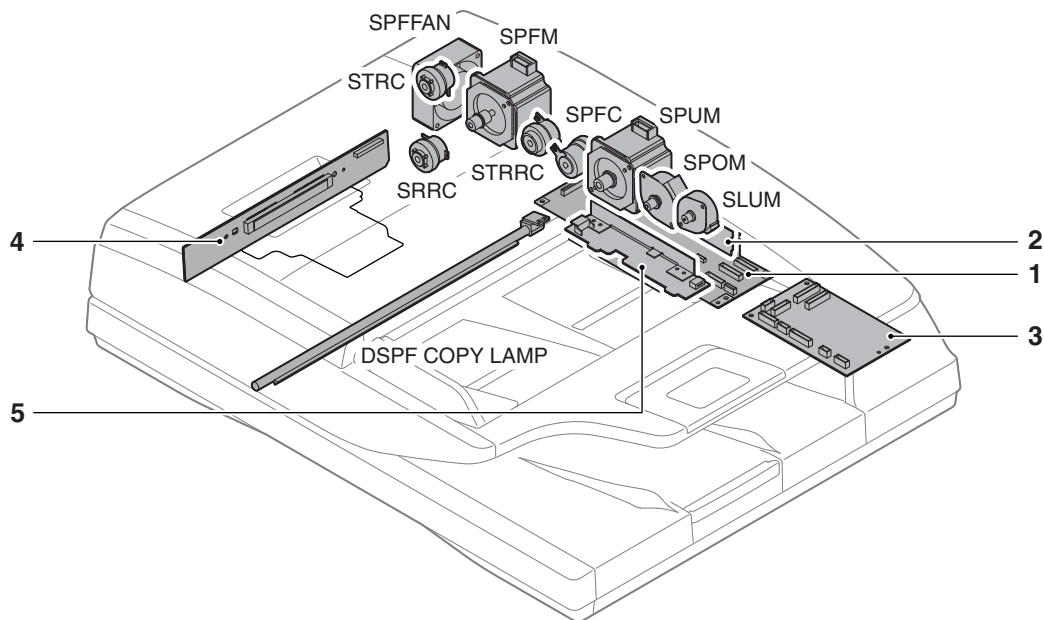
No.	Name	Function/ Operation
1	Pickup roller	Picks up a document and feeds it to the document feed roller.
2	Document feed roller	Performs the document feed operation of documents.
3	Separation roller	Separate a document to prevent against double-feed.
4	No. 1 resist roller (Drive)	Performs resist of document transport.
5	No. 1 resist roller (Idle)	Applied a pressure to document and the resist roller, and provides transport power of the resist roller to document.
6	Transport roller 1 (Drive)	Transports document from No. 1 resist roller to No. 2 resist roller.
7	Transport roller 1 (Idle)	Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.
8	No. 2 resist roller (Drive)	Make synchronization between the lead edge of a document and the scan start position.
9	No. 2 resist roller (Idle)	Applies a pressure to document and the resist roller, and provides transport power of the resist roller to document.
10	Transport roller 2 (Drive)	Transports document from the platen roller to the transport roller 3.
11	Transport roller 2 (Idle)	Applies a pressure to document and the transport roller and provides transport power of the transport roller to document.
12	Transport roller 3 (Drive)	Transports document from the transport roller 2 to the document exit roller.
13	Transport roller 3 (Idle)	Applies a pressure to document and the transport roller and provides transport power of the transport roller to document.
14	Document exit roller (Drive)	Discharges document.
15	Document exit roller (Idle)	Applies a pressure to document and the document exit roller and provides transport power of the document exit roller to document.

### (2) Sensors, switches



Signal name	Name	Function/Operation	Type
SCOV	DSPF upper door open/close sensor	Detects open/close of the upper door.	Transmission type
SLCOV	DSPF lower door open/close sensor	Detects open/close of the lower door.	Micro switch
SOCD	DSPF open/close sensor	Detects open/close of the DSPF unit.	Transmission type
SPED1	DSPF document upper limit sensor	Detects the upper limit of the DSPF document.	Transmission type
SPED2	DSPF document empty sensor	Detects document empty in the document feed tray.	Transmission type
SPLS1	DSPF document length detection short sensor	Detects the document length of the document feed tray upper.	Transmission type
SPLS2	DSPF document length detection long sensor	Detects the document length of the document feed tray upper.	Transmission type
SPOD	DSPF document exit sensor	Detects document exit of the document.	Transmission type
SPPD1	DSPF document pass sensor 1	Detects pass of the document.	Transmission type
SPPD2	DSPF document pass sensor 2	Detects pass of the document.	Transmission type
SPPD3	DSPF document pass sensor 3	Detects pass of the document.	Transmission type
SPPD4	DSPF document pass sensor 4	Detects pass of the document.	Transmission type
SPPD5	DSPF document pass sensor 5	Detects pass of the document.	Transmission type
SPRDMD	DSPF document random sensor	Detects the document size in random document feed.	Transmission type
SPWS	DSPF document width sensor	Detects the document width of the document feed tray upper.	Volume resistor
STLD	DSPF document feed tray lower limit sensor	Detects the lower limit of the document feed tray.	Transmission type
STUD	DSPF document feed tray upper limit sensor	Detects the upper limit of the document feed tray.	Transmission type

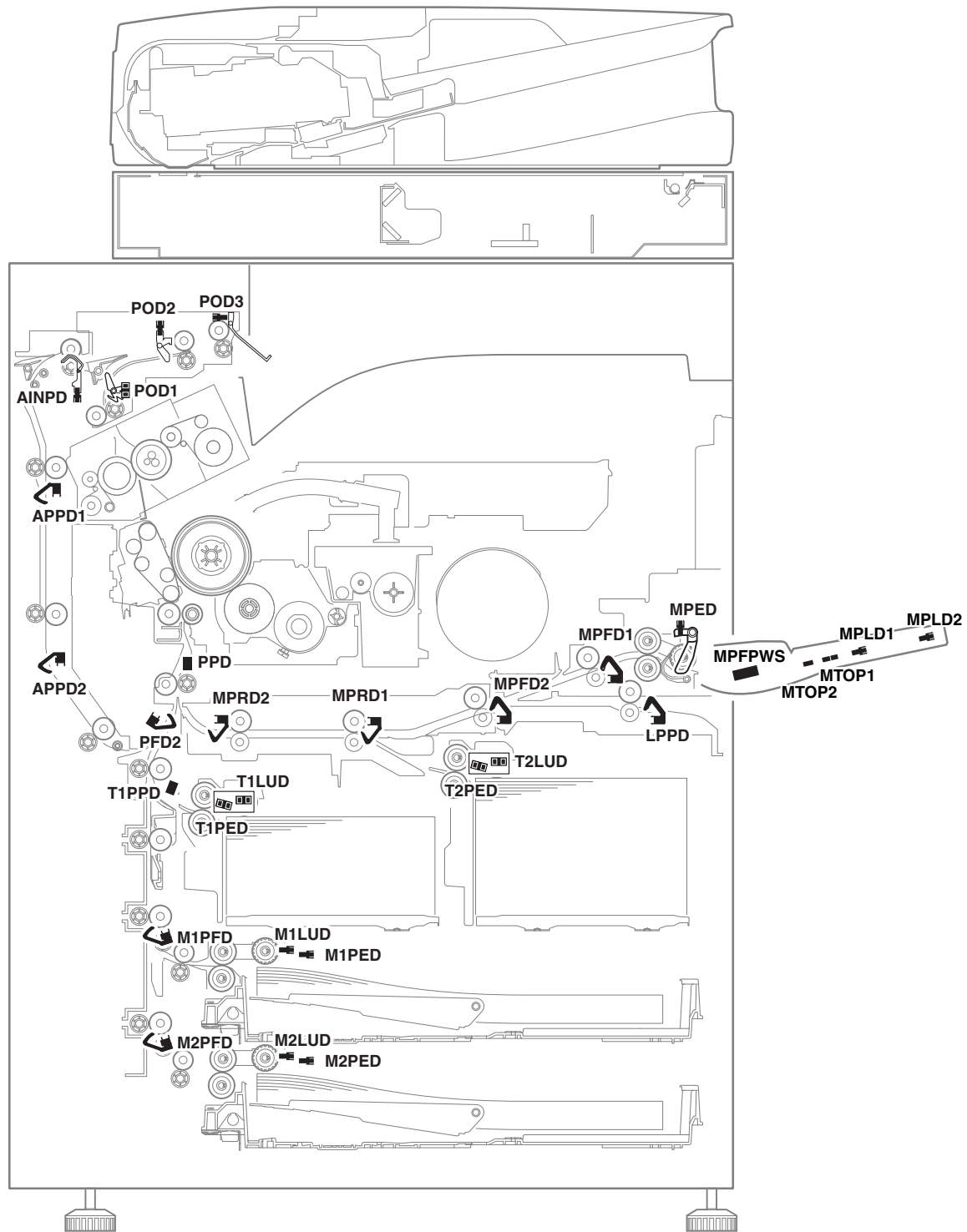
### (3) Motors, clutches, solenoids, PWB and lamps



Signal name	Name	Type	Function/Operation
DSPF COPY LAMP	DSPF copy lamp	Xenon lamp	Radiates light onto a document to allow the CCD to scan document images.
SLUM	DSPF lift-up motor	PM step motor	Lifts up or moves down the document feed tray.
SPFC	DSPF document feed clutch	Electromagnetic clutch	Controls ON/OFF of the rollers in the document feed section.
SPFFAN	DSPF cooling fan motor	DC brush-less motor	Cools the motors and the clutches.
SPFM	DSPF transport motor	Hybrid step motor	Drives the transport roller.
SPOM	DSPF document exit motor	PM step motor	Drives the document exit roller.
SPUM	DSPF document feed motor	Hybrid step motor	Drives the rollers and transport rollers in the document feed section.
SRRC	DSPF No.2 resist roller clutch	Electromagnetic clutch	Controls ON/OFF of No. 2 resist roller.
STRC	DSPF transport roller clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller 1.
STRRC	DSPF No.1 resist roller clutch	Electromagnetic clutch	Controls ON/OFF of No. 1 resist roller.

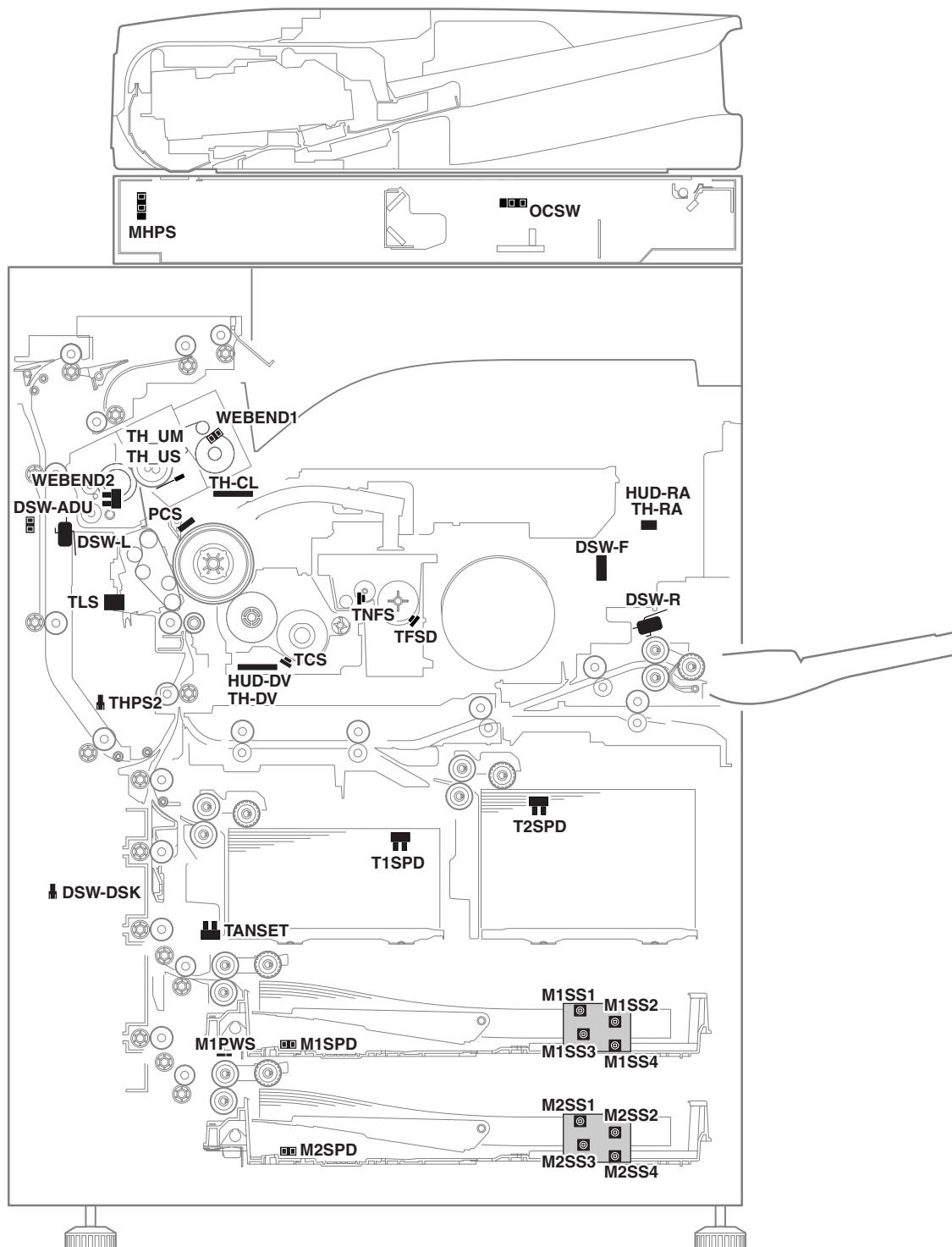
No.	Name	Function/Operation
1	DSPF control PWB	Control PWB for DSPF
2	DSPF flash PWB	Program ROM PWB for DSPF
3	DSPF driver PWB	Driver PWB for DSPF
4	DSPF CCD PWB	Scans document images.
5	DSPF CL inverter PWB	Drives the copy lamp.

## G. Sensor/detector



Signal name	Name	Function/Operation	Type	Connector level		NOTE
				"L"	"H"	
AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type	Paper pass	–	Paper transport system sensor
APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
LPPD	LCC paper pass detector	Detection of paper entry from LCC	Transmission type	Paper pass	–	Paper transport system sensor
M1LUD	Paper tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type	–	Upper limit detection	Paper feed tray system sensor
M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor

Signal name	Name	Function/Operation	Type	Connector level		NOTE
				“L”	“H”	
M1PFD	Paper pass detector (Paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
M2LUD	Paper tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type	–	Upper limit detection	Paper feed tray system sensor
M2PED	Paper tray upper limit detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor
M2PFD	Paper pass detector (Paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type	Paper present	Paper empty	Manual paper feed unit
MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPFD2	Manual feed paper pass detector 2	Manual tray and LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPFWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor	–	–	Analog detector
MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type	–	Paper present	Manual paper feed unit
MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type	–	Paper present	Manual paper feed unit
MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type	Storage	–	Manual paper feed unit
MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type	Pull-out	–	Manual paper feed unit
PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/ No.1, 3, 4 paper feed	Transmission type	Paper pass	–	Paper transport system sensor
POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper pass	–	Paper transport system sensor
POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper pass	–	Paper transport system sensor
POD3	Paper exit detector 3	Paper exit detection to upper section paper exit tray (Full detection)	Transmission type	–	Paper pass (Full detection)	Paper transport system sensor
PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper pass	–	Paper transport system sensor
T1LUD	Paper feed tray upper limit detector (Paper feed tray 1)	Paper feed tray upper limit (Paper feed tray 1)	Transmission type	Upper limit	–	Paper feed tray system sensor
T1PED	Paper empty detector (Paper feed tray 1)	Paper presence detection (Paper feed tray 1)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor
T1PPD	Paper pass detector (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Reflection type	Paper pass	–	Paper transport system sensor
T2LUD	Paper feed tray upper limit detector (Paper feed tray 2)	Paper feed tray upper limit (Paper feed tray 2)	Transmission type	Upper limit	–	Paper feed tray system sensor
T2PED	Paper empty detector (Paper feed tray 2)	Paper presence detection (Paper feed tray 2)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor



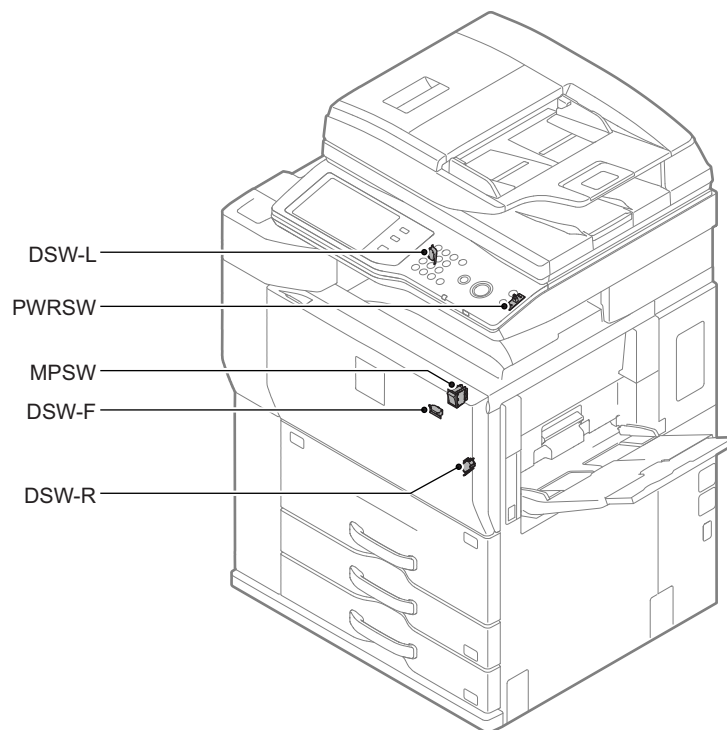
Signal name	Name	Function/Operation	Type	Connector level		NOTE
				"L"	"H"	
DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type	Duplex (ADU) door open	Duplex (ADU) door open close	Door switch
DSW-DSK	Left door open/close detector (Desk section)	Left door open/close detection (Desk section)	Transmission type	Desk left door open	Desk left door close	Door switch
DSW-F	Front door open/close detector	Front door open/close detection	Micro switch	Front door or left door open	Front door or left door close	Door switch
DSW-L	Left door open/close detector	Left door open/close detection	Micro switch	Left door, front door open, manual paper feed unit pullout	Left door, front door close manual paper feed unit close	Door switch



Signal name	Name	Function/Operation	Type	Connector level		NOTE
				"L"	"H"	
DSW-R	Manual feed open/close detector	Manual feed open/close detection	Micro switch (NC)	Left door open or manual unit pulled out	Manual unit insertion	Door switch
HUD-DV	Developing humidity sensor	Developing section peripheral humidity detection	Humidity sensor	—	—	Analog detector
HUD-RA	Room humidity sensor	Room humidity detection	Humidity sensor	—	—	Analog detector
M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	Slide resistor	—	—	Analog detector
M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining quantity detection (Paper feed tray 3)	Transmission type	—	Remaining paper quantity 66% or less	Paper feed tray remaining quantity sensor
M1SS1	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS2	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS3	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS4	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type	—	Remaining paper quantity 66% or less	Paper feed tray remaining quantity sensor
M2SS1	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SS2	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SS3	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SS4	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
MHPS	Scanner home position sensor detector	Scanner home position detection	Transmission type		Home position	Sensor
OCSW	DSPF open/close detector	Trigger for document size detection.	Transmission type	Close		Sensor
PCS	Image density sensor	Detection of density of toner patch on the OPC drum	Reflection type	—	—	Analog detector
T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	Transmission type	—	Remaining paper quantity 50% or less	Paper feed tray remaining quantity sensor
T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	Transmission type	—	Remaining paper quantity 33% or less	Paper feed tray remaining quantity sensor
TANSET	Paper feed tray 1/2 detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Transmission type	Pull-out	Insertion	Paper feed tray system sensor

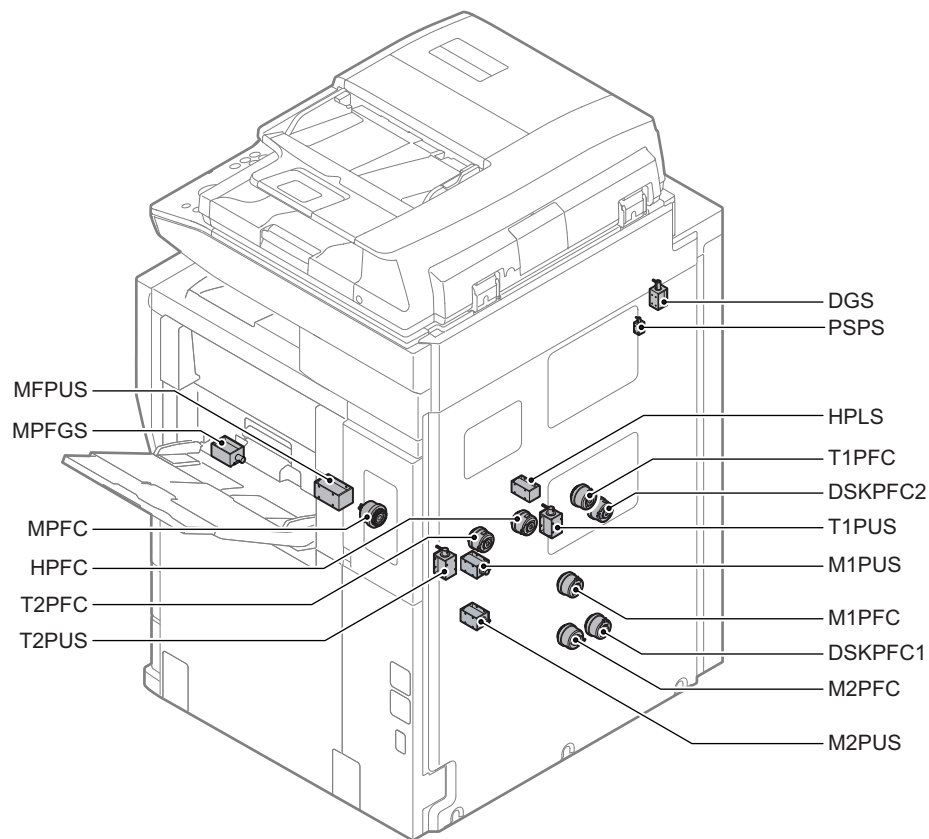
Signal name	Name	Function/Operation	Type	Connector level		NOTE
				"L"	"H"	
TCS	Toner density sensor	Toner density detection	Magnetic sensor	–	–	Analog detector
TFSD	Toner remaining quantity sensor	Toner hopper toner remaining quantity detection	Magnetic sensor	–	–	Other sensor, switch
TH-CL	OPC drum temperature sensor	OPC drum peripheral temperature detection	Thermistor	–	–	Analog detector
TH-DV	Developing temperature sensor	Developing section temperature detection	Thermistor/humidity	–	–	Analog detector
TH-RA	Room temperature sensor	Room temperature detection	Thermistor	–	–	Analog detector
TH_UM	Heat roller temperature sensor (Center section)	Heat roller temperature detection (Center section)	Thermistor	–	–	Analog detector
TH_US	Heat roller temperature sensor (Edge section)	Heat roller temperature detection (Edge section)	Thermistor	–	–	Analog detector
THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	–	Contact	Other sensor, switch
TLS	Waste toner pipe lock detector	Waste toner pipe lock detection	Lead type	–	Lock (Tilt)	Other sensor, switch
TNFS	Waste toner full sensor	Waste toner full detection	Magnetic sensor	Toner empty	Toner presence	
WEBEND1	Web end sensor	Detects the upper web paper end (replacement)	Transmission type	–	End detection	
WEBEND2	Web end sensor	Detects the lower web paper end (replacement)	Transmission type	–	End detection	

## H. Switch



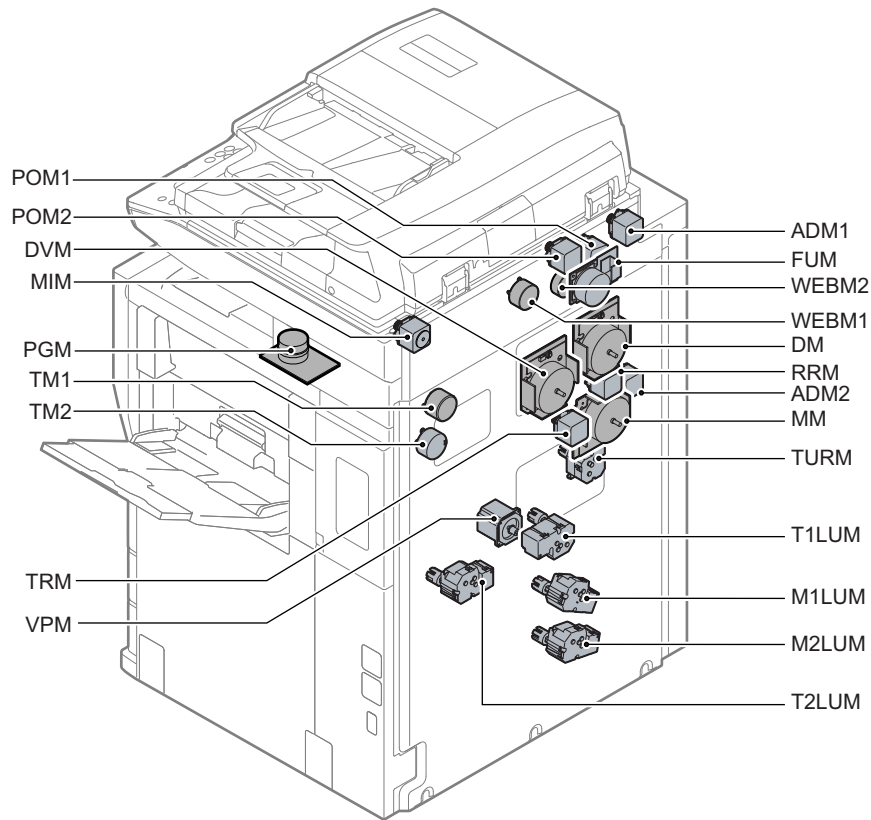
Signal name	Name	Type	Function/Operation
DSW-F	Front door open/close switch	Micro switch	Front door open/close detection, Main charger power source, Developing bias power line open/close
DSW-L	Left door open/close switch	Micro switch	Left door open/close detection, Main charger power source, Developing bias power line open/close
DSW-R	Manual paper feed unit open/close switch	Micro switch	Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close
MPSW	Main power switch	Seesaw switch	Turns ON/OFF all the power sources.
PWRSW	Operation panel power switch	Push switch	Turns ON/OFF the main DC power source.

## I. Clutch/solenoid



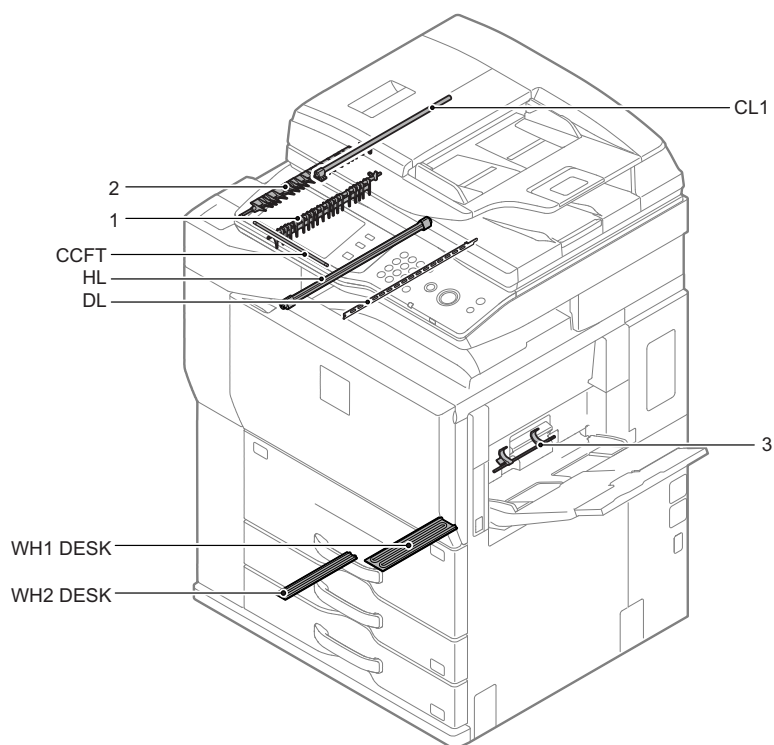
Signal name	Name	Function/Operation	Type
DGS	Paper exit gate solenoid	Paper exit gate drive	Electromagnetic solenoid
DSKPFC1	Paper feed tray 3/4 paper transport clutch 1	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch
DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch
HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch
HPLS	Paper guide lock solenoid	Lock the horizontal transport paper guide	Electromagnetic solenoid
M1PFC	Paper feed clutch (Paper feed tray 3)	Paper feed tray 3 section roller ON/OFF control	Electromagnetic clutch
M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper	Electromagnetic solenoid
M2PFC	Paper feed clutch (Paper feed tray 4)	Paper feed tray 4 section roller ON/OFF control	Electromagnetic clutch
M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper	Electromagnetic solenoid
MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper	Electromagnetic solenoid
MPFC	Paper feed clutch (Manual paper feed)	Manual paper feed section paper feed roller ON/OFF control	Electromagnetic clutch
MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control.	Electromagnetic solenoid
PSPS	Separation solenoid	OPC drum separation pawl drive	Electromagnetic solenoid
T1PFC	Paper feed clutch (Paper feed tray 1)	Paper feed tray 1 section roller ON/OFF control	Electromagnetic clutch
T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid
T2PFC	Paper feed clutch (Paper feed tray 2)	Paper feed tray 2 section roller ON/OFF control	Electromagnetic clutch
T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid

## J. Drive motor



Signal name	Name	Type	Function/Operation	NOTE
ADM1	Duplex (ADU) motor 1	Stepping motor	Drives the paper transport roller 2 and the paper transport roller 19.	High speed
ADM2	Duplex (ADU) motor 2	Stepping motor	Drives the paper exit rollers 20 and 21.	Selection of Normal speed/High speed
DM	OPC drum motor	DC brush-less motor	Drives the OPC drum and the transfer section.	
DVM	Developing system	DC brush-less motor	Drives the developing section.	
FUM	Fusing motor	DC brush-less motor	Drives the fusing section.	
M1LUM	Paper feed tray lift-up motor (Paper feed tray 3)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
M2LUM	Paper feed tray lift-up motor (Paper feed tray 4)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
MIM	Scanner (reading) motor	Stepping motor	Drives the scanner (reading) section.	
MM	Main motor	DC brush-less motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	
PGM	Polygon motor	DC brush-less motor	Drives the scanner (writing) (LSU) unit mirror.	
POM1	Paper exit motor 1	Stepping motor	Drives the paper transport roller 16.	Selection of Normal speed/High speed
POM2	Paper exit motor 2	Stepping motor	Drives the paper exit roller 1.	Selection of Normal speed/High speed
RRM	Resist roller motor	Stepping motor	Drives the resist roller.	
T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
TM1	Toner motor 1	Stepping motor	Transports toner in the toner hopper to the developing unit. / Transports waste toner to the waste toner section.	
TM2	Toner motor 2	Synchronous motor	Transports toner in the toner bottle to the toner hopper.	
TRM	Resist roller front drive motor	Stepping motor	Drives the paper transport roller 15.	Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
TURM	Transfer separation motor	DC brush motor	Drives and separates the transfer belt.	When executing the process correction and detecting a jam, the transfer belt is separated from the OPC drum.
VPM	Vertical paper transport motor	Stepping motor	Drives the paper transport rollers 4 and 13.	Normal speed mode
WEBM1	Web motor	Synchronous motor	Drives the upper web roller	
WEBM2	Web motor	Synchronous motor	Drives the lower web roller	

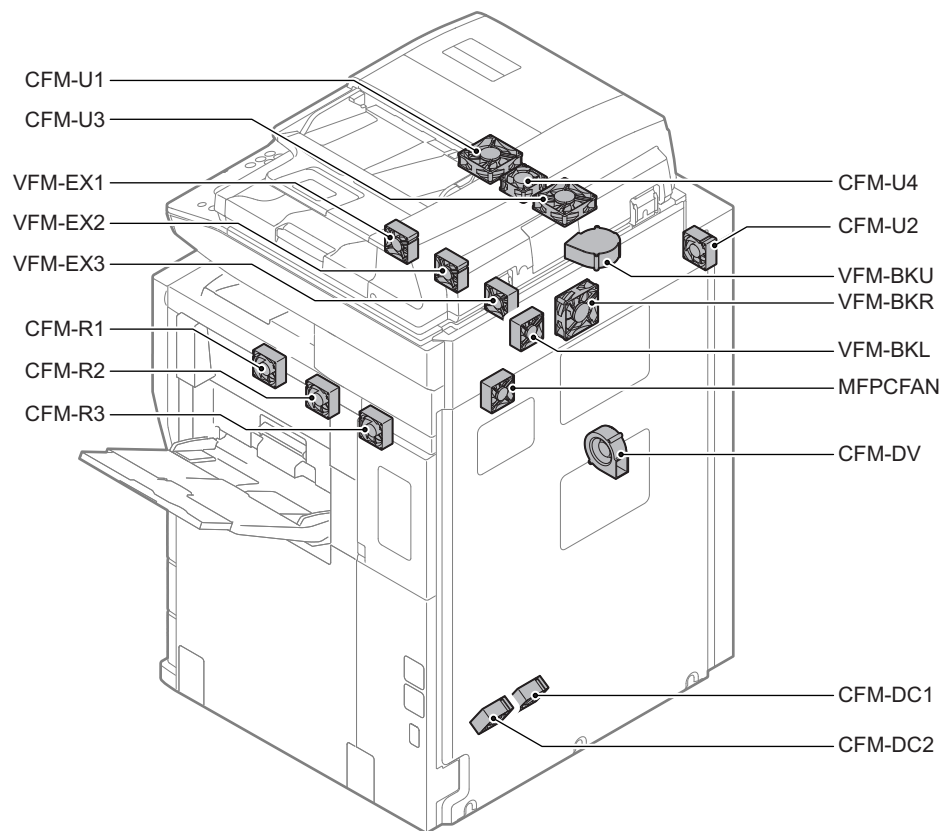
## K. Lamp/heater/gate



Signal name	Name	Type	Function/Operation	NOTE
CCFT	LCD backlight	Cold Cathode Fluorescent Tube	Backlight for LCD	
CL1	Scanner lamp	Xenon lamp	Radiates lights onto a document for the CCD to scan the document image.	
DL	Discharge lamp	Lamp	Discharges electric charges on the OPC drum.	
HL	Heater lamp	Halogen lamp	Heats the upper fusing roller.	
WH1 DESK	Dry heater (Paper feed tray 1, 2)	Nichrome wire (18W)	Dehumidifies paper on the paper feed tray 1 and 2.	Service parts
WH2 DESK	Dry heater (Paper feed tray 3, 4)	Nichrome wire (10W)	Dehumidifies paper on the paper feed tray 3 and 4.	

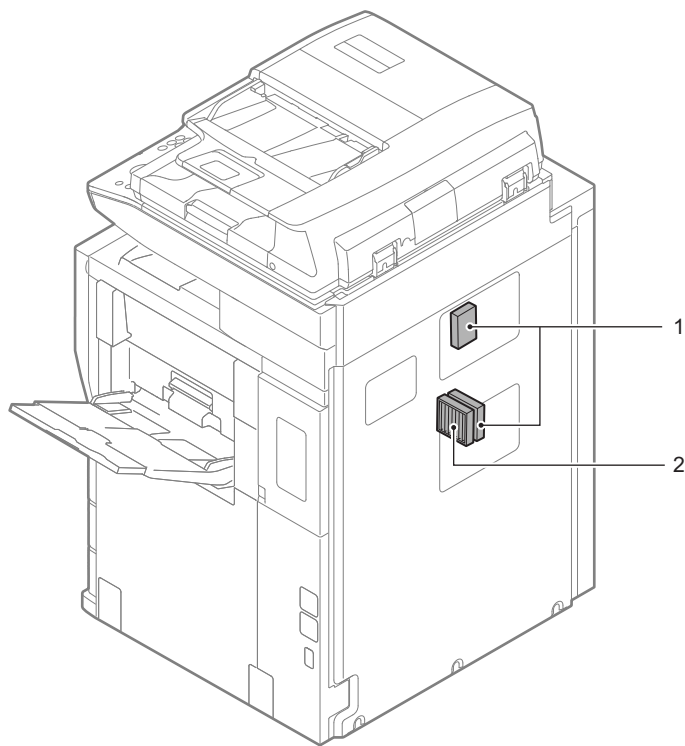
No.	Name	Function/Operation	NOTE
1	Switchback gate	Selects the paper route when discharging paper to the inner tray and when switching back to the exit or finisher.	Switched not by the solenoid drive but by the automatic procedure.
2	Paper exit gate	Selects the paper route to transport paper to the duplex (ADU) section or to discharge paper.	Driven by the solenoid (DGS).
3	Manual feed gate	Specifies the lead edge position of paper when setting paper. (Prevention against double feed and multifeed of paper into the paper feed roller)	

## L. Fan motor



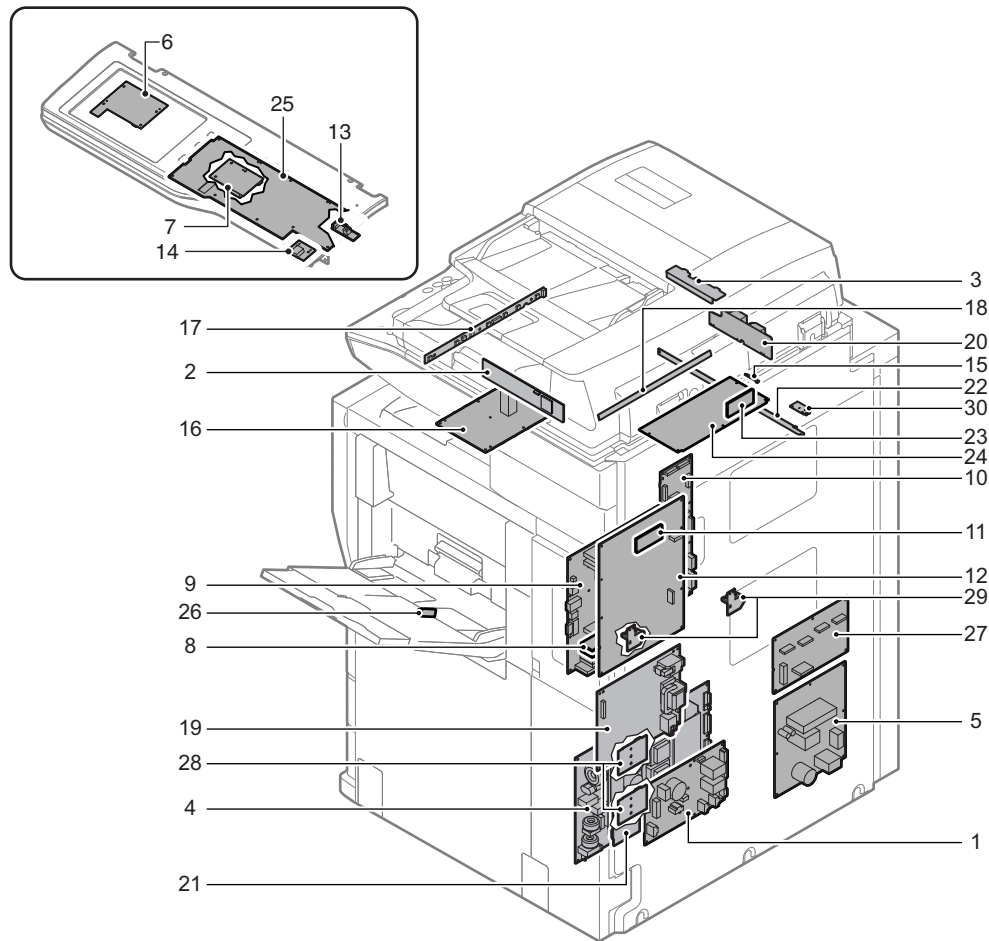
Signal name	Name	Type	Function/Operation	NOTE
CFM-DC1	Power cooling fan motor	DC brush-less motor	Cools the DC power unit.	PWM control
CFM-DC2	Power cooling fan motor	DC brush-less motor	Cools the DC power unit.	PWM control
CFM-DV	Developing section cooling fan motor	DC brush-less motor	Cools the developing section.	PWM control
CFM-R1	Process cooling fan motor 1 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-R2	Process cooling fan motor 2 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-R3	Process cooling fan motor 3 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-U1	Fusing section cooling fan motor 1 (Paper exit/duplex (ADU) section) (Top surface)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U2	Fusing section cooling fan motor 2 (Paper exit/duplex (ADU) section) (Paper exit rear side)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U3	Fusing section cooling fan motor 3 (Paper exit/duplex (ADU) section) (Top surface)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U4	Fusing section cooling fan motor 4 (Paper exit/duplex (ADU) section) (Paper cooling fan motor)	DC brush-less motor	Cools paper which is discharged to the inner tray.	PWM control
MFPCFAN	Controller cooling fan motor	DC brush-less motor	Cools the controller.	PWM control
VFM-BKL	Process exhaust fan motor 4	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-BKR	Fusing exhaust fan motor	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
VFM-BKU	Paper cooling fan motor	DC brush-less motor	Cools the paper and the paper exit section.	PWM control
VFM-EX1	Process exhaust fan motor 1 (Front side)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-EX2	Process exhaust fan motor 2 (Center)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-EX3	Process exhaust fan motor 3 (Rear side)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control

**M. Filter**



No.	Name	Function/Operation
1	Ozone filter	Absorbs ozone generated in the image process section.
2	Toner filter	Filters dispersed toner in the process section.

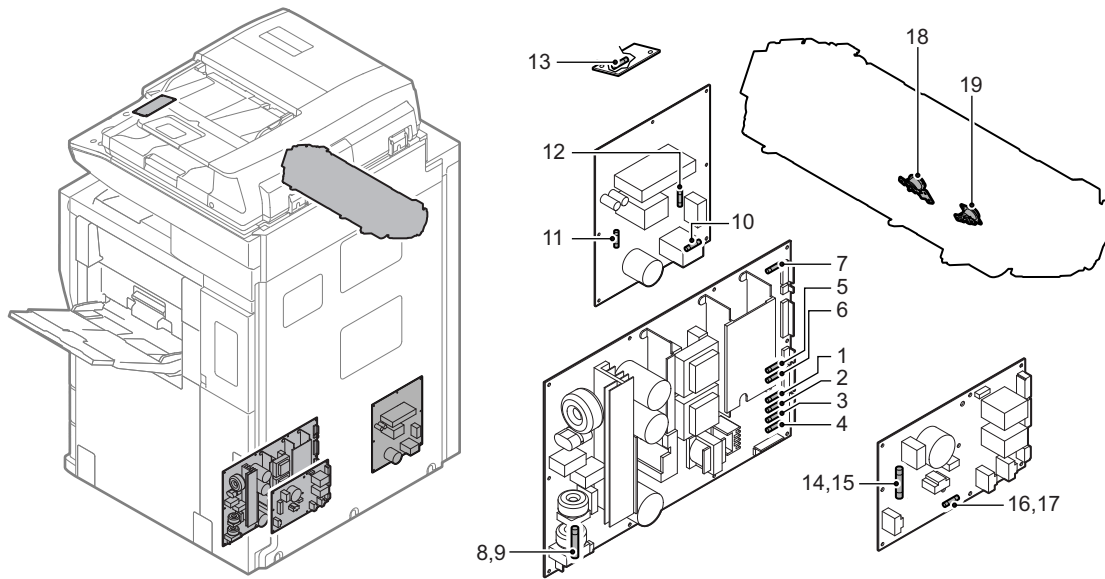
## N. PWB



No	Name	Function/Operation
1	AC power PWB	Controls the AC power.
2	CCD PWB	Scans document images to converts analog signal to digital signal.
3	CL inverter PWB	Drives the xenon lamp.
4	DC main power PWB	Generates the DC power.
5	DC sub power PWB	Energy-saving mode / Generates the DC power for the controller.
6	LVDS PWB	Generates the LCD display signal.
7	LCD INV PWB	Generates a high voltage for backlight.
8	MFP FLASH ROM PWB	Stores the MFP control program.
9	MFP controller PWB	Controls the image-related items and controls all over the machine.
10	Mother PWB	Interfaces the MFP control PWB and the PCU PWB.
11	PCU FLASH ROM PWB	Stores the PCU control program.
12	PCU PWB	Controls the engine section.
13	Power SW PWB	Outputs the ON/OFF control signal of the DC power source.
14	USB connector PWB	For USB connecting.
15	Image density sensor PWB	Detects the toner patch density in the image density correction.
16	HL PWB	Controls the heater lamp.
17	Document size detection light reception PWB	Generates the document size detection signal.
18	Document size detection light emitting PWB	Generates lights to detect the document size.
19	High voltage power PWB (MC/DV/TC)	Generates the main charger voltage, the developing bias voltage, the transfer voltage and the transfer belt cleaning voltage.
20	Transfer bias high voltage PWB (TD CL)	Provides the bias voltage for the transfer cleaning roller and the print mode.
21	Dehumidifier heater relay PWB	Controls ON/OFF of the dehumidifier heater.
22	Discharge lamp PWB	Generates light for discharging.
23	Scanner Flash PWB	Stores the scanner control program.
24	Scanner control PWB	Controls the scanner section.
25	Operation control PWB	Controls the display operation panel.
26	Manual feed paper width detection PWB	Detects the manual paper feed tray paper width.
27	Driver PWB	Drives the motors.
28	Paper size detection PWB (Paper feed tray 3, 4)	Detects the paper size.
29	Detector PWB (Paper feed tray 1, 2)	Detects the paper empty and upper limit tray.
30	Photo-conductor temperature sensor PWB	Temperature detection around the photo-conductor

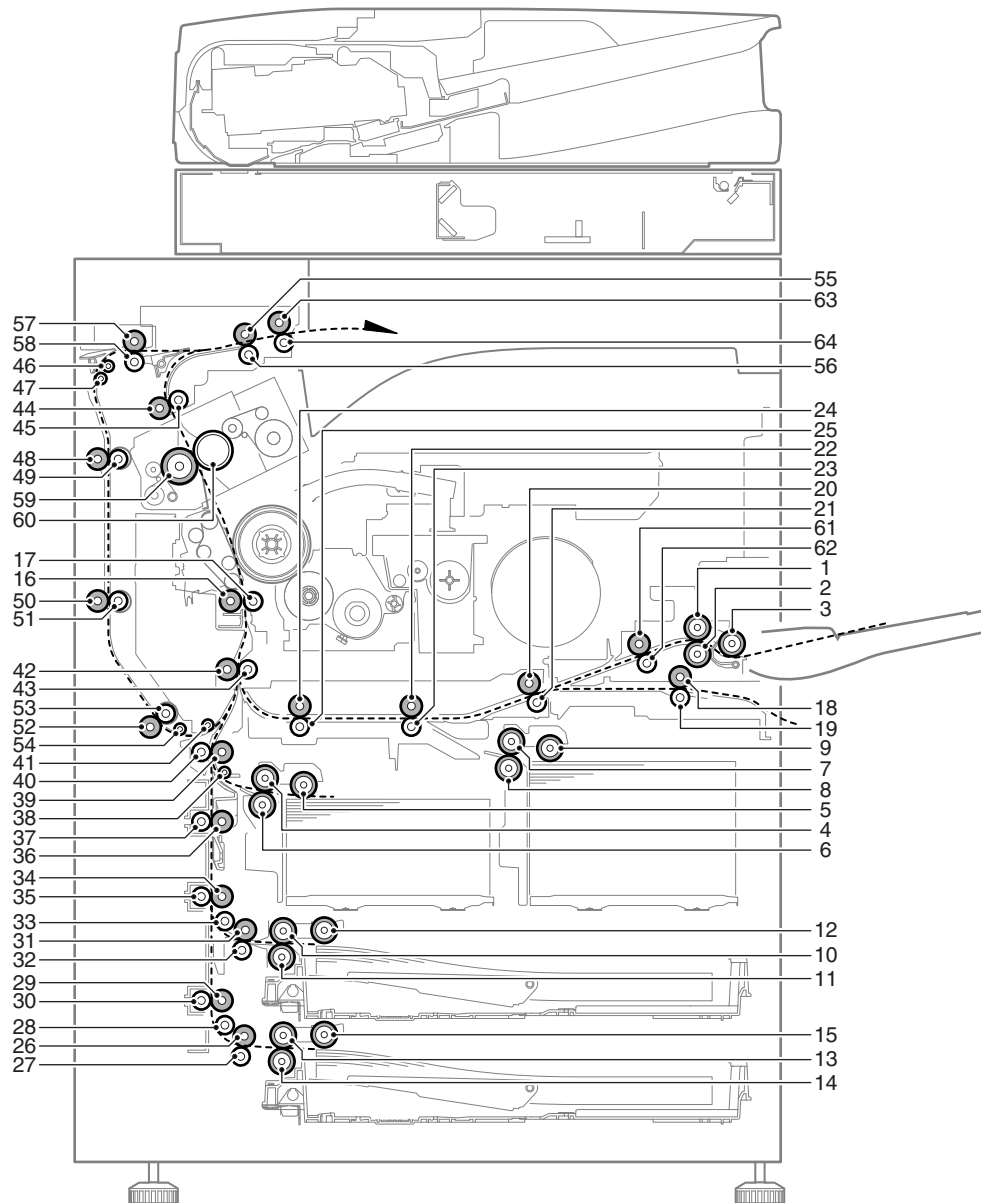


## O. Fuse/thermostat



No.	Code	Name	Type	Specifications	Function/Operation	Section	NOTE
1	F201	Fuse	Time lag	250V 6.3A	PCU PWB protection (24V1)	DC main power PWB	100V series/200V series
2	F202	Fuse	Time lag	250V 6.3A	Driver PWB protection (24V2)	DC main power PWB	100V series/200V series
3	F203	Fuse	Time lag	250V 6.3A	Scanner control PWB protection (24V3)	DC main power PWB	100V series/200V series
4	F204	Fuse	Time lag	250V 6.3A	LCC control PWB protection (24V4)	DC main power PWB	100V series/200V series
5	F205	Fuse	Time lag	250V 6.3A	Finisher protection (24V5)	DC main power PWB	100V series/200V series
6	F206	Fuse	Time lag	250V 6.3A	Insertion protection (24V6)	DC main power PWB	100V series/200V series
7	F208	Fuse	Time lag	250V 6.3A	Motor protection (38V)	DC main power PWB	100V series/200V series
8	F1	Fuse	Time lag	250V 15A	DC power source over-current protection (Main source)	DC main power PWB	100V series
9	F1	Fuse	Time lag	250V 8A	DC power source over-current protection (Main source)	DC main power PWB	200V series
10	F101	Fuse	Time lag	250V 5A (100V series) 250V 3.15A (200V series)	DC power source over-current protection (Main source)	DC sub power PWB	100V series/200V series
11	F201	Fuse	Time lag	250V 2A	DC power source over-current protection (Main source)	DC sub power PWB	100V series/200V series
12	F103	Fuse	Time lag	250V 2A	DC power source over-current protection (Main source)	DC sub power PWB	100V series/200V series
13	F1	Fuse	Immediate decision type	250V 200mA	LCD inverter circuit over-current protection LVDS/INV	LCD INV PWB	Common
14	F1	Fuse	Time lag	250V 20A	AC power source over-current protection (Main source)	AC power PWB	100V system
15	F2	Fuse	Time lag	250V 10A	AC power source over-current protection (Main source)	AC power PWB	200V system
16	F3	Fuse	Time lag	250V 2.0A	Dry heater over-current protection	AC power PWB	100V system
17	F4	Fuse	Time lag	250V 2.0A	Dry heater over-current protection	AC power PWB	200V system
18	HLTS_M	Thermostat		125VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	
19	HLTS_S	Thermostat		125VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	

## P. Roller



No.	Name	Function/Operation
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
2	Separation roller (Manual paper feed tray)	Separates paper to prevent double-feed.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper transport section.
4	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.
5	Paper pickup roller (No. 1 paper feed roller)	Sends paper to the paper transport section.
6	Separation roller (No. 1 paper feed tray)	Separates paper to prevent double-feed.
7	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.
8	Separation roller (No. 2 paper feed tray)	Separates paper to prevent double-feed.
9	Paper pickup roller (No. 2 paper feed roller)	Sends paper to the paper transport section.
10	Paper feed roller (No. 3 paper feed tray)	Feeds paper to the paper transport section.
11	Separation roller (No. 3 paper feed tray)	Separates paper to prevent double-feed.
12	Paper pickup roller (No. 3 paper feed roller)	Sends paper to the paper transport section.

No.	Name	Function/Operation
13	Paper feed roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.
14	Separation roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.
15	Paper pickup roller (No. 4 paper feed roller)	Sends paper to the paper transport section.
16	Resist roller (Drive)	Transports paper to the transfer section. / Controls the paper transport timing and adjusts the relative relationship between the image and paper.
17	Resist roller (Idle)	Applies pressure to paper and the resist roller to transport the paper.
18	Transport roller 1 (Drive)	Transports paper fed from the large capacity tray (LCC) to the transport roller 2.
19	Transport roller 1 (Idle)	Applies pressure to paper and the resist roller to transport the paper.
20	Transport roller 2 (Drive)	Transports paper transported from the manual paper feed and the transport roller 1 to the transport roller 3.
21	Transport roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
22	Transport roller 3 (Drive)	Transports paper transported from the paper feed tray 2 and the transport roller 2 to the transport roller 3.
23	Transport roller 3 (Idle)	Applies pressure to paper and the resist roller to transport the paper.
24	Transport roller 4 (Drive)	Transports paper transported from the transport roller 3 to the transport roller 15.
25	Transport roller 4 (Idle)	Applies pressure to paper and the resist roller to transport the paper.
26	Transport roller 5 (Drive)	Transports paper fed from the paper feed tray 4 to the transport rollers 6 and 7.
27	Transport roller 5 (Idle)	Applies pressure to paper and the resist roller to transport the paper.
28	Transport roller 6 (Idle)	Reduces friction between paper and the paper guide.
29	Transport roller 7 (Drive)	Transports paper transported from the transport roller 5 to the transport roller 10.
30	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
31	Transport roller 8 (Drive)	Transports paper transported from the paper feed tray 3 to the transport rollers 9 and 10.
32	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
33	Transport roller 9 (Idle)	Reduces friction between paper and the paper guide.
34	Transport roller 10 (Drive)	Transports paper transported from the transport rollers 7 and 8 to the transport roller 11.
35	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
36	Transport roller 11 (Drive)	Transports paper transported from the transport roller 10 to the transport roller 13.
37	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
38	Transport roller 12 (Idle)	Reduces friction between paper and the paper guide.
39	Transport roller 13 (Drive)	Transports paper fed from the paper feed trays 1, 3, and 4 to transport roller 15.
40	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
41	Transport roller 14 (Idle)	Reduces friction between paper and the paper guide.
42	Transport roller 15 (Drive)	Transports paper to the transport resist roller.
43	Transport roller 15 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
44	Transport roller 16 (Drive)	Transports paper from the fusing roller to the paper exit roller 1.
45	Transport roller 16 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
46	Transport roller 17 (Idle)	Reduces friction between paper and the paper guide.
47	Transport roller 18 (Idle)	Reduces friction between paper and the paper guide.
48	Transport roller 19 (Drive)	Transports paper from the transport from the paper exit roller 2 to the transport roller 20.
49	Transport roller 19 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
50	Transport roller 20 (Drive)	Transports paper transported from the transport roller 19 to the transport roller 21.
51	Transport roller 20 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
52	Transport roller 21 (Drive)	Transports paper transported from the transport roller 20 to the transport roller 15.
53	Transport roller 21 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
54	Transport roller 22 (Idle)	Reduces friction between paper and the paper guide.
55	Paper exit roller 1 (Drive)	Discharges paper to the paper exit tray. / Switches back paper.
56	Paper exit roller 1 (Idle)	Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper.
57	Paper exit roller 2 (Drive)	Discharges paper. / Transports paper to the duplex (ADU) section.
58	Paper exit roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the paper exit roller to paper.
59	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).
60	Fusing roller (Heating)	Heat and press toner onto paper to fuse images.
61	Transfer roller 1A (Drive)	Transports paper (which is fed from the manual paper feed tray) to the transport roller.
62	Transfer roller 1A (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
63	Paper exit roller 3 (Drive)	Discharges paper to the paper exit tray. /Switches back paper.
64	Paper exit roller 3 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.

## [5] ADJUSTMENTS AND SETTINGS

### 1. General

Each adjustment item in the adjustment item list is associated with a specific Job number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest Job number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or trouble may occur.

### 2. Adjustment item list

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting the developing unit	1A	Adjust the developing doctor gap	
		1B	Adjust the developing roller main pole position	
		1C	Toner density control reference value setting	25-2
ADJ 2	Adjusting high voltage values	2A	Adjust the main charger grid voltage	8-2
		2B	Adjust the developing bias voltage	8-1
		2C	Transfer current adjustment	8-6
		2D	Transfer belt cleaning voltage adjustment	8-17
		2E	Transfer cleaning roller voltage adjustment	8-18
ADJ 3	Print engine image skew adjustment (LSU parallelism adjustment)			64-2
ADJ 4	Scan image distortion adjustment (OC mode)	4A	Scanner (reading) unit parallelism adjustment	
		4B	Scan image sub scanning direction distortion adjustment	
		4C	Scan image main scanning direction distortion adjustment	
ADJ 5	Scanner image skew adjustment (DSPF mode)	5A	DSPF parallelism adjustment	
		5B	DSPF skew adjustment (Front surface mode)	64-2
		5C	DSPF skew adjustment (Back surface mode)	64-2
ADJ 6	Scan image focus adjustment	6A	Image focus adjustment (Document table mode/DSPF front surface mode)	48-1
		6B	Image focus adjustment (DSPF back surface mode)	
ADJ 7	Image lead edge position, image loss, void area, image off-center, and image magnification ratio adjustment (automatic adjustment)	7A	Print image main scanning direction image magnification ratio automatic adjustment (Print engine)	50-28
		7B	Print image off-center automatic adjustment (Print engine) (Each paper feed tray)	50-28
		7C	Copy lead edge image reference position adjustment, image loss, void area, scanner image off-center, and scanner sub scanning direction image magnification ratio automatic adjustment (document table mode)	50-28
		7D	Copy image off-center, image loss, void area, image lead edge position, and DSPF sub scanning direction image magnification ratio automatic adjustment (DSPF mode)	50-28
ADJ 8	Print lead edge image position, void area adjustment (Printer mode)			50-5
ADJ 9	CCD calibration	9A	CCD gamma adjustment (CCD calibration) (Document table mode)	63-3/63-5
		9B	CCD gamma adjustment (CCD calibration) (DSPF mode)	63-3
		9C	Shading adjustment (Calibration) (DSPF mode)	63-2
ADJ 10	Automatic adjustment of copy/printer density and gradation			46-74
ADJ 11	Copy density and gradation adjustment	11A	Automatic adjustment of copy density and gradation	46-24
		11B	Manual copy density and gradation adjustment	46-16
		11C	Copy density and gradation adjustment (Each copy mode) (Whole adjustment) (Normally unnecessary to adjust)	46-2
		11D	Manual copy density and gradation adjustment for each copy mode (Normally unnecessary to adjust)	46-10
		11E	Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust)	46-32
		11F	Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust)	46-37
		11G	Manual copy density and gradation adjustment (DSPF mode) (Individual adjustment of the low density area and the high density area)	46-9
		11H	Automatic copy density and gradation adjustment by the user (ENABLE/DISABLE setting and adjustment of the automatic copy density and gradation adjustment)	26-53
ADJ 12	Printer density and gradation adjustment	12A	Automatic adjustment of printer density and gradation	67-24
		12B	Manual printer density and gradation adjustment	67-25
		12C	Automatic printer density and gradation adjustment by the user (ENABLE/DISABLE setting and adjustment of the automatic printer density and gradation adjustment)	26-54
ADJ 13	Setting of the operating conditions for the automatic exposure mode in copy, scan, and FAX mode			46-19
ADJ 14	Paper size detection adjustment	14A	Manual paper feed tray paper width sensor adjustment	40-2
		14B	DSPF tray paper size (width) sensor adjustment	53-6
		14C	Adjust the paper width sensor for paper feed tray 3	40-12
ADJ 15	Adjusting the original size detection (in original table mode)	15A	Adjust the detection point of the original size sensor (in original table mode)	41-1
		15B	Adjust the sensitivity of the original size sensor	41-2
ADJ 16	Touch panel coordinate setting			65-1

Job No	Adjustment item list			Simulation
ADJ 17	Fusing paper guide position adjustment			
ADJ 18	Print engine image position, image magnification ratio, void area, off-center adjustment (manual adjustment)	18A	Print engine image magnification ratio adjustment (Main scanning direction)	50-10
		18B	Print engine image position adjustment	50-10/50-1
		18C	Print engine print area (void area) adjustment	50-10
ADJ 19	Scan image magnification ratio adjustment (Manual adjustment)	19A	Main scanning direction image magnification ratio adjustment (Document table mode)	48-1
		19B	Sub scanning direction image magnification ratio adjustment (Document table mode)	48-1/48-5
		19C	Main scanning direction image magnification ratio adjustment (DSPF mode)	48-1
		19D	Sub scanning direction image magnification ratio adjustment (DSPF mode)	48-1
ADJ 20	Scan image off-center adjustment (Manual adjustment)	20A	Scan image off-center adjustment (Document table mode)	50-12
		20B	Scan image off-center adjustment (DSPF mode)	50-12/50-6
ADJ 21	Copy image position, image loss, and void area adjustment (Manual adjustment)	21A	Copy image position, image loss, void area adjustment (Document table mode)	50-1
		21B	Document scan position adjustment (DSPF mode scanner scan position adjustment)	53-8
		21C	Copy mode image loss adjustment (DSPF mode)	50-6
ADJ 22	Finisher and punch unit adjustments (alignment, punch hole position, staple position, folding position)	22A	MX-FN15/MX-PN4	3-10
		22B	MX-FN16/MX-PN4	
		22C	MX-FN14/MX-PN10	

\*1: ADJ7 is the automatic adjustment of ADJ18, 19, 20, and 21.

When ADJ7 is executed, there is no need to execute ADJ18, 19, 20, and 21.

ADJ18, 19, 20, and 21 are executed only when a manual adjustment is required.

### 3. Details of adjustment

#### ADJ 1 Adjusting the developing unit

NOTE: Be careful not to put a fingerprint or a foreign material on the DV roller surface. If a fingerprints or a foreign material is put on the surface, the picture quality may be degraded.

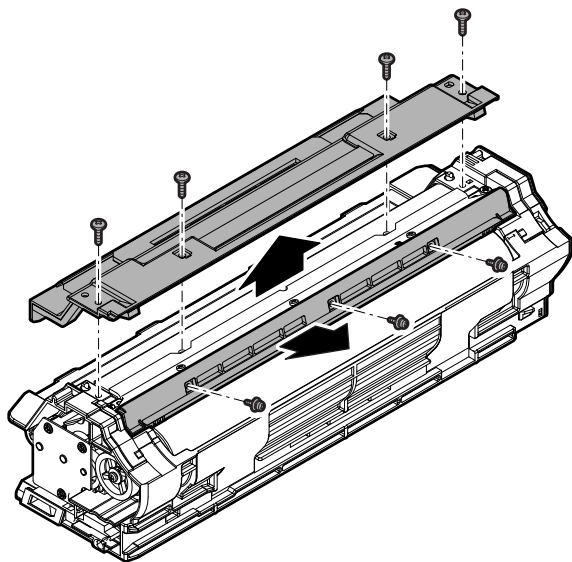
##### 1-A Adjust the developing doctor gap

###### a. This adjustment must be performed in the following cases:

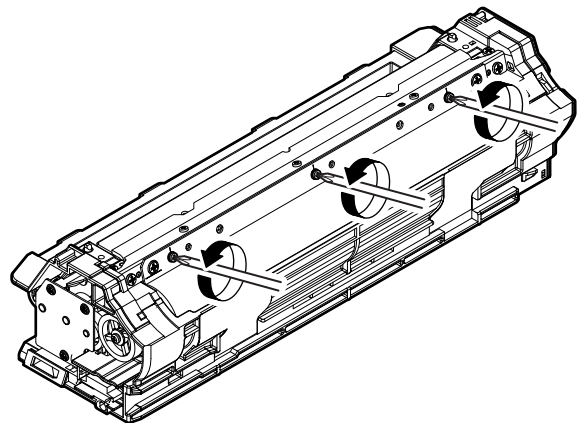
- \* The developing unit has been disassembled.
- \* The print density is low.
- \* The toner is excessively dispersed.

###### b. Adjustment procedures

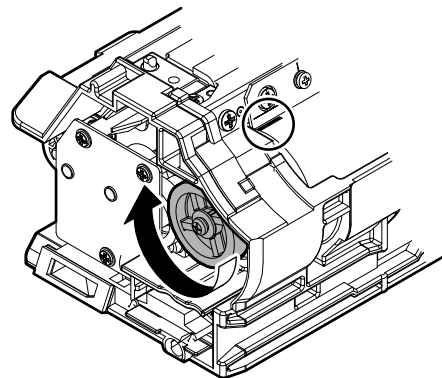
- 1) Remove the developing unit of the machine.
- 2) Remove the developing unit cover and doctor cover.



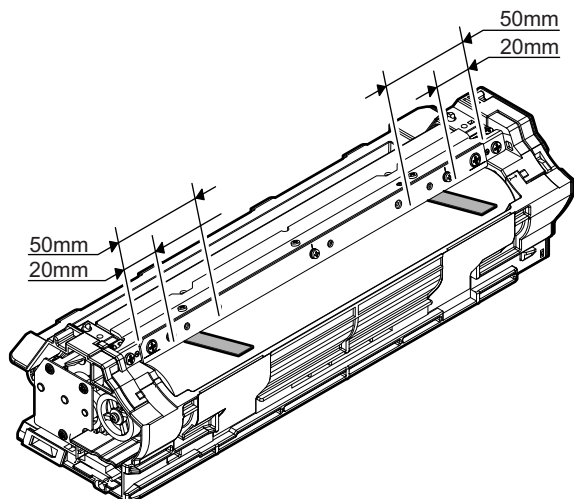
- 3) Loosen the DV doctor fixing screws.



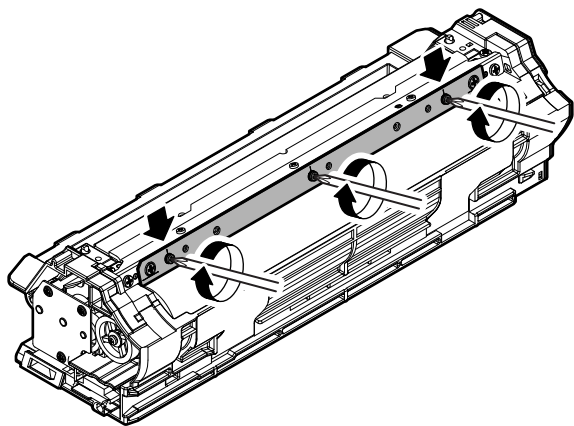
- 4) Manually turn the DV roller to align the marking on the DV roller surface with the DV doctor position.



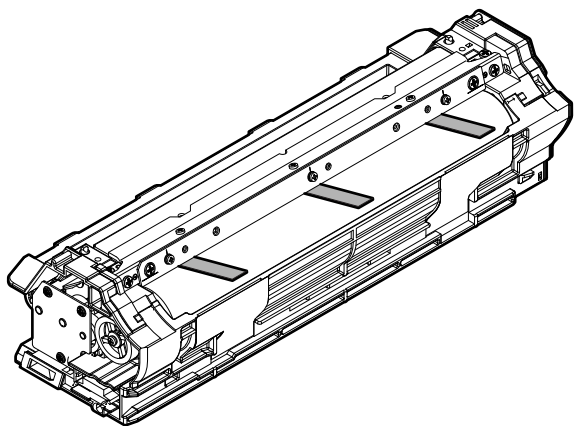
- 5) Insert a 0.43mm clearance gauge in between the DV roller and DV doctor so that the gauge is positioned at a distance of 40 mm to 70 mm from the DV doctor end face.



- 6) Tighten the DV doctor fixing screws while pressing the DV doctor in the arrow direction.  
(This should be done for both front and rear frames.)



- 7) On both sides of the DV doctor and at its center, make sure that the DV doctor gap is  $0.43 \pm 0.03$  mm.



\* When inserting a clearance gauge, take care not to damage the DV doctor or MG roller.  
Repeat steps 2 to 6 until the DV doctor gap meets the requirement.

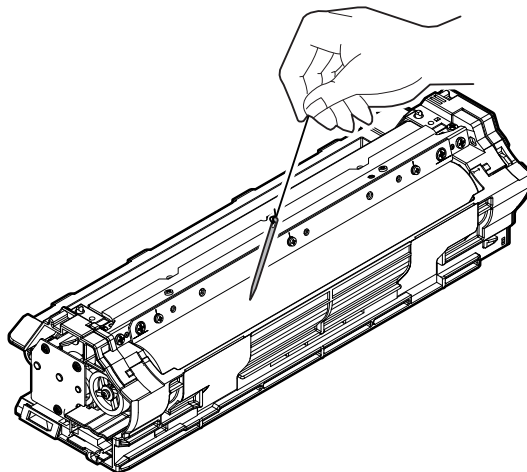
## 1-B Adjust the developing roller main pole position

### a. This adjustment must be performed in the following cases:

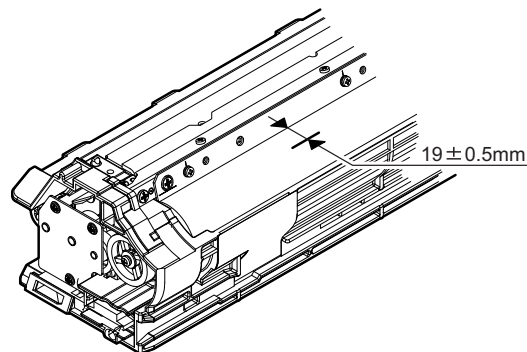
- \* The developing unit has been disassembled.
- \* The print density is low.
- \* The toner is excessively dispersed.

### b. Adjustment procedures

- 1) Remove the developing unit.
- 2) Remove the developing unit cover and blade cover, and then place the developing unit on a level surface.
- 3) Attach a piece of string to a sewing needle or pin.
- 4) With the string in hand, bring the needle closer to the DV roller while keeping the needle parallel with the roller. (Do not use a clip, which does not accurately indicate the position.)

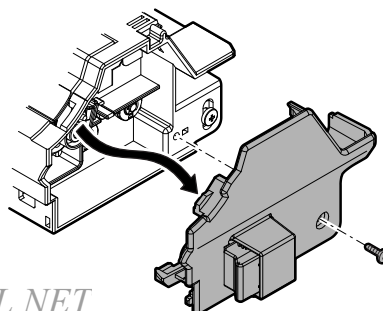


- 5) Keeping the needle 2 to 3 mm off the DV roller surface, mark the DV roller surface at an extension of the needle tip. (Do not let the needle tip contact the DV roller.)
- 6) Measure the distance between the marking on the DV roller and leading edge of the DV doctor, and make sure that it is  $19 \pm 0.5$  mm.



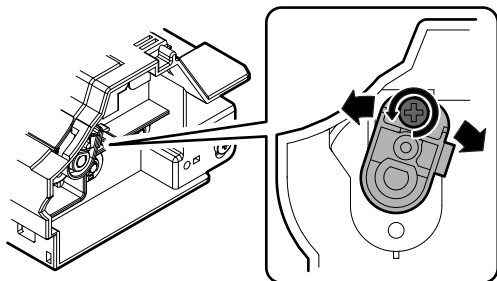
If this requirement is not met, do the following steps.

- 7) Remove the front cover.





- 8) Loosen the fixing screws of the developing roller main pole adjusting plate, and make adjustments by moving the adjusting plate in the arrow direction.



Repeat steps 3 to 6 until the developing roller main pole meets the positional requirement.

## 1-C Toner density control reference value setting

a. This adjustment must be performed in the following cases:

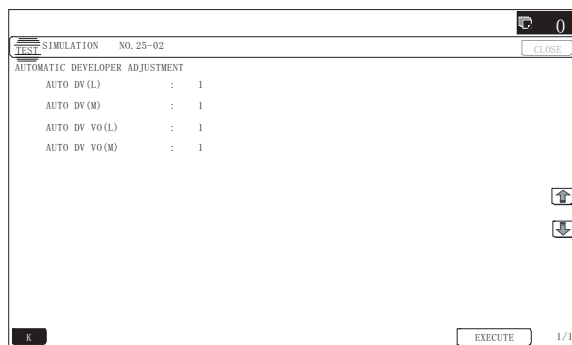
- \* When developer is replaced.

NOTE:

- Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.
- When setting the toner density control reference value, pull out the toner cartridge in advance.
- When not replacing the developer, do not execute SIM25-2.

b. Adjustment procedures

- 1) Remove the toner cartridge from the machine.
- 2) Turn ON the power with the front cabinet open.
- 3) Enter the SIM 25-2 mode.



- 4) Close the front cabinet.

- 5) Press [EXECUTE] key.

The key is highlighted. The developing roller rotates and the toner density sensor detects the toner density, and the output value displayed.

After execution of the above operation for 3 minutes, the average value of toner density sensor detection levels is set (stored) as the reference toner density control value.

When the reference toner density control adjustment operation is completed, [EXECUTE] key returns to normal from highlight. This makes known about whether the adjustment operation is completed or not.

NOTE:

If the operation is interrupted within 3 minutes, the adjustment result is not reflected.

When [EXECUTE] key is pressed during rotation, the operation is stopped and [EXECUTE] key returns to the normal display.

If [EE-EU], [EE-EL] or [EE-EC] is displayed, setting of the reference toner density control value is not completed normally.

Error display	Content	Details of content
EE-EL	EL abnormality	Sensor output level less than 26, or sensor control voltage level over 197
EE-EU	EU abnormality	Sensor output level over 200, or sensor control voltage level less than 49
EE-EC	EC abnormality	Sensor output level: Out of $108 \pm 5$

- 6) Cancel SIM25-2, and install the toner cartridge.

## ADJ 2 Adjusting high voltage values

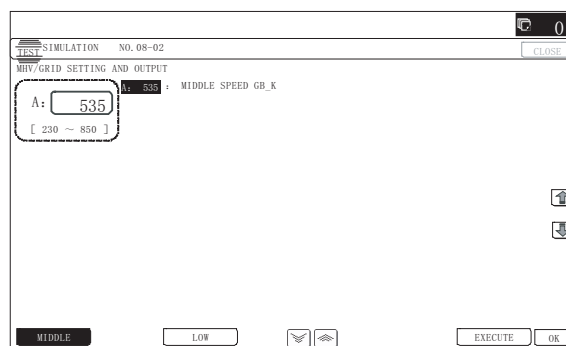
NOTE: For adjusting the output voltage, use a tool which can measure the effective value of 1000M $\Omega$  internal impedance. Also use a high voltage probe together. (FLUKE87FLUKE80K-40 is recommendable.)

### 2-A Adjust the main charger grid voltage

This adjustment is needed in the following situations:

- \* When the high voltage PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When the picture quality is abnormal.

- 1) Remove the rear cover of the machine.
- 2) Enter the SIM 8-2 mode.



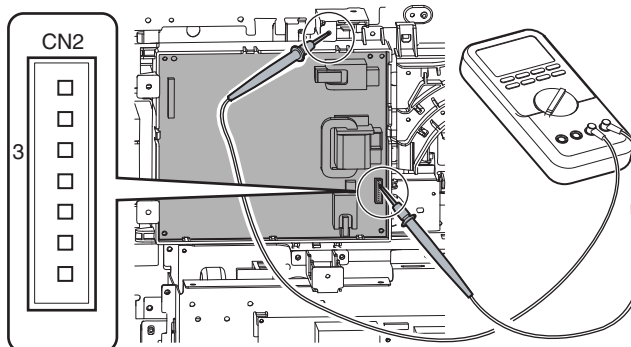
- 3) Select the middle speed mode.

When the adjustment value in the middle speed mode is set, the adjustment values of the other modes are automatically set accordingly in correlation.

To adjust an each mode individually, first adjust the middle speed mode, then adjust the other modes.

If the middle speed mode adjustment is executed after adjustment of the other mode, the adjustment value of the other mode is automatically set. Be careful of that.

- 4) Apply a digital multi-meter between the high voltage PWB connector CN2 pin (3) and the chassis GND.



- 5) Press [EXECUTE] key.

The main charger grid voltage is outputted for 30sec.

If this operation is executed for a long time, the OPC drum may be damaged. Therefore, this operation must be completed in a short time.

It is recommended to install an unnecessary OPC drum to the machine and execute this operation.

- 6) Check the output voltage with a digital multi-meter.

If the output voltage is not within the specified range listed in the table below, change the adjustment value.

(Enter the adjustment value with 10 key, and press [OK] key or [EXECUTE] key.)

Mode	Item/Display		Content	Adjustment range	Default value		High voltage PWB (MC/DV/TC)			
					62 CPM model	75 CPM model	Connector	Pin No.	Output voltage	
									62 CPM model	75 CPM model
MIDDLE	A	MIDDLE SPEED GB_K	Middle speed mode main charger grid voltage adjustment value	230 - 850	525	535	CN2	3	-540V ± 5	-550V ± 5
LOW	A	LOW SPEED GB_K	Low speed mode main charger grid voltage adjustment value	230 - 850	525	525	CN2	3	-540V ± 5V	

If the specified output cannot be obtained by changing the adjustment value, it is presumed that some parts listed below are defective.

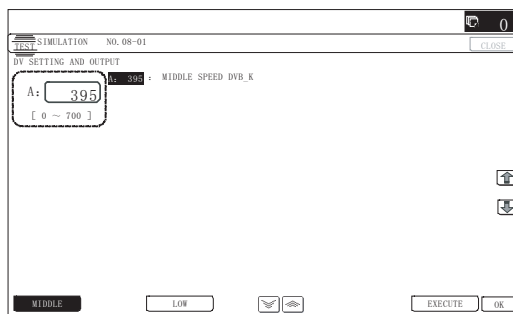
- High voltage PWB (MC/DV/TC)
- PCU PWB
- MC unit
- OPC drum unit
- High voltage circuit electrode

## 2-B Adjust the developing bias voltage

This adjustment is needed in the following situations:

- \* When the high voltage PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When the picture quality is abnormal.

- 1) Remove the rear cover of the machine.
- 2) Enter the SIM 8-1 mode.



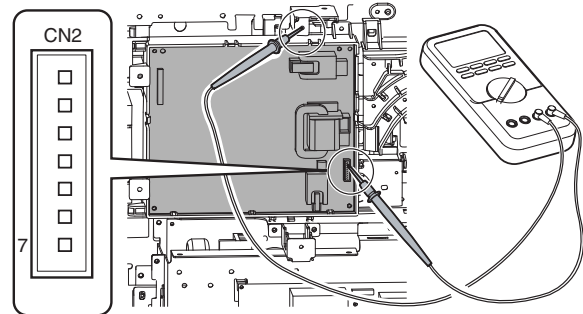
- 3) Select the middle speed mode.

When the adjustment value in the middle speed mode is set, the adjustment values of the other modes are automatically set accordingly in correlation.

To adjust an each mode individually, first adjust the middle speed mode, then adjust the other modes.

If the middle speed mode adjustment is executed after adjustment of the other mode, the adjustment value of the other mode is automatically set. Be careful of that.

- 4) Apply a digital multi-meter between the high voltage PWB connector CN2 pin (7) and the chassis GND.



- 5) Press [EXECUTE] key.

The main charger voltage is outputted for 30sec.

If this operation is executed for a long time, the OPC drum may be damaged. Therefore, this operation must be completed in a short time.

It is recommended to install an unnecessary OPC drum to the machine and execute this operation.

- 6) Check the output voltage with a digital multi-meter.

If the output voltage is not within the specified range listed in the table below, change the adjustment value.

(Enter the adjustment value with 10 key, and press [OK] key or [EXECUTE] key.)

Mode	Item/Display		Content	Adjustment range	Default value		High voltage PWB (MC/DV/TC)		
					62 CPM model	75 CPM model	Connector	Pin No.	Output voltage
MIDDLE	A	MIDDLE SPEED DVB_K	Middle speed mode developing bias voltage adjustment value	0 - 700	395	395	CN2	7	-400V ± 5V
LOW	A	LOW SPEED DVB_K	Low speed mode developing bias voltage adjustment value	0 - 700	395	395	CN2	7	-400V ± 5V

If the specified output cannot be obtained by changing the adjustment value, it is presumed that some parts listed below are defective.

- High voltage PWB (MC/DV/TC)
- PCU PWB
- MC unit
- OPC drum unit
- Developing unit
- High voltage circuit electrode

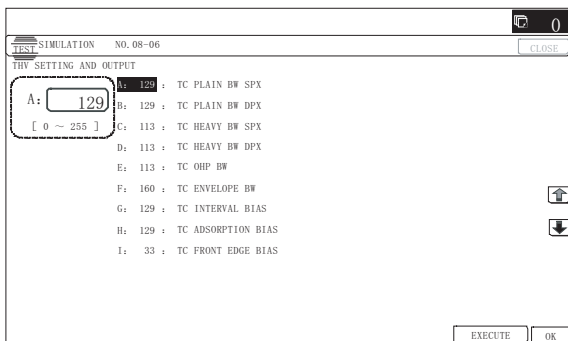


## 2-C Transfer current adjustment

This adjustment is needed in the following situations:

- \* When the high voltage PWB (MC/DV/TC) is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When the picture quality is abnormal.

1) Enter the SIM 8-6 mode.



2) Select a mode to be adjusted.

3) Enter an adjustment value (specified value) and press [OK] key.

By setting the default value (initial value), the specified current will be outputted.

When [EXECUTE] key is pressed, the transfer current is outputted for 30 sec.

Item/Display		Content			Adjustment range	Default value		High voltage PWB (MC/DV/TC) output current		
						62 CPM model	75 CPM model	62 CPM model	75 CPM model	
A	TC PLAIN BW SPX	Transfer current	Plain paper transfer mode	Front surface transfer mode	0 - 255	97	129	30μA	40μA	
B	TC PLAIN BW DPX			Back surface transfer mode	0 - 255	97	129	30μA	40μA	
C	TC HEAVY BW SPX		Heavy paper transfer mode	Front surface transfer mode	0 - 255	113	113	35μA	35μA	
D	TC HEAVY BW DPX			Back surface mode	0 - 255	113	113	35μA	35μA	
E	TC OHP BW		OHP transfer mode			0 - 255	97	113	30μA	35μA
F	TC INTERVAL BIAS		Non-transfer mode between papers			0 - 255	97	129	30μA	40μA
G	TC ADSORPTION BIAS		Toner retaining mode			0 - 255	97	129	30μA	40μA
H	TC FRONT EDGE BIAS		Paper lead edge transfer mode			0 - 255	97	113	30μA	35μA

NOTE: The transfer current cannot be checked. If the output is presumed to be abnormal even though the adjustment value is set to the default value, replace the high voltage PWB (MC/DV/TC).

If the specified output cannot be obtained by changing the adjustment value, it is presumed that some parts listed below are defective.

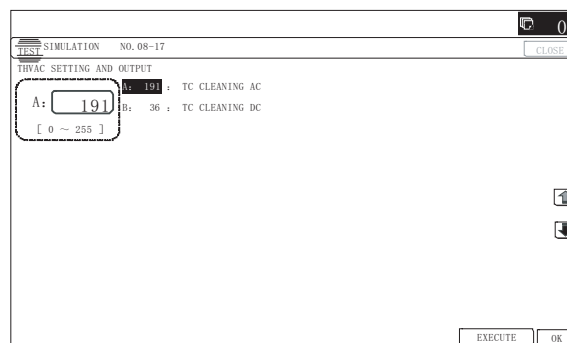
- High voltage PWB (MC/DV/TC)
- PCU PWB
- MC unit
- OPC drum unit
- High voltage circuit electrode

## 2-D Transfer belt cleaning voltage adjustment

This adjustment is needed in the following situations:

- \* When the high voltage PWB (MC/DV/TC) is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When the picture quality is abnormal.

1) Enter the SIM 8-17 mode.



- 2) Select a mode to be adjusted.
- 3) Enter an adjustment value (specified value) and press [OK] key.

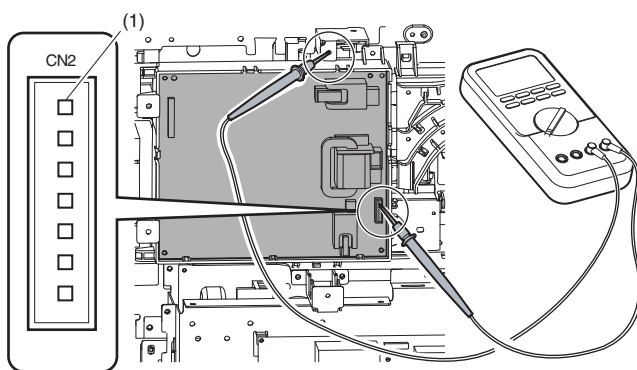
By setting the default value, the specified voltage is outputted.

When [EXECUTE] key is pressed, the transfer belt cleaning voltage is outputted for 30 sec.

Item/Display	Content	Adjustment range	Default value	High voltage PWB (MC/DV/TC) output voltage
A TC CLEANING AC	Transfer belt cleaning AC output voltage	0 - 255	191	AC 4.5KV (p-p)
B TC CLEANING DC	Transfer belt cleaning DC bias voltage	0 - 255	36	DC -100V ± 10V

NOTE: There is normally no need to check the output. To check the output, however, perform the following procedures.

- 4) Apply a digital multi-meter between the high voltage PWB connector CN2 pin (1) and the chassis GND.



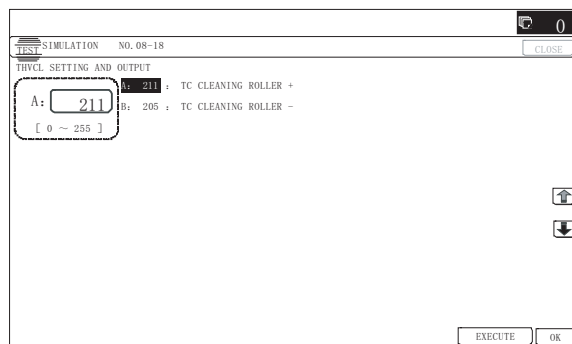
NOTE: The transfer current cannot be checked. If the output is presumed to be abnormal even though the adjustment value is set to the default value, replace the high voltage PWB (MC/DV/TC).

## 2-E Transfer cleaning roller voltage adjustment

This adjustment must be performed in the following cases:

- \* When the high voltage PWB (MC/DV/TC) is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* When the EEPROM on the PCU PWB is replaced.
- \* When the picture quality is abnormal.

- 1) Enter the SIM 8-18 mode.



- 2) Select a mode to be adjusted.
- 3) Enter an adjustment value (specified value) and press [OK] key.

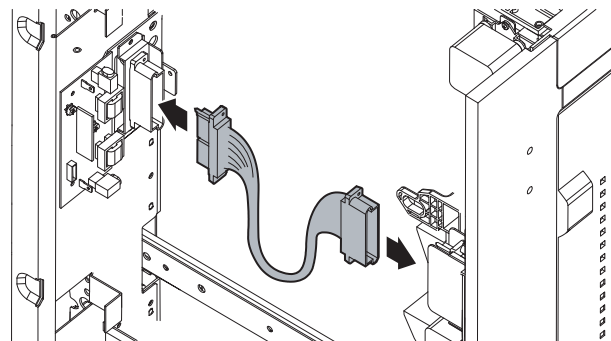
By setting the default value, the specified voltage is outputted.

When [EXECUTE] key is pressed, the transfer cleaning bias voltage is outputted for 30 sec.

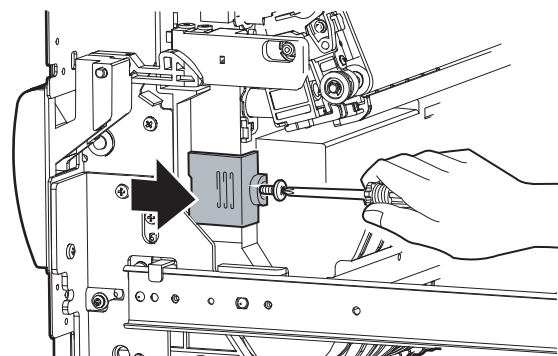
Item/Display	Content	Adjustment range	Default value	TC cleaning Checkpin voltage
A TC CLEANING ROLLER +	Transfer cleaning roller plus bias voltage (+) (Transfer belt cleaning voltage)	0 - 255	211	+2.0V ± 0.1V
B TC CLEANING ROLLER -	Transfer cleaning roller minus bias voltage (-) (Transfer cleaning roller cleaning voltage)	0 - 255	205	-2.0V ± 0.1V

NOTE: There is normally no need to check the output. To check the output, however, perform the following procedures.

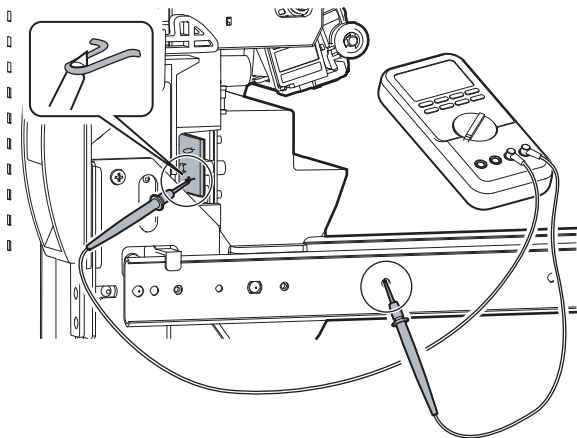
- 4) Connect the transfer section to the main body side using the transfer extension harness (DHA1-3629FCZZ).



- 5) Remove the front frame side cover in the paper transport section, and remove the front frame side cover in the transfer section.



- 6) Apply a digital multi-meter to the check pin of the high voltage PWB (TC cleaning) and the chassis GND.

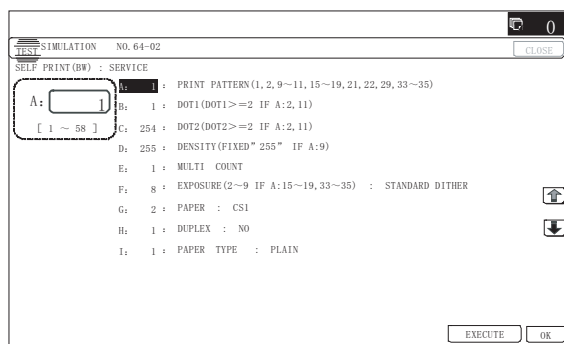


### ADJ 3 Print engine image skew adjustment (LSU parallelism adjustment)

This adjustment is needed in the following situations:

- \* When the LSU unit is replaced.
- \* When the LSU unit is removed from the main unit.

- 1) Enter the SIM 64-2 mode.



- 2) Set the set items to the values shown below.

Item	Setting value
A	1
B	1
C	254
D	255

- 3) Select the paper feed tray with A3 (11" x 17") paper in it by changing the value of G.
- 4) Press [EXECUTE] key.  
The check pattern is printed out.
- 5) Check the printed image for any skew.

Measure the right angle level by using the printed cross pattern.

There are following two methods of checking the image for any skew (right angle).

Method 1:

Measure the maximum length of the diagonal lines of the rectangle print pattern. Check the difference in the length of the diagonal lines for judgment of good or no good.

Method 2:

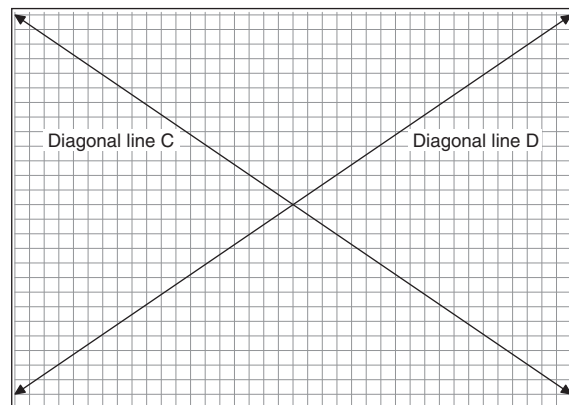
Compare the right angle of vertical side and the horizontal side of the rectangle print pattern with the right angle of A3 or 11" x 8.5" paper for judgment of good or no good.

(NOTE)

In the case of Method 2, the right angle of paper to be used may not be exact. Be sure to check the right angle of paper to be used in advance.

(Method 1)

- a) Measure the length of the diagonal lines of the rectangle print pattern.



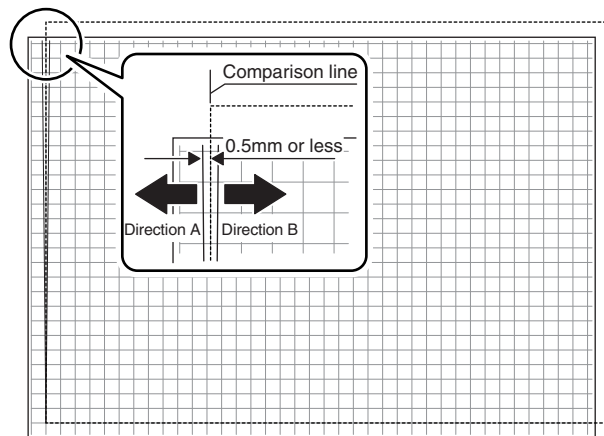
- b) Calculate the difference between the measured lengths C and D of the diagonal lines.

- c) Check to insure that the difference between C and D is in the following range.  $C - D = \pm 0.8\text{mm}$

If the difference between C and D is in the above range, there is no need to adjust.

(Method 2)

- a) Fit the side of A3 or 11" x 17" paper to the long side of the rectangle print pattern.

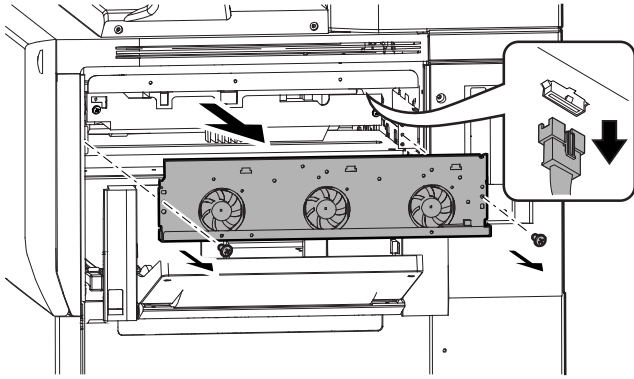


- b) Measure the shift distance between vertical side of paper and side of the rectangle print pattern.

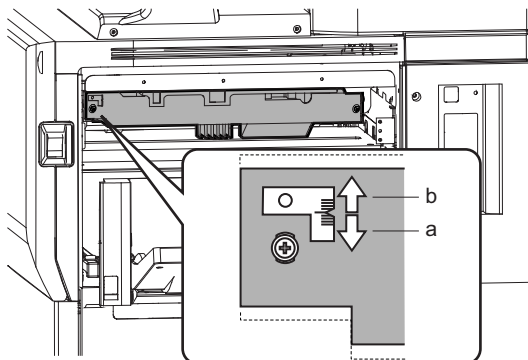
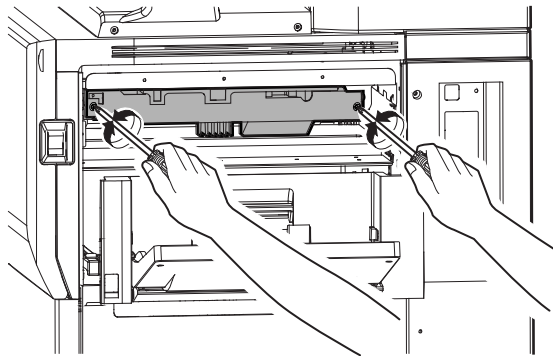
If the above distance is 0.5mm or less, there is no need to adjust.

If not, execute the following procedures.

- 6) Draw out the manual paper feed tray, and remove the front frame side, side cover, fan cover cabinet, and fan unit.
- 7) Turn OFF the power and remove the fan unit.



- 8) Loosen the LSU fixing plate screw, and change the LSU fixing angle. (Move the LSU front frame side up and down to adjust.)  
(When Method 1 is used to check the image for any skew (right angle) in procedure 5 in advance)  
When  $C > D$  (the lengths of the diagonal lines), the LSU is shifted upward.  
When  $C < D$  (the lengths of the diagonal lines), the LSU is shifted downward.  
(When Method 2 is used to check the image for any skew (right angle) in procedure 5 in advance)  
When the image is skewed in the arrow *direction a*, shift down the LSU (in direction a in the figure below). When the image is skewed in *direction b*, shift up the LSU (in direction b in the figure below).



## ADJ 4 Scan image distortion adjustment (OC mode)

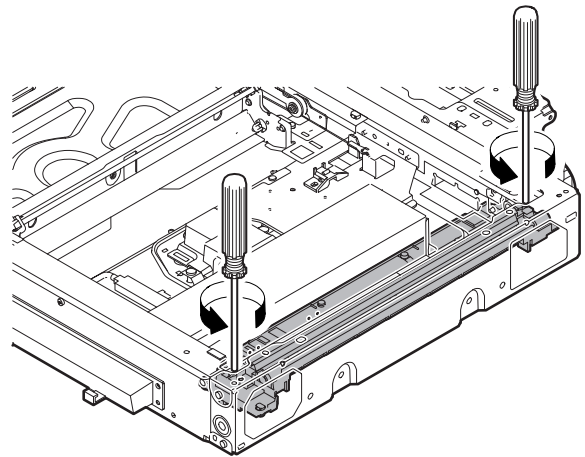
This adjustment is needed in the following situations:

- \* When the scanner (reading) section is disassembled.
- \* When the copy image is distorted.

### 4-A Scanner (reading) unit parallelism adjustment

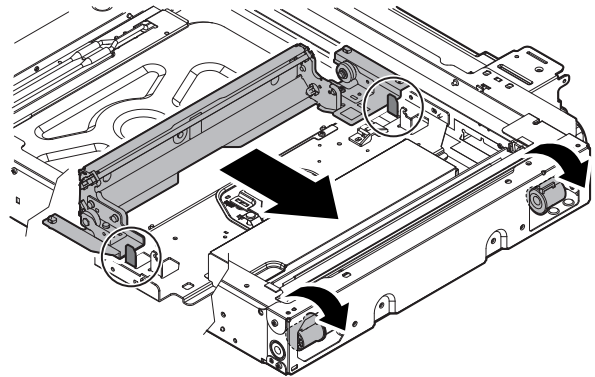
Before execution of this adjustment, remove the document table glass.

- 1) Loosen the fixing screws of the scanner unit A and the drive wire, and remove the scanner unit A from the drive wire.



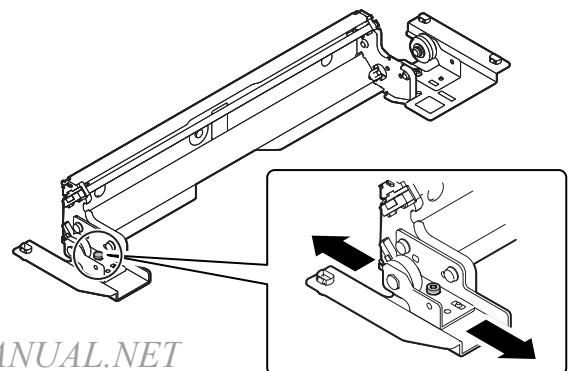
- 2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper.

When the scanner unit B is in contact with the two stoppers on the front and the rear frames simultaneously, the parallelism is proper.



If this requirement is not met, do the following steps.

- 3) Loosen the fixing screw of the pulley angle on the front frame side of the scanner unit B.

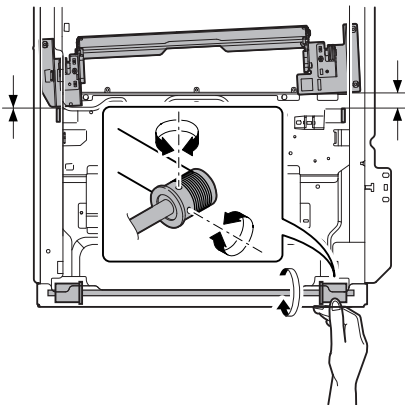


- 4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers on the front and the rear frames simultaneously.
- 5) Fix the pulley angle on the front frame side of the scanner unit B.

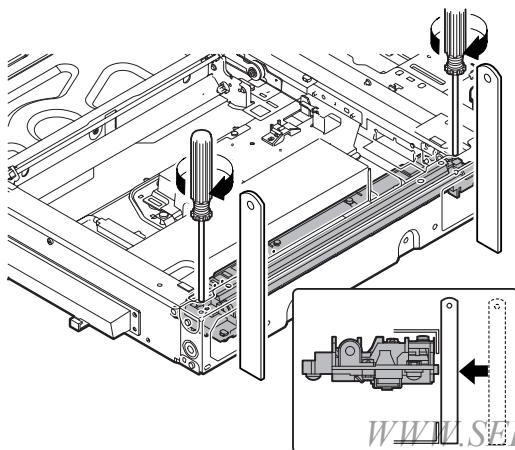
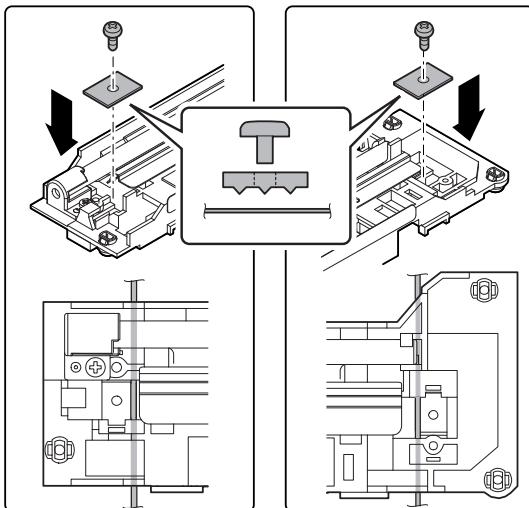
If a satisfactory result is not obtained from the above procedures, perform the following procedures.

Loosen the fixing screw of the scanner unit drive pulley which is not in contact.

Without moving the scanner unit drive shaft, turn the scanner unit drive pulley manually and adjust so that the scanner unit B is in contact with both stoppers on the front frame and the rear frame simultaneously. (Change the relative position of the scanner unit drive pulley and the drive shaft.) Fix the scanner unit drive pulley fixing screw.

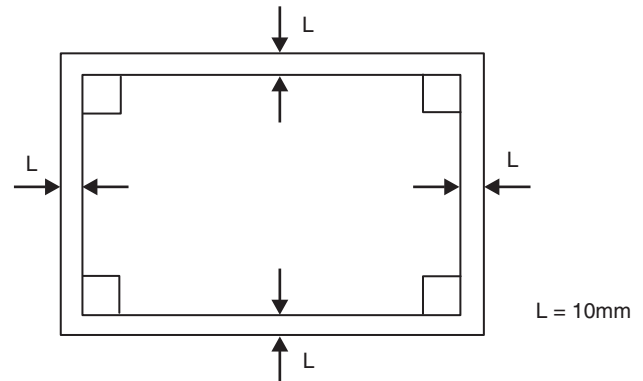


- 6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

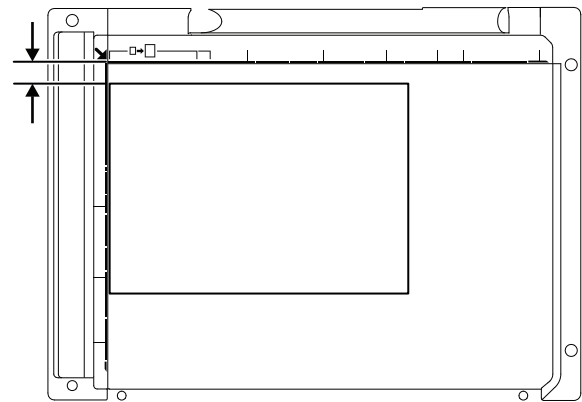


#### 4-B Scan image sub scanning direction distortion adjustment

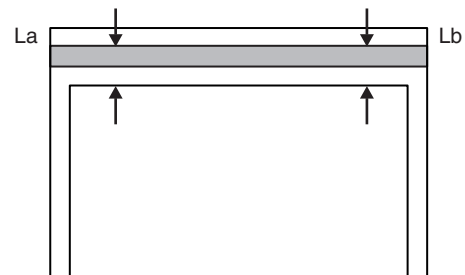
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart prepared in the procedure 1) on the document table. (Shift the test chart edge 30mm from the reference position as shown below.) With the document cover open, make a copy on A3 (11" x 17") paper.

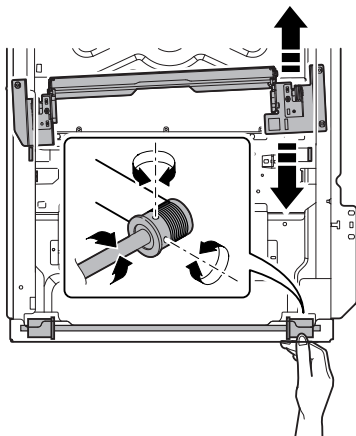


- 3) Check for distortion in the sub scanning direction. If  $L_a = L_b$ , there is no distortion.



If there is any distortion in the sub scanning direction, perform the following procedures.

- 4) Loosen either one of the fixing screws of the scanner unit drive pulley. (Either one on the front frame or on the rear frame will do.)



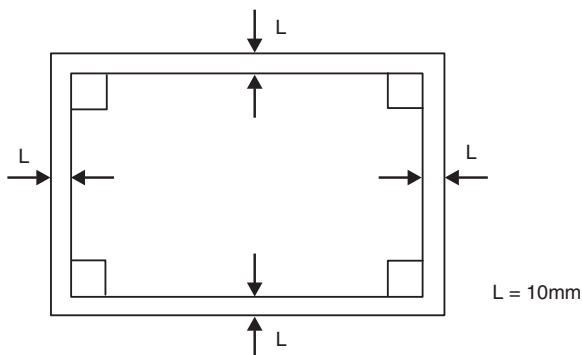
- 5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)
- 6) Tighten the scanner unit drive pulley fixing screw.

Repeat the procedures 2) - 6) until the condition of the procedure 3) is satisfied.

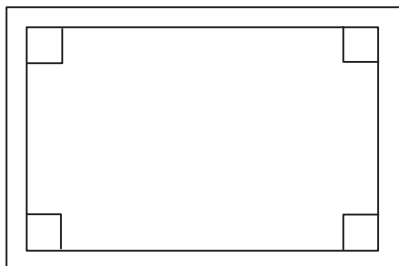
If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform "ADJ 11D Scan image distortion adjustment (whole scanner unit).

#### 4-C Scan image main scanning direction distortion adjustment

- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)

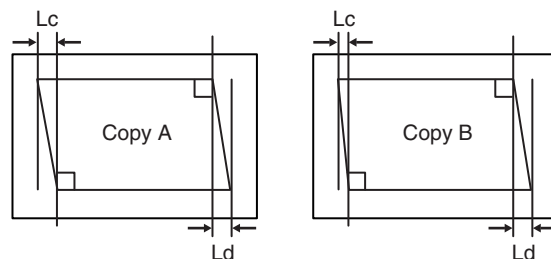


- 2) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11"x 17") paper.
- 3) Check for distortion in the main scanning direction.  
If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is any distortion in the main scanning direction, perform the following procedure.

- 4) Check the difference (distortion balance) between left-hand and right-hand side images distortions.



There is no difference between the distortion on the right and that on the left.  
 $L_c = L_d$

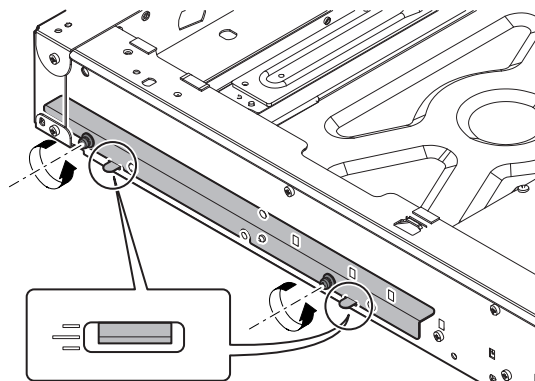
There is some difference between the distortion on the right and that on the left.  
 $L_c \neq L_d$

If  $L_c = L_d$ , the distortion on the left is equal to that on the right. (The distortions are balanced.)

If the above condition is satisfied, go to the procedure 6).

If not, perform the following procedures.

- 5) Change the height balance of the scanner rail on the front frame side.



Remove the lower cabinet of the operation panel. Loosen the scanner rail fixing screw to change the balance between the right and the left heights of the scanner rail.

Repeat the procedures 2) - 5) until the difference between the image distortions (distortion balance) is deleted.

- 6) Without changing the balance of the scanner rail on the front frame side, change the overall height.
- 7) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11" x 17") paper. Check that the distortion in the main scanning direction is within the specified range.

Repeat the procedures 6) and 7) until the distortion in the main scanning direction is in the specified range.

If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform ADJ 11D Scan image distortion adjustment (whole scanner unit).



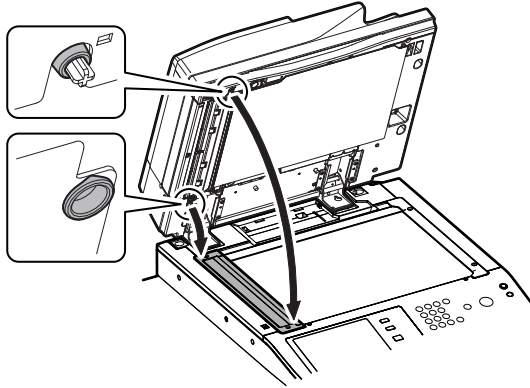
## ADJ 5 Scanner image skew adjustment (DSPF mode)

### 5-A DSPF parallelism adjustment

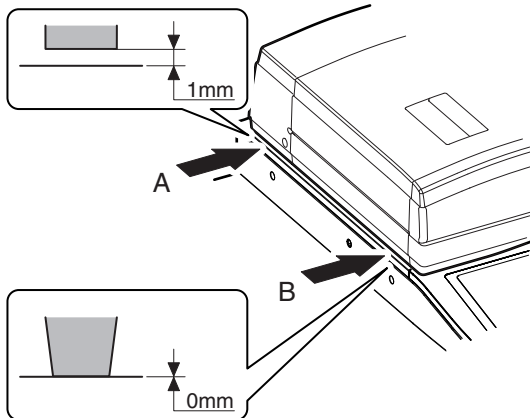
This adjustment is needed in the following situations:

- \* The DSPF section has been disassembled.
- \* The DSPF unit has been replaced.
- \* When a DSPF JAM is generated.
- \* When a skew is generated in the document feed operation.
- \* When there is a distortion (skew) in the scan image in the DSPF unit.

- 1) Close the DSPF unit and check the clearance between the projections in the front side and the rear side and the SPF glass holding resin surface.

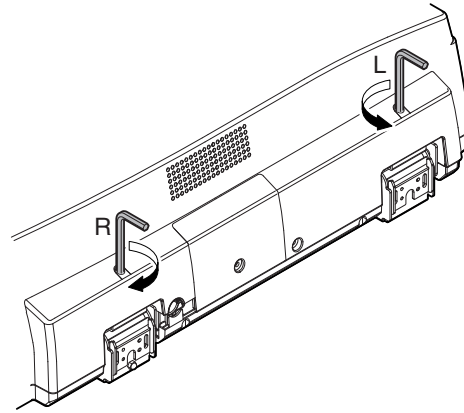


- 2) Visually check to insure that the clearance A is 1mm or less and the clearance B is 0mm (in contact).



If the above requirement is not met, do step 3.

- 3) Turn the height adjustment screw to adjust the DSPF front/rear frame horizontal level.

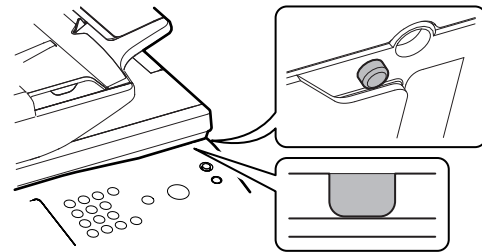


When the front frame side is higher (there is a clearance in B): Turn the height adjustment screw R of the DSPF rear frame clockwise.

When the rear frame side is higher (clearance A is more than 1mm): Turn the height adjustment screw L of the DSPF rear frame counterclockwise.

Repeat steps 2 to 3 until an acceptable result is obtained.

- 4) After adjustments of A and B, check to insure that the projection on the front right side is in contact with the glass surface of the main unit.



### 5-B DSPF skew adjustment (Front surface mode)

This adjustment is needed in the following situations:

- \* The DSPF section has been disassembled.
- \* When replacing the DSPF unit.
- \* The DSPF unit generates skewed scanned images.

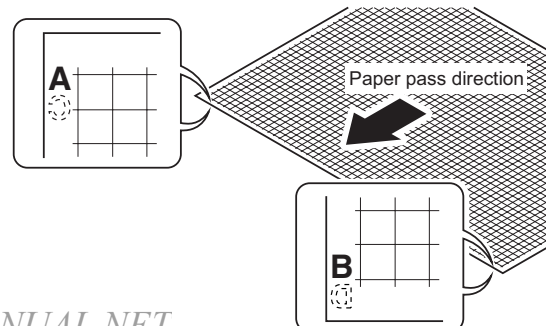
- 1) Make an adjustment chart.

Print the self print pattern (grid pattern) of SIM64-2 in the duplex print mode.

SIM64-2 set value

A=1, B=1, C=254, D=255

Make sure that the print grid pattern is almost in parallel with the paper edges, and apply position marks 'A', 'B', 'C' and 'D' to the leading and trailing edges of the paper for both front and back sides of the paper.



- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

- Check with one of the following methods.

[Check Method 1]

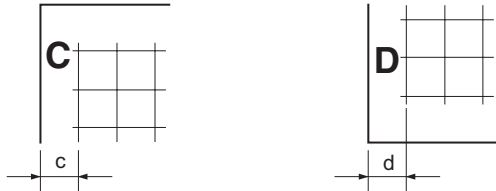
(Front side)

Make sure that the output satisfies the condition:  $|a-b| \pm 1 \text{ mm}$



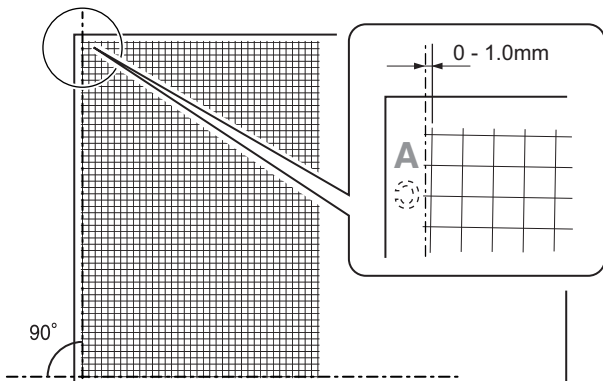
(Back side)

Make sure that the output satisfies the condition:  $|c-d| \pm 1 \text{ mm}$



[Check Method 2]

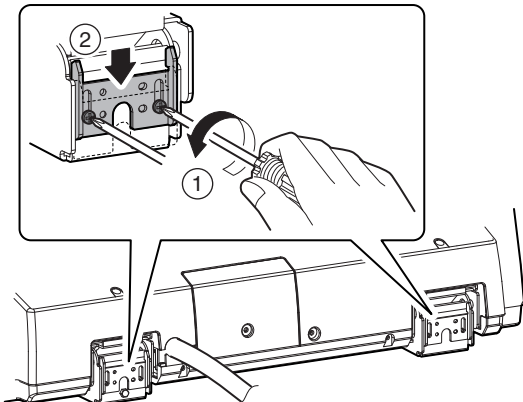
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



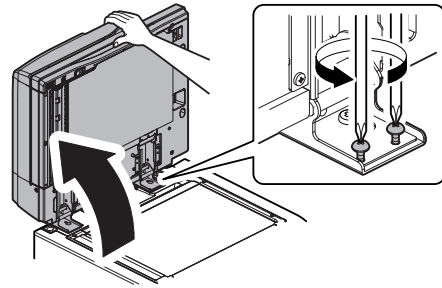
If the front surface copy image is as shown above and the back surface copy is not as shown above, go to the step 3) of "3. Skew adjustment (Back surface mode)."

If the above requirement is not met for the paper's front side, then do step 3.

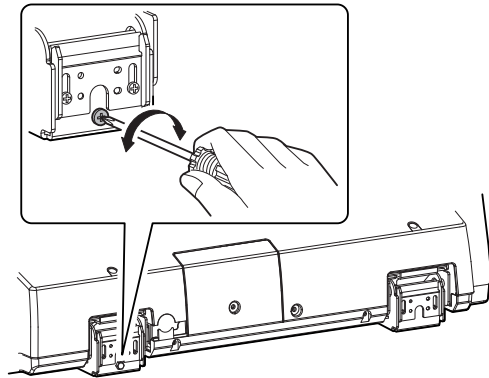
- 3) Loosen the hinge screws and lower the two attachments.



- 4) Open the DSPF and loosen the screw.



- 5) Adjust by turning the DSPF skew adjusting screw on the right side of the DSPF rear frame.



[When the main scanning direction print line is shifted to the left]

If  $a < b$ , then turn counterclockwise the DSPF skew adjusting screw.

[When the main scanning direction print line is shifted to the right]

If  $a > b$ , then turn clockwise the DSPF skew adjusting screw.

Repeat steps 2 to 5 until an acceptable result is obtained.

### 5-C DSPF skew adjustment (Back surface mode)

This adjustment is needed in the following situations:

- \* The DSPF section has been disassembled.
- \* When replacing the DSPF unit.
- \* The DSPF unit generates skewed scanned images.

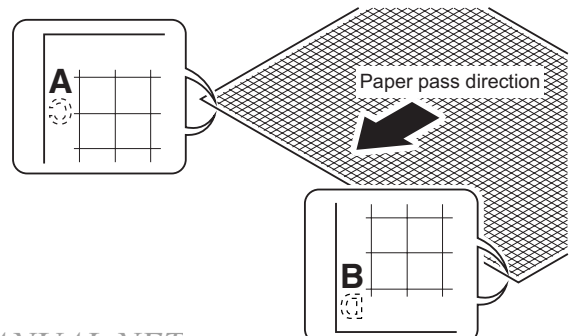
- 1) Make an adjustment chart.

Print the self print pattern (grid pattern) of SIM64-2 in the duplex print mode.

SIM64-2 set value

A=1, B=1, C=254, D=255

Make sure that the print grid pattern is almost in parallel with the paper edges, and apply position marks 'A', 'B', 'C' and 'D' to the leading and trailing edges of the paper for both front and back sides of the paper.





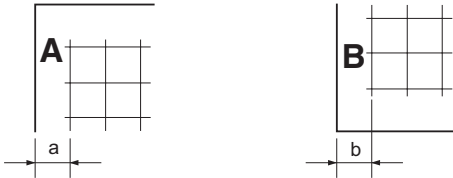
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

- Check with one of the following methods.

[Check Method 1]

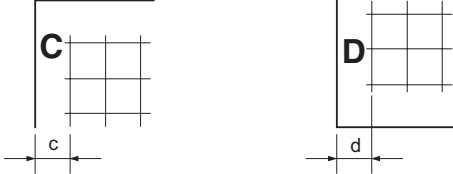
(Front side)

Make sure that the output satisfies the condition:  $|a-b| \pm 1 \text{ mm}$



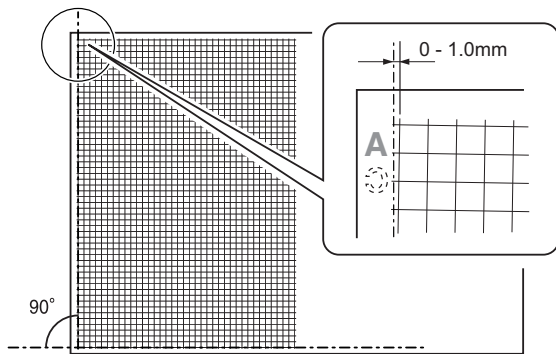
(Back side)

Make sure that the output satisfies the condition:  $|c-d| \pm 1 \text{ mm}$



[Check Method 2]

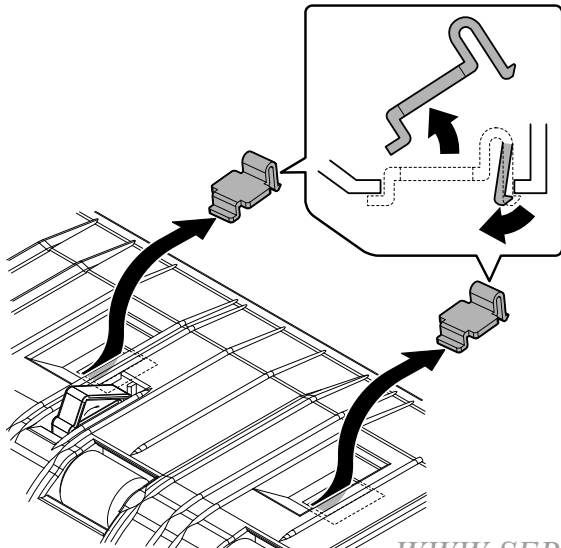
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



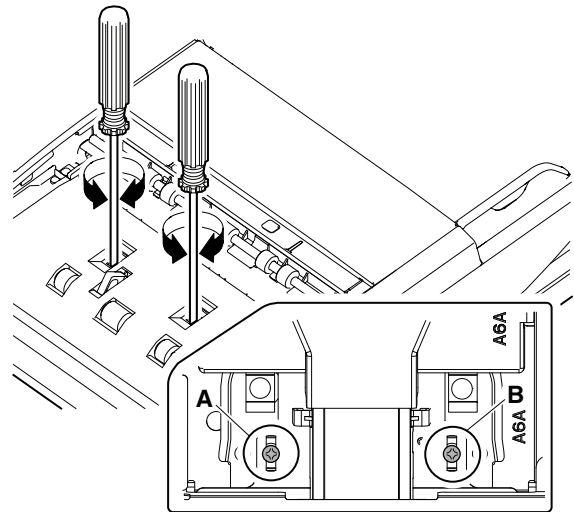
If the back surface copy image is as shown above and the front surface copy is not as shown above, go to the step 3) of "2. Skew adjustment (Front surface mode)."

If the back surface copy is not as shown above, perform the procedures of step 3) or later.

- 3) Open the upper door, and remove the adjustment cover.



- 4) Turn the DSPF skew adjustment screw on the CCD unit to adjust.



[When the main scanning direction print line is shifted to the left]

If  $c < d$ , turn the DSPF skew adjustment screw A counterclockwise, or turn the adjustment screw B clockwise.

[When the main scanning direction print line is shifted to the right]

If  $c > d$ , turn the DSPF skew adjustment screw A clockwise, or turn the adjustment screw B counterclockwise.

\* The adjustment screws A and B must be turned in proper balance. For example, if the trouble is not removed by turning the adjustment screw A 180 degrees clockwise, do not turn the adjustment screw A furthermore, but turn the adjustment screw B 180 degrees counterclockwise.

Repeat steps 2 to 5 until an acceptable result is obtained.

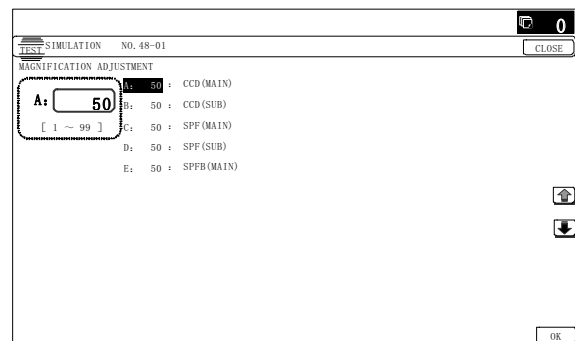
## ADJ 6 Scan image focus adjustment

### 6-A Image focus adjustment (Document table mode/DSPF front surface mode)

This adjustment is needed in the following situations:

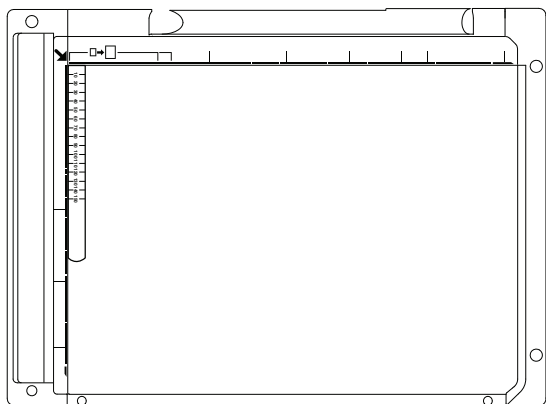
- \* The CCD unit has been removed from the machine.
- \* The CCD unit has been replaced.
- \* When the copy image focus is not properly adjusted.
- \* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
- \* U2 trouble has occurred.

- 1) Enter the SIM 48-1 mode.

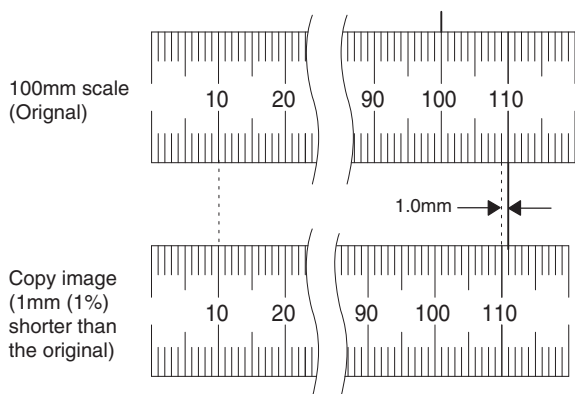


- 2) Set the adjustment item CCD (MAIN) to 50 (default value). Select the adjustment item with the scroll key, and enter the adjustment value with 10-key and press [OK] key.

- 3) Place a scale on the original table as illustrated below.

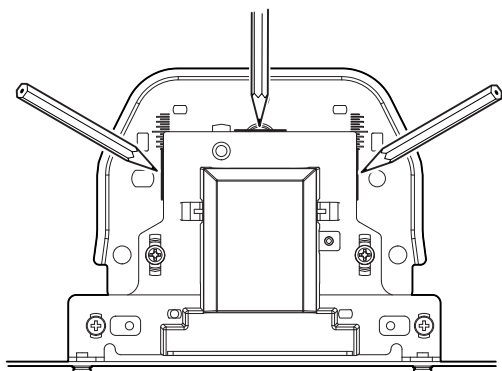


- 4) Make a normal copy on A4 paper.  
Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.
- 5) Compare the copied image of the scale and the actual scale length in terms of length.
- 6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.  
Main scanning direction copy magnification ratio correction ratio = (Original size - Copy image size) / Original size x 100%  
(Example)  
Compare the scale of 10mm with the scale of 10mm on the copy image.  
Main scanning direction copy magnification ratio correction ratio = (100 - 99) / 100 x 100 = 1



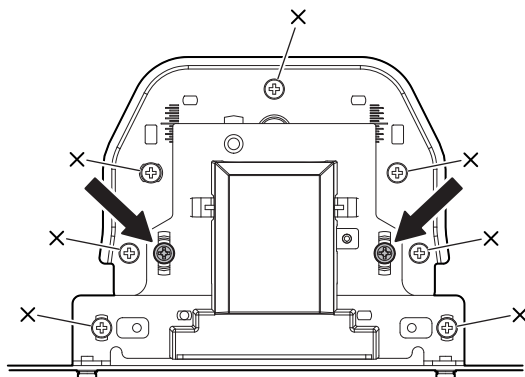
If the copy magnification ratio is not satisfactory, perform the following procedures.

- 7) Remove the document table glass.  
8) Remove the dark box cover.  
9) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



\* This procedure must be executed also when the CCD unit is replaced.

- 10) Loosen the CCD unit fixing screws.



\* **Never loosen the screws marked with X.**

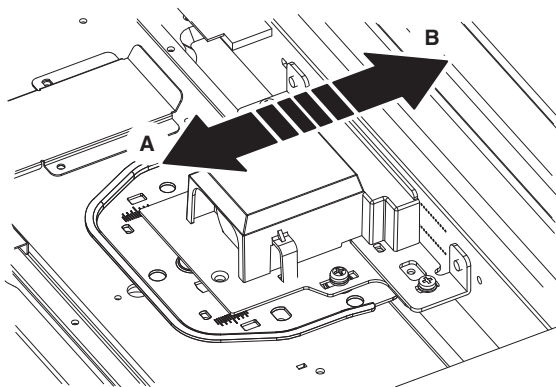
If any one of these screws is loosened, the position and the angle of the CCD unit base may be changed to cause a problem, which cannot be adjusted in the market. In that case, the whole scanner unit must be replaced.

- 11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

When the copy image is longer than the original scale, shift the CCD unit in the direction B. When the copy image is shorter than the original scale, shift the CCD unit in the direction A.  
One scale of mark-off line corresponds to 0.2%.

At that time, fix the CCD unit so that it is in parallel with the scale on the front and the rear side of the CCD unit base.

\* Fix the CCD unit so that it is in parallel with the line marked in procedure 9).



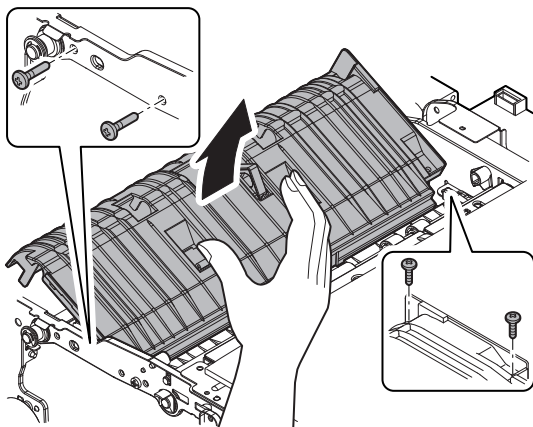
- 12) Make a copy and check the copy magnification ratio again.  
If the copy magnification ratio is not in the range of  $100 \pm 1\%$ , repeat the procedures of 9) - 11) until the condition is satisfied.

NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range ( $100 \pm 1.0\%$ ) and the specified resolution is obtained based on the optical system structure.

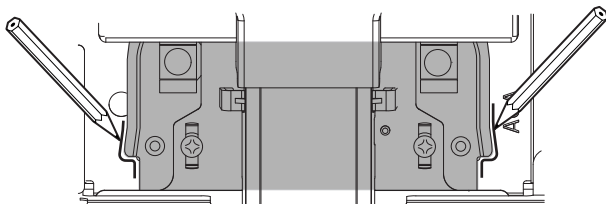
## 6-B Image focus adjustment (DSPF back surface mode)

This adjustment is required in the following cases:

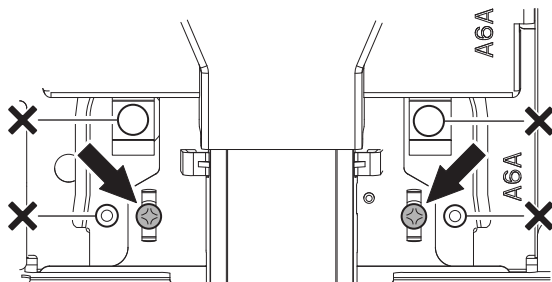
- \* When the DSPF CCD unit is replaced.
  - \* When the DSPF CCD unit is replaced.
  - \* When the focus of the back surface image is improper in the copy DSPF mode.
  - \* When the DSPF unit is removed.
  - \* When the DSPF unit is replaced.
- 1) Make a duplex copy in DSPF mode.
  - 2) Make sure that the copied image on the back side of the paper is satisfactorily focused.  
If the image is not satisfactorily focused, do the following steps.
  - 3) Open the door. Remove the screws, and remove the transport PG upper.



- 4) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



- 5) Loosen the CCD unit fixing screws (4 pcs.).



\* **Never loosen the screws marked with X.**

Loosening these screws could possibly change the CCD unit base optical axis. Once the optical axis has been changed, it cannot be corrected through on-site adjustments. Solving such a problem requires the replacement of the entire scanner unit.

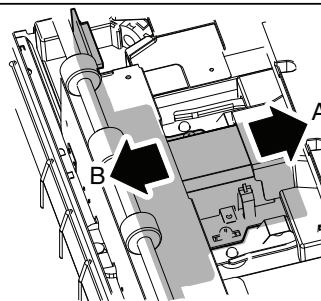
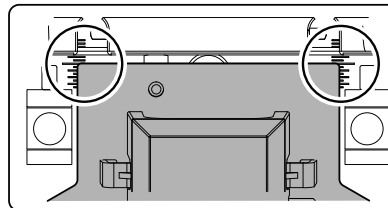
- 6) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

When the copy image is longer than the original scale, shift the CCD unit in the direction B. When the copy image is shorter than the original scale, shift the CCD unit in the direction A.

One scale of mark-off line corresponds to 0.2%.

At that time, fix the CCD unit so that it is in parallel with the scale on the front and the rear side of the CCD unit base.

- \* Fix the CCD unit so that it is in parallel with the line marked in procedure 4).



- 7) Make a copy and check the copy magnification ratio again.  
If the copy magnification ratio is not in the range of  $100 \pm 1\%$ , repeat the procedures of 4) – 6) until the condition is satisfied.

NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range ( $100 \pm 1.0\%$ ) and the specified resolution is obtained based on the optical system structure.

## ADJ 7 Image lead edge position, image loss, void area, image off-center, and image magnification ratio adjustment (automatic adjustment)

The following adjustment items can be executed automatically with SIM 50-28. It takes less time to use this adjustment than to use the following manual adjustments.

- \* ADJ18 Print engine image position, image magnification ratio, void area, off-center adjustment (manual adjustment)
- \* ADJ 19 Scan image magnification ratio adjustment (Manual adjustment)
- \* ADJ 20 Scan image off-center adjustment (Manual adjustment)
- \* ADJ 21 Copy image position, image loss, and void area adjustment (Manual adjustment)

(Menu in SIM 50-28 mode)

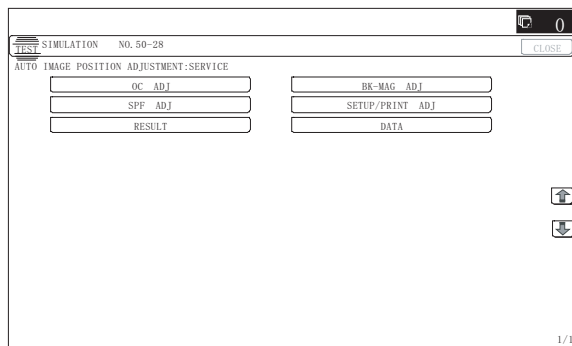
Item/Display	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)
SETUP/PRINT ADJ	Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment
RESULT DATA	Adjustment result display
	Display of data used when an adjustment is executed

## 7-A Print image main scanning direction image magnification ratio automatic adjustment (Print engine)

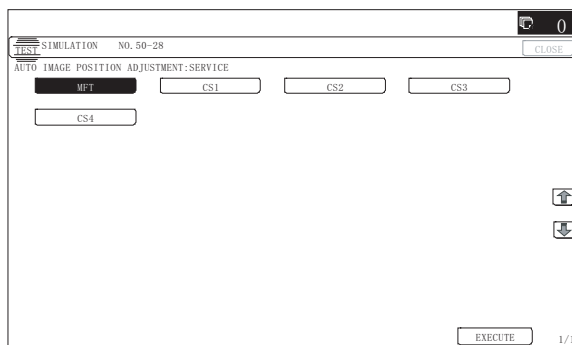
This adjustment must be performed in the following cases:

- \* When the PCU CONTROL PWB is replaced.
- \* When the EEPROM on the PCU PWB is replaced.
- \* When the LSU is replaced.
- \* U2 trouble has occurred.
- \* The DSPF section has been disassembled.
- \* When the DSPF unit is replaced.

1) Enter the SIM50-28 mode.

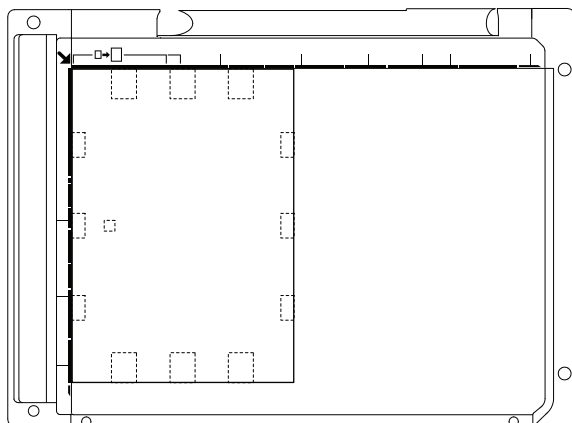


- 2) Select [BK-MAG ADJ] with the key.
- 3) Select the paper feed tray with paper in it with the key. (Any paper size will do.)

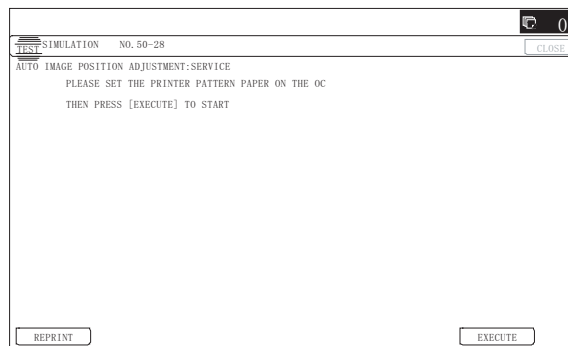


- 4) Press [EXECUTE] key.
- The color patch image (adjustment pattern) is printed out.
- 5) Set the adjustment pattern on the document table. (Any direction)

NOTE: Fit the adjustment pattern correctly with the document guide.

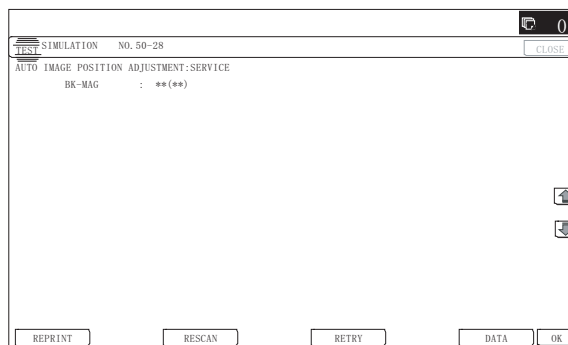


6) Press [EXECUTE] key.



7) Press [OK] key.

The adjustment result becomes valid.

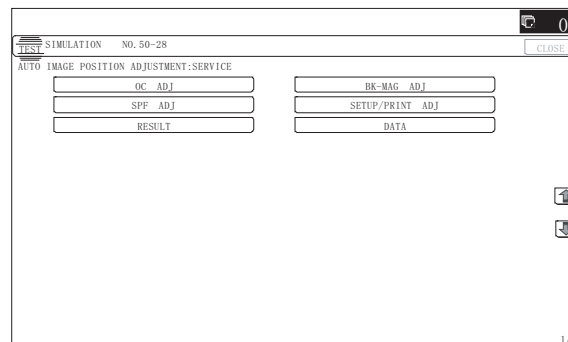


## 7-B Print image off-center automatic adjustment (Print engine) (Each paper feed tray)

This adjustment must be performed in the following cases:

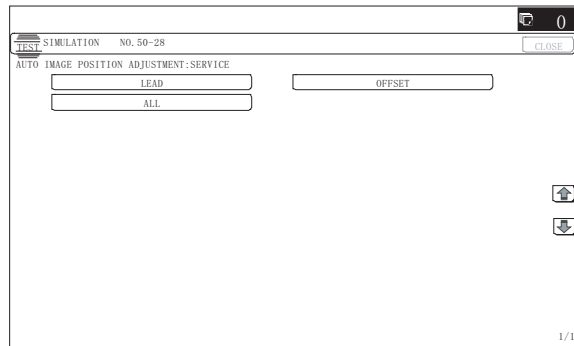
- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When the manual feed tray is replaced.
- \* When the manual feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the large capacity tray is installed or replaced.
- \* When the large capacity tray section is disassembled.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* When the EEPROM on the PCU PWB is replaced.

1) Enter the SIM50-28 mode.



2) Select [SETUP/PRINT] ADJ with the key.

- 3) Select [ALL] with the key.



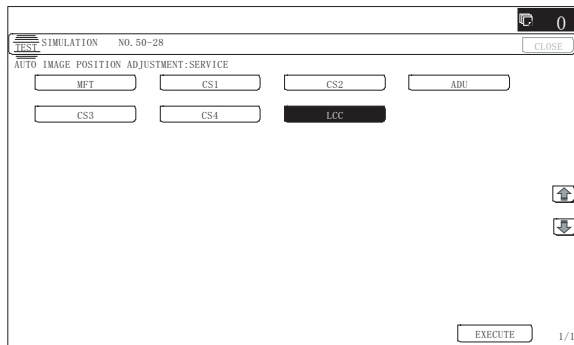
(Note)

By pressing [LEAD] or [OFFSET] key, the following items can be executed individually.

- \* [LEAD]: Print image lead edge image position adjustment
- \* [OFFSET]: Print image off-center adjustment

When [ALL] is selected, both of the above two items are executed simultaneously.

- 4) Select a paper feed tray to be adjusted.

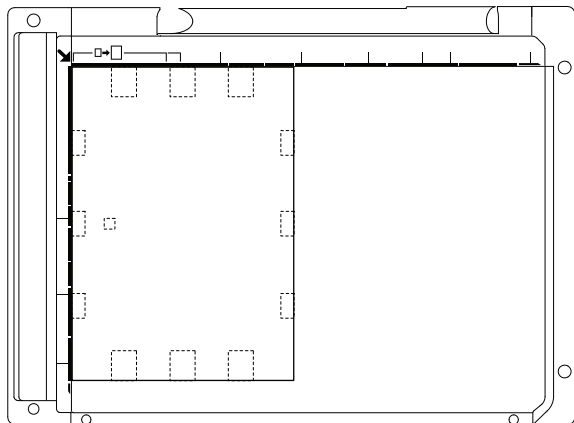


- 5) Press [EXECUTE] key.

The color patch image (adjustment pattern) is printed out.

- 6) Set the adjustment pattern on the document table. (Any direction)

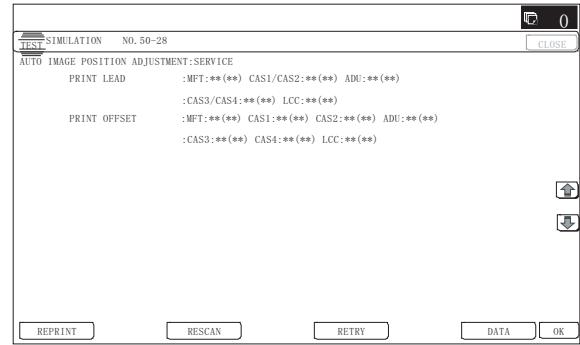
NOTE: Fit the adjustment pattern correctly with the document guide.



- 7) Press [EXECUTE] key.

- 8) Press [OK] key.

The adjustment result becomes valid.



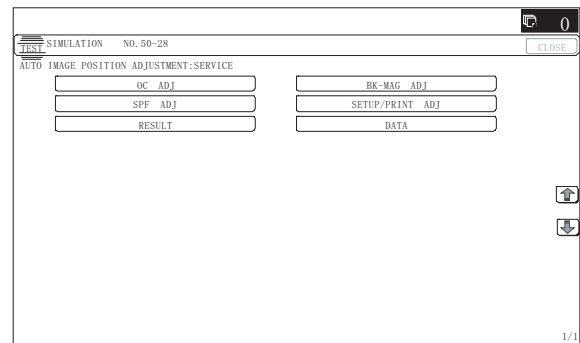
Perform procedures 4) to 7) for each paper feed tray.

## 7-C Copy lead edge image reference position adjustment, image loss, void area, scanner image off-center, and scanner sub scanning direction image magnification ratio automatic adjustment (document table mode)

This adjustment must be performed in the following cases:

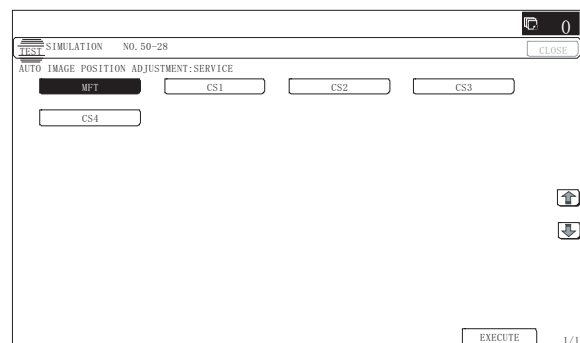
- \* When the LSU is replaced.
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* The scanner section has been disassembled.
- \* When the scanner unit is replaced.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* When the EEPROM on the PCU PWB is replaced.

- 1) Enter the SIM50-28 mode.



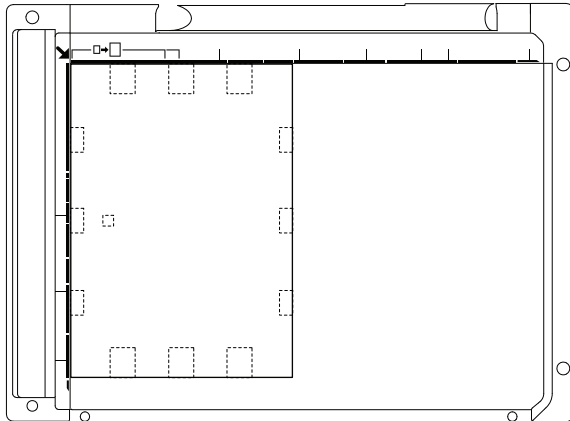
- 2) Select [OC ADJ] with the key.

- 3) Select the paper feed tray with paper in it with the key. (Any paper size will do.)

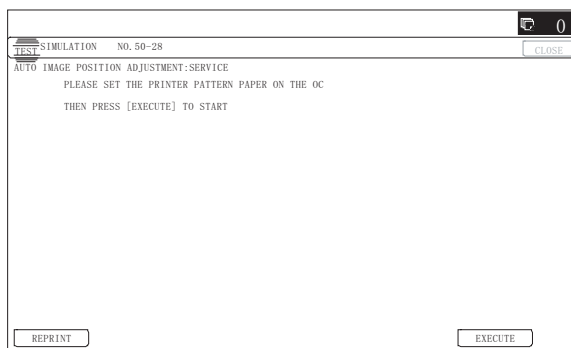


- 4) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 5) Set the adjustment pattern on the document table. (Any direction)

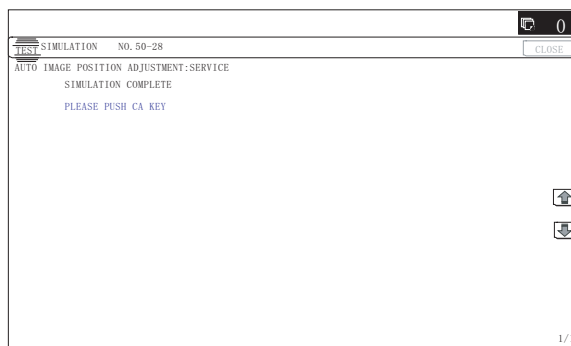
NOTE: Fit the adjustment pattern correctly with the document guide.



- 6) Press [EXECUTE] key.



- 7) Press [OK] key.  
The adjustment result becomes valid.



## 7-D Copy image off-center, image loss, void area, image lead edge position, and DSPF sub scanning direction image magnification ratio automatic adjustment (DSPF mode)

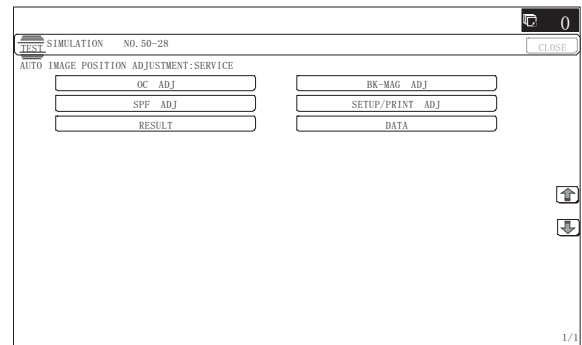
This adjustment must be performed in the following cases:

- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) section is replaced.
- \* U2 trouble has occurred.

- \* The DSPF section has been disassembled.
- \* When the DSPF unit is replaced.
- \* When the LSU is replaced.

This adjustment is used to adjust the document lead edge, the image loss, the void area, and the off-center sub operation magnification ratio of the DSPF (front and back).

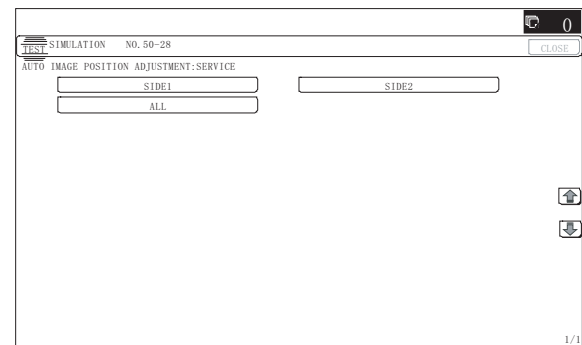
- 1) Enter the SIM50-28 mode, and select [SPF ADJ].



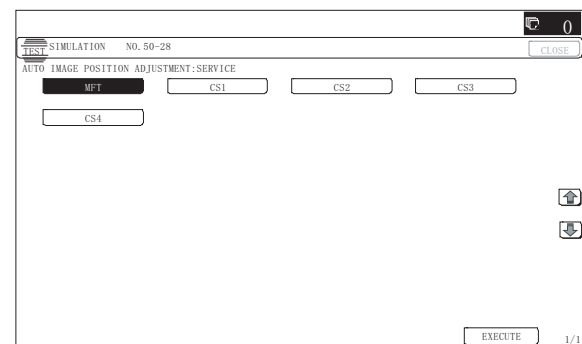
- 2) Select the adjustment items, ALL (front, back, both).

### <List of adjustment items>

Menu display item	Content
SIDE1	DSPF adjustment front surface
SIDE2	DSPF adjustment back surface
ALL	DSPF adjustment front/back surface

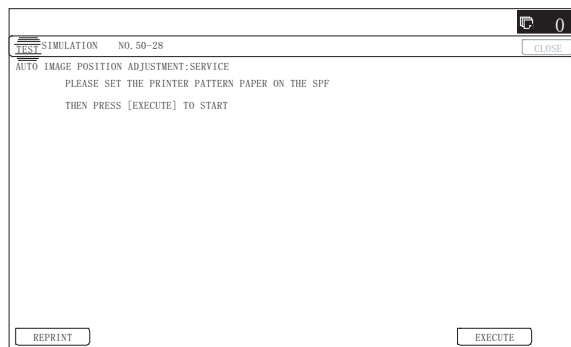


- 3) The display shows the tray select screen for printing the DSPF adjustment pattern.  
Select a tray for DSPF adjustment printing.

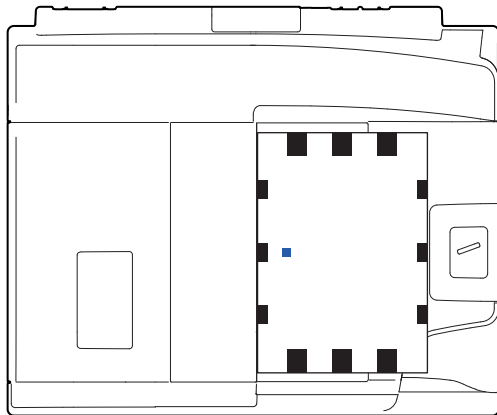


- 4) Self-print of the DSPF adjustment pattern is performed.

- 5) After completion of printing, the DSPF adjustment start screen is displayed.



- 6) Load the DSPF adjustment pattern on the DSPF.



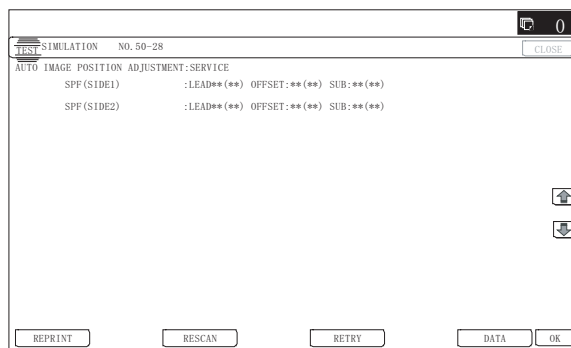
- 7) Press [EXECUTE] key.

Scanning of the DSPF adjustment pattern selected in the procedure 2) is started.

When [All] is selected in the procedure 2), load the DSPF adjustment pattern on the DSPF again and adjust the back surface in the same procedures.

When the adjustment is completed, the adjustment result is displayed.

This screen shows the current values along with the previous values in parentheses.



- \* When [REPRINT] key is pressed, the display returns to the cassette select screen to allow self-print of the DSPF adjustment pattern (front, back) again.
- \* When [RESCAN] key is pressed, the DSPF adjustment pattern (front, back) is scanned again.
- \* When [RETRY] key is pressed, the adjustment value is not saved in EEPROM and RAM and shifted to the top menu screen.
- \* When [DATA] key is pressed, the data used in execution of the adjustment are displayed.

- 8) Press [OK] key.

The adjustment result becomes valid.

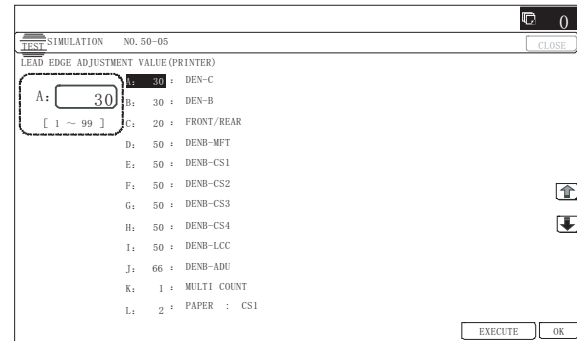
## ADJ 8 Print lead edge image position, void area adjustment (Printer mode)

This adjustment is needed in the following situations:

- \* When the registration roller section is disassembled.
- \* When the LSU is replaced or removed.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

NOTE: This adjustment is performed by the user to increase the lead edge void area to greater than the standard value (3mm) in the printer mode.

- 1) Enter the SIM 50-5 mode.



- 2) Select the set item L with the scroll key, and enter the value corresponding to the paper feed tray with A4 (11" x 8.5") paper in it.

Item/Display	Content	Setting range	Default value
A DEN-C	Used to adjust the print lead edge image position. (PRINTER MODE)	1 - 99	30
B DEN-B	Rear edge void area adjustment	1 - 99	30
C FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	30
D DENB-MFT	Manual feed rear edge void area adjustment correction value	1 - 99	50
E DENB-CS1	Tray 1 rear edge void area adjustment correction value	1 - 99	50
F DENB-CS2	Tray 2 rear edge void area adjustment correction value	1 - 99	50
G DENB-CS3	Tray 3 rear edge void area adjustment correction value	1 - 99	50
H DENB-CS4	Tray 4 rear edge void area adjustment correction value	1 - 99	50
I DENB-LCC	LCC rear edge void area adjustment correction value	1 - 99	50
J DENB-ADU	ADU rear edge void area adjustment correction value	1 - 99	50
K MULTI COUNT	Number of print	1 - 999	1
L PAPER	MFT Tray selection	1 - 6	1
	CS1		2
	CS2		3
	CS3		4
	CS4		5
	LCC		6
M DUPLEX	YES	0 - 1	0
	NO		1
			1 (NO)

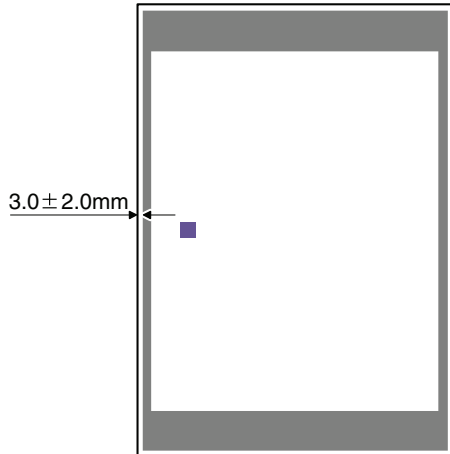
- 3) Press [EXECUTE] key.

The adjustment pattern is printed.



- 4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.

Standard adjustment value:  $3.0 \pm 2.0\text{mm}$



If the above requirement is not met, do the following steps.

- 5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.
- 6) Change the adjustment value.  
Enter the adjustment value and press the [OK] key or the [EXECUTE] key.  
When [EXECUTE] key is pressed, the adjustment pattern is printed.  
When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance is decreased.  
When the set value is changed by 1, the distance is changed by about 0.1mm.

Repeat the procedures 4) - 6) until the condition of 4) is satisfied.

NOTE: To adjust the void area, change the adjustment values of items B and C.

## ADJ 9 CCD calibration

### 9-A CCD gamma adjustment (CCD calibration) (Document table mode)

This adjustment is needed in the following situations:

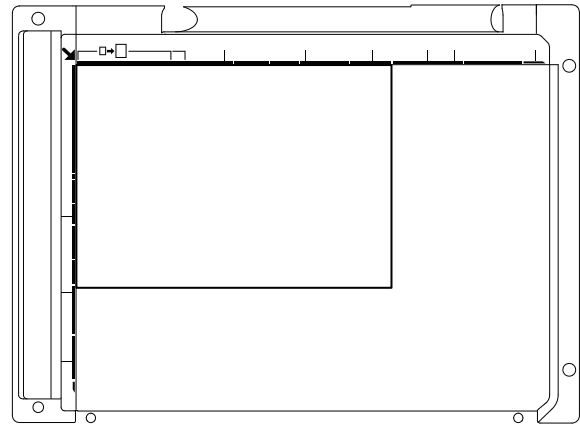
- \* When the CCD unit is replaced.
- \* When a U2 trouble is occurred.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

#### (1) Note before adjustment

- 1) Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.  
(If there is some dust and dirt, wipe and clean with alcohol.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.  
If they are dirty, clean them.  
If they are scratched or streaked, replace with new one.

#### (2) Adjustment procedures

- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left rear frame side of the document table.  
Set the chart so that the lighter density side of the patch is on the left side.

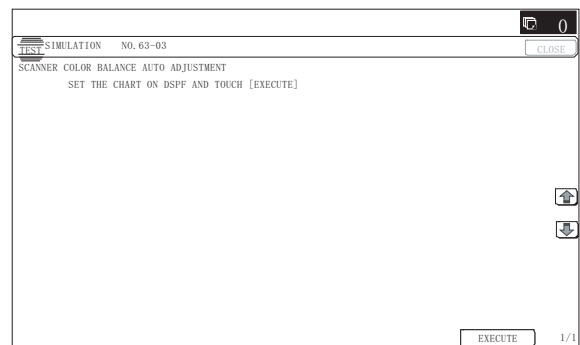


If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

NOTE: Check to insure that the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) is in close contact with the document table.

NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

- 2) Enter the SIM 63-3 mode.  
Select [OC] key, and press [EXECUTE] key.  
The automatic operation is started. During the adjustment, [EXECUTE] is highlighted. After completion of the adjustment, [EXECUTE] returns to the normal display.



NOTE: Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag (such as a dark file) and store in a dark place of low temperature and low humidity.

### 9-B CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

- \* When the DSPF CCD unit is replaced.
- \* When a U2 trouble occurs.
- \* When the DSPF control PWB is replaced.
- \* When the EEPROM on the DSPF control PWB is replaced.

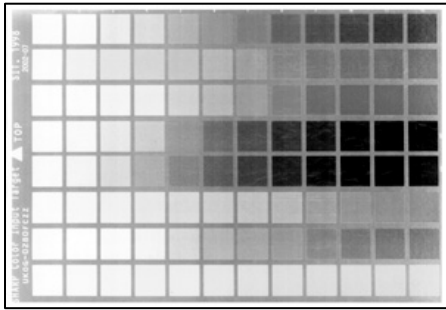
#### (1) Note before adjustment

- 1) Check to insure that there is no dirt or dust on the DSPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.  
If they are dirty, clean them.  
If they are scratched or streaked, replace with new one.



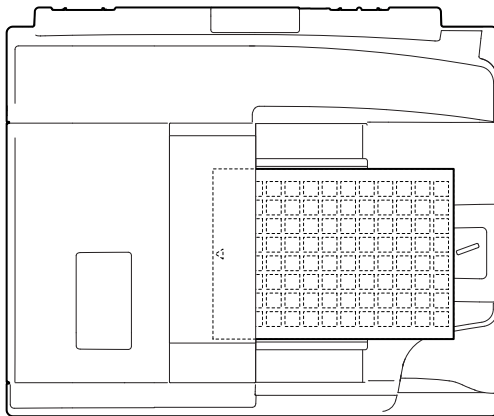
**NOTE:**

Since the SIT chart is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag such as a clear file) and store in a dark place of low temperature and low humidity.



**(2) Adjustment procedures**

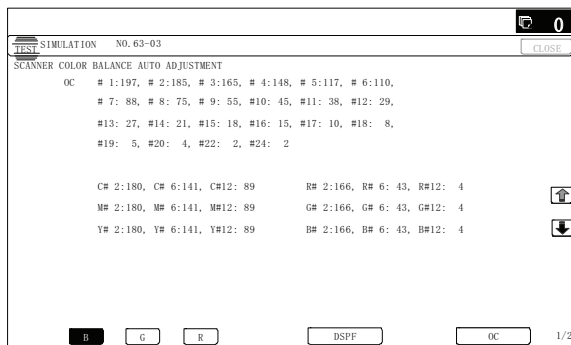
- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) face-down in the DSPF paper feed tray.



If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

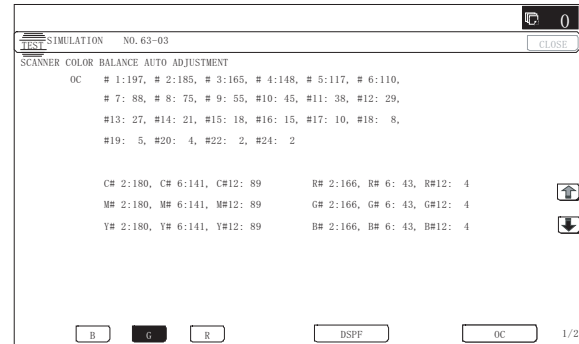
NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

- 2) Enter the SIM 63-3 mode.

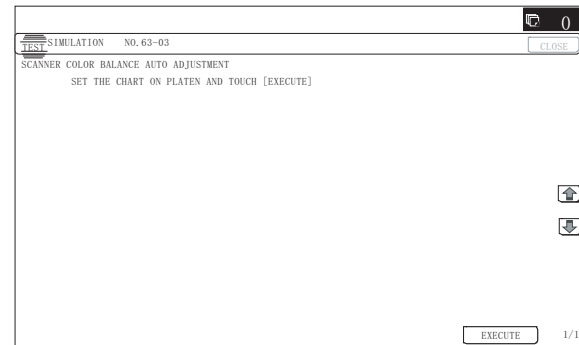


- 3) When a color key is selected, the adjustment value of the selected color is displayed.
  - \* When [B] (Blue), [G] (Green), or [R] (Red) key is selected, the selected key is highlighted and the adjustment value of the selected color is displayed.
  - \* Only one color key can be selected, and the selected key is highlighted. In the initial state, [B] is selected.
  - \* If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

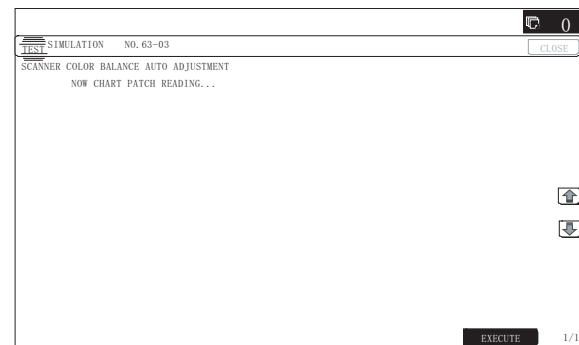
If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.



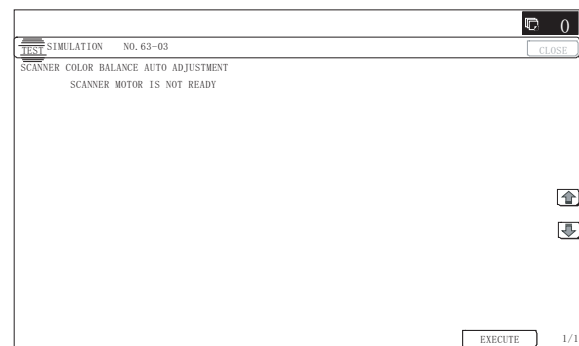
- 4) When [DSPF] key is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



- 5) Press [EXECUTE] key and it is highlighted and the color auto adjustment is executed.
  - \* When [EXECUTE] key is pressed during the automatic adjustment, the automatic adjustment is interrupted.

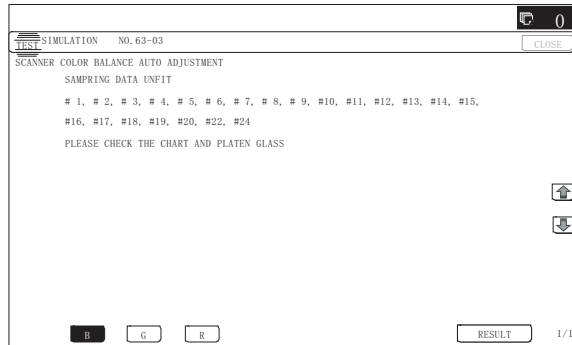


- 6) After normal completion, the result of calculation is displayed in the initial screen.
  - \* When an error occurs in execution, the following screen is displayed.



- \* When an error occurs in the automatic adjustment, all the error patch numbers are displayed.

When [RESULT] key is pressed, the display returns to the initial screen. (The previous value is displayed)



- \* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] key is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)



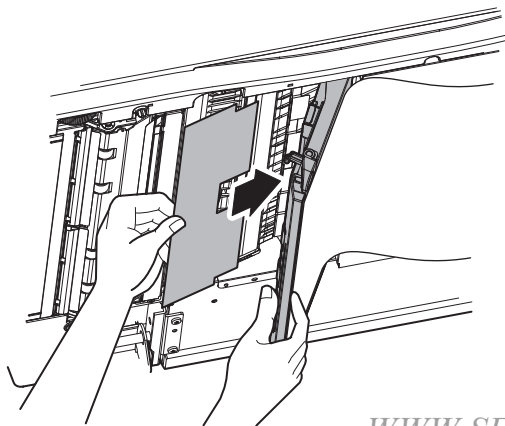
## 9-C Shading adjustment (Calibration) (DSPF mode)

This adjustment is required in the following cases:

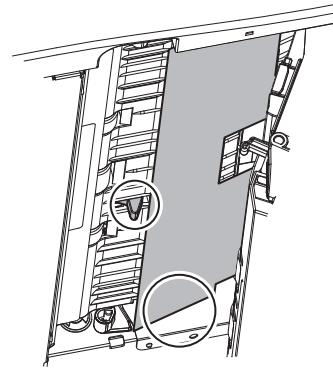
- \* When the DSPF CCD unit is replaced.
- \* When a U2 trouble occurs.
- \* When the DSPF control PWB is replaced.
- \* When the EEPROM on the DSPF control PWB is replaced.

### (1) Note before adjustment

- 1) Check to insure that there is no dirt or dust on the DSPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
- 2) Open the DSPF document scanning section, insert the shading adjustment sheet (UKOG-0333FCZZ), and close the DSPF document scanning section.



- \* When inserting the shading adjustment sheet, insert it along the rear edge frame so that the rear edge of the shading adjustment sheet comes to the root of the actuator.



- 3) Enter the SIM 63-2 mode.
- 4) Select [DSPF SHADING].



- 5) Press [EXECUTE] key. (The shading adjustment process is started.)
  - \* The shading adjustment sheet is transported by about 25mm, and shading data are obtained during transport.
  - \* During shading adjustment, "SHADING EXECUTING..." is displayed.
  - \* When [EXECUTE] key is pressed during shading adjustment, the operation is interrupted.
  - \* When shading adjustment is completed normally, [EXECUTE] key returns to the normal display and "COMPLETE" is displayed.

### <Descriptions of keys>

Display	Content
OC SHADING	OC analog correction level correction, and shading correction data making (Document table mode)
DSPF SHADING	Analog correction level correction, and shading correction data making (DSPF mode)

### <Result display>

Display	Content
COMPLETE	Normal completion
ERROR	Abnormal completion
INCOMPLETE	Incomplete, interruption

## A. ADJ 10/11/12 Automatic adjustment of copy/printer density and gradation

### (1) Precautions for execution of the copy/printer density and gradation adjustment

- \* Requisite conditions before execution of the copy/printer density and gradation adjustment  
The following items related to the picture quality must have been properly adjusted.

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting the developing unit	1A	Adjust the developing doctor gap	
		1B	Adjust the developing roller main pole position	
		1C	Toner density control reference value setting	25-2
ADJ 2	Adjusting high voltage values	2A	Adjust the main charger grid voltage	8-2
		2B	Adjust the developing bias voltage	8-1
		2C	Transfer current adjustment	8-6
		2D	Transfer belt cleaning voltage adjustment	8-17
		2E	Transfer cleaning roller voltage adjustment	8-18
ADJ 9	CCD calibration	9A	CCD gamma adjustment (CCD calibration) (Document table mode)	63-3/63-5
		9B	CCD gamma adjustment (CCD calibration) (DSPF mode)	63-3
		9C	Shading adjustment (Calibration) (DSPF mode)	63-2

### (2) Copy/printer density and gradation check

(Note)

Before checking the copy/printer density and gradation, be sure to execute the following jobs.

- \* Execute the high density image correction (Process correction) forcibly. (SIM 44-6)
- \* Execute the half-tone image correction forcibly. (SIM 44-26)

#### (Copy density and gradation check procedures)

(Method 1)

Make a copy of the gray test chart (UKOG-0162FCZZ), and check that it is proper.

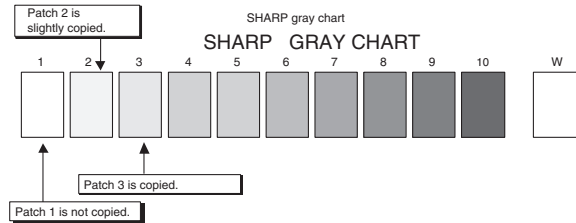
Note for checking the copy mode density and gradation.

To check the density and gradation, set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual) and make a copy to check.

In addition, all the picture quality adjustment settings in the user adjustment mode must be set to the default (center).

[Check with the gray test chart (UKOG-0162FCZZ)]

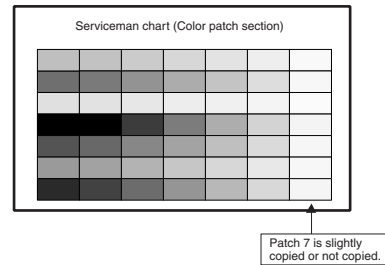
In the copy density check with the gray test chart, check to insure the following conditions.



(Method 2)

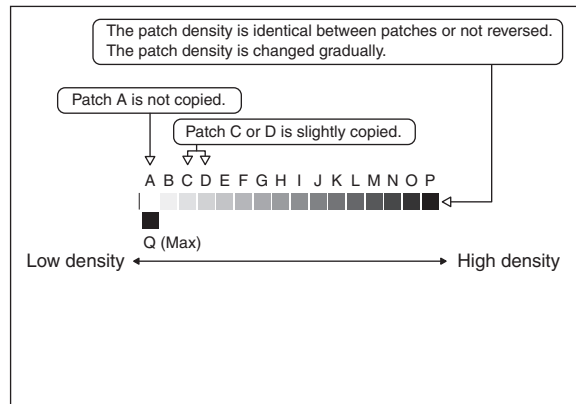
[Check with the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11 or UKOG-0326FCZZ/UKOG-0326FC11)]

Check to confirm that it is in the conditions shown below.



(Method 3)

Execute SIM 46-16 to print the adjustment check pattern.



The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

Patch C or D is slightly copied.

Patch A must not be copied.

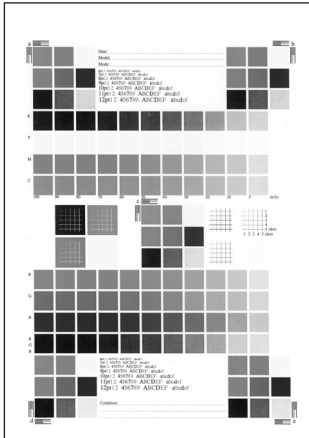
When, however, the color balance is adjusted on the request from the user, there is no need to set to the standard color balance stated above.

### (Printer density and gradation check procedures)

#### (Method 1)

Execute SIM 64-5 to print the print test pattern.

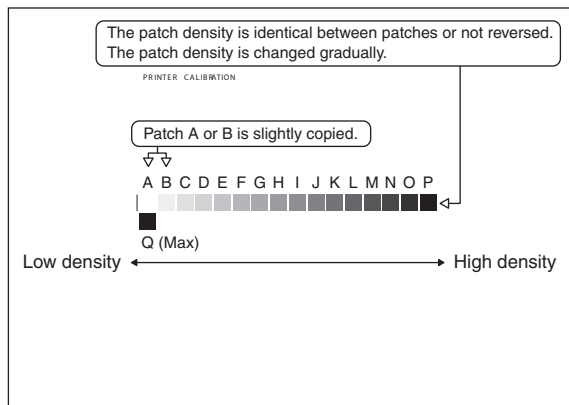
Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.



The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

#### (Method 2)

Execute SIM 67-25 to print the adjustment check pattern.



The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

Patch A or B is slightly copied.

When, however, the color balance is adjusted on the request from the user, there is no need to set to the standard color balance stated above.

## ADJ 10 Automatic adjustment of copy/printer density and gradation

This adjustment is needed in the following situations:

- \* When a consumable part (developer, OPC drum, transfer belt) is replaced.
- \* The CCD unit has been replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.
- \* When installing (as needed)
- \* When a repair, an inspection, or a maintenance is performed.

### a. General

There are following two modes in the auto copy/printer density and gradation adjustment.

- 1) Auto copy density and gradation adjustment, and auto printer density and gradation adjustment by the serviceman (SIM 46-74 is used.)

SIM 46-74 allows simultaneous execution of the automatic copy density and gradation adjustment, and the automatic printer density and gradation adjustment.

- 2) Auto copy/printer density and gradation adjustment by the user (The user program mode is used.)

The auto copy/printer density and gradation adjustment by the user is provided to reduce the number of service calls.

If the balance of the copy density or gradation is lost for some reason, the user can use this adjustment to recover the image quality.

When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

On the other hand, the automatic copy density and gradation adjustment by the serviceman can be used to obtain normal picture quality even though the machine environment is greatly changed.

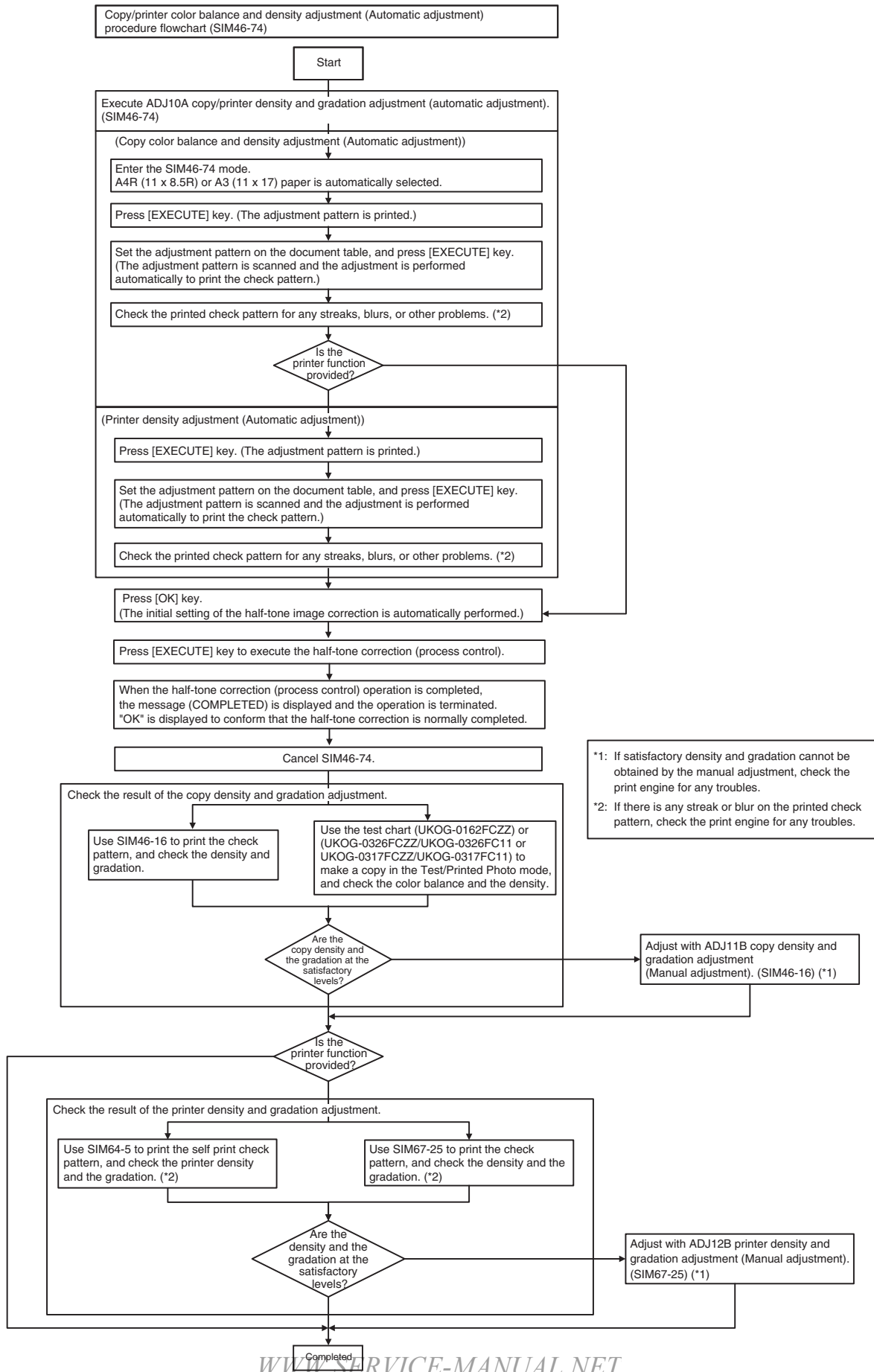
To perform the adjustment, the above difference must be fully understood.

### b. Note for execution of the auto copy density and gradation adjustment

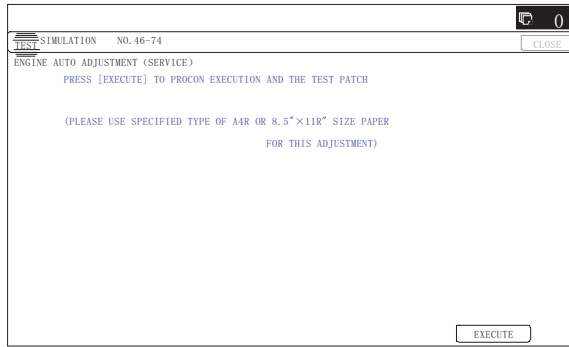
- 1) The print engine section must have been adjusted properly.
- 2) The CCD gamma adjustment must have been adjusted properly.
- 3) Set the adjustment pattern sheet on the document table, and place 5 sheet of white paper on the adjustment pattern sheet.

### c. Adjustment procedure

(Auto copy density and gradation adjustment, and auto printer density and gradation adjustment by the serviceman)

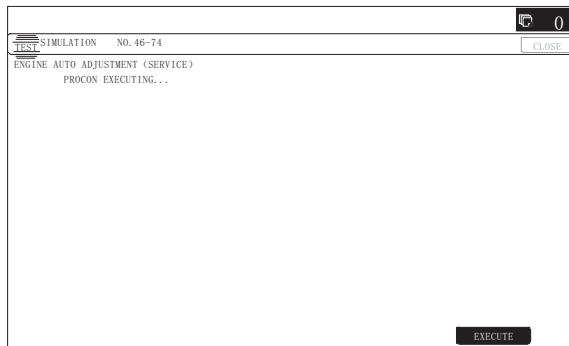


- 1) Enter the SIM46-74 mode.



- 2) Press [EXECUTE] key.

The high density process control is performed, and the copy patch image (adjustment pattern) is printed out. (A4R (11" x 8.5"R) or A3 (11" x 17") paper is automatically selected.)

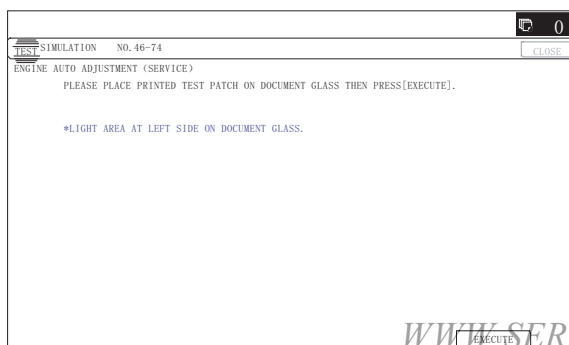


- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.

Set the printed patch image (adjustment pattern) on the document table so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed patch image (adjustment pattern).

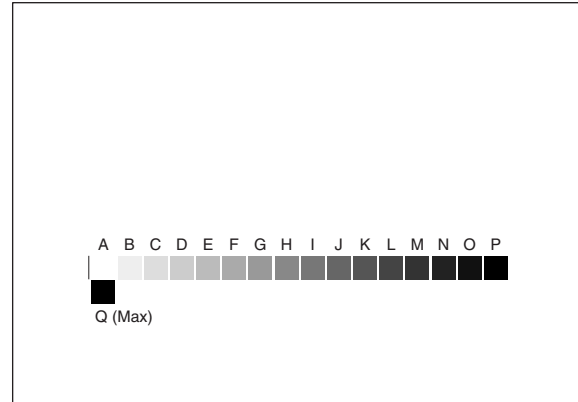


- 4) Press [EXECUTE] key.



The copy density and gradation adjustment is automatically executed and prints the check patch image.

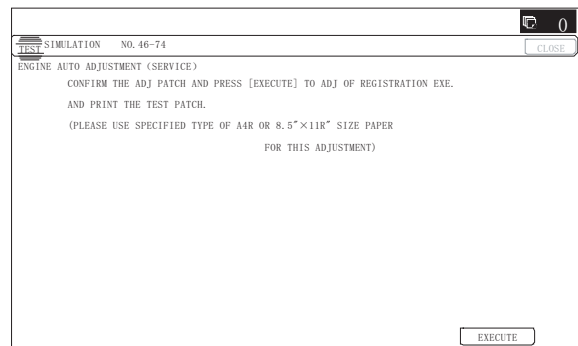
If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.



If the printer function is not provided, skip procedure 5) to 7).

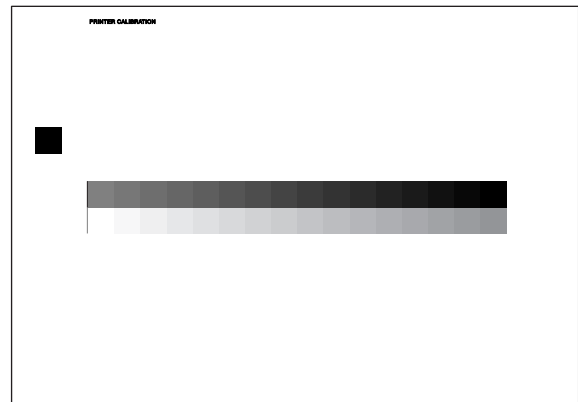
- 5) Press [EXECUTE] key.

The printer patch image (adjustment pattern) is printed out. (A4R (11" x 8.5"R) or A3 (11" x 17") paper is automatically selected.)

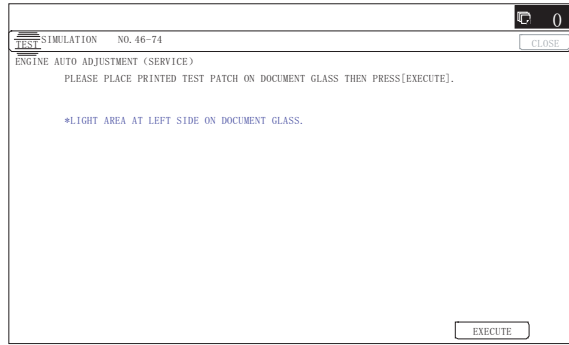


- 6) Set the patch image (adjustment pattern) paper printed in procedure 5) on the document table.

Set the printed patch image (adjustment pattern) on the document table so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed patch image (adjustment pattern).

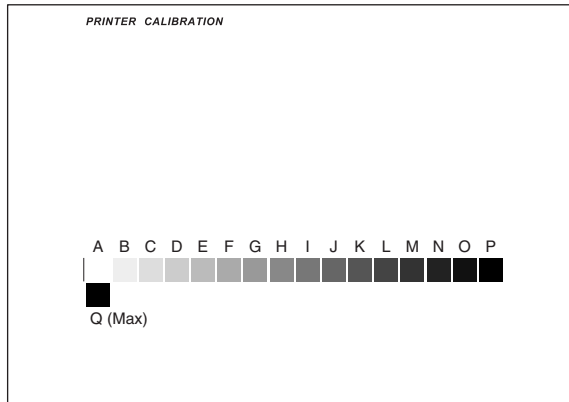


- 7) Press [EXECUTE] key.

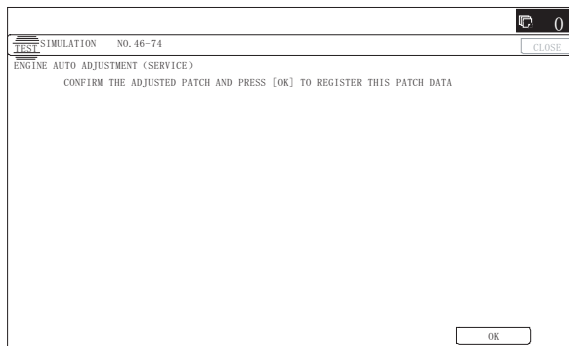


The adjustment (step 1) is automatically performed and the check patch image is printed out.

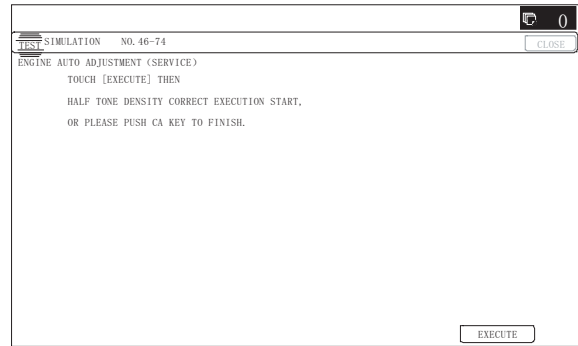
If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.



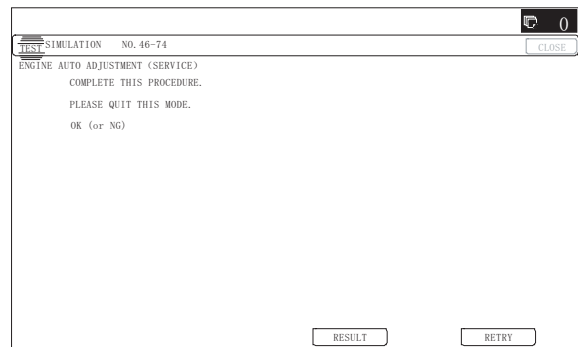
- 8) The initial setting menu of the half tone image correction is displayed. Press [OK] key.  
The initial setting of the half tone image correction is performed.



- 9) When the initial setting of the half-tone image correction is completed, [EXECUTE] key is displayed. Press the key, and the half-tone correction (process control) is executed.



- 10) When "COMPLETE THIS PROCEDURE" is displayed, the adjustment operation is completed. Cancel SIM46-74.



NOTE: If the printer function is provided, the adjustment result becomes valid only when the both adjustments in the copy mode and in the printer mode are completed.

If, for example, only the copy density and gradation adjustment (auto adjustment) is performed and the simulation is canceled, the adjustment result is invalid.

- 11) Check the copy/printer density and gradation.

The copy density and gradation check must be performed in the Text/Printed Photo mode.

If the printer function is not provided, check only the copy density and gradation. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

If a satisfactory result on the copy/print density and gradation is not obtained with the automatic adjustment, execute ADJ11B (SIM46-16) (manual adjustment) and ADJ12B (SIM67-25).

## ADJ 11 Copy density and gradation adjustment

This adjustment is needed in the following situations:

- \* When a consumable part (developer, OPC drum, transfer belt) is replaced.
- \* The CCD unit has been replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.
- \* When installing (as needed)
- \* When a repair, an inspection, or a maintenance is performed.

### 11-A Automatic adjustment of copy density and gradation

#### a. General

The copy density and gradation adjustment (auto adjustment) is used to adjust the copy density and gradation automatically by SIM46-24 or the user program.

(When this adjustment is executed, the density and gradation adjustments of all the copy modes are revised.)

There are following two modes in the automatic copy density and gradation adjustment.

- 1) Automatic copy density and gradation adjustment by the serviceman (SIM 46-24 is used.)
- 2) Automatic copy density and gradation adjustment by the user (The user program mode is used.)

The auto adjustment by the user is provided to reduce the number of service calls.

It is used by the user to reset the copy density and gradation to the normal levels when any trouble occurs in the copy density and gradation.

When, however, the machine has a fatal problem or when the machine environment is greatly changed, this function does not work effectively.

On the other hand, the auto adjustment by the serviceman functions to recover the normal copy density and gradation though the machine environment is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal copy density and gradation.

To perform the adjustment, the above difference must be fully understood.

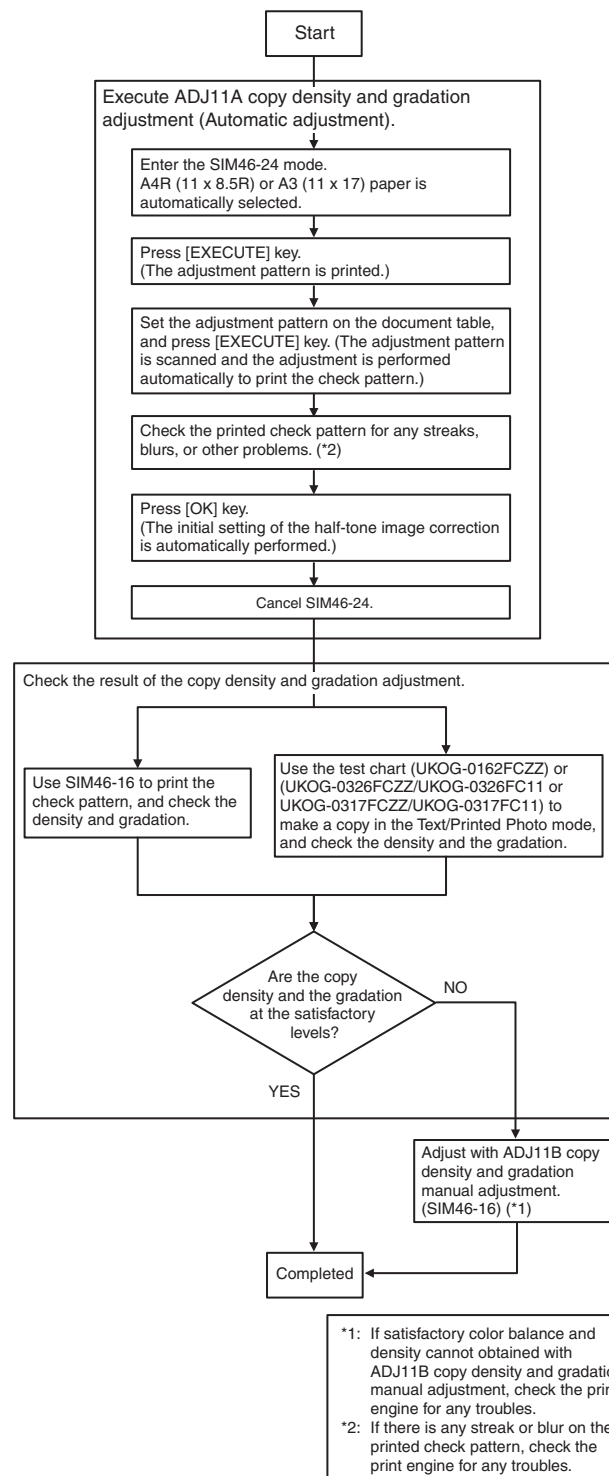
#### b. Note for execution of the copy density and gradation adjustment (Auto adjustment)

- 1) The print engine section must have been adjusted properly.
- 2) The CCD gamma adjustment must have been adjusted properly.
- 3) When setting the adjustment pattern on the document table in the copy density and gradation automatic adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible.

#### c. Adjustment procedure

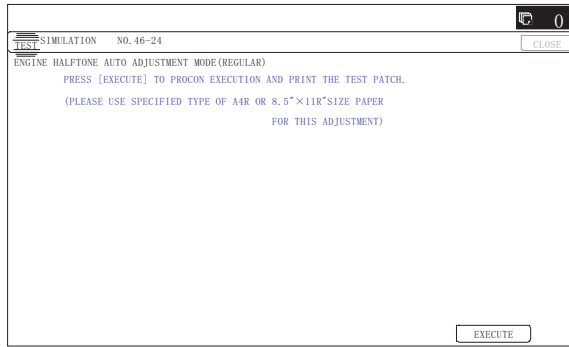
(Auto copy density and gradation adjustment by the serviceman)

Copy density and gradation adjustment (Automatic adjustment) procedures flowchart (SIM46-24)

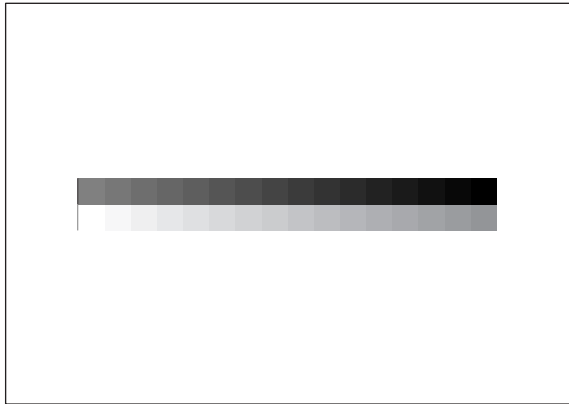




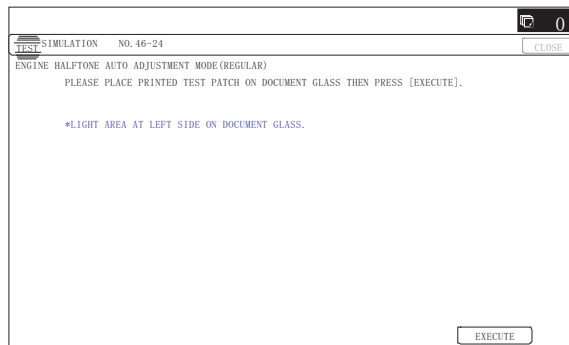
- 1) Enter the SIM 46-24 mode.



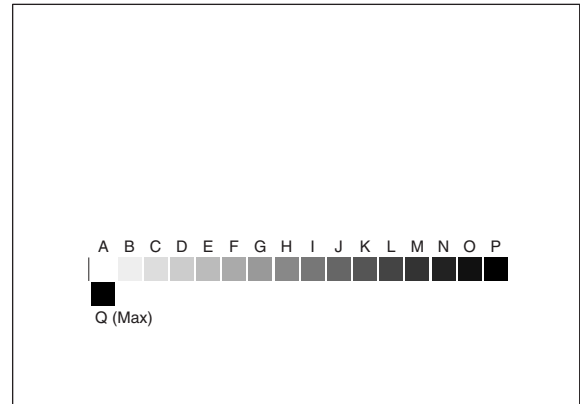
- 2) Press [EXECUTE] key. (A4R (11" x 8.5"R) or A3 (11" x 17") paper is automatically selected.)  
The patch image (adjustment pattern) is printed out.
- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.  
Set the printed patch image (adjustment pattern) on the document table so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed patch image (adjustment pattern).



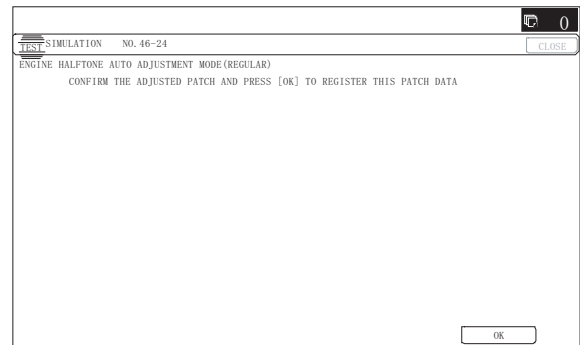
- 4) Press [EXECUTE] key.



The copy density and gradation adjustment is automatically executed to print the check patch image. Wait until the operation panel shown in procedure 5) is displayed.



- If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.
- 5) Press [OK] key on the operation panel.  
According to data of this adjustment, the initial setting of the half tone image correction is performed.

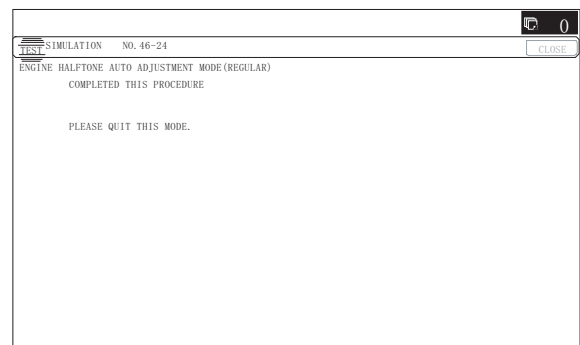


#### Remark:

After pressing [OK] key on the operation panel, the initial setting of the half tone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed.

After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.



- 6) Cancel SIM 46-24.
- 7) Check the copy density and gradation.  
The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)  
If a satisfactory result is not obtained by the automatic copy density and gradation adjustment, use ADJ11B manual adjustment (SIM46-16) to adjust.

## 11-B Manual copy density and gradation adjustment

### a. General

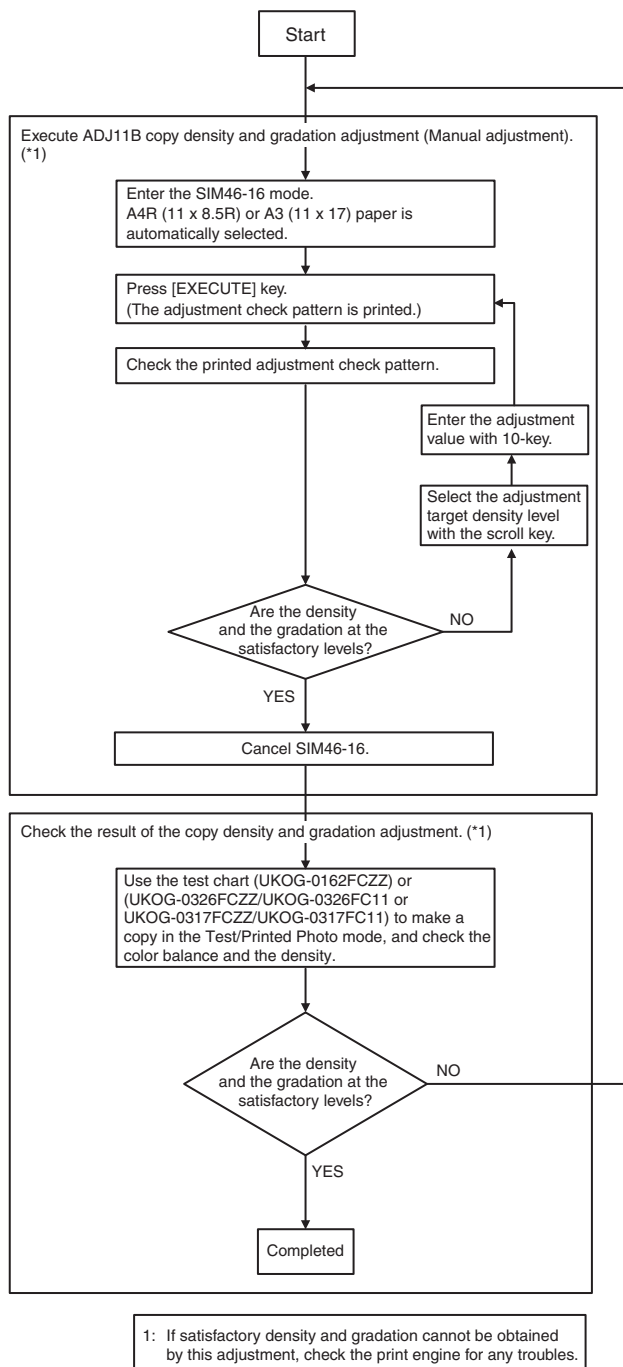
The copy density and gradation adjustment (manual adjustment) is executed when the above automatic adjustment cannot obtain the specified range, when a fine adjustment is required, or when a request for customization is made by the user.

### b. Note for the copy density and gradation adjustment (Manual adjustment)

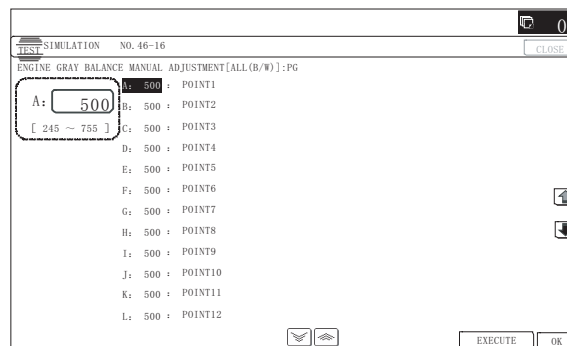
- 1) The print engine section must have been properly adjusted.

### c. Adjustment procedure

Copy density and gradation adjustment (Manual adjustment) procedures flowchart (SIM46-16)



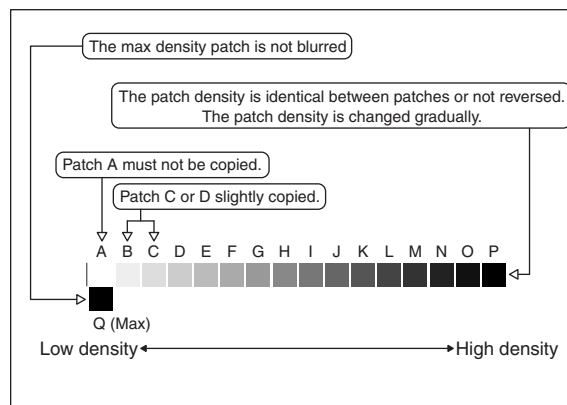
- 1) Enter the SIM46-16 mode.



- 2) Press [EXECUTE] key. (A4R (11" x 8.5R) or A3 (11" x 17") paper is automatically selected.)

The adjustment check pattern is printed.

- 3) Check that the following specification is satisfied or the density and gradation is satisfactory



The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed

Patch B may not be printed.

Patch A must not be copied.

If the above conditions are not satisfied, execute the following procedures.

- 4) Select the point to be adjusted with the scroll key

Item/Display	Density level (Point)	Adjustment value range	Default
A POINT1	Point 1	245 - 755	500
B POINT2	Point 2	245 - 755	500
C POINT3	Point 3	245 - 755	500
D POINT4	Point 4	245 - 755	500
E POINT5	Point 5	245 - 755	500
F POINT6	Point 6	245 - 755	500
G POINT7	Point 7	245 - 755	500
H POINT8	Point 8	245 - 755	500
I POINT9	Point 9	245 - 755	500
J POINT10	Point 10	245 - 755	500
K POINT11	Point 11	245 - 755	500
L POINT12	Point 12	245 - 755	500
M POINT13	Point 13	245 - 755	500
N POINT14	Point 14	245 - 755	500
O POINT15	Point 15	245 - 755	500
P POINT16	Point 16	245 - 755	500
Q POINT17	Point 17	245 - 755	500

- Enter the adjustment value with 10-key and press [OK] key.  
The adjustment value is set in the range of 245 - 755 (1 - 999).  
When SIM 46-24 is used to adjust the copy density and gradation automatically, all the set values of this simulation are set to 500.

To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

Repeat procedures of 2) - 5) until the condition of 3) is satisfied.

When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q (MAX) to a same level collectively. Then, adjust each patch density and gradation individually. This is an efficient way of adjustment.

- Cancel SIM 46-16.
- Check the copy density and gradation.

The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

As needed, copy a user document and check the adjustment result. If the copy density and gradation are not adjusted to the specified level, there may be another cause.

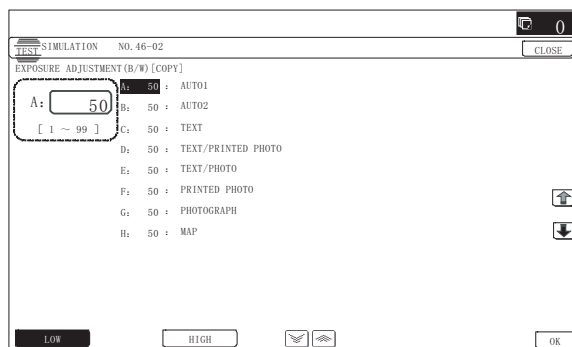
Troubleshoot the cause, and repair or perform proper treatments, and try all the procedures of the print image adjustment from the beginning.

## 11-C Copy density and gradation adjustment (Each copy mode) (Whole adjustment) (Normally unnecessary to adjust)

The density and gradation are adjusted in each copy mode individually.

Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

- Enter the SIM 46-2 mode.



- Select the copy mode to be adjusted with the scroll key.

Item/Display	Content	Setting range	Default value
A	AUTO1	Auto 1	LOW 1 - 99 50
		HIGH 1 - 99 50	
B	AUTO2	Auto 2	LOW 1 - 99 50
		HIGH 1 - 99 50	
C	TEXT	Text	LOW 1 - 99 50
		HIGH 1 - 99 50	
D	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW 1 - 99 50
		HIGH 1 - 99 50	
E	TEXT/PHOTO	Text/Photograph	LOW 1 - 99 50
		HIGH 1 - 99 50	
F	PRINTED PHOTO	Printed Photo	LOW 1 - 99 50
		HIGH 1 - 99 50	
G	PHOTOGRAPH	Photograph	LOW 1 - 99 50
		HIGH 1 - 99 50	
H	MAP	Map	LOW 1 - 99 50
		HIGH 1 - 99 50	

- Enter the adjustment value with 10-key and press [OK] key.  
When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.

When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

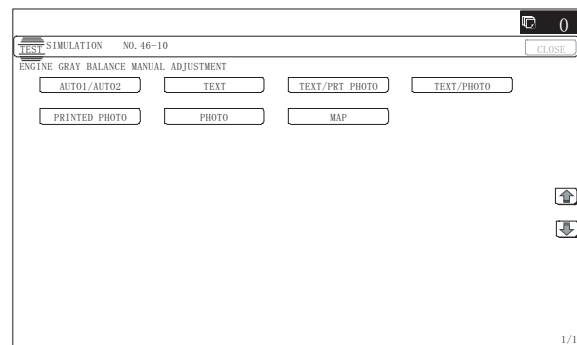
- Cancel SIM 46-2.
- Check the copy density and gradation.

The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

## 11-D Manual copy density and gradation adjustment for each copy mode (Normally unnecessary to adjust)

This is to adjust the density in each copy mode. Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

- Enter the SIM 46-10 mode.



- Select the copy mode to be adjusted with the mode key.
- Select the density level (point) to be adjusted with the scroll key.

Item/Display	Density level (Point)	Adjustment value range	Default value
A	POINT1	Point 1	245 - 755 500
B	POINT2	Point 2	245 - 755 500
C	POINT3	Point 3	245 - 755 500
D	POINT4	Point 4	245 - 755 500
E	POINT5	Point 5	245 - 755 500
F	POINT6	Point 6	245 - 755 500
G	POINT7	Point 7	245 - 755 500
H	POINT8	Point 8	245 - 755 500
I	POINT9	Point 9	245 - 755 500
J	POINT10	Point 10	245 - 755 500
K	POINT11	Point 11	245 - 755 500
L	POINT12	Point 12	245 - 755 500
M	POINT13	Point 13	245 - 755 500
N	POINT14	Point 14	245 - 755 500
O	POINT15	Point 15	245 - 755 500
P	POINT16	Point 16	245 - 755 500
Q	POINT17	Point 17	245 - 755 500

- Enter the adjustment value with 10-key and press [OK] key.  
When the adjustment value is increased, the density is increased. When the adjustment value is decreased, the density is decreased.

When the arrow key is pressed, the densities are collectively adjusted.

That is, all the density levels (points) from the low density point to the high density point can be adjusted collectively.

When [EXECUTE] key is pressed, the adjustment pattern is printed out.

A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

The density at each density level (point) can be checked by referring to this adjustment pattern. However, it is more practically to make a copy and check it.

- 5) Cancel SIM 46-10.
- 6) Check the copy density and gradation.

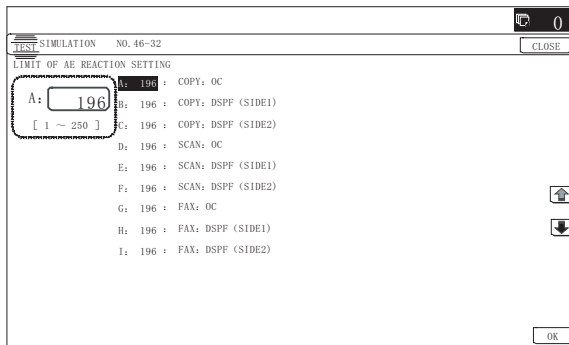
The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

### 11-E Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust)

Use for the reproducibility adjustment of document background density in auto copy mode.

When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.

- 1) Enter the SIM 46-32 mode.



- 2) Select the adjustment mode with the scroll key.
  - 3) Enter the adjustment value with 10-key, and press [OK] key.
- When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

(DSPF)

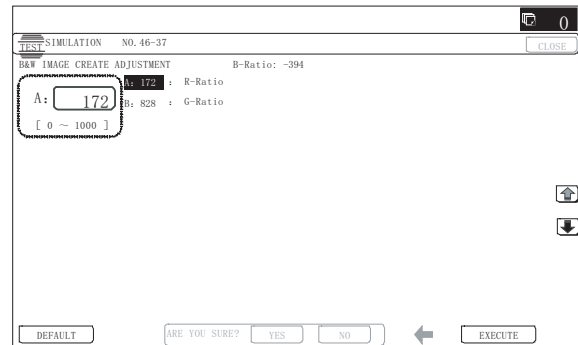
Item/Display	Content	Setting range	Default value
A	COPY: OC	Copy mode (OC mode)	1 - 250
B	COPY: DSPF (SIDE1)	Copy mode (DSPF front surface mode)	1 - 250
C	COPY: DSPF (SIDE2)	Copy mode (DSPF back surface mode)	1 - 250
D	SCAN: OC	Scanner mode (OC mode)	1 - 250
E	SCAN: DSPF (SIDE1)	Scanner mode (DSPF front surface mode)	1 - 250
F	SCAN: DSPF (SIDE2)	Scanner mode (DSPF back surface mode)	1 - 250
G	FAX: OC	FAX mode (OC mode)	1 - 250
H	FAX: DSPF (SIDE1)	FAX mode (DSPF front surface mode)	1 - 250
I	FAX: DSPF (SIDE2)	FAX mode (DSPF back surface mode)	1 - 250

- 4) Cancel SIM 46-32.
- 5) Check the copy density and gradation.

### 11-F Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust)

Use to adjust the reproducibility of the red image and the yellow image when copying a color document that includes the red/yellow images.

- 1) Enter the SIM 46-37 mode.



- 2) Select the mode to be adjusted with the scroll key.

Item/Display	Content	Setting range	Default value
A	R-Ratio	Gray making setting (R)	0 - 1000
B	G-Ratio	Gray making setting (G)	0 - 1000

- 3) Enter the adjustment value with 10-key, and press [OK] key.
- When [DEFAULT] key is pressed, the values are set to the initial values (Default).
- When the adjustment value of the adjustment item A is increased, the copy density of red images is decreased. When the adjustment value is decreased, the density is increased.
- When the adjustment value of the adjustment item B is increased, the copy density of yellow images is increased. When the adjustment value is decreased, the density is also decreased.
- 4) Cancel SIM 46-37.
  - 5) Check the copy density and gradation.

The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

### 11-G Manual copy density and gradation adjustment (DSPF mode) (Individual adjustment of the low density area and the high density area)

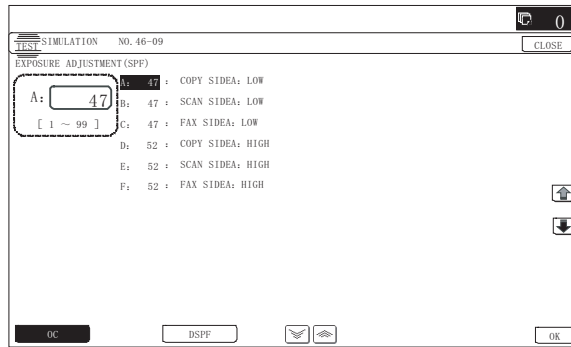
It is normally not necessary to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the copy density differs in the DSPF mode and in the document table mode.
- \* When the copy density differs on the front surface and on the back surface in the DSPF mode.
- \* When the copy density in the DSPF mode is too low or too high.
- \* When the DSPF unit is replaced.
- \* When the DSPF unit is disassembled.
- \* When the DSPF CCD unit is replaced.

## a. Adjustment procedures

### (Front surface copy density adjustment)

- 1) Enter the SIM 46-9 mode.



- 2) Press [OC] key to select the front surface copy density adjustment mode.

Item	Key	Display	Content	Setting range	Default value
A	OC	COPY SIDE A: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDE A: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDE A: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDE A: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	52
E		SCAN SIDE A: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	52
F		FAX SIDE A: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	52
A	DSPF	COPY SIDE B: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDE B: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDE B: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDE B: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	50
E		SCAN SIDE B: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	50
F		FAX SIDE B: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	50
G		BALANCE SIDE B: R	DSPF color balance R	1 - 99	50
H		BALANCE SIDE B: G	DSPF color balance G	1 - 99	50
I		BALANCE SIDE B: B	DSPF color balance B	1 - 99	50

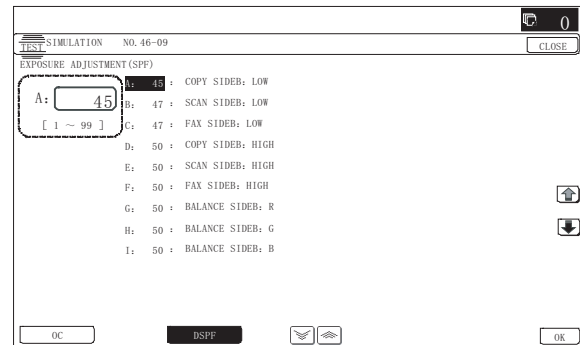
- 3) Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY SIDE A LOW." To adjust the density in the high density area, select "COPY SIDE A HIGH."
- 4) Enter the adjustment value with 10-key, and press [OK] key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
- 5) Cancel SIM 46-9.

- 6) Check the copy density and gradation.

The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

### (Back surface copy density adjustment)

- 1) Enter the SIM46-9 mode.



- 2) Press [DSPF] key to select the back surface copy density adjustment mode.

Item	Key	Display	Content	Setting range	Default value
A	OC	COPY SIDE A: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDE A: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDE A: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDE A: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	52
E		SCAN SIDE A: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	52
F		FAX SIDE A: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	52
A	DSPF	COPY SIDE B: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDE B: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDE B: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDE B: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	50
E		SCAN SIDE B: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	50
F		FAX SIDE B: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	50
G		BALANCE SIDE B: R	DSPF color balance R	1 - 99	50
H		BALANCE SIDE B: G	DSPF color balance G	1 - 99	50
I		BALANCE SIDE B: B	DSPF color balance B	1 - 99	50

- 3) Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY SIDE B LOW." To adjust the density in the high density area, select "COPY SIDE B HIGH."

- 4) Enter the adjustment value with 10-key, and press [OK] key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
- 5) Cancel SIM 46-9.
- 6) Check the copy density and gradation.  
The copy density and gradation check must be performed in the Text/Printed Photo mode. (For details of the density and gradation check procedures, refer to page 5-24, 25.)

## 11-H Automatic copy density and gradation adjustment by the user (ENABLE/DISABLE setting and adjustment of the automatic copy density and gradation adjustment)

### a. General

In the user program mode, the user can execute the automatic adjustment of the copy density and gradation.

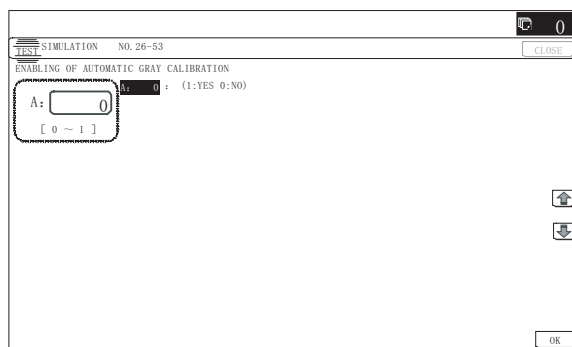
This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

**NOTE:** This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy density and gradation as well as the user's operational ability is judged enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

### b. Setting procedure

- 1) Enter the SIM 26-53 mode.

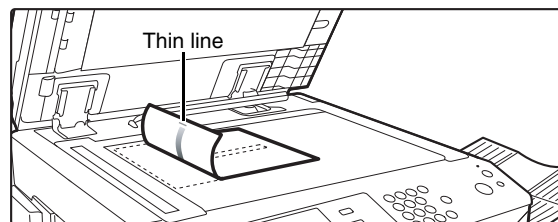


- 2) Select ENABLE or DISABLE with 10-key.  
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
- 3) Press [OK] key.

When this is set to DISABLE, the menu of the automatic adjustment of the user copy density and gradation is not displayed in the user program mode.

(Automatic adjustment of the copy density and gradation)

- 1) Enter the system setting mode.
- 2) Enter the copy setting mode.
- 3) Press the auto calibration key.
- 4) Press [EXECUTE] key.  
The patch image (adjustment pattern) is printed out.  
A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.
- 5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table.  
Set the patch image so that the light density area is on the left side.  
Place the adjustment pattern on the document table so that the adjustment pattern patch faces in the sub scanning direction.  
At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



- 6) Press [EXECUTE] key.  
The copy and the printer density and gradation adjustment is automatically executed. After completion of the adjustment, the display returns to the original operation screen.

## ADJ 12 Printer density and gradation adjustment

This adjustment is needed in the following situations:

- \* When a consumable part (developer, OPC drum, transfer belt) is replaced.
- \* The CCD unit has been replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When installing (as needed)
- \* When a repair, an inspection, or a maintenance is performed.

### 12-A Automatic adjustment of printer density and gradation

#### a. General

The automatic printer density and gradation adjustment is used to adjust the printer density and gradation automatically by SIM67-24 or the user program.

(When this adjustment is executed, all the printer densities and gradation adjustments of all the print modes are revised.)

There are following two modes in the automatic adjustment.

- 1) Automatic adjustment by the serviceman (SIM 67-24 is used.)
- 2) Automatic adjustment by the user (The user program mode is used.)

The automatic adjustment by the user is provided to reduce the number of service calls.

It is used by the user to reset the printer density and gradation to the normal levels when any trouble occurs in the printer density and gradation for some reasons.

When, however, the machine has a fatal problem or when the machine environment is greatly changed, this function does not work effectively.

On the other hand, the automatic adjustment by the serviceman functions to recover the normal printer density and gradation though the machine environment is greatly changed.

If the machine has a fatal problem, repair and adjust it for obtaining the normal printer density and gradation.

To perform the adjustment, the above difference must be fully understood.



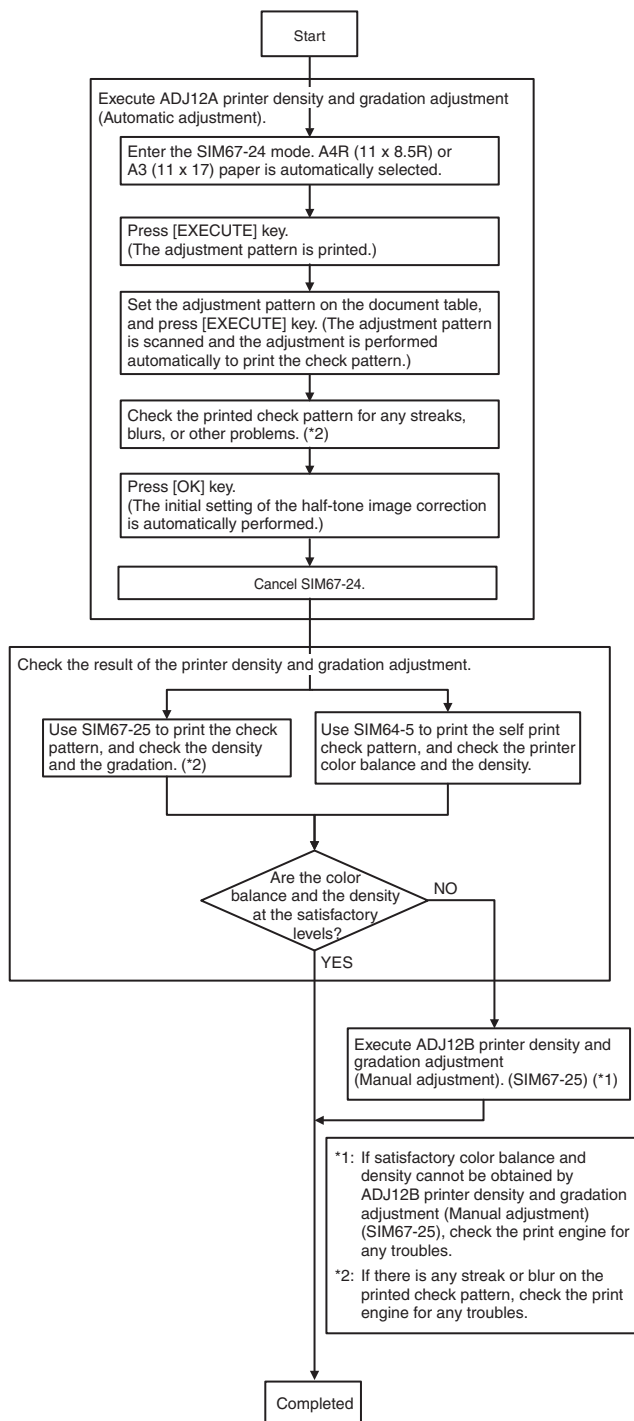
**b. Note for execution of the adjustment  
(Automatic adjustment)**

- 1) The copy density and gradation adjustment must have been completed properly.
- 2) The print engine section must have been adjusted properly.
- 3) When setting the adjustment pattern on the document table in the automatic adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible.

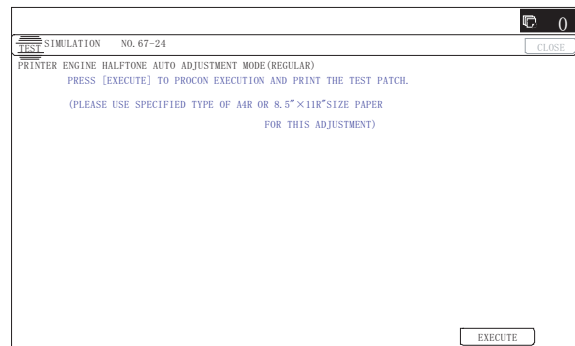
**c. Adjustment procedure**

(Auto printer density and gradation adjustment by the serviceman)

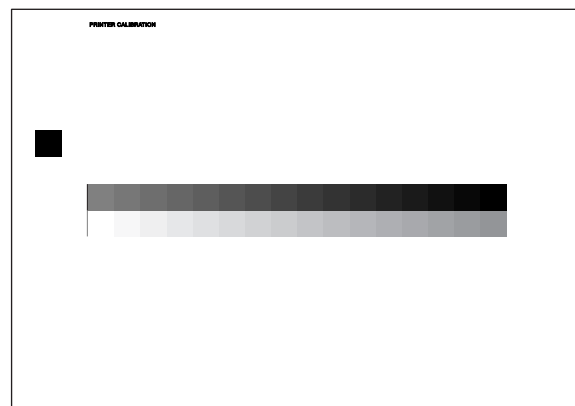
Printer density and gradation adjustment (Automatic adjustment) procedures flowchart (SIM67-24)



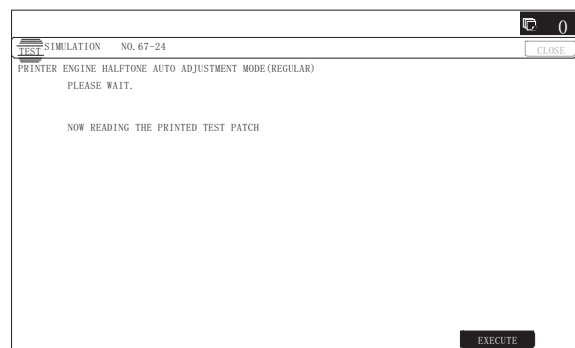
- 1) Enter the SIM 67-24 mode.



- 2) Press [EXECUTE] key. (A4R (11" x 8.5"R) or A3 (11" x 17") paper is automatically selected.)  
The patch image (adjustment pattern) is printed out.
- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.  
Set the printed patch image (adjustment pattern) on the document table so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed patch image (adjustment pattern).

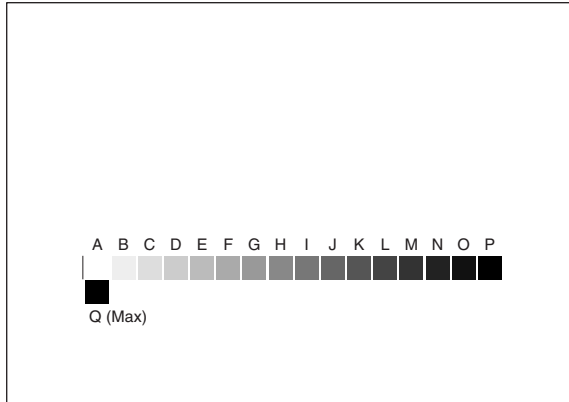


- 4) Press [EXECUTE] key.



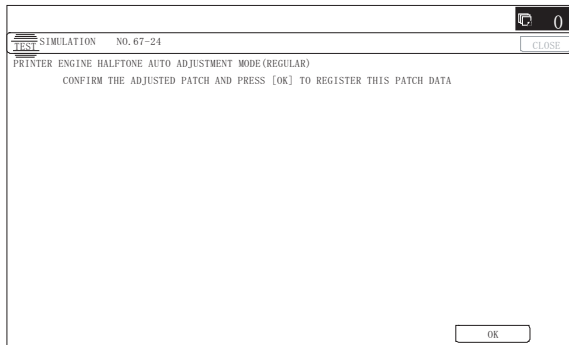
The printer density and gradation adjustment is automatically executed and prints the check patch image.

Wait until the operation panel shown in the procedure 5) is displayed.



If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.

- 5) Press [OK] key on the operation panel.

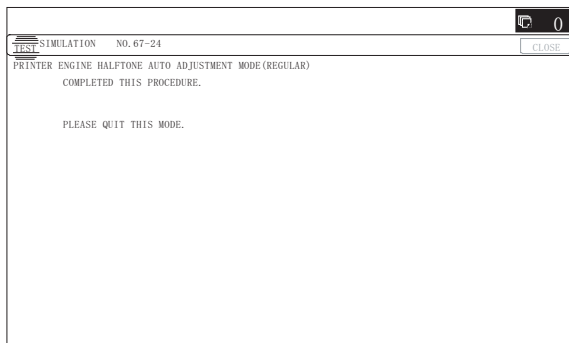


**NOTE:**

After pressing [OK] key, the initial setting of the half tone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed.

After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.



- 6) Cancel SIM 67-24.
- 7) Check the printer density and gradation.  
(For details of the density and gradation check procedures, refer to page 5-24, 25.)

## 12-B Manual printer density and gradation adjustment

### a. General

When the printer density and gradation are not within the specified range in the previous automatic adjustment of ADJ 10 or ADJ 12A, or when a fine adjustment is required, or when a requests for customization is made by the user, this adjustment is executed manually.

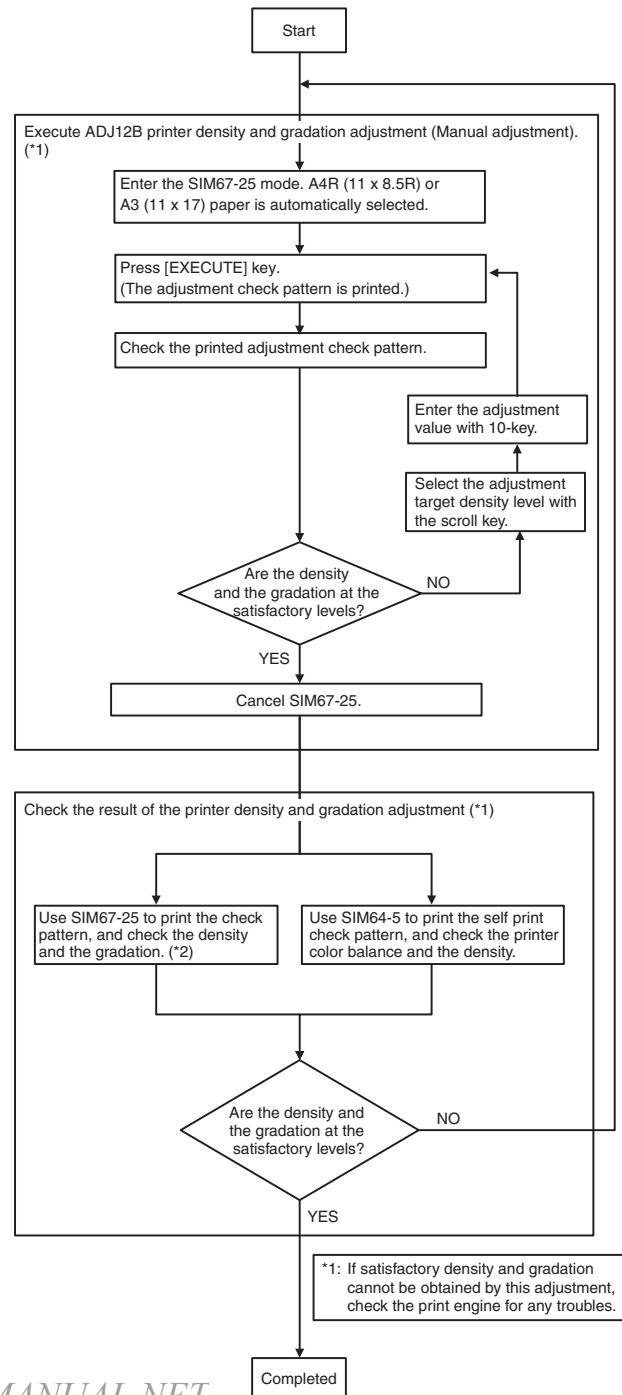
Execute the automatic adjustment of ADJ 12A in advance, and then execute this adjustment for better efficiency.

### b. Note for the printer density and gradation adjustment (Manual adjustment)

The print engine section must have been properly adjusted.

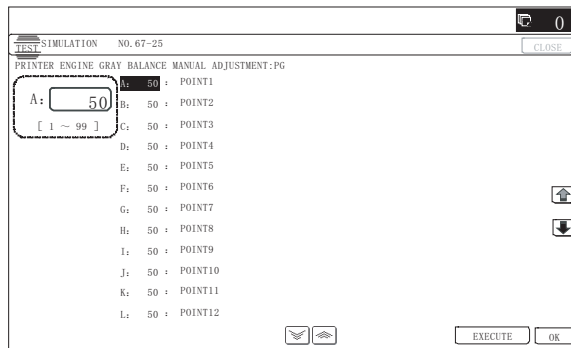
### c. Adjustment procedure

Copy density and gradation adjustment (Manual adjustment) procedures flowchart (SIM46-16)

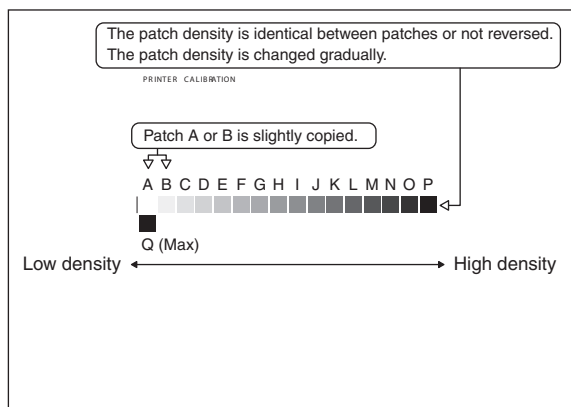




- 1) Enter the SIM 67-25 mode.



- 2) Press [EXECUTE] key. (A4R (11" x 8.5"R) or A3 (11" x 17") paper is automatically selected.)  
The patch image (adjustment pattern) is printed out.
- 3) Check that the following specification is satisfied or the density and the gradation are satisfactory.  
If not, execute the following procedures.



The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

Patch A or B is slightly copied.

When, however, the density and the gradation are adjusted on the request by the user, there is no need to set to the standard density and gradation stated above.

- 4) Select the adjustment point with the scroll key.
- 5) Enter the adjustment value with 10-key and press [OK] key.  
The adjustment value is set in the range of 0 - 255 (1 - 99). When SIM 46-24 is used to adjust the automatic density, all the set values of this simulation are set to 50.  
To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.  
Repeat procedures of 2) - 5) until the condition of 3) is satisfied.
- When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q (MAX) to a same level collectively.  
Then, adjust each patch density individually. This is an efficient way of adjustment.
- 6) Cancel SIM 67-25.
- 7) Check the printer density and gradation.  
(For details of the density and gradation check procedures, refer to page 5-24, 25.)

## 12-C Automatic printer density and gradation adjustment by the user (ENABLE/DISABLE setting and adjustment of the automatic printer density and gradation adjustment)

### a. General

In the user program mode, the user can execute the automatic adjustment of the printer density and gradation.

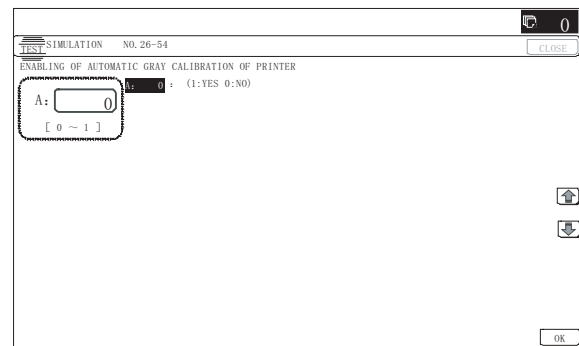
This adjustment is to set Enable/Disable of the above user operation with SIM 26-54.

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the printer density and gradation as well as the user's operational ability is judged enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

### b. Setting procedure

- 1) Enter the SIM 26-54 mode.

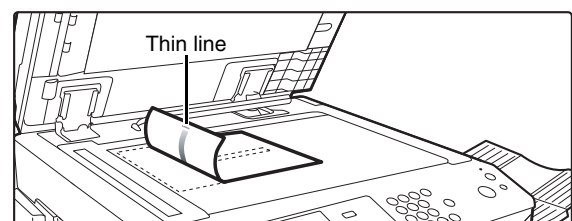


- 2) Select ENABLE or DISABLE with 10-key.  
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
- 3) Press [OK] key.

When this is set to DISABLE, the menu of the automatic adjustment of the user printer density is not displayed in the user program mode.

(Automatic adjustment of the printer density and gradation)

- 1) Enter the system setting mode.
- 2) Enter the copy setting mode.
- 3) Press the auto calibration key.
- 4) Press [EXECUTE] key.  
The patch image (adjustment pattern) is printed out.  
A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.
- 5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table.  
Set the patch image so that the light density area is on the left side.  
Place the adjustment pattern on the document table so that the adjustment pattern patch faces in the sub scanning direction.  
At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



- 6) Press [EXECUTE] key.

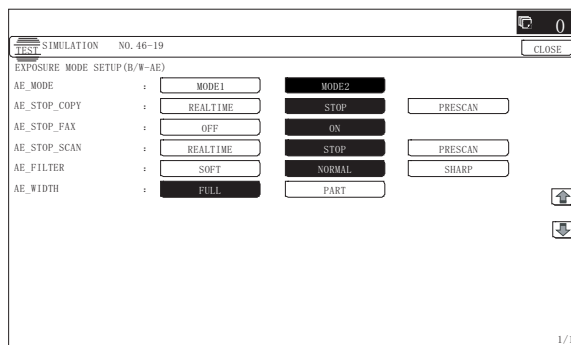
The copy and the printer density and gradation adjustment is automatically executed. After completion of the adjustment, the display returns to the original operation screen.

## ADJ 13 Setting of the operating conditions for the automatic exposure mode in copy, scan, and FAX mode

This is used to set the operating conditions of density scanning (exposure operation) of a document in the automatic copy mode, the scan mode, and the FAX mode.

When a copy with correct density is not obtained by type of document, change the setting.

- 1) Enter the SIM 46-19 mode.



- 2) Set REALTIME or STOP to adjustment item AE STOP COPY. For contents of each setting item, refer to below. Change the setting value of "AE WIDTH" item to "FULL" or "PART", in some cases.

Item/Display	Content	Set value	Default value
AE_MODE	Auto exposure mode	MODE1, MODE2	MODE2
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/STOP	STOP
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME/STOP	STOP
AE_FILTER	Auto exposure filter setting	SOFT NORMAL SHARP	NORMAL
AE_WIDTH	AE exposure width	FULL PART	FULL

NOTE: MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

STOP:

Reads the density of 3 - 7 mm area from leading edge of document, decides the output image density according to the density of that part. (The output image density is constant at whole area.)

REALTIME:

Reads the density of width of the document one by one, decides the output image density according to the density of each part of the document. (The output image density may be not constant at whole area.)

AE WIDTH FULL:

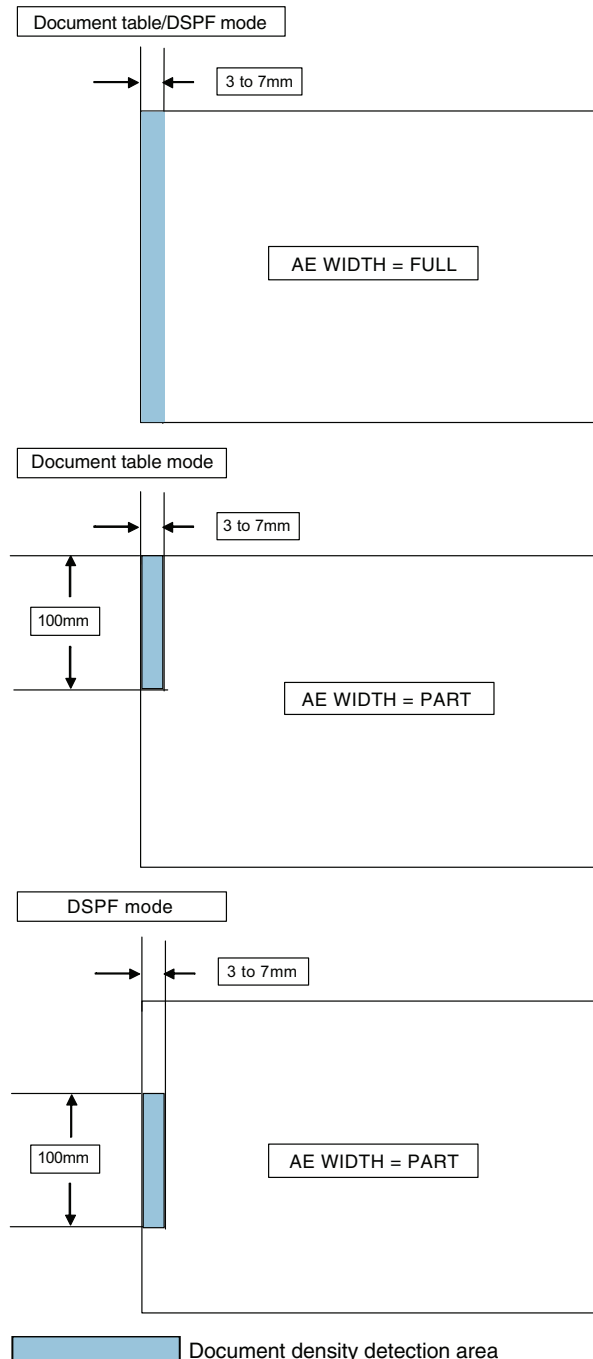
Document density reading area in auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

AE WIDTH PART:

Document density reading area in auto mode is 3 - 7 mm (leading edge of document) x 100 mm (width). No relationship to PRESCAN MODE

Operation in auto copy mode:

When the density of the document of the read area is light, output image density is increased by control. When the density of the document of the read area is dark, output image density is decreased by control.



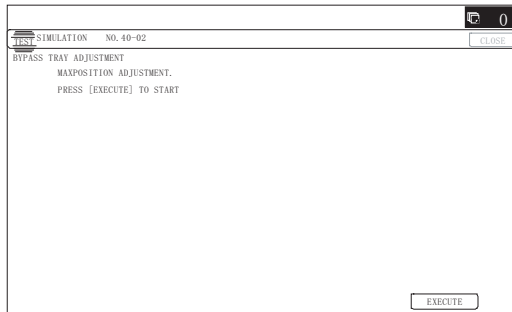
## ADJ 14 Paper size detection adjustment

### 14-A Manual paper feed tray paper width sensor adjustment

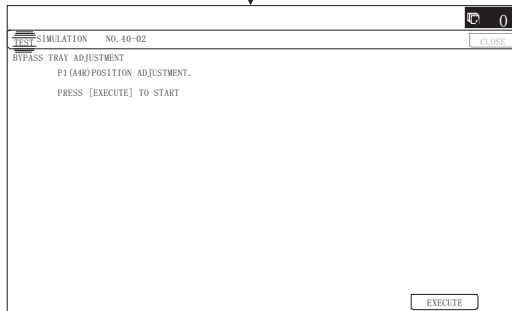
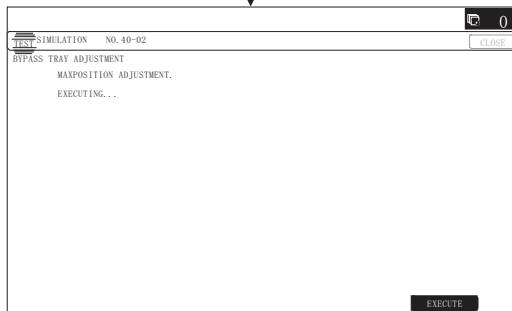
This adjustment is needed in the following situations:

- \* The manual paper feed tray section has been disassembled.
- \* The manual paper feed tray unit has been replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 40-2 mode.

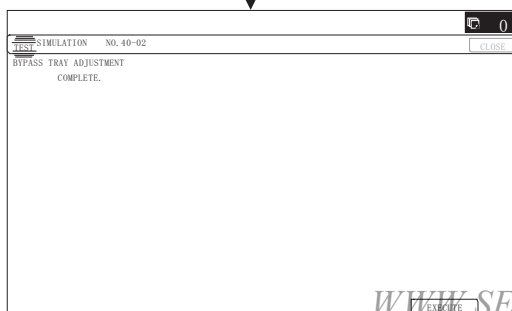


EXECUTE

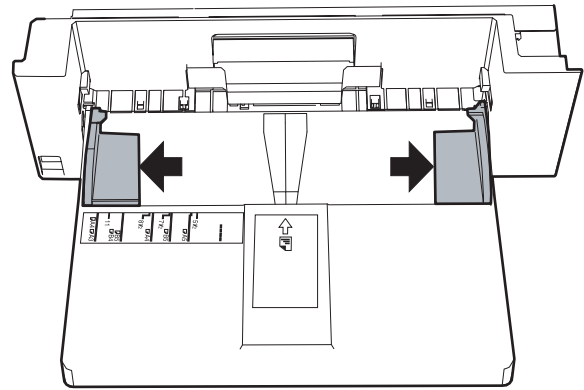


EXECUTE

Repeat the above procedure to adjust the A5R width MIN POSITION.



2) Open the manual paper feed guide to the maximum width position.



3) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The maximum width position detection level of the manual paper feed guide is recognized.

4) Set the manual paper feed guide to the A4R size.

5) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The A4R size width position detection level of the manual paper feed guide is recognized.

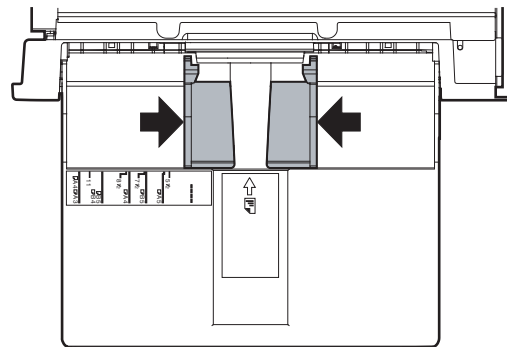
6) Set the manual paper feed guide to the width for the A5R size.

7) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

Set the manual paper feed guide to the width for the A5R size.

8) Open the manual paper feed guide to the minimum width position.



9) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The minimum width position detection level of the manual paper feed guide is recognized.

If the above operation is not completed normally, "ERROR" is displayed.

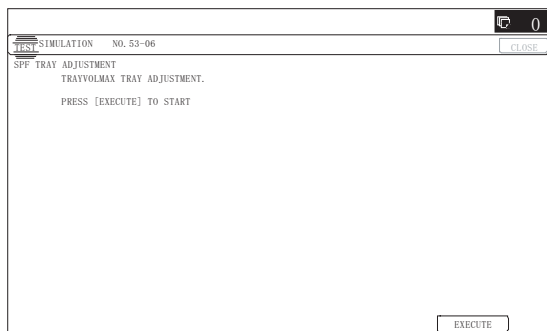
When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

## 14-B DSPF tray paper size (width) sensor adjustment

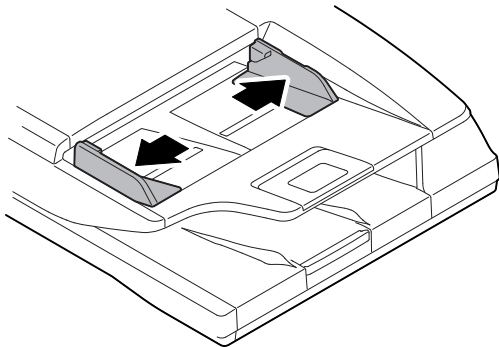
This adjustment must be performed in the following cases:

- \* The DSPF paper feed tray section has been disassembled.
- \* The DSPF paper feed tray unit has been replaced.
- \* When a U2 trouble occurs.
- \* The DSPF control PWB has been replaced.
- \* The EEPROM on the DSPF control PWB has been replaced.

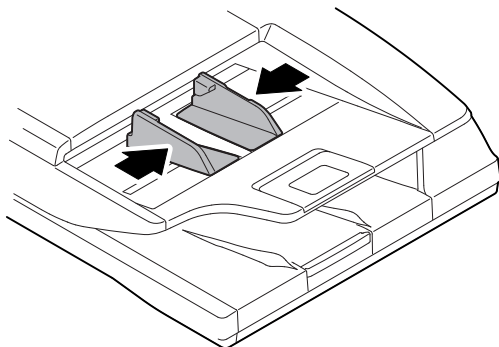
1) Enter the SIM 53-6 mode.



2) Open the DSPF paper feed guide to the maximum width position.



- 3) Press [EXECUTE] key.  
The maximum width detection level is recognized.
- 4) Open the DSPF paper feed guide to the width for the A4R size.
- 5) Press [EXECUTE] key.  
The A4R width detection level is recognized.
- 6) Open the DSPF paper feed guide to the width for the A5R size.
- 7) Press [EXECUTE] key.  
The A5R width detection level is recognized.
- 8) Open the DSPF paper feed guide to the minimum width position.



- 9) Press [EXECUTE] key.  
The minimum width detection level is recognized.

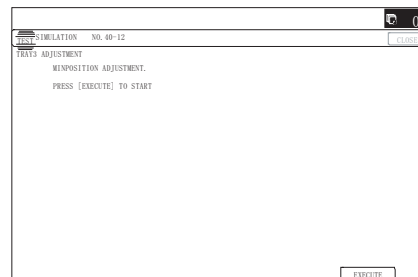
\* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

## 14-C Adjust the paper width sensor for paper feed tray 3

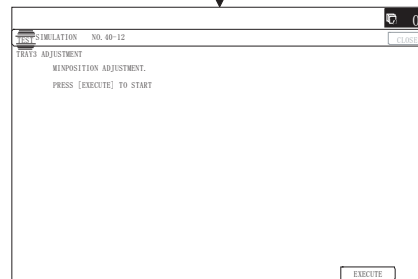
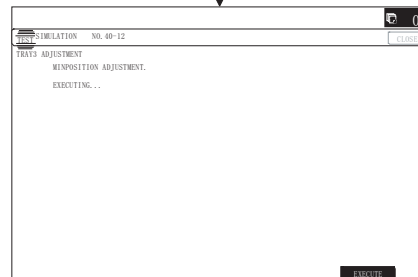
This adjustment is needed in the following situations:

- \* The paper feed tray section has been disassembled.
- \* The paper feed tray unit has been replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

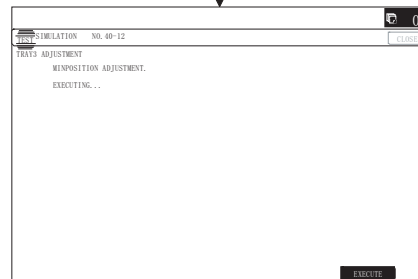
1) Enter the SIM 40-12 mode.



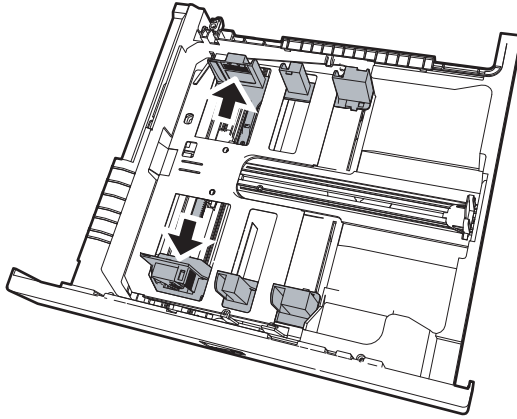
EXECUTE



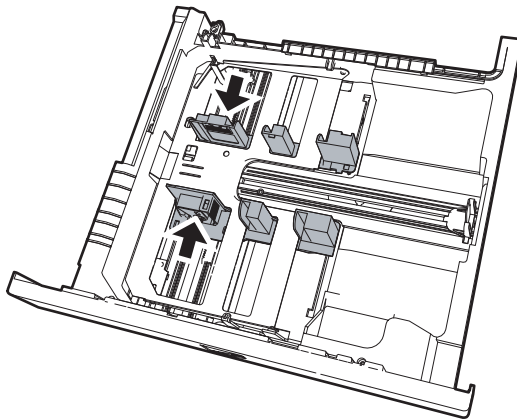
EXECUTE



- 2) Open the paper feed guide to the maximum width position.



- 3) Press [EXECUTE] key.  
The maximum width detection level is recognized.
- 4) Open the paper feed guide to the minimum width position.



- 5) Press [EXECUTE] key.  
The minimum width detection level is recognized.
- \* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

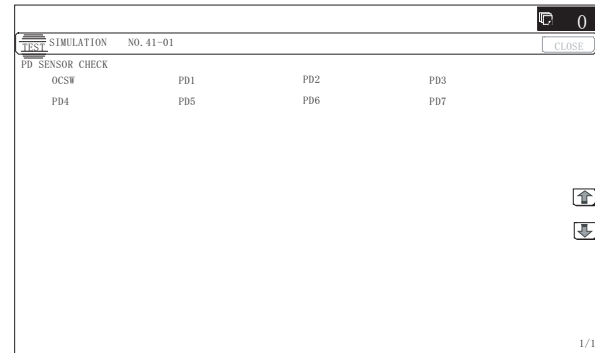
## ADJ 15 Adjusting the original size detection (in original table mode)

### 15-A Adjust the detection point of the original size sensor (in original table mode)

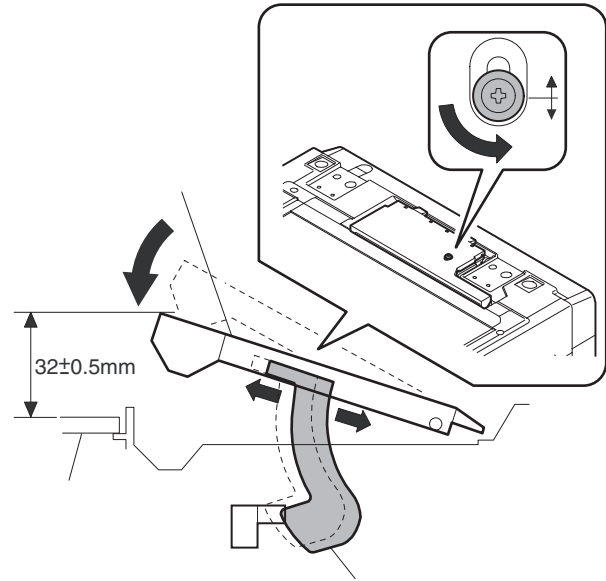
This adjustment is needed in the following situations:

- \* The original size sensor section has been disassembled.
- \* The original size sensor section has been replaced.
- \* U2 trouble has occurred.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.

- 1) Go through the modes specified in Simulation 41-1.



- 2) Gradually turn over the original detection arm unit in the arrow direction, and loosen the original cover switch actuator adjusting screw so that the OCSW indicator changes from inverse video to normal video when the arm unit top reaches a height of  $32 \pm 0.5\text{mm}$  from the table glass. Then move the actuator to adjust its position. (If the original cover switch turns on in improper timing, the original detection mechanism may fail to operate correctly.)

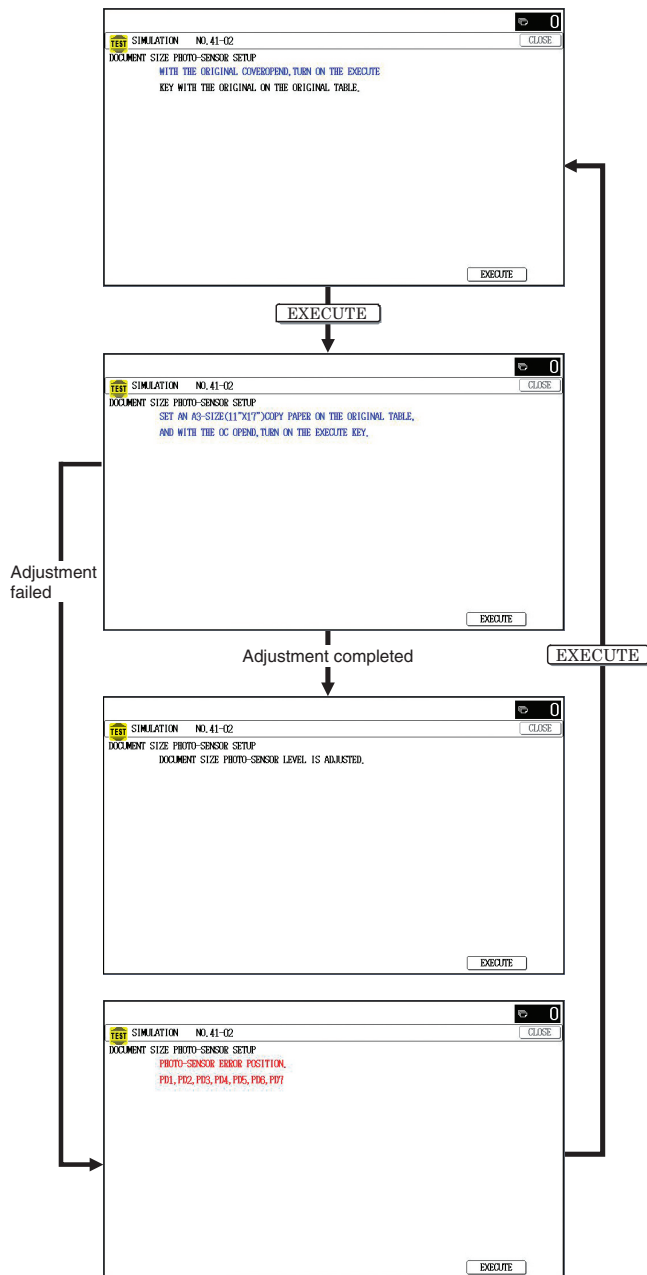


### 15-B Adjust the sensitivity of the original size sensor

This adjustment is needed in the following situations:

- \* The original size sensor section has been disassembled.
- \* The original size sensor section has been replaced.
- \* U2 trouble has occurred.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.

- 1) Enter the SIM 41-2 mode.



- 2) Execute the sensor adjustment without document.  
With the document cover open, without placing a document on the table glass, press [EXECUTE] key.
- 3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.  
If the adjustment is completed normally, "DOCUMENT PHOTO SENSOR LEVEL IS ADJUSTED" is displayed.

## ADJ 16 Touch panel coordinate setting

This adjustment is needed in the following situations:

- \* The operation panel has been replaced.
- \* U2 trouble has occurred.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.

- 1) Enter the SIM 65-1 mode.

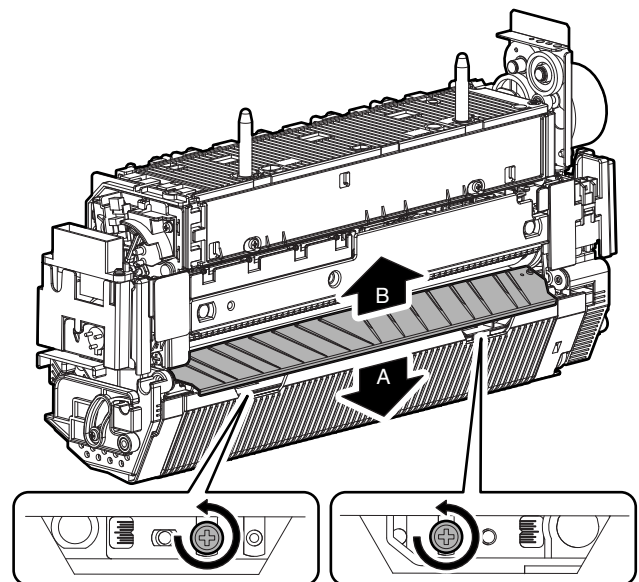


- 2) Precisely press the cross mark points (4 positions).  
When the cross mark is pressed precisely, a buzzer sounds and the display is reversed. When all the four points are pressed and the touch panel adjustment is completed, the display returns to the simulation sub number entry screen.  
In case of an error, the display returns to the entry screen again.  
Check to confirm that there is no shift between the display frame and the detection position when the touch panel is pressed.  
\* When pressing the touch panel, never use a sharp tip (such as a needle or a pin).

## ADJ 17 Fusing paper guide position adjustment

Normally there is no need to perform this adjustment. In the following cases, perform this adjustment.

- \* When a paper jam occurs in the fusing section.
  - \* When wrinkles are made on paper in the fusing section.
  - \* When an image deflection or an image blur is generated in the paper rear edge section.
- 1) Loosen the fusing paper guide fixing screws which are on two position in the front/rear frame direction.
  - 2) Use the fusing paper guide position scale as the reference to shift the paper guide in the arrow direction A or B.



Though the standard installing position is one scale under the center position of the marking, change the position depending on the situation.

- \* When wrinkles are generated on paper, change the position in the arrow direction B.
- \* When an image deflection or an image blur is generated in the paper rear edge section, change the position in the arrow direction A.



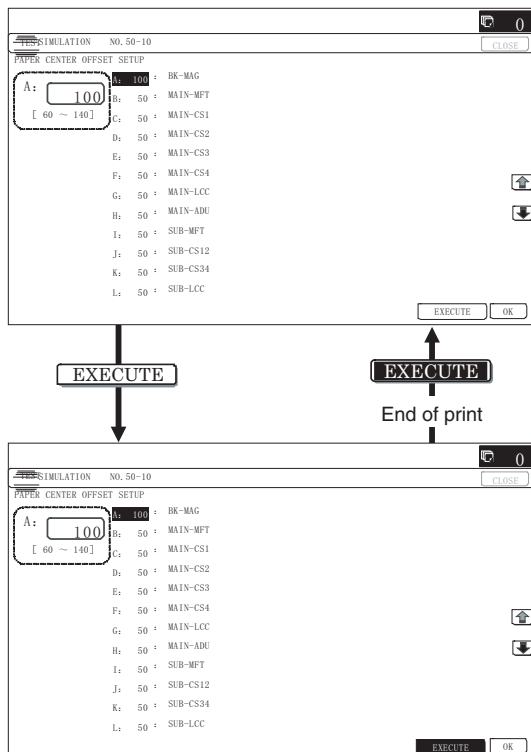
## ADJ 18 Print engine image position, image magnification ratio, void area, off-center adjustment (manual adjustment)

### 18-A Print engine image magnification ratio adjustment (Main scanning direction)

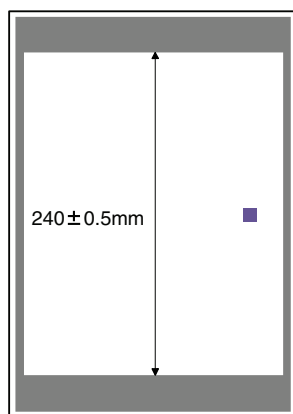
This adjustment is needed in the following situations:

- \* When the LSU (writing) unit is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 50-10 mode.



- 2) Set A4 (11" x 8.5") paper in the paper feed tray.
- 3) Select the paper feed tray set in procedure 2) with the scroll key.
- 4) Press [EXECUTE] key.  
The check pattern is printed out.
- 5) Check that the inside dimension of the printed half tone is  $240 \pm 0.5\text{mm}$ .



If the above requirement is not met, do the following steps.

- 6) Change the set value of set item A.
- When the set value is changed by 1, the dimension is changed by 0.1mm.

When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the BK image magnification ratio in the main scanning direction is decreased.

Repeat procedures 2) - 6) until a satisfactory result is obtained.

### 18-B Print engine image position adjustment

This adjustment is needed in the following situations:

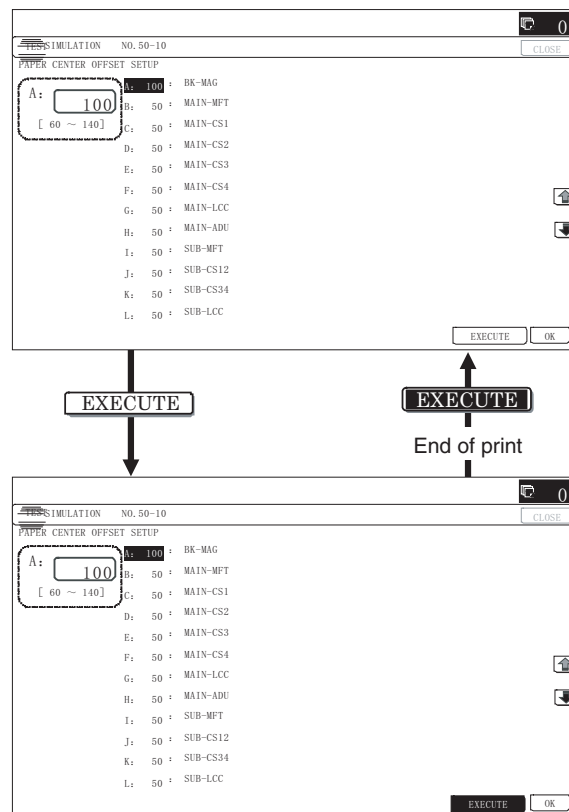
- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When "Print engine image magnification ratio adjustment (Main scanning direction)" is performed.
- \* When the manual feed tray is replaced.
- \* When the manual feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the large capacity tray is installed or replaced.
- \* When the large capacity tray section is disassembled.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

(Note)

Before execution of this adjustment, check to insure the following item.

- \* Check that the "Print engine image magnification ratio adjustment (Main scanning direction)" has been properly adjusted.

1) Enter SIM 50-10 mode.

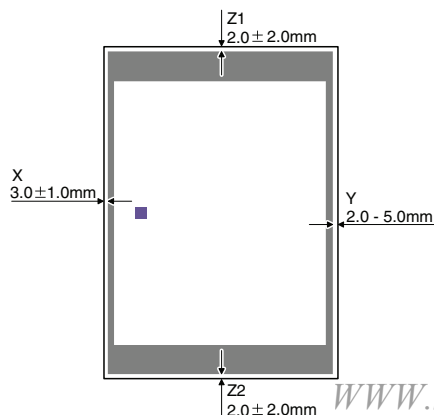


- 2) Use the scroll key to select a paper feed tray which is to be adjusted. (Items B - M)

Item/Display		Content	Setting range	Default value
A	BK-MAG	Main scan print magnification ratio BK	60 - 140	100
B	MAIN-MFT	Print off center adjustment value (Manual paper feed)	1 - 99	50
C	MAIN-CS1	Print off center adjustment value (Tray 1)	1 - 99	50
D	MAIN-CS2	Print off center adjustment value (Tray 2)	1 - 99	50
E	MAIN-CS3	Print off center adjustment value (Tray 3)	1 - 99	50
F	MAIN-CS4	Print off center adjustment value (Tray 4)	1 - 99	50
G	MAIN-LCC	Print off center adjustment value (LCC)	1 - 99	50
H	MAIN-ADU	Print off center adjustment value (ADU) NOTE: Before execution of this adjustment check to insure that the adjustment items A - G have been properly adjusted. If not, this adjustment cannot be made properly.	1 - 99	50
I	SUB-MFT	Paper transport direction image position adjustment	Manual paper feed	1 - 99
J	SUB-CS12		Standard tray	1 - 99
K	SUB-CS34		DESK	1 - 99
L	SUB-LCC		LCC	1 - 99
M	SUB-ADU		ADU	1 - 99
N	MULTI COUNT	Number of print	1 - 999	1
O	PAPER	MFT	Tray selection	Manual paper feed
			CS1	Tray 1
			CS2	Tray 2
			CS3	Tray 3
			CS4	Tray 4
			LCC	LCC
P	DUPLEX	YES	Duplex print selection	Yes
			No	No

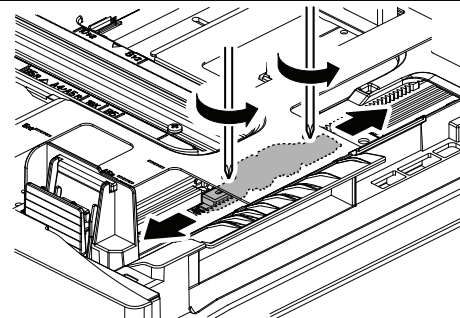
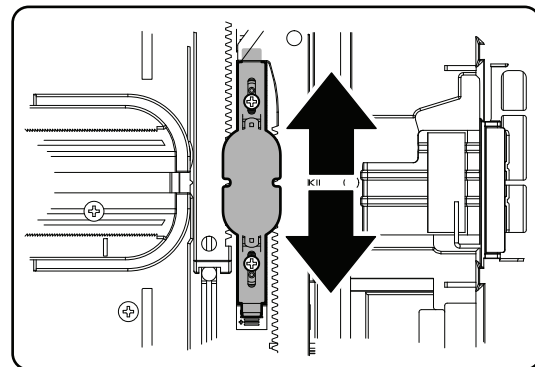
- 3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).
- 4) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 5) Check the adjustment pattern to confirm that it is as shown below.

	Content	Standard adjustment value
X	Lead edge void area	3.0 ± 1.0mm
Y	Rear edge void area	2.0 - 5.0mm
Z1/Z2	FRONT/REAR void area	2.0 ± 2.0mm



#### (When the off-center is adjusted)

- 6) Change the adjustment value. (Items I - M)  
Enter the adjustment value and press the [OK] key or the [EXECUTE] key.  
When [EXECUTE] key is pressed, the adjustment pattern is printed.  
When the adjustment value is increased, the adjustment pattern is shifted to the front frame side. When it is decreased, the adjustment pattern is shifted to the rear frame side.  
When the set value is changed by 1, the shift distance is changed by about 0.1mm.  
In case a satisfactory result cannot be obtained by repeating the above procedures, perform the following procedure.
- 7) Loosen the paper feed tray off-center adjustment screws (2 pcs.) at the center section of the lift plate of the paper feed tray, and change the gear unit position in the front/rear frame direction. Repeat the adjustment procedures from 4).



#### (When the paper transport direction image position is adjusted)

- 8) Change the adjustment value. (Items B - H)  
Enter the adjustment value and press the [OK] key or the [EXECUTE] key.  
When [EXECUTE] key is pressed, the adjustment pattern is printed.  
When the adjustment value is increased, it is shifted to the right. (It is shifted so that the image is delayed for the paper.)  
When the set value is changed by 1, the shift distance is changed by about 0.1mm.



## 18-C Print engine print area (void area) adjustment

This adjustment is needed in the following situations:

- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When the manual feed tray is replaced.
- \* When the manual feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the large capacity tray is installed or replaced.
- \* When the large capacity tray section is disassembled.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When "Print engine image magnification ratio adjustment (Main scanning direction)" is performed.
- \* When the print engine image position adjustment is performed.

(Note)

Before executing this adjustment, be sure to execute ADJ 3B print engine image magnification ratio adjustment (Main scanning direction) in advance.

- 1) Enter the SIM 50-10 mode.

EXECUTE

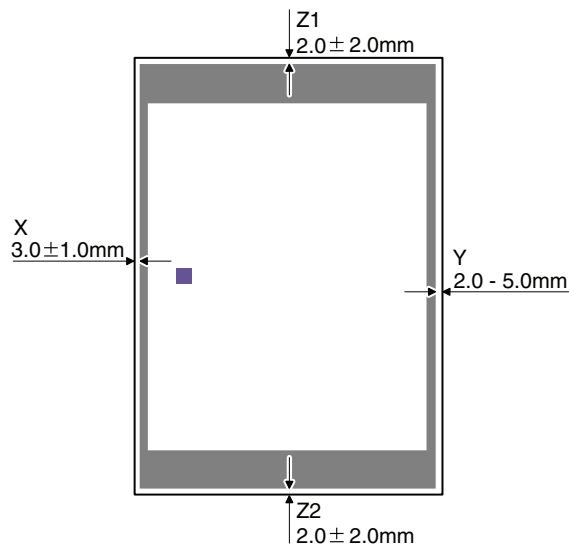
EXECUTE

End of print

- 2) Set A4 (11" x 8.5") paper to all the trays, and select the set item J with the scroll key. Enter the value corresponding to the adjustment target paper feed tray.
- 3) Press [EXECUTE] key.  
The adjustment pattern is printed.

- 4) Check the adjustment pattern to confirm that the items below are in the range of the standard values.

	Content	Standard adjustment value
X	Lead edge void area	$3.0 \pm 1.0\text{mm}$
Y	Rear edge void area	2.0 - 5.0mm
Z1/Z2	FRONT/REAR void area	$2.0 \pm 2.0\text{mm}$



If the above condition is not satisfied, or if it is set to a desired condition, execute the simulation 50-1.

(Note) Feed paper from all the paper feed trays to confirm.

- 5) Enter the SIM 50-1 mode.

10-key

OK

- 6) Select the adjustment item I, J, K with the scroll key, and enter the adjustment value and press [OK] key.

Item/Display		Content		Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)	0 - 99	50
B		RRCB-CS12	Resist motor ON	1 - 99	50
C		RRCB-CS34	Standard Tray timing	1 - 99	50
D		RRCB-LCC	Desk adjust-ment	1 - 99	50
E		RRCB-MFT	LCC	1 - 99	50
F		RRCB-ADU	Manual paper feed ADU	1 - 99	50
G	Image loss area setting value	LEAD	Lead edge image loss area setting	0 - 99	30
H		SIDE	Side image loss area adjustment	0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment	1 - 99	30
J		DENB	Rear edge void area adjustment	1 - 99	30
K		FRONT/ REAR	FRONT/REAR void area adjustment	1 - 99	30
L	Off-center adjustment	OFFSET_ OC	OC document off-center adjustment	1 - 99	50
M	Magnification ratio correction	SCAN_ SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
N	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value	1 - 99	50
O		DENB-CS1	Tray 1 correction value	1 - 99	50
P		DENB-CS2	Tray 2 correction value	1 - 99	50
Q		DENB-CS3	Tray 3 correction value	1 - 99	50
R		DENB-CS4	Tray 4 correction value	1 - 99	50
S		DENB-LCC	LCC correction value	1 - 99	50
T		DENB-ADU	ADU correction value	1 - 99	50

When the adjustment value is increased, the void area is increased. When the adjustment value is decreased, the void area is decreased.

When the adjustment value is changed by 1, the void area is changed by 0.1mm.

NOTE: The adjustment value and the actual void area are related as follows:

$$\text{Adjustment value}/10 = \text{Actual void area}$$

NOTE: When the amount of the rear edge void is different between each paper feed tray, change the adjustment value of item N, O, P, Q, R, S, T (DENB-XXX) in SIM50-1 and adjust.

The adjustment item J (DENB) have a effect on the paper of all paper feed tray.

That is, adjustment value of item N, O, P, Q, R, S, T (DENB-XXX) fine adjusts to adjustment item J (DENB) for each paper tray.

After execution of the above, perform procedures 1) - 4) to check that the void area is within the specified range.

Though the lead edge void area adjustment value is proper, if the lead edge void area is not within the specified range, change the adjustment value of RRCB-XXX (item B, C, D, E, F) of SIM 50-1.

## ADJ 19 Scan image magnification ratio adjustment (Manual adjustment)

This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

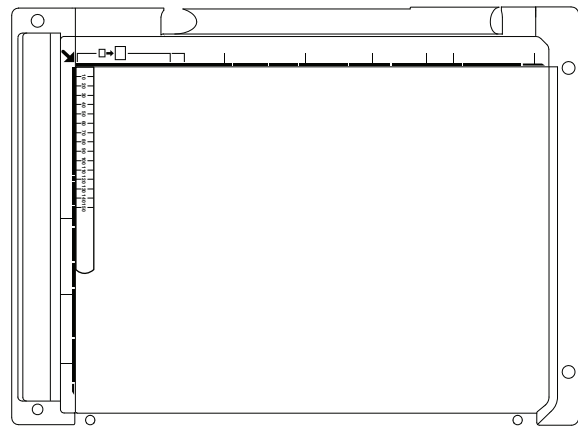
This adjustment is needed in the following situations:

- \* When the copy image magnification ratio in the sub scanning direction is not properly adjusted.
- \* When the scanner motor is replaced.
- \* When a U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

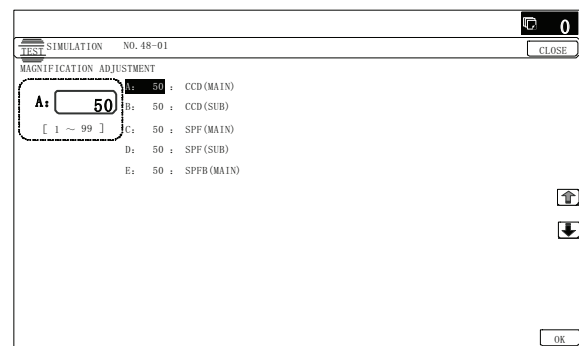
Before this adjustment, the focus adjustment (CCD unit installing position adjustment) must have been completed.

### 19-A Main scanning direction image magnification ratio adjustment (Document table mode)

- 1) Place a scale on the document table as shown in the figure below.



- 2) Enter the SIM 48-1 mode.

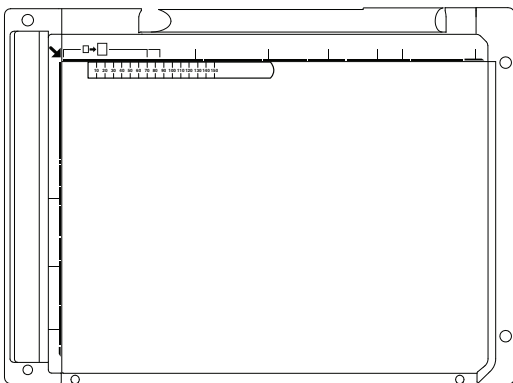


- 3) Make a normal copy and obtain the copy magnification ratio. Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.
- 4) Check that the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).  
If the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.
- 5) Change the CCD (MAIN) adjustment value of Simulation 48-1. When the adjustment value is increased, the copy magnification ratio is increased.

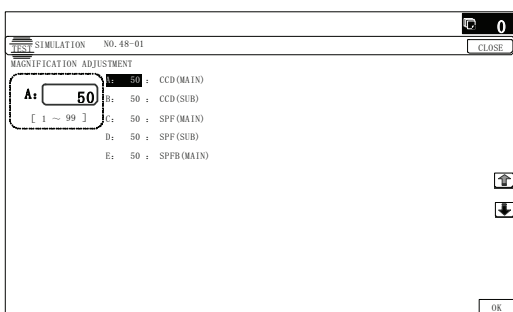
When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.02%.

## 19-B Sub scanning direction image magnification ratio adjustment (Document table mode)

- 1) Place a scale on the document table as shown in the figure below.

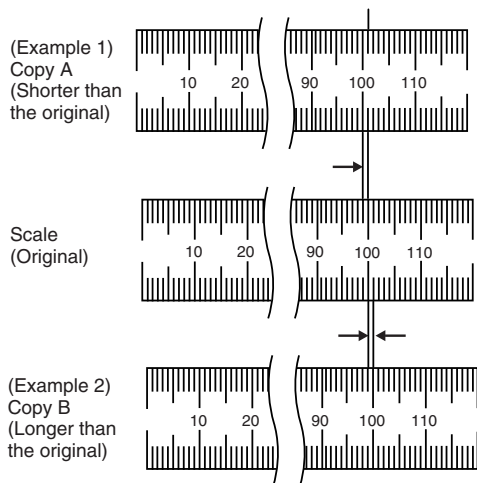


- 2) Enter the SIM 48-1 mode.



- 3) Make a normal copy and obtain the copy magnification ratio. Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.

$$\text{Copy magnification ratio} = \frac{(\text{Original dimension} - \text{Copy dimension})}{\text{Original dimension}} \times 100\%$$



- 4) Check that the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).

If the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

- 5) Change the CCD (SUB) adjustment value of Simulation 48-1. When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased. When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

## 19-C Main scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment must be performed in the following cases:

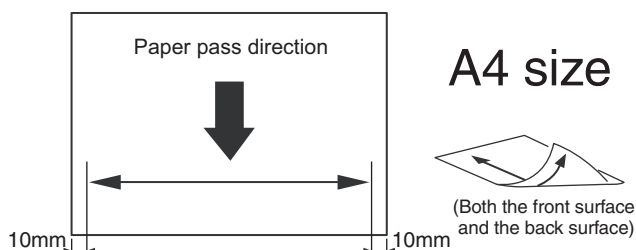
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the DSPF is disassembled.

### a. Adjustment procedures

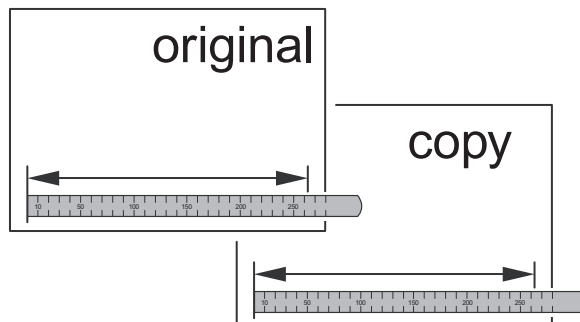
- 1) Place the duplex adjustment chart shown below on the document tray of the DSPF.

The adjustment chart is prepared by the following procedures.

Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



- 2) Make a duplex copy at the normal ratio on A4 paper.
- 3) Measure the images on the copy paper and the original images.



- 4) Obtain the image magnification ratio according to the following formula:

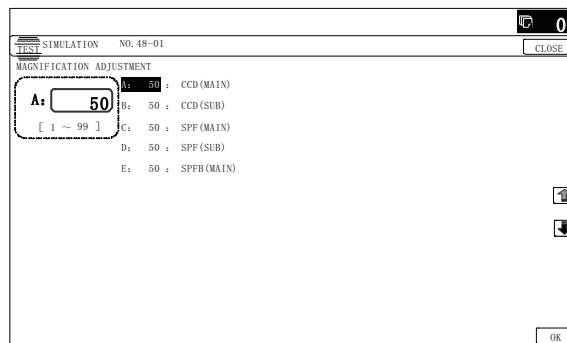
$$\text{Image magnification ratio} = \frac{\text{Original size}}{\text{Original size}} \times 100 (\%)$$

$$\text{Image magnification ratio} = 99 / 100 \times 100 = 99 (\%)$$

If the image magnification ratio is within the specified range ( $100 \pm 0.8\%$ ), there is no need to perform the adjustment.

If it is not within the specified range, perform the following procedures.

- 5) Enter the SIM 48-1 mode.



Item	Display	Content	Setting range	Default value
A	CCD(MAIN)	SCAN main scanning magnification ratio adjustment (CCD)	1 - 99	50
B	CCD(SUB)	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
C	SPF(MAIN)	DSPF document front surface magnification ratio adjustment (Main scan)	1 - 99	50
D	SPF(SUB)	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50
E	SPFB(MAIN)	DSPF document back surface magnification ratio adjustment (Main scan)	1 - 99	50

\* Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.

\* Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.

\* It affects scanning (PC scanning, etc.) as well as copying.

- 6) Select an adjustment item of SPF (MAIN)/SPFB (MAIN) with the scroll key.

SPF (MAIN) Main scanning direction image magnification ratio (Front surface)

SPFB (MAIN) Main scanning direction image magnification ratio (Back surface)

- 7) Enter an adjustment value with 10-key, and press [OK] key.  
When the adjustment value is increased, the image magnification ratio is increased.  
When the adjustment value is changed by 1, the image magnification ratio is changed by 0.02%.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

## 19-D Sub scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment must be performed in the following cases:

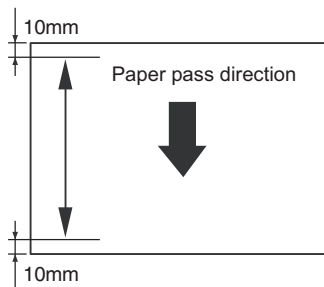
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the DSPF is disassembled.

### a. Adjustment procedures

- 1) Place the duplex adjustment chart shown below on the document tray of the DSPF.

The adjustment chart is prepared by the following procedures.

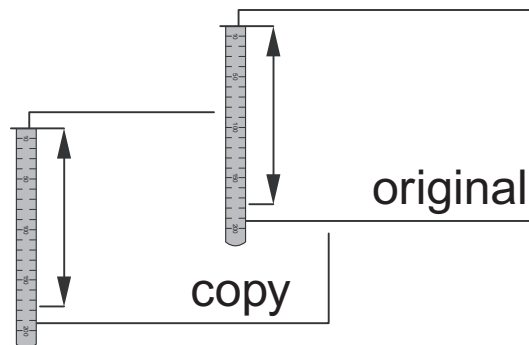
Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



A4 size

- 2) Make a duplex copy at the normal ratio on A4 paper.

- 3) Measure the images on the copy paper and the original images.



- 4) Obtain the image magnification ratio according to the following formula:

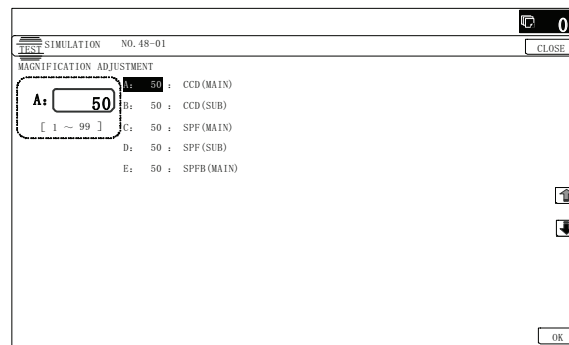
Image magnification ratio = Original size / Original size x 100 (%)

Image magnification ratio = 99 / 100 x 100 = 99 (%)

If the image magnification ratio is within the specified range (100 ± 0.8%), there is no need to perform the adjustment.

If it is not within the specified range, perform the following procedures.

- 5) Enter the SIM 48-1 mode.



Item	Display	Content	Setting range	Default value
A	CCD(MAIN)	SCAN main scanning magnification ratio adjustment (CCD)	1 - 99	50
B	CCD(SUB)	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
C	SPF(MAIN)	DSPF document front surface magnification ratio adjustment (Main scan)	1 - 99	50
D	SPF(SUB)	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50
E	SPFB(MAIN)	DSPF document back surface magnification ratio adjustment (Main scan)	1 - 99	50

\* Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.

\* Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.

\* It affects scanning (PC scanning, etc.) as well as copying.

- 6) Select an adjustment item with the scroll key.

SPF (SUB) Sub scanning direction image magnification ratio (Front surface/Back surface)

- 7) Enter an image magnification ratio adjustment value with 10-key, and press [OK] key.

When the adjustment value is increased, the image magnification ratio is increased.

When the adjustment value is changed by 1, the image magnification ratio is changed by 0.01%.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

## ADJ 20 Scan image off-center adjustment (Manual adjustment)

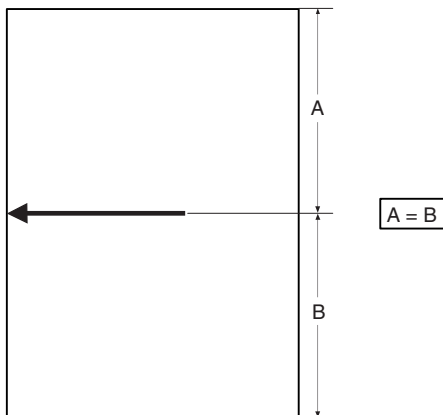
This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

### 20-A Scan image off-center adjustment (Document table mode)

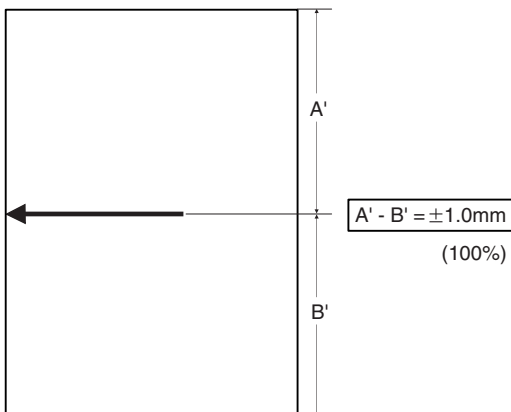
This adjustment is needed in the following situations:

- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When a U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

- 1) Make a copy of the adjustment chart (made by yourself) in the adjustment mode (document table).

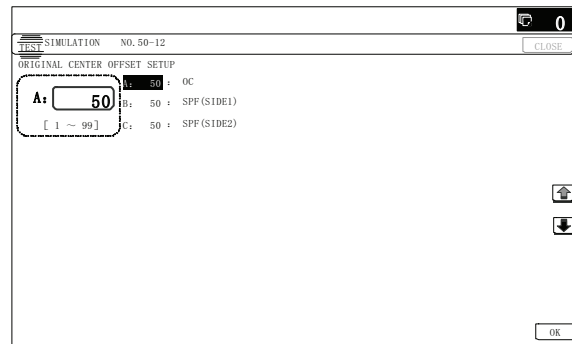


- 2) Check the copy image center position.  
If  $A' - B' = \pm 1.0\text{mm}$ , the adjustment is not required.



If the above condition is not satisfied, perform the following procedures.

- 3) Enter the SIM 50-12 mode.



- 4) Select the adjustment mode OC with the scroll key.
- 5) Enter the adjustment value with 10-key, and press [OK] key.  
The entered value is set.  
When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.
- 6) Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy.

### 20-B Scan image off-center adjustment (DSPF mode)

This adjustment must be performed in the following cases:

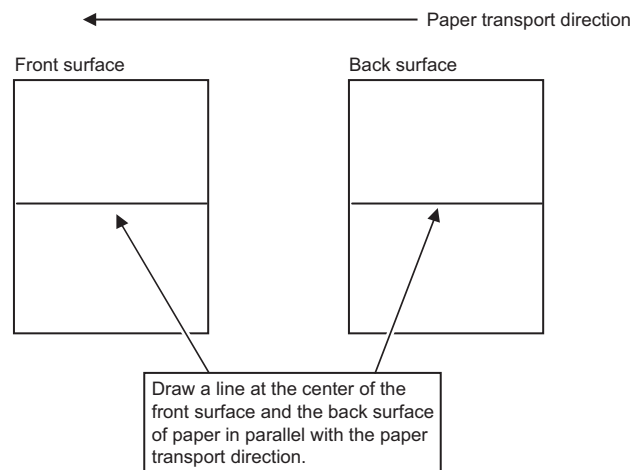
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) section is replaced.
- \* When U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

NOTE: To execute this adjustment, it is required that the Scan image off-center adjustment (Document table mode) must have been properly adjusted.

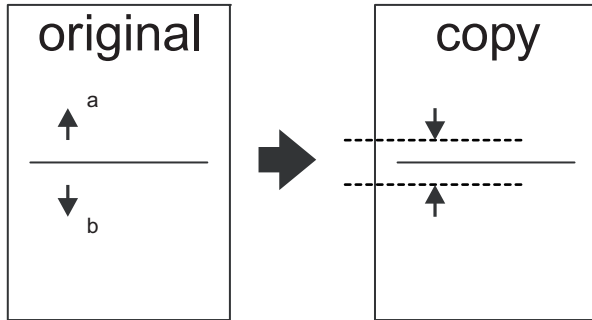
#### a. Adjustment procedures

- 1) Prepare the adjustment chart.

Draw a line at the center of the front surface and the back surface of A4 (11" x 8.5") paper in parallel with the paper transport direction.



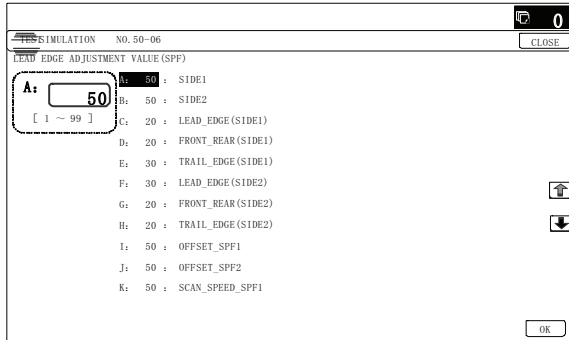
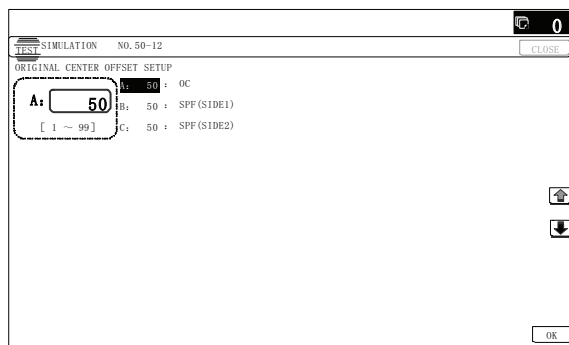
- 2) Set the adjustment chart to the DSPF.
- 3) Make a duplex copy in the normal magnification ratio from the manual paper feed tray, and check the image position on the front surface and the back surface of the copy paper.



If the difference is within the range of  $0 \pm 2.7\text{mm}$  there is no need to perform the adjustment.

If the adjustment is required, perform the following procedures.

- 4) Enter the SIM 50-12 or 50-6 mode.



#### SIM50-12

Item	Display	Content	Setting range	Default value
A	OC	Document table image off-center adjustment	1 - 99	50
B	SPF(SIDE1)	DSPF front surface image off-center adjustment	1 - 99	50
C	SPF(SIDE2)	DSPF back surface image off-center adjustment	1 - 99	50

A - C: When the adjustment value is increased, the image position is shifted to the rear frame side.

1step = 0.1mm

#### SIM50-6

Item/Display		Content	Setting range	Default value
A	SIDE1	Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2	Back surface document scan position adjustment (CIS)	1 - 99	50
C	Image loss amount setting	LEAD_EDGE (SIDE1)	0 - 99	20
D	setting SIDE1	FRONT_REAR (SIDE1)	0 - 99	20
E		TRAIL_EDGE (SIDE1)	0 - 99	30
F		LEAD_EDGE (SIDE2)	0 - 99	30
G	Image loss amount setting	FRONT_REAR (SIDE2)	0 - 99	20
H	setting SIDE2	TRAIL_EDGE (SIDE2)	0 - 99	20
I	OFFSET_SPF1	DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1	DSPF image magnification ratio adjustment (sub scanning)	1 - 99	50

\* Item A, B: When the adjustment value is increased, the scan timing is delayed.

\* Item C - H: When the adjustment value is increased, the image loss is increased.

\* Item A - H: 1 step = 0.1mm change

\* The DSPF rear edge image loss setting is provided for countermeasures against the case when shades are produced.

- 5) Select an adjustment mode with the scroll key.

#### (SIM50-12)

SPF(SIDE1) Front surface mode

SPF(SIDE2) Back surface mode

#### (SIM50-6)

OFFSET\_SPF1 Front surface mode

OFFSET\_SPF2 Back surface mode

- 6) Enter an adjustment value with 10-key, and press [OK] key.

(Change for change in the adjustment value: 0.1mm/step)

(When the adjustment value is increased, the print image is shifted to the rear.)

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

## ADJ 21 Copy image position, image loss, and void area adjustment (Manual adjustment)

This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

### 21-A Copy image position, image loss, void area adjustment (Document table mode)

This adjustment is needed in the following situations:

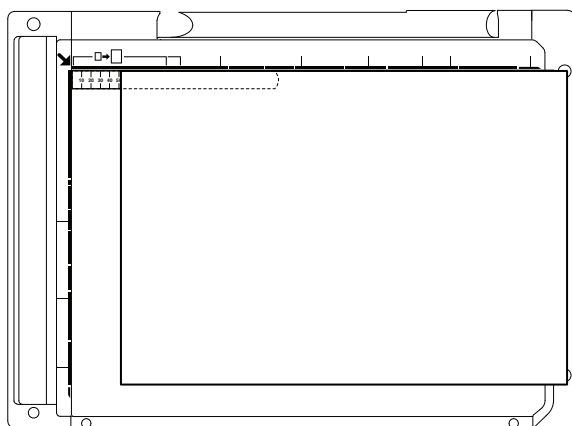
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When the LSU is replaced or removed.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.

**NOTE:** Before executing this adjustment, be sure to confirm that the "Print engine image skew, image position, image magnification ratio, void area adjustments" has been completed normally.

- 1) Place a scale on the document table as shown in the figure below.

Place a scale so that it is in parallel with the scanning direction and that its lead edge is in contact with the document guide plate.

Place white paper on the document table so that the scale lead edge can be seen.



- 2) Enter the SIM 50-1 mode.

10-key

OK

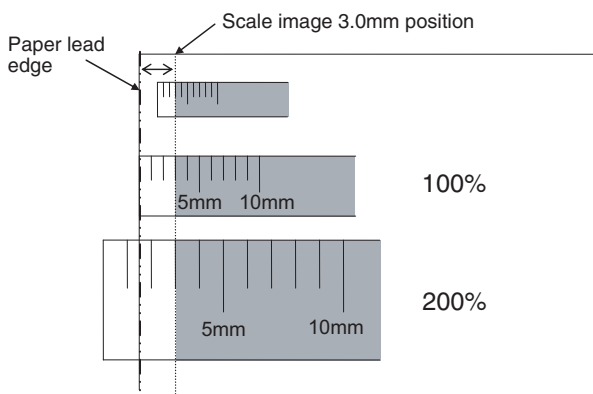
- 3) Set RRCA, LEAD, and SIDE to the default values.

Item/Display			Content	Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)	0 - 99	50
B		RRCB-CS12	Resist motor Standard Tray	1 - 99	50
C		RRCB-CS34	ON Desk	1 - 99	50
D		RRCB-LCC	timing LCC	1 - 99	50
E		RRCB-MFT	adjustment Manual paper feed	1 - 99	50
F		RRCB-ADU	ADU	1 - 99	50
G	Image loss area setting value	LEAD	Lead edge image loss area setting	0 - 99	30
H		SIDE	Side image loss area adjustment	0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment	1 - 99	30
J		DENB	Rear edge void area adjustment	1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	30
L	Off-center adjustment	OFFSET_OC	OC document off-center adjustment	1 - 99	50
M	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
N	Sub scanning direction	DENB-MFT	Manual feed correction value	1 - 99	50
O	print area correction value	DENB-CS1	Tray 1 correction value	1 - 99	50
P		DENB-CS2	Tray 2 correction value	1 - 99	50
Q		DENB-CS3	Tray 3 correction value	1 - 99	50

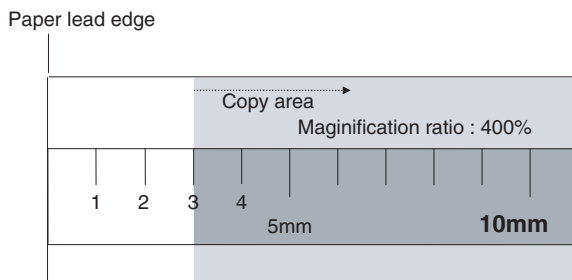


Item/Display			Content	Setting range	Default value
R	Sub scanning direction print area correction value	DENB-CS4	Tray 4 correction value	1 - 99	50
S		DENB-LCC	LCC correction value	1 - 99	50
T		DENB-ADU	ADU correction value	1 - 99	50

- 4) Perform the image lead edge reference position adjustment.  
Press [CLOSE] key, and shift from the simulation mode to the copy mode and make a copy in 100% mode and in 200% scale.
- When the adjustment value of RRCA is proper, the lead edge image from 3.0mm is not copied in either of 100% and 200% copy scale.
- If not, change and adjust the RRCA value.  
(Adjust so that the lead edge image from 3.0mm is not copied in either of different copy magnification ratios.)  
Repeat the above procedures until a satisfactory result is obtained.



- 5) Image loss adjustment  
When the adjustment item of the image loss below is set to the default value, it is adjusted to the standard state. If it is not in the below standard state, or when it is set to a desired value, change these adjustment items.



Void area: 3.0mm, Image loss: 3.0mm

Item/Display	Content		Adjustment range	Default value	Standard adjustment value
LEAD	Image loss adjustment	Lead edge image loss adjustment	0 - 99	30	3.0 ± 1.0mm
SIDE		Side image loss adjustment	0 - 99	20	2.0 ± 1.0mm

When the adjustment value is increased, the image loss is increased. When the adjustment value is decreased, the image loss is decreased.

When the adjustment value is changed by 1, the void area is changed by 0.1mm.

## 21-B Document scan position adjustment (DSPF mode scanner scan position adjustment)

This adjustment must be performed in the following cases:

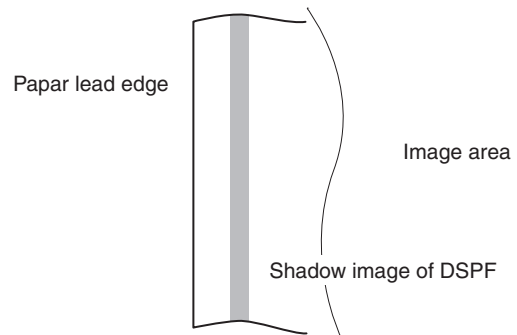
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) section is replaced.
- \* When U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

This simulation is to adjust the scanner reading position when scanning the front surface in the DSPF mode.

If this adjustment is made improperly, the scanner stop position is shifted to the specified position and a shade of the document table may be reflected on the lead edge section of the scan image in the DSPF (front surface) mode.

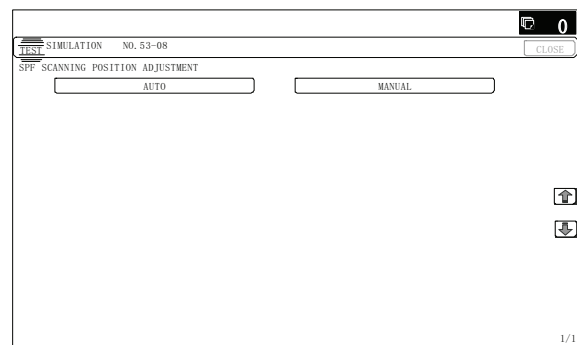
### a. Adjustment procedures

- 1) Make a copy in the DSPF (front surface) mode, and check for any shade on the lead edge section of the copy image.



If there is any shade of the document table on the lead edge section of the copy image, perform the following procedures.

- 2) Enter the SIM 53-8 mode, and press [MANUAL] key.



- 3) Enter an adjustment value with 10-key, and press [OK] key.

When the set value is increased, the distance from the home position to the DSPF scanning position is increased. When the set value is changed by 1, the scanning position is changed by 0.1mm.

Perform the procedures of 1) - 3) until a satisfactory result is obtained.

NOTE: After execution of this adjustment, be sure to execute "Copy mode image loss adjustment (DSPF mode)".



## 21-C Copy mode image loss adjustment (DSPF mode)

This adjustment must be performed in the following cases:

- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

NOTE: To execute this adjustment, the following items must have been properly adjusted.

- \* Print engine image position adjustment
- \* Print engine print area (void area) adjustment
- \* Main scanning direction image magnification ratio adjustment (DSPF mode)
- \* Sub scanning direction image magnification ratio adjustment (DSPF mode)
- \* Scan image off-center adjustment (DSPF mode)
- \* Document scan position adjustment (DSPF mode scanner scan position adjustment)

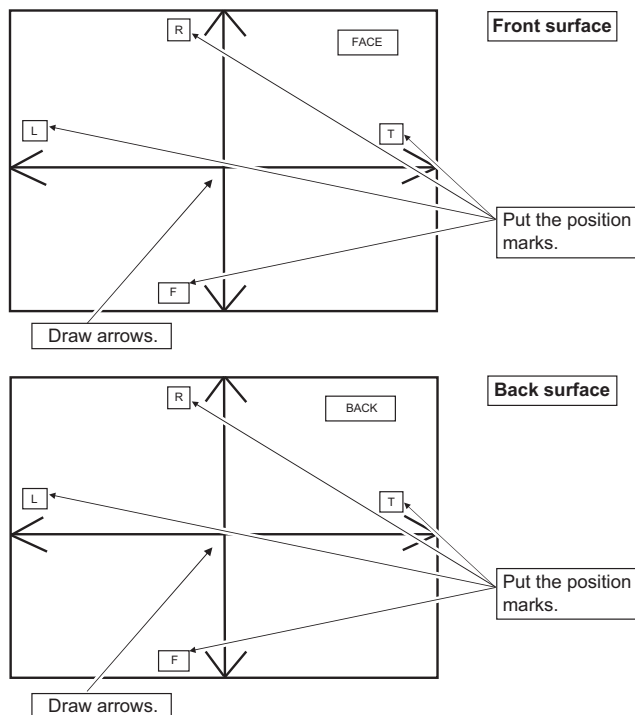
### a. Adjustment procedures

#### 1) Prepare the adjustment chart.

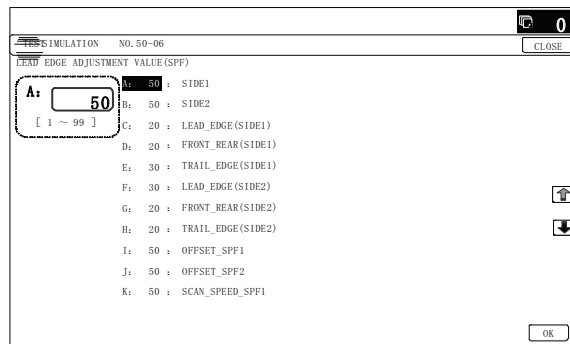
The adjustment chart can be made by the following procedures.

Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces.

At the same time, put marks of the lead edge, the trail edge, the front end, and the rear end as well as the identification marks of the front surface and the back surface.



#### 2) Enter the SIM 50-6 mode.



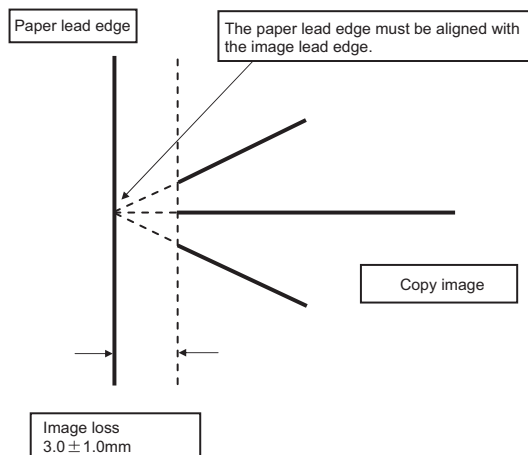
Item	Display	Content	Setting range	Default value
A	SIDE1	Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2	Back surface document scan position adjustment (CIS)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1) Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1) Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1) Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2) Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2) Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2) Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1	DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1	DSPF image magnification ratio adjustment (Sub scan)	1 - 99	50

- \* Item A, B: When the adjustment value is increased, the scan timing is delayed.
- \* Item C - H: When the adjustment value is increased, the image loss is increased.
- \* Item A - H: 1 step = 0.1mm change
- \* The DSPF rear edge image loss setting is provided for counter-measures against the case when shades are produced.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

### (Lead edge image loss adjustment)

- 1) Set the lead edge image loss adjustment values (LEAD EDGE (SIDE1/SIDE2)) on the front surface and the back surface to the following values.  
(Standard set value)  
LEAD EDGE(SIDE 1):  
20 Lead edge image loss set value (Front surface)  
LEAD EDGE(SIDE 2):  
30 Lead edge image loss set value (Back surface)  
(When the set value is increased, the lead edge image loss is increased.)  
(Change for change in the set value: 0.1mm/step)
- 2) Make a duplex copy in 100% in the DSPF mode. Check to confirm that the lead edge image loss is within  $3.0 \pm 1.0\text{mm}$  on the front surface and the back surface. The paper lead edge must be aligned with the presumed image lead edge.

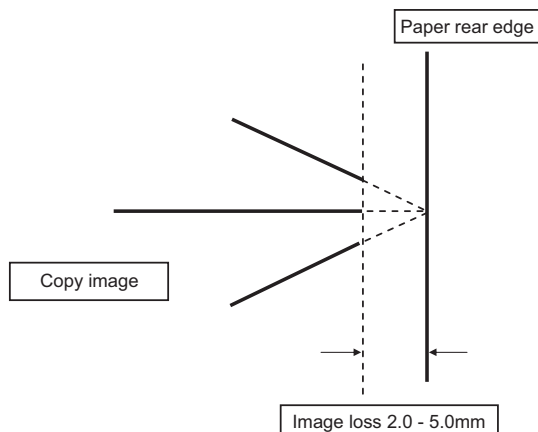


If the above condition is not satisfied, perform the following procedure.

- 3) Enter the adjustment value of SIDE1/SIDE2 with 10-key, and press [OK] key.  
Adjust so that the paper lead edge is aligned with the presumed image lead edge.  
SIDE1: Front surface lead edge scan position adjustment  
SIDE2: Back surface lead edge scan position adjustment  
(When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)  
(Change for change in the set value: 0.1mm/step)

### (Rear edge image loss adjustment)

- 1) Make a duplex copy in 100% in the DSPF mode. Check to confirm that the rear edge image loss is 2.0 - 5.0mm on the front surface and the back surface.

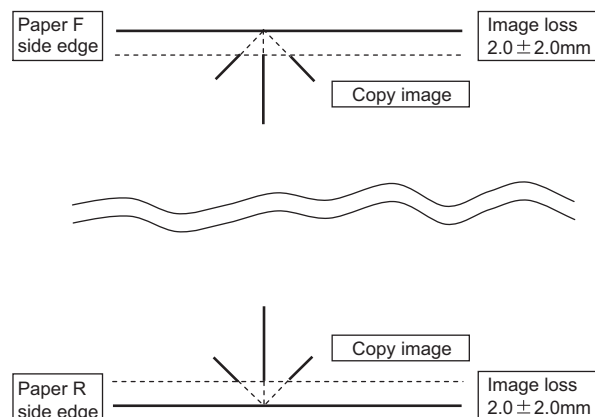


If the above condition is not satisfied, perform the following procedure.

- 2) Enter the adjustment value of TRAIL EDGE (SIDE1/SIDE2) with 10-key, and press [OK] key.  
TRAIL EDGE (SIDE 1):  
Rear edge image loss adjustment value (Front surface)  
TRAIL EDGE (SIDE 2):  
Rear edge image loss adjustment value (Back surface)  
(When the adjustment value is increased, the rear edge image loss is increased.)  
(Change for change in the set value: 0.1mm/step)

### (Front/rear frame direction image loss adjustment)

- 1) Make a duplex copy in 100% in the DSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are  $2.0 \pm 2.0\text{mm}$  on the front surface and the back surface.



If the above condition is not satisfied, perform the following procedure.

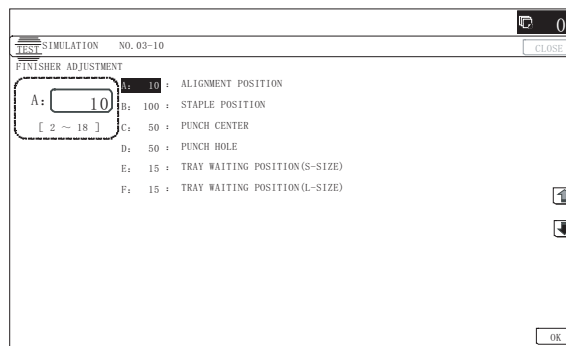
- 2) Enter the adjustment value of FRONT/REAR (SIDE 1) / FRONT/REAR (SIDE 2), and press [OK] key.  
FRONT/REAR (SIDE 1):  
Front/Rear image loss adjustment value (Front surface)  
FRONT/REAR (SIDE 2):  
Front/Rear image loss adjustment value (Back surface)  
(When the adjustment value is increased, the front/rear image loss is increased.)  
(Change for change in the adjustment value: 0.1mm/step)

## ADJ 22 Finisher and punch unit adjustments (alignment, punch hole position, staple position, folding position)

This adjustment must be performed in the following cases:

- \* When the finisher is replaced.
- \* When the finisher control PWB is replaced.
- \* When the punch unit is disassembled.
- \* When the punch control PWB is replaced.
- \* When the alignment is improper.
- \* When the punch hole position is shifted.
- \* When the paper holding position is shifted.

- 1) Enter the SIM 3-10 mode.



- 2) Select an adjustment target item with the scroll key.
- 3) Enter an adjustment value and press [OK] key.
- 4) Cancel the simulation, make a copy in the mode including the adjustment target, and check the adjustment result.

### 22-A MX-FN15/AR-PN4

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
A	ALIGNMENT POSITION	Alignment adjustment	2 - 18	10	This adjustment is used to adjust the paper alignment width when the paper alignment is improper.	Alignment plate position (width) on the staple tray	The alignment width is decreased when the adjustment value is increased. The alignment width is increased when the adjustment value is decreased.	0.35mm
B	STAPLE POSITION	Staple position adjustment	68 - 132	100	This adjustment is used to adjust the staple position when the staple position is improper.	Staple position (Stapler stop position) (F/R direction)	The staple position is shifted to the rear when the adjustment value is increased. The staple position is shifted to the front when the adjustment value is decreased.	0.152mm
C	PUNCH CENTER	Punch hole position adjustment (F/R direction)	37 - 63	50	This adjustment is used to adjust the punch position when the punch hole position is shifted in the F/R direction.	Punch position (F/R direction)	The punch position is shifted to the front when the adjustment value is increased. The punch position is shifted to the rear when the adjustment value is decreased.	0.15mm
D	PUNCH HOLE	Punch hole position adjustment (Paper transport direction)	35 - 57	50	This adjustment is used to adjust the punch hole position when the punch hole position is shifted in the paper transport direction.	Punch position (Paper transport direction)	The punch position is shifted to the paper lead edge when the adjustment value is increased. The punch position is shifted to the paper rear edge when the adjustment value is decreased.	0.26mm
E	TRAY WAITING POSITION (S-SIZE)	Stack tray alignment adjustment (Small size)	5 - 35	15	This adjustment is used to adjust alignment by changing the stack tray standby position when the paper alignment on the stack tray is improper.	Stack tray standby position (Up/down direction)	The stack tray standby position is shifted to the downside when the adjustment value is increased. The stack tray standby position is shifted to the upside when the adjustment value is decreased.	1mm

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
F	TRAY WAITING POSITION (L-SIZE)	Stack tray alignment adjustment (Large size)	5 - 35	15	This adjustment is used to adjust alignment by changing the stack tray standby position when the paper alignment on the stack tray is improper.	Stack tray standby position (Up/down direction)	The stack tray standby position is shifted to the downside when the adjustment value is increased. The stack tray standby position is shifted to the upside when the adjustment value is decreased.	1mm

## 22-B MX-FN16/AR-PN4

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
A	SADDLE POSITION	Saddle binding/folding position adjustment	192 - 208	200	This adjustment is used to set the binding/folding position to the paper center when it is shifted from the paper center.	Paper folding position positioning plate stop position	The binding/folding position is shifted to the upside when the adjustment value is increased by 1. The binding/folding position is shifted to the downside when the adjustment value is decreased by 1.	0.25mm
B	ALIGNMENT POSITION	Alignment adjustment	2 - 18	10	This adjustment is used to adjust the paper alignment width when the paper alignment on the staple tray is improper.	Alignment plate position (width) on the staple tray	The alignment width is decreased when the adjustment value is increased. The alignment width is increased when the adjustment value is decreased.	0.35mm
C	STAPLE POSITION	Staple position adjustment	68 - 132	100	This adjustment is used to adjust the binding position when the staple position is shifted.	Staple position (Stapler stop position) (F/R direction)	The staple position is shifted to the rear when the adjustment value is increased. The staple position is shifted to the front when the adjustment value is decreased.	0.152mm
D	PUNCH CENTER	Punch hole position adjustment (F/R direction)	37 - 63	50	This adjustment is used to adjust the punch position when the punch hole position is shifted in the F/R direction.	Punch position (F/R direction)	The punch position is shifted to the front when the adjustment value is increased. The punch position is shifted to the rear when the adjustment value is decreased.	0.15mm
E	PUNCH HOLE	Punch hole position adjustment (Paper transport direction)	35 - 57	50	This adjustment is used to adjust the punch hole position when the punch hole position is shifted in the paper transport direction.	Punch position (Paper transport direction)	The punch position is shifted to the paper lead edge when the adjustment value is increased. The punch position is shifted to the paper rear edge when the adjustment value is decreased.	0.26mm
F	TRAY WAITING POSITION (S-SIZE)	Stack tray alignment adjustment (Small size)	5 - 35	15	This adjustment is used to adjust alignment by changing the stack tray standby position when the paper alignment on the stack tray is improper.	Stack tray standby position (Up/down direction)	The stack tray standby position is shifted to the downside when the adjustment value is increased. The stack tray standby position is shifted to the upside when the adjustment value is decreased.	1mm

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
G	TRAY WAITING POSITION (L-SIZE)	Stack tray alignment adjustment (Large size)	5 - 35	15	This adjustment is used to adjust alignment by changing the stack tray standby position when the paper alignment on the stack tray is improper.	Stack tray standby position (Up/down direction)	The stack tray standby position is shifted to the downside when the adjustment value is increased. The stack tray standby position is shifted to the upside when the adjustment value is decreased.	1mm

## 22-C MX-FN14/MX-PN10

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
A	BUFFER SHIFT 1	Staple mode paper alignment adjustment 1 (adjustment of the shift amount of the first and the second sheet in the staple mode 2-sheet buffer 3-sheet discharge)	50 - 150	100	This adjustment is used to adjust the paper shift amount in the buffer section when the paper alignment in the paper transport direction in the staple mode is improper. (When there is a paper shift (1st - 3rd sheet) in the second set or later of the staple bundles of paper (A4, LT, B5, 16K) in the buffer section, adjust so that the shift is decreased.)	Paper shift amount in the buffer section	The following paper is shifted to the advancing direction when the adjustment value is increased. The following paper is shifted to the delaying direction when the adjustment value is decreased.	0.1mm
B	BUFFER SHIFT 2	Staple mode paper alignment adjustment 2 (adjustment of the shift amount of the second and the third sheet in the staple mode 2-sheet buffer 3-sheet discharge, and the shift amount of the first and the second sheet in 1-sheet buffer and 2-sheet discharge)	50 - 150	100	This adjustment is used to adjust the paper shift amount in the buffer section when the paper alignment in the paper transport direction in the staple mode is improper. (When there is a paper shift (1st - 3rd sheet) in the second set or later of the staple bundles of paper (A4, LT, B5, 16K) in the buffer section, adjust so that the shift is decreased.)	Paper shift amount in the buffer section	The following paper is shifted to the advancing direction when the adjustment value is increased. The following paper is shifted to the delaying direction when the adjustment value is decreased.	0.1mm
C	ALIGNMENT	Alignment adjustment	50 - 150	100	This adjustment is used to adjust the paper alignment width when the paper alignment is improper.	Indentation amount of the alignment plate on the front side of the process tray	The distance between the paper edge and the alignment plate is increased when the adjustment value is increased. The distance between the paper edge and the alignment plate is decreased when the adjustment value is decreased.	0.1mm
D	STAPLE FRONT (S-width)	Front side staple position adjustment (Paper width, 245mm or less)	70 - 130	100	This adjustment is used to adjust the staple position when the front side staple position is shifted. (Paper width, 245mm or less)	Front side staple position adjustment (stapler stop position) (F/R direction)	The staple position is shifted to the rear side when the adjustment value is increased. The staple position is shifted to the front side when the adjustment value is decreased.	0.1mm

Item/Display		Content	Setting range	Default value	Purpose (Case where the adjustment is required)	Change when the adjustment value is increased or decreased		Change when the adjustment value is changed by 1
E	STAPLE FRONT (W-width)	Front side staple position adjustment (Paper width, over 245mm)	70 - 130	100	This adjustment is used to adjust the staple position when the front side staple position is shifted. (Paper width, over 245mm)	Front side staple position adjustment (stapler stop position) (F/R direction)	The staple position is shifted to the rear side when the adjustment value is increased. The staple position is shifted to the front side when the adjustment value is decreased.	0.1mm
F	STAPLE REAR (S-width)	Rear side staple position adjustment (Paper width, 245mm or less)	70 - 130	100	This adjustment is used to adjust the staple position when the rear side staple position is shifted. (Paper width, 245mm or less)	Rear side staple position (stapler stop position) (F/R direction)	The staple position is shifted to the rear side when the adjustment value is increased. The staple position is shifted to the front side when the adjustment value is decreased.	0.1mm
G	STAPLE REAR (W-width)	Rear side staple position adjustment (Paper width, over 245mm)	70 - 130	100	This adjustment is used to adjust the staple position when the rear side staple position is shifted. (Paper width, over 245mm)	Rear side staple position (stapler stop position) (F/R direction)	The staple position is shifted to the rear side when the adjustment value is increased. The staple position is shifted to the front side when the adjustment value is decreased.	0.1mm
H	STAPLE CENTER	Staple center position adjustment (2-position staple mode)	85 - 115	100	This adjustment is used when the staple center position is shifted in the 2-position staple mode.	Rear side staple position (stapler stop position) (F/R direction)	The staple position (on the rear side only) is shifted to the rear side when the adjustment value is increased. The staple position (on the rear side only) is shifted to the front side when the adjustment value is decreased.	0.1mm
I	PUNCH Y	Punch hole position adjustment (F/R direction)	85 - 115	100	This adjustment is used to adjust the punch position when the punch hole position is shifted in the F/R direction.	Punch position (F/R direction)	The punch hole position is shifted to the front side when the adjustment value is increased. The punch hole position is shifted to the rear side when the adjustment value is decreased.	0.1mm
J	PUNCH X	Punch hole position adjustment (Paper transport direction)	50 - 150	100	This adjustment is used to adjust the punch hole position when the punch hole position is shifted in the paper transport direction.	Punch position (Paper transport direction)	The punch hole position is shifted to the lead edge when the adjustment value is increased. The punch hole position is shifted to the rear edge when the adjustment value is decreased.	0.1mm
K	PUNCH SKEW	Not used	100 - 102	100				

## [6] SIMULATION

### 1. General (Including basic operations)

The simulation mode has the following functions, to display the machine operating status, identify the trouble position and causes in an earlier stage, and make various setups and adjustments speedily for improving the serviceability of the machine.

- 1) Various adjustments
- 2) Setting of the specifications and functions
- 3) Canceling troubles
- 4) Operation check
- 5) Counters check, setting, clear
- 6) Machine operating conditions (operation hysteresis), data check, clear.
- 7) Various (adjustments, setting, operation, counters, etc.) data transport.

The operating procedures and displays depend on the design of the operation panel of the machine.

#### A. Basic operation

##### (1) Starting the simulation

\* Entering the simulation mode

- 1) Copy mode key ON → Program key ON → Asterisk (\*) key ON → CLEAR key ON → Asterisk (\*) key ON → Ready for input of a main code of simulation
- 2) Entering a main code with the 10-key → START key ON.  
Or select a main code with the SIM key on the touch panel.
- 3) Entering a sub code with the 10-key → START key ON.
- 4) Select an item with the scroll key and the item key.
- 5) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.

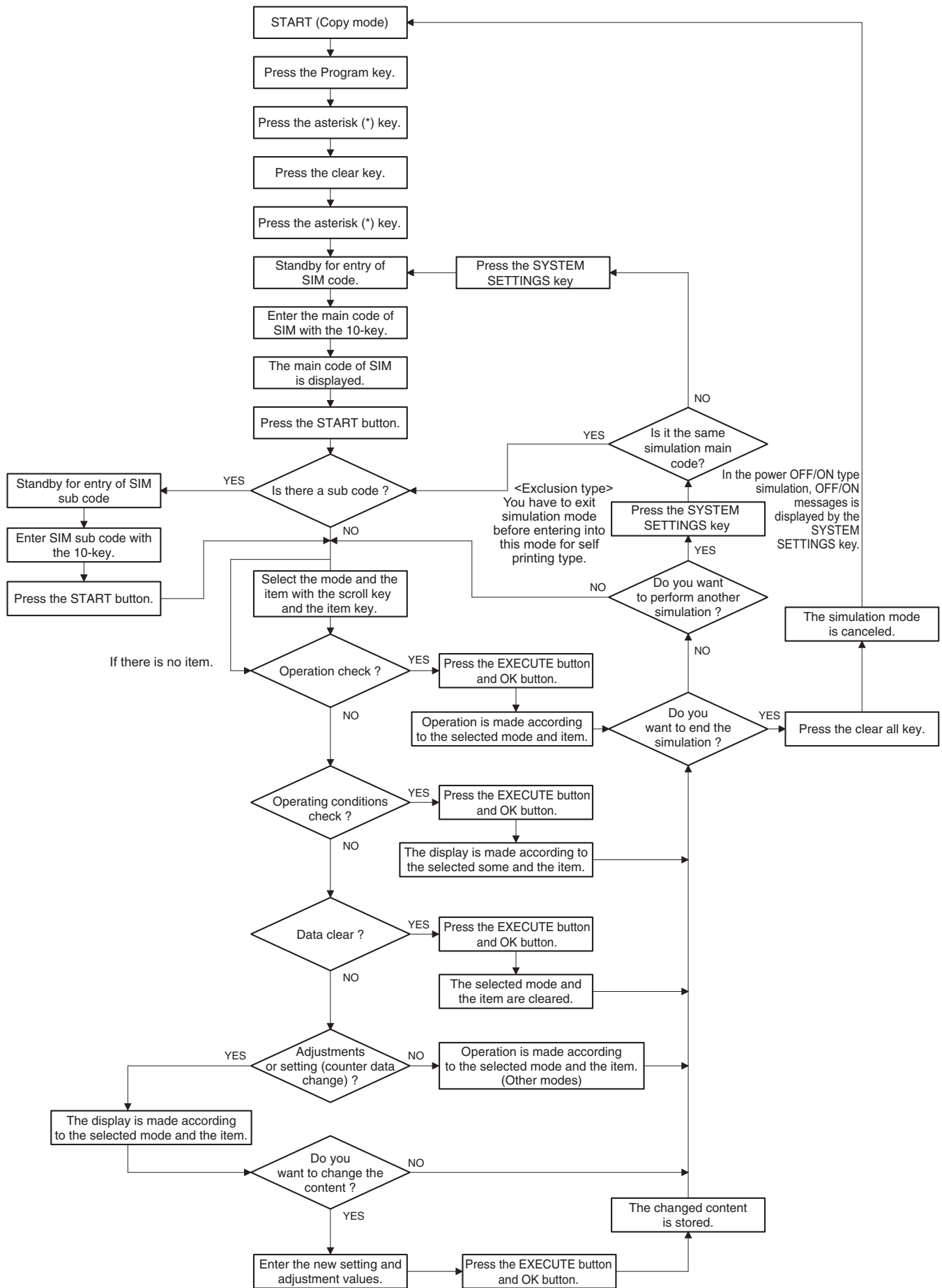
When canceling the current simulation mode to change the main code and the sub code, press [SYSTEM SETTINGS] key.

\* Canceling the simulation mode to return to the normal mode

- 1) Press [CA] key.

##### (Note for the simulation mode)

Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode. If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.





## 2. List of simulation codes

Main	Sub	Functions	Section
1	1	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
	2	Used to check the sensors in the scanner (reading) section and the related circuits.	Scanner (reading)
	5	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
2	1	Used to check the operations of the automatic document feed unit and the control circuit.	Automatic document feeder
	2	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.	Automatic document feeder
	3	Used to check the operations of the loads in the automatic document feed unit and the control circuit.	Automatic document feeder
3	2	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.	Finisher
	3	Used to check the operation of the load in the finisher and the control circuit.	Finisher
	10	Used to adjust the finisher.	Finisher
	30	Used to check the operations of the sensors and detectors in the inserter and the control circuits.	Inserter
	31	Used to check the operations of the loads in the inserter and the control circuit.	Inserter
	32	Used to enter the adjustment value of the inserter paper width detection level.	Inserter
4	2	Used to check the large capacity tray (LCC) sensors and detectors and their control circuits.	Large capacity tray (LCC)
	3	Used to check the large capacity tray (LCC) loads and their control circuits.	Large capacity tray (LCC)
	5	Used to check the operations of the LCC paper transport clutch (LTRC).	Large capacity tray (LCC)
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation panel
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing
	3	Used to check the operation of the scanner lamp and the control circuit.	Scanner (reading)
	4	Used to check the operation of the discharge lamp and the control circuit.	Process
6	1	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.	Paper transport/paper exit
	2	Used to check the operations of each fan and its control circuit.	Other
	3	Used to check the operations of the transfer unit and the control circuit.	Process (Transfer)
7	1	Used to set the operating conditions of aging.	Other
	6	Used to set the operating intermittent aging cycle.	
	8	Used to display the warm-up time.	
	12	The document reading number of sheets setting (for aging operation)	Automatic document feeder
8	1	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit.	Process (Developing)
	2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.	Process (Charging)
	6	Used to check and adjust the operation of the transport voltage and the control circuit.	Process (Transfer)
	17	Used to check and adjust the transfer electric cleaning output and the control circuit operations.	Process (Transfer)
	18	Used to check and adjust the transfer cleaning roller output and the control circuit operations.	Process (Transfer)
9	2	Used to check the operation of the sensors and detectors in the switchback section (duplex section) and the control circuit.	Duplex
	3	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.	Duplex
10	1	Used to check the operations of the toner supply mechanism (toner clutch) and the related circuit.	Process (Developing)
	2	Used to check the operations of the toner remaining quantity sensor and the related circuits.	Process (Developing)
13	-	Used to cancel the self-diag "U1" trouble.	
14	-	Used to cancel the self-diag "H3, H4, H5" trouble.	
15	-	Used to cancel the self-diag "F3-12, F3-22, U6-09" trouble.	LCC
16	-	Used to cancel the self-diag "U2" trouble.	MFP PWB / PCU PWB / SCU PWB
17	-	Used to cancel the self-diag "PF" trouble.	
21	1	Used to set the maintenance cycle.	
22	1	Used to display the print count value of each section and the operation mode.	
	2	Used to display the number of total mis-feed and the number of troubles.	
	3	Used to display the mis-feed position and the number of mis-feed at the position.	
	4	Used to display the trouble (self diag) history.	
	5	Used to display the ROM version of each unit (section).	Firmware
	6	Used to print information on various settings, adjustments, counters, controls, and versions.	
	8	Used to display the number of operations (the counter value) of the finisher, the DSPF, and scanning (reading).	
	9	Used to display the print quantity of each paper feed section.	
	10	Used to display the system configuration (options and internal hardware).	
	11	Used to display the use frequency of send/receive of FAX. (Only when FAX is installed.)	FAX
	12	Used to display the mis-feed position of the DSPF and the number of mis-feed at the position.	Automatic document feeder
	13	Used to display the use quantity of the process section (OPC drum, DV unit, toner cartridge).	Process
23	19	Used to display various counter values related to scan - image send.	
	90	Used to output the various set data lists.	
	2	Used to output the trouble history list of paper jam and mis-feed.	
	80	Used to output the operation data of paper feed and paper transport in the paper feed/transport section.	Paper feed, Paper transport

Main	Sub	Functions	Section
24	1	Used to clear the jam counter, and the trouble counter.	
	2	Used to clear the number of use (the number of prints) of each paper feed section.	Paper feed, paper reverse/transport
	3	Used to clear the finisher, DSPF, and the scan (reading) unit counter.	
	4	Used to clear the maintenance counter, the printer counters of the transfer unit and the fusing unit.	
	5	Used to clear the developer counter.	
	6	Used to clear the copy counter.	
	7	Used to clear the OPC drum counter.	
	9	Used clear the printer mode print counter and the self print mode print counter.	
	10	Used to clear the FAX counter. (Only when FAX is installed)	
	15	Used to clear the counters related to the scan mode and the image send.	
	30	Used to initialize the administrator password.	
	31	Used to initialize the service mode (Web page) password.	
25	1	Used to check the operations of the developing section, and to display the toner density detection level.	Process (Developing section)
	2	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)	Process (Photoconductor/Developing/Transfer/Cleaning)
26	2	Used to set the paper type and the weight type.	Paper feed
	3	Used to set the specifications of the auditor. (Japan only)	Auditor
	5	Used to set the count mode in A3 (11" x 17") print.	
	6	Used to set the specifications of the destination.	
	10	Used to set the trial mode of the network scanner.	
	18	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)	
	30	Used to set the operation mode corresponding to the CE mark (Europe safety standards).	
	35	Used to set the trouble history display mode.	
	38	Used to set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over.	
	41	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.	
	49	Used to set the print speed of postcards mode.	
	50	Used to set the operation specifications and functions.	
	52	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.	
	53	Used to set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the copy mode.	
	54	Used to set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the print mode.	
	65	Used to set the limit of the staple process.	
	69	Used to set the operating conditions for toner near end.	
	73	Used to adjust the image loss (shade removal amount) in the poster, the continuous enlargement copy, the card scan, and the A3 wide copy mode.	
	74	Used to set the OSA trial mode.	
	78	Used to set the password of the remote operation panel mode.	
27	1	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)	
	2	Used to set the sender's registration number and the HOST server telephone number. (FSS function)	
	4	Used to set the initial call and toner order auto send. (FSS function)	
	5	Used to set the machine tag No. (FSS function)	Communication (RIC/MODEM)
	6	Used to set of the manual service call. (FSS function)	
	7	Used to set of the enable, alert call out. (FSS function)	
	9	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)	
	10	Used to clear the trouble prediction history information. (FSS function)	
	11	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)	
	12	Used to check the high-density and the half-tone process control error history. (FSS Function)	
	13	Used to check the history of paper transport time between sensors. (FSS function)	
	14	Used to set the FSS function connection test mode.	
30	1	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.	
	2	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.	
33	1	Used to check the operations of the card reader sensor and the control circuit.	
	2	Used to delete the ID (IDM) information of card.	
40	2	Manual paper feed tray paper width sensor adjustment.	Paper feed
	7	Used to set the adjustment value of the manual paper feed tray paper width sensor.	Paper feed
	12	Used to adjust the multi-purpose tray width detection level.	Paper feed
41	1	Used to check the operations of the document size sensor and the control circuit.	
	2	Used to adjust the document size sensor detection level.	
	3	Used to check the operations of the document size sensor and the control circuit.	

Main	Sub	Functions	Section
43	1	Used to make the fusing reference temperature setting 1 in each operation mode.	
	4	Used to set the fusing temperature 2 in each operation mode.	
	20	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	21	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	22	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	23	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	24	Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.	
	31	Used to check the operation of the fusing web cleaning motor.	Fusing
	32	Used to set various items related to the forcible operation of web cleaning when job end.	Fusing
44	34	Used to check the operation of the fusing lower web cleaning motor.	Fusing
	1	Used to set each correction operation function in the image forming (process) section.	Process (Photo-conductor/Developing/Transfer/Cleaning)
	2	Used to adjust the sensitivity of the image density sensor.	Process
	4	Used to set the conditions of the high density process control operation.	Process
	6	Used to execute the high density process control forcibly.	Process
	9	Used to display the result data of the high density process control operation.	Process (Photo-conductor/Developing/Transfer/Cleaning)
	12	Used to display the operation data of the high density process control and the image density sensor.	Process (Photo-conductor/Developing)
	14	Used to display the output level of the temperature and humidity sensor.	Process (Photo-conductor/Developing)/Fusing
	16	Used to display the toner density control data.	
	21	Used to register the target value of the half-tone process control.	Process
	22	Used to display the toner patch density level in the half tone process control operation.	Process
	24	Used to display the correction target and the correction level in the half tone process control operation.	Process
	25	Used to set the calculating conditions of the correction value for the half tone process control.	Process
	26	Used to execute the half tone process control compulsory.	Process
	27	Used to clear the correction data of the half tone process control.	Process
	28	Used to set the process control execution conditions.	Process
	29	Used to set the operating conditions of the process control during a job.	Process
	37	Used to set the development bias correction level in the continuous printing operation.	
46	2	Used to adjust the copy density in each monochrome copy mode.	
	4	Used to adjust the density in the image send mode.	
	5	Used to adjust the density in the image send mode.	
	8	Used to adjust the image send mode color balance RGB.	
	9	Used to adjust the SPF mode scan image density (copy, image send mode)	
	10	Used to adjust the copy density (in each copy mode).	
	16	Used to adjust the copy density manually.	
	19	Used to set the operating conditions of document density scanning (copy, image send mode).	
	23	Used to set the density correction of copy high density section (High density tone gap supported).	
	24	Copy density adjustment (Auto adjustment)	
	32	Used to adjust the reproducibility of the document background density in the automatic copy mode.	
	37	Used to adjust the reproducibility of the scan image color document (copy, image send mode).	
	39	Used to adjust the sharpness of FAX send images.	
	40	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	
	41	Used to adjust the FAX send image density. (Normal)	
	42	Used to adjust the FAX send image density. (Fine)	
	43	Used to adjust the FAX send image density. (Super Fine)	
	44	Used to adjust the FAX send image density. (Ultra fine)	
	45	Used to adjust the FAX send image density. (600dpi).	
	47	Used to set the compression rate of copy and scan images (JPEG).	
	51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode (manual adjustment).	
	52	Used to set the gamma default for the copy mode heavy paper and the image process mode. (The set values of SIM46-51 are set to the default values.)	
	60	Used to adjust the automatic copy mode sharpness.	
	61	Used to adjust the area separation recognition level in the image send mode (color, gray, auto exposure mode).	
	62	Used to set the operating conditions of the ACS, the area separation, the background image process, and the automatic exposure mode.	
	63	Used to adjust the density in the low density area of a scan image.	Scan mode
	74	Used to adjust the copy density and the printer density. (Automatic adjustment)	
	90	Used to set the process operation of high-compression PDF images.	
48	1	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).	
	5	Used to correction the scan image magnification ratio (in the sub scanning direction).	
	6	Used to adjust the rotation speed of each motor.	

Main	Sub	Functions	Section
49	1	Used to perform the firmware update.	
	3	Used to install and update the Operation Manual data stored in the HDD.	
	5	Used to install and update the watermark data stored in the HDD.	
50	1	Copy image position, image loss adjustment	
	2	Used to adjust the copy image position and the image loss (simple adjustment).	
	5	Used to adjust the print lead edge image position. (PRINTER MODE)	
	6	Used to adjust the copy image position and the image loss (DSPF mode).	Automatic document feeder
	7	Used to adjust the copy image position and the image loss (DSPF mode) (simple adjustment).	Automatic document feeder
	10	Used to adjust the image off-center position. (The adjustment is made separately for each paper feed section.)	
	12	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)	
	27	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.	
51	2	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF resist roller.	
	6	Used to adjust the detection level of the DSPF document width.	
53	7	Used to adjust the DSPF document size width sensor.	Automatic document feeder
	8	Used to adjust the document lead edge reference and the DSPF mode document scan position.	Automatic document feeder
55	1	Used to set the specifications of the engine control operations. (SOFT SW)	
	2	Used to set the specifications of the scanner control operation. (SOFT SW)	
	3	Used to set the specifications of the controller operation. (SOFT SW)	
	10	Used to set the stamp text.	
56	1	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)	
	2	Used to backup the data in the EEPROM, SRAM, and HDD (including user authentication data and address data) to the USB memory.	
	3	Used to backup the document filing data to the USB memory.	
	4	Used to backup the JOB log data to the USB memory.	
60	1	Used to check the operations (read/write) of the MFP PWB memory.	
	2	Used to set the specifications of the MFP PWB on-board SDRAM.	
61	1	Used to check the LSU polygon motor rotation and laser detection.	LSU
	3	Used to set the laser power	
62	1	Used to execute the hard disk format (except operation manual area). * If no HDD is installed, the MFP Flash memory is formatted.	
	2	Used to check read/write of the hard disk (partial).	
	3	Used to check read/write of the hard disk (all areas).	
	6	Used to perform the self diagnostics of the hard disk.	
	7	Used to print the hard disk self diagnostics error log.	
	8	Used to format the hard disk. (Excluding the system area and the operation manual area)	
	10	Used to delete the job log data.	
	11	Used to delete the document filing data.	
	12	Used to set Enable/Disable of auto format in a hard disk trouble.	
	13	Used to format the hard disk. (only the operation manual and watermark area)	
63	1	Used to display the shading correction result.	Scanner
	2	Used to perform shading.	
	3	Used to perform scanner (CCD/CIS) color balance and gamma auto adjustment.	Scanner
	4	Used to display the SIT chart patch density.	
	5	Used to perform the scanner (CCD/CIS) color balance and gamma default setting.	
64	2	Test print. (Self print) (Monochrome mode)	
	4	Printer test print. (Self print) (256 gradation) * This simulation functions only for the machines which are provided with the printer function.	
	5	Printer test print. (Self print) (PCL)	
	6	Printer test print. (Self print) (PS)	
	7	Test print. (Self print) (Used to print the adjustment pattern of SIM46-16.)	
65	1	Used to adjust the touch panel (LCD display section) detection coordinates.	Operation panel section
	2	Used to display the touch panel (LCD display section) detection coordinates.	
	5	Used to check the operation panel key input.	
67	17	Printer controller reset	Printer
	24	Used to adjust the printer density. (Automatic adjustment)	Printer
	25	Printer density adjustment (manual adjustment) (this simulation functions only for the machines which are provided with the printer function).	Printer
	31	Used to clear the printer calibration data (this simulation functions only for the machines which are provided with the printer function).	Printer
	33	Used to adjust the gamma and the density in each printer screen (this simulation functions only for the machines which are provided with the printer function).	Printer
	34	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)	Printer
	70	MFP PWB SRAM data clear	MFP PWB

### 3. Details of simulation

1

1-1	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner (reading) unit and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the operation resolution (scan speed) with the touch panel key.
  - 2) Press [EXECUTE] key.
- Scanning is once performed at the speed corresponding to the scan resolution (operation speed).

Item/Display	Operation mode	Default value
OC SCAN	300DPI	300DPI (372.0mm/s)
	400DPI	400DPI (279.0mm/s)
	600DPI	600DPI (186.0mm/s)
	1200DPI	1200DPI (93.0mm/s)

1-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the sensors in the scanner (reading) section and the related circuits.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

The operating status of the sensor is displayed.  
When "MHPS" is highlighted, the scanner unit is in the home position.

1-5	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner (reading) unit and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the operation speed with the touch panel key.
  - 2) Press [EXECUTE] key.
- Scanning is repeated at the speed corresponding to the scan resolution (operation speed).  
When [EXECUTE] key is pressed, the operation is terminated.

Item/Display	Operation mode	Default value
OC SCAN	300DPI	300DPI (372.0mm/s)
	400DPI	400DPI (279.0mm/s)
	600DPI	600DPI (186.0mm/s)
	1200DPI	1200DPI (93.0mm/s)

2

2-1	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the automatic document feed unit and the control circuit.
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

- 1) Select the operation mode and the speed with the touch panel key.
  - 2) Press [EXECUTE] key.
- The DSPF repeats paper feed, transport, and paper exit operations at the speed corresponding to the scan resolution (operation speed).  
When [EXECUTE] key is pressed, the operation is terminated.

Item/Display	Operation mode	Default value
(SINGLE)	300DPI	300DPI (372.0mm/s)
	400DPI	400DPI (279.0mm/s)
	600DPI	600DPI (186.0mm/s)
(DOUBLE)	300DPI	300DPI (372.0mm/s)
	400DPI	400DPI (279.0mm/s)
	600DPI	600DPI (186.0mm/s)

2-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.  
The code names of the sensors and the detectors which are active are highlighted.

SSET	DSPF installation detector
SOC	DSPF open/close detector
SCOV	DSPF cover open/close detector
SLCOV	DSPF lower door open/close detector
SPED1	DSPF document detector 1
SPED2	DSPF document detector 2
SPPD1	DSPF document pass detector 1 (Paper entry detection)
SPPD2	DSPF document pass detector 2 (Resist roller front document transport detection)
SPPD3	DSPF document pass detector 3 (Document scanning front document transport detection)
SPPD4	DSPF document pass detector 4
SPPD5	DSPF document pass detector 5 (DSPF: Document transport detection)
SPOD	DSPF paper exit detector
SPRDMD	DSPF random feed paper size detector
SPLS1	DSPF document length detector 1 (Short)
SPLS2	DSPF document length detector (Long)
STLD	DSPF document tray lower limit detector
STUD	DSPF document tray upper limit detector
STMPU	DSPF stamp unit installation detector
SWD_LEN	DSPF guide plate position (Unit: 0.1mm)
SWD_AD	DSPF document detection volume output AD value

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the loads in the automatic document feed unit and the control circuit.
<b>Section</b>	Automatic document feeder

**Operation/Procedure**

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

SPUM	DSPF paper feed motor
SPFM	DSPF transport motor
SPOM	DSPF paper exit motor
SLUM	DSPF lift-up motor
SPFFAN	DSPF fan motor
SPFC	DSPF paper feed clutch
SRRRC	DSPF resist roller clutch
STRRC	DSPF No. 1 resist roller clutch
STRC	DSPF transport clutch
STMPs	Stamp solenoid ( Displayed only when the finish stamp is installed.)

**3**

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.
<b>Section</b>	Finisher

**Operation/Procedure**

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

**<100 sheets binding finisher>**

FATPS	Paper alignment tray paper sensor
FTPS11	Upper tray position sensor 1
FTPS12	Upper tray position sensor 2
FTPS13	Upper tray position sensor 3
FPLS	Paper level sensor
FPLD	Paper level detector
FATPLD	Paper alignment tray paper level detector
FTPLD2	Lower tray paper level detector
FDPHHS_C	Delivery paper hold home position sensor C
FARLHS	Paper alignment roller lift home position sensor
FPTHHS	Paper tail hold home position sensor
FTRLHS	Paper transport roller lift home position sensor
FBFHPS	Buffer flapper home position sensor
FPJD	Paper JAM detector
FPED	Paper enter detector
FSHS	Staple home position sensor
FSAD	Staple area detector
FPJD_T	Paper JAM detector (Transport section)
FTPSW	Tray proximity switch
FSLD	Staple lead detector
FSED	Staple empty detector
FDTPD1	Paper delivery upper tray paper detector
FDTPD2	Paper delivery lower tray paper detector
FDTPD3	Paper delivery middle tray paper detector
FSSHPS	Stapler shift home position sensor

FPAPHS_F	Paper alignment plate home position sensor F
FPAPHS_R	Paper alignment plate home position sensor R
FSOS	Shutter open sensor
FDRLHS	Delivery roller lift home position sensor
FCD	Connection detector
FCD1	Cover detector 1
PDCD	Paper delivery unit cover open/close detector
FSSW2	Safety switch 2
FSSW1	Safety switch 1
FSCS	Shutter close sensor
FSSW3	Safety switch 3
FTPS21	Lower tray position sensor 1
FTPS22	Lower tray position sensor 2
FTPS23	Lower tray position sensor 3
FTPDHS	Paper tail push down home position sensor
FDPHHS_R	Delivery paper hold home position sensor R
FDPHHS_F	Delivery paper hold home position sensor F
FPGHS_R	Paper guide home position sensor R
FPGHS_F	Paper guide home position sensor F
FGHPS	Gripper home position sensor
FGPS	Gripper position sensor
FGAPS1	Gripper arm position sensor 1
FGAPS2	Gripper arm position sensor 2

**<Saddle stitch finisher>**

FSMRS	Saddle motor rotation sensor
FCD2	Cover detector 2
FCD4	Cover detector 4
FSPTMRS	Saddle paper transport motor rotation sensor
FSAPHS	Saddle alignment plate home position sensor
FSTPD	Saddle paper delivery tray paper detector
FSPGHS	Saddle paper guide home position sensor
FSATPD	Saddle paper alignment tray paper detector
FCD3	Cover detector 3
FSPDD	Saddle paper delivery detector
FSRPS	Semilunar roller phase sensor
FSRGHS	Saddle roller guide home position sensor
FSPHS	Saddle plate home position sensor
FSPS	Saddle plate position sensor
FSPPD	Saddle paper pass detector
FSPJD1	Saddle paper JAM detector 1
FSPJD2	Saddle paper JAM detector 2
FSPJD3	Saddle paper JAM detector 3
FSRHS	Saddle roller home position sensor
FSSW3	Safety switch 3
FSSW4	Safety switch 4
FSSW5	Safety switch 5
FSSSW2	Saddle staple empty switch 2
FSSHWS2	Saddle staple home position switch 2
FSSSW1	Saddle staple empty switch 1
FSSHWS1	Saddle staple home position switch 1

**<4K finisher>**

FPED	Paper enter detector
FPPD	Paper pass detector
FSOS	Shutter open sensor
FPAPHS	Paper alignment plate home position sensor
FSSHPS	Stapler shift home position sensor
FTPS1	Upper tray position sensor 1
FTLMRS11	Upper tray lift motor rotation sensor 1
FDMRS	Delivery motor rotation sensor
FDTPD1	Paper delivery upper tray paper detector
FDTPD2	Paper delivery lower tray paper detector
FBPPD	Buffer paper pass detector
FCD	Connection detector
FCD1	Cover detector 1
FBPED	Buffer paper enter detector
FDRLUS	Delivery roller lift up sensor
FTLMRS12	Upper tray lift motor rotation sensor 2
FPMRMS	Paper delivery motor rotation sensor
FSLD	Staple lead detector
FSHS	Staple home position sensor

FTLMRS21	Lower tray lift motor rotation sensor 1
FTLMRS22	Lower tray lift motor rotation sensor 2
FTPS2	Lower tray position sensor 1
FSSW1	Safety switch 1
FDRLDD	Delivery roller lift down sensor
FTPSW1	Upper tray position switch
FSCSW	Shutter close switch
FSCDSW	Staple cartridge detect switch
FSED	Staple empty detector
FTPD	Tray proximity detector
FATPD	Paper alignment tray paper detector

3-3	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the load in the finisher and the control circuit.
<b>Section</b>	Finisher

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

#### <100 sheets binding finisher>

FARLM	Paper alignment roller lift motor
FDPHM	Delivery paper holding motor
FDRLM	Delivery roller lift motor
FGAM	Gripper arm motor
FGM	Gripper motor
FPAM_F	Paper alignment motor F
FPAM_R	Paper alignment motor R
FPDM1	Paper delivery motor 1
FPDM2	Paper delivery motor 2
FPGM	Paper guide motor
FPTAM	Paper transport alignment motor
FPTHM	Paper tail holding motor
FPTM1	Paper transport motor 1
FPTM2	Paper transport motor 2
FPTPDM	Paper tail push down motor
FPTRLM	Paper transport roller lift motor
FSC	Shutter clutch
FSM	Staple motor
FSSM	Stapler shift motor
FSSWS	Safety switch 2 solenoid
FTLM1	Upper tray lift motor
FTLM2	Lower tray lift motor
PDCF1	Paper delivery unit cooling fan 1
PDCF2	Paper delivery unit cooling fan 2
PDPTM	Paper delivery unit paper transport motor

#### <Saddle stitch finisher>

FFS2	Flappper solenoid 2
FFS3	Flappper solenoid 3
FPTM4	Paper transport motor 4
FPTS	Paper transport solenoid
FSDM	Saddle motor
FSDSM_F	Saddle staple motor F
FSDSM_R	Saddle staple motor R
FSPAM	Saddle paper alignment motor
FSRGM	Saddle roller guide motor
FSPM	Saddle positioning motor
FSPTM	Saddle paper transport motor

#### <4K finisher>

FBS1	Buffer solenoid 1
FBS2	Buffer solenoid 2
FDRLM	Delivery roller lift motor
FFS1	Flappper solenoid 1
FPABS	Paper alignment belt solenoid
FPAM	Paper alignment motor
FPDM	Paper delivery motor
FPOS	Paper offset solenoid
FPS	Paddle solenoid
FPTM1	Paper transport motor 1
FPTM2	Paper transport motor 2
FPTM3	Paper transport motor 3
FSM	Staple motor
FSSM	Stapler shift motor
FTLM1	Upper tray lift motor
FTLM2	Lower tray lift motor

3-10	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the finisher.
<b>Section</b>	Finisher

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

#### <100 sheets binding finisher>

	Item/Display	Content	Setting range	Default value
A	BUFFER SHIFT 1	Buffer paper adjustment 1	50 - 150	100
B	BUFFER SHIFT 2	Buffer paper adjustment 2	50 - 150	100
C	ALIGNMENT	Alignment width adjustment	50 - 150	100
D	STAPLE FRONT (S-width)	Staple binding position adjustment (one position in front)	70 - 130	100
E	STAPLE FRONT (W-width)	Staple binding position adjustment (one position in front)	70 - 130	100
F	STAPLE REAR (S-width)	Staple binding position adjustment (one position at the rear)	70 - 130	100
G	STAPLE REAR (W-width)	Staple binding position adjustment (one position at the rear)	70 - 130	100
H	STAPLE CENTER	Staple binding position adjustment (2 positions at the center)	85 - 115	100
I	PUNCH Y	Punch hole position adjustment (main scanning direction)	85 - 115	100
J	PUNCH X	Punch hole position adjustment (sub scanning direction)	50 - 150	100
K	PUNCH SKEW	Punch mode skew adjustment	100 - 102	100

#### <Saddle stitch finisher>

	Item/Display	Content	Setting range	Default value
A	SADDLE POSITION	Saddle binding/folding position adjustment	192 - 208	200
B	ALIGNMENT POSITION	Alignment position adjustment	2 - 18	10
C	STAPLE POSITION	Staple binding position adjustment	68 - 132	100
D	PUNCH CENTER	Punch center position adjustment	37 - 63	50

	Item/Display	Content	Setting range	Default value
E	PUNCH HOLE	Punch hole position adjustment	35 - 57	50
F	TRAY WAITING POSITION (S-SIZE)	Stack tray waiting position adjustment (Small size)	5 - 35	15
G	TRAY WAITING POSITION (L-SIZE)	Stack tray waiting position adjustment (Large size)	5 - 35	15

NOTE: "A: SADDLE POSITION (Saddle binding position adjustment)" and "B: FOLDING POSITION (Saddle folding position adjustment)"

The saddle binding position adjustment and the saddle folding position adjustment can be executed in the system setting menu. However, the adjustments in the system setting are based on the adjustment value of this simulation. If, therefore, the adjustment value of this simulation is set to an extreme level, the adjustment range in the system setting may be narrowed. (Adjustment range in the system setting  $\pm 5.0\text{mm}$ )

In general, when the saddle binding position and the saddle folding positions are adjusted to the center by this simulation, the above trouble will not occur.

#### <4K finisher>

	Item/Display	Content	Setting range	Default value
A	ALIGNMENT POSITION	Alignment position adjustment	2 - 18	10
B	STAPLE POSITION	Staple binding position adjustment	68 - 132	100
C	PUNCH CENTER	Punch center adjustment	37 - 63	50
D	PUNCH HOLE	Punch hole position adjustment	35 - 70	50
E	TRAY WAITING POSITION (S-SIZE)	Stack tray waiting position adjustment (Small size)	5 - 35	15
F	TRAY WAITING POSITION (L-SIZE)	Stack tray waiting position adjustment (Large size)	5 - 35	15

3-30	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to check the operations of the sensors and detectors in the inserter and the control circuits.
<b>Section</b>	Inserter

#### Operation/Procedure

The operating conditions of the sensors and detectors in the inserter are displayed.

The code names of the sensors and the detectors which are active are highlighted.

T_SEN	Tray paper size sensor
EMP_SEN	Tray empty sensor
REG_SEN	Resist sensor
TIM_SEN	Timing sensor
JCK_SW	Cover open/close switch
H_SEN	Reverse sensor
HI_SEN	Paper exit sensor
HYK_SEN	Reverse unit open/close sensor
S_SEN	Set sensor
KC_SEN	Mount cover open/close sensor
P_ST_SW	Start switch
P_MO_SW	Staple mode select switch
P_PN_SW	Punch selection switch

3-31	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to check the operations of the loads in the inserter and the control circuit.
<b>Section</b>	Inserter

#### Operation/Procedure

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] is pressed, the operation is stopped.

K_MOT	Paper feed motor
Y_MOT	Horizontal transport motor
H_MOT	Reverse motor
F_SOL	Flapper solenoid
R_CL	Resist clutch
P_LED	Operation panel upper LED

3-32	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to enter the adjustment value of the inserter paper width detection level.
<b>Section</b>	Inserter

#### Operation/Procedure

- 1) Select the set item with [ $\uparrow$ ] [ $\downarrow$ ] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Display	Content	Setting range
A	MAX POSITION	Tray width detection adjustment value (Max. width)	0 - 1023
B	POSITION1	Tray width detection adjustment value (Adjustment position 1)	0 - 1023
C	POSITION2	Tray width detection adjustment value (Adjustment position 2)	0 - 1023
D	MIN POSITION	Tray width detection adjustment value (Min. width)	0 - 1023

## 4

4-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the large capacity tray (LCC) sensors and detectors and their control circuits.
<b>Section</b>	Large capacity tray (LCC)

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

#### <A4 LCC>

LPFD	LCC transport detector
LUD	LCC tray upper limit detector
LDD	LCC tray lower limit detector
LPED	LCC tray paper empty detector
LCD	LCC tray insertion detector
LDSW	LCC upper open/close detection switch
LRE	LCC lift motor encoder sensor



L24VM	LCC24V power monitor
LLSW	LCC upper limit switch
LTOD	LCC main unit connection detector

#### <A3 LCC>

LPFD	LCC transport detector
LUD	LCC tray upper limit detector
LDD	LCC tray lower limit detector
LPED	LCC tray paper empty detector
LCD	LCC tray insertion detector
LDSW	LCC upper open/close detection switch
LRE	LCC lift motor encoder sensor
L24VM	LCC24V power monitor
LLSW	LCC upper limit switch
LPUSW	LCC paper upper surface detection switch
LRRSW	LCC reverse winding detection switch
LTLSW	LCC tray lift switch
LTLD	LCC tray lock detector
LIPSW	LCC illegal paper detection switch
LTOD	LCC main unit connection detector

4-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the large capacity tray (LCC) loads and their control circuits.
<b>Section</b>	Large capacity tray (LCC)

#### Operation/Procedure

- 1) Select the load item that is required to operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

#### <A4 LCC>

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch

#### <A3 LCC>

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch
LTLED	LCC tray LED lamp
LTLC	LCC tray lock clutch
LFAN	LCC separation auxiliary fan

4-5

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the LCC paper transport clutch (LTRC).
<b>Section</b>	Large capacity tray (LCC)

#### Operation/Procedure

[Check the ON operation]

Press the clutch button of the target of the ON operation check.

Checking is started. When the operation is normal, the button on the display is highlighted. When it is abnormal, the button is not highlighted.

[Check the OFF operation]

Press the highlighted button which is ON.

When the operation is normal, the highlighted button on the display returns to the normal display. When it is abnormal, the highlighted display is maintained.

button	Content
LTRC	LCC transport clutch

5

5-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the display, LCD in the operation panel, and control circuit.
<b>Section</b>	Operation panel

#### Operation/Procedure

The LCD is changed as shown below.

The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.

The LCD display contrast change and the LED lighting status are checked.

5-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the heater lamp and the control circuit.
<b>Section</b>	Fusing

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected heater lamp repeats ON/OFF operations 10 times at the interval of 500ms.  
When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:

Remove the rear cabinet, the heater lamp lighting status can be checked from the clearance between the frames.

HL_UM	Main heater lamp (HL MAIN)
HL_US	Sub heater lamp (HL SUB)
HL_UA	Assist heater lamp (HL UA)

5-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner lamp and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The scanner lamp lights up for 10 sec.  
When [EXECUTE] key is pressed, the operation is terminated.

Display	Content
OC COPY LAMP	OC scanner lamp
DSPF COPY LAMP	DSPF scanner lamp

<b>5-4</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the discharge lamp and the control circuit.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Select the item to be operation checked with the touch panel key. 2) Press [EXECUTE] key. The scanner lamp lights up for 30 sec. When [EXECUTE] key is pressed, the operation is terminated.	
<b>Display</b>	<b>Content</b>
DL	Discharge lamp

## 6

<b>6-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.
<b>Section</b>	Paper transport/paper exit
<b>Operation/Procedure</b>	
1) Select the item to be operation checked with the touch panel key. 2) Press [EXECUTE] key. The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated.	
<b>Load operation check method:</b> The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.	

Section	Item/Display	Content
Transport/ process	VPM	Vertical transport motor
	TRM	PS front motor
	POM1	Paper exit motor 1
	POM2F	Paper exit motor normal rotation
	POM2R	Paper exit motor reverse rotation
	MM	Main motor
	FUM	Fusing motor
	RRM	Resist roller motor
	PSPS	Separation solenoid
Paper feed	FRS	Lower pawl separation solenoid
	T1LUM	Tray 1 lift-up motor
	T2LUM	Tray 2 lift-up motor
	M1LUM	Tray 3 lift-up motor
	M2LUM	Tray 4 lift-up motor
	T1PUS	Tray 1 pickup solenoid
	T2PUS	Tray 2 pickup solenoid
	M1PUS	Tray 3 pickup solenoid
	M2PUS	Tray 4 pickup solenoid
	HPLS	Interface path lock solenoid
	MPFGS	Manual paper feed gate solenoid
	MPFPUS	Manual paper feed pickup solenoid
	T1PFC	Tray 1 paper feed clutch
	T2PFC	Tray 2 paper feed clutch
	M1PFC	Tray 3 paper feed clutch
	M2PFC	Tray 4 paper feed clutch
	DSKPFC1	Desk transport clutch 1
	DSKPFC2	Desk transport clutch 2
	MPFC	Manual paper feed clutch
	HPFC	Horizontal transport clutch

<b>6-2</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of each fan and its control circuit.
<b>Section</b>	Other
<b>Operation/Procedure</b>	
1) Select the item to be operation checked with the touch panel key. 2) Press [EXECUTE] key. The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated. Press [ALL] key to select all the fans collectively.	
<b>Load operation check method:</b> The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.	

Item/Display	Content
CFM_R	Process cooling fan motor 1, 2, 3
VFM_EX	Process exhaust fan motor 1, 2, 3 Process exhaust fan motor BKL Paper cooling fan motor BKL
CFM_UP	Paper exhaust fan motor BKR Fusing fan cooling motor 1,2,3
CFM_UP4	Fusing fan cooling motor 4
CFM_DC	Power cooling fan motor 1,2
CFM_DV	Developing fan cooling motor
MFPFAN	Controller fan motor

<b>6-3</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the transfer unit and the control circuit.
<b>Section</b>	Process (Transfer)
<b>Operation/Procedure</b>	
1) Select the item to be operation checked with the touch panel key. 2) Press [EXECUTE] key. The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated.	
<b>NOTE:</b> Before disassembling the transfer unit, be sure to use this simulation to separate the transfer unit from the OPC drum.	

Item/Display	Content
JOINT	Transfer unit in contact
RELEASE	Transfer unit separated

7-1	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of aging.
<b>Section</b>	Other

**Operation/Procedure**

- 1) Select the target to be set with the touch panel key.
- 2) Press [EXECUTE] key.

The machine is rebooted in the aging mode.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

AGING	Aging operation setup
INTERVAL	Intermittent setup
MISFEED DISABLE	JAM detection enable/disable setup
FUSING DISABLE	Fusing operation enable/disable setup
WARMUP DISABLE	Warm-up skip setup
DV CHECK DISABLE	DV unit detection enable/disable setup
SHADING DISABLE	Shading disable setup
CCD GAIN FREE	No setting of the CCD gain adjustment

7-6	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating intermittent aging cycle.
<b>Section</b>	

**Operation/Procedure**

- 1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
- 2) Press [OK] key.

The time entered in procedure 1) is set.

\* The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

7-8	
<b>Purpose</b>	Operation display
<b>Function (Purpose)</b>	Used to display the warm-up time.
<b>Section</b>	

**Operation/Procedure**

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

\* Interruption of counting by pressing [EXECUTE] key is inhibited.

7-12	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	The document reading number of sheets setting (for aging operation)
<b>Section</b>	Automatic document feeder

**Operation/Procedure**

- 1) Set document reading quantity with 10-key.  
(Setting range: 0 - 255)
- 2) Press [OK] key. The set value is saved.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

8-1	
<b>Purpose</b>	Operation test/Check/Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit.
<b>Section</b>	Process (Developing)

**Operation/Procedure**

- 1) Enter the setting value with 10-key.
- 2) Press [EXECUTE] key.

The entered voltage is outputted for 30 sec and the set value is saved.

When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display	Content	Setting range	Default value
MIDDLE	K color developing bias set value at the middle speed	0 - 700	395
LOW	K color developing bias set value at the low speed	0 - 700	395

8-2	
<b>Purpose</b>	Operation test/Check/Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.
<b>Section</b>	Process (Charging)

**Operation/Procedure**

- 1) Enter the setting value with 10-key.
- 2) Press [EXECUTE] key.

The entered voltage is outputted for 30 sec and the set value is saved.

When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display	Content	Setting range	Default value	
			62 CPM model	75 CPM model
MIDDLE	K color charging/grid bias set value at the middle speed	230 - 850	525	535
LOW	K color charging/grid bias set value at the low speed	230 - 850	525	525

8-6	
<b>Purpose</b>	Operation test/Check/Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operation of the transport voltage and the control circuit.
<b>Section</b>	Process (Transfer)

**Operation/Procedure**

- 1) Select a target item to be adjusted with [↑] [↓] key.
- 2) Enter the set value with 10-key.  
Enter the default value specified on the following list.
- 3) Press [EXECUTE] key.

The set value is saved and the voltage corresponding to the set value is output for 30 sec.

When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display		Content				Setting range	Default value		
							62 CPM model	75 CPM model	
A	TC PLAIN BW SPX	Transfer current	Black/White	Standard paper mode	Front surface	0 - 255	97	129	
B	TC PLAIN BW DPX				Back surface	0 - 255	97	129	
C	TC HEAVY BW SPX			Heavy paper mode	Front surface	0 - 255	113	113	
D	TC HEAVY BW DPX				Back surface	0 - 255	113	113	
E	TC OHP BW			OHP mode		0 - 255	97	113	
F	TC INTERVAL BIAS		Current value between papers				0 - 255	97	129
G	TC ADSORPTION BIAS		Transfer current value at adsorption				0 - 255	97	129
H	TC FRONT EDGE BIAS		Current value at the paper front edge				0 - 255	97	113

<b>8-17</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the transfer electric cleaning output and the control circuit operations.
<b>Section</b>	Process (Transfer)
<b>Operation/Procedure</b>	
<ol style="list-style-type: none"> <li>1) Select a target item to be adjusted with [↑] [↓] key.</li> <li>2) Enter the set value with 10-key. Enter the default value specified on the following list.</li> <li>3) Press [EXECUTE] key. The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.</li> </ol>	

Item/Display		Content	Setting range	Default value
A	TC CLEANING AC	Transfer cleaning output value AC	0 - 255	191
B	TC CLEANING DC	Transfer cleaning output value DC	0 - 255	36

<b>8-18</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the transfer cleaning roller output and the control circuit operations.
<b>Section</b>	Process (Transfer)
<b>Operation/Procedure</b>	
<ol style="list-style-type: none"> <li>1) Select a target item to be adjusted with [↑] [↓] key.</li> <li>2) Enter the set value with 10-key. Enter the default value specified on the following list.</li> <li>3) Press [EXECUTE] key. The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.</li> </ol>	

Item/Display		Content		Setting range	Default value
A	TC CLEANING ROLLER +	Transfer cleaning roller output	Print mode	0 - 255	211
B	TC CLEANING ROLLER -		Cleaning mode	0 - 255	205

8-20

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to check and adjust the output between transfer papers and the control circuit operations.
<b>Section</b>	Process (Transfer)

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) When [OK] key is pressed, the currently entered data are saved in the EEPROM and the RAM.

Item/Display		Content	Setting range	Default value
A	FRONT EDGE BIAS TERM	Paper front edge current time adjustment value	0 - 100	1

## 9

<b>9-2</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the sensors and detectors in the switchback section (duplex section) and the control circuit.
<b>Section</b>	Duplex
<b>Operation/Procedure</b>	
The operating conditions of the sensors and detectors are displayed.	
The code names of the sensors and the detectors which are active are highlighted.	

DSW_ADU	ADU transport open/close detection
AINPD	ADU paper entry detector
APPD1	ADU paper pass detector 1
APPD2	ADU paper pass detector 2

<b>9-3</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.
<b>Section</b>	Duplex
<b>Operation/Procedure</b>	
<ol style="list-style-type: none"> <li>1) Select the item to be operation checked with the touch panel key.</li> <li>2) Press [EXECUTE] key. The selected load performs the operation. When [EXECUTE] key is pressed during operation, the operation is terminated.</li> </ol>	

ADM1	ADU motor 1
ADM2	ADU motor 2
DGS	ADU gate solenoid

## 10

10-1	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the toner supply mechanism (toner clutch) and the related circuit.
<b>Section</b>	Process (Developing)

### Operation/Procedure

- 1) Press [EXECUTE] key.

The selected load operation is performed for 10 sec.

When [EXECUTE] key is pressed during operation, the operation is terminated.

NOTE: This simulation must be executed without installing the toner cartridge and the toner hopper.

If this simulation is executed with the toner cartridge and the toner hopper installed, toner will be forcibly supplied to the developing unit, resulting in over toner.

If this simulation is erroneously executed with the toner cartridge installed, the over toner state may be canceled by making several background copies.

TNM1	Toner motor 1
TNM2	Toner motor 2

10-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the toner remaining quantity sensor and the related circuits.
<b>Section</b>	Process (Developing)

### Operation/Procedure

- 1) Press [EXECUTE] key, and the toner motor 1 is driven for 10 sec.

\* During execution of the simulation, each sensor name is highlighted. Only at the moment when a sensor is turned ON, the sensor name is highlighted.

NOTE: The TNFS check must be performed with the toner cartridge installed.

When this simulation is executed, toner is forcibly supplied to the developer unit, resulting in an overtoner. Therefore, do not execute this simulation continuously.

TFSD	Toner remaining quantity sensor
TNFS	Waste toner full sensor

## 13

13--	
<b>Purpose</b>	Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "U1" trouble.
<b>Section</b>	

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 14

14--	
<b>Purpose</b>	Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "H3, H4, H5" trouble.

### Section

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 15

15--	
<b>Purpose</b>	Cancel
<b>Function (Purpose)</b>	Used to cancel the self-diag "F3-12, F3-22, U6-09" trouble.

### Section

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 16

16--	
<b>Purpose</b>	Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "U2" trouble.
<b>Section</b>	MFP PWB / PCU PWB / SCU PWB

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 17

17--	
<b>Purpose</b>	Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "PF" trouble.
<b>Section</b>	

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 21

21-1	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the maintenance cycle.
<b>Section</b>	

### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.

- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display	Content	Setting range	Default value
A MAINTENANCE COUNTER (TOTAL)	Maintenance counter (Total)	0 : Default 1 - 300: 1K - 300K 999 : Free	300K

## 22

### 22-1

**Purpose** Adjustment/Setting/Operation data output/Check

**Function (Purpose)** Used to display the print count value of each section and the operation mode.

**Section**

#### Operation/Procedure

Target counter	Display	Content	Default value	Display range/ No. of digits
Total output quantity	TOTAL OUT (BW)	Total output quantity of black and white	0	Max. 8
Total use quantity	TOTAL (BW)	Total use quantity of black and white	0	Max. 8
	TOTAL (COL)	Total use quantity of full color	0	Max. 8
Copy	COPY (BW)	Black and white copy counter	0	Max. 8
Print	PRINT (BW)	Black and white print counter	0	Max. 8
Document filing	DOC FIL (BW)	Black and white document filing print counter	0	Max. 8
Other	OTHER (BW)	Black and white other counter	0	Max. 8
Maintenance counter	MAINTENANCE ALL	Maintenance counter (Total)	0	Max. 8
Fuser unit	FUSER UNIT (U)	Fusing unit print counter (Heat roller upper)	0	Max. 8
	FUSER UNIT(L)	Fusing unit print counter (Heat roller lower)	0	Max. 8
	FUSER DAY(U)	Use day of fusing unit (Heat roller upper)	0	0 - 740
	FUSER DAY(L)	Use day of fusing unit (Heat roller lower)	0	0 - 740
	FUSER WEB SEND (U)	Fuser web cleaning send counter	0	Max. 8
	FUSER WEB UNIT (U)	Fuser web print counter	0	Max. 8
	FUSER WEB DAY (U)	Use day of fuser web unit	0	0 - 740
	FUSER WEB SEND (L)	Fuser lower web cleaning feed counter	0	Max. 8
	FUSER WEB UNIT (L)	Fuser lower web print counter	0	Max. 8
	FUSER WEB DAY (L)	Use day of fuser lower web unit	0	0 - 740

Target counter	Display	Content	Default value	Display range/ No. of digits
Drum life meter	DRUM LIFE (K)	Accumulated number of drum rotations (K)	0	0 - 100 (%) (±1% unit)
Developer life meter	DEVE LIFE (K)	Accumulated number of developer rotations (K)	0	0 - 100 (%) (±1% unit)

### 22-2

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to display the number of total mis-feed and the number of troubles.

**Section**

#### Operation/Procedure

The paper jam, trouble counter value is displayed.

Item/Display	Content
MACHINE JAM	Machine JAM counter
RSPF/DSPF JAM	SPFJAM counter
TROUBLE	Trouble counter

### 22-3

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to display the mis-feed position and the number of mis-feed at the position.

**Section**

#### Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

### 22-4

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to display the trouble (self diag) history.

**Section**

#### Operation/Procedure

The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.)

### 22-5

**Purpose** Other

**Function (Purpose)** Used to display the ROM version of each unit (section).

**Section** Firmware

#### Operation/Procedure

The ROM version of the installed unit in each section is displayed. When there is any trouble in the software, use this simulation to check the ROM version, and upgrade the version if necessary.

Item/Display	Content
S/N	Serial No. (The codes for November and December are "X" and "Y" respectively.)
ICU (MAIN)	ICU (Main section)
ICU (BOOT)	ICU (Boot section)
LANGUAGE	Language support data version
GRAPHIC	Graphic data for LCD
IMG DATA ROM, PCU	ImageASIC ROM data PCU

Item/Display	Content
SCU	SCU
SPF	DSPF
FAX1 (MAIN)	FAX 1-Line (Main section)
LCC	Side LCC
FINISHER	Finisher
SADDLE	Saddle unit
INSERTER	Inserter
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
WATER MARK	Watermark (HDD storage)
ESCP	ESCP font ROM
PDL	PDL font ROM
ACRE (MAIN)	ACRE (Main section)
ACRE (DATA)	ACRE (Data section)

<b>22-6</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to print information on various settings, adjustments, counters, controls, and versions.

<b>Section</b>	
<b>Operation/Procedure</b>	
* When installing or servicing, this simulation is executed to print the adjustment data and set data for use in the next servicing. (Memory trouble, PWB replacement, etc.)	
1) Select the print list mode with 10-key.	

Item/Display	Print list mode	Print content
A	DATA PATTERN	1
		2
		3
		Firmware version, counter data, etc.
		—
		Data related to the process control

- 2) Press [EXECUTE] key to start printing the list selected in step 1).

<b>22-8</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the number of operations (the counter value) of the finisher, the DSPF, and scanning (reading).

<b>Section</b>	
<b>Operation/Procedure</b>	
The counter values of the finisher, the DSPF, and the scanner related counters are displayed.	

SPF	Document feed quantity
SCAN	Number of times of scan
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Cover open/close counter
HP_ON	Number of scanner HP detection
INSERTER	Inserter counter
INSERTER OFFLINE	Insertor offline counter
OC LAMP TIME	Total lighting time of the lamp in OC section (* hour * minutes)
DSPF LAMP TIME	Total lighting time of the lamp in DSPF section (* hour * minutes)

<b>22-9</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the print quantity of each paper feed section.

<b>Section</b>	
<b>Operation/Procedure</b>	
The counter values related to paper feed are displayed.	

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
LCC	Side LCC paper feed counter (LCC)
ADU	ADU paper feed counter (Paper reverse section)

<b>22-10</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the system configuration (options and internal hardware).

<b>Section</b>	
<b>Operation/Procedure</b>	
The system configuration is displayed.	
(The model names of the installed devices and options are displayed.)	

Device	Model name	Content
MACHINE	MX-M753N	Main unit
	MX-M753U	
	MX-M753	
	MX-M623N	
	MX-M623U	
	MX-M623	
SPF	STANDARD	Auto document feeder
STAMP	AR-SU1	Finish stamp
LCC	MX-LC10	Large capacity tray (side LCC)
	MX-LCX3	
PUNCHER	AR-PN4A	Punch module
	AR-PN4B	
	AR-PN4C	
	AR-PN4D	
	MX-PNX10A	
	MX-PNX10B	
	MX-PNX10C	
	MX-PNX10D	
FINISHER	MX-FN15	Finisher (4K)
	MX-FN16	Saddle stitch finisher (4K)
	MX-FN14	100 sheets staple finisher (4K)
INSERTER	MX-CF10	Insertor
FAX1	MX-FXX2	Facsimile expansion kit
NETWORK SCANNER	MX-NSX1/STANDARD	Network scanner expansion kit
PRINTER	MX-PB13/STANDARD	Printer expansion kit
PS	MX-PKX1	PS expansion kit
XPS	MX-PUX1	XPS expansion kit
SECURITY	MX-FR22U	Data security kit (commercial version)
	MX-FR22	Data security kit (Authentication version)
AIM	MX-AMX1	Application integration module
SDRAM (SYS)	*****MB	SDRAM capacity
SDRAM (ICU)	*****MB	SDRAM capacity
HDD	*****MB	Hard disk capacity
NIC	STANDARD	NIC
BARCODE	AR-PF1	Bar code font

Device	Model name	Content
INTERNET-FAX	MX-FWX1	Internet Fax expansion kit
ACM	MX-AMX2 ("STANDARD" for North America)	Application communication module
EAM	MX-AMX3 ("STANDARD" for North America)	External account module
ACRE	MX-EBX3	Enhanced compression kit (ACRE)

<b>22-11</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the use frequency of send/receive of FAX. (Only when FAX is installed.)
<b>Section</b>	FAX

#### Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX OUTPUT	FAX print quantity counter (for line 1)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix adding communications

<b>22-12</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the mis-feed position of the DSPF and the number of mis-feed at the position.
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

\* For the list of the jam codes, Refer to "Paper JAM code list" in [6] SELF DIAG AND TROUBLE CODE.

<b>22-13</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the use quantity of the process section (OPC drum, DV unit, toner cartridge).
<b>Section</b>	Process

#### Operation/Procedure

The rotating time and the print quantity of the process section are displayed.

DRUM CTRG K	Drum cartridge print counter (K)
DRUM RANGE K	Drum cartridge accumulated traveling distance (cm) (K)
DRUM TURN K	Drum cartridge accumulated rotation time (K)
DRUM DAY K	Number of day that used drum (Day) K
DEVE CTRG K	Developer cartridge print counter (K)
DEVE RANGE K	Developer cartridge accumulated traveling distance (cm) (K)
DEVE TURN K	Developer cartridge accumulated rotation time (K)
DEVE DAY K	Number of day that used developer (Day) K
TONER MOTOR K	Toner motor print counter (K)
TONER TURN K	Toner motor accumulated rotation time (sec) (K)

<b>22-19</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display various counter values related to scan - image send.

#### Section

#### Operation/Procedure

Used to display the counter value related to the network scanner  
Change the display with [↑] [↓] key.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (Color scan job)
INTERNET FAX OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)

<b>22-90</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to output the various set data lists.
<b>Section</b>	

#### Operation/Procedure

- 1) Change the display with [↑] [↓] key.
- 2) Select the print target with the keys on the touch panel.
- 3) Press [EXECUTE] key to start self print of the list.

All setting list	ALL CUSTOM SETTING LIST
Printer test page	PCL SYMBOL SET LIST PCL INTERNAL FONT LIST PCL EXTENDED FONT LIST PS FONT LIST PS KANJI FONT LIST PS EXTENDED FONT LIST NIC PAGE
Address registration list (*)	INDIVIDUAL LIST GROUP LIST PROGRAM LIST MEMORY BOX LIST ALL SENDING ADDRESS LIST
Document filing list	DOCUMENT FILING FOLDER LIST
System setting list	ADMIN. SETTINGS LIST (COPY) ADMIN. SETTINGS LIST (PRINT) ADMIN. SETTINGS LIST (IMAGE SEND) ADMIN. SETTINGS LIST (DOC FILING) ADMIN. SETTINGS LIST (SECURITY) ADMIN. SETTINGS LIST (COMMON) ALL ADMINISTRATOR SETTINGS LIST
Receive YES/NO number table	ANTI JUNK FAX NUMBER LIST
Receive rejection/allow address domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
To network Transfer table list	INBOUND ROUTING LIST
To administrator Transfer list	DOCUMENT ADMIN LIST
Web setting list	WEB SETTING LIST
Meta data set list	METADATA SET LIST

\* When the data list print of system setting is inhibition in DSK model, this setting is invalid.



## 23

<b>23-2</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to output the trouble history list of paper jam and mis-feed.

### Section

#### Operation/Procedure

Press [EXECUTE] key to execute print.

The trouble history of paper jams and mis-feed is printed.

<b>23-80</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to output the operation data of paper feed and paper transport in the paper feed/transport section.
<b>Section</b>	Paper feed, Paper transport

#### Operation/Procedure

When [EXECUTE] key is pressed, the timing list of paper feed and paper transport is outputted.

Used to print the operations timing list of the sensors and detectors in the paper feed and transport section.

The timing list of paper feed and paper transport operations of the latest job (copy or print) on the final paper is printed.

Since the paper feed and paper transport routes differ depending on the used paper feed tray and the print operation mode, the sensor and the detectors and the operation timing also differ.

SECTION	Operation content (Trigger name - Detection operation or load operation name)
STANDARD	Standard value (ms)
CURRENT (*1)	Operation timing (ms) of the latest job on the final paper
PREVIOUS (*1)	Operation timing (ms) of the second latest job on the final paper
MAXIMUM (*1)	Max. operation timing (ms) of all the jobs
MINIMUM (*1)	Min. operation timing (ms) of all the jobs

\*1: The value without unit on the left side of each item on the list has no relation to the operation timing. It is not used in the market.

## 24

<b>24-1</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the jam counter, and the trouble counter.

### Section

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

MACHINE	Machine JAM counter
SPF	DSPF JAM counter
TROUBLE	Trouble counter

<b>24-2</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the number of use (the number of prints) of each paper feed section.
<b>Section</b>	Paper feed, paper reverse/transport

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
LCC	Side LCC paper feed counter (LCC)
ADU	ADU paper feed counter

<b>24-3</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the finisher, DSPF, and the scan (reading) unit counter.

### Section

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

SPF	DSPF document feed counter
SCAN	Scan counter
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
INSERTER	Insert counter
INSERTER OFFLINE	Insert counter offline
COVER	Cover open/close counter
HP_ON	HP detection count
OC LAMP TIME	OC section lamp total lighting time
DSPF LAMP TIME	DSPF section lamp total lighting time

<b>24-4</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the maintenance counter, the printer counters of the transfer unit and the fusing unit.

### Section

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

MAINTENANCE ALL	Maintenance counter (Total)
FUSER UNIT(U)	Fusing unit print counter (Heat roller upper)
FUSER UNIT(L)	Fusing unit print counter (Heat roller lower)
FUSER DAY(U)	Use day of fusing unit (Heat roller upper)
FUSER DAY(L)	Use day of fusing unit (Heat roller lower)

FUS WEB SEND(U)	Fuser web send counter
FUS WEB UNIT(U)	Fuser web print counter
FUS WEB DAY(U)	Fuser web unit use day
FUS WEB SEND(L)	Fuser lower web send counter
FUS WEB UNIT(L)	Fuser lower web print counter
FUS WEB DAY(L)	Fuser lower web unit use day

<b>24-5</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the developer counter.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

NOTE: When SIM25-2 is executed, this counter is also cleared automatically.

Developer cartridge print counter (K)
Developer cartridge accumulated traveling distance (cm) (K)
Number of day that used developer (Day) K

<b>24-6</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the copy counter.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

COPY BW	Copy counter
---------	--------------

<b>24-7</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the OPC drum counter.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

Drum cartridge print counter (K)
Drum cartridge accumulated traveling distance (cm) (K)
Number of day that used drum (Day) K

<b>24-9</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used clear the printer mode print counter and the self print mode print counter.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

PRINT BW	Print counter
OTHER BW	Other counter

<b>24-10</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the FAX counter. (Only when FAX is installed)
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

FAX OUTPUT	FAX Print quantity counter (for line 1)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix adding communications

<b>24-15</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the counters related to the scan mode and the image send.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR scan job)
INTERNET FAX OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)

<b>24-30</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to initialize the administrator password.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The administrator password is initialized.

If the administrator password of system setting and Web page is forgotten, execute this simulation to set the password to "admin" (default).

<b>24-31</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to initialize the service mode (Web page) password.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The service mode password is initialized.

If the password of Web page is forgotten, execute this simulation to set the password to "service" (default).

## 25

<b>25-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the developing section, and to display the toner density detection level.

<b>Section</b>	Process (Developing section)
----------------	------------------------------

#### Operation/Procedure

- 1) Select the process speed with the touch panel key.

LOW	Process speed: Low speed
MIDDLE	Process speed: Medium speed

- 2) Press [EXECUTE] key.

The developing motor and the OPC drum motor rotate for 3 minutes and the output level of the toner density sensor is displayed.

TCS	Toner density detection level
TCV_K	Toner density sensor output voltage level

<b>25-2</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)

#### Section

Process (Photoconductor/Developing/Transfer/Cleaning)

#### Operation/Procedure

- 1) Press [EXECUTE] key.

The developing motor rotates for 3 minutes, and the toner density sensor makes sampling of the toner density. The detected level is displayed.

After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation unless new Developer material has been installed. If it is executed in other cases, under toner or over-toner may occur, causing a trouble.

#### Adjustment result data display

Item/Display	Content
AUTO DV(L)	Toner density adjustment value at the low speed
AUTO DV(M)	Toner density adjustment value at the middle speed
AUTO DV VO(L)	Toner density sensor control voltage level at the low speed
AUTO DV VO(M)	Toner density sensor control voltage level at the middle speed

#### Data display during execution

Item/Display	Content
TCS	Toner density sensor detection level
TCV	Toner density sensor control voltage level

#### Display in case of an error

Error display	Content	Details of content
EE-EL	EL abnormality	Sensor output level less than 26, or sensor control voltage level over 197
EE-EU	EU abnormality	Sensor output level over 200, or sensor control voltage level less than 49
EE-EC	EC abnormality	The sampling level in the automatic toner density adjustment is outside of $108 \pm 5$ .

## 26

<b>26-2</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the paper type and the weight type.

#### Section

Paper feed

#### Operation/Procedure

Select a paper size to be changed with the touch panel.

TRAY2	0	8.5 x 11
	1	A4
	2	B5
A4 LCC	0	8.5 x 11
	1	A4
	2	B5
G/LBS SET	0	GRAM
	1	LBS

<b>26-3</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the specifications of the auditor. (Japan only)
<b>Section</b>	Auditor

#### Operation/Procedure

Select an item to be set with the touch panel.

Item/Display		Content	Default value
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation.	P10
	EC1	EC1 mode operation	
OUTSIDE AUDITOR	NONE	No external connection vendor is used.	NONE
	P VENDOR1	Coin vendor mode (Only the copy mode can be controlled.)	
	P VENDOR2	Vendor mode communicating with the parallel I/F (for DocuLyzer) (Japan only)	
	VENDOR-EX (*1)	Vendor I/F for EQUITRAC	
	VENDOR-EX (MULTI) (*1)	VENDOR-EX + Multi job cueing Enable mode	
	P OTHER	NOT USED	
	S_VENDOR	Serial vendor mode	
DOC ADJ	ON	Support for the auditor in document filing print	OFF
	OFF	No support for the auditor in document filing print	
PF ADJ	ON	Continuous printing is performed in the duplex print mode. If the remaining money expires during continuous printing, the sheets in the machine are discharged without being printed on the back surfaces.	OFF
	OFF	Continuous printing is not performed in the duplex print mode. (The remaining amount is checked for printing every surface in all the printing process.) If the remaining money expires during printing, the sheet is discharged without printing on the back surface.	
VENDOR MODE (*2)	MODE1	Vendor mode 1	MODE 3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	
COUNTUP TIMING	FUSER_IN	When the paper lead edge passes the fusing rear sensor.	EXIT_OUT
	FUSER_OUT	When the paper rear edge passes the fusing rear sensor.	
	EXIT_OUT	When the paper rear edge passes the paper exit sensor in the main unit, the right tray, and the after process unit.	
IMS CONTROL	ON	There is some restriction in the image send mode.	OFF
	OFF	There is no restriction in the image send mode.	

Item/Display		Content	Default value
PRINTER CONTROL	MODE1	PRINTER CONTROL MODE1 (All the items of OUTSIDE AUDITOR can be selected.)	MODE 1
	MODE2	PRINTER CONTROL MODE2 (The item of OUTSIDE AUDITOR must be the value of "P VENDOR 1" and the other buttons are gray out.)	
	MODE3	PRINTER CONTROL MODE3 (The item of OUTSIDE AUDITOR must be the value of "P OTHER" and the other buttons are gray out.)	

(\*1) Displayed only when EQUITRAC.

#### (\*2) Details of the vendor mode

VENDER MODE	Completion of the specified quantity. (Money remaining)	Insufficient money during copy job	Completion of the specified quantity. (No money remaining)
		No money remaining	
	Condition 1	Condition 2	Condition 3
MODE1	Operation 1	Operation 2	Operation 1
MODE2	Operation 1	Operation 1	Operation 1
MODE3	Operation 1	Operation 3	Operation 3

Operation 1:  
Standby during setting time of auto clear. Default is 60 seconds, which can be changed in the system setting.

Operation 2:  
Auto clear is not made.

Operation 3:  
The display is shifted to the initial screen.

<b>26-5</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the count mode in A3 (11" x 17") print.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the setting value with 10-key  
1 = Count up by 1, 2 = Count up by 2
- 3) Press [OK] key.  
The set value in step 2) is saved.

Item/Display		Content	Default value
A	TOTAL (B/W)	Total counter (B/W)	2
B	MAINT (B/W)	Maintenance counter (B/W)	2
C	DEV (B/W)	Developer counter (B/W)	

<b>26-6</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the specifications of the destination.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with the touch panel.
- 2) Press [EXECUTE] key.  
The selected set content is saved.

U.S.A.	United States of America
CANADA	Canada
INCH	Inch series, other destinations
JAPAN	Japan
AB_B	AB series (B5 detection), other destinations
EUROPE	Europe
U.K.	United Kingdom
AUS.	Australia
AB_A	AB series (A5 detection), other destinations
CHINA	China

<b>26-10</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the trial mode of the network scanner.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Enter the set value with 10-key.
2)	Press [OK] key.
	The set value in step 1) is saved.

TRIAL MODE (0: YES 1: NO)	0	Trial mode setting
	1	Trial mode cancel (Default)

<b>26-18</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Select an item to be set with [↑] [↓] keys.
2)	Enter the set value with 10-key.
3)	Press [OK] key.
	The set value in step 2) is saved.

Item	Display	Content	Default value
A	COPY	0 Copy toner save mode is inhibited.	0
		1 Copy toner save mode is allowed	
B	PRINTER	0 Printer toner save mode is inhibited.	0
		1 Printer toner save mode is allowed.	

<b>26-30</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operation mode corresponding to the CE mark (Europe safety standards).

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Enter the set value with 10-key.
0	Control allowed
1	Control inhibited

- 2) Press [OK] key.
- The set value in step 1) is saved.
- \* Even in Enable state, the control may not be executed due to the power frequency, etc.

U.S.A	1 (CE not supported)	EUROPE	0 (CE supported)
CANADA	1 (CE not supported)	U.K.	0 (CE supported)
INCH	1 (CE not supported)	AUS.	0 (CE supported)
JAPAN	1 (CE not supported)	AB_A	0 (CE supported)
AB_B	1 (CE not supported)	CHINA	0 (CE supported)

<b>26-35</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the trouble history display mode.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Enter the set value with 10-key.
0	Only once display.
1	Any time display.

- 2) Press [OK] key.
- The set value in step 1) is saved.

<b>26-38</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Enter the set value with 10-key.
2)	Press [OK] key.
	The set value in step 1) is saved.

Item/Display		Content		Default value
A	MAINTENANCE LIFE OVER	0	Print continue	0
		1	Print stop	
B	FUSER WEB END (0: CONTINUE 1: STOP)	0	Continue/Stop setting of print when the fusing web is end (Print Continue)	0
		1	Continue/Stop setting of print when the fusing web is end (Print Stop)	

<b>26-41</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Enter the set value with 10-key.
0	AMS Disable
1	AMS Enable

- 2) Press [OK] key.
- The set value in step 1) is saved.

#### <Default value of each destination>

U.S.A	0 (Disable)	EUROPE	1 (Enable)
CANADA	0 (Disable)	U.K.	1 (Enable)
INCH	0 (Disable)	AUS.	0 (Disable)
JAPAN	0 (Disable)	AB_A	0 (Disable)
AB_B	0 (Disable)	CHINA	0 (Disable)

<b>26-49</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the print speed of postcards mode.

#### Section

#### Operation/Procedure

Select the copy speed mode with the touch panel. (Default: LOW)

When the setting is changed, the paper feed interval in print or copy in the postcard mode is changed and the job speed is changed accordingly.

LOW: The paper feed interval is long. (Normal mode)

HIGH: The paper feed interval is short. (when a paper jam occurs, the number of sheets of jam paper is greater than that in the LOW mode.)

<b>26-50</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operation specifications and functions.

#### Section

#### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display		Content		Default value
A	BW REVERSE	0	BW reverse copy Disable	Refer to *1
		1	BW reverse copy Enable	
B	FEED TRAY COLOR	0	Paper feed tray color display ON during paper feed	0
		1	Paper feed tray color display OFF during paper feed	

#### (\*1) Default values for each destination of item A

Destination	Item A
U S A	1
CANADA	1
INCH	1
JAPAN	1
AB_B	1
EUROPE	1
U K	0
AUS	1
AB_A	1
CHINA	1

<b>26-52</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

#### Section

#### Operation/Procedure

- 1) Enter the set value with 10-key.

0	Count up
1	No count up

- 2) Press [OK] key.  
The set value in step 1) is saved.

Destination	Default
U.S.A	0 (Counted)
CANADA	0 (Counted)
INCH	0 (Counted)
JAPAN	1 (Not counted)
AB_B	0 (Counted)
EUROPE	0 (Counted)
U.K.	0 (Counted)
AUS.	1 (Not counted)
AB_A	0 (Counted)
CHINA	0 (Counted)

<b>26-53</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the copy mode.

#### Section

#### Operation/Procedure

- 1) Enter the set value with 10-key.

0	Inhibit (Default)
1	Allow

- 2) Press [OK] key.  
The set value in step 1) is saved.

<b>26-54</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the print mode.

#### Section

#### Operation/Procedure

- 1) Enter the set value with 10-key.

0	Inhibit (Default)
1	Allow

- 2) Press [OK] key.  
The set value in step 1) is saved.

<b>26-65</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the limit of the staple process.

#### Section

#### Operation/Procedure

Use the touch key to set.

[Target paper size]

<LIMIT SHEETS>

A4, B5, 8.5 x 11, 16K

<LIMIT SHEETS(L)>

(A3, B4, 11 x 17, 8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13, 8K, A4R, 8.5 x 11R)

Item	Content	100 sheets binding finisher		4K finisher		4K saddle finisher	
		Set value	Default value	Set value	Default value	Set value	Default value
LIMIT SHEETS	Staple limit sheets	30 100	100	30 50	50	30 50	50
LIMIT COPIES	Staple limit copies ON	ON	ON	ON	ON	ON	ON
	Staple limit copies OFF	OFF		OFF		OFF	
LIMIT SHEETS (L)	Staple limit sheets	30 50	50	25 30	30	25 30	30
SADDLE COPIES	Saddle staple load quantity limited	—		—		ON	ON
	Saddle staple load quantity not limited					OFF	

\*1: 1-5sheets (20 sets) / 6-10 sheets (15 sets) / 11-15 sheets (10 sets)

<b>26-69</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions for toner near end.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value in step 2 is saved.

Item/Display		Content		Setting range	Default value
A	TONER PREPARATION (0: YES 1: NO)	0	The toner preparation message is displayed.	0 - 1	
		1	The toner preparation message is not displayed.		
B	TONER NEAR END (0: YES 1: NO)	0	The toner near end message is displayed.	0 - 1	0
		1	The toner near end message is not displayed.		
C	TONER END	1	Operation Enable in TONER END	1 - 3	2
		2	Operation STOP in TONER END		
		3	Operation STOP in TONER END		
D	TONER END COUNT	Setting of Enable/Disable of toner supply to the developer unit after toner near end		1 - 5	3
E	TONER E-MAIL ALERT	0	Condition for Low status send of E-mail alert	0 - 1	1
			When the toner preparation message is displayed (in near toner end)		
		1	Condition for Low status send of E-mail alert		
			When near toner end		

#### <List of Default values and set values for each destination>

Destination	Set value	
	Toner preparation message	Toner near end message
U.S.A	0 (Displayed)	0 (Displayed)
CANADA	0 (Displayed)	0 (Displayed)
INCH	0 (Displayed)	0 (Displayed)
JAPAN	1 (Not Displayed)	0 (Displayed)
AB_B	0 (Displayed)	0 (Displayed)
EUROPE	0 (Displayed)	0 (Displayed)
U.K.	0 (Displayed)	0 (Displayed)
AUS.	0 (Displayed)	0 (Displayed)
AB_A	0 (Displayed)	0 (Displayed)
CHINA	0 (Displayed)	0 (Displayed)

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display when the toner remaining quantity reaches 25%.

B: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

C: Enable/Disable setting of the machine operation when the toner end status is reached.

For except Japan, performs operation of set value "3" regardless of the setting value.

D: Setting of the toner supply enable time (sec) to the developer unit after toner near end. (Range of 180 - 380 sec)

When the set time is exceeded, it is judged as toner end.

The number of output print allowed in item D is based on the assumption that the sheets are of A4 size with print ratio of 6%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Set value of item D and toner supply enable time

1: 180 sec, equivalent to 2.0K sheets

2: 230 sec, equivalent to 2.5K sheets

3: 280 sec, equivalent to 3.0K sheets

4: 330 sec, equivalent to 3.5K sheets

5: 380 sec, equivalent to 4.0K sheets

\* Reference value based on 6% documents

<b>26-73</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to adjust the image loss (shade removal amount) in the poster, the continuous enlargement copy, the card scan, and the A3 wide copy mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

When the adjustment value is increased, the image loss (shade delete quantity) is increased.

Item/Display		Content	Setting range	Default value
A	DELETING SHADOW ADJ (M)	Rear frame side image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)
B	DELETING SHADOW ADJ (S)	Lead edge image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)

<b>26-74</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the OSA trial mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

Item/Display	Content	Setting range	Default value
A OSA TRIAL MODE (0: YES 1: NO)	0 Used to set the OSA trial mode.	0 - 1	1
	1 OSA trial mode is canceled.		

<b>26-78</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the password of the remote operation panel mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Enter a password with 10-key. (5 - 8 digits)  
The entered password is displayed on the column of "NEW".  
In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
- 2) Press [SET] key.

<b>27</b>	
<b>27-1</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)
<b>Section</b>	

#### Operation/Procedure

- 1) Enter the set value with 10-key.

0	Not detection
1	Detection

- 2) Press [OK] key.  
The set value in step 1) is saved.

<b>27-2</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the sender's registration number and the HOST server telephone number. (FSS function)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with touch panel.  
[USER FAX NO] [SERVA TEL NO]
- 2) Enter the set value with 10-key.
- 3) Press [SET] key.  
The set value in step 2) is saved.

USER FAX_NO.	Sender registration number (Max. 16 digits)
SERVA TEL_NO.	Host server telephone number (Max. 16 digits) • If the connection process is not completed normally when registering the FSS, calling to the HOST may be continuously made every time when the power is turned ON (from OFF) or rebooted. In this case, enter "*****" to inhibit calling to the HOST.

<b>27-4</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the initial call and toner order auto send. (FSS function)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

Item/Display	Content	Setting range	Default value	Remarks
A FSS MODE	NEB1	0 - 3	0	Exclusive for send in NE-B mode Send/Receive in NE-B mode Exclusive for send in NE-F mode Send/Receive in NE-F mode
	NEB2		1	
	NFB1		2	
	NFB2		3	
B	RETRY_BUSY	0 - 15	2	* 0: No retry
C	TIMER (MINUTE)_BUSY	1 - 15	3	
D	RETRY_ERROR	0 - 15	1	* 0: No retry
E	TIMER (MINUTE)_ERROR	1 - 15	1	



Item/Display			Content	Setting range	Default value	Remarks
F	TONER ORDER TIMING (K)	100% - 75%	Toner order auto send timing setting (K)	100% - 75%	0 - 5	3 (49%-25%)
		74% - 50%		74% - 50%	5	
		49% - 25%		49% - 25%	4	
		LOWER 25		25% or less	3	
		NEAREND		NEAREND	2	
		EMPTY		EMPTY	1	
					0	

<b>27-5</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the machine tag No. (FSS function)
<b>Section</b>	Communication (RIC/MODEM)
<b>Operation/Procedure</b>	
1) Enter the password (max. 8 digits) with 10-key. The entered password is displayed on the column of "NEW". In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.	
2) Press [SET] key.	

<b>27-6</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set of the manual service call. (FSS function)
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Enter the set value with 10-key.	
0	Allow (Default)
1	Inhibit
2) Press [OK] key. The set value in step 1) is saved.	

<b>27-7</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set of the enable, alert call out. (FSS function)
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Select an item to be set with [↑] [↓] keys.	
2) Enter the set value with 10-key.	
3) Press [OK] key. The set value in step 2) is saved.	

A	FSS FUNCTION	0	FSS function enable
		1	FSS function disable (*1) (Default)
B	ALERT	0	Alert call enable (*2) (Default)
		1	Alert call disable
C	CONNECTION	0	FAX connection enable
		1	E-MAIL connection enable

\*1 The FSS function setting can be changed only from Disable to Enable. (Cannot be changed from Enable to Disable.)

\*2 Alert send timing

No alert cause	Initial state / Trouble / Continuous JAM alert
Maintenance	When the maintenance timing is reached.
Service call	When pressing Service call.
Toner send request	When the toner order automatic send setting is reached.
Toner collection request	Revision of the toner installation date (only for a new product)
Alert resend	

<b>27-9</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Select an item to be set with [↑] [↓] keys.	
2) Enter the set value with 10-key.	
3) Press [OK] key. The set value in step 2) is saved.	

A	FEED TIME 1	0 - 100	Threshold value of the paper transport time between sensors (Main unit) (50: Default)
B	FEED TIME 2	0 - 100	Threshold value of the paper transport time between sensors (DSPF) (50: Default)
C	GAIN ADJUSTMENT RETRY	0 - 20	Threshold value of the gain adjustment retry number (11: Default)
D	JAM ALERT	1 - 100	Alert judgment threshold value for occurrence of continuous jams Alert judgment threshold value for occurrence of continuous jams (Setting of the number of times of continuous jams as the alert for continuous jams) (Default: 10 times)

\* Items A, B: 0%, standard passing time between sheets of paper; 100%, time for judgment as a jam between sheets of paper.

\* Item C: Because of a trouble in shading operation, the number of retry is actually not registered.

<b>27-10</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the trouble prediction history information. (FSS function)
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Press [EXECUTE] key.	
2) Press [YES] key. The history information of trouble prediction is cleared.	

Target history	Serial communication retry number history
	High density process control error history
	Half tone process control error history
	Scanner gain adjustment retry history
	DSPF gain adjustment retry history
	Paper transport time between sensors

27-11	
<b>Purpose</b>	Other
<b>Function (Purpose)</b>	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)
<b>Section</b>	

#### Operation/Procedure

The serial communication retry number history and the scanner gain adjustment retry number history are displayed.

Display Item			Content
Item name	Occurrence date (Display)	Retry number	
LSU1	99/99/99 99:99:99	8 digits	Serial communication retry number history display
LSU2	99/99/99 99:99:99	8 digits	
INSERTER1	99/99/99 99:99:99	8 digits	
INSERTER2	99/99/99 99:99:99	8 digits	
FINISHER1	99/99/99 99:99:99	8 digits	
FINISHER2	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ5	99/99/99 99:99:99	8 digits	DSPF gain adjustment retry history
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ2	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ3	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ4	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ5	99/99/99 99:99:99	8 digits	

27-12	
<b>Purpose</b>	Other
<b>Function (Purpose)</b>	Used to check the high-density and the half-tone process control error history. (FSS Function)
<b>Section</b>	

#### Operation/Procedure

The high density and the half-tone process control error history are displayed.

HV_ERR1	High density error history 1
HV_ERR2	High density error history 2
HV_ERR3	High density error history 3
HV_ERR4	High density error history 4
HV_ERR5	High density error history 5
H_TONE_ERR1	Half tone error history 1
H_TONE_ERR2	Half tone error history 2
H_TONE_ERR3	Half tone error history 3
H_TONE_ERR4	Half tone error history 4
H_TONE_ERR5	Half tone error history 5

27-13	
<b>Purpose</b>	Other
<b>Function (Purpose)</b>	Used to check the history of paper transport time between sensors. (FSS function)
<b>Section</b>	

#### Operation/Procedure

Change the display with [↑] [↓] key.

	Item/Display	Content	Occurrence date	Code between sensors	Passing time	Reference passing time
Main unit	FEED TIME1	History of paper transport time between sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2	History of paper transport time between sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3	History of paper transport time between sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4	History of paper transport time between sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5	History of paper transport time between sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6	History of paper transport time between sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7	History of paper transport time between sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8	History of paper transport time between sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9	History of paper transport time between sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10	History of paper transport time between sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
DSPF	FEED TIME1(SPF)	History of paper transport time between SPF sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2(SPF)	History of paper transport time between SPF sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3(SPF)	History of paper transport time between SPF sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4(SPF)	History of paper transport time between SPF sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5(SPF)	History of paper transport time between SPF sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6(SPF)	History of paper transport time between SPF sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7(SPF)	History of paper transport time between SPF sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8(SPF)	History of paper transport time between SPF sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9(SPF)	History of paper transport time between SPF sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10(SPF)	History of paper transport time between SPF sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)

<b>27-14</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the FSS function connection test mode.
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Enter the set value with 10-key.	
0	Disable (Default)
1	Enable

2) Press [OK] key.

The set value in step 1) is saved.

\* For setting the FSS function connection test mode, only DIS-ABLE to ENABLE can be made. (ENABLE to DISABLE cannot be made.)

## 30

<b>30-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.
<b>Section</b>	
<b>Operation/Procedure</b>	

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are high-lighted.

PPD	Resist detection
PFD2	Paper feed transport detection
POD1	Fusing rear detection
POD2	Main unit paper exit detection
POD3	Main unit paper exit full detection
LPPD	LCC paper pass detection
WEBEND1	Web end detection 1
WEBEND2	Web end detection 2
DSW_L	Left door open/close detection
DSW_F	Front door open/close detection
DSW_DSK	Desk left door open/close detection
TNFS	Waste toner full detection
TLS	Waste toner lock detection
THPS	Transfer belt home position detection

<b>30-2</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.
<b>Section</b>	

### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are high-lighted.

TANSET	Tray 1, 2 insertion detection
T1PPD	Tray 1 paper pass detection
T1LUD	Tray 1 paper upper limit detection
T1PED	Tray 1 paper empty detection
T1SPD	Tray 1 paper remaining quantity detection

MPRD1	Manual paper feed interface paper detection 1
MPRD2	Manual paper feed interface paper detection 2
T2LUD	Tray 2 paper upper limit detection
T2PED	Tray 2 paper empty detection
T2SPD	Tray 2 paper remaining quantity detection
M1SS1	Tray 3 rear edge detection 1
M1SS2	Tray 3 rear edge detection 2
M1SS3	Tray 3 rear edge detection 3
M1SS4	Tray 3 rear edge detection 4
M2SS1	Tray 4 rear edge detection 1
M2SS2	Tray 4 rear edge detection 2
M2SS3	Tray 4 rear edge detection 3
M2SS4	Tray 4 rear edge detection 4
M1PFD	Tray 3 paper pass detection
M1LUD	Tray 3 paper upper limit detection
M1PED	Tray 3 paper empty detection
M1SPD	Tray 3 paper remaining quantity detection
M2PFD	Tray 4 paper pass detection
M2LUD	Tray 4 paper upper limit detection
M2PED	Tray 4 paper empty detection
M2SPD	Tray 4 paper remaining quantity detection
MPFD1	Paper pass detection 1 from manual paper feed tray
MPFD2	Paper pass detection 2 from manual paper feed tray
MPED	Manual paper feed paper empty detection
MPLD1	Manual paper feed length detection 1
MPLD2	Manual paper feed length detection 2
MTOP1	Manual paper feed pulling detection 1
MTOP2	Manual paper feed pulling detection 2
DSW_R	Manual paper feed open/close detection

## 33

<b>33-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the card reader sensor and the control circuit.

### Section

### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are high-lighted.

CARD	Card Yes/No detection
DATA	Card number signal detection
CLOCK	Reference clock signal detection

<b>33-2</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the ID (IDM) information of card.

### Section

### Operation/Procedure

1) Press [EXECUTE] key.

2) Press [YES] key.

The ID (IDM) information of Felica card in the HDD is deleted.

## 40-2

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Manual paper feed tray paper width sensor adjustment.
<b>Section</b>	Paper feed

**Operation/Procedure**

- 1) Open the manual paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key.  
The max. width (MAX) detection level is recognized.
- 3) Open the manual paper feed guide to P1 width (A4R).
- 4) Press [EXECUTE] key.  
The P1 width (A4R) detection level is recognized.
- 5) Open the manual paper feed guide to P2 width (A5R).
- 6) Press [EXECUTE] key.  
The P2 width (A5R) detection level is recognized.
- 7) Open the manual paper feed guide to the min. width (MIN).
- 8) Press [EXECUTE] key.  
The min. width (MIN) detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed. When completed normally, "COMPLETE" is displayed.

MAX POSITION	Manual feed max. width
P1(A4R)POSITION	Manual feed P1 position width (A4R)
P2(A5R)POSITION	Manual feed P2 position width (A5R)
MIN POSITION	Manual feed min. width

## 40-7

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the adjustment value of the manual paper feed tray paper width sensor.
<b>Section</b>	Paper feed

**Operation/Procedure**

- 1) Select a target item to be adjusted with [↑] [↓] buttons.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

	Item/Display	Content	Default value
A	MAX POSITION	Manual feed max. width	193
B	P1 POSITION	Manual feed P1 position width (A4R)	183
C	P2 POSITION	Manual feed P2 position width (A5R)	133
D	MIN POSITION	Manual feed min. width	84

## 40-12

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the multi-purpose tray width detection level.
<b>Section</b>	Paper feed

**Operation/Procedure**

- 1) Open the multi-purpose tray guide to the maximum width, and press [EXECUTE] key.  
The maximum detection level is recognized.
- 2) When the minimum width adjustment start is displayed, open the guide to the minimum width and press [EXECUTE] key.  
The minimum detection level is recognized.

## 41-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the document size sensor and the control circuit.
<b>Section</b>	

**Operation/Procedure**

The operating conditions of the sensors and detectors are displayed.  
The sensors and the detectors which are turned ON are highlighted.

OCSW	Document cover status	Open: Normal display Close: Highlighted
PD1 - 7	Document detection sensor status	No document: Normal display Document present: Highlighted

## 41-2

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the document size sensor detection level.
<b>Section</b>	

**Operation/Procedure**

- 1) Open the document cover, and press [EXECUTE] key without place a document on the document table.  
The sensor level without document is recognized.
- 2) Set A3 (11" x 17") paper on the document table, and press [EXECUTE] key.  
The sensor level when detecting the document is displayed.  
When the above operation is normally completed, it is displayed.

## 41-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the document size sensor and the control circuit.
<b>Section</b>	

**Operation/Procedure**

The detection output level (A/D value) of OCSW and the document sensor (PD1 - PD7) is displayed in real time.

The light receiving range of PD1 - PD7 is 1 - 255. (Default: 128)

Item/Display	Content	Detection level range
OCSW	Original cover SW	0-1 ("1" to Close)
PD1 - PD7	Document detection 1 - Document detection 7	0 - 255

## 43-1

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to make the fusing reference temperature setting 1 in each operation mode.
<b>Section</b>	

**Operation/Procedure**

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM READY	TH_UM set value when ready standby	70 - 240	200	205	200	205	200	205
B	HL_US READY	TH_US set value when ready standby	70 - 240	200	205	200	205	200	205
C	HL_UM PLAIN PAPER BW	Black and white plain paper TH_UM set value	70 - 240	200	205	210		210	
D	HL_US PLAIN PAPER BW	Black and white plain paper TH_US set value	70 - 240	200	205	210		210	
E	WARMUP FUMON HL_UM T	Fusing motor previous rotation start TH_UM set value	30 - 240	190		50		50	
F	WARMUP FUMOFF HL_UM T	Fusing motor previous rotation complete time	0 - 200	5					
G	WARM UP END TIME	Warm-up complete time	0 - 200	28	50	28	50	28	50
H	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 - 240	220					
I	HL_US HEAVY PAPER	Heavy paper TH_US set value	70 - 240	220					
J	HL_UM OHP PAPER	OHP-TH_UM set value	70 - 240	210					
K	HL_US OHP PAPER	OHP-TH_US set value	70 - 240	210					
L	HL_UM E-STAR	Preheating TH_UM set value	30 - 200	165					
M	HL_US E-STAR	Preheating TH_US set value	30 - 200	165					
N	PRE-JOB	Resetting from preheating TH_UM set value	30 - 240	180		190		190	
O	HL_UM WARMUP_120L	TH_UM set value when warming up of 120°C or less	70 - 240	200	210	215		215	
P	HL_US WARMUP_120L	TH_US set value when warming up of 120°C or less	70 - 240	200	210	215		215	
Q	LO_WARMUP_TIME	O - P applying time (Timer from completion of Ready)	0 - 255	5					
R	HL_UM WARMUP_120H	TH_UM set value when warming up of 120°C or above	70 - 240	200	210	215		215	
S	HL_US WARMUP_120H	TH_US set value when warming up of 120°C or above	70 - 240	200	210	215		215	
T	HI_WARMUP_TIME	R - S applying time (Timer from completion of Ready)	0 - 255	5					
U	HI_WU_FM_ON_TMP	FM previous rotation start TH_US set value when warming up of alpha °C or above	30 - 240	130					
V	HI_WU_END_TIME	Warm-Up complete time when warming up of alpha °C or above	0 - 200	28	50	28	50	28	50
W	HI_WU_JOB_SET_TMP1	Job enable TH UM temperature 1 when warming up of alpha °C or above	70 - 240	190	200	210		210	
X	HI_WARMUP_BORDER	U - W applying set value	1 - 119	70					
Y	LO_WU_JOB_SET_TMP1	Job enable TH UM temperature 1 when warming up of alpha °C or less	70 - 240	190	200	210		210	
Z	JOBEND_FUMON_TIME	After rotation time when Job end	0 - 200	10					
AA	HI_WU_JOB_SET_TMP2	Job enable TH UM temperature 2 when warming up of alpha °C or above	70 - 240	195	205	210		210	
AB	LO_WU_JOB_SET_TMP2	Job enable TH UM temperature 2 when warming up of alpha °C or less	70 - 240	195	205	210		210	

#### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

#### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

43-4	
Purpose	Setting
Function (Purpose)	Used to set the fusing temperature 2 in each operation mode.
Section	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM PLAIN PAPER BW DUP	Black and white plain paper duplex TH_UM set value	70 - 240	200	205	210		210	
B	HL_US PLAIN PAPER BW DUP	Black and white plain paper duplex TH_US set value	70 - 240	200	205	210		210	
C	PLAIN PAPER BW DUP APP CNT	Black and white plain paper duplex applying number of sheets	0 - 60	0					
D	HL_UM HEAVY PAPER BW DUP	Black and white heavy paper duplex TH_UM set value	70 - 240	220					
E	HL_US HEAVY PAPER BW DUP	Black and white heavy paper duplex TH_US set value	70 - 240	220					
F	HEAVY PAPER BW DUP APP CNT	Black and white heavy paper duplex applying number of sheets	0 - 60	0					

#### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

#### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

43-20

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.

#### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1°C change/1sec change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM READY LL	Correction value for TH_UM set value in ready standby under LL environment	1 - 99	55		60		60	
B	HL_US READY LL	Correction value for TH_US set value in ready standby under LL environment	1 - 99	55		60		60	
C	HL_UM PLAIN BW LL	Correction value for black and white plain paper TH_UM set value under LL environment	1 - 99	55					
D	HL_US PLAIN BW LL	Correction value for black and white plain paper TH_US set value under LL environment	1 - 99	55					
E	WARMUP FUMON HL_US T LL	Correction value for fusing motor previous rotation start TH_UM set value under LL environment	1 - 99	5		50		50	
F	WARMUP FUMOFF T LL	Correction value for fusing motor previous rotation completion time under LL environment	1 - 99	50					
G	WARMUP END TIME LL	Correction value for warm-up complete time under LL environment	1 - 99	80					
H	HL_UM HEAVY LL	Correction value for heavy paper TH_UM set value under LL environment	1 - 99	55					
I	HL_US HEAVY LL	Correction value for heavy paper TH_US set value under LL environment	1 - 99	55					

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
J	HL_UM OHP LL	Correction value for OHP TH_UM set value under LL environment	1 - 99	55					
K	HL_US OHP LL	Correction value for OHP TH_UM set value under LL environment	1 - 99	55					
L	HL_UM E-STAR LL	Correction value for TH_UM set value when preheating under LL environment	1 - 99	55					
M	HL_US E-STAR LL	Correction value for TH_US set value when preheating under LL environment	1 - 99	55					
N	PRE-JOB LL	Correction value for TH_UM set value when restoring from preheating under LL environment	1 - 99	55					
O	HL_UM WARMUP_120L LL	Correction value for TH_UM set value when warming up of 120°C or less under LL environment	1 - 99	55		60		60	
P	HL_US WARMUP_120L LL	Correction value for TH_US set value when warming up of 120°C or less under LL environment	1 - 99	55		60		60	
Q	LO_WARMUP_TIME_LL	Correction value for O - P applying time (Timer from Ready Complete) under LL environment	1 - 99	50					
R	HL_UM WARMUP 120H LL	Correction value for TH_UM set value when warming up of 120°C or above under LL environment	1 - 99	55		60		60	
S	HL_US WARMUP_120H LL	Correction value for TH_US set value when warming up of 120°C or above under LL environment	1 - 99	55		60		60	
T	HI_WU_TIME_LL	Correction value for R - S applying time (Timer from Ready Complete) under LL environment	1 - 99	50					
U	HI_WU_FM_ON_TMP_LL	Correction value for FM previous rotation start TH_UM when warming up of alpha °C or above under LL environment	1 - 99	45					
V	HI_WU_END_TIME_LL	Correction value for Warm-Up complete time when warming up of alpha °C or above under LL environment	1 - 99	50					
W	HI_WU_JOB_SET_TMP_1LL	Correction value for Job enable time when warming up of alpha °C or above under LL environment	1 - 99	60					
X	HI_WARMUP_BORDER_LL	Correction value for the value applying U - W under LL environment	1 - 99	50					
Y	LO_WU_JOB_SET_TMP_1LL	Correction value for Job enable TH_UM temperature when warming up of alpha °C or less under LL environment	1 - 99	55		60		60	
Z	JOBEND_FUMON_TIME_LL	Correction value for after rotation time at Job end under LL environment	1 - 99	50					
AA	HI_WU_JOB_SET_TMP_2LL	Correction value for Job enable TH_UM temperature when warming up of alpha °C or above under LL environment	1 - 99	60					
AB	LO_WU_JOB_SET_TMP_2LL	Correction value for Job enable TH_UM temperature when warming up of alpha °C or less under LL environment	1 - 99	60					

#### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

#### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.
<b>Section</b>	

**Operation/Procedure**

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Correction value: -49 - +49, 1 Count = 1°C change/1sec change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM READY HH	Correction value for TH_UM set value in ready standby under HH environment	1 - 99	50					
B	HL_US READY HH	Correction value for TH_US set value in ready standby under HH environment	1 - 99	50					
C	HL_UM PLAIN BW HH	Correction value for black and white plain paper TH_UM set value under HH environment	1 - 99	50					
D	HL_US PLAIN BW HH	Correction value for black and white plain paper TH_US set value under HH environment	1 - 99	50					
E	WARMUP FUMON HL_UM T HH	Correction value for fusing motor previous rotation start TH_UM set value under HH environment	1 - 99	50					
F	WARMUP FUMOFF T HH	Correction value for fusing motor previous rotation completion time under HH environment	1 - 99	50					
G	WARMUP END TIME HH	Correction value for warm-up complete time under HH environment	1 - 99	50					
H	HL_UM HEAVY HH	Correction value for heavy paper TH_UM set value under HH environment	1 - 99	50					
I	HL_US HEAVY HH	Correction value for heavy paper TH_US set value under HH environment	1 - 99	50					
J	HL_UM OHP HH	Correction value for OHP TH_UM set value under HH environment	1 - 99	50					
K	HL_US OHP HH	Correction value for OHP TH_US set value under HH environment	1 - 99	50					
L	HL_UM E-STAR HH	Correction value for TH_UM set value when preheating under HH environment	1 - 99	50					
M	HL_US E-STAR HH	Correction value for TH_US set value when preheating under HH environment	1 - 99	50					
N	PRE-JOB HH	Correction value for TH_UM set value when restoring from preheating under HH environment	1 - 99	50					
O	HL UM WARMUP 120L HH	Correction value for TH_UM set value when warming up of 120°C or less under HH environment	1 - 99	50					
P	HL US WARMUP 120L HH	Correction value for TH_US set value when warming up of 120°C or less under HH environment	1 - 99	50					
Q	LO_WARMUP_TIME_HH	Correction value for O - P applying time (Timer from Ready Complete) under HH environment	1 - 99	50					
R	HL UM WARMUP 120H HH	Correction value for TH_UM set value when warming up of 120°C or above under HH environment	1 - 99	50					
S	HL US WARMUP 120H HH	Correction value for TH_US set value when warming up of 120°C or above under HH environment	1 - 99	50					
T	HI_WU_TIME_HH	Correction value for R - S applying time (Timer from Ready Complete) under HH environment	1 - 99	50					
U	HI_WU_FM_ON_TMP_HH	Correction value for FM previous rotation start TH_UM when warming up of alpha °C or above under HH environment	1 - 99	50					
V	HI_WU_END_TIME_HH	Correction value for Warm-Up complete time when warming up of alpha °C or above under HH environment	1 - 99	50					



Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
W	HI_WU_JOB_SET_TMP_1HH	Correction value for Job enable TH_UM temperature when warming up of alpha °C or above under HH environment	1 - 99	50					
X	HI_WARMUP_BORDER_HH	Correction value for the value applying U - W under HH environment	1 - 99	50					
Y	LO_WU_JOB_SET_TMP_1HH	Correction value for Job enable TH_UM temperature when warming up of alpha °C or above under HH environment	1 - 99	50					
Z	JOBEND_FUMON_TIME_HH	Correction value for after rotation time at Job end under HH environment	1 - 99	50					
AA	HI_WU_JOB_SET_TMP_2HH	Correction value for Job enable TH_UM temperature when warming up of alpha °C or above under HH environment	1 - 99	50					
AB	LO_WU_JOB_SET_TMP_2HH	Correction value for Job enable TH_UM temperature when warming up of alpha °C or less under HH environment	1 - 99	50					

#### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

#### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

43-22

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.

#### Section

##### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Correction value: -49 - +49, 1 Count = 1°C change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM PLAIN BW DUP LL	Correction value for TH_UM set value in black and white plain paper duplex under LL environment	1 - 99	55					
B	HL_US PLAIN BW DUP LL	Correction value for TH_US set value in black and white plain paper duplex under LL environment	1 - 99	55					
C	PLAIN BW DUP APP CNT LL	Correction value for applying number of sheets in black and white plain paper duplex under LL environment	1 - 99	50					
D	HL_UM HEAVY BW DUP LL	Correction value for TH_UM set value in black and white heavy paper duplex under LL environment	1 - 99	55					
E	HL_US HEAVY BW DUP LL	Correction value for TH_US set value in black and white heavy paper duplex under LL environment	1 - 99	55					
F	HEAVY BW DUP APP CNT LL	Correction value for applying number of sheets in black and white heavy paper duplex under LL environment	1 - 99	50					

### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

43-23

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.

### Section

#### Operation/Procedure

- 1) Select an item to be set with [ $\uparrow$ ] [ $\downarrow$ ] keys.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value in step 2) is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Correction value: -49 - +49, 1 Count = 1°C change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM PLAIN BW DUP HH	Correction value for TH_UM set value in black and white plain paper duplex under HH environment	1 - 99	50					
B	HL_US PLAIN BW DUP HH	Correction value for TH_US set value in black and white plain paper duplex under HH environment	1 - 99	50					
C	PLAIN BW DUP APP CNT HH	Correction value for applying number of sheets in black and white plain paper duplex under HH environment	1 - 99	50					
D	HL_UM HEAVY BW DUP HH	Correction value for TH_UM set value in black and white heavy paper duplex under HH environment	1 - 99	50					
E	HL_US HEAVY BW DUP HH	Correction value for TH_US set value in black and white heavy paper duplex under HH environment	1 - 99	50					
F	HEAVY BW DUP APP CNT HH	Correction value for applying number of sheets in black and white heavy paper duplex under HH environment	1 - 99	50					

### <Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

SW-A Setting value when 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

SW-B Set value when 90 - 105g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on

60 - 89g/m<sup>2</sup> or 90 - 105g/m<sup>2</sup> which is selected in the system setting/device setting/fusing control setting.

(Example) When 60 - 89g/m<sup>2</sup> is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

### <List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
Group C	Europe	U.K.	AUS	AB_A

<b>43-24</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.

<b>Section</b>	
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#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Correction value: -49 - +49, 1 Count = 1°C change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value
A	NN_120_FUS_DUP_HL_UM	Fusing temperature correction value (SIM43-4 item A at Warm-Up 120°C or less under NN environment) (when in duplex mode)	1 - 99	50
B	LL_120_FUS_DUP_HL_UM	Fusing temperature correction value (SIM43-22 item A at Warm-Up 120°C or less under LL environment) (when in duplex mode)	1 - 99	50
C	HH_120_FUS_DUP_HL_UM	Fusing temperature correction value (SIM43-23 item A at Warm-Up 120°C or less under HH environment) (when in duplex mode)	1 - 99	50
D	NN_120_FUS_DUP_CNT	Fusing duplex paper exit count under NN environment	1 - 60	5
E	LL_120_FUS_DUP_CNT	Fusing duplex paper exit count under LL environment	1 - 60	10
F	HH_120_FUS_DUP_CNT	Fusing duplex paper exit count under HH environment	1 - 60	5
G	COOL_DOWN_HEAVY	Cool down time (heavy paper mode)	1 - 60	15
H	COOL_DOWN_OHP	Cool down time (OHP mode)	1 - 60	30
I	NN_120_FUS_DUP_HL_US	Fusing temperature correction value (SIM43-4 item B at Warm-Up 120°C or less under NN environment) (when in duplex mode)	1 - 99	50
J	LL_120_FUS_DUP_HL_US	Fusing temperature correction value (SIM43-22 item B at Warm-Up 120°C or less under LL environment) (when in duplex mode)	1 - 99	50

Item	Display	Content	Setting range	Default value
K	HH_120_FUS_DUP_HL_US	Fusing temperature correction value (SIM43-23 item B at Warm-Up 120°C or less under HH environment) (when in duplex mode)	1 - 99	50
L	FUS_MOTOR(U)	Fusing web motor operation interval	1 - 20	8
M	FUS_MOTOR(L)	Fusing lower web motor operation interval	1 - 20	7
N	POWER_SET	Power voltage setting	100V 110-120V 220-240V	100V 110-120V 220-240V

Correction value: -49 - +49, 1 Count = 1°C change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

\* Each paper exit count: 1 count = 1 sheet change

\* Time setting: 1 count = 1sec change

#### <Code descriptions>

HL_UM	Heater lamp upper main
HL_US	Heater lamp upper sub

#### \* Item N initial value

Default value	Destination
1	JAPAN
2	U.S.A/CANADA/INCH/AB_B
3	EUROPE/UK/AUS/AB_A

<b>43-31</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to check the operation of the fusing web cleaning motor.
<b>Section</b>	Fusing

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
Perform the fusing web cleaning motor drive.
- 2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Fusing web unit installation detection state	Operation	Remark
Fusing web unit not installed	Not operate	* During this operation, the fusing web cleaning feed counter is counted up.
Fusing web unit installed	Specified pulse number drive	

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set various items related to the forcible operation of web cleaning when job end.
<b>Section</b>	Fusing

**Operation/Procedure**

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Item	Display	Item		Setting range		Default value
A	JOB END COMP ACT CHECK	Fusing web motor forcible operation condition when job end	Enable	0 - 1	0	1
			Disable		1	
B	JOB END COMP ACT INTERVAL	Interval of the print quantity of compulsory action of the fusing web motor at job end		1 - 255		110
C	JOB END COMP ACT CNT	Number of forcible operations of the fusing web motor when job end		1 - 10		6

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to check the operation of the fusing lower web cleaning motor.
<b>Section</b>	Fusing

**Operation/Procedure**

- 1) Press [EXECUTE] key.  
Perform the fusing lower web cleaning motor drive.
- 2) When driving the fusing lower web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Fusing lower web unit installation detection state	Operation	Remark
Fusing lower web unit not installed	Not operate	* During this operation, the fusing web cleaning feed counter is counted up.
Fusing lower web unit installed	Specified pulse number drive	

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set each correction operation function in the image forming (process) section.
<b>Section</b>	Process (Photo-conductor/Developing/Transfer/Cleaning)

**Operation/Procedure**

- 1) Select an item to be set with the touch panel.  
(The selected item is highlighted.)
- 2) Press [EXECUTE] key. (The set value is saved.)

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Set the items to the default values unless a change is specially required.

Item/Display	Content	Setting range	Default value
HV	Enable/Disable setting of the high density process control in normal operation	Normal (Disable: 0: NO) Reverse (Enable: 1: YES)	Enable
HT	Enable/Disable setting of the medium density process control in normal operation		Enable
TC	Enable/Disable setting of the transfer output correction		Enable
MD VG	Enable/Disable setting of the membrane decrease grid voltage correction		Enable
MD LD	Enable/Disable setting of the membrane decrease laser power voltage correction		Enable
MD EV	Enable/Disable setting of the membrane decrease environment grid voltage correction		Enable
MD_DL_EV	Enable/Disable setting of the membrane decrease environment discharge quantity correction		Enable
TN_HUM	Enable/Disable setting of the toner density humidity correction		Enable
TN_AREA	Enable/Disable setting of the toner density area correction		Enable
TN_LIFE	Enable/Disable setting of the toner density life correction		Enable
TN_COV	Enable/Disable setting of the toner density print ratio correction		Enable
TN_PROCON	Enable/Disable setting of the toner density process control correction		Enable
TN_ENV	Enable/Disable setting of the toner density environment correction		Enable
TN_DRIP	Enable/Disable setting of the toner density correction unconditional supply		Enable
TN_SPEND	Enable/Disable setting of toner compulsory consumption mode		Enable

Item/Display	Content	Setting range	Default value
PRT_HT	Enable/Disable setting of the half-tone process control printer correction feedback	Normal (Disable: 0: NO) Reverse (Enable: 1: YES)	Enable
TN_INTERMITTENT	Enable/Disable setting of the intermittent supply		Enable
TN_ABSOLUTE	Enable/Disable setting of the unconditional supply		Enable
TN_PROFIT_RETURN	Enable/Disable setting of the differential return correction		Enable
MD LD EV	Enable/Disable setting of the environment laser power correction for the OPC drum membrane decrease correction		Enable
MD LD HV	Enable/Disable setting of the process control laser power correction		Enable

<b>44-2</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the sensitivity of the image density sensor.
<b>Section</b>	Process

#### Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is executed automatically.

After completion of the adjustment, the adjustment result is displayed.

If the adjustment is not executed normally, "ERROR" is displayed.

Item/Display	Content	Setting range	Default value
A PCS_K LED ADJ	Image density sensor sensitivity (light quantity) adjustment value	1 - 255	40
B PCS_K DARK	Image density sensor dark voltage	0 - 255	0
C PCS_K GRND	Belt surface detection level when the adjustment of item A is completed	0 - 255	0
D PCS_K DRUM MAX	OPC drum surface detection level Max. value	0 - 255	0
E PCS_K DRUM MIN	OPC drum surface detection level Min. value	0 - 255	0
F PCS_K DRUM DIF	OPC drum surface detection level differential (Item D - Item E)	0 - 255	0

Error name	Error content
Sensor adjustment abnormality	PCS_K LED ADJ error The adjustment target level is not reached by three times of retry operations.
Surface scanning abnormality	PCS_K GRND error The difference between the max. value and the min. value of the OPC drum surface detection level is out of the specified range in detection of one circle of the OPC drum surface.

<b>44-4</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the conditions of the high density process control operation.

<b>Section</b>	Process
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#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Item/Display	Content	Setting range	Default value
A PCS_K TARGET	Image density sensor sensitivity adjustment target value	1 - 255	210
B LED_K OUTPUT	Initial current level black sensor LED light emitting quantity set value in the image density sensor adjustment	1 - 255	40
C PCSADJUSTMENT LIMIT	Adjustment error allowance level in the sensor sensitivity adjustment	1 - 255	10
D DRUM GROUND DIF	The difference between the max. value and the min. value of the OPC drum surface detection level is in the allowable range in detection of one circle of the OPC drum surface.	0 - 255	0
E BIAS_BK STANDARD DIF	Developing bias reference value in the high density process control	0 - 255	0
F BIAS PATCH INTERVAL	Patch-forming developing bias voltage interval (voltage difference) in the high density process control	1 - 255	45
G K_PAT TARGET ID	Toner patch density target value (black) in the high density process control	1 - 255	45
H HV BK_GROUND LIMIT	Error judgment criterion for the difference between the max. level and the min. level of the OPC drum surface detection	1 - 255	29

<b>44-6</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to execute the high density process control forcibly.

<b>Section</b>	Process
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#### Operation/Procedure

Press [EXECUTE] key.

In case of a normal completion, the result is saved.

In case of an abnormal completion, "ERROR" is displayed. (Refer to the table below.)

In case of an ERROR, the previous correction data are saved.

Result display	Content description
COMPLETE	Normal complete
ERROR	Abnormal end
INTERRUPTION	Forcible interruption

Details of error display	Content description
BK_SEN_ADJ_ERR	Image density sensor sensitivity adjustment error
K_HV_ERR	Density process control operation error
TIMEOUT_ERR	Density process control operation time-out

44-9

<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the result data of the high density process control operation.
<b>Section</b>	Process (Photo-conductor/Developing/Transfer/Cleaning)

#### Operation/Procedure

Select a target display mode with [CPY/PRN],[OTHER] keys.

Mode	Item/Display (*: Correction value)		Content	Display range	Default value
CPY/ PRN	P (PROCON)	BLACK : GB ***/*** DV ***/***	High density process control mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 535 DV: 395
	N (NORMAL) M (MIDDLE)	BLACK : GB ***/*** DV ***/***	Actual operation mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 535 DV: 395
	N (NORMAL) L (LOW)	BLACK : GB ***/*** DV ***/***	Actual operation mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 525 DV: 395
OTHER	TN/TC	TN HUD AREA	Toner density correction humidity area	1 - 14	9
		TN HUD DATA	Toner density correction humidity AD value	0 - 1023	0
		TC TMP AREA	Transfer voltage correction temperature area	1 - 9	4
		TC TMP DATA	Transfer voltage correction temperature AD value	0 - 1023	0
		TC HUD AREA	Transfer voltage correction humidity area	1 - 9	4
		TC HUD DATA	Transfer voltage correction humidity AD value	0 - 1023	0
		MD HUD AREA	OPC drum membrane decrease correction humidity area	1 - 14	9
	MD HUD DATA	OPC drum membrane decrease correction humidity AD value	0 - 1023	0	
	DRUM	MD K STEP	OPC drum membrane decrease correction STEP number display (K)	0 - 4	0
		MD K DRUM COUNTER	OPC drum membrane decrease correction counter (rotation distance)	0 - 20	0
	VG	MD K REVISE(VG) L*** M***	Display of MC correction voltage for OPC drum membrane decrease	0 - 255	0
	LD	MD K REVISE(LD) L*** M***	OPC drum membrane decrease laser power correction display	0 - 255	0
	LD EV	MD K REVISE(LD EV) L*** M***	Display of drum membrane decrease environment laser power correction	-128 - 128	0
	LD HV	MD K REVISE(LD HV) L*** M***	Display of high-density process control laser power correction	-128 - 128	0
	LD ALL	MD K REVISE(LD ALL) L*** M***	Display of laser power total correction amount	-128 - 128	0
	HV	MD K REVISE(HV) L*** M***	OPC drum membrane environment MC correction voltage display	0 - 255	0
	CP	MD K REVISE(CP) L*** M***	OPC drum membrane / Environment MC correction voltage display	0 - 255	0
	CRUM	DESTINATION	CRUM destination data stored in the PCU PWB of the machine		
		MODEL TYPE	Model type of the machine	0 - 1	0
		CRUM DEST_K	Crum destination data		
	CNT	PROCON COUNT HV	High density process control execution number	0 - 99999999	0
		PROCON COUNT HT	Half-tone process control execution umber	0 - 99999999	0

<b>44-12</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the operation data of the high density process control and the image density sensor.
<b>Section</b>	Process (Photo-conductor/Developing)

#### Operation/Procedure

Select a display mode with [TARGET] [PATCH] keys.

Mode	Item/Display	Content	Display range	Default value
TARGET	ADK_SL (K)	Development characteristics gradient coefficient (High density process control operation)	-9.99 - 9.99	0
	ADK_INT (K)	Development characteristics intercept level (High density process control operation 0V)	-999.9 - 999.9	0
	TARGET (K)	High density process control target density level (K)	0.00 - 255.00	0
PATCH 1-5	n-1	High density process control nth time patch density level 1 (n=1-5)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=1-5)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=1-5)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=1-5)	0 - 255	0
PATCH 6-10	n-1	Patch data nth time patch 1 (n=6-10)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=6-10)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=6-10)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=6-10)	0 - 255	0

<b>44-14</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the output level of the temperature and humidity sensor.
<b>Section</b>	Process (Photo-conductor/Developing)/Fusing

#### Operation/Procedure

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

Item/Display	Content	Display range
TH_RA	A/D value and temperature of the ambient air sensor	Temperature: 0 - 255.0°C A/D value: 0 - 255
TH_CL	A/D value and temperature around the process unit	Temperature: 0 - 255.0°C A/D value: 0 - 255
TH_DV	A/D value and temperature around the developing unit	Temperature: 0 - 255.0°C A/D value: 0 - 255
HUD_RA	A/D value and humidity of the ambient humidity sensor	Humidity: 0 - 100.0% A/D value: 0 - 255
HUD_DV	A/D value and humidity around the developing unit	Humidity: 0 - 100.0% A/D value: 0 - 255
TH_UM	A/D value and temperature of the heat roller center temperature sensor	Temperature: 0 - 255°C A/D value: 0 - 1023
TH_US	A/D value and temperature of the heat roller edge temperature sensor	Temperature: 0 - 255°C A/D value: 0 - 1023

<b>44-16</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the toner density control data.
<b>Section</b>	

#### Operation/Procedure

1) The toner density control data are displayed.

Item/Display	Content	Display range
TONER DEN_LT	Current toner density sensor output value (final value)	1 - 255
TONER DEN_ST	Current toner density control reference value display (the value including all the correction values)	

Item/Display	Content	Display range
AUTO DEVE	Toner density sensor output value when SIM25-02 is executed and completed.	1 - 255
ALL	Actual toner density control value (including all the correction factors)	
AREA	Toner density control correction value for the temperature and the humidity	-127 - 127
HUD	Toner density control correction value for a change in the humidity	
PRINT RATE	Toner density control correction value for the document print ratio	
PROCON	Toner density control correction value for the result of the high density process control	
LIFE	Toner density control correction value for the developer life	

Item/Display	Content	Display range
AUTO DEVE VO	Toner density sensor control voltage value when SIM25-02 is executed and completed.	1 - 255
ALL VO	Actual toner density sensor control voltage value (including all the correction factors)	
AREA VO	Toner density sensor control voltage correction value for the temperature and the humidity	-127 - 127
HUD VO	Toner density sensor control voltage correction value for a change in the temperature and the humidity	
PRINT RATE VO	Toner density sensor control voltage correction value for the document print ratio	
PROCON VO	Toner density sensor control voltage correction value for the high density process control result	
LIFE VO	Toner density sensor control voltage correction value for the developer life	
ENV VO	Toner density sensor control voltage correction value for the environment with a high humidity	
PROFIT_RETURN_VO	Control voltage correction value for the difference between the reference value and the sensor value	

Item/Display	Content		Display range
AUTO DEVE AREA	Area in the auto development adjustment	Display of the humidity area when SIM25-2 is executed	1 - 14
AREA	Current area	Current humidity area display	

<b>44-21</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to register the target value of the half tone process control.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
Press [EXECUTE] key.	
The half tone process control target is set and the operation data are displayed.	
<b>Display</b>	<b>Content</b>
COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor sensitivity adjustment error
[K]	High density process control error
OTHER	Other errors

<b>44-22</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the toner patch density level in the half tone process control operation.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) The toner patch density level made in the half tone process control operation is displayed.	
<b>Item/Display</b>	<b>Content</b>
BASE_n	Belt substrate data (n = 1 - 6)
ID_n	Patch data display (n = 1 - 6)

<b>44-24</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the correction target and the correction level in the half tone process control operation.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Select the display category with [NEXT] key.	

Category	Item/Display	Content
Coefficient	[LOW FIELD]	Coefficient value of the approximate equation in the low density area
	[MID FIELD]	Coefficient value of the approximate equation in the medium density area
Reference value	[SENSOR_TARGET]	Half tone process control reference value
Correction value	[S_VALUE]	Half tone process control correction value
For printer	[PRINTER_S_VALUE]	Printer half tone process control correction value
	[PRINTER_BASE_DITHER_VALUE]	Printer half tone process control reference dither value
	[PRINTER_AUTO_HT_VALUE]	Printer auto density adjustment correction value
Previous correction value	[BEFORE S_VALUE]	Previous half tone process control value

<b>44-25</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the calculating conditions of the correction value for the half tone process control.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Select a target adjustment density level with [↑] [↓] key on the touch panel.	
2) Enter the set value with 10-key.	
3) Press [OK] key.	
NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.	

	Item/Display	Content	Setting range	Default value
A	HIGHLIGHT POINT	Correction point in the low density area	1 - 17	7
B	MID FIELD POINT	Correction point in the medium density area	1 - 17	12
C	LOW FIELD DITHER DEF	Input dither difference in the low density area	0 - 255	10
D	MID FIELD DITHER DEF	Input dither difference in the medium density area	0 - 255	10
E	LOW POINT COEF	Correction amount low density point correction coefficient	0 - 100	100
F	MID POINT COEF	Correction amount medium density point correction coefficient	0 - 100	100

<b>44-26</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to execute the half tone process control compulsory.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
Press [EXECUTE] key.	
The half tone process control is performed and the operation data are displayed.	

COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor sensitivity adjustment error
[K]	High density process control error
OTHER	Other errors

<b>44-27</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the correction data of the half tone process control.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
The correction data of the half tone process control are cleared.	



<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the process control execution conditions.
<b>Section</b>	Process

**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Mode	Item/Display			Content		Setting range		Default value
Process control Enable/Disable setting	A	INITIAL	YES	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0 - 1	0	0
			NO		Disable		1	
	B	SW ON		When supplying the power (when clearing shut-off.)	Process control Disable	1 - 3	1	3
					BK process control Enable		2	
					Pixel count judgment (Judgement is based on the setting value of item K, L.)		3	
	C	TIME		After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)	Process control Disable	1 - 3	1	3
					BK process control Enable		2	
					Pixel count judgment (Judgement is based on the setting value of item L.)		3	
	D	HUM_LIMIT		HUM judgment is made when turning ON the power and after passing TIME.	Process control Disable	1 - 2	1	2
					BK process control Enable		2	
Process control Enable/Disable setting	E	HUM		The temperature and humidity in side the machine are monitored only during a job for every 2 hours (set by item L). When the changes in the temperature and the humidity are greater than the specified level (the set value of item L) in comparison with the previous process control.	Process control Disable	1 - 2	1	2
					BK process control Enable		2	
	F	REV1	YES	The accumulated traveling distance of the photo-conductor unit reaches a certain level after supplying the power.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	G	REV2_BK	YES	The accumulated traveling distance of the photo-conductor unit reaches a certain level after previous execution of density correction	Enable	0 - 1	0	0
			NO		Inhibit		1	
	H	REFRESH MODE	YES	YES/NO setting of the display of the manual process control key by key operations	Key operation display YES	0 - 1	0	1
			NO		Key operation display NO		1	
Process control conditions setting	I	DAY		When the next warm-up if there is no job after a job after passing the specified days from execution of the previous process control	0: Disable of the specified days judgment	0 - 999	0	1
					1 - 999: 1 - 999 days passing		1 - 999	
	J	PIX_RATIO_BK		Magnification ratio setting (%) of the BK toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999	10	
	K	INTERVAL TIME		Passing time setting of "TIME" (h: hour)		1-255 (1-255: 1-255h passed)	12	
	L	HUM HOUR		Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)		1 - 24	2	
	M	HUM_DIF		Area difference specified value when compared with the execution of the previous process control of "HUM"		1 - 9	2	
	N	BK_RATIO		Setting of [REV2_BK] OPC drum traveling distance, specified value of print quantity		1 - 999 (Entry of 20 corresponds to 100,000mm.)	40	
O	HT_DIF		Bias variation difference value used for HT process control execution judgment		1-255	60		

44-29

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of the process control during a job.

<b>Section</b>	Process
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**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

Item/Display	Content	Setting range	Default value
A COPY	During copy job	0 - 2 0: No execution 1: HV only 2: HV → HT	2
B PRINTER	During print job		2
C FAX	During FAX print job		2
D SELF PRINT	During self print		2

HV: High density process control

HT: Half tone process control

44-37

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the development bias correction level in the continuous printing operation.

**Section****Operation/Procedure**

- 1) Select a set target color with the touch panel.
- 2) Select a target item with [↑] [↓] buttons.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

**NOTE:**

When the print density is varied in the continuous printing operation, this simulation is used.

		Item/Display	Default value	Variable range
Current DV Bias voltage	less than 300[v]	A	0	0-5 (*1)
	300[v] or more, less than 450[v]	B	0	
	450[v] or more	C	0	
Time (T) from termination of continuous outputs to start of the next output operation	Less than 10 [sec] & after process control JOB	D	0	0-12 (*2)
	10 [sec] or more, less than 60 [sec]	E	0	
	60 [sec] or more, less than 240 [sec]	F	0	
	240 [sec] or more	G	0	

&lt;Use example&gt;

- (\*1) The default of A/B/C is "0" and this function is set to OFF. When 10 sheets are printed in the multi copy and the 10th output is lighter than the first sheet, set the values of 1 - 5. The greater the value is, the darker the density of the 10th sheet or later.
- (\*2) The correction amount is adjusted by the length of the leaving time. When (\*1) is 1 - 5, the greater the value of (\*2) is, the greater the density of printing is.

46

46-2

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy density in each monochrome copy mode.

**Section****Operation/Procedure**

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value.

When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

Item/Display	Content	Setting range	Default value
A AUTO1	Auto 1	LOW	1 - 99
		HIGH	1 - 99
B AUTO2	Auto 2	LOW	1 - 99
		HIGH	1 - 99
C TEXT	Text	LOW	1 - 99
		HIGH	1 - 99
D TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99
		HIGH	1 - 99
E TEXT/PHOTO	Text/Photograph	LOW	1 - 99
		HIGH	1 - 99
F PRINTED PHOTO	Printed Photo	LOW	1 - 99
		HIGH	1 - 99
G PHOTOGRAPH	Photograph	LOW	1 - 99
		HIGH	1 - 99
H MAP	Map	LOW	1 - 99
		HIGH	1 - 99

46-4

<b>Purpose</b>	Adjustment (color scanner mode)
<b>Function (Purpose)</b>	Used to adjust the density in the image send mode.

**Section****Operation/Procedure**

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

Item/Display	Content	Setting range	Default value
A AUTO	Auto	1 - 99	50
B TEXT	Text	1 - 99	50
C TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99	50
D TEXT/PHOTO	Text/Photograph	1 - 99	50
E PRINTED PHOTO	Printed Photo	1 - 99	50
F PHOTOGRAPH	Photograph	1 - 99	50
G MAP	Map	1 - 99	50

<b>46-5</b>	
<b>Purpose</b>	Adjustment (monochrome scanner mode)
<b>Function (Purpose)</b>	Used to adjust the density in the image send mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.  
\* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

Item/Display	Content	Setting range	Default value
A AUTO TEXT	Automatic/Text	1 - 99	50
B TEXT	Text	1 - 99	50
C TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99	50
D TEXT/PHOTO	Text/Photograph	1 - 99	50
E PRINTED PHOTO	Printed Photo	1 - 99	50
F PHOTOGRAPH	Photograph	1 - 99	50
G MAP	Map	1 - 99	50

<b>46-8</b>	
<b>Purpose</b>	Adjustment (color scanner mode)
<b>Function (Purpose)</b>	Used to adjust the image send mode color balance RGB.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target with [R] [G] [B] keys on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

The color balance can be adjusted separately for the low density area and the high density area.

When the adjustment value is increased, the image density of the target color is increased, and vice versa.

Item/Display	Content	Default value
A LOW DENSITY POINT	Low density correction amount	50
B HIGH DENSITY POINT	High density correction amount	50

<b>46-9</b>	
<b>Purpose</b>	Adjustment (DSPF mode)
<b>Function (Purpose)</b>	Used to adjust the SPF mode scan image density (copy, image send mode)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target mode with [OC] and [DSPF] keys on the touch panel. (DSPF-installed model only)
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.  
\* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.

- 4) Press [OK] key. (The set value is saved.)

This adjustment result affects the image send mode, the copy mode, and the fax mode.

When the adjustment value is increased, the image density is increased, and vice versa.

Item	Button	Display	Content	Setting range	Default value
A	OC	COPY SIDEA: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDEA: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDEA: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDEA: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	52
E		SCAN SIDEA: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	52
F		FAX SIDEA: HIGH	DSPF FAX mode exposure adjustment (High density)	1 - 99	52
A	DSPF	COPY SIDEB: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDEB: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDEB: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	47
D		COPY SIDEB: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	50
E		SCAN SIDEB: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	50
F		FAX SIDEB: HIGH	DSPF FAX mode exposure adjustment (High density)	1 - 99	50
G		BALANCE SIDEB: R	DSPF color balance R	1 - 99	50
H		BALANCE SIDEB: G	DSPF color balance G	1 - 99	50
I		BALANCE SIDEB: B	DSPF color balance B	1 - 99	50

<b>46-10</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy density (in each copy mode).
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target mode with the touch panel key.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.

- 3) Enter the set value with 10-key.  
\* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 4) Press [OK] key. (The set value is saved.)  
When the adjustment value is increased, the image density is increased, and vice versa.
- 5) When [EXECUTE] key is pressed, the self print image is printed.  
A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

Item	Content
AUTO1	Automatic 1
AUTO2	Automatic 2
TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
TEXT/PHOTO	Text/Photograph
PRINTED PHOTO	Printed Photo
PHOTO	Photograph
MAP	Map

Item/Display	Density level (Point)	Setting range	Default value
A POINT1	Point 1	245 - 755	500
B POINT2	Point 2	245 - 755	500
C POINT3	Point 3	245 - 755	500
D POINT4	Point 4	245 - 755	500
E POINT5	Point 5	245 - 755	500
F POINT6	Point 6	245 - 755	500
G POINT7	Point 7	245 - 755	500
H POINT8	Point 8	245 - 755	500
I POINT9	Point 9	245 - 755	500
J POINT10	Point 10	245 - 755	500
K POINT11	Point 11	245 - 755	500
L POINT12	Point 12	245 - 755	500
M POINT13	Point 13	245 - 755	500
N POINT14	Point 14	245 - 755	500
O POINT15	Point 15	245 - 755	500
P POINT16	Point 16	245 - 755	500
Q POINT17	Point 17	245 - 755	500

<b>46-16</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy density manually.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.
- 2) Enter the set value with 10-key.  
\* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)  
When the adjustment value is increased, the image density is increased, and vice versa.
- 4) When [EXECUTE] key is pressed, the self print image is printed.  
A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

Item/Display	Density level (Point)	Setting range	Default value
A POINT1	Point 1	245 - 755	500
B POINT2	Point 2	245 - 755	500
C POINT3	Point 3	245 - 755	500
D POINT4	Point 4	245 - 755	500
E POINT5	Point 5	245 - 755	500
F POINT6	Point 6	245 - 755	500
G POINT7	Point 7	245 - 755	500
H POINT8	Point 8	245 - 755	500

Item/Display	Density level (Point)	Setting range	Default value
I POINT9	Point 9	245 - 755	500
J POINT10	Point 10	245 - 755	500
K POINT11	Point 11	245 - 755	500
L POINT12	Point 12	245 - 755	500
M POINT13	Point 13	245 - 755	500
N POINT14	Point 14	245 - 755	500
O POINT15	Point 15	245 - 755	500
P POINT16	Point 16	245 - 755	500
Q POINT17	Point 17	245 - 755	500

<b>46-19</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of document density scanning (copy, image send mode).

#### Section

#### Operation/Procedure

Select an item to be set with touch panel.

When an item is selected, it is highlighted and the setting change is saved.

Item/Display	Content	Set value	Default value
AE_MODE	Auto exposure mode	MODE1, MODE2	MODE2
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/ STOP/ PRESCAN	STOP
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME/ STOP/ PRESCAN	STOP
AE_FILTER	Auto exposure filter setting	SOFT NORMAL SHARP	NORMAL
AE_WIDTH	AE exposure width	FULL/PART	FULL

#### NOTE:

MODE 1	High gamma (high contrast images)
MODE 2	Normal gamma
STOP	The image density in 3 - 7mm area at the lead edge is scanned, and the output image density is determined according to the scanned density. (The output image density is even for all the surface.)
REALTIME	The densities of the document width are scanned sequentially, and the output image density is determined according to the density in each area of document. (The output image density may not be even for all the surface.)
AE WIDTH FULL	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x the document width. This is not related to the PRESCAN mode.
AE WIDTH PART	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x 100mm width. This is not related to the PRESCAN mode.

<b>46-23</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the density correction of copy high density section (High density tone gap supported).

#### Section

#### Operation/Procedure

- 1) Select a target item of setting with [ $\uparrow$ ] [ $\downarrow$ ] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range	Default value
A	K (0: ENABLE 1: DISABLE)	0	K engine highest density correction mode: Enable	0 - 1	1
		1	K engine highest density correction mode: Disable		
B	BLACK MAX TARGET	Scanner target value for correction of the maximum density		0 - 999	500

\* When tone gap is generated in the high density area, set item A to "0".

The density of high density part decreases. However, the tone gap is better.

\* To increase the density in the high density area further, set item A to "1".

The tone gap may occur in high density part.

<b>46-24</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy density adjustment (Auto adjustment)
<b>Section</b>	

#### Operation/Procedure

- Press [EXECUTE] key.  
The adjustment pattern is printed out.
- Press [EXECUTE] key.  
The automatic adjustment of copy density is executed, and then the adjustment result pattern of the copy mode is printed.
- Press [OK] key.  
The half tone correction target registration is processed.
- The half-tone correction execution menu is displayed. Press [EXECUTE] key.  
Half-tone correction is executed. When [RESULT] button is pressed after completion of correction, the data of the half-tone correction can be checked.

Display	Content
COMPLETE	Normal completion
ERROR BLACK SENSOR ADJUSTMENT	Black sensor abnormality
[K]	Half-tone correction [K] abnormality
OTHER	Other errors

<b>46-32</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the reproducibility of the document background density in the automatic copy mode.
<b>Section</b>	

#### Operation/Procedure

- Select a target item of setting with [↑] [↓] key on the touch panel.
- Enter the set value with 10-key.
- Press [OK] key. (The set value is saved.)

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

Item	Display	Content	Setting range	Default value
A	COPY: OC	Copy mode (for OC)	1 - 250	196
B	COPY: DSPF (SIDE1)	Copy mode (for DSPF front surface)	1 - 250	196

Item	Display	Content	Setting range	Default value
C	COPY: DSPF (SIDE2)	Copy mode (for DSPF back surface)	1 - 250	196
D	SCAN: OC	Scanner mode (for OC)	1 - 250	196
E	SCAN: DSPF (SIDE1)	Scanner mode (for DSPF front surface)	1 - 250	196
F	SCAN: DSPF (SIDE2)	Scanner mode (for DSPF back surface)	1 - 250	196
G	FAX: OC	FAX mode (for OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (for DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX mode (for DSPF back surface)	1 - 250	196

<b>46-37</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the reproducibility of the scan image color document (copy, image send mode).

#### Section

#### Operation/Procedure

- Select a target item with [↑] [↓] keys on the touch panel.
- Enter the set value with 10-key.
- Press [EXECUTE] key.
- Press [YES] key.

This simulation is used to adjust the reproducibility of red and yellow images when copy a color document of red and yellow images in the monochrome mode.

Item/Display	Content	Setting range	Default value
A	R-Ratio	Gray making setting (R)	0 - 1000
B	G-Ratio	Gray making setting (G)	0 - 1000

\* B-Ratio: The value of gray making setting (B) is obtained from the formula below.

$$1000 - R - \text{Ratio} - G - \text{Ratio}$$

When [DEFAULT] key is pressed, the values are set to the initial values (default).

When the adjustment values of items A and B are decreased, the copy density of yellow images is increased. When the adjustment values are increased, the density is decreased.

When the adjustment value of item A is decreased and the adjustment value of item B is increased, the copy density of red images is increased. When the adjustment value of item A is increased and the adjustment value of item B is decreased, the copy density is decreased.

<b>46-39</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the sharpness of FAX send images.

#### Section

#### Operation/Procedure

- Select a target item with [↑] [↓] keys on the touch panel.
- Enter the set value with 10-key.
- Press [OK] key. (The set value is saved.)

Input large numeric value to obtain crispy image. Input small numeric value to decrease moire.

Item/Display	Content	Setting range	Default value
A	200 x 100 [DPI] OFF	200 x 100 [DPI] half tone OFF	0 - 2
B	200 x 200 [DPI] OFF	200 x 200 [DPI] half tone OFF	0 - 2

Item/Display	Content	Setting range	Default value
C	200 x 200 [DPI] ON	200 x 200 [DPI] half tone ON	0 - 2 1
D	200 x 400 [DPI] OFF	200 x 400 [DPI] half tone OFF	0 - 2 1
E	200 x 400 [DPI] ON	200 x 400 [DPI] half tone ON	0 - 2 1
F	400 x 400 [DPI] OFF	400 x 400 [DPI] half tone OFF	0 - 2 1
G	400 x 400 [DPI] ON	400 x 400 [DPI] half tone ON	0 - 2 1
H	600 x 600 [DPI] OFF	600 x 600 [DPI] half tone OFF	0 - 2 1
I	600 x 600 [DPI] ON	600 x 600 [DPI] half tone ON	0 - 2 1

<b>46-40</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Collective adjustment of all the modes)
<b>Section</b>	

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display	Content	Setting range	Default value
A	EXPOSURE LEVEL(ALL)	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	1 - 99 50

<b>46-41</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Normal)
<b>Section</b>	

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display	Content	Setting range	Default value
A	AUTO	Auto	1 - 99 50
B	EXPOSURE1	Exposure 1	1 - 99 50
C	EXPOSURE2	Exposure 2	1 - 99 50
D	EXPOSURE3	Exposure 3	1 - 99 50
E	EXPOSURE4	Exposure 4	1 - 99 50
F	EXPOSURE5	Exposure 5	1 - 99 50
G	EXECUTE MODE	Print mode	Auto Exposure 1 Exposure 2 Exposure 3 Exposure 4 Exposure 5
			1 - 6 1 2 3 4 5 6
			1 (AUTO)

To check the adjustment density level of items A - F, set the document and set the setting value of item G according to items A - F, and press [EXECUTE] key.

<b>46-42</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Fine)

#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display	Content	Setting range	Default value
A	AUTO	Fine/Automatic	1 - 99 50
B	EXPOSURE1	Fine/Exposure 1	1 - 99 50
C	EXPOSURE2	Fine/Exposure 2	1 - 99 50
D	EXPOSURE3	Fine/Exposure 3	1 - 99 50
E	EXPOSURE4	Fine/Exposure 4	1 - 99 50
F	EXPOSURE5	Fine/Exposure 5	1 - 99 50
G	AUTO H_TONE	Fine/Automatic/ Half tone	1 - 99 50
H	EXPOSURE1 H_TONE	Fine/Exposure 1/ Half tone	1 - 99 50
I	EXPOSURE2 H_TONE	Fine/Exposure 2/ Half tone	1 - 99 50
J	EXPOSURE3 H_TONE	Fine/Exposure 3/ Half tone	1 - 99 50
K	EXPOSURE4 H_TONE	Fine/Exposure 4/ Half tone	1 - 99 50
L	EXPOSURE5 H_TONE	Fine/Exposure 5/ Half tone	1 - 99 50
M	EXECUTE MODE	Print mode	Fine/Auto Fine/ Exposure 1 Fine/ Exposure 2 Fine/ Exposure 3 Fine/ Exposure 4 Fine/ Exposure 5 Fine/ Automatic/ half tone Fine/ Exposure 1 /Half tone Fine/ Exposure 2 /Half tone Fine/ Exposure 3 /Half tone Fine/ Exposure 4 /Half tone Fine/ Exposure 5 /Half tone
			1 - 12 1 2 3 4 5 6 7 8 9 10 11 12
			1 (AUTO)

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

<b>46-43</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Super Fine)

#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Super Fine/Auto	1 - 99	50
B	EXPOSURE1	Super Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Super Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Super Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Super Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Super Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Super Fine /Auto/Half tone	1 - 99	50
H	EXPOSURE1 H_TONE	Super Fine/Exposure 1 /Half tone	1 - 99	50
I	EXPOSURE2 H_TONE	Super Fine/Exposure 2 /Half tone	1 - 99	50
J	EXPOSURE3 H_TONE	Super Fine/Exposure 3 /Half tone	1 - 99	50
K	EXPOSURE4 H_TONE	Super Fine/Exposure 4 /Half tone	1 - 99	50
L	EXPOSURE5 H_TONE	Super Fine/Exposure 5 /Half tone	1 - 99	50
M	EXECUTE MODE	Print mode	1 - 12	1 (AUTO)
		Super Fine /Auto		
	EXP1	Super Fine /Exposure 1		2
	EXP2	Super Fine /Exposure 2		3
	EXP3	Super Fine /Exposure 3		4
	EXP4	Super Fine /Exposure 4		5
	EXP5	Super Fine /Exposure 5		6
	AUTO H_TONE	Super Fine /Auto /Half tone		7
	EXP1 H_TONE	Super Fine /Exposure 1 /Half tone		8
	EXP2 H_TONE	Super Fine /Exposure 2 /Half tone		9
	EXP3 H_TONE	Super Fine /Exposure 3 /Half tone		10
	EXP4 H_TONE	Super Fine /Exposure 4 /Half tone		11
	EXP5 H_TONE	Super Fine /Exposure 5 /Half tone		12

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

<b>46-44</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Ultra fine)

#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Ultra Fine/Auto	1 - 99	50
B	EXPOSURE1	Ultra Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Ultra Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Ultra Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Ultra Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Ultra Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Ultra Fine/Auto/Half tone	1 - 99	50
H	EXPOSURE1 H_TONE	Ultra Fine/Exposure 1 /Half tone	1 - 99	50
I	EXPOSURE2 H_TONE	Ultra Fine/Exposure 2 /Half tone	1 - 99	50
J	EXPOSURE3 H_TONE	Ultra Fine/Exposure 3 /Half tone	1 - 99	50
K	EXPOSURE4 H_TONE	Ultra Fine/Exposure 4 /Half tone	1 - 99	50
L	EXPOSURE5 H_TONE	Ultra Fine/Exposure 5 /Half tone	1 - 99	50
M	EXECUTE MODE	Print mode	1 - 12	1 (AUTO)
		Ultra Fine/ Auto		
	EXP1	Ultra Fine/ Exposure 1		2
	EXP2	Ultra Fine/ Exposure 2		3
	EXP3	Ultra Fine/ Exposure 3		4
	EXP4	Ultra Fine/ Exposure 4		5
	EXP5	Ultra Fine/ Exposure 5		6
	AUTO H_TONE	Ultra Fine/ Auto/Half tone		7
	EXP1 H_TONE	Ultra Fine/ Exposure 1 /Half tone		8
	EXP2 H_TONE	Ultra Fine/ Exposure 2 /Half tone		9
	EXP3 H_TONE	Ultra Fine/ Exposure 3 /Half tone		10
	EXP4 H_TONE	Ultra Fine/ Exposure 4 /Half tone		11
	EXP5 H_TONE	Ultra Fine/ Exposure 5 /Half tone		12

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (600dpi).

**Section****Operation/Procedure**

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content		Setting range		Default value
A	AUTO	600dpi/Auto 1		1 - 99		50
B	EXPOSURE1	600dpi/Exposure 1		1 - 99		50
C	EXPOSURE2	600dpi/Exposure 2		1 - 99		50
D	EXPOSURE3	600dpi/Exposure 3		1 - 99		50
E	EXPOSURE4	600dpi/Exposure 4		1 - 99		50
F	EXPOSURE5	600dpi/Exposure 5		1 - 99		50
G	AUTO H_TONE	600dpi/Auto /Half tone 1		1 - 99		50
H	EXPOSURE1 H_TONE	600dpi/Exposure 1 /Half tone		1 - 99		50
I	EXPOSURE2 H_TONE	600dpi/Exposure 2 /Half tone		1 - 99		50
J	EXPOSURE3 H_TONE	600dpi/Exposure 3 /Half tone		1 - 99		50
K	EXPOSURE4 H_TONE	600dpi/Exposure 4 /Half tone		1 - 99		50
L	EXPOSURE5 H_TONE	600dpi/Exposure 5 /Half tone		1 - 99		50
M	EXECUTE MODE	AUTO	Print mode	600dpi/Auto	1 - 12	1 (AUTO)
		EXP1		600dpi/Exposure 1		2
		EXP2		600dpi/Exposure 2		3
		EXP3		600dpi/Exposure 3		4
		EXP4		600dpi/Exposure 4		5
		EXP5		600dpi/Exposure 5		6
		AUTO H_TONE		600dpi/Auto /Half tone		7
		EXP1 H_TONE		600dpi/Exposure 1 /Half tone		8
		EXP2 H_TONE		600dpi/Exposure 2 /Half tone		9
		EXP3 H_TONE		600dpi/Exposure 3 /Half tone		10
		EXP4 H_TONE		600dpi/Exposure 4 /Half tone		11
		EXP5 H_TONE		600dpi/Exposure 5 /Half tone		12

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the compression rate of copy and scan images (JPEG).

**Section****Operation/Procedure**

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value is saved.

Operation mode	Item/Display		Content	Setting range	Default value
(COLOR) (Document filing (COLOR mode))	A	COPY (C)	LOW	Low compression (Color)	0
			MIDDLE	Medium compression (Color)	1
			HIGH	High compression (Color)	2
			LOWER	Super low compression (Color)	3
COPY (GRAY) (Copy/Document filing (Monochrome half-tone mode))	B	COPY (G)	LOW	Low compression (Gray)	0
			MIDDLE	Medium compression (Gray)	1
			HIGH	High compression (Gray)	2
			LOWER	Super low compression (Gray)	3
PUSH SCAN (COLOR) (Scanner (Color mode))	C	SCAN (C) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0
			MIDDLE 2	Medium compression mode 2 Medium compression	1
			MIDDLE 3	Medium compression mode 3 High compression	2



Operation mode	Item/Display			Content	Setting range	Default value
PUSH SCAN (GRAY) (Scanner (Monochrome half-tone mode))	D	SCAN (G) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0	0 (MIDDLE 1)
			MIDDLE 2	Medium compression mode 2 Medium compression	1	
			MIDDLE 3	Medium compression mode 3 High compression	2	

\*1: Setting of compression rate for images when the image compression rate is set to "Medium" in the user mode.

NOTE: When the compression rate is increased, the HDD capacity in the document filing mode is decreased. On the other hand, however, the image quality of some documents may be remarkably reduced.

<b>46-51</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode (manual adjustment).

#### Section

#### Operation/Procedure

- 1) Select a target adjustment mode with the touch panel key [PAPER/DITHER].
- 2) Select a target adjustment density level with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [EXECUTE] key, or [OK] key.

When [EXECUTE] key is pressed, the self print image is outputted.

A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

Item/Display	Content
HEAVY	Heavy paper
ED1	Multivalued error diffusion

Item/Display		Density level (Point)	Setting range	Default value	
				HEAVY	ED1
A	POINT1	Point 1	245 - 755	500	467
B	POINT2	Point 2	245 - 755	500	466
C	POINT3	Point 3	245 - 755	500	469
D	POINT4	Point 4	245 - 755	500	470
E	POINT5	Point 5	245 - 755	500	474
F	POINT6	Point 6	245 - 755	500	478
G	POINT7	Point 7	245 - 755	500	496
H	POINT8	Point 8	245 - 755	500	507
I	POINT9	Point 9	245 - 755	500	504
J	POINT10	Point 10	245 - 755	500	473
K	POINT11	Point 11	245 - 755	500	448
L	POINT12	Point 12	245 - 755	500	397
M	POINT13	Point 13	245 - 755	500	382
N	POINT14	Point 14	245 - 755	500	385
O	POINT15	Point 15	245 - 755	500	483
P	POINT16	Point 16	245 - 755	500	500
Q	POINT17	Point 17	245 - 755	500	500

#### 46-52

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the gamma default for the copy mode heavy paper and the image process mode. (The set values of SIM46-51 are set to the default values.)

#### Section

#### Operation/Procedure

- 1) Select an item to be set to the default with the touch panel key. To reset the adjustment values of all the items, select [ALL].
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) Press [EXECUTE] key.

#### 46-60

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the automatic copy mode sharpness.

#### Section

#### Operation/Procedure

- 1) Select a target item of the adjustment with [↑] and [↓] keys on the touch panel.
- 2) Enter the value corresponding to the sharpness level (filter process mode) with 10 key.
- 3) Press [OK] key.

Item	Display		Content		Setting range	Default value	Remark
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment for the automatic copy mode and dot-pattern images	High enhancement	1	3 (Auto)	Applied only to the automatic copy mode.
		L		Low enhancement	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the automatic copy mode	SOFT	1	2 (CENTER)	Applied only to the automatic copy mode.
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	B/W COPY	OFF	Soft filter application ON/OFF setting for monochrome copy mode images	OFF	0	1 (ON)	
		ON		ON	1		
D	COLOR PUSH:RGB	OFF	Soft filter application ON/OFF setting for push-scan color mode images	OFF	0	1 (ON)	
		ON		ON	1		
E	B/W PUSH	OFF	Soft filter application ON/OFF setting for push-scan monochrome mode images	OFF	0	1 (ON)	
		ON		ON	1		

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the area separation recognition level in the image send mode (color, gray, auto exposure mode).

**Section****Operation/Procedure**

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

When the adjustment value is changed greatly from the initial value, an image quality trouble may occur.

Item/Display	Content	Setting range	Default value
A SEGMENT: SWITCH [TXT ON SCR]	Detection ON/OFF: Text on dot	0 - 1	0
B SEGMENT: SWITCH [LINE SCR]	Detection ON/OFF: line screen	0 - 1	0
C SEGMENT: SWITCH [SMALL SCR]	Detection ON/OFF: Dot in a small area	0 - 1	0
D SEGMENT: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 5	3
E SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 5	3
F SEGMENT: ADJUST [BK TXT 2, CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 5	3
G SEGMENT: ADJUST [BK/CL]	Detection level adjustment: Chroma/Achroma judgment	1 - 5	3
H SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 5	3
I SEGMENT: ADJUST [SCR]	Detection level adjustment: Dot	1 - 5	3

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of the ACS, the area separation, the background image process, and the automatic exposure mode.

**Section****Operation/Procedure**

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

When the adjustment value is changed greatly from the initial value, an image quality trouble may occur.

Item	Display	Content	Setting range	Default value
A	SW_ACS	ACS judgment reference area adjustment	0 - 1	1
B	TEXT_IMAGE	SIM display item: Text/Image judgment priority level select	0 - 6	3
C	TEXT_BLANK	SIM display item: Text/Blank judgment priority level select	0 - 6	4
D	HT_LV	Dot area judgment threshold value adjustment	0 - 6	1
E	AE_AREA_LV	SIM display item: Color AE judgment target area adjustment value	0 - 6	3
F	AE_LV_CC	AE background detection division result adjustment: For color copy	0 - 8	4
G	AE_LV_MC	AE background detection division result adjustment: For monochrome copy	0 - 8	4
H	AE_LV_CS	AE background detection division result adjustment: For color scan	0 - 8	4
I	AE_LV_MS	AE background detection division result adjustment: For monochrome scan	0 - 8	4
J	AE_JUDGE_LV_L_U	Color AE background density threshold adjustment value (lower limit)	0 - 4	0
K	AE_JUDGE_LV_L_O	Color AE background density threshold adjustment value (upper limit)	0 - 10	0
L	AE_JUDGE_LV_C	Color AE background detection level adjustment (chroma)	0 - 10	5
M	AE_ONOFF_CC	AE mode ON/OFF select: For color copy	ON: 0 - 1 OFF: 0 - 1	0 (ON) 1
N	AE_ONOFF_MC	AE mode ON/OFF select: For monochrome copy	ON: 0 - 1 OFF: 0 - 1	0 (ON) 1
O	AE_ONOFF_CS	AE mode ON/OFF select: For color scan	ON: 0 - 1 OFF: 0 - 1	0 (ON) 1
P	AE_ONOFF_MS	AE mode ON/OFF select: For monochrome scan	ON: 0 - 1 OFF: 0 - 1	0 (ON) 1
Q	BLANK_JUDGE_LV_L	Blank judgment level adjustment (brightness)	0 - 10	0
R	BLANK_JUDGE_LV_C	Blank judgment level adjustment (chroma)	0 - 10	0
S	MODE0_UNDER	Mode 0 photographic paper system mode select threshold value	0 - 6	0
T	MODE1_UNDER	Mode 1 photographic paper system mode select threshold value	0 - 6	0
U	MODE5_UNDER	Mode 5 photographic paper system mode select threshold value	0 - 6	0
V	MODE6_UNDER	Mode 6 photographic paper system mode select threshold value	0 - 6	0

<b>46-63</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the density in the low density area of a scan image.
<b>Section</b>	Scan mode

#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

Item/Display		Content	Setting range	Default value
A	COLOR PUSH: TEXT/PRINTED PHOTO	Text print (Color PUSH)	1 - 9	3
B	COLOR PUSH: TEXT	Text (Color PUSH)	1 - 9	3
C	COLOR PUSH: PRINTED PHOTO	Printed photo (Color PUSH)	1 - 9	5
D	COLOR PUSH: PHOTOGRAPH	Photograph (Color PUSH)	1 - 9	5
E	COLOR PUSH: TEXT/PHOTO	Text photograph (Color PUSH)	1 - 9	3
F	COLOR PUSH: MAP	Map (Color PUSH)	1 - 9	5

<b>46-74</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy density and the printer density. (Automatic adjustment)
<b>Section</b>	

#### Operation/Procedure

In this simulation, SIM46-24 and SIM67-24 are continuously performed.

To execute both the copy density adjustment (automatic adjustment) and the printer density adjustment (automatic adjustment), it is advisable to use this simulation for effective operation.

- 1) Press [EXECUTE] key.  
The high density process control is performed, and then the copy density adjustment pattern is printed.
- 2) Place the printed adjustment pattern on the document table, and press [EXECUTE] key.  
The copy density automatic adjustment is performed, and then the adjustment result pattern is printed.
- 3) Press [EXECUTE] key.  
The printer density adjustment pattern is printed.
- 4) Place the printed adjustment pattern on the document table, and press [EXECUTE] key.  
The print density automatic adjustment is performed, and then the adjustment result pattern is printed.
- 5) Press [OK] key.  
The half-tone correction target registration is executed.

NOTE: The adjustment result will not become valid until the both adjustment procedures are executed completely.

<b>46-90</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to set the process operation of high-compression PDF images.
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment mode with [TEXT], [COLOR] and [BG LAYER] keys.
- 2) Select a target adjustment item with [↑] [↓] key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

The set value is saved.

Item	Button	Display	Content	Setting range	Default value
A	TEXT	GLYPH SENSITIVITY	Text handling selection	0 - 2	0
B		BG SW FOR FINDLINES	Line handling selection	0 - 1	0
C		HOR FINDLINES SW	Line detection SW (H)	0 - 2	0
D		VERT FINDLINES SW	Line detection SW (V)	0 - 2	0
E		FGCOLOR INDEXING SEL	Text color number adjustment SW	0 - 3	0
F		FGCOLOR INDEXING ADJ	Text color adjustment	0 - 4	2
A	COLOR	LUMINANCE ADJUSTMENT	Luminance adjustment	0 - 4	2
B		CHROMA INTENT	Chroma selection	0 - 2	1
C		NEUTRAL ADJUSTMENT	Neutral adjustment	0 - 2	0
D		R-RATIO ADJUSTMENT	Gray scale adjustment (R)	0 - 1000	299
E		G-RATIO ADJUSTMENT	Gray scale adjustment (G)	0 - 1000	587
A	BG LAYER	BG LAYER INTENT 1	Speed priority setting	0 - 2	1
B		BG LAYER INTENT 2	Image quality priority setting	0 - 2	1

## 48

<b>48-1</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value is saved.

When the adjustment value is increased, the image magnification ratio is increased.

A change of "1" in the adjustment value of item A, C or E corresponds to a change of about 0.02% in the copy magnification ratio.

A change of "1" in the adjustment value of item B or D corresponds to a change of about 0.1% in the copy magnification ratio.

Item/Display		Content	Setting range	Default value
A	CCD(MAIN)	SCAN main scanning magnification ratio adjustment (CCD)	1 - 99	50
B	CCD(SUB)	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
C	SPF(MAIN)	DSPF document front surface magnification ratio adjustment (Main scan)	1 - 99	50
D	SPF(SUB)	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50
E	SPFB(MAIN)	DSPF document back surface magnification ratio adjustment (Main scan)	1 - 99	50

<b>48-5</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to correction the scan image magnification ratio (in the sub scanning direction).
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value is saved.

When the image magnification ratio in the sub scanning direction is adjusted with SIM48-1, and a different magnification ratio is specified, and the image magnification ratio is not satisfactory, perform this adjustment.

When there is an error in the image magnification ratio in reduction, change the adjustment value in the high speed mode. When there is an error in the image magnification ratio in enlargement, change the adjustment value in the low speed mode.

Item/Display		Content	Setting range	Default value
A	MR (HI)	Scanner motor (High speed)	1 - 99	50
B	MR(MID)	Scanner motor (Reference speed)	1 - 99	50
C	MR(LO)	Scanner motor (Low speed)	1 - 99	50
D	SPF(HI)	Document feed (SPF) motor (High speed)	1 - 99	50
E	SPF(MID)	Document feed (SPF) motor (Reference speed)	1 - 99	50

#### Scan speed

Unit	Reference speed		
	HI	MID	LO
OC	372.0mm/s	186.0mm/s	93.0mm/s
DSPF	372.0mm/s	186.0mm/s	—

<b>48-6</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the rotation speed of each motor.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the adjustment target speed with [MONO] and [HEAVY] keys on the touch panel.
- 2) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

Mode	Item	Display	Content	Setting range	Default value	
					62 CPM model	75 CPM model
MONO	A	RRM	Resist motor correction value	1 - 99	50	50
	B	DM	Drum motor correction value	1 - 99	50	50
	C	DVM	Developing motor correction value	1 - 99	50	50
	D	TRM	Resist front motor correction value	1 - 99	50	50
	E	VPM	Vertical transport motor correction value	1 - 99	50	50
	F	POM1	Paper exit motor 1 correction value	1 - 99	50	50
	G	POM2	Paper exit motor 2 correction value	1 - 99	50	50
	H	FSM	Fusing motor correction value	1 - 99	50	50
	I	FUSER SETTING	Fusing speed select timing	1 - 99	53	55
HEAVY	A	RRM	Resist motor correction value	1 - 99	50	50
	B	DM	Drum motor correction value	1 - 99	50	50
	C	DVM	Developing motor correction value	1 - 99	50	50
	D	TRM	Resist front motor correction value	1 - 99	50	50
	E	VPM	Vertical transport motor correction value	1 - 99	50	50
	F	POM1	Paper exit motor 1 correction value	1 - 99	50	50

Mode	Item	Display	Content	Setting range	Default value	
					62 CPM model	75 CPM model
HEAVY	G	POM2	Paper exit motor 2 correction value	1 - 99	50	50
	H	FSM	Fusing motor correction value	1 - 99	50	50
	I	FUSER SETTING	Fusing speed select timing	1 - 99	45	30
	J	RRM START	RRM acceleration start timing	0 - 255	50	50
	K	RRM END	RRM acceleration end timing	0 - 255	40	35

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, a jam, paper wrinkle, or image quality trouble may occur.

## 49

49-1

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to perform the firmware update.
<b>Section</b>	

### Operation/Procedure

- 1) Save the firmware to the USB memory.
- 2) Insert the USB memory into the main unit. (Use USB I/F of the operation panel section.)
- 3) Select a target firmware file for update with the touch panel.
- 4) Select a target firmware.  
Press [ALL] key to select all the Firmware collectively.
- 5) Press [EXECUTE] key.
- 6) Press [YES] key.

The selected firmware is updated.

When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

Item/Display	Content
CONFIG	Configuration data
ICU (MAIN)	ICU Main section former half
ICU (BOOTM)	ICU Boot section main
ICU (BOOTCN)	ICU Boot section CN
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCU (BOOT)	PCU Boot section
PCU (MAIN)	PCU Main section
A4LCC (BOOT)	Side LCC (A4) Boot section
A4LCC (MAIN)	Side LCC (A4) Main section
A3LCC (BOOT)	Side LCC (A3) Boot section
A3LCC (MAIN)	Side LCC (A3) Main section
FIN100 (BOOT)	100 sheets staple finisher Boot section
FIN100 (MAIN)	100 sheets staple finisher Main section
SCU (BOOT)	SCU Boot section
SCU (MAIN)	SCU Main section
DSPF (BOOT)	DSPF Boot section
DSPF (MAIN)	DSPF Main section
FAX (BOOT)	FAX1 Boot section
FAX(MAIN)	FAX1 Main section

Item/Display	Content
ESCP_FONT	ESC/P font
PDL_FONT	PDL font
ANIMATION	Animation data
IMAGE_DATA	MFP ASIC data
WEB_HELP	WEB help
UNICODE	UNICODE table
ACRE (BOOT)	ACRE Boot section
ACRE (MAIN)	ACRE Main section
ACRE_DATA	ACRE table

List of error displays in case of abnormal end

Item/Display	Content
CONF	Configuration data
ICUM	ICU Main section former half
ICUBM	ICU Boot section main
ICUCN	ICU Boot section CN
LANG	Language support data program (General term)
GRAPH	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCUB	PCU Boot section
PCUM	PCU Main section
LCC4B	Side LCC (A4) Boot section
LCC4M	Side LCC (A4) Main section
LCC3B	Side LCC (A3) Boot section
LCC3M	Side LCC (A3) Main section
FINHB	100 sheets staple finisher Boot section
FINHM	100 sheets staple finisher Main section
SCUB	SCU Boot section
SCUM	SCU Main section
DSPFB	DSPF Boot section
DSPFM	DSPF Main section
FAXB	FAX1 Boot section
FAXM	FAX1 Main section
ESCP	ESC/P font
PDL	PDL font
ANIME	Animation data
IMGDT	Image ASIC data
WEBHP	WEB help
UNICD	UNICODE table
ACREB	ACRE Boot section
ACREM	ACRE Main section
ACRED	ACRE table

49-3

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to install and update the Operation Manual data stored in the HDD.
<b>Section</b>	

### Operation/Procedure

- 1) Insert the USB memory into the main unit.  
\* When the USB is not inserted, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
- 2) Press the folder button of the operation manual data. (The display is shifted to the operation manual update menu.)  
The current version and the update version are displayed.
- 3) Press [EXECUTE] key.  
[EXECUTE] key is highlighted, and [YES] [NO] keys becomes active from gray out.
- 4) When [YES] key is pressed, the selected operation manual is updated.  
When update is completed normally, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

49-5	
<b>Purpose</b>	Install
<b>Function (Purpose)</b>	Used to install and update the watermark data stored in the HDD.
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Insert the USB memory into the main unit. 2) Select the button of the folder to perform the watermark update. 3) The current version and the update version are displayed. 4) Press [EXECUTE] key. 5) Press [YES] key. The selected watermark is updated.	

## 50

50-1	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy image position, image loss adjustment
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Select an adjustment target item with [↑] [↓] key on the touch panel. 2) Enter the set value with 10-key. Set the items other than RRCA, LEAD, and SIDE to the default. RRCA: Image lead edge reference position adjustment LEAD: Lead edge image loss adjustment SIDE: Side image loss adjustment 3) Press [OK] key. (The set value is saved.)	

Item/Display		Content	Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)	0 - 99
B		RRCB-CS12	Resist Standard	1 - 99
C		RRCB-CS34	motor Tray	1 - 99
D		RRCB-LCC	ON LCC	1 - 99
E		RRCB-MFT	timing Manual	1 - 99
F		RRCB-ADU	adjust- paper	1 - 99
G	Image loss area setting value	LEAD	Lead edge image loss area setting	0 - 99
H		SIDE	Side image loss area adjustment	0 - 99
I	Void area adjustment	DENA	Lead edge void area adjustment	1 - 99
J		DENB	Rear edge void area adjustment	1 - 99
K		FRONT/REAR	FRONT/REAR void area adjustment	1 - 99
L	Off-center adjustment	OFFSET_OC	OC document off-center adjustment	1 - 99
M	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99

Item/Display		Content	Setting range	Default value
N	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value	1 - 99
O		DENB-CS1	Tray 1 correction value	1 - 99
P		DENB-CS2	Tray 2 correction value	1 - 99
Q		DENB-CS3	Tray 3 correction value	1 - 99
R		DENB-CS4	Tray 4 correction value	1 - 99
S		DENB-LCC	LCC correction value	1 - 99
T		DENB-ADU	ADU correction value	1 - 99

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (0.1mm/step)

\* When the value is decreased, the timing is advanced. When the value is increased, the timing is delayed.

B - F. (RRC-B) Timing of paper (resist roller ON) for the image position on the transfer belt is adjusted. (0.1mm/step)

\* When the value is decreased, the timing is delayed. When the value is increased, the timing is advanced.

G. (LEAD) The lead edge image loss amount is adjusted. (0.1mm/step)

\* When the value is increased, the image loss is increased.

H. (SIDE) The side image loss amount is adjusted.

\* When the value is increased, the image loss is increased. (0.1mm/step)

I. (DEN-A) The paper lead edge void amount is adjusted. (0.1mm/step)

\* When the value is increased, the void is increased.

J. (DEN-B) The paper rear edge void amount is adjusted. (0.1mm/step)

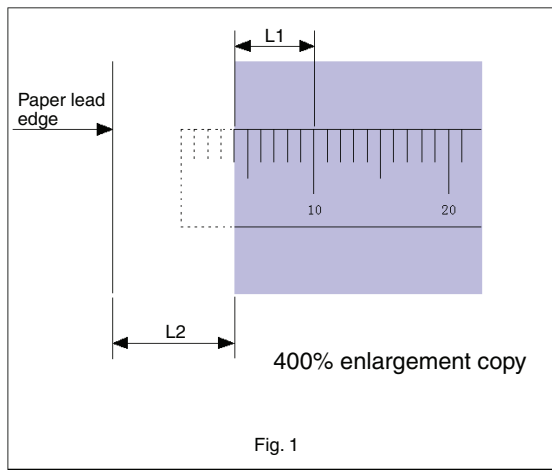
\* When the value is increased, the void is increased.

K. (FRONT/REAR) The void amount on the right and left edges of paper is adjusted. (0.1mm/step)

50-2	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy image position and the image loss (simple adjustment).
<b>Section</b>	

### Operation/Procedure

- Set item A (L1) and item B (L2) to 0.
- Place a rule on the left edge of the document table, and make a copy at a magnification ratio of 400%.
- Measure the length of L1 and L2 on the copied image in the unit of 0.1mm (referring to the figure below). Enter the adjustment values of L1 x 10 and L2 x 10. Be sure to enter the both adjustment values of L1 and L2.  
 L1: Distance from the lead edge of the copied image to 10mm scale.  
 L2: Distance from the paper lead edge to the copy image lead edge.



- 4) Press [EXECUTE] key. (The set value is saved.)
- 5) Make a copy at the magnification ratio of 100%, and adjust the rear edge void.

Item/Display		Description	Setting range	Default value
A	Actual measurement value	L1	Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment)	-
B		L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)	0
C	Image loss area setting value	LEAD	Lead edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	30
D		SIDE	Side edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	20

Item/Display		Description	Setting range	Default value
E	Void area adjustment	DENA	Lead edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99
F		DENB	Rear edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99
G		FRONT/ REAR	FRONT/REAR void amount adjustment (When the adjustment value is increased, the void is increased.)	1 - 99

Same as the adjusted items of SIM50-01 except for A and B.

The values adjusted with A and B are reflected to the document lead edge reference position (RRC-A) of SIM50-01 and all the paper lead edge positions (RRCB-\*\*).

All adjustment items: 1 step = 0.1mm change

#### 50-5

##### Purpose

Adjustment

##### Function (Purpose)

Used to adjust the print lead edge image position. (PRINTER MODE)

##### Section

##### Operation/Procedure

- 1) Select a target adjustment item (DEN-C) with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [EXECUTE] key.
- 4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.

Standard reference value:  $3.0 \pm 2.0\text{mm}$

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distanced is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

Item/Display		Content	Setting range	Default value	NOTE
A	DEN-C	Used to adjust the print lead edge image position. (PRINTER MODE)	1 - 99	30	Adjustment value too align the print lead edge for the printer. When the adjustment value of this item is decreased by 1, the printer print start position in the paper transport direction is shifted to the lead edge by 0.1mm.
B	DEN-B	Rear edge void area adjustment	1 - 99	30	Void amount generated at the paper rear edge. When the adjustment value of item B (DEN-B) is decreased by 1, the print area adjustment value in the sub scanning direction for the paper transport direction is decreased by 0.1mm.
C	FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	30	Adjustment of the void amount generated on the left and right edges of paper. When the adjustment value is increased, the void amount is increased.
D	DENB-MFT	Manual feed rear edge void area adjustment correction value	1 - 99	50	Fine adjustment value of each paper feed source for the adjustment value of DEN-B
E	DENB-CS1	Tray 1 rear edge void area adjustment correction value	1 - 99	50	
F	DENB-CS2	Tray 2 rear edge void area adjustment correction value	1 - 99	50	

Item/Display		Content		Setting range	Default value	NOTE
G	DENB-CS3	Tray 3 rear edge void area adjustment correction value		1 - 99	50	
H	DENB-CS4	Tray 4 rear edge void area adjustment correction value		1 - 99	50	
I	DENB-LCC	LCC rear edge void area adjustment correction value		1 - 99	50	
J	DENB-ADU	ADU rear edge void area adjustment correction value		1 - 99	50	
K	MULTI COUNT	Number of print		1 - 999	1	Adjustment pattern print conditions setting
L	PAPER	MFT	Tray selection	1 - 6	1	2 (CS1)
		CS1	Manual paper feed		2	
		CS2	Tray 1		3	
		CS3	Tray 2		4	
		CS4	Tray 3		5	
		LCC	Tray 4		6	
M	DUPLEX	YES	Duplex print selection	0 - 1	0	1 (NO)
		NO	No		1	

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance from the paper lead edge to the image lead edge is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

50-6	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy image position and the image loss (DSPF mode).
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	SIDE1	Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2	Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1) Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1) Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1) Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2) Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2) Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2) Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1	DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface document off-center adjustment	1 - 99	50

Item/Display		Content	Setting range	Default value
K	SCAN_SPEED_SPF1	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50

Item A, B: When the adjustment value is increased, the scan timing is delayed.

Item C - H: When the adjustment value is increased, the image loss is increased.

Item E - H: When a shadow image appears on the rear edge, increase the adjustment value to delete the shadow.

All adjustment items: 1 step = 0.1mm change

50-7	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy image position and the image loss (DSPF mode) (simple adjustment).
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Set item A (L4) and item B (L5) to 0.
- 3) Set the magnification ratio to 200%, and make a copy in the DSPF duplex mode.

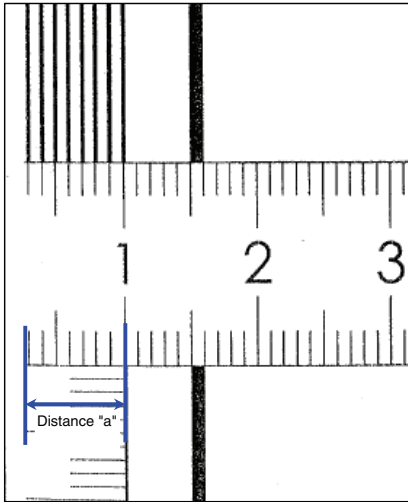


- 4) Measure the size of the printed image. Enter the actual measurement value of distance a (DSPF) to L4 and L5 in the unit of 0.1mm.

(Adjustment value "1" for 0.1mm)

L4: Distance a (DSPF front surface: 200%) (unit: 0.1mm)

L5: Distance a (DSPF back surface: 200%) (unit: 0.1mm)



- 5) Press [EXECUTE] key. (The set value is saved.)

Item/Display	Content	Setting range	Default value
A L4	Distance (SPF 200%, 0.1mm unit) from the front surface image lead edge to the scale of 10mm.	0 - 999	-
B L5	Distance (SPF 200%, 0.1mm unit) from the back surface image lead edge to the scale of 10mm.	0 - 999	-
C LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20

Item C - H: When the adjustment value is increased, the image loss is increased.

All adjustment items: 1 step = 0.1mm change

Items C - H are linked with items C - H of SIM50-06.

<b>50-10</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the image off-center position. (The adjustment is made separately for each paper feed section.)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

Item/Display	Content	Setting range	Default value
A BK-MAG	Main scan print magnification ratio BK	60 - 140	100
B MAIN-MFT	Print off center adjustment value (Manual paper feed)	1 - 99	50
C MAIN-CS1	Print off center adjustment value (Tray 1)	1 - 99	50
D MAIN-CS2	Print off center adjustment value (Tray 2)	1 - 99	50
E MAIN-CS3	Print off center adjustment value (Tray 3)	1 - 99	50
F MAIN-CS4	Print off center adjustment value (Tray 4)	1 - 99	50
G MAIN-LCC	Print off center adjustment value (Large capacity tray)	1 - 99	50
H MAIN-ADU	Print off center adjustment value (Duplex) (NOTE) If the adjustment items A - G are not properly adjusted, this adjustment cannot be executed properly.	1 - 99	50
I SUB-MFT	Resist motor ON timing adjustment	Manual paper feed 1 - 99	50
J SUB-CS12		Standard cassette 1 - 99	50
K SUB-CS34		LCC 1 - 99	50
L SUB-LCC		ADU 1 - 99	50
M SUB-ADU			
N MULTI COUNT	Number of print	1 - 999	1
O PAPER MFT	Tray selection	Manual paper feed 1 - 6	1 2 (CS1)
		Tray 1	2
		Tray 2	3
		Tray 3	4
		Tray 4	5
		LCC	6
P DUPLEX YES	Duplex print selection	Yes	0 - 1 0 1 (NO)
		No	1

Item A: When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the image magnification ratio is decreased.

Item B - H: When the adjustment value is increased, it is shifted to the front frame side. When the adjustment value is decreased, it is shifted to the rear frame side.

All adjustment items: 1 step = 0.1mm change

<b>50-12</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image position is shifted to the rear frame side. When the adjustment value is decreased, it is shifted to the front frame side.

1step = 0.1mm

Item/Display	Content	Setting range	Default value
A OC	Document table image off-center adjustment	1 - 99	50
B SPF(SIDE1)	SPF front surface image off-center adjustment	1 - 99	50
C SPF(SIDE2)	SPF back surface image off-center adjustment	1 - 99	50

<b>50-27</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment mode with [FAX] or [SCANNER] key.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

Item/Display				Content	Setting range	Default value
FAX send	A	Image loss	LEAD_EDGE (OC)	OC lead edge image loss amount setting	0 - 100	30 (3mm)
	B	amount setting	FRONT_REAR (OC)	OC side image loss amount setting	0 - 100	20 (2mm)
	C	OC	TRAIL_EDGE (OC)	OC rear edge image loss amount setting	0 - 100	20 (2mm)
	D	Image loss	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss amount setting	0 - 100	20 (2mm)
	E	amount setting	FRONT_REAR (SPF_SIDE1)	Front surface side image loss amount setting	0 - 100	20 (2mm)
	F	SPF SIDE1	TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss amount setting	0 - 100	30 (3mm)
	G	Image loss	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss amount setting	0 - 100	30 (3mm)
	H	amount setting	FRONT_REAR (SPF_SIDE2)	Back surface side image loss amount setting	0 - 100	20 (2mm)
	I	SPF SIDE2	TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss amount setting	0 - 100	20 (2mm)
When image send mode (Except for FAX and copy)	A	Image loss	LEAD_EDGE (OC)	OC lead edge image loss amount setting	0 - 100	0 (0mm)
	B	amount setting	FRONT_REAR(OC)	OC side image loss amount setting	0 - 100	0 (0mm)
	C	OC	TRAIL_EDGE(OC)	OC rear edge image loss amount setting	0 - 100	0 (0mm)
	D	Image loss	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss amount setting	0 - 100	0 (0mm)
	E	amount setting	FRONT_REAR (SPF_SIDE1)	Front surface side image loss amount setting	0 - 100	0 (0mm)
	F	SPF SIDE1	TRAIL_EDGE(SPF_SIDE1)	Front surface rear edge image loss amount setting	0 - 100	0 (0mm)
	G	Image loss	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss amount setting	0 - 100	0 (0mm)
	H	amount setting	FRONT_REAR (SPF_SIDE2)	Back surface side image loss amount setting	0 - 100	0 (0mm)
	I	SPF SIDE2	TRAIL_EDGE(SPF_SIDE2)	Back surface rear edge image loss amount setting	0 - 100	0 (0mm)

A-I: When the adjustment value is increased, the image loss is increased.

1step = 0.1mm

<b>50-28</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.
<b>Section</b>	

#### Operation/Procedure

The following adjustment items can be executed automatically with SIM50-28.

- \* Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
- \* Image off-center adjustment (Print engine section)
- \* Scan image magnification ratio adjustment
- \* Scan image off-center adjustment
- \* Print area (void area) adjustment (Print engine section)
- \* Copy image position, image loss adjustment

Item/Display	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)
SETUP/PRINT ADJ	Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment
RESULT	Adjustment result display
DATA	Adjustment operation data display

#### (1) Image loss off-center sub scan direction image magnification ratio adjustment (Document table mode)

- 1) Select [OC ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

#### (2) Main scan direction image magnification ration adjustment

- 1) Select [BK-MAG ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

#### (3) Image loss off-center sub scan direction image magnification ratio adjustment (DSPF mode)

- 1) Select [SPF ADJ] on the touch panel.
- 2) Select the adjustment mode; SIDE 1 (Front surface) or SIDE 2 (Back surface) or ALL (Both modes).
- 3) Select the paper tray to be used for the adjustment pattern print.
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the DSPF.

- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.  
When ALL is selected in the procedure 2), perform procedures 5) and 6) for both of the front surface and the back surface.

- 7) Press [OK] key.

**(4) Print lead edge adjustment image off-center  
(Each paper feed tray, duplex mode) adjustment**

- 1) Select [SETUP/PRINT ADJ] on the touch panel.
- 2) Select the adjustment mode; LEAD (print lead edge adjustment) or OFF SET (image off-center) or ALL (both modes).
- 3) Select the paper feed tray for the adjustment pattern print.  
(Two or more trays can be selected.)
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the document table.
- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.  
When two or more paper feed trays are selected in the procedure 3), perform procedures 5) and 6) for the adjustment pattern printed with each paper.
- 7) Press [OK] key.

RESCAN: The adjustment pattern is scanned.

REPRINT: The adjustment pattern is printed again.

RETRY: Shifts to the top menu.

# 51

51-2

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF resist roller.

## Section

### Operation/Procedure

- 1) Select a target adjustment mode with [REGI1] or [REGI2] or [ENGINE] keys.  
(When RSPF model)  
Select a target adjustment mode with [SIDE1] or [SIDE2] or [ENGINE] keys.
- 2) Select a target item to be adjusted with [↑] [↓] buttons.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

Display/Item			Content		Setting range	Default value
A	REGI1	NORMAL_PLAIN_HIGH	DSPF deflection amount adjustment value 1 (Normal/Plain paper/HIGH)	-	1 - 99	50
B		NORMAL_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Plain paper/LOW)	-	1 - 99	50
C		NORMAL_THIN_HIGH	DSPF deflection amount adjustment value 1 (Normal/Thin paper/HIGH)	-	1 - 99	50
D		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Thin paper/LOW)	-	1 - 99	50
E		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Plain paper/HIGH)	-	1 - 99	50
F		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Random/Plain paper/LOW)	-	1 - 99	50
G		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Thin paper/HIGH)	-	1 - 99	50
H		RANDOM_THIN_LOW	DSPF deflection amount adjustment value 1 (Random/Thin paper/LOW)	-	1 - 99	50
A	REGI2	NORMAL_PLAIN_HIGH	DSPF deflection amount adjustment value 2 (Normal/Plain paper/HIGH)	-	1 - 99	50
B		NORMAL_PLAIN_LOW	DSPF deflection amount adjustment value 2 (Normal/Plain paper/LOW)	-	1 - 99	50
C		NORMAL_THIN_HIGH	DSPF deflection amount adjustment value 2 (Normal/Thin paper/HIGH)	-	1 - 99	50
D		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 2 (Normal/Thin paper/LOW)	-	1 - 99	50
E		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Plain paper/HIGH)	-	1 - 99	50
F		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 2 (Random/Plain paper/LOW)	-	1 - 99	50
G		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Thin paper/HIGH)	-	1 - 99	50
H		RANDOM_THIN_LOW	DSPF deflection amount adjustment value 2 (Random/Thin paper/LOW)	-	1 - 99	50
A	ENGINE	TRAY1(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
B		TRAY1(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
C		TRAY1 HEAVY PAPER(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
D		TRAY1 HEAVY PAPER(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
E		TRAY2(S)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
F		TRAY2(L)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
G		TRAY2 HEAVY PAPER(S)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55

Display/Item			Content		Setting range	Default value
H	ENGINE	TRAY2 HEAVY PAPER(L)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
I		TRAY3 PLAIN PAPER(S)	Main unit cassette 3 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
J		TRAY3 PLAIN PAPER(L)	Main unit cassette 3 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
K		TRAY3 HEAVY PAPER1(S)	Main unit cassette 3 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
L		TRAY3 HEAVY PAPER1(L)	Main unit cassette 3 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
M		TRAY4 PLAIN PAPER(S)	Main unit cassette 4 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
N		TRAY4 PLAIN PAPER(L)	Main unit cassette 4 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
O		TRAY4 HEAVY PAPER1(S)	Main unit cassette 4 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
P		TRAY4 HEAVY PAPER1(L)	Main unit cassette 4 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
Q		MANUAL PLAIN PAPER(S)	Manual feed tray/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
R		MANUAL PLAIN PAPER(L)	Manual feed tray/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
S		MANUAL HEAVY PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
T		MANUAL HEAVY PAPER(L)	Manual feed tray/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
U		MANUAL OHP	Manual feed tray/deflection adjustment value (OHP)	-	1 - 99	55
V		ADU PLAIN PAPER(S)	ADU/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
W		ADU PLAIN PAPER(L)	ADU/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
X		ADU HEAVY PAPER(S)	ADU/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
Y		ADU HEAVY PAPER(L)	ADU/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55
Z		A4LCC	A4LCC/deflection adjustment value	-	1 - 99	55
AA		A3LCC(S)	A3LCC/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	55
AB		A3LCC(L)	A3LCC/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	55
AC		A3LCC HEAVY PAPER(S)	A3LCC/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	55
AD		A3LCC HEAVY PAPER(L)	A3LCC/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	55

<Small size, Large size>

Small size: The paper length in the transport direction is shorter than the LT size (216mm).

Large size: The paper length in the transport direction is longer than the LT size (216mm).

When the adjustment value is increased, the warp amount is increased. When the adjustment value is decreased, the warp amount is decreased.

(When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.)

## 53

53-6	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the detection level of the DSPF document width.
<b>Section</b>	

### Operation/Procedure

- 1) Open the DSPF paper feed guide to the maximum width.
- 2) Press [EXECUTE] key.  
The maximum width detection level is recognized.
- 3) Open the DSPF paper feed guide to the A4R width.
- 4) Press [EXECUTE] key.  
The A4R width detection level is recognized.
- 5) Open the DSPF paper feed guide to the A5R width.
- 6) Press [EXECUTE] key.  
The A5R width detection level is recognized.
- 7) Open the DSPF paper feed guide to the minimum width.
- 8) Press [EXECUTE] key.  
The minimum width detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed and. When the above operation is completed normally, "COMPLETE" is displayed.

1	TRAYVOLMAX	Tray size volume maximum value
2	TRAYVOLA4R	Tray volume A4R size adjustment value
3	TRAYVOLA5R	Tray volume A5R size adjustment value
4	TRAYVOLMIN	Tray size volume minimum value

53-7	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the DSPF document size width sensor.
<b>Section</b>	Automatic document feeder

### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display			Setting range	Default value
A	AD_MAX	Max. width position	0 - 1023	66
B	AD_P1	A4R width position	0 - 1023	438
C	AD_P2	A5R width position	0 - 1023	699
D	AD_MIN	Min. width position	0 - 1023	893

<b>53-8</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the document lead edge reference and the DSPF mode document scan position.
<b>Section</b>	Automatic document feeder

#### Operation/Procedure

Select an adjustment item with [AUTO] [MANUAL] key.

<AUTO: Document lead edge reference (RRCA) adjustment>  
(Auto adjustment)

- 1) Set a sheet of black paper of A4 or 11"x 8.5" on the document table.
- 2) Press [EXECUTE] key. (The adjustment is performed and the adjustment value is saved.)

Item/Display	Content	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measurement distance	0-255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

NOTE: The AUTO mode must not be used.

<MANUAL: DSPF mode document scan position adjustment>

- 1) Enter the set value with 10-key.
- 2) Press [OK] key. (The set value is saved.)

Item/Display	Content	Setting range	Default value
A ADJUST VALUE	DSPF mode document scan position adjustment (Scanner stop position adjustment)	1 - 99	5

- When the adjustment value is increased, the scanner stop position in the DSPF mode is shifted to the right.
- When the adjustment value is changed by 1, the position is shifted by 0.1mm.

## 55

<b>55-1</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the engine control operations. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	

<b>55-2</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the scanner control operation. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	

<b>55-3</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the controller operation. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	

<b>55-10</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the stamp text.
<b>Section</b>	
<b>Operation/Procedure</b>	

- 1) Select an set target item with [↑] and [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Display		Content	Setting range	Default value
A	1ST DIGIT		1st digit (Left edge)	* Refer to the input values below.	1
B	2ND DIGIT		2nd digit		
C	3RD DIGIT		3rd digit		
D	4TH DIGIT		4th digit		
E	5TH DIGIT		5th digit		
F	6TH DIGIT		6th digit (Right edge)		
G	TYPE	PATTERN 1	Print composing method	0 - 2	0
		PATTERN 2			
		PATTERN 3			
			Edging type		1
			OR process type		
			Non-delete-composing type		2

Print	Empty	A	B	C	D	E	F	G	H	I	J	K	L	M
Input	32	65	66	67	68	69	70	71	72	73	74	75	76	77

Print	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Input	78	79	80	81	82	83	84	85	86	87	88	89	90

Print	0	1	2	3	4	5	6	7	8	9
Input	48	49	50	51	52	53	54	55	56	57

<b>56-1</b>	
<b>Purpose</b>	Backup
<b>Function (Purpose)</b>	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Select a target content of data transfer.
2)	Press [EXECUTE] key and press [YES] key. Data transfer of the item selected in procedure 1) is executed. When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

ALL → HDD	All the memory contents are transferred to the HDD.
HDD → ALL	The HDD contents are transferred to all the memories.
EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM
SRAM → HDD	Data transfer from SRAM to HDD. (Including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents in the memory for FAX are also transferred to HDD.
HDD → SRAM	Transfer from HDD to SRAM (including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents of the FAX memory are also transferred to HDD.

NOTE: The backup data must not be installed to another machine.  
If installed, the adjustment data will be overwritten and a trouble may be generated.

<b>56-2</b>	
<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the data in the EEPROM, SRAM, and HDD (including user authentication data and address data) to the USB memory.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Insert the USB memory into the main unit.
2)	Select a target transfer item with the touch panel. <IMPORT> From USB MEMORY DEVICE To EEPROM, SRAM, HDD <EXPORT> From EEPROM, SRAM, HDD To USB MEMORY
3)	Press [EXECUTE] key, and press [YES] key. Data transfer selected in the procedure 2) is performed When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed. (Machine with the DSK installed)
1)	Insert the USB memory into the main unit.
2)	Select a target transfer item with the touch panel. <IMPORT> From USB MEMORY DEVICE to EEPROM, SRAM, HDD <EXPORT> From EEPROM, SRAM, HDD to USB MEMORY DEVICE
3)	Enter the password with 10-key.
4)	Press [SET] key.

- 5) Press [EXECUTE] key, and press [YES] key.  
Data transfer selected in the procedure 2) is performed.  
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.  
<Data list outside the backup targets>  
(EEPROM/SRAM)

PWB Type	Content	NOTE
Controller	Machine serial No.	
	Product key information	
	Various counter	Copy counter/FAX send counter etc.
	Trouble history	
PCU	Machine serial No.	
	Various counter	Maintenance counter
	Machine adjustment execute history	
	Trouble history	
SCU	Various counter	Maintenance counter
	Trouble history	

(HDD)

Classification	Content	NOTE
Japanese FEP	User dictionary	
Job end list	Job end list display data (The image send series include the preserved job list.)	
Log	Job log	Read from WEB is enable.
New N/A	<ul style="list-style-type: none"> <li>Print history information</li> <li>JAM history information</li> <li>Trouble history information</li> <li>Same position continuous jam count value</li> <li>Charging information</li> <li>Life information</li> </ul>	
Operation manual	E-manual	
Document filing	Document filing data	

NOTE: The backup data must not be installed to another machine.  
If installed, the adjustment data will be overwritten and a trouble may be generated.

<b>56-3</b>	
<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the document filing data to the USB memory.

<b>Section</b>	
<b>Operation/Procedure</b>	
1)	Insert the USB memory into the main unit.
2)	Select a target transfer item with the touch panel. <IMPORT> From USB MEMORY DEVICE To EEPROM, SRAM, HDD <EXPORT> From EEPROM, SRAM, HDD To USB MEMORY DEVICE
3)	Press [EXECUTE] key, and press [YES] key. Data transfer selected in the procedure 2) is performed. When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

<b>56-4</b>	
<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the JOB log data to the USB memory.
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Insert the USB memory into the main unit.	
2) Press [JOB LOG EXPORT] key.	
3) Press [EXECUTE] key, and press [YES] key.	
Data transfer selected in the procedure 2) is performed.	
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.	

## 60

<b>60-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations (read/write) of the MFP PWB memory.
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Press [EXECUTE] key.	
Start the test.	
<b>Result display</b>	<b>Description</b>
OK	Success
NG	Fail
NONE	Not installed (Including DIMM trouble)
INVALID	Execution disable

SLOT	Description	
SLOT1	System memory (expansion)	DIMM1
SLOT2	System memory (standard)	DIMM2
SLOT3	Local memory (MFP expansion)	DIMM4
SLOT4	Local memory (MFP standard)	DIMM3

<b>60-2</b>	
<b>Purpose</b>	(Do not use in the market.)
<b>Function (Purpose)</b>	Used to set the specifications of the MFP PWB on-board SDRAM.
<b>Section</b>	
<b>Operation/Procedure</b>	

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- NOTE: Set to the default value.

Item/Display			Content	Setting range		Default value
A	SETTING ENABLE	DISABLE	SDRAM setting change flag	0 - 1	0	0
		ENABLE	DDR setting of On-board SPD DDR setting of B or later		1	
B	NUMBER OF ROW	11BIT	ROW address width	0 - 2	0	2
		12BIT			1	
		13BIT			2	

Item/Display			Content	Setting range		Default value
C	NUMBER OF COLUMN	8BIT	COLUMN address width	0 - 4	0	2
		9BIT			1	
		10BIT			2	
		11BIT			3	
		12BIT			4	
D	TWR SETTING VALUE	2CLOCK	TWR set value	0 - 3	0	1
		3CLOCK			1	
		4CLOCK			2	
		5CLOCK			3	
E	TRAS SETTING VALUE	4CLOCK	TRAS set value	0 - 3	0	2
		5CLOCK			1	
		6CLOCK			2	
		7CLOCK			3	
F	TRC SETTING VALUE	6CLOCK	TRC set value	0 - 4	0	3
		7CLOCK			1	
		8CLOCK			2	
		9CLOCK			3	
		10CLOCK			4	
G	TRCD SETTING VALUE	2CLOCK	TRCD set value	0 - 3	0	1
		3CLOCK			1	
		4CLOCK			2	
		5CLOCK			3	
H	TRP SETTING VALUE	2CLOCK	TRP set value	0 - 3	0	1
		3CLOCK			1	
		4CLOCK			2	
		5CLOCK			3	
I	TFRC SETTING VALUE	7CLOCK	TFRC set value	0 - 13	0	3
		8CLOCK			1	
		-			-	
		20CLOCK			13	
J	CAS LATENCY	CL=2	CAS latency	0 - 2	0	1
		CL=2.5			1	
		CL=3			2	
K	TOTAL NUMBER OF MBYTES ON BOARD DDR	NONE	On-board DDR total capacity	0 - 2	0	1
		128M BYTE			1	
		256M BYTE			2	
L	NUMBER OF ON BOARD-DDR CS-BANK	NONE	On-board DDR bank number	0 - 2	0	1
		1CHIP SELECT			1	
		2CHIP SELECT			2	

## 61

<b>61-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the LSU polygon motor rotation and laser detection.
<b>Section</b>	LSU
<b>Operation/Procedure</b>	
1) Press [EXECUTE] key.	
When the operation is completed normally, [OK] is displayed. In case of an abnormal end, [NG] is displayed.	
<b>Display</b>	<b>Content</b>
LSU TESTRESULT NG: PG	Polygon mirror rotation abnormality
LSU TESTRESULT NG: K	Laser abnormality (K)

61-3	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to set the laser power
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target mode for adjustment with [COPY], [PR600/ FAX] and [PR1200] on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the adjustment value using the 10-key.
- 4) Press [OK] key. (The set value is saved.)

When the laser power and the DUTY adjustment value are increased, the print density is increased and the line width of line images are increased.

Item/Display		Content	Setting range	Default value	
				62 CPM model	75 CPM model
COPY	A	LASER POWER MIDDLE (BW1)	100 - 213	148	175
	B	LASER POWER MIDDLE (BW2)			
	C	LASER POWER LOW (BW1)			
	D	LASER POWER LOW (BW2)			
	E	LASER DUTY MIDDLE (BW)	0 - 255	0	0
	F	LASER DUTY LOW (BW)			
PR600/ FAX	A	LASER POWER MIDDLE (BW1)	100 - 213	148	175
	B	LASER POWER MIDDLE (BW2)			
	C	LASER POWER LOW (BW1)			
	D	LASER POWER LOW (BW2)			
	E	LASER DUTY MIDDLE (BW)	0 - 255	40	40
	F	LASER DUTY LOW (BW)			

Item/Display			Content	Setting range	Default value	
					62 CPM model	75 CPM model
PR1200	A	LASER POWER MIDDLE (BW1)	Laser power setting middle speed / BW1	100 - 213	148	175
	B	LASER POWER MIDDLE (BW2)				
	C	LASER POWER LOW (BW1)				
	D	LASER POWER LOW (BW2)				
	E	LASER DUTY MIDDLE (BW)	Laser duty select middle speed / BW	0 - 255	0	
	F	LASER DUTY LOW (BW)				

## 62

62-1	
<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to execute the hard disk format (except operation manual area). * If no HDD is installed, the MFP Flash memory is formatted.
<b>Section</b>	

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Used to execute the hard disk format. Used to execute the MFP PWB flash memory format.

62-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check read/write of the hard disk (partial).
<b>Section</b>	

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

62-3	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check read/write of the hard disk (all areas).
<b>Section</b>	

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Read/write operations are performed.



<b>62-6</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to perform the self diagnostics of the hard disk.

#### Section

#### Operation/Procedure

- 1) Select the self diag area.
- 2) Press [EXECUTE] key.

The self diag operation is performed.

\* E7-03 error occurs. If there may be a trouble in the HDD, use this simulation to check the HDD.

SHORT S.T	Partial area diag
EXTENDED S.T	All area diag

When the operation is completed, [EXECUTE] key returns to the normal display.

Normal completion → "OK(RESULT:0)" is displayed.

Abnormal end → "NG(RESULT: Other than 0)" is displayed.

\* If the simulation cannot be executed or terminated abnormally for some reason, "ERROR" is displayed on the corresponding section.

<b>62-7</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to print the hard disk self diagnostics error log.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.

ERROR LOG SECTOR of the SMART function is executed, and the result is printed.

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>62-8</b>	
<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to format the hard disk. (Excluding the system area and the operation manual area)

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

\* When the HDD formatting (except for the system area) is not completed normally, "HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.

<b>62-10</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the job log data.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

Used to delete the job log data.

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>62-11</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the document filing data.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

Used to delete the document filing data.

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>62-12</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Enable/Disable of auto format in a hard disk trouble.

#### Section

#### Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

The set value is saved.

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

A	0	Enable
	1	Disable (Default)

<b>62-13</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to format the hard disk. (only the operation manual and watermark area)

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The operation manual data are deleted.

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>63-1</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data display
<b>Function (Purpose)</b>	Used to display the shading correction result.
<b>Section</b>	Scanner

**Operation/Procedure**

- 1) Select a mode.
- 2) Select a target color to display with [R] [G] [B] key on the touch panel.

Item/Display	Content	NOTE	
GAIN ODD	Gain adjustment value (odd number)		
GAIN EVEN	Gain adjustment value (Even number)		
OFFSET ODD	Offset value (odd number)		
OFFSET EVEN	Offset value (even number)		
SMP AVE ODD	Reference plate sampling average value (ODD)		
SMP AVE EVEN	Reference plate sampling average value (EVEN)		
TARGET VALUE	Target value		
BLACK LEVEL	Black output level		
ERROR CODE	Error code (0, 1 - 14) (for debug)	0	No error
		1	STAGE1: Loop number over
		2	STAGE2: The target value is under the specified value.
		3	STAGE3: The gain set value is negative.
		4	END is not asserted. (Gain adjustment)
		5	(reserve)
		6	STAGE2: Underflow
		7	Black shading error
		8	Other error
		9	END is not asserted. (White shading)
		10	END is not asserted. (Black shading)
		11	END is not asserted. (Light quantity correction)
		12	END is not asserted. (Scan)
		13	Register check error. (When booting/Gain)
		14	Register check error. (Before light quantity correction)
DSPF FACE WHITE LEVEL 1ST	First scan DSPF front surface white reference level	—	
DSPF FACE WHITE LEVEL 2ND	DSPF front surface white reference level of the second or later scanning		
DSPF BACK WHITE LEVEL 1ST	First scan DSPF back surface white reference level	when DSPF	
DSPF BACK WHITE LEVEL 2ND	DSPF back surface white reference level of the second or later scanning		

<b>63-2</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform shading.
<b>Section</b>	

**Operation/Procedure**

- 1) Select [OC SHADING] key or [DSPF SHADING] key, and press [EXECUTE] key.  
Used to perform shading.

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>63-3</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform scanner (CCD/CIS) color balance and gamma auto adjustment.
<b>Section</b>	Scanner

**Operation/Procedure**

- 1) Place the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) on the reference position of the left rear frame side of the document table. For the DSPF mode, put the SIT chart backside up on the DSPF tray.
- 2) Select [OC] key or [DSPF] key.
- 3) Press [EXECUTE] key.

The scanner (CCD/CIS) color balance automatic adjustment is performed.

When the operation is completed, [EXECUTE] key returns to the normal display.

After completion of the operation, press [RESULT] key, and the adjustment data are displayed. At that time, the target color of data display can be selected with [R] [G] [B] key.

<b>63-4</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the SIT chart patch density.
<b>Section</b>	

**Operation/Procedure**

- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left rear frame side of the document table. For the DSPF mode, put the SIT chart backside up on the DSPF tray.
- 2) Select [OC] key or [DSPF] key.
- 3) Press [EXECUTE] key.  
The patch of the SIT chart is scanned.  
When the operation is completed, [EXECUTE] key returns to the normal display.
- 4) Select a data display mode.

THROUGH GAMMA	SIT chart scan data
COPY GAMMA	Copy mode gamma process data of the SIT chart scan data
SCANNER GAMMA	Image send mode gamma process data of the SIT chart scan data

Select an target display color with [R] [G] [B] keys.

<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to perform the scanner (CCD/CIS) color balance and gamma default setting.

**Section****Operation/Procedure**

- 1) Select [SIDE A(OC)] key or [SIDE B(DSPF)] key.
- 2) Press [EXECUTE] key, and press [OK] key  
The scanner (CCD/CIS) color balance and gamma are set to the default.

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Test print. (Self print) (Monochrome mode)
<b>Section</b>	

**Operation/Procedure**

- 1) Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10-key.
- 2) Press [EXECUTE] key.  
The test print (self print) is performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN (1,2,9 - 11,15 - 19, 21, 22, 29)	Print pattern specification (* For details, refer to the description below.)		1 - 58 (1, 2, 9 - 11, 15 - 19, 21, 22, 29)		1
B	DOT1 (DOT1>=2 IF A:2,11)	Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2,11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A:2,11)	Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2,11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)	Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT	Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 15 - 19)	THROUGH	Exposure mode specification	(Pattern 15 - 19, 2 - 8) Other pattern: 1 - 8	1	8 (STANDARD DITHER)
		CHAR/PIC	No process (through)		2	
		CHAR/PRPIC	Text/Printed Photo		3	
		CHAR	Text/ Photograph		4	
		PRINT PIC	Text		5	
		PRINT PAPER	Printed Photo		6	
		MAP	Photograph		7	
		STANDARD DITHER	Map		8	
G	PAPER	MFT	Tray selection	1 - 6	1	2 (CS1)
		CS1	Manual paper feed		2	
		CS2	Tray 1		3	
		CS3	Tray 2		4	
		CS4	Tray 3		5	
		LCC	Tray 4		6	
H	DUPLEX	YES	Duplex print selection	0 - 1	0	1 (NO)
		NO	No		1	
I	PAPER TYPE	PLAIN	Paper type	1 - 3	1	1 (PLAIN)
		HEAVY	Standard paper		2	
		OHP	Heavy paper		3	

**<Print pattern of Item A>**

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	
2	Dot print		-
9	10% area (A4/A4R) density print		
10	Belt print		
11	Dot print (sub scan)		
15	16 gradations + M by N (center gradations only): Sub scan)	MFP ASIC	<ul style="list-style-type: none"> <li>• 16 gradations print</li> <li>• The gradation is changed for every 256 dots.</li> </ul>
16	16 gradations + M by N (center gradations only): Main scan)		
17	Halftone pattern (all over the page)	Controller (Memory)	-
18	256 gradations pattern (Other dither)		-
19	256 gradations pattern (straight)		-
20	-	-	-
21	4-point dot print (main scan)	LSU-ASIC	
22	Slant line		
29	Dot print 1200dpi		

64-4

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (256 gradation) * This simulation functions only for the machines which are provided with the printer function.

**Section****Operation/Procedure**

- 1) Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10-key.
- 2) Press [EXECUTE] key.
- 3) The test print (self print) is performed.  
\* If paper which does not satisfy the paper feed conditions is selected, printing cannot be performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN	Specification of the print pattern (* For details, refer to the description below.)		1 - 3		3
B	DENSITY	Used to specify the print gradation.		1 - 255		128
C	MULTI COUNT	Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	1 - 6	1	3 (CS2)
		CS1			2	
		CS2			3	
		CS3			4	
		CS4			5	
		LCC			6	
E	QUALITY	STANDARD	Image quality setting	0 - 1	0	0 (STANDARD)
		FINE			1	
F	DITHER	STRAIGHT	Specification of dither correction	1 - 2	1	2 (CALIB)
		CALIB			2	
G	PAPER TYPE	PLAIN	Paper type	0 - 1	0	0
		HEAVY			1	

**<Print pattern of Item A>**

Pattern No.	Content
1	256 gradations pattern (B/W)
2	Half tone pattern (B/W)
3	Dot, background (BW)

64-5

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (PCL)
<b>Section</b>	

**Operation/Procedure**

- 1) Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10-key.
- 2) Press [EXECUTE] key.  
The test print (self print) is performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN	Specification of the print pattern		1		1
B	DITHER	STRAIGHT	Specification of dither correction	1 - 2	1	2
		CALIB			2	
C	MULTI COUNT	Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	1 - 6	1	2 (CS1)
		CS1			2	
		CS2			3	
		CS3			4	
		CS4			5	
		LCC			6	
E	QUALITY	STANDARD	Image quality setting	0 - 1	0	0 (STANDARD)
		FINE			1	
F	TONER SAVE MODE	ON	Toner save mode	0 - 1	0	1 (OFF)
		OFF			1	
G	PAPER TYPE	PLAIN	Paper type	0 - 1	0	0 (PLAIN)
		HEAVY			1	

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64-6	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (PS)
<b>Section</b>	

#### Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10-key.

- Press [EXECUTE] key.  
The test print (self print) is performed.

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern		1		1
B	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
E	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 1	0	0 (STANDARD)
		FINE		Ultra Fine (1200dpi, 1bit)		1	
F	TONER SAVE MODE	ON	Toner save mode	set.	0 - 1	0	1 (OFF)
		OFF		not set.		1	
G	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0 (PLAIN)
		HEAVY		Heavy paper		1	

64-7	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Test print. (Self print) (Used to print the adjustment pattern of SIM46-16.)
<b>Section</b>	

#### Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10-key.
- Press [EXECUTE] key.  
The adjustment pattern of SIM46-16 is printed.

Item/Display			Content		Setting range	Default value
A	COPIES		Print quantity		1 - 999	1
B	PROC ADJ	YES	0	The half-tone process control correction is reflected.	0 - 1	1
		NO	1	The half-tone process control correction is not reflected.		

## 65

65-1	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the touch panel (LCD display section) detection coordinates.
<b>Section</b>	Operation panel section

#### Operation/Procedure

Touch the center of the cross mark at the four corners of the screen.

When the adjustment is completed normally, the screen shifts to the simulation sub number entry menu.

In case of an error, the screen returns to the adjustment menu.

65-2	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to display the touch panel (LCD display section) detection coordinates.
<b>Section</b>	

#### Operation/Procedure

Touch the touch panel.

The coordinates X (horizontal direction) and Y (vertical direction) of the touched position is displayed in real time.

<b>65-5</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation panel key input.
<b>Section</b>	

#### Operation/Procedure

Press the keys sequentially according to the guidance displayed on the screen.

If the key entry is effective, the guidance for pressing the next key is displayed. When all the key entries are completed, "COMPLETE" is displayed.

#### <Check target key>

Operation panel	Operation panel
JOB STATUS	8
SYSTEM SETTINGS	9
HOME	AUDIT CLEAR
1	0
2	PROGRAM
3	CLEAR
4	STOP
5	CLEAR ALL/RESET
6	START (MONO)
7	

## 67

<b>67-17</b>	
<b>Purpose</b>	
<b>Function (Purpose)</b>	Printer controller reset
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The set data related to the printer are initialized. (Including the NIC setting.)

When the operation is completed, [EXECUTE] key returns to the normal display.

<b>67-24</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the printer density. (Automatic adjustment)
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 2) Place the printed adjustment pattern on the document table, and press [EXECUTE] key.  
The printer density automatic adjustment is performed, and the adjustment result pattern is printed.
- 3) Press [OK] key.  
The half-tone correction target registration is performed.

<b>67-25</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Printer density adjustment (manual adjustment) (this simulation functions only for the machines which are provided with the printer function).
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Select a target adjustment density level with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.  
\* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

When [EXECUTE] key is pressed, the check pattern in printed in the density corresponding to the adjustment value.

A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

Item/Display		Setting range	Default value
A	POINT1	1 - 99	50
B	POINT2	1 - 99	50
C	POINT3	1 - 99	50
D	POINT4	1 - 99	50
E	POINT5	1 - 99	50
F	POINT6	1 - 99	50
G	POINT7	1 - 99	50
H	POINT8	1 - 99	50
I	POINT9	1 - 99	50
J	POINT10	1 - 99	50
K	POINT11	1 - 99	50
L	POINT12	1 - 99	50
M	POINT13	1 - 99	50
N	POINT14	1 - 99	50
O	POINT15	1 - 99	50
P	POINT16	1 - 99	50
Q	POINT17	1 - 99	50

<b>67-31</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the printer calibration data (this simulation functions only for the machines which are provided with the printer function).
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The printer calibration data (Half tone correction data) are cleared.  
(The printer density correction is canceled.)

<b>67-33</b>	
<b>Purpose</b>	Adjustment/Setting
<b>Function (Purpose)</b>	Used to adjust the gamma and the density in each printer screen (this simulation functions only for the machines which are provided with the printer function).
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Select a target screen with [SCREEN] key.
- 2) Select a target adjustment density level with [↑] [↓] key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

When [EXECUTE] key is pressed, the check pattern is printed in the density corresponding to the adjustment value.

A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

Screen	Content
HEAVY PAPER	Heavy paper mode
SCREEN1	600dpi 1bit screen
SCREEN2	1200dpi 1 bit screen
SCREEN3	Toner Save mode

Item/Display	Content	Setting range	Default value
A	POINT1	Point 1	0 - 255
B	POINT2	Point 2	0 - 255
C	POINT3	Point 3	0 - 255
D	POINT4	Point 4	0 - 255
E	POINT5	Point 5	0 - 255
F	POINT6	Point 6	0 - 255
G	POINT7	Point 7	0 - 255
H	POINT8	Point 8	0 - 255
I	POINT9	Point 9	0 - 255
J	POINT10	Point 10	0 - 255
K	POINT11	Point 11	0 - 255
L	POINT12	Point 12	0 - 255
M	POINT13	Point 13	0 - 255
N	POINT14	Point 14	0 - 255
O	POINT15	Point 15	0 - 255
P	POINT16	Point 16	0 - 255
Q	POINT17	Point 17	0 - 255

<b>67-34</b>	
<b>Purpose</b>	Setting/Setting
<b>Function (Purpose)</b>	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key. (The set value is saved.)
- When tone gap is generated in the high density section, set to "0".  
The density in the high density section is decreased, but tone gap is reduced.
  - To increase the density in the high density section further, set to "1".  
The tone gap may occur in high density part.

Item	Display	Content	Setting range	Default value
A	K (0: ENABLE 1: DISABLE)	0 Maximum density correction mode ENABLE	0 - 1	1
		1 Maximum density correction mode DISABLE		
B	BLACK MAX TARGET	BLACK maximum density correction scanner target value	0 - 999	500

<b>67-70</b>	
<b>Purpose</b>	
<b>Function (Purpose)</b>	MFP PWB SRAM data clear
<b>Section</b>	MFP PWB

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

MFP PWB SRAM data is cleared.

When the operation is completed, [EXECUTE] key returns to the normal display.

NOTE: When the MFP PWB is replaced, execute this simulation.

## [7] SELF DIAG AND TROUBLE CODE

### 1. Self diag

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

#### A. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

#### B. Self diag message classifications

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Service	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Others	-
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Others	-

### C. Self diag operation

#### (1) Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

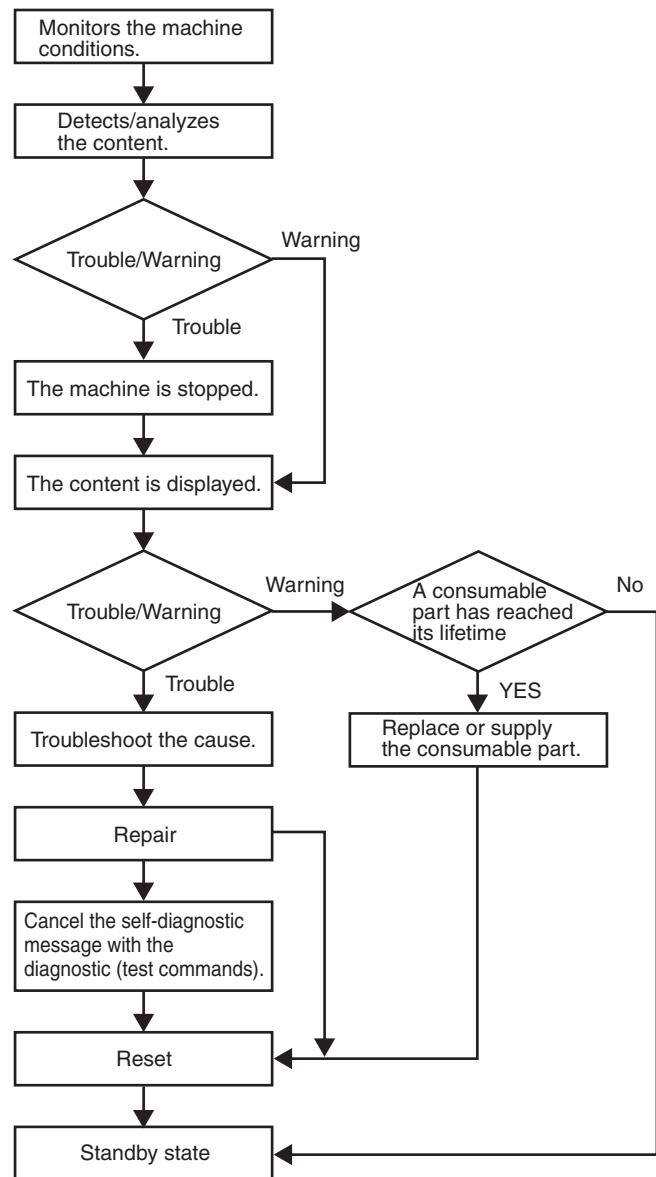
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD and lamp.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.





## D. Breakdown sequence

### (1) Breakdown mode processing

Kind of trouble	Judgment block	Trouble code	Operatable mode							
			Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
FAX board trouble	MFP	F6 (00, 01, 04, 21, 30, 97, 98)	○	○	○	○	○	○	×	×
HDD trouble		E7 (03)	×	×	×	×	×	×	×	×
HDD-ASIC trouble		E7 (04)	×	×	×	×	×	×	×	×
SCU communication trouble		E7 (80) A0 (02)	×	×	×	×	○	○	×	○
PCU communication trouble		E7 (90) A0 (01)	×	×	×	×	×	×	×	×
ACU communication trouble		A0 (04)	×	×	×	×	×	×	×	×
Backup battery voltage fall		U1 (01)	×	×	×	×	×	×	×	×
Controller fan motor trouble		L4 (30)	×	×	×	×	×	×	×	×
External communication disable (RIC)		U7 (50, 51)	×	×	×	×	×	×	×	×
Memory error (included not installed the expansion RAM)		U2 (00, 05, 10, 11, 12, 22, 23, 24)	×	×	×	×	×	×	×	×
Connection trouble (MFP detection)		E7 (60, 61, 62, 65) A0 (10, 11, 12, 15, 20)	×	×	×	×	×	×	×	×
Serial number discrepancy		U2 (30)	×	×	×	×	×	×	×	×
HDD registration data sum error If the HDD is not installed, data check sum error of the Flash memory for setting and registration.		U2 (50)	×	×	×	×	×	×	×	×
Image memory trouble, decode error		E7 (01, 05, 06, 08, 09)	×	×	×	×	×	×	×	×
Image memory trouble, decode error (ACRE-related 1)		E7 (42, 46, 48)	×	△ 10	×	×	×	○	○	○
Image memory trouble, decode error (ACRE-related 2)		E7 (49)	×	○	×	×	×	○	○	○
Personal counter installation trouble		PC (00)	×	×	×	×	×	×	×	×
Power controller trouble		L8 (20)	×	×	×	×	×	×	×	×
Special function error		U2 (60)	○	○	○	○	○	○	○	○
Laser trouble	PCU	E7 (20, 21, 28, 29) L6 (10)	×	×	×	×	×	×	×	×
Connection trouble (PCU detection)		E7 (50, 55) A0 (21) F1 (50)	×	×	×	×	×	×	×	×
PCU section troubles (motor, fusing, etc.)		C1 (10) F2 (40, 64, 68, 70, 74) F4 (38) H2 (00, 01) H3 (00, 01) H4 (00, 01) H5 (01) H7 (10, 11) L4 (01, 02, 03, 04, 06, 08, 31, 32, 35, 38, 40, 43, 46, 50, 56, 58) L8 (01, 02) U2 (90, 91),	×	×	×	×	×	×	×	×
Paper feed tray 1 trouble		F3 (12)	△ 2	○	○	○	△ 2	△ 2/7	○	△ 2
Paper feed tray 2 trouble		F3 (22)	△ 2	○	○	○	△ 2	△ 2/7	○	△ 2
Paper feed tray 3 trouble		F3 (32)	△ 2	○	○	○	△ 2	△ 2/7	○	△ 2
Paper feed tray 4 trouble		F3 (42)	△ 2	○	○	○	△ 2	△ 2/7	○	△ 2
Paper feed tray 5 trouble		U6 (20, 21, 22, 23, 24, 51)	△ 2	○	○	○	△ 2	△ 2/7	○	△ 2
Staple trouble		F1 (08, 10)	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3/7	△ 3	△ 3
Saddle stitch section trouble		F1 (31, 41, 42, 43, 44, 45, 46, 51)	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3/7	△ 3	△ 3
After-process trouble		F1 (00, 02, 03, 09, 11, 14, 15, 18, 19, 20, 21, 23, 25, 28, 30, 33, 34, 37, 38, 52, 60, 80, 81, 83, 84, 86)	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3/7	△ 3	△ 3
Insertor trouble		F1 (61, 62)	△ 3	○	○	○	△ 3	△ 3	△ 3	○
Other troubles		EE (EC, EL, EU)	○	○	○	○	○	○	○	○
Process control trouble (PCU detection)		F2 (31, 39, 46, 48)	○ △ 9	○	○	○	○	○	○	○

Kind of trouble	Judgment block	Trouble code	Operatable mode							
			Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
Connection trouble (SCU detection)	SCU	A0 (22) E7 (70, 75)	×	×	×	×	×	×	×	×
SCU color system troubles (SCU detection)		UC (02)	△ 6	△ 6	△ 6	△ 6	○	○	△ 6	○
Anti copy system		UC (20)	×	×	×	×	○	○	×	○
EEPROM faction		U2 (80, 81)	×	×	×	×	○	○	×	○
Scanner section troubles (mirror motor, lens, copy lamp)		L1 (00) L3 (00)	×	×	×	×	○	○	×	○
CCD troubles (shading, etc.)		E7 (10, 11, 14)	×	×	×	×	○	○	×	○
DSPF trouble		U5 (00, 16, 30, 31, 40)	△ 4	△ 4	△ 4	△ 4	○	○	△ 4	○
General troubles in the DSPF back surface scanning section		E6 (10, 11, 14)	△ 5	△ 5	△ 5	△ 5	○	○	△ 5	○

○ : Operation enabled, × : Operation disabled

△ 2 : When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△ 3 : When detected during other than a job, the operation is enabled in a section other than the trouble paper exit section.

\* However, it is valid only when the escape tray setting has been made.

△ 4 : When detected during other than a job, the operation is enabled in the OC mode.

△ 5 : When detected during other than a job, the operation is enabled in the OC mode and the simplex scanning mode.

△ 6 : When detected during other than a job, the operation is enabled in the black and white mode.

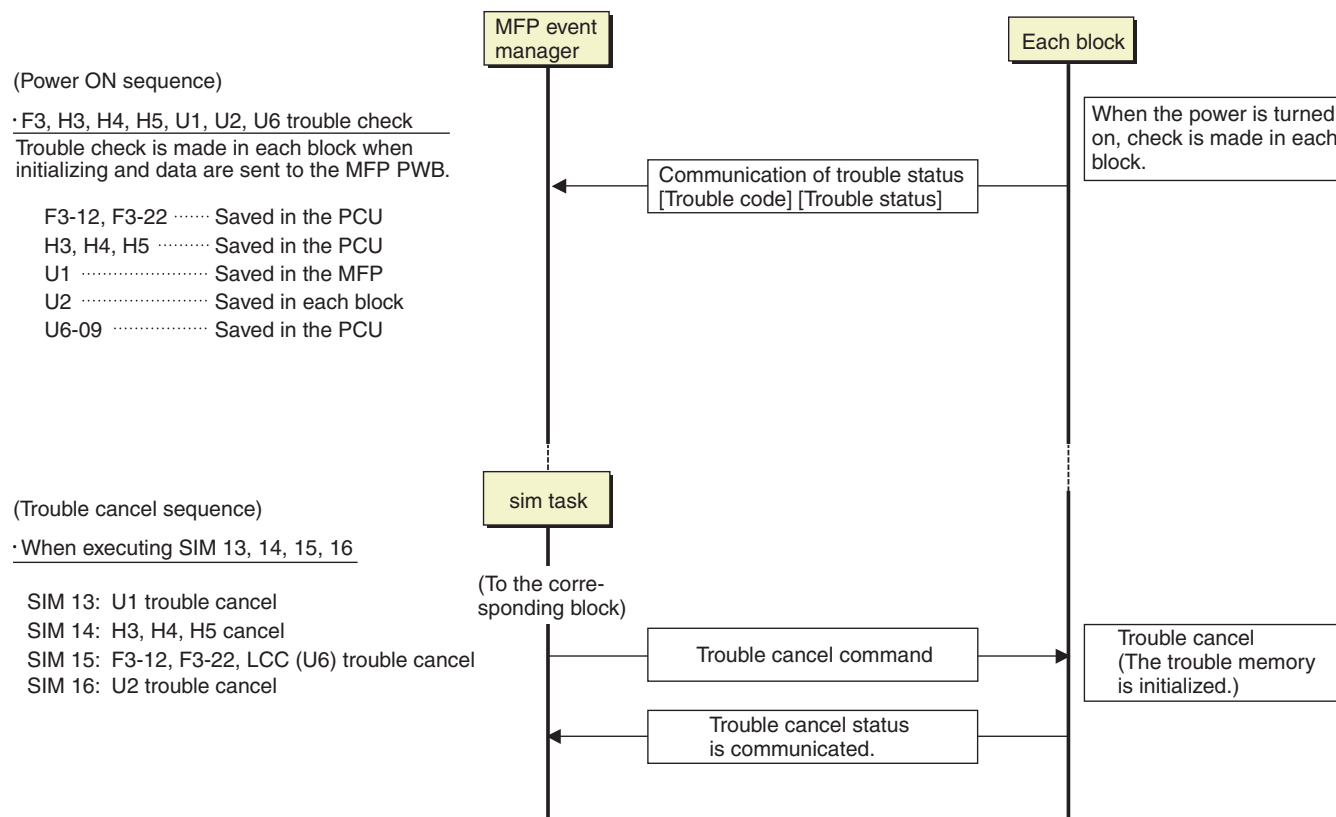
△ 7 : Since communication is enabled, reception can be transferred.

△ 8 : When detected during other than a job, the operation is enabled in other than the DESK.

△ 9 : Trouble display is message of 2 lines. (Example: Ready to copy. F2 trouble)

△ 10 : Execution of a job is enabled only for the format other than the high-compression PDF related ones.

## (2) Power ON trouble detection sequence.



## 2. Trouble code list

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
C1	10	Main charger trouble	PCU			○		
E6	10	DSPF shading error (Black correction)	SCU			○		
	11	DSPF shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
E7	01	MFP image data error	MFP			○		
	03	HDD trouble	MFP			○		
	04	HDD-ASIC error	MFP			○		
	05	Standard/Extension memory R/W error (MFP PWB) (Local memory)	MFP			○		
	06	Image data decode error	MFP			○		
	08	MFP memory compatibility error (MFP PWB) (Local memory)	MFP			○		
	09	Standard/Extension memory size (MFP PWB) (Local memory)	MFP			○		
	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection error	PCU			○		
	21	LSU laser deterioration trouble	PCU			○		
	28	LSU-PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			○		
	42	Data error (ACRE ASIC)	MFP			○		
	46	Decode error (ACRE ASIC)	MFP			○		
	48	Memory error (ACRE ASIC)	MFP			○		
	49	Water Mark data error	MFP			○		
	50	Engine connection trouble	PCU			○		
	55	PWB information sum error (Engine detection)	PCU			○		
	60	Combination error between the MFP PWB and other PWB, firmware	MFP			○		
	61	Combination error between the MFP PWB and the PCU PWB	MFP			○		
	62	Combination error between the MFP PWB and the SCU PWB	MFP			○		
	65	MFP EEPROM sum check error	MFP			○		
	70	Combination error between the SCU PWB and the other PWB	SCU			○		
	75	SCU EEPROM sum check error	SCU			○		
	80	MFP-SCU PWB communication error	MFP			○		
	90	MFP - PCU PWB communication error	MFP			○		
EE	EC	Automatic toner density adjustment error (Sampling level 67-94/106-154)	PCU			○		
	EL	Automatic toner density adjustment error (Over toner)	PCU			○		
	EU	Automatic toner density adjustment error (Under toner)	PCU			○		
F1	00	Finisher - PCU PWB communication error	PCU		○			
	02	Finisher paper transport motor trouble	PCU		○			
	03	Finisher paper exit roller lifting operation trouble	PCU		○			
	08	Stapler shift trouble	PCU		○			
	09	Finisher load quantity sensor trouble	PCU		○			
	10	Staple operation trouble	PCU		○			
	11	Finisher grip operation trouble	PCU		○			
	14	Finisher paper tail push down motor trouble	PCU		○			
	15	Finisher paper exit tray lift operation trouble	PCU		○			
	18	Finisher paper tail holding motor trouble	PCU		○			
	19	Finisher alignment operation trouble F	PCU		○			
	20	Finisher alignment operation trouble R	PCU		○			
	21	Finisher paper delivery unit cooling fan trouble	PCU		○			
	23	Finisher shutter trouble	PCU		○			
	25	Finisher paper transport roller lift motor trouble	PCU		○			
	28	Finisher paper alignment roller lift motor trouble	PCU		○			
	30	Finisher - Saddle unit communication trouble	PCU		○			
	31	Saddle paper folding trouble	PCU		○			
	33	Punch unit shift operation trouble	PCU		○			
	34	Punch operation trouble	PCU		○			
	37	Finisher data backup RAM error	PCU		○			
	38	Punch data backup RAM error	PCU		○			
	41	Saddle paper positioning operation trouble	PCU		○			
	42	Saddle guide motor trouble	PCU		○			
	43	Saddle alignment operation trouble	PCU		○			
	44	Saddle staple motor R trouble	PCU		○			
	45	Saddle staple motor F trouble	PCU		○			
	46	Saddle motor trouble	PCU		○			
	50	Main unit - Finisher combination error	PCU		○			

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F1	51	Saddle sensor connection trouble	PCU		○			
	52	Finisher micro switch trouble	PCU		○			
	60	Finisher - Inserter communication trouble	PCU		○			
	61	Inserter EEPROM trouble	PCU		○			
	62	Inserter reverse sensor trouble	PCU		○			
	80	Finisher power cooling fan motor trouble	PCU		○			
	81	Finisher paper delivery unit paper transport motor trouble	PCU		○			
	83	Finisher paper guide motor trouble	PCU		○			
	84	Finisher grip trouble	PCU		○			
	86	Finisher delivery paper holding motor trouble	PCU		○			
F2	31	Image density sensor trouble (OPC drum surface reflection ratio abnormality)	PCU					○
	39	Process thermistor trouble	PCU					○
	40	Toner density sensor trouble	PCU					○
	46	Developing thermistor trouble	PCU					○
	47	Room temperature thermistor trouble	PCU					○
	48	Developing humidity sensor trouble	PCU					○
	59	Room humidity sensor trouble	PCU					○
	64	Toner supply operation trouble	PCU					○
	68	Waste toner full sensor trouble	PCU	○				
	69	Waste toner full detection	PCU	○				
	70	Improper toner cartridge detection	PCU					○
	74	Toner cartridge CRUM error	PCU					○
F3	12	Paper feed tray 1 lift operation trouble	PCU	○				
	22	Paper feed tray 2 lift operation trouble	PCU	○				
	32	Paper feed tray 3 lift operation trouble	PCU	○				
	42	Paper feed tray 4 lift operation trouble	PCU	○				
F4	38	Voltage trouble	PCU			○		
F6	00	MFP-FAX communication trouble	MFP				○	
	01	FAX board EEPROM read/write error	FAX				○	
	04	FAX MODEM operation trouble	FAX				○	
	21	Combination error between the TEL/LIU PWB and the FAX soft switch	FAX				○	
	30	Access error to 1-chip microprocessor on the FAX board (FAX detection)	FAX				○	
	97	The FAX PWB does not match with the machine model.	FAX				○	
	98	Combination error between the FAX-BOX destination information and the machine destination information.	FAX				○	
H2	00	Thermistor open trouble (TH_UM)	PCU	○				
	01	Thermistor open trouble (TH_US)	PCU	○				
H3	00	Fusing section high temperature trouble (TH_UM)	PCU	○				
	01	Fusing section high temperature trouble (TH_US)	PCU	○				
H4	00	Fusing section low temperature trouble (TH_UM)	PCU	○				
	01	Fusing section low temperature trouble (TH_US)	PCU	○				
H5	01	5 times continuous POD1 not-reach jam	PCU	○				
H7	10	Recovery error from low fuser temp. (TH_UM)	PCU	○				
	11	Recovery error from low fuser temp. (TH_US)	PCU	○				
L1	00	Scanner feed trouble	SCU	○				
L3	00	Scanner return trouble	SCU	○				
L4	01	Main motor trouble	PCU			○		
	02	Drum motor trouble	PCU			○		
	03	Fusing motor trouble	PCU			○		
	04	Developing motor trouble	PCU			○		
	06	Transfer separation motor trouble	PCU			○		
	08	Waste toner transport trouble	PCU			○		
	30	MFP fan motor trouble	MFP			○		
	31	Fusing section cooling fan (CFM-U1/3) trouble	PCU			○		
	32	Power supply cooling fan (CFM-DC1/DC2) trouble	PCU			○		
	35	Fusing exhaust fan (VFM-BKR) trouble	PCU			○		
	38	Fusing section cooling fan (CFM-U4) trouble	PCU			○		
	40	Process exhaust fan (VFM-EX1/2/3) trouble	PCU			○		
	43	Fusing exhaust fan (VFM-BKU) trouble	PCU			○		
	46	Developing section cooling fan (CFM-DV) trouble	PCU			○		
	50	Process cooling fan (CFM-R1/2/3) trouble	PCU			○		
	56	Fusing section cooling fan (CFM-U2) trouble	PCU			○		
	58	Process exhaust fan (VFM-BKL) trouble	PCU			○		
L6	10	Polygon motor trouble	PCU			○		
L8	01	Full wave signal detection error	PCU			○		
	02	Full wave signal error	PCU			○		
	20	Communication error of MFP PWB/Mother board	MFP			○		
PC	-	Personal counter not detected	MFP	○				
U1	01	Battery trouble	MFP			○		

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
U2	00	MFP EEPROM read/write error	MFP			○		
	05	HDD/MFP PWB SRAM contents inconsistency	MFP			○		
	10	MFP PWB SRAM user authentication index check sum error	MFP			○		
	11	MFP PWB EEPROM counter check sum error	MFP			○		
	12	FAX SRAM check sum error	MFP				○	
	22	MFP PWB SRAM memory check sum error	MFP			○		
	23	MFP PWB SRAM memory individual data check sum error	MFP			○		
	24	MFP PWB SRAM memory user authentication counter check sum error	MFP			○		
	30	MFP PWB and PCU PWB manufacturing No. data inconsistency	MFP			○		
	50	HDD/Flash memory registration data check sum error	MFP			○		
	60	Water Mark check error	MFP			○		
	80	SCU PWB EEPROM read/write error	SCU			○		
	81	SCU PWB EEPROM check sum error	SCU			○		
	90	PCU PWB EEPROM read/write error	PCU			○		
	91	PCU PWB EEPROM check sum error	PCU			○		
U5	00	Document feed unit communication error	SCU			○		
	16	Document feed unit fan motor trouble	SCU			○		
	30	Document feed unit tray lift up trouble	SCU			○		
	31	Document feed unit tray lift down trouble	SCU			○		
	40	Document feed unit installation trouble	SCU			○		
U6	09	LCC lift trouble	PCU		○			
	20	PCU PWB - LCC communication error	PCU		○			
	21	LCC paper transport motor trouble	PCU		○			
	22	LCC 24V power trouble	PCU		○			
	23	A3LCC tray descending trouble	PCU		○			
	24	A3LCC tray lock trouble	PCU		○			
	51	LCC - Main unit combination trouble	PCU		○			
U7	50	MFP PWB - Vendor machine communication error	MFP			○		
	51	Vendor machine error	MFP			○		
UC	02	IPD/DOCC ASIC IPD section error	SCU			○		
	20	IPD/DOCC ASIC DOCC section error	SCU			○		
A0	01	PCU PWB ROM error	MFP			○		
	02	SCU PWB ROM error	MFP			○		
	04	ACU PWB ROM error (when scanner expansion kit is installed)	MFP			○		
	10	MFP PWB ROM error	MFP			○		
	11	Firmware version inconsistency (MFP - PCU)	MFP			○		
	12	Firmware version inconsistency (MFP - SCU)	MFP			○		
	15	DSK BOOT version disagreement	MFP			○		
	20	Conflict firmware and EEPROM data version (MFP)	MFP			○		
	21	Conflict firmware and EEPROM data version (PCU)	PCU			○		
	22	Conflict firmware and EEPROM data version (SCU)	SCU			○		

### 3. Details of trouble code

#### C1-10 Main charger trouble

Trouble content	
Detail	PCU
Cause	The main charger unit is not installed properly. There is an abnormality in the main charger unit. Disconnection of the high voltage PWB connector. MC/DV high voltage PWB trouble. PCU PWB trouble
Check & Remedy	Check the output of the main charger with SIM8-2. Check disconnection of the main charger./Replace. Check disconnection of the high voltage PWB connector./Replace. Replace the MC/DV high voltage PWB. Replace the PCU PWB.

#### E6-10 DSPF shading error (Black correction)

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. CCD unit trouble. DSPF PWB trouble.
Check & Remedy	Check the installing state of the harness to the CCD unit. Check the CCD unit. Check the DSPF PWB.

**E6-11 DSPF shading error (White correction)**

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. Copy lamp lighting trouble. Dirt on the reference white plate. CCD unit trouble. DSPF PWB trouble. Shading adjustment error
Check & Remedy	Check the installing state of the harness the CCD unit. Clean the reference white plate. Check the CCD unit. Check the DSPF PWB.

**E6-14 CCD-ASIC error**

Trouble content	
Detail	SCU
Cause	DSPF PWB trouble.
Check & Remedy	Replace the DSPF PWB.

**E7-01 MFP image data error**

Trouble content	
Detail	MFP
Cause	Image data transfer error in the MFP PWB. MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFP PWB. Replace the MFP PWB.

**E7-03 HDD trouble**

Trouble content	
Detail	MFP
Cause	Connector, harness connection trouble in the MFP PWB and HDD. HDD error file management area data abnormality (FAT breakage). MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFP PWB and HDD. Use SIM62-2,3 to check read/write operations of the HDD. Replace the HDD. Replace the MFP PWB.

**E7-04 HDD-ASIC error**

Trouble content	
Detail	MFP
Cause	HDD-ASIC trouble. An error occurs in the HDD-ASIC self test when booting.
Check & Remedy	Replace the MFP PWB.

**E7-05 Standard/Extension memory R/W error (MFP PWB) (Local memory)**

Trouble content	Memory access is disabled.
Detail	MFP
Cause	Improper insertion of the memory. Garbled memory data. The memory capacity is not the specified level.
Check & Remedy	Check insertion of the memory. Use SIM60-1 to check the read/write operations of the memory. Replace the expansion memory. Replace the MFP PWB.

**E7-06 Image data decode error**

Trouble content	
Detail	MFP
Cause	Compressed image data abnormality. HDD connection trouble when HDD is installed. Image data compression/transfer data garble. MFP PWB trouble.
Check & Remedy	If the job at an occurrence of an error is a FAX job, check the FAX PWB. Check connection of the MFPC PWB and the HDD. Replace the MFPC PWB.

**E7-08 MFP memory compatibility error (MFP PWB) (Local memory)**

Trouble content	
Detail	MFP
Cause	A DIMM of different specifications is installed to the MFP memory slot. DIMM trouble.
Check & Remedy	Check the installed DIMM. Replace the DIMM.

**E7-09 Standard/Extension memory size (MFP PWB) (Local memory)**

Trouble content	
Detail	MFP
Cause	A DIMM which is not 512MB is inserted. DIMM trouble. Insufficient memory size.
Check & Remedy	Replace the DIMM.

**E7-10 Shading error (Black correction)**

Trouble content	
Detail	SCU
Cause	Abnormality in the CCD black scan level when the scanner lamp is turned OFF. Improper installation of the harness to the CCD unit. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check the CCD unit. Check the SCU PWB.

**E7-11 Shading error (White correction)**

Trouble content	
Detail	SCU
Cause	Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON. Improper installation of the harness to the CCD unit. Dirt on the mirror, lens, and the reference white plate. Scanner lamp lighting trouble. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check connection of the harness to the scanner lamp unit. Clean the mirror, the lens, and the reference white plate. Check the CCD unit. Check the SCU PWB.

**E7-14 CCD-ASIC error**

Trouble content	
Detail	SCU
Cause	SCU PWB trouble.
Check & Remedy	Check the SCU PWB. Replace the SCU PWB.

**E7-20 LSU laser detection error**

Trouble content	
Detail	PCU
Cause	Optical axis shift. Reduced laser power, lighting error, laser diode trouble. Harness and connector trouble between the LD/BD PWB and the LSU control PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-21 LSU laser deterioration trouble**

Trouble content	
Detail	PCU
Cause	Power reduction due to laser deterioration. Harness and connector disconnection/insertion trouble between the LD PWB and the LSU control PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-28 LSU-PCU connection error**

Trouble content	
Detail	PCU
Cause	Communication error between the CPU in the PCU PWB and the LSU control ASIC. Improper connection of the communication connector between the PCU PWB and the LSU control PWB (interface PWB). Harness trouble between the PCU PWB and the LSU control PWB (interface PWB) PCU PWB or LSU control PWB (interface PWB) trouble
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU control PWB (interface PWB). Replace the LSU control PWB. Replace the PCU PWB.

**E7-29 LSU ASIC frequency error**

Trouble content	
Detail	PCU
Cause	Oscillation abnormality of the external oscillator and the internal oscillating circuit used in the LSU ASIC. LSU ASIC abnormality on the LSU ASIC PWB.
Check & Remedy	Replace the LSU control PWB.

**E7-42 Data error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	Image transfer trouble.
Check & Remedy	Check the connection state of the ACRE ASIC PWB connector. Replace the ACRE ASIC PWB.

**E7-46 Decode error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	Compression data abnormality. Garbled data are produced in image compression/transmission. ACRE ASIC PWB trouble.
Check & Remedy	Check the installation state of the PWB. Check connection of the ACRE ASIC PWB. Replace the ACRE ASIC PWB.

**E7-48 Memory error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	DIMM trouble, memory slot trouble. DIMM insertion trouble, different DIMM inserted.
Check & Remedy	DIMM trouble. Replace the PWB.

**E7-49 Water Mark data error**

Trouble content	
Detail	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data. Replace the HDD.

**E7-50 Engine connection trouble**

Trouble content	
Detail	PCU
Cause	A PWB, or firmware, or LSU which is not supported by the machine specifications is detected in the PCU PWB. PCU PWB trouble. LSU trouble.
Check & Remedy	Check the kind and the version of the firmware. Check the LSU, and replace it if necessary. Check the PCU PWB, and replace it if necessary.

**E7-55 PWB information sum error (Engine detection)**

Trouble content	PCU EEPROM PWB information sum error
Detail	PCU
Cause	PCU EEPROM sum check error. PCU EEPROM trouble. PCU EEPROM contact trouble. Malfunction due to noises
Check & Remedy	Replace the PCU PWB. Replace the PCU EEPROM.

**E7-60 Combination error between the MFP PWB and other PWB, firmware**

Trouble content	
Detail	MFP
Cause	A PWB or firmware which is not supported by the machine specifications is detected in the MFP PWB. MFP PWB trouble. The PWB/firmware which is not supported by the machine specifications is connected.
Check & Remedy	Check the kind and the version of the firmware. Check the MFP PWB, and replace it if necessary.

**E7-61 Combination error between the MFP PWB and the PCU PWB**

Trouble content	
Detail	MFP
Cause	Combination error between the MFP PWB and the PCU PWB. MFP PWB trouble. PCU PWB trouble.
Check & Remedy	Check the combination between the MFP PWB and the PCU PWB. Replace the MFP PWB. Replace the PCU PWB.

**E7-62 Combination error between the MFP PWB and the SCU PWB**

Trouble content	
Detail	MFP
Cause	Combination error between the MFP PWB and the SCU PWB. MFP PWB trouble. SCU PWB trouble.
Check & Remedy	Check the combination between the MFP PWB and the SCU PWB. Replace the MFP PWB. Replace the SCU PWB.

**E7-65 MFP EEPROM sum check error**

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM device breakdown. Contact trouble of the MFP EEPROM device. Malfunction due to noises.
Check & Remedy	Replace the MFP PWB. Replace the MFP PWB EEPROM.

**E7-70 Combination error between the SCU PWB and the other PWB**

Trouble content	
Detail	SCU
Cause	A SUC PWB /firmware which does not comply with the machine specifications is detected. SCU PWB trouble. A PWB/firmware which does not comply with the machine specifications is connected.
Check & Remedy	Check the firmware kind/version. Check and replace the SCU PWB.

**E7-75 SCU EEPROM sum check error**

Trouble content	
Detail	SCU
Cause	SCU PWB EEPROM device breakdown. Contact trouble of the SCU EEPROM device. Malfunction due to noises.
Check & Remedy	Replace the SCU PWB. Replace the SCU PWB EEPROM.

**E7-80 MFP-SCU PWB communication error**

Trouble content	
Detail	MFP
Cause	SCU PWB connector connection trouble. SCU PWB - MFP PWB connection trouble. SCU PWB mother board connection trouble. SCU PWB trouble. MFP PWB trouble. Mother board trouble.
Check & Remedy	Check connection of the SCU PWB, the MFP PWB, and the mother board. Check the ground. Replace the SCU PWB. Replace the MFP PWB. Replace the mother board.

**E7-90 MFP - PCU PWB communication error**

Trouble content	
Detail	MFP
Cause	PCU PWB connector connection trouble. PCU PWB - MFP PWB connection trouble. PCU PWB trouble. MFP PWB trouble. Mother board trouble.
Check & Remedy	Check connection of the PCU PWB, the MFP PWB, and the mother board. Check the ground. Replace the PCU PWB. Replace the MFP PWB. Replace the mother board.



## EE-EC Automatic toner density adjustment error (Sampling level 26-102/114-200)

Trouble content	The sampling level in the automatic toner density adjustment is outside of 108±5.
Detail	PCU
Cause	Toner density sensor trouble. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

## EE-EL Automatic toner density adjustment error (Over toner)

Trouble content	The sampling level in the automatic toner density adjustment is less than 26 or the control voltage is over 197.
Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

## EE-EU Automatic toner density adjustment error (Under toner)

Trouble content	The sampling level in the automatic toner density adjustment is over 200 or the control voltage is less than 49.
Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

## F1-00 Finisher - PCU PWB communication error

Trouble content	
Detail	PCU
Cause	Connection trouble of the connector and the harness between the finisher and the PCU PWB. Finisher control PWB trouble. PCU PWB trouble. Strong external noises.
Check & Remedy	Check the connector and the harness between the finisher and the PCU PWB. Replace the finisher control PWB. Replace the PCU PWB.

## F1-02 Finisher paper transport motor trouble

Trouble content	
Detail	PCU
Cause	Finisher paper transport motor trouble. Harness and connector connection trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper transport motor. Replace the paper transport motor. Check connection of the connector and the harness. Replace the finisher control PWB.

## F1-03 Finisher paper exit roller lifting operation trouble

Trouble content	
Detail	PCU
Cause	Finisher paper exit roller lift motor trouble. Harness and connector connection trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit roller lift motor. Replace the paper exit roller lift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

## F1-08 Stapler shift trouble

Trouble content	
Detail	PCU
Cause	Stapler shift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the stapler shift motor. Replace the stapler shift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

## F1-09 Finisher load quantity sensor trouble

Trouble content	
Detail	PCU
Cause	Punch paper edge sensor trouble. Harness disconnection. Finisher control PWB trouble. Punch control PWB trouble.
Check & Remedy	Use SIM3-2 to check the operation of the sensor. Replace the punch paper edge sensor. Replace the finisher control PWB. Replace the punch control PWB.

**F1-10 Staple operation trouble**

Trouble content	
Detail	PCU
Cause	Staple motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. Replace the staple motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

**F1-11 Finisher grip operation trouble**

Trouble content	
Detail	PCU
Cause	Gripper arm motor trouble. Finisher control PWB trouble. Grip arm trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the gripper arm motor. Replace the gripper arm motor (FGAM). Replace the finisher control PWB. Replace the grip arm. Replace the home position sensor.

**F1-14 Finisher paper tail push down motor trouble**

Trouble content	
Detail	PCU
Cause	Paper tail push down motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper tail push down motor. Replace the paper tail push down motor (FPTPDM). Replace the finisher control PWB. Replace the home position sensor.

**F1-15 Finisher paper exit tray lift operation trouble**

Trouble content	Lift motor trouble.
Detail	PCU
Cause	Paper exit tray lift motor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit tray lift motor. Replace the finisher control PWB. Replace the paper exit tray lift motor (FTLM).

**F1-18 Finisher paper tail holding motor trouble**

Trouble content	
Detail	PCU
Cause	Finisher paper tail holding motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper tail holding motor. Replace the paper tail holding motor (FPTHM). Replace the home position sensor. Replace the finisher control PWB.

**F1-19 Finisher alignment operation trouble F**

Trouble content	
Detail	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Over-current to the motor. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor. Replace the paper alignment motor (FPAM-F). Replace the home position sensor. Replace the finisher control PWB.

**F1-20 Finisher alignment operation trouble R**

Trouble content	
Detail	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Over-current to the motor. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor. Replace the paper alignment motor (FPAM-F). Replace the home position sensor. Replace the finisher control PWB.

**F1-21 Finisher paper delivery unit cooling fan trouble**

Trouble content	
Detail	PCU
Cause	Finisher paper delivery unit cooling fan motor trouble. Finisher control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper delivery unit cooling fan motor. Replace the paper delivery unit cooling fan motor (PDCF). Replace the finisher control PWB. Check connection of the connector and the harness.

**F1-23 Finisher shutter trouble**

Trouble content	
Detail	PCU
Cause	Motor lock trouble. Control PWB trouble. Home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the rear edge assist motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB. Replace the sensor.

**F1-25 Finisher paper transport roller lift motor trouble**

Trouble content	
Detail	PCU
Cause	Finisher paper transport roller lift motor lock trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper transport roller lift motor. Replace the paper transport roller lift motor (FPTRLM). Replace the home position sensor. Replace the finisher control PWB.

**F1-28 Finisher paper alignment roller lift motor trouble**

Trouble content	
Detail	PCU
Cause	Finisher paper alignment roller lift motor lock trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment roller lift motor. Replace the paper alignment roller lift motor (FARLM). Replace the home position sensor. Replace the finisher control PWB.

**F1-30 Finisher - Saddle unit communication trouble**

Trouble content	
Detail	PCU
Cause	Connector and harness connection trouble. Finisher control PWB trouble.
Check & Remedy	Check connection of the connector and the harness. Turn OFF/ON the power. Replace the finisher control PWB.

**F1-31 Saddle paper folding trouble**

Trouble content	
Detail	PCU
Cause	Saddle paper transport motor trouble. Saddle paper folding mechanism trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper folding. Replace the saddle paper transport motor (FSPTM). Check and repair the saddle paper folding mechanism. Replace the finisher control PWB Replace the home position sensor.

**F1-33 Punch unit shift operation trouble**

Trouble content	
Detail	PCU
Cause	Punch shift motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the punch shifting. Replace the punch shift motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

**F1-34 Punch operation trouble**

Trouble content	
Detail	PCU
Cause	Punch motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Check the punch operation. Replace the punch motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

**F1-37 Finisher data backup RAM error**

Trouble content	
Detail	PCU
Cause	Finisher control PWB trouble. Malfunction due to noises
Check & Remedy	Replace the finisher control PWB. Readjust the finisher. (Use SIM3-10, Finisher control PWB DIP SW adjustment.)

**F1-38 Punch data backup RAM error**

Trouble content	
Detail	PCU
Cause	Punch control PWB trouble. Malfunction due to noises
Check & Remedy	Replace the punch control PWB. Set the punch unit specifications, and adjust the sensor. (Punch unit control PWB DIP SW adjustment.)

**F1-41 Saddle paper positioning operation trouble**

Trouble content	Abnormality in the folding positioning guide motor in the saddle section.
Detail	PCU
Cause	Saddle positioning motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle positioning motor. Replace the saddle positioning motor (FSPM). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-42 Saddle guide motor trouble**

Trouble content	
Detail	PCU
Cause	Saddle roller guide motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle roller guide motor. Replace the saddle roller guide motor (FSRGM). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-43 Saddle alignment operation trouble**

Trouble content	
Detail	PCU
Cause	Saddle alignment motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle alignment motor. Replace the saddle alignment motor (FSPAM). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-44 Saddle staple motor R trouble**

Trouble content	
Detail	PCU
Cause	Saddle staple motor R trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor R. Replace the saddle staple motor R (FSDSMR). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-45 Saddle staple motor F trouble**

Trouble content	Abnormality of the staple unit drive motor in the saddle section.
Detail	PCU
Cause	Saddle staple motor F trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor F. Replace the saddle staple motor F (FSDSMF). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-46 Saddle motor trouble**

Trouble content	
Detail	PCU
Cause	Saddle motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle motor. Replace the saddle motor (FSDM). Replace the finisher control PWB. Replace the home position sensor. Check connection of the harness and the connector.

**F1-50 Main unit - Finisher combination error**

Trouble content	
Detail	PCU
Cause	The finisher which is not supported by the main unit model is installed. Finisher control PWB trouble.
Check & Remedy	Install a proper finisher. Replace the finisher control PWB.

**F1-51 Saddle sensor connection trouble**

Trouble content	
Detail	PCU
Cause	Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-2 to check the operation of the guide home position sensor and the saddle plate position sensor. Replace the finisher control PWB. Check connection of the harness and the connector.

**F1-52 Finisher micro switch trouble**

Trouble content	
Detail	PCU
Cause	Finisher control PWB trouble. Each micro switch trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-2 to check the operation of the safety switch 1 and the delivery roller lift down sensor. Replace the finisher control PWB. Check connection of the harness and the connector.

**F1-60 Finisher - Inserter communication trouble**

Trouble content	
Detail	PCU
Cause	Connector and harness connection trouble. Finisher control PWB trouble.
Check & Remedy	Check connection of the connector and the harness. Turn OFF/ON the power. Replace the finisher control PWB.

**F1-61 Inserter EEPROM trouble**

Trouble content	
Detail	PCU
Cause	EEPROM trouble. Inserter PWB EEPROM access circuit trouble.
Check & Remedy	Check the installing state of the EEPROM. Replace the inserter control PWB.

**F1-62 Inserter reverse sensor trouble**

Trouble content	
Detail	PCU
Cause	Sensor breakage. Harness disconnection. Inserter PWB trouble.
Check & Remedy	Use SIM3-2 to check the operation of the sensor. Replace the inserter control PWB.

**F1-80 Finisher power cooling fan motor trouble**

Trouble content	
Detail	PCU
Cause	Power cooling fan motor trouble. Finisher control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Replace the power cooling fan motor. Replace the finisher control PWB. Check connection of the harness and the connector.

**F1-81 Finisher paper delivery unit paper transport motor trouble**

Trouble content	
Detail	PCU
Cause	Paper delivery unit paper transport motor trouble. Finisher control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper delivery unit paper transport motor. Replace the paper delivery unit paper transport motor (PDPTM). Replace the finisher control PWB. Check connection of the harness and the connector.

**F1-83 Finisher paper guide motor trouble**

Trouble content	
Detail	PCU
Cause	Paper guide motor trouble. Finisher control PWB trouble. Harness and connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper guide motor. Replace the paper guide motor (FPGM). Replace the finisher control PWB. Check connection of the harness and the connector. Replace the home position sensor.

**F1-84 Finisher grip trouble**

Trouble content	
Detail	PCU
Cause	Gripper motor trouble. Finisher control PWB trouble. Harness and connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the gripper motor. Replace the gripper motor (FGM). Replace the finisher control PWB. Check connection of the harness and the connector. Replace the home position sensor.

**F1-86 Finisher delivery paper holding motor trouble**

Trouble content	
Detail	PCU
Cause	Delivery paper holding motor trouble. Finisher control PWB trouble. Harness and connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the delivery paper holding motor. Replace the delivery paper holding motor (FDPHM). Replace the finisher control PWB. Check connection of the harness and the connector. Replace the home position sensor.

**F2-31 Image density sensor trouble (OPC drum surface reflection ratio abnormality)**

Trouble content	
Detail	PCU
Cause	Before execution of the process control, a document is scanned by the image density sensor and the sensor gain is adjusted so that the output is at a fixed level. Though, however, the sensor gain is changed, the output does not become a fixed level. Image density sensor trouble Connection trouble of the harness between the PCU PWB and the image density sensor Image density sensor dirt
Check & Remedy	Use SIM44-2 to execute the gain adjustment of the process control sensor. When there are some troubles, "Error" is displayed. Check the sensor and the harness at that time.

**F2-39 Process thermistor trouble**

Trouble content	
Detail	PCU
Cause	Process thermistor trouble. Process thermistor harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the process thermistor. Check connection of the harness and the connector. Replace the PCU PWB.

**F2-40 Toner density sensor trouble**

Trouble content	
Detail	PCU
Cause	Toner density sensor output abnormality (Sample level less than 26, or over 200) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Check connection of the connectors and the harness. Replace the developing unit. Replace the PCU PWB.

**F2-46 Developing thermistor trouble**

Trouble content	
Detail	PCU
Cause	Developing thermistor harness connection trouble. Developing thermistor harness trouble. PCU PWB trouble.
Check & Remedy	Check connection of the harness and connector of the developing thermistor. Replace the developing thermistor harness. Replace the PCU PWB.

**F2-47 Room temperature thermistor trouble**

Trouble content	
Detail	PCU
Cause	Room temperature thermistor trouble. Room temperature thermistor harness trouble. PCU PWB trouble.
Check & Remedy	Check connection of the harness and connector of the room temperature thermistor. Replace the room temperature thermistor harness. Replace the PCU PWB.

**F2-48 Developing humidity sensor trouble**

Trouble content	
Detail	PCU
Cause	Developing humidity sensor harness connection trouble. Developing humidity sensor trouble. PCU PWB trouble.
Check & Remedy	Check connection of the harness and connector of the developing humidity sensor. Replace the developing humidity sensor. Replace the PCU PWB.

**F2-59 Room humidity sensor trouble**

Trouble content	
Detail	PCU
Cause	Room humidity sensor harness connection trouble. Room humidity sensor trouble. PCU PWB trouble.
Check & Remedy	Check connection of the harness and connector of the room humidity sensor. Replace the room humidity sensor. Replace the PCU PWB.

**F2-64 Toner supply operation trouble**

Trouble content	
Detail	PCU
Cause	Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner density sensor. Connector and harness check. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

**F2-68 Waste toner full sensor trouble**

Trouble content	
Detail	PCU
Cause	Waste toner full sensor trouble Connector/harness trouble. Waste toner pipe clogging
Check & Remedy	Replace the waste toner full sensor. Connector/harness trouble. Remove clogging in the waste toner pipe.

**F2-69 Waste toner full detection**

Trouble content	
Detail	PCU
Cause	Waste toner full detection
Check & Remedy	Replace the toner cartridge.

**F2-70 Improper toner cartridge detection**

Trouble content	
Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

**F2-74 Toner cartridge CRUM error**

Trouble content	
Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector and harness check.

**F3-12 Paper feed tray 1 lift operation trouble**

Trouble content	
Detail	PCU
Cause	T1LUD is not turned ON within the specified time. T1LUD sensor trouble Paper feed tray 1 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check connection of the harness and the connector of T1LUD. Replace the lift up unit. Replace the PCU PWB. Use SIM15 to cancel the trouble.

**F3-22 Paper feed tray 2 lift operation trouble**

Trouble content	
Detail	PCU
Cause	T2LUD does not turn ON within the specified time. T2LUD sensor trouble. Paper feed tray 2 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check the harness and the connector of T2LUD. Replace the lift up unit. Replace the PCU PWB. Use SIM15 to cancel the trouble.

**F3-32 Paper feed tray 3 lift operation trouble**

Trouble content	
Detail	PCU
Cause	M1LUD does not turn ON within the specified time. M1LUD sensor trouble. Paper feed tray 3 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check the harness and the connector of M1LUD. Replace the lift up unit. Replace the PCU PWB.

**F3-42 Paper feed tray 4 lift operation trouble**

Trouble content	
Detail	PCU
Cause	M2LUD does not turn ON within the specified time. M2LUD sensor trouble. Paper feed tray 4 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check the harness and the connector of M2LUD. Replace the lift up unit. Replace the PCU PWB.

**F4-38 Voltage trouble**

Trouble content	
Detail	PCU
Cause	Connector/harness connection trouble or disconnection PCU PWB trouble. Power unit trouble. AC PWB trouble.
Check & Remedy	Check the connector and harness of the power line. Replace the PCU PWB. Replace the power unit. Replace the AC PWB.

**F6-00 MFP-FAX communication trouble**

Trouble content		Communication establishment error/Framing/Parity/Protocol error
Section		MFP
Case 1	Cause	FAX unit PWB connector connection error
	Check and remedy	Check the connector connection between the FAX unit PWB and the MFPcnt PWB.
Case 2	Cause	FAX unit PWB - MFPcnt PWB harness trouble
	Check and remedy	Check the connector harness between the FAX unit PWB and the MFPcnt PWB.
Case 3	Cause	FAX unit PWB mother board connector pin breakage
	Check and remedy	Check the machine grounding.
Case 4	Cause	FAX unit ROM trouble/ROM pin breakage
	Check and remedy	Check the FAX unit PWB ROM.

**F6-01 FAX board EEPROM read/write error**

Trouble content		EEPROM access error (read/write)
Section		FAX
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that no trouble occurs after replacement of EEPROM. Execute the memory check of SIM66-3 to insure that EEPROM can be accessed.
Case 2	Cause	FAX PWB EEPROM access circuit trouble
	Check and remedy	Replace the PWB. In this case, not need to execute the simulation.

**F6-04 FAX MODEM operation trouble**

Trouble content		FAX PWB MODEM chip operation trouble
Section		FAX
Case 1	Cause	FAX PWB MODEM chip operation trouble
	Check and remedy	Replace the FAX PWB MODEM chip.
Case 2	Cause	The FAX PWB MODEM chip cannot be accessed.
	Check and remedy	Replace the FAX PWB.

**F6-21 Combination error between the TEL/LIU PWB and the FAX soft switch**

Trouble content		Combination error between the TEL/LIU PWB and the FAX PWB information (soft switch)
Section		FAX
Case 1	Cause	The destination of the installed TEL/LIU PWB differs.
	Check and remedy	Check the destination of the installed TEL/LIU PWB.
Case 2	Cause	TEL/LIU PWB trouble
	Check and remedy	Replace the TEL/LIU PWB.

**F6-30 Access error to 1-chip microprocessor on the FAX board (FAX detection)**

Trouble content		Access error (read/write) to 1-chip microprocessor on the FAX board
Section		FAX
Case 1	Cause	Program writing error (or no writing) to the 1-chip microprocessor
	Check and remedy	Use SIM66-42 to rewrite the 1-chip microprocessor program.
Case 2	Cause	1-chip microprocessor trouble
	Check and remedy	Replace the 1-chip microprocessor chip. When replacing, use SIM66-42 to rewrite the 1-chip microprocessor program.
Case 3	Cause	FAX PWB 1-chip microprocessor access circuit trouble
	Check and remedy	Replace the FAX PWB.

### F6-97 The FAX PWB does not match with the machine model.

Trouble content		The FAX PWB identification model does not match with the machine model.
Section		FAX
Case 1	Cause	An improper type of FAX PWB is installed to the machine.
	Check and remedy	Replace the FAX PWB with a proper one.

### F6-98 Combination error between the FAX-BOX destination information and the machine destination information.

Trouble content		Combination error between the FAX PWB destination information and the machine destination information.
Section		FAX
Case 1	Cause	Combination error between the destination information written in EEPROM on the FAX PWB and the destination information of the machine (set with SIM26-6).
	Check and remedy	1) Check the destination of the FAX PWB. 2) Check the destination of the machine. (SIM26-6) 3) Use a proper combination of the machine and the FAX PWB.

### H2-00 Thermistor open trouble (TH\_UM)

Trouble content		
Detail		PCU
Cause		Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy		Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

### H2-01 Thermistor open trouble (TH\_US)

Trouble content		
Detail		PCU
Cause		Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy		Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

### H3-00 Fusing section high temperature trouble (TH\_UM)

Trouble content		
Detail		PCU
Cause		The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Connection trouble of the fusing section connector and the harness. HL PWB trouble.
Check & Remedy		Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the HL PWB.

### H3-01 Fusing section high temperature trouble (TH\_US)

Trouble content		
Detail		PCU
Cause		The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble. HL PWB trouble. Fusing section connector connection trouble. HL PWB trouble.
Check & Remedy		Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Check connection of the thermistor and the harness. Check the PCU PWB thermistor input circuit section. (When the lamp is ON:) Check the HL PWB and the PCU PWB lamp circuit. Replace the thermistor, the HL PWB, and the PCU PWB.

### H4-00 Fusing section low temperature trouble (TH\_UM)

Trouble content		
Detail		PCU
Cause		The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL PWB trouble. Interlock switch trouble.
Check & Remedy		Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.



#### H4-01 Fusing section low temperature trouble (TH\_US)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. HL PWB trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

#### H5-01 5 times continuous POD1 not-reach jam

Trouble content	
Detail	PCU
Cause	A fusing jam is not canceled completely. (A jam paper remains.) POD1 sensor trouble. Fusing unit installation trouble. Connector, harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the POD1 sensor. Check the installing position of the fusing unit. Replace the fusing unit. Check connection of the connector and the harness. Replace the PCU PWB. Use SIM14 to cancel the trouble.

#### H7-10 Recovery error from low fuser temp. (TH\_UM)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. HL PWB trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Use SIM5-2 to check the flashing operation of the heater lamp.

#### H7-11 Recovery error from low fuser temp. (TH\_US)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. HL PWB trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Use SIM5-2 to check the flashing operation of the heater lamp.

#### L1-00 Scanner feed trouble

Trouble content	
Detail	SCU
Cause	Scanner feed is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.

#### L3-00 Scanner return trouble

Trouble content	
Detail	SCU
Cause	Scanner return is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.

#### L4-01 Main motor trouble

Trouble content	
Detail	PCU
Cause	Main motor trouble. Harness and connector connection trouble. PCU PWB trouble.
Check & Remedy	Use SIM6-1 to check the operation of the main motor. Check connection of the connectors and the harness. Replace the PCU PWB.

**L4-02 Drum motor trouble**

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the drum motor. Drum motor trouble. Harness and connector connection trouble. PCU PWB trouble. Developing unit trouble. Drum unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the drum motor. Replace the drum motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing unit. Replace the drum unit.

**L4-03 Fusing motor trouble**

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the fusing motor. Fusing motor trouble. Connection trouble of the connector and the harness. PCU PWB trouble.
Check & Remedy	Use SIM6-1 to check the operation of the fusing motor. Replace the Fusing motor. Check connection of the connectors and the harness. Replace the PCU PWB.

**L4-04 Developing motor trouble**

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the developing motor. Developing motor trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the developing motor. Replace the developing motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing unit.

**L4-06 Transfer separation motor trouble**

Trouble content	
Detail	PCU
Cause	Transfer separation motor trouble. Harness and connector connection trouble. PCU PWB trouble.
Check & Remedy	Use SIM6-3 to check the operation of the transfer separation motor. Replace the transfer separation motor. Check connection of the connectors and the harness. Replace the PCU PWB.

**L4-08 Waste toner transport trouble**

Trouble content	
Detail	PCU
Cause	Drum motor trouble. Waste toner transport pipe clogging. Harness and connector connection trouble. Waste toner lock sensor trouble.
Check & Remedy	Use SIM6-1 to check the operation of the drum motor. Replace the drum motor. Check connection of the connectors and the harness. Check the waste toner transport pipe for clogging. Replace the waste toner lock sensor. Replace the PCU PWB.

**L4-30 MFP fan motor trouble**

Trouble content	
Detail	MFP
Cause	Fan motor trouble. MFP PWB trouble. Harness and connector connection trouble. PCU PWB trouble
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the fan motor. Replace the MFP PWB. Check connection of the connector and the harness. Replace the PCU PWB.

**L4-31 Fusing section cooling fan (CFM-U1/3) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing section cooling fan operation. Fusing section cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the rotating operation of the fan. Replace the fusing section cooling fan. Replace the PCU PWB.

**L4-32 Power supply cooling fan (CFM-DC1/DC2) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the power cooling fan operation. Power cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the power cooling fan. Replace the PCU PWB. Check/replace the connector or the harness.

**L4-35 Fusing exhaust fan (VFM-BKR) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing exhaust fan operation. Fusing exhaust fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the fusing exhaust. Replace the PCU PWB.

**L4-38 Fusing section cooling fan (CFM-U4) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing section cooling fan operation. Fusing section cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the fusing section cooling fan. Replace the PCU PWB.

**L4-40 Process exhaust fan (VFM-EX1/2/3) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process exhaust fan operation. Process exhaust fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the process exhaust fan. Replace the PCU PWB.

**L4-43 Paper cooling fan trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the paper cooling fan operation. Paper cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connector and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the paper cooling fan. Replace the PCU PWB.

**L4-46 Developing section cooling fan (CFM-DV) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the developing section cooling fan operation. Developing section cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connector and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the developing section cooling fan. Replace the PCU PWB.

**L4-50 Process cooling fan (CFM-R1/2/3) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process cooling fan operation. Process cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connector and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the process cooling fan. Replace the PCU PWB.

**L4-56 Fusing section cooling fan (CFM-U2) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing section cooling fan operation. Fusing section cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the fusing section cooling fan. Replace the PCU PWB.

**L4-58 Process exhaust fan (VFM-BKL) trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process exhaust fan operation. Process exhaust fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the process exhaust fan. Replace the PCU PWB.

**L6-10 Polygon motor trouble**

Trouble content	
Detail	PCU
Cause	The motor does not reach the specified rpm in 8 sec after starting rotation of the polygon motor. Polygon motor trouble. LSU control PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM61-1 to check the operation of the polygon motor. Check connection of the connector and the harness. Replace the polygon motor. Replace the LSU. Replace the LSU control PWB.

**L8-01 Full wave signal detection error**

Trouble content	
Detail	PCU
Cause	No full wave signal is detected. PCU PWB trouble Power unit trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness.

**L8-02 Full wave signal error**

Trouble content	
Detail	PCU
Cause	An abnormality in the full wave signal frequency is detected. (The frequency is detected as 65Hz or above, or 45Hz or less.) PCU PWB trouble. Power unit trouble. Connection trouble of the connector and the harness. Power frequency, waveform abnormality.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness. Check the power waveform.

**L8-20 Communication error of MFP PWB/ Mother board**

Trouble content	
Detail	MFP
Cause	Mother board PWB - MFP PWB connection trouble. MFP PWB trouble. Mother trouble.
Check & Remedy	Check connection between the mother board and the MFP PWB. Check the ground of the main unit. Replace the MFPC PWB. Replace the mother board.

**PC-- Personal counter not detected**

Trouble content	
Detail	MFP
Cause	The personal counter is not installed. The personal counter is not detected.
Check & Remedy	Check connection of the connectors and the harness. Replace the SCU PWB.

**U1-01 Battery trouble**

Trouble content	Backup SRAM battery voltage fall.
Detail	MFP
Cause	Battery life Battery circuit abnormality
Check & Remedy	Check to confirm that the battery voltage is about 2.0V or above.

**U2-00 MFP EEPROM read/write error**

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Replace the MFP PWB EEPROM. Replace the MFP PWB. Check the power environment.

**U2-05 HDD/MFP PWB SRAM contents inconsistency**

Trouble content	
Detail	MFP
Cause	The HDD or the MFP PWB which differs from that before turning OFF the power is installed. HDD trouble. MFP PWB trouble.
Check & Remedy	Use SIM16 to cancel the error. If there is backup data (export data by device cloning), import it.

**U2-10 MFP PWB SRAM user authentication index check sum error**

Trouble content	
Detail	MFP
Cause	SRAM user index information (user authentication basic data) check sum error. MFP PWB SRAM trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Transfer the user index information data in the HDD to the SRAM. Replace the MFP PWB.

**U2-11 MFP PWB EEPROM counter check sum error**

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Replace the MFP PWB.

**U2-12 FAX SRAM check sum error**

Trouble content	
Detail	MFP
Cause	Check sum error of the user index information (user authentication basic data) in the SRAM. MFP PWB SRAM trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Transfer the user index information data in the HDD to the SRAM. Replace the MFP PWB.

**U2-22 MFP PWB SRAM memory check sum error**

Trouble content	
Detail	MFP
Cause	The identifier which controls the communication management table stored in the SRAM and the FAX soft switch is not detected correctly. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Since the data of the communication management table and the FAX soft switch stored in the SRAM are initialized when an error occurs, register the deleted data again individually. Use SIM16 to cancel the error. Replace the MFP PWB.

**U2-23 MFP PWB SRAM memory individual data check sum error**

Trouble content	MFP PWB SRAM memory individual data check sum error.
Detail	MFP
Cause	The check sum value for individual data of the communication table and the sender registration does not match. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Turn OFF/ON the power to initialize the data related to the content of check sum error. Since the registered contents are deleted, register the deleted contents again. Use SIM16 to cancel the error. Replace the MFP PWB.

**U2-24 MFP PWB SRAM memory user authentication counter check sum error**

Trouble content	
Detail	MFP
Cause	MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error.

**U2-30 MFP PWB and PCU PWB manufacturing No. data inconsistency**

Trouble content	
Detail	MFP
Cause	Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFP PWB. When replacing the PCU PWB or the MFP PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB. MFP PWB trouble. PCU PWB trouble
Check & Remedy	Check that the EEPROM is properly set. Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB. Replace the MFP PWB. Replace the PCU PWB.

**U2-50 HDD/Flash memory registration data check sum error**

Trouble content	HDD/MFP Flash data check sum error (MFP PWB detection)
Detail	MFP
Cause	HDD/MFP PWB Flash memory data check sum error (when HDD is not installed) <ul style="list-style-type: none"> <li>Address book</li> <li>Image send series registration data (Sender record, meta data, etc.)</li> <li>Job end list (FAX/Internet FAX/scanner job only), etc.</li> </ul> Error in write/read circuit to HDD or MFP Flash memory Malfunctions caused by noises MFP PWB HSS access circuit error
Check & Remedy	Use SIM16 to cancel the U2 trouble. Check the following data for any abnormality. If there is any abnormality, reset and register the content. <ul style="list-style-type: none"> <li>Address book</li> <li>Image send series registration data (Sender record, meta data, etc.)</li> <li>Job end list (FAX/Internet FAX/scanner job only), etc.</li> </ul> Replace the HDD. Replace the MFP PWB.

**U2-60 Water Mark check error**

Trouble content	
Detail	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data.

**U2-80 SCU PWB EEPROM read/write error**

Trouble content	
Detail	SCU
Cause	SCU PWB EEPROM trouble. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

**U2-81 SCU PWB EEPROM check sum error**

Trouble content	
Detail	SCU
Cause	SCU PWB EEPROM trouble. Installation of non-initialized EEPROM. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

**U2-90 PCU PWB EEPROM read/write error**

Trouble content	
Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

**U2-91 PCU PWB EEPROM check sum error**

Trouble content	
Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

**U5-00 Document feed unit communication error**

Trouble content	
Detail	SCU
Cause	Connector, harness connection trouble. SCU PWB trouble. DSPF PWB trouble.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector and the harness. Replace the SCU PWB. Replace the DSPF PWB.

**U5-16 Document feed unit fan motor trouble**

Trouble content	
Detail	SCU
Cause	Fan motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM2-3 to check the operation. Check the DSPF PWB and the driver PWB connection of the connector and the harness.

**U5-30 Document feed unit tray lift up trouble**

Trouble content	
Detail	SCU
Cause	STUD does not turn ON 5 times continuously within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and the harness. DSPF PWB trouble.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

**U5-31 Document feed unit tray lift down trouble**

Trouble content	
Detail	SCU
Cause	STLD does not turn OFF within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and the harness. DSPF PWB trouble.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the STUD/STLD. Replace the DSPF PWB.

**U5-40 Document feed unit installation trouble**

Trouble content	
Detail	SCU
Cause	When two or more document feed units are detected. Connection trouble of the connector and the harness. Document feeder trouble.
Check & Remedy	Check connection of the connector and the harness.

**U6-09 LCC lift trouble**

Trouble content	
Detail	PCU
Cause	No change in the lift motor rotation sensor signal is detected within the specified time after outputting the lift motor ON signal. The lift motor rotation sensor signal varies though the lift motor is stopped. Lift motor rotation sensor trouble. LCC control PWB trouble Lift mechanism trouble. Lift motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor. Replace the lift motor rotation sensor. Replace the LCC control PWB. Replace the lift mechanism. Replace the lift motor. Check connection of the connector and the harness. Use SIM15 to cancel the trouble.

**U6-20 PCU PWB - LCC communication error**

Trouble content	
Detail	PCU
Cause	Error when testing the communication line after turning ON the power or canceling the simulation. LCC control PWB trouble. PCU PWB trouble. Connector, harness connection trouble. Strong external noises. Improper combination between the main unit and the LCC.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Replace the LCC control PWB. Replace the PCU PWB.

**U6-21 LCC paper transport motor trouble**

Trouble content	
Detail	PCU
Cause	No change in the paper transport motor rotation sensor signal is detected within the specified time after outputting the paper transport motor ON signal. The paper transport motor rotation sensor signal varies though the paper transport motor is stopped. Paper transport motor rotation sensor trouble. LCC control PWB trouble. Mechanism trouble. Paper transport motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM4-3 to check the operation of the paper transport motor. Replace the paper transport motor. Replace the LCC control PWB. Replace the mechanism. Replace the paper transport motor. Check connection of the connector and the harness.

**U6-22 LCC 24V power trouble**

Trouble content	
Detail	PCU
Cause	The DC24V power is not supplied from the main unit to the LCC. Connector, harness connection trouble. LCC control PWB trouble. Power source unit trouble.
Check & Remedy	Check the connector and the harness in the power line. Replace the power unit. Replace the LCC control PWB.

**U6-23 A3LCC tray descending trouble**

Trouble content	
Detail	PCU
Cause	Reverse-winding detection SW-ON. The wire is wound reversely. Reverse-winding detection SW trouble. Connector, harness connection trouble. LCC control PWB trouble.
Check & Remedy	Check the wire. Replace the reverse-winding SW and the LCC control PWB. Check connection of the connector and the harness.

**U6-24 A3LCC tray lock trouble**

Trouble content	
Detail	PCU
Cause	Tray lock mechanism breakdown. Tray lock sensor trouble. Connector, harness connection trouble. LCC control PWB trouble.
Check & Remedy	Check the tray lock mechanism. Replace the tray lock sensor and the LCC control PWB. Check connection of the connector and the harness.

**U6-51 LCC - Main unit combination trouble**

Trouble content	
Detail	PCU
Cause	Improper combination between the main unit and the LCC. LCC control PWB trouble.
Check & Remedy	Install a LCC which is proper for the main unit mode. Replace the LCC control PWB.

**U7-50 MFP PWB - Vendor machine communication error**

Trouble content	
Communication error between the MFP and the serial vendor.	
Detail	MFP
Cause	Improper setting of the vendor machine specifications (SIMI26-3). Vendor machine trouble. MFP PWB trouble. Connector, harness connection trouble. Strong external noises.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Change the specifications of the vendor machine (SIMI26-3). Replace the MFP PWB.

**U7-51 Vendor machine error**

Trouble content	
Detail	MFP (Notification of a trouble from the serial vendor)
Cause	Serial vendor machine trouble. Connector, harness connection trouble.
Check & Remedy	"Err.XX" is displayed on the operation panel of the vendor. (XX is the detail code.) Repair the vendor machine referring to the detail code. Check the connector and the harness in the communication line.

**UC-02 IPD/DOCC ASIC IPD section error**

Trouble content	
Detail	SCU
Cause	SCU PWB trouble (IPD/DOCC ASIC trouble).
Check & Remedy	Replace the SCU PWB.

**UC-20 IPD/DOCC ASIC DOCC section error**

Trouble content	
Detail	SCU
Cause	SCU PWB trouble (IPD/DOCC ASIC trouble).
Check & Remedy	Replace the SCU PWB.

**A0-01 PCU PWB ROM error**

Trouble content	
Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. Replace the ROM.

**A0-02 SCU PWB ROM error**

Trouble content	
Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. Replace the ROM.

**A0-04 ACU PWB ROM error (when scanner expansion kit is installed)**

Trouble content	
Detail	MFP
Cause	The firmware update is failed because of turning OFF the power during the firmware update operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to execute update of the firmware. Replace the ROM.

**A0-10 MFP PWB ROM error**

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the image ROM (color correction ROM).
Check & Remedy	Upgrade the firmware versions of the MFP and the image ROM (color correction ROM).

**A0-11 Firmware version inconsistency (MFP - PCU)**

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the PCU.
Check & Remedy	Check the combination between the MFP and the PCU.

**A0-12 Firmware version inconsistency (MFP - SCU)**

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the SCU.
Check & Remedy	Check the combination between the MFP and the SCU.

**A0-15 DSK BOOT version disagreement**

Trouble content	
Detail	MFP
Cause	Firmware combination error between the DSK and the BOOT.
Check & Remedy	Check the combination between the DSK and the BOOT.

**A0-20 Conflict firmware and EEPROM data version (MFP)**

Trouble content	
Detail	MFP
Cause	Inconsistency between the MFP firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

**A0-21 Conflict firmware and EEPROM data version (PCU)**

Trouble content	
Detail	PCU
Cause	Inconsistency between the PCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

**A0-22 Conflict firmware and EEPROM data version (SCU)**

Trouble content	
Detail	SCU
Cause	Inconsistency between the SCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.



## 4. Paper JAM code

### A. JAM cause code list

#### (1) Main unit

JAM code	JAM content	JAM detection method		Basic distance (A) [mm]	JAM margin distance (B) [mm]	JAM detection distance (A+B) [mm]
		JAM detection start trigger	JAM judgment condition			
TRAY1	Tandem tray 1 paper feed JAM (T1PPD not-reached)	T1PFC On	T1PPD On	61.1mm	65.0mm + 1sec	126.1mm + 1sec
T1PPD_S	T1PPD remaining JAM	T1PFC Off	T1PPD Off	72.3mm	65.0mm	137.3mm
PFD2_NT1	PFD2 not-reached JAM (Tandem tray 1 feed paper)	T1PPD On	PFD2 On	78.6mm	65.0mm	143.6mm
PFD2_ST1	PFD2 remaining JAM (Tandem tray 1 feed paper)	T1PPD Off	PFD2 Off	78.6mm	65.0mm	143.6mm
PFD2_NM1	PFD2 not-reached JAM (Multi-stage tray 1 feed paper)	M1PFD On	PFD2 On	210.7mm	65.0mm	275.7mm
PFD2_NM2	PFD2 not-reached JAM (Multi-stage tray 2 feed paper)	M1PFD On	PFD2 On	210.7mm	65.0mm	275.7mm
PFD2_NAD	PFD2 not-reached JAM (ADU refeed paper)	APPD2 On	PFD2 On	176.8mm	65.0mm	241.8mm
PFD2_SM1	PFD2 remaining JAM (Multi-stage tray 1 feed paper)	M1PFD Off	PFD2 Off	210.7mm	65.0mm	275.7mm
PFD2_SM2	PFD2 remaining JAM (Multi-stage tray 2 feed paper)	M1PFD Off	PFD2 Off	210.7mm	65.0mm	275.7mm
PFD2_SAD	PFD2 remaining JAM (ADU refeed paper)	APPD2 On	PFD2 On	176.8mm	65.0mm	241.8mm
TRAY2	Tandem tray 2 paper feed JAM (MPRD1 not-reached)	T2PFC On	MPRD1 On	109.6mm	65.0mm + 1sec	174.6mm + 1sec
MPRD1_S2	MPRD1 remaining JAM (Tandem tray 2 feed paper)	T2PFC Off	MPRD1 Off	120.8mm	65.0mm	185.8mm
MPRD1_NM	MPRD1 not-reached JAM (Manual feed tray feed paper)	MPFD2 On	MPRD1 On	124.6mm	65.0mm	189.6mm
MPRD1_NL	MPRD1 not-reached JAM (LCC feed paper)	MPFD2 On	MPRD1 On	124.6mm	65.0mm	189.6mm
MPRD1_SM	MPRD1 remaining JAM (Manual feed tray feed paper)	MPFD2 Off	MPRD1 Off	124.6mm	65.0mm	189.6mm
MPRD1_SL	MPRD1 remaining JAM (LCC feed paper)	MPFD2 Off	MPRD1 Off	124.6mm	65.0mm	189.6mm
MPRD2_N2	MPRD2 not-reached JAM (Tandem tray 2 feed paper)	MPRD1 On	MPRD2 On	154.4mm	65.0mm	219.4mm
MPRD2_NM	MPRD2 not-reached JAM (Manual feed tray feed paper)	MPRD1 On	MPRD2 On	154.4mm	65.0mm	219.4mm
MPRD2_NL	MPRD2 not-reached JAM (LCC feed paper)	MPRD1 On	MPRD2 On	154.4mm	65.0mm	219.4mm
MPRD2_S2	MPRD2 remaining JAM (Tandem tray 2 feed paper)	MPRD1 Off	MPRD2 Off	154.4mm	65.0mm	219.4mm
MPRD2_SM	MPRD2 remaining JAM (Manual feed tray feed paper)	MPRD1 Off	MPRD2 Off	154.4mm	65.0mm	219.4mm
MPRD2_SL	MPRD2 remaining JAM (LCC feed paper)	MPRD1 Off	MPRD2 Off	154.4mm	65.0mm	219.4mm
MPFD2_NM	MPFD2 not-reached JAM (Manual feed tray feed paper)	MPFD1 On	MPFD2 On	126.0mm	65.0mm	191.0mm
MPFD2_NL	MPFD2 not-reached JAM (LCC feed paper)	LPPD On	MPFD2 On	162.6mm	65.0mm	227.6mm
MPFD2_SM	MPFD2 remaining JAM (Manual feed tray feed paper)	MPFD1 Off	MPFD2 Off	126.0mm	65.0mm	191.0mm
MPFD2_SL	MPFD2 remaining JAM (LCC feed paper)	LPPD Off	MPFD2 Off	162.6mm	65.0mm	227.6mm
PPD_NT1	PPD not-reached JAM (Tandem tray 1 feed paper)	PFD2 On	PPD On	53.2mm	65.0mm	118.2mm
PPD_NT2	PPD not-reached JAM (Tandem tray 2 feed paper)	MPRD2 On	PPD On	79.0mm	65.0mm	144.0mm
PPD_NM1	PPD not-reached JAM (Multi-stage tray 1 feed paper)	PFD2 On	PPD On	53.2mm	65.0mm	118.2mm
PPD_NM2	PPD not-reached JAM (Multi-stage tray 2 feed paper)	PFD2 On	PPD On	53.2mm	65.0mm	118.2mm
PPD_NMF	PPD not-reached JAM (Manual feed tray feed paper)	MPRD2 On	PPD On	79.0mm	65.0mm	144.0mm
PPD_NLC	PPD not-reached JAM (LCC feed paper)	MPRD2 On	PPD On	79.0mm	65.0mm	144.0mm
PPD_NAD	PPD not-reached JAM (ADU refeed paper)	PFD2 On	PPD On	53.2mm	65.0mm	118.2mm
PPD_ST1	PPD remaining JAM (Tandem tray 1 feed paper)	PFD2 Off	PPD Off	53.2mm	65.0mm	118.2mm
PPD_ST2	PPD remaining JAM (Tandem tray 2 feed paper)	MPRD2 Off	PPD Off	79.0mm	65.0mm	144.0mm
PPD_SM1	PPD remaining JAM (Multi-stage tray 1 feed paper)	PFD2 Off	PPD Off	53.2mm	65.0mm	118.2mm
PPD_SM2	PPD remaining JAM (Multi-stage tray 2 feed paper)	PFD2 Off	PPD Off	53.2mm	65.0mm	118.2mm
PPD_SMF	PPD remaining JAM (Manual feed tray feed paper)	MPRD2 Off	PPD Off	79.0mm	65.0mm	144.0mm
PPD_SLC	PPD remaining JAM (LCC feed paper)	MPRD2 Off	PPD Off	79.0mm	65.0mm	144.0mm
PPD_SAD	PPD remaining JAM (ADU refeed paper)	PFD2 Off	PPD Off	53.2mm	65.0mm	118.2mm

JAM code	JAM content	JAM detection method		Basic distance (A) [mm]	JAM margin distance (B) [mm]	JAM detection distance (A+B) [mm]
		JAM detection start trigger	JAM judgment condition			
PPD_PRI	PPD JAM (The IMAGE_PREPARE request is not sent from the ICU.)	The IMAGE_PREPARE command is sent from the PCU to the ICU.	The END_IMAGE_PREPARE command is received from the ICU. (50 sec)	—	—	—
POD1_N	POD1 not-reached JAM	PPDOn	POD1 On	313.5mm	65.0mm	378.5mm
POD1_S	POD1 remaining JAM	PPDOff	POD1 Off	313.5mm	65.0mm	378.5mm
POD1_FUS	POD1 JAM (Detection of winding around the fusing unit)	Warm-up	Fusing thermistor temperature abnormality	—	—	—
POD2_N	POD2 not-reached JAM	POD1 On	POD2 On	69.3mm	65.0mm	134.3mm
POD2_SR	POD2 remaining JAM (When discharging to the right side of the machine)	POD1 Off	POD2 Off	60.0mm	65.0mm	125.0mm
POD2_SL	POD2 remaining JAM (When discharging to the left side of the machine)	Reversing start	POD2 Off	Paper transport direction length - 14.4	65.0mm	Paper transport direction length - 14.4 + 65.0
AINPD_N	ADU paper entry sensor not-reached JAM	Reversing start	AINPDOn	71.1mm	65.0mm	136.1mm
AINPD_S	ADU paper entry sensor remaining JAM	POD2 Off	AINPDOff	85.5mm	65.0mm	150.5mm
APPD1_N	ADU transport sensor 1 not-reached JAM	AINPD On	APPD1 On	169.7mm	65.0mm	234.7mm
APPD1_S	ADU transport sensor 1 remaining JAM	AINPD Off	APPD1 Off	169.7mm	65.0mm	234.7mm
APPD2_N	ADU transport sensor 2 not-reached JAM	APPD1 On	APPD2 On	175.0mm	65.0mm	240.0mm
APPD2_S	ADU transport sensor 2 remaining JAM	APPD1 Off	APPD2 Off	175.0mm	65.0mm	240.0mm
DESK1	Multi-stage tray 1 paper feed JAM (M1PFD not-reached)	M1PFC On	M1PFD On	113.5mm	65.0mm + 1sec	178.5mm + 1sec
M1PFD_N2	M1PFD not-reached JAM (Multi-stage tray 2 feed paper)	M2PFD On	M1PFD On	107.0mm	65.0mm	172.0mm
M1PFD_S1	M1PFD remaining JAM (Multi-stage tray 1 feed paper)	M1PFC Off	M1PFD Off	118.7mm	65.0mm	183.7mm
M1PFD_S2	M1PFD remaining JAM (Multi-stage tray 2 feed paper)	M2PFD Off	M1PFD Off	107.0mm	65.0mm	172.0mm
DESK2	Multi-stage tray 2 paper feed JAM (M2PFD not-reached)	M2PFC On	M2PFD On	113.5mm	65.0mm + 1sec	178.5mm + 1sec
M2PFD_S	M2PFD remaining JAM	M2PFC Off	M2PFD Off	118.7mm	65.0mm	183.7mm
BPT	Manual feed tray paper feed JAM (MPFD1 not-reached)	MPFPFC On	MPFD1 On	58.4mm	65.0mm + 1sec	123.4 + 1sec
MPFD1_S	MPFD1 remaining JAM	MPFPFC Off	MPFD1 Off	68.4mm	65.0mm	133.4mm
LPPD_N	LPPD not-reached JAM	Reception of the paper feed start command from the LCC.	LPPD On	85.0mm	65.0mm	150.0mm
LPPD_S	LPPD remaining JAM	Reception of the paper feed complete command from the LCC.	LPPD Off	85.0mm	65.0mm	150.0mm

\*1: The distance (length) divided by the process speed is the time.

Process speed    62 PPM Model    335mm/sec  
                          75 PPM Model    395mm/sec

## (2) DSPF

JAM code	JAM content	JAM detection method	
		JAM detection start trigger	JAM judgment condition
SPPD1_N	SPPD1 not-reached JAM	Paper feed start (When the document width is more than B5 size.)	SPPD1 ON
SPPD2_N	SPPD2 not-reached JAM	Paper feed start (When the document width is less than B5 size.)	SPPD2 ON
		SPPD1 ON (When the document width is more than B5 size.)	SPPD2 ON
SPPD3_N	SPPD3 not-reached JAM	Restart at the temporal stop position	SPPD3 ON
SPPD5_N	SPPD5 not-reached JAM	SPPD3 ON	SPPD5 ON
SPOD_N	SPOD not-reached JAM	SPPD5 ON	SPOD ON
SPPD1_S	SPPD1 remaining JAM	SPPD1 ON (When the document width is more than B5 size.)	SPPD1 OFF
SPPD2_S	SPPD2 remaining JAM	SPPD2 ON (When the document width is less than B5 size.)	SPPD2 OFF
		SPPD1 OFF (When the document width is more than B5 size.)	SPPD2 OFF
SPPD3_S	SPPD3 remaining JAM	SPPD2 OFF	SPPD3 OFF
SPPD5_S	SPPD5 remaining JAM	SPPD3 OFF	SPPD5 OFF
SPOD_S	SPOD remaining JAM	SPPD5 OFF	SPOD OFF
SPSD_SCN	Exposure start notification timer end	Arrival at temporal stop position	Exposure start command from ICU to SCU no reception time-out (120 sec)
P_SHORT	Short size JAM	SPPD3 ON	When the document length is less than 120.0mm.
ICU_REQ	ICU factor stop JAM	—	Stop by a job stop request command from ICU to SCU
STOP_JAM	Emergency stop JAM	—	Trouble mode transition request from ICU to SCU Emergency stop by a command

## (3) Option

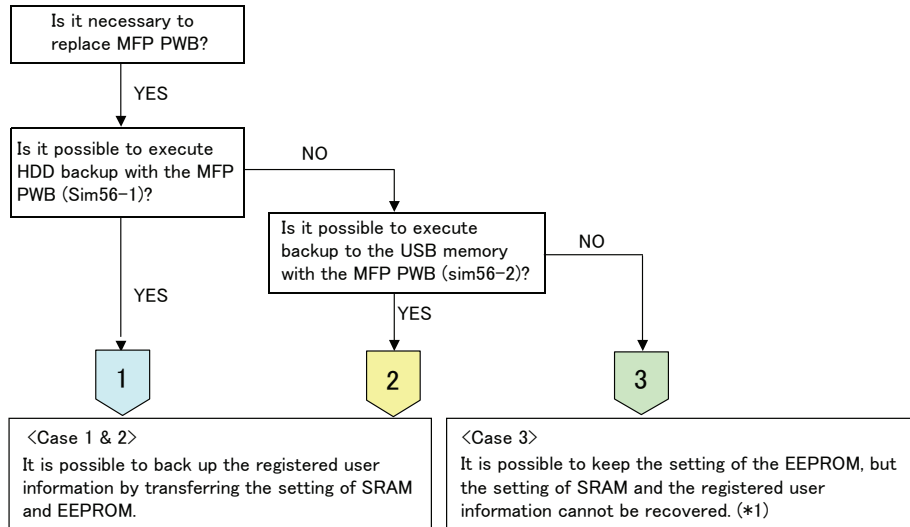
	JAM code	Content	JAM detection method	
			JAM detection timer start trigger	JAM judge detector
FIN	FPED_N	Inlet port not-reached JAM	FPED ON	FPED does not turn ON within the specified time.
	FPED_S	Inlet port remaining JAM	FPED OFF	FPED does not turn OFF within the specified time.
	FSPPD_N	Saddle not-reached JAM	FSPPD ON	FSPPD does not turn ON within the specified time.
	FSPPD_S	Saddle remaining JAM	FSPPD OFF	FSPPD does not turn OFF within the specified time.
	FATPD_S	Bundle discharge remaining JAM	FATPD OFF	FATPD does not turn OFF within the specified time.
	FSMJ	Staple motor JAM	Staple operation start	FSHS does not turn ON within the specified time.
	FPMJ	Punch motor JAM	Punching operation start	FPCHPS does not turn ON within the specified time.
	FIN_TIME	Finisher paper early reaching JAM	POD2 ON (front paper)	POD2 turns ON earlier than the specified timing. (detection paper)
	FIN_PAOF	Paper attribute data reception overflow	—	Reception of paper attribute data exceeds the allowable buffer limit.
	FPJD_T_N	Interface not-reached JAM	FPJD_T ON	FPJD_T does not turn ON within the specified time.
	FPJD_T_S	Interface remaining JAM	FPJD_T OFF	FPJD_T does not turn OFF within the specified time.
	FPJD_N	Paper exit not-reached JAM	FPJD ON	FPJD does not turn ON within the specified time.
	FPJD_S	Paper exit remaining JAM	FPJD OFF	FPJD does not turn OFF within the specified time.
	PPD_FIN	PPD JAM (Finisher communication abnormality)	—	
	FDRLMJ	Delivery roller lift motor JAM	—	Delivery roller lift motor trouble detection (during JOB)
	FGMJ	Gripper motor JAM	—	Gripper motor trouble detection (during JOB)
	FGAMJ	Gripper arm motor JAM	—	Gripper arm motor trouble detection (during JOB)
	FARLMJ	Paper alignment roller lift motor JAM	—	Paper alignment roller lift motor trouble detection (during JOB)
	FPTDMJ	Paper tail push down motor JAM	—	Paper tail push down motor trouble detection (during JOB)
	FDPHMJ	Delivery paper holding motor JAM	—	Delivery paper holding motor trouble detection (during JOB)
	FPTHMJ	Paper tail holding motor JAM	—	Paper tail holding motor trouble detection (during JOB)

	JAM code	Content	JAM detection method	
			JAM detection timer start trigger	JAM judge detector
INSERTER	REG_SEN_N	Registration sensor not-reached JAM	REG_SEN ON	REG_SEN does not turn ON within the specified time.
	REG_SEN_S	Registration sensor remaining JAM	REG_SEN OFF	REG_SEN does not turn OFF within the specified time.
	TIM_SEN_N	Timing sensor not-reached JAM	TIM_SEN ON	TIM_SEN does not turn ON within the specified time.
	TIM_SEN_S	Timing sensor remaining JAM	TIM_SEN OFF	TIM_SEN does not turn OFF within the specified time.
	HI_SEN_NI	Paper exit not-reached JAM (When feeding paper from the inserter.)	HI_SEN ON	HI_SEN does not turn ON within the specified time from the paper feed motor ON.
	HI_SEN_NP	Paper exit not-reached JAM (When feeding paper from the machine.)	HI_SEN_ON	HI_SEN does not turn ON within the specified time after reception of the machine paper exit command.
	HI_SEN_S	Paper exit remaining JAM	HI_SEN OFF	HI_SEN does not turn OFF within the specified time from TIM_SEN OFF.
	H_SEN_NF	Reverse sensor not-reaching JAM (When entering the reverse path)	H_SEN ON	HI_SEN does not turn ON within the specified time from H_MOT ON.
	H_SEN_NB	Reverse sensor not-reaching JAM (When discharging from the reverse path)	H_SEN ON	HI_SEN does not turn ON within the specified time from H_MOT ON.
	H_SEN_SF	Reverse sensor remaining JAM (When entering the reverse path)	H_SEN OFF	HI_SEN does not turn OFF within the specified time from TIM_SEN OFF.
	H_SEN_SB	Reverse sensor remaining JAM (When discharging from the reverse path)	H_SEN OFF	H_SEN does not turn OFF within the specified time from H_SEN ON.
LCC	LCC	Side LCC paper feed JAM (LPFD not-reached)	LPFC ON (paper feed start)	LPFD does not turn ON within the specified time.
	LPFD_SL	LPFD remaining JAM (Side LCC feed paper)	LPFD ON	LPFD does not turn OFF within the specified time.

## 5. Necessary works when replacing the PWB and the HDD

### A. MFP substrate replacement procedure (work flow)

(Note) Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (\*1)



(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.  
The registered user information will be deleted.

1. Execute Sim56-01 (data transmission) before replacing the MFP PWB, execute "ALL→HDD," and transfer the SRAM data and the EEPROM data to HDD.

2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.

Note: Ground your body with grounding band during the work.

At this timing, F6-21 may occur. Whether it may occur or not, go to execute procedure 3.

3. Execute "HDD→ALL" by Sim56-01 (data transmission) to return the data of SRAM and EEPROM in the HDD to the new MFP PWB.

\* Please be aware that if "ALL→HDD" is not executed by Sim56-01 (data transmission), blank data will be exported to the EEPROM when "HDD→ALL" is executed.

(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.  
The registered user information will be deleted.

1. Execute "EEPROM&SRAM EXPORT" by Sim56-02 (memory HDD data backup) before replacing the MFP PWB to transfer the data of SRAM and EEPROM to USB memory.

2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.

Note: Ground your body with grounding band during the work.

At this timing, F6-21 may occur. Whether it may occur or not, go to execute procedure 3.

3. Execute SIM62-01. (For the U model, only when the HDD is not installed.)

4. Execute "EEPROM&SRAM IMPORT" by Sim56-02 (memory HDD data backup) to return the data of SRAM and EEPROM in the USB memory to the new MFP PWB.

1. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.

Note: Ground your body with grounding band during the work.

2. Execute SIM62-01. (For the U model, only when the HDD is not installed.)

3. Turn on the power, execute Sim16 to clear U2-05 trouble.

4. Set as follows after restarting the main unit.

At this timing, F6-21 may occur. Whether it may occur or not, go to execute procedure 1.

(1) Use SIM67-70 to clear the contents of the MFP PWB SDRAM.

(2) Set the appropriate country code by Sim66-02 (clear the software switches related to FAX).

(Note) Make sure to execute even if the fax option is not installed on the machine.

(3) Select "Printer environment setting" at System setting, select "Printer initial setting," open "Standard paper feed paper size" screen, and set A4 size if you use an AB-type machine and letter size if you use an inch-type machine.

(\*1) If you have backed up the data by storage backup (WEB) or device cloning (WEB for service) during normal use before the failure of MFP PWB, it is possible to return to the state when the data was backed up even if Sim16 is executed.

NOTE: The backup data must not be installed to another machine. If installed, the adjustment data will be overwritten and a trouble may be generated.

## B. Works and procedures necessary for HDD replacement

### Note for HDD replacement

- Data of the following list are saved in the HDD of the complex machine. If the HDD operates normally and data backup is possible before replacement, perform data backup and then replace the HDD.
- If the HDD does not operate normally, data cannot be backed up.
- The HDD replacement procedures with a broken HDD differs from that with a normal HDD.

### Contents of this chapter

- 1) HDD storage data and backup
- 2) Replacement procedures when HDD storage data can be backed up
- 3) Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD
- 4) Reinstall and update procedures of Operation Manual data saved in HDD
- 5) Reinstall and update procedures of watermark data.

### (1) HDD storage data and backup

Some HDD storage data can be backed up, and some other cannot. Some HDD storage data can be reinstalled, and some other cannot.

If the HDD operates normally before replacement and data can be backed up, back up the data before replacement of the HDD referring to the HDD storage data list. Then reinstall the data after replacement of the HDD.

#### a. HDD storage data list

No.	Data kind	Before installation (When shipping from the factory)	After installation (After use by users)	Enable/ Disable of data backup	Backup means	Enable/ Disable of data reinstall	Data reinstall procedures	Reinstall operator
1	e-Manual	Available	Available	Disable	*1	Enable	Sim49-3	Service
2	Address book	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
3	Image send series registration data (Sender's information, meta data, etc.)	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
4	User authentication	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
5	Japanese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
6	Chinese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
7	JOB LOG	Not available	Available	Enable	Perform with WEB PAGE.	Disable		—
8	JOB completion list	Not available	Available	Disable	Not available	Disable		—
9	New N/A (FSS) information	Not available	Available	Disable	Not available	Disable		—
10	User font (Added)	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service or User
11	User macro	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	
12	Document filing	Not available	Available	Enable	Perform with WEB PAGE.	Enable	Perform with WEB PAGE.	
13	Some of system setting data	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
14	Watermark	Available	Available	Disable	*2	Enable	Sim49-5	Service

\*1: The e-Manual cannot be backed up, but can be reinstalled by using Sim49-3 and USB memory.

\*2: Watermark data cannot be backed up, but can be reinstalled by using Sim49-5 and USB memory.

## (2) Replacement procedures when HDD data can be backed up

### a. Work contents and procedures

Procedures	When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.	When a used HDD (used in the same model) is used *
Step 1	Back up the HDD storage data before replacement. (Servicing) Use SIM56-2 or the device cloning, or the storage backup function to backup the data. (Back up the data to the USB memory.) (Backup enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data))	
Step 2	Back up the HDD storage data before replacement. (User or servicing) Back up the data to PC with Web page. (Backup enable data: HDD storage data list No. 7, 10, 14 (Document filing data, JOB LOG data))	
Step 3	Replace the HDD.	
Step 4	Boot the complex machine. → Formatting is automatically performed.	Boot the complex machine.
Step 5		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 6	Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.	Use SIM62-1 to format the HDD.
Step 7	Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.)	
Step 8	Use SIM49-3 to install the manual data to the HDD.	
Step 9	The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → After booting the machine, use SIM16 to cancel the "U2-60" trouble.	
Step 10	Import the data backed up in Step 1. Use SIM56-2, or the device cloning, or the storage backup to import. (Import enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data))	
Step 11	Import the data backed up with the Web page function in Step 2. Import enable data: Document filing data, User font, Use macro (The JOB LOG data can be backed up but cannot be imported.)	

## (3) Replacement procedures when the HDD storage data cannot be backed up due to breakdown

### a. Display when HDD breakdown

When a trouble occurs in the HDD, the error code display of E7-03 is popped up.

In this case, the main power must be turned OFF and the HDD must be replaced.

### b. Work contents and procedures

Procedures	When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.	When a used HDD (used in the same model) is used *
Step 1	Install a HDD to the machine, and boot the complex machine. → Formatting is automatically performed.	Install a HDD to the machine, and boot the complex machine.
Step 2		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 3	Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.	Use Sim62-1 to format the HDD.
Step 4	Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.)	
Step 5	Use SIM49-3 to install the manual data to the HDD.	
Step 6	The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → After booting the machine, use SIM16 to cancel the "U2-60" trouble.	

With the above procedures, the HDD is reset to the state of factory shipping.

## (4) Reinstall and update procedures of the HDD storage Operation Manual data

### 1) Obtain the Operation Manual data.

Download the Operation Manual data from the utility menu on the web site (Tech-DS home page).

Copy the downloaded files to the USB device without changing the file hierarchy.

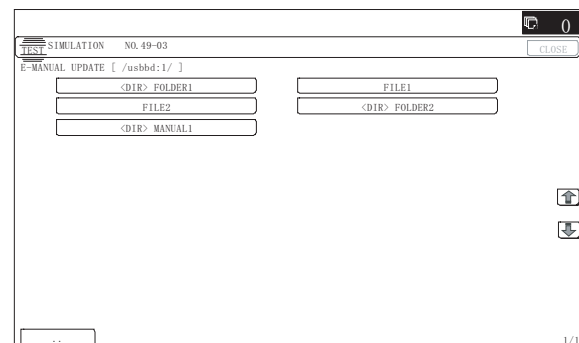
(To upload to the complex machine, files of "\*\*\*\_pdf\_fax.idx" and "\*\*\*\_pdf.idx" and "version.txt" as well as the Operation Manual data (\*.pdf) are required. When the downloaded files are copied without changing the file hierarchy, these files also are copied.)

#### NOTE:

When data are uploaded from the USB memory to the HDD, if there are some data in the HDD, the files in the memory are compared with the files in the HDD and only the files which satisfy the following conditions are written into the HDD.

- The file size is different.
- The time stamp is different.
- The file exists only in the USB memory.

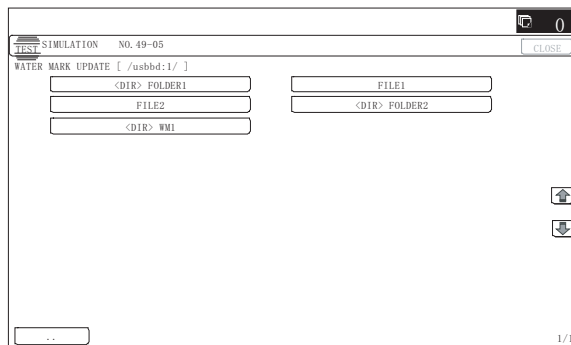
### 2) Enter the SIM49-3 mode.



- 3) Insert the USB memory into the machine.
  - When the USB memory is not inserted, "INSERT A STORAGEEE-MANUAL STORED ON" is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.
- 4) Select the folder of the Operation Manual data. (The screen shifts to the Operation Manual data install menu.)  
The current version and the update version are displayed.
- 5) Press [EXECUTE] button.  
[EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.
- 6) When [YES] button is pressed, the selected Operation Manual is installed.  
When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.

#### (5) Watermark data reinstall and update procedures

- 1) Obtain the watermark data.  
Download the watermark data from the utility menu on the web site (Tech-DS home page).  
Copy the downloaded files to the USB device without changing the file hierarchy. Or copy the watermark data from the accessory CD-ROM to the USB device.  
NOTE:  
When data are uploaded from the USB memory to the HDD, if there are some data in the HDD, the files in the memory are compared with the files in the HDD and only the files which satisfy the following conditions are written into the HDD.
  - The file size is different.
  - The time stamp is different.
  - The file exists only in the USB memory.
- 2) Enter the SIM49-5 mode.



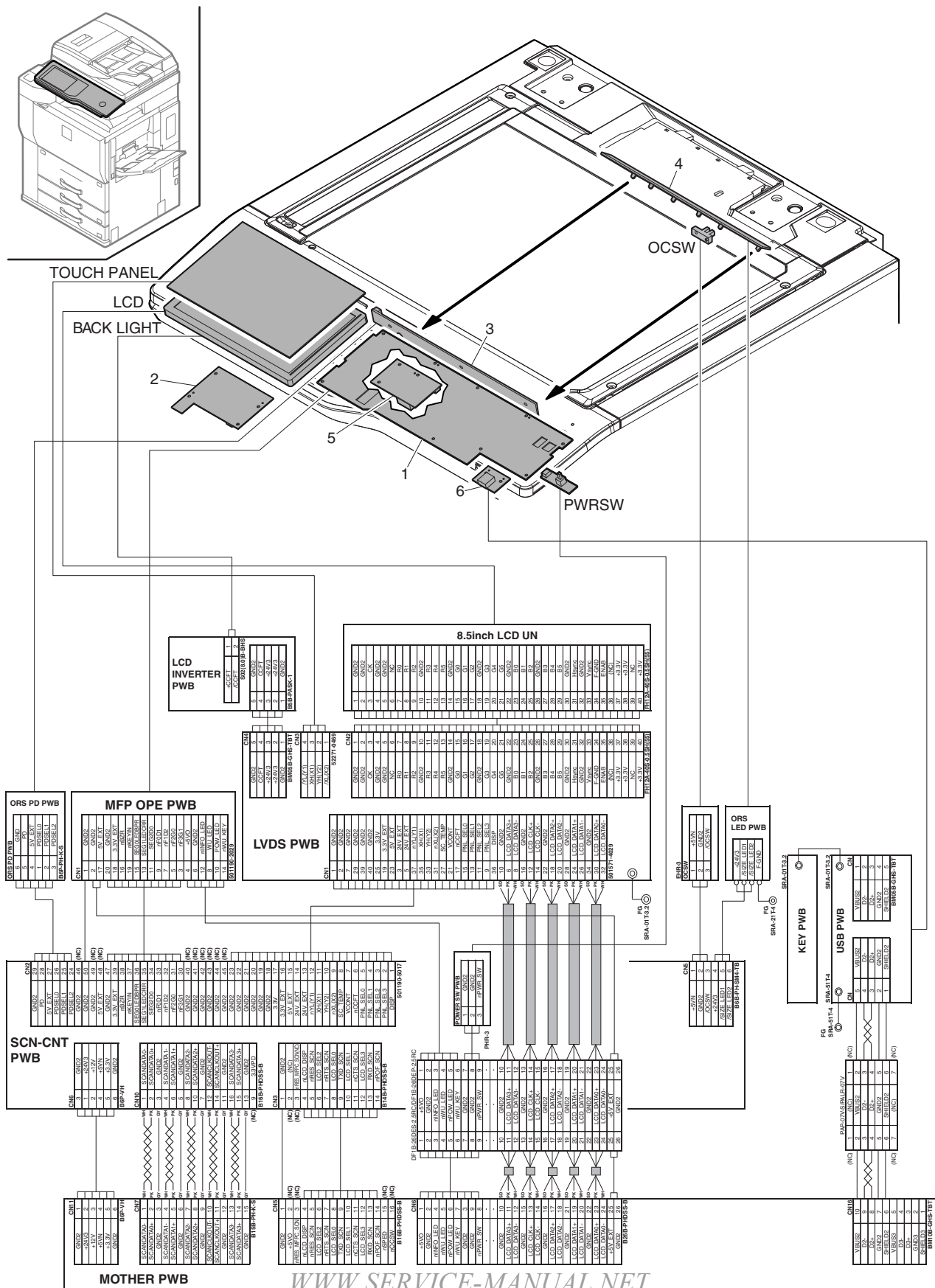
- 3) Insert the USB memory into the machine.
  - When the USB memory is not inserted, "INSERT A STORAGEEE-MANUAL STORED ON" is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.
- 4) Select the folder of the watermark data. (The screen shifts to the watermark data install menu.)  
The current version and the update version are displayed.
- 5) Press [EXECUTE] button.  
[EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.
- 6) When [YES] button is pressed, the selected watermark data are installed.  
When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.



# [8] OPERATIONAL DESCRIPTIONS

## 1. Operation panel

### A. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
OCSW	Original cover SW	Document size detection timing switch
PWRSW	Operation panel power supply switch	Outputs the ON/OFF control signal of the DC power source.

No.	Name	Function/Operation
1	MFP OPE PWB	Detects the pressed key on the operation panel.
2	LVDS PWB	Converts the display signal and outputs to the LCD.
3	Document detection light receiving PWB	Receives light from the document detection light emitting PWB to detect the document size.
4	Document detection light emitting PWB	Emits light for detection of the document size.
5	LCD INV PWB	Emits the document size detection LED lights.
6	USB connector PWB	For USB connecting

## B. Outline

The operation panel is composed of the 8.5 MFP OPE PWB, the LCD INV PWB, the LVDS PWB, the USB CN PWB, the LCD unit, and the operation key, and is used to operation the machine, to set and to display the status.

They are connected with the document detection light receiving PWB for detection of the document size. They receive light from the document detection light emitting PWB attached to the rear frame side, detecting the document size.

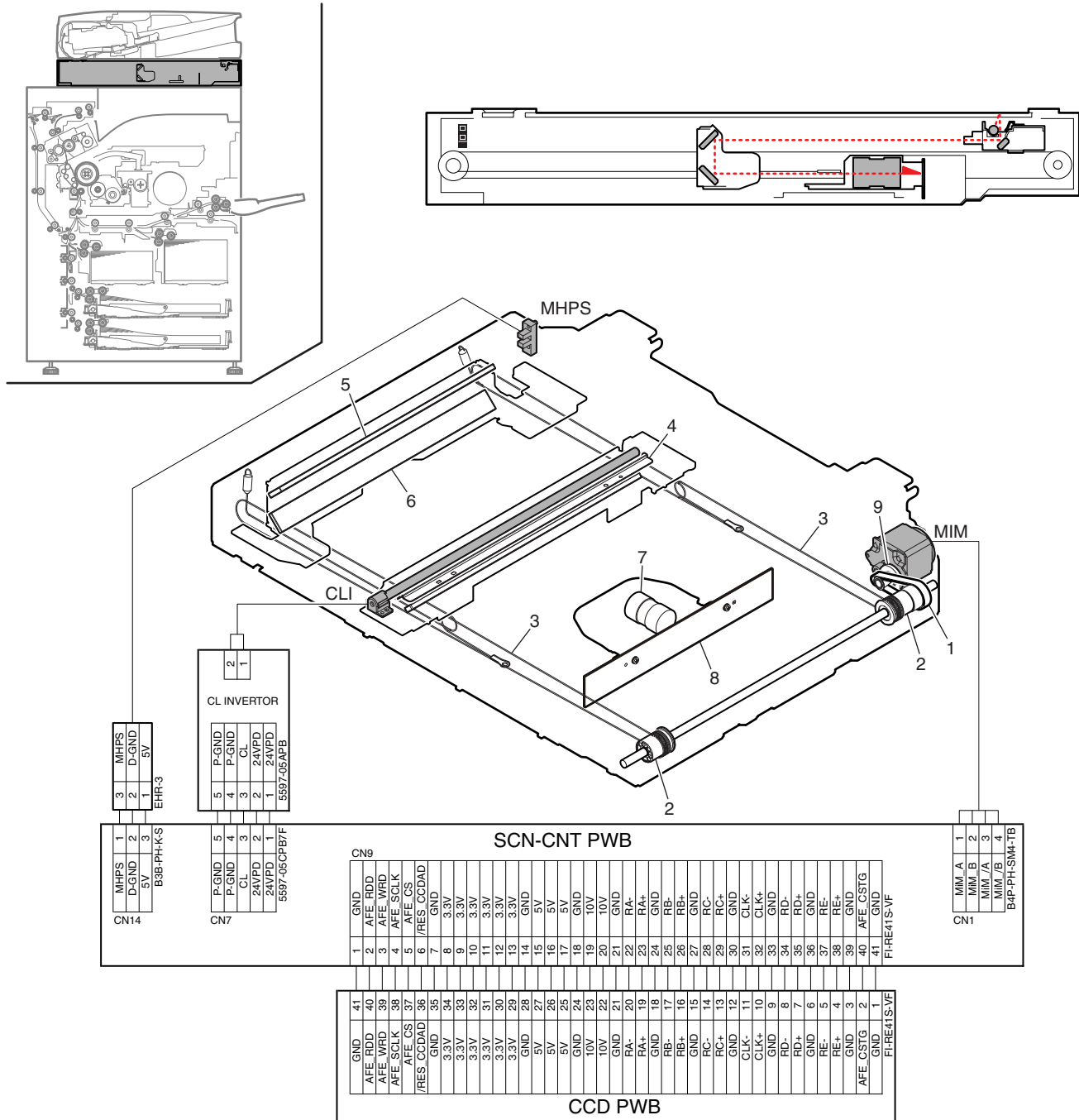
The power switch of the operation panel outputs the ON/OFF control signal of the DC power.

The USB connector can be connected with the USB memory, the USB keyboard, the IC card writer, the IC card reader, and the USB hub, sending the electronic data to the mother PWB.

Use of the keyboard in the lower section of the operation panel facilitates text inputs.

## 2. Scanner section

### A. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
CLI	Scanner lamp	Illuminates the document. (Xenon lamp)
MHPS	Scanner home position sensor	Detects the home position of the copy lamp unit.
MIM	Scanner motor	Drives the copy lamp unit and the mirror base unit.

No.	Name	Function/Operation
1	Pulley belt	Transmits the scanner motor power to the pulley.
2	Pulley	Drives the scanner drive wire.
3	Scanner drive wire	Transmits the scanner motor drive to the copy lamp unit and the mirror base unit.
4	Reflector	Reflects the copy lamp light.
5	No. 2 mirror	Reflects the document image into the No. 3 mirror.
6	No. 3 mirror	Reflects the document image into the lens.
7	Lens	Shrinking the image (light) of the document, and project it on CCD.
8	CCD PWB	Reads the document image (optical signal) and converts it into the electric signal.
9	Idle gear	Transmits the scanner motor drive power to the belt.

## B. Outline

This section performs the following functions.

- 1) Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).
- 2) The image signals (analog) are converted into 10bit digital signals by the A/D converter.
- 3) The image signals (digital) are sent to the image process section (scanner control PWB).

## C. Detail description

### (1) Optical section drive

The optical section drive power is transmitted from the scanner motor (MIM) to the drive pulley and the wire through the belt, to drive the copy lamp unit and the mirror base which are attached by the drive wires.

The scanner motor (MIM) is controlled by the drive signal sent from the scanner control PWB.

### (2) Scanner lamp drive

The scanner lamp (CLI) is driven by the scanner lamp drive voltage generated in the CL inverter PWB according to the control signal sent from the scanner control PWB.

### (3) Image scan/color separation

Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).

The color components of document images are extracted to R, G, and B separately by the three kinds of CCD elements (R,G,B).

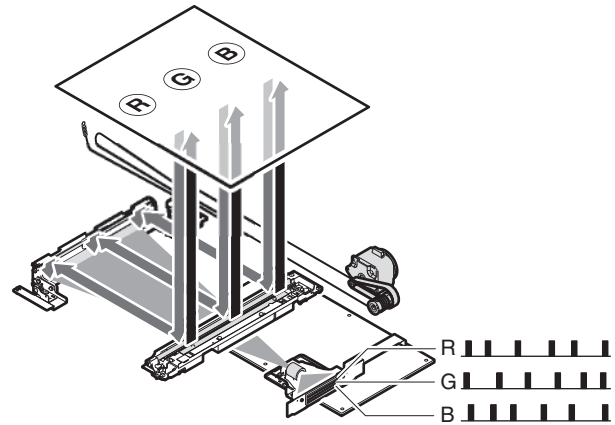
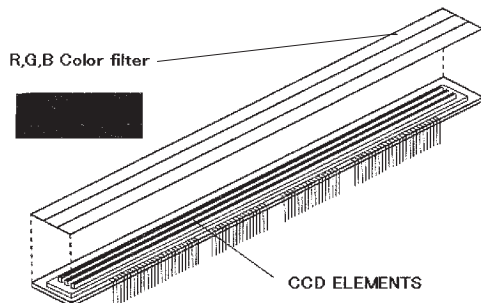
The red CCD extracts the red component of document images, the green CCD green the components, and the blue CCD the blue components. This operation is called the color separation.

The CCD unit looks like one unit, but it includes three kinds of CCD elements, R, G, and B.

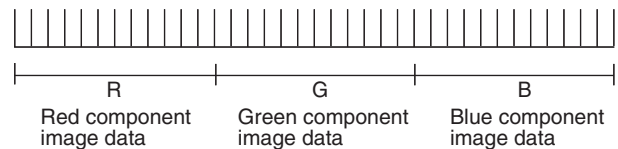
The document scan in the main scanning direction is performed by the CCD element. The document scan in the sub scanning direction is performed by shifting the scanner unit with the scanner motor. Document images are optically reduced by the lens and reflected to the CCD.

The scan resolution is 600 dpi.

3 LINES CCD UNIT

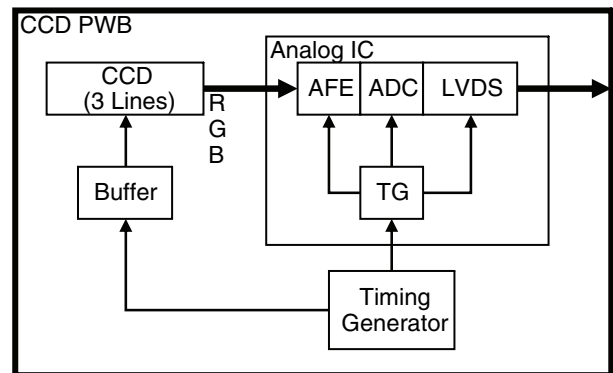


(Image data for 1 line)



### (4) Image signal A/D conversion

- 1) The image signal (analog) for each of R, G, and B is converted into 10bit digital signal by the A/D converter. Each color pixel has 10bit information.
- 2) The 10bit digital image signals of R, G, B are sent to the image process section.



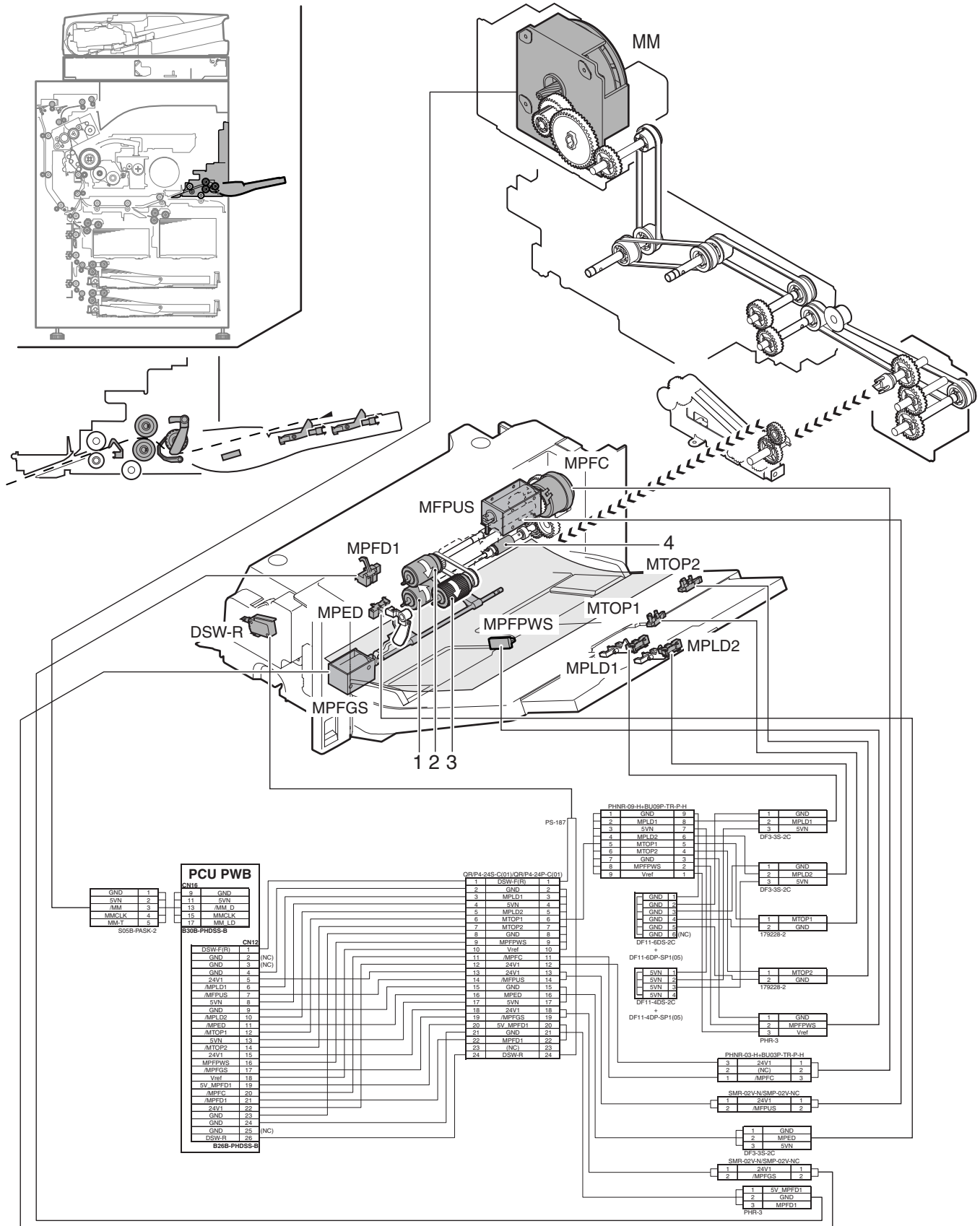
### (5) Zooming operation

Zooming in the sub scanning direction is performed by combined use of a change in the scanning speed in the sub scanning direction and the image process technology (software).

Zooming in the main scanning direction is not performed optically, but performed with the image process technology (by the software).

### 3. Manual paper feed section

#### A. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation	Type	NOTE
DSW-R	Manual feed unit open/close Switch	Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close.	Micro switch	
MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type	Manual paper feed unit
MPFC	Paper feed clutch (Manual paper feed)	Controls the manual paper feed section paper feed roller ON/OFF.	Electromagnetic clutch	
MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type	Paper transport system sensor
MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control.	Electromagnetic solenoid	
MPFPWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor	Analog detector
MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type	Manual paper feed unit
MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type	Manual paper feed unit
MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type	Manual paper feed unit
MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type	Manual paper feed unit

No.	Name	Function/Operation
1	Separation roller (Manual paper feed tray)	Separates paper to prevent against double feed.
2	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper feed roller.
4	Torque limiter	A fixed level of resistance is applied to the paper separation roller to prevent against double feed.

## B. Outline

The paper feed tray 1 holds 900 sheets, the paper feed tray 2 holds 1,300 sheets, the multi-purpose paper feed tray 3 holds 500 sheets, the paper feed tray 4 holds 500 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

**(1) Paper feed tray 1, 2 section**

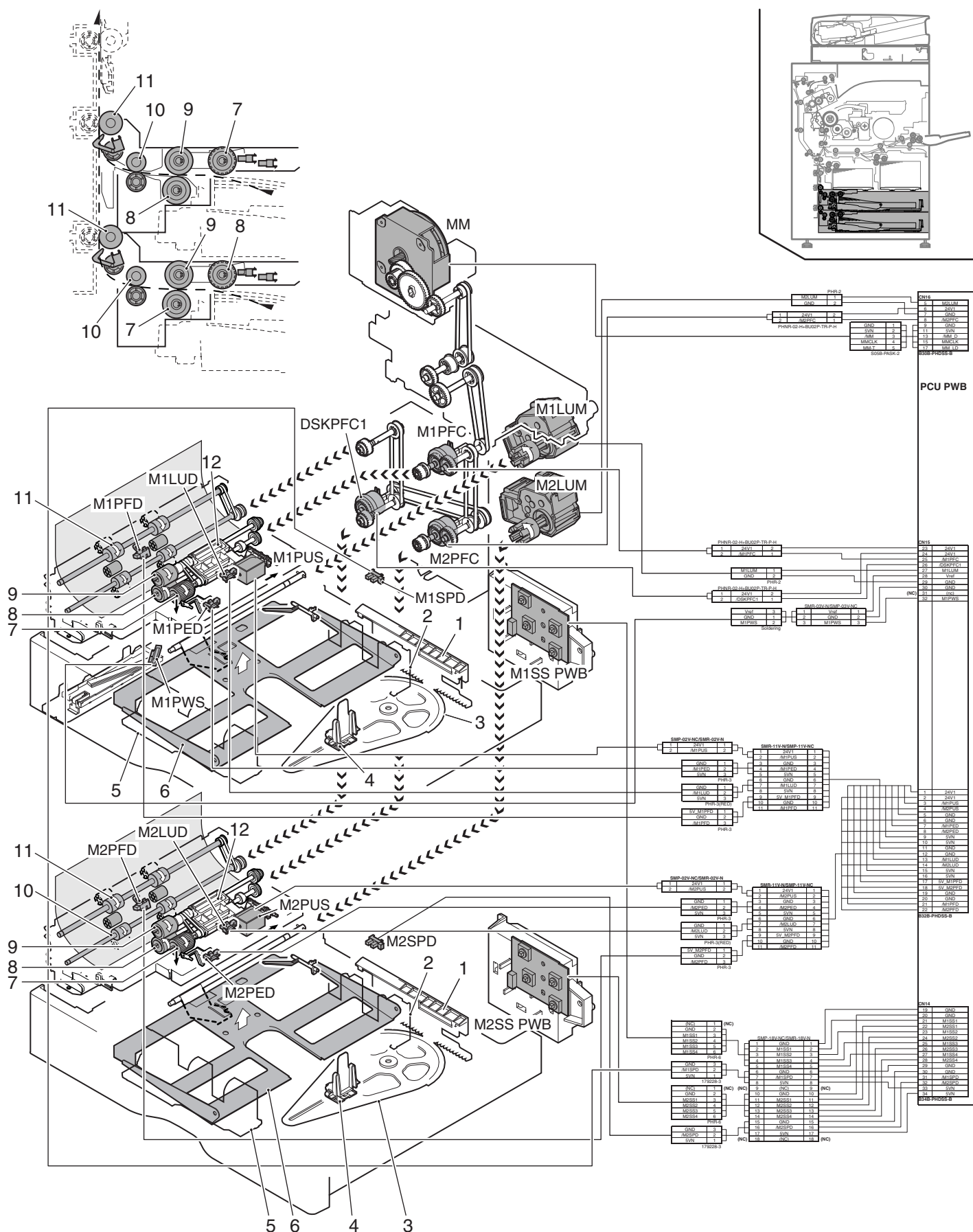


Signal name	Name	Function/Operation	Type	NOTE
MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray.	DC brush motor	Selection of Rotation mode/ Brake mode
T1PFC	Paper feed clutch (Paper feed tray 1)	Paper feed tray 1 section roller ON/OFF control	Electromagnetic clutch	
T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
T1S PWB	Detector PWB (Paper feed tray 1, 2 paper feed unit) (Paper feed tray 1)	Paper tray upper limit detection and paper empty detection		
T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining detection (Paper feed tray 1)	Transmission type	Paper feed tray remaining quantity sensor
T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	Drives the lift plate of the paper feed tray.	DC brush motor	Selection of Rotation mode/ Brake mode
T2PFC	Paper feed clutch (Paper feed tray 2)	Paper feed tray 2 section roller ON/OFF control	Electromagnetic clutch	
T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
T2S PWB	Detector PWB (Paper feed tray 1, 2 paper feed unit) (Paper feed tray 2)	Paper tray upper limit detection and paper empty detection		
T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining detection (Paper feed tray 2)	Transmission type	Paper feed tray remaining quantity sensor
TANSET	Paper feed tray 1, 2 (1, 2 tray unit) detection signal	Paper feed tray 1, 2 (1, 2 tray unit) insertion detection	Transmission type	Paper feed tray system sensor

No.	Name	Function/Operation
1	Lift wire	Transmits the paper tray lift motor to power the paper feed tray.
2	Paper feed table	Paper is put on this table.
3	Paper feed tray unit 1, 2 regulation plates L/R	Regulates the paper width to restrict skew to the minimum.
4	Pulley	Transmits the paper tray lift-up motor power to the paper feed tray.
5	Paper pickup roller	Sends paper to the paper feed roller.
6	Separation roller	Separates paper to prevent against double feed.
7	Paper feed roller	Feeds paper to the paper transport section.
8	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.



## (2) Paper feed tray 3, 4 section



Signal name	Name	Function/Operation	Type	NOTE
DSKPFC1	Paper feed tray 3, 4 paper transport clutch 1	Paper feed tray 3, 4 section paper transport roller ON/OFF control	Electromagnetic clutch	
M1LUD	Paper feed tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type	Paper feed tray system sensor
M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type	Paper feed tray system sensor
M1PFC	Paper feed clutch (Paper feed tray 3)	Paper feed tray 3 section roller ON/OFF control	Electromagnetic clutch	
M1PFD	Paper pass detector (Multi Paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type	Paper transport system sensor
M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Paper width detection of multi Paper feed tray (Paper feed tray 3)	Slide resistor	Analog detector
M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining detection (Multi Paper feed tray 3)	Transmission type	Paper feed tray remaining quantity sensor
M2LUD	Paper feed tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type	Paper feed tray system sensor
M2PED	Paper empty detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type	Paper feed tray system sensor
M2PFC	Paper feed clutch (Paper feed tray 4)	Paper feed tray 4 section roller ON/OFF control	Electromagnetic clutch	
M2PFD	Paper pass detector (Multi Paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type	Paper transport system sensor
M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type	Paper feed tray remaining quantity sensor
M2SS	Paper size detection PWB	Paper remaining detection		
MM	Main motor	Drive the paper feed tray 1, 2, 3 and 4, and the manual paper feed section.	DC brush-less motor	Paper pass

No.	Name	Function/Operation
1	Paper size detection plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detector detects the paper size.
2	Paper width guide R	Suppresses skew to the minimum by restricting the paper width.
3	Paper size detection rotation plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detection plate position is changed and the paper size detector detects the paper size.
4	Paper size (length) guide plate	Regulates the paper size (length).
5	Paper width guide L	By restricting the paper width, skew is restricted to the minimum.
6	Lift plate	Lifts the paper to maintain the paper feed position at the fixed position.
7	Paper pickup roller	Sends paper to the paper transport section.
8	Separation roller	Separate paper to prevent against double feed
9	Paper feed roller	Feeds paper to the paper transport section.
10	Transport roller 8 (Paper feed tray 3) Transport roller 5 (Paper feed tray 4)	Transports paper from the paper feed tray 3 to the transport rollers 9 and 10. Transports paper from the paper feed tray 4 to the transport rollers 6 and 7.
11	Transport roller 10 (Paper feed tray 3) Transport roller 7 (Paper feed tray 4)	Transports paper from the transport rollers 7 and 8 to the transport roller 11. Transports paper from the transport roller 5 to the transport roller 10.
12	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.

## B. Outline

Paper feed tray 1 holds 900 sheets, paper feed tray 2 holds 1,300 sheets.

The multi-purpose paper feed tray 3 holds 550 sheets, the paper feed tray 4 holds 550 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

## C. Paper feed tray 1, 2 section

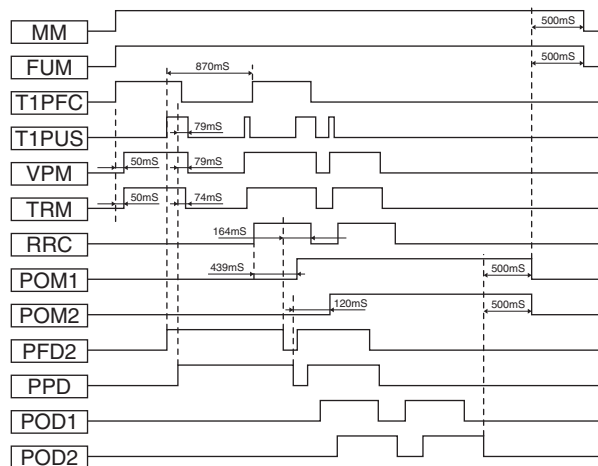
### (1) Paper feed operation

#### a. Preliminary operation before paper feed

- 1) Set paper in the tray, and insert the tray into the machine. The tray sensor turns on.
- 2) The lift-up motor operates to lift the tray.
- 3) The paper upper limit sensor turns on to stop the tray at the specified position.

#### b. Paper feed operation

- 1) When copy/print operation is started, the motors (MM, FUM, VPM, and TRM) and the clutch (TRC) are turned on to turn on the solenoid (T1PUS) at the timing of paper pickup. This rotates and falls the take-up roller to pick up paper.
- 2) At the same time, the paper feed roller rotates to feed paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.



## D. Paper size of paper feed trays detection method

### (1) Paper size of paper feed trays detection method

#### a. Paper feed tray1, 2 paper feed unit (Paper feed tray 1, 2)

The paper feed tray 1 is used exclusively for A4 (11 x 8.5) paper size. The paper feed tray 2 is used for A4, 11 x 8.5, or B5 paper size. To change the paper size, change the paper guide and change the set value of SIM 26-2.

## (2) Paper size of paper feed trays detection method

### a. Multi-purpose paper feed tray (Paper feed tray 3), 500 sheets paper feed tray (Paper feed tray 4)

#### 1) Paper width detection

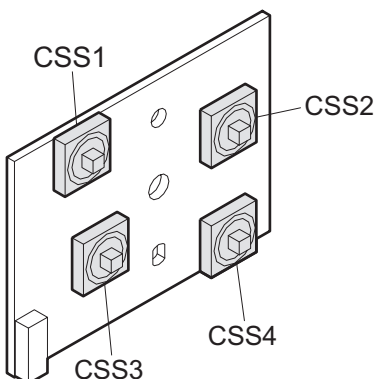
The paper width is calculated with the VR voltage value (A/D conversion value) linked with the side guide plate.

Paper width and paper size (set in the range of standard value  $\pm 6$  [mm]).

Width size Detection pattern	Paper size	Standard [mm]	Range [mm]
A	A3/A4	297.0	303.0 to 291.0
B	WLT/LT	279.4	285.4 to 273.4
C	B4/B5	257.0	263.0 to 251.0
D	LG/LTR/Foolscap	215.9	221.9 to 209.9
E	A4R	210.0	216.0 to 204.0
F	Executive-R	184.1	190.1 to 178.1
G	B5R	182.0	188.0 to 176.0

#### 2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship between each paper size detector detection and paper size

Vertical size detection Pattern	Detection SW state				AB size	Inch size	Width of detection range
	CSS1	CSS2	CSS3	CSS4			
1	ON	ON	OFF	ON	B5	Extra	147.0 to 198.0
2	OFF	ON	OFF	ON	A4	LT	198.0 to 237.0
3	OFF	ON	ON	ON	B5R	EX-R	237.0 to 274.0
4	OFF	OFF	ON	ON	A4R	LTR	274.0 to 314.0
5	ON	OFF	ON	ON	Foolscap	Extra	314.0 to 347.0
6	ON	OFF	ON	OFF	B4	LGL	347.0 to 389.0
7	ON	ON	ON	OFF	A3	WLT	389.0 to 432.8
0	OFF	OFF	OFF	OFF	Paper feed tray not attached		

#### 3) Size detection combinations

Paper size	Width detection pattern	Vertical detection pattern
B5	C	1
A4	A	2
B5R	G	3
A4R	E	4
Foolscap	D	5
B4	B	6
A3	A	7
LT	B	2
EX-R	F	3
LTR	D	4
LGL	D	6
WLT	B	7

## E. Paper remaining detection

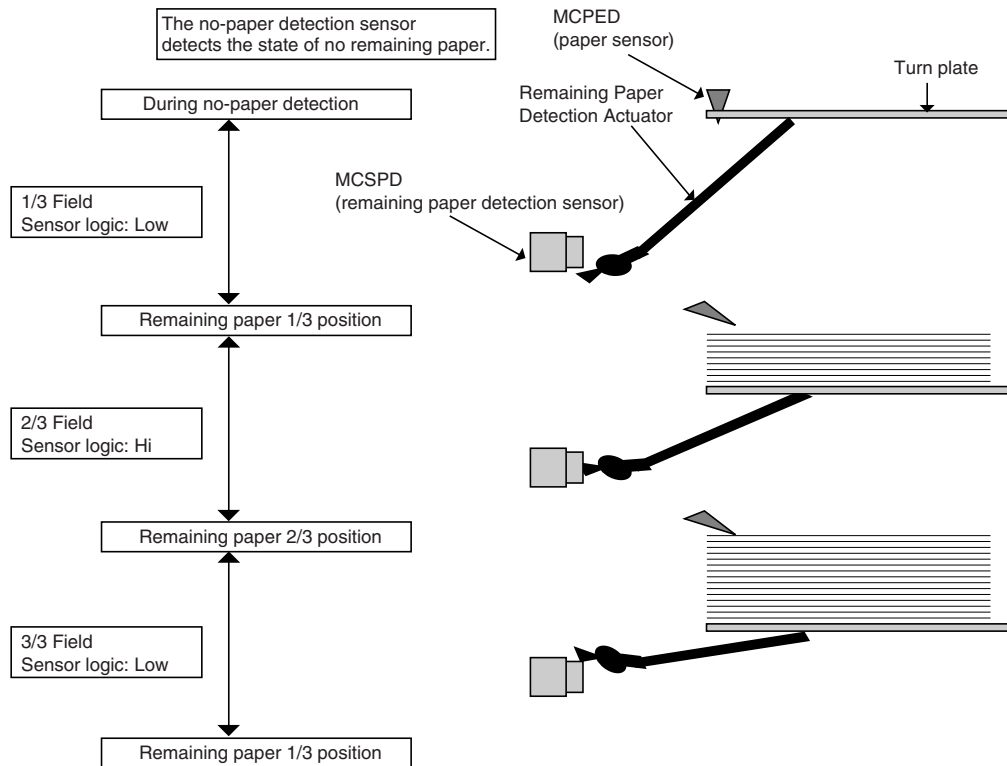
### (1) Paper remaining detection

Remaining paper detection is performed according to four stages, i.e. three stages with paper and one stage with no paper, and the result is displayed.

### (2) Detection method

The number of remaining sheets is determined according to the number of times the remaining paper sensor changes from the time the paper feed tray starts lifting up to the time when the upper detection sensor comes ON.

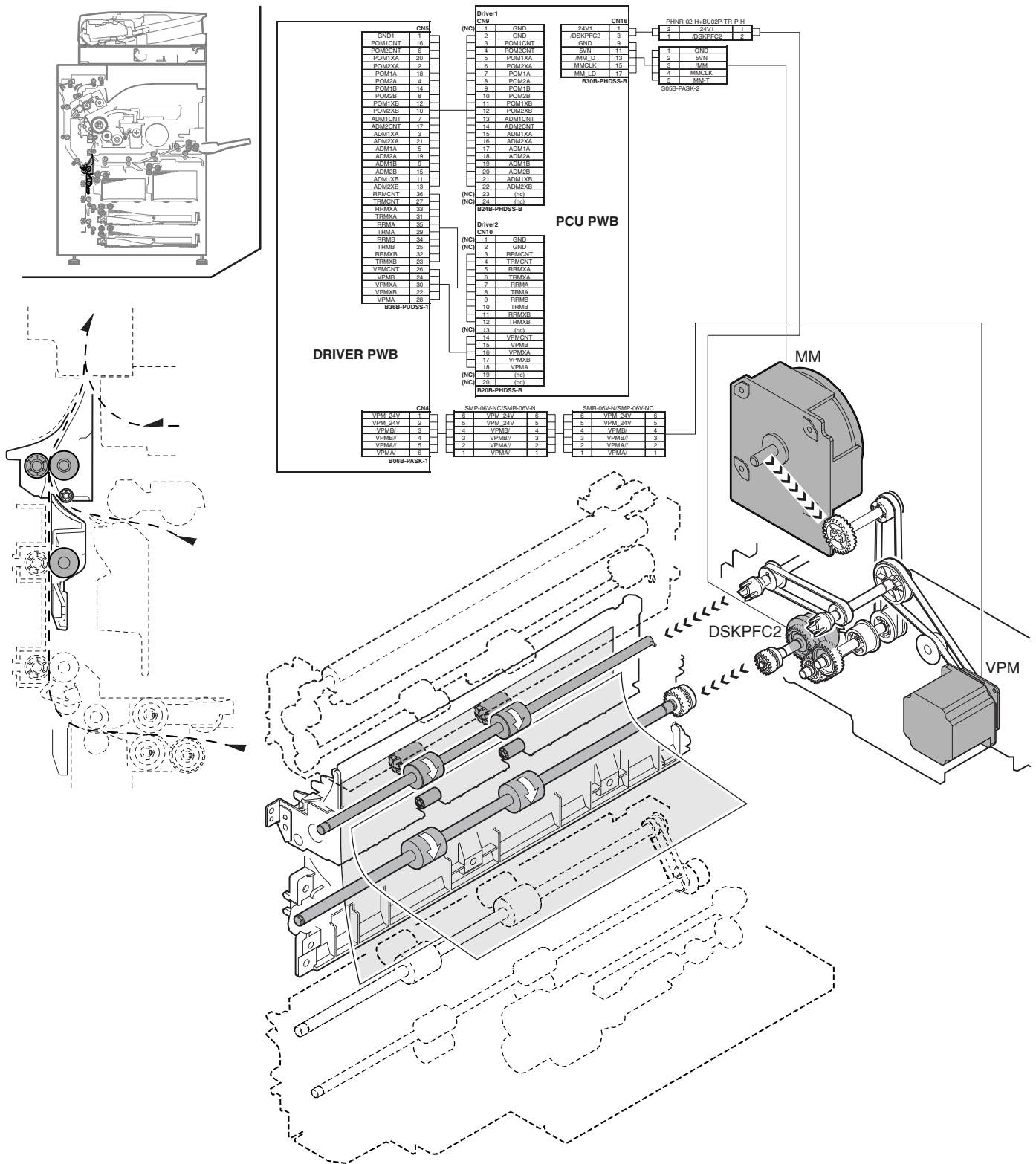
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



## 5. Paper transport section, Duplex section

### A. Electrical and mechanical relation diagram

#### (1) Vertical paper transport section 1



Signal name	Name	Function/Operation	Type	NOTE
DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper transport roller 11 ON/OFF control.	Electromagnetic clutch	
MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brush-less motor	Paper pass
VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor	65 CPM model: One speed 75 CPM model: Two speed

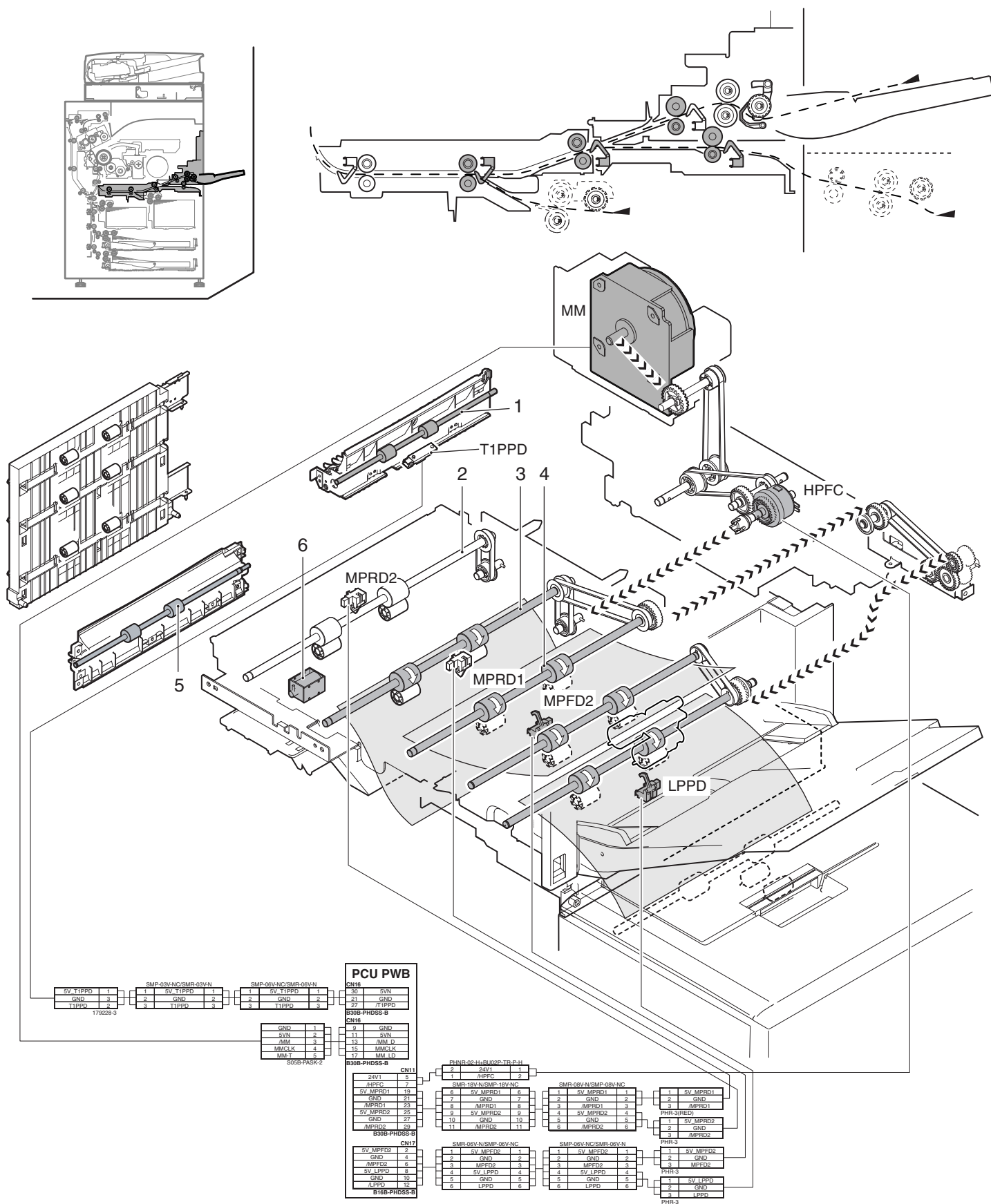
[illegible]

Signal name	Name	Function/Operation	Type	NOTE
MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper transport system sensor
RRM	Resist roller drive motor	Drives the resist roller.	Electromagnetic clutch	
TRM	Resist roller front drive motor	Drives the paper transport roller 15.	Stepping motor	Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor	Normal speed mode

No.	Name	Function/Operation
1	Resist roller (Drive)	Transports paper to the transfer section. / Controls the transport timing of paper to adjust the relationship between images and paper.
2	Resist roller (Idle)	Applies a pressure to paper and the resist roller to provide transport power of the transport roller to paper.
3	Transport roller 15	Transports paper to the transport resist roller.



### (3) Horizontal paper transport section



Signal name	Name	Function/Operation	Type	NOTE
HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch	
MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
MPFD2	Manual feed paper pass detector 2	Manual tray and LCC unit paper pass detection	Transmission type	Paper transport system sensor
MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2, LCC paper pass detection	Transmission type	Paper transport system sensor
MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
T1PPD	Paper pass detector (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Reflection type	Paper transport system sensor

No.	Name	Function/Operation
1	Transport roller 15	Transports the paper to resist roller.
2	Transport roller 4	Transports paper from the transport roller 3 to the transport roller 15.
3	Transport roller 3	Transports paper from the paper feed tray 2 and the transport roller 2 to the transport roller 3.
4	Transport roller 2	Transports paper from the manual paper feed and transport roller 2 to the transport roller 3.
5	Transport roller 13	Transports to the transport roller 15.
6	Paper guide lock solenoid	Lock the horizontal transport paper guide.

[illegible]

Signal name	Name	Function/Operation	Type	NOTE
ADM1	Duplex (ADU) motor 1	Drives the paper transport roller 2 and the paper transport roller 19	Stepping motor	High speed only
ADM2	Duplex (ADU) motor 2	Drives the paper transport roller 20 and 21	Stepping motor	Selection of Normal speed/High speed
AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type	Paper transport system sensor
APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type	Paper transport system sensor
APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type	Paper transport system sensor
DGS	Paper exit gate solenoid	Drives the paper exit gate	Electromagnetic solenoid	
DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type	Door switch
DSW-L	Left door open/close detector	Left door open/close detection	Micro switch	Door switch
PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/Paper feed tray 1, 3, 4	Transmission type	Paper transport system sensor
THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	Other sensor, switch
TURM	Transfer separation motor	Drives and separates the transfer belt	DC brush motor	The transfer belt is pressed on the OPC drum only during printing.

No.	Name	Function/Operation
1	Transport roller 21 (Drive)	Transports paper from the transport roller 20 to the transport roller 15
2	Transport roller 20 (Drive)	Transports paper from the transport roller 19 to the transport roller 21
3	Transport roller 19 (Drive)	Transports paper from the transport roller 2 to the transport roller 20
4	Paper exit roller 2 (Drive)	Discharges paper. / Transports paper to the duplex (ADU) section

## B. Outline

### (1) Paper transport section

The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

Paper from manual feed, paper feed tray units 1 and 2 (optional), and the right paper feed tray of the paper feed tray units 1 and 2 is transported horizontally, whereas paper from the left paper feed tray of the paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

After the leading edge of the paper is synchronized with the leading edge of the drum image in the registration roller section, the paper that is transfer printed with the image in the transfer section passes through the fusing section and is discharged either face-down or face-up.

### (2) Duplex section

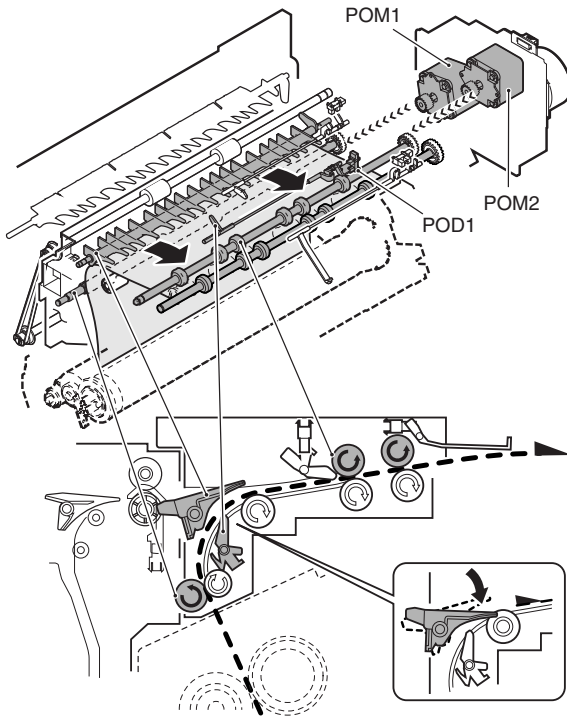
When duplex print is selected, the first side is printed then switched back to feed to the duplex section to make duplex print.

## C. Paper transport operation in duplex print

### (1) Switchback operation and transport to the reverse section

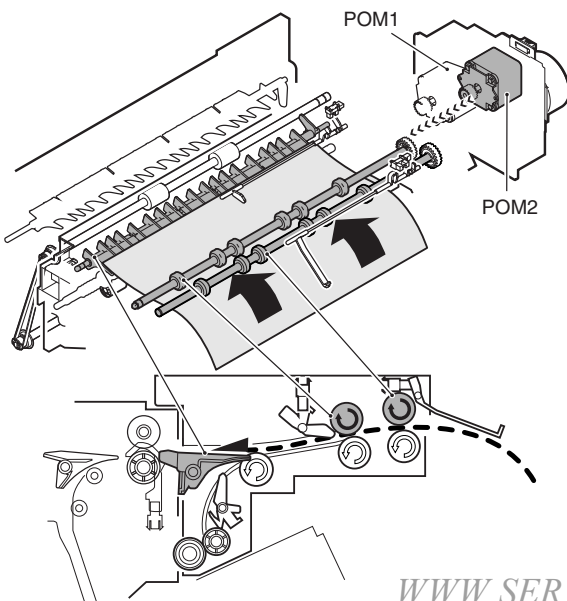
- 1) The paper transported from the fusing section is sent to the paper exit roller 1 (which is driven by the paper exit motor 2 (POM2)) with the transport roller 16 (which is driven by the paper exit motor 1 (POM1)).

At this time, paper is passed under the paper exit guide. After paper passing, the paper exit gate guide falls down by its own weight.

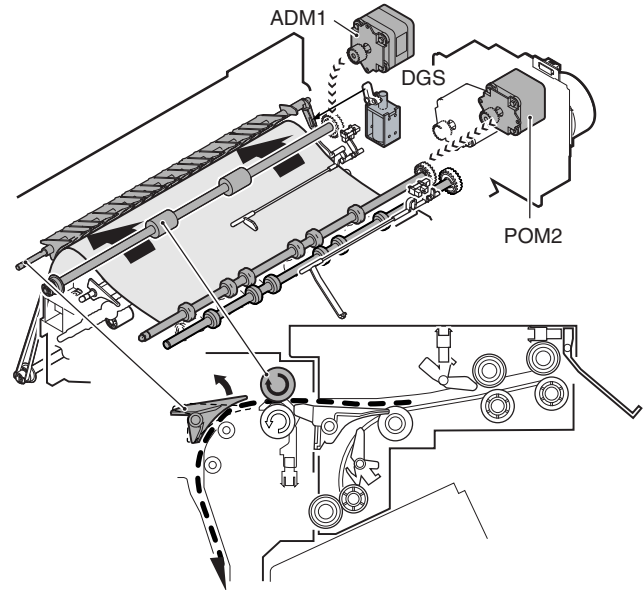


- 2) When the specified time has passed from detection of the paper lead edge by POD1 (paper exit detection from fusing), POM2 rotates in the normal direction, then rotates in the reverse direction in the specified time. (The rotation time differs depending on the paper size.)
- 3) When POM2 rotates reversely, paper is transported to the reverse section.

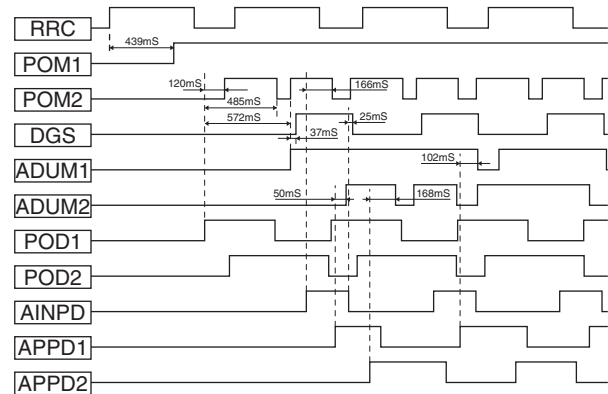
At that time, paper is passed over the paper exit gate guide which fell down by its own weight.



- 4) When the specified time has passed from reverse rotation of POM2, DGS (paper exit guide) turns on for a certain time and paper is sent to the reverse section.



- 5) POM2 stops after passing the specified time from detection the paper lead edge by AINPD (duplex paper entry detection). Its rotation is changed from reverse direction to normal direction to transport the next paper.



### (2) Paper transport speed in duplex print

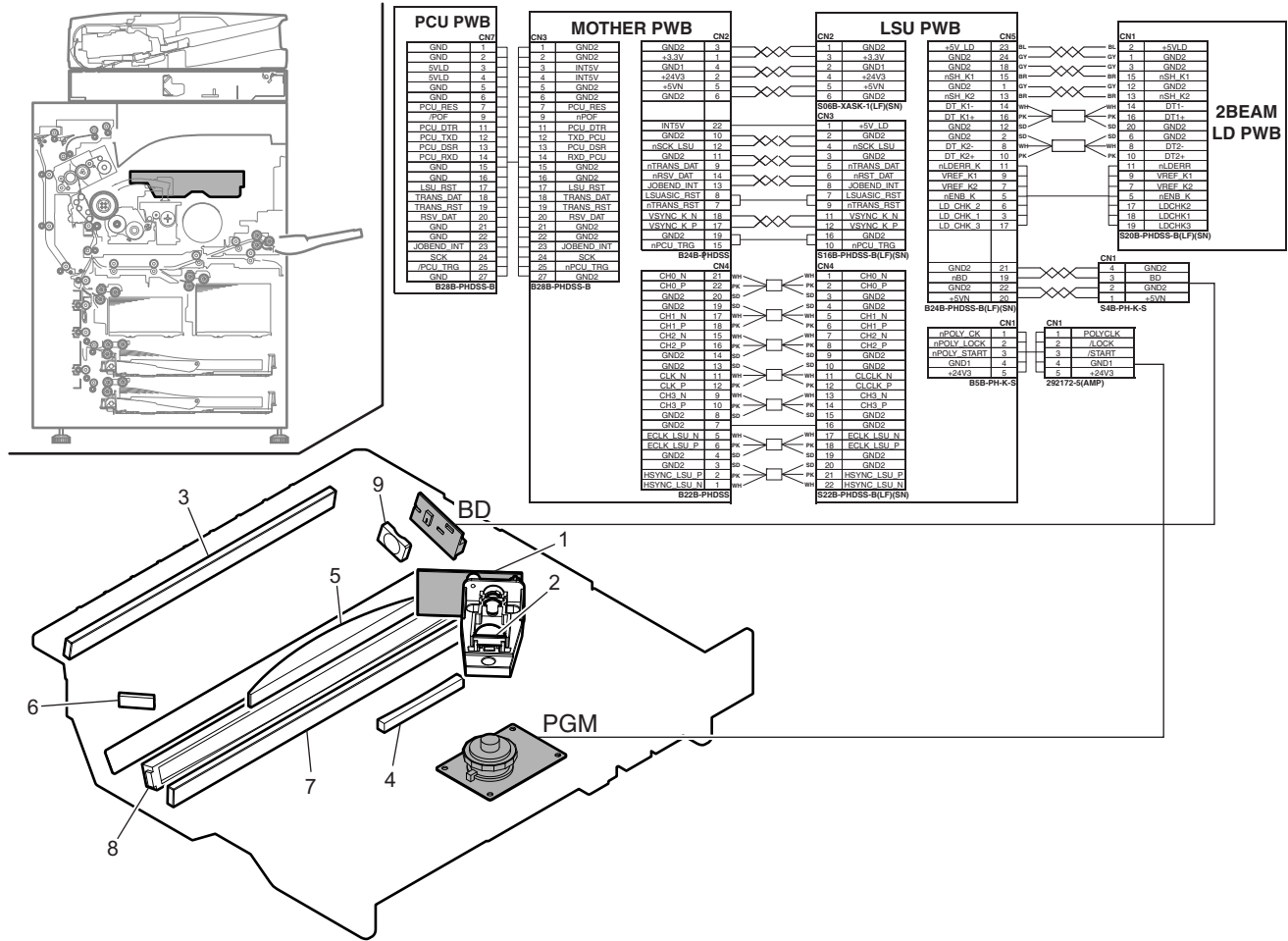
The transport speed in duplex print is changed to the high speed (800mm/sec) to increase the job speed in some positions of paper.

The transport speed is changed to the high speed in the Following positions:

- 1) From when the paper rear edge passes the fusing section to when switchback operation is started.
- 2) From when switchback operation is started to when a certain amount of paper is transported after passing APPD1 (Paper pass detection sensor in upstream of duplex).
- 3) After that, paper is stopped at the duplex paper feed position and fed to the machine again. (The paper feed speed to the machine is 335mm/sec)

## 6. LSU section

### A. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
BD	BD PWB	Detects the laser scan start timing This device is used to detect a laser trouble
PGM	Polygon mirror (motor)	Reflects laser beams at the constant rotation speed

No.	Name	Function/Operation
1	Laser control PWB	Controls laser beam flashing and the output value
2	Cylindrical lens	Converges laser beams to focus
3	No. 1 mirror	Assures the optical path for laser beams
4	f 0 lens 1	Deflects laser beams so that the laser scan speeds on the both ends of the drum and that at the center of the drum are the same
5	f 0 lens 2	
6	BD mirror	Assures the optical path for laser beams to the BD PWB
7	No. 2 mirror	Assures the optical path for laser beams
8	Plane lens	Converges laser beams to focus
9	Collective lens for BD	Converges laser beams on to the BD PWB

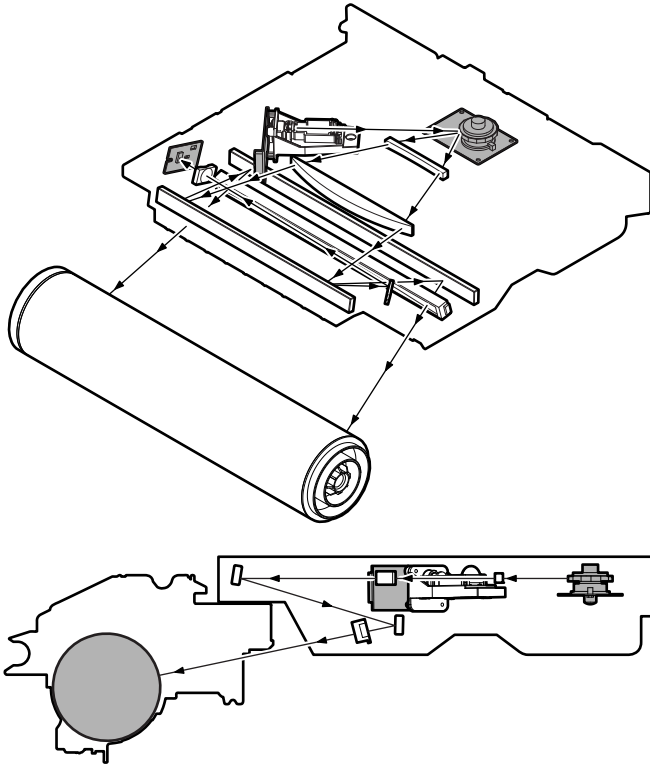
No.	Signal name	Function/Operation
1	+5VLD	5V power for laser diode
2	/READY	Polygon mirror motor READY signal ("L" in the constant speed rotation)
3	/PMCLK	Clock signal for driving the polygon mirror motor
4	/START	Polygon mirror motor drive start signal
5	/VIDEO	VIDEO (Image signal)
6	/SYNC	Sync signal (SYNC) from BD, sync signal for 1 line

## B. Outline

This section performs the following operations.

Image data sent from the MFP (image process circuit) through the mother board and PCU are converted into laser beams to radiate onto the drum surface.

[Laser optical path]



\* This unit must not be disassembled in the market.

## C. Polygon mirror motor

Model	Number of mirror surface	Rotating speed	Bearing	Remarks
MX-M623U	14 surfaces	33914.5 rpm	Oil bearing	
MX-M623N	14 surfaces	33914.5 rpm	Oil bearing	
MX-M753U	14 surfaces	39988.8 rpm	Oil bearing	
MX-M753N	14 surfaces	39988.8 rpm	Oil bearing	

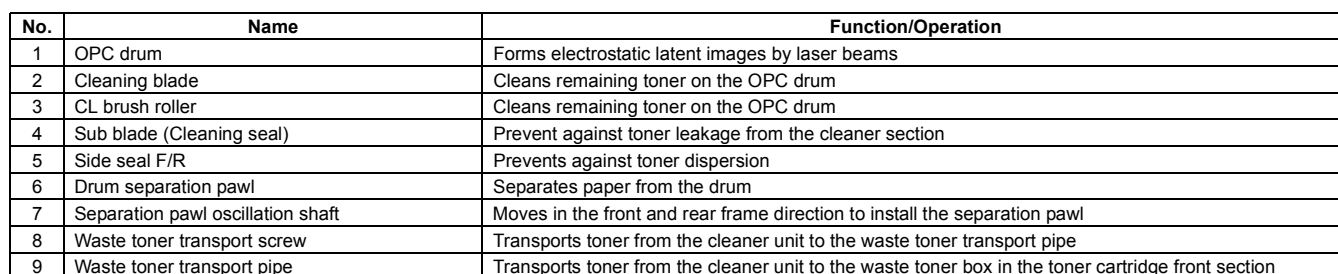
The number of mirror surfaces and the motor RPM are reduced to reduce noises and increase reliability.

## D. Outline of LSU specifications

Effective scan width	302 mm
Resolution	1200 dpi
Beam diameter	Main scan = 50 to 75 mm Sub scan = 50 to 90 mm
Laser power	0.088 - 0.238mW per 1 beam (2 beam Lasers are used in this model.)
LD wavelength	790 ± 10 nm

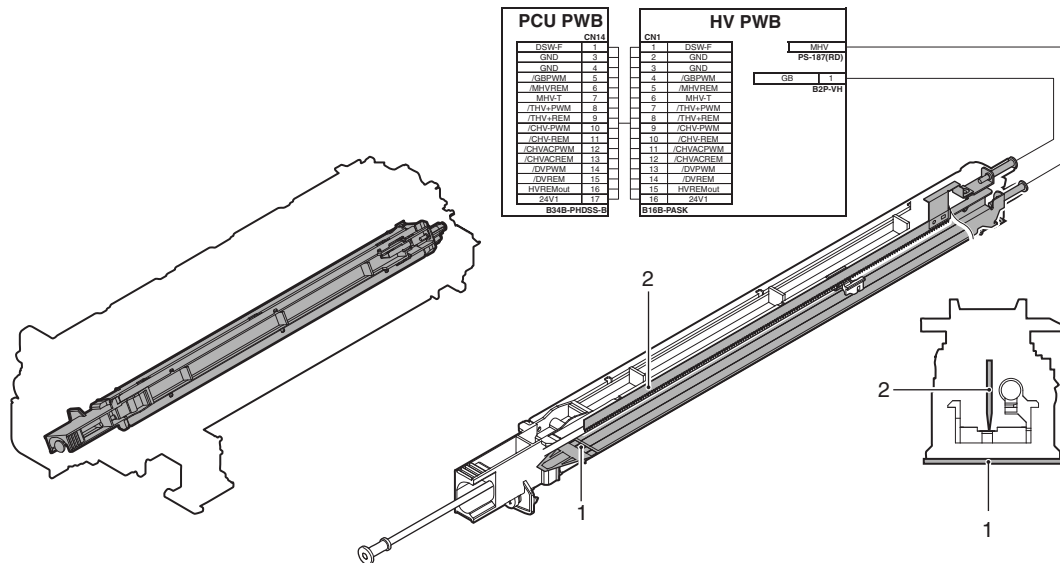


**(1) OPC drum section**





(2) Main charger section



No.	Name	Function/Operation
1	Screen grid	Charges the OPC drum evenly / Charges the OPC drum
2	Sawtooth plate	Charges the OPC drum

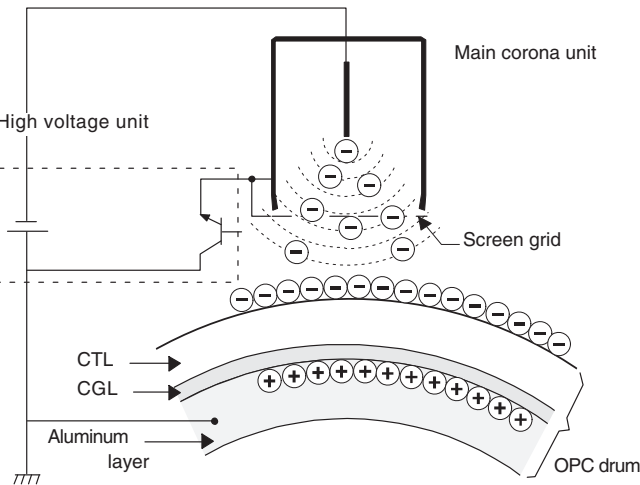
B. Outline

In this section, laser beams are radiated to the OPC drum surface which was negatively charged, making electrostatic latent images.

C. Description

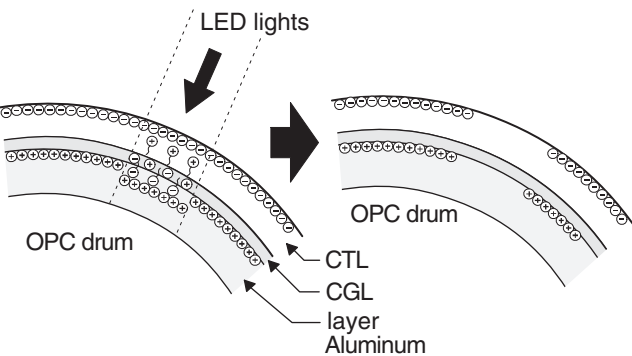
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.

- 1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

- 2) LED lights are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.



When laser lights are radiated to the OPC drum CGL, negative and positive charges are generated.

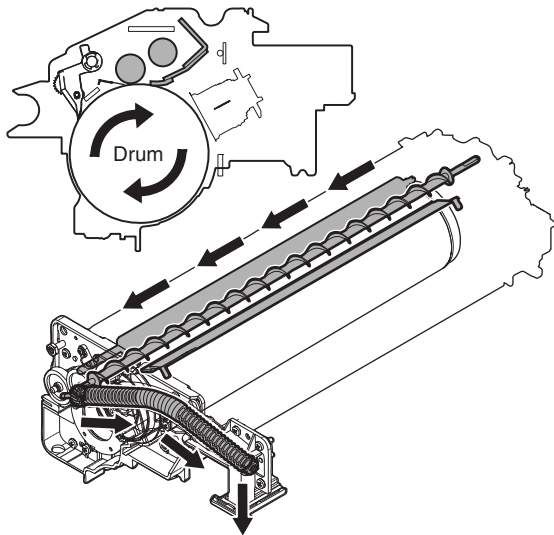
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the OPC drum aluminum layer.

Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where LED lights are not radiated.

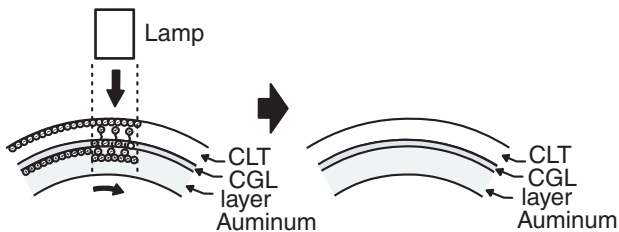
As a result, latent electrostatic images are formed on the OPC drum surface.

- 3) After transfer operation, remaining toner is removed by the cleaning blade.



Toner removed from the OPC drum surface is transported to the waste toner section in the toner cartridge by the waste toner transport screw.

- 4) The whole surface of the OPC drum is discharged.

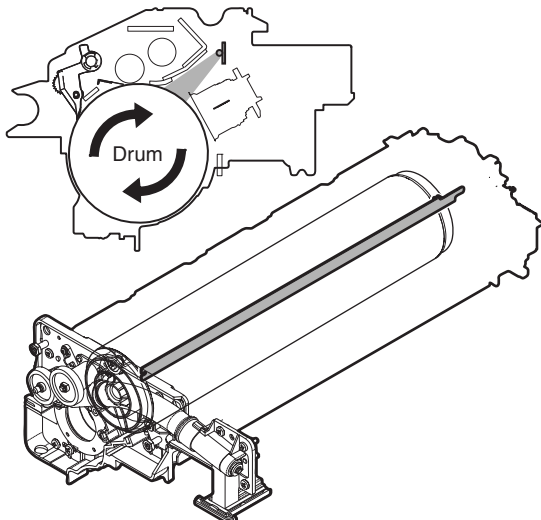


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

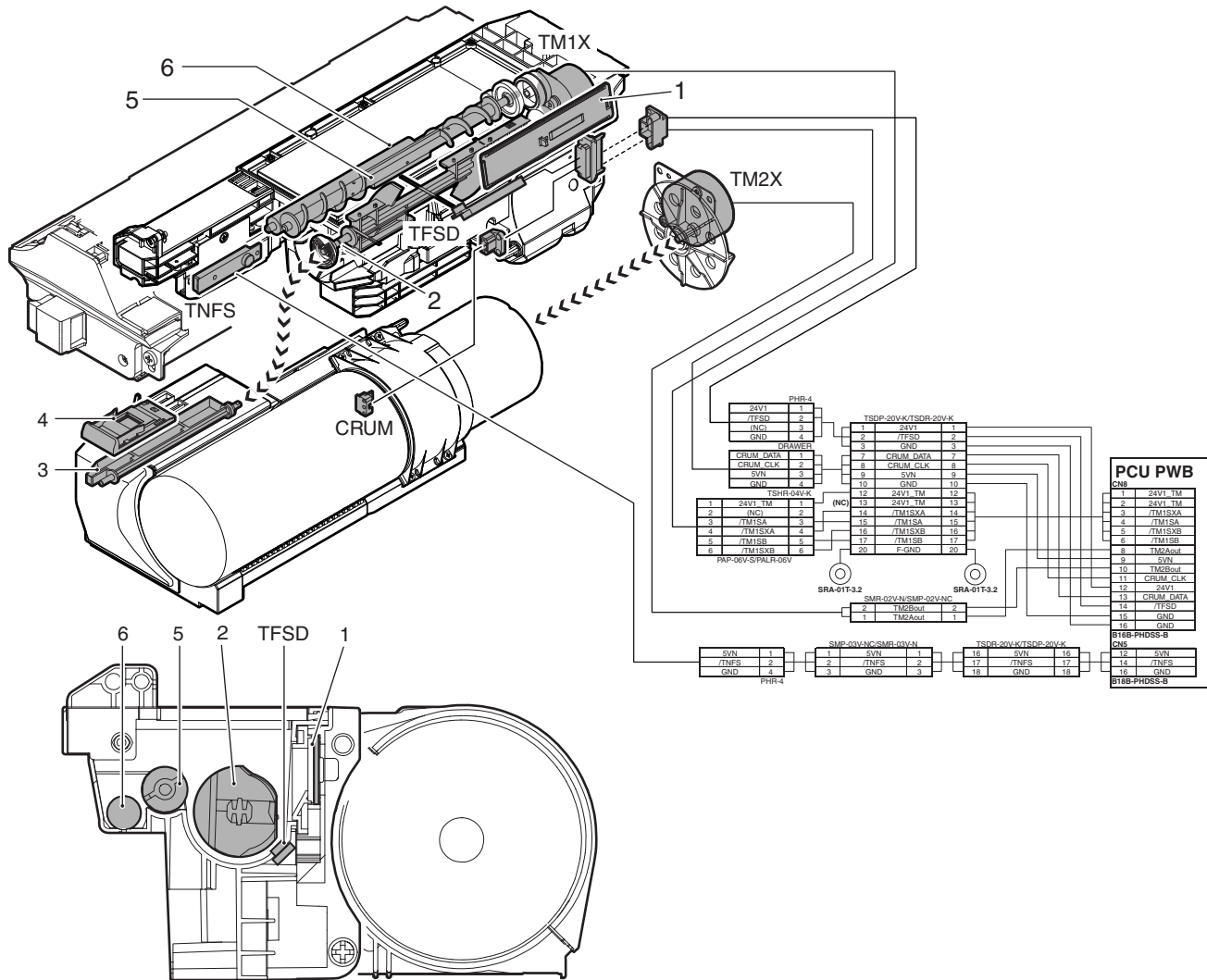
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



## 8. Toner supply section

### A. Electrical and mechanism relation diagram



Signal name	Name	Function/Operation	Type	NOTE
CRUM	CRUM lap	Stores the toner bottle information		
TFSD	Toner remaining quantity sensor	Toner hopper remaining quantity detection	Magnetic sensor	
TM1X	Toner motor 1	Transports toner in the toner hopper to the developing unit/ Transports waste toner to the waste toner section	Stepping motor	
TM2X	Toner motor 2	Transports toner in the toner bottle to the toner hopper	Synchronous motor	
TNFS	Waste toner full sensor	Waste toner full detection	Magnetic sensor	

No.	Name	Function/Operation
1	TH shutter	Serves as a shutter to supply toner from the toner bottle unit to the toner hopper. When a toner bottle unit is installed, the shutter opens.
2	TH transport roller	Mixes toner in the toner hopper.
3	Waste toner transport plate	Remains toner evenly in the waste toner box.
4	Waste toner shutter	Serves as a shutter to receive waste toner from the process unit.
5	TH screw	Toner supply roller to the toner unit section.
6	TH supply roller	Toner supply roller to the developing unit section.

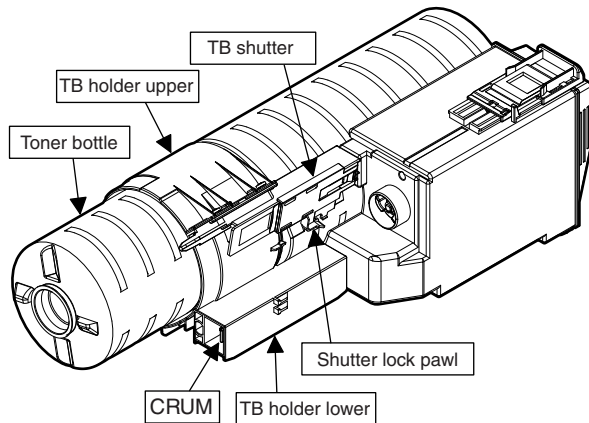
## B. Outline

Adoption of the rotating toner bottle enables large capacity with a compact toner bottle size.

When the remaining toner detection sensor in the toner hopper unit detects no toner, the toner bottle turns to supply toner to the toner hopper. Following supply, since the sensor detects full or empty status inside the toner hopper based on a standard quantity of approximately 150 g of toner, even if the toner cartridge becomes empty, copying is not immediately suspended because toner inside the toner hopper is used (approximately 5K/6% print duty documents).

Toner filling amount	Life with 6% print duty documents
1,700g	83,000 sheets

## C. Composition

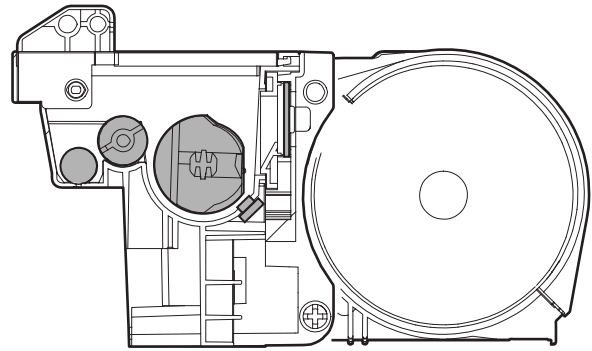


The toner cartridge is composed of the toner bottle with toner filled in it, the TB holder lower which holds the toner bottle and to which the CRUM and the waste toner box assembly are attached, and the TG holder upper.

The TB holder lower is attached to the TB shutter. When inserting it to the machine, the toner hopper rib releases the shutter lock pawl, and opens in linkage with the TH shutter. When removing the toner cartridge from the machine, the TB shutter closes.

**NOTE:** The toner discharge port of the toner bottle is sealed by the heat seal. Do not rotate the toner bottle manually, or the heat seal is dismantled and toner is discharged from the TB shutter port.

## D. Operation



The toner remaining quantity sensor in the toner hopper detects the toner remaining quantity by the toner transport roller rotation. When there is little toner, the toner bottle rotating motor of the machine is rotated.

The toner bottle rotates at 4.2rpm. Toner of about 5g is supplied to the toner hopper for every rotation. When toner full is not detected after detecting the state with little toner for a certain period (4min), the toner cartridge is judged as empty, and the display to urge toner cartridge replace is shown on the operation panel.

**NOTE:** When the power is turned on for toner hopper replacement or cleaning, the toner cartridge replacement display is shown though toner is not accumulated enough in the toner hopper. In such a case, turn off/on the power again.

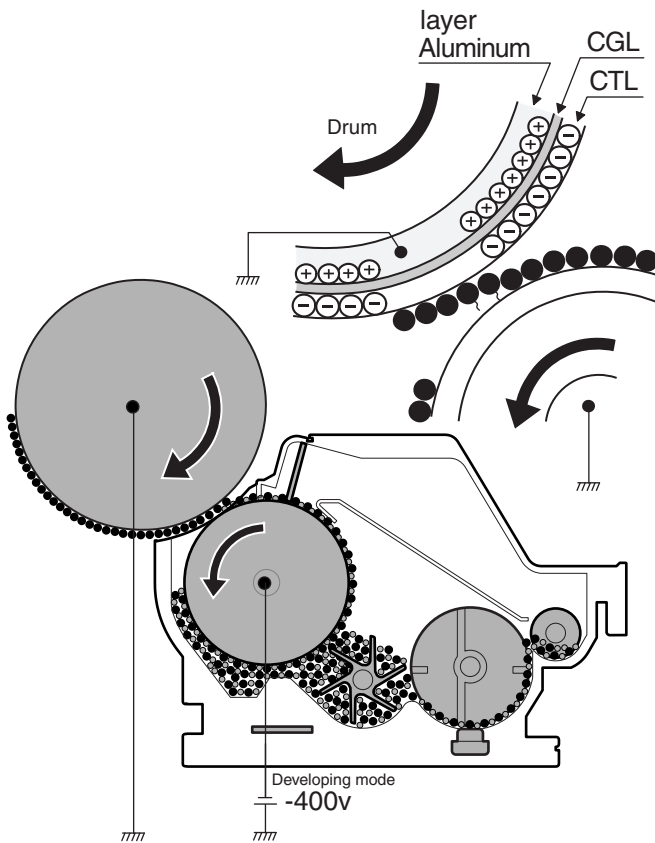


## B. Outline

In this section, toner is attached to electrostatic latent images formed by laser beams on the OPC drum, making visible images.

## C. Description

Electrostatic latent images formed on the OPC drum by the LED (writing) unit (LED image light) are converted into visible images by toner.



Toner in the developing unit is stirred by the mixing roller.

When toner is stirred, it is negatively charged by mechanical friction.

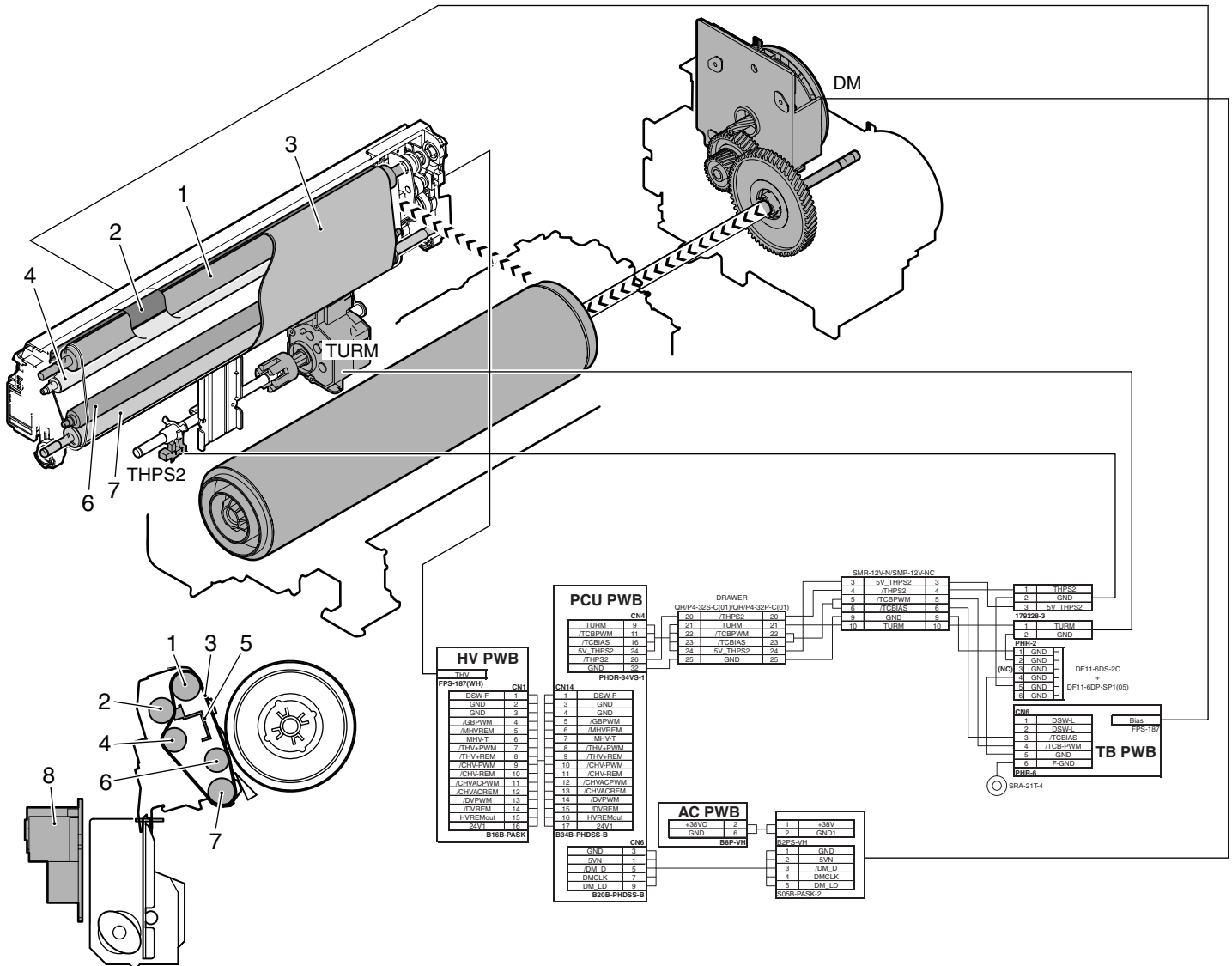
The developing bias voltage (negative) is applied to the developing roller.

Negatively charged toner is attracted and attached to the area on the OPC drum where negative voltage is reduced by exposure.

On the other hand, the negative voltage at an area where exposure is not made is higher than the developing bias voltage, and toner is not attached.

## 10. Transfer section

### A. Electrical and mechanism relation diagram



Signal name	Name	Function/Operation	Type	NOTE
DM	OPC drum motor	Drives the OPC drum and the transfer section.	DC brushless motor	
THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	Other sensor, switch
THV	Transfer high voltage	High voltage for transfer		
TURM	Transfer separation motor	Drives and separates the transfer belt.	DC brush motor	The transfer belt is pressed on the OPC drum only during printing.

No.	Name	Function/Operation
1	Transfer drive roller (Drive)	Drives the transfer belt.
2	Transfer cleaning roller	Cleans the transfer belt.
3	Transfer belt	Transfers toner images from the OPC drum to paper.
4	Transfer tension roller	Applies a proper tension to the transfer belt.
5	Transfer belt discharge brush	Connects the transfer belt to the chassis ground.
6	Transfer roller	Applies a transfer voltage to the transfer belt.
7	Transfer auxiliary roller (Idle)	Helps to stretch the transfer belt.
8	Transfer (TCCL) bias high voltage PWB	Generates a bias voltage for the transfer cleaning roller in cleaning or in the print mode.



## B. Outline

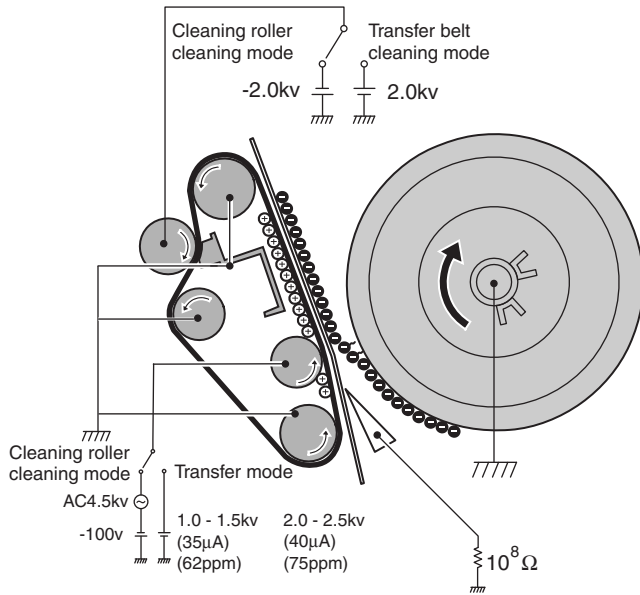
In this section, toner images on the OPC drum are transferred to paper.

## C. Description

### 1) Toner image transfer

Toner images formed on the drum by the developing roller are transferred to paper by the transfer belt.

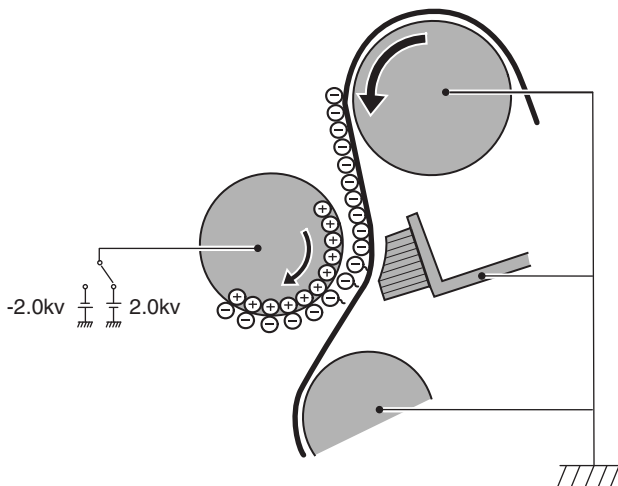
Toner on the drum is negatively charged by stirring in the developing unit. By applying a positive voltage to the transfer roller, the transfer belt and paper on the transfer belt are positively charged to transfer negatively charged toner images to paper.



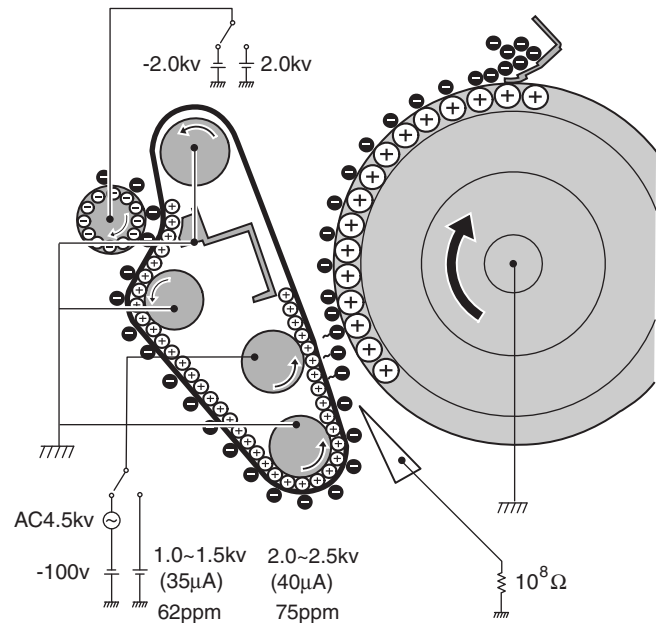
### 2) Transfer belt cleaning

During the job, a positive voltage is applied to the transfer cleaning roller so that negatively charged toner on the transfer belt is attracted to the cleaning roller.

(The brush on the back of the transfer belt is provided for increasing the cleaning effect.)



After completion of the job, the applied voltage to the transfer cleaning roller is switched to negative, and toner is returned from the transfer cleaning roller to the transfer belt, and toner on the transfer belt is attracted to the drum and cleaned by the cleaning blade.



Cleaning timing:

After completion of the job, When warming-up, After canceling a jam, After execution of process control

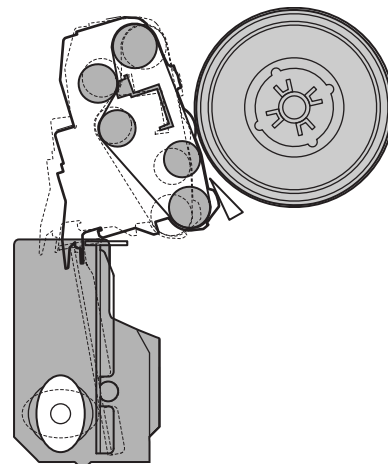
### 3) Transfer belt separation/contact

Transfer belt is separated by the transfer separation motor.

The transfer belt is in contact with the drum except for the following cases.

The case that the transfer belt is separated from the drum except:

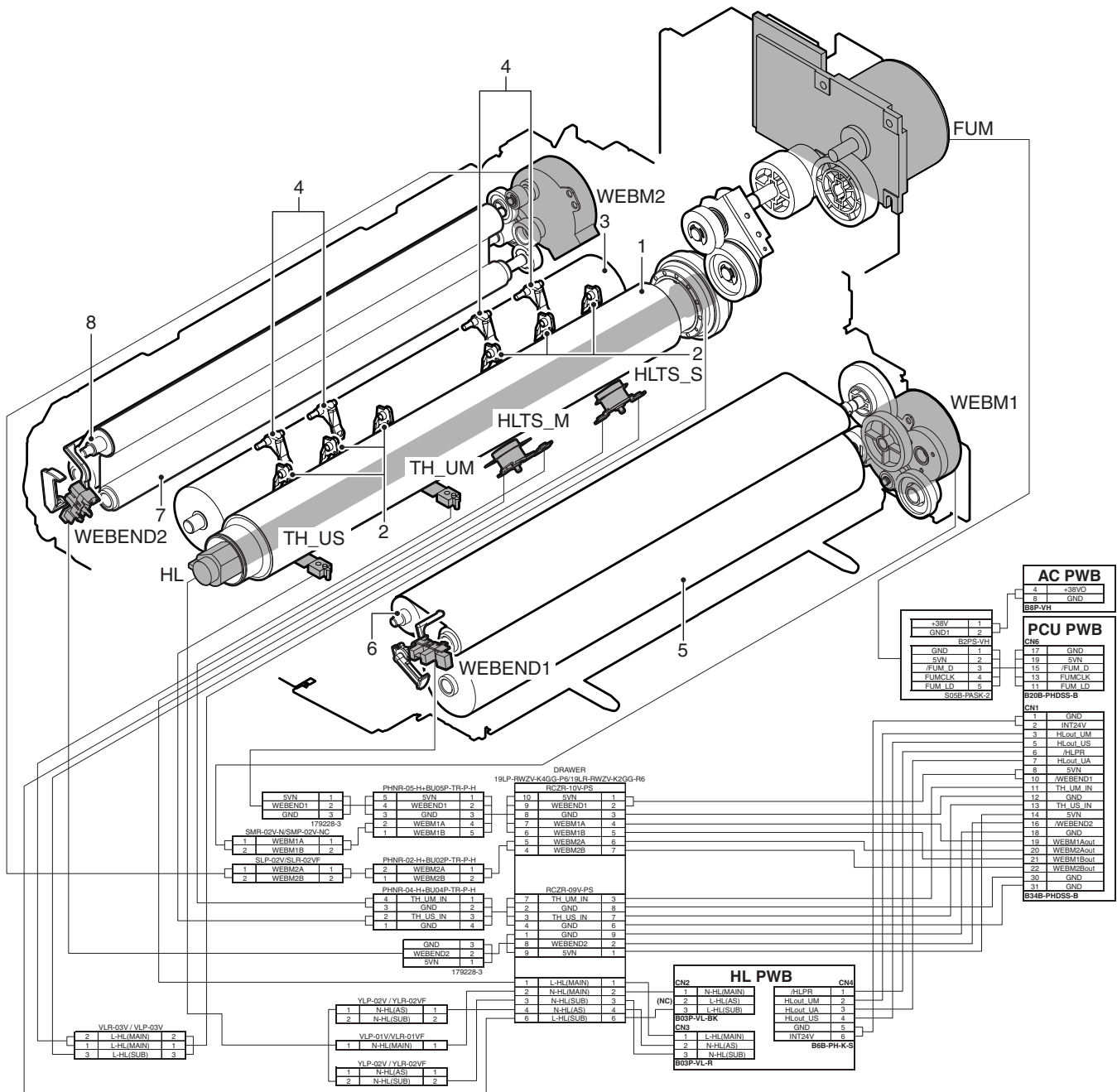
- \* When executing process control (to prevent against breakage of toner patch on the drum)
- \* When a jam occurs (Protection of the drum, left door open/close)
- \* When shipping (Protection of the drum. Separate with the simulation 6-1 (7).)





## 11. Fusing section

### A. Electrical and mechanism relation diagram



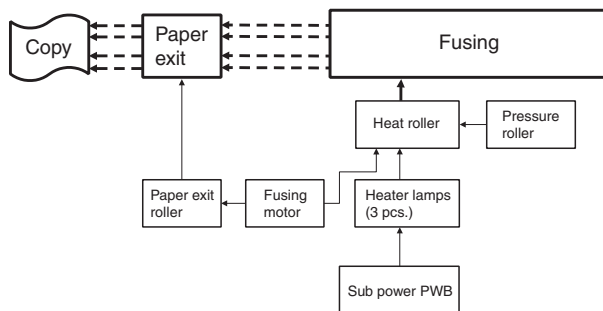
Signal name	Name	Type	Function/Operation	Active condition	NOTE
FUM	Fusing motor		Drives the fusing unit.		
HL1	Heater lamp (1)		Heats the heat roller.		
HL2	Heater lamp (2)		Heats the heat roller.		
HL3	Heater lamp (3)		Heats the heat roller.		
HLTS_M	Thermostat (1)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the heat roller]		
HLTS_S	Thermostat (2)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the heat roller]		
TH_UM	Fusing temperature sensor (1)	Thermistor	Detects the surface temperature of the heat roller. (Center section)	Analog input	
TH_US	Fusing temperature sensor (2)	Thermistor	Detects the surface temperature of the heat roller. (Edge section)	Analog input	
WEBEND1	Web end sensor	Transmission type	Detects the upper web paper end (replacement)	End detection	
WEBEND2	Web end sensor	Transmission type	Detects the lower web paper end (replacement)	End detection	
WEBM1	Web motor	Synchronous motor	Drives the upper web roller		
WEBM2	Web motor	Synchronous motor	Drives the lower web roller		

No.	Name	Function/Operation	Active condition	NOTE
1	Heat roller	Heats and presses toner on paper and fuses it on paper.		
2	Separation pawl	Mechanically separates paper which was not separated naturally from the heat roller.		
3	Pressure roller	Heats and presses toner on paper and fuses it on paper.		
4	Separation pawl	Mechanically separates paper which was not separated naturally from the pressure roller.		
5	Web roller	Clean the heat roller.		
6	Pressure roller	Applies a pressure to web paper to connect the heat roller.		
7	Lower web roller	Clean the pressure roller.		
8	Lower pressure roller	Applies a pressure to web paper to connect the pressure roller.		

## B. General

This section performs the following functions and operations.

- 1) Toner attached to paper in the transfer section are heated and pressed by the fusing roller onto paper to fuse.



## C. Fusing unit drive

To drive the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

The drive motor (stepping motor) is driven according to the control signal sent from the PCU.



## D. Heater lamp drive

The surface temperature of the heat roller detected by the thermostat is sent to the PCU.

When the temperature is lower than the specified level, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the sub power PWB.

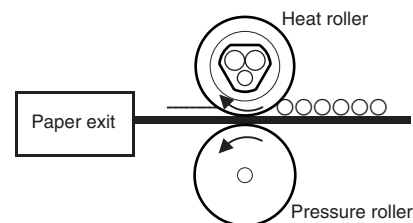
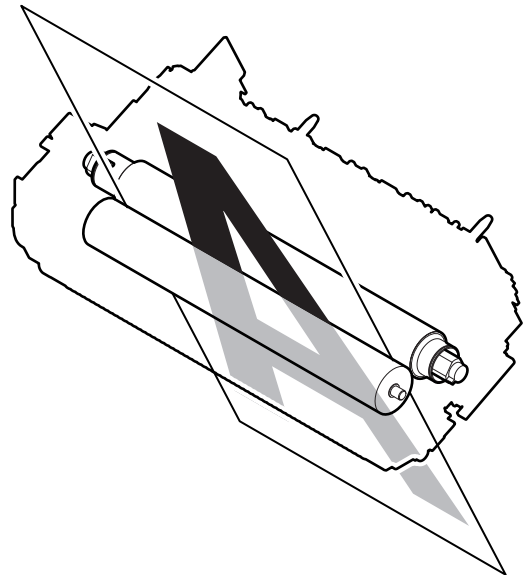
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, power supply (AC line) to the heater lamp is cut off.

## E. Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.



Three heater lamps are provided for the heat roller lamp is provided for the pressure roller to sub heat paper from above.

This is because toner on paper must be heated from above to be fused on paper.

Pressure roller are of silicon rubber because of the following reasons and purpose. This is the following reason, objective.

- 1) Paper is separated upward. (Since the heat roller is of higher hardness, the pressure roller is deformed to separate paper upward.)
- 2) The nip quantity is increased to increase heat capacity for paper.
- 3) By pressing paper with the flexible roller, toner is fused without deformation. (The flatness, however, is not so high.)

## F. Fusing temperature control

The temperature sensor is provided at the center of the heat roller.

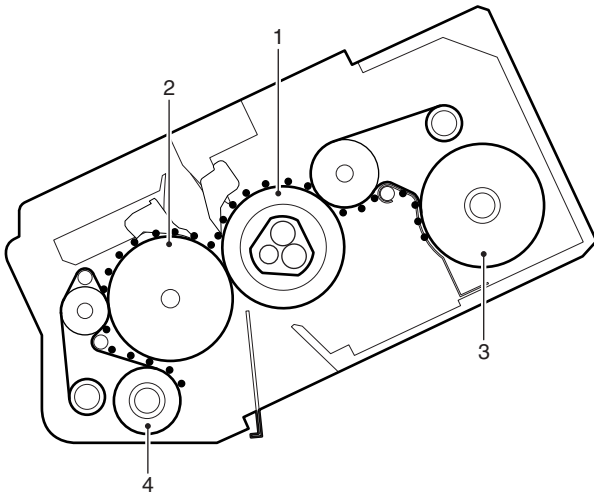
The roller temperature is detected by the installed temperature sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

In addition, the fusing temperature is switched according to the kind of paper.

## G. Cleaning operation

The fusing roller removes toner and dusts from the heat roller and the pressure roller surfaces by the following methods.

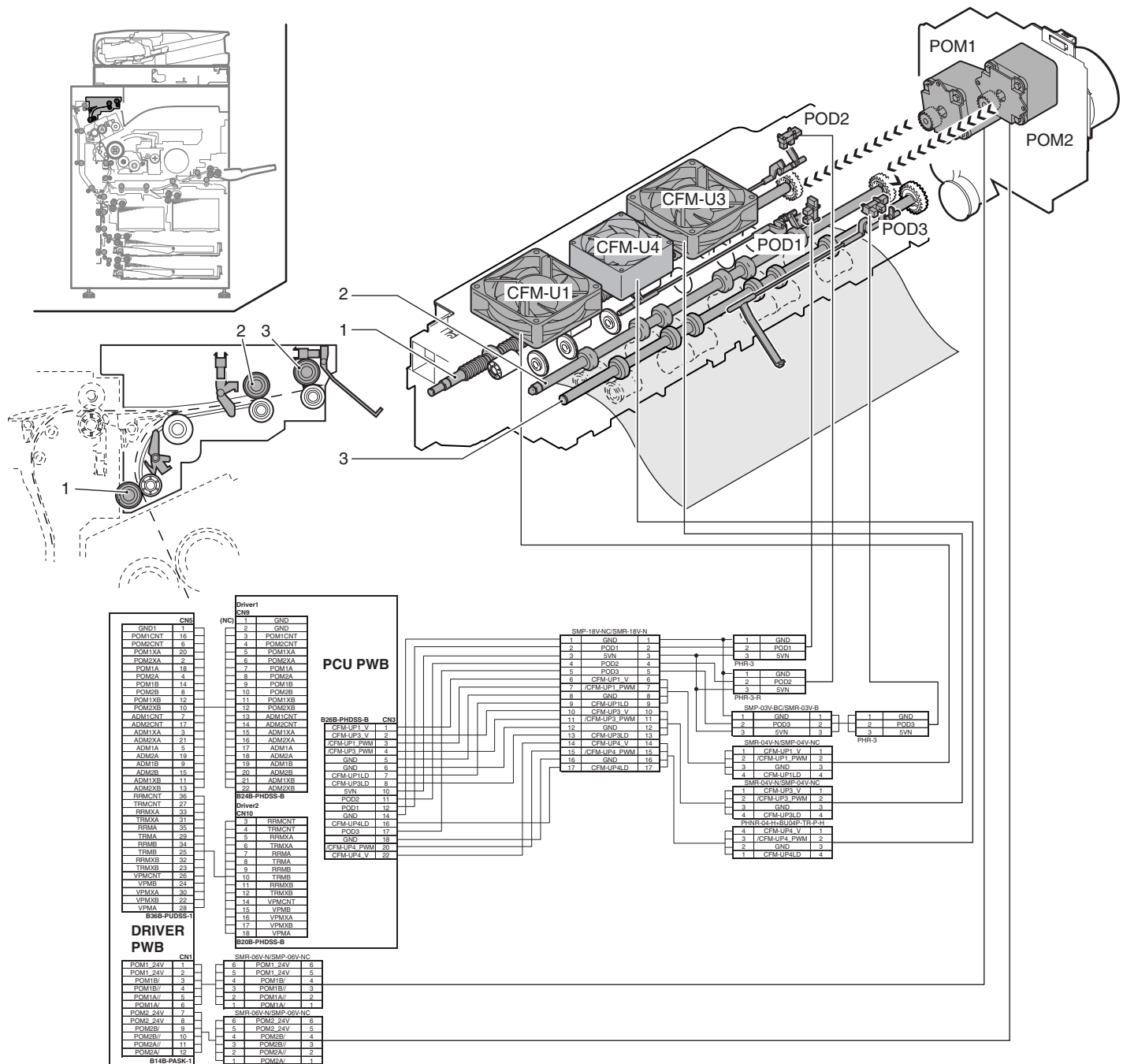
- Pressure roller: Mechanical cleaning by the web roller.
- Heat roller: Mechanical cleaning by the web roller.



No.	Name
1	Heat roller
2	Pressure roller
3	Upper web roller
4	Lower web roller

## 12. Paper exit section

### A. Electrical and mechanism relation diagram



Signal name	Name	Function/Operation	Type	NOTE
CFM-U1	Fusing cooling fan motor 1 (Paper exit, duplex (ADU) section) (Front surface)	Exhaust heat from the fusing section.	DC brush-less motor	PWM control
CFM-U3	Fusing cooling fan motor 3 (Paper exit, duplex (ADU) section) (Front surface)	Exhaust heat from the fusing section.	DC brush-less motor	PWM control
CFM-U4	Fusing cooling fan motor 4 (Paper exit, duplex (ADU) section) (Paper exit section rear side)	Cools paper which is discharged to the inner tray.	DC brush-less motor	PWM control
POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper transport system sensor
POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper transport system sensor
POD3	Paper exit detector 3	Paper exit detection to upper section	Transmission type	Paper transport system sensor
POM1	Paper exit motor 1	Drives the paper transport roller 16.	Stepping motor	Selection of Normal speed/ High speed
POM2	Paper exit motor 2	Drives the paper exit roller 1.	Stepping motor	Selection of Normal speed/ High speed

No.	Name	Function/Operation
1	Transport roller 16	Transports paper from the fusing roller to the paper exit roller 1.
2	Paper exit roller 1	Discharges paper to the paper exit tray. / Switches back paper.
3	Paper exit roller 3	Discharges paper.

## B. Outline

The paper exit and turning section discharges paper which is transported from the fusing section, and detects paper full. It also turns paper to transport it to the duplex or the finisher.

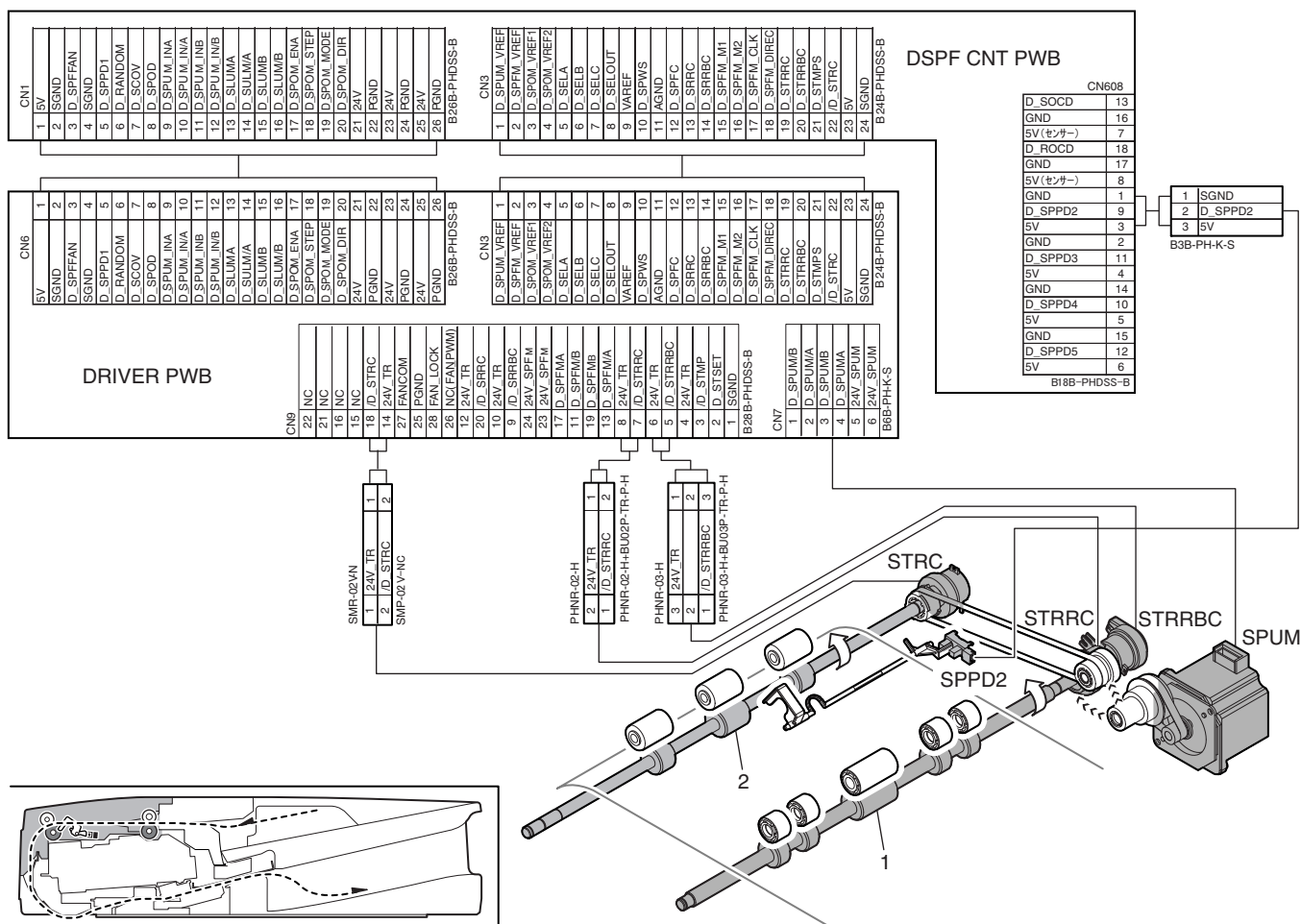
### (1) Document feed section



Signal name	Name	Function/Operation
SCOV	DSPF upper door open/close sensor	Detects open/close of the upper door.
SLUM	DSPF lift-up motor	Lifts up or moves down the document feed tray.
SPED1	DSPF document upper limit sensor	Detects the upper limit of the DSPF document.
SPED2	DSPF document empty sensor	Detects document empty in the document feed tray.
SPFC	DSPF document feed clutch	Controls ON/OFF of the rollers in the document feed section.
SPLS1	DSPF document length detection short sensor	Detects the document length of the document feed tray upper.
SPLS2	DSPF document length detection long sensor	Detects the document length of the document feed tray upper.
SPPD1	DSPF document pass sensor 1	Detects pass of the document.
SPRDMD	DSPF document random sensor	Detects the document size in random document feed.
SPUM	DSPF document feed motor	Drives the rollers and transport rollers in the document feed section.
SPWS	DSPF document width sensor	Detects the document width of the document feed tray upper.
STLD	DSPF document feed tray lower limit sensor	Detects the lower limit of the document feed tray.
STUD	DSPF document feed tray upper limit sensor	Detects the upper limit of the document feed tray.

No.	Name	Function/ Operation
1	Pickup roller	Picks up a document and feeds it to the document feed roller.
2	Document feed roller	Performs the document feed operation of documents.
3	Separation roller	Separate a document to prevent against double-feed.
4	Torque limiter	A fixed level of resistance is always provided for rotation of the separation roller to prevent double feed.

## (2) Upper transport section

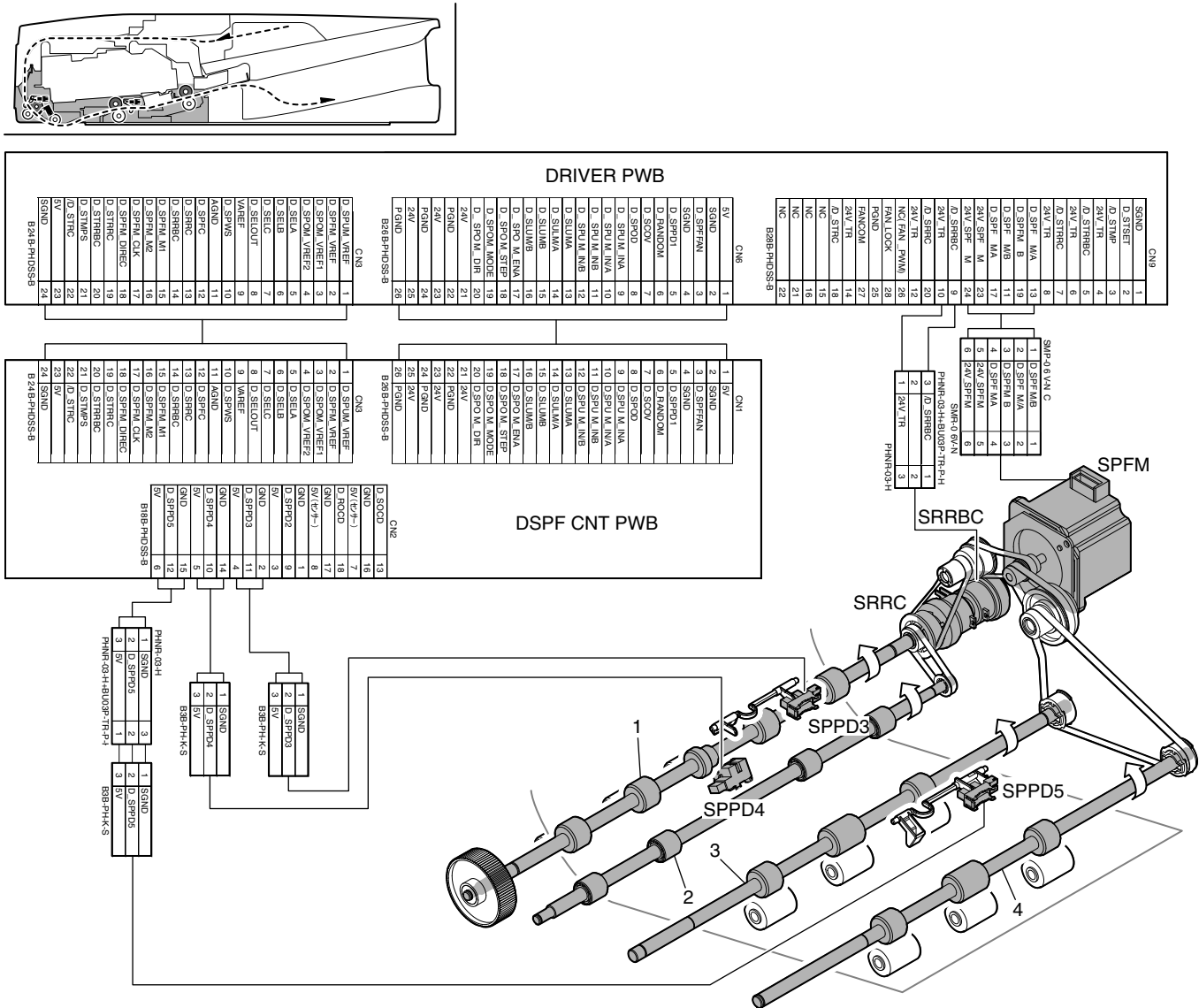


Signal name	Name	Function/Operation
SPPD2	DSPF document pass sensor 2	Detects pass of the document.
SPUM	DSPF document feed motor	Drives the rollers, transport rollers and transport rollers in the document feed section.
STRC	DSPF transport roller clutch	Controls ON/OFF of the transport roller 1.
STRRBC	DSPF No. 1 resist roller brake clutch	No. 1 resist roller braking is performed.
STRRC	DSPF No.1 resist roller clutch	Controls ON/OFF of No. 1 resist roller.

No.	Name	Function/ Operation
1	No. 1 resist roller (Drive)	Performs resist of document transport.
2	Transport roller 1 (Drive)	Transports document from No. 1 resist roller to No. 2 resist roller.



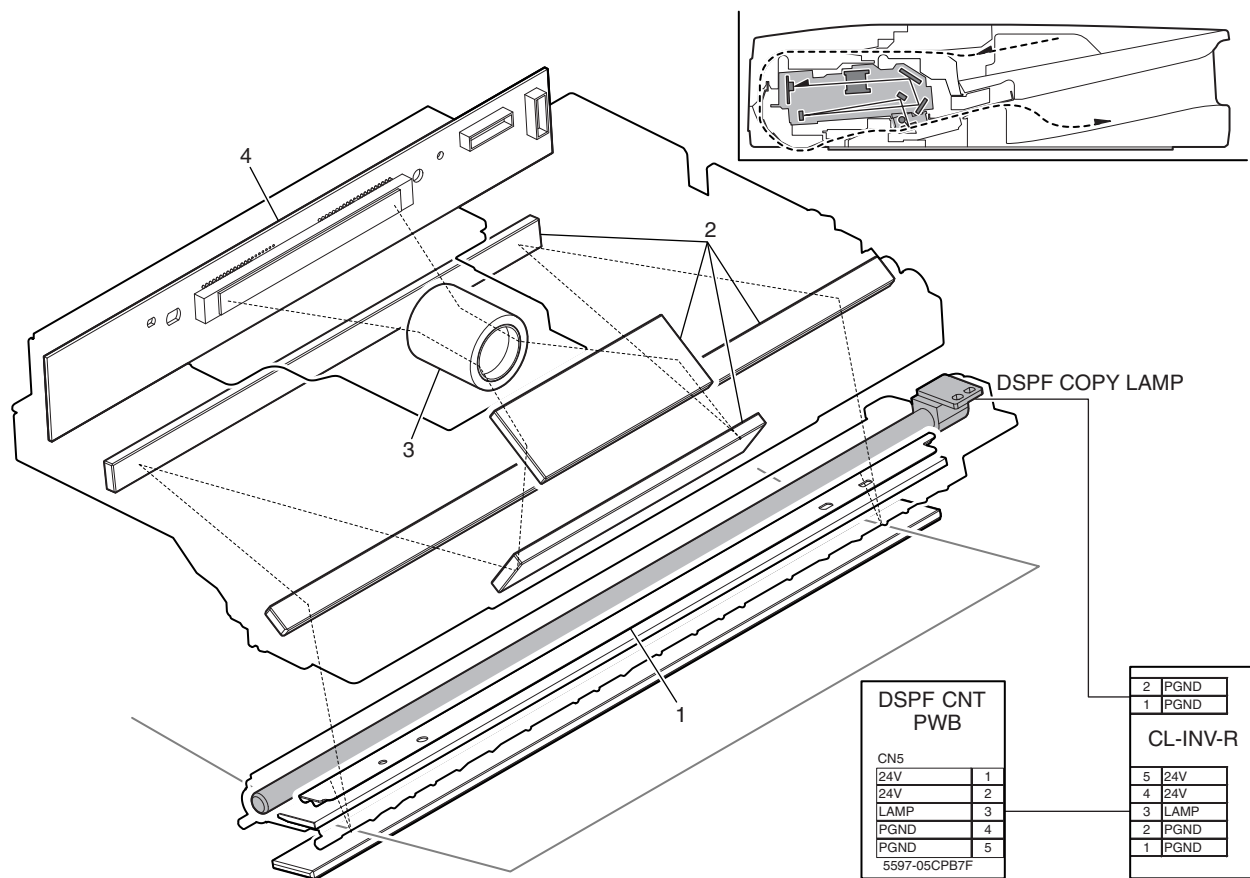
### (3) Lower transport section



Signal name	Name	Function/Operation
SPFM	DSPF transport motor	Drives the transport roller.
SPPD3	DSPF document pass sensor 3	Detects pass of the document.
SPPD4	DSPF document pass sensor 4	Detects pass of the document.
SPPD5	DSPF document pass sensor 5	Detects pass of the document.
SRRBC	DSPF No. 2 resist roller brake clutch	No. 2 resist roller braking is performed.
SRRRC	DSPF No.2 resist roller clutch	Controls ON/OFF of No. 2 resist roller.

No.	Name	Function/ Operation
1	No. 2 resist roller (Drive)	Make synchronization between the lead edge of a document and the scan start position.
2	Platen roller	A pressure is applied to document to prevent fluctuations of document.
3	Transport roller 2 (Drive)	Transports document from the platen roller to the transport roller 3.
4	Transport roller 3 (Drive)	Transports document from the transport roller 2 to the document exit roller.

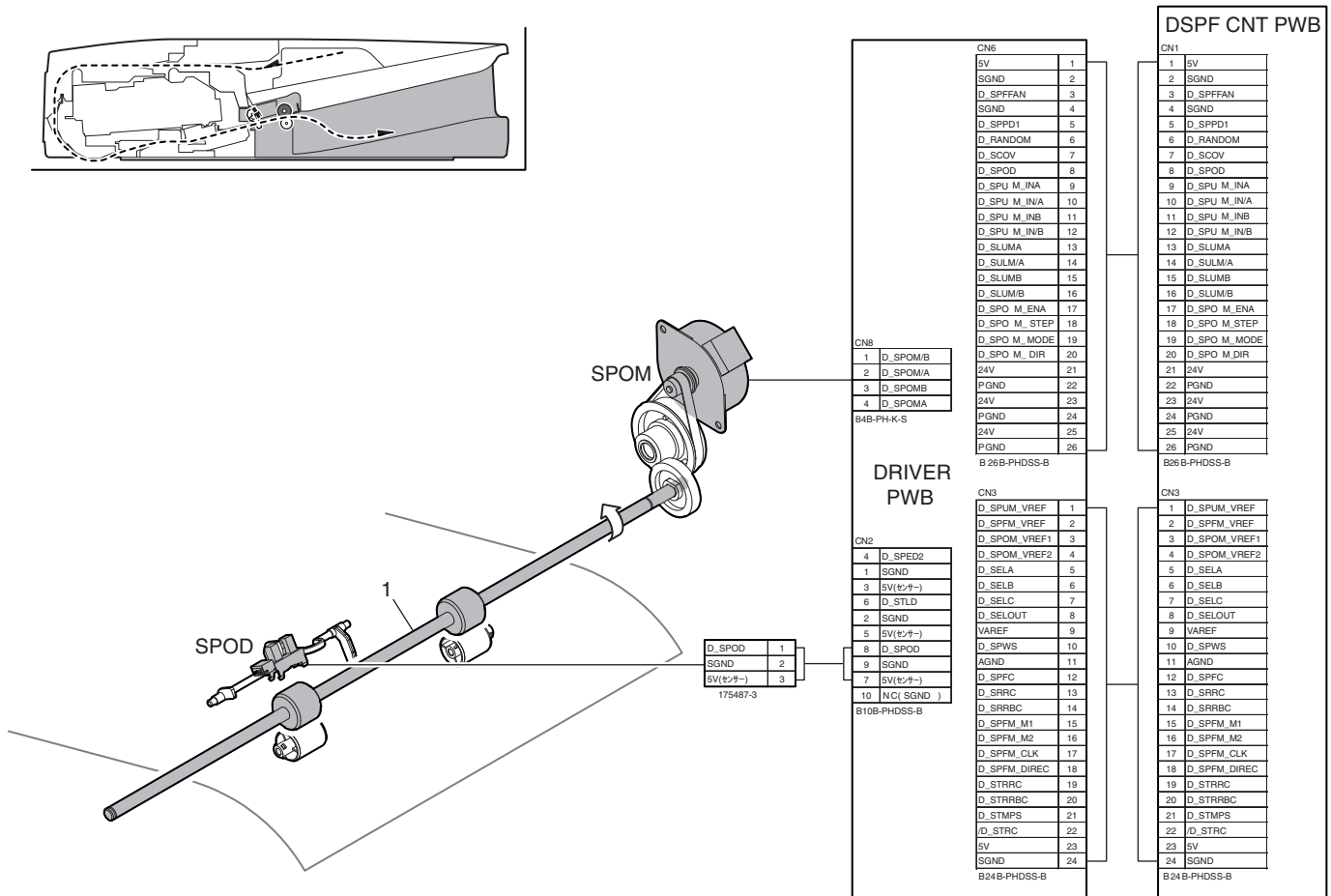
(4) Optical section



Signal name	Name	Function/Operation
DSPF COPY LAMP	DSPF copy lamp	Radiates light onto a document to allow the CCD to scan document images.

No.	Name	Function/Operation
1	Reflector	Converges lights from the copy lamp.
2	Mirror	Sends the document image to the lens.
3	Lens	Reduces the document image (light) and reflects it onto the CCD.
4	DSPF CCD PWB	Scans the document image (optical signals) and converts it into electrical signals.

## (5) Paper exit section



Signal name	Name	Function/Operation
SPOD	DSPF document exit sensor	Detects document exit of the document.
SPOM	DSPF document exit motor	Drives the document exit roller.

No.	Name	Function/ Operation
1	Document exit roller (Drive)	Discharges document.

## B. Document size detection

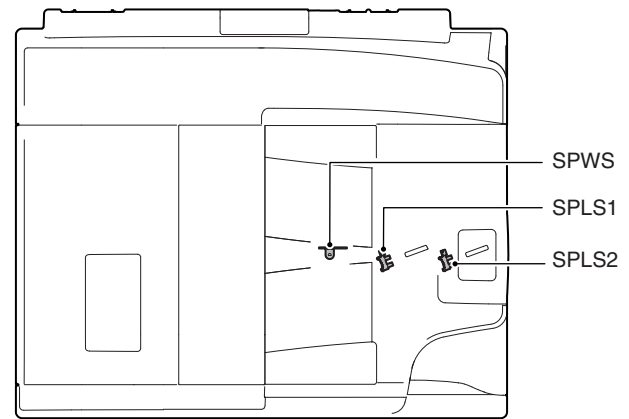
Size detection on the document tray

The document size is detected by the DSPF document width sensor (SPWS), and the document length is detected by the DSPF document length sensors (SPLS1, SPLS2). The document size is judged from the document width and the document length as shown in the table below.

When, however, documents of different sizes are mixed and set on the document tray, the largest size is detected.

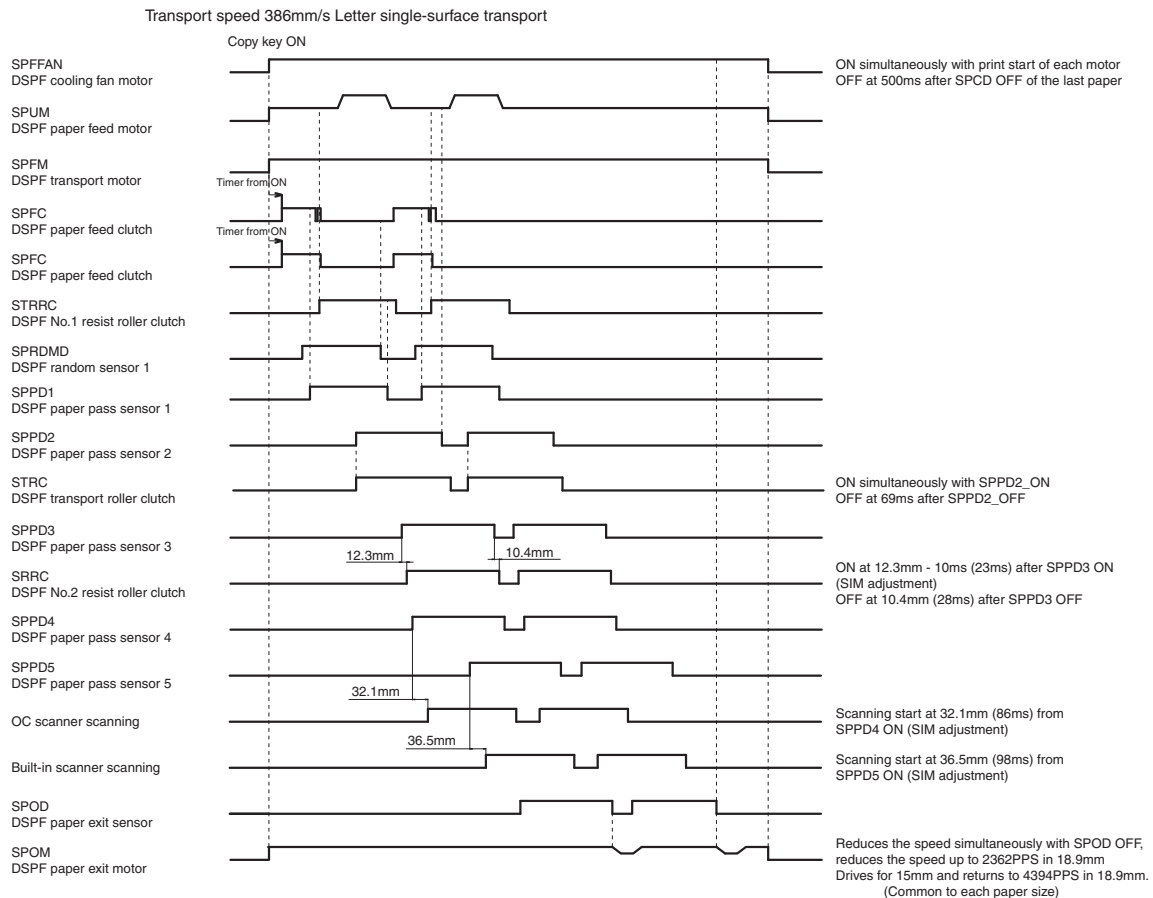
	Document size	Document length sensor	
		SPLS1	SPLS2
AB series	A5	OFF	OFF
	B5	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	B5R	ON	OFF
	A4R	ON	OFF
	8.5" x 13"	ON	ON
	B4	ON	ON
	A3	ON	ON
Inch series	11" x 17"	ON	ON
	8.5" x 5.5"	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	11" x 8.5"R	ON	OFF
	8.5" x 13"	ON	ON
	8.5" x 14"	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON

DSPF unit



## C. Timing chart

To increase the document replacement speed, pre-feed of the second and the later documents is performed for documents of A4/Letter or smaller sizes. Therefore, a clutch is provided for each transport roller to perform individual control.



## [9] MAINTENANCE

### 1. Necessary execution items (Before and after maintenance)

#### A. Execution items before maintenance and servicing

To perform the procedures safely, refer to "NOTE FOR SERVICING" on the first page of this service manual.

Item	Simulation	
Check the developer counter value.	22	13
Check the OPC drum counter value.	22	13
Check the print counter value of each section in each operation mode.	22	1
Check the number of times of paper jams and troubles.	22	2
Check the paper jam positions and contents.	22	3
Check the paper jam positions and contents. (DSPF section)	22	12
Check the trouble contents.	22	4
Print the list of set values and adjustment values.	22	6
Check the number of use of the DSPF, the scanner, the finisher, the stapler, and the punch.	22	8
Check the number of use of each paper feed section.	22	9
Check the ROM version.	22	5

#### B. Necessary execution items in maintenance and servicing

\* Perform the work items listed in the maintenance list (parts) and details of works as well as the items described below.  
(The necessary execution items are marked with "\*" depending on each situation.)

No.	JOB No.	JOB item	Simulation	When repairing (with replacement of consumable parts)/checking						When repairing (without replacement of consumable parts)/checking
				When installing	When replacing the OPC drum	When replacing developer	When replacing the fusing web roller	After cleaning the scanner (reading) section	At periodic maintenance	
1	—	Toner density reference control level setting	25-2			*				
2	—	The OPC drum counter is cleared.	24-7		*					
3	—	The fusing web cleaning feed counter is cleared.	24-4				*			
4	ADJ10	Copy/Printer picture quality check and adjustment	46-74	*	*	*		*	*	

#### C. Execution items after maintenance and servicing

Item	Simulation	
Clear the paper jam/trouble data.	24	1
Clear the use quantity counter of each paper feed section.	24	2
Clear the number of use of the DSPF, the scanner, the finisher, the stapler, and the punch unit.	24	3
Clear the maintenance counter. (Select MAINTENANCE ALL.)	24	4
Print the list of setting values and adjustment values.	22	6

## 2. Contents of the maintenance codes and countermeasures (Relationship between various counter values and display messages)

The message of maintenance execution timing and consumable part replacement timing is displayed when each counter reaches the specified value or when each sensor detects the condition for replacement.

The relationships between the kinds of messages and the life conditions are as shown below.

### A. Maintenance conditions and messages

Counter name	Near end condition	Message at Near End Over	
		Sim.26-38A "0"	Sim.26-38A "1"
		Print Enable	Print Disable
Maintenance counter (Total)	90% of SIM21-1 set value		Message (1)

Counter name	End condition	Message at End Over	
		Sim.26-38A "0"	Sim.26-38A "1"
		Print Enable	Print Disable
Maintenance counter (Total)	Sim.21-1 set value	Message (1)	Message (2)

Message No.	Message	Print job Enable/Disable
(1)	Maintenance timing has come. Code: TA	Enable
(2)	Maintenance timing has come. Code: TA (Displayed with parentheses.)	Disable

- After completion of maintenance, use SIM24-4 to clear the maintenance counter.

### B. Waste toner full (toner cartridge replacement) conditions and messages

Counter name	End condition	Message at End Over	
		Sim.26-38A "0"	Sim.26-38A "1"
		Print Enable	Print Disable
Waste toner	Full detection sensor ON	Message (3)	Message (3)

Message No.	Message	Print job Enable/Disable
(3)	Replace the toner cartridge. (Displayed with parentheses.)	Disable

### C. Fusing unit maintenance conditions and messages

Counter name	Near end condition	Message at Near End Over	
		Sim.26-38B "0"	Sim.26-38B "1"
		Print Enable	Print Disable
Fusing unit print counter	No criteria		
Number of use days of the fusing unit	No criteria	—	—

Unit name	Not installed	Message when not installed	
		Sim.26-38B "0"	Sim.26-38B "1"
		Print Enable	Print Disable
Fusing unit	Judged by the fusing thermistor value.	(4)	(4)
Fusing web unit	No criteria		

Counter name	End condition	Message at End Over	
		Sim.26-38B "0"	Sim.26-38B "1"
		Print Enable	Print Disable
Fusing upper heat roller print counter	300,000 [sheet]		
Fusing lower heat roller print counter	300,000 [sheet]		
Number of use days of the fusing upper heat roller	—	—	—
Number of use days of the fusing lower heat roller	—		
Fusing upper web print counter	300,000 [sheet]		
Fusing lower web print counter	300,000 [sheet]		
Fusing upper web cleaning feed counter	Judged by the end detection signal.	Message (5)	Message (6)
Fusing lower web cleaning feed counter	Judged by the end detection signal.	Message (7)	Message (8)
Number of use days of the fusing upper web	—	—	—
Number of use days of the fusing lower web	—	—	—

Message No.	Message	Print job Enable/Disable
(5)	Maintenance timing has come. Code: FK3	Enable
(6)	Maintenance timing has come. Code: FK3 (Displayed with parentheses.)	Disable
(4)	Set the frame fusing unit properly.	Disable
(7)	Maintenance timing has come. Code: FK4	Enable
(8)	Maintenance timing has come. Code: FK4 (Displayed with parentheses.)	Disable

After completion of maintenance, use SIM24-4 to clear the fusing counter and the web counter.

### D. OPC drum unit maintenance conditions and messages

Counter name	Near End condition	Message at Near End Over	
		Sim.26-38A "0"	Sim.26-38A "1"
		Print Enable	Print Disable
Drum cartridge print counter (K)	No criteria		
Drum cartridge accumulated traveling distance (K)	No criteria	—	—
Drum cartridge use days (K)	No criteria	—	—

Counter name	End condition	Message at End Over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Disable
Drum cartridge print counter (K)	300,000 [sheet]*	Message (9)	Message (9)
Accumulated rotation number of drum (K)	840K rotations	Message (9)	Message (9)

Judged by the earlier timing of the OPC drum print counter or the drum rotation accumulated counter.

Message No.	Message	Print job Enable/Disable
(9)	Maintenance timing has come. Code: DK	Enable

- After completion of maintenance, use SIM24-7 to clear the OPC drum counter.

## E. Developer life conditions and messages

Counter name	Near End condition	Message at Near End Over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Disable
Developer cartridge print counter (K)	No criteria		
Developer cartridge accumulated traveling distance (K)	No criteria	—	—
Developer cartridge use days (K)	No criteria	—	—

Counter name	End condition	Message at End Over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Disable
Developer cartridge print counter (K)	300,000 [sheet]*	Message (10)	Message (10)
Developer rotation accumulate count (K)	840K rotations	Message (10)	Message (10)

Judged by the earlier timing of the developer print counter or the developer rotation accumulated counter.

The developer rotation number is synchronized with the drum motor rotation number.

Message No.	Message	Print job Enable/Disable
(10)	(Maintenance timing has come. Code: VK)	Enable

- After replacement of developer, use SIM25-2 to set the reference toner density control level.
- When the above operation is executed, the developer counter (developer print counter and developer accumulated traveling distance) is cleared.

## F. Toner cartridge life conditions and messages

Sensor name	Near end condition	Toner preparation Message	
		Sim.26-69A "0" Displayed	Sim.26-69A "1" Not displayed
	Toner remaining quantity 25% or less (calculated with the accumulated rotation time of the toner motor.)	Message (11)	

Sensor name	Near end condition	Message at Near End detection	
		Sim.26-69B "0" Displayed	Sim.26-69B "1" Not displayed
Intermediate hopper inside Toner remaining quantity sensor (K)	The intermediate toner hopper remaining quantity sensor repeats ON/OFF operations and the toner remaining quantity in the toner cartridge is 2.5% or less (calculated with the accumulated rotation time of the toner motor).	Message (12)	

Counter name	End condition	Message at End Over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Disable
In the developing tank Toner remaining quantity sensor (K)	Condition 1 or 2 below:  Condition 1: The toner hopper motor rotation time passes a lapse of 280sec from the near end state.  Condition 2: AND condition of status A and status C, or AND condition of status B and status C.  Status A: The toner remaining quantity in the toner cartridge is 2.5% or less (calculated with the accumulated rotation time of the toner motor).  Status B: Toner near end (The intermediate toner hopper remaining sensor repeats ON/OFF operations and the toner remaining quantity in the toner cartridge is 2.5% or less (calculated with the accumulated rotation time of the toner motor).  Status C: Toner concentration sensor output (Reference value: 0.14V or above)	Message (13)	Message (13)

Message No.	Message	Print job Enable/Disable
(11)	Toner is decreasing.	Enable
(12)	Replace the toner cartridge.	Enable
(13)	Replace the toner cartridge. (Displayed with parentheses.)	Disable

### 3. Maintenance system table

Sequence of the maintenance works

The work sequence numbers are marked to the maintenance works on the maintenance list in the following three divisions.

- Large division
- Middle division
- Small division

Follow the above work sequence for efficient maintenance.

Work sequence number	Division		Description
*1	Work sequence for a section/unit	Large division	Indicates a section/unit to be worked.
*2	Work sequence for a sub unit	Medium division	Indicates the work sequence of the sub units in a section/unit.
*3	Work sequence of parts	Small division	Indicates the work sequence of the parts in a section/unit.

#### [Main unit]

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
1	DSPF		Paper feed/Transport/Paper exit section	1	Paper feed roller	○	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Pickup roller	○	○	○	○			
				3	Separation roller	○	○	○	○			
				4	Torque limiter (For separation)	×	×	×	×	[Note 1] [Note 7]		
				5	No.1 resist roller	○	○	○	○			
				6	Transport roller 3	○	○	○	○		Wipe with cloth immersed in water to clean.	
				7	Transport roller 1	○	○	○	○			
				8	No.2 resist roller/Platen roller	○	○	○	○			
				9	Transport roller 2	○	○	○	○			
				10	Paper exit roller	○	○	○	○			
			Optical section	11	Discharge brush	×	×	×	×	[Note 11]	Wipe with dry cloth or ethyl alcohol to clean.	
				12	Scanner lamp/Reflector	○	○	○	○			
				13	Lens/CCD	○	○	○	○			
				14	Mirror	○	○	○	○		Wipe with dry cloth or ethyl alcohol to clean.	
				15	No. 1 scanning plate	○	○	○	○			
				16	No. 2 scanning section (Scanning glass)	○	○	○	○			
			Drive section	17	No. 2 scanning section (White reference glass)	○	○	○	○	(Specified position)	HANARL FL-955R	UKOG-0299FCZZ
				18	Gears	×	×	×	×			
			Finish stamp section	19	Belts		×	×	×			
				20	Stamp solenoid							Option Replace at 2400K.
			Other	21	OC mat	○	○	○	○			
2	Scanner section (Optical section)			1	Table glass/SPF glass	○	○	○	○		Wipe with dry cloth or ethyl alcohol to clean.	
				2	Scanner lamp/Reflector	○	○	○	○			
				3	Lens/CCD/Mirrors	○	○	○	○			
				4	Drive belt/Drive wire/Pulley	×	×	×	×			
				5	Rails	☆	☆	☆	☆	(Specified position)		
3	MC unit			1	Screen grid	×	▲	▲	▲			
				2	Sawtooth	○	▲	▲	▲			
				3	MC cleaner		▲	▲	▲			



Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
4	OPC drum peripheral section			1	Drum	×	▲	▲	▲		Stearic acid	UKOG-0312FCZZ
				2	Drum separation pawl	×	▲	▲	▲			
				3	Cleaning blade	×	▲	▲	▲	It is desirable to replace after one year from installation or replacement.		
				4	Toner reception seal	×	▲	▲	▲			
				5	CL side seal F		▲	▲	▲		Stearic acid	UKOG-0309FCZZ
				6	CL side seal R		▲	▲	▲			
				7	Cleaning brush roller	×	▲	▲	▲			
				8	Image density sensor	×	○	○	○		Ethyl alcohol	
				9	Discharge lamp	×	○	○	○			
				10	Paper guide	○	○	○	○			
5	Transfer unit			1	Transfer CL roller		▲	▲	▲			
				2	Transfer belt	○	▲	▲	▲			
				3	Transfer roller collar		▲	▲	▲			
				4	Transfer roller		▲	▲	▲			
				5	Discharge brush		×	×	×			
				6	Transfer drive gear	×	▲	▲	▲			
				7	Shaft (Conductive grease)	×	×	×	×	Lubricate as needed when checking.	FLOIL GE-676	UKOG-0012QSZZ
6	Developing unit	1		1	Developer		▲	▲	▲	Supply when installing		
				2	Doctor cover unit (with DV seal)		▲	▲	▲			
				3	DV side seal F		▲	▲	▲		Ethyl alcohol	
				4	DV side seal R		▲	▲	▲			
				5	MG holder F/R	○	○	○	○			
		2			Toner cartridge					Assembly when installing/ Replacement by user when empty		
7	Paper feed/ Paper transport/ Paper exit section	1	Manual paper feed section	1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Shaft (Conductive grease)	×	☆	☆	☆	[Note 8]	FLOIL GE-676	UKOG-0012QSZZ
				6	Transport roller 1	×	○	○	○		Wipe with cloth immersed in water to clean.	
		2	Paperfeed tray 1, 2 section	7	Paper guides	×	○	○	○		Ethyl alcohol	
				1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Paper guides	×	○	○	○		Ethyl alcohol	

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	3	Paperfeed tray 3, 4 section	1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Transport roller 8, 9, 10	×	○	○	○			
				6	Transport roller 5, 6, 7	×	○	○	○		Wipe with cloth immersed in water to clean.	
				7	Paper guides	×	○	○	○			
		4	Transport section (Horizontal transport section)	1	Transport roller 2	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 3, 4	×	○	○	○			
				3	Paper guides	×	○	○	○			
		5	Transport section (Duplex)	1	Transport roller 19, 20, 21	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Paper exit roller 2	×	○	○	○			
				3	Discharge brush	×	×	×	×			
				4	Paper guides	×	○	○	○			
		6	Transport section (Vertical transport 2)	1	PS roller	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 15	×	○	○	○			
				3	Paper guides	×	○	○	○			
				4	Paper dust clean unit	×	▲	▲	▲			
				5	Reflection sensor (PPD)		○	○	○			
		7	Transport section (Vertical transport 1)	1	Transport roller 11, 12, 13	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 11 shaft (Conductive grease)	×	☆	☆	☆			
				3	Paper guides	×	○	○	○			
				4	Reflection sensor (T1PPD)		○	○	○			
		8	Transport section (Paper exit reverse section)	1	Transport roller 16	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Paper exit roller 1, 3	×	○	○	○			
				3	Paper guide	○	○	○	○			
				4	Discharge brush	×	×	×	×			
				5	Transport roller 16 shaft (Conductive grease)	×	☆	☆	☆			
				6	Paper exit roller 3 shaft (Conductive grease)	×	☆	☆	☆			
8	Drive section			1	Drum shaft (Conductive grease)	×	☆	☆	☆		FLOIL GE-676	UKOG-0012QSZZ
				2	Gears	×	×	×	×	[Note 8]	FLOIL	UKOG-
				3	Belts		×	×	×	[Note 9]	G-313S	0307FCZZ

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
9	Fusing unit	1	Upper web unit	1	Web roller	×	▲	▲	▲			
				2	Pressure roller	×	▲	▲	▲			
				3	Pressure bearing		▲	▲	▲			
				4	Web bearing		▲	▲	▲			
				5	Web guide	×	○	○	○			
		2	Lower web unit	1	Lower web roller	×	▲	▲	▲			
				2	Lower pressure roller	×	▲	▲	▲			
				3	Lower pressure bearing		▲	▲	▲			
				4	Web shaft	×	○	○	○			
		3	Fusing unit body	1	Heat roller	×	▲	▲	▲			
				2	Heat roller insulation bush	×	▲	▲	▲			
				3	Insulation spacer (4 pieces)		▲	▲	▲			
				4	Heat roller gear		×	×	×	Lubricate as needed when checking.	JFE552	UKOG-0235FCZZ
				5	Pressure roller	×	▲	▲	▲			
				6	Upper separation pawl	×	▲	▲	▲			
				7	Lower separation pawl	×	▲	▲	▲			
				8	Thermistor (upper/lower)	×	×	×	×	Paper dust removal is required.		
				9	Paper entry guide	○	○	○	○			
				10	Paper exit guide	○	○	○	○			
10	Filters			1	Ozone filter		▲	▲	▲			
				2	Toner filter		▲	▲	▲			
11	Other				Sensors, detectors		×	×	×	[Note 10]		
12	Image quality check, adjustment				SIM46-74	×	×	×	×			

[Note 1] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2 section: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4 section: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

[Note 7] Check when jams occur frequently.

[Note 8] Grease when noises are generated.

[Note 9] Check when noises are generated.

[Note 10] Check when a trouble or a jam is generated due to a sensor or a detector.

[Note 11] Clean when white or black streaks are generated on a copy.

#### \* (NOTE) Paper feed section roller life

The lifetime of each roller is 100K or 200K.

When, therefore, a particular paper feed unit is intensively used, the life of the unit will expire before the maintenance timing.

In actual cases, however, the paper feed trays are switched and used according to different paper sizes, it is quite rare that replacement of the roller is required before the maintenance timing.

When it is needed to use a particular size paper intensively, it is advisable to use two or more paper feed trays for the particular paper size as far as possible. That must be deliberately explained to the user.

When servicing, check the use frequency of each paper feed tray and replace the roller as needed.

For cleaning the roller, it is advisable to use cloth immersed in water.

Since the paper feed trays 3 and 4 are more frequently used for larger sizes of paper than the paper feed trays 1 and 2, their lifetimes are shorter than those of the paper feed roller.

The degree of wear is greater in the sequence of the paper pickup roller, the paper feed roller, and the separation roller.

**[Option]**

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
Large capacity tray (A4)		Paper feed separation section	1	Pickup roller/ Paper feed rollers	×	○	○	○	[Note 2]	Wipe with cloth immersed in water to clean.	
		Transport section	2	Transport rollers	×	○	○	○		Wipe with cloth immersed in water to clean.	
			3	Transport paper guides	○	○	○	○		Ethyl alcohol	
		Drive section	4	Gears	×	☆	☆	☆	(Specified position) [Note 8]	<b>Lift drive section</b> Gear: White grease Shaft: MOLYKOTE BR2 Plus  <b>Drive section</b> Shaft: White grease Gear: HANARL (FL-955R)  <b>Paper feed transport drive section</b> HANARL (FL-955R)	<b>Lift drive section</b> UKOG-0158FCZZ UKOG-0062FCZZ <b>Drive section</b> UKOG-0158FCZZ UKOG-0299FCZZ  <b>Paper feed transport drive section</b> UKOG-0299FCZZ
			5	Belt		×	×	×	[Note 9]		
			6	Sensors	×	×	×	×	[Note 10]		
		Paper feed separation section	7	Torque limiter	×	×	×	×	[Note 2] [Note 7]		
Large capacity tray (A3)		Paper feed separation section	1	Pickup roller/ Paper feed rollers	×	○	○	○	[Note 6]	Wipe with cloth immersed in water to clean.	
		Transport section	2	Transport rollers	×	○	○	○			
			3	Transport paper guides	○	○	○	○			
		Drive section	4	Gears	×	☆	☆	☆	(Specified position) [Note 8]	<b>Lift drive section</b> Plastic gear: FLOIL (G-313S) Metal gear: MOLYKOTE BR2 Plus  <b>Paper feed transport drive section</b> Shaft: FLOIL (G-313S)	<b>Lift drive section</b> UKOG-0307FCZZ UKOG-0062FCZZ  <b>Paper feed transport drive section</b> UKOG-0307FCZZ
			5	Belt		×	×	×	[Note 9]		
			6	Sensors	×	×	×	×	[Note 10]		
		Paper feed separation section	7	Torque limiter	×	×	×	×	[Note 6] [Note 7]		

Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
Finisher/ Saddle finisher/ Punch unit		Other	1	Punch unit					Replacement reference: Replace the unit at 1000K.		
		Drive section	2	Gears	×	☆	☆	☆	(Specified position) [Note 8]	MOLYKOTE EM50L	UKOG-0327FCZZ
				Belts		×	×	×	[Note 9]		
		Transport section	3	Transport rollers	×	○	○	○		Wipe with cloth immersed in water to clean.	
				Transport paper guides	×	○	○	○		Ethyl alcohol	
		Staple process section	4	Knurling belt	×	○	○	○	[Note 3]	Wipe with cloth immersed in water to clean.	
				Paddle	×	○	○	○			
		Other	5	Sensors	×	×	×	×	[Note 10]		
				Discharge brush	×	×	×	×			
			6	Stapler unit					Replacement reference: Replace the unit at 500K staple.		
			7	Staple cartridge					User replacement at every 5000 pcs.		
			8	Stitcher unit (stapler unit for saddle)					Replacement reference: Replace the unit at 200K staple.		
			9	Stitcher staple cartridge (staple cartridge for saddle)					User replacement at every 2000 pcs.		
Inserter	1	Transport section	1	Transport rollers	×	○	○	○		Wipe with cloth immersed in water to clean.	
			2	Transport paper guides	○	○	○	○		Ethyl alcohol	
	2	Paper feed separation section	3	Pickup roller/ Paper feed rollers	×	○	○	○	[Note 4]	Wipe with cloth immersed in water to clean.	
			4	Torque limiter	×	×	×	×	[Note 4] [Note 7]		
	3	Other	5	Sensors	×	×	×	×	[Note 10]		
	4	Drive section	6	Gears	×	☆	☆	☆	(Specified position) [Note 8]	FLOIL G5000H	
			7	Belts		×	×	×	[Note 9]		
Finisher (100 sheets binding)/ Punch unit		Transport section		Transport rollers	×	○	○	○		Wipe with cloth immersed in water to clean.	
				Transport paper guides	×	○	○	○		Ethyl alcohol	
				Curl correction roller	×	○	○	○	[Note 5] 1000K	Wipe with cloth immersed in water to clean.	
		Drive section		Gears	×	☆	☆	☆	[Note 8]	MOLYKOTE EM50L	UKOG-0327FCZZ
				Belts		×	×	×	[Note 9]		

Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
Finisher (100 sheets binding)/ Punch unit		Staple process section		Paper holding rubber roller	×	×	×	×	[Note 5] 1000K		
				Scratch roller (Rear)	×	×	×	×	[Note 5] 1000K		
				Scratch roller (Front)	×	×	×	×	[Note 5] 1000K		
				Discharge roller upper (Front/ Rear)	×	○	○	○		Wipe with cloth immersed in water to clean.	
				Discharge roller upper (Center)	×	○	○	○		Wipe with cloth immersed in water to clean.	
				Shutter clutch	×	×	×	×	[Note 5] 1000K		
				Paper holding torque limiter	×	×	×	×	[Note 5] 1000K		
				Shutter torque limiter		×	×	×	[Note 5] 1000K		
				Sub guide torque limiter		×	×	×	[Note 5] 1000K		
		Other		Sensors	×	×	×	×	[Note 10]		
				Discharge brush	×	×	×	×			
		Load tray (Upper/ Lower)		Load tray torque limiter	×	×	×	×	[Note 5] 200K [Note 7]		
				Load tray one-way clutch	×	×	×	×	[Note 5] 1000K [Note 7]		
				Paper holding lever rubber	×	○	○	○		Wipe with cloth immersed in water to clean.	
				Stapler unit					Replacement reference: Replace the unit at 500K staple.		
				Oscillation guide solenoid					Replacement reference: Replace the unit at 1000K staple.		
				Punch unit					Replacement reference: Replace the unit at 1000K.		
				Staple cartridge					User replacement at every 5000 pcs.		

[Note 2] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed roller related section: 200K or 1 year
- Torque limiter: 800K

[Note 3] Replacement reference: For replacement, refer to the finisher paper exit counter value.

- Knurling belt: 1000K
- Paddle: 1000K

[Note 4] Replacement reference: For replacement, refer to the inserter paper feed port counter value.

- Paper feed roller related section: 150K or 1 year
- Torque limiter: 400K

[Note 5] Replacement reference: For replacement, refer to the finisher paper exit counter value.

5 sheets of paper is considered as one cycle.

[Note 6] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed roller related section: 100K or 1 year
- Torque limiter: 800K

[Note 7] Check when jams occur frequently.

[Note 8] Grease when noises are generated.

[Note 9] Check when noises are generated.

[Note 10] Check when a trouble or a jam is generated due to a sensor or a detector.

## A. DSPF

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

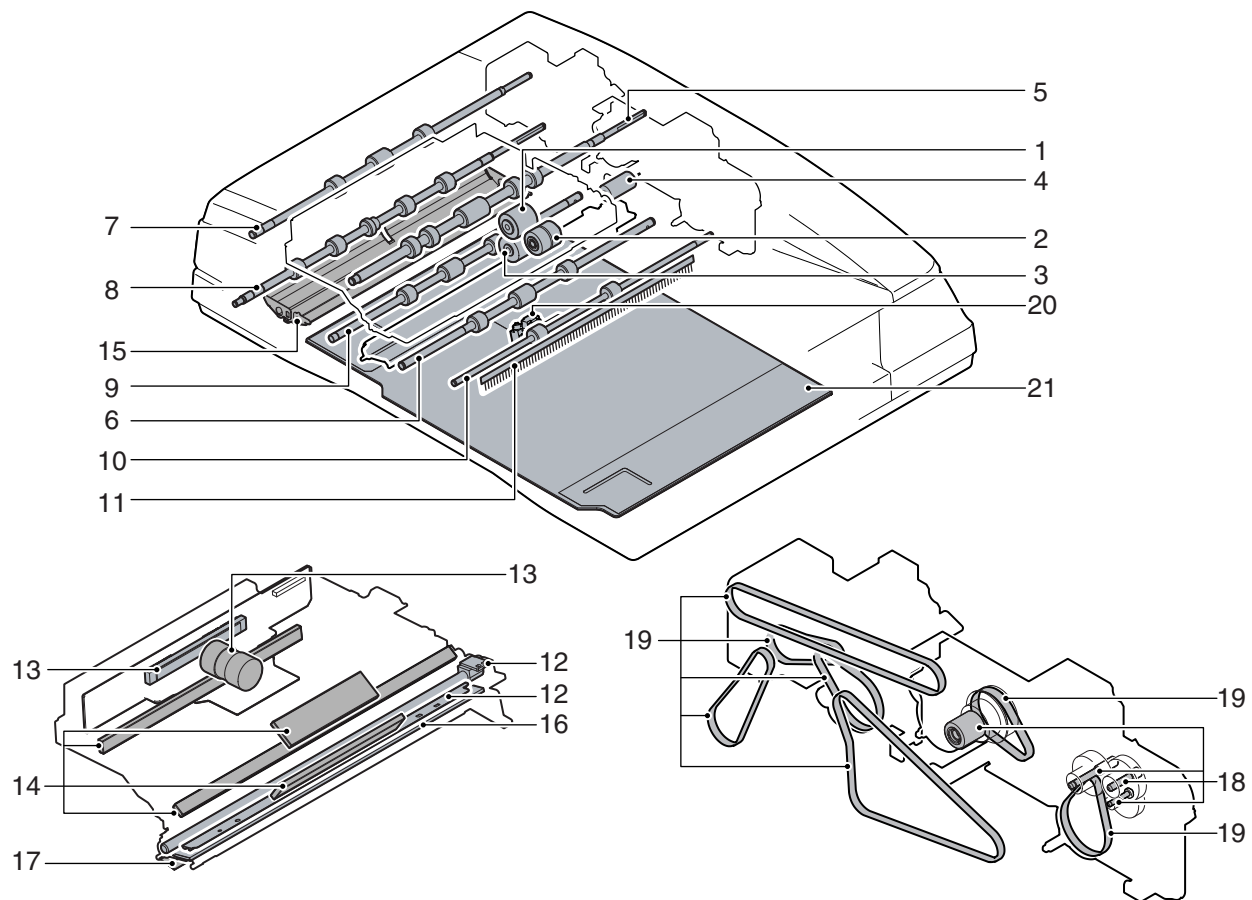
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
1	DSPF		Paper feed/ Transport/ Paper exit section	1	Paper feed roller	○	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Pickup roller	○	○	○	○			
				3	Separation roller	○	○	○	○			
				4	Torque limiter (For separation)	×	×	×	×	[Note 1] [Note 7]		
				5	No.1 resist roller	○	○	○	○			
				6	Transport roller 3	○	○	○	○		Wipe with cloth immersed in water to clean.	
				7	Transport roller 1	○	○	○	○			
				8	No.2 resist roller/ Platen roller	○	○	○	○			
				9	Transport roller 2	○	○	○	○			
				10	Paper exit roller	○	○	○	○			
				11	Discharge brush	×	×	×	×			
			Optical section	12	Scanner lamp/ Reflector	○	○	○	○	[Note 11]	Wipe with dry cloth or ethyl alcohol to clean.	
				13	Lens/CCD	○	○	○	○			
				14	Mirror	○	○	○	○			
				15	No. 1 scanning plate	○	○	○	○		Wipe with dry cloth or ethyl alcohol to clean.	
				16	No. 2 scanning section (Scanning glass)	○	○	○	○			
				17	No. 2 scanning section (White reference glass)	○	○	○	○			
			Drive section	18	Gears	×	×	×	×	(Specified position)	HANARL FL-955R	UKOG-0299FCZZ
				19	Belts		×	×	×			
			Finish stamp section	20	Stamp solenoid							Option Replace at 2400K.
			Other	21	OC mat	○	○	○	○			

[Note 1] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2 section: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4 section: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

[Note 7] Check when jams occur frequently.

[Note 11] Clean when white or black streaks are generated on a copy.

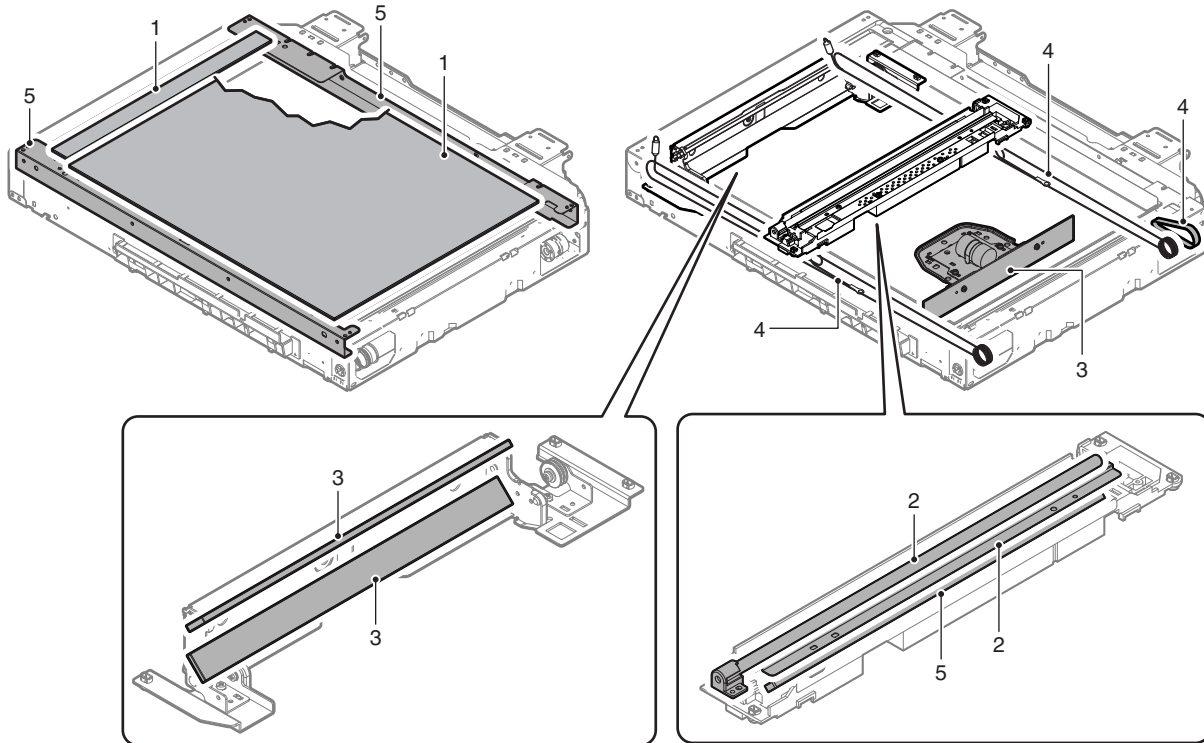




## B. Scanner section (Optical section)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

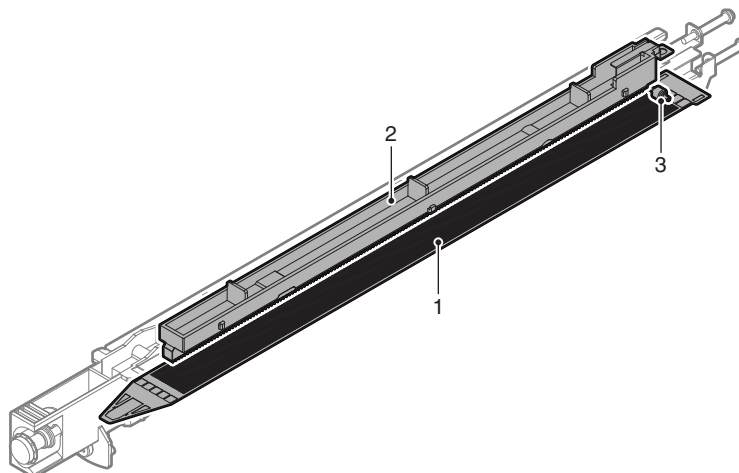
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
2	Scanner section (Optical section)			1	Table glass/ SPF glass	○	○	○	○		Wipe with dry cloth or ethyl alcohol to clean.	
				2	Scanner lamp/ Reflector	○	○	○	○			
				3	Lens/CCD/ Mirrors	○	○	○	○			
				4	Drive belt/ Drive wire/Pulley	×	×	×	×			
				5	Rails	☆	☆	☆	☆	(Specified position)		



## C. MC unit

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

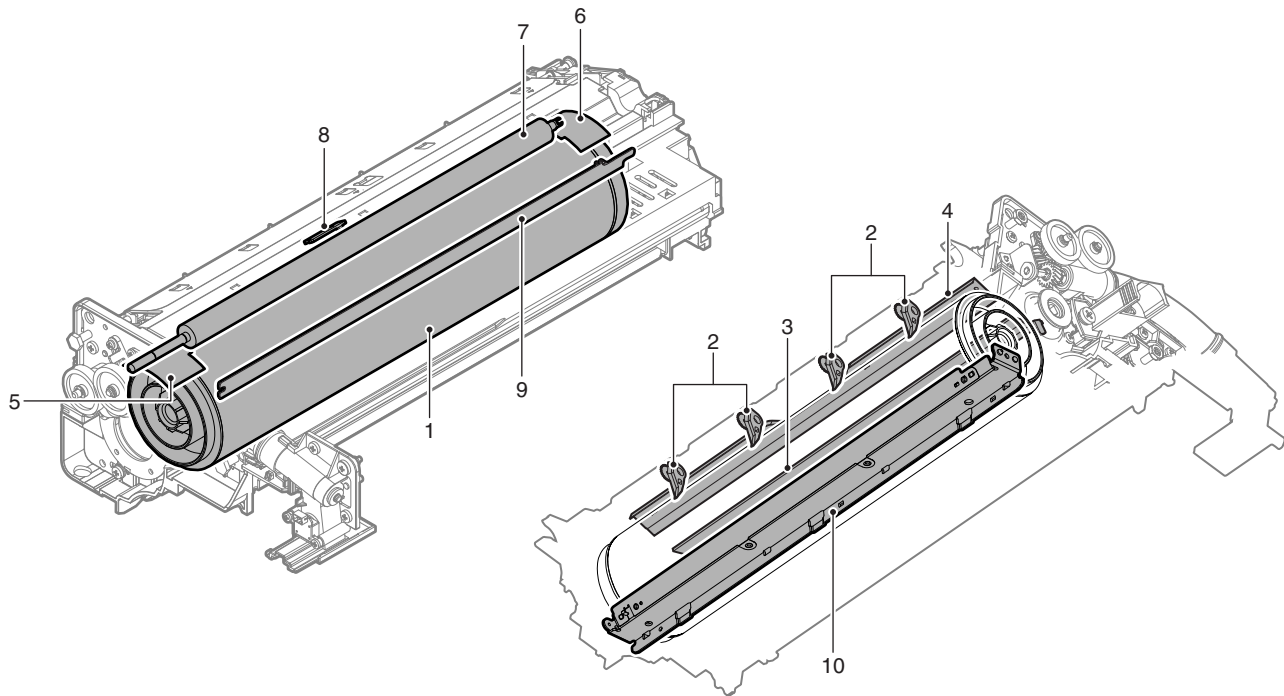
Work sequence (Section/ Unit) (*1)	Section/ Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
3	MC unit			1	Screen grid	×	▲	▲	▲			
				2	Sawtooth	○	▲	▲	▲			
				3	MC cleaner		▲	▲	▲			



## D. OPC drum peripheral section

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

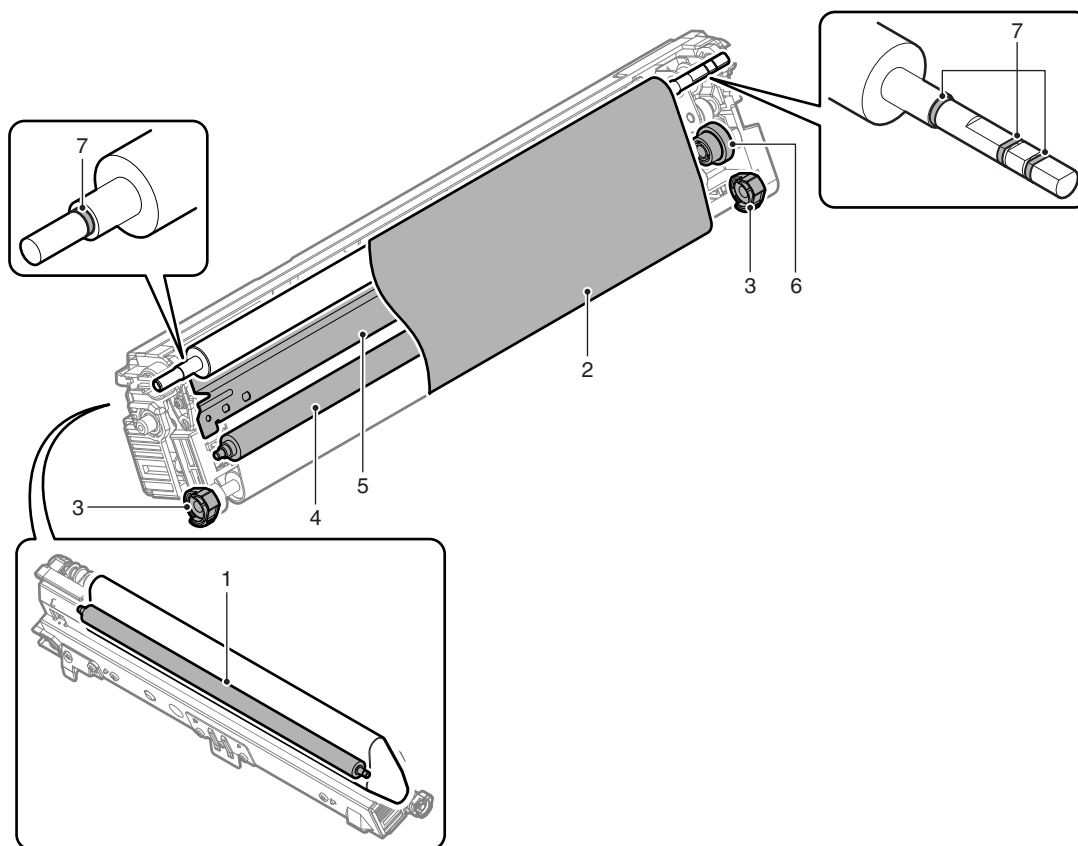
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
4	OPC drum peripheral section			1	Drum	×	▲	▲	▲		Stearic acid	UKOG-0312FCZZ
				2	Drum separation pawl	×	▲	▲	▲			
				3	Cleaning blade	×	▲	▲	▲	It is desirable to replace after one year from installation or replacement.		
				4	Toner reception seal	×	▲	▲	▲			
				5	CL side seal F		▲	▲	▲		Stearic acid	UKOG-0309FCZZ
				6	CL side seal R		▲	▲	▲			
				7	Cleaning brush roller	×	▲	▲	▲			
				8	Image density sensor	×	○	○	○		Ethyl alcohol	
				9	Discharge lamp	×	○	○	○			
				10	Paper guide	○	○	○	○			



## E. Transfer unit

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

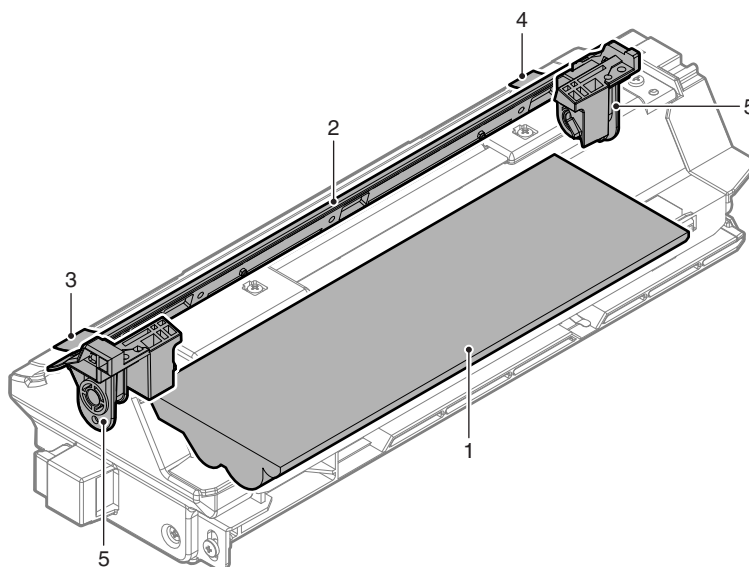
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
5	Transfer unit			1	Transfer CL roller		▲	▲	▲			
				2	Transfer belt	○	▲	▲	▲			
				3	Transfer roller collar		▲	▲	▲			
				4	Transfer roller		▲	▲	▲			
				5	Discharge brush		×	×	×			
				6	Transfer drive gear	×	▲	▲	▲			
				7	Shaft (Conductive grease)	×	×	×	×	Lubricate as needed when checking.	FLOIL GE-676	UKOG-0012QSZZ



## F. Developing unit

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/ Unit) (*1)	Section/ Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
6	Developing unit	1		1	Developer		▲	▲	▲	Supply when installing		
				2	Doctor cover unit (with DV seal)		▲	▲	▲			
				3	DV side seal F		▲	▲	▲		Ethyl alcohol	
				4	DV side seal R		▲	▲	▲			
				5	MG holder F/R	○	○	○	○			
		2			Toner cartridge					Assembly when installing/ Replacement by user when empty		



## G. Paper feed/Paper transport/ Paper exit section

### (1) Manual paper feed section

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

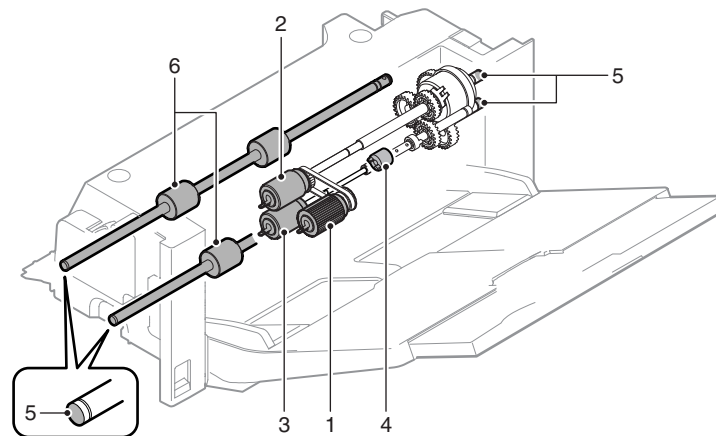
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	1	Manual paper feed section	1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Shaft (Conductive grease)	×	☆	☆	☆	[Note 8]	FLOIL GE-676	UKOG-0012QSZZ
				6	Transport roller 1	×	○	○	○		Wipe with cloth immersed in water to clean.	
				7	Paper guides	×	○	○	○		Ethyl alcohol	

[Note 1] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2 section: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4 section: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

[Note 7] Check when jams occur frequently.

[Note 8] Grease when noises are generated.



## (2) Paper feed tray 1, 2 section

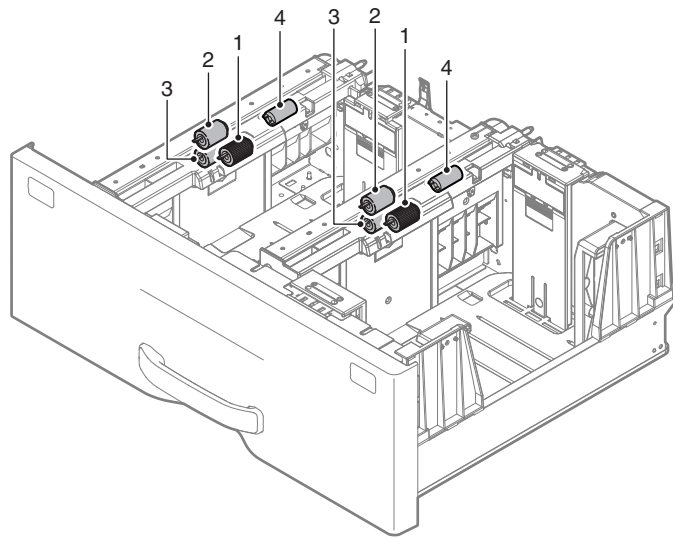
×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	2	Paperfeed tray 1, 2 section	1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Paper guides	×	○	○	○		Ethyl alcohol	

[Note 1] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2 section: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4 section: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

[Note 7] Check when jams occur frequently.



### (3) Paper feed tray 3, 4 section

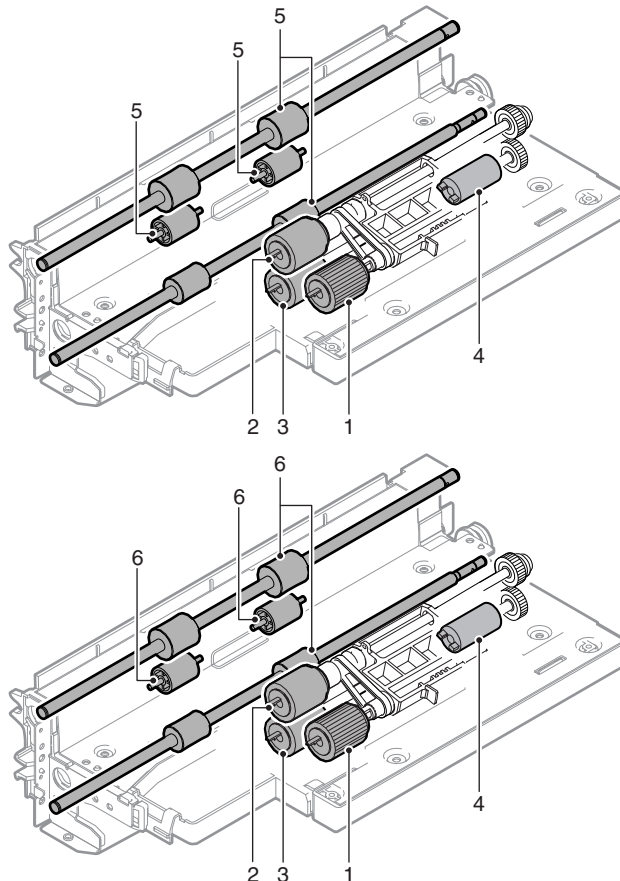
×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	3	Paperfeed tray 3, 4 section	1	Pickup roller	×	○	○	○	[Note 1]	Wipe with cloth immersed in water to clean.	
				2	Paper feed roller	×	○	○	○			
				3	Separation roller	×	○	○	○			
				4	Torque limiter	×	×	×	×	[Note 1] [Note 7]		
				5	Transport roller 8, 9, 10	×	○	○	○		Wipe with cloth immersed in water to clean.	
				6	Transport roller 5, 6, 7	×	○	○	○			
				7	Paper guides	×	○	○	○			
											Ethyl alcohol	

[Note 1] Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2 section: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4 section: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

[Note 7] Check when jams occur frequently.

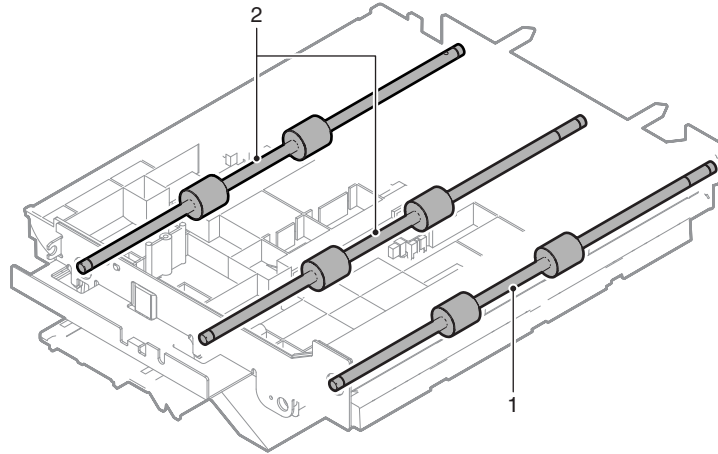




#### (4) Transport section (Horizontal transport section)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

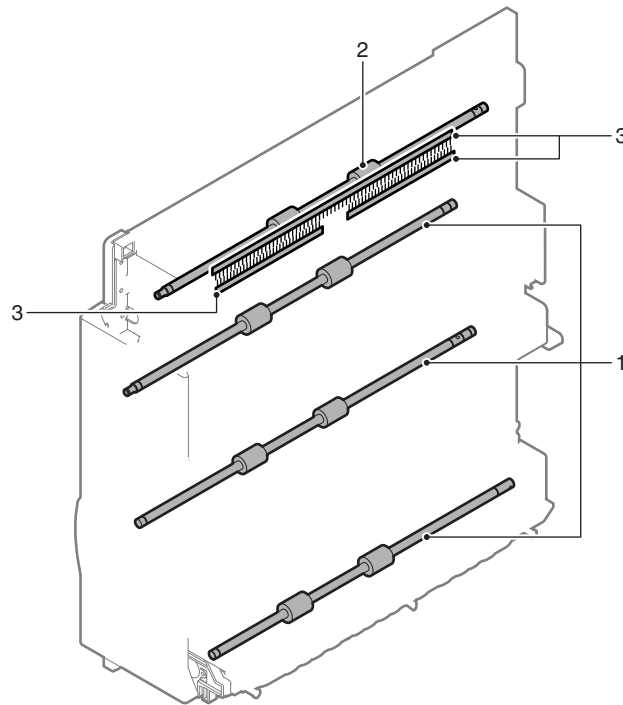
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	4	Transport section (Horizontal transport section)	1	Transport roller 2	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 3, 4	×	○	○	○			
				3	Paper guides	×	○	○	○		Ethyl alcohol	



## (5) Transport section (Duplex)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

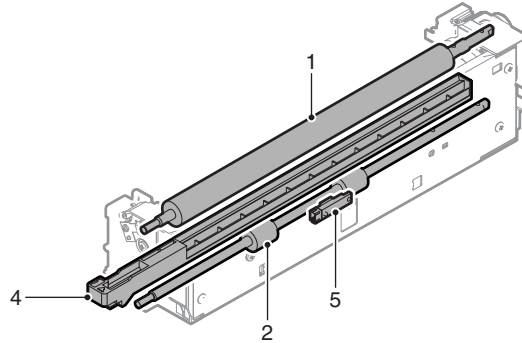
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	5	Transport section (Duplex)	1	Transport roller 19, 20, 21	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Paper exit roller 2	×	○	○	○			
				3	Discharge brush	×	×	×	×			
				4	Paper guides	×	○	○	○		Ethyl alcohol	



## (6) Transport section (Vertical transport 2)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	6	Transport section (Vertical transport 2)	1	PS roller	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 15	×	○	○	○			
				3	Paper guides	×	○	○	○		Ethyl alcohol	
				4	Paper dust clean unit	×	▲	▲	▲			
				5	Reflection sensor (PPD)		○	○	○			

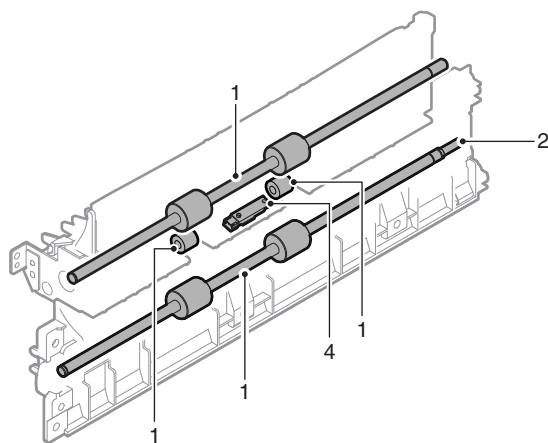


## (7) Transport section (Vertical transport 1)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	7	Transport section (Vertical transport 1)	1	Transport roller 11, 12, 13	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Transport roller 11 shaft (Conductive grease)	×	☆	☆	☆	[Note 8]	FLOIL GE-676	UKOG-0012QSZZ
				3	Paper guides	×	○	○	○		Ethyl alcohol	
				4	Reflection sensor (T1PPD)		○	○	○			

[Note 8] Grease when noises are generated.

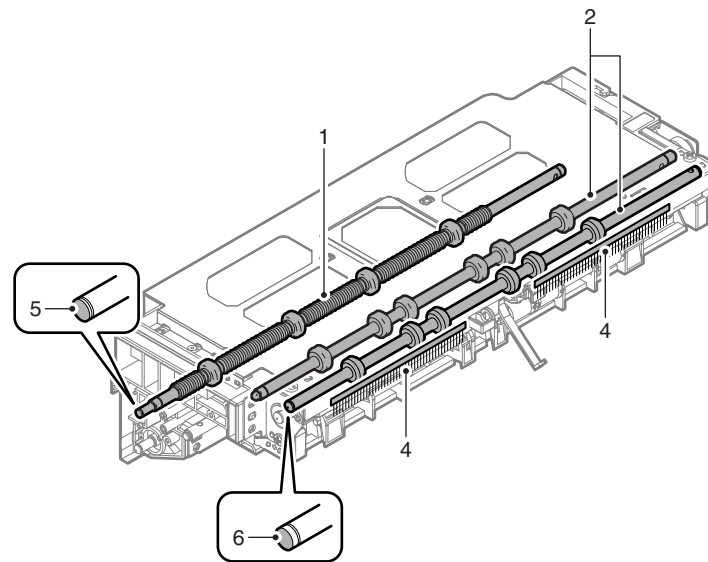


# (8) Transport section (Paper exit reverse section)

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
7	Paper feed/ Paper transport/ Paper exit section	8	Transport section (Paper exit reverse section)	1	Transport roller 16	×	○	○	○		Wipe with cloth immersed in water to clean.	
				2	Paper exit roller 1, 3	×	○	○	○			
				3	Paper guide	○	○	○	○		Ethyl alcohol	
				4	Discharge brush	×	×	×	×			
				5	Transport roller 16 shaft (Conductive grease)	×	☆	☆	☆	[Note 8]	FLOIL GE-676	UKOG-0012QSZZ
				6	Paper exit roller 3 shaft (Conductive grease)	×	☆	☆	☆			

[Note 8] Grease when noises are generated.



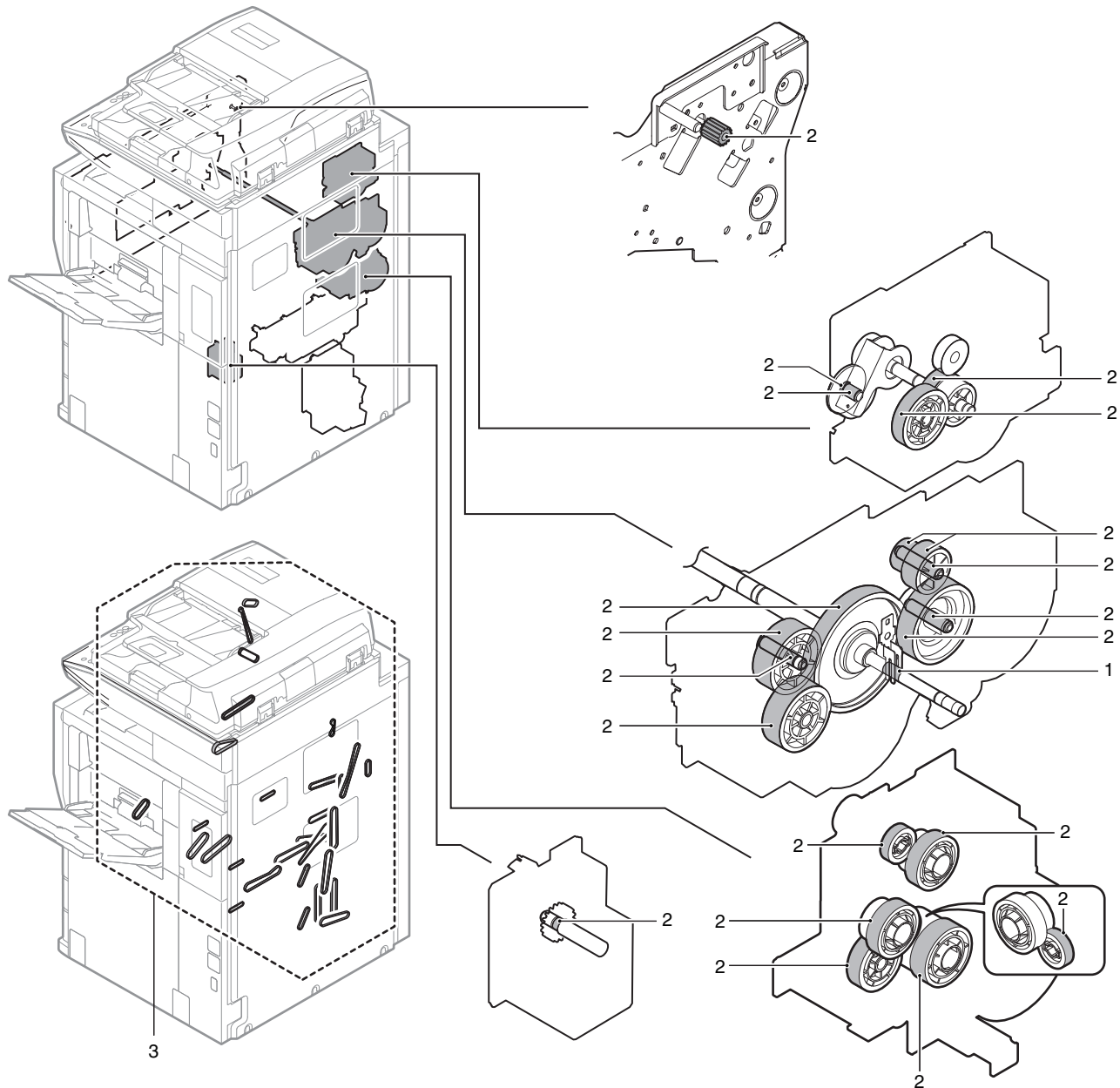
## H. Drive section

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
8	Drive section			1	Drum shaft (Conductive grease)	×	☆	☆	☆		FLOIL GE-676	UKOG-0012QSZZ
				2	Gears	×	×	×	×	[Note 8]	FLOIL G-313S	UKOG-0307FCZZ
				3	Belts		×	×	×	[Note 9]		

[Note 8] Grease when noises are generated.

[Note 9] Check when noises are generated.

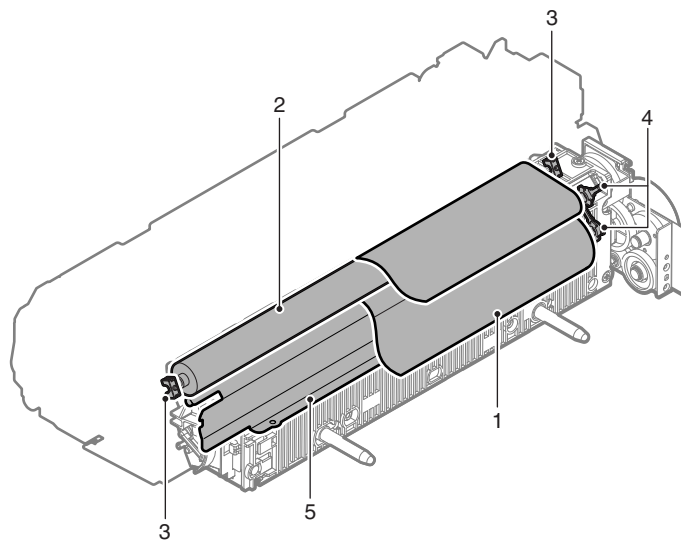


## I. Fusing unit

### (1) Upper web unit

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

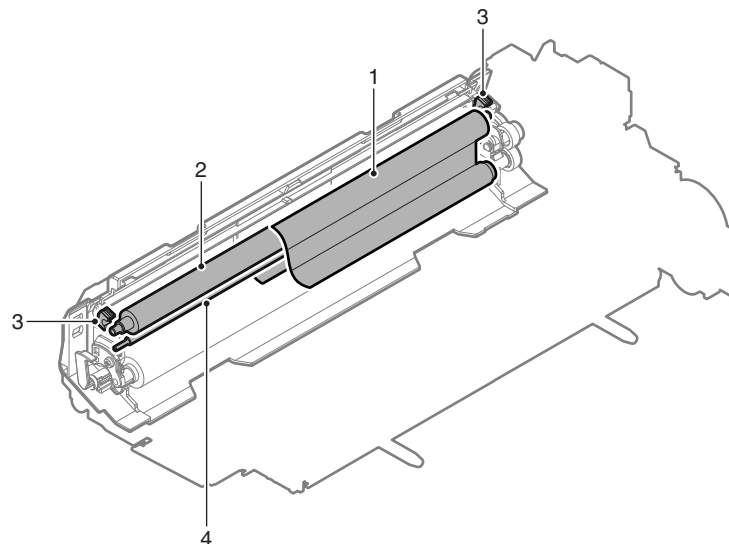
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
9	Fusing unit	1	Upper web unit	1	Web roller	×	▲	▲	▲			
				2	Pressure roller	×	▲	▲	▲			
				3	Pressure bearing		▲	▲	▲			
				4	Web bearing		▲	▲	▲			
				5	Web guide	×	○	○	○			



### (2) Lower web unit

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

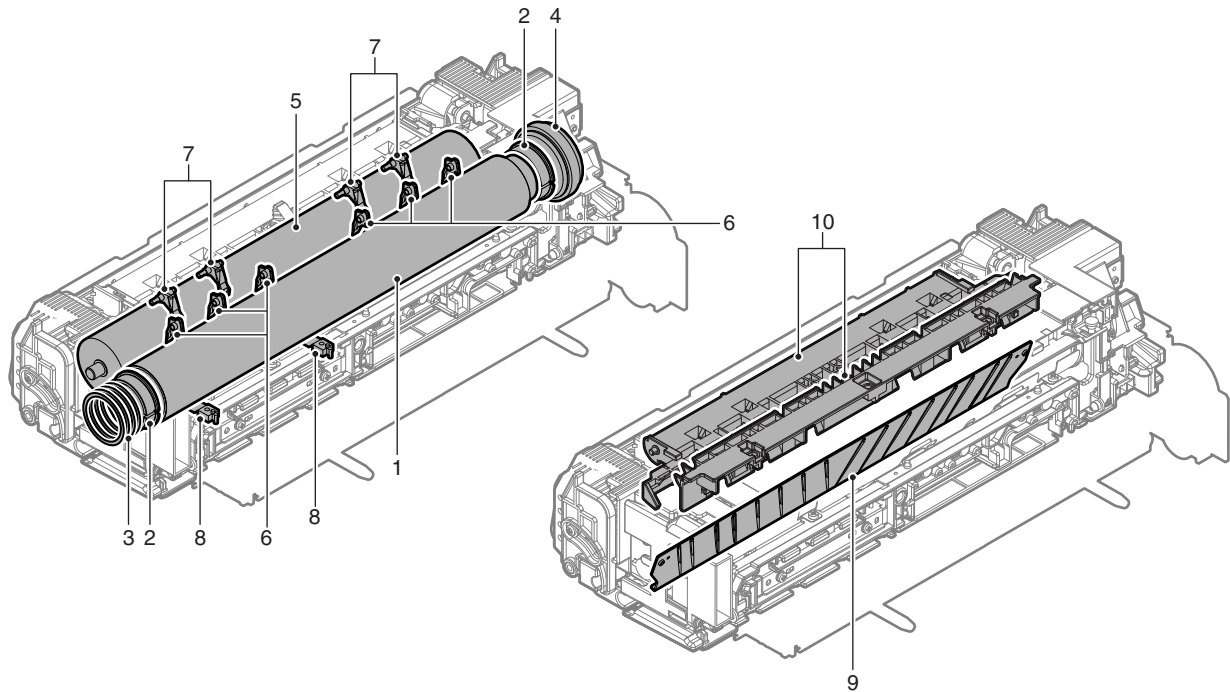
Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
9	Fusing unit	2	Lower web unit	1	Lower web roller	×	▲	▲	▲			
				2	Lower pressure roller	×	▲	▲	▲			
				3	Lower pressure bearing		▲	▲	▲			
				4	Web shaft	×	○	○	○			



### (3) Fusing unit body

×: Check (Clean, replace, adjust, or grease as needed.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
9	Fusing unit	3	Fusing unit body	1	Heat roller	×	▲	▲	▲			
				2	Heat roller insulation bush	×	▲	▲	▲			
				3	Insulation spacer (4 pieces)		▲	▲	▲			
				4	Heat roller gear		×	×	×	Lubricate as needed when checking.	JFE552	UKOG-0235FCZZ
				5	Pressure roller	×	▲	▲	▲			
				6	Upper separation pawl	×	▲	▲	▲			
				7	Lower separation pawl	×	▲	▲	▲			
				8	Thermistor (upper/lower)	×	×	×	×	Paper dust removal is required.		
				9	Paper entry guide	○	○	○	○			
				10	Paper exit guide	○	○	○	○			

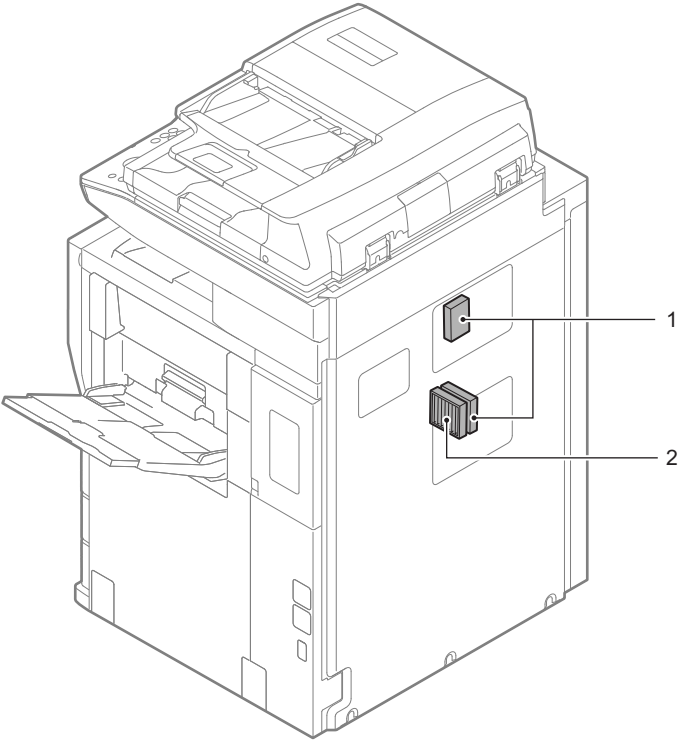




**J. Filters**

×: Check (Clean, replace, adjust, or grease as needed.)    ○: Clean    ▲: Replace    △: Adjust    ☆: Lubricate    □: Shift position

Work sequence (Section/Unit) (*1)	Section/Unit name	Work sequence (Sub unit) (*2)	Section/ Sub unit name	Work sequence (Parts) (*3)	Part name	When calling	300 K	600 K	900 K	NOTE	Process / Material	
10	Filters			1	Ozone filter		▲	▲	▲			
				2	Toner filter		▲	▲	▲			

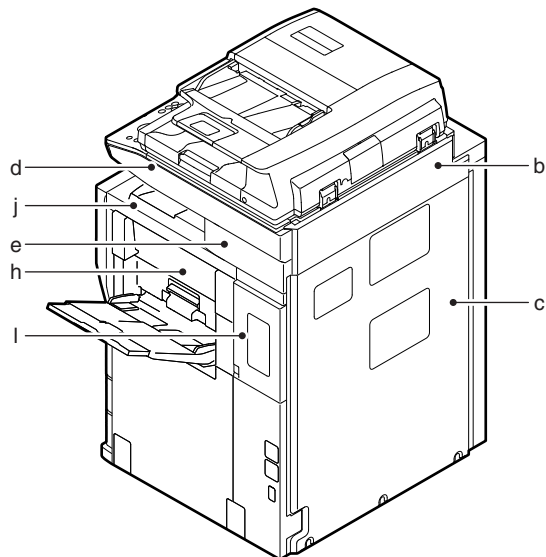
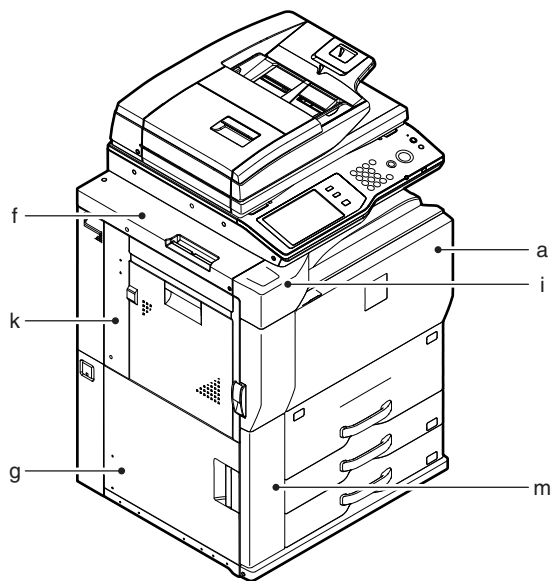


# [10] DISASSEMBLY AND ASSEMBLY

## 1. Exterior

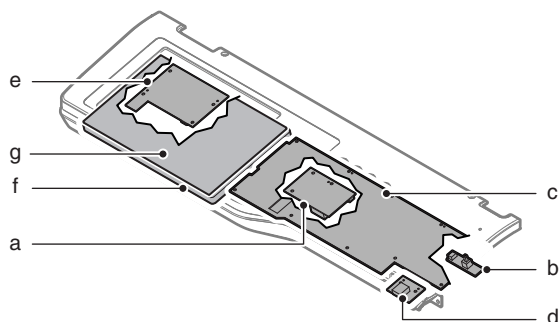
Disassembly of each external outfit part refer to each section.

No.	Parts
a	Front cabinet
b	Rear cabinet upper
c	Rear cabinet
d	Right side cabinet upper
e	Right side cabinet lower
f	Left top cabinet
g	Left lower cabinet
h	Right cabinet center
i	Front cabinet upper
j	Paper exit tray cabinet
k	Left cabinet upper
l	Right cabinet upper
m	Left front cabinet



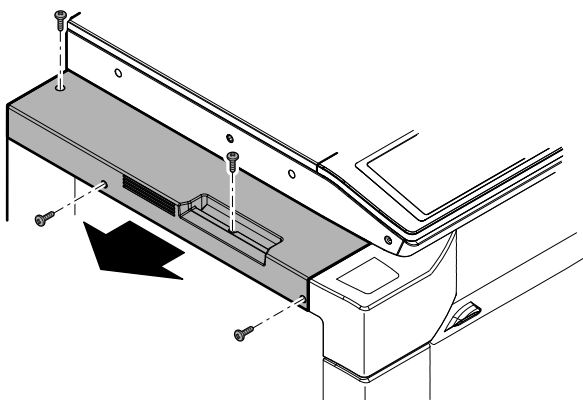
## 2. Operation panel section

### A. Operation panel unit

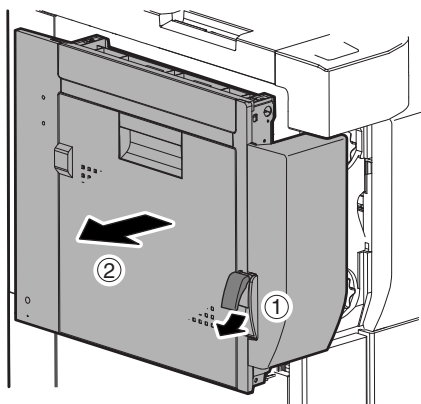


Parts	
a	LCD INV PWB
b	POWER SW PWB
c	8.5 MFP OPE PWB
d	USB connector PWB
e	LVDS PWB
f	LCD module
g	Touch panel

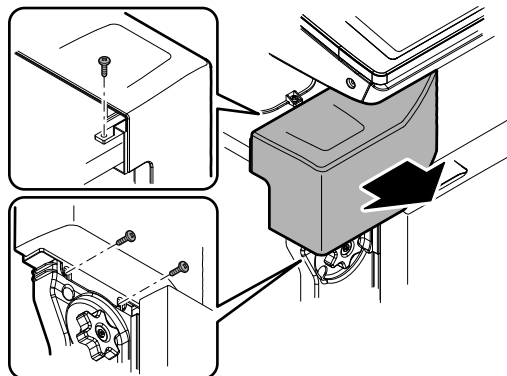
- 1) Remove the screw, and remove the left cover cabinet.



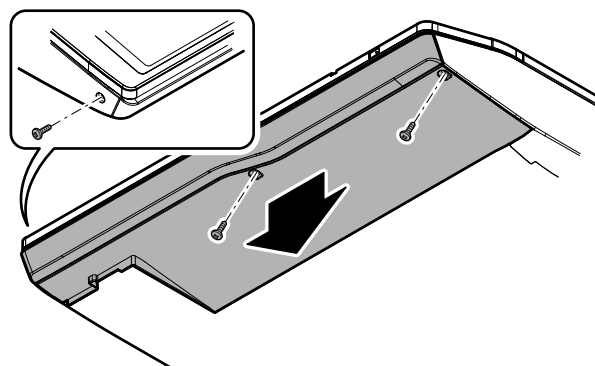
- 2) Open the left door.



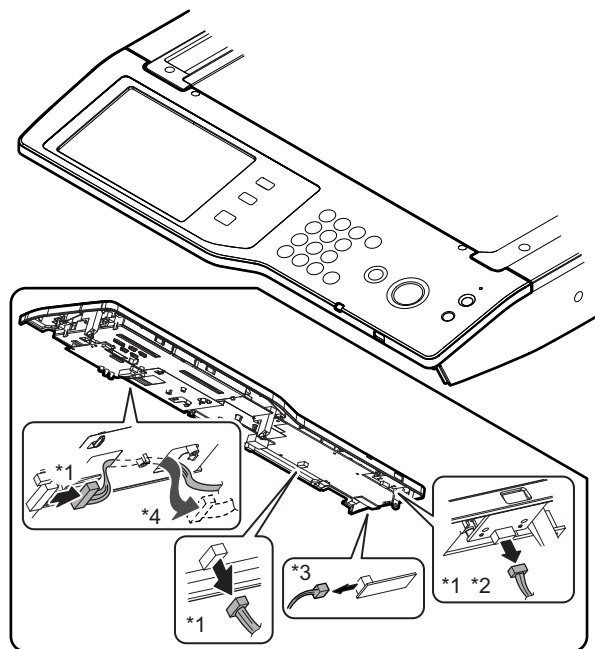
- 3) Remove the screw, and remove the front cabinet upper.



- 4) Remove the screw, and remove the operation base plate unit.



- 5) Disconnect the connector from the operation panel unit.



\*1: Since the lead wire is provided with the lock, do not pull the lead wire.

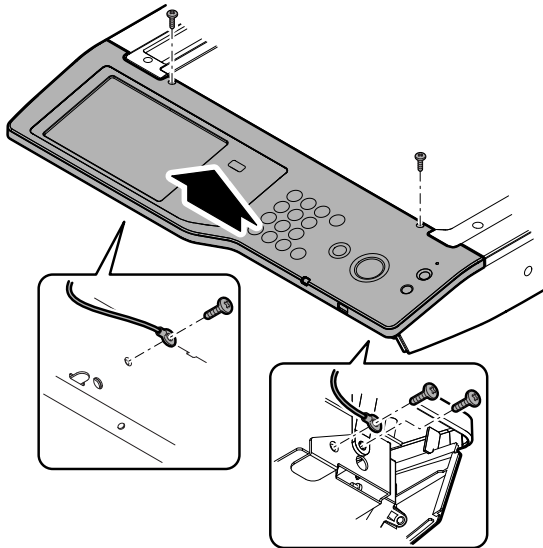
Hold the connector and pull it out.

\*2: Note that the lock is on the back surface.

\*3: When disconnecting the connector, pull the lead wire slowly.

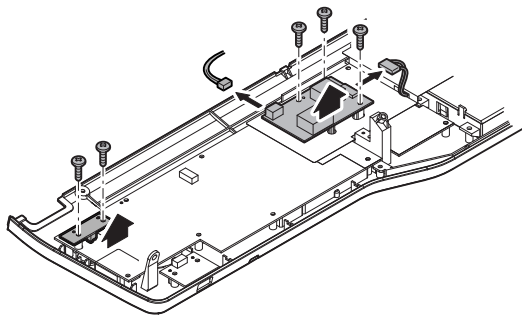
\*4: Disconnect the connector from the Mylar.

- 6) Remove the screw and the earth wire, and remove the operation panel unit.

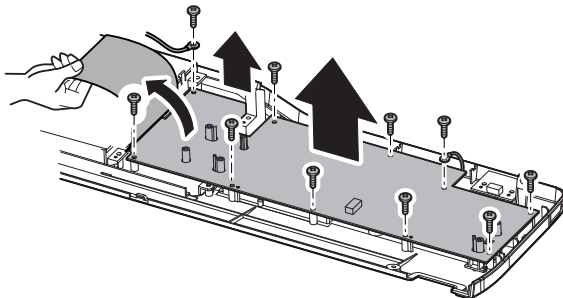


### (1) LCD INV PWB/POWER SW PWB/8.5 MFP OPE PWB

- 1) Remove the operation panel unit.
- 2) Disconnect the connector and remove the screw. Remove the LCD INV PWB and the POWER SW PWB.

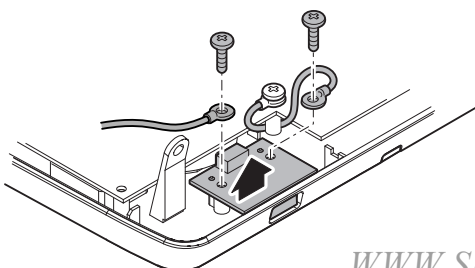


- 3) Remove the screw and the earth wire. Peel off the Mylar, and remove the 8.5 MFP OPE PWB.



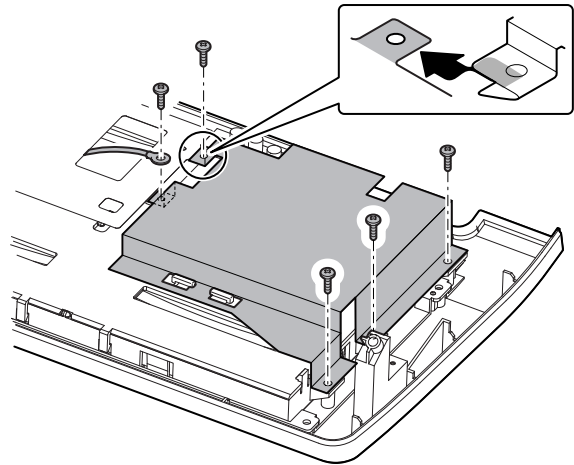
### (2) USB connector PWB

- 1) Remove the operation panel unit.
- 2) Remove the screw and the earth wire, and remove the USB connector PWB.



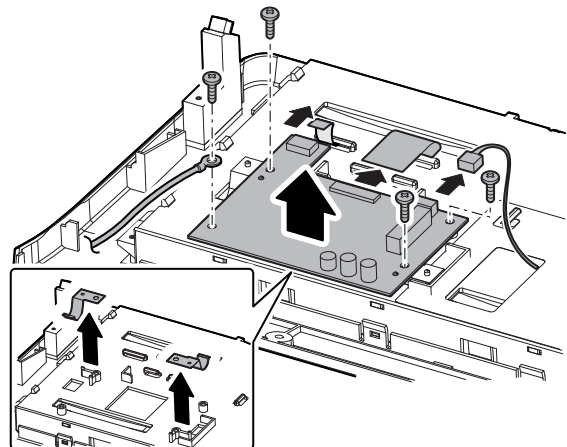
### (3) LVDS PWB

- 1) Remove the operation panel unit.
- 2) Remove the screw and the earth wire, and remove the LVDS shield sheet.



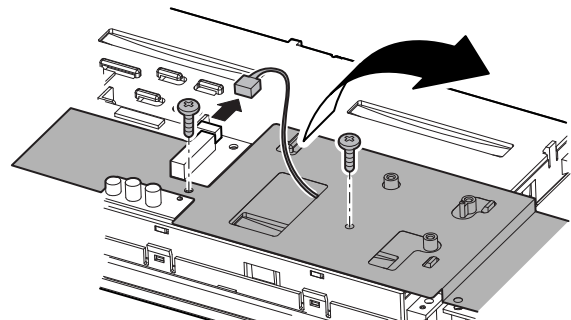
- 3) Disconnect the connector and remove the screw and the earth wire. Remove the LVDS PWB.

\* When the LVDS PWB is removed, the earth plate for the LCD is also removed. Be careful not to lose it.

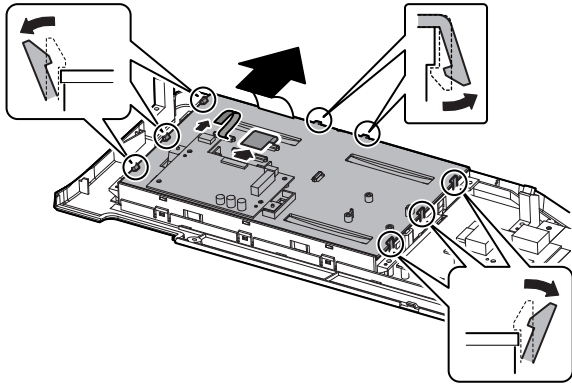


### (4) LCD module

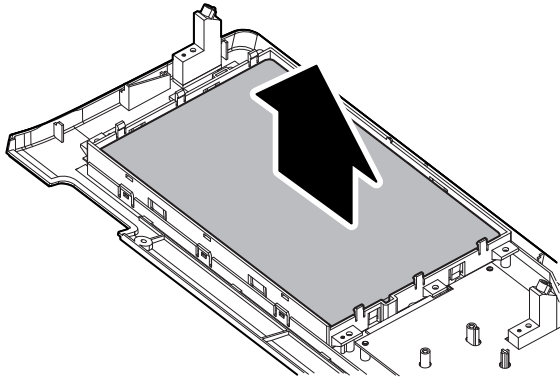
- 1) Remove the operation panel unit.
- 2) Remove the LVDS shield sheet.
- 3) Disconnect the connector and remove the screw. Remove the Mylar.



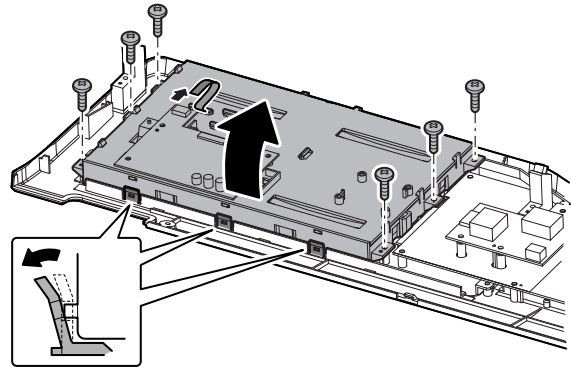
- 4) Disconnect the connector, and remove the LCD holder.



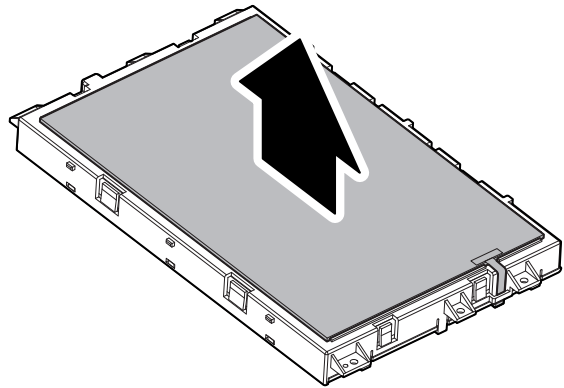
- 5) Remove the LCD module.



- 4) Disconnect the connector and remove the screw, and remove the LCD unit.

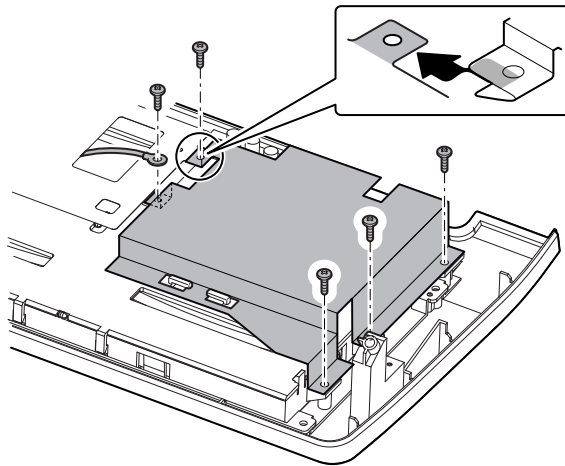


- 5) Remove the touch panel.

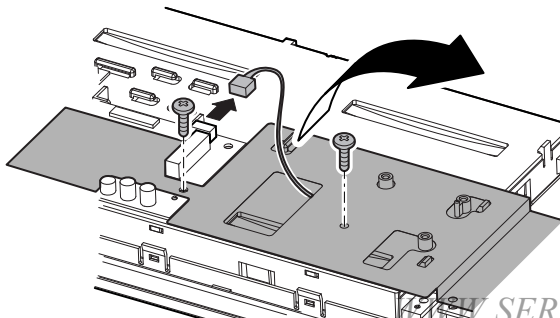


#### (5) Touch panel

- 1) Remove the operation panel unit.
- 2) Remove the screw and the earth wire, and remove the LVDS shield sheet.

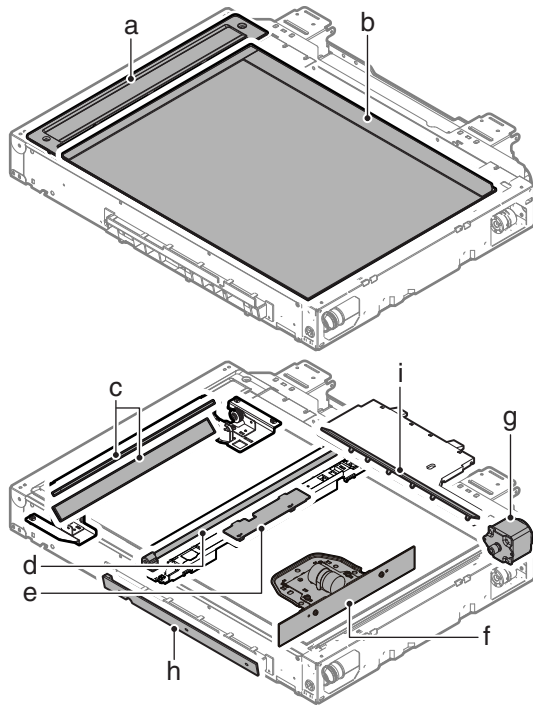


- 3) Disconnect the connector and remove the screw. Remove the Mylar.



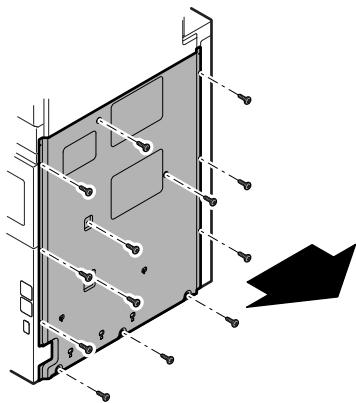
### 3. Scanner section

#### A. Scanner unit

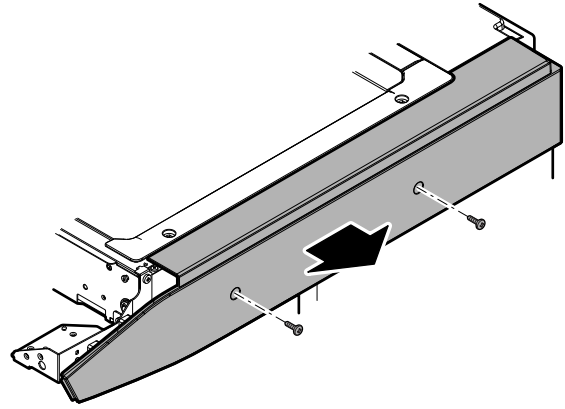


Parts	
a	SPF glass
b	Table glass
c	Mirror
d	Scanner lamp
e	CL inverter PWB
f	CCD unit
g	Scanner motor
h	Document detection light receiving PWB
i	Document detection light emitting PWB

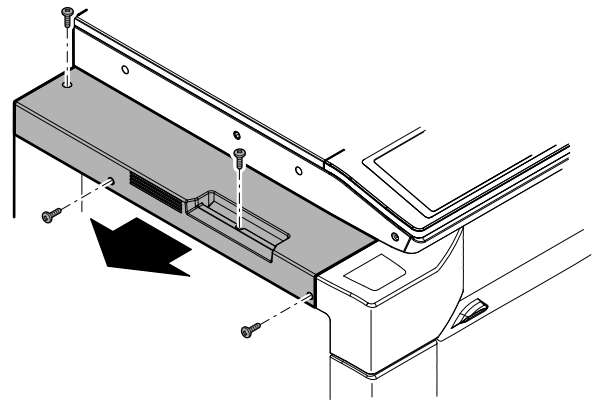
- 1) Remove the operation panel unit.  
(See "2. Operation panel section")
- 2) Remove the DSPF unit.  
(See "18. Automatic document feeder")
- 3) Remove the screw, and remove the rear cabinet.



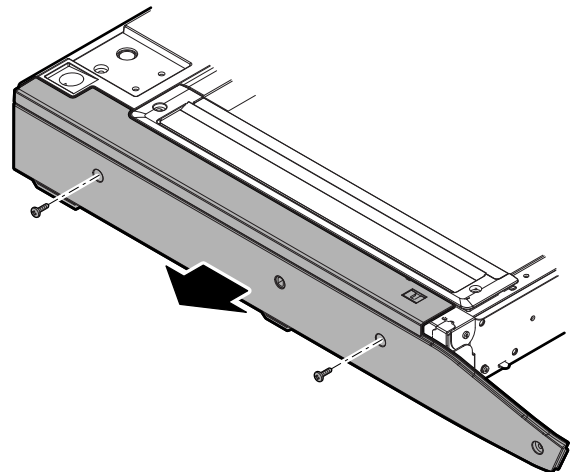
- 4) Remove the screw, and remove the upper cabinet left.



- 5) Remove the screw, and remove the left cover cabinet.

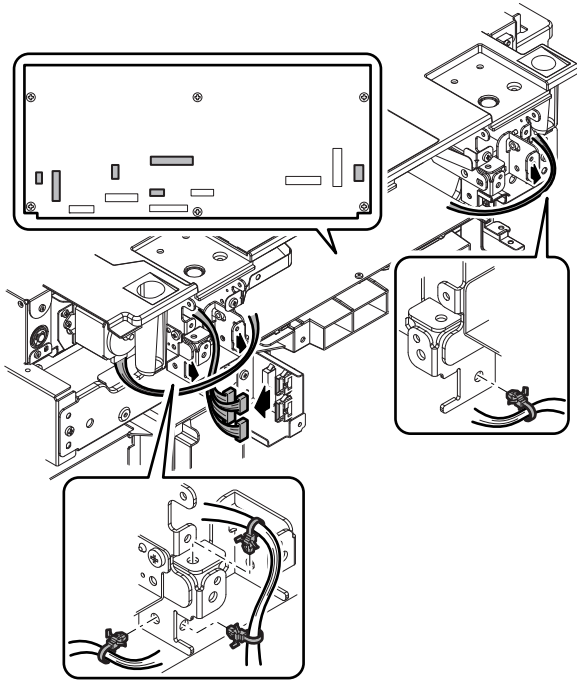


- 6) Remove the screw, and remove the upper cabinet right.

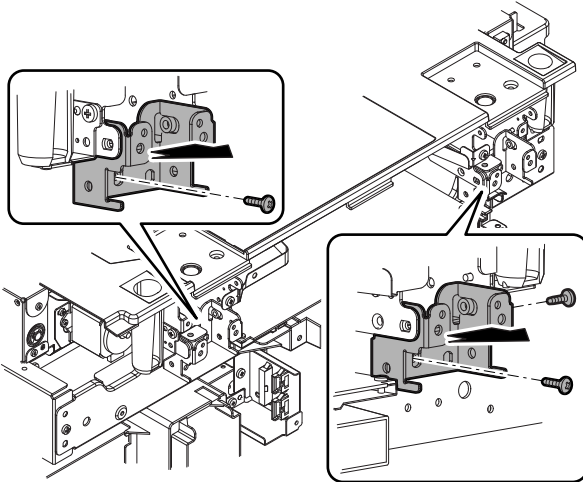




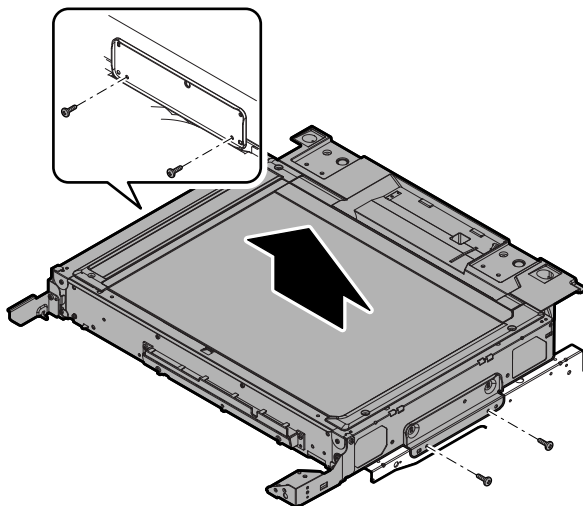
- 7) Disconnect the connector. Remove the snap band, and remove the harness from the edge saddle.



- 8) Remove the screw, and remove the supporting plate.

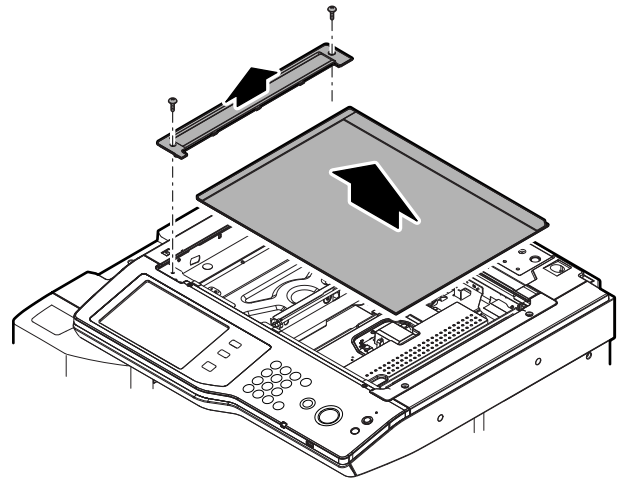


- 9) Remove the screw, and remove the scanner unit.

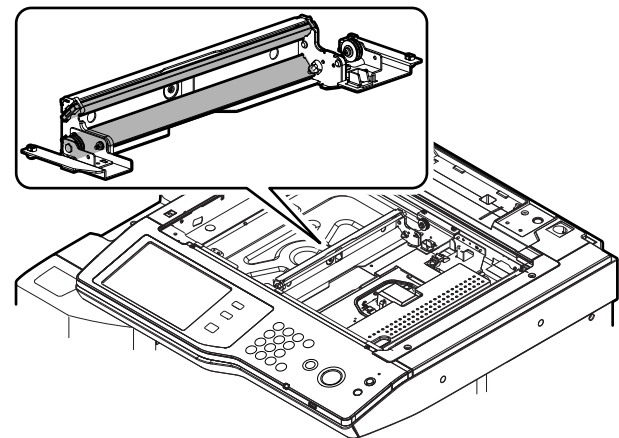


## (1) SPF glass/Table glass/Mirror

- 1) Remove the screw, and remove the SPF glass. Remove the table glass.

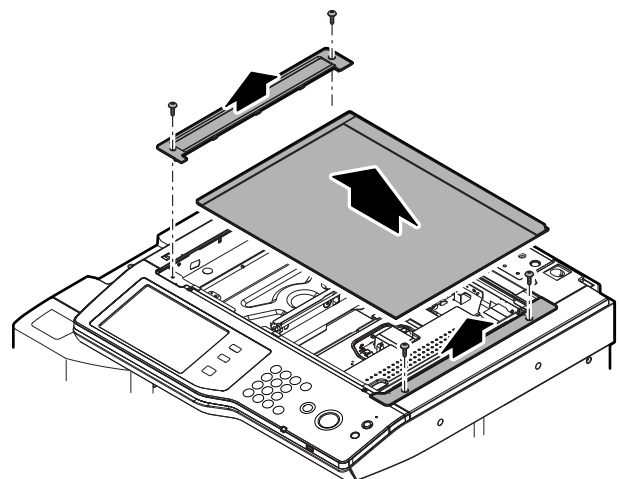


- 2) Clean the mirror.

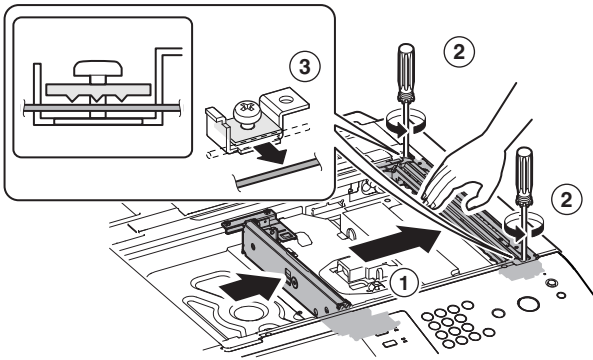


## (2) Scanner lamp/CL inverter PWB

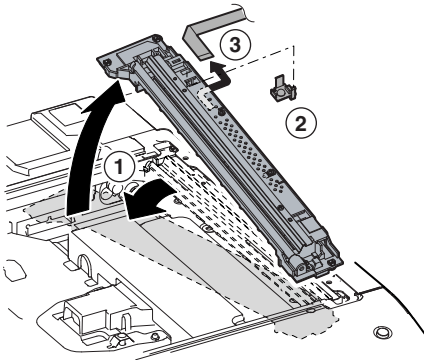
- 1) Remove the screw, and remove the SPF glass. Remove the table glass. Remove the screw, and remove the glass supporting plate.



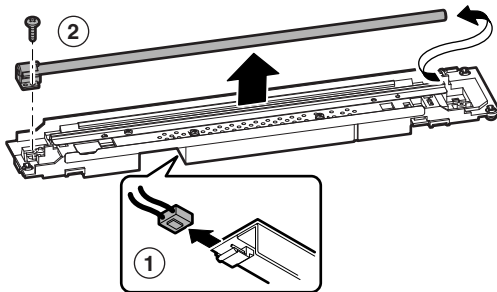
- 2) Shift the lamp unit to the right end. Loosen the screw, and remove the wire.



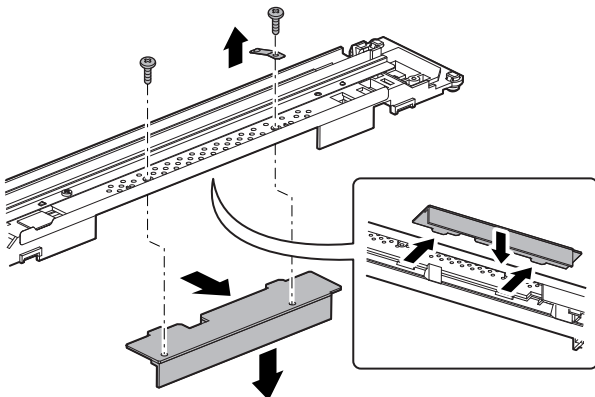
- 3) While rotating the lamp unit, lift it. Remove the harness holder and the flat cable, and remove the lamp unit.



- 4) Disconnect the connector, and remove the lamp.

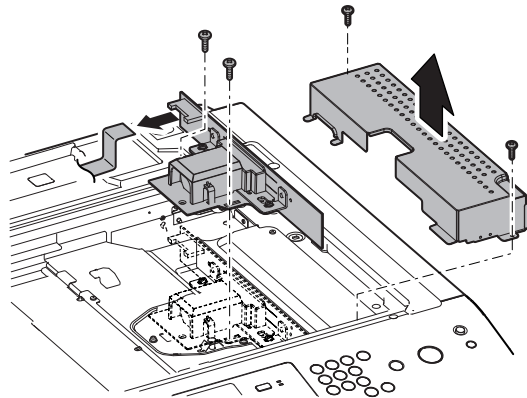


- 5) Remove the CL inverter PWB.



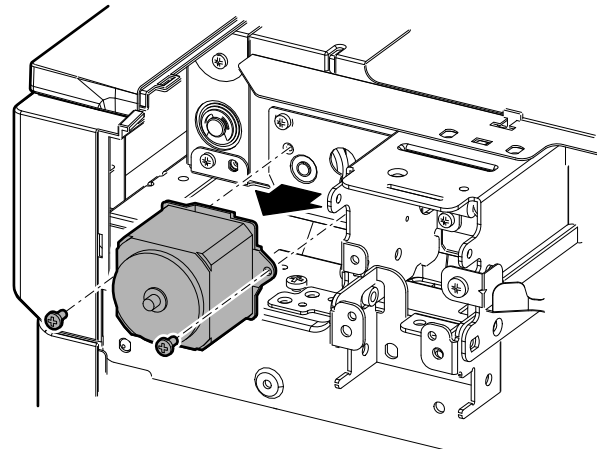
### (3) CCD unit

- 1) Remove the dark box cover. Disconnect the connector, and remove the CCD unit.



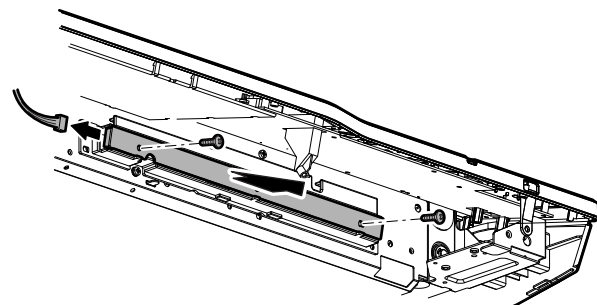
### (4) Scanner motor

- 1) Remove the DSPF unit.  
(See "18. Automatic document feeder")
- 2) Remove the upper cabinet rear unit.
- 3) Disconnect the connector. Remove the screw, and remove the scanner motor.



### (5) Document detection light receiving PWB

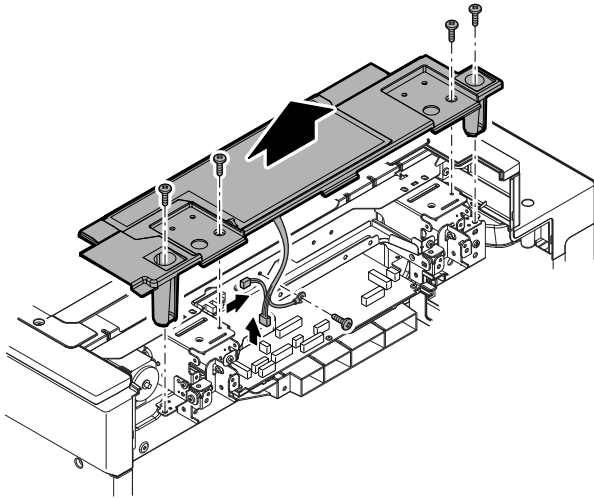
- 1) Remove the operation base plate.
- 2) Disconnect the connector. Remove the screw, and remove the document detection light receiving PWB.



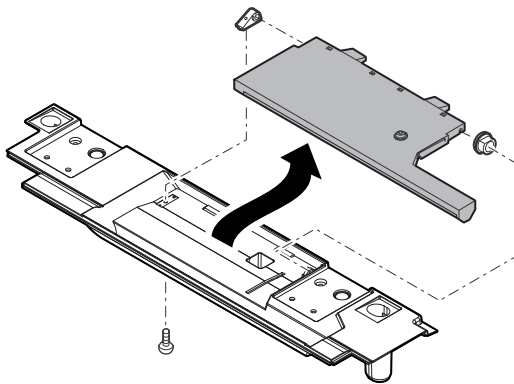


**(6) Document detection light emitting PWB**

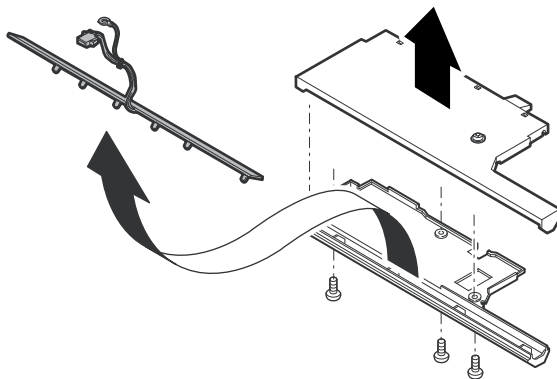
- 1) Remove the DSPF unit.  
(See "18. Automatic document feeder")
- 2) Remove the screw, and remove the upper cabinet rear unit.  
Remove the screw, and remove the earth wire. Disconnect the connector.



- 3) Remove the screw, and remove the light emitting unit.

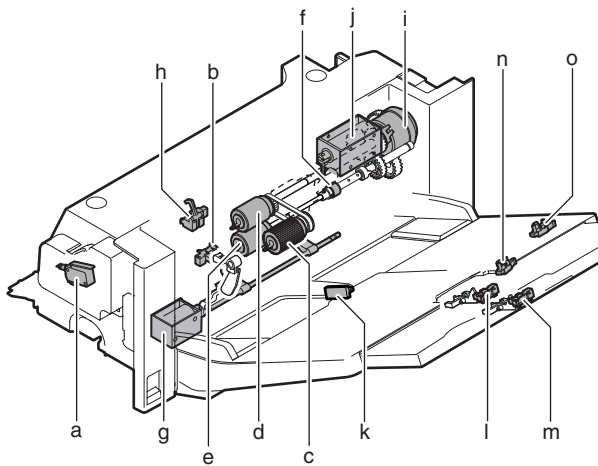


- 4) Remove the document detection light emitting PWB.



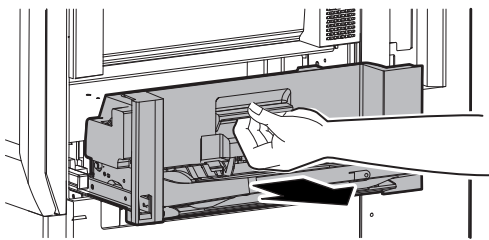
## 4. Manual paper feed section

No.	Parts	Maintenance
a	Manual paper feed unit open/close switch	
b	Manual feed empty detector	
c	Pickup roller	× ○
d	Paper feed roller	× ○
e	Separation roller	× ○
f	Torque limiter	×
g	Manual feed gate solenoid	
h	Manual feed paper pass detector 1	
i	Paper feed clutch	
j	Paper pickup solenoid	
k	Manual feed paper width size detection PWB	
l	Manual feed paper length detector 1	
m	Manual feed paper length detector 2	
n	Manual feed tray pull-out position detector 1	
o	Manual feed tray pull-out position detector 2	

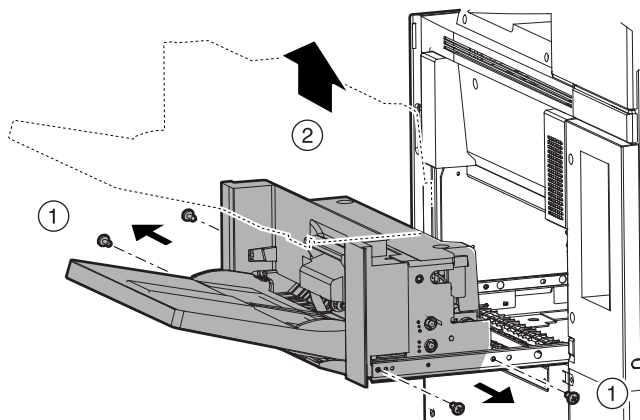


### A. Multi manual paper feed tray unit

- 1) Pull out the multi manual paper feed tray unit.

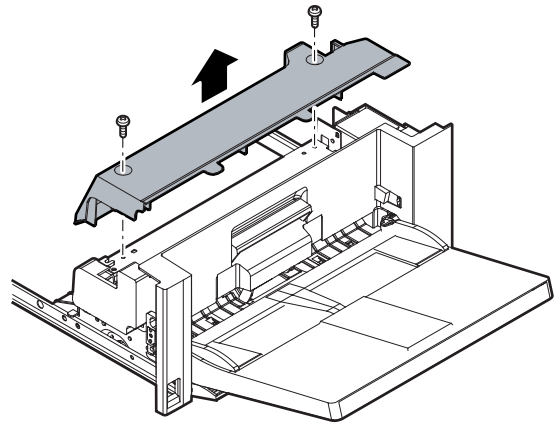


- 2) Remove the multi manual paper feed tray unit from the left and right accurately.

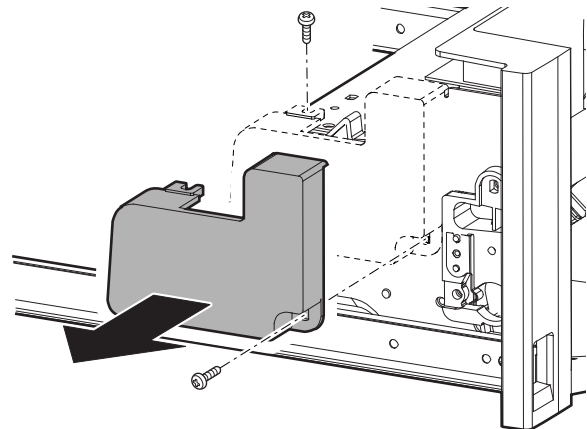


### (1) Manual paper feed unit open/close switch

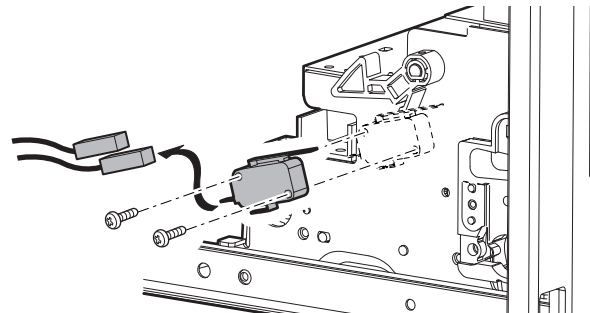
- 1) Pull out the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.



- 3) Remove the manual feed front cover.

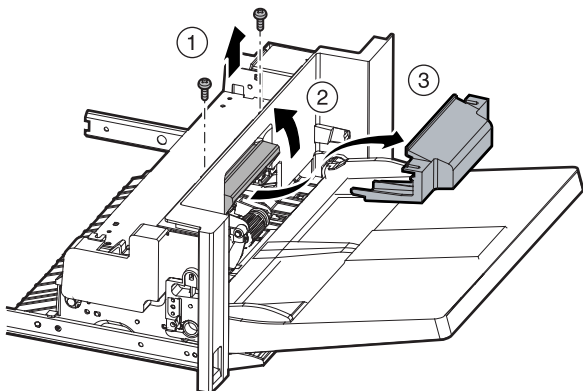


- 4) Remove the manual paper feed unit open/close switch.

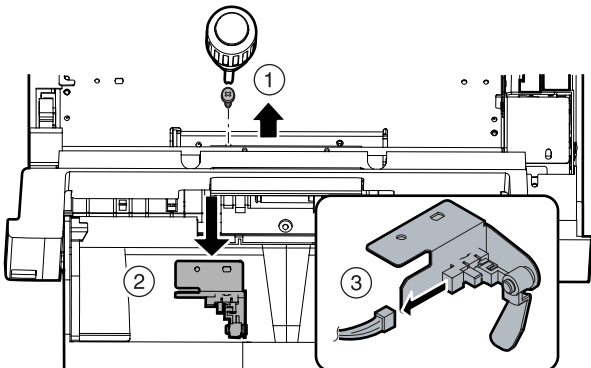


## (2) Manual feed empty detector

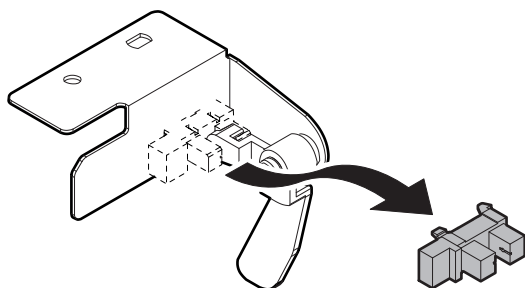
- 1) Pull out the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.  
(See "A-(1) Manual paper feed unit open/close switch")
- 3) Remove the pickup cover.



- 4) Remove the actuator unit.



- 5) Remove the manual feed empty detector.

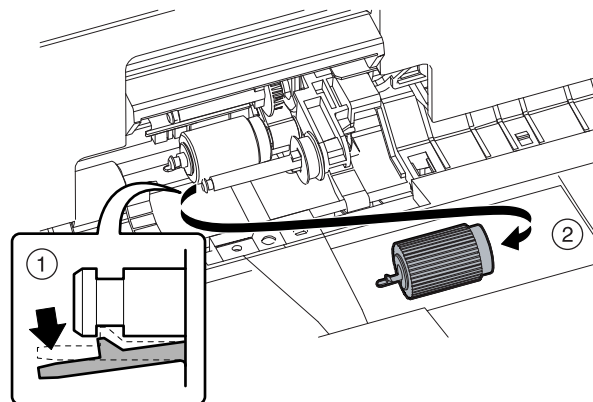


## (3) Pickup roller

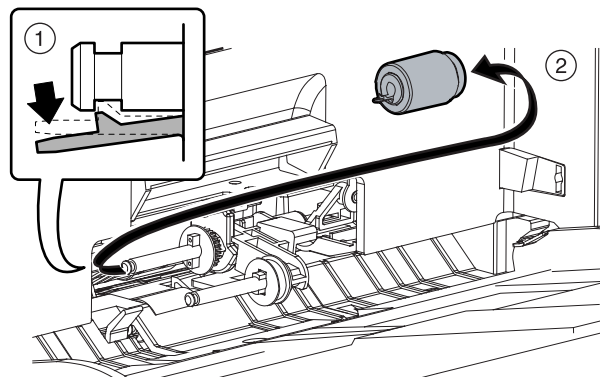
## (4) Paper feed roller

## (5) Separation roller

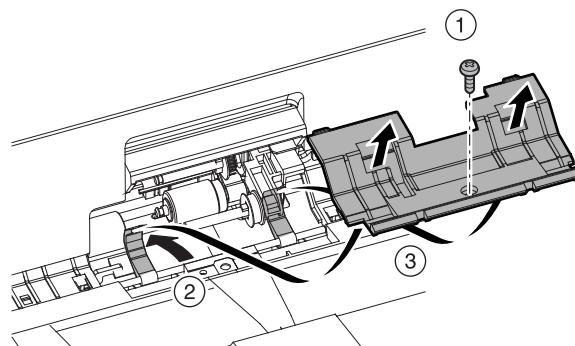
- 1) Pull out the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the actuator unit.  
(See "A-(2) Manual feed empty detector")
- 3) Unhook the claw to remove the pickup roller.



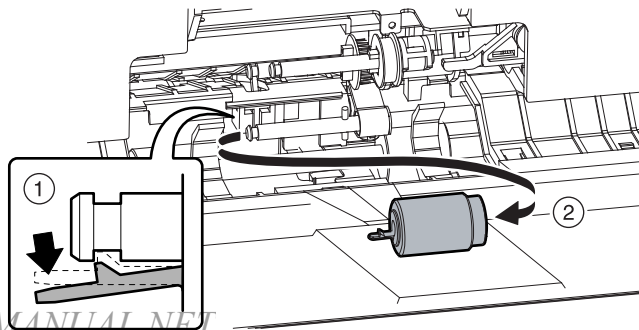
- 4) Unhook the claw to remove the paper feed roller.



- 5) Remove the separation roller cover.

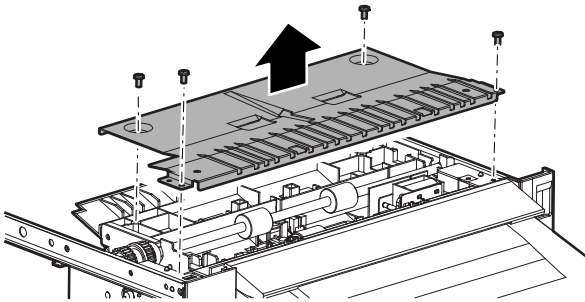


- 6) Remove the separation roller.

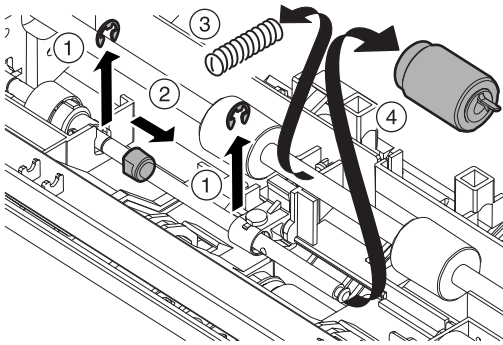


## (6) Torque limiter

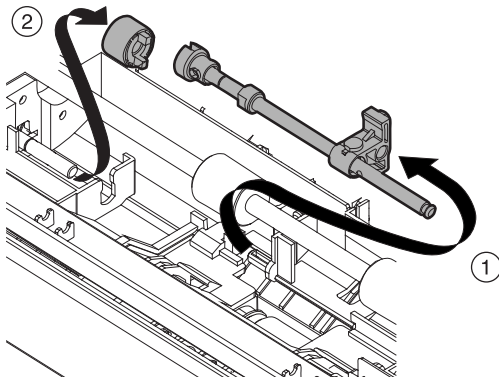
- 1) Pull out the multi paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover.



- 3) Remove the separation roller.

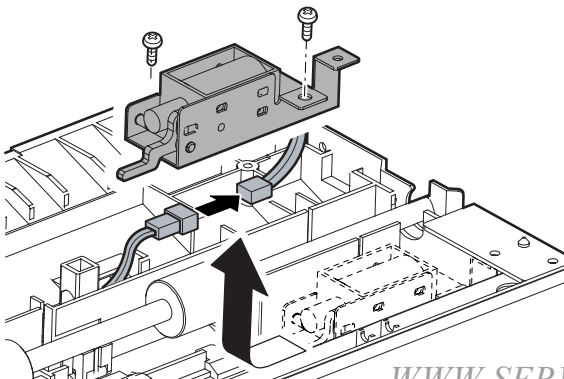


- 4) Remove the separation roller shaft, and remove the torque limiter.

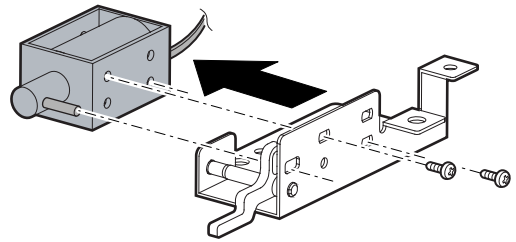


## (7) Manual feed gate solenoid

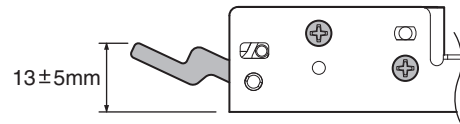
- 1) Remove the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "A-(6) Torque limiter")
- 3) Disconnect the connector, and remove the manual feed gate solenoid unit.



- 4) Remove the manual gate solenoid.

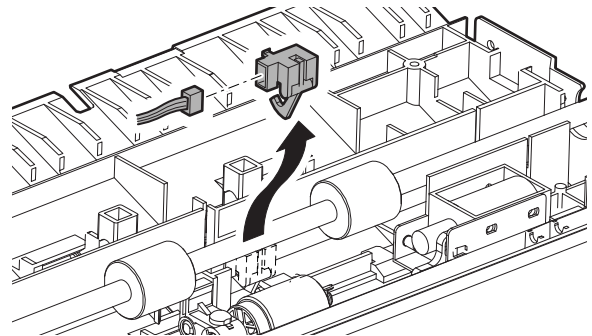


\* When assembling, tighten the screw so that the lever tip is at  $13 \pm 0.5\text{mm}$  from the frame edge with the solenoid plunger pulled.



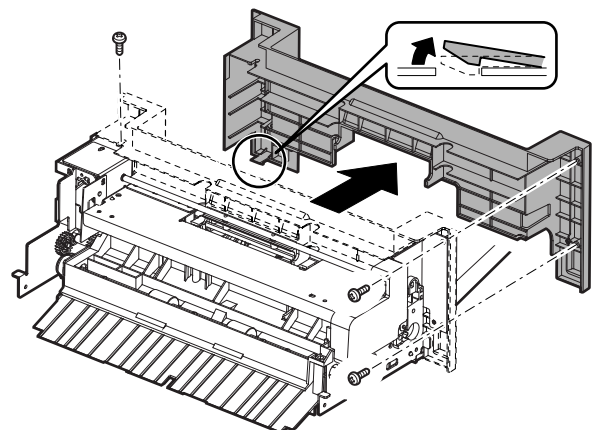
## (8) Manual feed paper pass detector 1

- 1) Remove the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "A-(6) Torque limiter")
- 3) Disconnect the connector, and remove the manual feed paper pass detector 1.

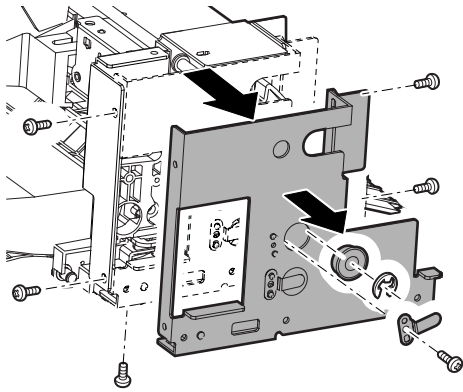


## (9) Paper feed clutch

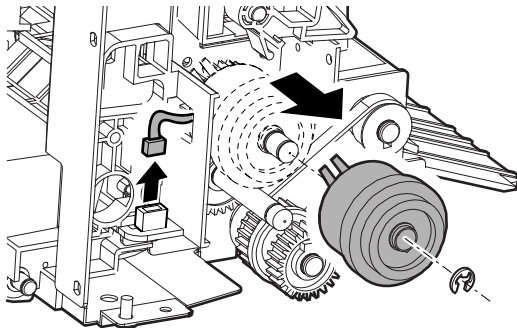
- 1) Remove the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.  
(See "A-(3) Pickup roller")
- 3) Remove the front cover.



- 4) Remove the interface pass earth plate, the E-ring, and the bearing, and remove the manual feed mounting plate.

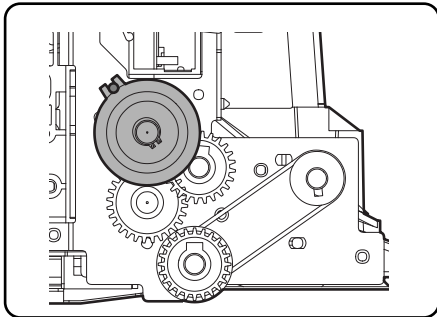


- 5) Remove the connector and E-ring, and remove the paper feed clutch.



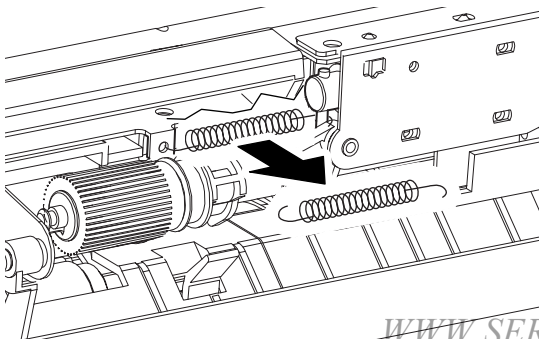
**[Note installing]**

- When assembling, fit the rotation stopper of the paper feed clutch with the clutch fixing screw.

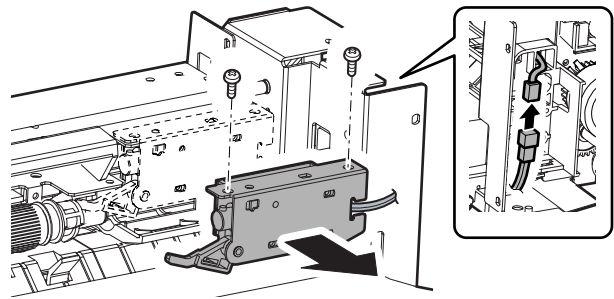


**(10) Paper pickup solenoid**

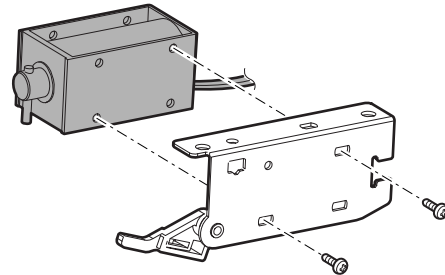
- 1) Remove the multi manual paper feed tray unit. (See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover and the pickup upper cover. (See "A-(3) Pickup roller")
- 3) Remove the front cover, and remove the manual feed mounting plate. (See "A-(9) Paper feed clutch")
- 4) Remove the spring.



- 5) Disconnect the connector, and remove the paper pickup solenoid unit.

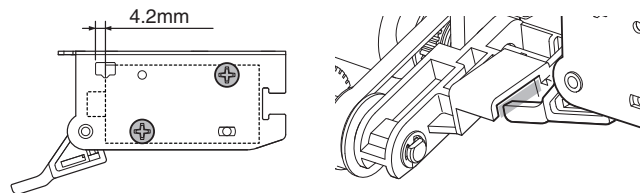


- 6) Remove the paper pickup solenoid.



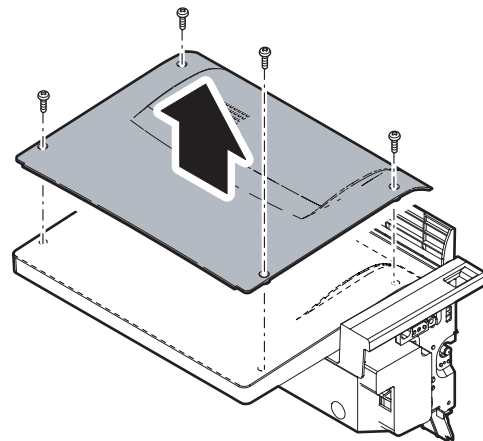
**[Note installing]**

Check that there is a clearance when the solenoid plunger is pulled.



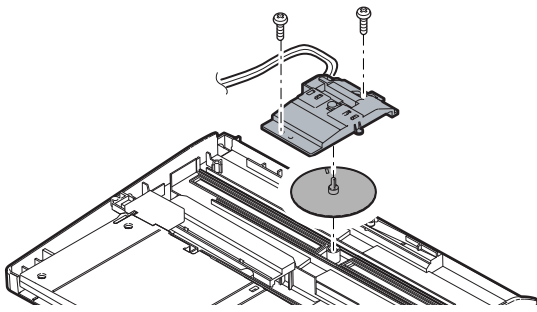
**(11) Manual feed paper width size detection PWB**

- 1) Remove the multi manual paper feed tray unit. (See "A. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower.

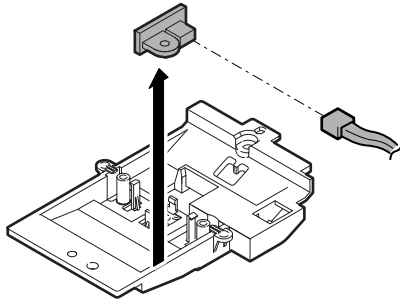




- 3) Remove the width detection mounting plate.



- 4) Disengage the pawl and the connector, and remove the manual feed VR PWB.



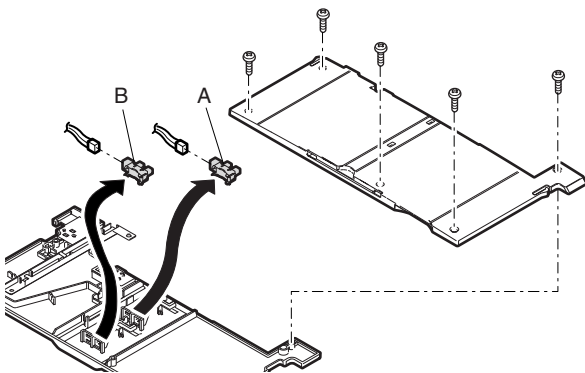
**(12) Manual feed paper length detector 1**

**(13) Manual feed paper length detector 2**

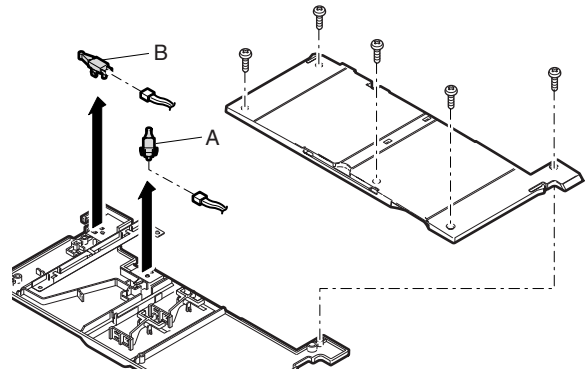
**(14) Manual feed tray pull-out position detector 1**

**(15) Manual feed tray pull-out position detector 2**

- 1) Remove the multi manual paper feed tray unit.  
(See "A. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower.  
(See "A-(11) Manual feed paper width size detection PWB")
- 3) Remove the manual feed tray lower.
- 4) Disconnect the connector, and remove the manual feed paper length detector 1 (A) and manual feed paper length detector 2 (B).

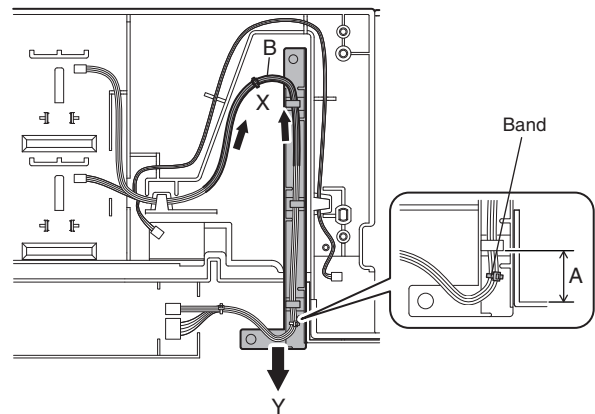


- 5) Disconnect the connector, and remove the manual feed tray pull-out position detector 1 (A) and the manual feed tray pull-out position detector 2 (B).

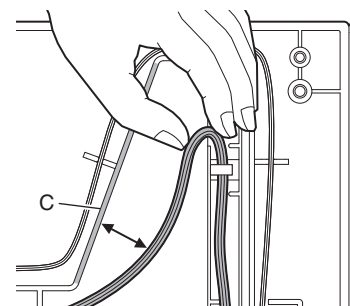


**[Note installing]**

- Slide the harness holder in the direction of Y and install it. The band must be in the range of A. Pull section B in the arrow direction to give a slack to the harness.



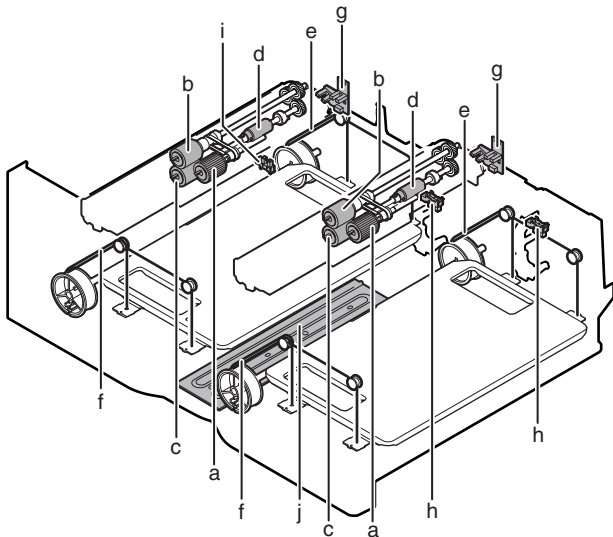
- Fold the harness with your fingers and check that the harness keeps the folded shape along the holder when it is released. Rib C must be separated from the harness.



## 5. Tray paper feed section

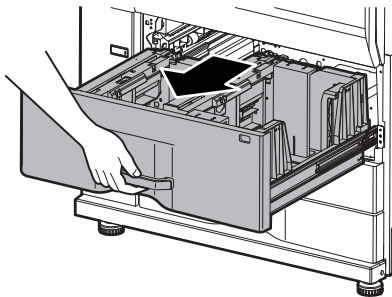
### A. Paper feed tray 1, 2 section

No.	Parts	Maintenance
a	Pickup roller	× ○
b	Paper feed roller	× ○
c	Separation roller	× ○
d	Torque limiter	×
e	Lift wire (Rear)	
f	Lift wire (Front)	
g	Paper remaining quantity sensor PWB	
h	Paper remaining quantity detector	
i	Paper feed tray 1, 2 detection sensor	
j	Dry heater	

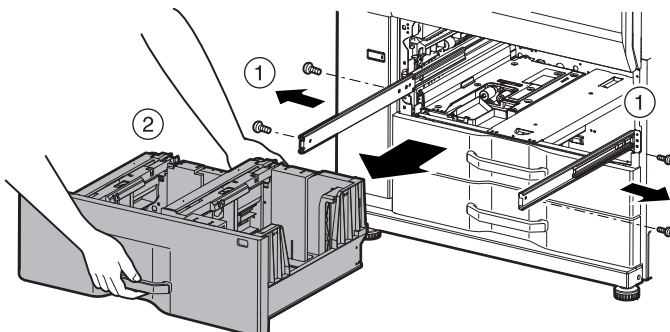


#### (1) Paper feed unit (Paper feed tray 1, 2)

- 1) Pull up the paper feed tray 1, 2.

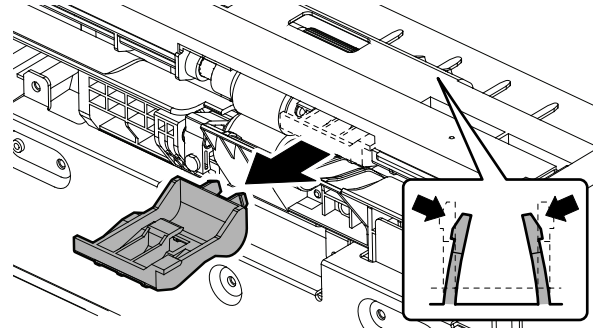


- 2) Remove the fixing screws from the left and right rails.
- 3) Hold the grips of the position indicated in the figure with both hands, and remove it.

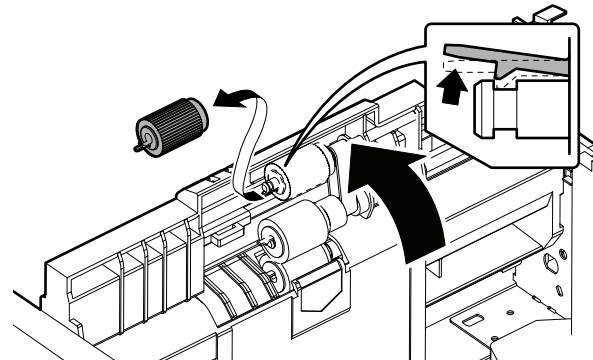


#### a. Pickup roller

- 1) Pull up the paper feed tray 1, 2.
- 2) Unhook the claws to remove the paper guide.

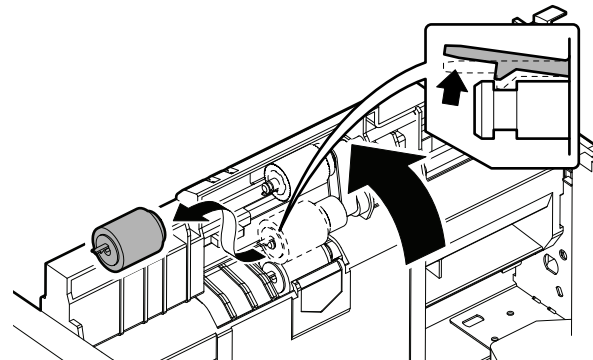


- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the pickup roller.



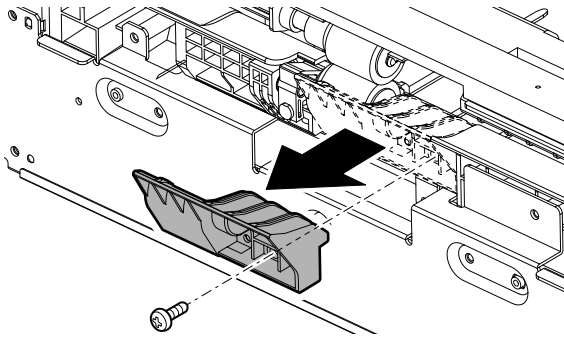
#### b. Paper feed roller

- 1) Pull up the paper feed tray 1, 2.
- 2) Remove the paper guide.
- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the paper feed roller.

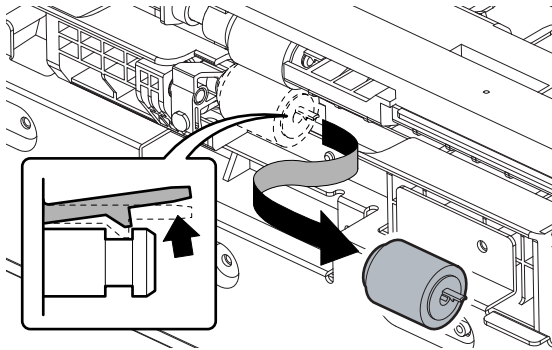


### c. Separation roller

- 1) Pull up the paper feed tray 1, 2.
- 2) Remove the paper guide.
- 3) Remove the lower paper guide.

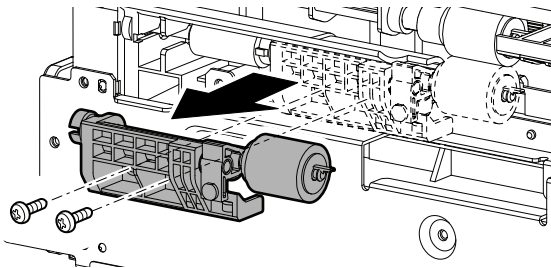


- 4) Unhook the claws to remove the separation roller.

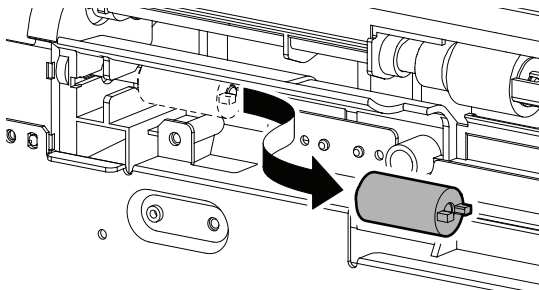


### d. Torque limiter

- 1) Pull up the paper feed tray 1, 2.
- 2) Remove the lower paper guide.
- 3) Remove the separation roller unit.

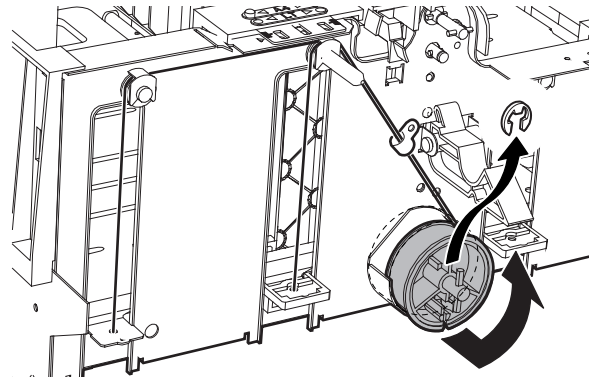


- 4) Remove the torque limiter.

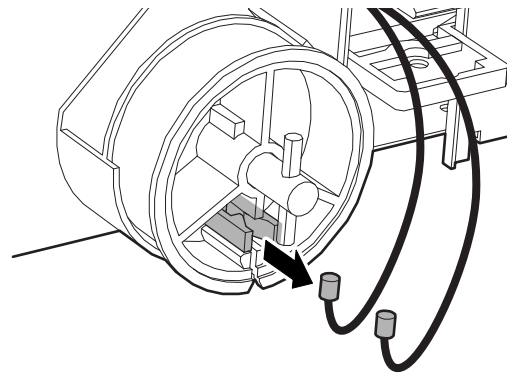


### e. Lift wire (Rear)

- 1) Remove the paper feed tray 1, 2.
- 2) Remove the E-ring, slide the winding pulley, and loosen the wire.



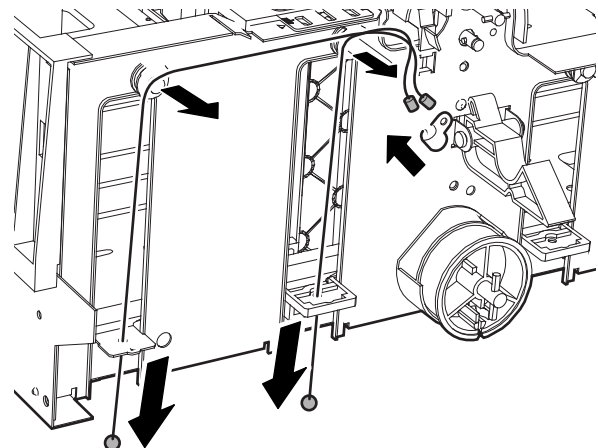
- 3) Disengage the pawl, and remove the wire.



- 4) Remove the resin E-ring.

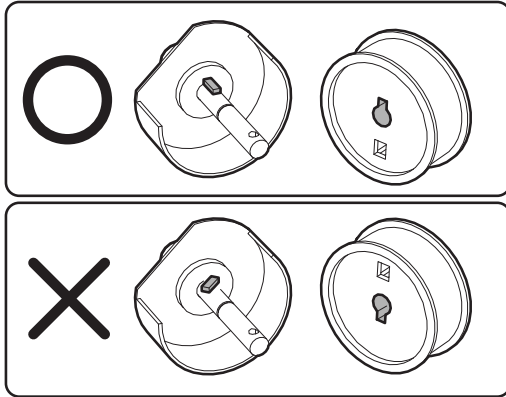


- 5) Remove the wire.



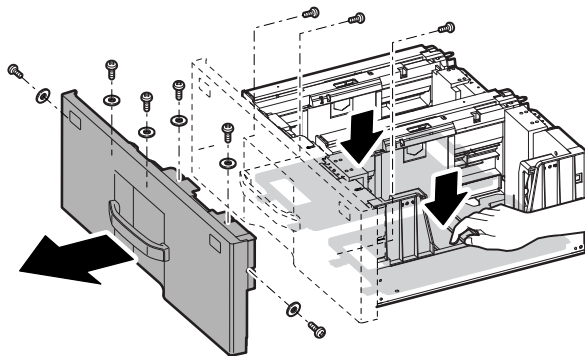


- \* Pass the nylon clamp.
- \* Attach so that the red wire is on the outside.
- \* Turn it clockwise to fit with the T-shape pin position and insert.

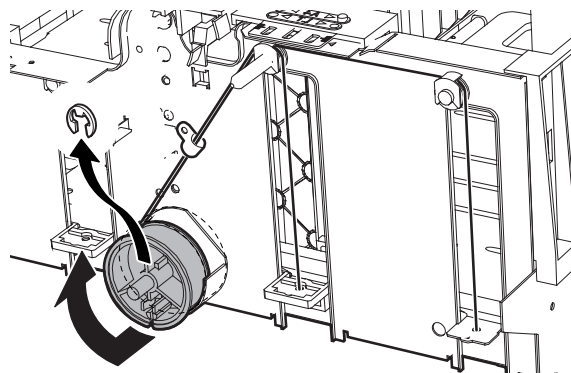


#### f. Lift wire (Front)

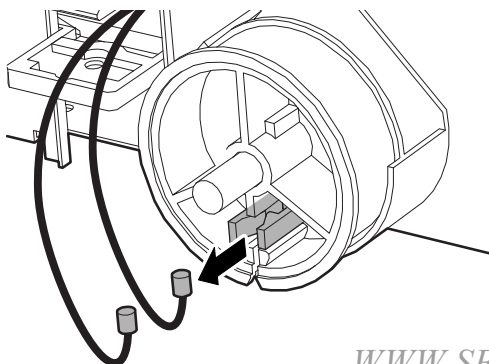
- 1) Remove the paper feed tray 1, 2.
- 2) Push down the tray and remove the screw, and remove the paper feed tray 1, 2 front cabinet.



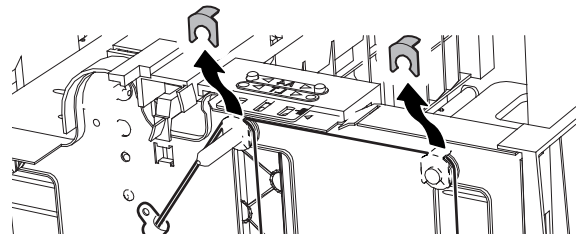
- 3) Remove the E-ring, slide the winding pulley, and loosen the wire.



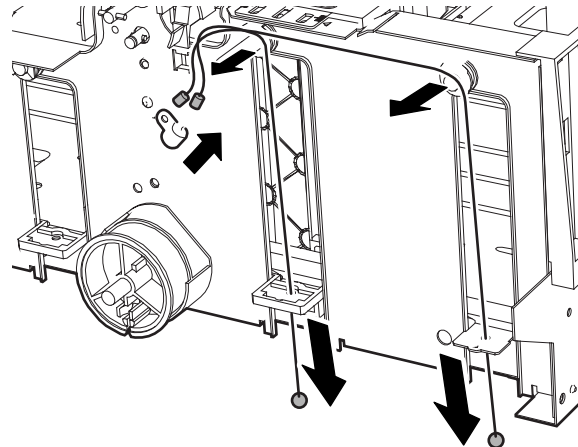
- 4) Disengage the pawl, and remove the wire.



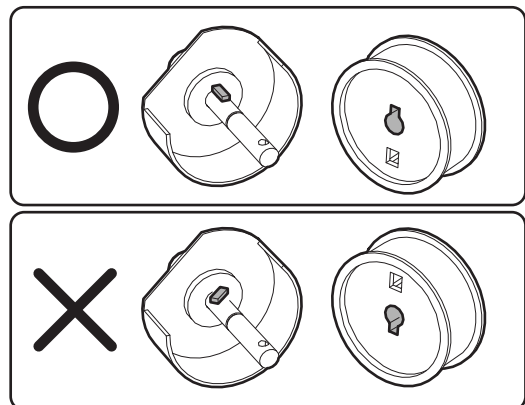
- 5) Remove the resin E-ring.



- 6) Remove the wire.

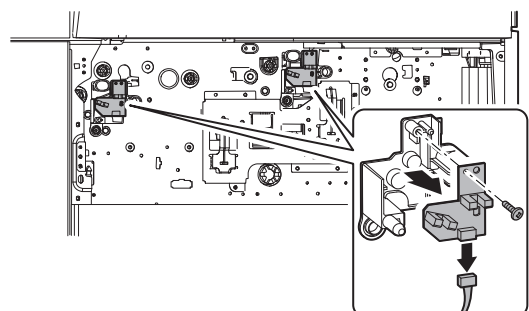


- \* Pass the nylon clamp.
- \* Attach so that the red wire is on the outside.
- \* Turn it counterclockwise and fit with the T-shape pin position and insert.



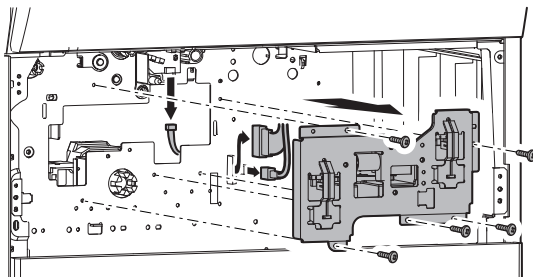
#### (2) Paper remaining quantity sensor PWB

- 1) Remove the paper feed tray 1, 2.
- 2) Disconnect the connector, and remove the paper remaining quantity sensor PWB.

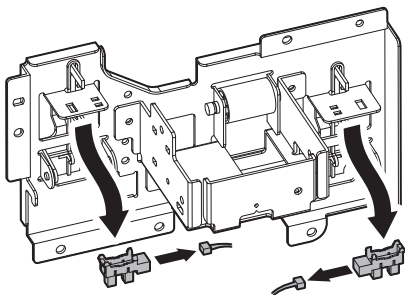


### (3) Paper remaining quantity detector

- 1) Remove the paper feed tray 1, 2.
- 2) Disconnect the connector, and remove the paper feed tray lock arm unit.

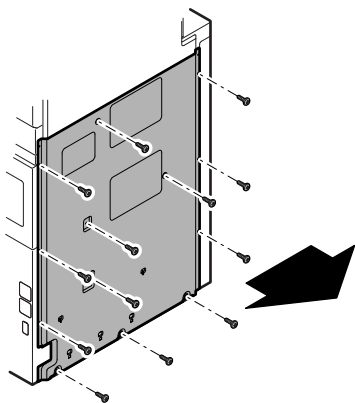


- 3) Disconnect the connector, and remove the paper remaining quantity detector.

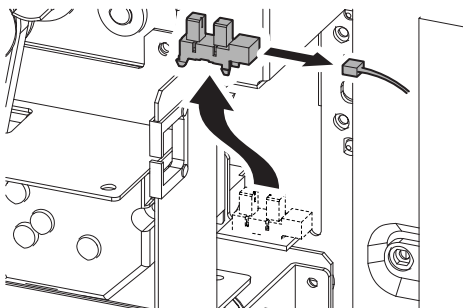


### (4) Paper feed tray 1, 2 detection sensor

- 1) Remove the rear cabinet.

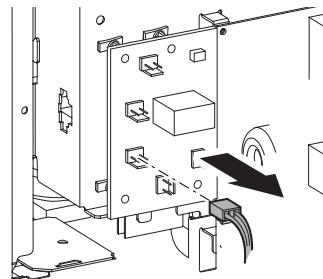


- 2) Disconnect the connector, and remove the paper feed trays 1, 2 detection sensor.

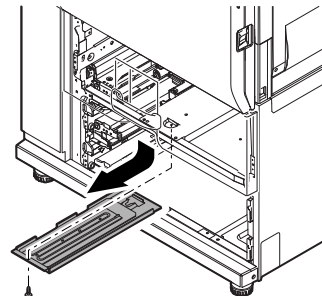


### (5) Dry heater

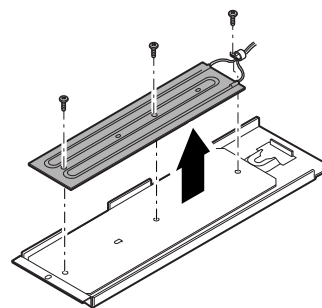
- 1) Remove the rear cabinet.
- 2) Disconnect the connector from dehumidifier heater relay PWB.



- 3) Remove the band, and remove the dry heater unit.

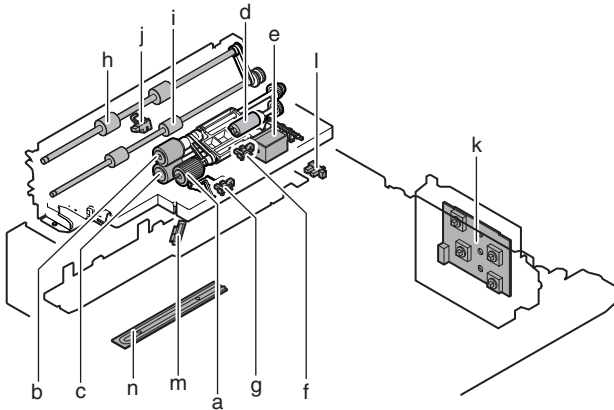


- 4) Remove the dry heater.



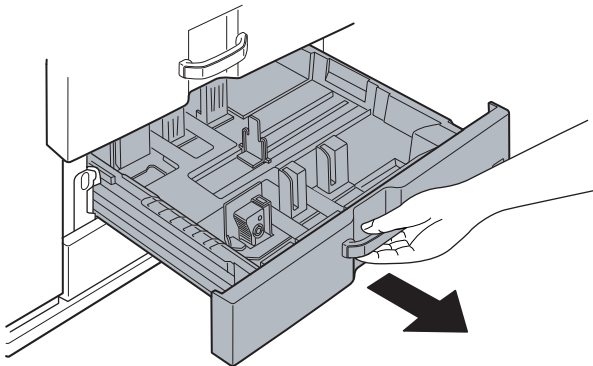
## B. Paper feed tray 3, 4 section

No.	Parts	Maintenance
a	Pickup roller	× ○
b	Paper feed roller	× ○
c	Separation roller	× ○
d	Torque limiter	×
e	Paper pickup solenoid	
f	Paper feed tray upper limit detector	
g	Paper feed tray empty detector	
h	Transport roller 8, 10	× ○
i	Transport roller 5, 7	× ○
j	Paper pass detector	
k	Paper size detection PWB	
l	Paper remaining quantity detector	
m	Paper feed tray paper width detector	
n	Dry heater	

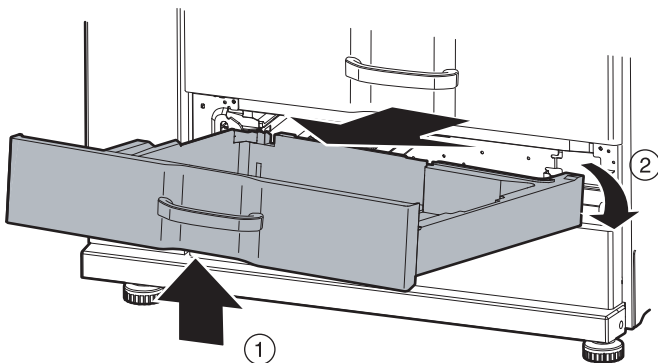


### (1) Paper feed tray 3, 4

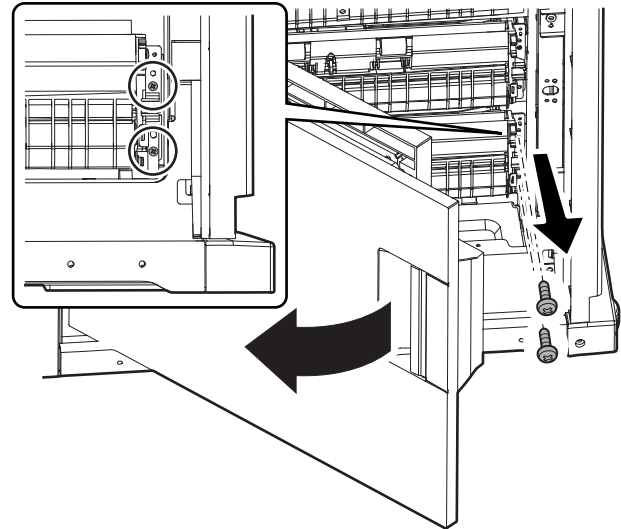
- 1) Pull out gently the paper feed tray it stops.



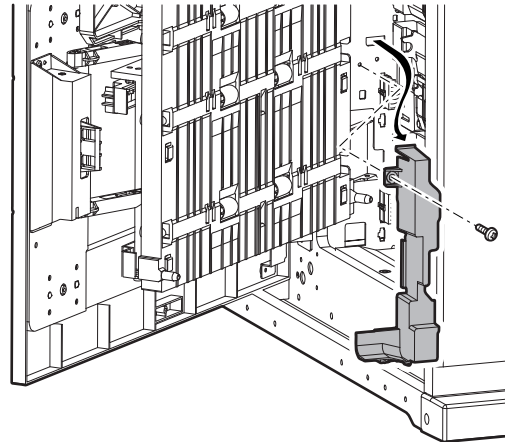
- 2) Lifting up the paper feed tray unit slightly, remove it at an angle from the right side.



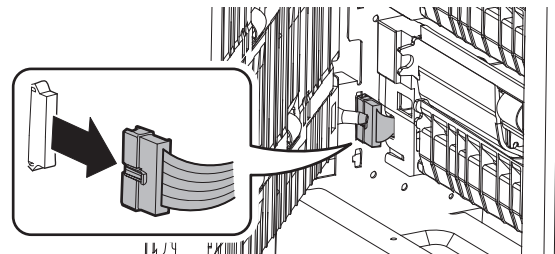
- 3) Open the bottom left cabinet.



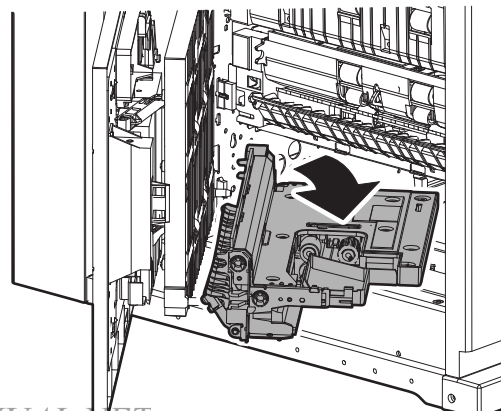
- 4) Remove the connector cover.



- 5) Disconnect the connector.

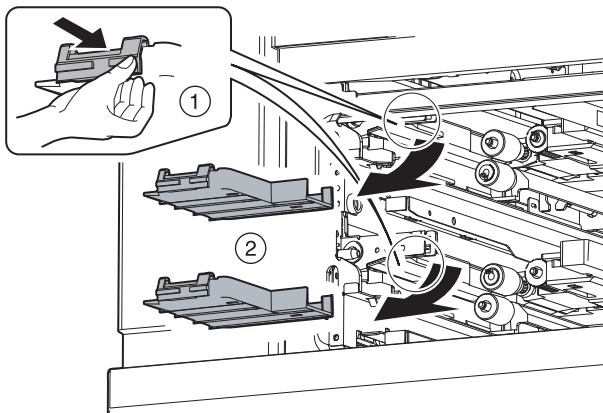


- 6) Remove the paper feed tray 3, 4 from the lower shelf.

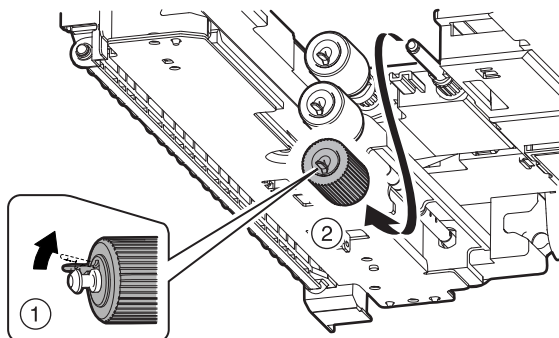


#### a. Pickup roller

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the paper guide.

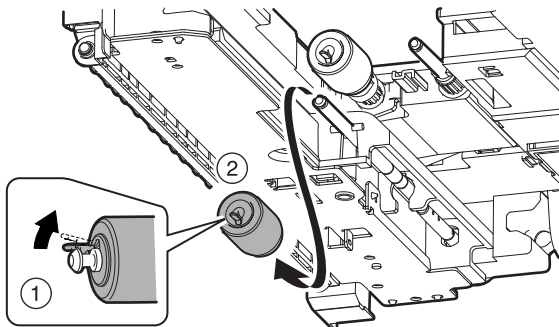


- 3) Unhook the claws to remove the pickup roller.



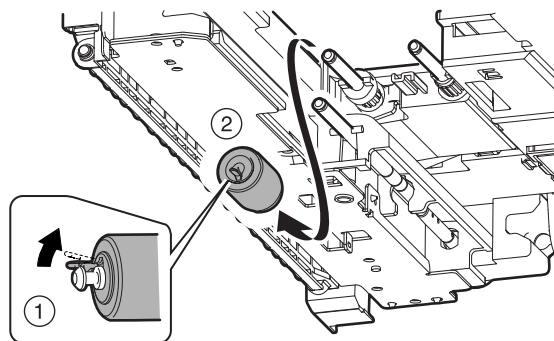
#### b. Paper feed roller

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the paper guide.
- 3) Release the pawl, and remove the paper feed roller.



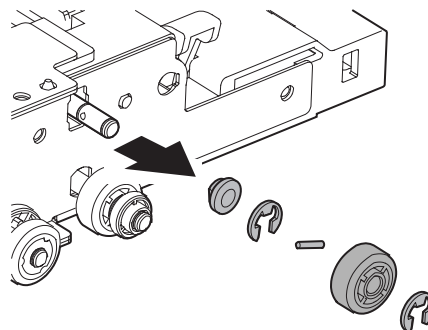
#### c. Separation roller

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the paper guide.
- 3) Disengage the pawl, and remove the separation roller.

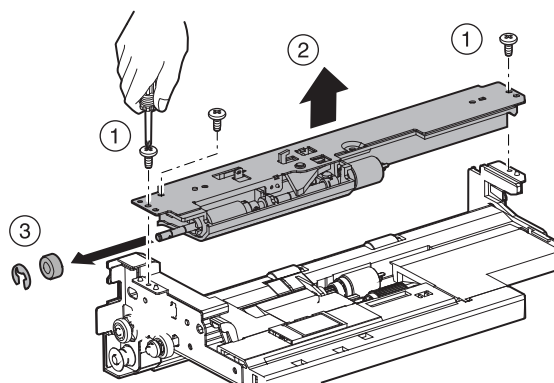


#### d. Torque limiter

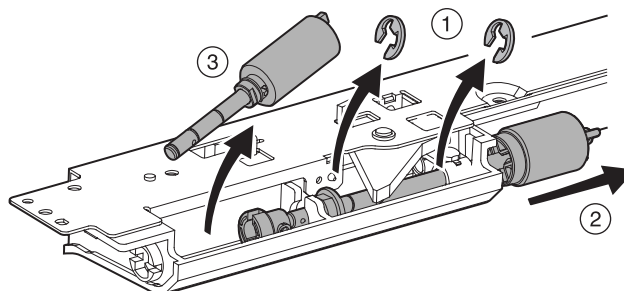
- 1) Remove the paper feed tray 3, 4.
- 2) Remove the E-ring, and remove the gear and the pin.
- 3) Remove the E-ring and the bearing.



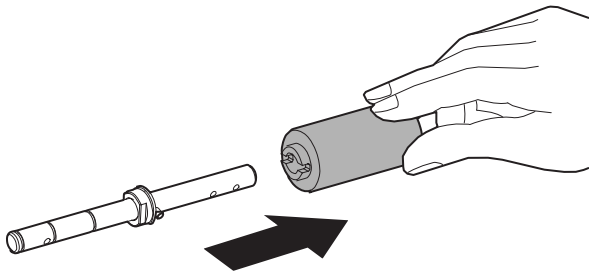
- 4) Remove the separation roller unit.
- 5) Remove the E-ring, and one-way clutch.



- 6) Remove the E-ring, and move the separation roller shaft.
- 7) Remove the shaft unit.

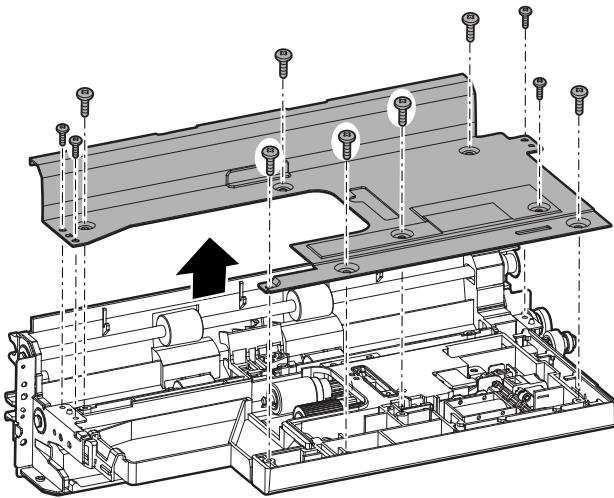


8) Remove the torque limiter.

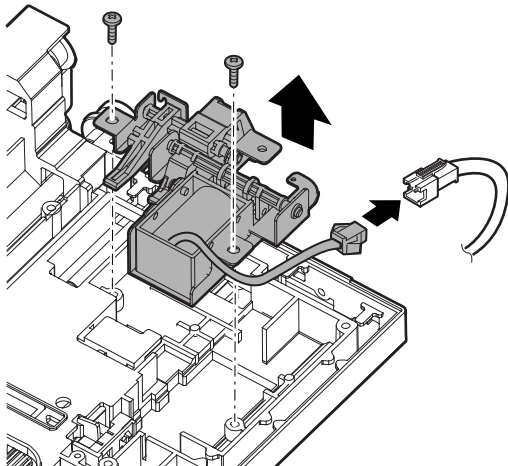


**e. Paper pickup solenoid**

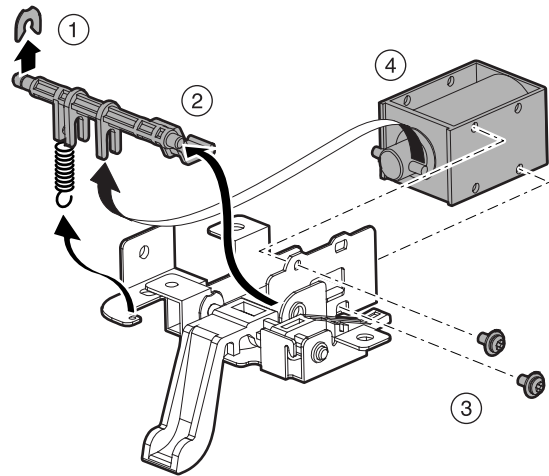
- 1) Remove the paper feed tray 3, 4.
- 2) Remove the cover.



3) Remove the solenoid unit.

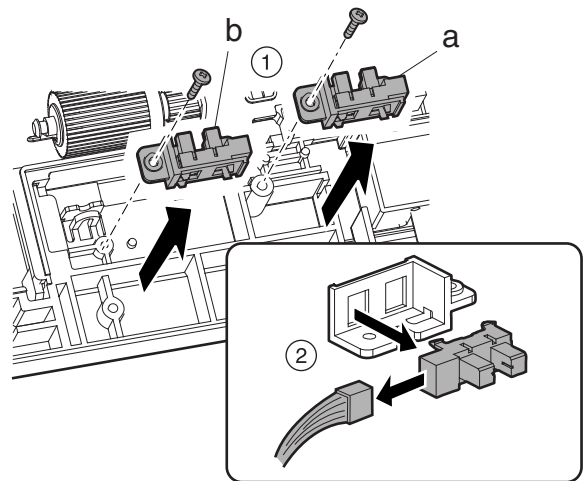


4) Remove the paper pickup solenoid.



**f. Paper feed tray upper limit detector/  
Paper feed tray empty detector**

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the cover.
- 3) Remove the paper feed tray upper detector unit (a) and the paper feed tray empty detector unit (b).

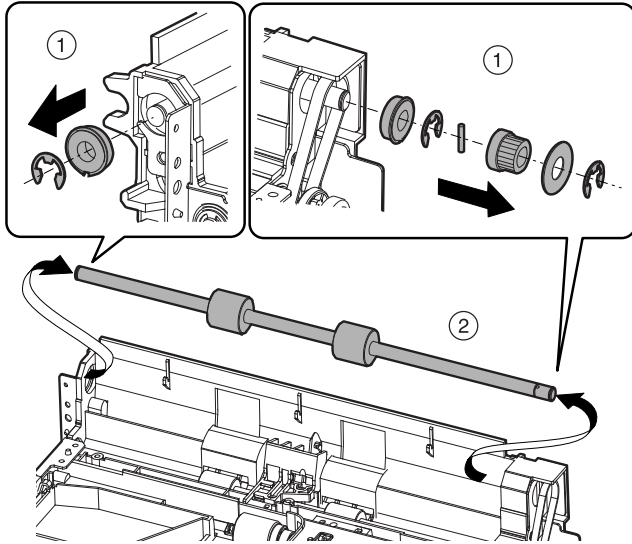


4) Remove the detector.



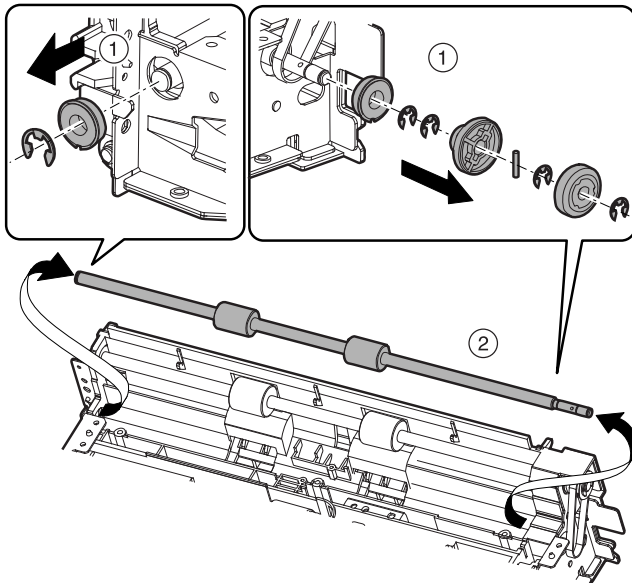
**g. transport roller 8, 10**

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the cover.
- 3) Remove the E-ring and remove the pulley and the bearing.
- 4) Remove the transport roller 8, 10.



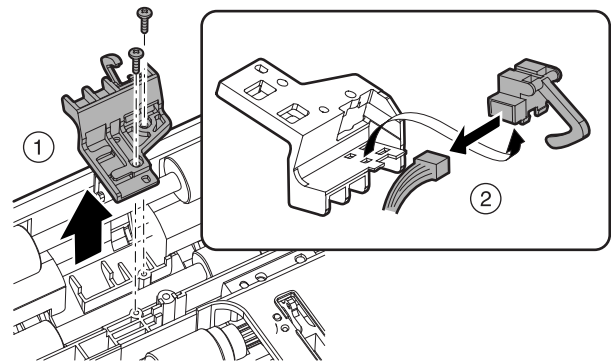
**h. Transport roller 5, 7**

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the cover.
- 3) Remove the E-ring and remove the pulley and the bearing.
- 4) Remove the transport roller 5, 7.



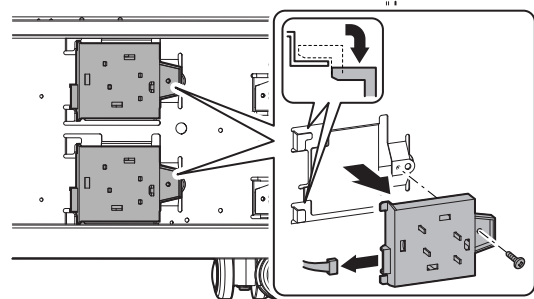
**i. Paper pass detector**

- 1) Remove the paper feed tray 3, 4.
- 2) Remove the cover.
- 3) Remove the paper pass detector unit.
- 4) Remove the paper pass detector.

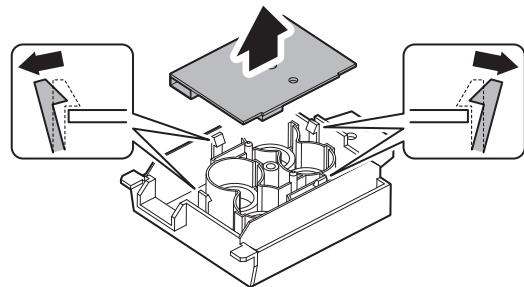


**(2) Paper size detection PWB**

- 1) Remove the paper feed tray.
- 2) Disconnect the connector, and remove the paper size detection PWB unit.

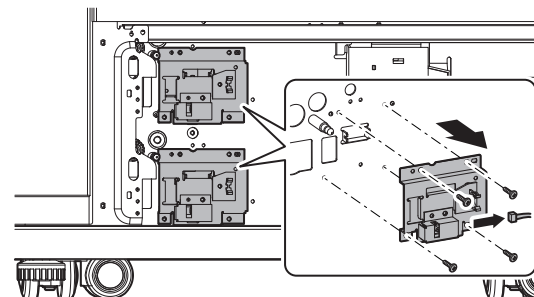


- 3) Release the pawl, and remove the paper size detection PWB.

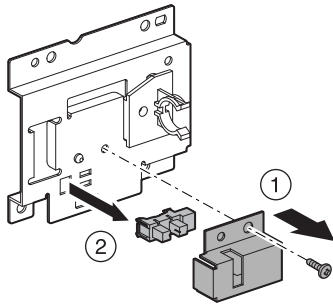


**(3) Paper remaining quantity detector**

- 1) Remove the paper feed tray.
- 2) Disconnect the connector, and remove the paper remaining quantity detector unit.

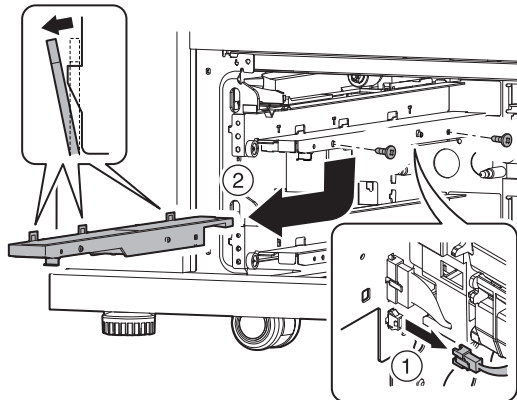


- 3) Remove the paper remaining quantity detector cover. Remove the paper remaining quantity detector.

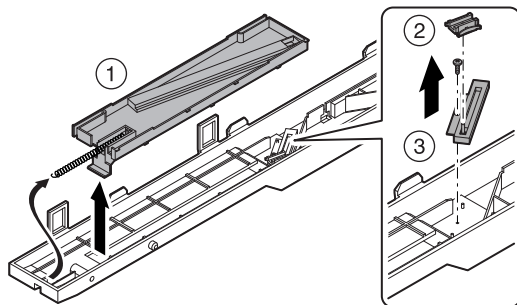


#### (4) Paper feed tray paper width detector

- 1) Remove the paper feed tray 3, 4 unit lower.
- 2) Disconnect the connector, and release the pawl, and remove the width detection unit.

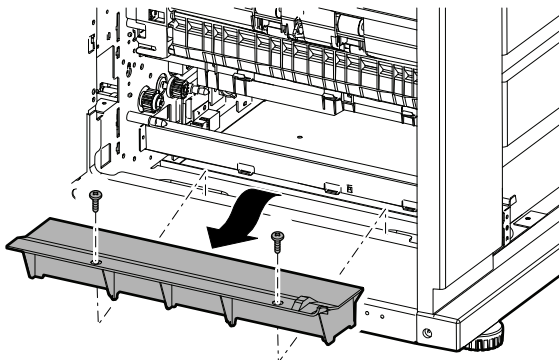


- 3) Remove the spring, and remove the paper width mounting base. Remove the width detection arm and remove the paper feed tray paper width detector.

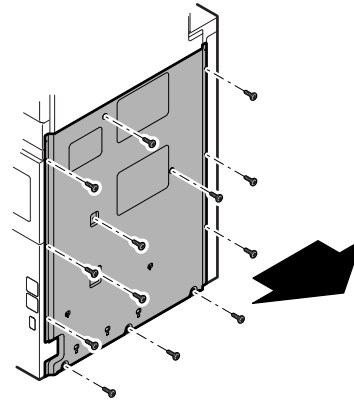


#### (5) Dry heater

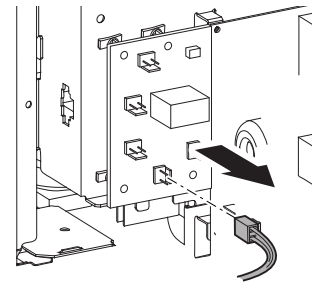
- 1) Remove the paper feed tray 3, 4 unit lower.
- 2) Remove the paper feed lower cover.



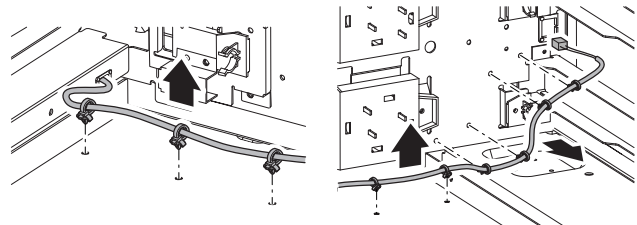
- 3) Remove the rear cabinet.



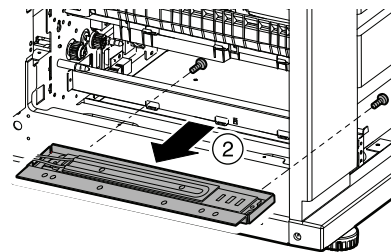
- 4) Disconnect the connector from the dehumidifying heater relay PWB.



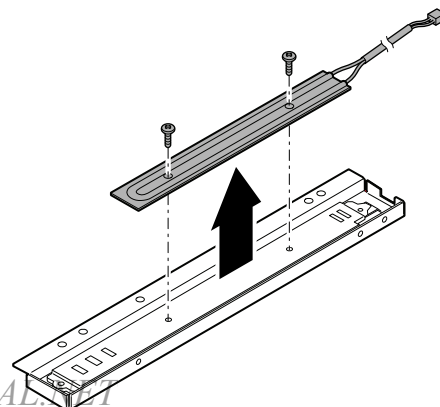
- 5) Remove the snap band.



- 6) Remove the dry heater unit.



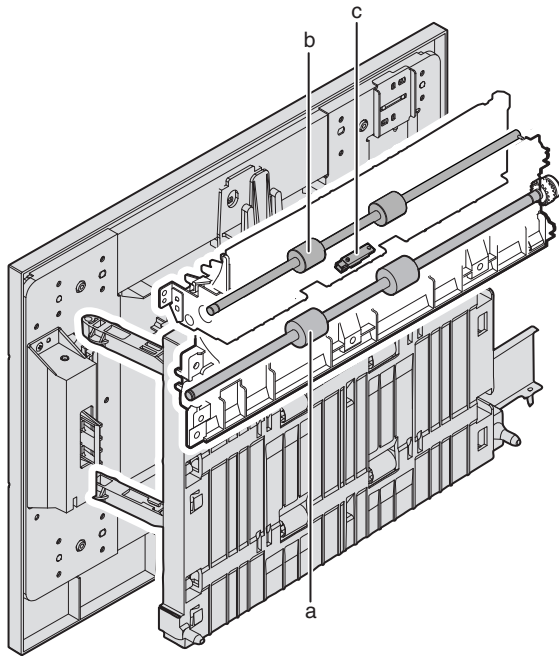
- 7) Remove the dry heater.



## 6. Paper transport and duplex section

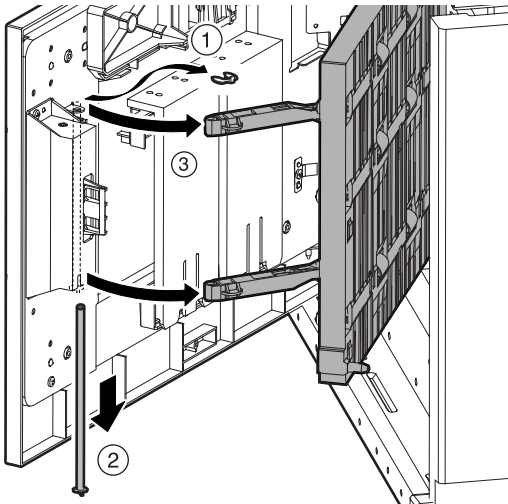
### A. Vertical paper transport section 1

No.	Parts	Maintenance
a	Transport roller 11 (Drive)	× ○
b	Transport roller 13 (Drive)	× ○
c	Transport sensor	

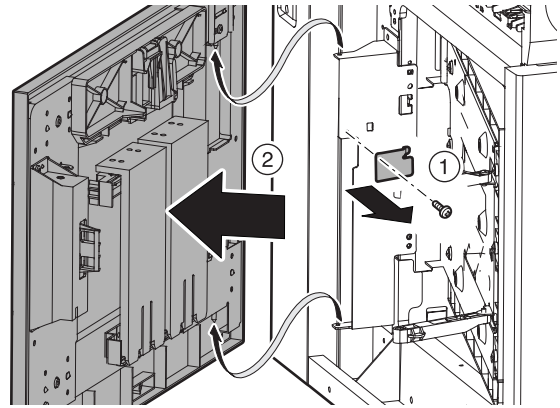


#### (1) Paper feed tray 1 and 2 left PG unit

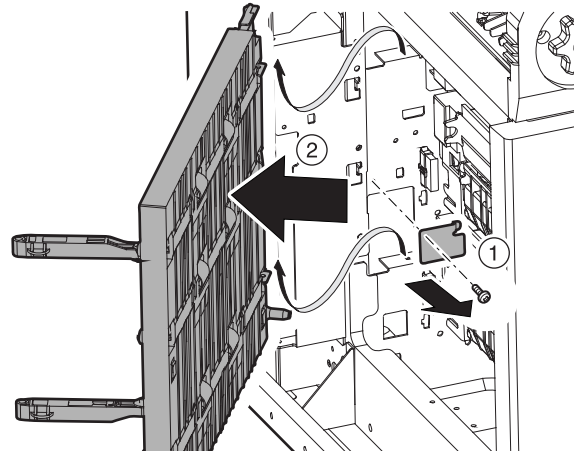
- 1) Open the left lower cabinet.
- 2) Remove the resin E-ring, and remove the pressure fulcrum shaft.



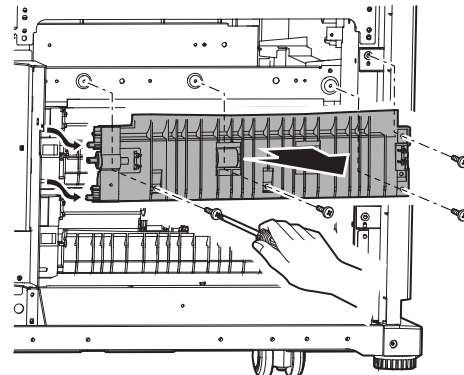
- 3) Remove the left vertical transport PG stopper plate.
- 4) Open the left door, and remove the left lower cabinet unit.



- 5) Remove the left vertical transport PG stopper plate.
- 6) Open the left vertical transport unit, and remove it.



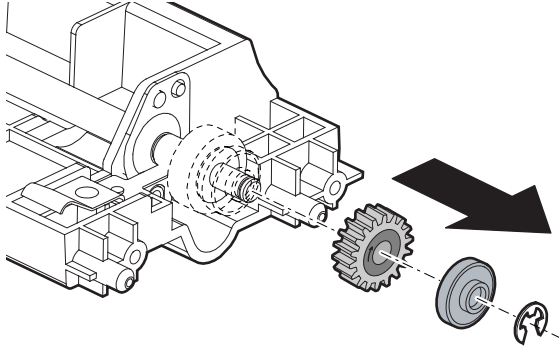
- 7) Remove the paper feed tray 1 and 2 left PG unit.





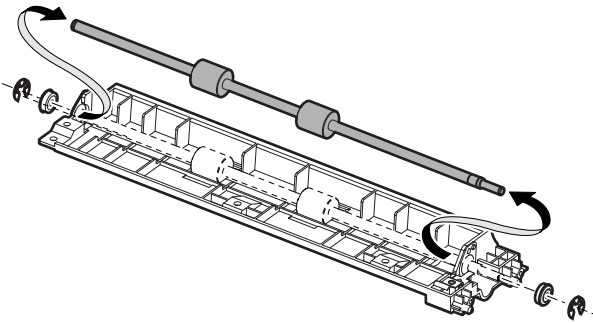
**a. Transport roller 11 (Drive)**

- 1) Remove the paper feed tray 1 and 2 left PG unit.
- 2) Remove the E-ring, the drive collar, and the one-way gear.



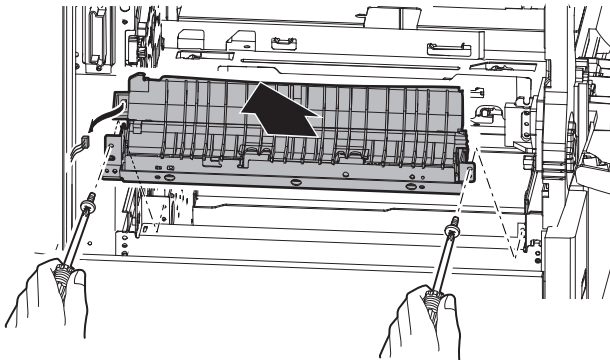
\* Be careful of the installing direction.

- 3) Remove the E-ring and the bearing, and remove the transport roller 11 (Drive).



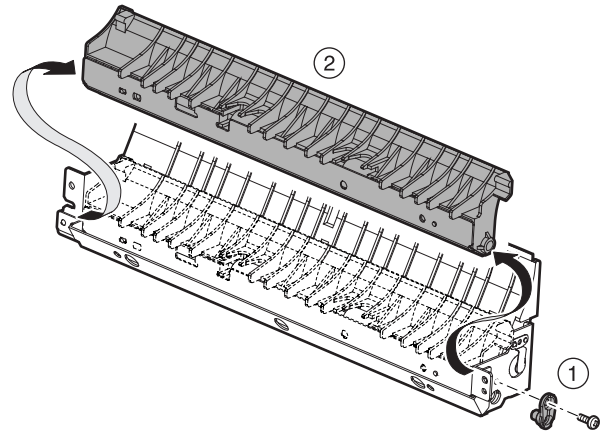
**(2) Vertical transport upper unit**

- 1) Remove the resist roller unit.
- 2) Disconnect the connector, and remove the vertical transport upper unit.

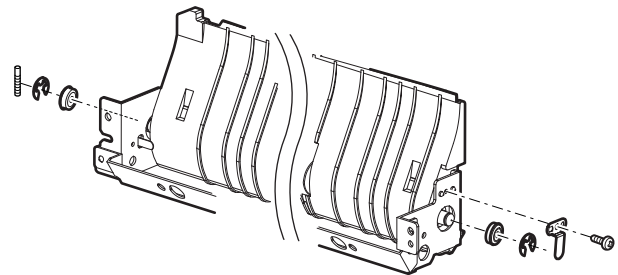


**a. Transport roller 13 (Drive)**

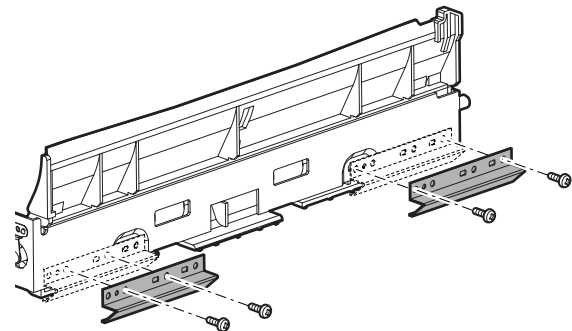
- 1) Remove the vertical transport upper unit.
- 2) Remove the upper transport fulcrum plate holder, and remove the vertical transport upper open/close PG.



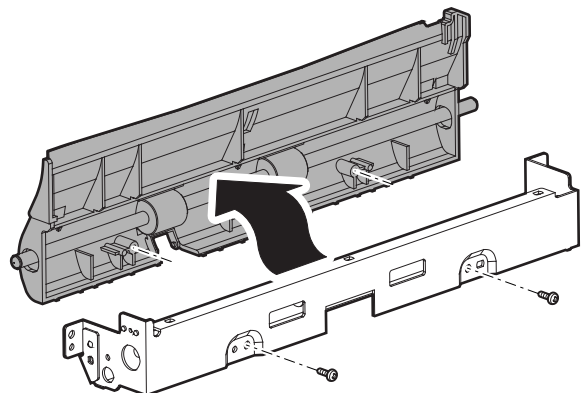
- 3) Remove the open/close PG earth, and remove the drive connection stopper screw and the bearing.



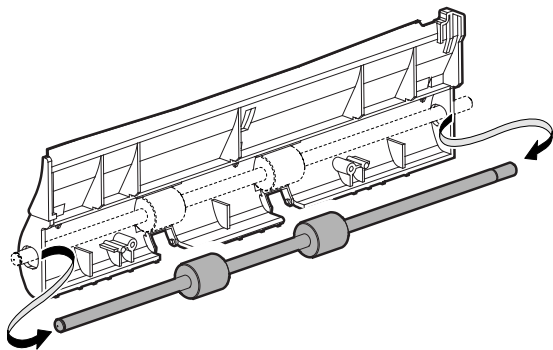
- 4) Remove the upper PG holding plate.



- 5) Remove the vertical transport upper PG.

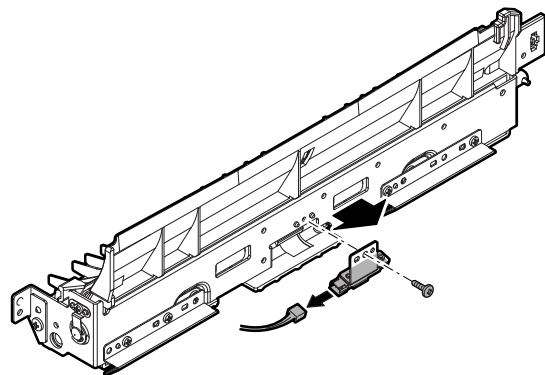


- 6) Remove the transport roller 13 (Drive).



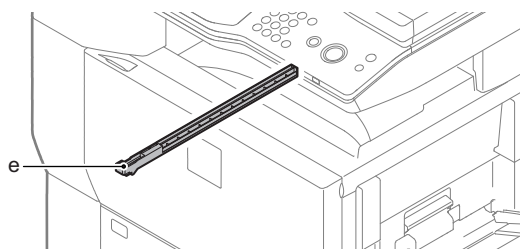
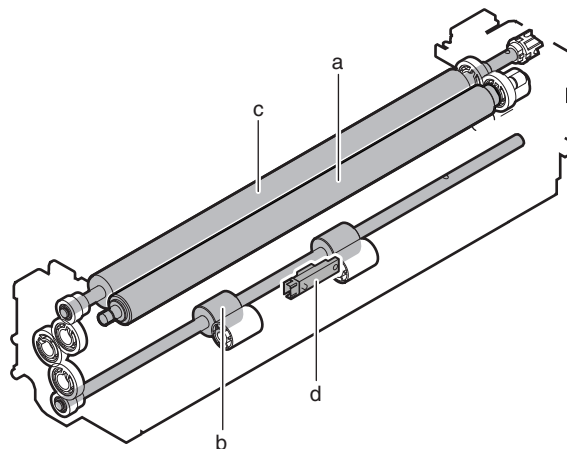
#### b. Transport sensor

- 1) Remove the vertical transport upper unit.
- 2) Check each sensors.



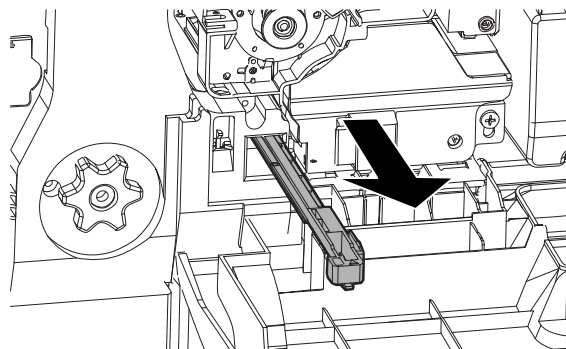
## B. Vertical paper transport section 2

No.	Parts	Maintenance
a	Resist roller (Idle)	× ○
b	Transport roller 15	× ○
c	Resist roller (Drive)	× ○
d	Resist roller front paper pass detector	
e	Paper dust cleaner	× ▲

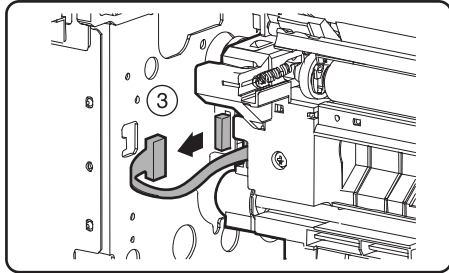
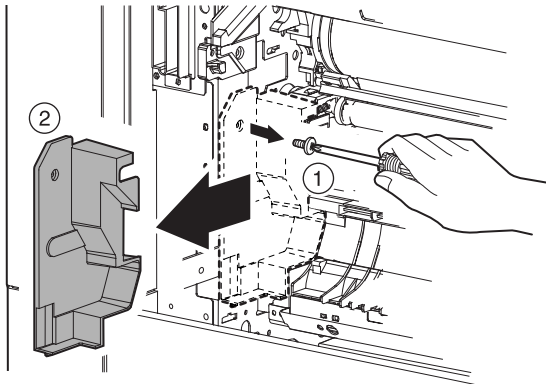


#### (1) Resist roller unit

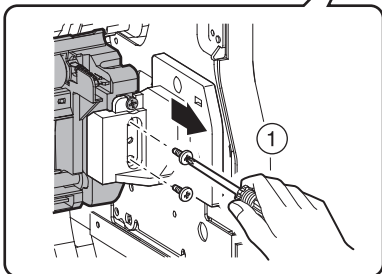
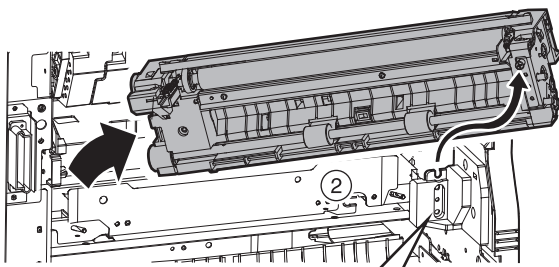
- 1) Remove the process unit. (See "8. Photo-conductor section")
- 2) Remove the paper dust removing unit.



- 3) Remove the rear frame side cover, and disconnect the connector.

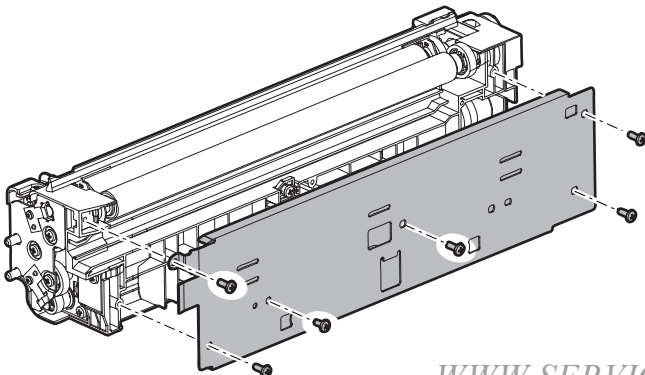


- 4) Remove the resist roller unit.

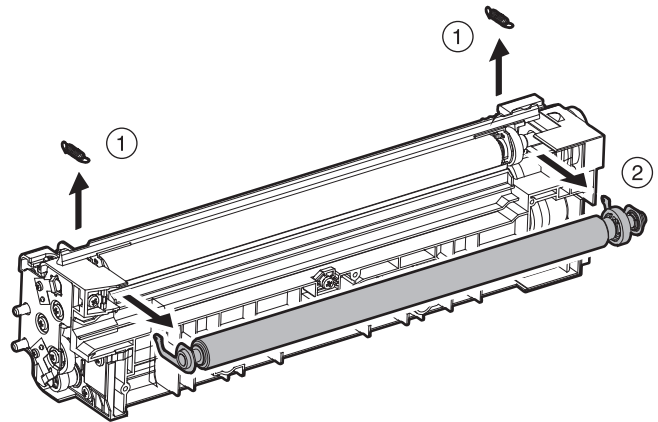


#### a. Resist roller (Idle)

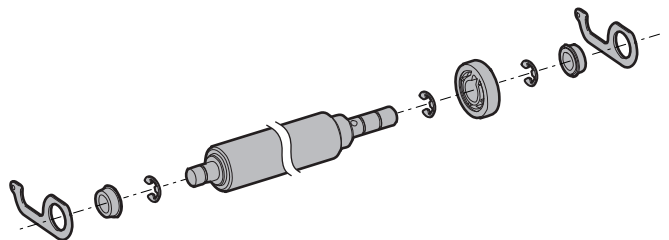
- 1) Remove the resist roller unit.
- 2) Remove the cover.



- 3) Remove the follower roller tension spring.
- 4) Remove the resist roller (Idle) unit.

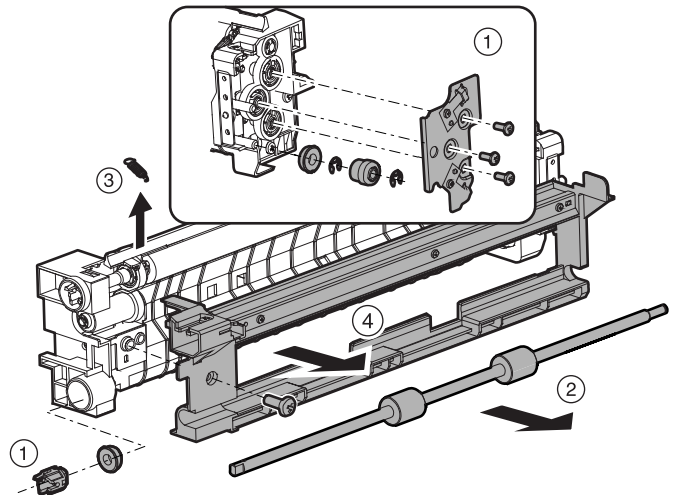


- 5) Remove the bearing, and remove the E-ring, the gear, and the pin.



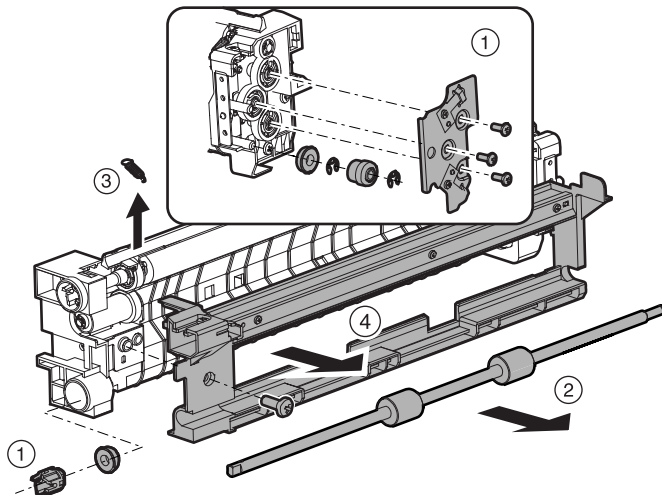
#### b. Transport roller 15

- 1) Remove the resist roller unit.
- 2) Remove the front side cover.
- 3) Remove the E-ring, the gear, and the bearing.
- 4) Remove the coupling bearing on the rear side.
- 5) Remove the transport roller 15.

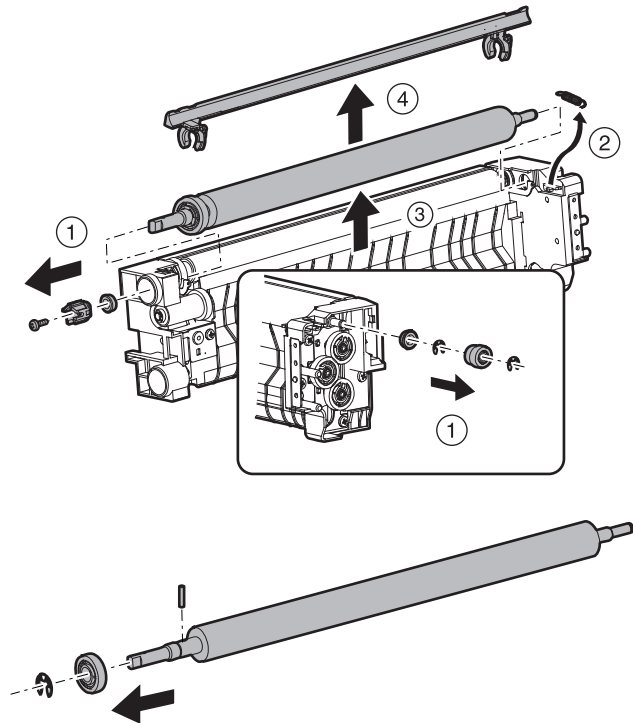


### c. Resist roller (Drive)

- 1) Remove the resist roller unit.
- 2) Remove the follower roller and the tension spring.
- 3) Remove the cover on the front side.
- 4) Remove the transport roller 15.
- 5) Remove the paper guide.

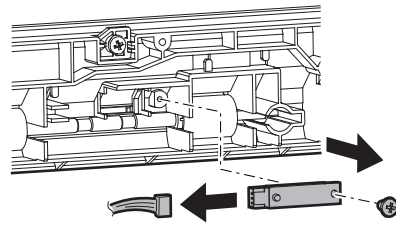


- 6) Remove the E-ring, the gear, and the bearing.
- 7) Remove the coupling on the rear side.
- 8) Remove the resist roller (Drive).



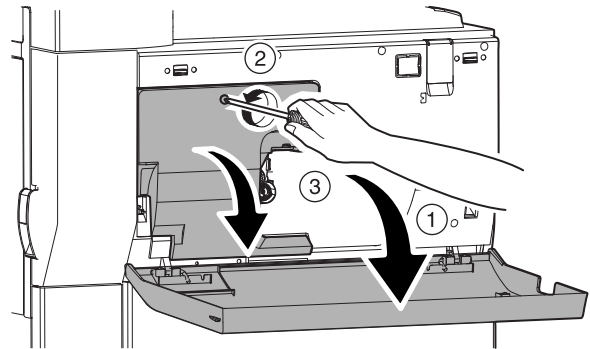
### d. Resist roller front paper pass detector

- 1) Remove the resist roller unit.
- 2) Remove the cover.
- 3) Remove the resist roller front paper pass detector.

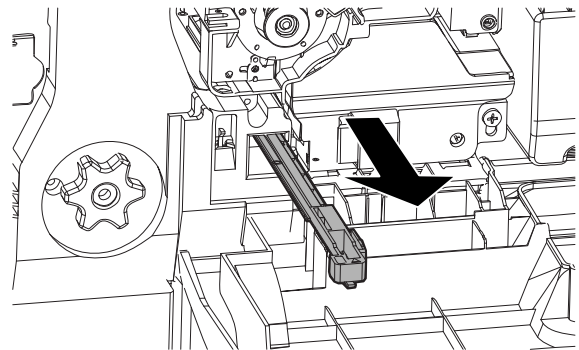


### (2) Paper dust cleaner

- 1) Open the front cabinet. Open the process DV cover.

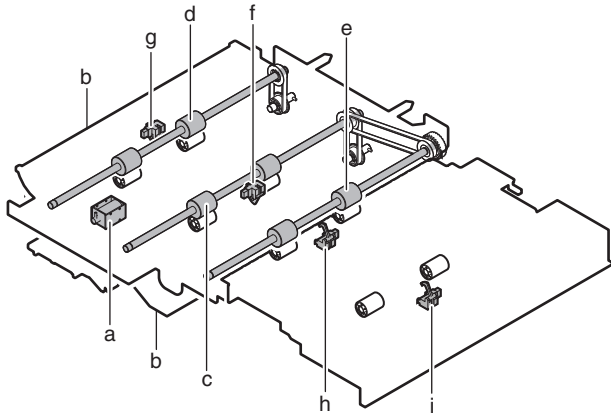


- 2) Remove the paper dust cleaner.



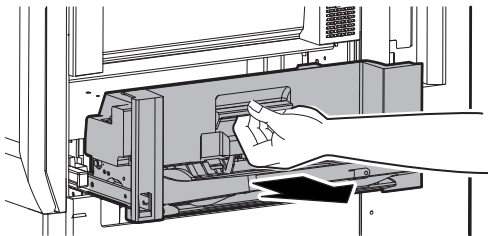
## C. Horizontal paper transport section

No.	Parts	Maintenance
a	Paper guide lock solenoid	
b	Paper guides	○
c	Transport roller 3 (drive)	× ○
d	Transport roller 4 (Drive)	× ○
e	Transport roller 2 (Drive)	× ○
f	Paper feed tray 2 paper pass detector 1	
g	Paper feed tray 2 paper pass detector 2	
h	Manual paper pass detector 2	
i	No. 5 paper feed paper pass detector	



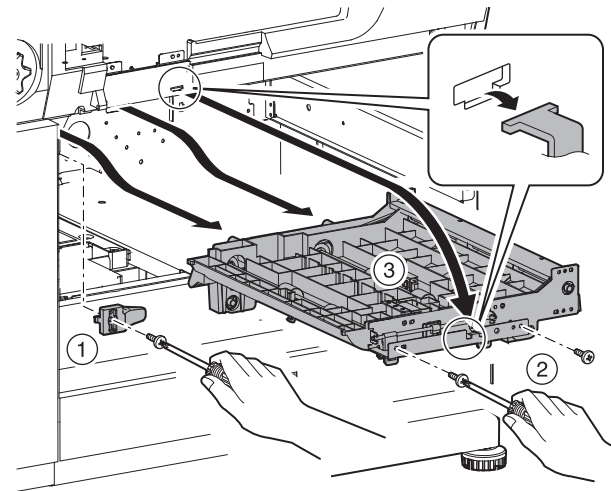
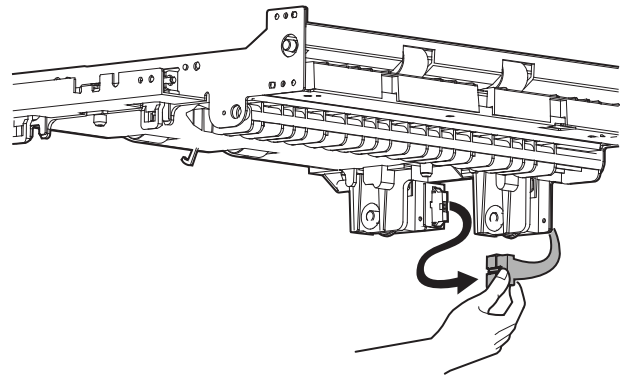
### (1) Relay pass unit

- 1) Pull out the multi manual paper feed tray unit.



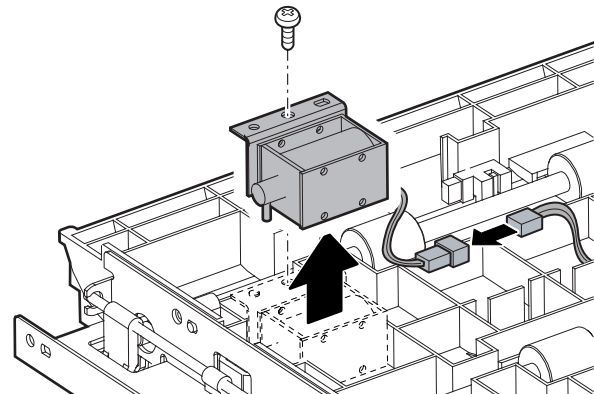
- 2) Remove the paper feed tray units 1 and 2.  
(See "5. Tray paper feed section")
- 3) Remove the toner cartridge, the OPC drum, and the toner hopper, and remove the front door.

- 4) Remove the paper feed reverse guide.  
Disconnect the connector, and remove the relay pass unit.

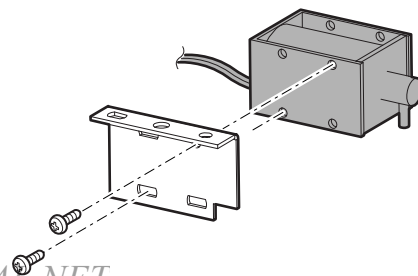


### a. Paper guide lock solenoid

- 1) Remove the relay pass unit.
- 2) Remove the connector, and remove the paper guide lock solenoid unit.



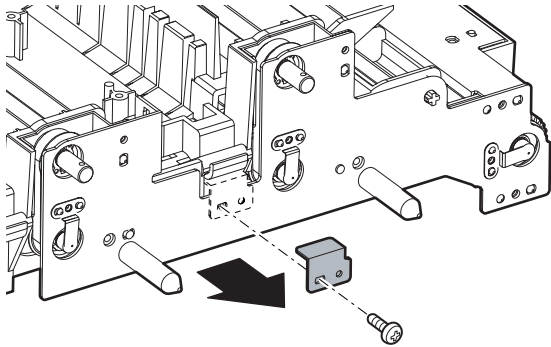
- 3) Remove the paper guide lock solenoid.



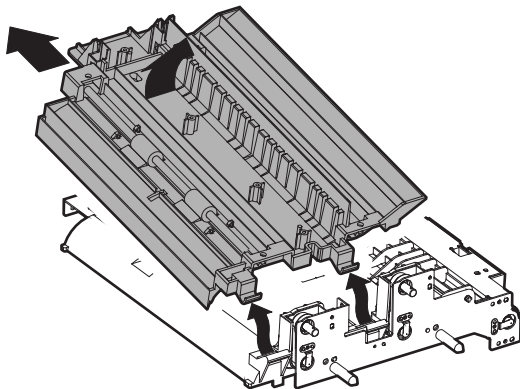


#### b. Paper guides

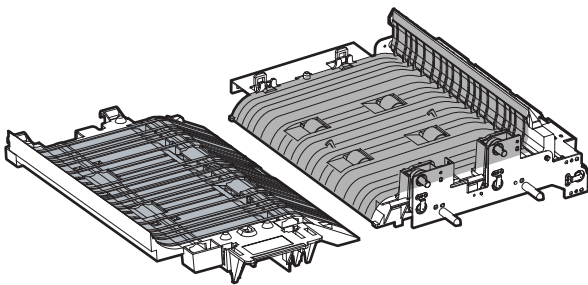
- 1) Remove the relay pass unit.
- 2) Remove the metal fixture.



- 3) Remove the lower paper guide unit.

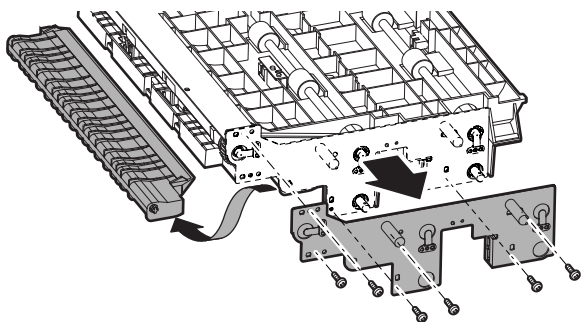


- 4) Clean each paper guides.

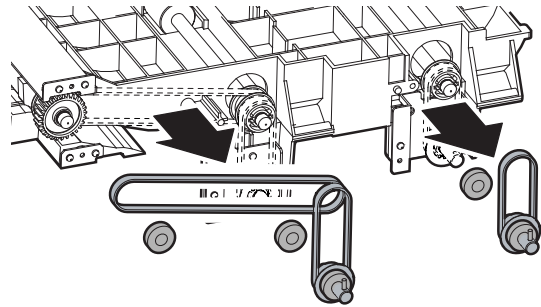


#### c. Transport roller 3/4 (Drive)

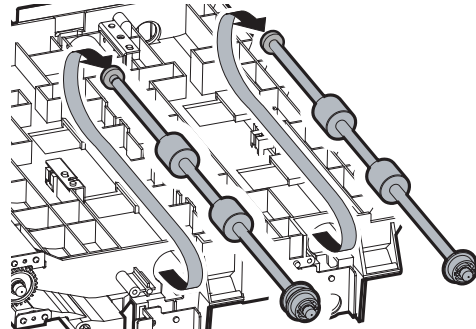
- 1) Remove the relay pass unit.
- 2) Remove lower paper guide unit.
- 3) Remove the rear positioning plate, and remove the paper feed port PG of the paper feed tray 1 and 2.



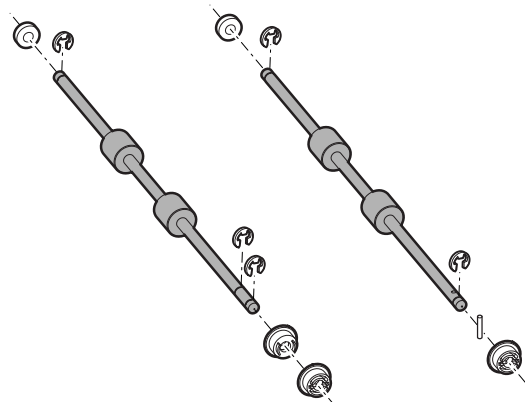
- 4) Remove the bearing, the belt, and the relay pass drive shaft unit.



- 5) Remove the transport roller 3 and 4 (Drive).

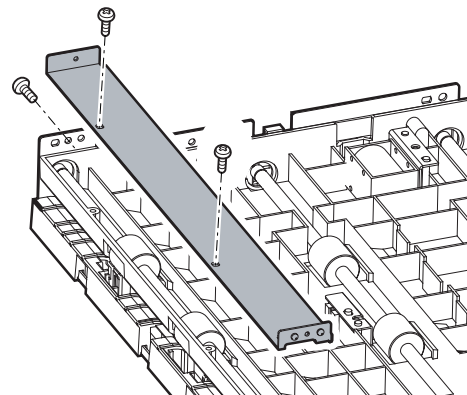


- 6) Remove the E-ring from transport roller 3 and 4 (Drive), and remove the belt pulley.

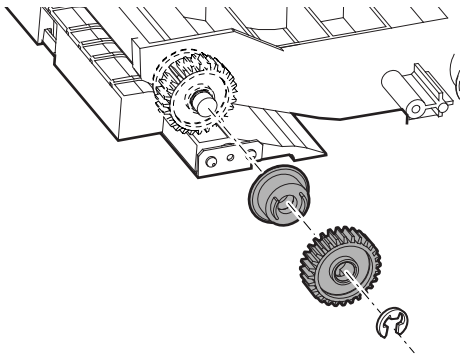


#### d. Transport roller 2 (Drive)

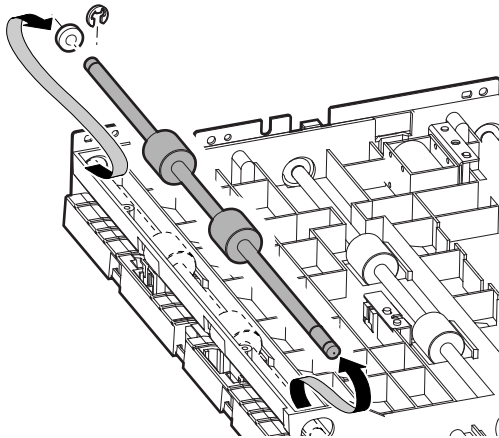
- 1) Remove the relay pass unit.
- 2) Remove lower paper guide unit.
- 3) Remove the paper feed PG of the paper feed tray 1/2.
- 4) Remove the paper entry side upper plate.



- 5) Remove the E-ring, and remove the gear and the belt pulley.

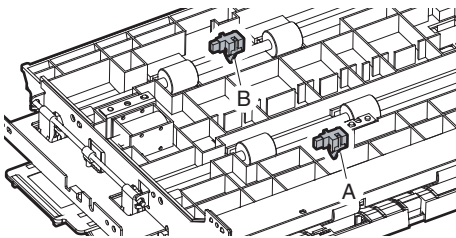


- 6) Remove the transport roller 2 (Drive) unit.
- 7) Remove the E-ring from the transport roller 2 (Drive).



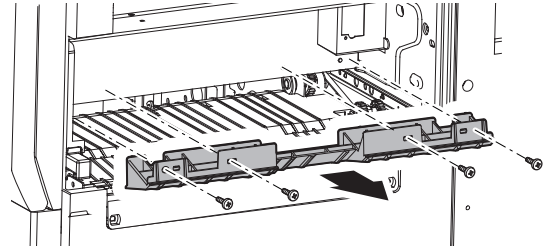
#### e. Paper feed tray 2 paper pass detector 1/2

- 1) Remove the relay pass unit.
- 2) Check the paper feed tray 2 paper pass detector 1 (A) and the paper feed tray 2 paper pass detector 2 (B).

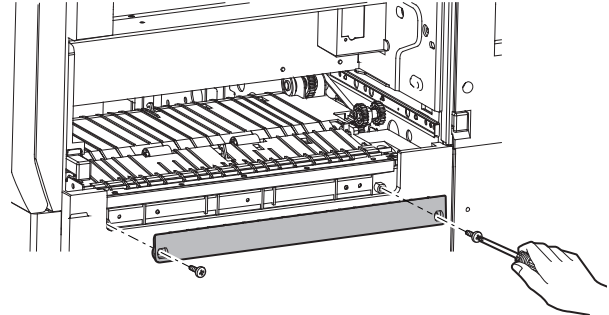


#### (2) No. 5 paper feed relay unit

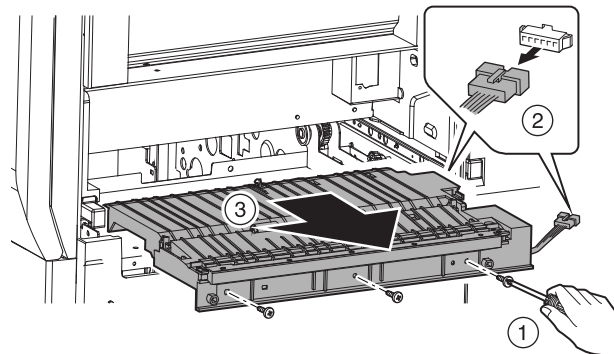
- 1) Remove the multi manual paper feed unit.  
(See "4. Manual paper feed section")
- 2) Remove the manual relay paper guide upper.



- 3) Remove the No. 5 paper feed relay paper guide.

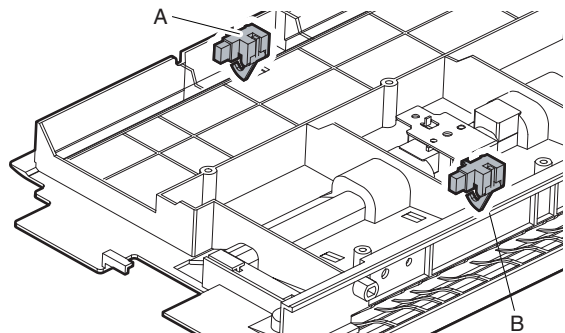


- 4) Lift the No. 5 paper feed relay unit, and remove the connector.
- 5) Remove the No. 5 paper feed relay unit.



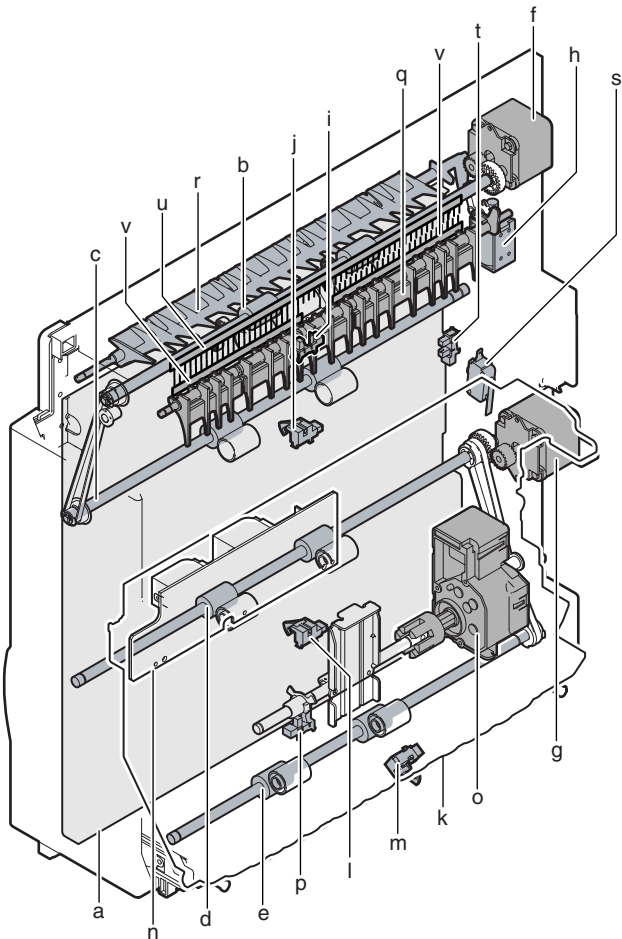
#### a. Manual paper pass detector 2/ No. 5 paper feed relay detector

- 1) Remove the multi manual paper feed unit.  
(See "4. Manual paper feed section")
- 2) Remove the No. 5 paper feed relay unit.
- 3) Check the manual paper pass detector 2 (A) and the No. 5 paper feed relay detector (B).



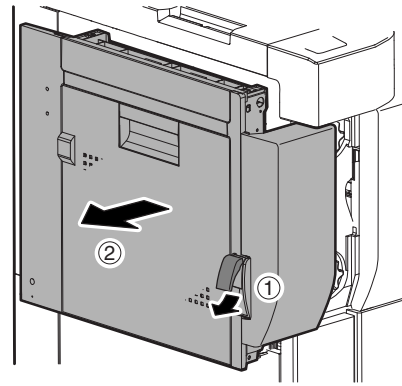
## D. Duplex section

No.	Parts	Maintenance
a	ADU opening/closing door	
b	Paper exit roller 2	× ○
c	Transport roller 19	× ○
d	Transport roller 20	× ○
e	Transport roller 21	× ○
f	Duplex motor 1	
g	Duplex motor 2	
h	Paper exit gate solenoid	
i	Duplex paper entry detector	
j	Duplex paper pass detector 1	
k	Left door transport paper guide R unit	
l	Duplex paper pass detector 2	
m	Paper pass detector 2	
n	Transfer high voltage transformer	
o	Transfer separation motor	
p	Transfer belt separation home position sensor	
q	Switchback gate	
r	Paper exit gate	
s	Left door open/close detector	
t	Duplex cover open/close detector	
u	Fusing discharge brush	×
v	Reversing discharge brush	×

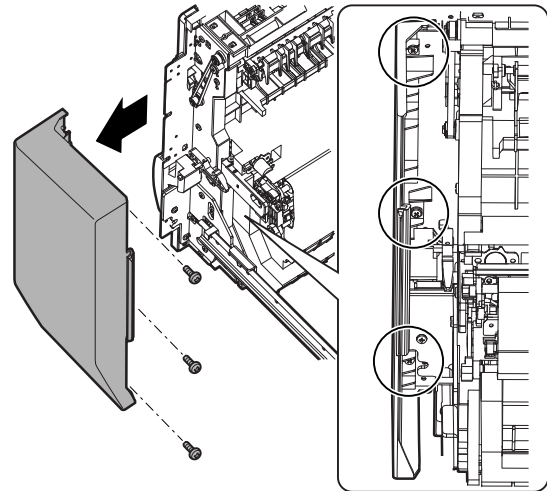


### (1) Left door unit

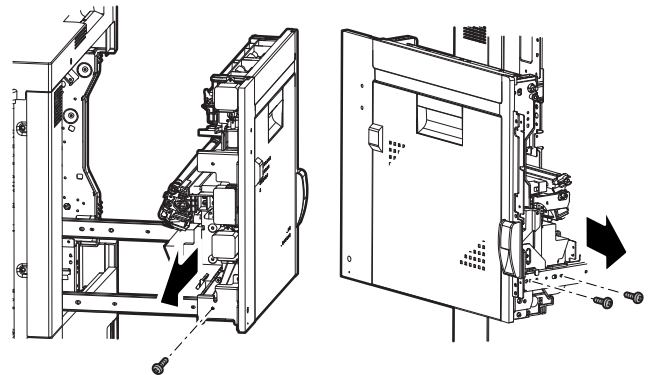
- 1) Pull out the left door.



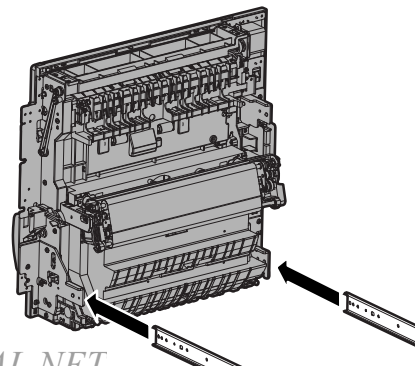
- 2) Remove the front cabinet.



- 3) Remove the fixing screw.



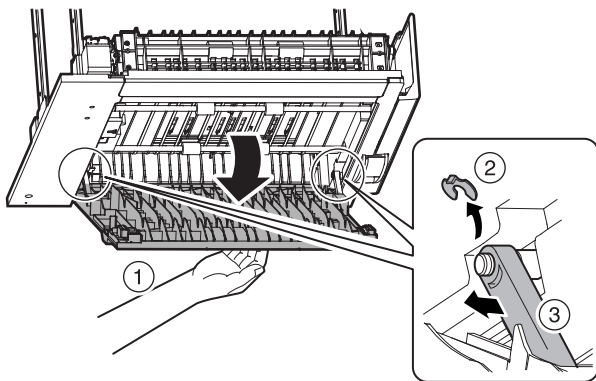
- 4) Remove the left door unit.



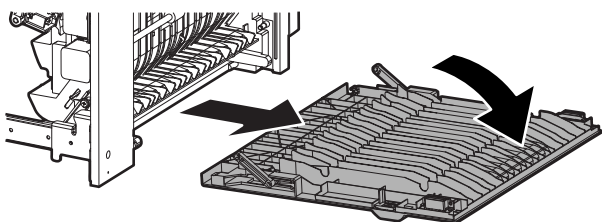


#### a. ADU opening/closing door

- 1) Pull out the left door.
- 2) Remove the stopper section plastic E-ring.

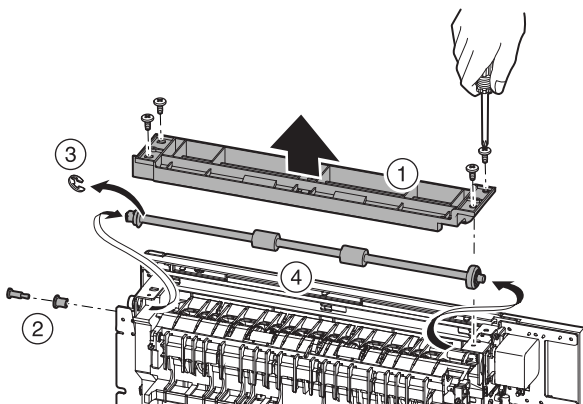


- 3) Remove the stopper from the fulcrum shaft to remove the ADU opening/closing door unit in the arrowed direction.

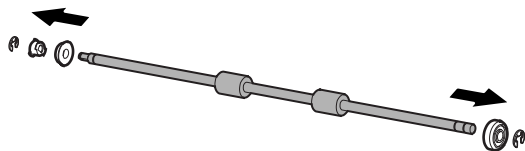


#### b. Paper exit roller 2

- 1) Pull out the left door.
- 2) Remove the ADU opening/closing door.
- 3) Remove the ADU paper exit upper paper guide.
- 4) Remove the ADU brake collar.
- 5) Remove the E-ring to remove the transport roller 2 assembly.

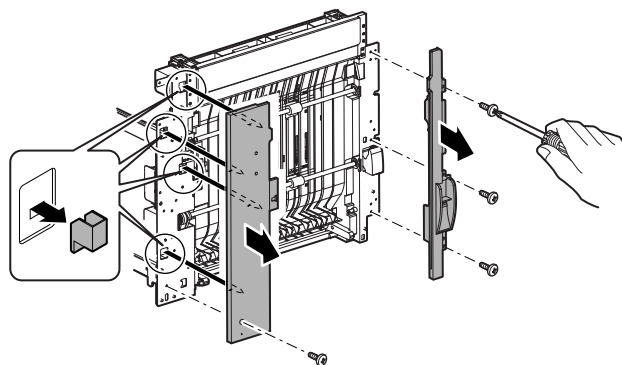


- 6) Remove the E-ring to remove the bearing, pulley, gear and pin from the paper exit roller.

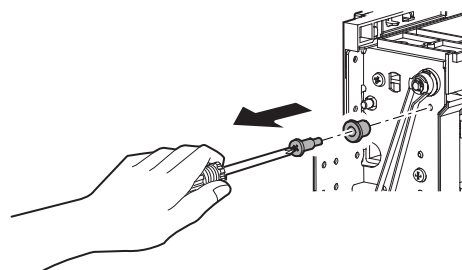


#### c. Transport roller 19/20/21

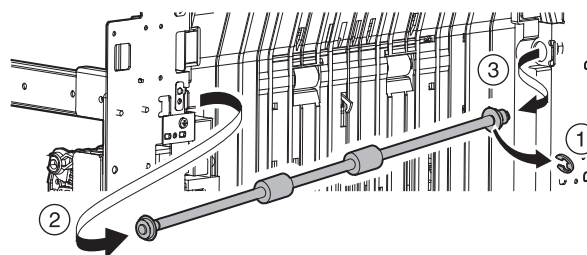
- 1) Pull out the left door.
- 2) Remove the ADU opening/closing door.
- 3) Remove the left door cabinet F.
- 4) Remove the left door cabinet R.



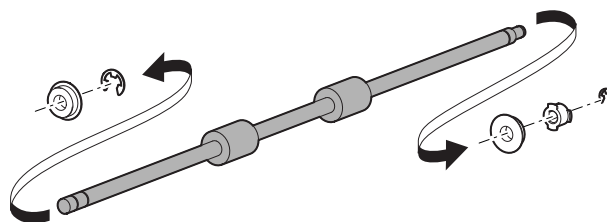
- 5) Remove the front belt collar.



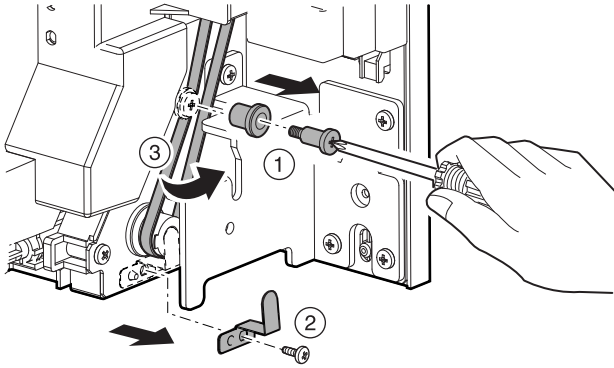
- 6) Remove the E-ring to remove the transport roller 19 assembly.



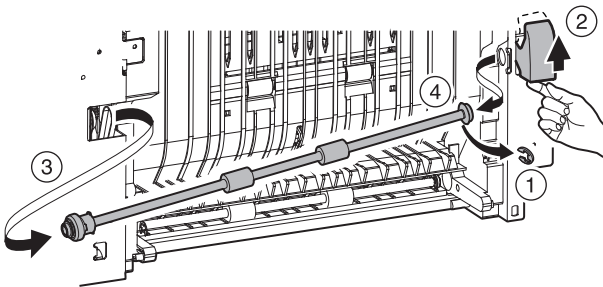
- 7) Remove the bearing, pulley, gear and pin from the transport roller 19.



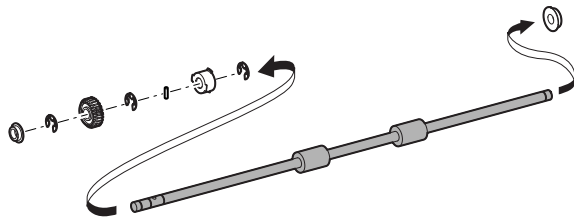
- 8) Remove the rear belt collar.
- 9) Remove the ground plate.
- 10) Remove the belt.



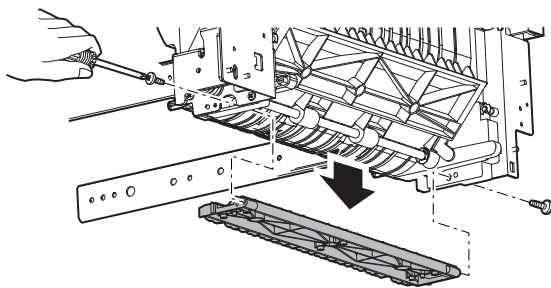
- 11) Remove the E-ring and lift up the switching lever to remove the transport roller 20 assembly.



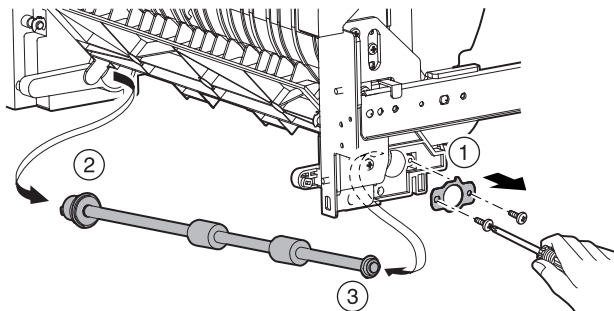
- 12) Remove the bearing, pulley, gear and pin from the transport roller 20.



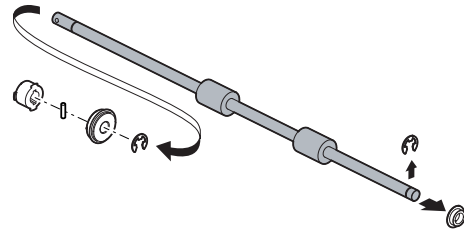
- 13) Remove the U-turn paper guide.



- 14) Apply the bearing attachment plate to remove transport roller 21.

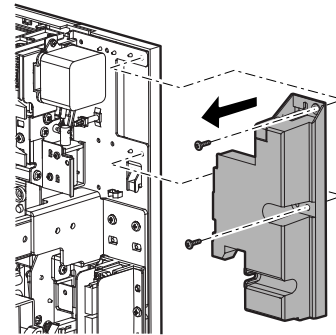


- 15) Remove the bearing, pulley, gear and pin from the transport roller 21.

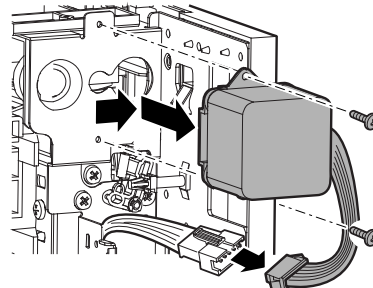


#### d. Duplex motor 1

- 1) Pull out the left door.
- 2) Remove the cover.

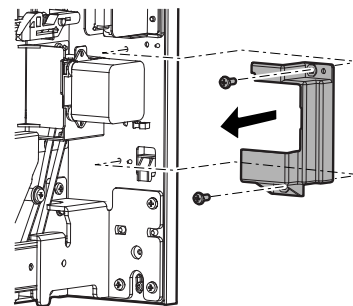


- 3) Remove the duplex motor 1.

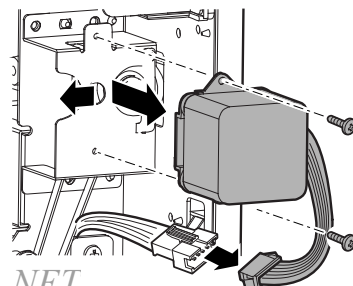


#### e. Duplex motor 2

- 1) Pull out the left door.
- 2) Remove the cover.

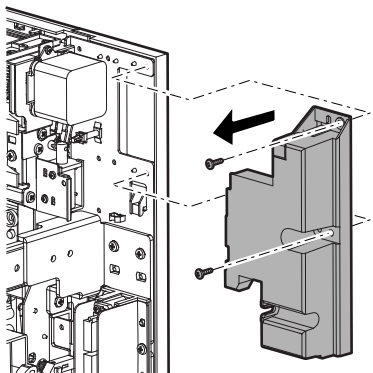


- 3) Remove the duplex motor 2.

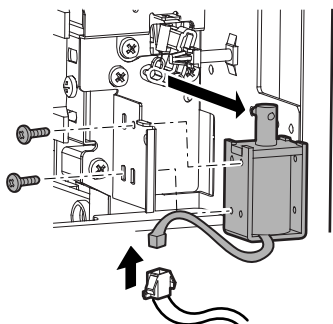


**f. Paper exit gate solenoid**

- 1) Pull out the left door.
- 2) Remove the cover.

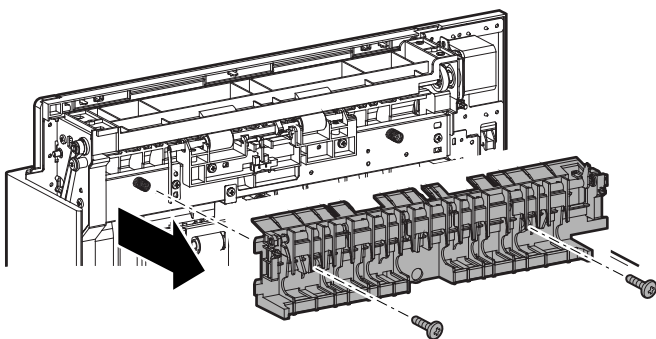


- 3) Remove the paper exit gate solenoid.

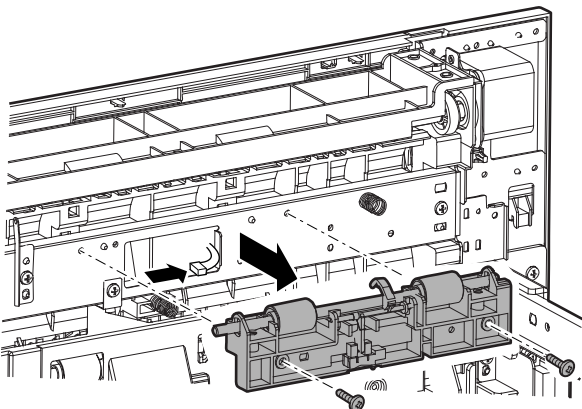


**g. Duplex paper entry detector**

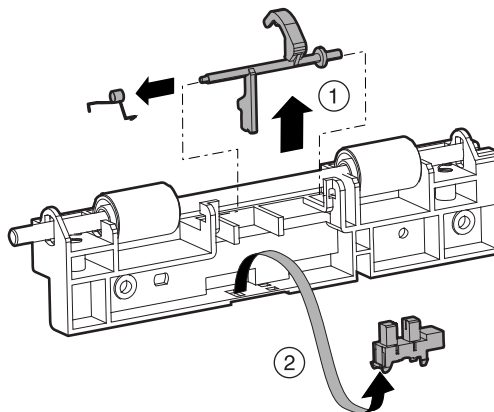
- 1) Pull out the left door.
- 2) Remove the paper guide unit.



- 3) Remove the follower roller unit.

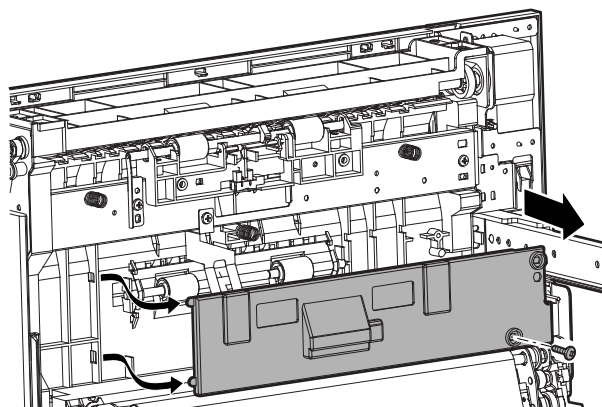


- 4) Remove the duplex paper entry detector.

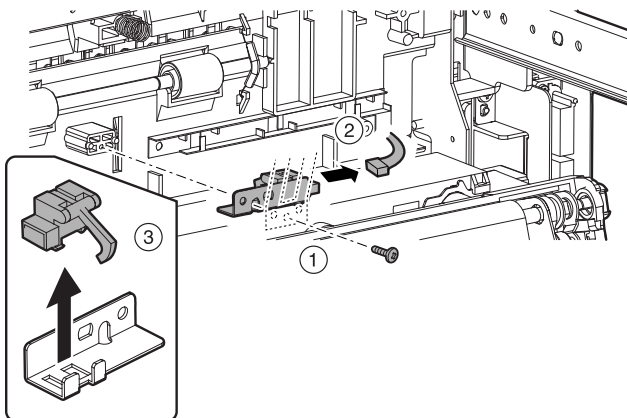


**h. Duplex paper pass detector 1**

- 1) Pull out the left door.
- 2) Remove the cover.

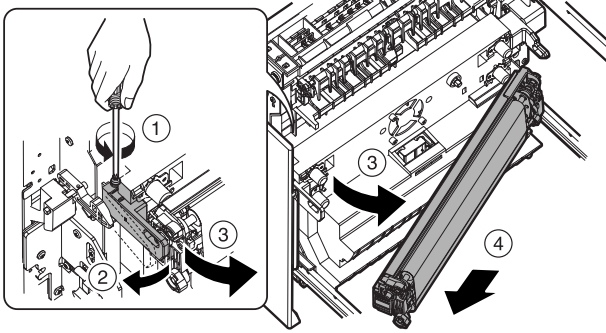


- 3) Remove the duplex paper pass detector 1.

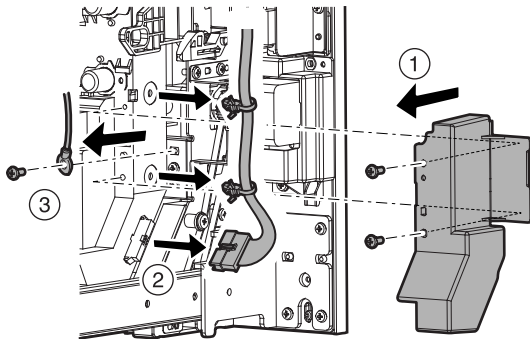


**i. Left door transport paper guide R unit.**

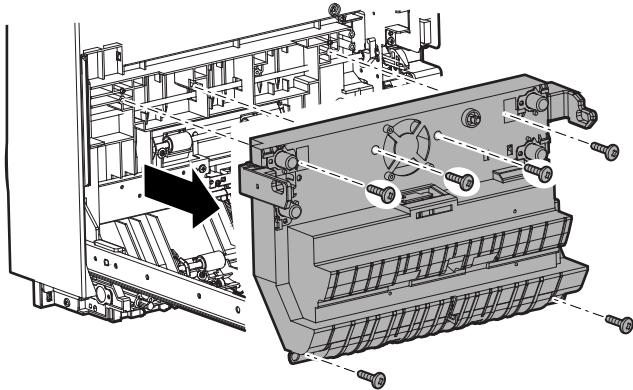
- 1) Pull out the left door.
- 2) Remove the transfer unit.



- 3) Remove the cover, and remove the connector, the snap band, and the earth terminal.

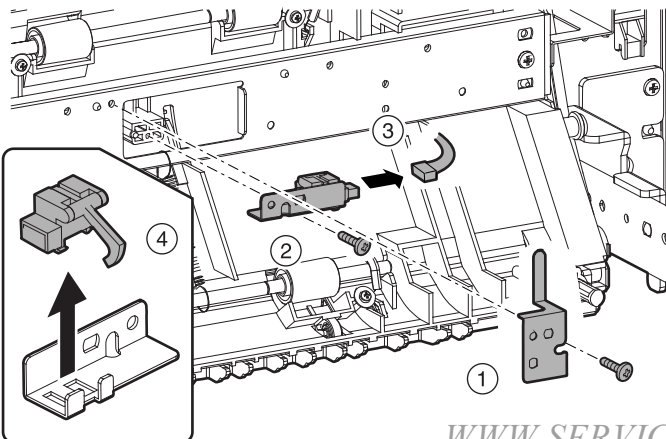


- 4) Remove the left door transport paper guide R unit.



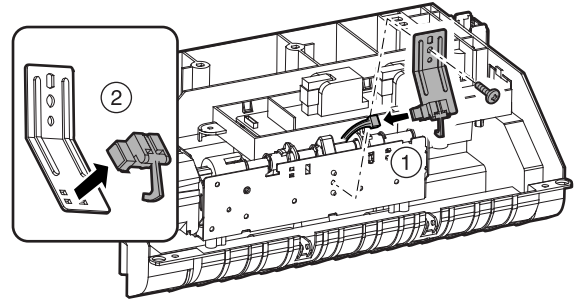
**j. Duplex paper pass detector 2**

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the duplex paper pass detector 2.



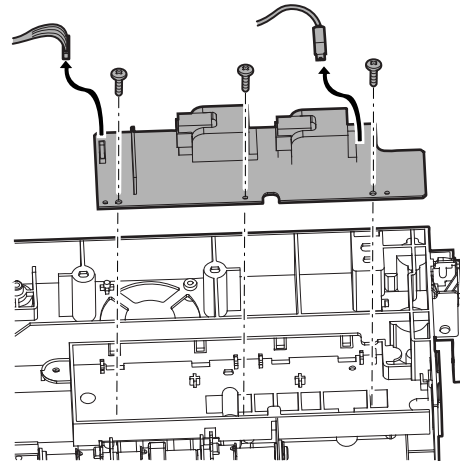
**k. Paper pass detector 2**

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the paper pass detector 2.



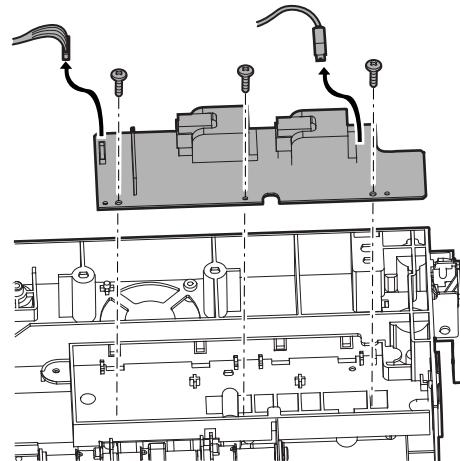
**l. Transfer high voltage transformer**

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer high voltage transformer.



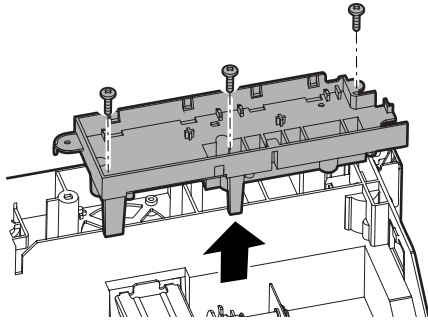
**m. Transfer separation motor**

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer high voltage transformer.

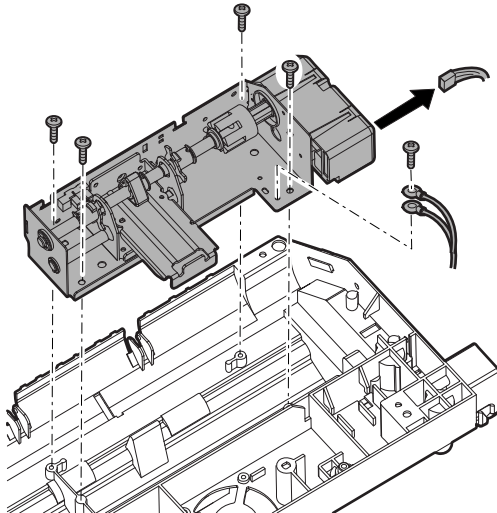




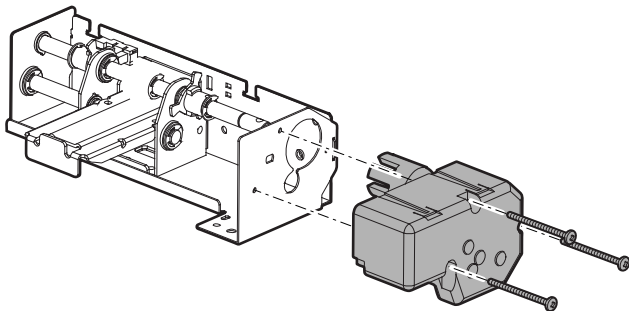
- 4) Remove the PWB holder.



- 5) Remove the transfer separation unit.

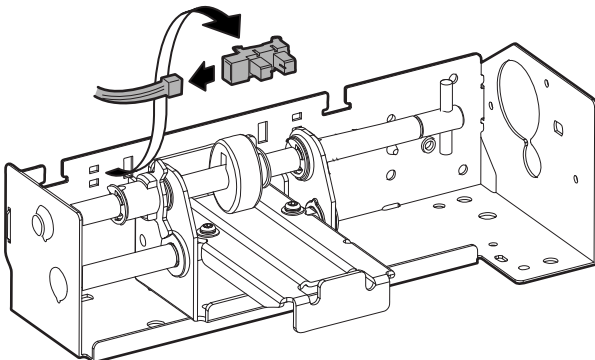


- 6) Remove the transfer separation motor.



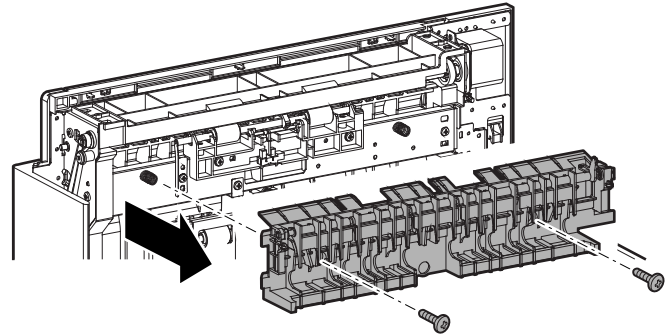
**n. Transfer belt separation home position sensor**

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer belt separation home position sensor.

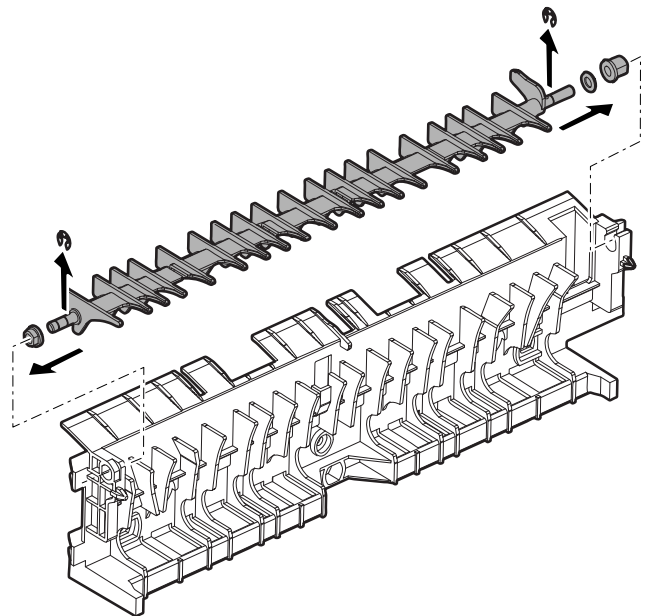


**o. Switchback gate**

- 1) Pull out the left door.
- 2) Remove the paper guide unit.

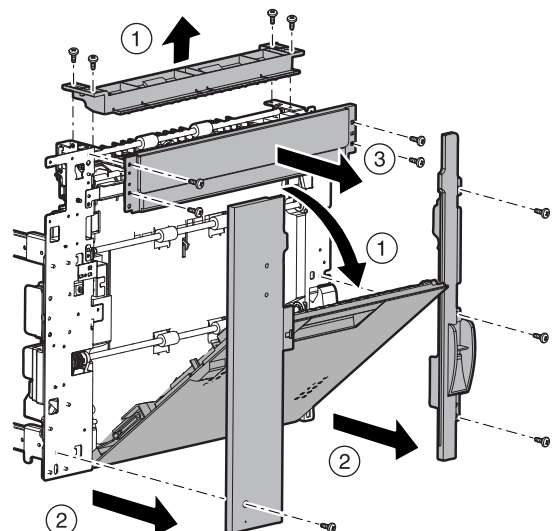


- 3) Remove the switchback gate.

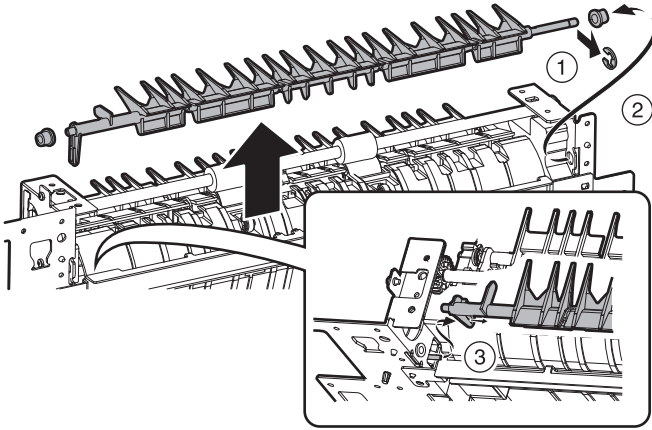


**p. Paper exit gate**

- 1) Pull out the left door.
- 2) Remove the paper guide unit. Open the door, and remove the cabinets.

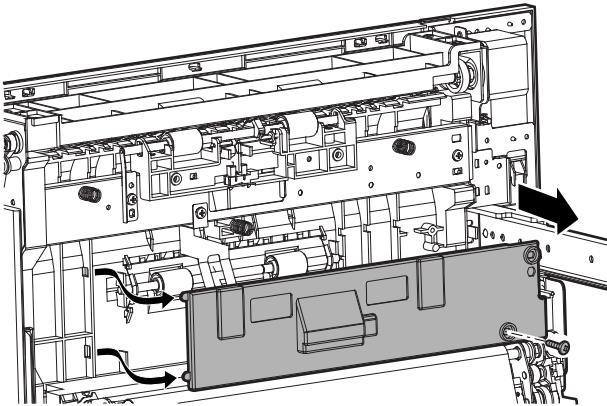


- 3) Remove the paper exit gate.

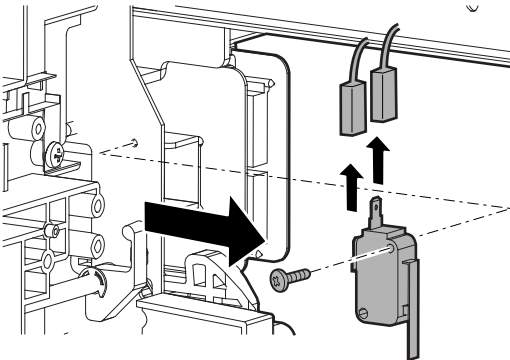


#### q. Left door open/close detector

- 1) Pull out the left door.
- 2) Remove the cover.

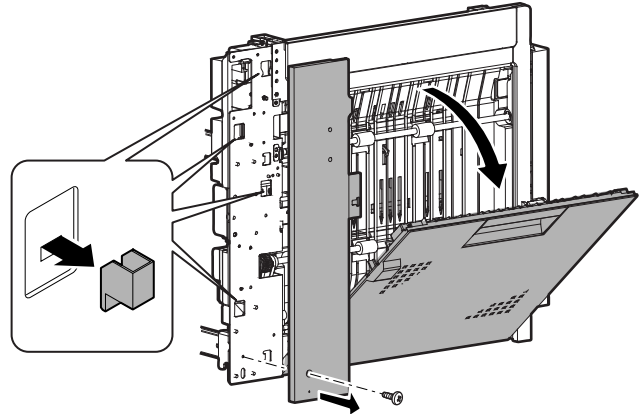


- 3) Remove the left door transport paper guide R unit.
- 4) Remove the left door open/close detector.

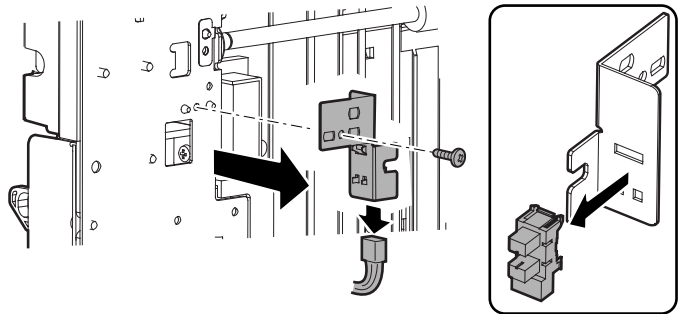


#### r. Duplex cover open/close detector

- 1) Pull out the left door.
- 2) Open the door, and remove the cover.

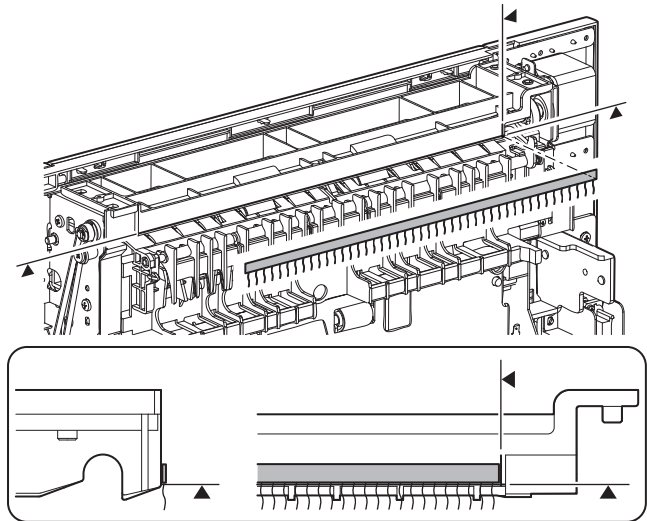


- 3) Remove the duplex cover open/close detector.



#### s. Fusing discharge brush

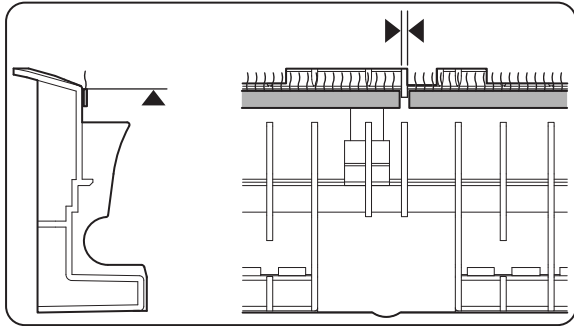
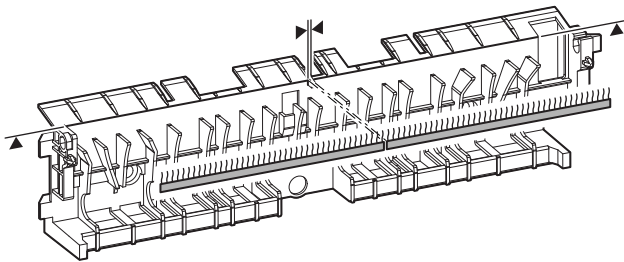
- 1) Pull out the left door.
- 2) Remove the fusing discharge brush.



\* Attach the fusing discharge brush so that it is fit with the rear end.

**t. Reversing discharge brush**

- 1) Pull out the left door.
- 2) Remove the switchback gate.
- 3) Remove the reversing discharge brush.



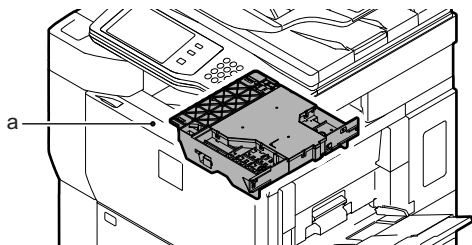
\* Attach the reverse discharge brush so that it is fit with the rib inside and the parting line.

## 7. LSU section

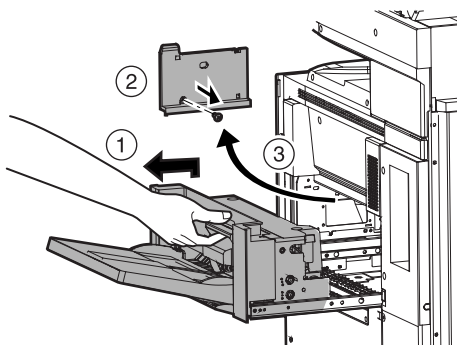
No.	Unit
a	LSU

### A. LSU

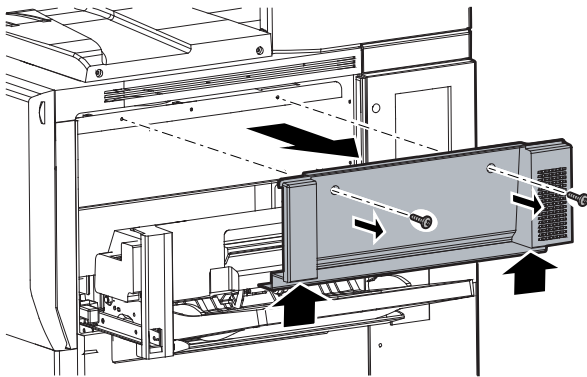
\* Do not disassemble the LSU unit.



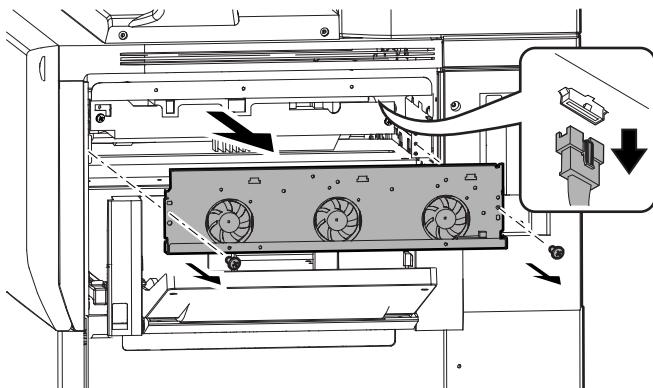
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



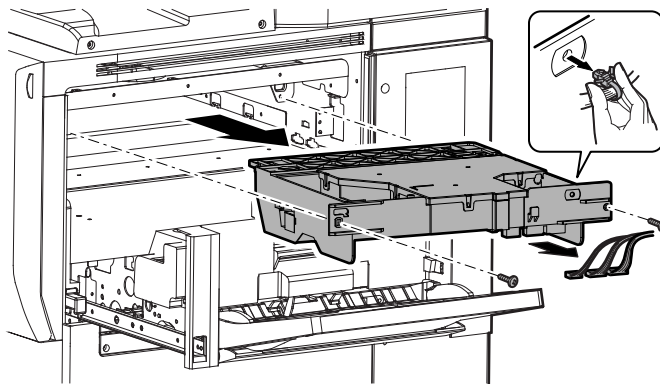
- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



- 4) Disconnect the connector, remove the snap band, and remove the LSU.

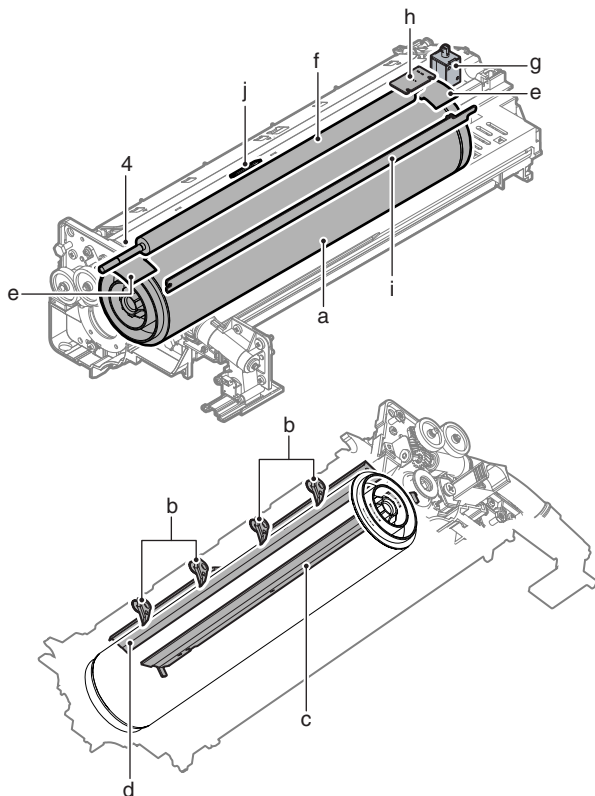




## 8. Photo-conductor section

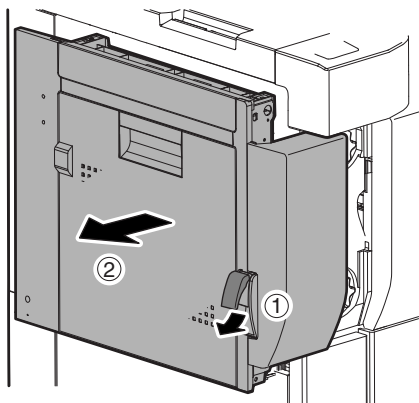
### A. OPC drum Section

No.	Parts	Maintenance
a	OPC drum	× ▲
b	Drum separation	× ▲
c	Cleaning blade	× ▲
d	Toner reception seal	× ▲
e	CL side seal F/R	× ▲
f	Cleaning brush roller	▲
g	Drum separation pawl solenoid	
h	OPC drum cleaner temperature sensor	
i	Image density sensor	× ○
j	Discharge lamp	× ○

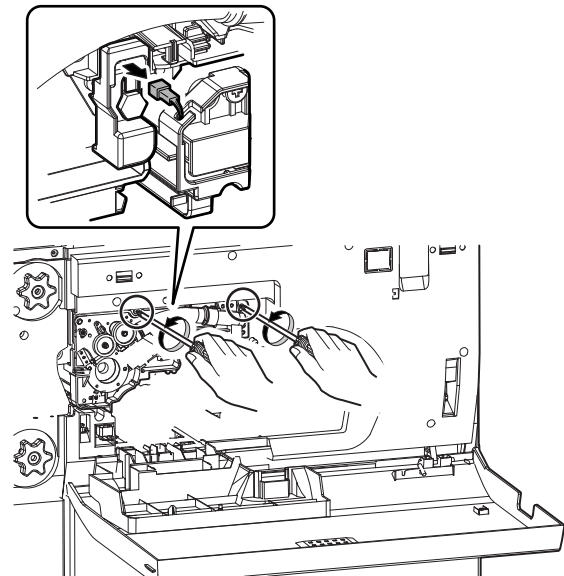


#### (1) Process unit

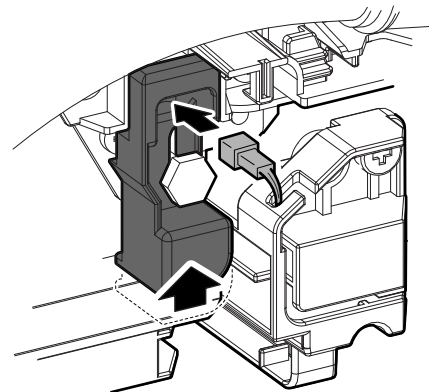
- 1) Remove the toner cartridge and tone hopper unit. (See "9. Toner supply section")
- 2) Remove the developing unit. (See "10. Developing section")
- 3) Remove the MC charger unit.
- 4) Open the left door.



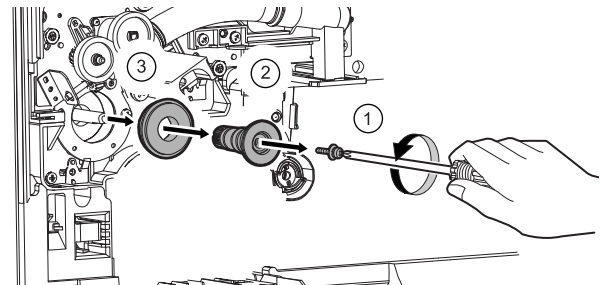
- 5) Disconnect the connector. Remove the blue screw.



\* When connecting the connector, lift the connector cover and connect it.

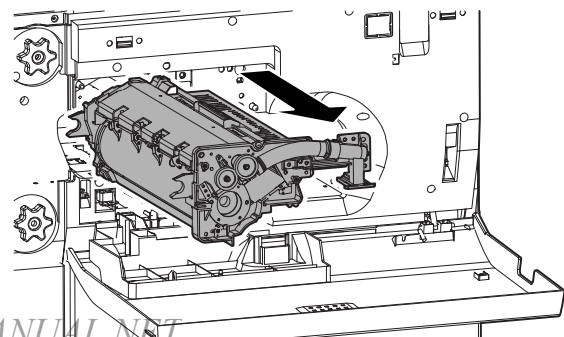


- 6) Unfix the OPC drum to remove the bearing.



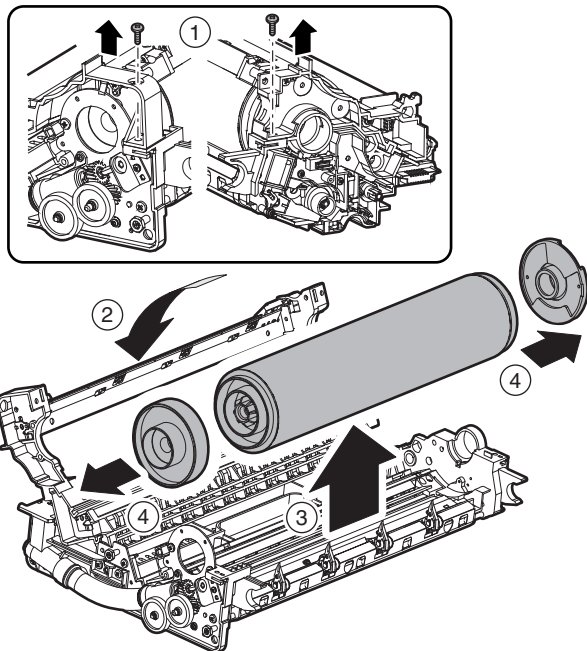
- 7) Pull out the process unit by clasping the bolt head.

\* When disassembling the process unit, be careful not to catch the waste toner detection connector.

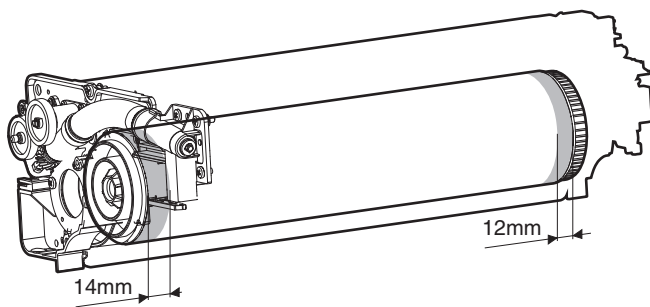


#### a. OPC drum

- 1) Remove the blue screw to open the lower frame.
- 2) Gently remove the drum, guide and all.
- 3) Remove the guide.



\* The OPC layer of a certain area of the OPC drum may break off due to rotational friction. The OPC layer break-off generated in the area shown below will not affect print images. Therefore, the drum can be used without replacement.



\* When replacing the OPC drum, apply friction-reducing powder (UKOG-0309FCZZ) evenly to all over the CL side seals (F and R) in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



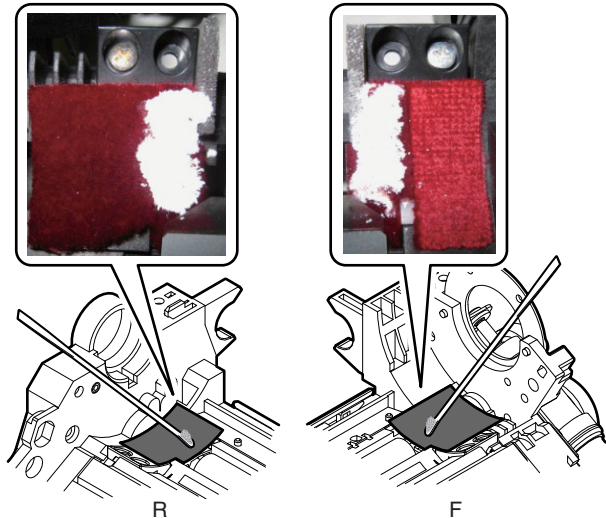
One spoon of micro-spatel  
(7 - 8mg)

NOTE: When applying stearic acid to the CL side seal, deliberately spread it over the area shown in the photo. At that time, be careful not to apply it to the other areas.

Note that the application quantity of stearic acid differs depending on the right and the left side.

- CL side seal F: 3 spoons of micro-spatel (21 - 24mg)
- CL side seal R: 2 spoons of micro-spatel (14 - 16mg)

One spoon of micro-spatel corresponds to 7 - 8mg.

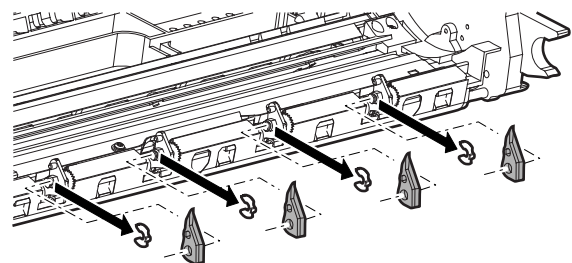


\* When installing the OPC drum, apply stearic acid (UKOG-0312FCZZ) to the whole surface of the drum.

#### b. Drum separation

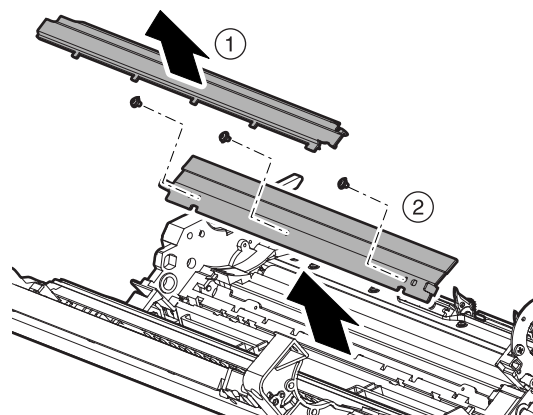
- 1) Remove the OPC drum.
- 2) Remove the resin E-ring.
- 3) Remove the drum separation pawl.

\* Be careful not to deform the tip of the separation pawl.



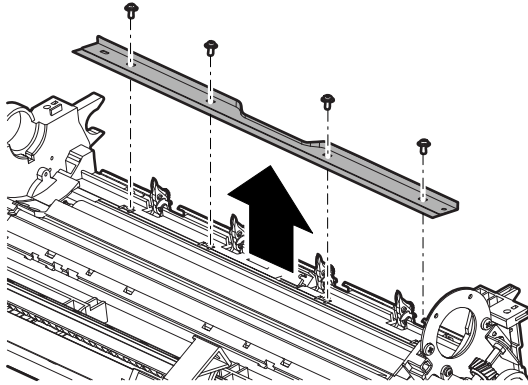
#### c. Cleaning blade

- 1) Remove the OPC drum.
- 2) Remove the cover.
- 3) Remove the cleaning blade.



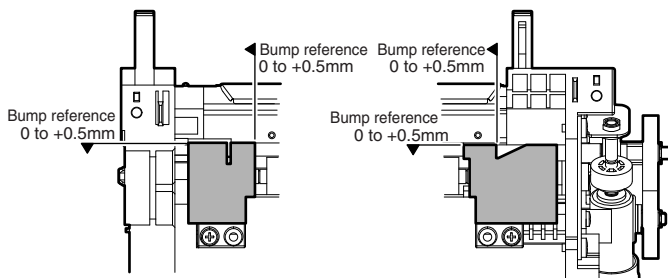
#### d. Toner reception seal

- 1) Remove the OPC drum.
- 2) Remove the toner receiving seal.



#### e. CL side seal F/R

- 1) Remove the OPC drum.
- 2) Remove the CL side seal F and R base sheet.
  - \* Clean the attachment section with alcohol to remove toner, dust, or foreign material.
  - \* Attach according to the attachment reference.



\* When replacing the OPC drum, apply friction-reducing powder (UKOG-0309FCZZ) evenly to all over the CL side seals (F and R) in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



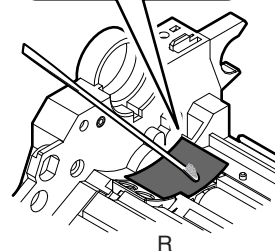
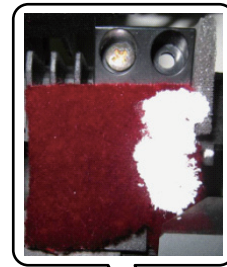
One spoon of micro-spatel  
(7 - 8mg)

NOTE: When applying stearic acid to the CL side seal, deliberately spread it over the area shown in the photo. At that time, be careful not to apply it to the other areas.

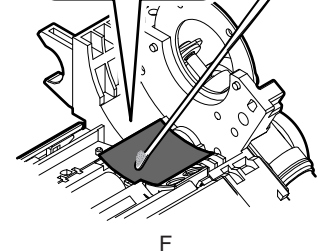
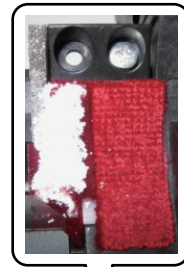
Note that the application quantity of stearic acid differs depending on the right and the left side.

- CL side seal F: 3 spoons of micro-spatel (21 - 24mg)
- CL side seal R: 2 spoons of micro-spatel (14 - 16mg)

One spoon of micro-spatel corresponds to 7 - 8mg.



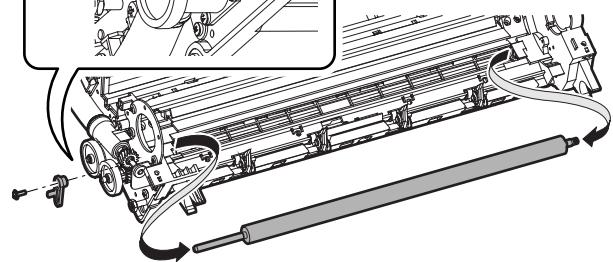
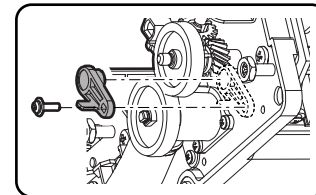
R



F

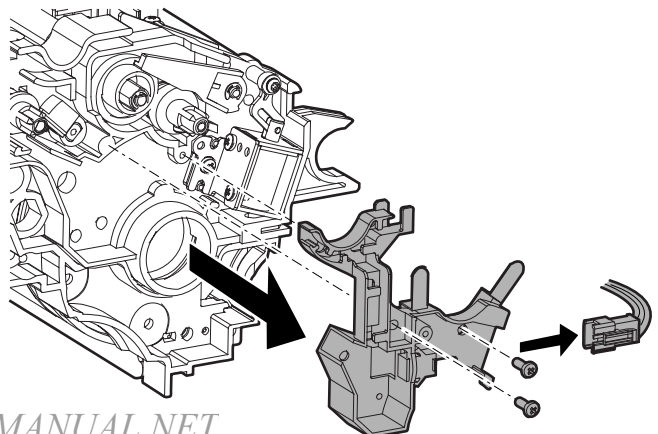
#### f. Cleaning brush roller

- 1) Remove the OPC drum.
- 2) Remove the toner receiving seal.
- 3) Remove the blue screw to remove the lever.
- 4) Remove the cleaning brush roller.

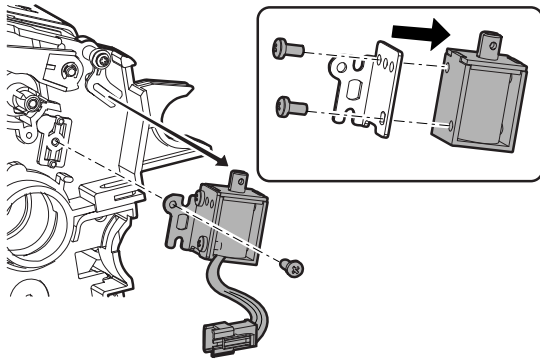


#### g. Drum separation pawl solenoid

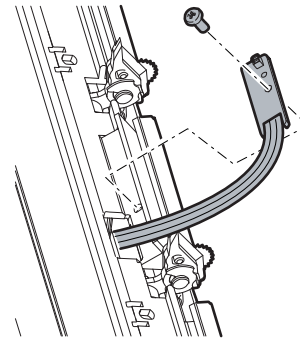
- 1) Disconnect the connector, and remove the harness guide unit.



- 2) Remove the drum separation pawl solenoid.

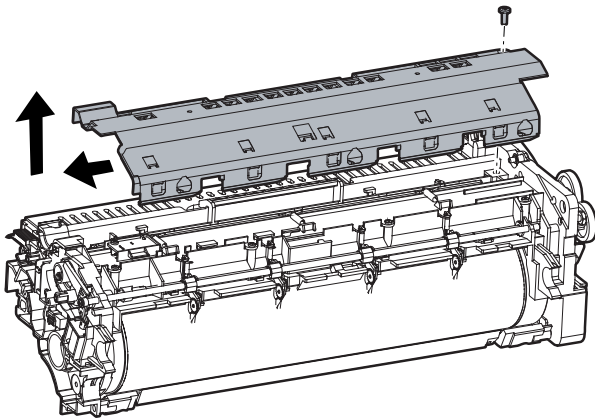


- 3) Remove the OPC drum.
- 4) Remove the image density sensor.

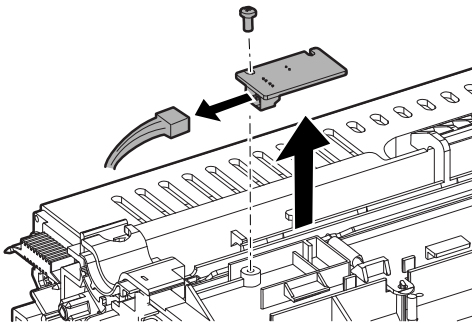


#### h. OPC drum cleaner temperature sensor

- 1) Remove the upper cover.

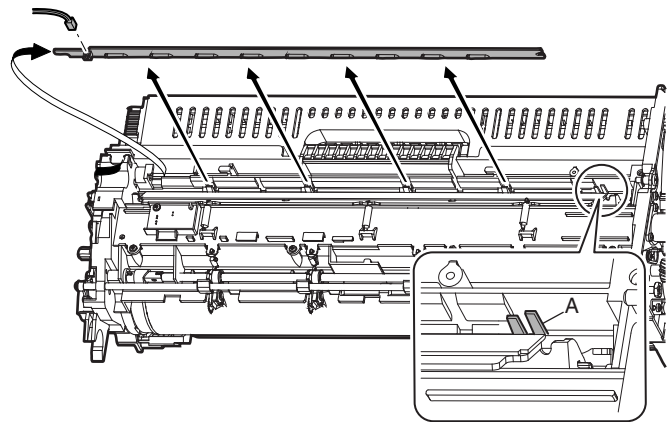


- 2) Remove the OPC drum cleaner temperature sensor.



#### j. Discharge lamp

- 1) Remove the upper cover.
  - 2) Remove the discharge lamp.
- \* Be careful not to break the pawl when fixing (A).

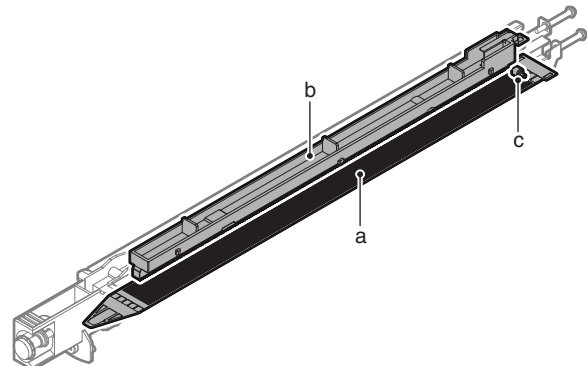
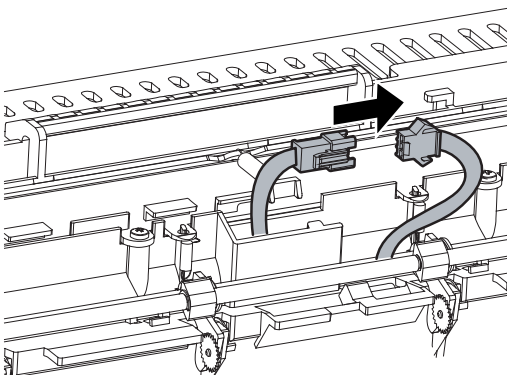


### B. Main charger section

No.	Parts	Maintenance
a	Screen grid	× ▲
b	Sawtooth	○ ▲
c	MC cleaner	▲

#### i. Image density sensor

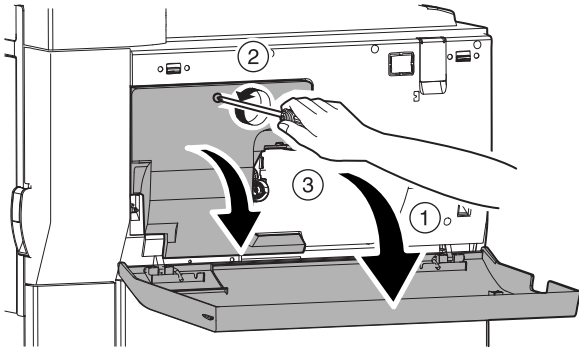
- 1) Remove the upper cover.
- 2) Remove the connector.



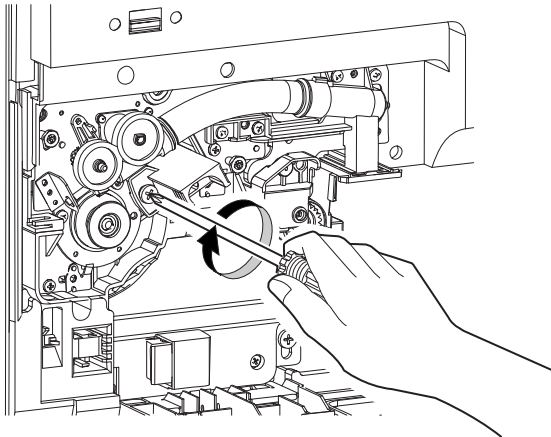


### (1) Main charger unit

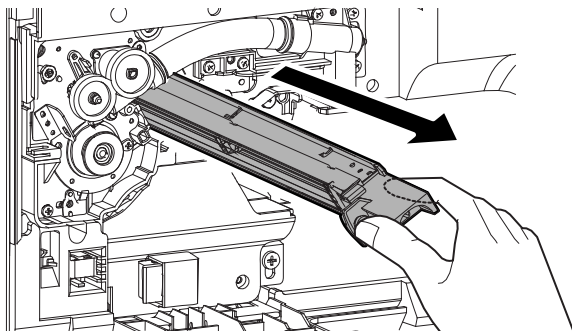
- 1) Open the front cabinet and the process cover.



- 2) Loosen the blue screw.

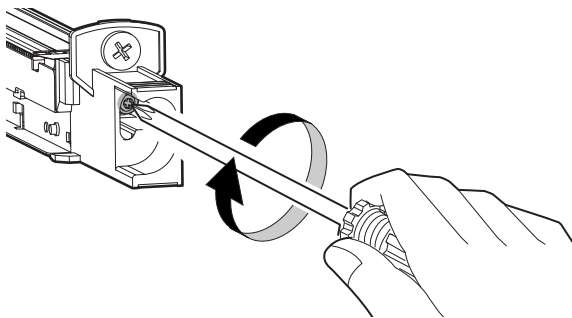


- 3) Remove the main charger unit.

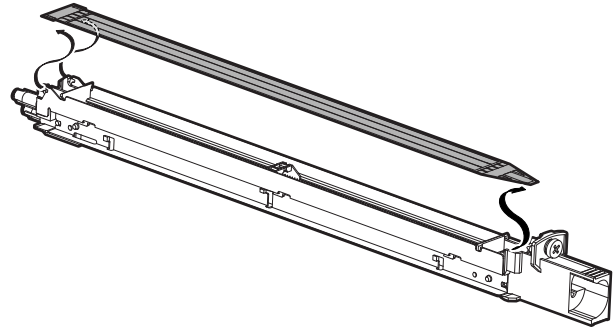


### a. Screen grid

- 1) Loosen the screw.

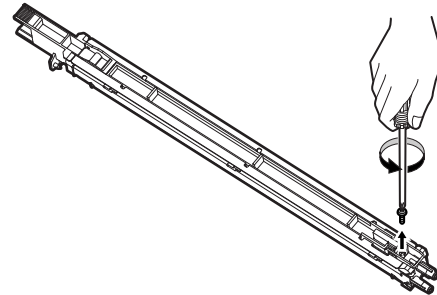


- 2) Remove the screen grid from the claw.

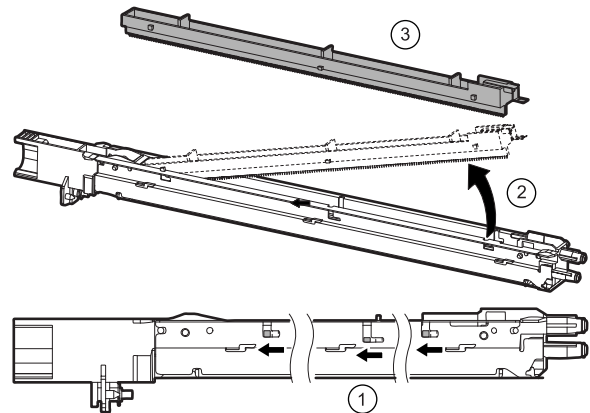


### b. Sawtooth plate

- 1) Remove the blue screw.

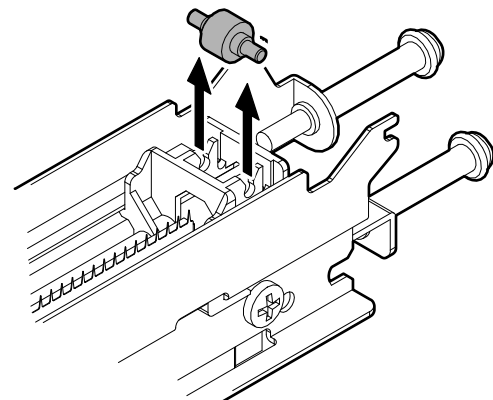


- 2) Lifting one end up, slide off the saw blade holder.



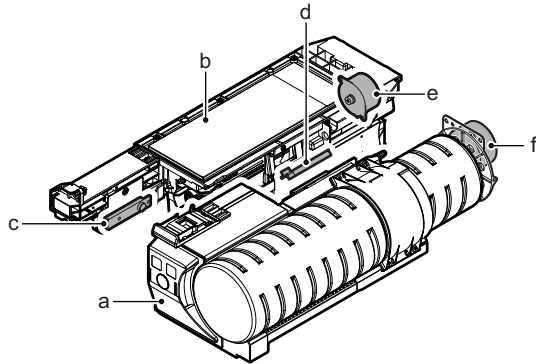
### c. MC cleaner

- 1) Remove the screen grid.
- 2) Remove the MC cleaner.



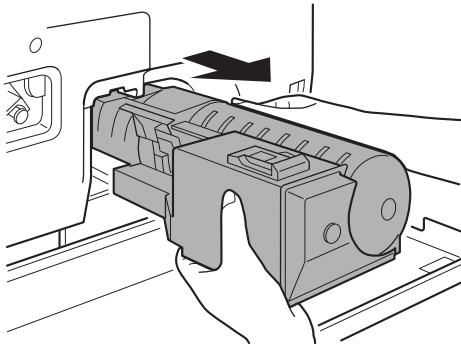
## 9. Toner supply section

No.	Parts
a	Toner cartridge
b	Toner hopper unit
c	Waste toner full sensor
d	Toner sensor
e	Toner motor 1
f	Toner motor 2



### A. Toner cartridge

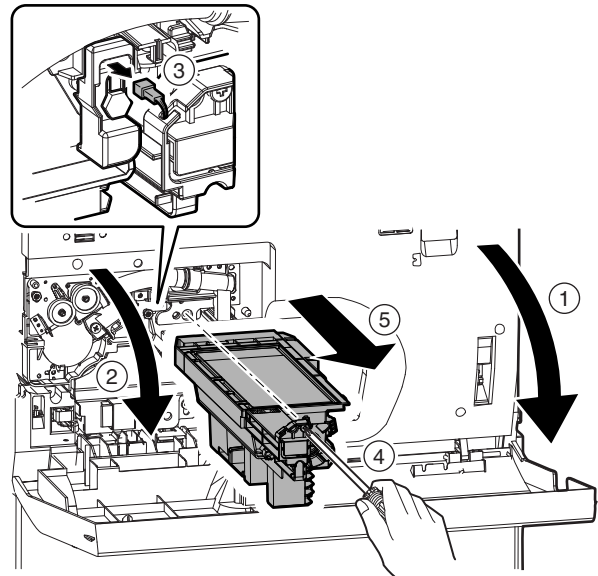
- 1) Open the front door.
- 2) Remove the toner cartridge.



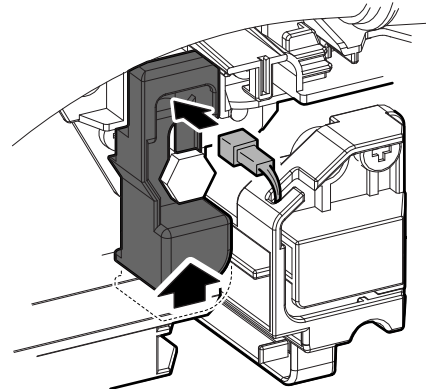
### B. Toner hopper unit

- 1) Remove the toner cartridge.
- 2) Open the process cover.
- 3) Disconnect the connector and remove the screw, and remove the toner hopper unit.

\* When pulling out the toner hopper unit, be careful not to catch the harness.



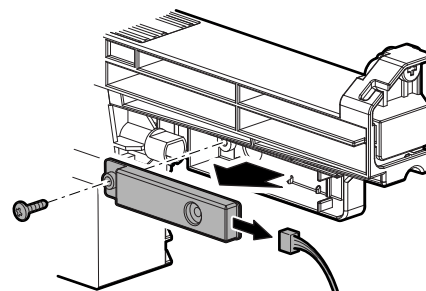
\* When connecting the connector, lift the connector cover and connect it.



#### (1) Waste toner full sensor

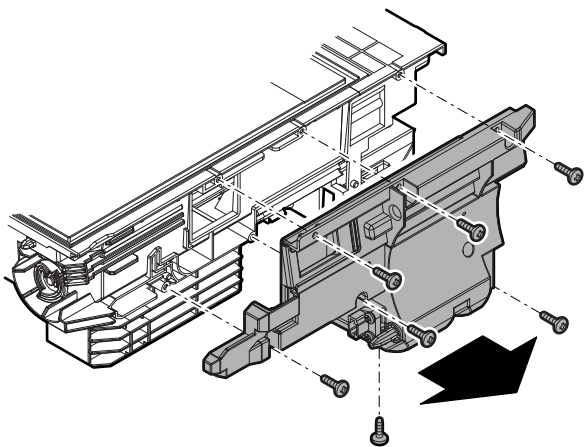
- 1) Disconnect the waste toner full sensor connector, and pull out the toner hopper unit.
- 2) Remove the screw, and remove the waste toner full sensor. Disconnect the connector.

\* When attaching the sensor, do not tighten the screw excessively. If the screw is tightened too strongly, the screw hole may be broken.

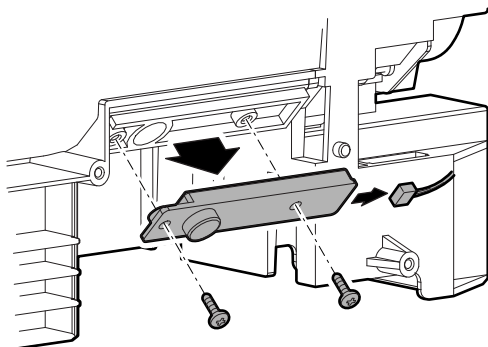


## (2) Toner sensor

- 1) Remove the toner hopper unit.
- 2) Remove the cover.

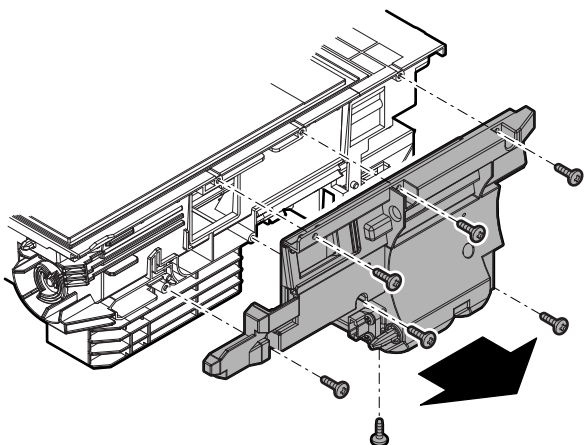


- 3) Remove the toner sensor.

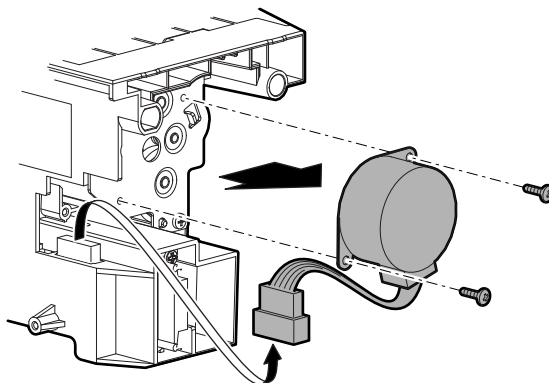


## (3) Toner motor 1

- 1) Remove the toner hopper unit.
- 2) Remove the cover.

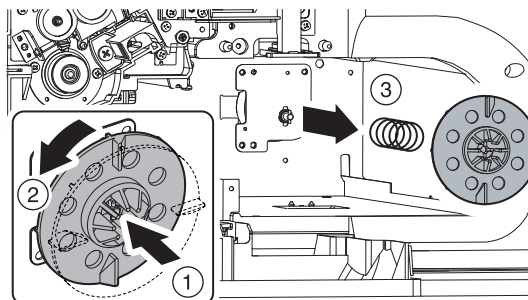


- 3) Remove the toner motor 1.

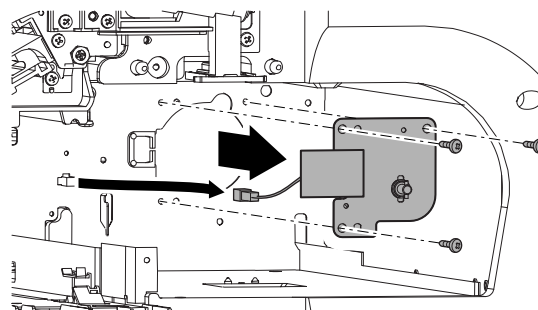


## C. Toner motor 2

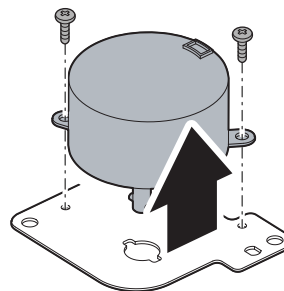
- 1) Remove the toner cartridge.
- 2) Remove the toner hopper unit.
- 3) While pressing the bottle coupling, turn it 90 degrees to the left and remove it. Remove the spring.



- 4) Disconnect the connector, and remove the toner motor unit.

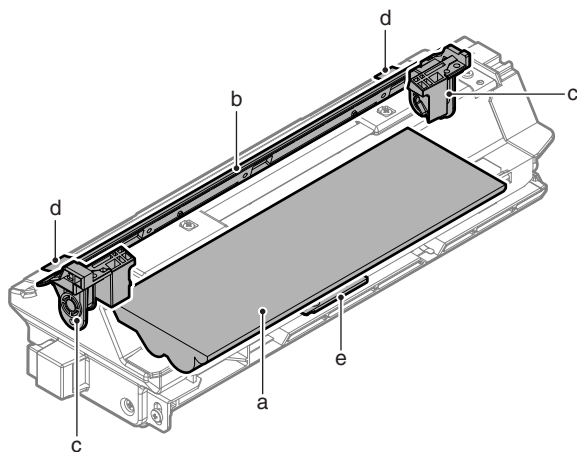


- 5) Remove the toner motor 2.



## 10. Developing section

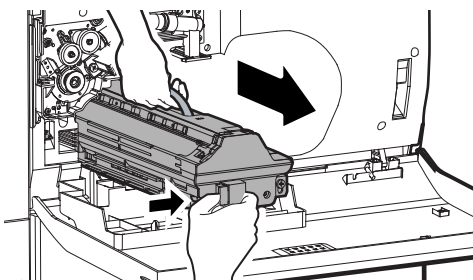
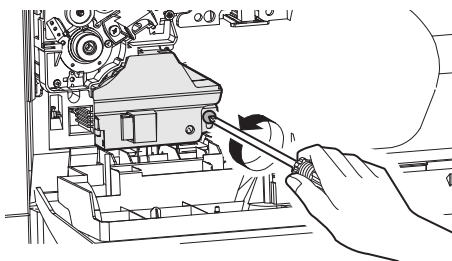
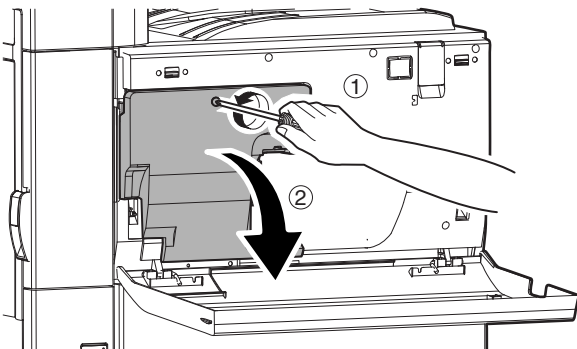
No.	Parts	Maintenance
a	Developer	▲
b	Doctor cover unit (with DV seal)	▲
c	MG holder	○
d	DV side seal F and R	▲
e	Toner density sensor	



### A. Developing unit

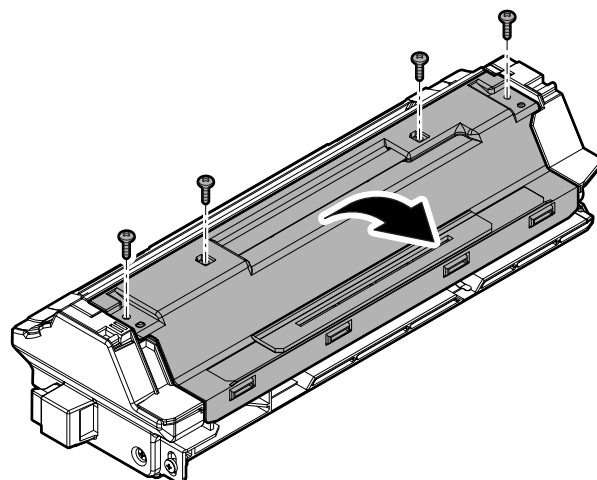
\* Be careful not to put a fingerprint or a foreign material on the DV roller surface. If a fingerprints or a foreign material is put on the surface, the picture quality may be degraded.

- 1) Take out the developing tank.

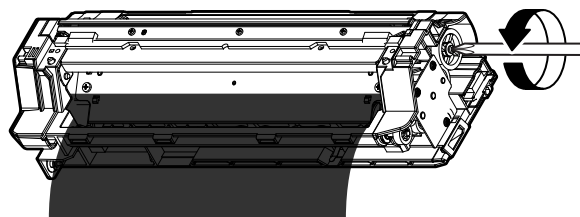


### (1) Developer

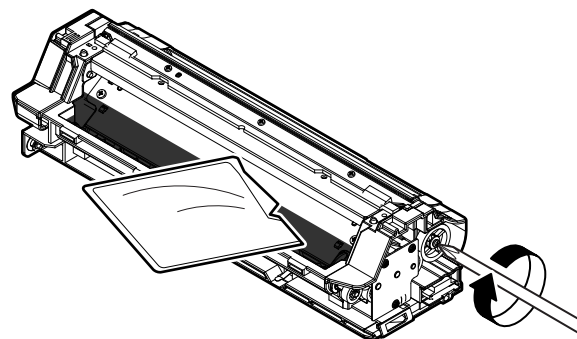
- 1) Take out the developing unit.
- 2) Remove the DV cover.



- 3) Turning the MG roller, take out the old developer.

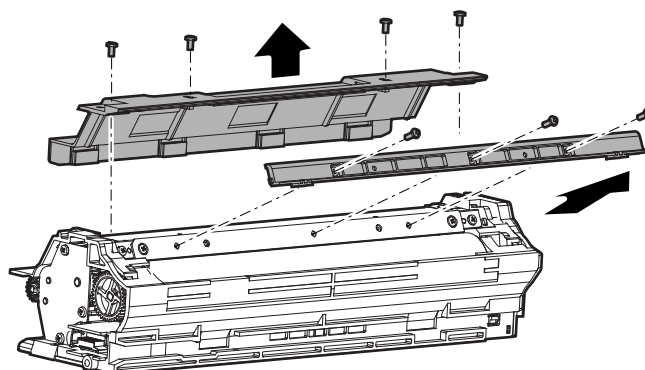


- 4) Insert the new developer.



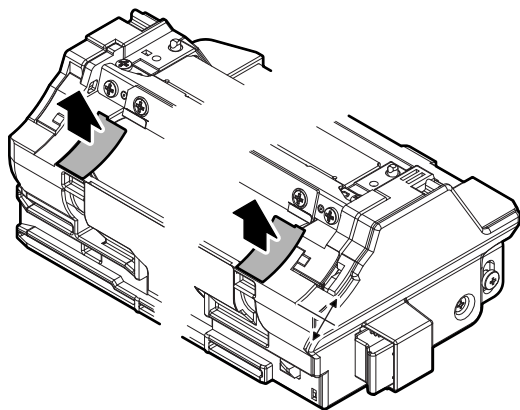
### (2) Doctor cover unit (with DV seal)/MG holder/ DV side seal F and R

- 1) Take out the developing unit.
- 2) Remove the DV cover.
- 3) Remove the doctor cover unit (with DV seal).

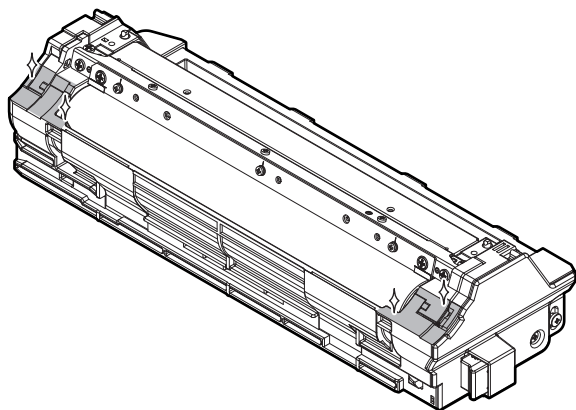




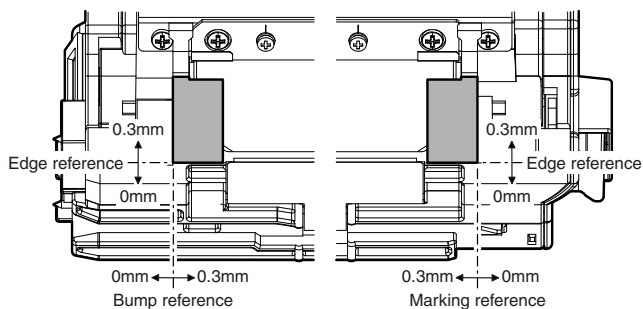
- 4) Remove the DV side seal F and R.



- 5) Clean the MG holder and the DV side seal attachment surface.

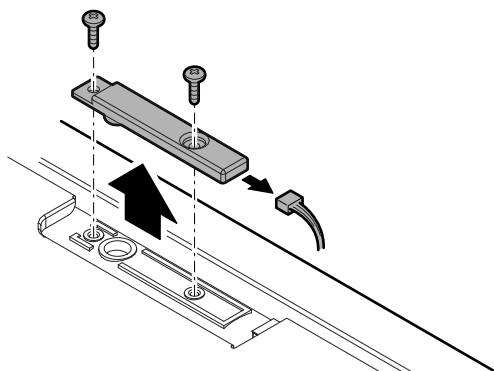


- 6) Attach new side DV seal F and R according to the attachment reference.



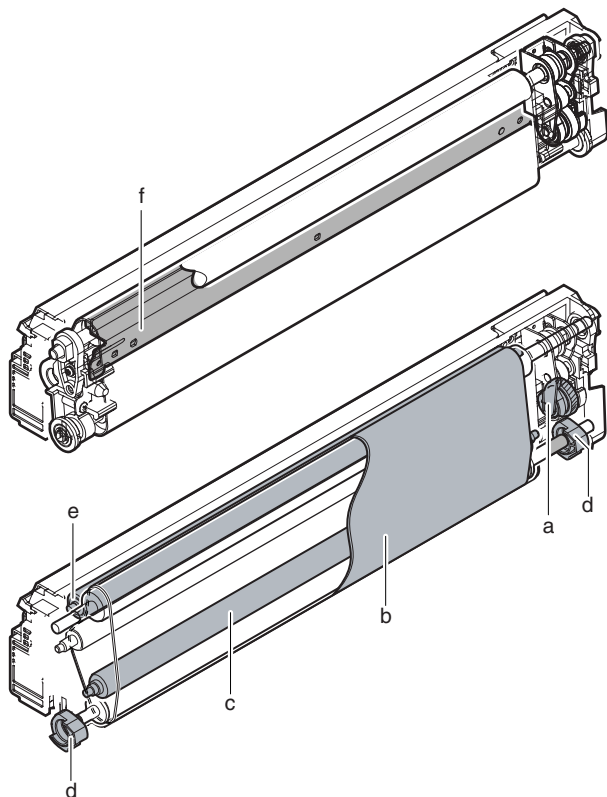
### (3) Toner density sensor

- 1) Take out the developing unit.
- 2) Remove the toner concentration sensor.



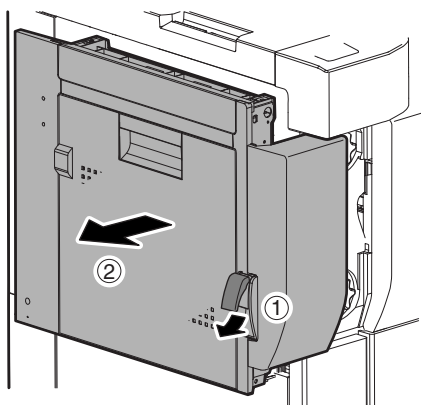
## 11. Transfer section

No.	Parts	Maintenance
a	Transfer drum gear	× ▲
b	Transfer belt	○ ▲
c	Transfer roller	▲
d	Transfer roller collar	▲
e	Transfer CL roller	▲
f	Discharge brush	×

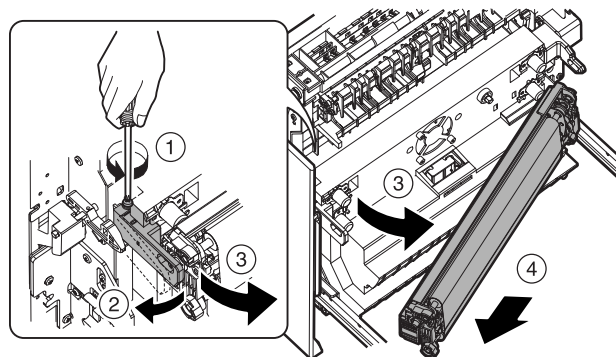


### A. Transfer unit

- 1) Before disassembling the transfer unit, execute SIM6-3 (Transfer pressing operation) so that the transfer unit can be disassembled.
- 2) Open the left door unit.

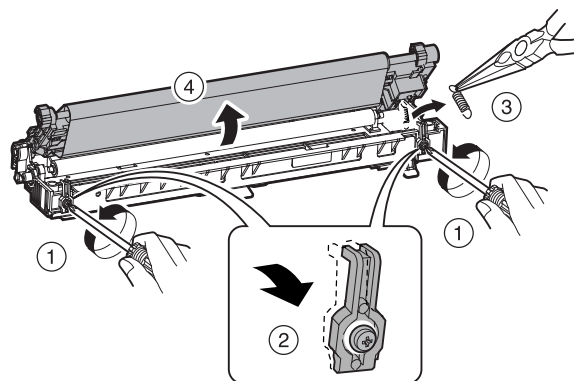


- 3) Loosen the blue screw and open the holder to remove the transfer unit.

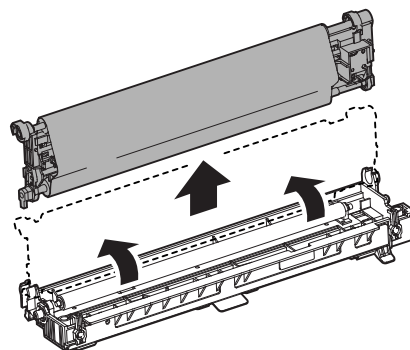


### (1) Transfer drum gear

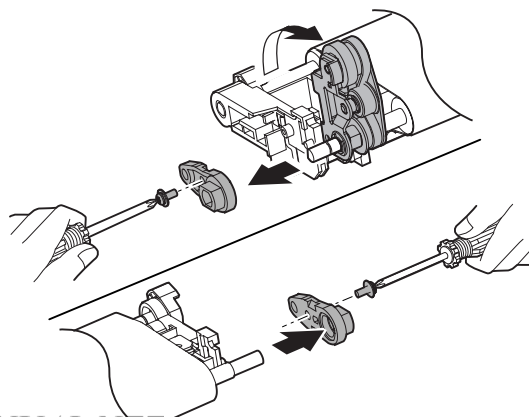
- 1) Remove the transfer unit.
- 2) Loosen the blue screw and unhook the hook lever in order to open the transfer belt unit in the arrowed direction.
- 3) Remove the spring.



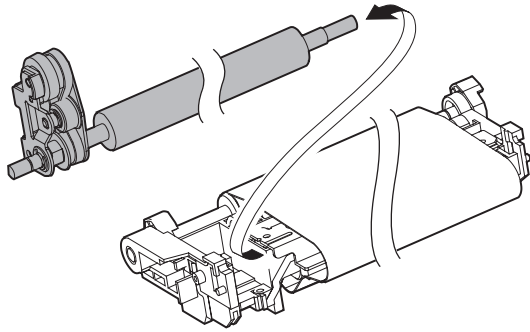
- 4) Remove the transfer belt unit in the arrowed direction.



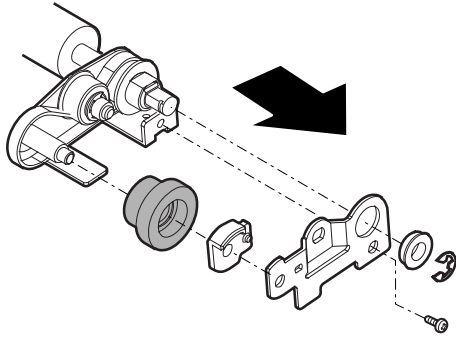
- 5) Remove the blue screw to remove the roller fixing members.



6) Pull out the upper transfer roller unit from the transfer belt.

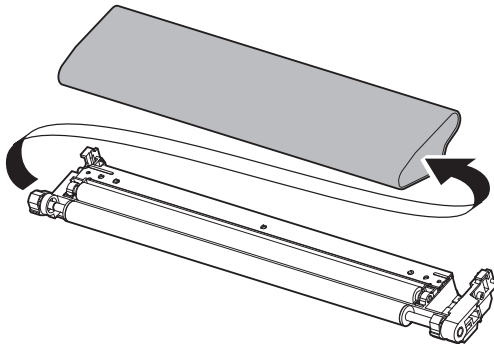


7) Remove the E-ring and screw to remove the transfer drum gear.



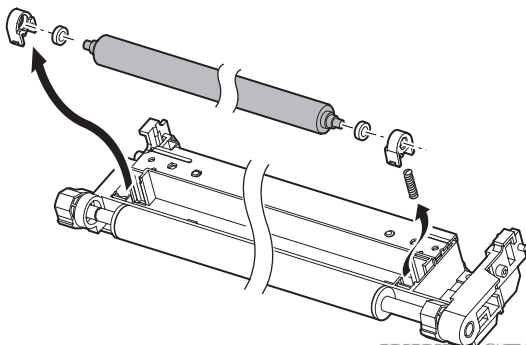
## (2) Transfer belt

- 1) Remove the transfer unit.
- 2) Remove the transfer belt unit.
- 3) Pull out the transfer belt.

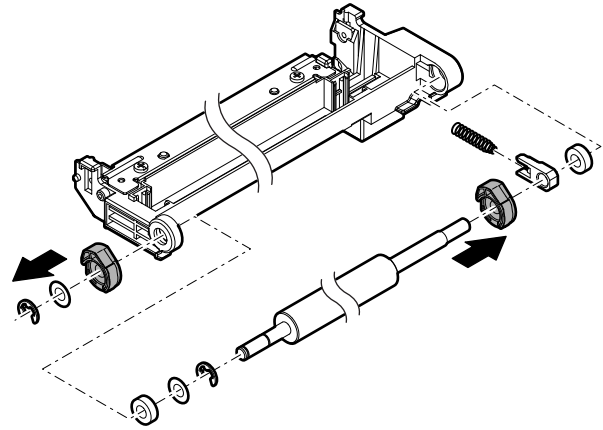


## (3) Transfer roller/Transfer roller collar

- 1) Remove the transfer unit.
- 2) Remove the upper transfer roller unit.
- 3) Remove the transfer belt.
- 4) Remove the transfer tension roller bearing to remove the transfer roller.

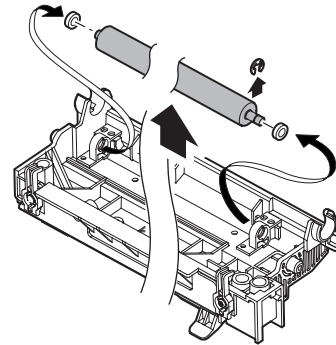


5) Remove the E-ring to remove the transfer roller collar.



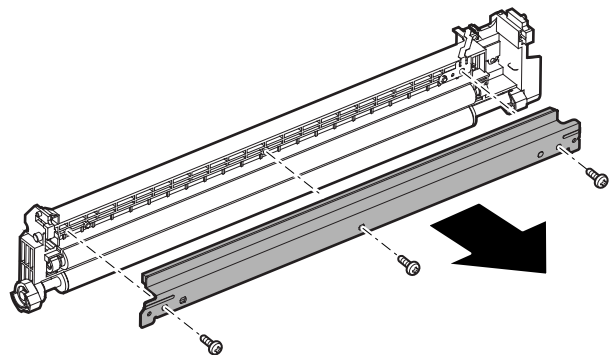
## (4) Transfer CL roller

- 1) Remove the transfer unit.
- 2) Remove the transfer belt unit.
- 3) Remove the E-ring to remove the transfer CL roller.



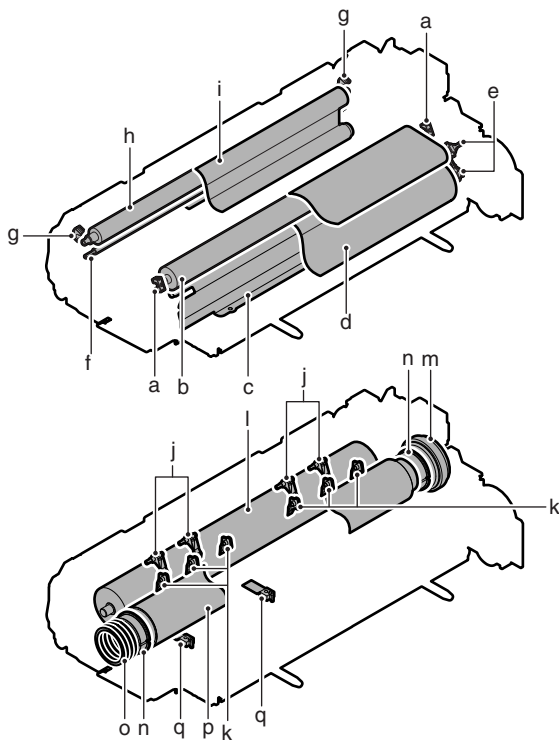
## (5) Discharge brush

- 1) Remove the transfer unit.
- 2) Remove the upper transfer roller unit.
- 3) Remove the transfer belt.
- 4) Remove the discharge brush.



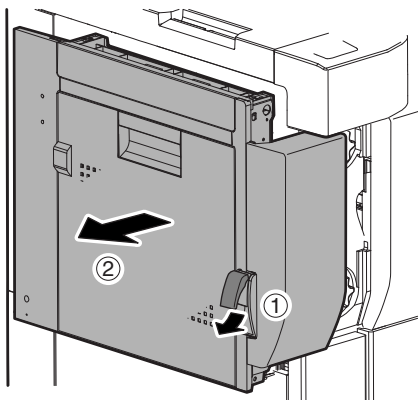
## 12. Fusing section

Parts		Maintenance
a	Pressure bearing	▲
b	Pressure roller	× ▲
c	Web guide	× ○
d	Web roller	× ▲
e	Web bearing	▲
f	Web shaft	× ○
g	Lower pressure roller bearing	× ▲
h	Lower pressure roller	× ▲
i	Lower web roller	× ▲
j	Upper separation pawl	× ▲
k	Lower separation pawl	× ▲
l	Crimping roller	× ▲
m	Heat roller gear	×
n	Heat roller insulation bush	× ▲
o	Insulation spacer	▲
p	Heat roller	× ▲
q	Thermistor	×

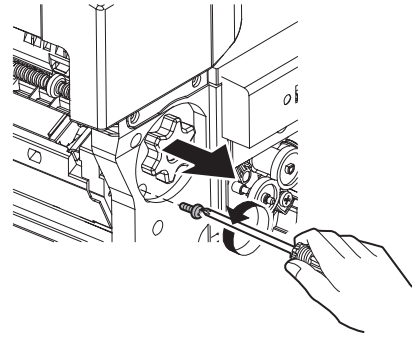


### A. Fusing unit

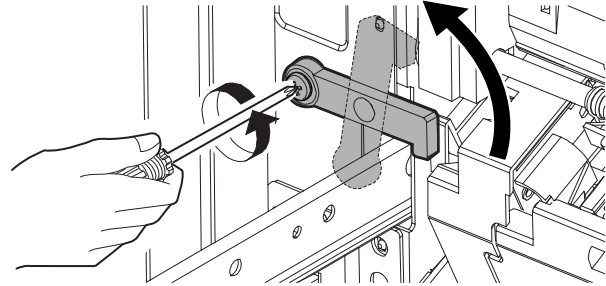
- 1) Open the left door.



- 2) Remove the blue fixing screw on the front side.



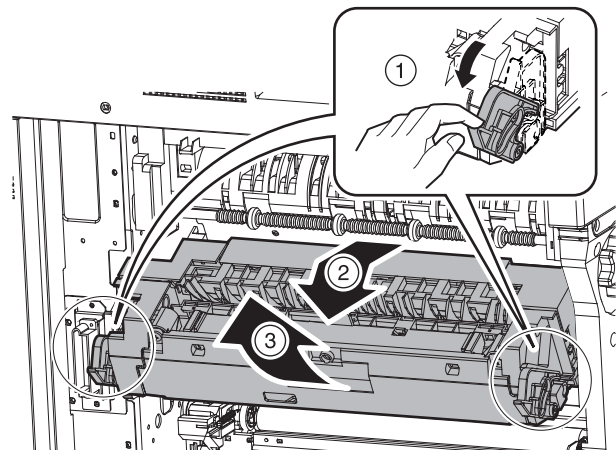
- 3) Release the fixing members on the rear frame side.



- 4) Release the right and left lock levers of the fusing unit to remove the fusing unit.

\* Since the fusing unit is heated to a high temperature, use enough care not to drop or scratch it. Be sure to hold the both edges of the fusing unit with both hands when handling. Also be careful not to scratch the OPC drum.

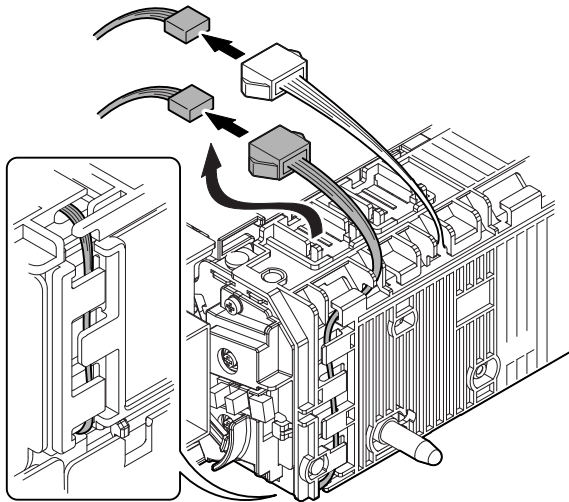
\* When removing the fusing unit, be careful not to tilt it, and remove slowly. (This is because the fusing unit includes paper dust scraped by the scraper.)



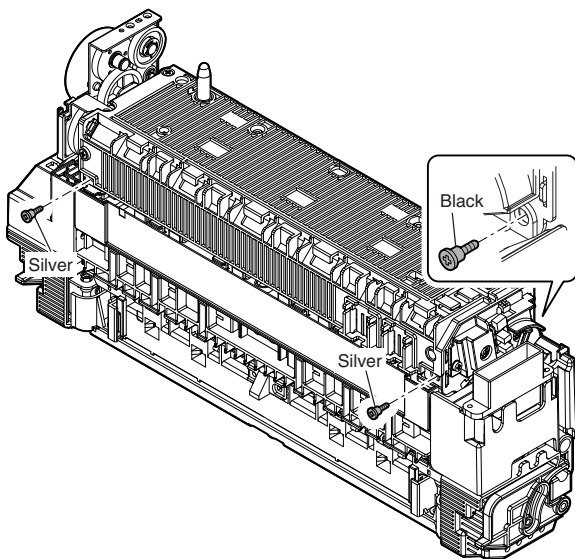
## (1) Upper web unit

- 1) Remove the fusing unit.
- 2) Disconnect the connector, and remove only the 4 pin connector harness.

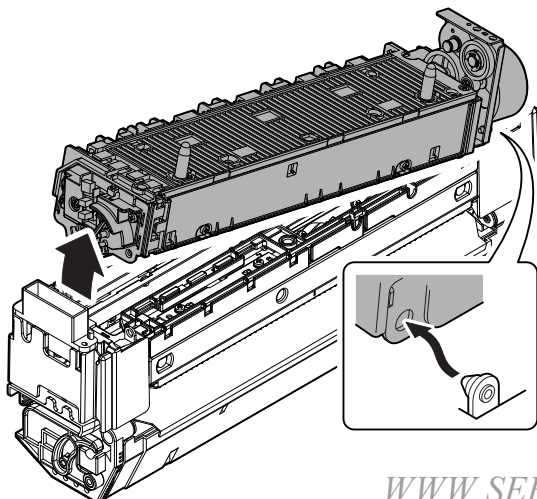
\* When disconnecting the connector, carefully treat it so as not to break it. When connecting the connector, insert it securely to the full end.



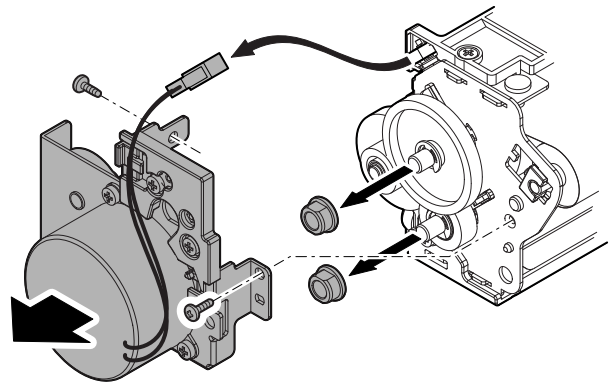
- 3) Remove the screw.



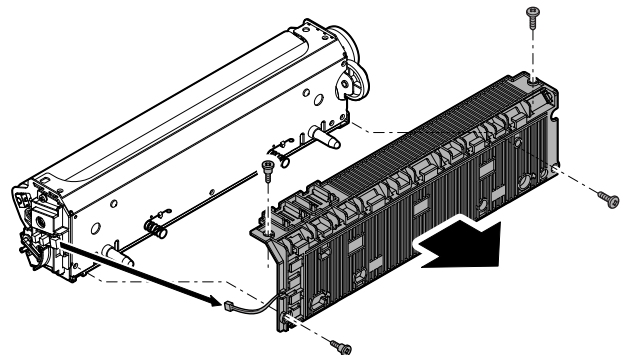
- 4) Remove the web unit.



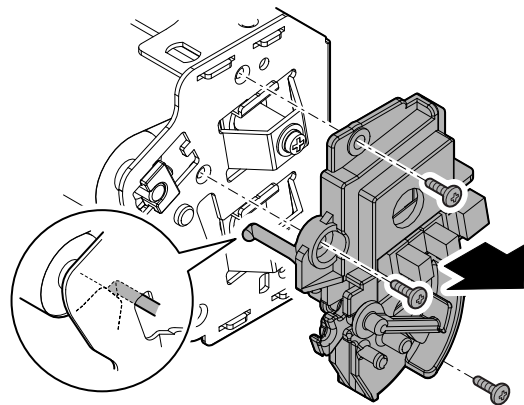
- 5) Disconnect the connector. Remove the screws, and remove the web drive unit. Remove the bearings.



- 6) Disconnect the connector. Remove the screws, and remove the cover.

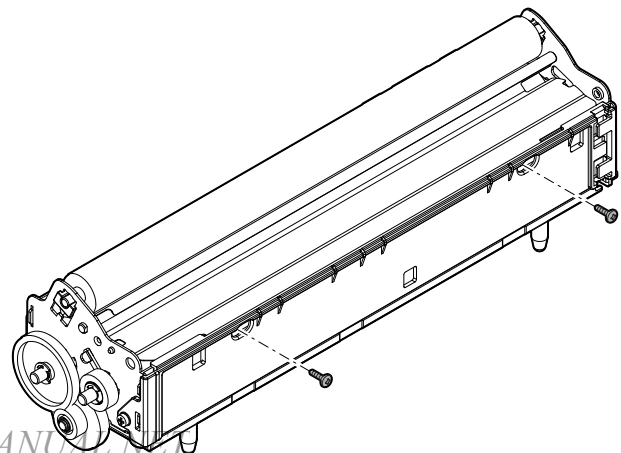


- 7) Remove the screws, and remove the web end sensor unit.



\* When installing, put the boss of actuator in the inside of a websheet.

- 8) Remove the screws of backup plate.

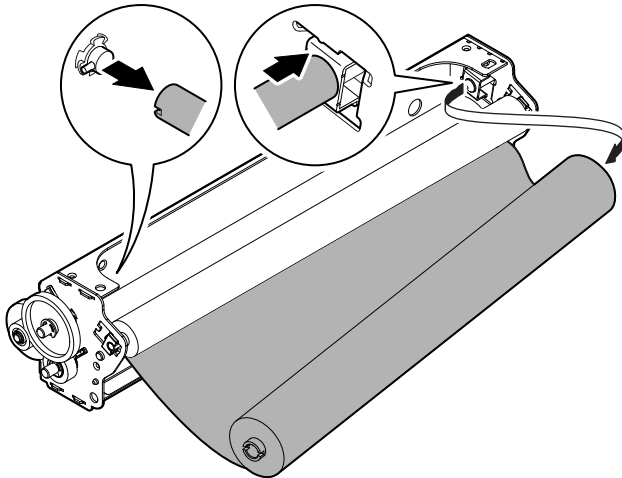




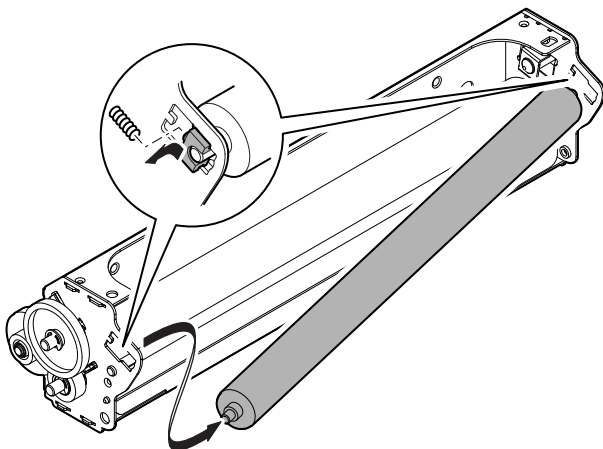
9) Remove the web roller (wind-up side).

\* When installing, rotate the web roller until the red line (approx. 30cm) is hidden after installing the web roller. (rotate the gear)

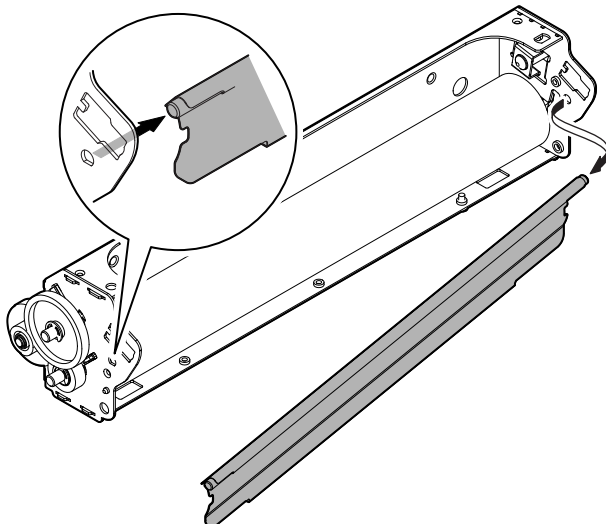
\* Be careful not to slack or warp web paper.



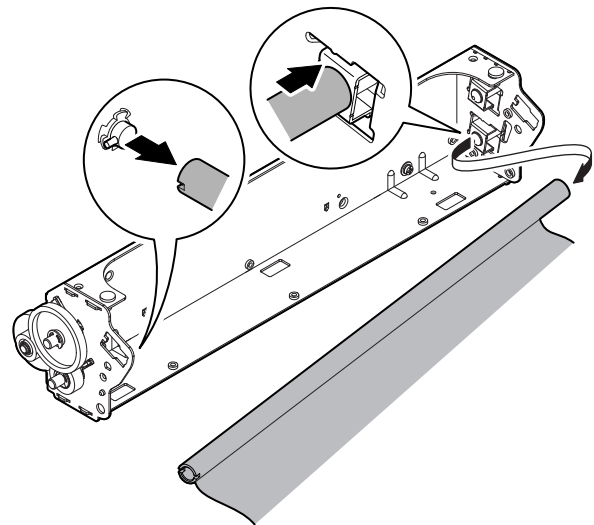
10) Remove the spring, and remove the pressure bearing. Remove the pressure roller.



11) Remove the web tension bearing and the web guide.

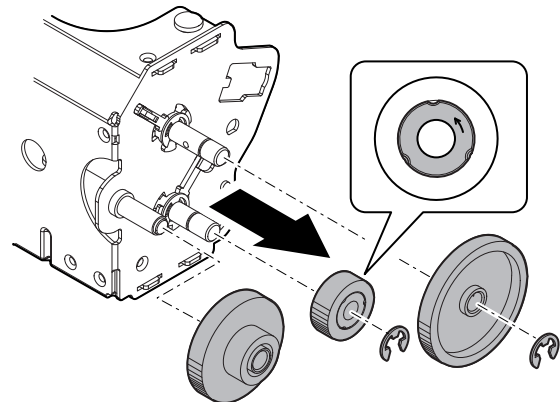


12) Remove the web roller.



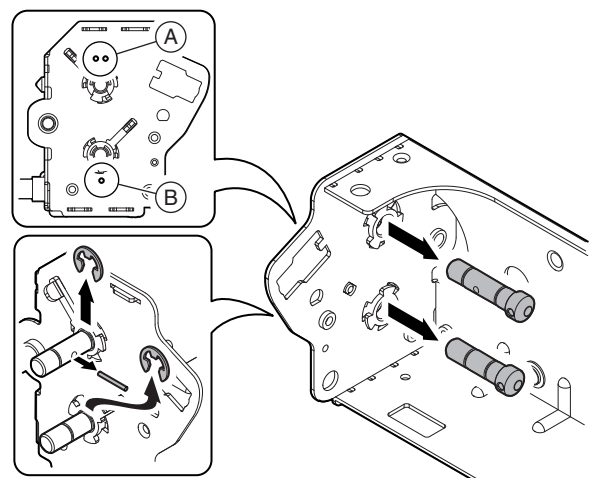
13) Remove the E-rings and the gears.

\* When installing the one way gear, direct the metal surface side to outside.

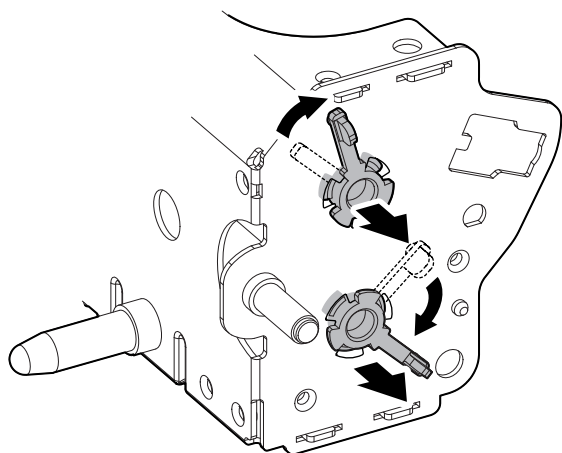


14) Remove the pins and E-rings, and remove the winding shaft and the transport shaft.

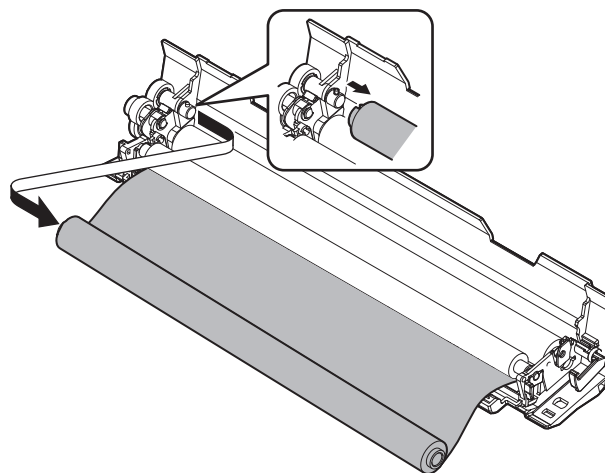
\* When installing, install the winding shaft (two pin holes) in an attachment hole (A) of the "OO" mark side, and install transport shaft (one pin hole) in an attachment hole (B) of the "O" mark side.



15) Remove the web bearings.

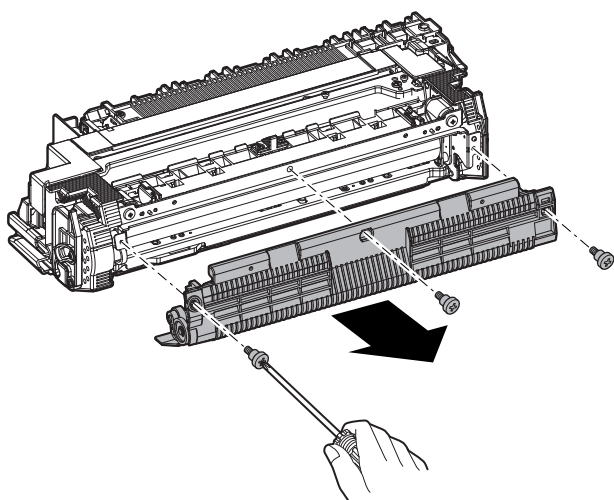


4) Remove the lower web roller (on the transmission side).

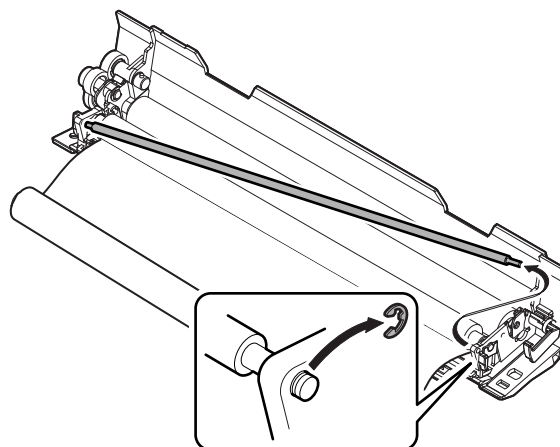


## (2) Lower web unit

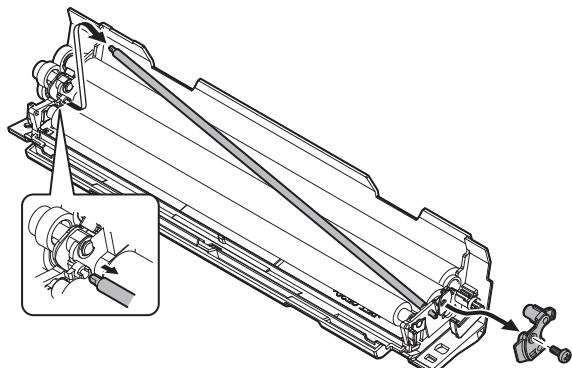
- 1) Remove the fusing unit.
- 2) Remove the step screws, and remove the lower web unit.



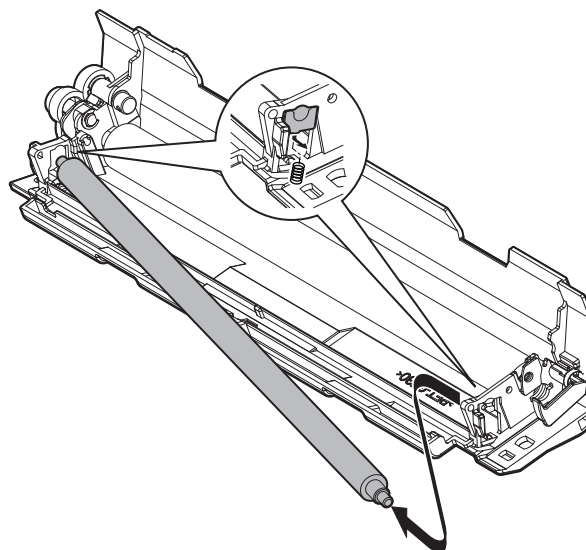
5) Remove the E-ring, and remove the web tension shaft.



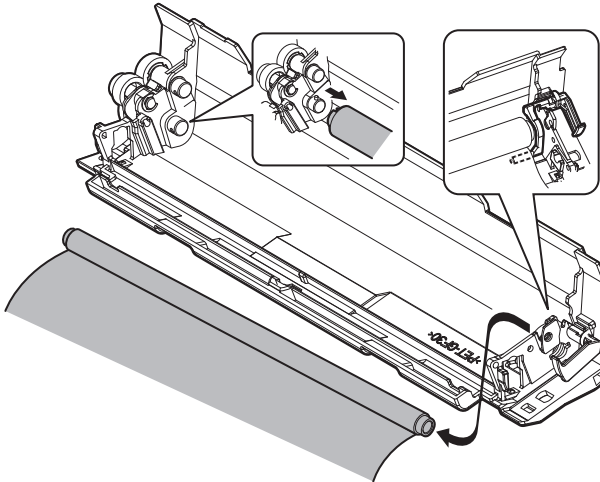
3) Remove the screw, and remove the web roller shaft. Remove the web shaft.



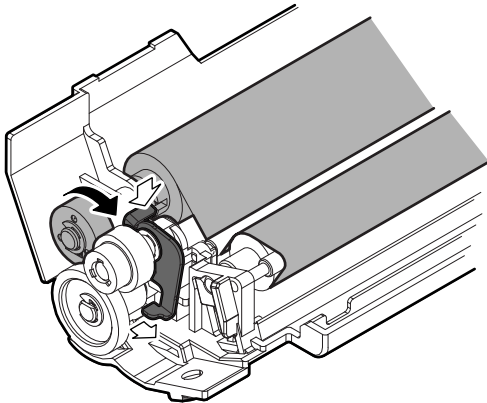
6) Remove the spring and the lower pressure bearing, and remove the lower pressure roller.



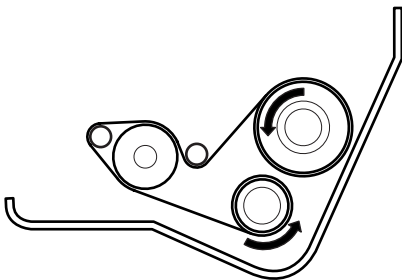
- 7) Remove the lower web roller (on the winding side).  
 \* When installing the lower web roller, install so that the actuator is outside of the web paper.



- \* After assembling the lower web roller, rotate and wind the lower web roller until the green line (about 30cm) disappears. At that time, the lower web roller must be released from the lock.

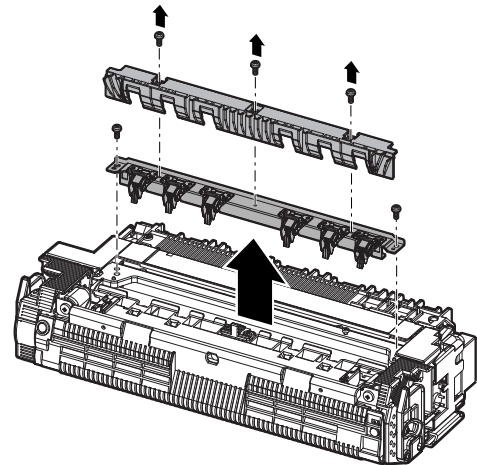


- \* Be careful not to slack or warp web paper.



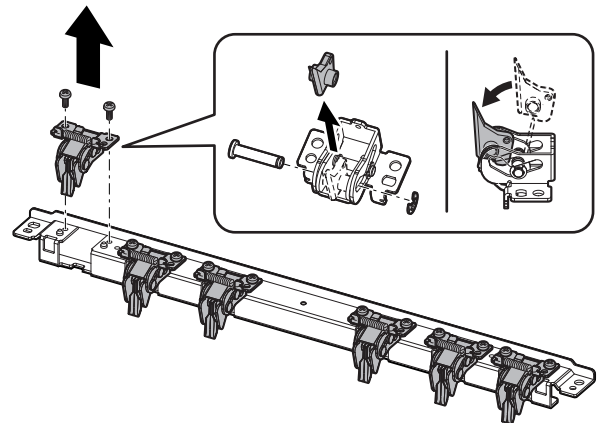
### (3) Upper separation pawl

- 1) Remove the fusing unit.
- 2) Remove the screws, and remove the upper separation pawl holder. Remove the step screws, and remove the paper guide.



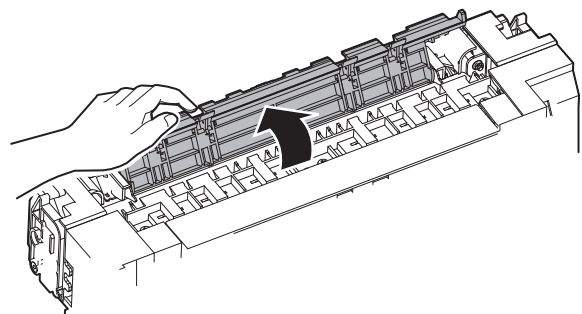
- 3) Remove the screws, and remove the upper separation pawl unit. Remove the E-ring and the shaft, and remove the upper separation pawl.

- \* When installing the upper separation pawl, check to confirm that the spring is engaged.  
 \* Be careful not to deform the tip of the upper separation pawl.



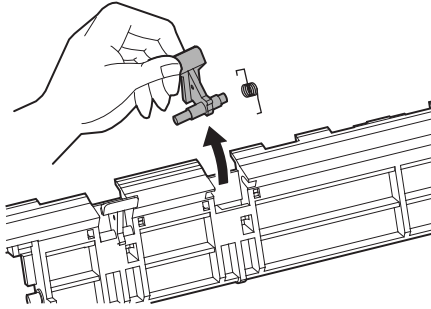
### (4) Lower separation pawl

- 1) Remove the fusing unit.
- 2) Open the lower separation pawl unit.

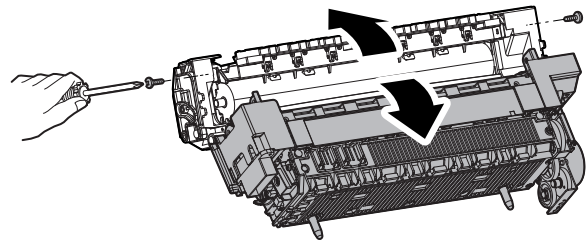




- 3) Remove the lower separation pawl.

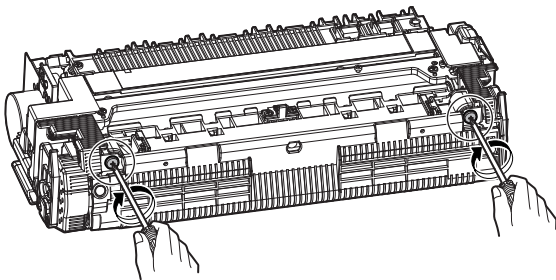


- 4) Remove the screws and open the fusing unit.



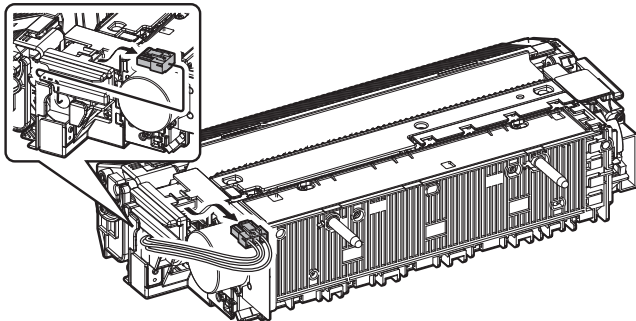
#### (5) Crimping roller

- 1) Remove the fusing unit.
  - 2) Alternately tighten the screws to release pressure.
- \* When releasing the pressure, do not apply any force to the shaded area. (Otherwise, the paper guide on the paper entry side may be deformed.)

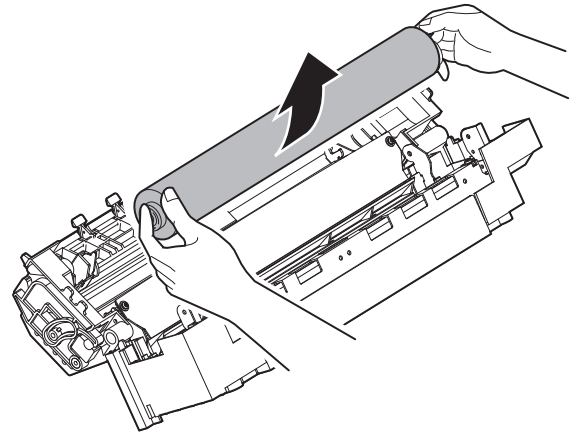


- 3) Disconnect the connector, and remove the harness from the harness guide.

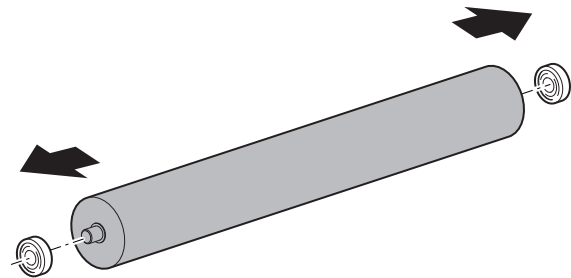
\* Deliberately handle the harness not to damage the coating.



- 5) Remove the crimping roller unit.

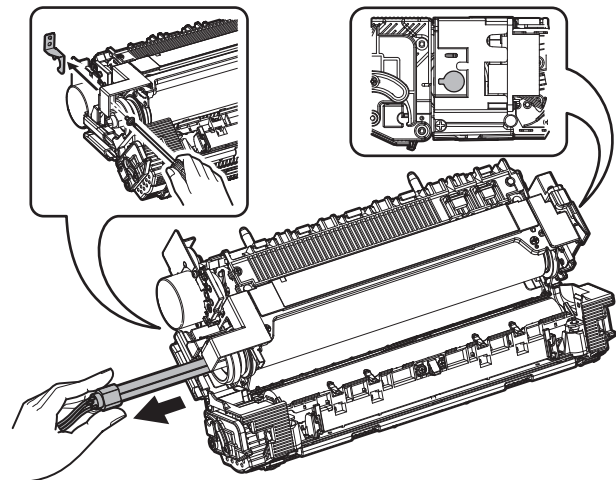
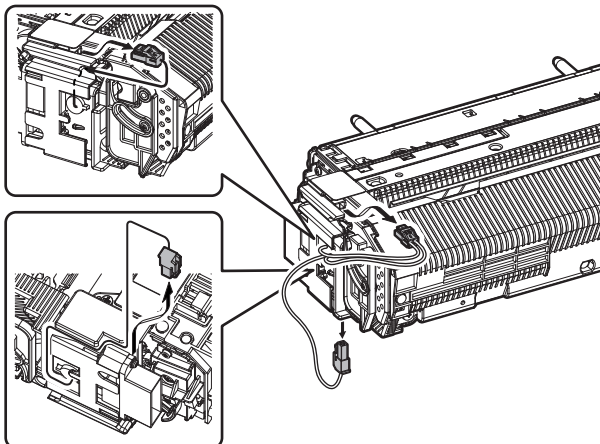


- 6) Remove the bearings from the crimping roller.

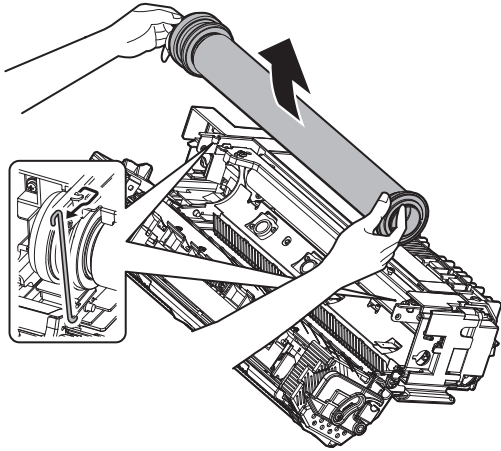


#### (6) Heat roller gear/Heat roller insulation bush/Insulation spacer/Heat roller

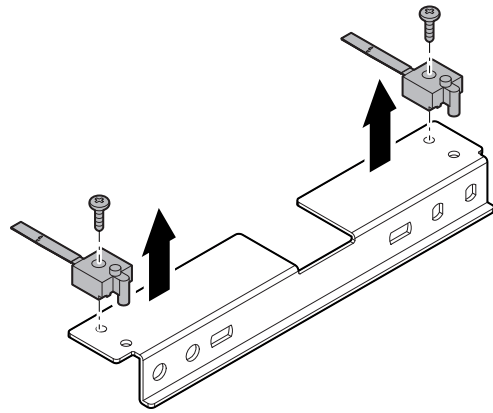
- 1) Remove the fusing unit.
- 2) Open the fusing unit.
- 3) Remove the screw, and remove the mounting plate. Remove the heater lamp.



- 4) Remove the spring, and remove the heat roller unit.

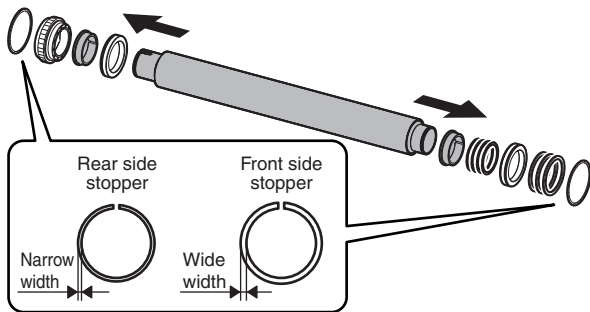


- 4) Remove the screws, and remove the thermistor.



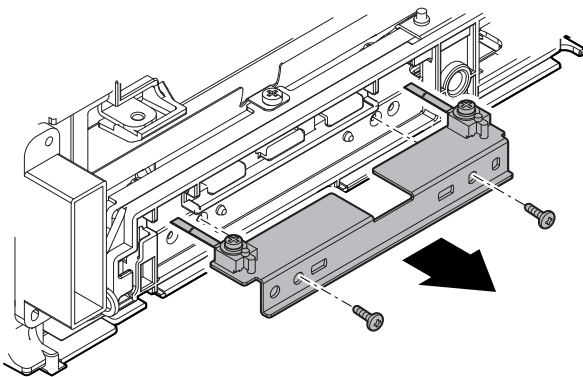
- 5) Remove the stopper from the heat roller, and remove the heat roller gear, the spacer, the insulation spacer, the heat roller insulation bush and the bearing.

\* Since the stopper on the front side differ in shape from that on the rear side, be careful not to mix them up.



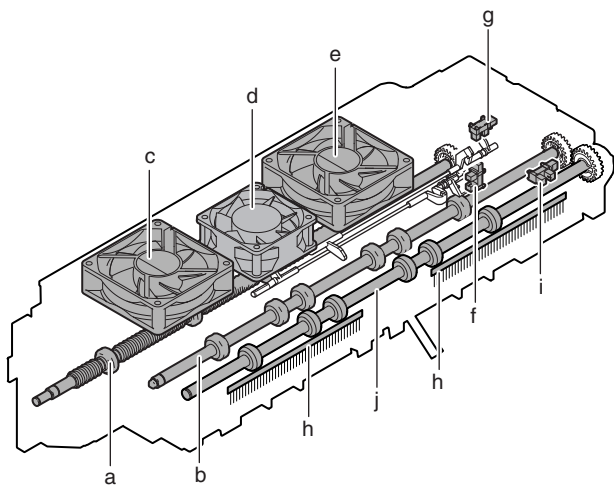
## (7) Thermistor

- 1) Remove the fusing unit.
- 2) Remove the web unit.
- 3) Remove the screws, and remove the mounting plate.



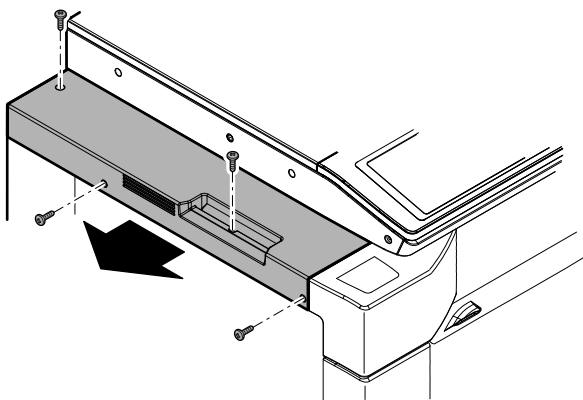
## 13. Paper exit section

No.	Parts	Maintenance
a	Transport roller 16	× ○
b	Paper exit roller 1	× ○
c	Fusing cooling fan motor 1	
d	Fusing cooling fan motor 3	
e	Fusing cooling fan motor 4	
f	Paper exit detector 1	
g	Paper exit detector 2	
h	Discharge brush	×
i	Paper exit detector 3	
j	Paper exit roller 3	× ○

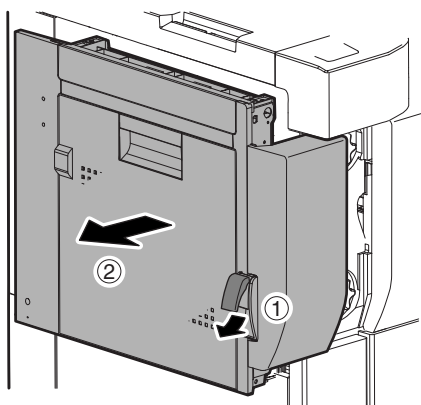


### A. Paper exit unit

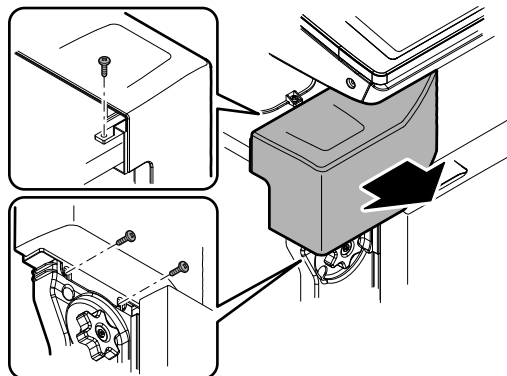
- 1) Remove the screw, and remove the left cover cabinet.



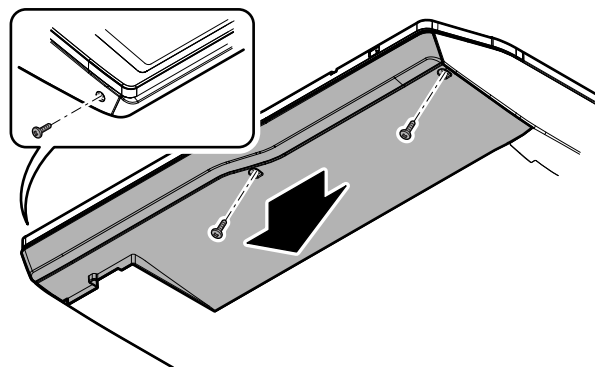
- 2) Open the left door.



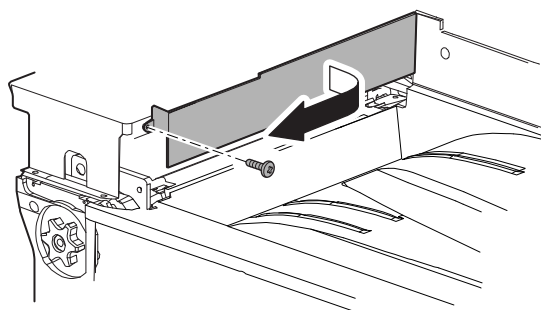
- 3) Remove the screw, and remove the front cabinet upper.



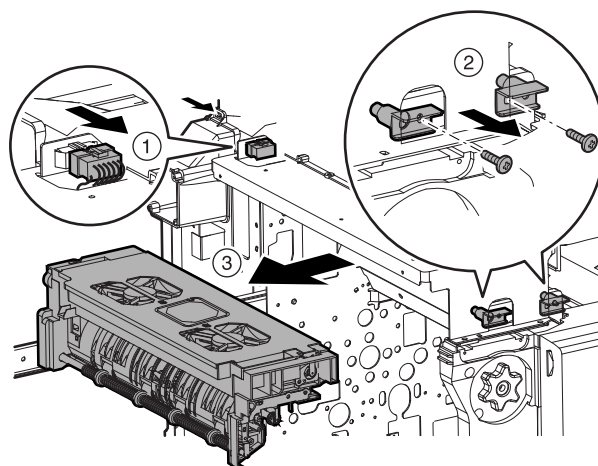
- 4) Remove the screw, and remove the operation base plate unit.



- 5) Remove the paper exit port cabinet.

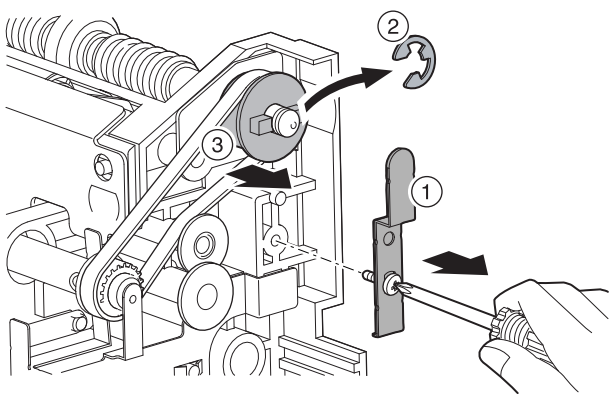


- 6) Disconnect the connector. Remove the screw, and remove the front fixing bracket. Remove the paper exit unit in the arrowed direction.

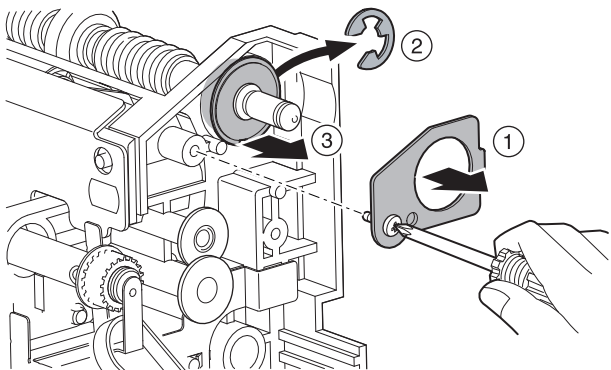


### (1) Transport roller 16

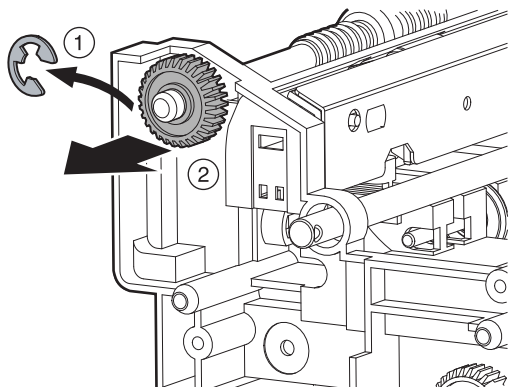
- 1) Remove the paper exit unit.
- 2) Remove the ground plate. Remove the E-ring to remove the pulley.



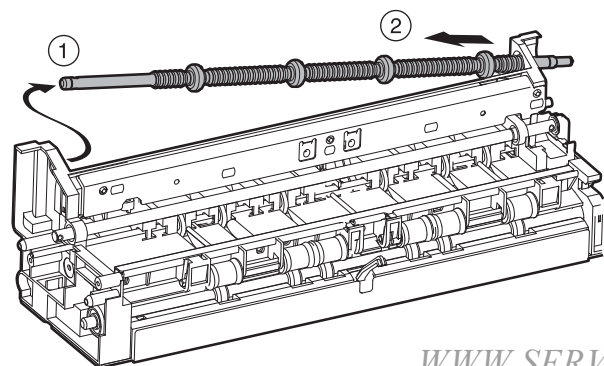
- 3) Remove the stopper. Remove the E-ring to remove the bearing.



- 4) Remove the E-ring to remove the gear.

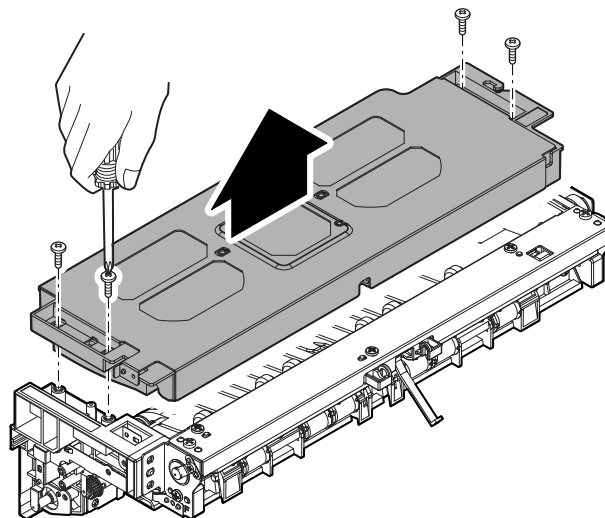


- 5) Remove the transport roller 16.

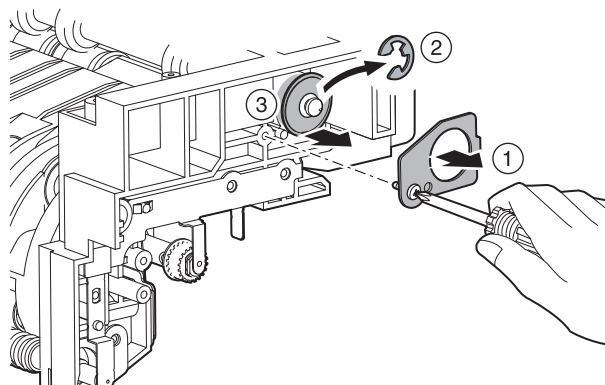


### (2) Paper exit roller 1

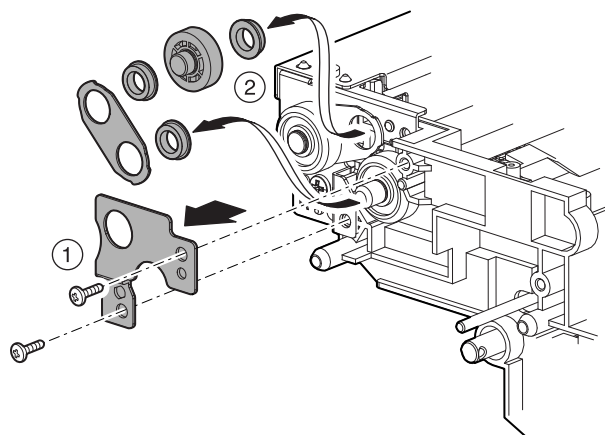
- 1) Remove the paper exit unit.
- 2) Remove the upper unit.



- 3) Remove the stopper. Remove the E-ring to remove the bearing.

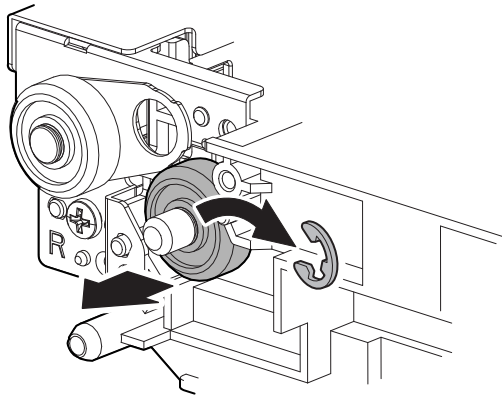


- 4) Remove the supporting plate. Remove the connection plate, and remove the gears.

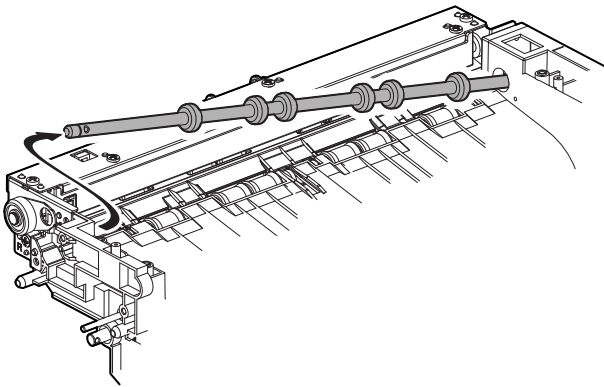




5) Remove the E-ring to remove the gear.

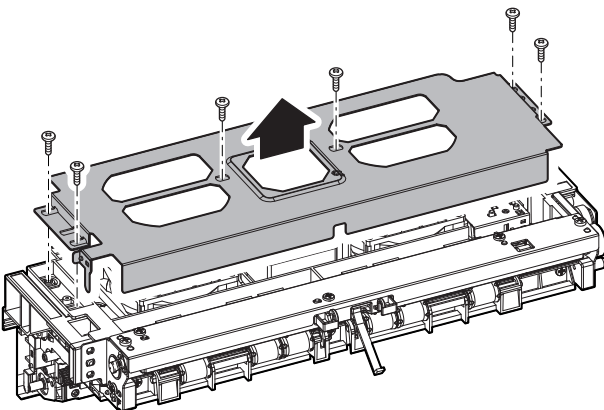


6) Remove the paper exit roller 1.

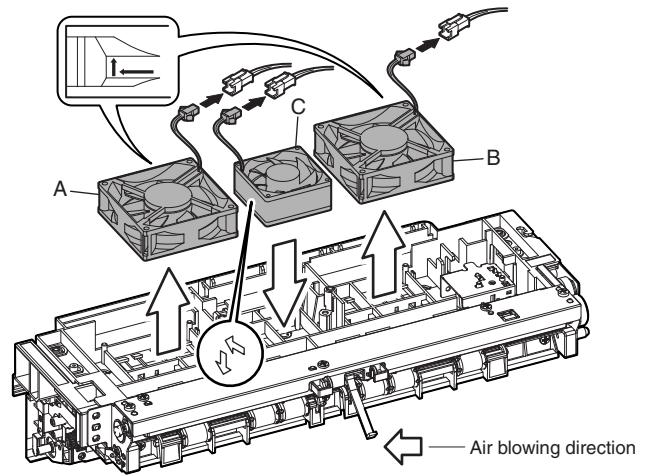


**(3) Fusing cooling fan motor 1/  
Fusing cooling fan motor 3/  
Fusing cooling fan motor 4**

- 1) Remove the paper exit unit.
- 2) Remove the upper cover.



3) Remove the fusing cooling fan motor 1 (A), 3 (B), and 4 (C).

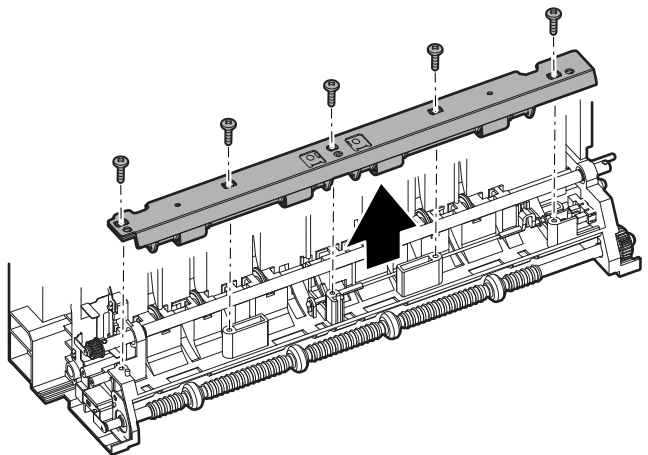


**[Caution when attaching]**

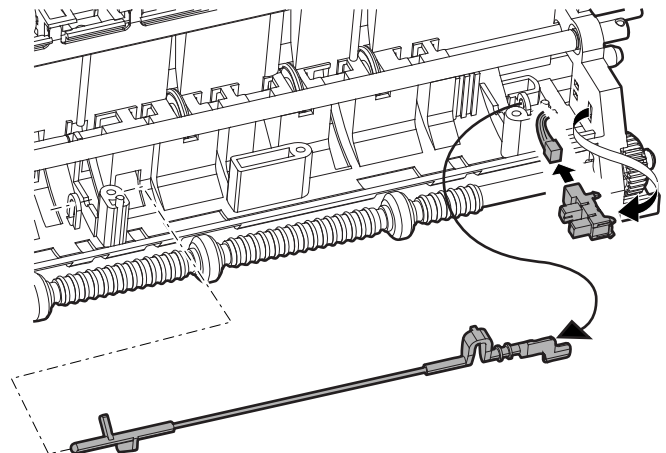
- When assembling, be careful of the direction of the fan.  
(Fit the fan with the mark rotating direction)

**(4) Paper exit detector 1**

- 1) Remove the paper exit unit.
- 2) Remove the follower roller unit.

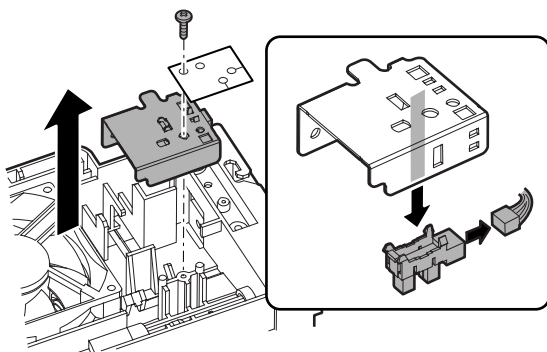


3) Remove the paper exit detector 1.



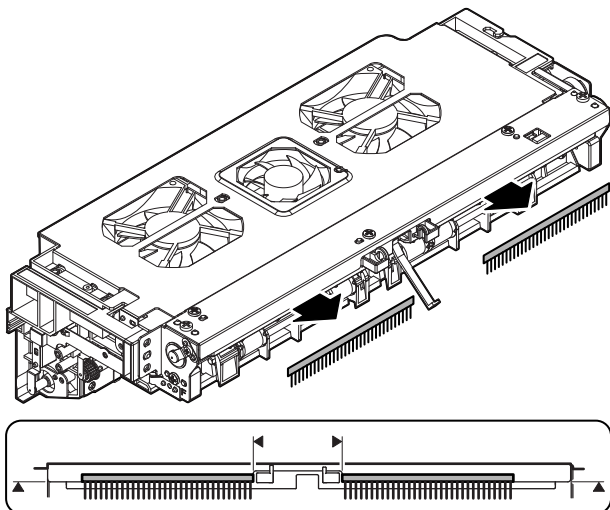
#### (5) Paper exit detector 2

- 1) Remove the paper exit unit.
- 2) Remove the upper cover.
- 3) Remove the paper exit detection 2 detector.



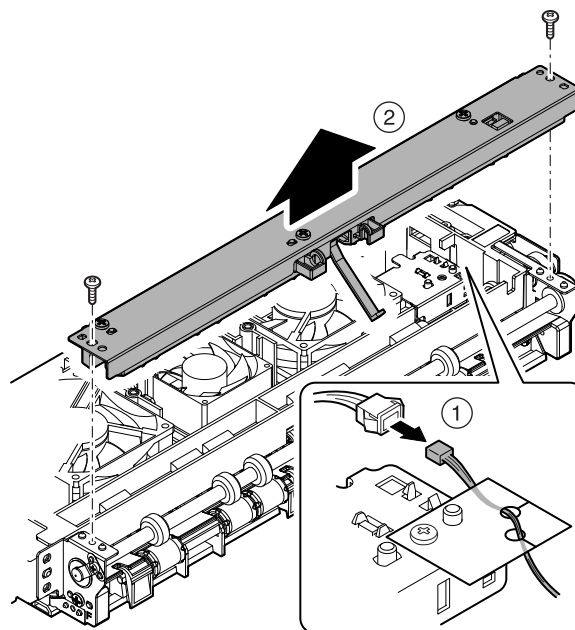
#### (6) Discharge brush

- 1) Remove the paper exit unit.
  - 2) Remove the discharge brush.
- \* When attaching, attach it to the reference.

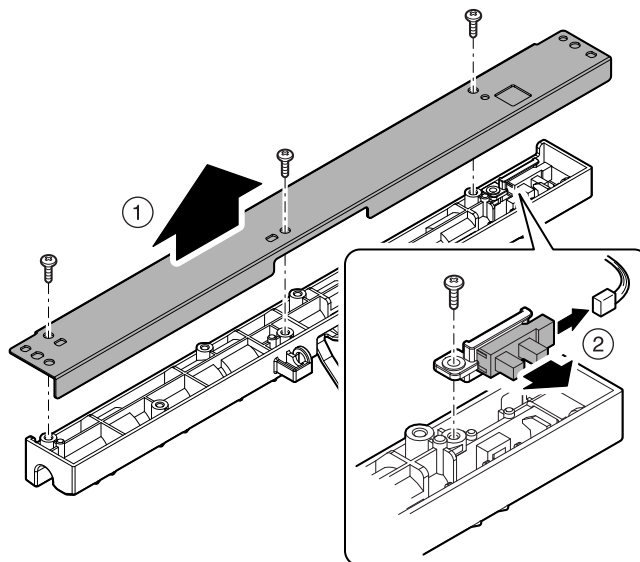


#### (7) Paper exit detector 3

- 1) Remove the paper exit unit.
- 2) Remove the upper cover.
- 3) Disconnect the connector, and remove the harness protect sheet. Remove the paper guide.

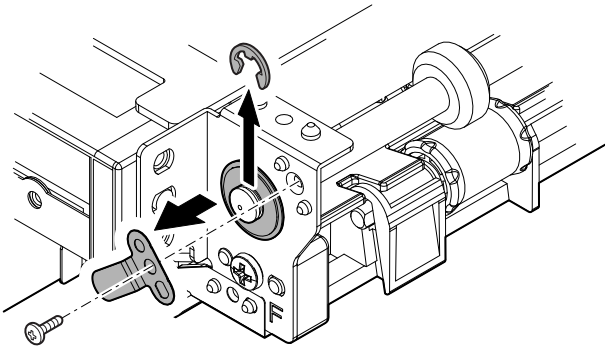


- 4) Remove the cover, and the remove the paper exit detector 3.

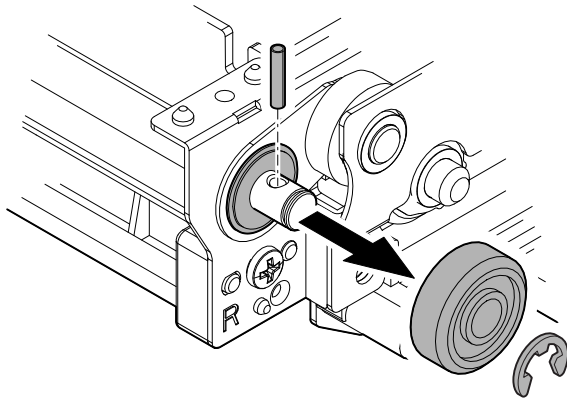


#### (8) Paper exit roller 2

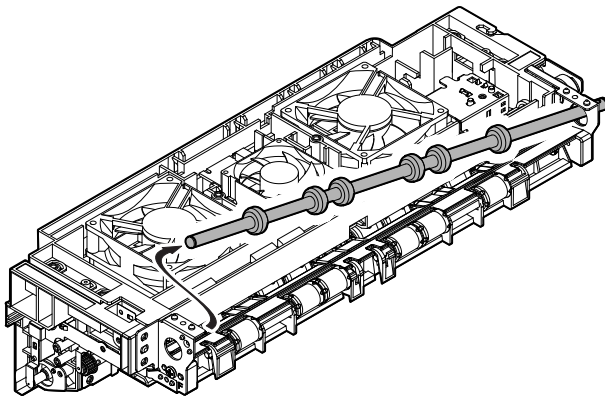
- 1) Remove the paper exit unit.
- 2) Remove the upper cover.
- 3) Remove the paper guide.
- 4) Remove the ground plate. Remove the E-ring to remove the bearing.



- 5) Remove the E-ring, and the gear. Remove the spring pin and the bearing.



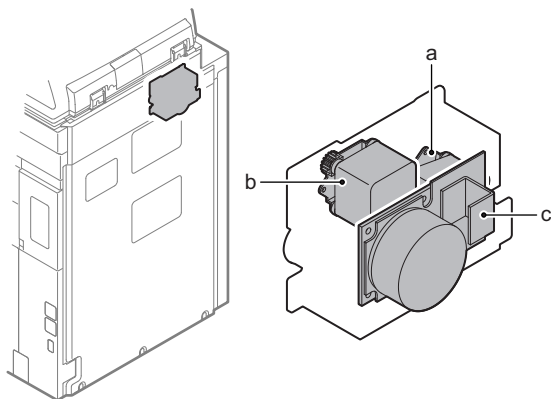
- 6) Remove the paper exit roller 3.



## 14. Drive section

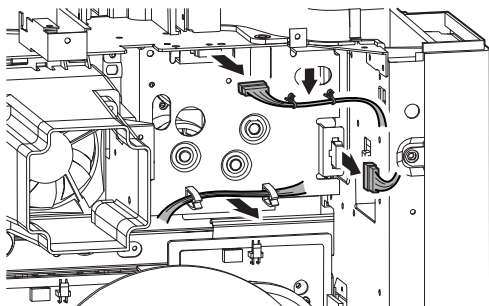
### A. Fusing drive section

No.	Parts
a	Paper exit motor 1
b	Paper exit motor 2
c	Fusing motor

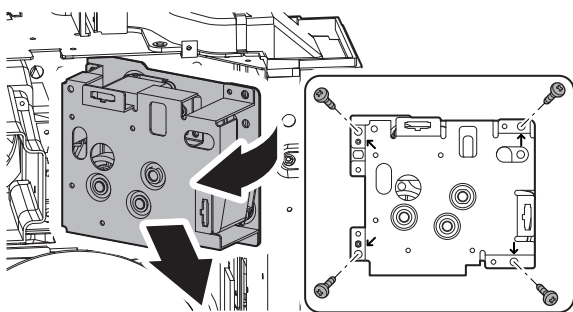


#### (1) Fusing drive unit

- 1) Remove the fusing unit. (See "12. Fusing section")
- 2) Remove the fusing motor.
- 3) Disconnect the connector and remove the harness clamp.

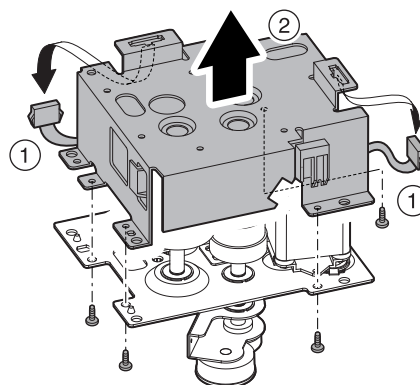


- 4) Remove the fusing drive unit.  
\* Remove the screw which was indicated with the arrow mark.

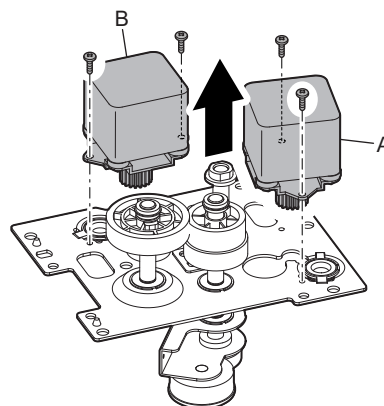


#### a. Paper exit motor 1/Paper exit motor 2

- 1) Remove the fusing unit. (See "12. Fusing section")
- 2) Remove the fusing drive unit.
- 3) Disconnect the connector, and remove the fusing drive frame.

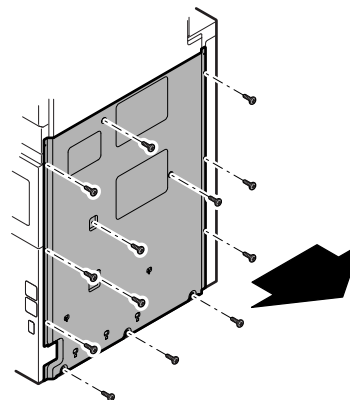


- 4) Remove the paper exit motor 1 (A) and the paper exit motor 2 (B).



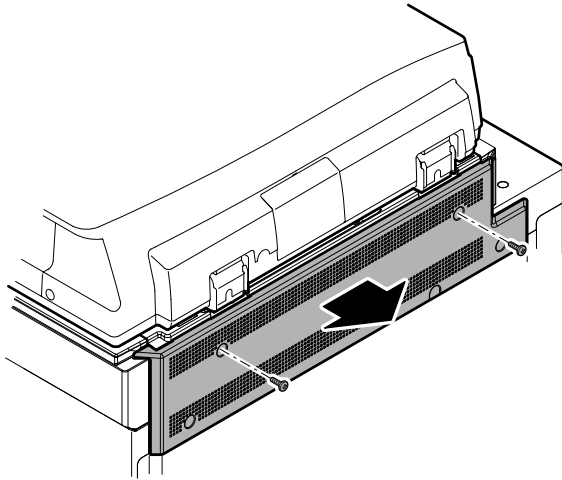
#### (2) Fusing motor

- 1) Remove the screw, and remove the rear cabinet.

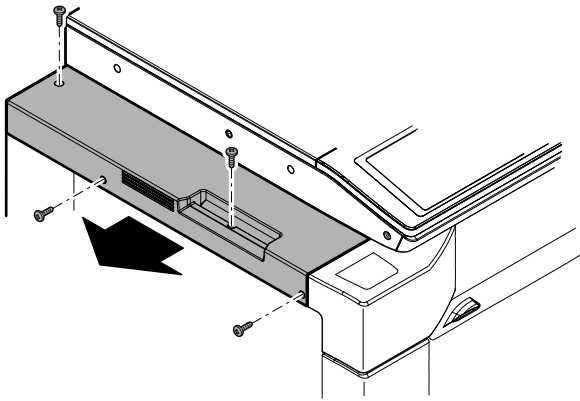




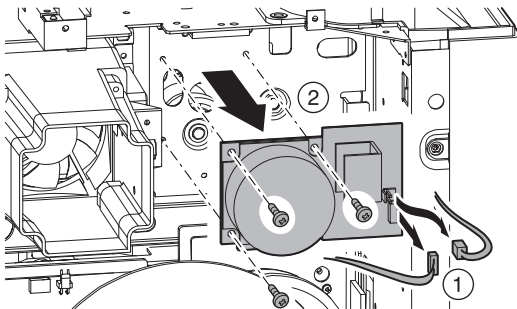
- 2) Remove the screw, and remove the rear cabinet upper.



- 3) Remove the screw, and remove the left cover cabinet.

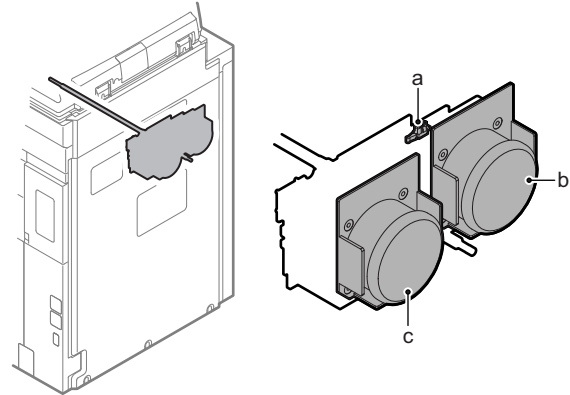


- 4) Disconnect the connector and remove the fusing motor.



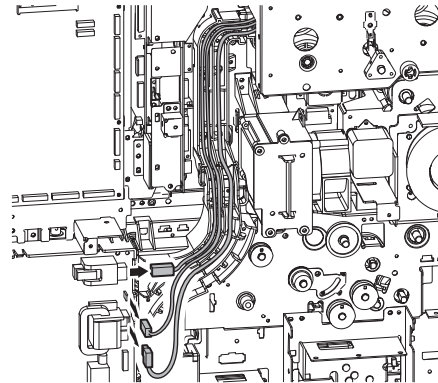
## B. OPC drum drive section

No.	Parts
a	Waste toner pipe lock detector
b	OPC drum motor
c	Developing system



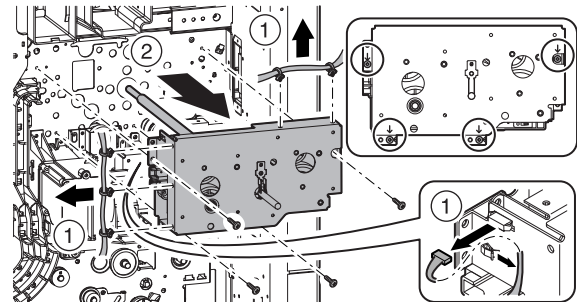
### (1) Drum drive unit

- 1) Remove the developing unit. (See "10. Developing section")
- 2) Remove the process unit. (See "8. Photo-conductor section")
- 3) Remove the OPC drum motor and the developing motor.
- 4) Disconnect the connector, and remove the harness from the harness holder.



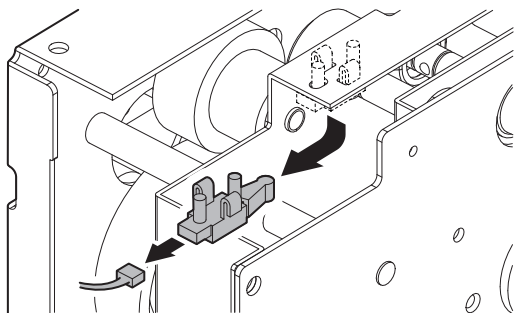
- 5) Disconnect the connector and remove the harness clamp, and remove the drum drive unit.

\* Remove the screw which was indicated with the arrow mark.



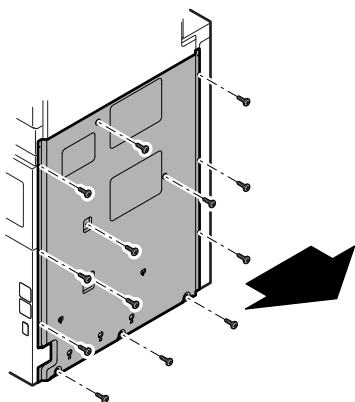
#### a. Waste toner pipe lock detector

- 1) Remove the developing unit. (See "10. Developing section")
- 2) Remove the process unit. (See "8. Photo-conductor section")
- 3) Remove the OPC drum motor and the developing motor.
- 4) Remove the drum drive unit.
- 5) Disconnect the connector, and remove the waste toner pipe lock detector.

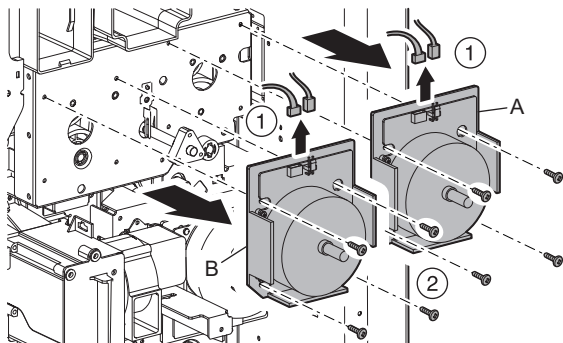


#### (2) OPC drum motor/Developing motor

- 1) Remove the rear cabinet.

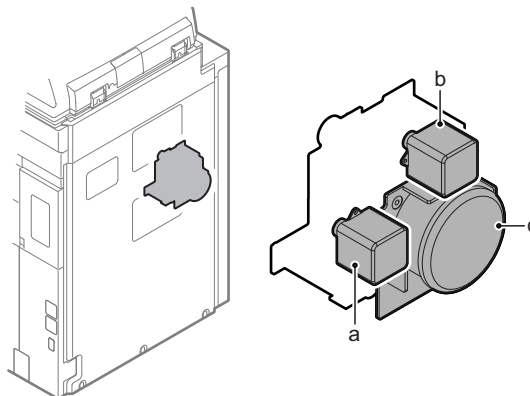


- 2) Disconnect the connector, and remove the OPC drum motor (A) and the developing motor (B).



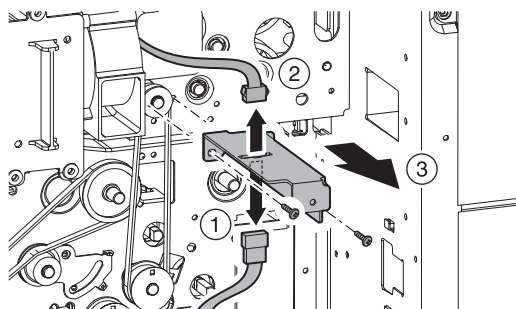
#### C. Paper feed/paper transport drive section

No.	Parts
a	Resist roller front drive motor
b	Resist roller motor
c	Main motor



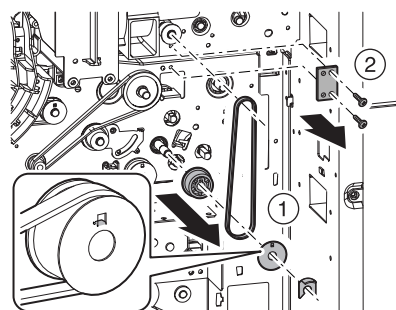
#### (1) Main drive unit

- 1) Remove the resist roller unit.  
(See "6. Paper transport and duplex section")
- 2) Remove the main motor.
- 3) Disconnect the connector, and remove the external outfit mounting plate.

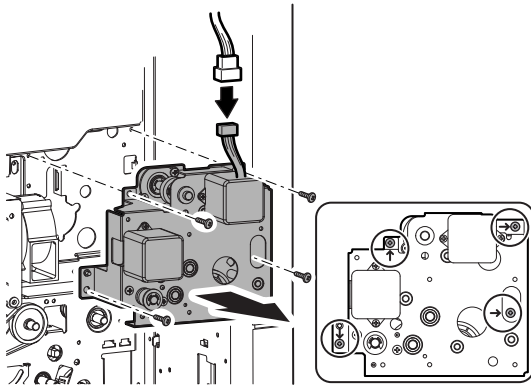


- 4) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.

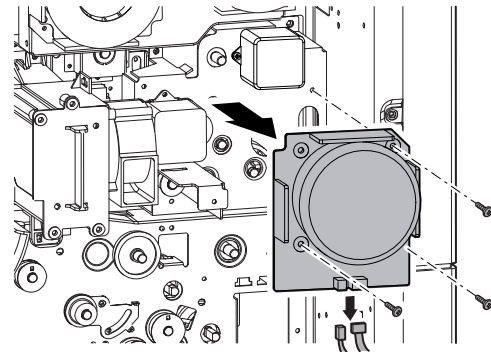
\* When installing, be careful of the direction of the belt holding sheet.



- 5) Disconnect the connector, and remove the main drive unit.  
\* Remove the screw which was indicated with the arrow mark.

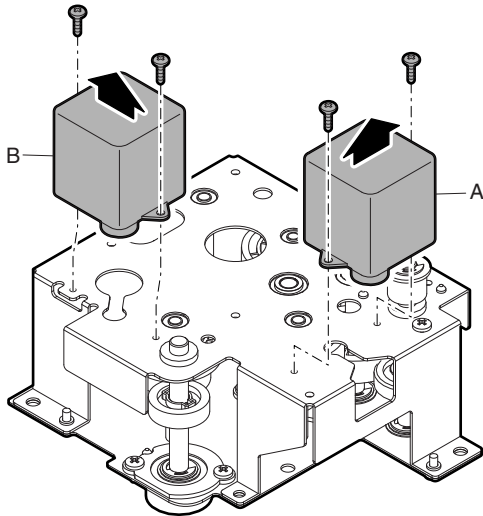


- 2) Disconnect the connector, and remove the main motor.



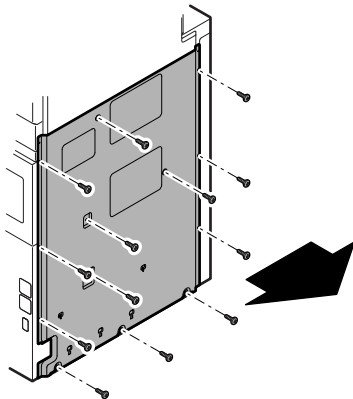
**a. Resist roller front drive motor/Resist roller motor**

- 1) Remove the resist roller unit.  
(See "6. Paper transport and duplex section")
- 2) Remove the main motor.
- 3) Remove the main drive unit.
- 4) Remove the resist roller front drive motor (A) and the resist roller motor (B).



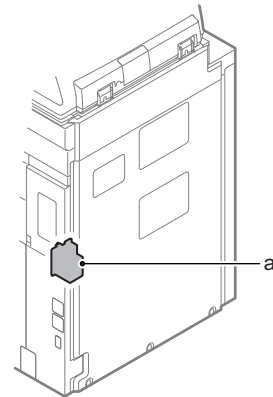
**(2) Main motor**

- 1) Remove the rear cabinet.



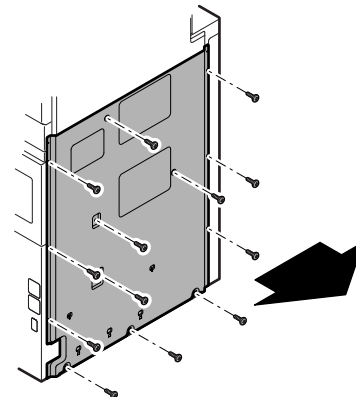
**D. Manual paper feed drive section**

No.	Unit
a	Manual paper feed drive unit

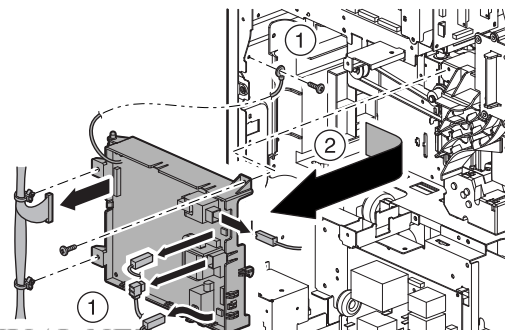


**(1) Manual paper feed drive unit**

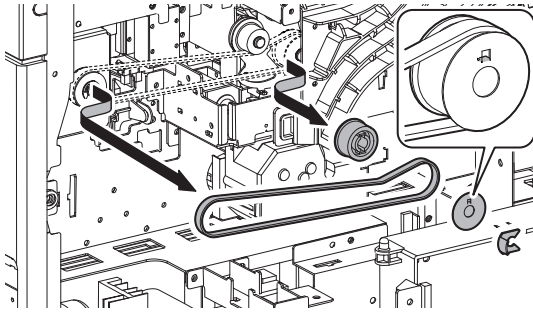
- 1) Remove the rear cabinet.



- 2) Disconnect the connector, the harness clamp, and the earth wire. Remove the high voltage PWB unit.

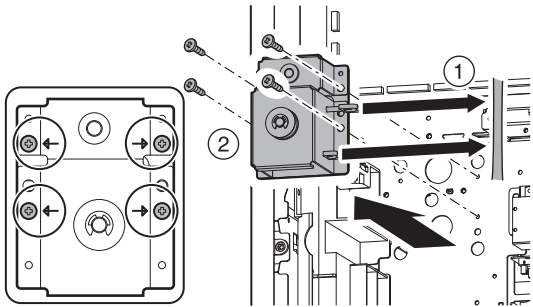


- 3) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.



\* When installing, be careful of the direction of the belt holding sheet.

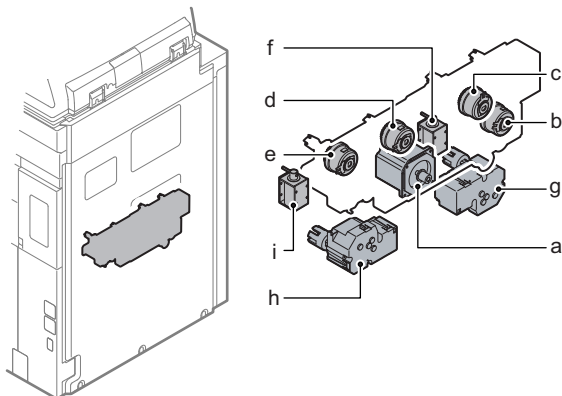
- 4) Disconnect the connector and remove the harness clamp, and remove the manual paper feed drive unit.



\* Remove the screw which was indicated with the arrow mark.

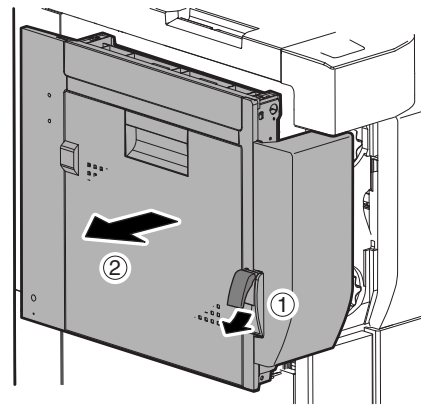
## E. Paper feed tray 1/2 paper feed drive section

No.	Parts
a	Vertical paper transport motor
b	Paper feed tray 3/4 paper transport clutch 2
c	Paper feed clutch (Paper feed tray 1)
d	Horizontal paper transport clutch
e	Paper feed clutch (Paper feed tray 2)
f	Paper pickup solenoid (Paper feed tray 1)
g	Remove the paper tray lift up motor (paper feed tray 1)
h	Paper tray lift up motor (Paper feed tray 2)
i	Paper pickup solenoid (Paper feed tray 2)

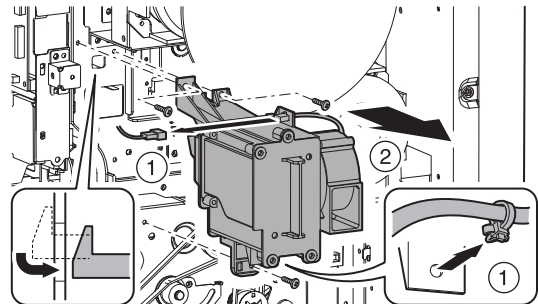


## (1) 1/2 paper feed drive unit

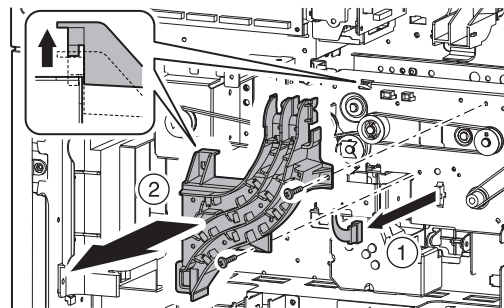
- 1) Remove the main motor.
- 2) Remove the high voltage PWB unit.
- 3) Pull out the left door.



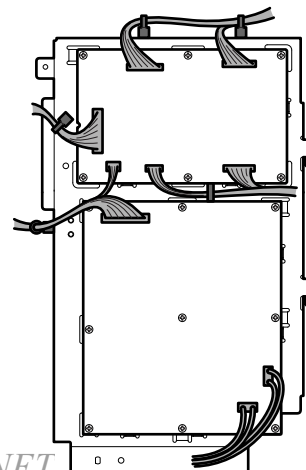
- 4) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.



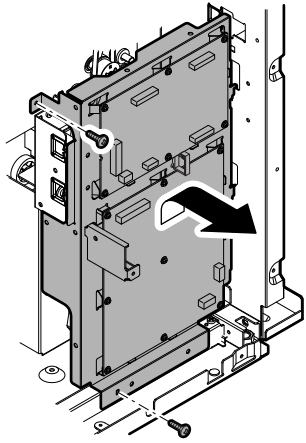
- 5) Disconnect the connector and remove the harness holder.



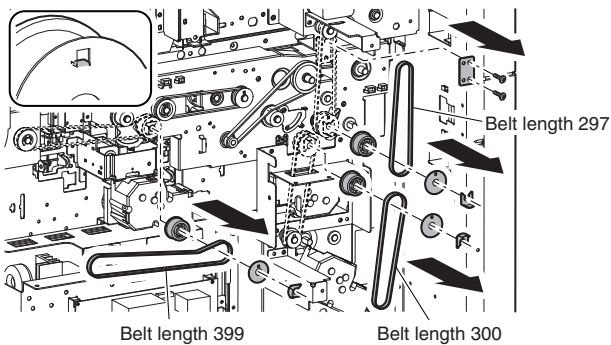
- 6) Disconnect the connector, remove the snap band, and remove the harness from the wire saddle.



- 7) Remove the screw, and remove the driver DC SUB PWB unit.

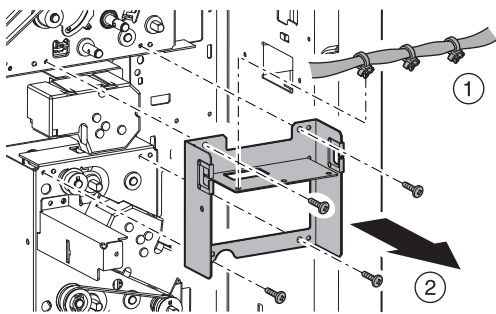


- 8) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.



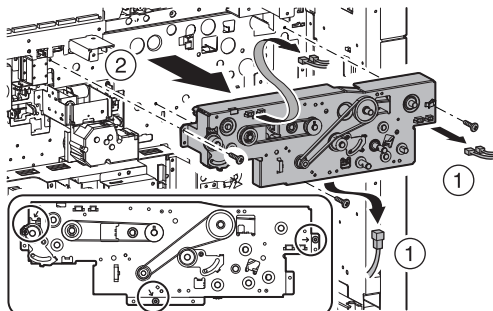
\* When installing, be careful of the belt length and the belt holding sheet direction.

- 9) Remove the harness, and remove the drive joint plate.



\* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 10) Disconnect the connector and remove the harness clamp. Remove the 1/2 paper feed drive unit.

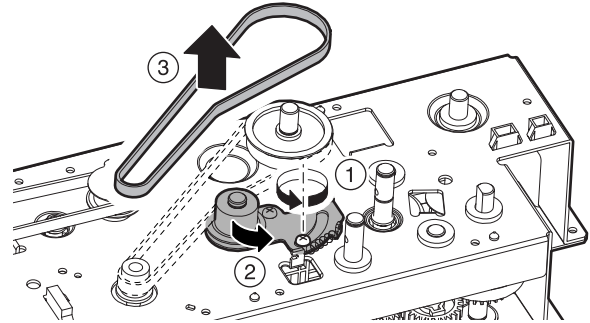


\* If the left door is completely pulled out, the unit may drop off. Be careful to avoid it.

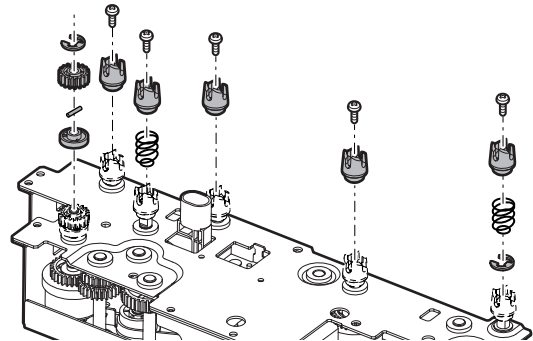
\* Remove the screw which was indicated with the arrow mark.

#### a. Vertical paper transport motor

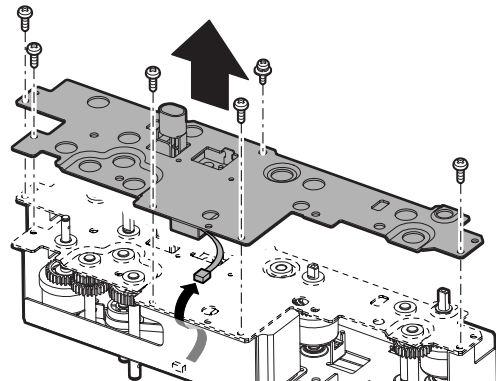
- 1) Remove the 1/2 paper feed drive unit.
- 2) Loosen the screw to release the tension, and remove the belt.



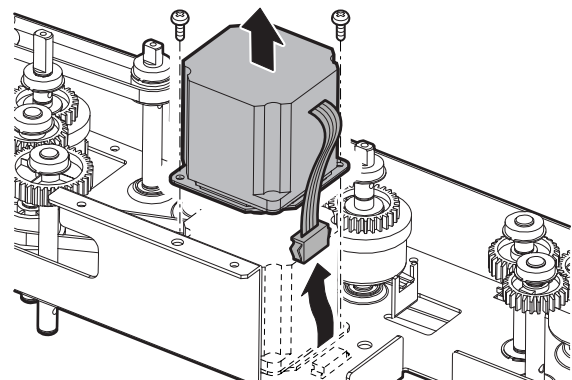
- 3) Remove the parts.



- 4) Remove the 1/2 paper feed drive frame lower. Remove the harness clamp.



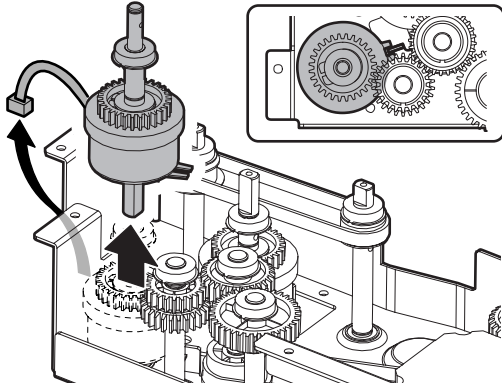
- 5) Disconnect the connector, and remove the vertical paper transport motor.



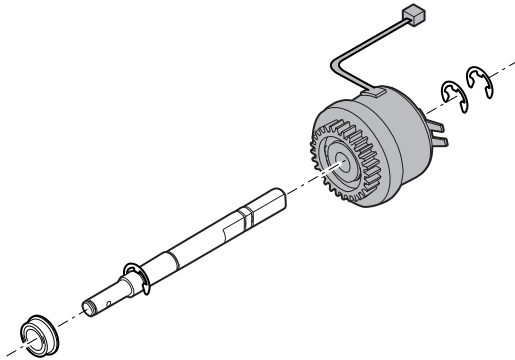


**b. Paper feed tray 3/4 paper transport clutch 2**

- 1) Remove the 1/2 paper feed drive unit.
- 2) Remove the 1/2 paper feed drive frame lower.
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed tray 3/4 paper transport clutch 2.

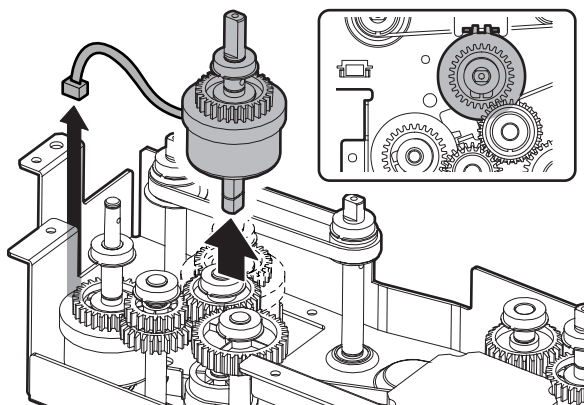


- 4) Remove the E-ring, and remove the paper feed tray 3/4 paper transport clutch 2.

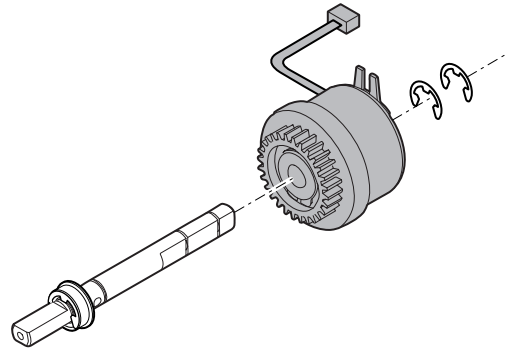


**c. Paper feed clutch (Paper feed tray 1)**

- 1) Remove the 1/2 paper feed drive unit.
- 2) Remove the 1/2 paper feed drive frame lower.
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 1) unit.

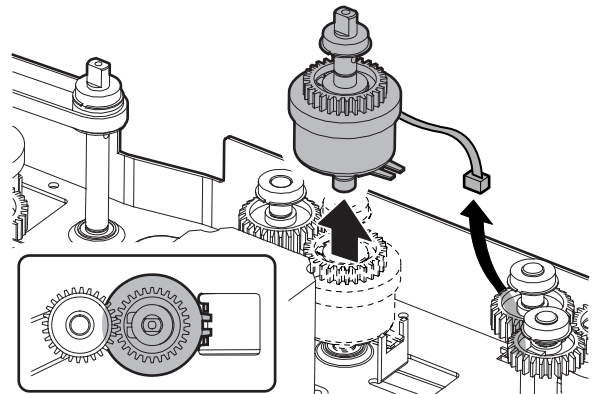


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 1).

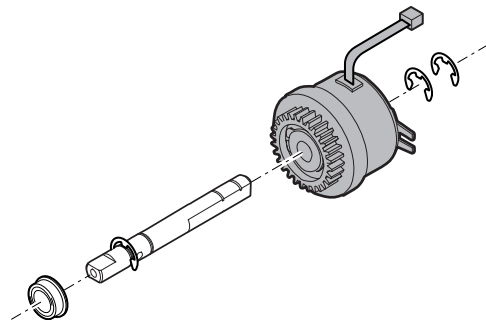


**d. Horizontal paper transport clutch**

- 1) Remove the 1/2 paper feed drive unit.
- 2) Remove the 1/2 paper feed drive frame lower.
- 3) Disconnect the connector and remove the harness clamp, and remove the horizontal paper transport clutch.

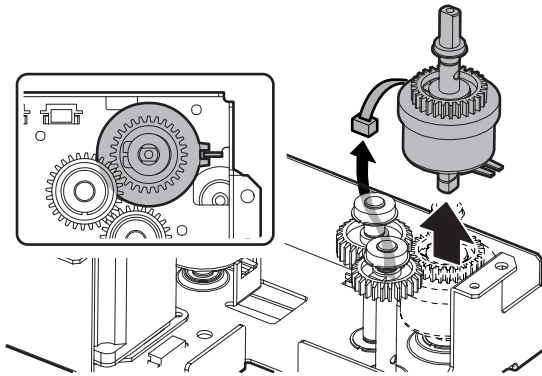


- 4) Remove the E-ring, and remove the horizontal paper transport clutch.

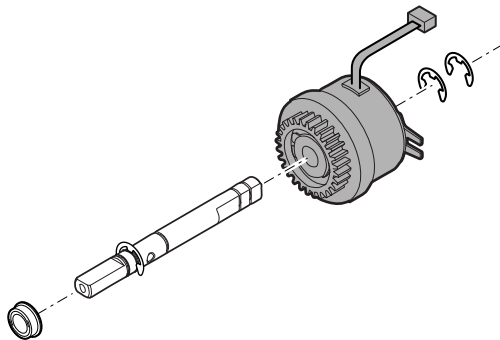


**e. Paper feed clutch (Paper feed tray 2)**

- 1) Remove the 1/2 paper feed drive unit.
- 2) Remove the 1/2 paper feed drive frame lower.
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 2).

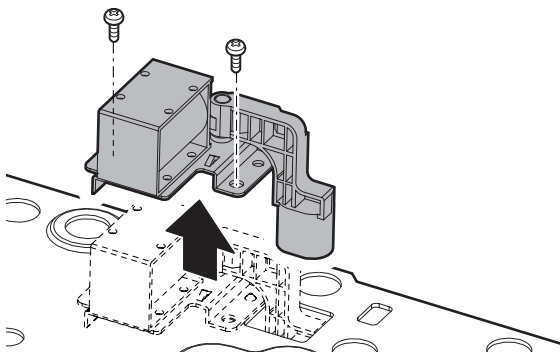


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 2).

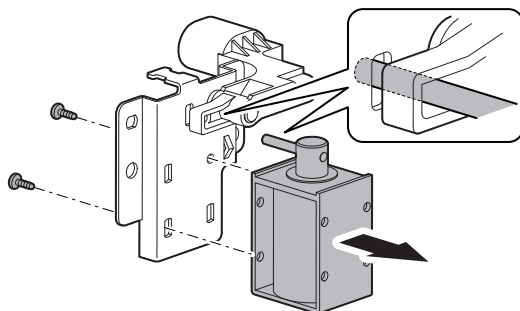


**f. Paper pickup solenoid (Paper feed tray 2)**

- 1) Remove the 1/2 paper feed drive unit.
- 2) Remove the 1/2 paper feed drive frame lower.
- 3) Remove the paper pickup solenoid unit.



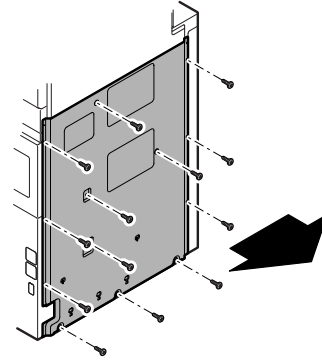
- 4) Remove the paper pickup solenoid.



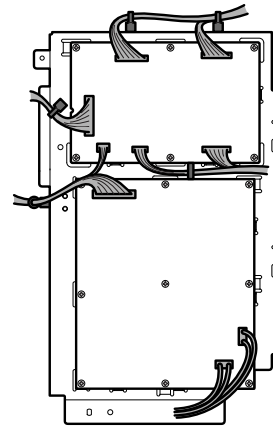
\* When installing, check that the solenoid plunger is inserted in the arm.

**(2) Remove the paper tray lift up motor (paper feed tray 1)**

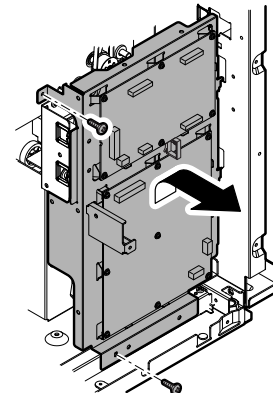
- 1) Remove the rear cabinet.



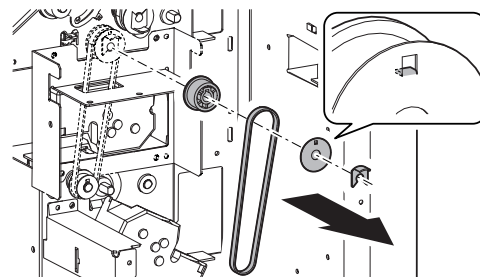
- 2) Disconnect the connector, remove the snap band, and remove the harness from the wire saddle.



- 3) Remove the screw, and remove the driver DC SUB PWB unit.

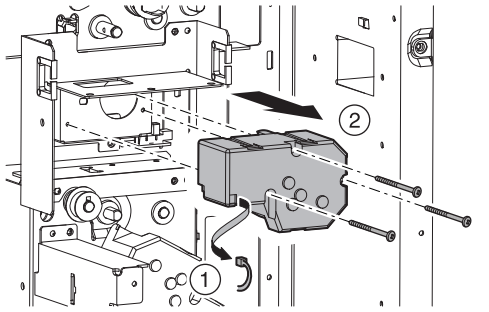


- 4) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.

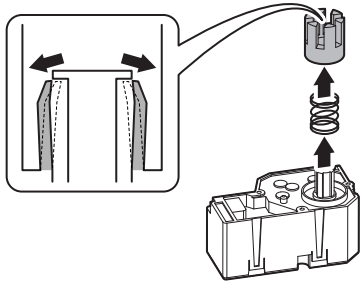


\* When installing, be careful of the direction of the belt holding sheet.

- 5) Disconnect the connector, and remove the lift up motor unit.

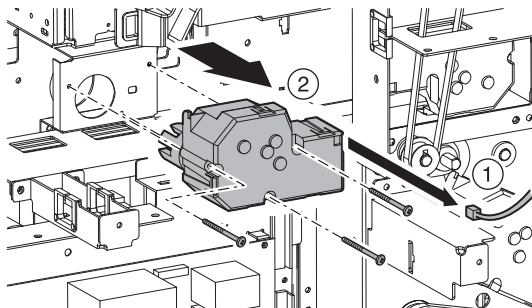


- 6) Release the pawl, and remove the lift up coupling. Remove the lift up spring from the paper tray lift up motor.

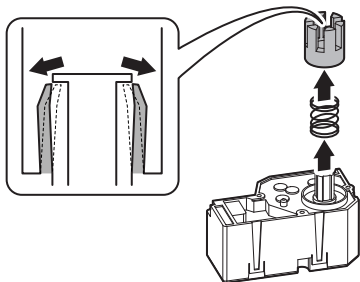


### (3) Paper tray lift up motor (Paper feed tray 2)

- 1) Remove the high voltage PWB unit.
- 2) Disconnect the connector, and remove the lift up motor unit.

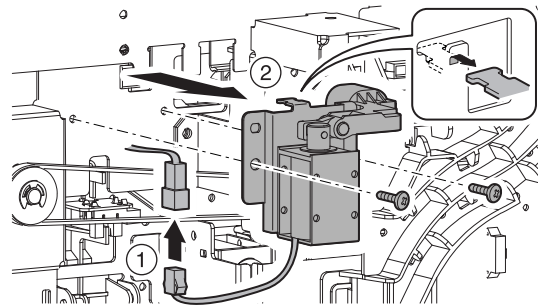


- 3) Release the pawl, and remove the lift up coupling. Remove the lift up spring from the lift up motor.

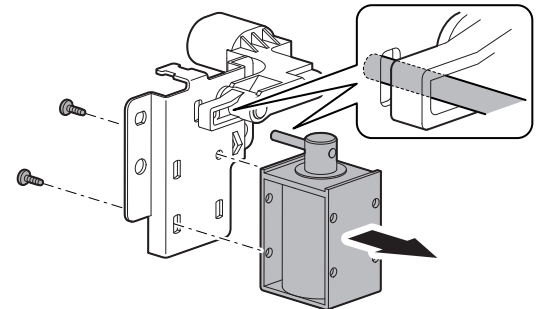


### (4) Paper pickup solenoid (Paper feed tray 2)

- 1) Remove the high voltage PWB unit.
- 2) Disconnect the connector, and remove the paper pickup solenoid unit.



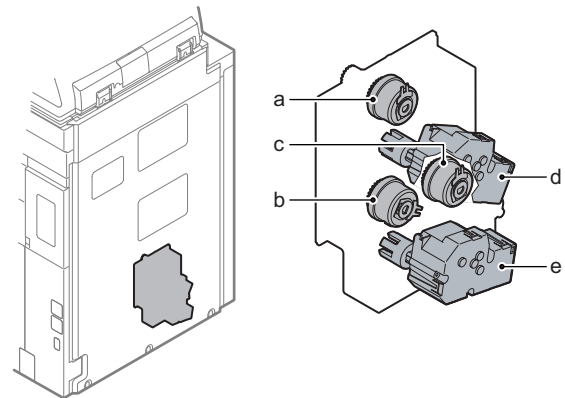
- 3) Remove the paper pickup solenoid.



\* When installing, check that the solenoid plunger is inserted in the arm.

## F. Paper feed tray 3/4 paper feed drive section

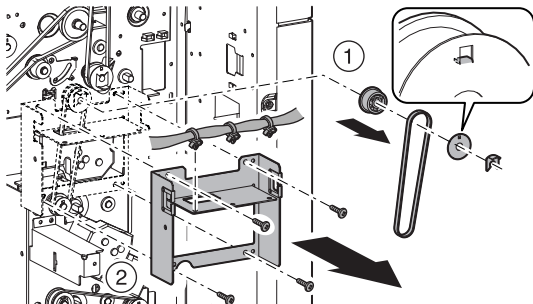
No.	Parts
a	Paper feed clutch (Paper feed tray 3)
b	Paper feed clutch (Paper feed tray 4)
c	Paper feed tray 3/4 paper transport clutch 1
d	Paper tray lift up motor (Paper feed tray 3)
e	Paper tray lift up motor (Paper feed tray 4)





### (1) 3/4 paper feed drive unit

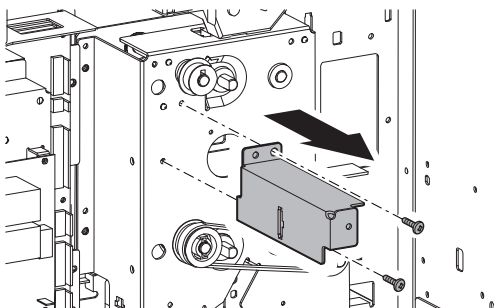
- 1) Remove the paper tray lift up motor.
- 2) Remove the parts and remove the drive joint plate.



\* When installing, be careful of the direction of the belt holding sheet.

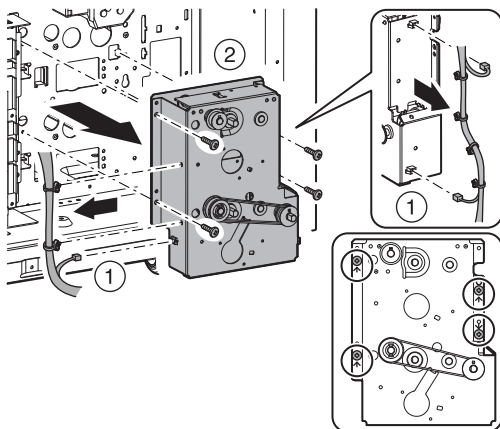
\* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 3) Remove the external outfit mounting plate.



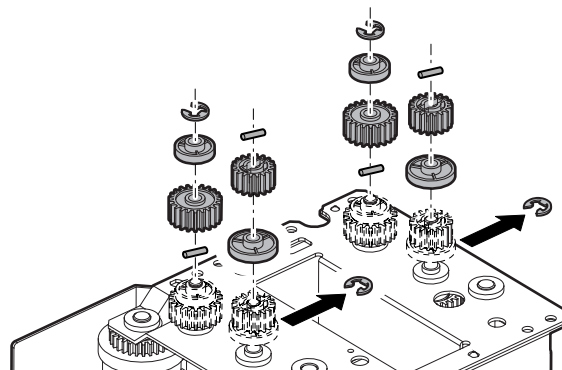
- 4) Disconnect the connector and remove the harness clamp. Remove the 3/4 paper feed drive unit.

\* Remove the screw which was indicated with the arrow mark.

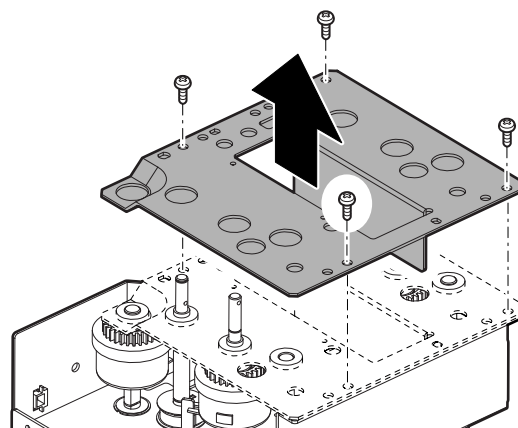


### a. Paper feed clutch (Paper feed tray 3)

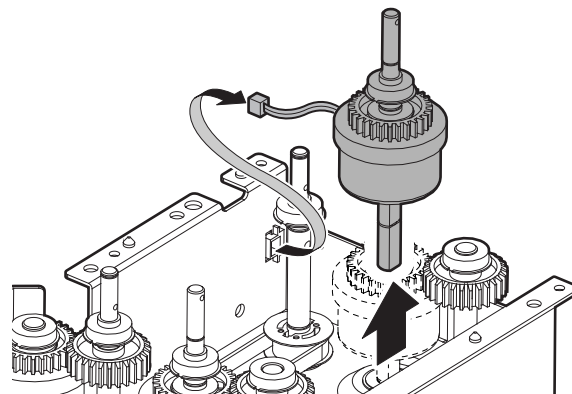
- 1) Remove the 3/4 paper feed drive unit.
- 2) Remove the E-ring and remove the parts.



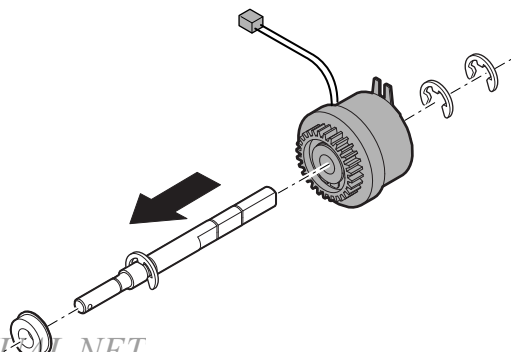
- 3) Remove the 3/4 drive frame lower.



- 4) Disconnect the connector, and remove the paper feed clutch unit.

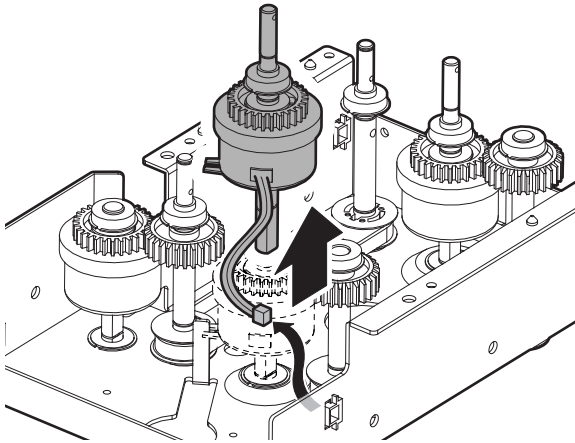


- 5) Remove the E-ring, and remove the paper feed clutch.

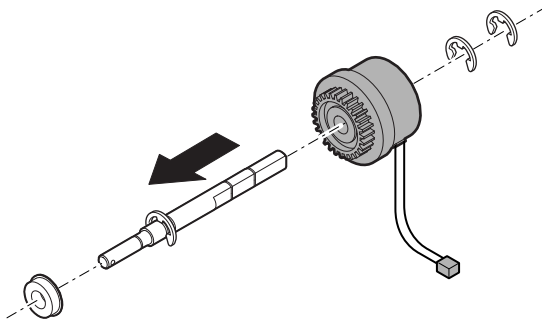


**b. Paper feed clutch (Paper feed tray 4)**

- 1) Remove the 3/4 paper feed drive unit.
- 2) Remove the 3/4 drive frame lower.
- 3) Disconnect the connector, and remove the paper feed clutch unit.

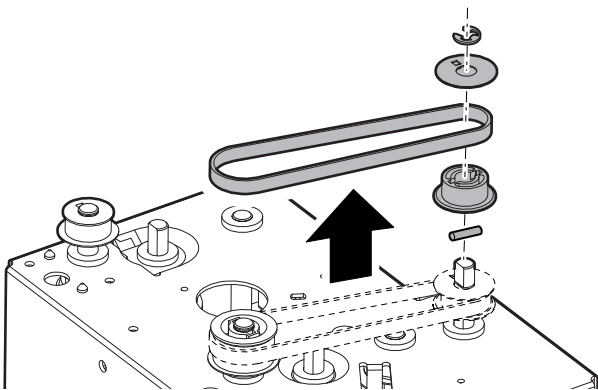


- 4) Remove the E-ring, and remove the paper feed clutch.

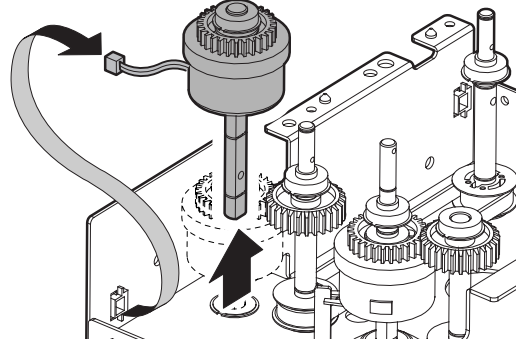


**c. Paper feed tray 3/4 paper transport clutch 1**

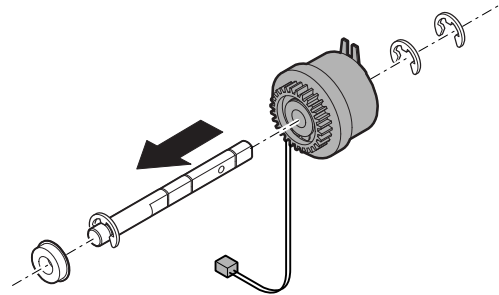
- 1) Remove the 3/4 paper feed drive unit.
- 2) Remove the parts, and remove the belt.



- 3) Remove the 3/4 drive frame lower.
- 4) Disconnect the connector, and remove the paper feed tray 3/4 paper transport clutch 1 unit.

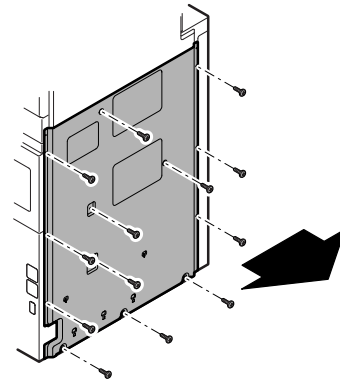


- 5) Remove the E-ring, and remove the paper feed tray 3/4 paper transport clutch 1.

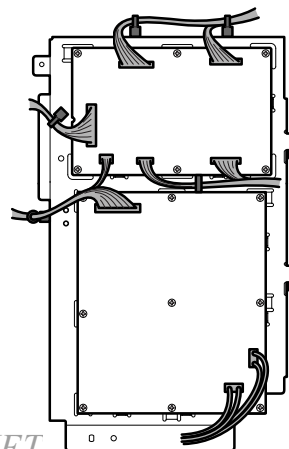


**(2) Paper tray lift up motor (Paper feed tray 3)/  
Paper tray lift up motor (Paper feed tray 4)**

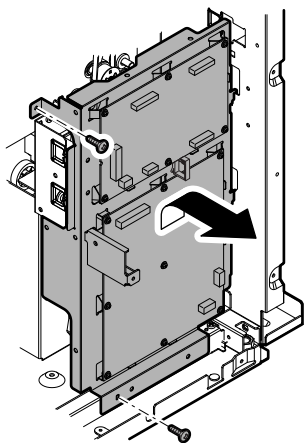
- 1) Remove the rear cabinet.



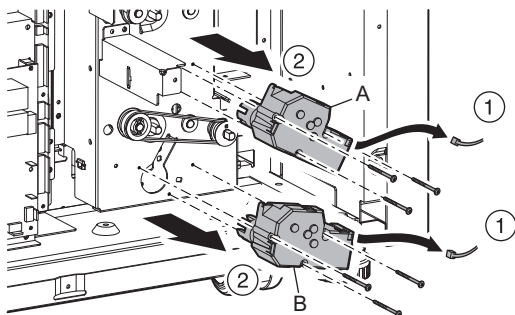
- 2) Disconnect the connector, remove the snap band, and remove the harness from the wire saddle.



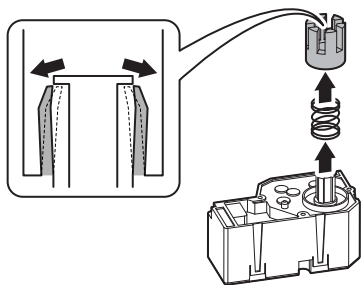
- 3) Remove the screw, and remove the driver DC SUB PWB unit.



- 4) Disconnect the connector, and remove the paper tray lift up motor (paper feed tray 3) (A) and the paper tray lift up motor (Paper feed tray 4) (B).



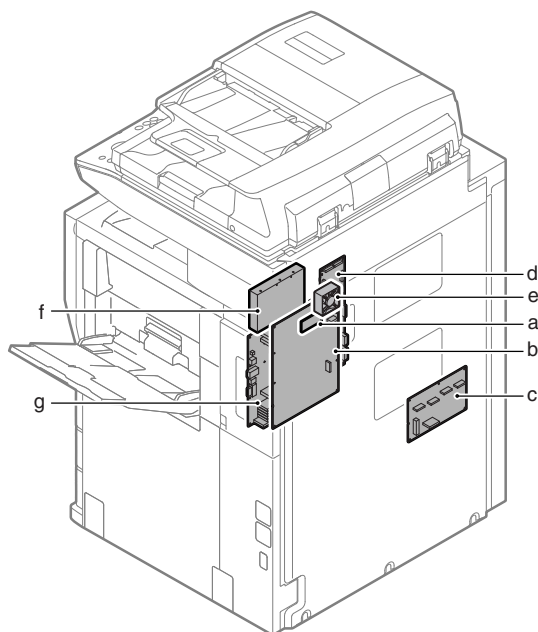
- 5) Release the pawl, and remove the lift up coupling. Remove the lift up spring from the lift up motor.



## 15. PWB section

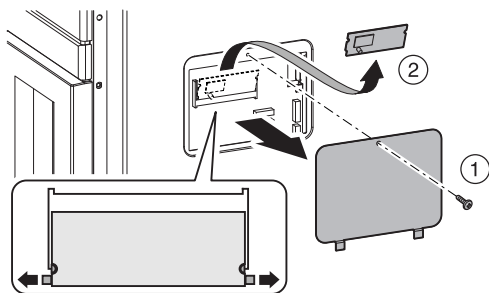
### A. Control PWB section

No.	Parts
a	PCU FLASH PWB
b	PCU PWB
c	Driver PWB
d	Mother PWB
e	Controller cooling fan motor
f	HDD
g	MFP controller PWB



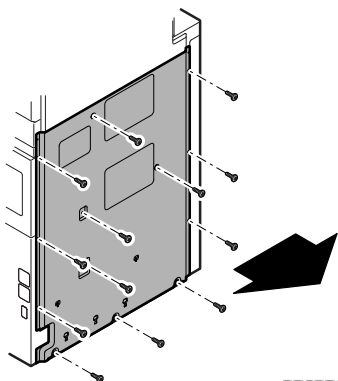
#### (1) PCU FLASH PWB

- 1) Remove the ROM cover. Release the lock and remove the PCU FLASH PWB.

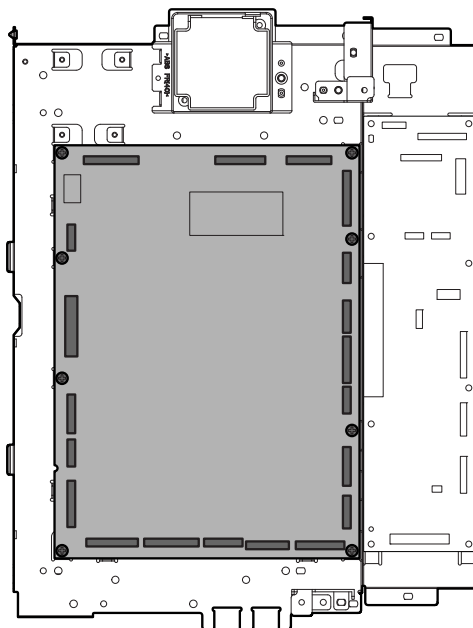


#### (2) PCU PWB

- 1) Remove the rear cabinet.

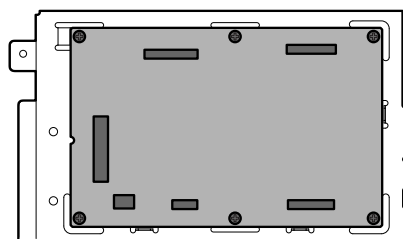


- 2) Disconnect the connector. Remove the screw, and remove the PCU PWB.



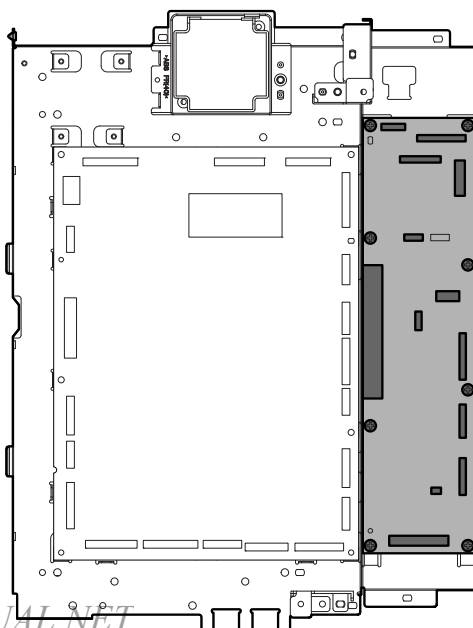
#### (3) Driver PWB

- 1) Remove the rear cabinet.
- 2) Disconnect the connector. Remove the screw, and remove the driver PWB.



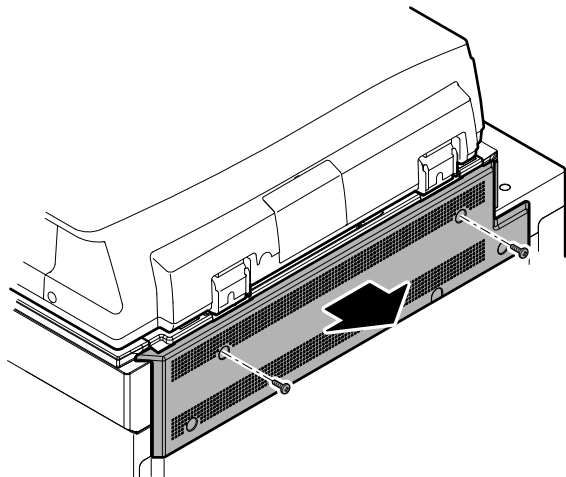
#### (4) Mother PWB

- 1) Remove the rear cabinet.
- 2) Remove the MFP PWB unit.
- 3) Disconnect the connector. Remove the screw, and remove the mother PWB.

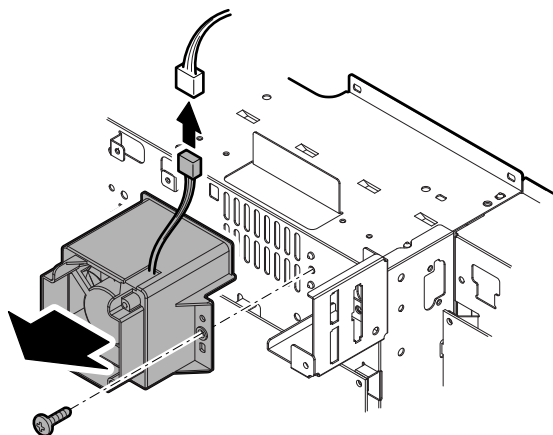


### (5) Controller cooling fan motor

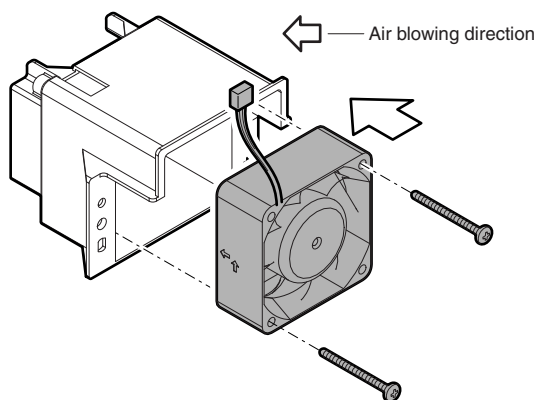
- 1) Remove the rear cabinet.
- 2) Remove the screw, and remove the rear cabinet upper.



- 3) Disconnect the connector. Remove the screw, and remove the duct.



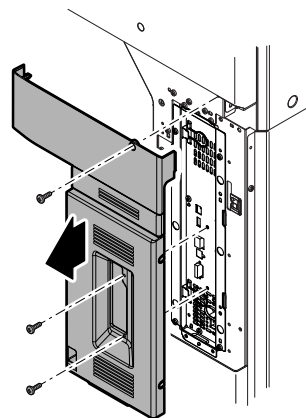
- 4) Remove the screw, and remove the controller cooling fan motor.



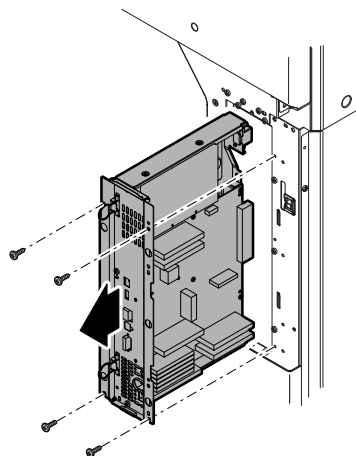
\* Fit the notch in the fan cover with the pull-out position of the fan harness. Also be careful not to mistake the installing direction of the fan.

### (6) HDD

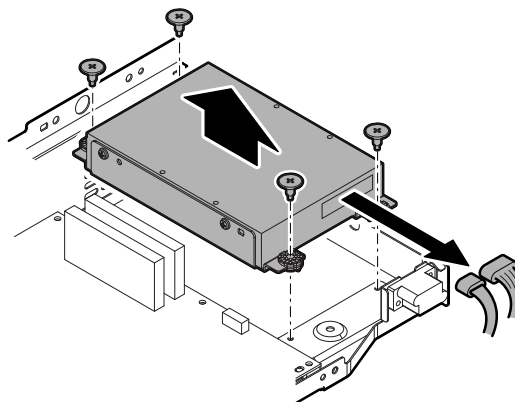
- 1) Remove the screw, and remove the right cabinet upper.



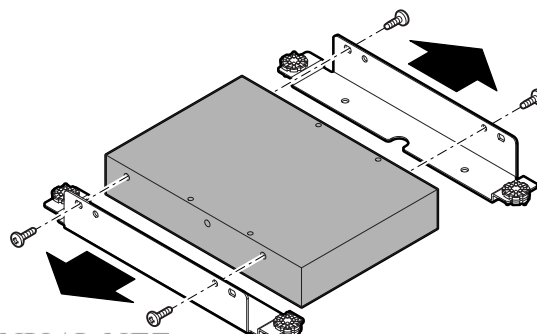
- 2) Remove the screw, and remove the controller PWB unit.



- 3) Disconnect the connector, and remove the HDD unit.

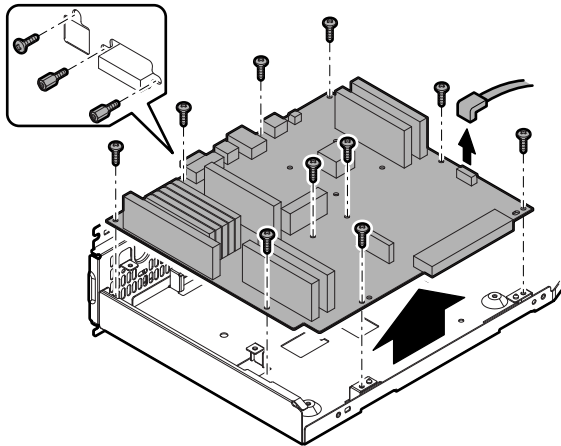


- 4) Remove the HDD mounting plate from the HDD.



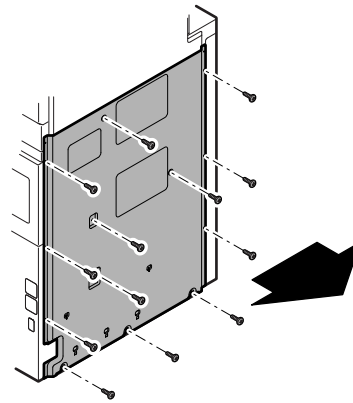
## (7) MFP controller PWB

- 1) Remove the controller PWB unit.
- 2) Disconnect the connector. Remove the MFP controller PWB.



## (1) AC power PWB

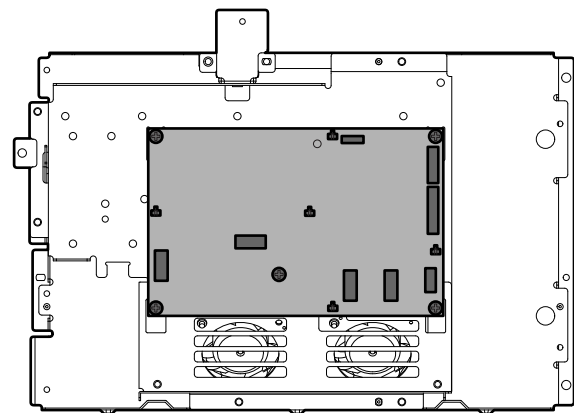
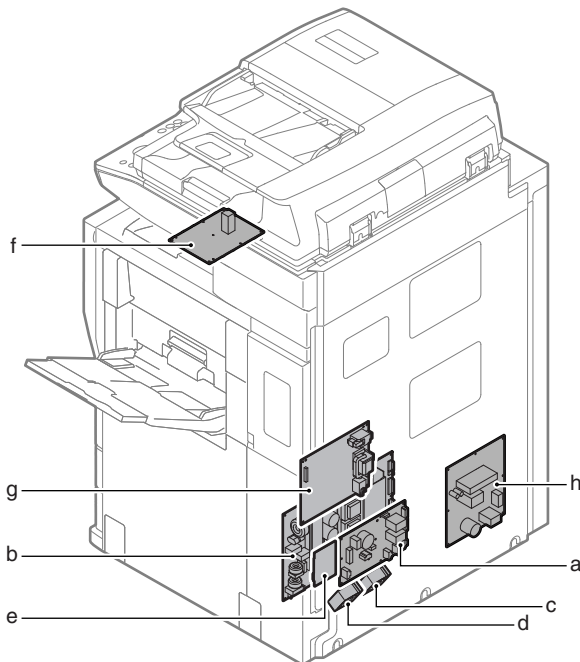
- 1) Remove the rear cabinet.



- 2) Disconnect the connector. Remove the screw and the supporter, and remove the AC power PWB.

## B. Power PWB section

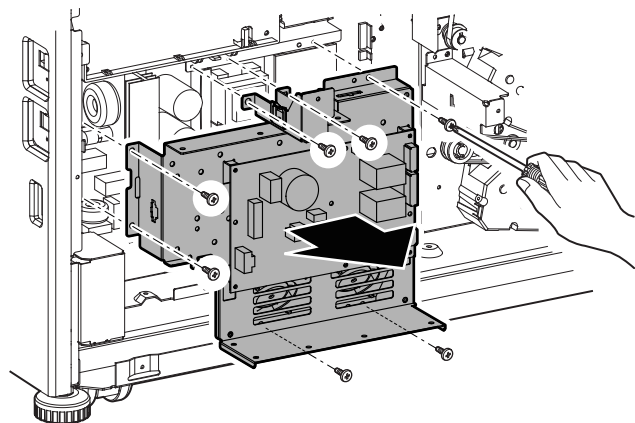
No.	Parts
a	AC power PWB
b	DC main power PWB
c	Power cooling fan motor 1
d	Power cooling fan motor 2
e	Dehumidifier heater relay PWB
f	HL PWB
g	High voltage PWB (MC/DV/TC)
h	DC sub power PWB



## (2) DC main power PWB

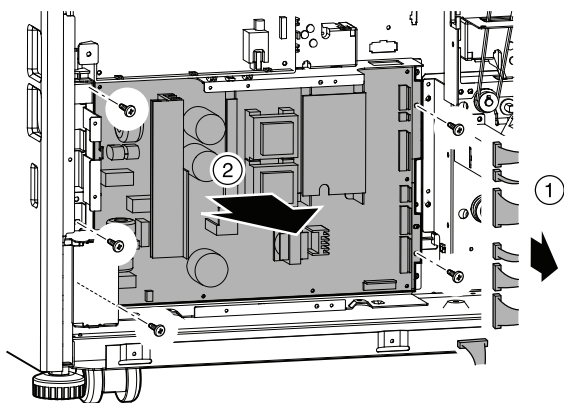
### (Method 1)

- 1) Remove the rear cabinet.
- 2) Disconnect the connector and remove the harness clamp. Remove the AC power PWB unit.



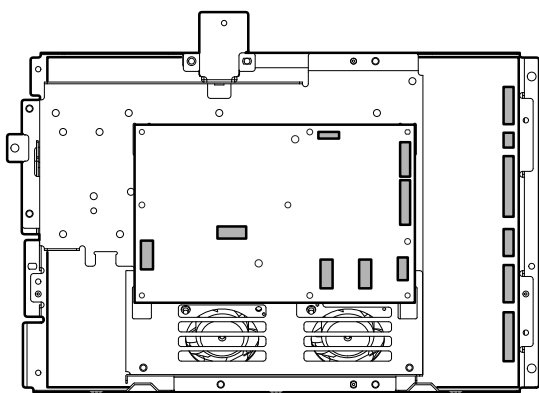


- 3) Disconnect the connector and remove the DC main power PWB.

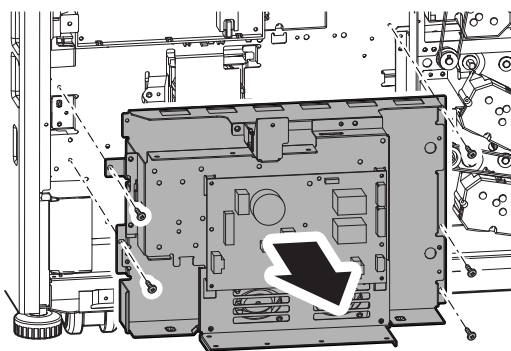


**(Method 2)**

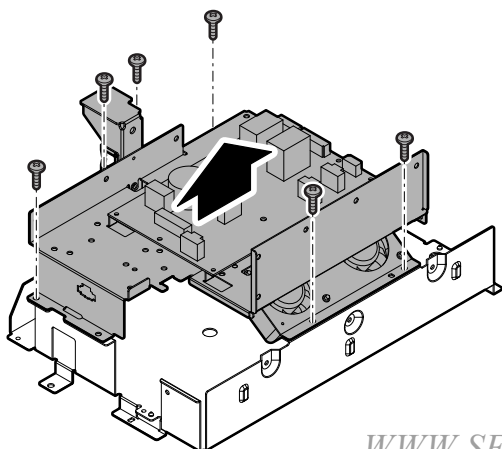
- 1) Remove the rear cabinet.
- 2) Remove the connector.



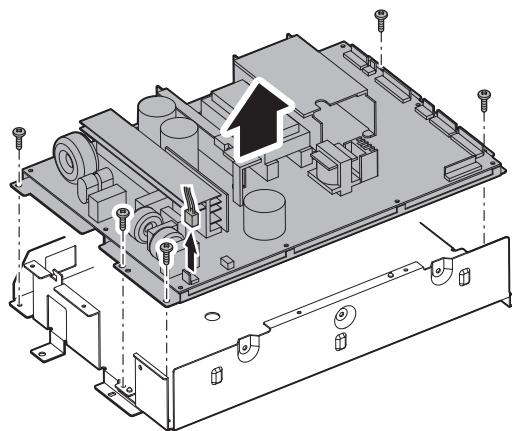
- 3) Remove the AC/DC power unit.



- 4) Remove the AC power PWB unit.

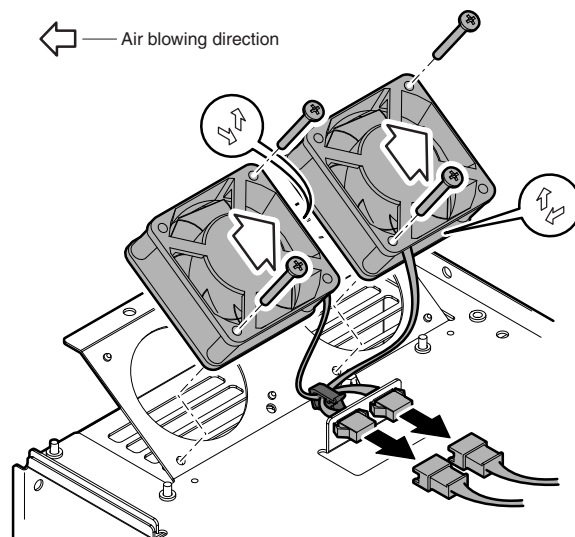


- 5) Remove the DC power PWB unit.



**(3) Power cooling fan motor 1/2**

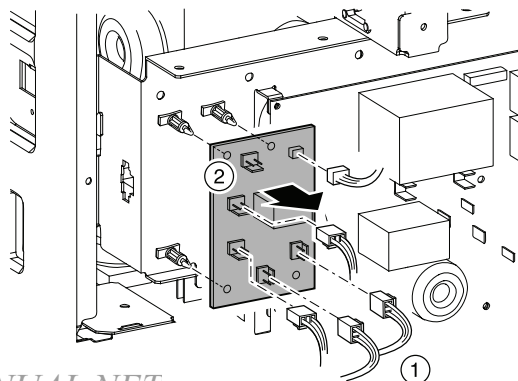
- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and remove the AC power PWB unit.
- 3) Disconnect the connector and remove the harness clamp. Remove the power cooling fan motors 1/2.



\* Install the fan so that the label attached on the fan faces the front, and that the concave section of the fan is fit with the convex section of the frame fan mounting surface without clearance.

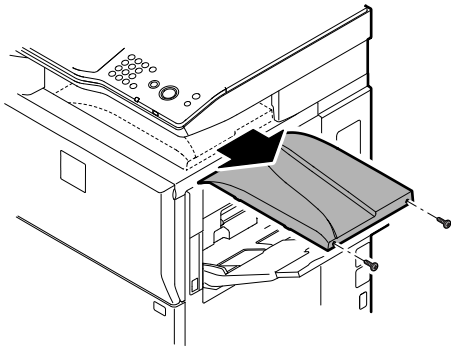
**(4) Dehumidifier heater relay PWB**

- 1) Remove the rear cabinet.
- 2) Disconnect the connector and remove the supporter. Remove the dehumidifier heater relay PWB.

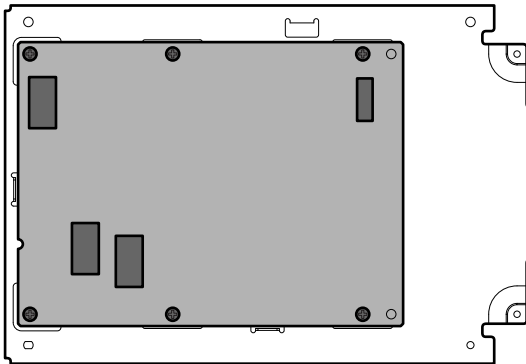


#### (5) HL PWB

- 1) Remove the paper exit tray cabinet.

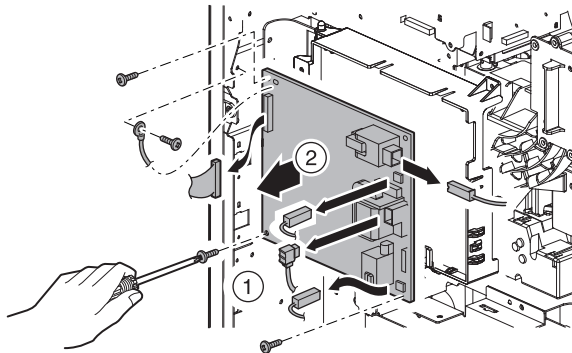


- 2) Disconnect the connector. Remove the screw, and remove the HL PWB.



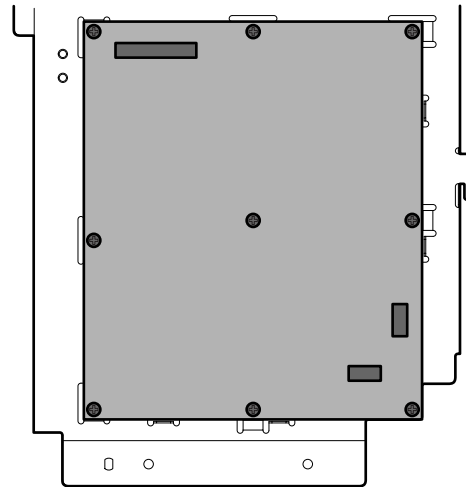
#### (6) High voltage PWB (MC/DV/TC)

- 1) Remove the rear cabinet.
- 2) Disconnect the connector and remove the earth terminal. Remove the high voltage PWB.



#### (7) DC sub power PWB

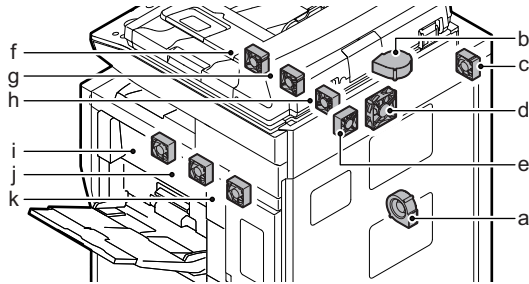
- 1) Remove the rear cabinet.
- 2) Disconnect the connector. Remove the screw, and remove the DC sub power PWB.





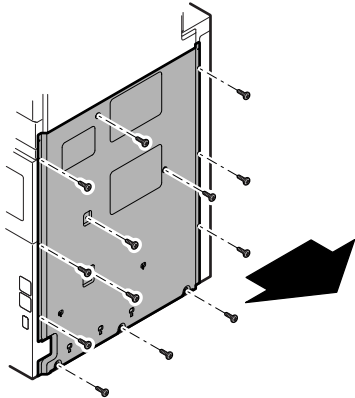
## 16. Fan section

No.	Parts
a	Developing section cooling fan motor
b	Paper cooling fan motor
c	Fusing cooling fan motor 2
d	Fusing exhaust fan motor
e	Process exhaust fan motor 4
f	Process exhaust fan motor 1
g	Process exhaust fan motor 2
h	Process exhaust fan motor 3
i	Process cooling fan 1
j	Process cooling fan 2
k	Process cooling fan 3

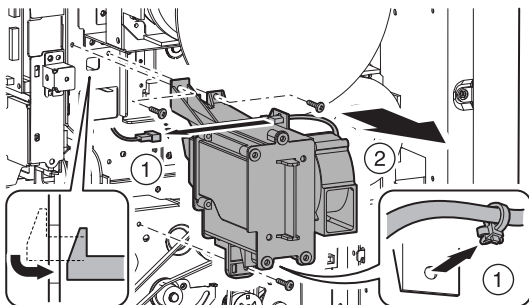


### A. Developing section cooling fan motor

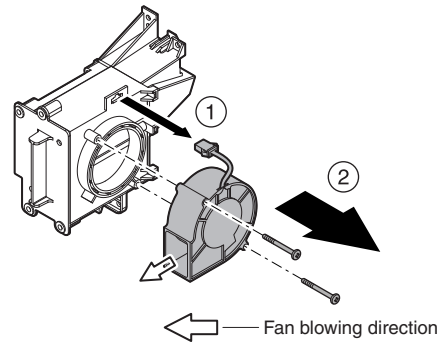
- 1) Remove the rear cabinet.



- 2) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.

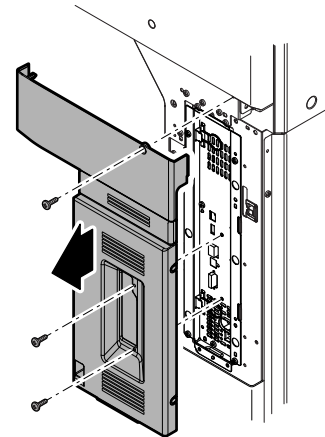


- 3) Disconnect the connector, and remove the DV fan.

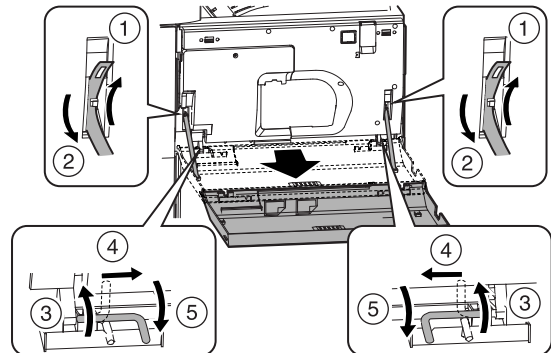


### B. Paper cooling fan motor

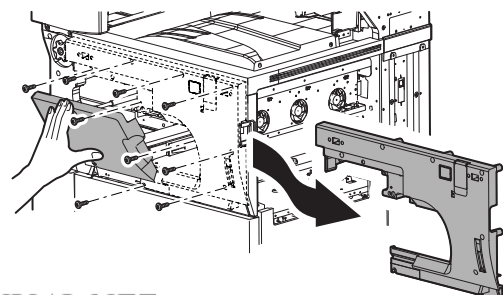
- 1) Remove the toner cartridge and the tone hopper unit. (See "9. Toner supply section")
- 2) Remove the developing unit. (See "10. Developing section")
- 3) Remove the process unit. (See "8. Photo-conductor section")
- 4) Remove the paper exit unit. (See "13. Paper exit section")
- 5) Remove the right cabinet upper.



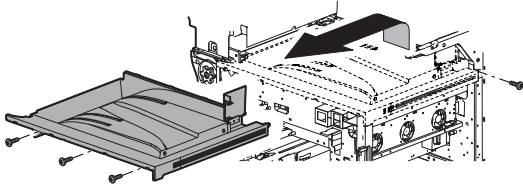
- 6) Remove the front cabinet band, and remove the front cabinet.



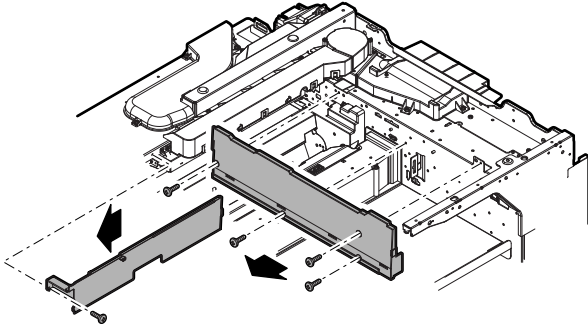
- 7) Raise the process DV cover diagonally, and remove the front cover right.



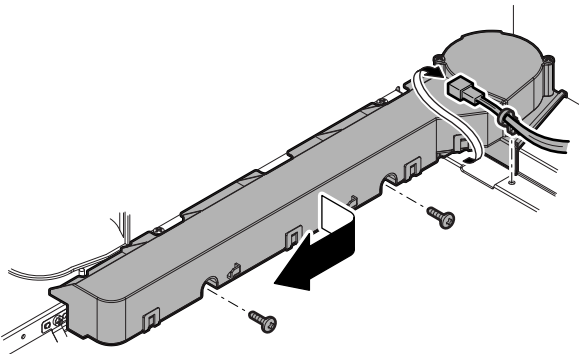
- 8) Remove the paper exit tray cabinet unit.



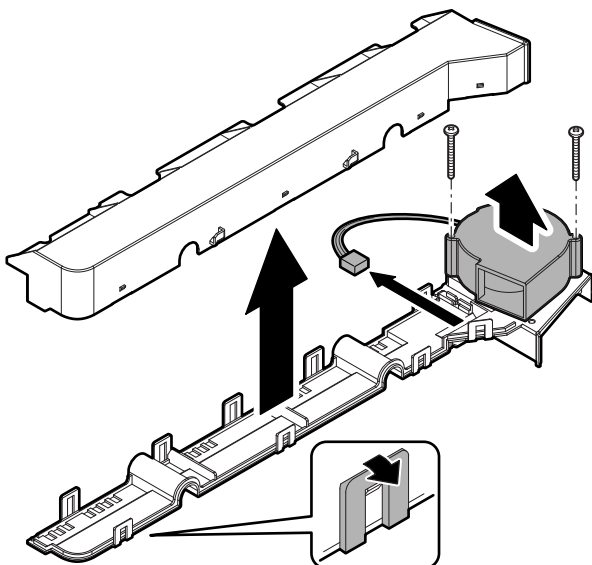
- 9) Remove the paper exit port cabinet, and remove the paper exit tray cabinet C.



- 10) Disconnect the connector. Remove the snap band. Remove the screw, and remove the duct.

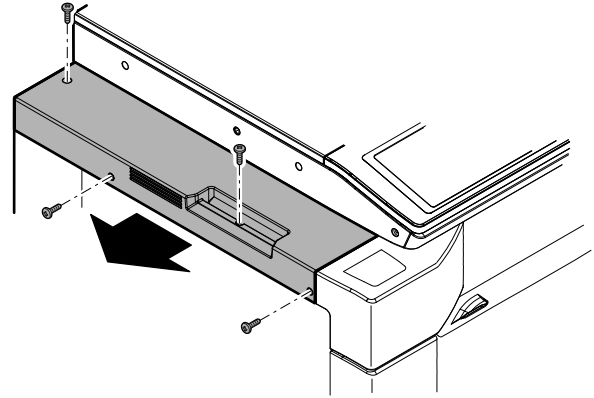


- 11) Disengage the pawl, and remove the cover. Disconnect the connector. Remove the screw, and remove the paper cooling fan motor.

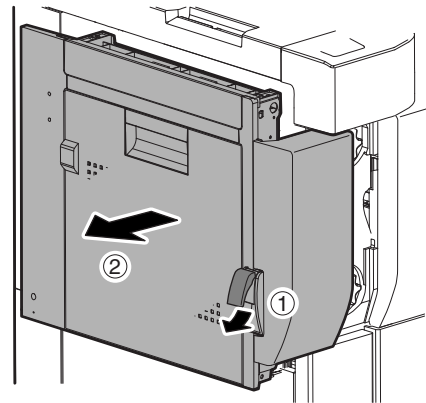


## C. Fusing cooling fan motor 2

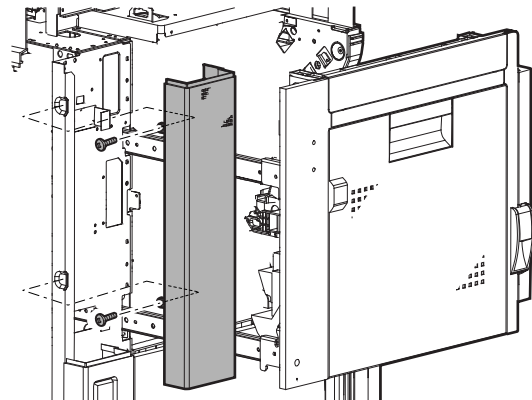
- 1) Remove the rear cabinet.
- 2) Remove the left cover cabinet.



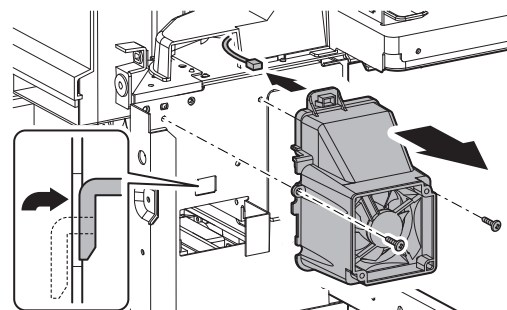
- 3) Open the left door.



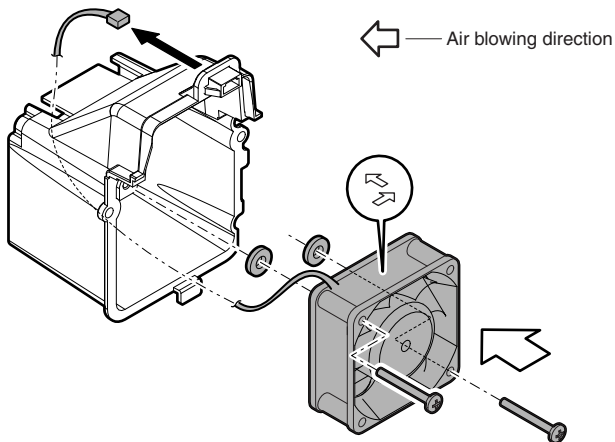
- 4) Remove the left cabinet upper.



- 5) Disconnect the connector, and remove the paper exit rear duct unit.



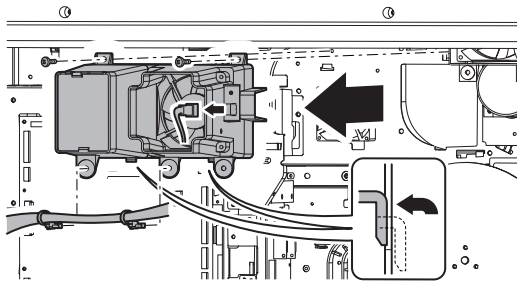
- 6) Disconnect the connector, and remove the fusing cooling fan motor.



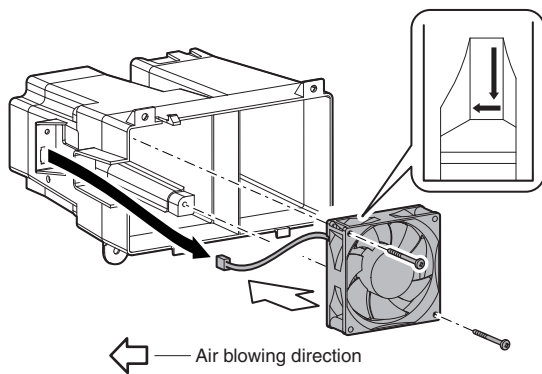
\* Install the fan so that the label attached on the fan faces out-side.

#### D. Fusing exhaust fan motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector and remove the harness clamp. Remove the sub duct unit.



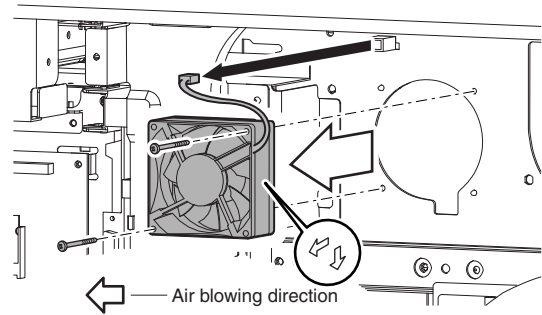
- 3) Disconnect the connector and remove the fusing exhaust fan motor.



\* Be careful of the direction of the fan.

#### E. Process exhaust fan motor 4

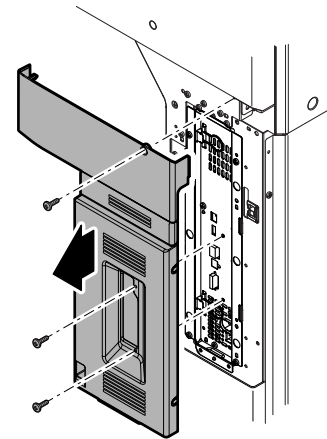
- 1) Remove the rear cabinet.
- 2) Remove the sub duct unit.
- 3) Disconnect the connector and remove the process exhaust fan motor 4.



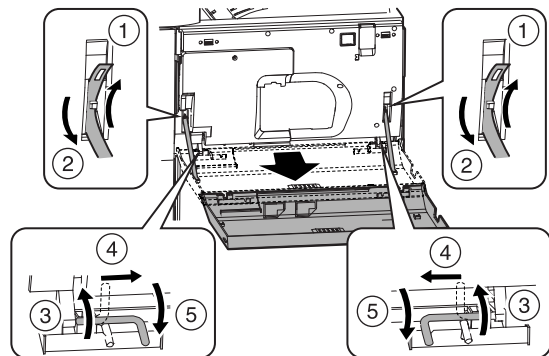
\* When installing, be careful of the fan direction and be careful not to cover the boss.

#### F. Process exhaust fan motor 1/2/3

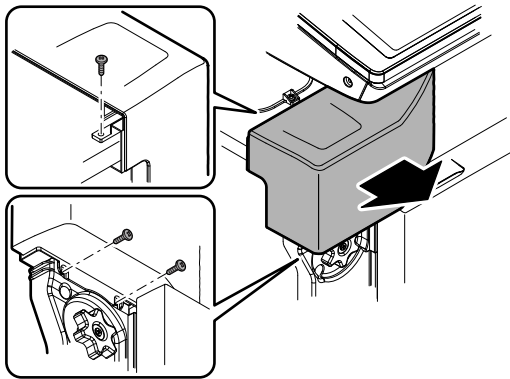
- 1) Remove the DSPF unit. (See "18. Automatic document feeder")
- 2) Remove the scanner unit. (See "3. Scanner section")
- 3) Remove the right cabinet upper.



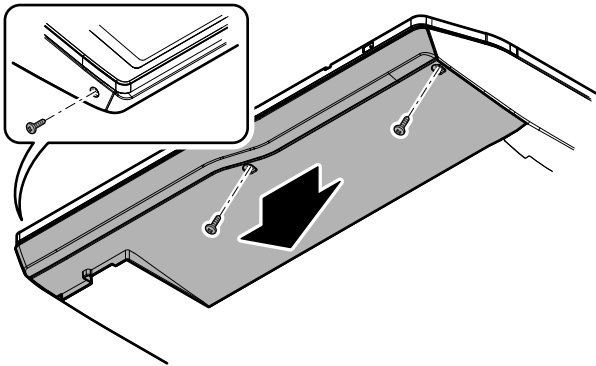
- 4) Remove the front cabinet band, and remove the front cabinet.



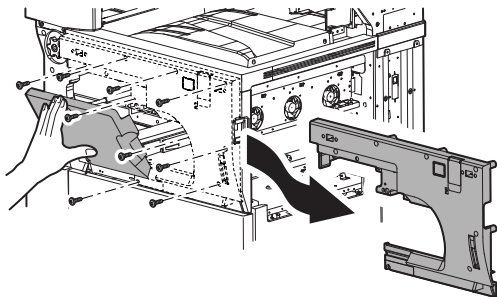
- 5) Remove the toner cartridge and the tone hopper unit. (See "9. Toner supply section")
- 6) Remove the developing unit. (See "10. Developing section")
- 7) Remove the process unit. (See "8. Photo-conductor section")
- 8) Remove the front cabinet upper.



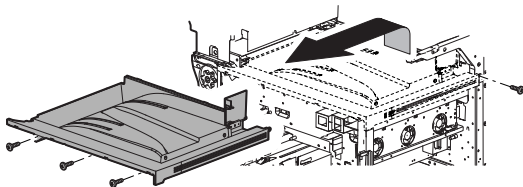
- 9) Remove the screw, and remove the operation base plate unit.



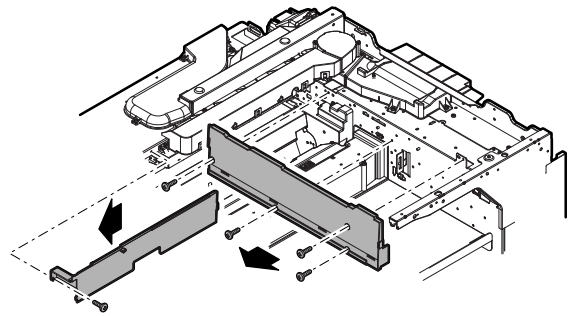
- 10) Raise the process DV cover diagonally, and remove the front cover right.



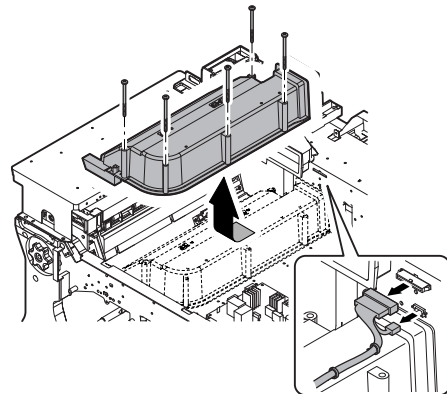
- 11) Remove the paper exit tray cabinet unit.



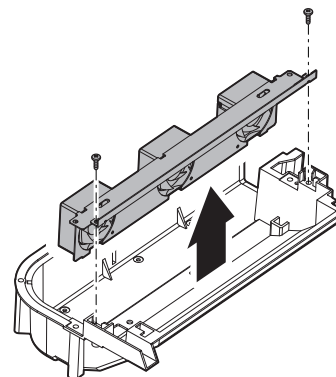
- 12) Remove the paper exit port cabinet, and remove the paper exit tray cabinet C.



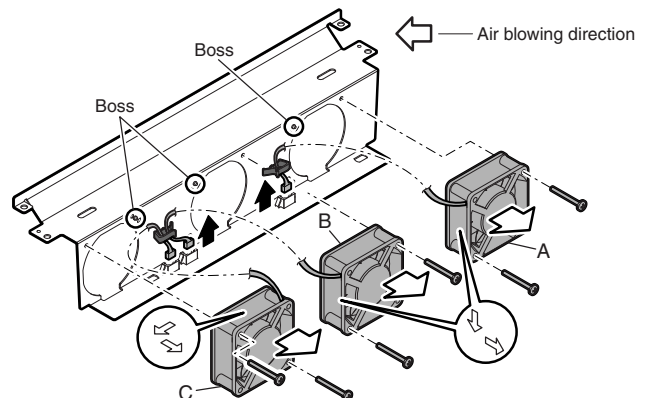
- 13) Disconnect the connector, and remove the main duct unit.



- 14) Remove the fan unit.



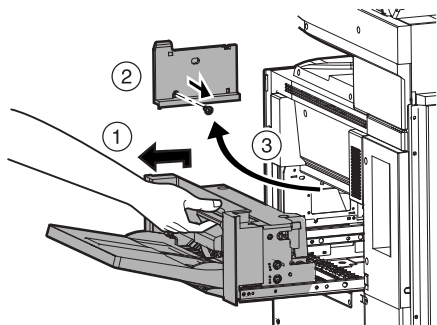
- 15) Disconnect the connector, and remove the process exhaust fan motors 1 (A), 2 (B), and 3 (C).



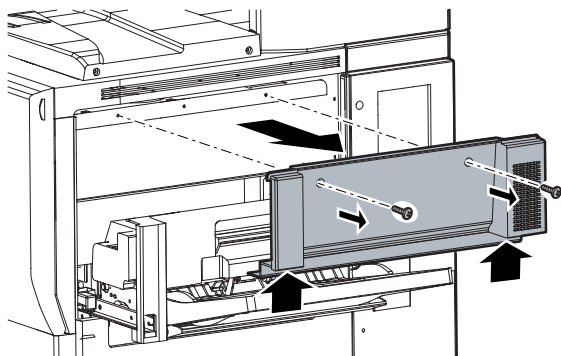
\* When installing, be careful of the fan direction and be careful not to cover the boss.

## G. Process cooling fan motor 1/2/3

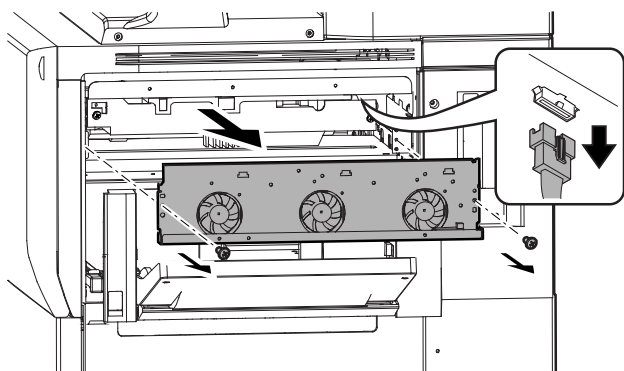
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



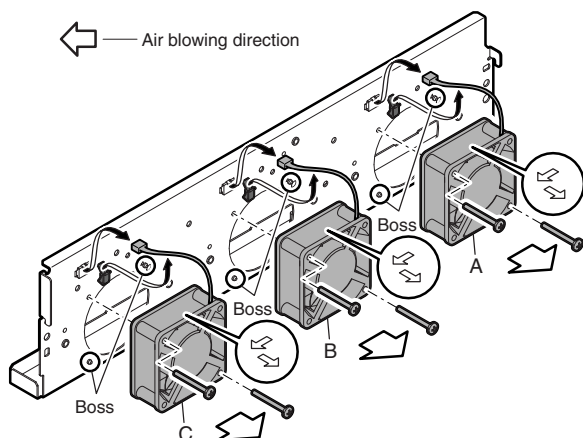
- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



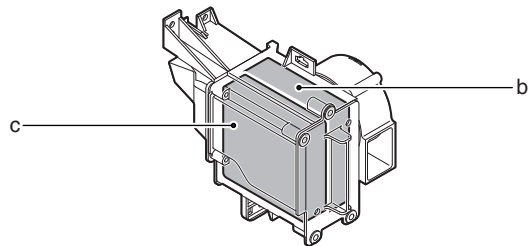
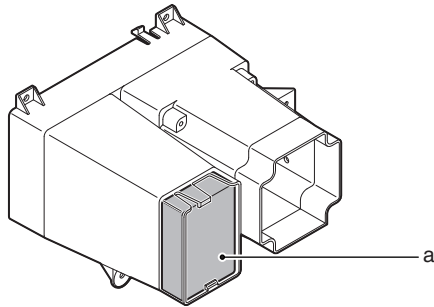
- 4) Disconnect the connector, and remove the process cooling fan motors 1 (A), 2 (B), and 3 (C).



\* When installing, be careful of the fan direction and be careful not to cover the boss.

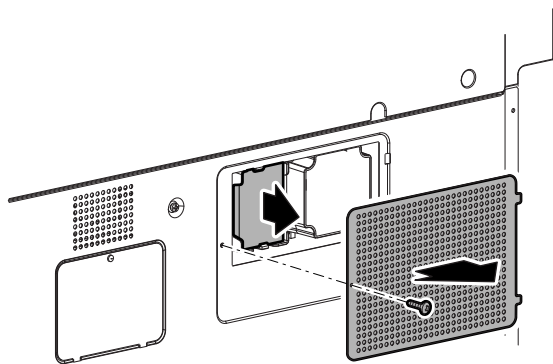
## 17. Filter section

No.	Parts	Maintenance
a	Ozone filter	▲
b	DV ozone filter	▲
c	Toner filter	▲



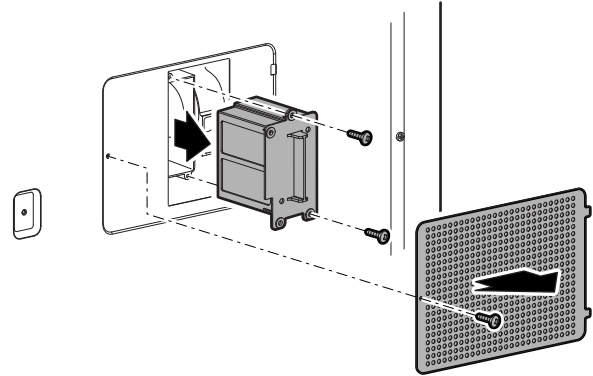
### A. Ozone filter

- 1) Remove the screw, and remove the filter cover. Remove the ozone filter.

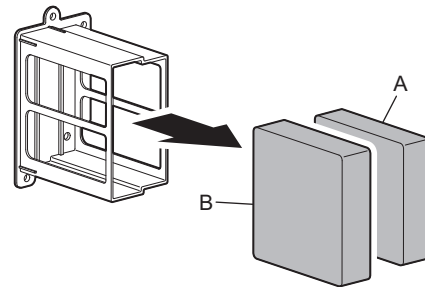


### B. DV ozone filter/Toner filter

- 1) Remove the screw, and remove the filter cover. Remove the screw, and remove the DV filter box.



- 2) Remove the DV ozone filter (A) and the toner filter (B).



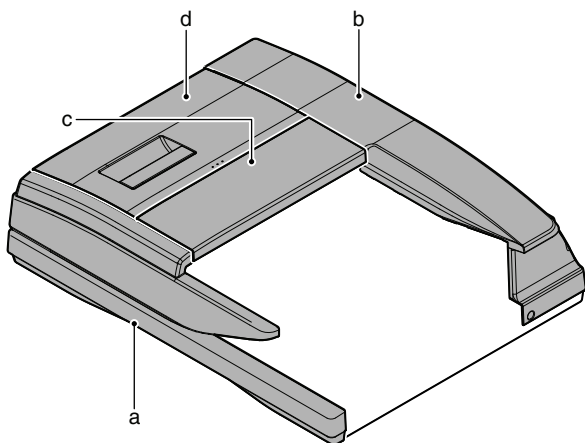


## 18. Automatic document feeder

Section	
A	Exterior section
B	Paper feed section
C	Upper transport section
D	Lower transport section
E	Optical section
F	Paper exit section
G	Drive section
H	Others

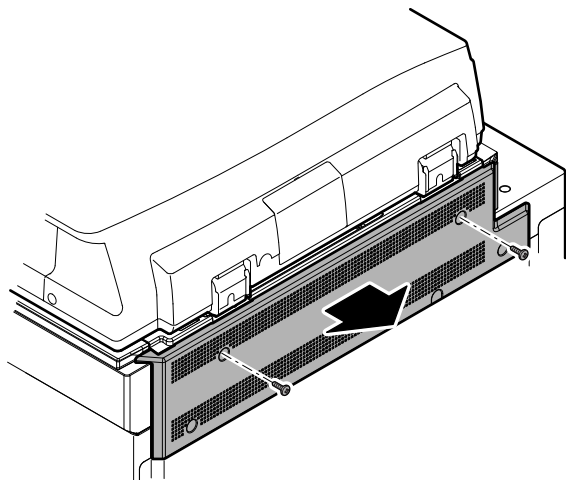
### A. Exterior section

Unit	Parts
1 DSPF unit	a Front cabinet
	b Rear cabinet
	c Paper feed cover
	d Upper door

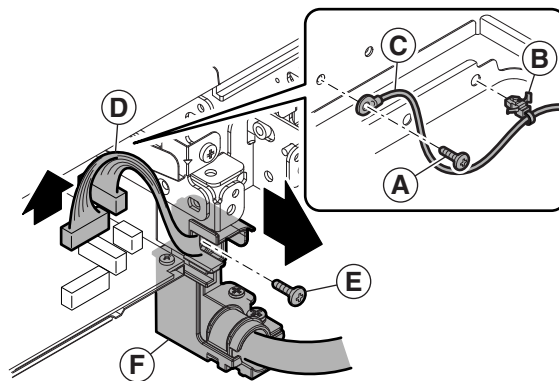


#### (1) DSPF unit

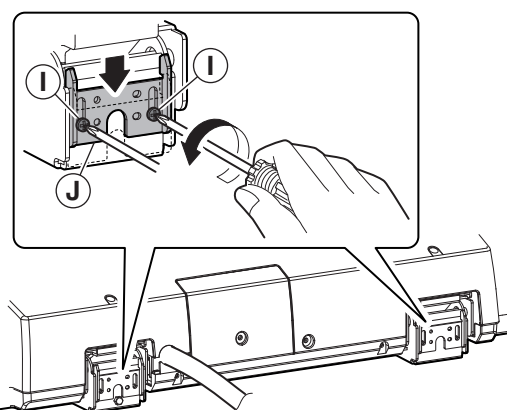
- 1) Remove the screw, and remove the rear cabinet upper.



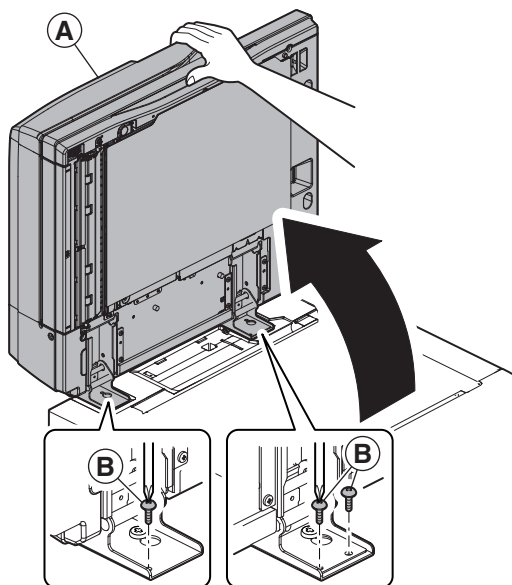
- 2) Remove the screw (A) and the snap band, and remove the earth wire (C). Disconnect the connector (D). Remove the screw (E), and remove the cable holder (F).



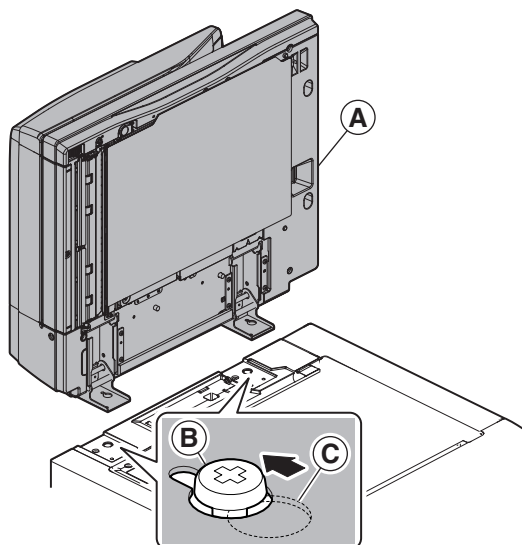
- 3) Loosen the screws (I), and lower the angle adjustment plate (J).



- 4) Open the DSPF unit (A) to put it straight up, and remove the screws (B).

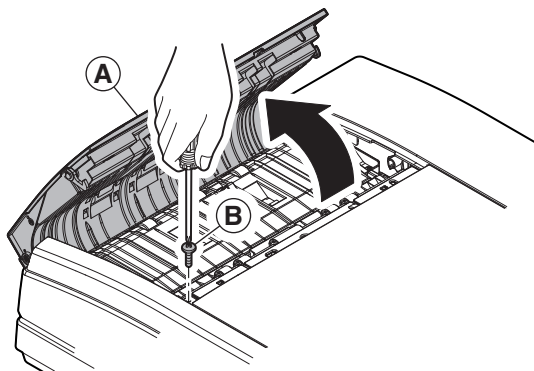


- 5) Slide the DSPF unit (A) to the rear side, and fit the step screw (B) with the key hole (C) of the hinge, and lift it up to remove.

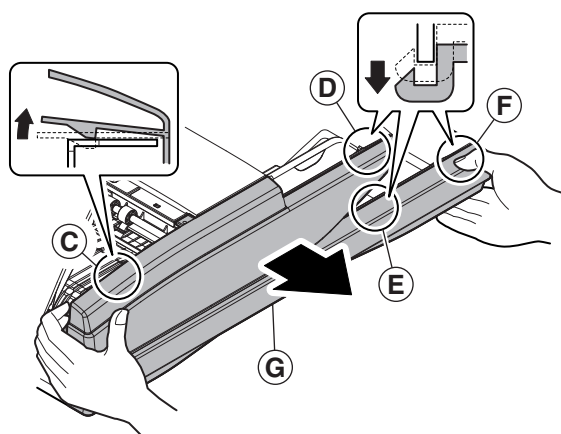


#### a. Front cabinet

- 1) Open the upper door (A), and remove the screw (B).

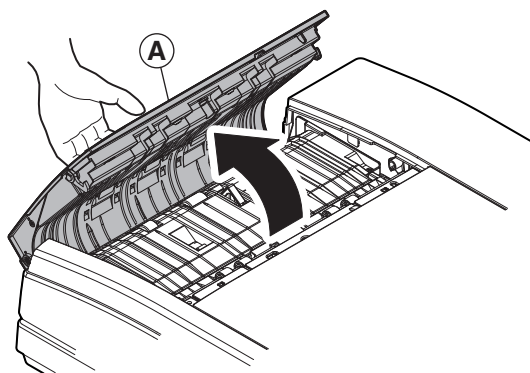


- 2) Disengage the pawls (C, D, E, F), and remove the front cabinet (G).

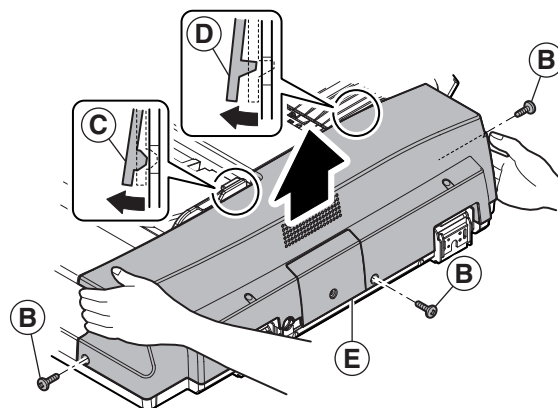


#### b. Rear cabinet

- 1) Open the upper door (A).

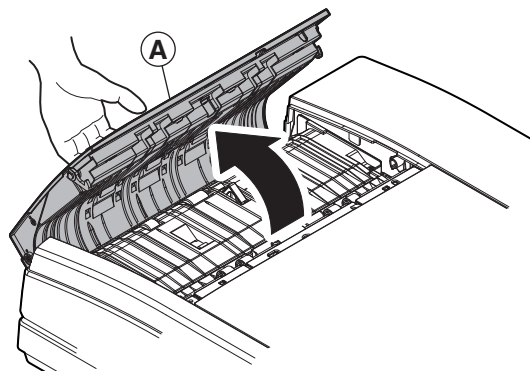


- 2) Remove the screws (B). Disengage the pawls (C, D), and remove the rear cabinet (E).

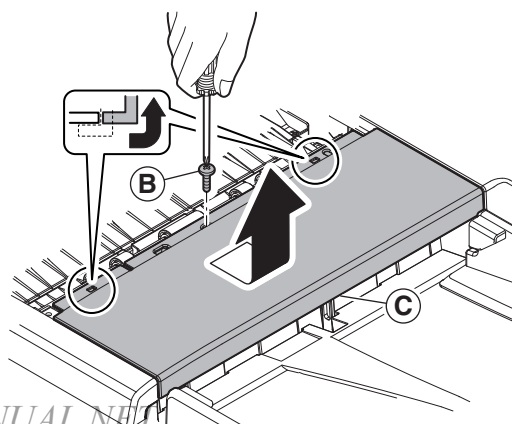


#### c. Paper feed cover

- 1) Open the upper door (A).



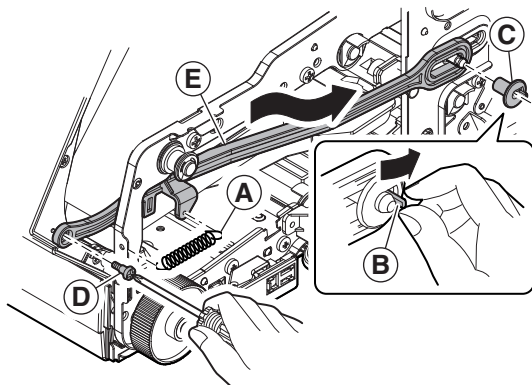
- 2) Remove the screw (B), and remove the paper feed cover (C).



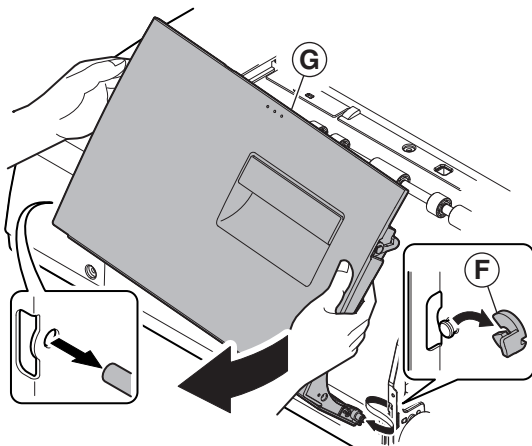


#### d. Upper door

- 1) Remove the front cabinet. (See "a. Front cabinet".)
- 2) Remove the spring (A). Disengage the pawl (B), and remove the pressure release axis holder (C). Remove the screw (D), and remove the pressure release link lever (E).



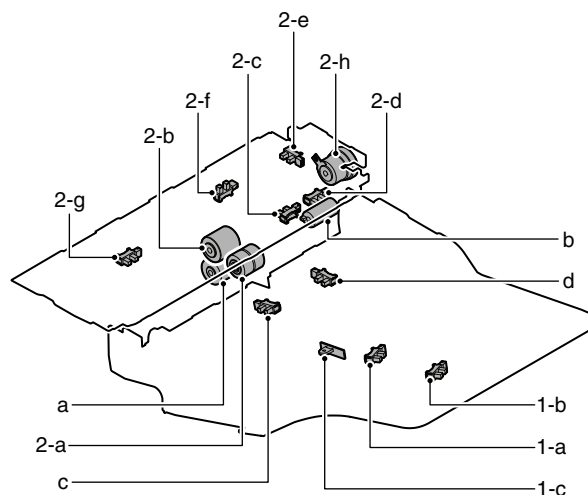
- 3) Remove the resin E-ring (F), and remove the upper door (G).



#### B. Paper feed section

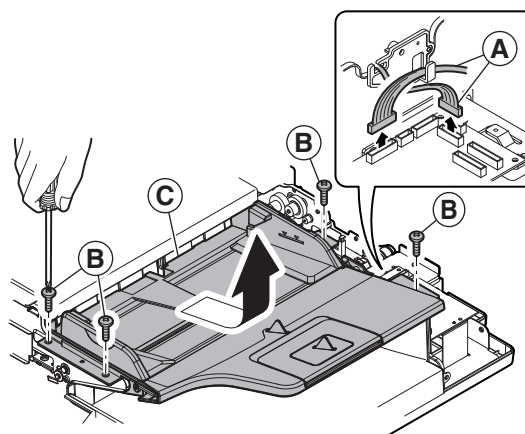
Unit		Parts	Maintenance
1	Paper feed tray unit	a DSPF document length detection short sensor	—
		b DSPF document length detection long sensor	—
		c DSPF document width sensor	—
2	Paper feed unit	a Pickup roller	○
		b Paper feed roller	○
		c DSPF paper feed tray upper limit sensor	—
		d DSPF document upper limit sensor	—
		e DSPF upper door open/close sensor	—
		f DSPF paper pass sensor 1	—
		g DSPF document random sensor	—
		h DSPF paper feed clutch	—

Parts		Maintenance
a	Separation roller	○
b	Torque limiter	×
c	DSPF paper feed tray lower limit sensor	—
d	DSPF document empty sensor	—



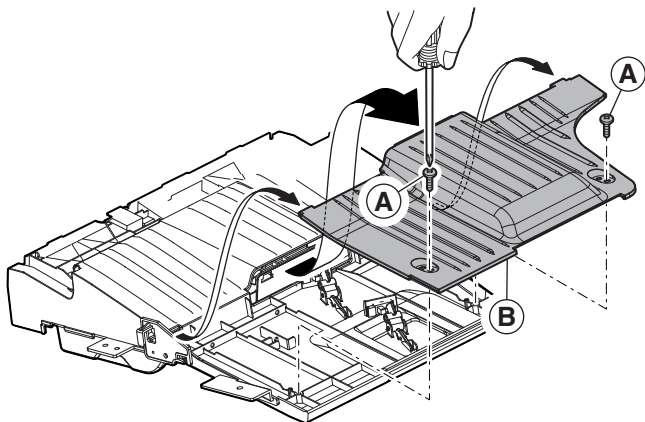
#### (1) Paper feed tray unit

- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A). Remove the screws (B), and remove the paper feed tray unit (C).

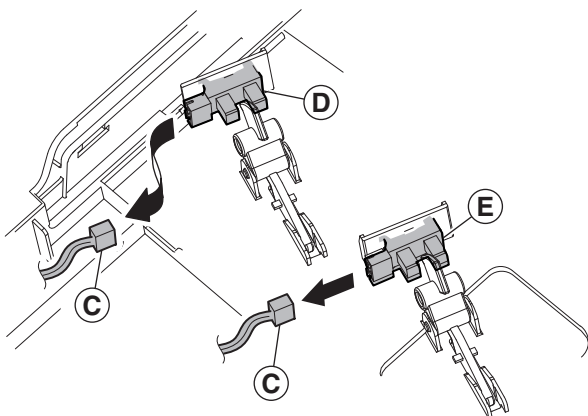


**a. DSPF document length detection short sensor, DSPF document length detection long sensor**

- 1) Remove the front cabinet and the rear cabinet.  
(See "A. Exterior section".)
- 2) Remove the paper feed tray unit.  
(See "(1) Paper feed tray unit".)
- 3) Remove the screws (A), and remove the paper feed tray lower (B).

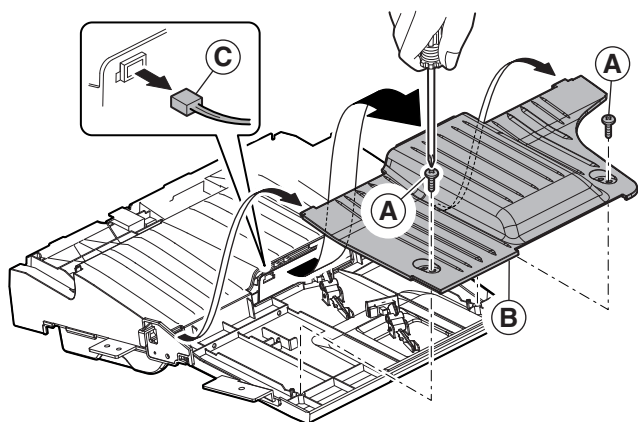


- 4) Disconnect the connectors (C), and remove the DSPF document length detection short sensor (D) and the DSPF document length detection long sensor (E).

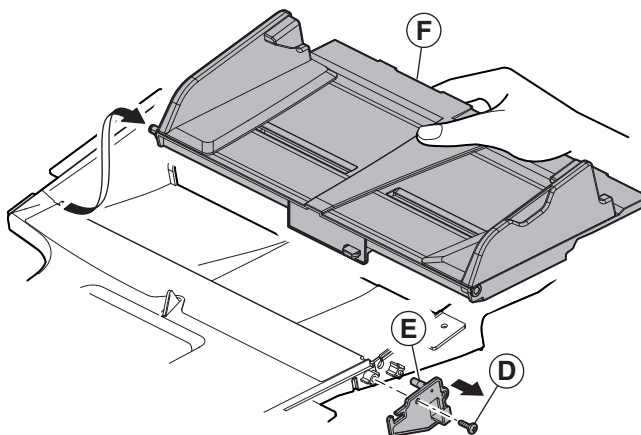


**b. DSPF document width sensor**

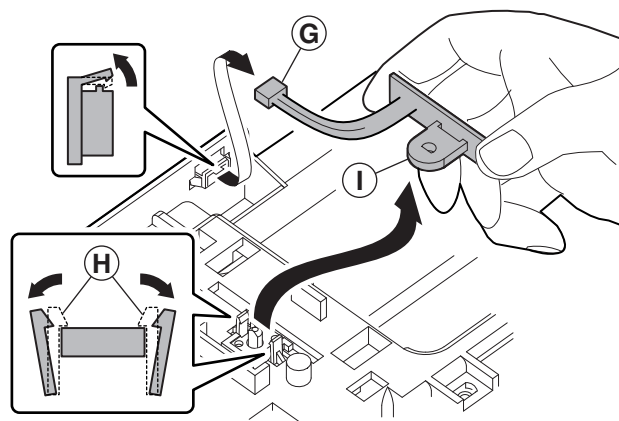
- 1) Remove the front cabinet and the rear cabinet.  
(See "A. Exterior section".)
- 2) Remove the paper feed tray unit.  
(See "(1) Paper feed tray unit".)
- 3) Remove the screws (A), and remove the paper feed tray lower (B). Disconnect the connector (C).



- 4) Remove the screw (D), and remove the rotation tray shaft (E). Remove the paper feed rotation tray (F).

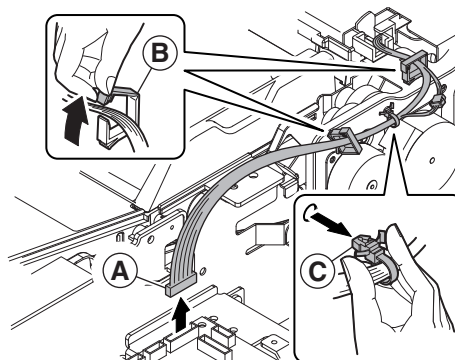


- 5) Disconnect the connector (G). Disengage the pawl (H), and remove the DSPF document width sensor (I).

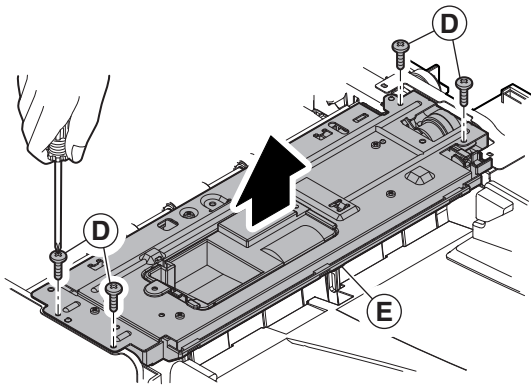


**(2) Paper feed unit**

- 1) Remove the front cabinet, the rear cabinet, and the paper feed cover. (See "A. Exterior section".)
- 2) Disconnect the connector (A). Open the wire saddle (B). Remove the snap band (C).

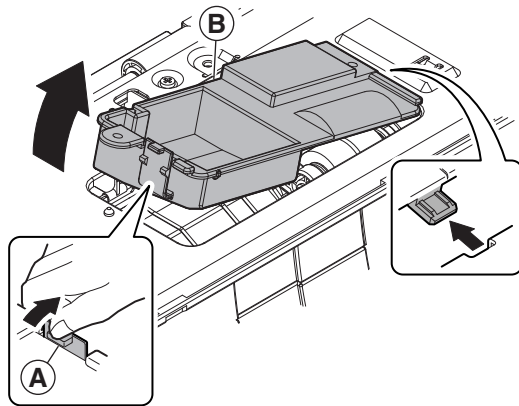


- 3) Remove the screws (D), and remove the paper feed unit (E).

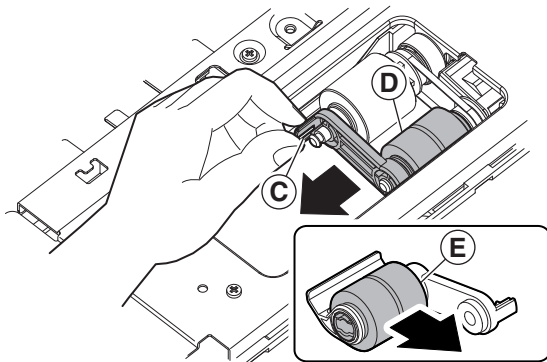


**a. Pickup roller, paper feed roller**

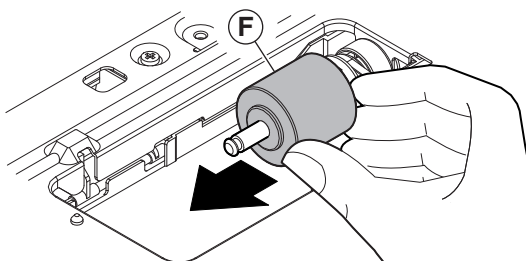
- 1) Remove the paper feed cover. (See "A. Exterior section".)
- 2) Disengage the pawl (A), and remove the paper feed PG upper cover (B).



- 3) Disengage the pawl (C), and remove the pickup roller holder (D). Remove the pickup roller (E) from the pickup roller holder (D).

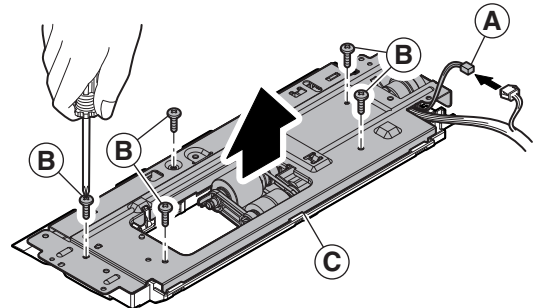


- 4) Remove the paper feed roller (F).

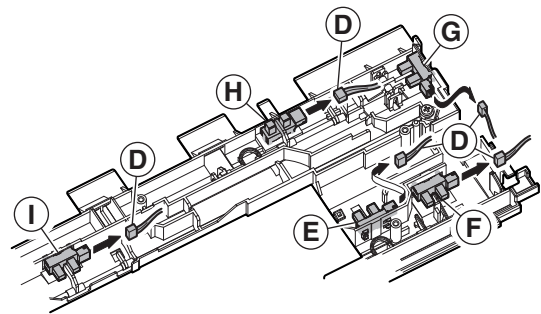


**b. DSPF paper feed tray upper limit sensor, DSPF document upper limit sensor, DSPF upper door open/close sensor, DSPF paper pass sensor 1, DSPF document random sensor**

- 1) Remove the front cabinet and the rear cabinet and the paper feed cover. (See "A. Exterior section".)
- 2) Remove the paper feed unit. (See "(2) Paper feed unit".)
- 3) Disconnect the connector (A). Remove the screws (B), and remove the paper feed PG upper supporting plate (C).

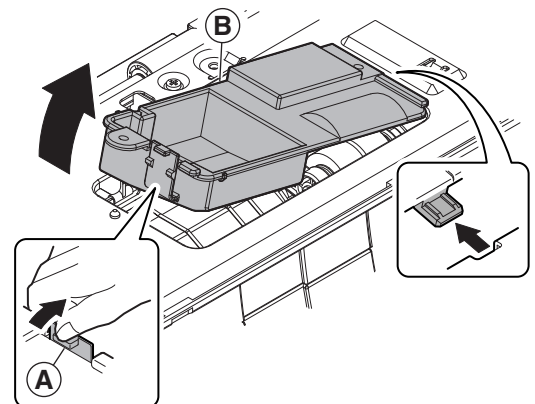


- 4) Disconnect the connectors (D), and remove the DSPF paper feed tray upper limit sensor (E), the DSPF document upper limit sensor (F), the DSPF upper door open/close sensor (G), the DSPF paper pass sensor 1 (H), and the DSPF document random sensor (I).

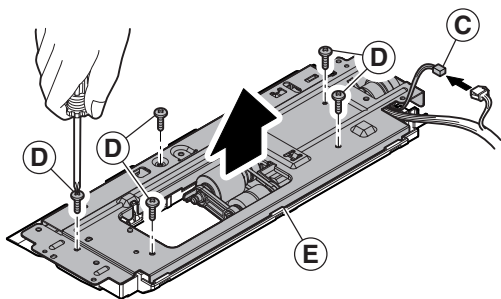


**c. DSPF paper feed clutch**

- 1) Remove the front cabinet and the rear cabinet and the paper feed cover. (See "A. Exterior section".)
- 2) Remove the paper feed unit. (See "(2) Paper feed unit".)
- 3) Disengage the pawl (A), and remove the paper feed PG upper cover (B).

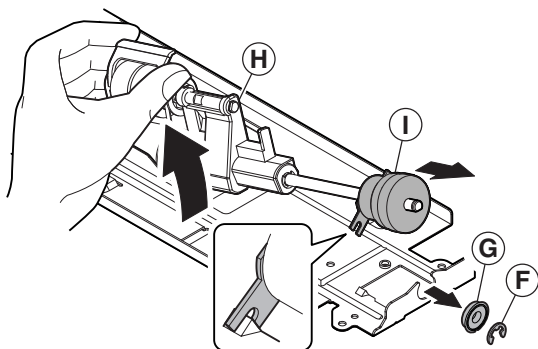


- 4) Disconnect the connector (C). Remove the screws (D), and remove the paper feed PG upper supporting plate (E).



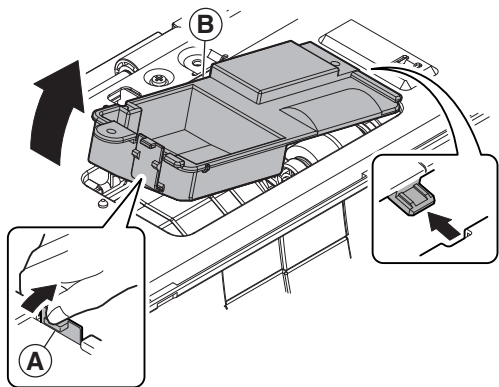
- 5) Remove the E-ring (F) and the bearing (G). Lift the paper feed roller shaft (H) diagonally, and remove the DSPF paper feed clutch (I).

\* When installing, check to insure that the clutch rotation stopper is engaged with the plate.

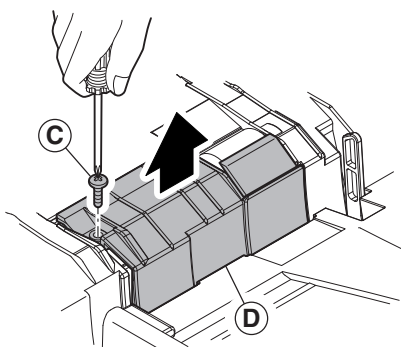


### (3) Separation roller

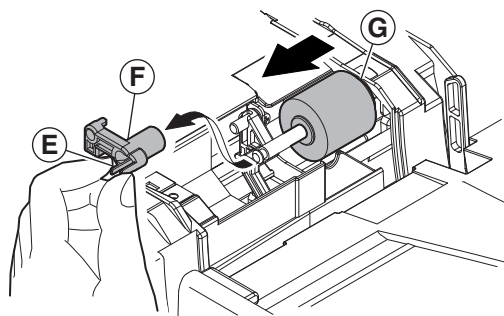
- 1) Remove the paper feed cover. (See "A. Exterior section".)
- 2) Disengage the pawl (A), and remove the paper feed PG upper cover (B).



- 3) Remove the screw (C), and remove the paper feed PG lower cover (D).

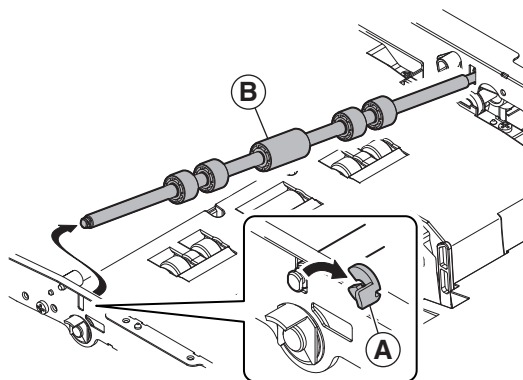


- 4) Disengage the pawl (E), and remove the reverse pressure release lever (F). Remove the separation roller (G).

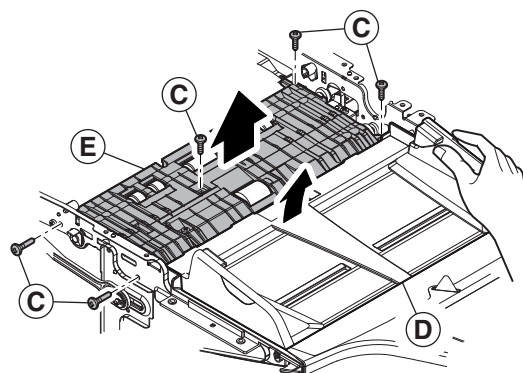


### (4) Torque limiter

- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the paper feed unit. (See "(2) Paper feed unit".)
- 3) Remove the DSPF No.1 resist roller brake clutch, and remove the DSPF No.1 resist roller clutch. (See "C. Upper transport section")
- 4) Remove the drive unit. (See "G. Drive section".)
- 5) Remove the resin E-ring (A), and remove the No.1 resist roller (idle) (B).

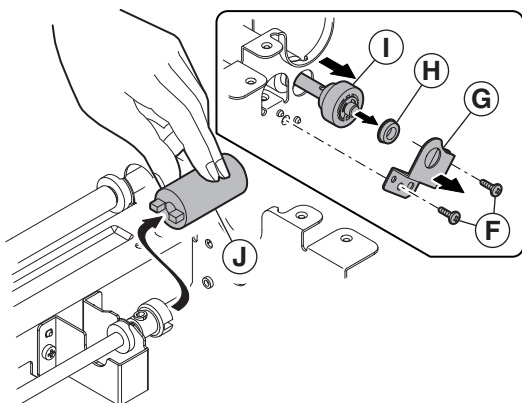


- 6) Remove the screws (C). Lift the paper feed rotation tray (D), and remove the paper feed PG lower (E).



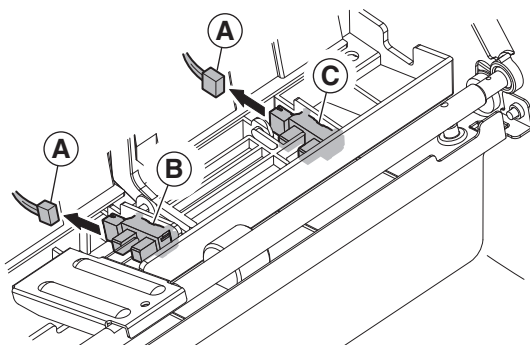


- 7) Remove the screws (F), and remove the separation roller supporting plate (G) and the bearing (H). Remove the roller shaft (I), and remove the torque limiter (J).



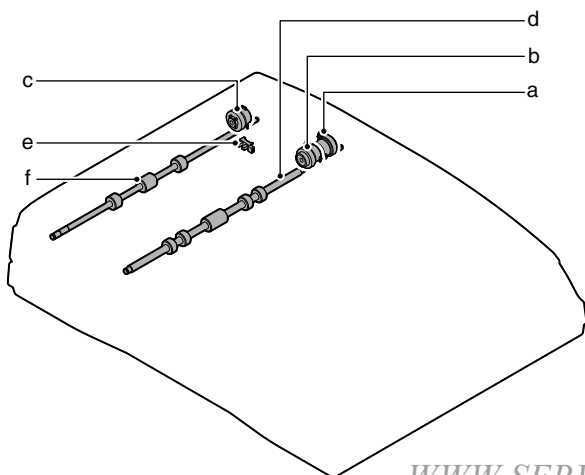
#### (5) DSPF paper feed tray lower limit sensor, DSPF document empty sensor

- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the paper feed tray unit. (See "(1) Paper feed tray unit".)
- 3) Disconnect the connectors (A), and remove the DSPF paper feed tray lower limit sensor (B) and the DSPF document empty sensor (C).



### C. Upper transport section

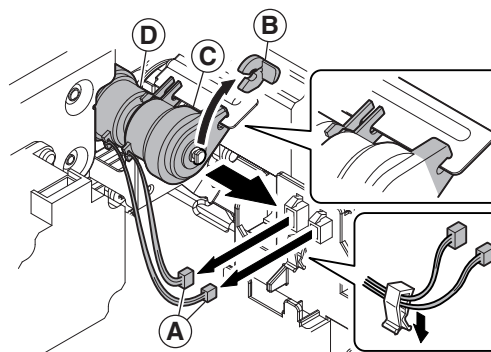
Parts		Maintenance
a	DSPF No.1 resist roller brake clutch	—
b	DSPF No.1 resist roller clutch	—
c	DSPF transport roller clutch	—
d	No.1 resist roller (Drive)	○
e	DSPF paper pass sensor 2	—
f	Transport roller 1 (Drive)	○



#### (1) DSPF No.1 resist roller brake clutch, DSPF No.1 resist roller clutch

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connectors (A). Remove the resin E-ring (B), and remove the DSPF No.1 resist roller brake clutch (C) and the DSPF No.1 resist roller clutch (D).

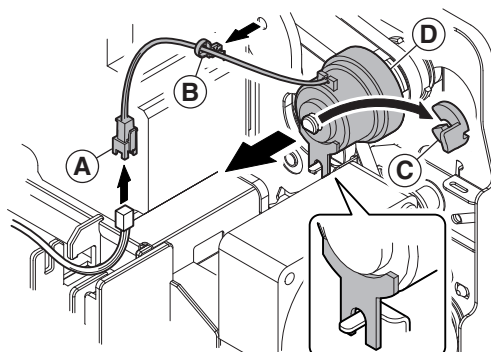
\* When installing, check to insure that the clutch rotation stopper is engaged with the plate.



#### (2) DSPF transport roller clutch

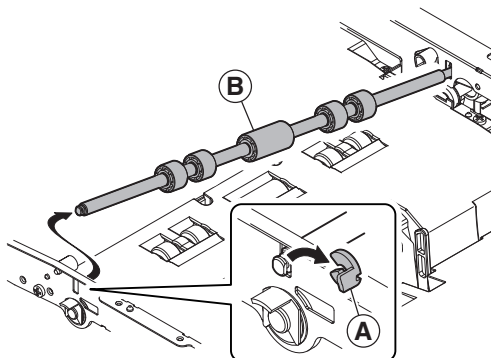
- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A), and remove the snap band (B). Remove the resin E-ring (C), and remove the DSPF transport roller clutch (D).

\* When installing, check to insure that the clutch rotation stopper is engaged with the plate.

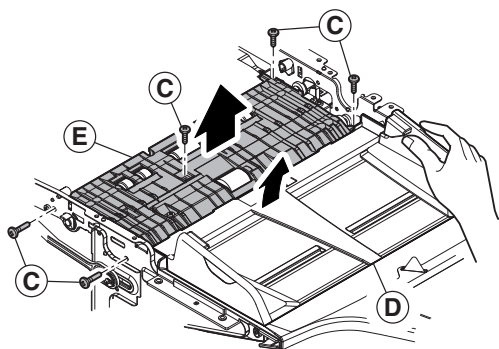


#### (3) No.1 resist roller (Drive)

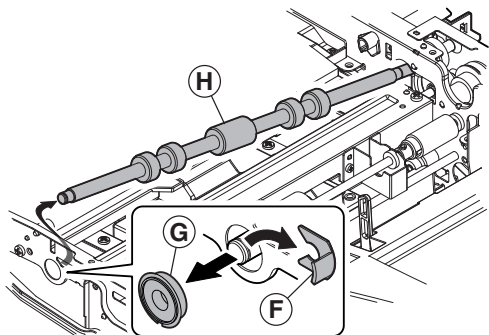
- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the paper feed unit. (See "B. Paper feed section".)
- 3) Remove the DSPF No.1 resist roller brake clutch, and remove the DSPF No.1 resist roller clutch. (See "(1) DSPF No.1 resist roller brake clutch, DSPF No.1 resist roller clutch".)
- 4) Remove the resin E-ring (A), and remove the No.1 resist roller (idle) (B).



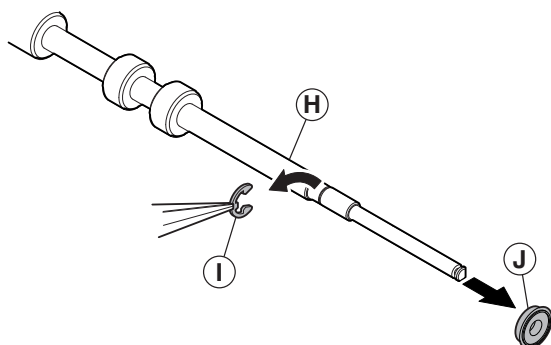
- 5) Remove the screws (C), lift the paper feed rotation tray (D), and remove the paper feed PG lower (E).



- 6) Remove the resin E-ring (F) and the bearing (G), and remove the No.1 resist roller (drive) (H).

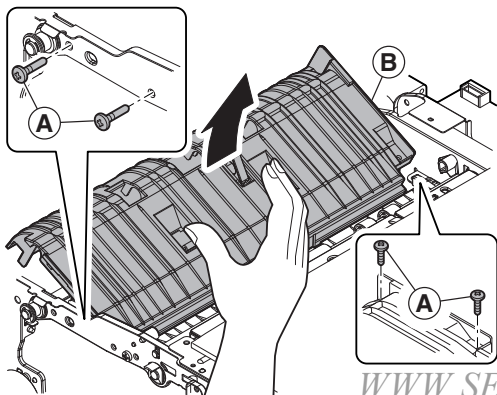


- 7) Remove the E-ring (I) and the bearing (J) from the No.1 resist roller (drive) (H).

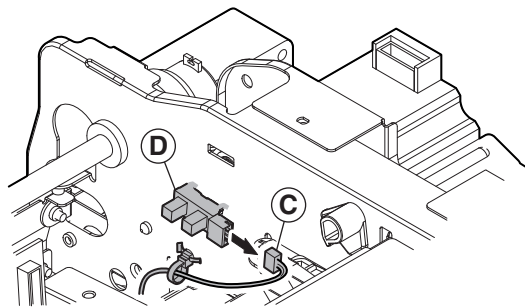


#### (4) DSPF paper pass sensor 2, Transport roller 1 (drive)

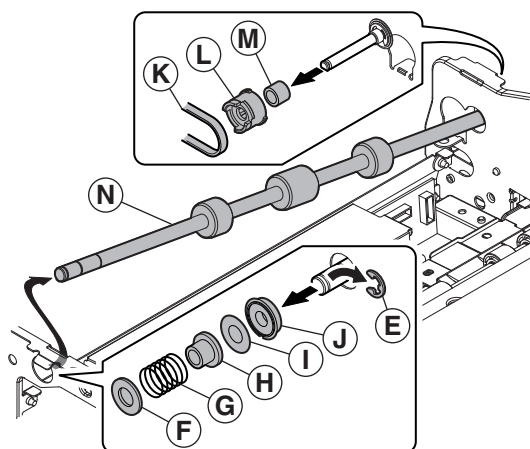
- 1) Remove the front cabinet and the rear cabinet.  
(See "A. Exterior section".)
- 2) Remove the screws (A), and remove the transport PG upper (B).



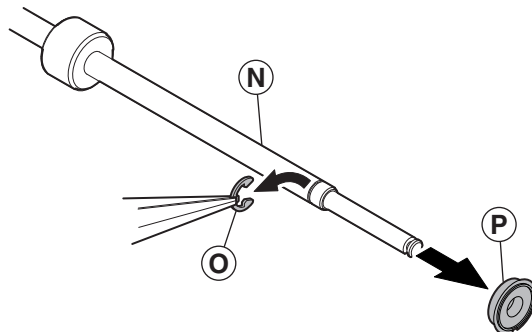
- 3) Disconnect the connector (C), and remove the DSPF paper pass sensor 2 (D).



- 4) Remove the DSPF transport roller clutch.  
(See "(2) DSPF transport roller clutch".)
- 5) Remove the E-ring (E), the washer (F), the spring (G), the collar (H), the polyslider (I), and the bearing (J). Remove the belt (K), the pulley (L), and the bearing (M), and remove the transport roller 1 (drive) (N).

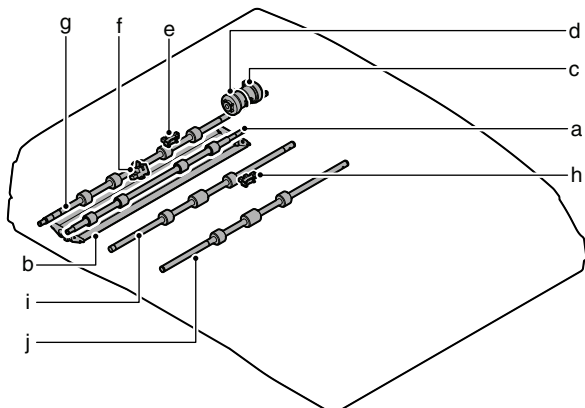


- 6) Remove the E-ring (O) and the bearing (P) from the transport roller 1 (drive) (N).



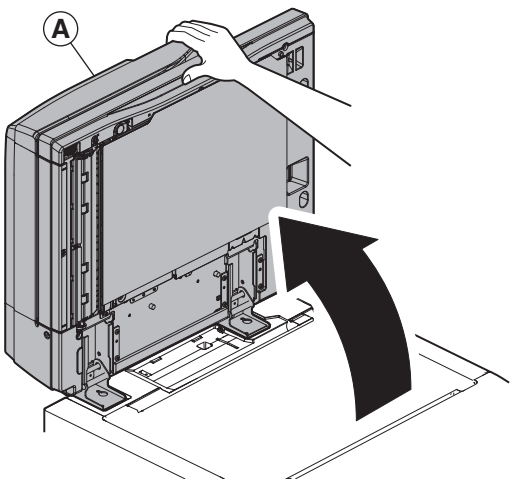
## D. Lower transport section

Parts		Maintenance
a	Platen roller	○
b	No. 1 scanning plate	○
c	DSPF No.2 resist roller brake clutch	—
d	DSPF No.2 resist roller clutch	—
e	DSPF paper pass sensor 3	—
f	DSPF paper pass sensor 4	—
g	No.2 resist roller (Drive)	○
h	DSPF paper pass sensor 5	—
i	Transport roller 2 (Drive)	○
j	Transport roller 3 (Drive)	○

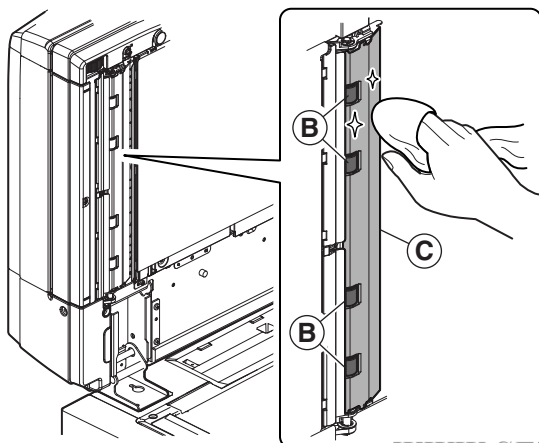


### (1) Platen roller, No.1 scanning plate

- 1) Open the DSPF unit (A).



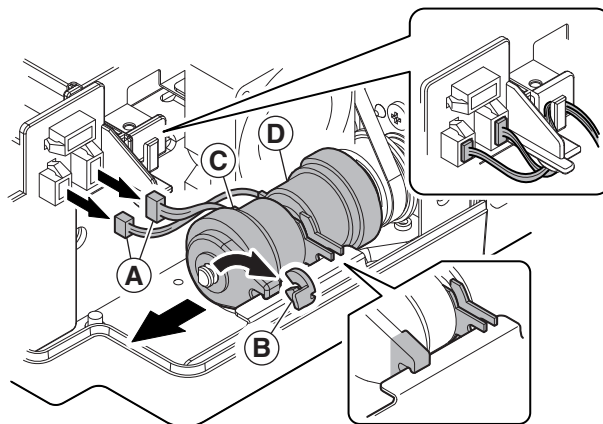
- 2) Clean the platen rollers (B) and the No.1 scanning plate (C).



### (2) DSPF No.2 resist roller brake clutch, DSPF No.2 resist roller clutch

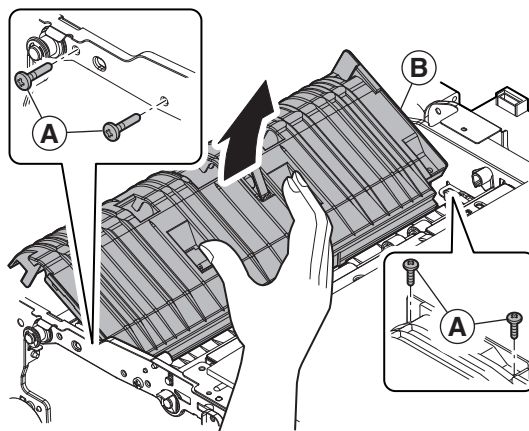
- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connectors (A). Remove the resin E-ring (B) and remove the DSPF No.2 resist roller brake clutch (C) and the DSPF No.2 resist roller clutch (D).

\* When installing, check to insure that the clutch rotation stopper is engaged with the plate.

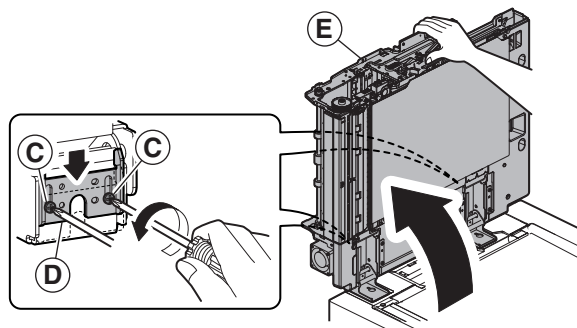


### (3) DSPF paper pass sensor 3, DSPF paper pass sensor 4, No.2 resist roller (Drive)

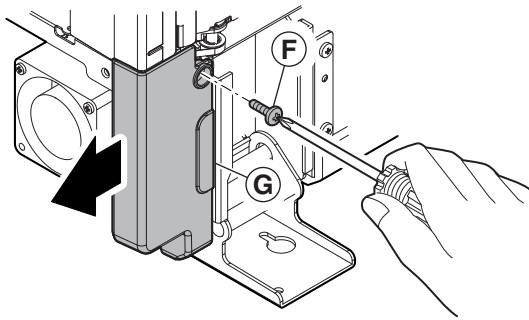
- 1) Remove the front cabinet and the rear cabinet and the upper door. (See "A. Exterior section".)
- 2) Remove the screws (A), and remove the transport PG upper (B).



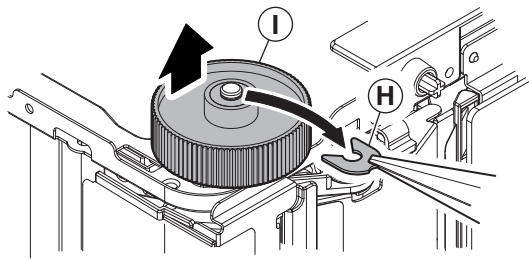
- 3) Loosen the screws (C), and lower the angle adjustment plate (D). Open the DSPF unit (E).



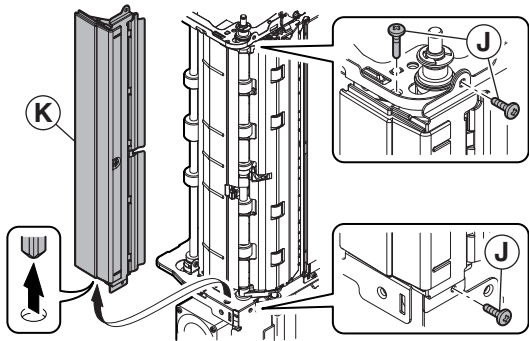
- 4) Remove the screw (F), and remove the left rear lower cabinet (G).



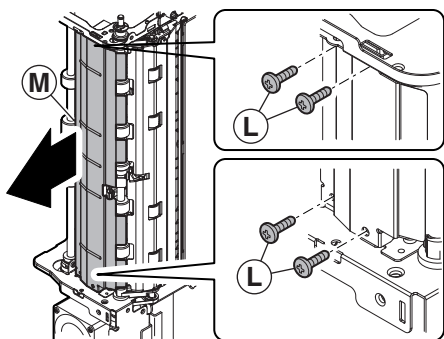
- 5) Remove the resin E-ring (H), and remove the PS knob (I).



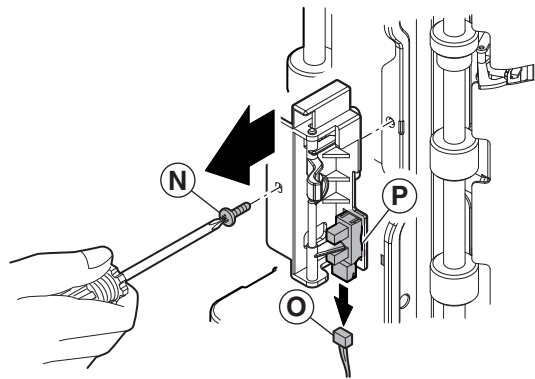
- 6) Remove the screws (J), and remove the PS outer PG (K).



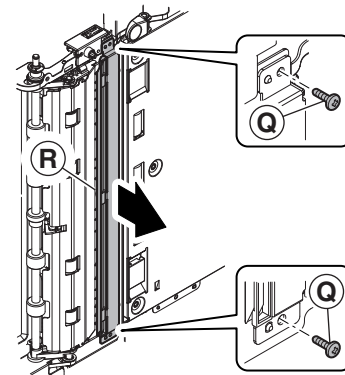
- 7) Remove the screws (L), and remove the PS front PG (M).



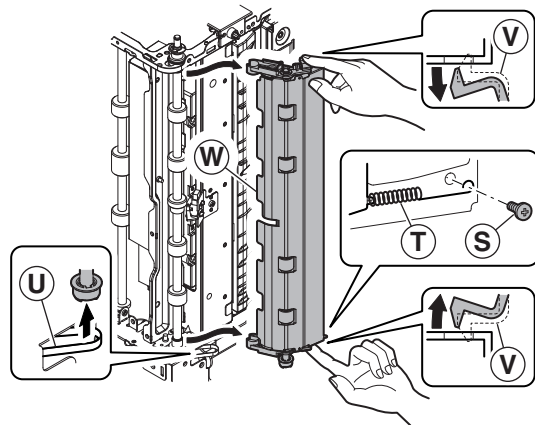
- 8) Remove the screw (N), and disconnect the connector (O), and remove the DSPF paper pass sensor 3 (P).



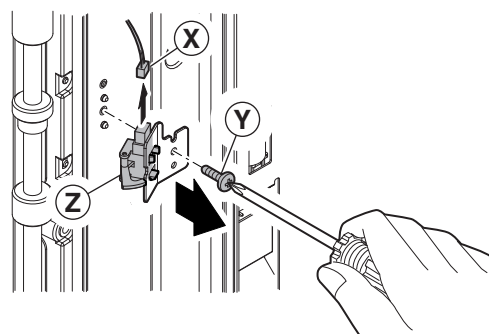
- 9) Remove the screws (Q), and remove the lift up PG (R).



- 10) Remove the screw (S), and remove the spring (T). Remove the belt (U), and disengage the pawls (V), and remove the platen roller (W).

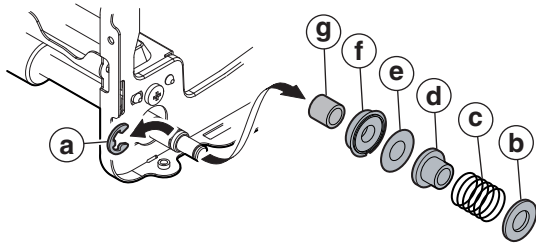


- 11) Disconnect the connector (X) and remove the screw (Y). Remove the DSPF paper pass sensor 4 (Z).

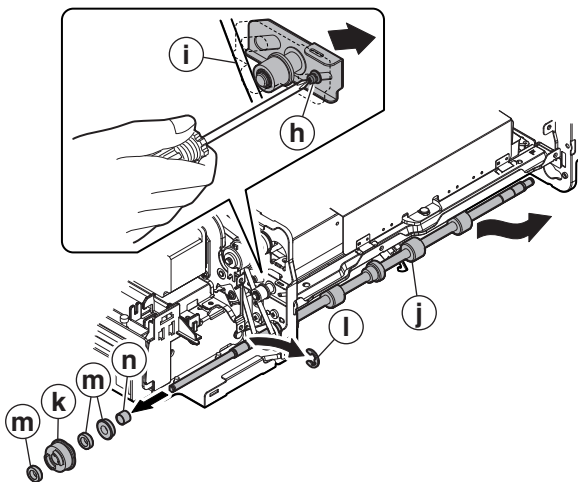




- 12) Remove the DSPF No.2 resist roller brake clutch and the DSPF No.2 resist roller clutch. (See "(2) DSPF No.2 resist roller brake clutch, DSPF No.2 resist roller clutch".)
- 13) Remove the DSPF cooling fan motor. (See "G. Drive section".)
- 14) Remove the E-ring (a), the washer (b), the spring (c), the collar (d), the polyslider (e), the bearing (f), and the bearing (g).

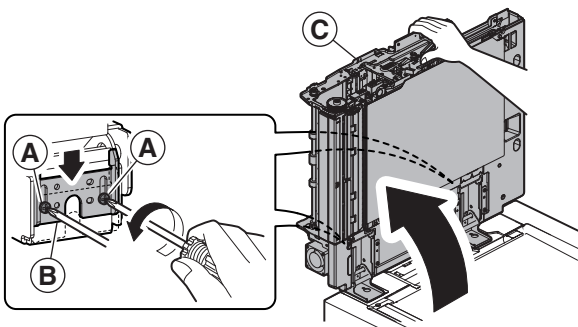


- 15) Loosen the screw (h). Loosen the belt (i) tension. Tighten the screw (h). Slide the No.2 resist roller (drive) (j). Remove the pulley (k), the E-ring (l), the bearing (m), and the bearing (n). Remove the No.2 resist roller (drive) (j).

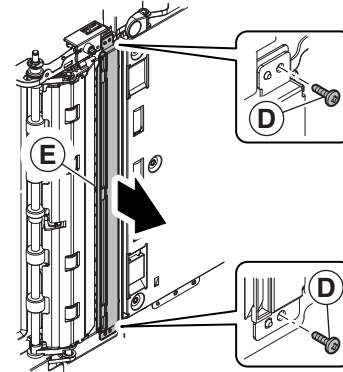


#### (4) DSPF paper pass sensor 5, Transport roller 2 (Drive)

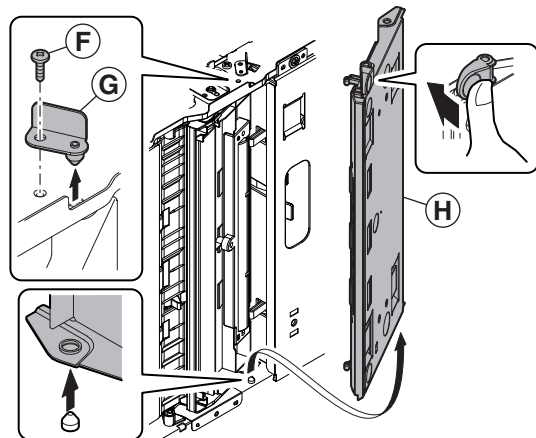
- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Loosen the screw (A), and lower the angle adjustment plate (B). Open the DSPF unit (C).



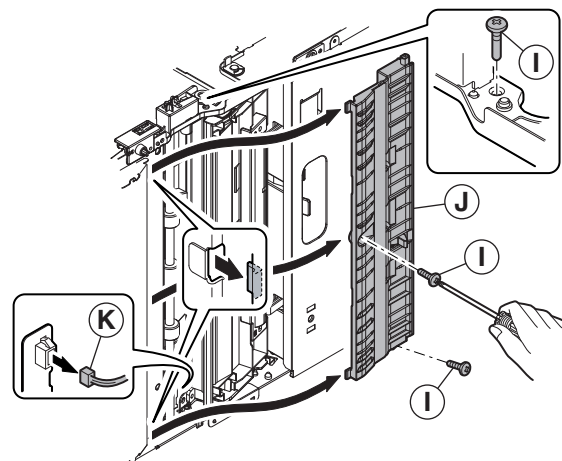
- 4) Remove the screws (D), and remove the lift up PG (E).



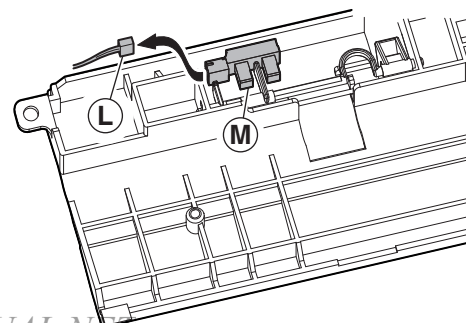
- 5) Remove the screw (F), and remove the intersecting point plate (G). Remove the lower door (H).



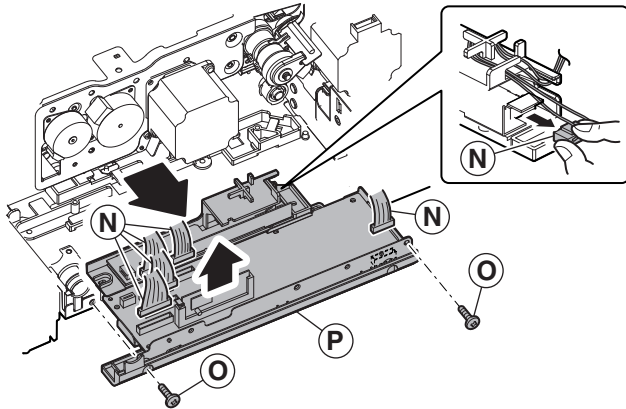
- 6) Remove the screws (I). Remove the transport PG lower (J). Disconnect the connector (K).



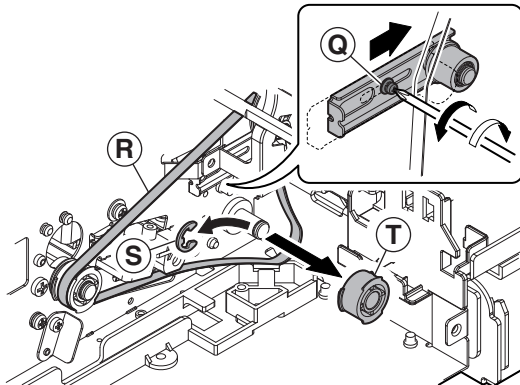
- 7) Disconnect the connector (L), and remove the DSPF paper pass sensor 5 (M).



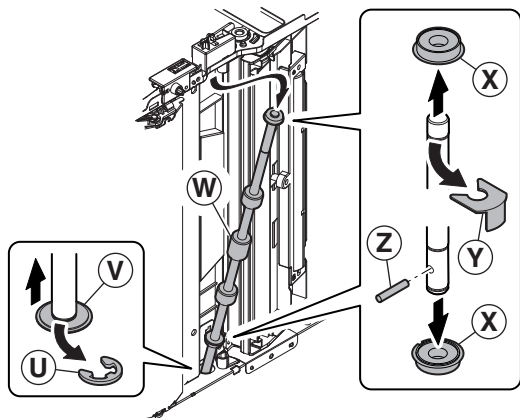
- 8) Remove the DSPF No.1 resist roller brake clutch and remove the DSPF No.1 resist roller clutch. (See "C. Upper transport section".)
- 9) Remove the drive unit. (See "G. Drive section".)
- 10) Disconnect the connectors (N). Remove the screws (O), and remove the control PWB unit (P).



- 11) Loosen the screw (Q), and loosen the belt (R) tension. Tighten the screw (Q). Remove the belt (R). Remove the E-ring (S) and the pulley (T).

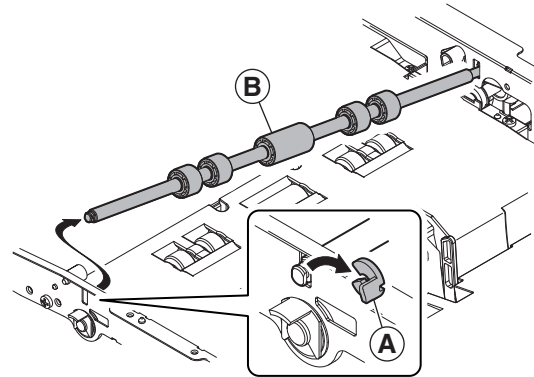


- 12) Remove the E-ring (U). Slide the bearing (V). Remove the transport roller 2 (drive) (W). Remove the bearing (X), the resin E-ring (Y), and the spring pin (Z) from the transport roller 2 (drive) (W).

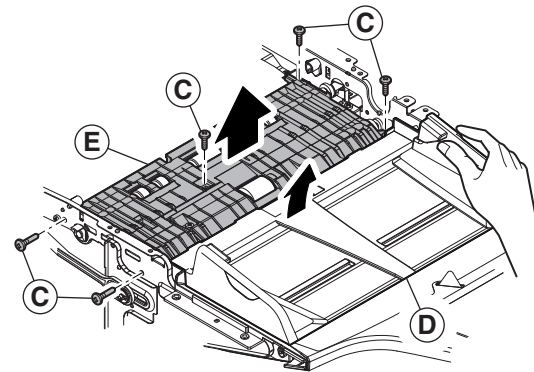


## (5) Transport roller 3 (drive)

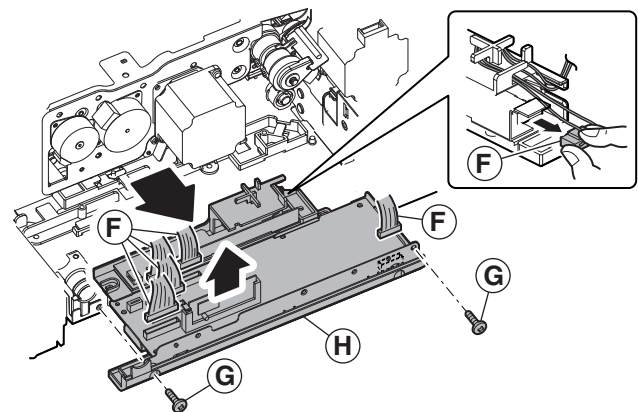
- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the paper feed unit. (See "B. Paper feed section".)
- 3) Remove the DSPF No.1 resist roller brake clutch and remove the DSPF No.1 resist roller clutch. (See "C. Upper transport section".)
- 4) Remove the drive unit. (See "G. Drive section".)
- 5) Remove the resin E-ring (A), and remove the No.1 resist roller (idle) (B).



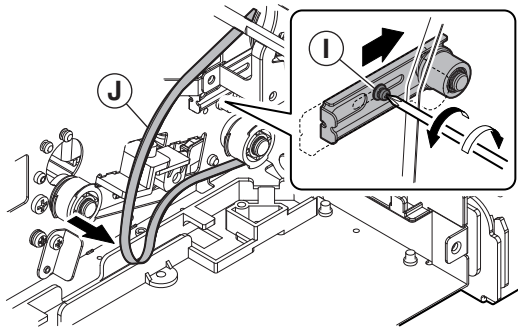
- 6) Remove the screws (C). Lift the paper feed rotation tray (D), and remove the paper feed PG lower (E).



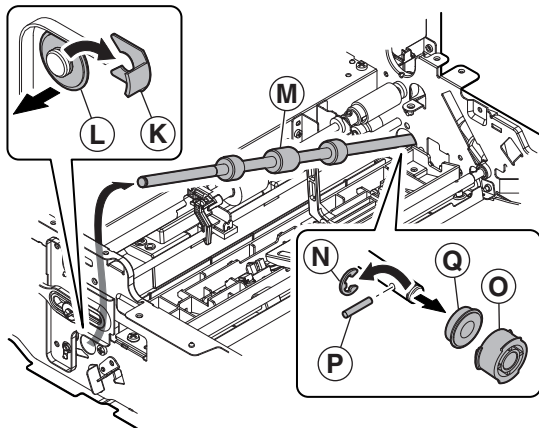
- 7) Disconnect the connector (F). Remove the screws (G), and remove the control PWB unit (H).



- 8) Loosen the screw (I), and loosen the belt (J) tension. Tighten the screw (I). Remove the belt (J).



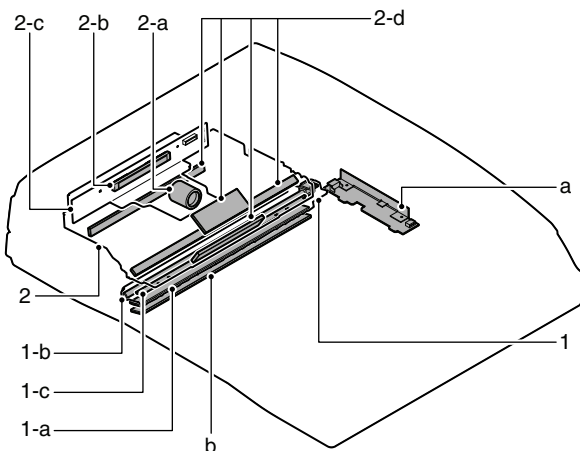
- 9) Remove the resin E-ring (K) and the bearing (L). Remove the transport roller 3 (drive) (M). Remove the E-ring (N), the pulley (O), the spring pin (P), and the bearing (Q) from the transport roller 3 (drive) (M).



## E. Optical section

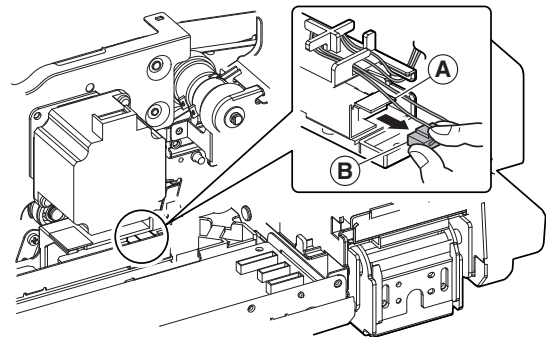
Unit	Parts	Maintenance
1 Lamp unit	a Scanning glass	○
	b DSPF copy lamp	○
	c Reflector	○
2 Optical unit	a Lens	○
	b CCD	○
	c CCD unit	—
	d Mirror	×

Parts	Maintenance
a DSPF CL inverter PWB	—
b White reference glass	○

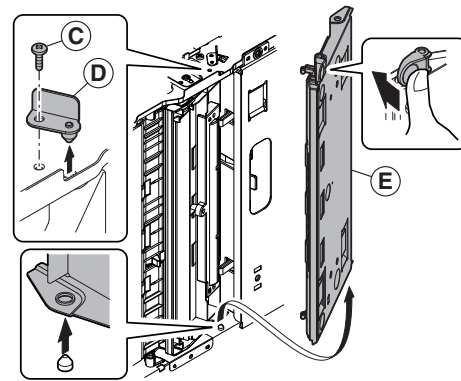


## (1) Lamp unit

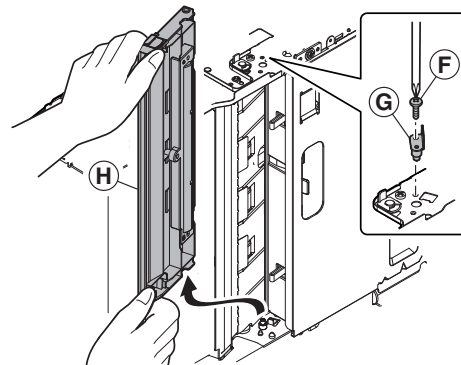
- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Disconnect the connector (B) from DSPF CL inverter PWB (A).



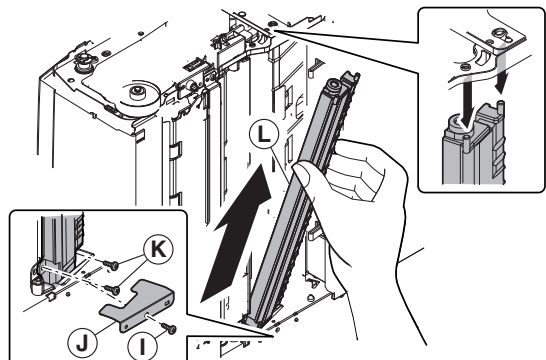
- 4) Remove the screw (C), and remove the intersecting point plate (D). Remove the lower door (E).



- 5) Remove the screw (F), and remove the intersecting point plate (G). Remove the white reference plate (H).

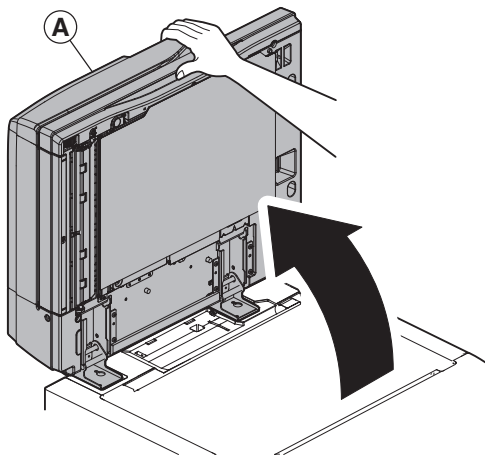


- 6) Remove the screw (I), and remove the scanning section cover (J). Remove the screws (K), and remove the lamp unit (L).

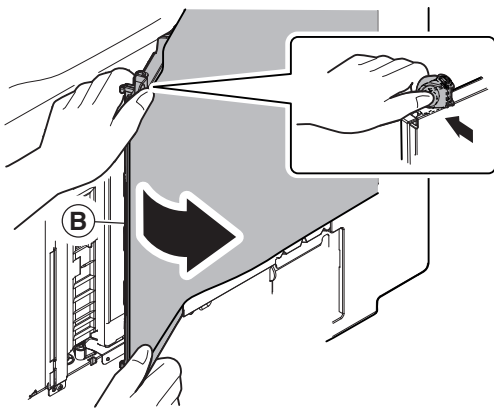


**a. Scanning glass, DSPF copy lamp, Reflector**

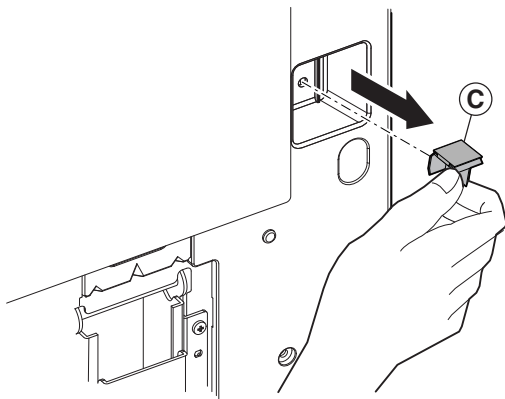
- 1) Open the DSPF unit (A).



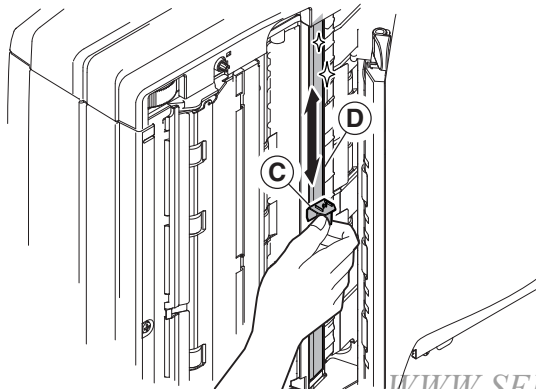
- 2) Open the lower door (B).



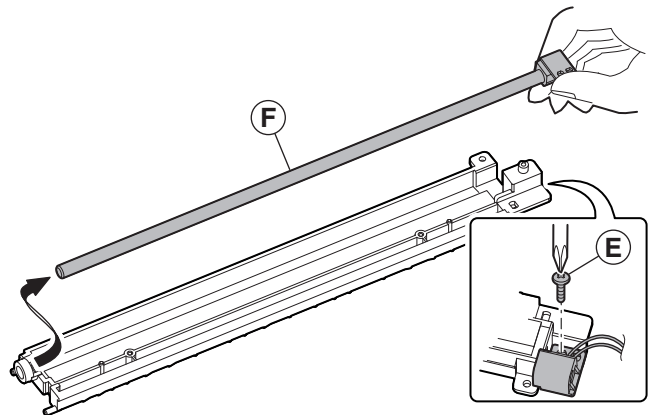
- 3) Remove the cleaner (C).



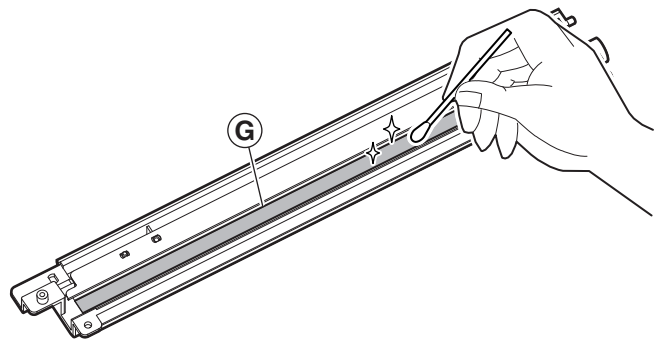
- 4) Use the cleaner (C) to clean the scanning glass (surface) (D).



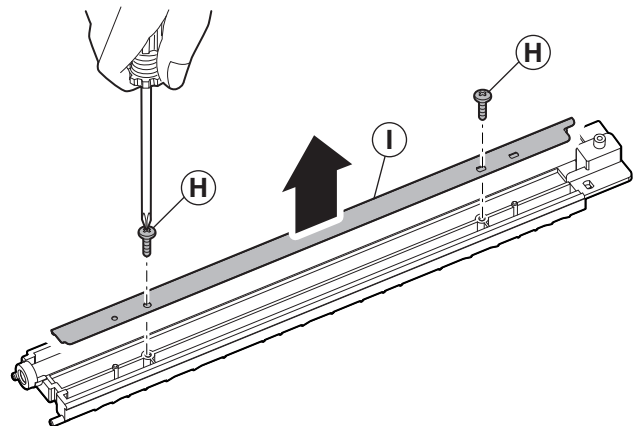
- 5) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)  
 6) Remove the OC mat. (See "H. Others".)  
 7) Remove the lamp unit. (See "(1) Lamp unit".)  
 8) Remove the screw (E), and remove the DSPF copy lamp (F).



- 9) Clean the scanning glass (back surface) (G).



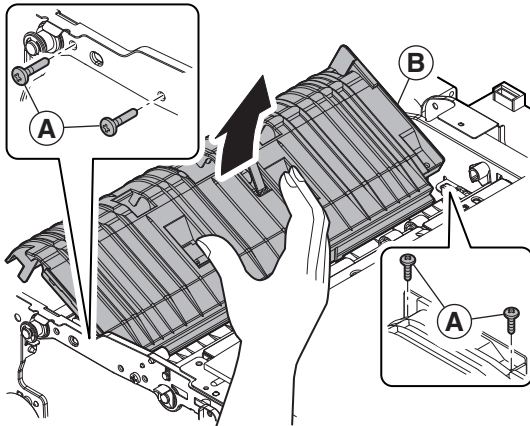
- 10) Remove the screws (H), and remove the reflector (I).





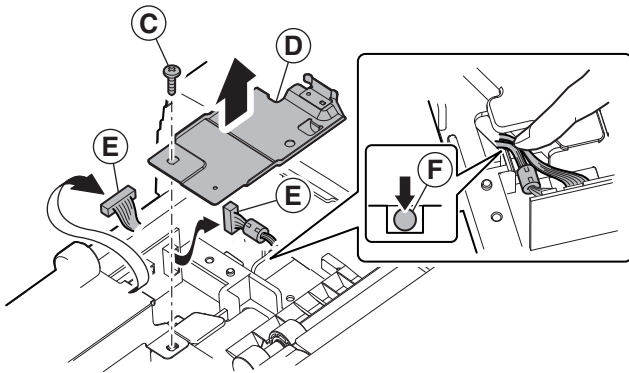
## (2) Optical unit

- 1) Remove the front cabinet and the rear cabinet and the upper door. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Remove the lamp unit. (See "(1) Lamp unit".)
- 4) Remove the screws (A), and remove the transport PG upper (B).

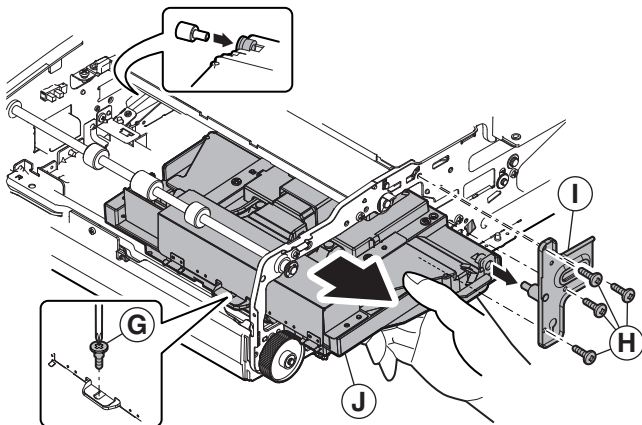


- 5) Remove the screw (C), and remove the harness cover (D). Disconnect the connectors (E).

\* When installing, arrange the harness (F) so that it is placed in the lower position than the rib height.

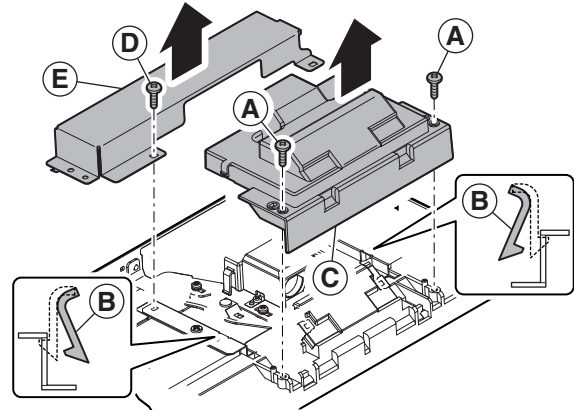


- 6) Remove the step screw (G), and remove the screws (H), and remove the optical fixing plate (I). Remove the optical unit (J).

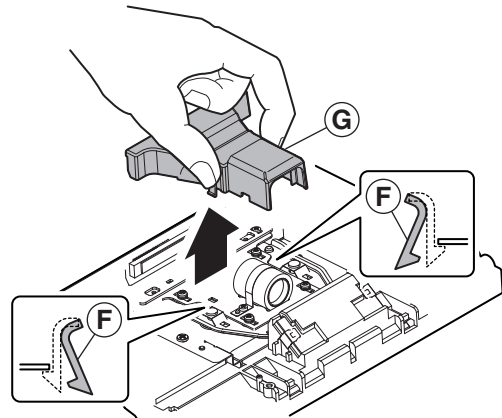


## a. Lens, CCD

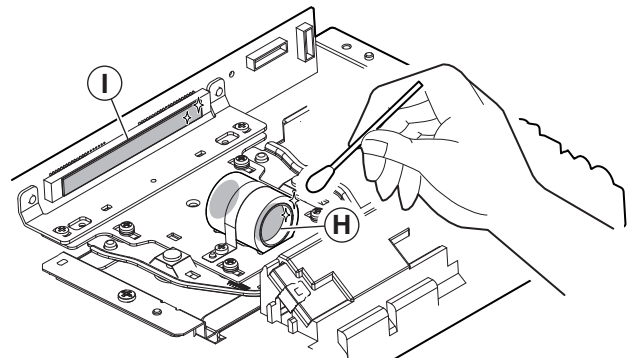
- 1) Remove the front cabinet and the rear cabinet and the upper door. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Remove the lamp unit. (See "(1) Lamp unit".)
- 4) Remove the optical unit. (See "(2) Optical unit".)
- 5) Remove the screws (A). Disengage the pawls (B). Remove the dust-proof cover (C). Remove the screw (D), and remove the dark box (E).



- 6) Disengage the pawls (F), and remove the lens cover (G).

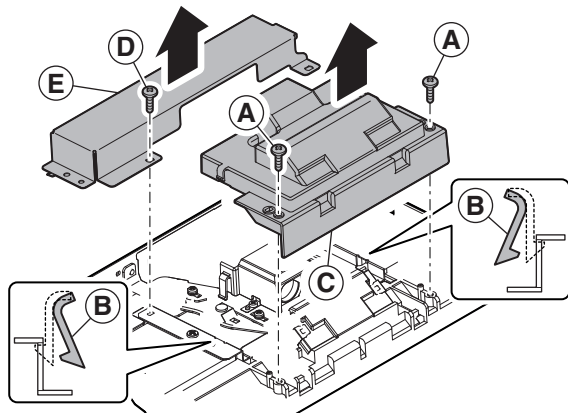


- 7) Clean the lens (H) and the CCD (I).

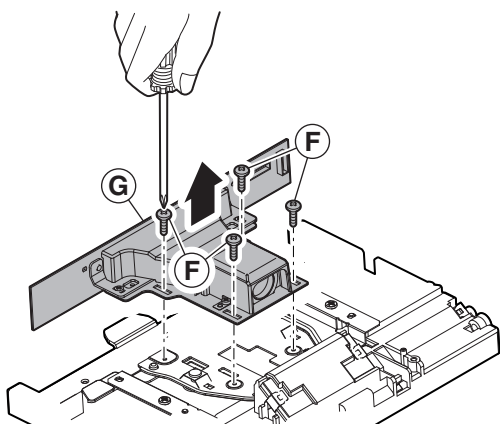


### b. CCD unit

- 1) Remove the front cabinet and the rear cabinet and the upper door. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Remove the lamp unit. (See "(1) Lamp unit".)
- 4) Remove the optical unit. (See "(2) Optical unit".)
- 5) Remove the screws (A). Disengage the pawls (B), and remove the dust-proof cover (C). Remove the screw (D), and remove the dark box (E).

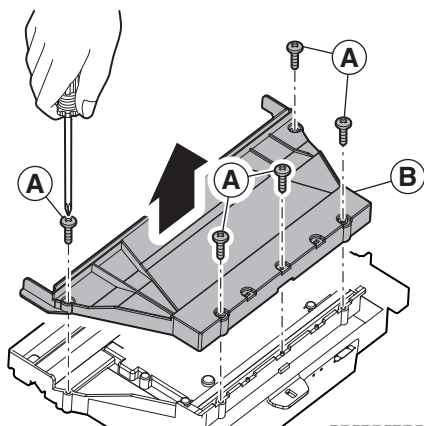


- 6) Remove the screws (F), and remove the CCD unit (G).

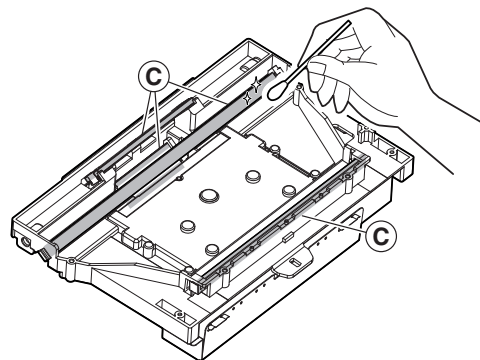


### c. Mirror

- 1) Remove the front cabinet and the rear cabinet and the upper door. (See "A. Exterior section".)
- 2) Remove the OC mat. (See "H. Others".)
- 3) Remove the lamp unit. (See "(1) Lamp unit".)
- 4) Remove the optical unit. (See "(2) Optical unit".)
- 5) Remove the screws (A), and remove the mirror base cover (B).

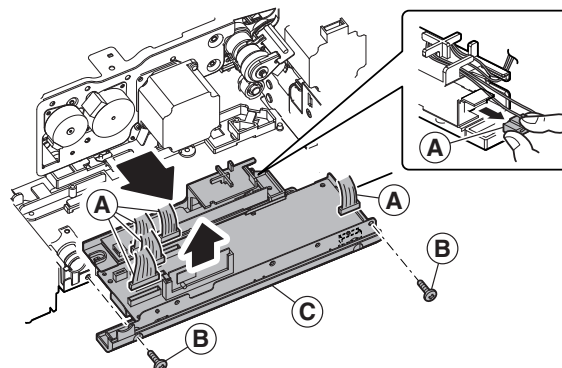


- 6) Clean the mirrors (C).

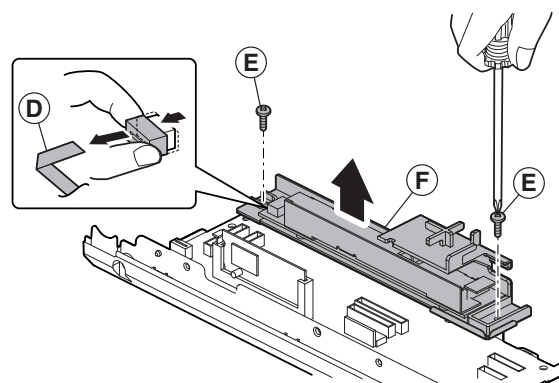


### (3) DSPF CL inverter PWB

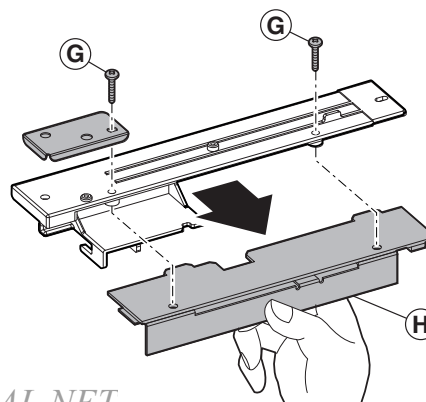
- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connectors (A). Remove the screws (B), and remove the control PWB unit (C).



- 3) Disconnect the connector (D), and remove the screws (E). Remove the inverter PWB guide (F).

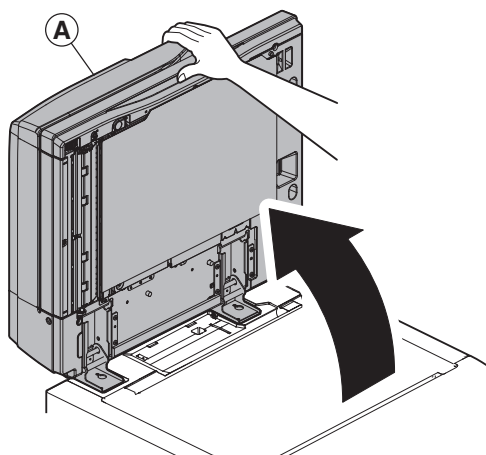


- 4) Remove the screws (G), and remove the DSPF CL inverter PWB (H).

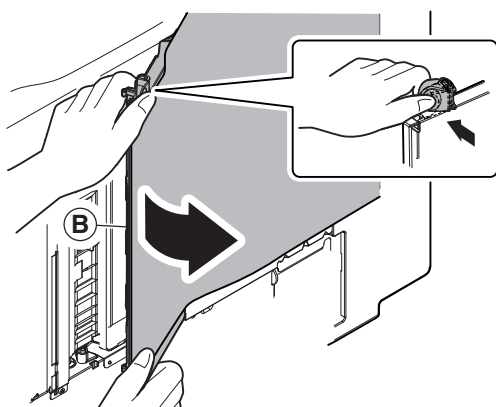


#### (4) White reference glass

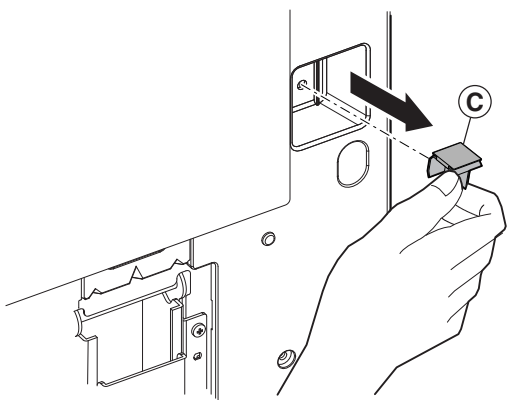
- 1) Open the DSPF unit (A).



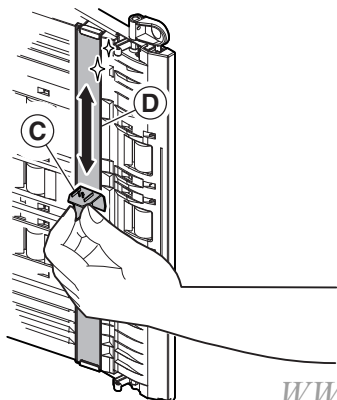
- 2) Open the lower door (B).



- 3) Remove the cleaner (C).

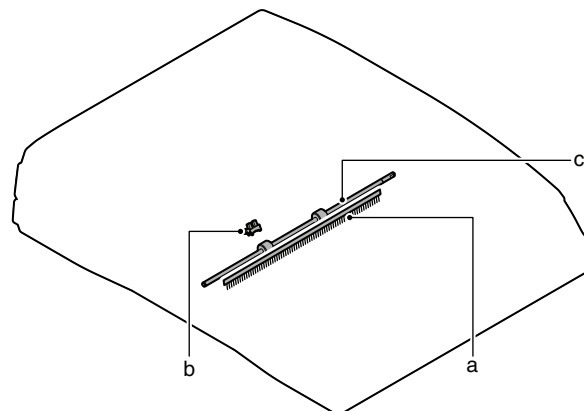


- 4) Use the cleaner (C) to clean the white reference glass (D).



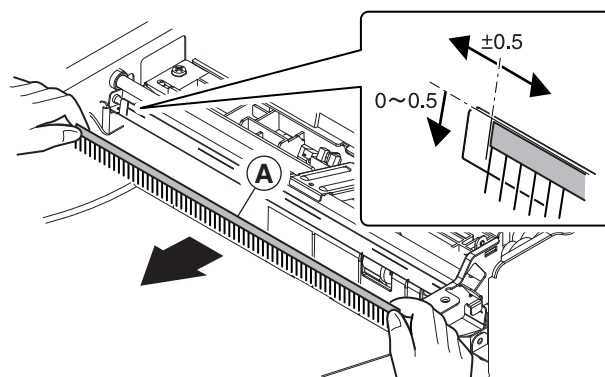
#### F. Paper exit section

Parts		Maintenance
a	Discharge brush	×
b	DSPF paper exit sensor	—
c	Paper exit roller (drive)	○



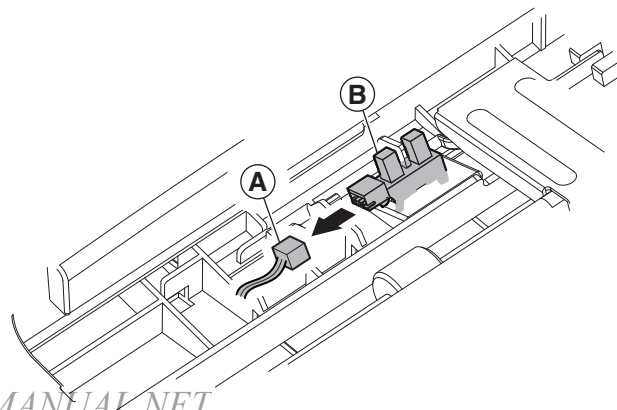
##### (1) Discharge brush

- 1) Remove the front cabinet and the rear cabinet.  
(See "A. Exterior section".)
- 2) Remove the paper feed tray unit.  
(See "B. Paper feed section".)
- 3) Remove the discharge brush (A).  
\* When attaching the discharge brush, attach it to the attachment reference.



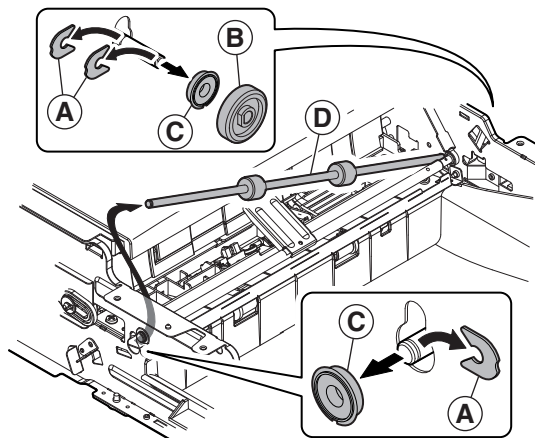
##### (2) DSPF paper exit sensor

- 1) Remove the front cabinet and the rear cabinet.  
(See "A. Exterior section".)
- 2) Remove the paper feed tray unit.  
(See "B. Paper feed section".)
- 3) Disconnect the connector (A), and remove the DSPF paper exit sensor (B).



### (3) Paper exit roller (drive)

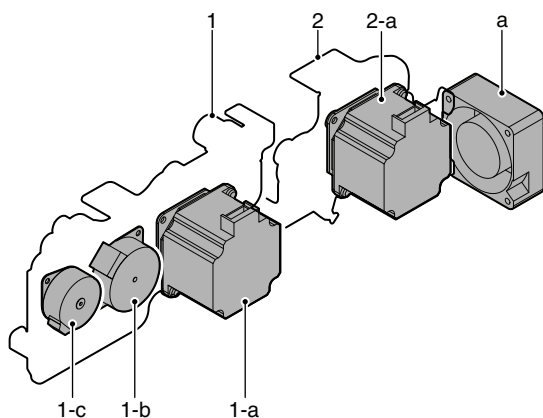
- 1) Remove the front cabinet and the rear cabinet. (See "A. Exterior section".)
- 2) Remove the paper feed tray unit. (See "B. Paper feed section".)
- 3) Remove the DSPF No.1 resist roller brake clutch, and remove the DSPF No.1 resist roller clutch. (See "C. Upper transport section".)
- 4) Remove the drive unit. (See "G. Drive section".)
- 5) Remove the resin E-rings (A), the gear (B), the bearing (C), and the paper exit roller (drive) (D).



### G. Drive section

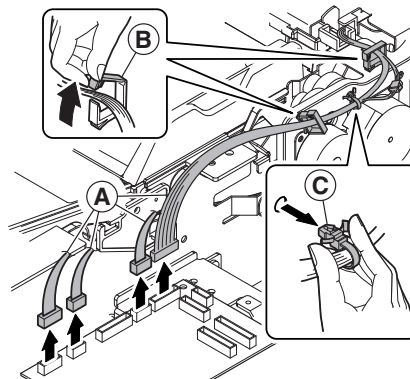
Unit		Parts	
1	Drive unit	a	DSPF paper feed motor
		b	DSPF paper exit motor
		c	DSPF lift up motor
2	Drive transport unit	a	DSPF transport motor

Parts	
a	DSPF cooling fan motor

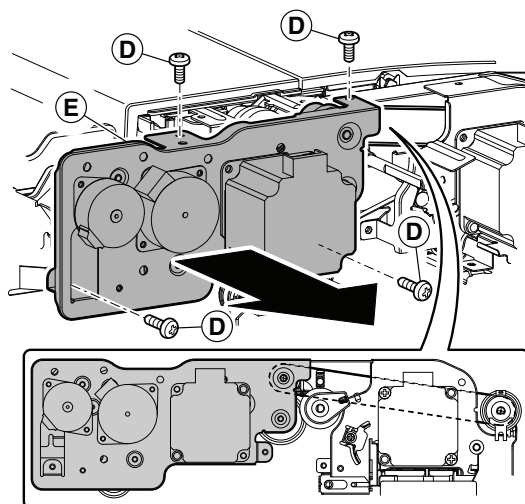


### (1) Drive unit

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Remove the DSPF No.1 resist roller brake clutch and remove the DSPF No.1 resist roller clutch. (See "C. Upper transport section".)
- 3) Disconnect the connectors (A), and open the edge saddle (B). Remove the snap band (C).

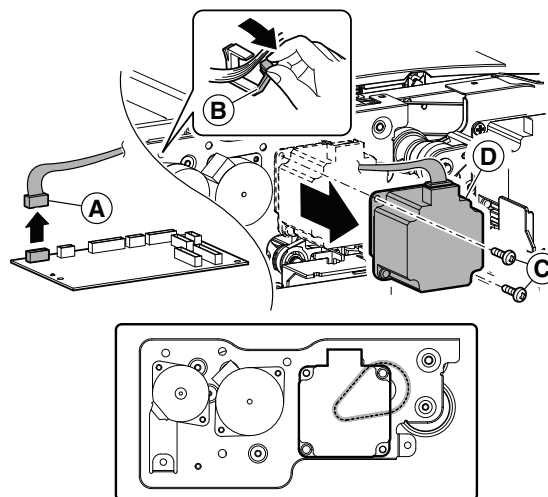


- 4) Remove the screw (D), and remove the drive unit (E).



#### a. DSPF paper feed motor

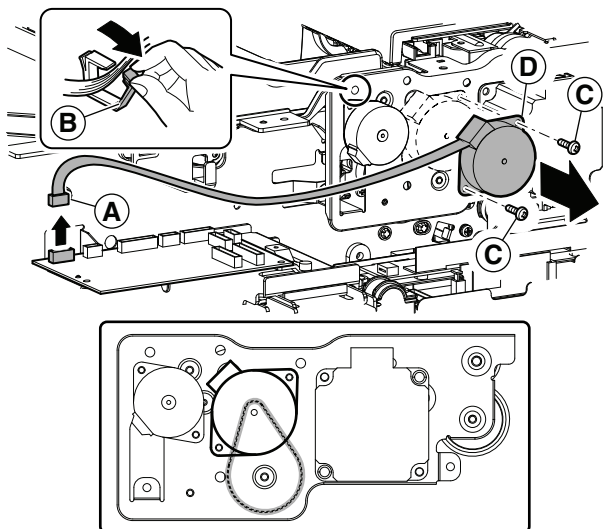
- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A), and open the edge saddle (B). Remove the screws (C), and remove the DSPF paper feed motor (D).





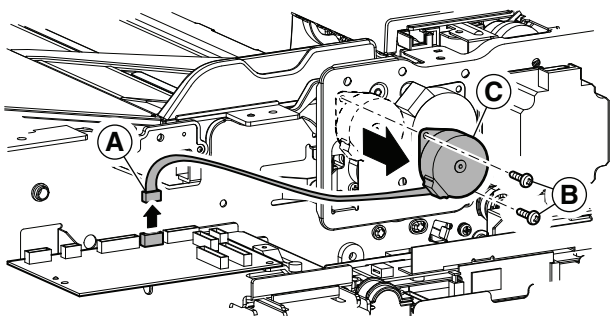
### b. DSPF paper exit motor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A), and open the edge saddle (B). Remove the screws (C), and remove the DSPF paper exit motor (D).



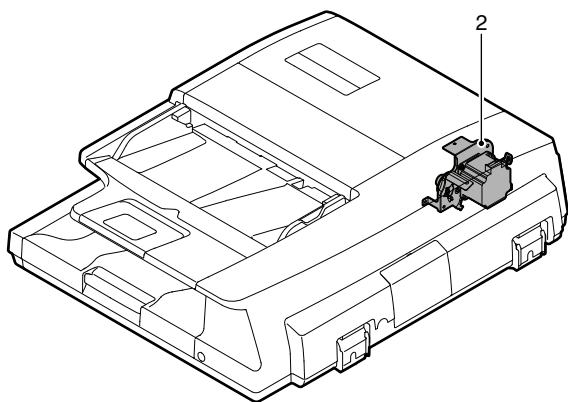
### c. DSPF lift up motor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A). Remove the screws (B), and remove the DSPF lift up motor (C).

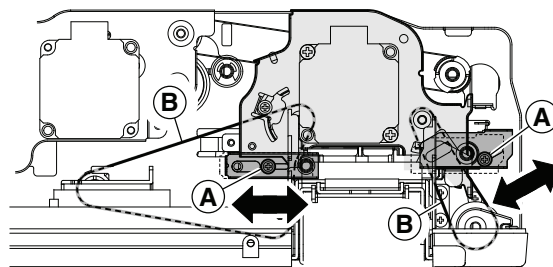


### (2) Drive transport unit

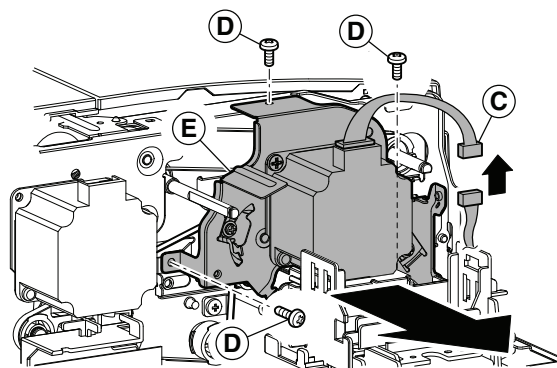
Unit	
2	Drive transport unit



- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Remove the DSPF No.1 resist roller clutch and the DSPF No.1 resist roller clutch and the DSPF transport roller clutch. (See "C. Upper transport section".)
- 3) Remove the DSPF cooling fan motor. (See "(3) DSPF cooling fan motor".)
- 4) Loosen the screws (A), and loosen the belts tension (B). Tighten the screws (A).

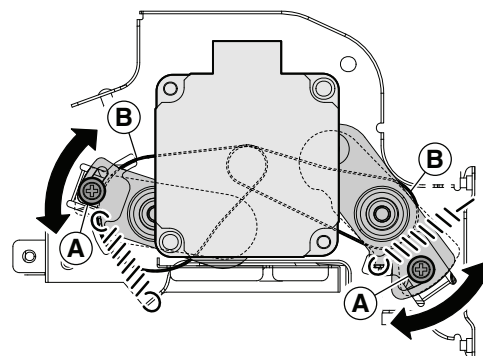


- 5) Disconnect the connector (C). Remove the screws (D), and remove the drive transport unit (E).

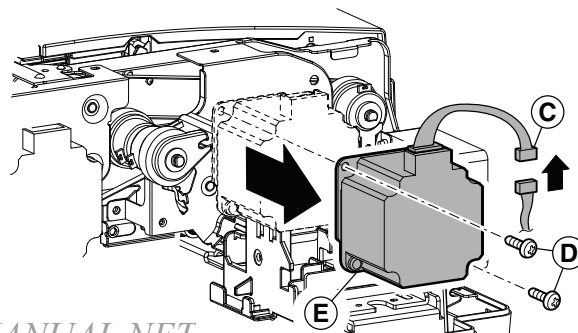


### a. DSPF transport motor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Loosen the screws (A), and loosen the belts (B) tension. Tighten the screw (A).

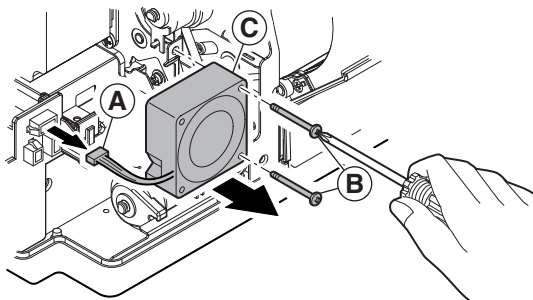


- 3) Disconnect the connector (C), and remove the screws (D). Remove the DSPF transport motor (E).

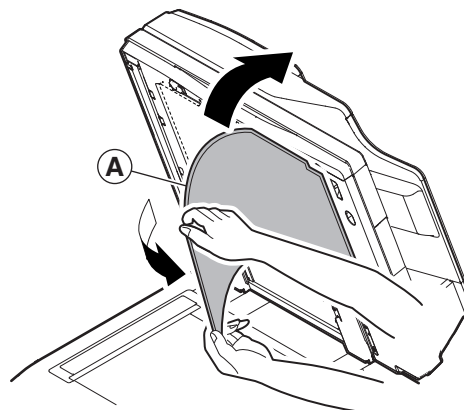


### (3) DSPF cooling fan motor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A), and remove the screws (B), and remove the DSPF cooling fan motor (C).

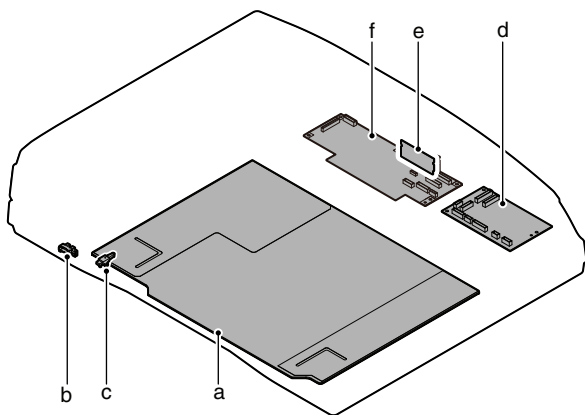


- 2) Remove the OC mat (A) from the left edge.

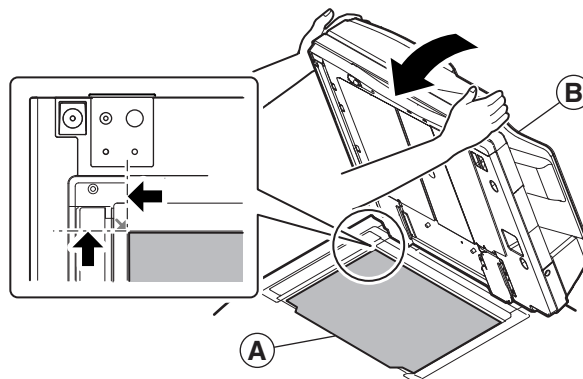


## H. Others

Parts		Maintenance
a	OC mat	○
b	DSPF open/close sensor	—
c	DSPF lower door open/close sensor	—
d	DSPF driver PWB	—
e	DSPF flash PWB	—
f	DSPF control PWB	—

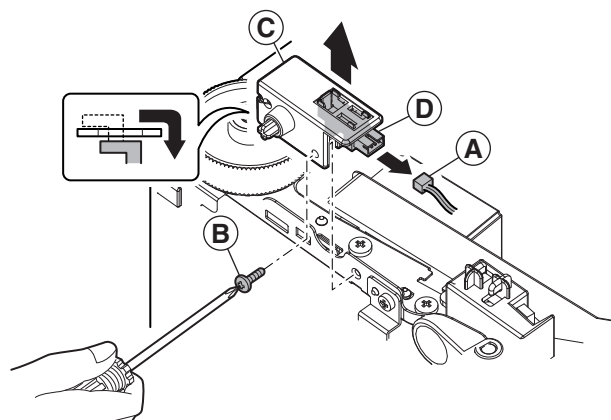


- \* When installing, place the OC mat (B) on the document table to fit with the reference and close the DSPF unit (A).



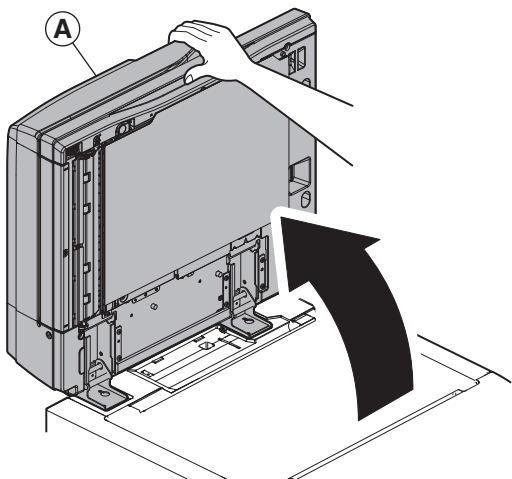
### (2) DSPF open/close sensor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A) and remove the screw (B). Remove the open/close sensor holder (C). Remove the DSPF open/close sensor (D) from the open/close sensor holder (C).



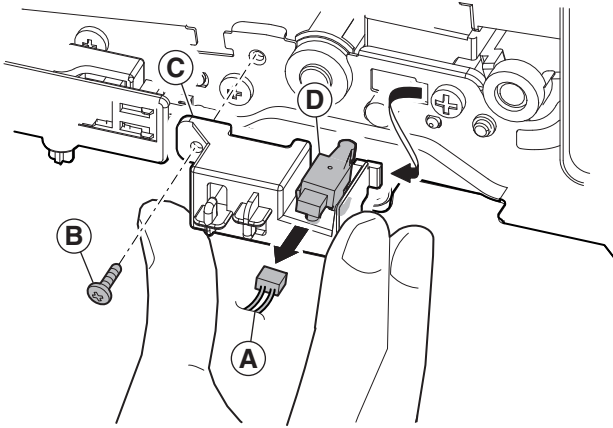
### (1) OC mat

- 1) Open the DSPF unit (A).



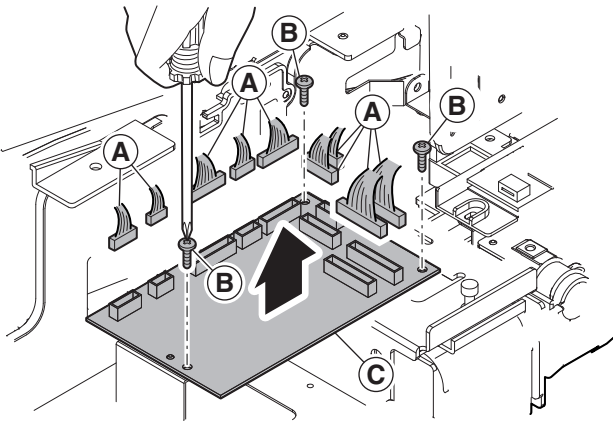
### (3) DSPF lower door open/close sensor

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connector (A), and remove the screw (B). Remove the lower door open/close sensor holder (C). Remove the DSPF lower door open/close sensor (D) from the lower door open/close sensor holder (C).



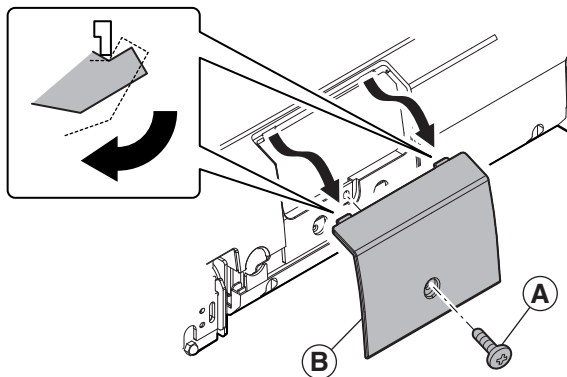
### (4) DSPF driver PWB

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Disconnect the connectors (A). Remove the screws (B), and remove the DSPF driver PWB (C).

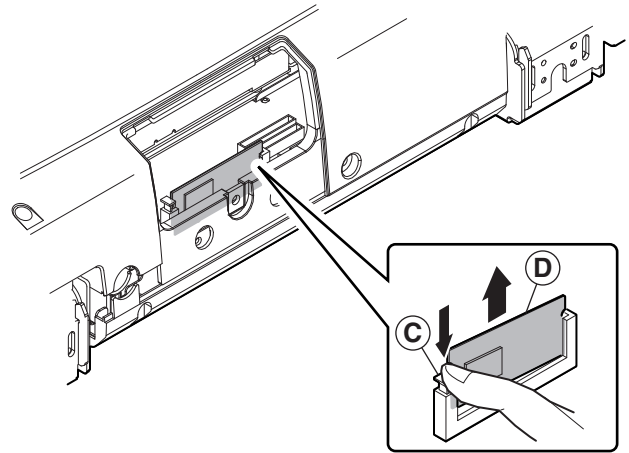


### (5) DSPF flash PWB

- 1) Remove the screw (A), and remove the ROM cover (B).

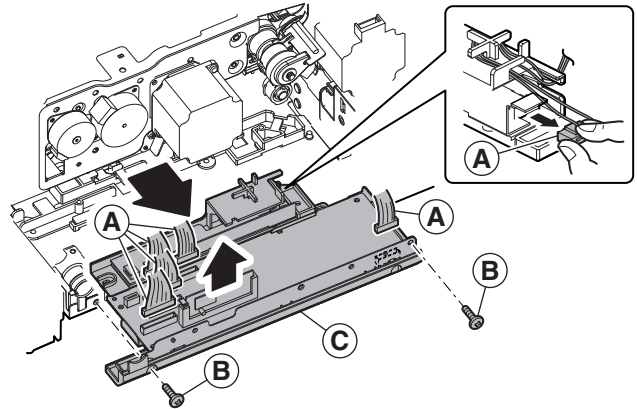


- 2) Release the lock (C), and remove the DSPF flash PWB (D).

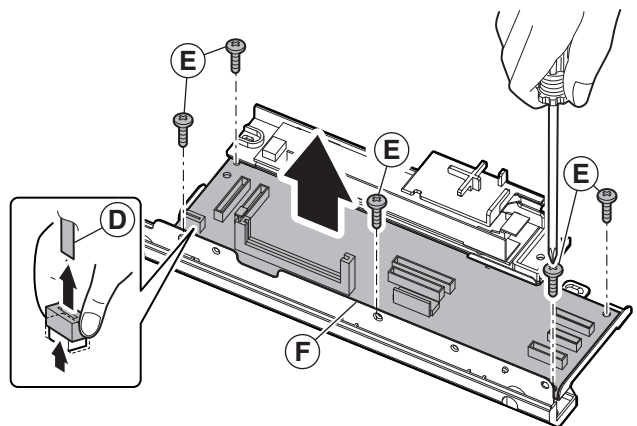


### (6) DSPF control PWB

- 1) Remove the rear cabinet. (See "A. Exterior section".)
- 2) Remove the DSPF flash PWB. (See "(5) DSPF flash PWB".)
- 3) Disconnect the connectors (A). Remove the screws (B), and remove the control PWB unit (C).

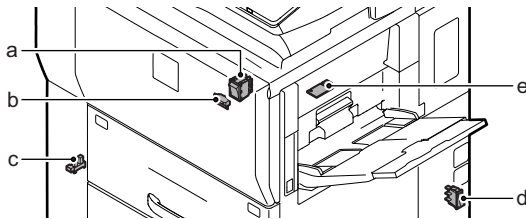


- 4) Disconnect the connector (D), and remove the screws (E). Remove the control PWB unit (F).



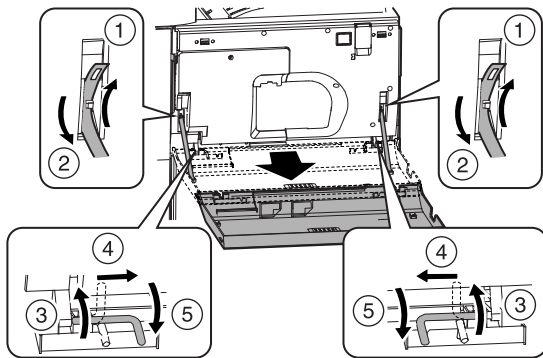
## 19. Other

No.	Parts
a	Main power switch
b	Front door open/close detector
c	Left door open/close detector
d	Dry heater switch
e	Machine temperature sensor

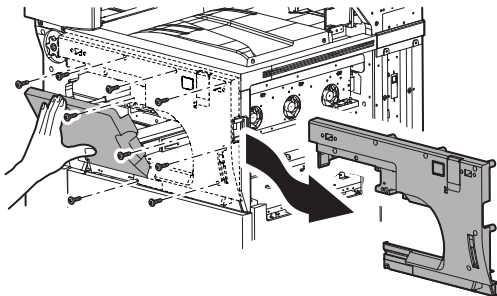


### A. Main power switch/Front door open/close detector

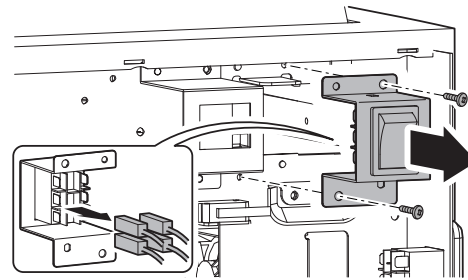
- 1) Remove the front cabinet band, and remove the front cabinet.



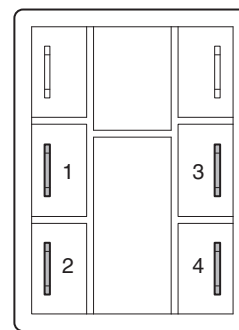
- 2) Remove the toner cartridge and the toner hopper unit. (See "9. Toner supply section")
- 3) Remove the developing unit. (See "10. Developing section")
- 4) Remove the process unit. (See "8. Photo-conductor section")
- 5) Raise the process DV cover diagonally, and remove the front cover right.



- 6) Disconnect the connector, and remove the main power switch unit.



\* When installing, be careful of the connection position of the connector and the installing direction. Insert the connector securely to the end until it clicks.

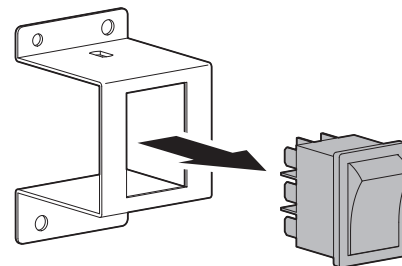


Main power switch  
(Connector surface)

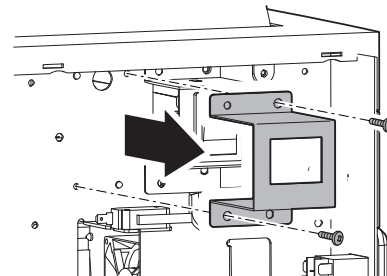
[Connector connecting position]

	Connector color	Line color
1	White	Black
2	Black	Black
3	White	White
4	Black	White

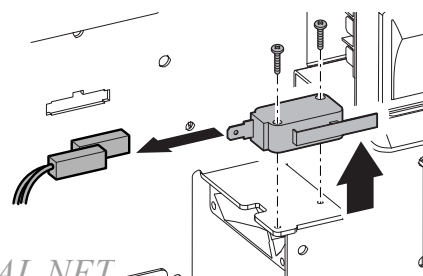
- 7) Remove the main power switch.



- 8) Remove the counter mounting plate.

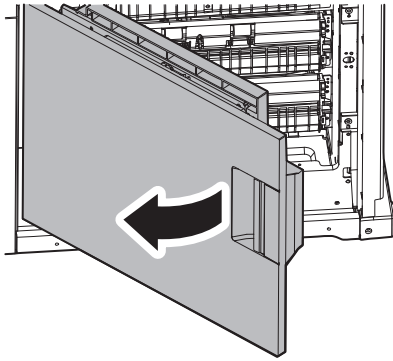


- 9) Disconnect the connector and remove the front door open/close switch unit.

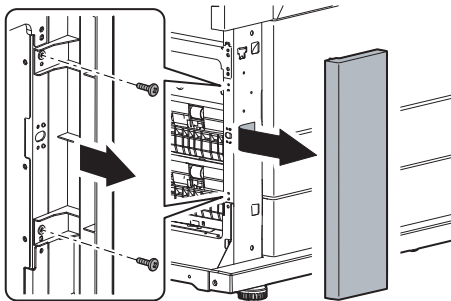


## B. Left door open/close detector

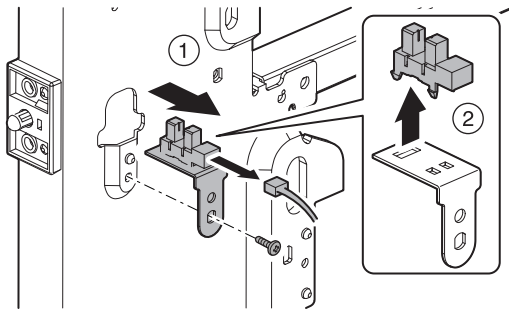
- 1) Open the left door.



- 2) Remove the left front cabinet.

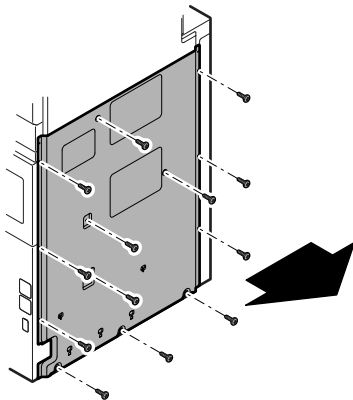


- 3) Disconnect the connector, and remove the left door open/close detector unit. Remove the left door open/close detector.

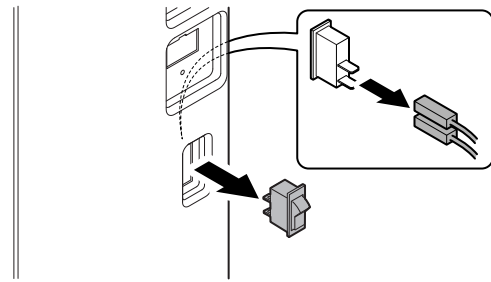


## C. Dry heater switch

- 1) Remove the rear cabinet.

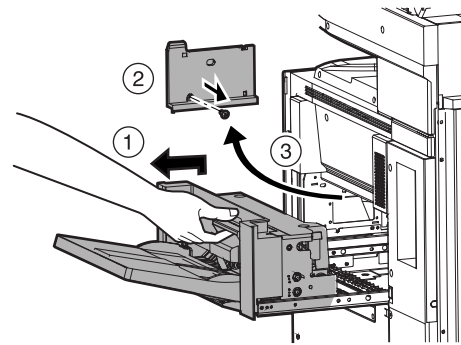


- 2) Disconnect the connector, and remove the dry heater switch.

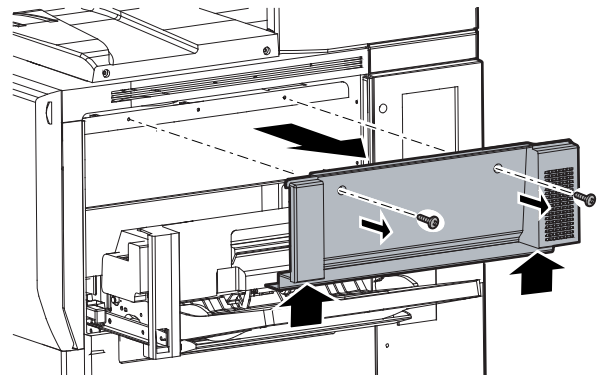


## D. Room temperature sensor

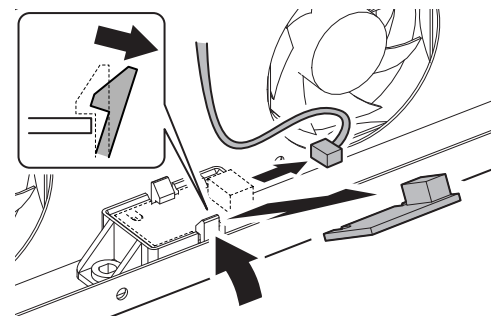
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, release the pawl, and remove the machine temperature sensor.





# [11] FIRMWARE UPDATE

## 1. Outline

### A. Cases where update is required

ROM update is required in the following cases:

- 1) When there is a necessity to upgrade the performance.
- 2) When installing a new spare part ROM for repair to the machine.
- 3) When installing a new spare parts PWB unit (with ROM) for repair to the machine.
- 4) When there is a trouble in the ROM program and it must be repaired.

### B. Notes for update

#### (1) Relationship between each ROM and update

Before execution of ROM update, check combinations with ROM's installed in the other PWB's including options. Some combinations of each ROM's versions may cause malfunctions of the machine.

### C. Update procedures and kinds of firmware

There are following methods of update of the firmware.

- 1) Update method using SIM 49-1
- 2) Update method using FTP
- 3) Update method using the Web page
- 4) Update method using the CN update function (There are three methods.)

Normally, one of 1) - 3) is used to update the firmware.

When any one of 1) - 3) is interrupted by an error such as power-off during updating, etc., and when retries of these methods are failed, the method 4) is employed.

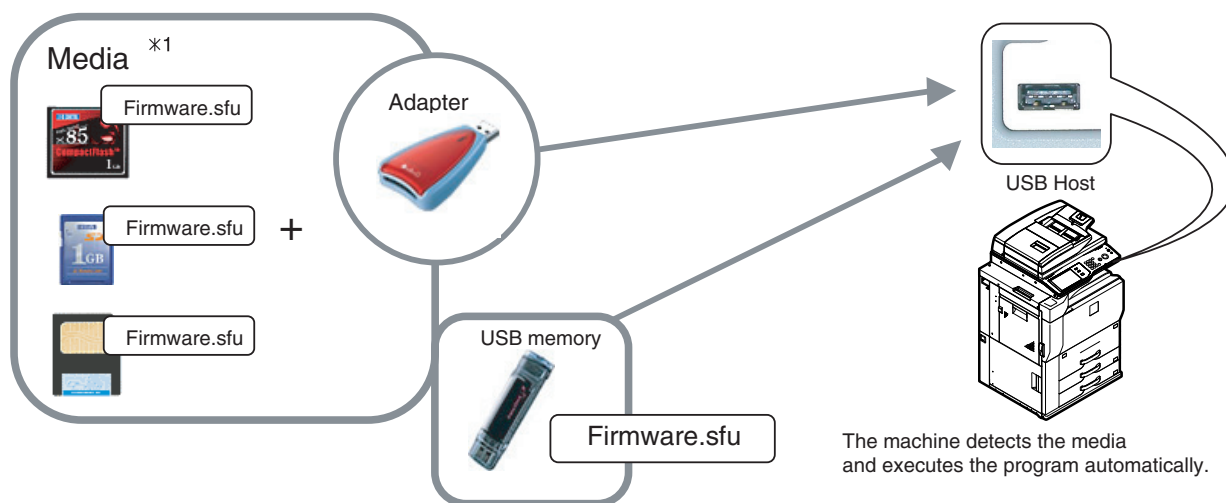
#### \*Firmware types

	Item/Display	Content
MAIN BODY	CONFIG	Configuration data
	ICU (MAIN)	ICU Main section former half
	ICU (BOOTM)	ICU Boot section main
	ICU (BOOTCN)	ICU Boot section CN
	LANGUAGE	Language support data program (General term)
	GRAPHIC	Graphic data for L-LCD
	SLIST	SLIST data for L-LCD
	PCU (BOOT)	PCU Boot section
	PCU (MAIN)	PCU Main section
	SCU (BOOT)	SCU Boot section
	SCU (MAIN)	SCU Main section
	DSPF (BOOT)	DSPF Boot section
	DSPF (MAIN)	DSPF Main section
	FAX (BOOT)	FAX1 Boot section
	FAX (MAIN)	FAX1 Main section
	PDL_FONT	PDL font
	ANIMATION	Animation data
	IMAGE_DATA	MFP ASIC data
	WEB_HELP	WEB help
	UNICODE	UNICODE table
OPTION	A4LCC (BOOT)	Side LCC (A4) Boot section
	A4LCC (MAIN)	Side LCC (A4) Main section
	A3LCC (BOOT)	Side LCC (A3) Boot section
	A3LCC (MAIN)	Side LCC (A3) Main section
	FIN100 (BOOT)	100 sheets staple finisher Boot section
	FIN100 (MAIN)	100 sheets staple finisher Main section
	ACRE (MAIN)	ACRE Main section
	ACRE_DATA	ACRE table
	ACRE (BOOT)	ACRE Boot section

## 2. Update procedure

### A. Update method using SIM 49-1

For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



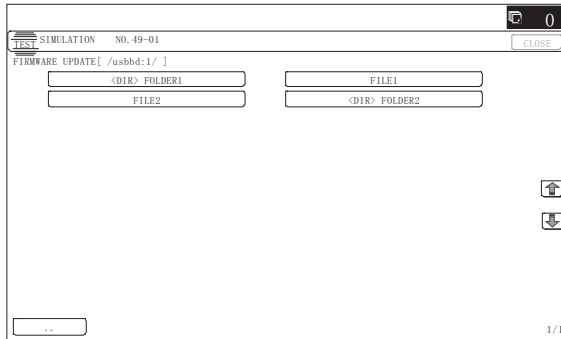
\*1:

- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have an enough capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

The firmware update executes by SIM49-01.

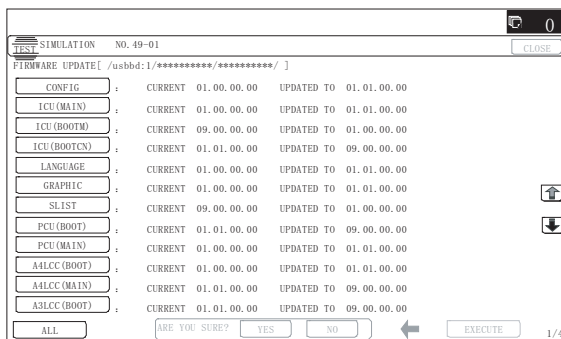
- 1) Insert the media or USB memory which stores the firmware into the main unit.
- 2) Enter the SIM49-01.

Press the key of the file to be updated. The screen transfers to the update screen.



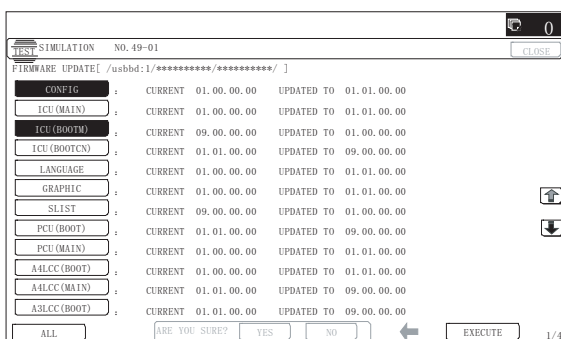
- \* The number of key changes according to the number of the sfu file in the media or USB memory inserted.
- \* If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE [OK]" is displayed on the screen. Insert the media or USB memory and push the [OK] key to open the file. If the media have not been inserted and [OK] key is pushed, the next screen does not appear and the screen waits the entry. Conversely, if the media or USB memory is pulled out on the file list screen, the error is detected by the [FILE] key pressing, and the first screen appears.

- 3) Current version number and the version number to be updated will be shown for each firmware respectively.



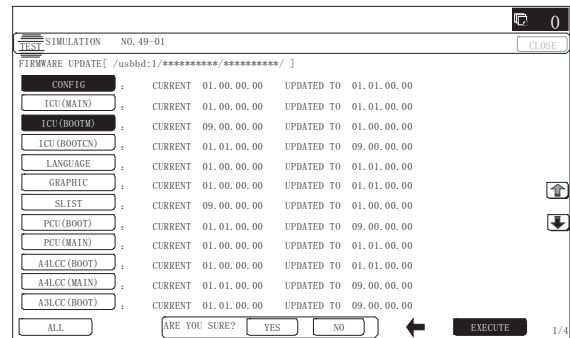
- 4) Select the key of the firmware to be updated. The key will be highlighted. (In this screen, [CONFIG] and [ICU(BOOTM)] are selected.) At the same time, [EXECUTE] key appears.

If firmware's key is not selected, [EXECUTE] is gray out and cannot be pressed.

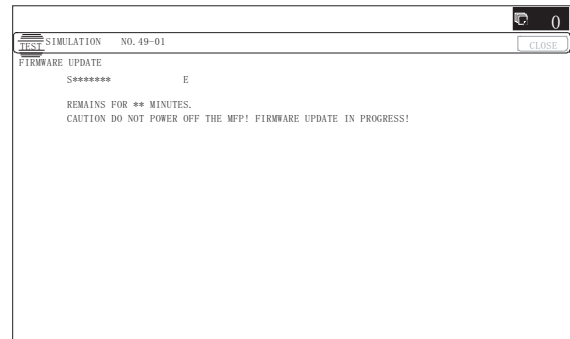


- \* Press the selected key again to release the selection.
- \* Press [ALL] key to select all items.

- 5) Press [EXECUTE] key. "ARE YOU SURE? [YES] [NO]" becomes clear. Press [YES] to start the update of selected firmware.

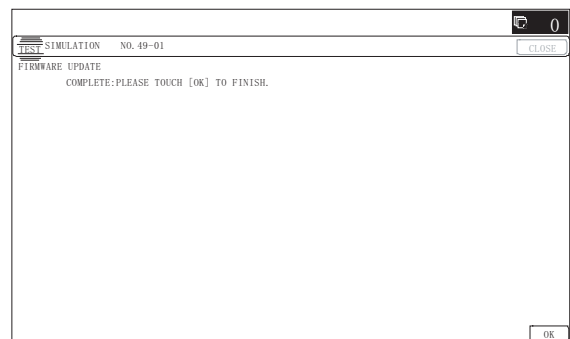


The progress is displayed on right side of "FIRMWARE UPDATE" title by 20 steps.



At this time, only the progress gauge is displayed on the screen, and the version and the firmware selection key are not displayed.

- 6) If the update is normal completion, following screen is displayed.



Exit the simulation mode and turn off the power.

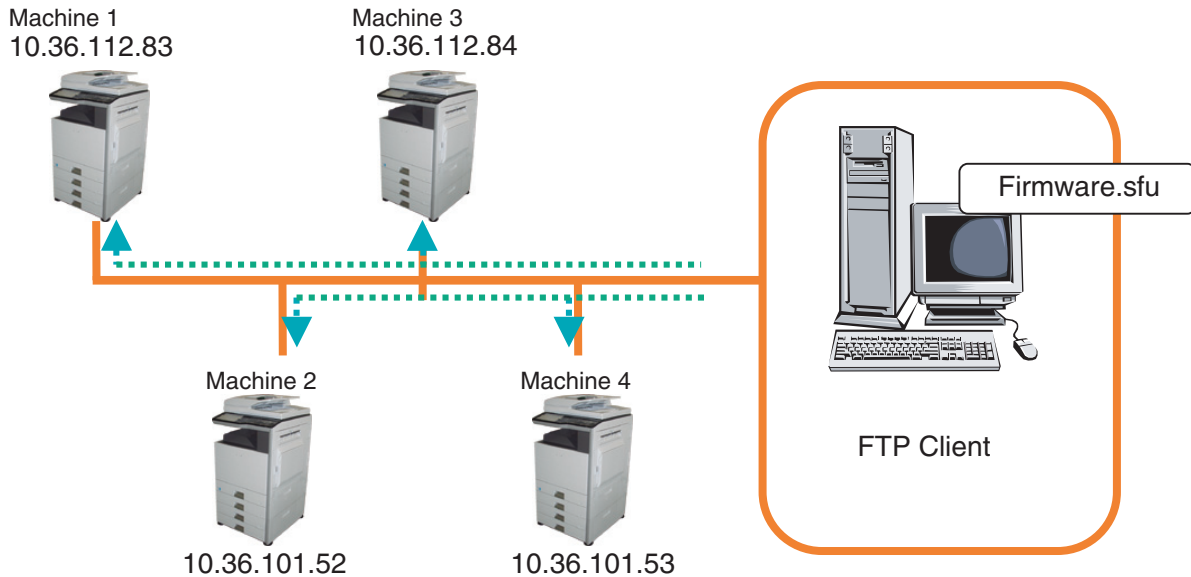
Go to SIM22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.



## B. Firmware update using FTP

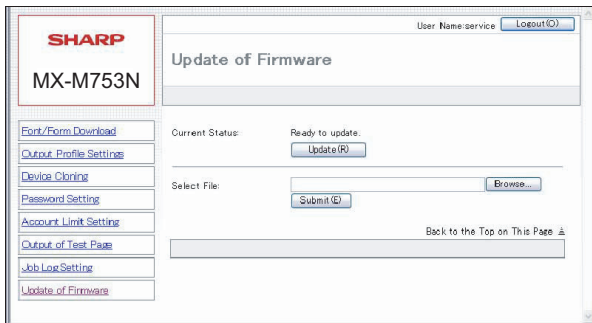
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



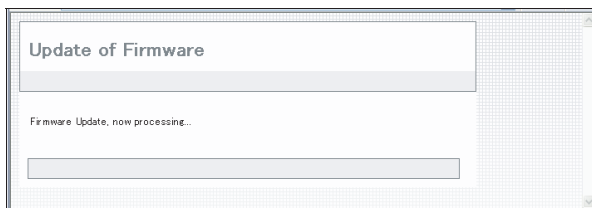
## C. Firmware update using the Web page

An Web browser (service technician's Web page) is used to update the firmware.

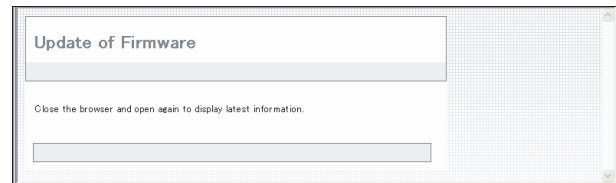
- 1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
- 2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.



- 3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.



- 4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



"Close the browser and open again to display latest information." will be displayed.

- 5) Check the firmware version of machine again.

## D. Firmware update using the CN update function (There are three methods.)

### (1) Outline

The firmware update method using the MFP PWB ROM slot of the MFP PWB is called "CN update."

#### a. Function

There are the following five functions in the CN update mode.

- 1) ROM copy function 1  
(This is not used in the market, and therefore, not described in details in this manual.)
- 2) Firmware update function  
This function is used to update the firmware by transferring data from the PC which is connected to the MFP PWB, the SCU PWB, the PCU PWB, the FAX PWB, and various options by means of a USB memory or USB cable.

This is basically the same as SIM49-01, but differs in the following points:

When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.



If, however, an abnormality occurs in the boot program, the Program ROM 1 must be replaced with a new one having the normal boot program.

If the boot animation is not displayed, there is an abnormality in the boot program (Program ROM 1).

If the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program (Program ROM 2).

- 3) ROM copy function 2  
(This is not used in the market, and therefore, not described in details in this manual.)
- 4) Firmware version check function  
(The method to check the firmware version by using SIM22-5 is easier than this method. Therefore, it is not described in this manual.)
- 5) ROM making function  
(This function is not used in the market, and not described in this manual.)

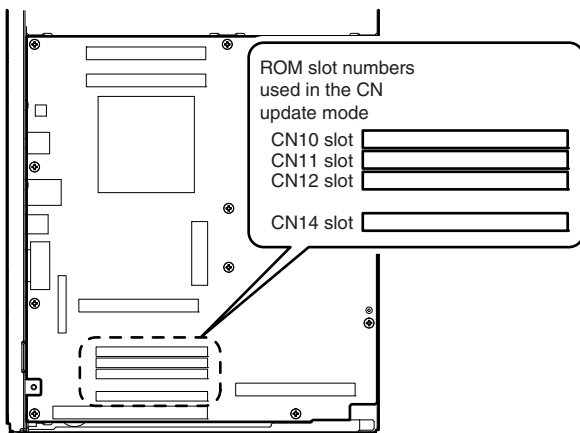
### b. Purpose

This function is used in the following cases:

- 1) When an error occurs during firmware update operation other than the CN update.  
When the power is shut down or an error occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.  
If, however, an abnormality occurs in the boot program, the Program ROM 1 must be replaced with a new one having the normal boot program.  
If an error occurs in the boot program, this method cannot be used. In such a case, the Program ROM 1 must be replaced with a new one having the normal boot program.

### c. ROM slot used in the CN update mode

The following ROM slots are used in the CN update mode.



### d. DIP-SW used in the CN update mode

To enter the CN update mode, set DIP-SW1 and DIP-SW2 on the MFP PWB as shown below:

DIP-SW1 ON: CN update mode

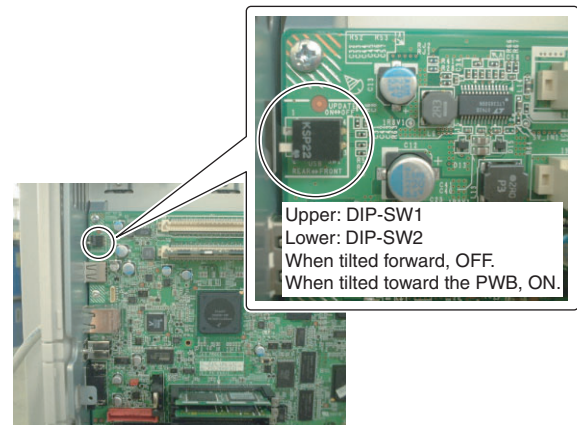
DIP-SW2 OFF: OFF in the normal mode

NOTE: Keep DIP-SW2 at OFF. DIP-SW2 is used to enable the USB port on the front side or the USB port on the rear side. When it is set to OFF, the USB port on the front side is enabled. When it is set to ON, the USB port on the rear side is enabled.

When the keyboard is installed to the machine, an exclusive connection is enabled. (Simultaneous connection is disabled.)

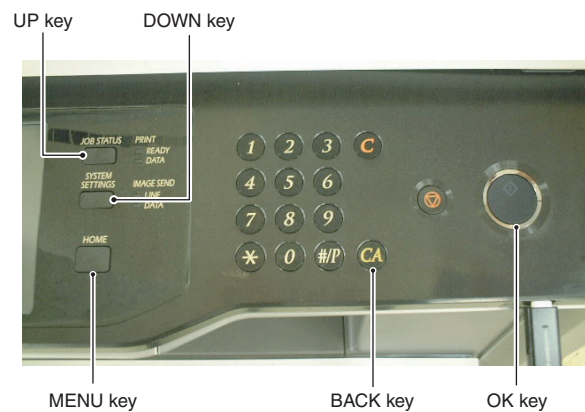
When terminating the CN update mode, reset DIP-SW1 to OFF (normal mode).

NOTE: When using the USB port, be careful of the total current consumption not to exceed 500mA.



### e. Keys used in the CN update mode

The following five keys are used for operations in the CN update mode. Be careful that the functions of the keys differ those in the normal mode.



Key name	Functions in the CN update mode
[OK] key	Executes the selected function or item.
[MENU] key	Selects a menu.
[BACK] key	Selects a menu. (Serves as a cancel key in the execution check screen.)
[UP] key	Selects an item.
[DOWN] key	Selects an item.

#### f. Kinds of Flash ROM

There are following kinds of Flash ROM used in this machine.  
Take care that a different model number of Flash ROM cannot be used.

The Flash ROM model number is marked on the semiconductor chip on the Flash ROM.

The number of semiconductor chips differs depending on the Flash ROM model number: 1 and 2.

This also helps identifying the model number of Flash ROM.

#### Kinds of Flash ROM

Kinds	Normal installing position	Flash ROM model number	Number of semiconductor chips
MFP (PROGRAM1) ROM	MFP PWB CN10 slot	M29LV640EBTI-70G	2
MFP (PROGRAM2) ROM	MFP PWB CN11 slot	M29LV640EBTI-70G	2
PCU ROM	PCU PWB	LHF00L28	1
SCU ROM	SCU PWB	LH28F800BJE - PTTL90	1
DSPF ROM	DSPF PWB	LH28F800BJE - PTTL90	1

## (2) Operating procedures

### a. Firmware update function

This function is used to copy the firmware data from a USB memory or the PC which is connected with a USB cable to the MFP PWB, the SCU PWB, the PCU PWB, the FAX PWB, or various options to update the firmware.

It is basically same as SIM 49-01, but differs in the following points.

- 1) The update target ROM is automatically selected.
- 2) When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update.

If, however, an abnormality occurs in the boot program, this method cannot be used. On that case, the Program ROM 1 must be replaced with a new one having the normal boot program.

When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware. If, however, an abnormality occurs in the boot program, the Program ROM 1 must be replaced with a new one having the normal boot program.

When the boot animation is not displayed, there is an abnormality in the boot program (Program ROM 1).

When the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program (Program ROM 2).

#### a-1. Necessary items

- 1) Machine (Insert the MFP (PROGRAM1) ROM into CN10 slot, and insert the MFP (PROGRAM2) ROM into CN11.)
- 2) USB memory with the firmware file (SFU) saved in it. (Save the firmware file in the main directory or in a one-level lower directory.)

#### a-2. Procedures

- 1) Turn OFF the power, and remove the rear cabinet and the MFP PWB cover.
- 2) Set the MFP PWB DIP-SW1 to ON. (Tilt it to the PWB side.)
- 3) Install the USB memory into the USB port.



USB port

USB memory installing position

- 4) Turn ON the power.
- 5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)

Update Program Init  
Please wait



Version Check  
Conf : 00050000

Display when booting is completed

- 6) Select the firmware update mode.  
Select the update mode with [MENU] key and [BACK] key.

Firm Update  
From USB Memory

Display of the firmware update mode

- 7) Press [OK] key.  
The firmware file saved in the USB memory is retrieved, and the file selection menu is displayed.

Firm Update  
> F 0100P000.sfu

Display of file selection

- 8) Select the firmware file (SFU).  
Select the target firmware file (SFU) with [UP] key and [DOWN] key.  
When [OK] key is pressed with a directory name (the head: "> D") displayed, the menu goes to the one-stage lower directory.  
When [BACK] key is pressed in the lower-stage directory, the menu returns to the original upper directory.

- 9) Press [OK] key.

The selected firmware file (SFU) is read. It takes about one minute.



Display of file reading

- 10) After completion of reading, the firmware update process is continued.

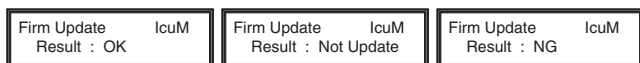


Display of the firmware update process

- \* The abbreviated name of the firmware which is under update process is indicated on the right upper corner of the display.
- \* During the update process, the display may flash instantaneously. It is a normal operation.

- 11) Check the update result.

Use [UP] key and [DOWN] key to display the results of all the firmware programs.



Display of the firmware update result

OK: Update is completed successfully.

NG: Update is failed.

Not Update: Update is not executed.

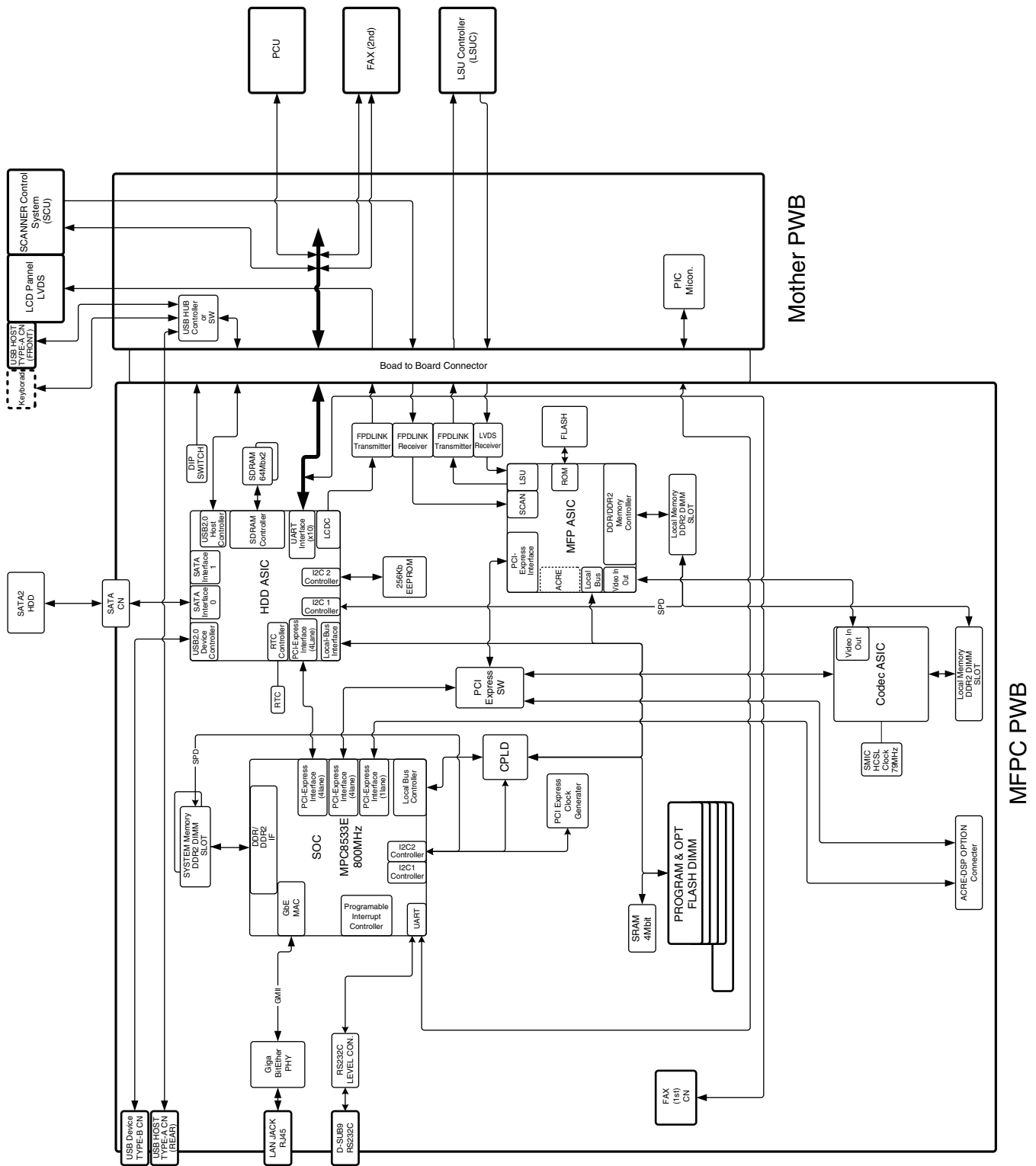
- 12) Turn OFF the power.
- 13) Set the MFP PWB DIP-SW1 to OFF. (Set the DIP-SW to the normal mode.)
- 14) Turn ON the power, and check to confirm that the machine boots up normally.
- Check to confirm that the boot animation is displayed.
- Check to confirm that "Copying is enabled" is displayed on the copier basic menu.
- 15) Check to confirm the version of each firmware with SIM22-5.
- 16) Attach the MFP PWB cover and the rear cabinet.

NOTE: If the CN update function does not work normally, refer to "Check items when the CN update function does not work normally" and fix the abnormal points.

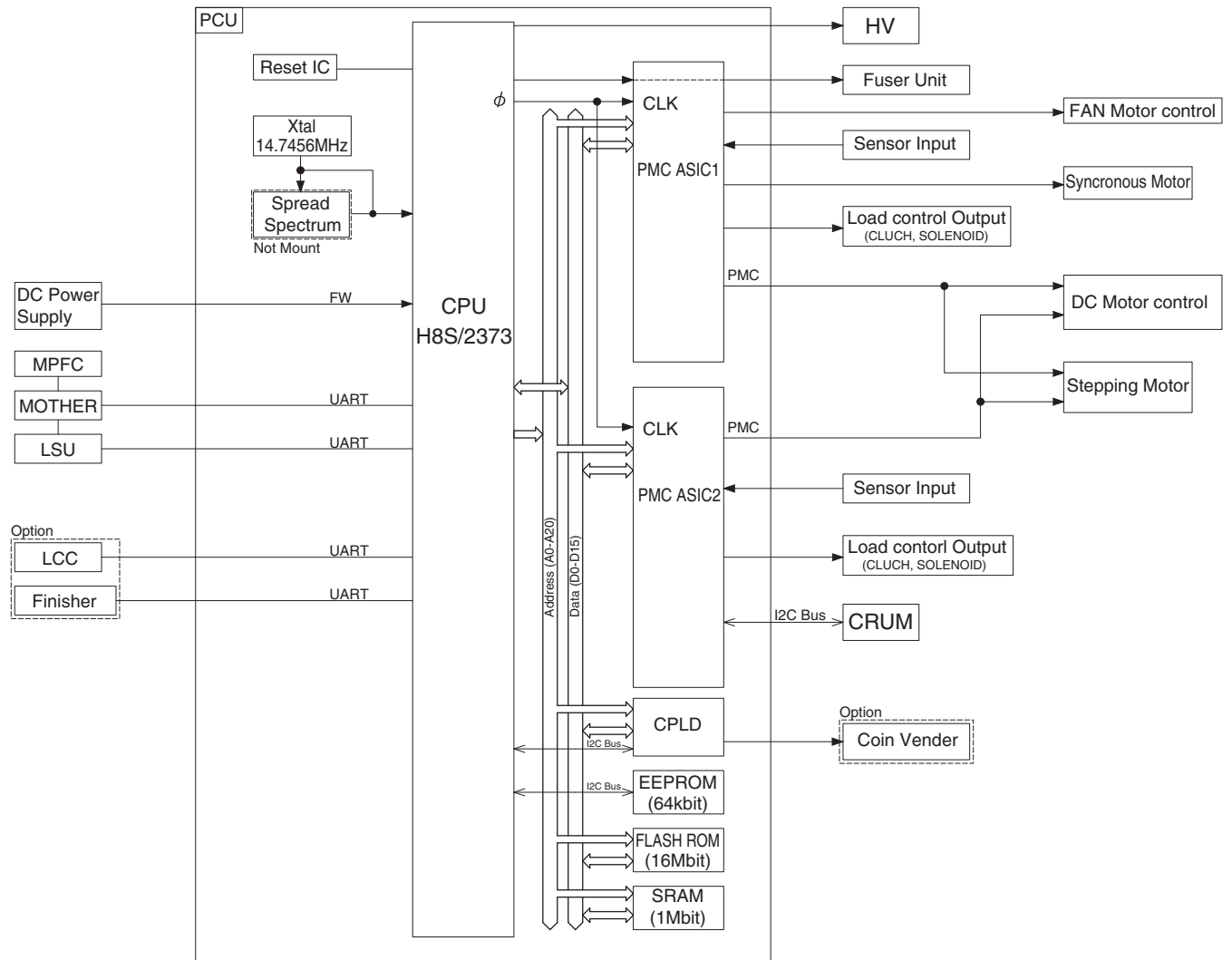
### A. System block diagram



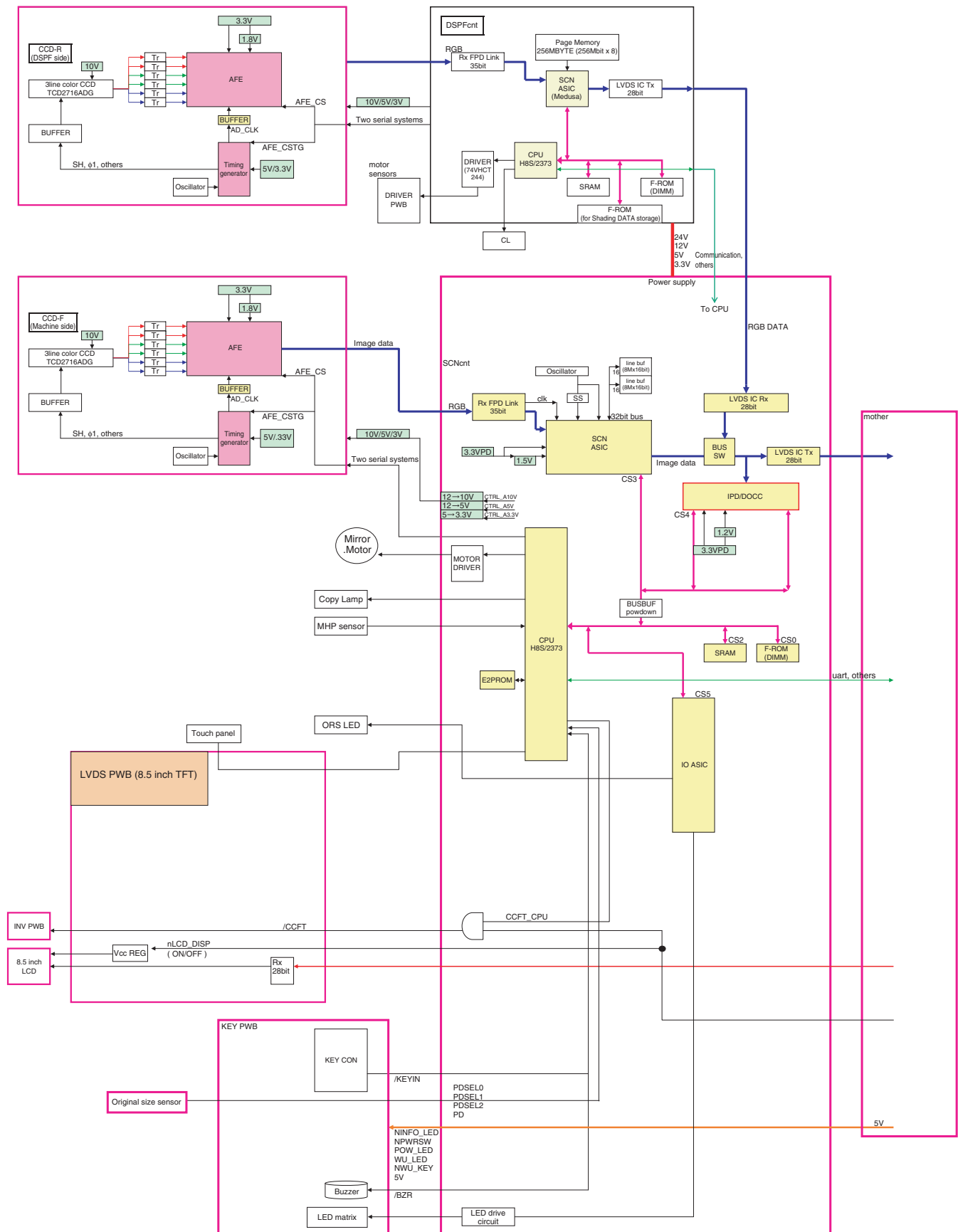
## B. MFP control PWB



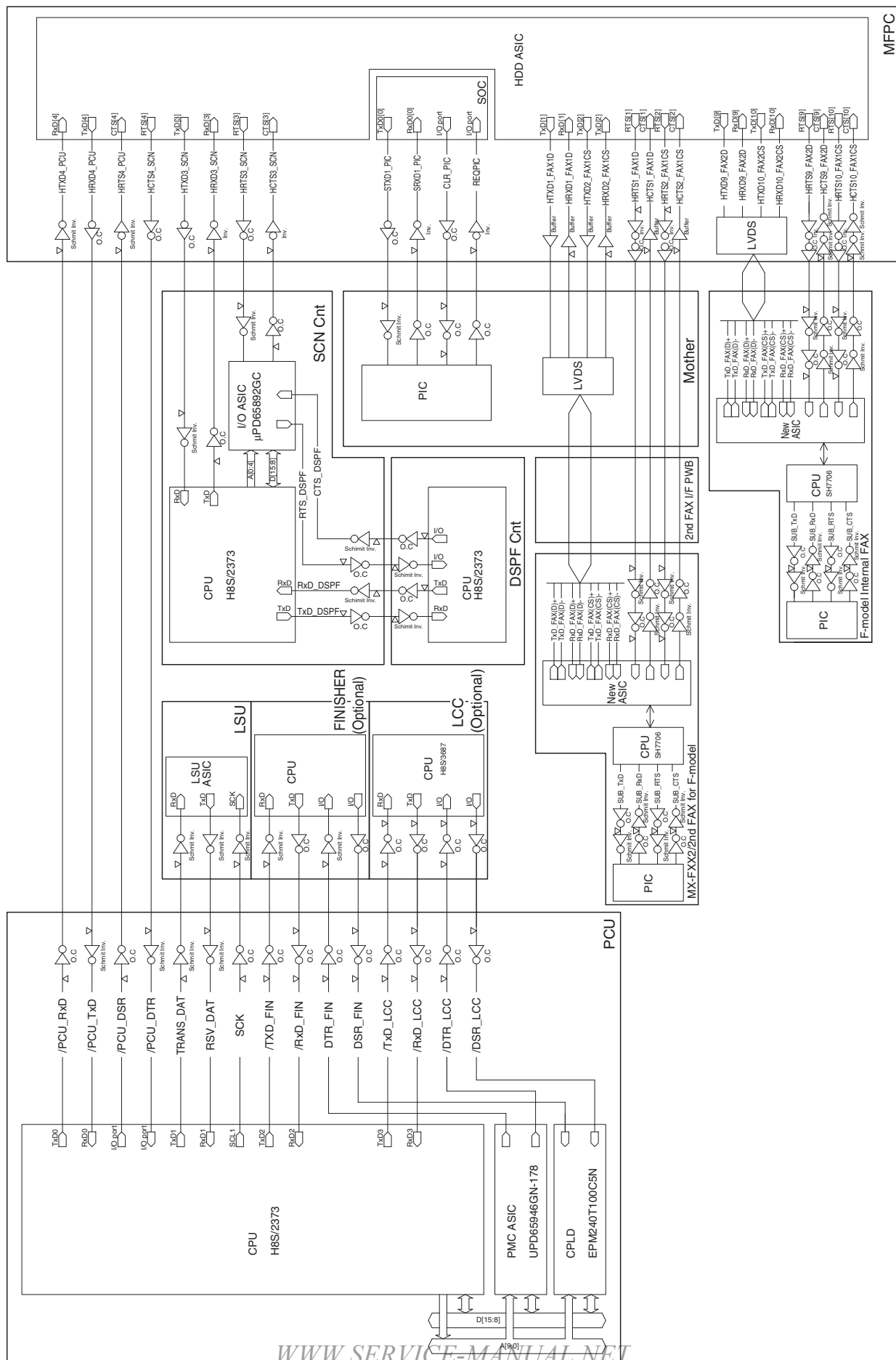
## C. PCU PWB



## D. Scanner control PWB, DSPF

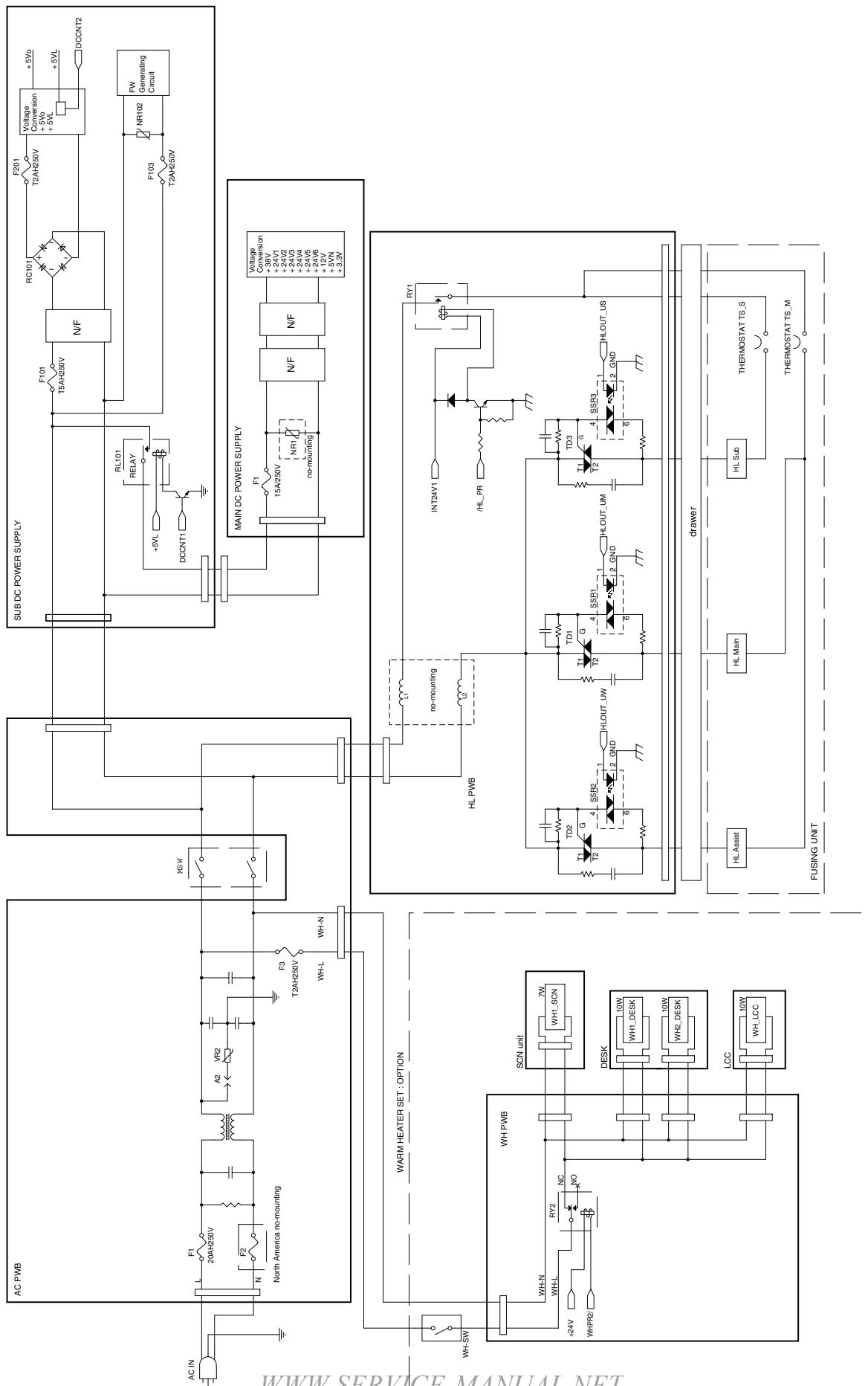


### E. Serial communication

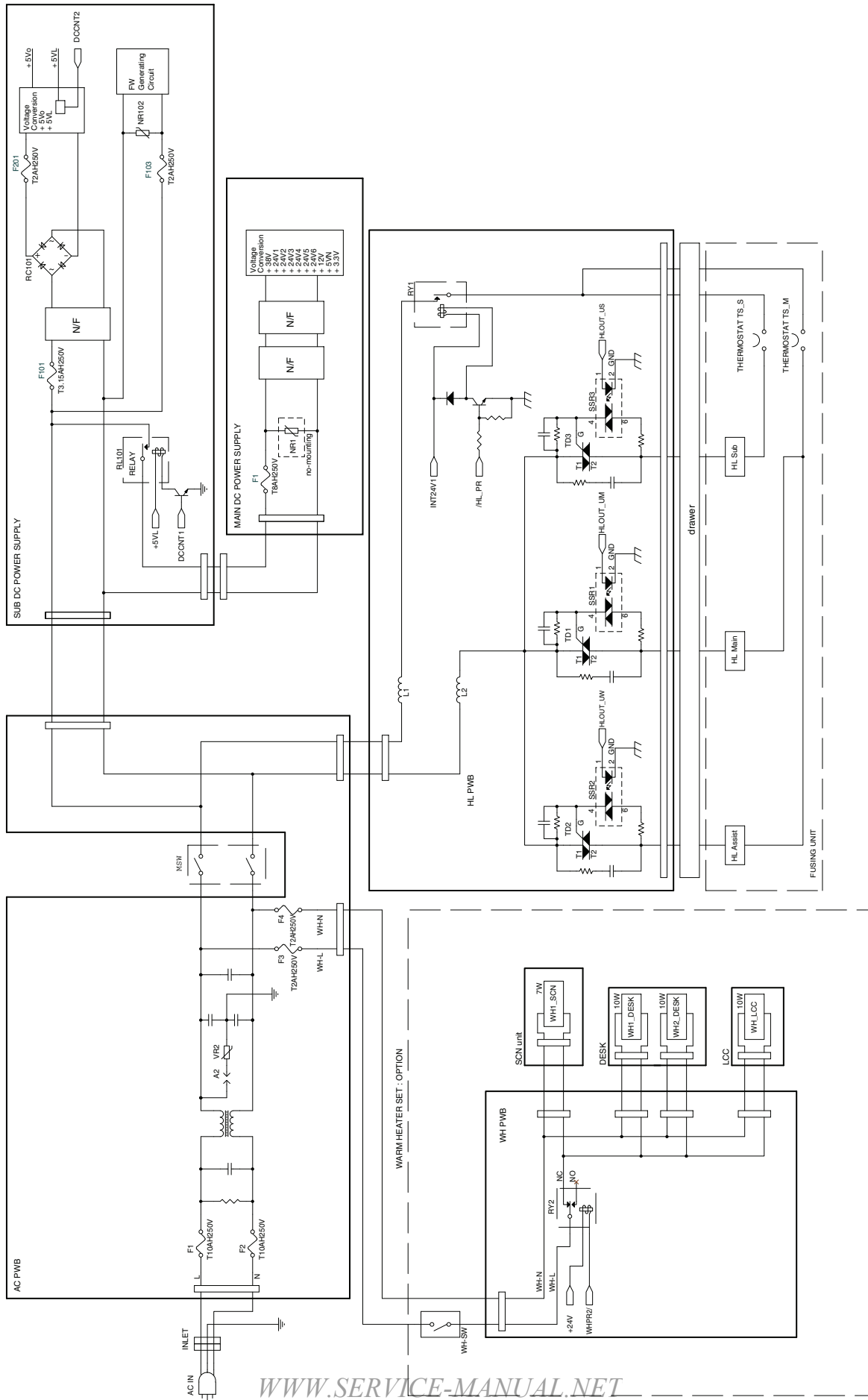




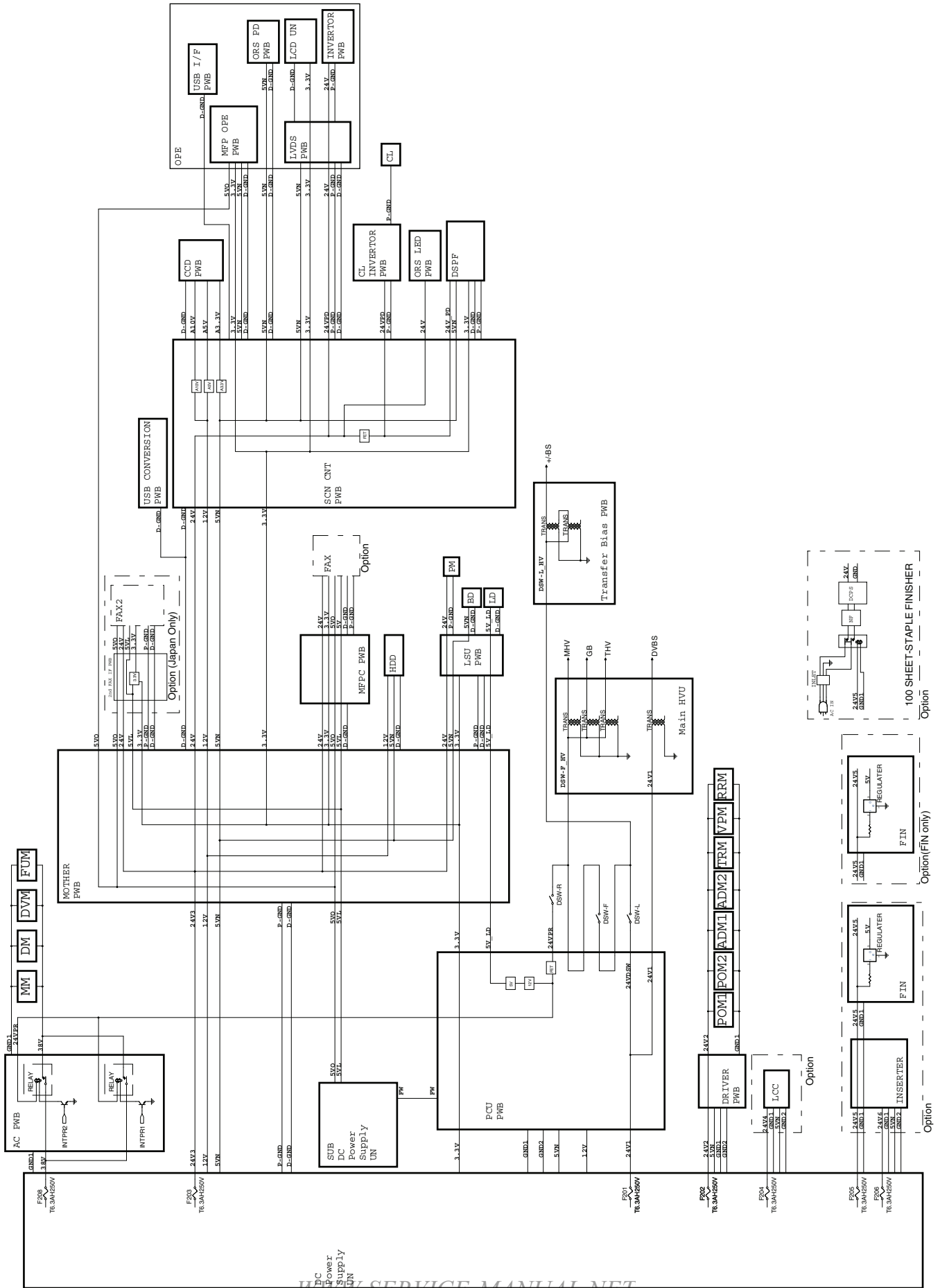
#### F. AC power line diagram (100V)



### G. AC power line diagram (200V)



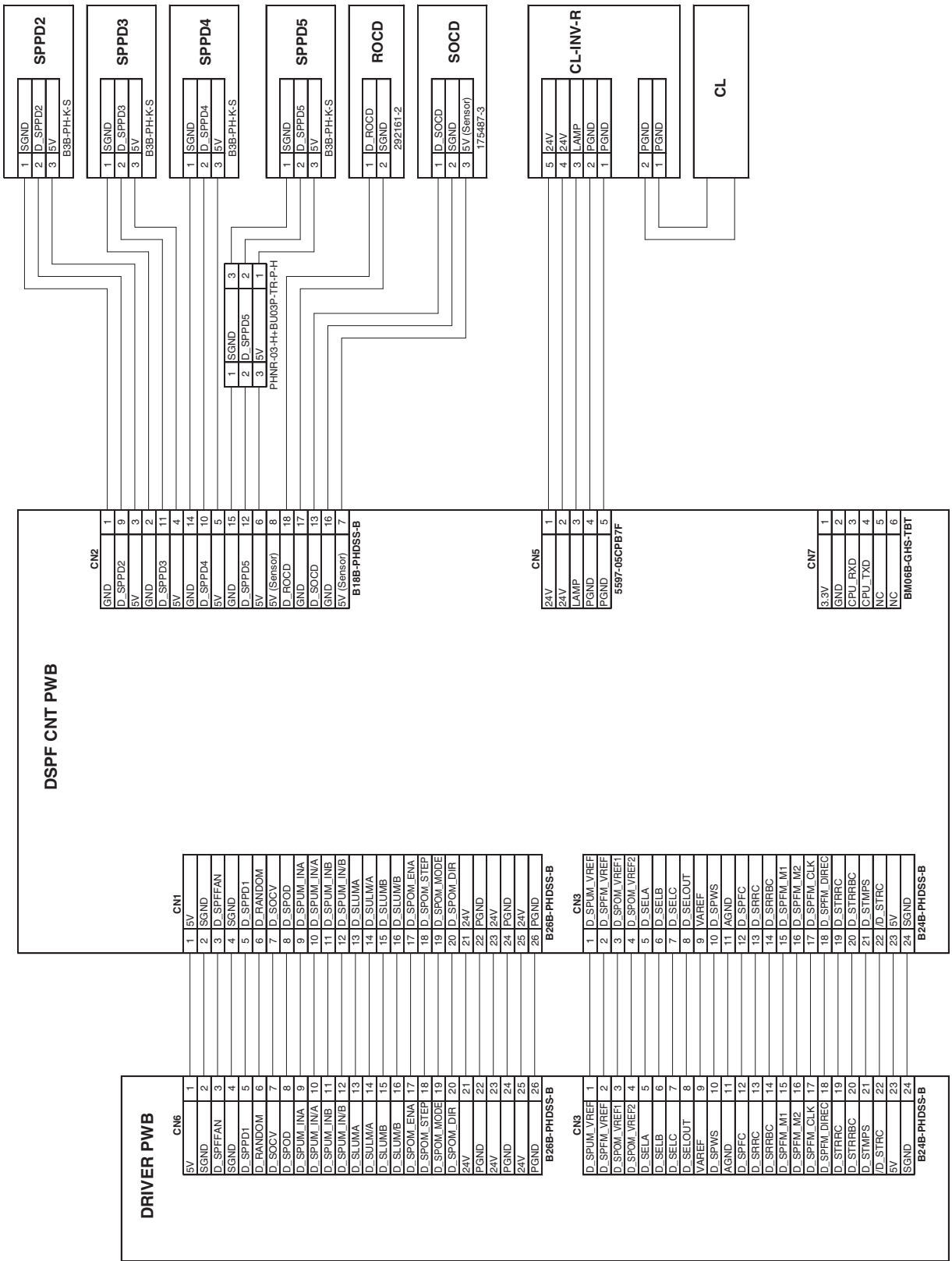
#### H. DC power line diagram



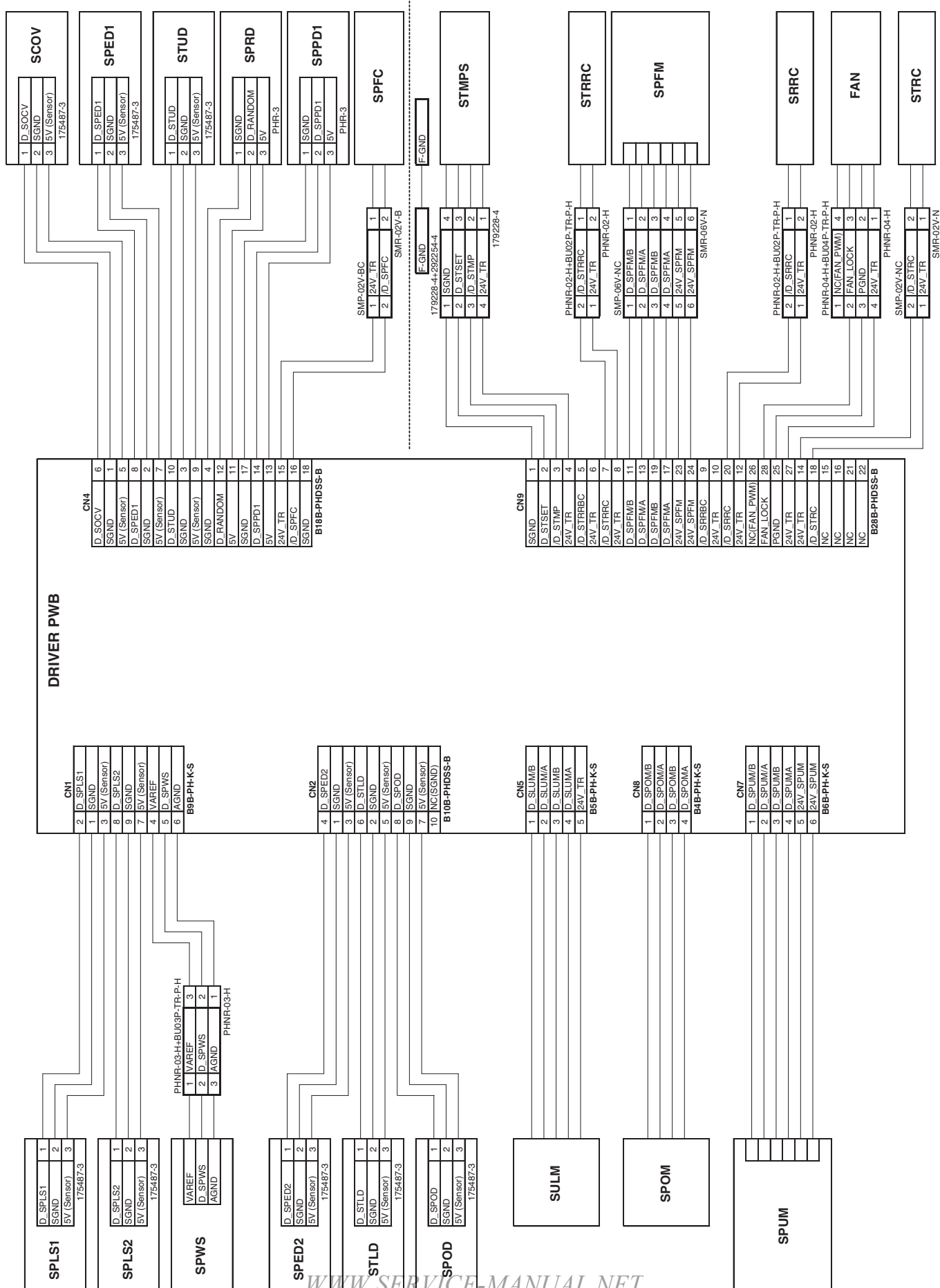
**(1) DSPF CNT PWB section 1/2**



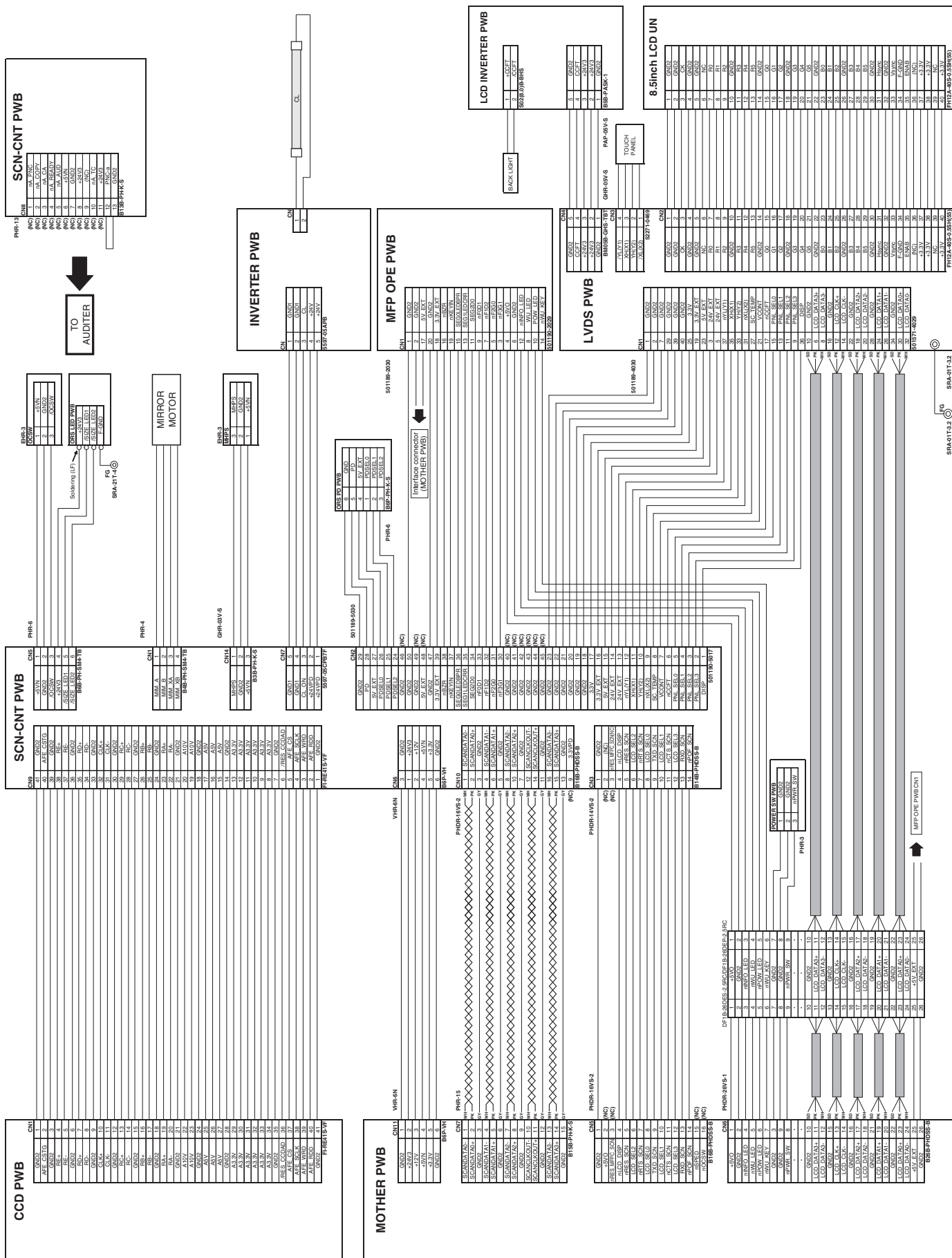
(2) DSPF CNT PWB section 2/2



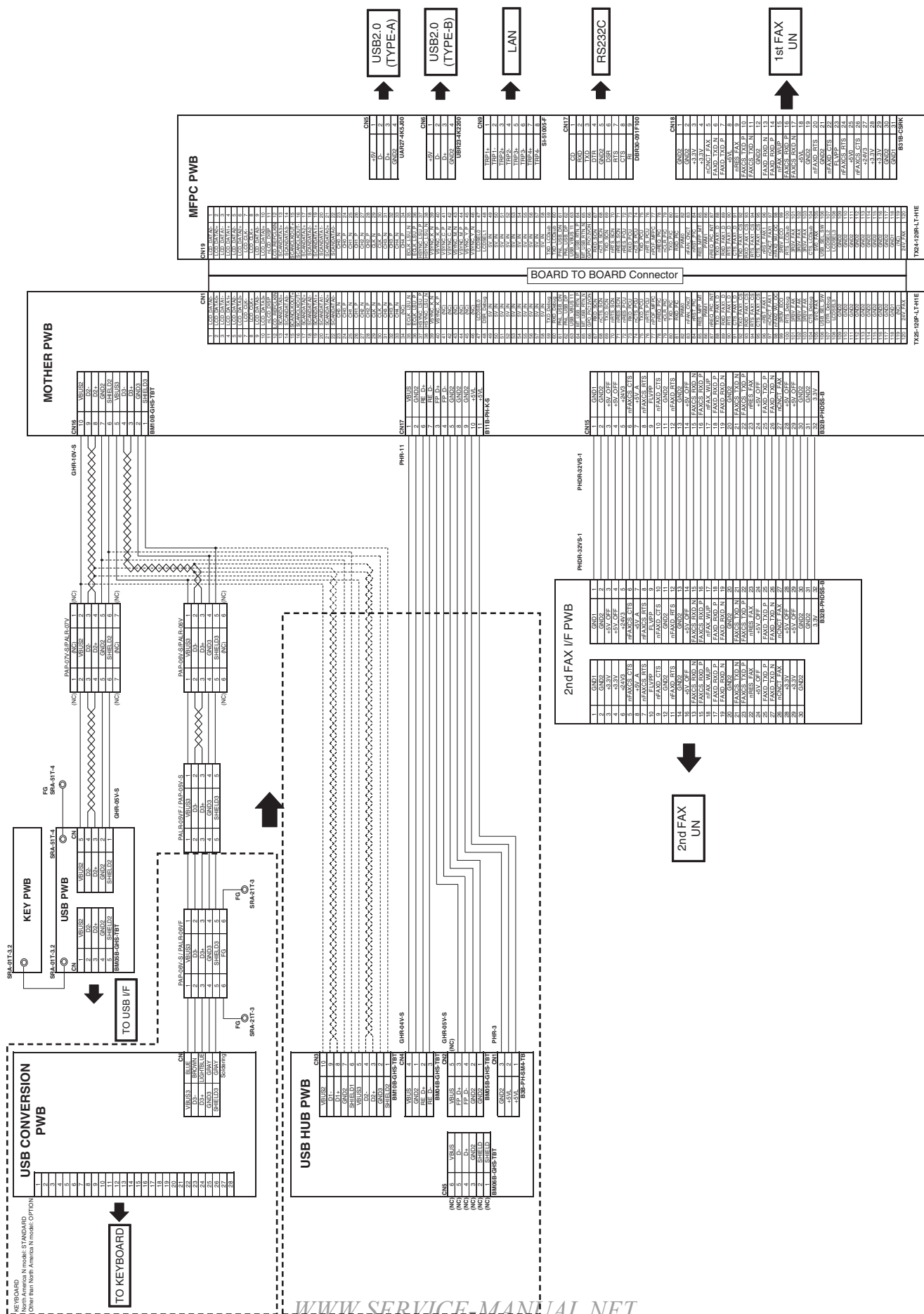
### (3) DRIVER PWB



### B. Scanner section and Operation section

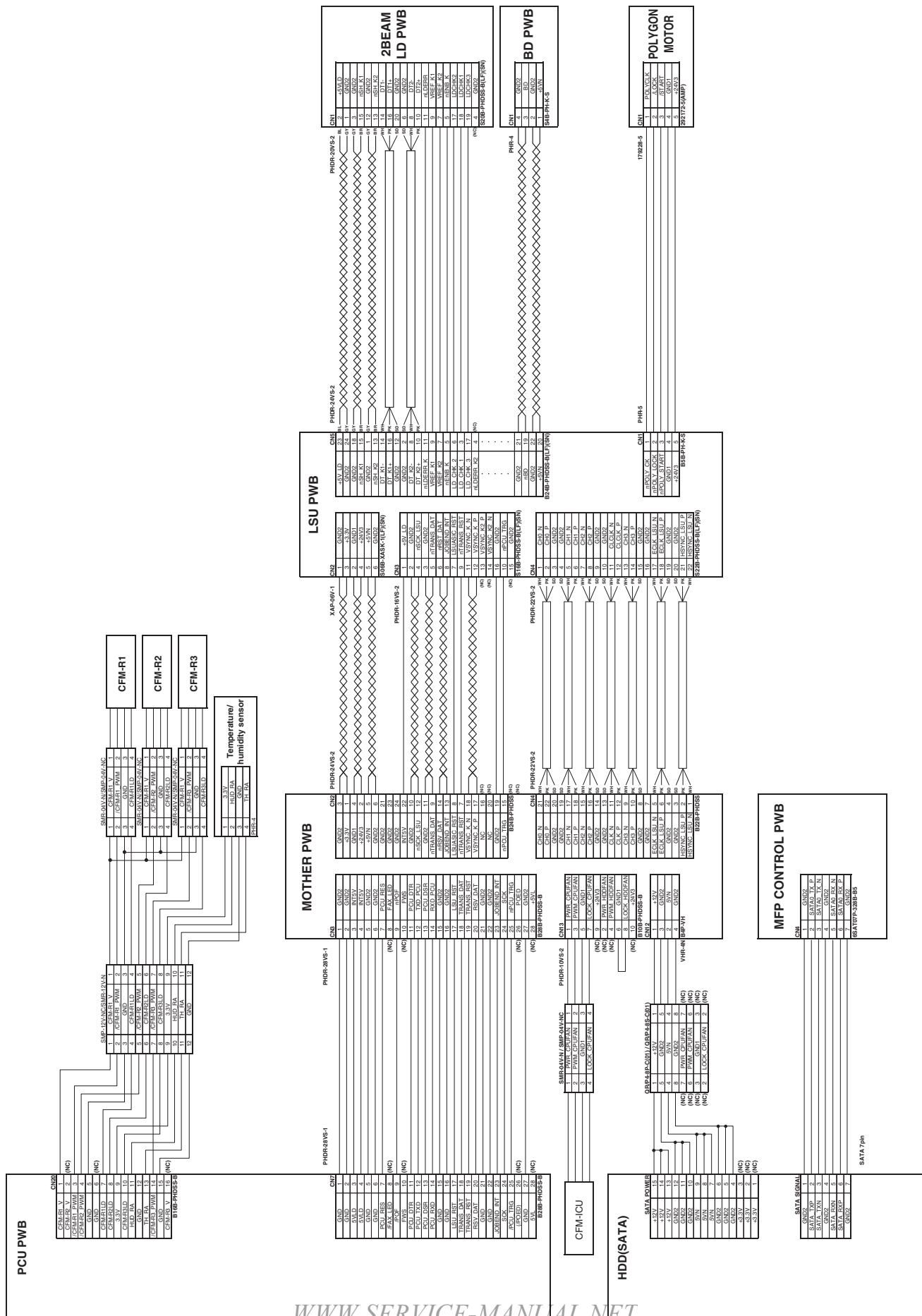


### C. FAX section and USB section

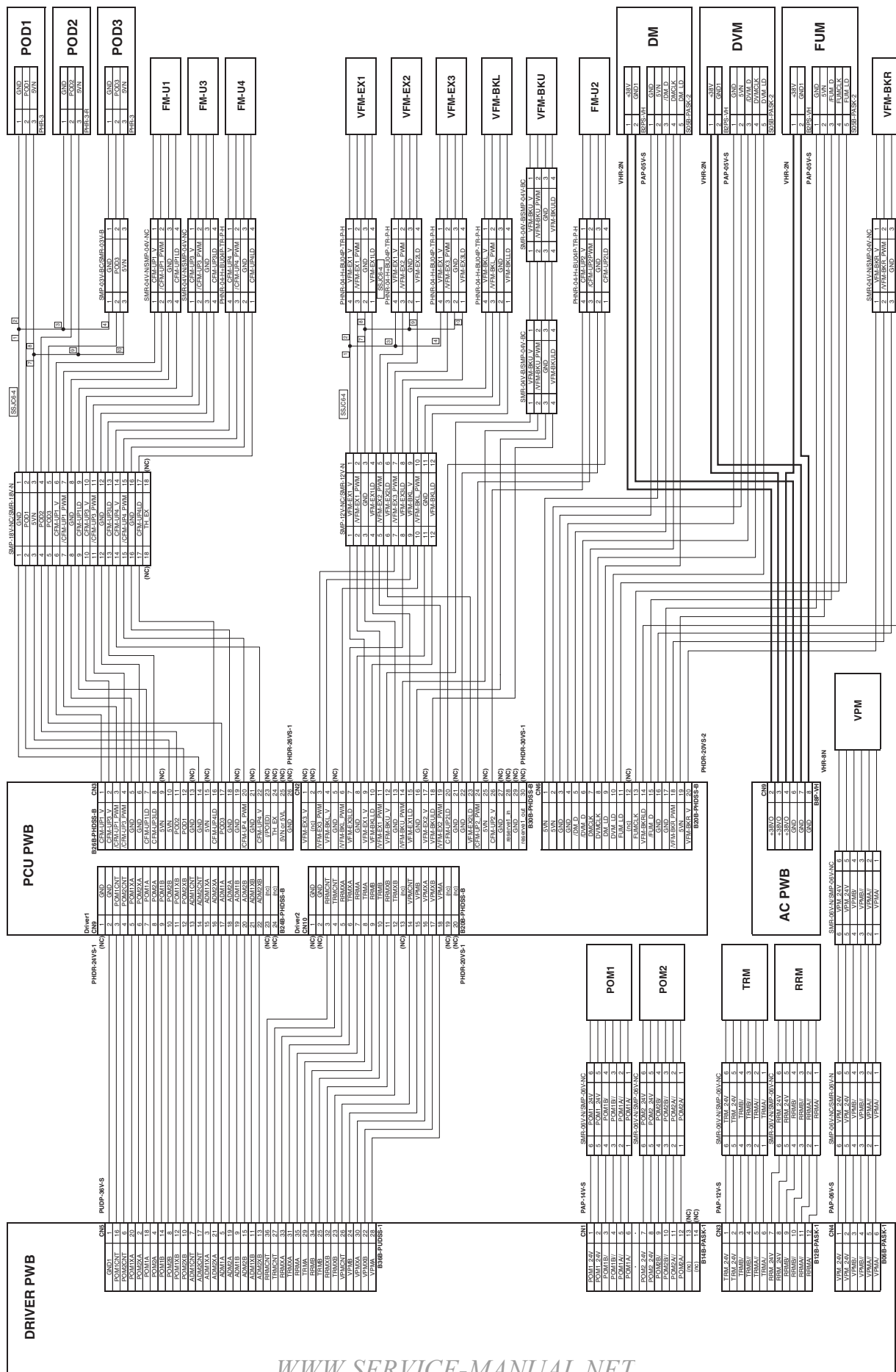




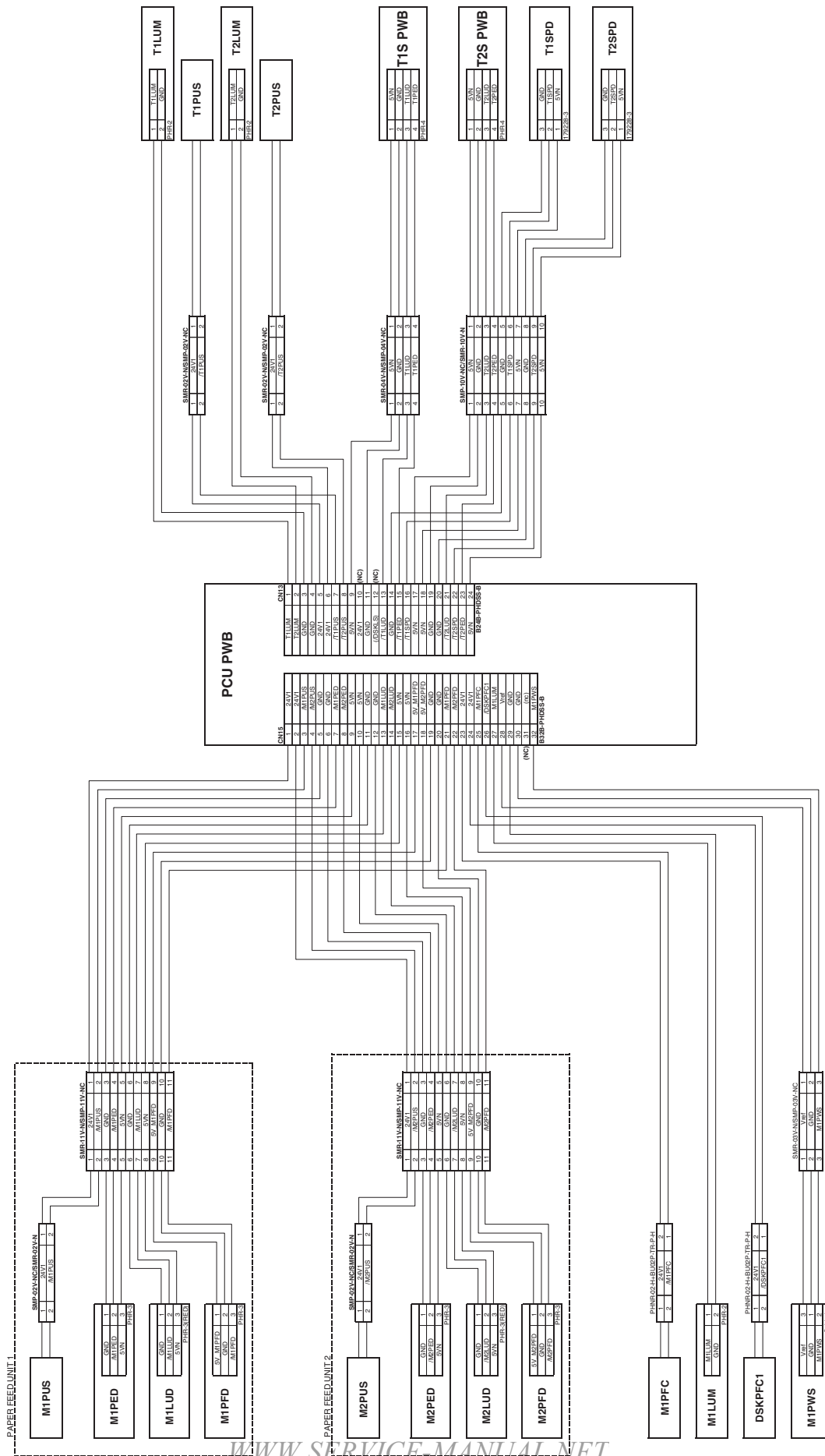
#### D. Image process section



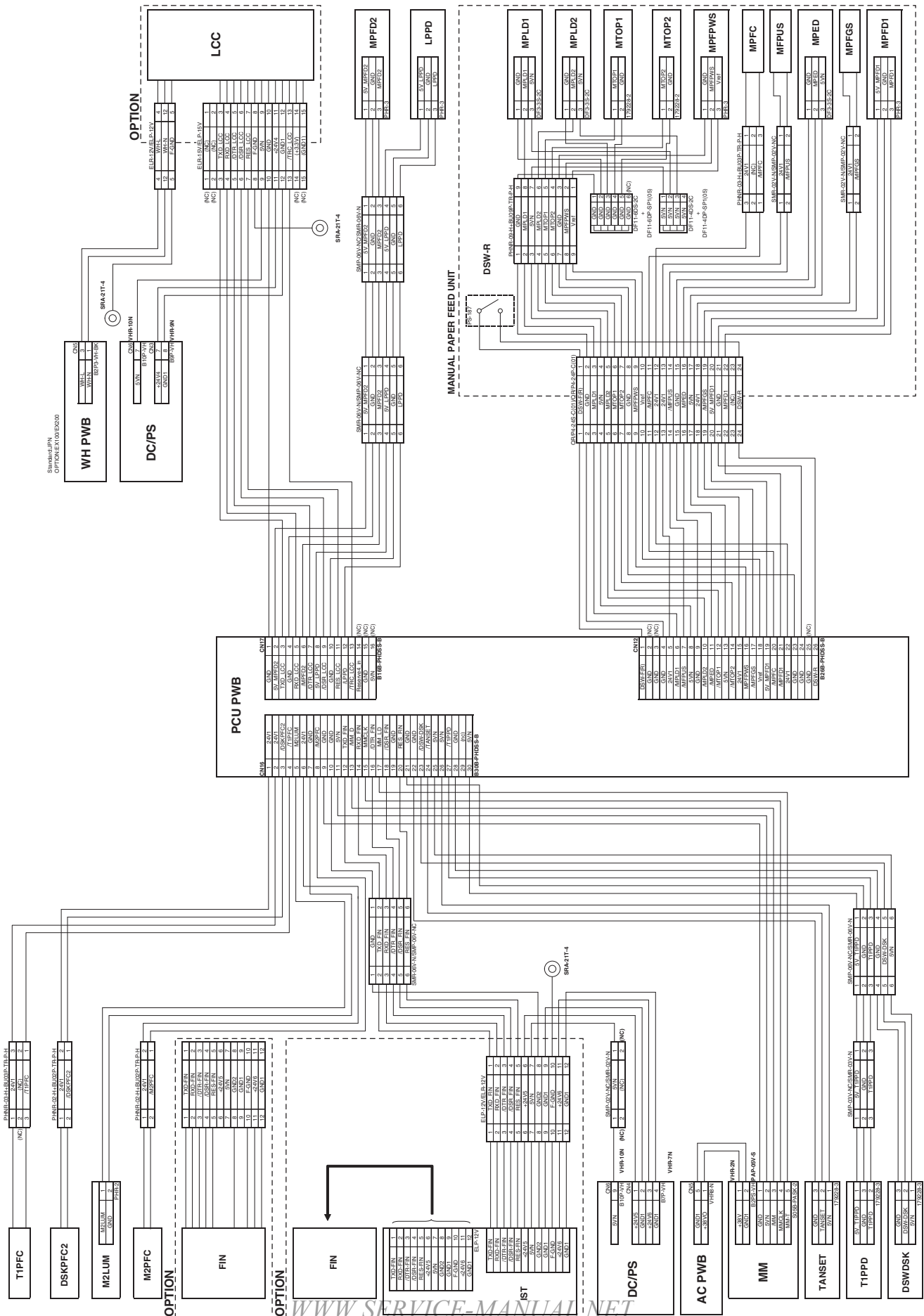
### E. Paper transport section (1/2)



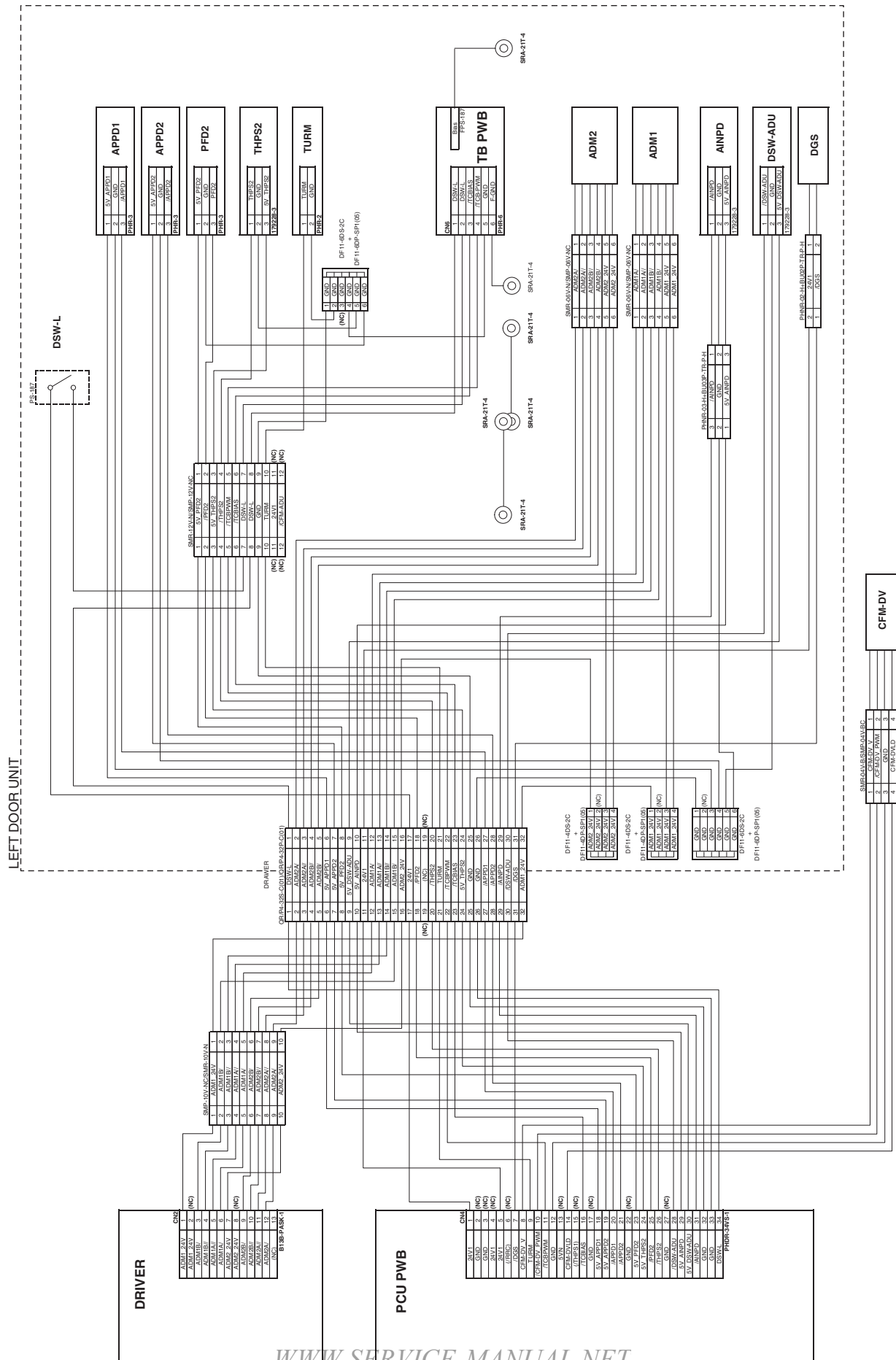
## F. Paper transport section (2/2)



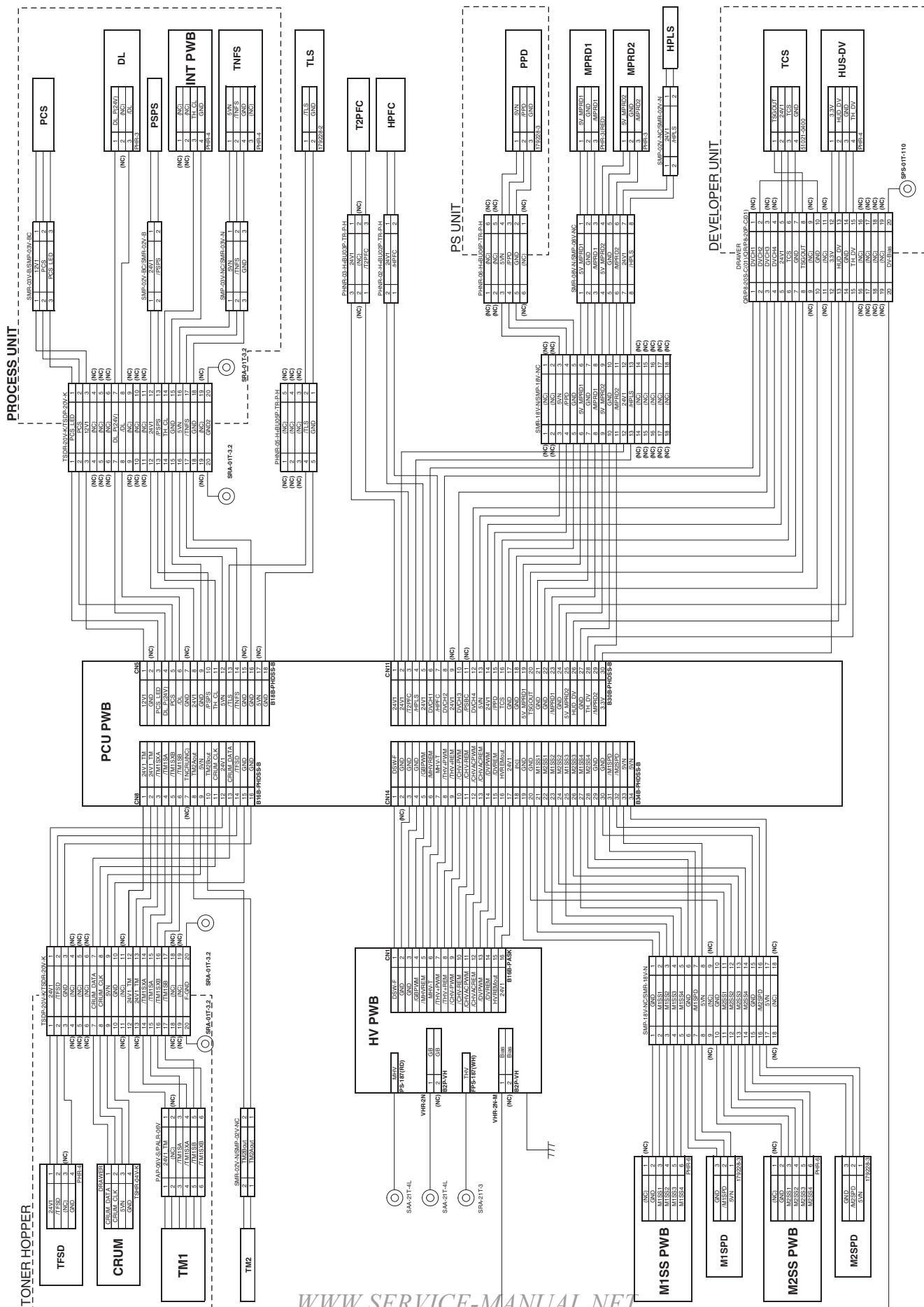
## G. Transport section and Option section



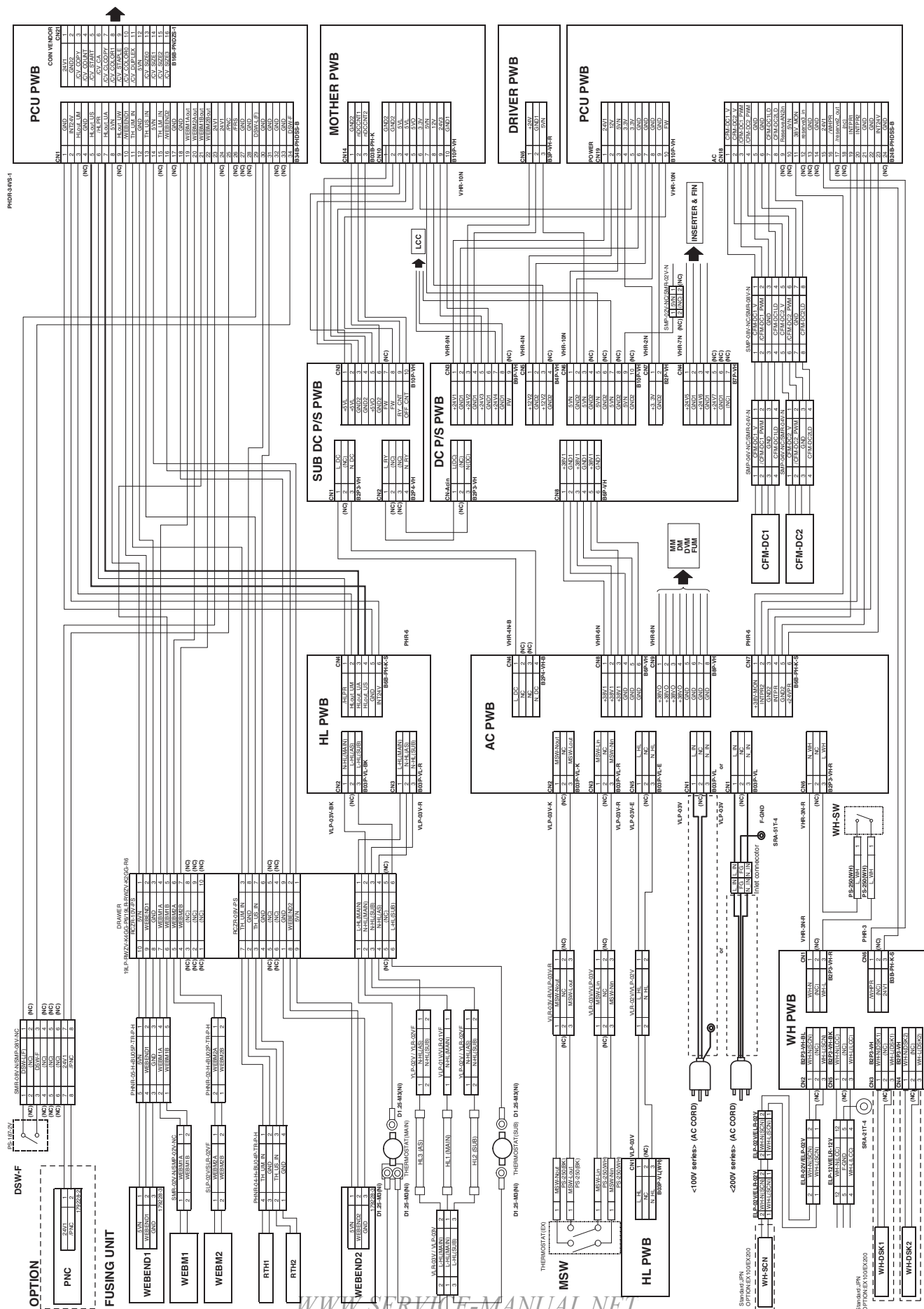
#### H. Left door transport section



# I. Process section



## J. Power source peripheral section



### 3. Signal list

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
38V_MON	38V monitor signal	Detection of 38V for interlock	OFF	ON	CN18	11	PCU	
ADM1A	ADU motor 1 control signal	ADU motor 1 ON/OFF control	–	–	CN9	17	PCU	
ADM1B	ADU motor 1 control signal	ADU motor 1 ON/OFF control	–	–	CN9	19	PCU	
ADM1CNT	ADU motor 1 current set signal	ADU motor 1 current select	Current Large	Current Small	CN9	13	PCU	
ADM1XA	ADU motor 1 control signal	ADU motor 1 ON/OFF control	–	–	CN9	15	PCU	
ADM1XB	ADU motor 1 control signal	ADU motor 1 ON/OFF control	–	–	CN9	21	PCU	
ADM2A	ADU motor 2 control signal	ADU motor 2 ON/OFF control	–	–	CN9	18	PCU	
ADM2B	ADU motor 2 control signal	ADU motor 2 ON/OFF control	–	–	CN9	20	PCU	
ADM2CNT	ADU motor 2 current set signal	ADU motor 2 current select	Current Large	Current Small	CN9	14	PCU	
ADM2XA	ADU motor 2 control signal	ADU motor 2 ON/OFF control	–	–	CN9	16	PCU	
ADM2XB	ADU motor 2 control signal	ADU motor 2 ON/OFF control	–	–	CN9	22	PCU	
/AINPD	ADU paper entry sensor detection signal	ADU paper entry detection	Paper presence	–	CN4	31	PCU	
/APPD1	ADU paper pass sensor 1 detection signal	ADU upstream section paper pass detection	Paper presence	–	CN4	20	PCU	
/APPD2	ADU paper pass sensor 2 detection signal	ADU midstream section paper pass detection	Paper presence	–	CN4	21	PCU	
CCFT	LCD backlight [CCFT cold-cathode tube]	Backlight for LCD	ON	OFF	CN2	6	SCU	
/CFM-DC1_PWM	Discharge fan motor PWM control signal (Power cooling fan motor 1)	Discharge fan motor PWM control (Power cooling fan motor 1)	Operating	Stop	CN18	3	PCU	
CFM-DC1_V	Discharge fan motor control signal (Power cooling fan motor 1)	Discharge fan motor control (Power cooling fan motor 1)	Stop	Conduction	CN18	1	PCU	
/CFM-DC2_PWM	Discharge fan motor PWM control signal (Power cooling fan motor 2)	Discharge fan motor PWM control (Power cooling fan motor 2)	Operating	Stop	CN18	4	PCU	
CFM-DC2_V	Discharge fan motor control signal (Power cooling fan motor 2)	Discharge fan motor control (Power cooling fan motor 2)	Stop	Conduction	CN18	2	PCU	
CFM-DC2LD	Discharge fan motor lock detection signal (Power cooling fan motor 2)	Discharge fan motor lock detection (Power cooling fan motor 2)	Normal	Abnormal	CN18	8	PCU	
CFM-DC1LD	Discharge fan motor lock detection signal (Power cooling fan motor 1)	Discharge fan motor lock detection (Power cooling fan motor 1)	Normal	Abnormal	CN18	7	PCU	
/CFM-DV_PWM	Discharge fan motor PWM control signal (Developing cooling fan motor)	Discharge fan motor PWM control (Developing cooling fan motor)	Operating	Stop	CN4	10	PCU	
CFM-DV_V	Discharge fan motor control signal (Developing cooling fan motor)	Discharge fan motor control (Developing cooling fan motor)	Stop	Conduction	CN4	8	PCU	
CFM-DVLD	Discharge fan motor lock detection signal (Developing cooling fan motor)	Discharge fan motor lock detection (Developing cooling fan motor)	Normal	Abnormal	CN4	14	PCU	
/CFM-R1_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 1)	Discharge fan motor PWM control (Process cooling fan motor 1)	Operating	Stop	CM20	3	PCU	
CFM-R1_V	Discharge fan motor control signal (Process cooling fan motor 1, 2, 3)	Discharge fan motor control (Process cooling fan motor 1, 2, 3)	Stop	Conduction	CN20	1	PCU	
CFM-R1LD	Discharge fan motor lock detection signal (Process cooling fan motor 1)	Discharge fan motor lock detection (Process cooling fan motor 1)	Normal	Abnormal	CN20	7	PCU	
/CFM-R2_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 2)	Discharge fan motor PWM control (Process cooling fan motor 2)	Operating	Stop	CN20	4	PCU	
CFM-R2LD	Discharge fan motor lock detection signal (Process cooling fan motor 2)	Discharge fan motor lock detection (Process cooling fan motor 2)	Normal	Abnormal	CN20	8	PCU	
/CFM-R3_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 3)	Discharge fan motor PWM control (Process cooling fan motor 3)	Operating	Stop	CN20	14	PCU	
CFM-R3LD	Discharge fan motor lock detection signal (Process cooling fan motor 3)	Discharge fan motor lock detection (Process cooling fan motor 3)	Normal	Abnormal	CN20	10	PCU	
/CFM-UP1_PWM	Discharge fan motor PWM control signal (Fusing cooling fan motor 1)	Discharge fan motor PWM control (Fusing cooling fan motor 1)	Operating	Stop	CN3	3	PCU	



Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
CFM-UP1_V	Discharge fan motor control signal (Fusing cooling fan motor 1)	Discharge fan motor control (Fusing cooling fan motor 1)	Stop	Conduction	CN3	1	PCU	
CFM-UP1LD	Discharge fan motor lock detection signal (Fusing cooling fan motor 1)	Discharge fan motor lock detection (Fusing cooling fan motor 1)	Normal	Abnormal			PCU	
/CFM-UP2_PWM	Discharge fan motor PWM control signal (Fusing cooling fan motor 2)	Discharge fan motor PWM control signal (Fusing cooling fan motor 2)	Operating	Stop	CN2	24	PCU	
CFM-UP2_V	Discharge fan motor control signal (Fusing cooling fan motor 2)	Discharge fan motor control (Fusing cooling fan motor 2)	Stop	Conduction	CN2	26	PCU	
CFM-UP2LD	Discharge fan motor lock detection signal (Fusing cooling fan motor 2)	Discharge fan motor lock detection (Fusing cooling fan motor 2)	Normal	Abnormal	CN2	20	PCU	
/CFM-UP3_PWM	Discharge fan motor PWM control signal (Fusing cooling fan motor 3)	Discharge fan motor PWM control (Fusing cooling fan motor 3)	Operating	Stop	CN3	4	PCU	
CFM-UP3_V	Discharge fan motor control signal (Fusing cooling fan motor 3)	Discharge fan motor control (Fusing cooling fan motor 3)	Stop	Conduction	CN3	2	PCU	
CFM-UP3LD	Discharge fan motor lock detection signal (Fusing cooling fan motor 3)	Discharge fan motor lock detection (Fusing cooling fan motor 3)	Normal	Abnormal	CN3	8	PCU	
/CFM-UP4_PWM	Discharge fan motor PWM control signal (Fusing cooling fan motor 4)	Discharge fan motor PWM control (Fusing cooling fan motor 4)	Operating	Stop	CN3	20	PCU	
CFM-UP4_V	Discharge fan motor control signal (Fusing cooling fan motor 4)	Discharge fan motor control (Fusing cooling fan motor 4)	Stop	Conduction	CN3	22	PCU	
CFM-UP4LD	Discharge fan motor lock detection signal (Fusing cooling fan motor 4)	Discharge fan motor lock detection (Fusing cooling fan motor 4)	Normal	Abnormal	CN3	16	PCU	
/CHVACPWM	High voltage control output (Separation charger) (CHV)	Separation charger AC component PWM control	–	–	CN14	12	PCU	
/CHVACREM	High voltage control output (Separation charger) (CHV)	Separation charger AC component ON/OFF control	ON	OFF	CN14	13	PCU	
/CHV-PWM	High voltage control output (Separation charger) (CHV)	Separation charger DC component PWM control	–	–	CN14	10	PCU	
/CHV-REM	High voltage control output (Separation charger) (CHV)	Separation charger DC component ON/OFF control	ON	OFF	CN14	11	PCU	
CL_ON	Scanner lamp	Light is radiated on the document for the CCD to scan document images.	ON	OFF	CN7	3	SCU	
CLR_PIC	Communication start timing	Communication start signal from MFPC	Communication start	–	CN1	79	MOTHER	
CNCT_FAN	Controller cooling fan stop control	Controller cooling fan stop	Drive	Stop	CN1	83	MOTHER	
CRU_CLK	CLK for communication	CLK for CRUM communication	–	–	CN8	11	PCU	
CRU_DATA	Communication data address signal	CRUM communication data address signal	–	–	CN8	13	PCU	
/CV_CA	Clear all signal (Coin vendor)	Clear all (Coin vendor)	Clear		CN21	6	PCU	
/CV_COUNT	Clear all signal (Coin vendor)	Count up (Coin vendor)	Count UP		CN21	4	PCU	
/CV_DUPLEX	Print count identification signal (Duplex mode) (For Coin vendor)	Print count identification signal (Duplex mode) (For Coin vendor) (Single count or double count is identified.)	DUPLEX mode		CN21	11		
/CV_SIZE0	Paper size signal 0 (Coin vendor)	Paper size 0 (Coin vendor)			CN21	13	PCU	
/CV_SIZE1	Paper size signal 1 (Coin vendor)	Paper size 1 (Coin vendor)			CN21	14	PCU	
/CV_SIZE2	Paper size signal 2 (Coin vendor)	Paper size 2 (Coin vendor)			CN21	15	PCU	
/CV_SIZE3	Paper size signal 3 (Coin vendor)	Paper size 3 (Coin vendor)			CN21	16	PCU	
/CV_STAPLE	Staple mode signal (Coin vendor)	Staple mode identification (Coin vendor)	STAPLE mode		CN21	9	PCU	
/CV_START	Copy start signal (Coin vendor)	Copy start status (Coin vendor)	Copy start		CN21	5	PCU	
DCCNT1	Main power control	The main power is turned OFF.	OFF	ON	CN14	2	MOTHER	
DCCNT2	Sub power control	The sub power is turned OFF.	OFF	ON	CN14	3	MOTHER	
/DGS	Paper exit gate solenoid control signal	Paper exit gate operation	DUPLEX mode	Single face	CN4	7	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
/DL	Discharge lamp control signal	Discharge lamp control	Lighting	OFF	CN5	6	PCU	
/DM_D	Drum motor control signal	DRUM motor ON/OFF	ON	OFF	CN6	5	PCU	
DM_LD	Drum motor lock detection signal	Drum motor lock detection	–	Lock	CN6	9	PCU	
DMCLK	Drum motor rotation speed control signal	Drum motor rotation speed control	–	–	CN6	7	PCU	
/DSKPFC1	Paper feed tray 3, 4 paper transport clutch control signal 1	Paper feed tray 3, 4 paper transport control	Paper transport	–	CN15	26	PCU	
/DSKPFC2	Paper feed tray 3, 4 paper transport clutch control signal 2	Paper feed tray 3, 4 paper transport control	Paper transport	–	CN16	3	PCU	
/DSR_FIN	Serial communication control signal	Reception control	–	–	CN16	18	PCU	
/DSR_LCC	Serial communication control signal	Reception control	–	–	CN17	9	PCU	
/DSW-ADU	ADU cover open/close detection signal	Duplex (ADU) cover open/close detection	Door open	Door close	CN4	28	PCU	
/DSW-DSK	Left door open/close detection signal (Desk section)	Left door open/close detection (Desk section)	Desk Left door open	Desk Left door close	CN16	23	PCU	
DSW-F	Front door open/close detection signal	Front door open/close detection	Left door Open or Front door Open	Left door Close or Front door Close	CN1	34	PCU	
DSW-F	Front door open/close detection signal	Front door open/close detection	Left door Open or Front door Open	Left door Close or Front door Close	CN14	1	PCU	
DSW-L	Left door open/close detection signal	Left door open/close detection	Left door Open	Left door Close	CN4	34	PCU	
DSW-R	Manual feed open/close detection signal	Manual feed open/close detection	Left door Open or Front door Open or Manual unit Pull-out	Left door Close or Front door Close or Manual unit Store	CN12	26	PCU	
/DTR_FIN	Serial communication control signal	Transmission control	–	–	CN16	16	PCU	
/DTR_LCC	Serial communication control signal	Transmission control	–	–	CN17	7	PCU	
/DVCH2	DV unit identification signal 1	Installation is recognized.	-	-	CN11	6	PCU	
/DVM_D	Developing motor control signal	Developing motor ON/OFF	ON	OFF	CN6	6	PCU	
DVM_LD	Developing motor lock detection signal	Developing motor lock detection	–	Lock	CN6	10	PCU	
DVMCLK	Developing motor rotation speed control signal	Developing motor rotation speed control	–	–	CN6	8	PCU	
/DVPWM	Developing bias voltage control signal (PWM)	Developing bias PWM control	–	–	CN14	14	PCU	
/DVREM	Developing bias control (ON/OFF) signal	Developing bias ON/OFF	ON	OFF	CN14	15	PCU	
/FUM_D	Fusing motor control signal	Fusing motor ON/OFF	ON	OFF	CN6	15	PCU	
FUM_LD	Fusing motor lock detection signal	Fusing motor lock detection	–	Lock	CN6	11	PCU	
FUMCLK	Fusing motor rotation speed control signal	Fusing motor rotation speed control	–	–	CN6	13	PCU	
FW	AC power full wave signal	Power monitor	–	–	CN19	10	PCU	
/GBPWM	Main charger grid bias voltage (PWM) control signal	Main charger grid bias voltage (PWM) control	–	–	CN14	5	PCU	
HLout-UA	Heater lamp heating control signal (Upper assist)	Heater lamp heating control (Upper assist)	OFF	Lighting	CN1	7	PCU	
HLout-UM	Heater lamp heating control signal (Upper main)	Heater lamp heating control (Upper main)	OFF	Lighting	CN1	3	PCU	
HLout-US	Heater lamp heating control signal (Upper sub)	Heater lamp heating control (Upper sub)	OFF	Lighting	CN1	5	PCU	
/HLPR	Fusing heater lamp power relay control signal	Fusing heater lamp power relay control	ON	OFF	CN1	6	PCU	
/HPFC	Horizontal paper transport clutch control signal	Horizontal paper transport clutch control	Paper transport	–	CN11	7	PCU	
/HPLS	Paper guide lock solenoid control signal	Paper guide lock solenoid control	Lock	–	CN11	4	PCU	
HUD_DV	Developing humidity sensor	Developing section humidity detection	–	–	CN11	26	PCU	
HUD_RA	Room humidity detection signal	Room humidity detection	–	–	CN20	11	PCU	
HVREMout	High voltage output control signal (MC/DV/TC)	High voltage ON/OFF control signal (MC/DV/TC)	OFF	ON	CN14	16	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
INFO_LED	FAX reception lamp [LED]	FAX reception lamp lighting	Lighting	Off	CN6	4	MOTHER	
INTPR1	Interlock power relay control signal	+38V interlock power relay control	OFF	ON	CN18	19	PCU	
INTPR2	Interlock power relay control signal	Interlock power relay control	OFF	ON	CN18	20	PCU	
JOBEND_INT	LSU job end signal	The LSU notifies job end.	–	Job End	CN7	23	PCU	
LOCK_CPUFAN	Controller cooling fan lock detection	Controller cooling fan lock detection	–	Lock detection	CN13	7	MOTHER	
/LPPD	LCC paper pass detection signal	Detection of paper entry from LCC	Paper pass	–	CN17	12	PCU	
LSU_RST	LSU reset signal	The PCU resets the LSU.	Operation Enable	Reset	CN7	17	PCU	
/M1LUD	Paper tray upper limit detection signal (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	–	Upper limit	CN15	13	PCU	
M1LUM	Lift-up motor control signal (Paper feed tray 3)	Lift-up motor control (Paper feed tray 3)	Stop	Lifting	CN15	27	PCU	
/M1PED	Paper empty detection signal (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Paper empty	Paper presence	CN15	7	PCU	
/M1PFC	Paper feed clutch (M1) control signal (Paper feed tray 3)	Paper feed tray 3 paper feed control	Paper transport	–	CN15	25	PCU	
/M1PFD	Paper pass detection signal (Multi paper feed tray 3)	Detection of paper pass from paper feed tray 3	Paper pass	–	CN15	21	PCU	
/M1PUS	Paper pickup solenoid control signal (Paper feed tray 3)	Paper pickup roller control (Paper feed tray 3)	Roller lifting	Paper feed	CN15	3	PCU	
M1PWS	Paper feed tray paper width detection signal (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	–	–	CN15	32	PCU	
/M1SPD	Paper remaining quantity detection signal (Paper feed tray 3)	–	–	Paper remaining quantity 66% or less	CN14	31	PCU	
M1SS1	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			CN14	21	PCU	
M1SS2	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			CN14	23	PCU	
M1SS3	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			CN14	25	PCU	
M1SS4	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			CN14	27	PCU	
/M2LUD	Paper tray upper limit detection signal (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	–	Upper limit detection	CN15	14	PCU	
M2LUM	Lift-up motor control signal (Paper feed tray 4)	Lift-up motor control (Paper feed tray 4)	Stop	Lifting	CN16	5	PCU	
/M2PED	Paper empty detection signal (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Paper empty	Paper presence	CN15	8	PCU	
/M2PFC	Paper feed clutch (M1) control signal (Paper feed tray 4)	Paper feed tray 4 paper feed control	Paper transport	–	CN16	8	PCU	
/M2PFD	Paper pass detection signal (Multi paper feed tray 4)	Detection of paper pass from paper feed tray 4	Paper pass	–	CN15	22	PCU	
/M2PUS	Paper pickup solenoid control signal (Paper feed tray 4)	Paper pickup roller control (Paper feed tray 4)	Roller lifting	Paper feed	CN15	4	PCU	
/M2SPD	Paper remaining quantity detection (Paper feed tray 4) signal	Paper remaining quantity detection (Paper feed tray 4)	–	Paper remaining quantity 66% or less	CN14	32	PCU	
M2SS1	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			CN14	22	PCU	
M2SS2	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			CN14	24	PCU	
M2SS3	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			CN14	26	PCU	
M2SS4	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			CN14	28	PCU	
/MFPUS	Paper pickup solenoid control signal (Manual paper feed)	Paper pickup solenoid control (Manual paper feed)	Roller descending Paper feed	–	CN12	7	PCU	
MHPS	Scanner home positions sensor [Transmission type]	Scanner home position detection	–	Home position	CN14	1	SCU	
/MHVREM	Main charger control signal	Main charger ON/OFF	ON	OFF	CN14	6	PCU	
MHV-T	Main charger trouble detection signal	Main charger trouble detection	Trouble/ without MHV	Normal	CN14	7	PCU	
MIM_*	Scanner motor [Stepping motor]	Scanner (reading) section	–	–	CN1	1, 2, 3, 4	SCU	
/MM_D	Main motor control signal	Main motor ON/OFF control	ON	OFF	CN16	13	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
MM_LD	Main motor lock detection signal	Main motor lock detection	Rotation	Stop/Lock	CN16	17	PCU	
MMCLK	Main motor rotation speed control (CLK) signal	Main motor rotation speed control	–	–	CN16	15	PCU	
/MPED	Manual feed paper empty detection signal	Manual paper feed tray paper empty detection	Paper presence	Paper empty	CN12	11	PCU	
/MPFC	Paper feed clutch control signal (Manual feed)	Manual paper feed tray paper feed roller control	Paper feed	–	CN12	20	PCU	
/MPFD1	Manual feed paper pass detection signal 1	Detection of paper pass from manual paper feed tray	Paper pass	–	CN12	21	PCU	
/MPFD2	Manual feed paper pass detection signal 2	Detection of paper pass from manual paper feed tray and LCC	Paper pass	–	CN17	6	PCU	
/MPFGS	Manual feed gate solenoid control signal	Manual feed gate control	Paper pass Enable	Stopper	CN12	17	PCU	
MPFPWS	Manual feed paper width detection signal	Manual feed paper width detection	–	–	CN12	16	PCU	
/MPLD1	Manual feed paper length detection signal 1	Manual paper feed tray paper length detection (Short)	–	Paper presence	CN12	6	PCU	
/MPLD2	Manual feed paper length detection signal 2	Manual paper feed tray paper length detection (Long)	–	Paper presence	CN12	10	PCU	
/MPRD1	Paper feed tray 2paper pass detection signal 1	Detection of paper pass from manual/paper feed tray 2/LCC	Paper pass	–	CN11	23	PCU	
/MPRD2	Paper feed tray 2paper pass detection signal 2	Detection of paper pass from manual/paper feed tray 2/LCC	Paper pass	–	CN11	29	PCU	
/MTOP1	Manual paper feed tray pull-out position detection signal 1	Manual paper feed tray pull-out position detection (Store position)	–	Store	CN12	12	PCU	
/MTOP2	Manual paper feed tray pull-out position detection signal 2	Manual paper feed tray pull-out position detection (Pull-out position)	–	Pull-out	CN12	14	PCU	
OCSW	Original cover SW [Transmission type]	Document cover open/close detection (Document size detection trigger)	Close	Open	CN5	3	SCU	
PCS	Image density sensor signal	Toner patch density detection on the OPC drum	–	–	CN5	5	PCU	
PCS_LED	Image density sensor LED current control signal	Image density sensor LED light quantity control	–	–	CN5	3	PCU	
PCU_DSR	Serial communication control signal	Transmission control signal (Serial communication)	–	–	CN7	13	PCU	
PCU_DTR	Serial communication control signal	Reception control signal (Serial communication)	–	–	CN7	11	PCU	
PCU_RES	PCU reset signal	The controller resets the PCU.	Operation Enable	Reset	CN7	7	PCU	
PCU_RXD	Serial communication reception data signal	Reception data from the controller	–	–	CN7	14	PCU	
/PCU_TRG	LSU trigger signal	The PCU detects the trigger signal.	Trigger	–	CN7	25	PCU	
PCU_TXD	Serial communication transmission data signal	Transmission data to the controller	–	–	CN7	12	PCU	
/PFD2	Paper feed section paper pass sensor detection signal	Detection of paper pass from ADU/LCC/Desk section	Paper presence	–	CN4	25	PCU	
/PNC	Count-up signal (Personal counter)	Count-up (Personal counter)	–	–	CN1	25	PCU	
/POD1	Paper exit sensor 1 detection signal	Detection of paper exit from the fusing section	Paper presence	–	CN3	12	PCU	
/POD2	Paper exit sensor 2 detection signal	Paper exit paper pass detection	Paper pass	–	CN3	11	PCU	
/POD3	Paper exit sensor 3 detection signal	Detection of paper delivery to the upper paper exit tray	–	Paper presence	CN3	17	PCU	
/POF	Power OFF status signal	Power OFF status	Power OFF	Power ON	CN7	9	PCU	
POF_MFPC	Power OFF signal transmission	Main power OFF status signal transmission to MFPC	Power OFF	–	CN1	77	MOTHER	
POF_PCU	Power OFF signal reception	Main power OFF status signal reception from PCU	Power OFF	–	CN3	9	MOTHER	
POF_SCN	Power OFF signal transmission	Main power OFF status signal transmission to SCN	Power OFF	–	CN5	14	MOTHER	
POM1A	Paper exit motor 1 control signal	Paper exit motor 1 ON/OFF control	–	–	CN9	7	PCU	
POM1B	Paper exit motor 1 control signal	Paper exit motor 1 ON/OFF control	–	–	CN9	9	PCU	
POM1CNT	Paper exit motor 1 current set signal	Paper exit motor 1 current select	Current Large	Current Small	CN9	3	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
POM1XA	Paper exit motor 1 control signal	Paper exit motor 1 ON/OFF control	–	–	CN9	5	PCU	
POM1XB	Paper exit motor 1 control signal	Paper exit motor 1 ON/OFF control	–	–	CN9	11	PCU	
POM2A	Paper exit motor 2 control signal	Paper exit motor 2 ON/OFF control	–	–	CN9	8	PCU	
POM2B	Paper exit motor 2 control signal	Paper exit motor 2 ON/OFF control	–	–	CN9	10	PCU	
POM2CNT	Paper exit motor 2 current set signal	Paper exit motor 2 current select	Current Large	Current Small	CN9	4	PCU	
POM2XA	Paper exit motor 2 control signal	Paper exit motor 2 ON/OFF control	–	–	CN9	6	PCU	
POM2XB	Paper exit motor 2 control signal	Paper exit motor 2 ON/OFF control	–	–	CN9	12	PCU	
POW_LED	Power lamp [LED]	Power lamp lighting	Lighting	Off	CN6	6	MOTHER	
/PPD	Resist roller front paper pass detection signal	Paper pass detection in front of the resist roller	Paper pass	–	CN11	15	PCU	
/PSPS	Separation solenoid control signal	Separation solenoid control	Separation	–	CN5	10	PCU	
PWM_CPUFAN	Controller cooling fan control	Controller cooling fan control	OFF	ON (PWM control)	CN13	3	MOTHER	
PWR_SW	Operation panel power switch [Push switch]	Operation panel power switch pressing detection	Pressing	–	CN6	8	MOTHER	
REQ_PIC	Communication request	Communication request signal to MFPC	Communication start	–	CN1	78	MOTHER	
RES_FIN	Finisher reset signal	Finisher reset	Operation Enable	Reset	CN16	20	PCU	
RES_LCC	LCC reset signal	LCC reset	Operation Enable	Reset	CN17	11	PCU	
RRMA	PS motor control signal	PS motor ON/OFF control	–	–	CN10	7	PCU	
RRMB	PS motor control signal	PS motor ON/OFF control	–	–	CN10	9	PCU	
RRMCNT	PS motor current set signal	PS motor current select	Current Large	Current Small	CN10	3	PCU	
RRMXA	PS motor control signal	PS motor ON/OFF control	–	–	CN10	5	PCU	
RRMXB	PS motor control signal	PS motor ON/OFF control	–	–	CN10	11	PCU	
/RSV_DAT	Serial communication reception data signal	Data reception from the LSU	–	–	CN7	20	PCU	
RXD_FIN	Serial I/F data (FINISHER)	Serial I/F data (PCU PWB - FINISHER)	–	–	CN16	14	PCU	
RXD_LCC	Serial I/F data (LCC)	Serial I/F data (PCU PWB - LCC)	–	–	CN17	5	PCU	
RXD_PIC	Serial communication transmission data signal	Transmission data to MFPC	–	–	CN1	81	MOTHER	
/SCK	Serial communication clock	LSU serial communication clock	–	–	CN7	24	PCU	
/T1LUD	Paper feed tray upper limit detection signal (Paper feed tray 1)	Paper feed tray upper limit detection (Paper feed tray 1)	Upper limit	–	CN13	13	PCU	
T1LUM	Paper tray lift-up motor control signal (Paper feed tray 1)	Paper tray lift-up control (Paper feed tray 1)	Stop	Lifting	CN13	1	PCU	
/T1PED	Paper empty detection signal (Paper feed tray 1)	Paper empty detection (Paper feed tray 1)	Paper empty	Paper presence	CN13	15	PCU	
/T1PFC	Paper feed clutch control signal (Paper feed tray 1)	Paper feed clutch control (Paper feed tray 1)	Paper transport	–	CN16	4	PCU	
/T1PPD	Paper pass detection signal (Paper feed tray 1)	Detection of paper pass from Paper feed tray 1	Paper pass	–	CN16	27	PCU	
/T1PUS	Paper pickup solenoid control signal 1	Paper pickup solenoid control (Paper feed tray 1)	Roller lifting	Paper feed	CN13	7	PCU	
/T1SPD	Paper remaining quantity detection signal (Paper feed tray 1)	Paper remaining quantity detection (Tray 1)	–	Paper remaining quantity 66% or less	CN13	16	PCU	
/T2LUD	Paper feed tray upper limit detection signal (Paper feed tray 2)	Paper feed tray upper limit detection (Paper feed tray 2)	Upper limit	–	CN13	21	PCU	
T2LUM	Paper tray lift-up motor control signal (Paper feed tray 2)	Paper tray lift-up control (Paper feed tray 2)	Stop	Lifting	CN13	2	PCU	
/T2PED	Paper empty detection signal (Paper feed tray 2)	Paper empty detection (Paper feed tray 2)	Paper empty	Paper presence	CN13	23	PCU	
/T2PFC	Paper feed clutch control signal (Tandem tray 2)	Tandem tray 2 paper feed roller drive	Paper transport	–	CN11	3	PCU	
/T2PUS	Paper pickup solenoid control signal 2	Paper pickup solenoid control (Paper feed tray 2)	Roller lifting	Paper feed	CN13	8	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
/T2SPD	Paper remaining quantity detection signal (Paper feed tray 2)	Paper remaining quantity detection (Tray 2)	–	Paper remaining quantity 66% or less	CN13	22	PCU	
/TANSET	Paper feed tray 1, 2 (Tandem tray) detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Pull-out	Insert	CN16	24	PCU	
/TCBias	Transfer bias control signal	Transfer belt cleaning output control	ON	OFF	CN4	16	PCU	
/TCBPWM	Transfer bias PWM control signal	Transfer belt cleaning output voltage PWM control	ON	OFF	CN4	11	PCU	
TCS	Toner density detection signal	Toner density detection	–	–	CN11	16	PCU	
/TFSD	Toner remaining quantity detection signal	Toner hopper remaining quantity detection	Remaining quantity Large	Remaining quantity Small	CN8	14	PCU	
TH_CL	Process section peripheral temperature sensor signal	Process section peripheral temperature detection	–	–	CN5	11	PCU	
TH_DV	Developing temperature detection signal	Developing section peripheral temperature detection	–	–	CN11	28	PCU	
TH_RA	Room temperature detection signal	Room temperature detection	–	–	CN20	13	PCU	
TH_UM_IN	Heater lamp (upper main) temperature detection signal	Heater lamp (upper main) temperature detection	–	–	CN1	11	PCU	
TH_US_IN	Heater lamp (upper sub) temperature detection signal	Heater lamp (upper sub) temperature detection	–	–	CN1	13	PCU	
/THPS2	Transfer belt separation HP sensor 2 detection signal	Transfer belt separation HP detection 2	Separation	Contact	CN4	26	PCU	
/THV+PWM	Transfer charger output control signal (THV)	Transfer charger output control (PWM control)	–	–	CN14	8	PCU	
/THV+REM	Transfer charger control signal (THV)	Transfer charger ON/OFF control	ON	OFF	CN14	9	PCU	
/TLS	Waste toner pipe lock detection signal	Waste toner pipe lock detection	–	Lock	CN5	13	PCU	
/TM1SA	Toner motor 1 control signal	Toner motor 1 ON/OFF control	–	–	CN8	4	PCU	
/TM1SB	Toner motor 1 control signal	Toner motor 1 ON/OFF control	–	–	CN8	6	PCU	
/TM1SXA	Toner motor 1 control signal	Toner motor 1 ON/OFF control	–	–	CN8	3	PCU	
/TM1SXB	Toner motor 1 control signal	Toner motor 1 ON/OFF control	–	–	CN8	5	PCU	
TM2Aout	Toner motor 2 control signal	Toner motor 2 ON/OFF control	–	–	CN8	8	PCU	
TM2Bout	Toner motor 2 control signal	Toner motor 2 ON/OFF control	–	–	CN8	10	PCU	
/TNFS	Waste toner box full detection signal	Waste toner box full detection	Toner empty	Toner presence	CN5	14	PCU	
/TRANS_DAT	Serial communication transmission data signal	Transmission data to LSU	–	–	CN7	18	PCU	
/TRANS_RST	LSU communication reset signal	The PCU resets LSU communication.	Reset	Operation Enable	CN7	19	PCU	
/TRC_LCC	LCC paper feed timing signal	LCC paper feed timing control (PCU output)	–	–	CN17	13	PCU	
TRMA	PS front motor control signal	PS front motor ON/OFF control	–	–	CN10	8	PCU	
TRMB	PS front motor control signal	PS front motor ON/OFF control	–	–	CN10	10	PCU	
TRMCNT	PS front motor current set signal	PS front motor current select	Current Large	Current Small	CN10	4	PCU	
TRMXA	PS front motor control signal	PS front motor ON/OFF control	–	–	CN10	6	PCU	
TRMXB	PS front motor control signal	PS front motor ON/OFF control	–	–	CN10	12	PCU	
TSGout	Toner density sensor gain control signal	Toner density sensor gain control	–	–	CN11	20	PCU	
TURM	Separation motor control signal	Transfer unit separation operation	Stop	Transfer separation	CN4	9	PCU	
TXD_FIN	Serial I/F data (FINISHER)	Serial I/F data (PCU PWB - FINISHER)	–	–	CN16	12	PCU	
TXD_LCC	Serial I/F data (LCC)	Serial I/F data (PCU PWB - LCC)	–	–	CN17	3	PCU	
TXD_PIC	Serial communication reception data signal	Reception data from MFPC	–	–	CN1	80	MOTHER	
/VFM-BKL_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 4)	Discharge fan motor PWM control (Process cooling fan motor 4)	Operating	Stop	CN2	6	PCU	
VFM-BKL_V	Discharge fan motor control signal (Process cooling fan motor 4)	Discharge fan motor control (Process cooling fan motor 4)	Stop	Conduction	CN2	4	PCU	
VFMBKLLD	Discharge fan motor lock detection signal (Process cooling fan motor 4)	Discharge fan motor lock detection (Process cooling fan motor 4)	Normal	Abnormal	CN2	10	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
/VFM-BKR_PWM	Discharge fan motor PWM control signal (Fusing discharge fan motor)	Discharge fan motor PWM control (Fusing discharge fan motor)	Operating	Stop	CN6	18	PCU	
VFM-BKR_V	Discharge fan motor control signal (Fusing discharge fan motor)	Discharge fan motor control (Fusing discharge fan motor)	Stop	Conduction	CN6	20	PCU	
VFM-BKRLD	Discharge fan motor lock detection signal (Fusing discharge fan motor)	Discharge fan motor lock detection (Fusing discharge fan motor)	Normal	Abnormal	CN6	14	PCU	
/VFM-BKU_PWM	Discharge fan motor PWM control signal (Paper cooling fan motor)	Discharge fan motor PWM control (Paper cooling fan motor)	Operating	Stop	CN2	14	PCU	
VFM-BKU_V	Discharge fan motor control signal (Paper cooling fan motor)	Discharge fan motor control (Paper cooling fan motor)	Stop	Conduction	CN2	12	PCU	
VFMBKULD	Discharge fan motor lock detection signal (Paper cooling fan motor)	Discharge fan motor lock detection (Paper cooling fan motor)	Normal	Abnormal	CN2	18	PCU	
VFM-EX1_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 1)	Discharge fan motor PWM control (Process cooling fan motor 1)	Operating	Stop	CN2	11	PCU	
VFM-EX1_V	Discharge fan motor control signal (Process cooling fan motor 1, 2, 3)	Discharge fan motor control (Process cooling fan motor 1, 2, 3)	Stop	Conduction	CN2	9	PCU	
VFM-EX1LD	Discharge fan motor lock detection signal (Process cooling fan motor 1)	Discharge fan motor lock detection (Process cooling fan motor 1)	Normal	Abnormal	CN2	15	PCU	
/VFM-EX2_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 2)	Discharge fan motor PWM control (Process cooling fan motor 2)	Operating	Stop	CN2	19	PCU	
VFM-EX2LD	Discharge fan motor lock detection signal (Process cooling fan motor 2)	Discharge fan motor lock detection (Process cooling fan motor 2)	Normal	Abnormal	CN2	23	PCU	
/VFM-EX3_PWM	Discharge fan motor PWM control signal (Process cooling fan motor 3)	Discharge fan motor PWM control (Process cooling fan motor 3)	Operating	Stop	CN2	3	PCU	
VFM-EX3LD	Discharge fan motor lock detection signal (Process cooling fan motor 3)	Discharge fan motor lock detection (Process cooling fan motor 3)	Normal	Abnormal	CN2	7	PCU	
VPMA	Vertical transport motor control signal	Vertical transport motor ON/OFF control	–	–	CN10	18	PCU	
VPMB	Vertical transport motor control signal	Vertical transport motor ON/OFF control	–	–	CN10	15	PCU	
VPMCNT	Vertical transport motor current set signal	Vertical transport motor current select	Current Large	Current Small	CN10	14	PCU	
VPMXA	Vertical transport motor control signal	Vertical transport motor ON/OFF control	–	–	CN10	16	PCU	
VPMXB	Vertical transport motor control signal	Vertical transport motor ON/OFF control	–	–	CN10	17	PCU	
/WEBEND1	Web end detection signal (Upper side)	Web end detection (Upper side)	–	End	CN1	10	PCU	
/WEBEND2	Web end detection signal (Lower side)	Web end detection (Lower side)	–	End	CN1	16	PCU	
WEBM1Aout	Web motor 1 control signal	Motor ON/OFF control	–	–	CN1	19	PCU	
WEBM1Bout	Web motor 1 control signal	Motor ON/OFF control	–	–	CN1	21	PCU	
WEBM2Aout	Web motor 2 control signal	Motor ON/OFF control	–	–	CN1	20	PCU	
WEBM2Bout	Web motor 2 control signal	Motor ON/OFF control	–	–	CN1	22	PCU	
/WHPR	Dehumidifier heater power relay control signal	Dehumidifier heater control	ON	OFF	CN18	16	PCU	
WU_FAX	FAX call-in detection [2nd I/F FAX]	Call-in signal from the second FAX line (Japan option)	Call detection	–	CN15	17	MOTHER	
WU_FAX2	FAX call-in detection [MFPC]	Call-in signal from the first FAX line (FAX option)	Call detection	–	CN1	98	MOTHER	
WU_KEY	Power saving key detection [Push switch]	Power saving key pressing detection	Pressing	–	CN6	7	MOTHER	
WU_LED	Power saving lamp [LED]	Power saving lamp lighting	Lighting	Off	CN6	5	MOTHER	

# [13] SERVICE WEB PAGE

## 1. General

The following functions are available on the Hidden Web Page exclusively used for the serviceman.

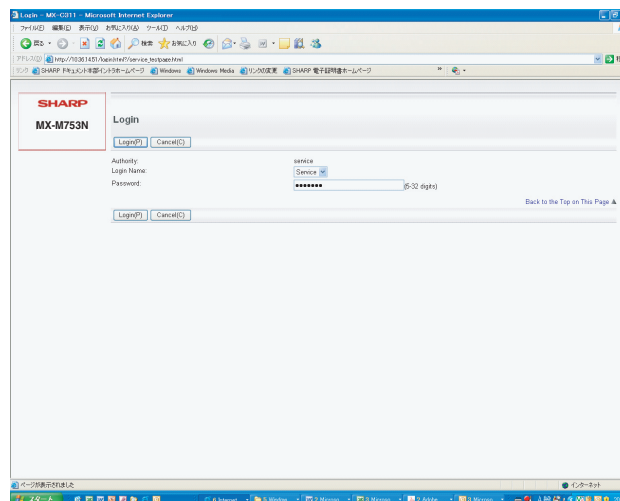
Menu/Item		Function and content
Password Setting		Used to set the password to enter the Hidden Web Page exclusively used for the serviceman.
Output of Test Page		Used to print out the test page (system setting contents).
Font/Form Download		Used to download Font/Form. Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled. (PS, PCL5 only)
Device Cloning		Used to import/export the system setting information in XML format. By importing the export file to the other device, the setting values and setting contents of the device can be copied to another device. This function is useful to set the same setting to two or more machines efficiently.
Filing Data Backup		Used to import/export the document filing data in the unit of folder.
User Control		Used to shift to the user mode. After log in, the screen is shifted to the setting screen of user management.
User Control 2		Used to set the Pages Limit Group and the Favorite Operation Group by authority of the serviceman. (Select among preset items.)
Job Log	Save Job Log	Used to save the Job Log.
	View Job Log	Used to display the Job Log.
Update of Firmware		Used to update the firmware version.
Syslog *1	Administration Settings	Used to set the Log Type. (Set to the default.)
	Storage/Send Settings	Keep all the items selected.
	Save/ Delete Syslog	Used to save or delete the log data.
	View Syslog	Used to display the log data.

\*1: This may be useful for troubleshooting when a trouble occurs.  
When submission of the log data file is requested in order to troubleshoot, use the log file save mode to export the log data file to the client PC.

## 2. Details and operation procedures

### A. Procedures to enter the Hidden Web page exclusively used for the serviceman

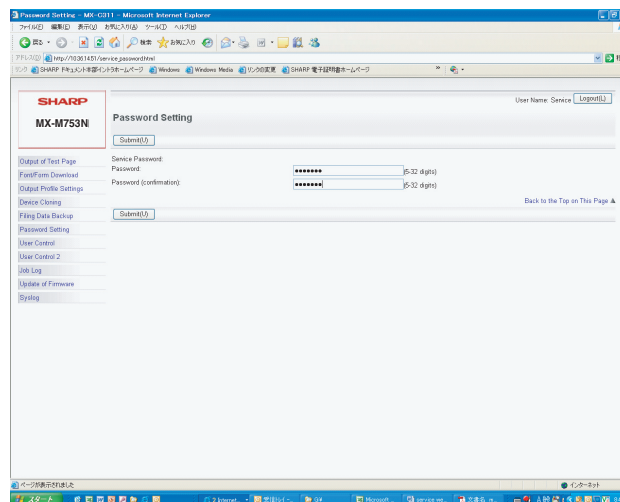
- 1) Boot a browser program.
- 2) Enter the specified URL ([http://xxx.xxx.xxx.xxx/service\\_login.html](http://xxx.xxx.xxx.xxx/service_login.html)) and enter the servicing page menu.  
Default password: "service"



NOTE: The password can be optionally changed in the Password Setting menu.

If the password is changed and forgotten, use SIM24-31 to reset the password to the default.

### B. Password Setting

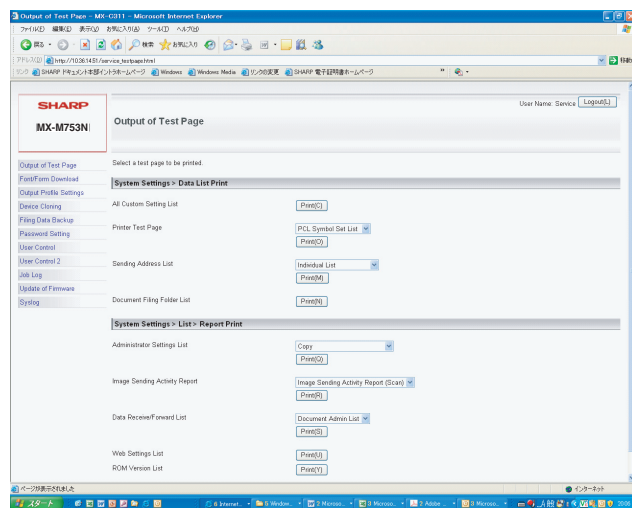


\* The password can be optionally changed in the following procedures.

- 1) Enter a new password.
- 2) Enter the new password again to make confirmation.
- 3) Click "Submit" (registration) button.

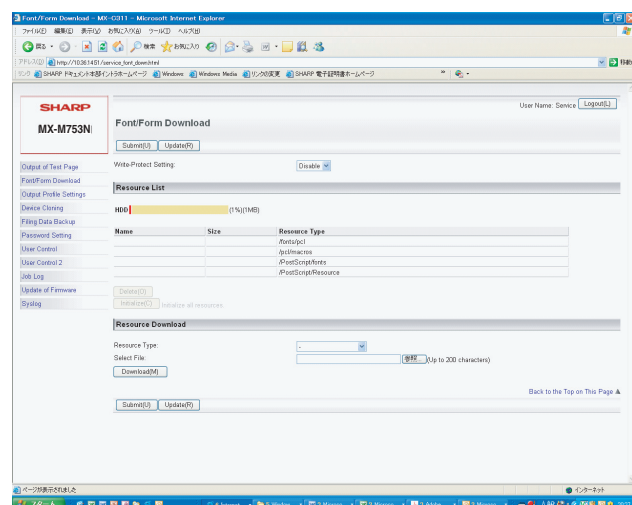


## C. Output of Test Page



- 1) Click "Print" button of an item or report to be printed.  
When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.  
The list is printed out.

## D. Font/Form Download



### (1) Download of Font, Form, and Macro

- 1) Select "Resource Type" from the pull-down menu list.  
(Example: PCL/PostScript Font/Form or Macro)
- 2) Click "Refer" button to select a target file.
- 3) Click "Download" button.
- 4) Click "Submit" (registration) button.  
The file is downloaded to the HDD.  
The list of the downloaded files and the use percentage of the HDD are displayed.

### (2) Delete of downloaded font (Procedures to delete a file separately)

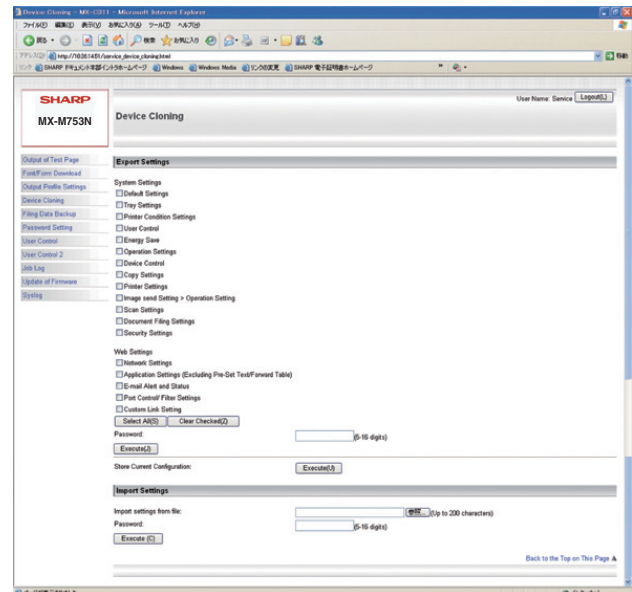
- 1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
- 2) Check that the confirmation message is displayed, and press Yes key.
- 3) Click "Submit" (registration) button.  
The file in the HDD is deleted.

### (3) Procedures to initialise and delete all files at a file

- 1) Click "Initialize" button.
- 2) Check that the confirmation message is displayed, and press OK key.
- 3) Click "Submit" (registration) button.

NOTE: By the Write-Protect Setting function, the downloaded files can be set to write protect.

## E. Device Cloning



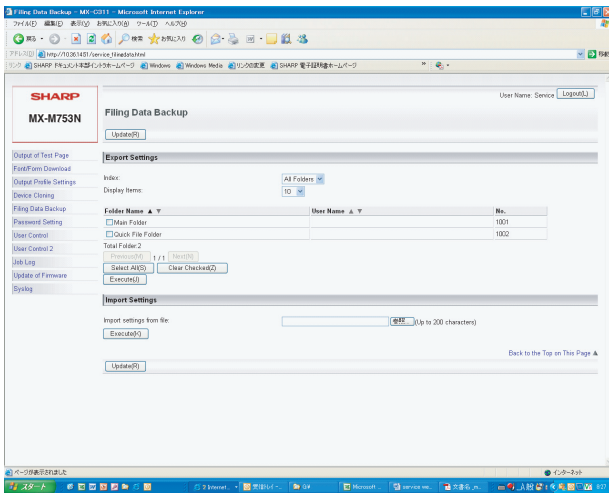
### (1) Export

- 1) Select an item to be backed up.
- 2) Click "Execute" button.  
Specify the save position of the file, and save the file.  
(File name: \*\*\*\*.bin)  
When the password is set, the set password must be entered when importing.

### (2) Import

- 1) Import from a file: Click "Refer" button to select the back-up file. (File name: \*\*\*\*.bin)
- 2) Click "Execute" button to execute import.  
If the password is set when exporting, the password must be entered.
- 3) Reboot the machine.

## F. Filing Data Backup



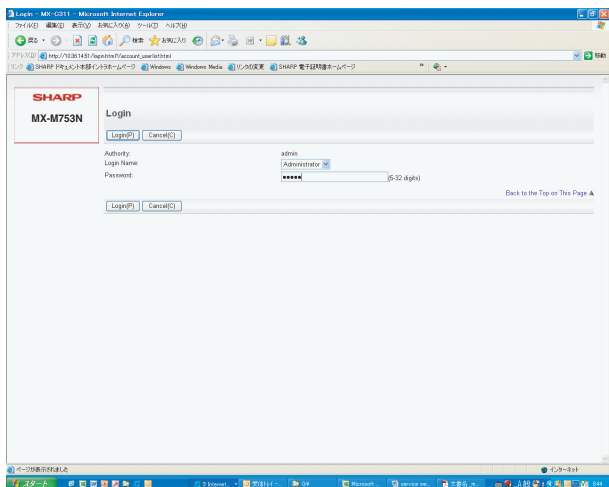
### (1) Export

- 1) Select the folder to be backed up.  
The list display conditions can be specified by changing the index and the number of display items on the pull-down menu.
- 2) Click "Execute" button.  
Specify the save position of the file, and save the file. (File name: \*\*\*\*\*.bin)
- 3) Click "Update" button.

### (2) Import

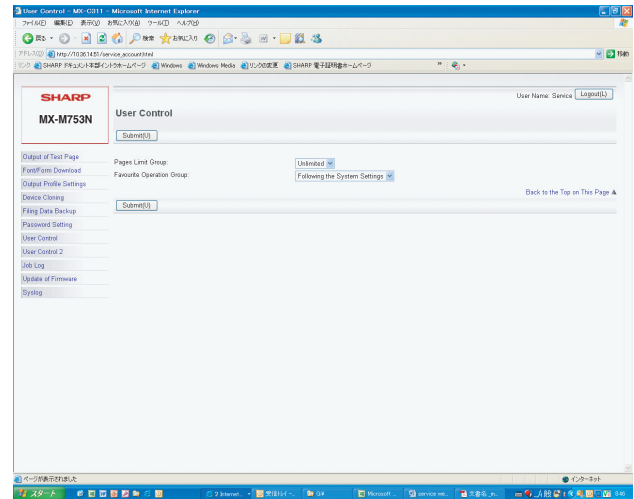
- 1) Click "Refer" button to select a target file. (File name: \*\*\*\*\*.bin)
- 2) Click "Execute" button.  
The target file is imported.
- 3) Click "Update" button.

## G. User Control



- 1) Enter the password to log in.  
Default Password: admin  
The screen is shifted to the setting menu of user management.

## H. User Control 2



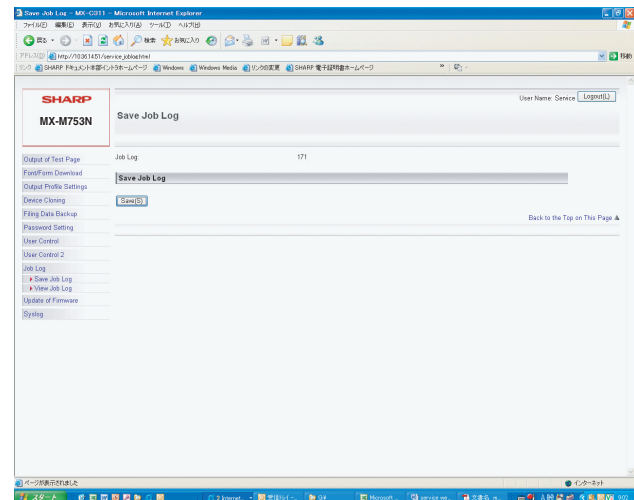
Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(Example of use)

The use sets the conditions for servicing work by using the Pages Limit Group and the Favorite Operation Group functions in advance, and the serviceman selects the set conditions in this mode for servicing work.

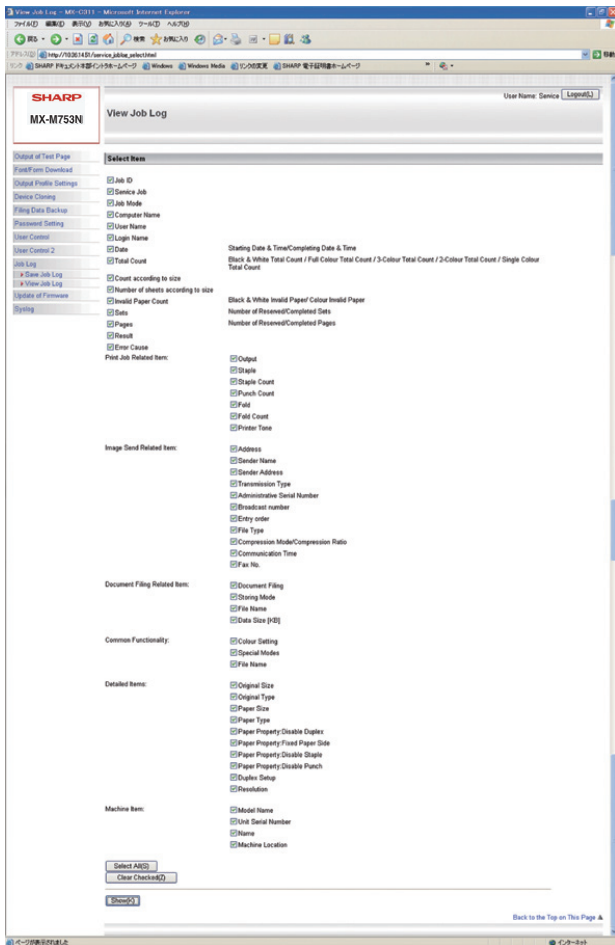
## I. Job Log

### (1) Save Job Log



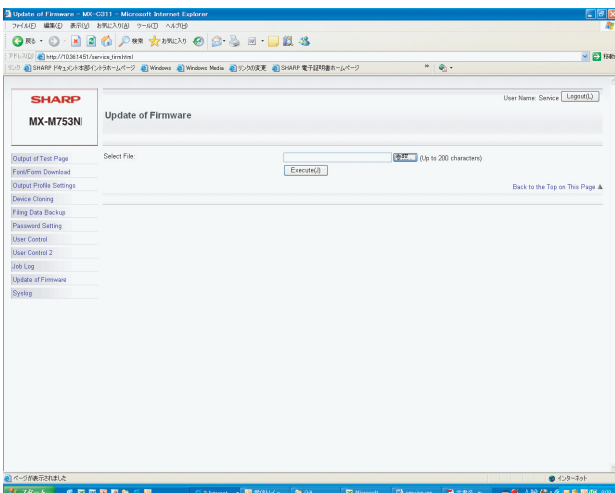
- 1) Click "Save" button, and specify the save position of the Job Log to save it.

## (2) View Job Log



- 1) Select a Jog Log item to be displayed. (In the default setting, all the items are selected. Remove check marks of the items which are not to be displayed.)
- 2) Click "Show" (display) button.  
The Jog Log is displayed.

## J. Update of Firmware



- 1) Click "Refer" button to select a firmware file.
- 2) After selecting a firmware file, click "Execute" button.  
The firmware data are sent to the machine, and update of the firmware is processed.  
During the process, the message of "Firmware Update, now processing..." is displayed.

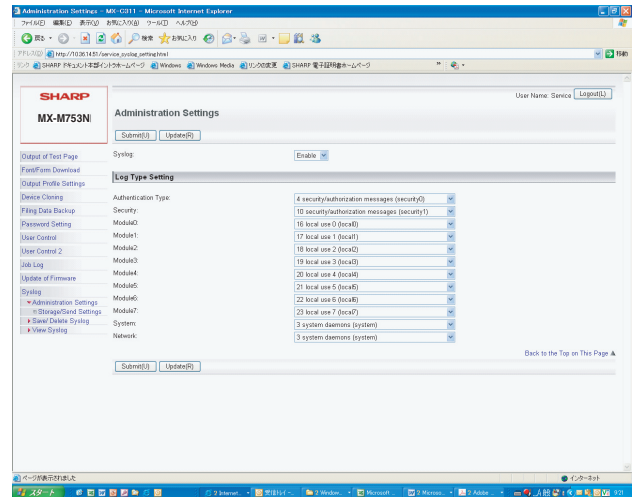
## K. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

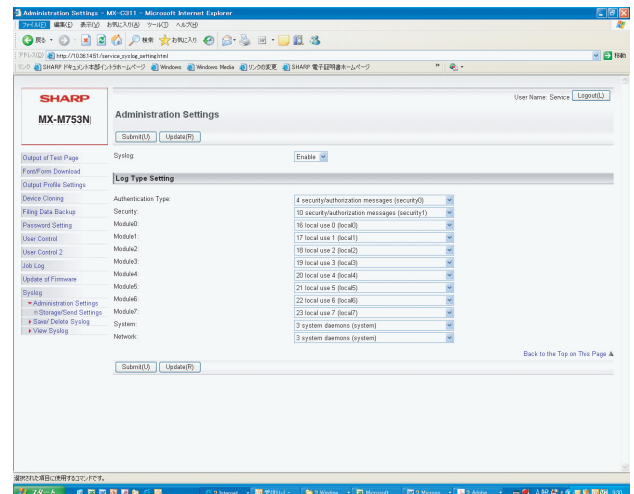
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

Syslog	Administration Settings	Log Type Setting (Set to the default.)
	Storage/Send Settings	Set all the items selected.
	Save/ Delete Syslog	Log data save, delete
	View Syslog	Log data display



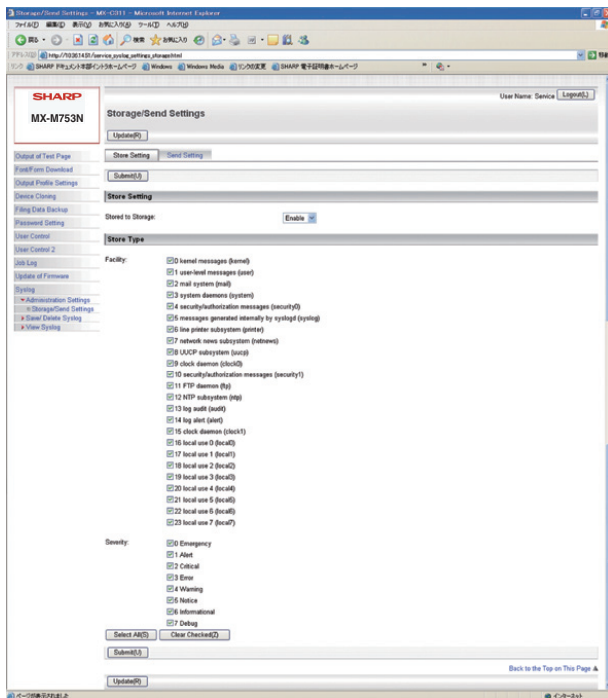
### (1) Administration Settings/ Log Type Setting

Set to the default.

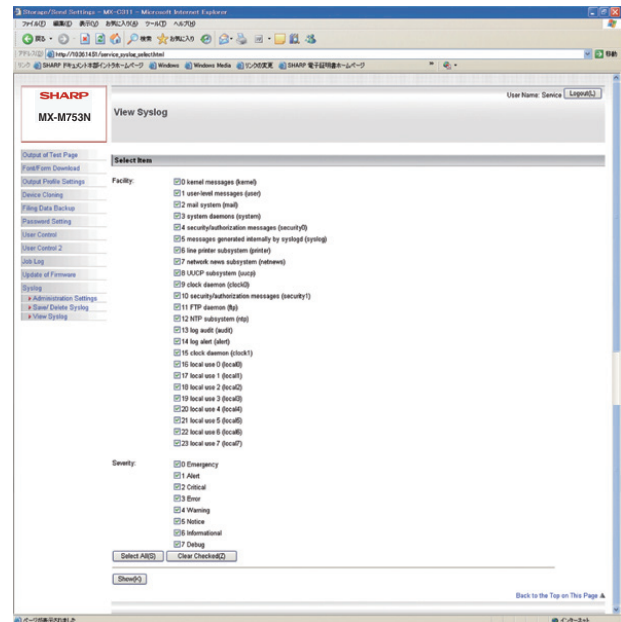


## (2) Storage/Send Settings

Keep all the items selected.

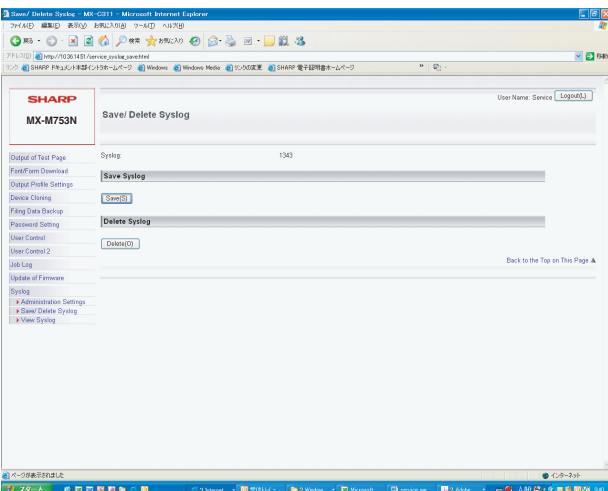


## (4) View Syslog



- 1) Select a Syslog item to be displayed.
  - 2) Click "Show" button.
- The Syslog is displayed.

## (3) Save/ Delete Syslog



When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

Check to confirm that the confirmation message is displayed, and press OK key.

# Memo

This image shows a full page of primary-ruled paper. It features multiple sets of horizontal dashed lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There are no margins, text, or other markings present.

# Memo

[illegible]

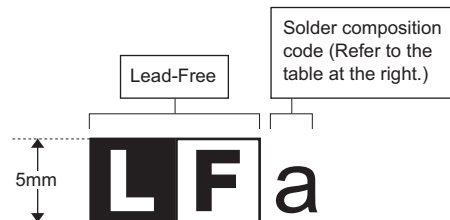
# Memo

This image shows a full page of primary-ruled paper. It features multiple sets of horizontal dashed lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There are no margins, text, or other markings present.

## LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

### Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

### (1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting-point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommended.

### (2) NOTE FOR SOLDERING WORK

Since the melting-point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.



#### CAUTION FOR BATTERY REPLACEMENT

(Danish)

ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri

af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandoren.

(English)

Caution !

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type

recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

(Finnish)

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan

tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden

mukaisesti.

(French)

ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect

de la batterie. Remplacer uniquement avec une batterie du

même type ou d'un type équivalent recommandé par

le constructeur.

Mettre au rebut les batteries usagées conformément aux

instructions du fabricant.

(Swedish)

VARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent

typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens

instruktion.

(German)

Achtung

Explosionsgefahr bei Verwendung inkorrektter Batterien.

Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder

vom Hersteller empfohlene Batterien verwendet werden.

Entsorgung der gebrauchten Batterien nur nach den vom

Hersteller angegebenen Anweisungen.

#### CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

THIS PRODUCT CONTAINS A LITHIUM PRIMARY  
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY  
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE  
BATTERY FROM THE PRODUCT AND CONTACT YOUR  
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION  
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE  
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANESE)  
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA  
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE  
AGENCE ENVIRONNEMENTALE LOCALE POUR DES  
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET  
DE TRAITEMENT.

# SHARP

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