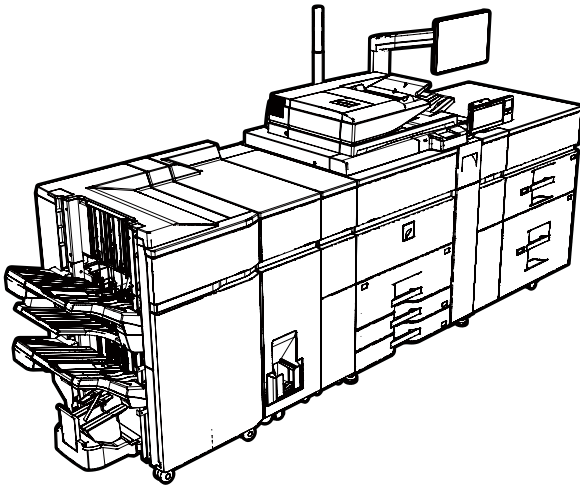


SERVICE MANUAL

DIGITAL MULTIFUNCTIONAL SYSTEM



e-STUDIO1058 MODEL e-STUDIO1208

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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

This Service Manual uses some symbols to assure safe operation. Please understand the meanings of photographs before servicing.

- ⚠ **WARNING:** If this WARNING should be ignored, a serious danger to life or a serious injury could result.
- ⚠ **CAUTION:** If this CAUTION should be ignored, an injury or a damage to properties could result.

1. ⚠ **WARNING** **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 diode 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 you 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 you 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. Disconnect mains before servicing.
- ⚠ **ATTENTION.** Double pôle, fusible sur le neutre. Débrancher l'alimentation avant l'entretien.

2. ⚠ **WARNING** **Warning for servicing**

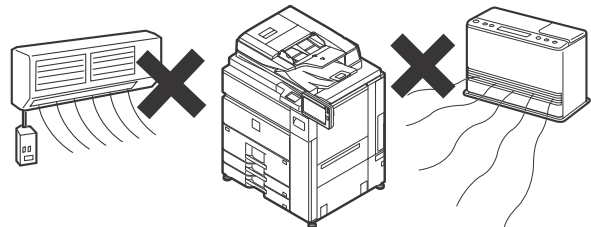
- 1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.
Avoid complex wiring, which may lead to a fire or an electric shock.
It may cause a fire or an electric shock.
- 2) If there is any abnormality such as a smoke or an abnormal smell, 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 lightning, 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.

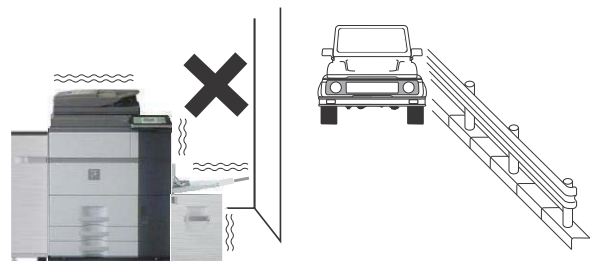
3. Note for installing site

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.

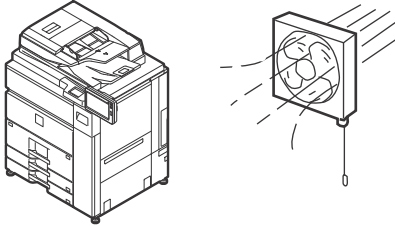


3) **Poorly ventilated place**

An electro-static type multi-functional system 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.

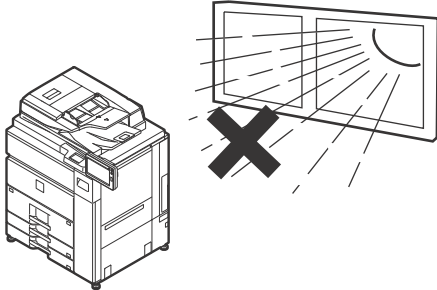
When using special paper such as glossy paper, unique smell or gas may be generated. Provide an additional duct to exhaust the smell and gas from the exhaust section of the machine as needed. (There is no setting for the exclusive-use duct.)



4) **Place of direct sunlight.**

Plastic parts may become deformed, discolored, or undergo qualitative change.

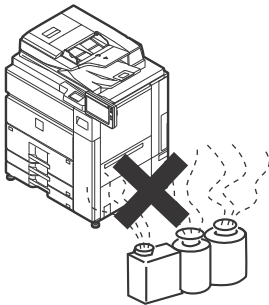
It may cause a breakdown or copy quality problems.



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

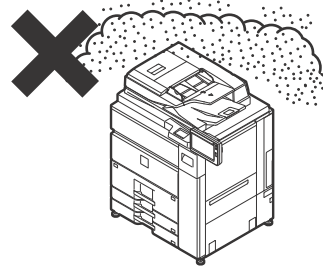
The organic photoconductor (OPC) drum used in the machine may undergo qualitative change due to organic gases such as ammonium.

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



6) **Place of excessive dust**

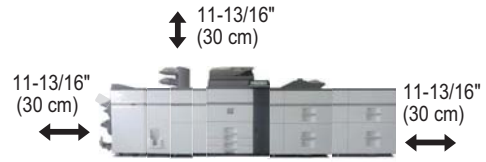
When dusts enter the machine, it may cause a breakdown or copy quality problems.



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.

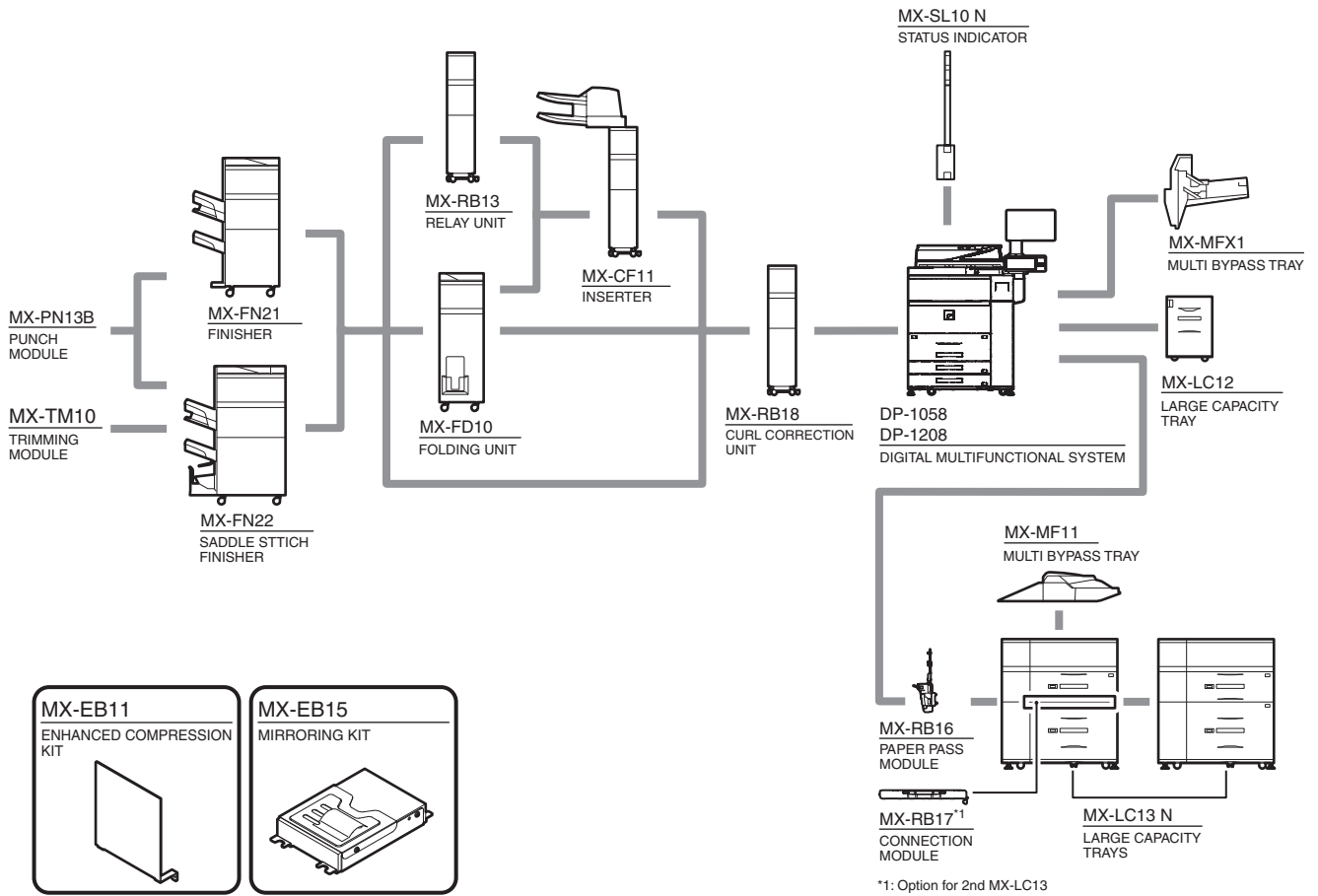


When installing the machine, make sure that the sides and back of the machine are at least 11-13/16\" (30 cm) away from any walls.

There is a portion currently expressed with the illustration of a conventional model in this manual.

[1] PRODUCT OUTLINE

1. System diagram



[2] SPECIFICATIONS

1. Basic specifications

A. Engine specification

Photoconductor type	OPC (Drum diameter: ϕ 120mm)
Recording system	Electronic photo system (Laser)
Developing system	Dry type 2-component magnetic brush development
Charging system	Wire charging system
Transfer system	Transfer belt system
Cleaning system	Counter blade
Fusing system	Heat roller
Toner supply system	Toner continuous run
Waste toner process	Without toner recycle system/ Toner collection container system

B. Engine speed (ppm)

<Tray 1 - 4, LCC, LCT>

For heavy paper, the speed is same as that for plain paper, except for the items below.

Paper	105cpm machine	120cpm machine
469mm x 318mm, Extra	48	49
12" x 18" (A3W)	49	51
SRA3	49	52
440mm x 312mm	50	53
A3, 11" x 17", 8K	52	54
B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	58	66
A4R, B5R, 8.5" x 11"R, 7.25" x 10.5"R, 16KR	67	76
318mm x 234mm	78	88
9" x 12" (A4W)	80	89
SRA4	81	90
312mm x 220mm	83	92
A4, B5, 8.5" x 11", 16K	105	120
A5R, 5.5" x 8.5"R	105	120
Heavy paper (A4, B5, 8.5" x 11", 16K)	72	81
Heavy paper (A5R, 5.5" x 8.5"R)	72	81
Heavy paper (318mm x 234mm)	72	81
Heavy paper (9" x 12" (A4W))	72	81
Heavy paper (SRA4)	72	81
Heavy paper (312mm x 220mm)	72	81
OHP (11" X 17", A4) (Face-up)	72	81
OHP (A4R, 11" X 17"R) (Face-up)	67	76
OHP (Ohter) (Face-up)	48	55

<Manual paper feed, LCT manual paper feed>

For heavy paper, the speed is same as that for plain paper, except for the items below.

Paper	105cpm machine	120cpm machine
469mm x 318mm, Extra	48	49
12" x 18" (A3W)	49	51
SRA3	49	52
440mm x 312mm	50	53
A3, 11" x 17", 8K	52	54
B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	58	66
A4R, B5R, 8.5" x 11"R, 7.25" x 10.5"R, 16KR	67	76
318mm x 234mm	78	88
9" x 12" (A4W)	80	89
SRA4	81	90
312mm x 220mm	83	92
A4, B5, 8.5" x 11", 16K	105	120
A5R, 5.5" x 8.5"R	105	120
Heavy paper (A4, B5, 8.5" x 11", 16K)	72	81

Paper	105cpm machine	120cpm machine
Heavy paper (A5R, 5.5" x 8.5"R)	72	81
Heavy paper (318mm x 234mm)	72	81
Heavy paper (SRA4/A4W)	72	81
Heavy paper (312mm x 220mm)	72	81
Heavy paper (Postcard (High)) (Face-up)	54	64
OHP (11" x 17", A4) (Face-up)	72	81
OHP (A4R, 11" x 17"R) (Face-up)	67	76
OHP (Other) (Face-up)	48	55

* For the items below, same as for the plain paper.

Thin paper/Recycled paper (Standard paper)/Color paper (Standard paper)

C. Printable range

Max. print size	310 X 462.5mm
Void area	Lead edge: 2-5mm Rear edge: 2-5mm LR total: 8mm or less FR total: 4 ± 2mm (unprintable if 310mm or more)

The printable area must be as large as the A3 / 11 X 17 page dimension + flap for fastening + cropped mark (310 X 462.5mm) by PCL / PS driver.

D. Engine resolution

Resolution	Copy	Writing 1200dpi x 1200dpi, 600dpi x 600dpi		
	Print	Writing 600 x 600dpi (Default) 1,200 x 1,200dpi		
Gradation (256 levels *2)	Copy	Writing		
		1200 x 1200dpi	1bit	
	600dpi x 600dpi	4bit		
	Print	Writing		
		PCL	600 x 600dpi	1bit, 4bit
			1,200 x 1,200dpi	1bit
PS		600 x 600dpi	1bit, 4bit	
	1,200 x 1,200dpi	1bit		

*2: Dither process is executed by an 8bit input.

E. Scanner section

(1) Resolution/Gradation

		Monochrome	Color
Scanning Resolution (dpi)	Platen	600 x 600dpi 600 x 400dpi 600 x 300dpi (default)	-
	DSPF	600 x 600dpi 600 x 400dpi 600 x 300dpi (default)	-
Exposure lamp		White LED	
Reading gradation		10bit	
Output gradation		BW: Binary (1bit) Gray scale: 8bit Full Color: each color RGB 8bit	

(2) Document table

Type	Document table fixed system (Flat bed)
Scanning area	297 x 432mm
Original standard position	Left top reference
Detection	Yes
Detection size	Automatic detection (One type of detection unit to be switched for software destination)
Dehumidifying heater (Scanner section)	Supplied as a service parts

F. Document feeder

Type	DSPF (Duplex single pass feeder)	
Scan speed	Monochrome (A4/8.5" x 11")	Color (A4/8.5" x 11")
Copy	Single: 120-sheet/min. (600 x 300dpi, 1bit) 60-sheet/min. (600 x 600dpi, 1bit) Double: 200-page/min. (600 x 300dpi, 1bit) 100-page/min. (600 x 600dpi, 1bit)	N/A
Scanner	Single: 120-sheet/min. (200 x 200dpi, 1bit) Double: 200-page/min. (200 x 200dpi, 1bit)	Single: 120-sheet/min. (200 x 200dpi, 8bit) Double: 200-page/min. (200 x 200dpi, 8bit)
Original setup direction	Upward standard (1 to N feeding standard)	
Original standard position	Center standard (Rear one-side standard for random feeding)	
Original transport method	Sheet-through method	
Original size	Standard size Inch-1: 11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R Inch-2: 11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R Inch-3: 11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R AB-1: 11" x 17", 8.5" x 14", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R AB-2: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R AB-3: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R, 8K, 16K, 16KR AB-4: 11" x 17", 8.5" x 13.4", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R AB-5: 11" x 17", 8.5" x 13.5", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R Long paper 1000 mm (Monochrome binary only)	
Mix paper feed (Same series, same width paper)	Enabled	
Random feeding (feeding of different types / different widths)	Enabled Only the following combinations of 2 size types are allowed: A3 and B4; B4 and A4R; A4 and B5; B5 and A5; and 11-inch and 8.5-inch. AMS available.	
Original copy weight	Single: Thin paper: 9 - 13 lb bond (38 - 49 g/m ²) Plain paper: 13 lb bond - 110 lb index (50 - 205 g/m ²) * Thin paper mode (80-sheet/min. (A4, 8.5" x 11")) is set up for the thin paper. Duplex: 13 - 110 lb bond (52 - 205 g/m ²)	
Max. loading capacity of documents	Max. 250-sheets (80g/m ² , 21 lbs bond), or max. 32.5mm (1-9/32 inch) of the document load height.	
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	Auto detection (Refer to "Original size")	
Paper feeding direction	Right hand feeding	
Finish stamp	Option	

G. Paper feed section

(1) Basic specifications

Type	Standard	4-stage paper feed tray + Multi bypass tray
	Full option	4-stage paper feed tray + Multi bypass tray + 2-stage large capacity trays + 2-stage large capacity trays
Dehumidifying heater	Service parts	

Tray		Tray 1 (Left side)	Tray 2 (Right side)	Tray 3	Tray 4
Paper capacity	Plain paper (80g/m ²)	1,200 sheets	800 sheets	500 sheets	500 sheets
Paper size	Refer to "Size of paper which can be fed".				
Paper size detection	No		Yes		
Paper type settings	Refer to "Size of paper which can be fed".				
Changing of paper size	User/Serviceman selection *1		User selection		
Cassette handle	Normal grasp/reverse grasp support				
Handle lock mechanism	Yes				
Default Paper Size	Inch series	8.5" x 11"	8.5" x 11"	11" x 17"	11" x 17"
Setting	AB series	A4	A4	A3	A3
Paper remaining quantity detection	Paper empty, 100%/33%/6%		Paper empty, 100%/50%/9%		Paper empty, 100%/67%/33%
Paper size display	Yes				
Tray rising / falling time	Rising	12 seconds or less Without paper, from tray insertion to paper empty detection		—	
	Falling	Self-weight falling		—	

*1: A4/8.5" x 11" can be selected by the user. B5 size is selected by the serviceman.

(2) Extra paper capacity

Paper type	Tray 1 (Left side)	Tray 2 (Right side)	Tray 3	Tray 4
Postcard	N/A	N/A	N/A	N/A
Envelope	N/A	N/A	N/A	N/A
OHP	N/A	N/A	N/A	Yes
Heavy paper 1 106-176	N/A	N/A	Yes	Yes
Heavy paper 2 177-220	N/A	N/A	Yes	Yes
Heavy paper 3 221-256	N/A	N/A	N/A	N/A
Heavy paper 4 257-300	N/A	N/A	N/A	N/A
Label sheet	N/A	N/A	N/A	Yes
Tab paper	N/A	N/A	N/A	Yes
Glossy paper	N/A	N/A	N/A	N/A
Others	N/A	N/A	N/A	Yes

(3) Size of paper which can be fed

Paper size	Tray 1	Tray 2	Tray 3	Tray 4
12" x 18" (A3W)	-	-	Yes	Yes
11" x 17"	-	-	Yes	Yes
8.5" x 14" (216 x 356)	-	-	Yes	Yes
8.5" x 13.5" (216 x 343)	-	-	Yes	Yes
8.5" x 13.4" (216 x 340)	-	-	Yes	Yes
8.5" x 13" (216 x 330)	-	-	Yes	Yes
8.5" x 11"	Yes	Yes	Yes	Yes
8.5" x 11"R	-	-	Yes	Yes
5.5" x 8.5"	-	-	-	-
5.5" x 8.5"R	-	-	-	Yes
7.25" x 10.5"R	-	-	Yes	Yes
9" x 12" (A4W)	-	-	Yes	Yes
A3	-	-	Yes	Yes
B4	-	-	Yes	Yes
A4	Yes	Yes	Yes	Yes
A4R	-	-	Yes	Yes
B5	Yes	-	Yes	Yes
B5R	-	-	Yes	Yes
A5R	-	-	-	Yes
SRA3	-	-	-	-
SRA4	-	-	-	-
318mm x 234mm	-	-	-	-
312mm x 220mm	-	-	-	-
469mm x 318mm	-	-	-	-
440mm x 312mm	-	-	-	-
8K	-	-	Yes	Yes
16K	-	-	Yes	Yes
16KR	-	-	Yes	Yes
Postcard	-	-	-	-
Envelope	-	-	-	-
Custom *1	No	No	No	Yes
Paper type				
Thin paper	No	No	No	No
Standard paper	Yes	Yes	Yes	Yes
Recycled paper (Standard paper)	Yes	Yes	Yes	Yes
Color paper (Standard paper)	Yes	Yes	Yes	Yes
Letter head paper (Standard paper)	Yes	Yes	Yes	Yes
Pre printed (Standard paper)	Yes	Yes	Yes	Yes
Pre punched (Standard paper)	Yes	Yes	Yes	Yes
Heavy paper 1 106-176	No	No	Yes	Yes
Heavy paper 2 177-220	No	No	Yes	Yes
Heavy paper 3 221-256	No	No	No	No
Heavy paper 4 257-300	No	No	No	No
Envelope	No	No	No	No
OHP Transparency	No	No	No	Yes
Label sheet	No	No	No	Yes
Tab sheet *2	No	No	No	Yes
Glossy paper	No	No	No	No
Embossed paper	No	No	No	No
User type 1 - 11	Yes	Yes	Yes	Yes

Type: Weight

Thin paper: 52-59g/m² 13 - 16 lbs bond

Standard paper: 60-105g/m² 16 - 28 lbs bond

Heavy paper 1: 106-176g/m² 28 lbs bond - 65 lbs index

Heavy paper 2: 177-220g/m² 65 lbs index - 80 lbs Cover

Heavy paper 3: 221-256g/m² 80 lbs bond - 140 lbs index

Heavy paper 4: 257-300g/m² 140 lbs index - 110 lbs Cover

*1: Custom size range

		AB series (mm)		Inch series (Inch)	
		Min.	Max.	Min.	Max.
Tray 4	X	148	457	5.875	18
	Y	100	305	4.0	12
Manual paper feed (Main unit)	X	182	457	5.5	18
	Y	100	305	4.0	12
LCT *3	X	182	470	7.2	18.5
	Y	182	320	7.2	12.5
Manual paper feed (LCT)	X	140	470	5.5	18.5
	Y	100	320	4.0	12.5

*2: Supported tab width for tab paper is as follows:

A4 tab width: 12 - 20mm, 8.5" x 11" tab width: 6.1 - 17mm

*3: For the second series LCT, postcards cannot be used.

H. Paper exit section

(1) Machine paper exit section

Paper exit section	Machine paper exit section
Setting	Service parts
Paper exit method	Face-down/face-up paper exit
Paper exit capacity	250-sheet (80g/m ² paper)
Paper exit paper size/ kind	A3W, A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard, 12" x 18", 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, 9" x 12" * Paper of 305mm or more in the main scanning direction cannot be discharged.
Remaining paper detection	No
Exit paper full detection	Yes
Contents	Paper exit tray, Paper exit tray mounting plate, Left lower cabinet, Paper exit section cabinet, Paper full sensor, Roller

(2) Machine decurler

Type	Follower sponge roller
Decurl setting	Manual level 1 - 9 (Decurl amount: Small → Large)
Paper weight	Refer to "Size of paper which can be discharged".
Productivity	Same speed as the machine (No speed loss)

(3) Size of paper which can be discharged

Paper type	Duplex section/ machine decurler	Reverse section
Thin paper	No	Yes
Standard paper	Yes	Yes
Recycled paper	Yes	Yes
Color paper	Yes	Yes
Letter head paper	Yes	Yes
Pre printed	Yes	Yes
Pre punched	Yes	Yes
Heavy paper 1 106-176	Yes	Yes
Heavy paper 2 177-220	Yes	Yes
Heavy paper 3 221-256	No	No
Heavy paper 4 257-300	No	No
Tab sheet	No	Yes
OHP	No	No

		Duplex section/ machine decurler	Reverse section
Paper type	Label sheet	No	No
	Glossy paper	Yes	Yes
Paper size	12" x 18" (A3W)	305 x 457	Yes
	Ledger (11" x 17")	279 x 432	Yes
	Legal (8.5" x 14")	216 x 356	Yes
	Asian legal (8.5" x 13.5")	216 x 343	Yes
	Mexican legal (8.5" x 13.4")	216 x 340	Yes
	Foolscap (8.5" x 13")	216 x 330	Yes
	Letter (8.5" x 11")	279 x 216	Yes
	Letter R (8.5" x 11"R)	216 x 279	Yes
	Invoice (5.5" x 8.5")	216 x 140	No
	Invoice R (5.5" x 8.5"R)	140 x 216	Yes
	Executive R (7.25" x 10.5"R)	184 x 266	Yes
	9" x 12" (A4W)	305 x 229	Yes
	A3	297 x 420	Yes
	B4	257 x 364	Yes
	A4	297 x 210	Yes
	A4-R	210 x 297	Yes
	B5	257 x 182	Yes
	B5-R	182 x 257	Yes
	A5	210 x 148	No
	A5-R	148 x 210	Yes
	SRA3	320 x 450	Yes
	SRA4	320 x 225	Yes
	318mm x 234mm	318 x 234.75	Yes
	312mm x 220mm	312.5 x 220	Yes
	469mm x 318mm	318 x 469.5	Yes
	440mm x 312mm	312.5 x 440	Yes
	8K	270 x 390	Yes
16K	270 x 195	Yes	
16K-R	195 x 270	Yes	
Postcard	100 x 148	No	
Monarch	98 x 191	No	
COM10	105 x 241	No	
DL	110 x 220	No	
C5	229 x 162	No	
Special - Custom size		No	
Special - Uncertain paper size		No	

I. Operation panel

(1) Display device

Size	15.4inch
Type	Dot matrix LCD, touch panel, Arm type
Display dot number	1,280X800 dots (WXGA)
Color	Yes
LCD drive display area (W x D)	331.2mm x 207.0mm
LCD back-light	LED lamp back-light system
LCD brightness adjustment	Yes (Backlight light quantity adjustment)
Angle/position adjustment	Swig mechanism, with tilt mechanism, free stop

J. Controller board

CPU	ARM11/600MHz
SOC	Intel Atom D525 1.8GHz
Interface	
Ethernet	1port
Interface	10Base-T, 100Base-TX, 1000Base-T
Support Protocol	TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk
USB 2.0 (high speed) (host)	Front : 1port Rear : 1port
USB 2.0 (high speed) (device)	1port
USB-HUB (host)	Internal: 4por 1) For Front USB Port 2) For Rear USB Port 3) For Keyboard 4) For IC card reader
ACRE expansion I/F	Yes
Serial I/F (for coin vendor)	1 port
Memory	See the section "Memory/Hard disk".
Memory slot	4 port

K. Memory/Hard disk

SD Card	ICU (Main Reus) PWB	ICU (SUB Reus) PWB	SOC		HDD* 1
	On Board	On Board	Slot1	On Board	
4GB	1GB (STD)	1GB (STD)	2GB (STD)	1GB (STD)	1TB

*1: HDD capacity depends on procurement and sourcing status.

Memory area (SD card)	Boot/Program area
-----------------------	-------------------

L. Warm-up time

Warm-up time *1 (Time for the operation panel to be ready for printing from turning on the power switch)	210sec.
Pre heat	Yes
Jam recovery time *2	30 sec. or less

*1: Result may change depending on conditions.

*2: Conditions: Leave the machine for 60 sec. after door open, standard condition, Polygon stops.

M. Power source

	North America
Voltage / Current	208-240V 15A
Frequency	60Hz
Power source cord	Fixed type (Direct)
Power switch	2 switches Primary switch: in the front cover Secondary switch (momentary SW): on the operation panel

N. Power consumption

	200V North America and others
Max. rated power consumption*1	3.55 kW or less
Network waiting power consumption is 2W or less/ *Condition of Standing by Network: Connect with TCP/IP protocol only.	Yes
Recovery time from Preheat mode	10 seconds

*1: Power ON. Dehumidator switch: OFF

2. Copy functions

A. First copy time

Platen/DSPF	105cpm machine	120cpm machine
Platen	3.2 seconds or less	3.2 seconds or less
DSPF	5.5 seconds or less	5.5 seconds or less

3. Printer function

A. Printer driver supported OS

OS		Custom PCL6	Custom PCL5c	Custom PS	PPD	TWAIN
Windows	Windows 8	No	No	No	No	No
	Windows 8 x 64	No	No	No	No	No
	Windows 8.1	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Windows 8.1 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Server 2012 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Server 2012 R2 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Windows 10	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Windows 10 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	Server 2016 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
Mac	Server 2019 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM
	X10.9	No	No	CD-ROM	No	No
	X10.10	No	No	CD-ROM	No	No
	X10.11	No	No	CD-ROM	No	No
	X10.12	No	No	CD-ROM	No	No
	X10.13	No	No	CD-ROM	No	No
	X10.14	No	No	CD-ROM	No	No
X10.15	No	No	CD-ROM	No	No	

B. PDL emulation/Font

PDL (Command)		Installed font
PCL5e / PCL6 compatibility	STD	European outline font = 80 styles Line printer font (BMP) = 1 style
Postscript 3	STD	European outline font = 139 styles

4. Image send function

A. Mode

Mode	Sub mode
Scanner	E-mail, FTP server, Shared folder (SMB)
PC scan	-

B. Support image

Mode	File format
Scanner File format	Mono 2 gradation: TIFF, PDF, PDF/A, Encrypted PDF, XPS Color/ Gray scale: Color TIFF, JPEG, PDF, PDF/A, XPS, Encrypted PDF, High compression PDF

Mode	Compression method
Scanner Compression method	Mono 2 gradation: Non-compression, G3 (1-dimensional)= MH (Modified Huffman), G4= MMR (Modified MR) Color/ Grayscale: JPEG (high/ middle/ low), High compression PDF (with ACRE installed), Bk Letter Emphasis

C. Image processing

(1) Color mode

	Scanner
B&W	Yes
Grayscale	Yes
Full color	Yes
Auto Color Selection (ACS)	Yes

(2) Resolution

Level	Scanner
1	100x100dpi
2	150x150dpi
3	200x200dpi
4	300x300dpi
5	400x400dpi
6	600x600dpi

(3) Exposure / Original Type

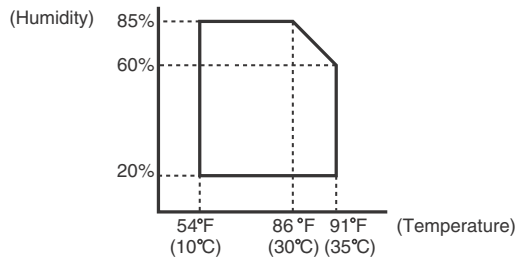
Mode	Scanner	
Halftone reproduction	Equivalent to 256 gradations	
Exposure Adjustment	Auto	Yes
	Manual	5 levels
Original document type (Selectable in manual mode)	Text	Yes
	Text / Photo	Yes
	Text / Printed photo	Yes
	Photo	Yes
	Printed photo	Yes
	Map	Yes
Area division + Suppress background	Yes	
Selection of image quality	N/A	

5. External dimension and weight

Outer dimension (W x D x H) (Included operation panel)	Included the keyboard 1,144mm(W) x 775mm(D) x 1,529mm(H) 45"3/64(W) x 30"33/64(D) x 60"13/64(H)
Dimension occupied by the machine (When the bypass tray is extended)	1,242mm(W) x 775mm(D) 48"29/32(W) x 30"33/64(D) (Included the adjuster wheel)
Weight Main Unit (including photoreceptor / not including consumables)	300kg 661.4 lbs

6. Ambient conditions

A. Environment conditions



Standard environmental conditions	Temperature	21 - 25°C
	Humidity	40 - 60%RH
Usage environmental conditions	Temperature	10 - 35°C
	Humidity	20 - 85%RH
	Atmospheric pressure	800-1013hPa (height:0-2000m)
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	

[3] CONSUMABLE PARTS

1. Supply system table

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	PS-ZT1207UK	Life: A4 6% document
2	Developer	Developer x1	1000K	D-1207	
3	Drum	OPC drum x1	1000K	OD-1207	

* The toner life may vary depending on the document density and temperature and humidity.

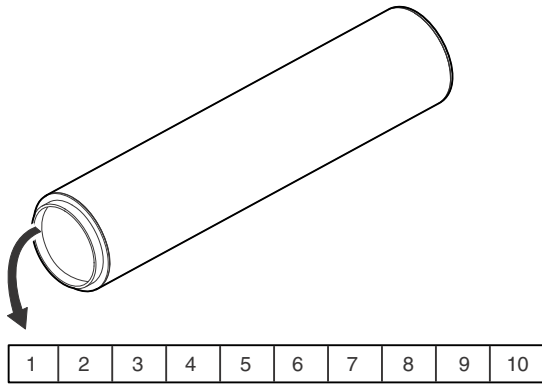
2. Maintenance parts list

No.	Item	Contents	Piece	Life	Model Name
1	Heat Roller Kit	Upper Heat Roller Unit	x1	1000K	HR-KIT-1207
		Lower Heat Roller Unit	x1		
2	Fuser Maintenance Kit	Fusing Separation Pawl (Upper)	x6	500K	FM-KIT-1207
		Fusing Separation pawl (Lower)	x4		
		Fusing Front Paper Guide (Upper)	x1		
3	Web Cleaning kit	Web Roller	x1	500K	CW-KIT-1207
		Web Roller Bearing	x2		
		Web Backup Roller	x1		
		Web Backup Roller Bearing	x2		
		Web Guide Shaft	x1		
4	Main Charger Kit	Charger Wire	x2	500K	MC-KIT-1207
		Screen Grid	x1		
		Charger Cleaner	x1		
		Charger Cushion	x4		
		Cleaner Base Guide	x1		
5	Cleaning Blade Kit	Side Seal F	x1	500K	BL-KIT-1207
		Side Seal R	x1		
		Cleaning Blade	x1		
		SUB Blade	x1		
		Drum Separation Pawl	x4		
		Duct sheet	x1		
6	Developer Maintenance Kit	Doctor Cover Unit/DV Seal	x1	1000K	DM-KIT-1207
		DV Side Seal F	x1		
		DV Side Seal R	x1		
		DV Box Filter	x1		
		DV Toner Filter	x1		
7	Transfer Belt Kit	Transfer Belt	x1	1000K	TB-KIT-1207
		Transfer Roller	x1		
		Transfer Cleaning Blade	x1		
		Ball Bearing	x4		
8	Paper Dust Removing Unit	Paper Dust Removing Unit	x1	500K	PAPER-DUST-REM
9	Toner collection container	Toner collection container (with cap)	x1	500K	PS-TB-1207
10	Filter Kit	Ozone filter	x1	500K /6 months	FLTR-KIT-1207
		Outlet Filter	x1		
11	Staple Cartridge	Staple Cartridge	x3	5,000x3	STAPLE-2600
12	Staple Cartridge	Staple Cartridge	x3	5,000x3	STAPLE-2400
13	WEB Cleaning Unit	WEB Cleaning Unit	x1	---	WEB-CLEANING-UNIT
14	Fusing Unit (for all cpm model) North America	Fusing Unit	x1	---	FUSER-UNIT
15	Transfer Unit	Transfer Unit (For servicing rotation)	x1	---	TRANSFER-UNIT

3. Production number identification

A. Photoconductor drum

(1) Photoconductor drum



The lot number is in 10 digits. Each digit indicates the following content.

This number is printed on the inside wall of the tube.

- 1: Number
2 for this mode.
- 2: Alphabet
Indicates the model code. It is B for this model.
- 3: Number
Indicates the end digit of the production year.
- 4: Number or X, Y, or Z
Indicates the production month.
X means October, Y November, and Z December.
- 5/6: Number
Indicates the production day.
- 7/8/9: Production management number in the production factory.
- 10: Alphabet
Production place code.

B. Developer



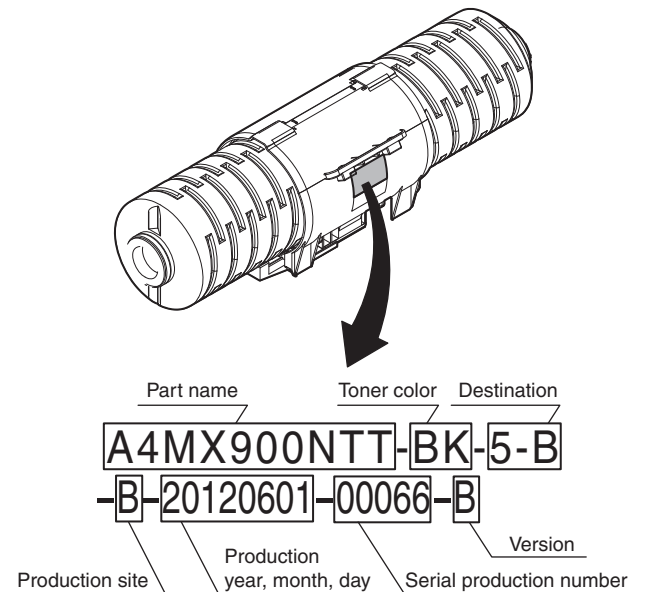
The lot number is in 8 digits, and each digit indicates the following content.

This number is printed on the right lower section 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

The label with the management number on it is attached to the side of the toner cartridge.

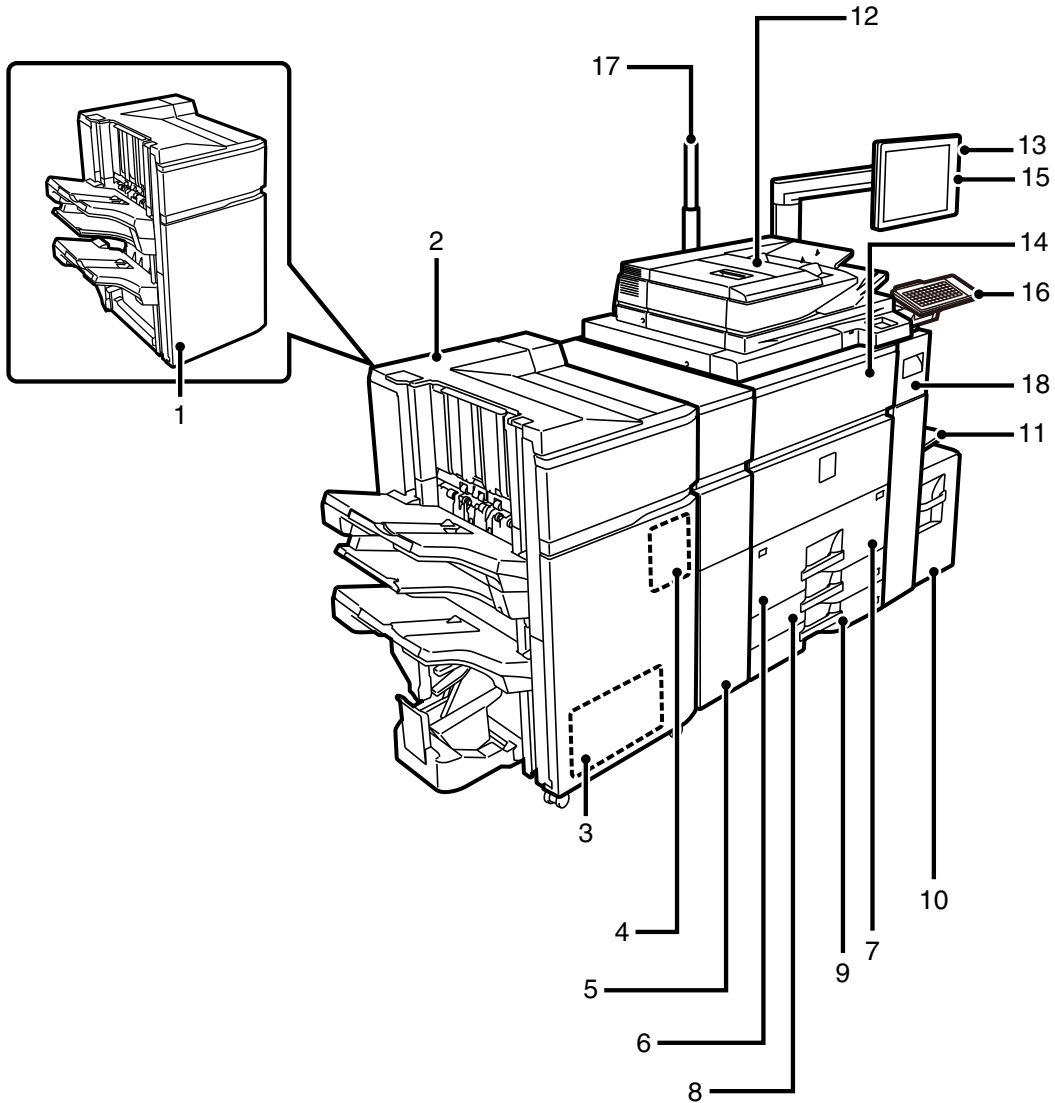


(Example) Produced on June 1st, 2012, 66th item.

[4] EXTERNAL VIEW AND INTERNAL STRUCTURE

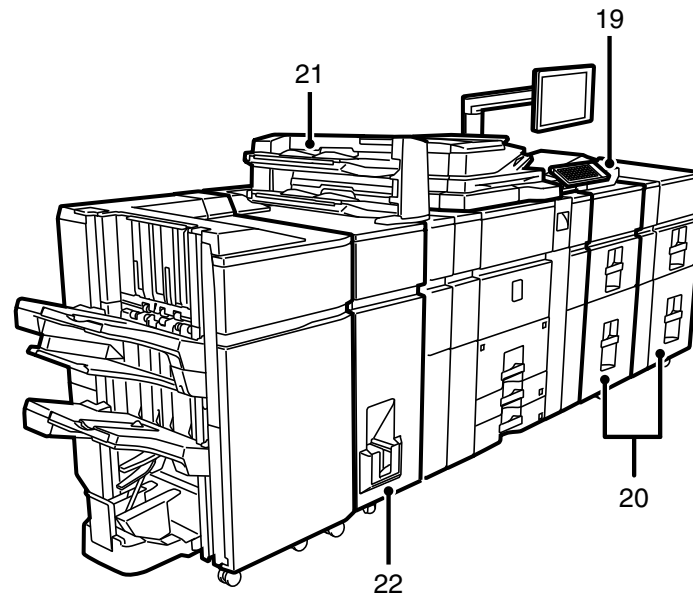
1. Identification of each section and functions

A. Exterior



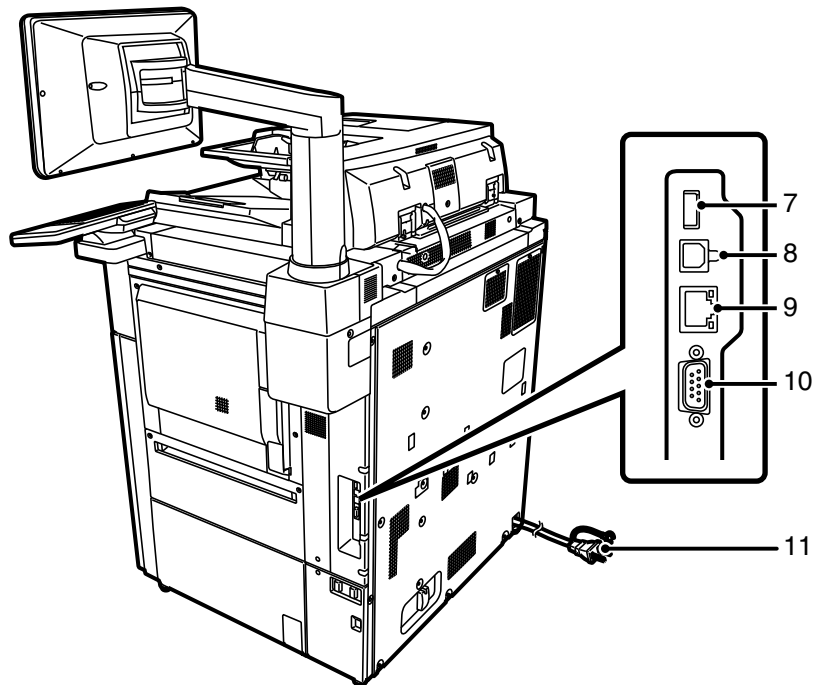
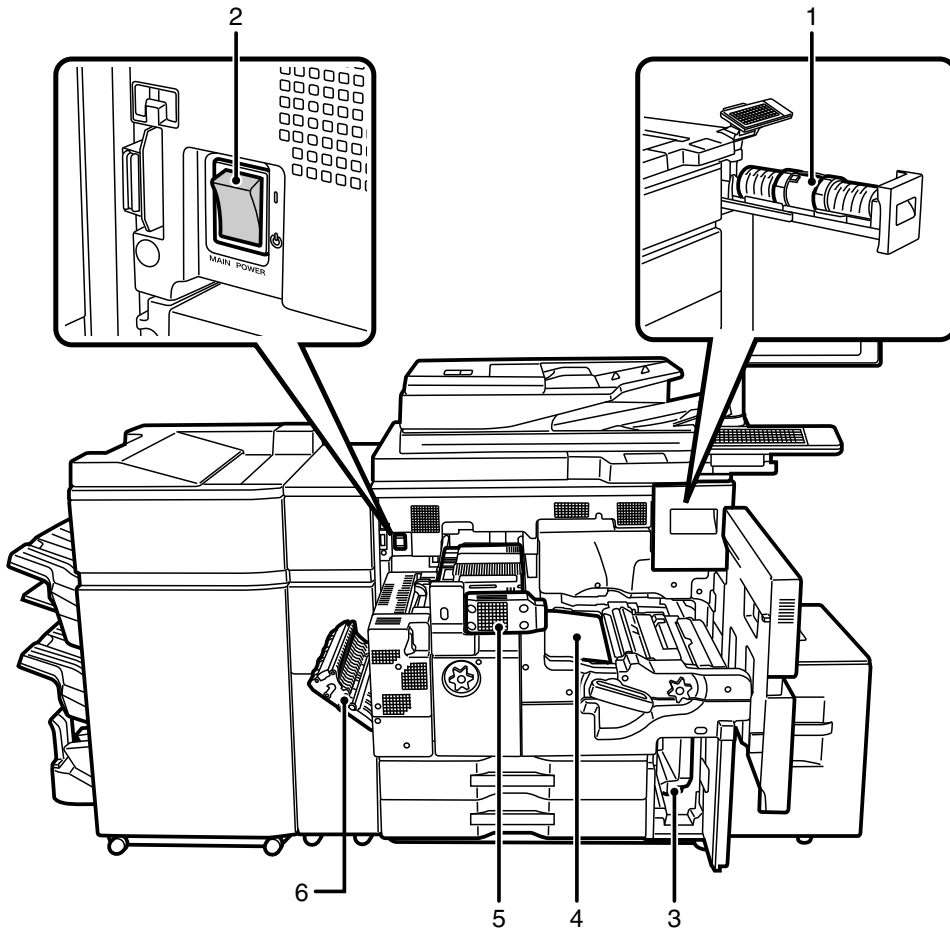
No.	Name	Function / Operation	Note
1	Finisher	This can be used to staple output. The optional punch module can be installed to punch holes in output. (100-sheet stapling)	* Peripheral device.
2	Saddle stitch finisher	The output is folded at the center. The saddle stitch function staples output at the centerline. (100-sheet stapling)	* Peripheral device.
3	Trimming module	An extended section when performing center stapling can be cut out.	* Peripheral device.
4	Punch module	This is used to punch holes in output. Requires the finisher (large capacity) or the saddle stitch finisher (large capacity).	* Peripheral device.
5	Decurler unit	Corrects curl of printed paper properly.	* Peripheral device.
6	Tray 1 (left side)	This holds paper. Up to 1200 sheets of paper can be loaded. (80g/m ²)	
7	Tray 2 (right side)	This holds paper. Up to 800 sheets of paper can be loaded. (80g/m ²)	
8	Tray 3	This holds paper. Up to 500 sheets of paper can be loaded. (80g/m ²)	
9	Tray 4	This holds paper. Up to 500 sheets of paper can be loaded. (80g/m ²)	
10	A4 LCC	This holds paper. Up to 3500 sheets of paper can be loaded. (80g/m ²)	* Peripheral device.

No.	Name	Function / Operation	Note
11	Bypass tray	Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension. This tray cannot be installed when the large-capacity 2-stage paper feed tray is installed.	
12	Automatic document feeder	This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.	
13	USB connector (A type)	A USB device such as a USB memory is connected to this connector. Be sure to use a USB cable of the shield type.	
14	Front cover	Open this cover when a paper jam occurs in the transport unit or in order to turn ON/OFF the main power switch.	
15	Operation panel	This is used to select functions and enter the number of copies.	
16	Keyboard	This is a keyboard that is incorporated into the machine.	* Peripheral device.
17	Status indicator	The machine status is indicated by the LED.	* Peripheral device.
18	Toner tray	Pull out this tray when replacing the toner cartridge.	



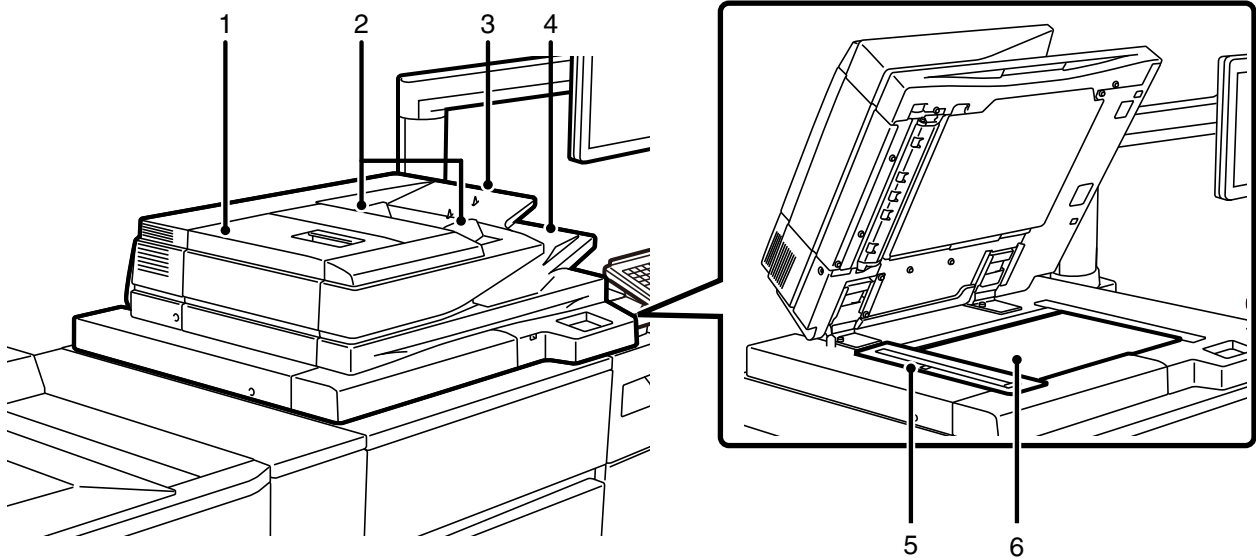
No.	Name	Function / Operation	Note
19	Bypass tray	Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension. This tray cannot be installed when the large-capacity 2-stage paper feed tray is installed.	* Peripheral device.
20	Large capacity trays	This holds paper. Up to 5000 sheets of paper can be loaded. Upper stage tray: 2500 sheets Lower stage tray: 2500 sheets (80g/m ²)	* Peripheral device.
21	Inserter	Paper loaded in the inserter can be inserted into output from the machine as covers and inserts.	* Peripheral device.
22	Folding unit	When outputting different paper sizes such as A3 and A4, the larger size paper can be Z-folded to align with the smaller size paper.	* Peripheral device.

B. Inside and connectors



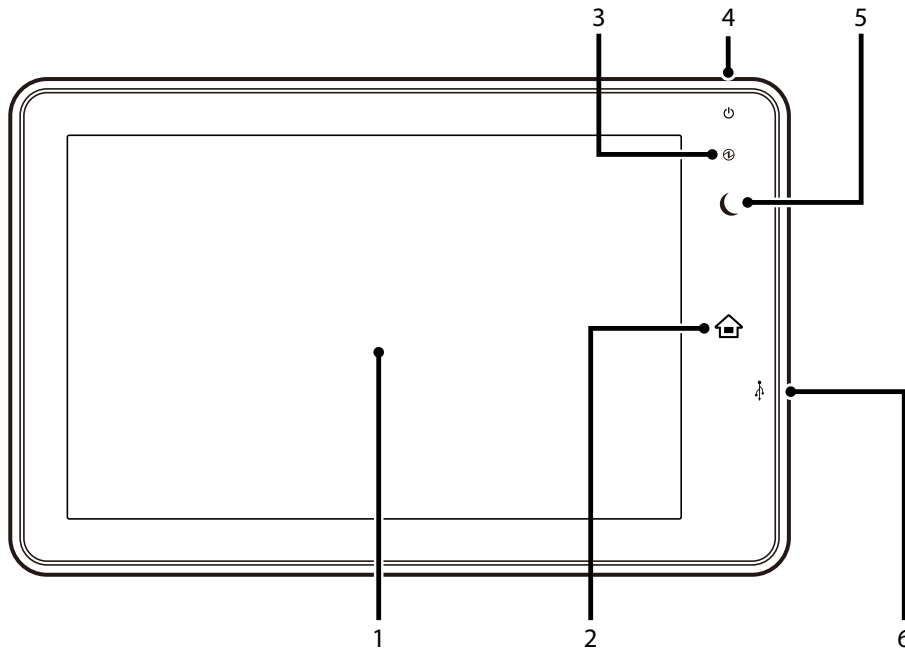
No.	Name	Function / Operation	Note
1	Toner cartridge	These contain toner for printing. When the toner runs out in the cartridge, replace the cartridge with a new cartridge.	
2	Main power switch	This is used to power on the machine. When using the fax or Internet fax functions, keep this switch in the "on" position.	
3	Toner collection container	This collects excess toner that remains after printing.	
4	Transfer belt	Toner images are overlaid on the transfer belt.	
5	Fusing unit	Heat is applied here to fuse the transferred image onto the paper.	
6	Paper reversing section cover	This is used when 2-sided printing is performed. Open this cover to remove a paper misfeed.	
7	USB connector (A type)	N/A	
8	USB connector (B type)	A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.	
9	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.	
10	Service-only connector	This connector is for use only by service technicians.	Important note for service technicians: The cable connected to the service connector must be less than 118" (3 m) in length.
11	Power plug		

C. Automatic document feeder and document glass



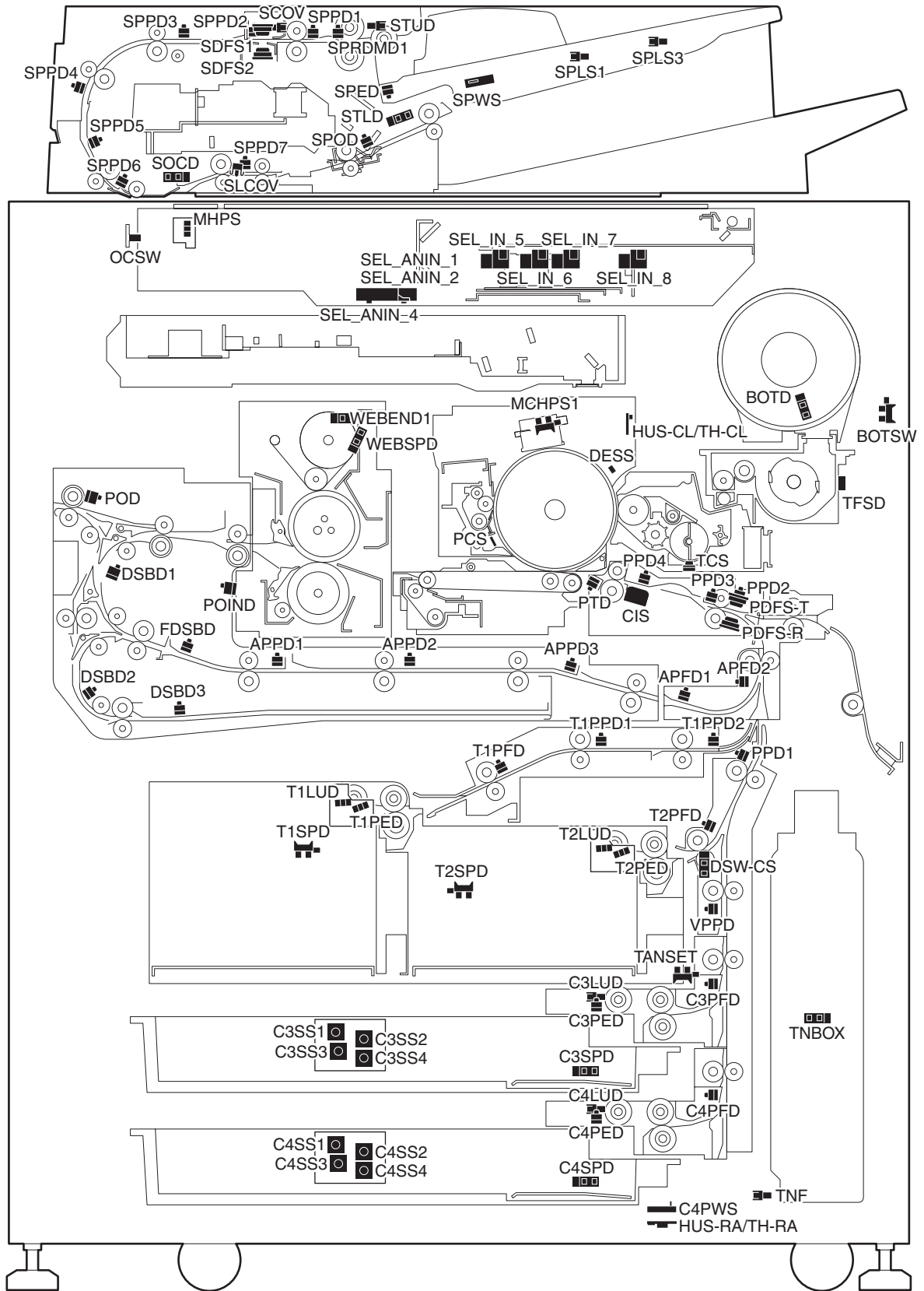
No.	Name	Function / Operation
1	Document feeding area cover	Open to remove a misfed original.
2	Original guides	These help ensure that the original is scanned correctly. Adjust the guides to the width of the original.
3	Document feeder tray	Place originals in this tray. 1-sided originals must be placed face up.
4	Original exit tray	Originals are delivered to this tray after scanning.
5	Scanning area	Originals placed in the document feeder tray are scanned here.
6	Document glass	Use this to scan a book or other thick original that cannot be fed through the automatic document feeder.

D. 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	[HOME Screen] button / indicator	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.
3	Main power indicator	This lights up when the machine's main power switch is in the "on" position.
4	[POWER] button	Use this key to turn the machine power on and off.
5	[POWER SAVE] button / 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.
6	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.

E. Sensors

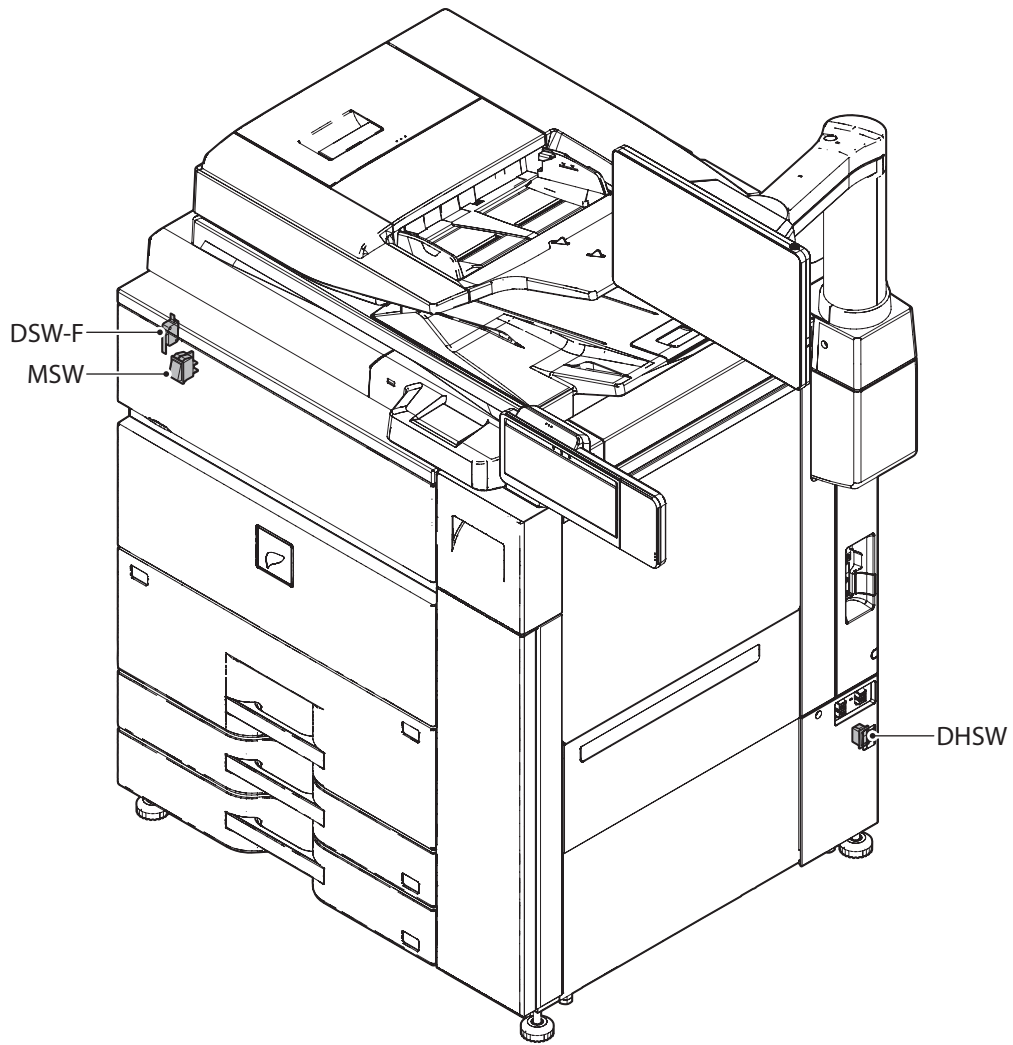


Signal name	Name	Type	Function / Operation	Active condition	Note
APFD1	ADU paper entry detection 1	Reflection type	Detects the ADU paper pass.		
APFD2	ADU paper entry detection 2	Reflection type	Detects the ADU paper pass.		
APPD1	ADU transport detection 1	Reflection type	Detects the ADU paper transport.		
APPD2	ADU transport detection 2	Reflection type	Detects the ADU paper transport.		
APPD3	ADU transport detection 3	Reflection type	Detects the ADU paper transport.		

Signal name	Name	Type	Function / Operation	Active condition	Note
BOTD	Toner cartridge rotation detection	Transmission type	Detects toner cartridge rotation		
BOTSW	Toner tray detection	Transmission type	Detects the toner tray.		
C3LUD	Cassette 3 upper limit detection	Transmission type	Detects lift up of the cassette 3.		
C3PED	Cassette 3 paper presence detection	Reflection type	Detects the cassette 3 paper presence.		
C3PFD	Cassette 3 paper entry detection	Reflection type	Detects the cassette 3 paper pass.		
C3SPD	Cassette 3 remaining quantity detection	Transmission type	Detects the cassette 3 remaining quantity.		
C3SS1	Cassette 3 size detection 1	Tact switch	Detects the cassette 3 paper size. Detects insertion of the cassette 3 by detecting one of cassette 3 size detection 1 to 4.		PWB unit
C3SS2	Cassette 3 size detection 2	Tact switch			
C3SS3	Cassette 3 size detection 3	Tact switch			
C3SS4	Cassette 3 size detection 4	Tact switch			
C4LUD	Cassette 4 upper limit detection	Transmission type	Detects lift up of the cassette 4.		
C4PED	Cassette 4 paper presence detection	Reflection type	Detects the cassette 4 paper presence.		
C4PFD	Cassette 4 paper entry detection	Reflection type	Detects the cassette 4 paper pass.		
C4PWS	Cassette 4 width detection	Volume resistor	Detects the cassette 4 width.		
C4SPD	Cassette 4 remaining quantity detection	Transmission type	Detects the cassette 4 remaining quantity.		
C4SS1	Cassette 4 size detection 1	Tact switch	Detects the cassette 4 paper size. Detects insertion of the cassette 4 by detecting one of cassette 4 size detection 1 to 4.		PWB unit
C4SS2	Cassette 4 size detection 2	Tact switch			
C4SS3	Cassette 4 size detection 3	Tact switch			
C4SS4	Cassette 4 size detection 4	Tact switch			
CIS	Image position sensor	Contact image sensor	Detects the paper edge position in the off-center direction in the PS section.		
DESS	Surface potential sensor	Surface potential sensor	Detects the surface potential of the photoconductor.		
DSBD1	Duplex reverse detection 1	Reflection type	Detects the duplex reverse paper pass.		
DSBD2	Duplex reverse detection 2	Reflection type	Detects the duplex reverse paper pass.		
DSW-CS	Cassette right door open/close detection	Transmission type	Detects the cassette right door open/close.		
FDSBD	Face down reverse detection	Reflection type	Detects face down reverse paper pass.		
HUS-CL/TH-CL	Temperature humidity sensor 2	Temperature humidity sensor	Detects temperature and humidity in the machine.		
HUS-RA/TH-RA	Temperature humidity sensor 1	Temperature humidity sensor	Detects the temperature and humidity under the installation environment.		
MCHPS1	MC cleaner home position detection	Transmission type	Detects the MC cleaner home position.		
MHPS	Scanner home position sensor	Photo interrupter	Scanner home position detection.		
OCSW	Original cover SW	Photo interrupter	Document size detection trigger.	L when the DSPF unit is open.	
PCS	Procon sensor	Reflection type	Detects the ID density.		
PDFS-R	Double feed sensor (receiving)	Supersonic sensor	Detects paper double feed.	105/120cpm machine only	PWB unit
PDFS-T	Double feed sensor (transmitting)	Supersonic sensor		105/120cpm machine only	
POD	Paper exit detection	Reflection type	Detects paper exit.		
POIND	Paper exit paper entry detection	Reflection type	Detects the paper pass at the paper exit port.		
PPD1	Transport detection 1	Reflection type	Detects paper transport in the transport path.		
PPD2	Transport detection 2	Reflection type	Detects paper transport in the transport path.		
PPD3	Transport detection 3	Reflection type	Detects paper transport in the transport path.		
PPD4	Transport detection 4	Reflection type	Detects paper transport in the transport path.		
PTD	PS section paper lead edge detection sensor	Reflection type	Detects a shift at the paper lead edge in the PS section.	105/120cpm machine only	
SCOD	DSPF open/close sensor	Transmission type	Detects open/close of the DSPF unit.	H when the DSPF unit is open.	
SDFS1	DSPF double feed sensor (transmitting)	Supersonic sensor	Detects double feed.		PWB unit
SDFS2	DSPF double feed sensor (receiving)	Supersonic sensor	Detects double feed.		
SEL_ANIN_1	Main scanning document size sensor 1	Reflection type	Detects the main scanning document size.		
SEL_ANIN_2	Main scanning document size sensor 2	Reflection type	Detects the main scanning document size.		

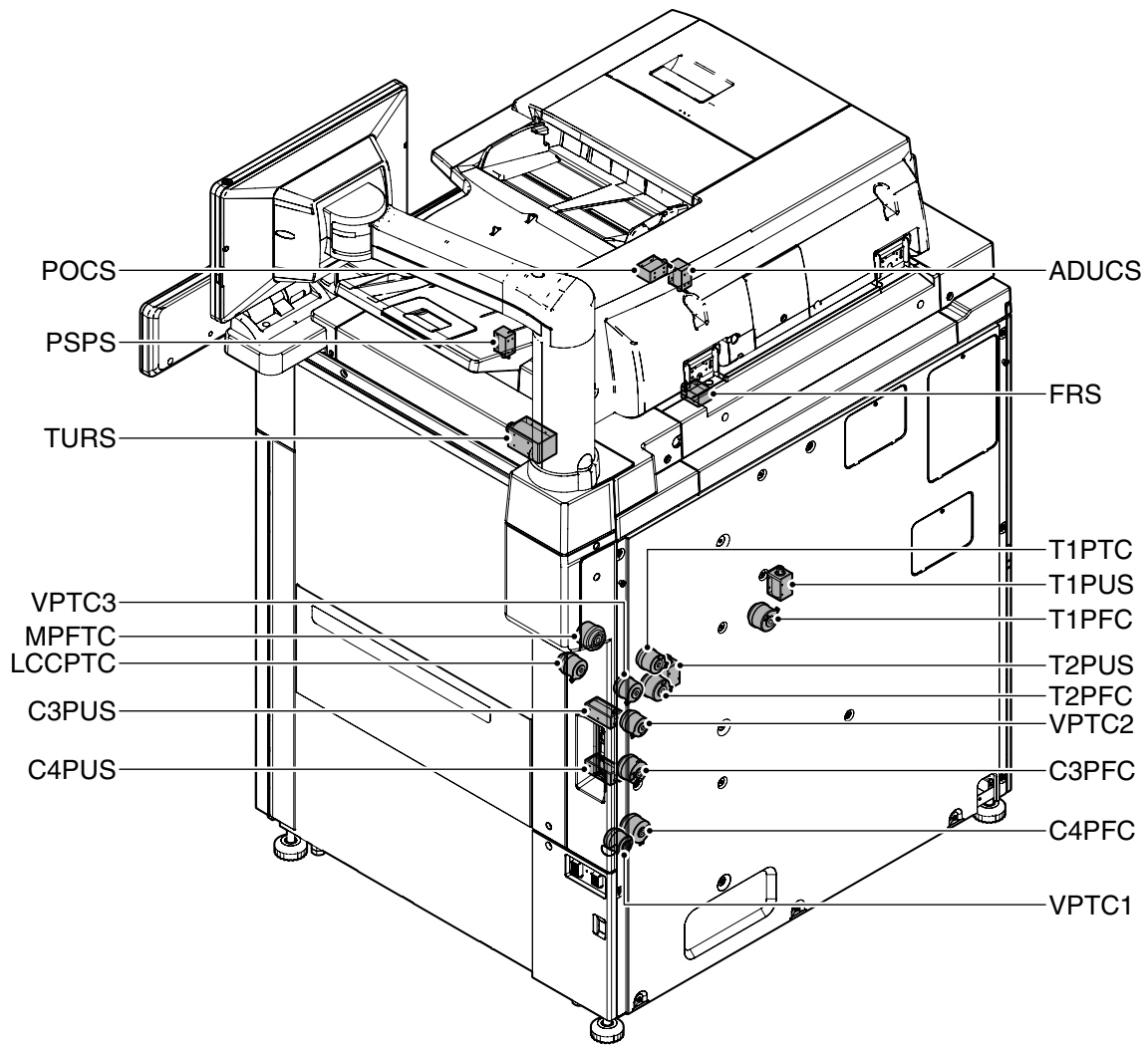
Signal name	Name	Type	Function / Operation	Active condition	Note
SEL_ANIN_4	Main scanning document size sensor 4	Reflection type	Detects the main scanning document size.		
SEL_IN_5	Sub scanning document size sensor 5	Reflection type	Detects the sub scanning document size.		
SEL_IN_6	Sub scanning document size sensor 6	Reflection type	Detects the sub scanning document size.		
SEL_IN_7	Sub scanning document size sensor 7	Reflection type	Detects the sub scanning document size.		
SEL_IN_8	Sub scanning document size sensor 8	Reflection type	Detects the sub scanning document size.		
SLCOV	DSPF lower door open/close sensor	Transmission type	Detects open/close of the lower door.	L when the lower door is open.	
SPED	DSPF document empty sensor	Reflection type	Detects document empty on the document tray.	L when paper is detected.	
SPLS1	DSPF document length detection short sensor	Transmission type	Detects the length of the document on the document tray.	H when paper is detected.	
SPLS3	DSPF document length detection1 long sensor	Transmission type	Detects the length of the document on the document tray.	H when paper is detected.	
SPOD	DSPF paper exit sensor	Reflection type	Detects document pass.	L when paper is detected.	
SPPD1	DSPF document pass sensor 1	Reflection type	Detects document pass.	L when paper is detected.	
SPPD2	DSPF document pass sensor 2	Reflection type	Detects document pass.	L when paper is detected.	
SPPD3	DSPF document pass sensor 3	Reflection type	Detects document pass.	L when paper is detected.	
SPPD4	DSPF document pass sensor 4	Reflection type	Detects document pass.	L when paper is detected.	
SPPD5	DSPF document pass sensor 5	Reflection type	Detects document pass.	L when paper is detected.	
SPPD6	DSPF document pass sensor 6	Reflection type	Detects document pass.	L when paper is detected.	
SPPD7	DSPF document pass sensor 7	Reflection type	Detects document pass.	L when paper is detected.	
SPRDMD1	DSPF document random sensor	Reflection type	Detects the paper size in random paper feed.	L when paper is detected.	
SPWS	DSPF document width sensor	Volume resistor	Detects the width of the document.		
SOCD	DSPF upper door open/close sensor	Transmission type	Detects open/close of the upper door.	L when the upper door is open.	
STLD	DSPF document tray lower limit sensor	Transmission type	Detects the lower limit of the DSPF document tray.	H when the lower limit is detected.	
STUD	DSPF document tray upper limit sensor	Transmission type	Detects the upper limit of the DSPF document tray.	H when the upper limit is detected.	
C1LUD	Cassette 1 upper limit detection	Photo interrupter	Detects lift up of the cassette 1 and paper presence.		PWB unit
C1PED	Cassette 1 paper presence detection	Photo interrupter			
T1PFD	Cassette 1 paper entry detection	Reflection type	Detects the cassette 1 paper pass.		
T1PPD1	Cassette 1 transport detection 1	Reflection type	Detects the cassette 1 paper transport.		
T1PPD2	Cassette 1 transport detection 2	Reflection type	Detects the cassette 1 paper transport.		
T1SPD	Cassette 1 remaining quantity detection	Transmission type	Detects the cassette 1 remaining quantity.		
T2LUD	Cassette 2 upper limit detection	Photo interrupter	Detects lift up of the cassette 2.		PWB unit
T2PED	Cassette 2 paper presence detection	Photo interrupter	Detects the cassette 2 paper presence.		PWB unit
T2PFD	Cassette 2 paper entry detection	Reflection type	Detects the cassette 2 paper pass.		
T2SPD	Cassette 2 remaining quantity detection	Transmission type	Detects the cassette 2 remaining quantity.		
TANSET	Tandem presence detection	Transmission type	Detects insertion of the tandem tray.		
TCS	Toner density sensor	Permeability sensor	Detects the toner density.		
TFSD	Toner hopper remaining quality sensor	Permeability detection	Toner remaining quantity detection signal		
TNBOX	Toner collection container presence detection	Transmission type	Detects presence of the toner collection container.		
TNF	Toner collection container full detection	Transmission type	Detects the toner collection container full.		
VPPD	Vertical transport detection	Reflection type	Detects paper transport in the vertical transport path.		
WEBEND1	Web end detection	Transmission type	Detects the web end.		
WEBSPD	Web near end detection	Transmission type	Detects the web near end.		

F. Switches



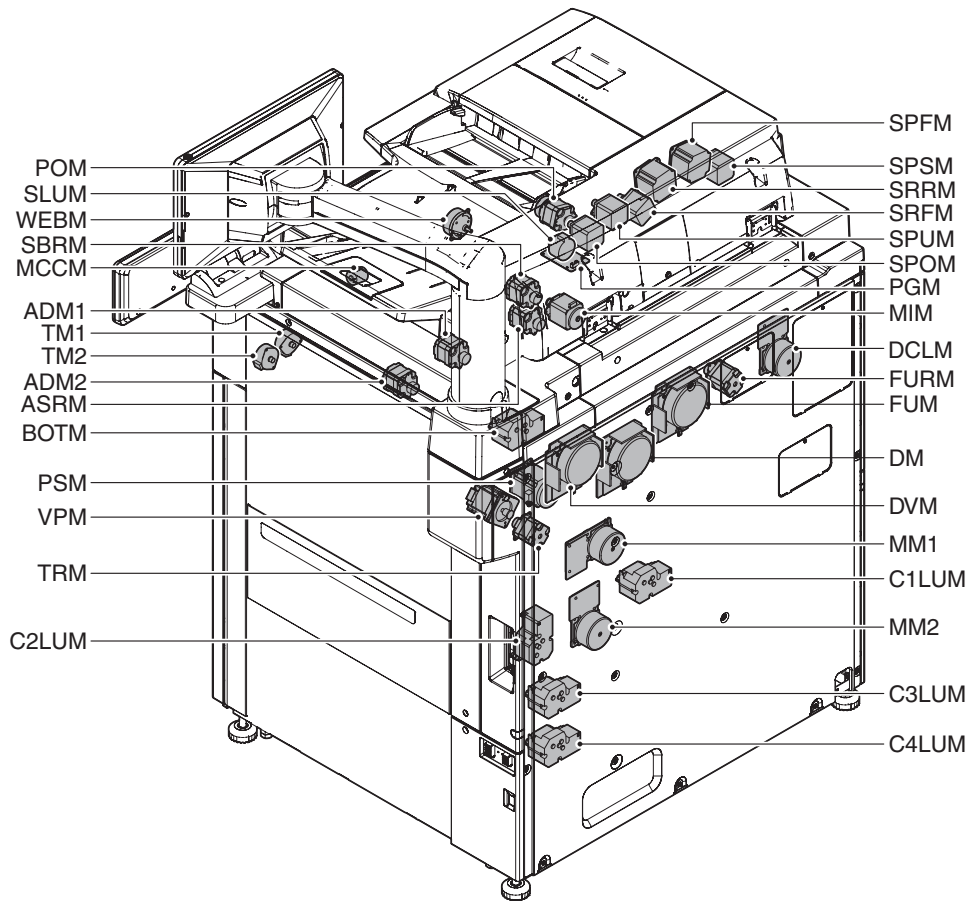
Signal name	Name	Type	Function / Operation
DHSW	Dehumidifying heater switch	Seesaw switch	Turns ON/OFF the power of the dehumidifying heater.
DSW-F	Front door switch	Micro switch	Detects open/close of the front door.
MSW	Main switch	Rocker switch	Turns ON/OFF the power of the machine.

G. Clutches and solenoids



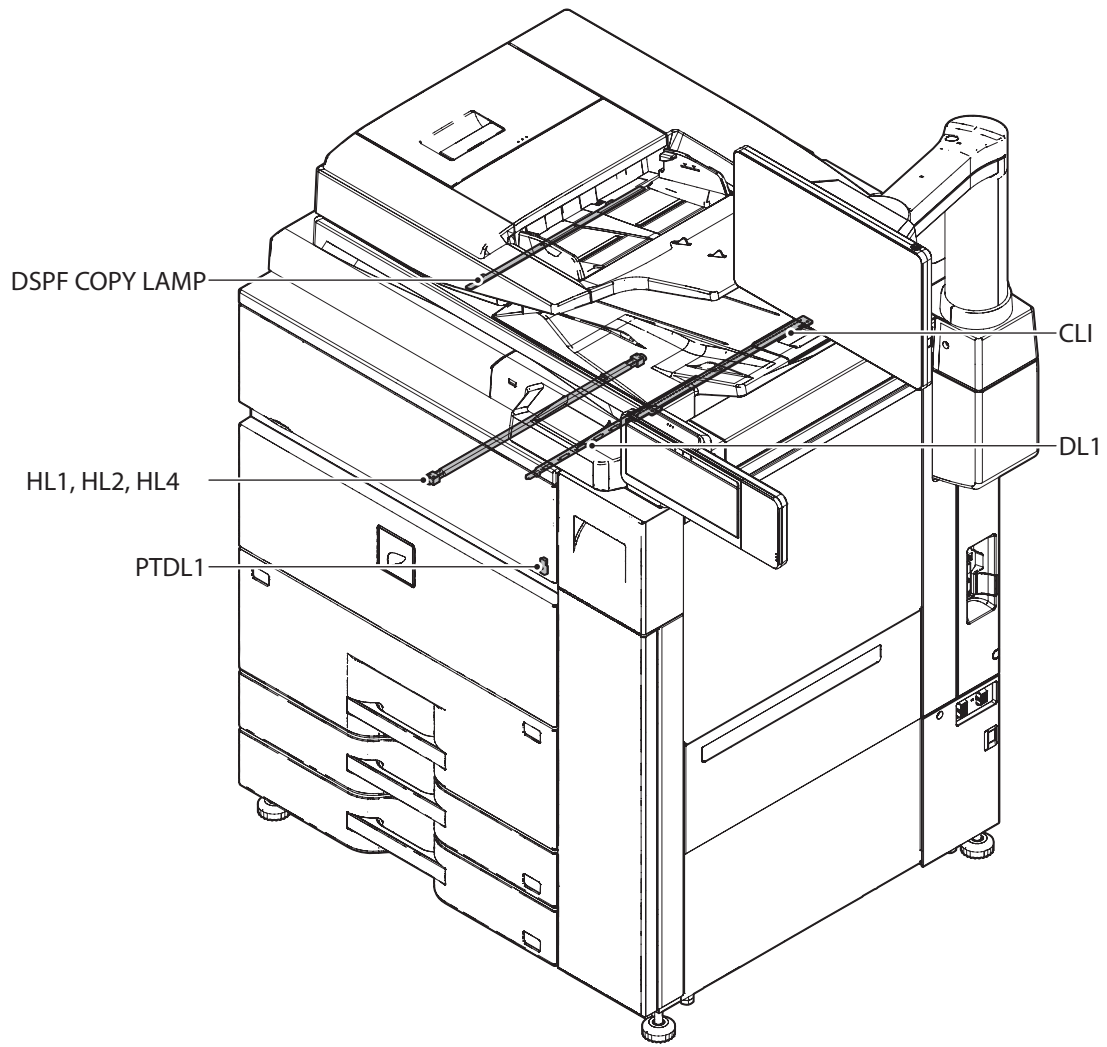
Signal name	Name	Type	Function / Operation
ADUCS	Duplex select gate solenoid	Electromagnetic solenoid	Select gate solenoid for transport in the ADU section
C1PFC	Cassette 1 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 1 paper feed section.
C1PTC	Horizontal transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
C1PUS	Cassette 1 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 1)
C2PFC	Cassette 2 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 2 paper feed section.
C2PUS	Cassette 2 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 2)
C3PFC	Cassette 3 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 3 paper feed section.
C3PUS	Cassette 3 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 3)
C4PFC	Cassette 4 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 4 paper feed section.
C4PUS	Cassette 4 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 4)
FRS	Lower pawl separation solenoid	Electromagnetic solenoid	Controls the lower pawl separation solenoid.
LCCPTC	LCC transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
MPFTC	Manual transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
POCS	Face-up/face-down select gate solenoid	Electromagnetic solenoid	Face-up/face-down select gate solenoid
PSPS	Separation solenoid	Electromagnetic solenoid	Drives the separation pawl of the OPC drum.
TURS	Transfer separation solenoid	Electromagnetic solenoid	Controls of the transport roller separation.
VPTC1	Vertical transport clutch (Lower)	Electromagnetic clutch	Controls ON/OFF of the vertical transport roller.
VPTC2	Vertical transport clutch (Intermediate)	Electromagnetic clutch	Controls ON/OFF of the vertical transport roller.
VPTC3	Vertical transport clutch (Upper)	Electromagnetic clutch	Controls ON/OFF of the vertical transport roller.

H. Drive motors



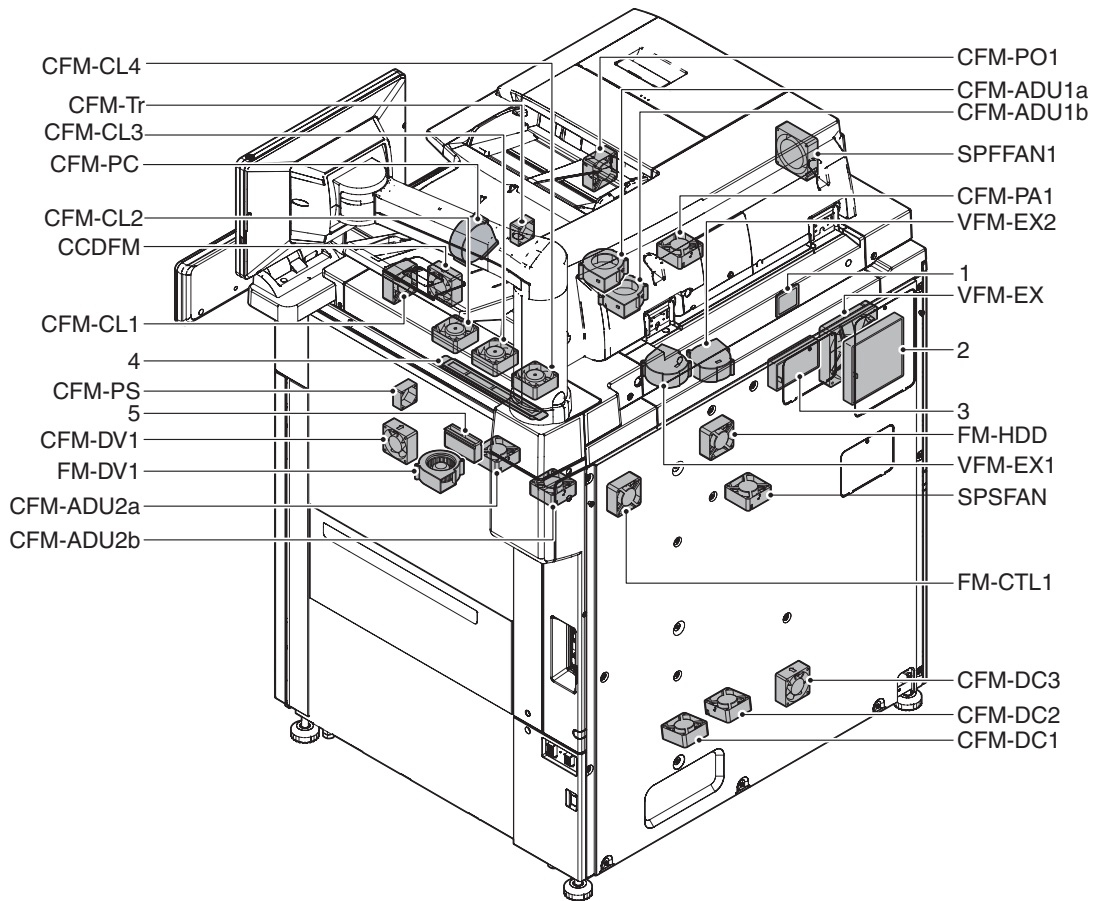
Signal name	Name	Type	Function / Operation
ADM1	ADU transport motor 1	Stepping motor	Drives the ADU transport roller 1.
ADM2	ADU transport motor 2	Stepping motor	Drives the ADU transport roller 2.
ASRM	ADU reverse motor	Stepping motor	Drives the ADU reverse roller.
BOTM	Toner cartridge motor	DC brush motor	Transports toner.
C1LUM	Paper lift up motor (Tray 1)	DC brush motor	Drives the paper tray lift. (This is the same as the T1LUM in the circuit diagram.)
C2LUM	Paper lift up motor (Tray 2)	DC brush motor	Drives the paper tray lift. (This is the same as the T2LUM in the circuit diagram.)
C3LUM	Paper lift up motor (Tray 3)	DC brush motor	Drives the paper tray lift.
C4LUM	Paper lift up motor (Tray 4)	DC brush motor	Drives the paper tray lift.
DCLM	Decurler motor	DC brushless motor	Drives the decurler roller.
DM	Drum motor	DC brushless motor	Drives the drum.
DVM	Developing motor	DC brushless motor	Drives the developing roller.
FUM	Fusing motor	DC brushless motor	Drives the fusing roller.
FURM	Fusing rear motor	Stepping motor	Drives the fusing rear roller.
MCCM	Main charger cleaning motor	DC brush motor	Cleans the main charger.
MIM	Scanner motor	Stepping motor	Drives the copy lamp unit.
MM1	Paper feed motor 1	DC brushless motor	Drives the paper feed section 1.
MM2	Paper feed motor 2	DC brushless motor	Drives the paper feed section 2.
PGM	Polygon motor	DC brushless motor	Scans laser beams
POM	Paper exit motor	Stepping motor	Drives the paper exit roller.
PSM	PS motor	Stepping motor	Drive the PS roller.
SBRM	Paper exit reverse motor	Stepping motor	Drives the paper exit reverse roller.
SLUM	DSPF lift-up motor	PM stepping motor	Lifts up and move down the document tray.
SPFM	DSPF transport motor	Stepping motor	Drives the transport roller.
SPOM	DSPF paper exit motor	Stepping motor	Drives the paper exit roller.
SPSM	DSPF PS motor	Stepping motor	Drives the PS roller.
SPUM	DSPF paper feed motor	Stepping motor	Drives the paper feed roller.
SRFM	DSPF scan transport motor	Stepping motor	Drives the scan transport roller.
SRRM	DSPF PS motor	Stepping motor	Drive the PS roller.
TM1	Toner motor 1	Stepping motor	Transports toner.
TM2	Toner motor 2	Stepping motor	Transports toner.
TRM	Transport motor	Stepping motor	Drives the transport roller.
VPM	Vertical transport motor	Stepping motor	Drives the vertical transport roller.
WEBM	Web motor	Synchronous motor	Drives the fusing roller cleaning.

I. Lamps



Signal name	Name	Type	Function / Operation	Note
CLI	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan the document image.	
DL1	Discharge lamp	Fuse lamp	Discharging the OPC drum.	
DSPF COPY LAMP	DSPF copy lamp	LED	Radiates lights onto a document for the CCD to scan the document image.	
HL1, HL2, HL4	Upper heater lamp	Halogen lamp	Heats the upper heat roller.	"HL4": Europe, other desitnations.
PTDL1	Transfer section front discharge lamp	LED	Discharges the OPC drum surface of the transfer section front.	

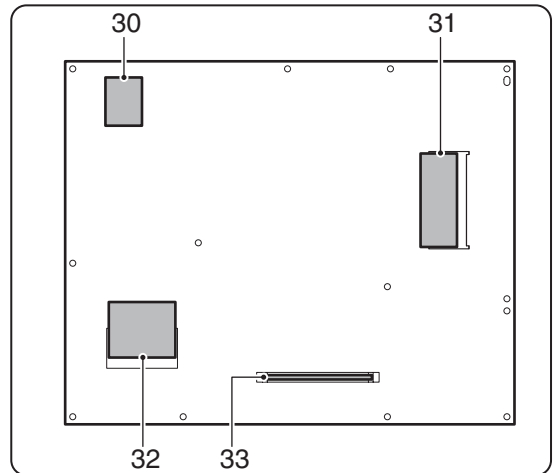
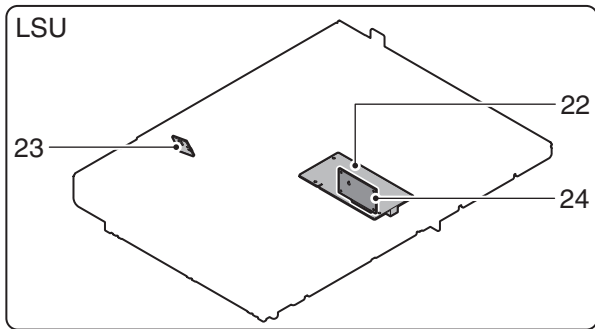
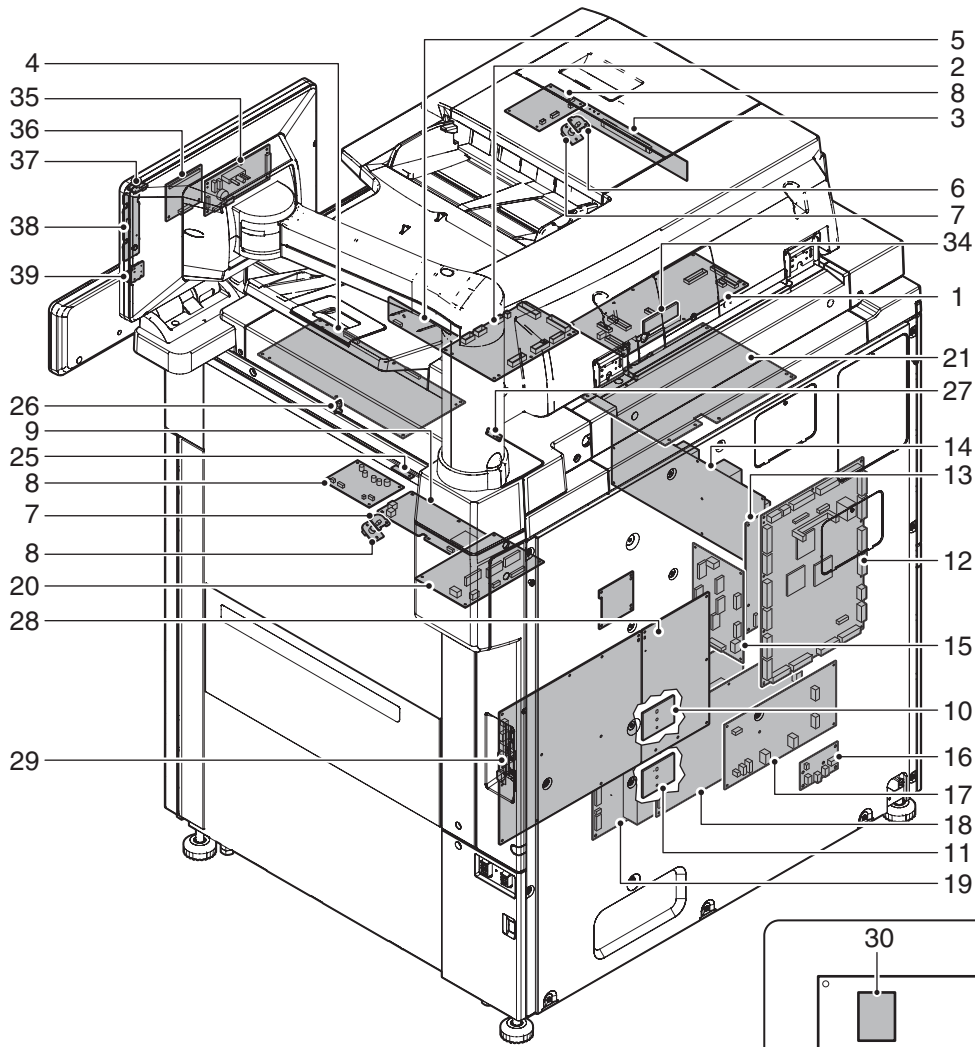
J. Fans and Filters



Signal name	Name	Type	Function / Operation	Trouble code
CCDFM	CCD cooling fan	Fan motor	Cools the CCD and the CL inverter.	L2-10
CFM-ADU1a	Reverse transport cooling fan	Sirocco fan	Cools paper in the reverse section.	L4-38
CFM-ADU1b	Reverse cooling fan	Sirocco fan	Cools the reverse section.	L4-39
CFM-ADU2a	ADU section paper cooling fan 1	Axial-flow fan (□60)	Cools paper in the ADU section.	L4-48
CFM-ADU2b	ADU section paper cooling fan 2	Axial-flow fan (□60)	Cools paper in the ADU section.	L4-49
CFM-CL1	Process cooling fan 1	Axial-flow fan (□60)	Cools the process section.	L4-50
CFM-DC1	Power cooling fan 1	Axial-flow fan (□60)	Cools the power section.	L4-32
CFM-CL2	Process cooling fan 2	Axial-flow fan (□60)	Cools the process section.	L4-51
CFM-CL3	Process cooling fan 3	Axial-flow fan (□60)	Cools the process section.	L4-52
CFM-CL4	Process cooling fan 4	Axial-flow fan (□60)	Cools the process section.	L4-53
CFM-DC2	Power cooling fan 2	Axial-flow fan (□60)	Cools the power section.	L4-32
CFM-DC3	Power cooling fan 3	Axial-flow fan (□60)	Cools the power section.	L4-47
CFM-DV1	Developing cooling fan 1	Axial-flow fan (□60)	Cools the developing section.	L4-46
CFM-PA1	Paper cooling fan	Axial-flow fan (□60)	Cools paper in the paper exit section.	L4-43
CFM-PC	Process section cooling fan	Sirocco fan	Cools the process section.	L4-58
CFM-PS	PS cooling fan	Axial-flow fan (□40)	Cools the PS section. (120/105cpm machines)	L4-54
CFM-PO1	Polygon cooling fan	Axial-flow fan (□60)	Cools the polygon section.	L4-34
CFM-Tr	Process cooling fan	Axial-flow fan (□40)	Cools the process section.	L4-55
FM-CTL1	CTL cooling fan	Axial-flow fan (□60)	Cools the controller section.	L4-30
FM-DV1	Toner suction fan	Sirocco fan	Sucks toner.	L4-36
FM-HDD	HDD cooling fan	Axial-flow fan (□60)	Cools the HDD.	L4-30
SPFFAN1	DSPF motor cooling fan 1	Fan motor	Cools the DSPF motor.	U5-16
SPSFAN	Sub power supply cooling fan	Axial-flow fan (□60)	Cools the sub power supply.	L4-28
VFM-EX	Machine exhaust fan 1	Axial-flow fan (□120)	Discharges heat from the fusing section.	L4-31
VFM-EX1	Ozone exhaust fan 1	Sirocco fan	Discharges ozone.	L4-40
VFM-EX2	Ozone exhaust fan 2	Sirocco fan	Discharges ozone.	L4-41

No.	Name	Function / Operation
1	Dust cover	Collects dust in sucked air.
2	Exhaust filter	Sucks dust in exhaust air.
3	Ozone filter	Decomposes ozone generated in the process section.
4	Toner filter	Prevents toner dispersion.
5	DVBOX filter	Prevents toner dispersion.

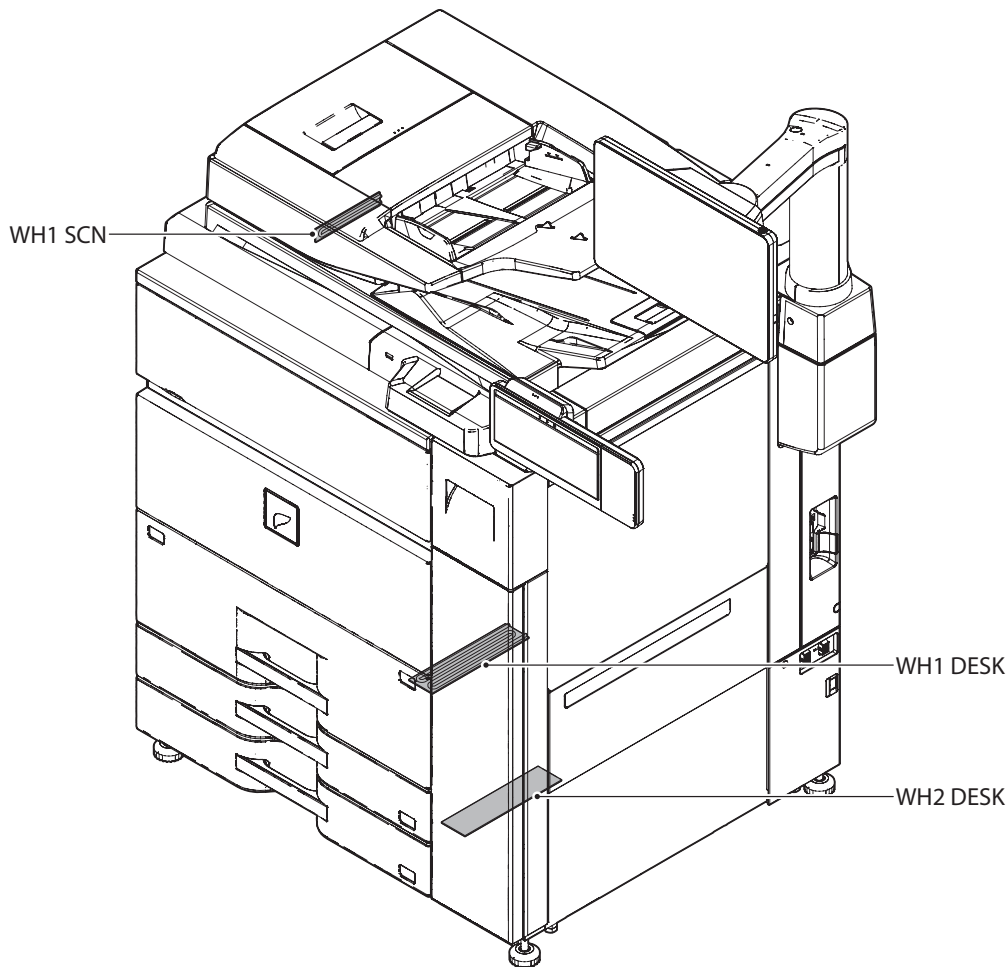
K. PWB



No.	Name	Function / Operation
1	DSPF cnt PWB	Controls the DSPF.
2	DSPF driver PWB	Drives the DSPF motor.
3	DSPF CCD PWB	DSPF (back) scanning CCD.
4	SCNCNT PWB	Controls the scanner.
5	CCD PWB	Scanner (front) read CCD.
6	DF S PWB	Detects double feed of paper.
7	DF R PWB	Detects double feed of paper.
8	DF cnt PWB	Detects double feed of paper.
9	PED cis PWB	Detects the paper edge.
10	Size detection PWB	Detects the paper size in the tray 3.
11	Side detection PWB	Detects the paper size in the tray 4.
12	PCU PWB	Controls the engine section.
13	HL PWB	Controls the heater lamp.
14	SUB PWB	Supplies the power for the MFPC PWB/brushless motor of the machine.
15	Driver PWB (paper exit)	Drives the paper exit system transport motor.
16	WH PWB (option)	Controls on/off of the dehumidifying heater.

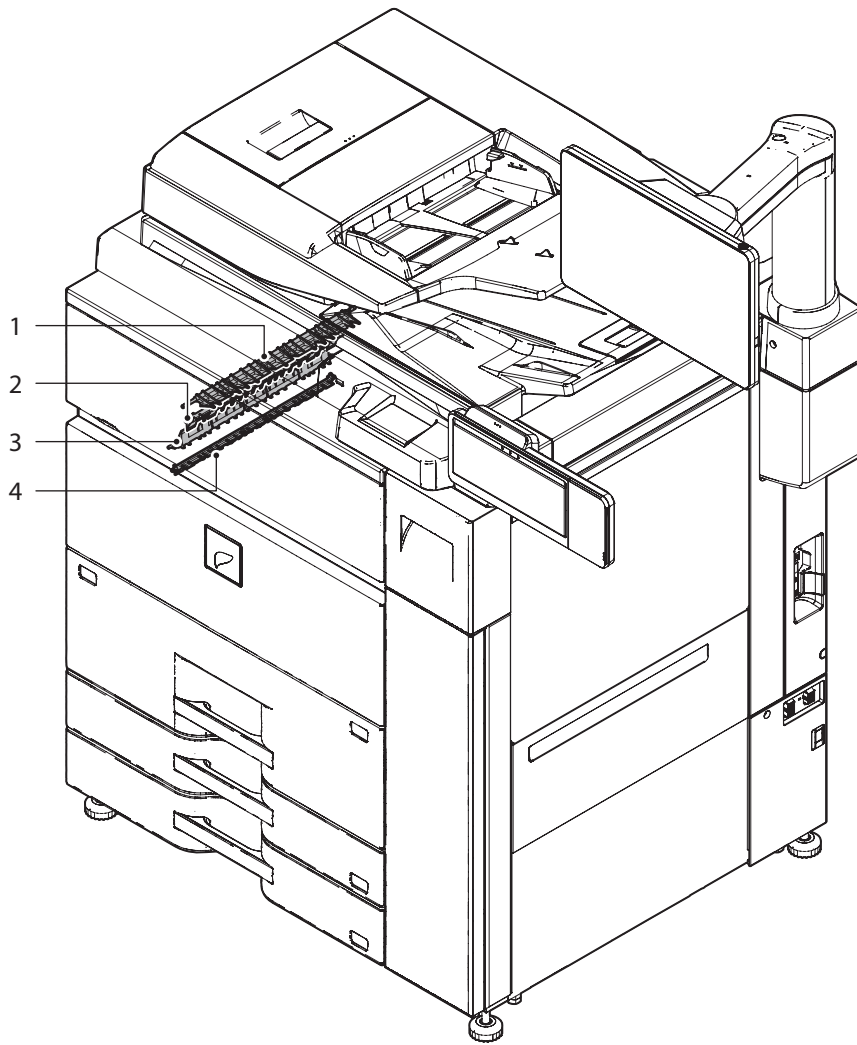
No.	Name	Function / Operation
17	AC PWB	Controls the power on the primary side.
18	Option power	Supplies power for the option.
19	Main power	Supplies the power for the machine.
20	Driver PWB (Paper feed)	Drives the paper feed system transport motor.
21	High voltage PWB	Outputs the main charger voltage, the developing bias voltage, the transfer voltage, and the transfer belt cleaning voltage. / Outputs the bias voltage for transfer cleaning brush.
22	LSU PWB	Controls the LSU.
23	BD PWB	Detects the laser synchronous signal.
24	LD PWB	Controls lighting the laser. (4 beams)
25	High voltage PS PWB	Prevents against leakage of the transfer current.
26	PTDL PWB	Discharge the OPC drum surface before transfer.
27	Process control sensor PWB	Detects the toner density on the drum.
28	Mother PWB	Controls power energy saving and relays the MFPC connect signal and EFI Server I/F.
29	MFPC PWB	Controls the image-related items and controls all over the machine.
30	SD card memory	Stores the Main Reus program data.
31	Sub Reus Flash memory	Stores the Sub Reus program data.
32	CF card memory	Stores the SOC program data.
33	SOCKET 1	SOC memory (2GB)
34	DSPF Flash PWB	Stores the DSPF program data.
35	LVDS PWB	Converts the display data signal to the LCD display signal.
36	TP-IF PWB	PWB Controls the touch panel.
37	PW-KEY PWB	Power display lamp.
38	HM-KEY PWB	Outputs the key operation signal.
39	USB I/F PWB	USB interface.

L. Heater



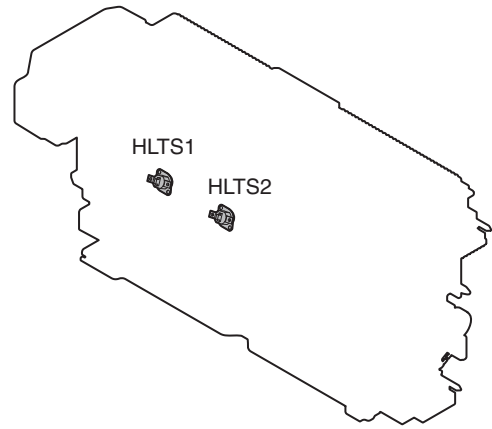
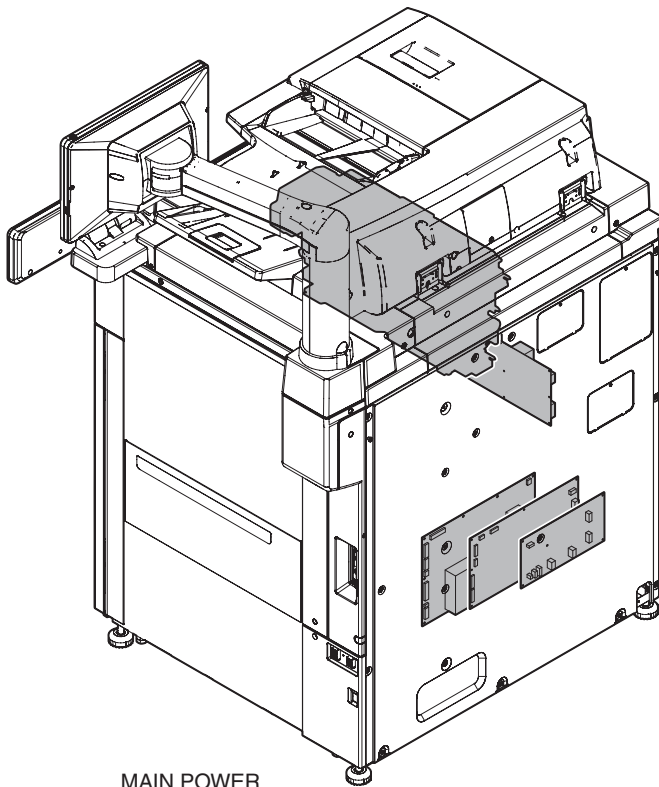
Signal name	Name	Function / Operation	Note
WH1 DESK	Dehumidifying heater (Paper feed tray 1, 2)	Dehumidifies paper. (Paper feed tray 1, 2)	Option.
WH1 SCN	Scanner dehumidifying heater	Dehumidifies the scanner unit.	Option.
WH2 DESK	Dehumidifying heater (Paper feed tray 3, 4)	Dehumidifies paper. (Paper feed tray 3, 4)	Option.

M. Gates

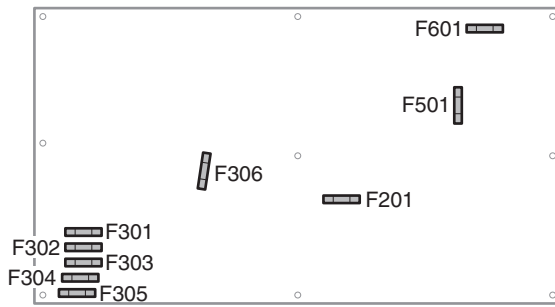


No.	Name	Function / Operation
1	Face-up/face-down select gate	Selects face-up or face-down.
2	Paper exit/reverse select gate	Select gate when paper exit in face-down.
3	Reverse ADU select gate	Select gate of transport to the ADU section and paper exit in face-down.
4	ADU reverse select gate	Transport gate to the ADU section when duplex printing.

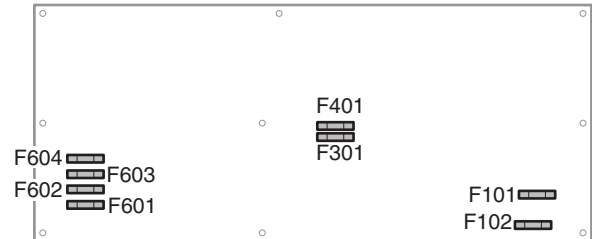
N. Fuses and thermostats



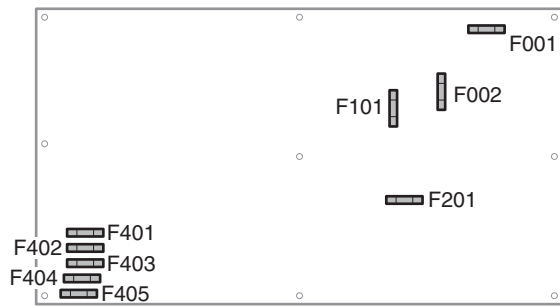
MAIN POWER



SUB POWER



OPTION POWER



AC PWB



Thermostats

Signal name	Name	Type	Location
HLTS1	Thermostat	125VAC 15A 250VAC 10A	Fusing unit
HLTS2	Thermostat	125VAC 15A 250VAC 10A	Fusing unit

Fuse

Signal name	Name	Type	Location
F101	Fuse	T12AH AC250V	SUB POWER
F102	Fuse	T3.15AH AC250V	SUB POWER
F301	Fuse	T5AH AC250V	SUB POWER
F401	Fuse	T3.15AH AC250V	SUB POWER
F601	Fuse	T6.3AH AC250V	SUB POWER
F602	Fuse	T6.3AH AC250V	SUB POWER
F603	Fuse	T6.3AH AC250V	SUB POWER
F604	Fuse	T6.3AH AC250V	SUB POWER
F201	Fuse	F5AH AC250V	MAIN POWER

Signal name	Name	Type	Location
F301	Fuse	T6.3AH AC250V	MAIN POWER
F302	Fuse	T6.3AH AC250V	MAIN POWER
F303	Fuse	T6.3AH AC250V	MAIN POWER
F304	Fuse	T6.3AH AC250V	MAIN POWER
F305	Fuse	T6.3AH AC250V	MAIN POWER
F306	Fuse	F8AH AC250V	MAIN POWER
F501	Fuse	T2AH AC250V	MAIN POWER
F601	Fuse	T8AH AC250V	MAIN POWER
F001	Fuse	T8AH AC250V	OPTION POWER
F002	Fuse	T2AH AC250V	OPTION POWER
F101	Fuse	T2.5AH AC250V	OPTION POWER
F201	Fuse	T4AH AC250V	OPTION POWER
F401	Fuse	T6.3AH AC250V	OPTION POWER
F402	Fuse	T6.3AH AC250V	OPTION POWER
F403	Fuse	T6.3AH AC250V	OPTION POWER
F404	Fuse	T6.3AH AC250V	OPTION POWER
F405	Fuse	T6.3AH AC250V	OPTION POWER
AC-F1*	Fuse	20A 250V	AC PWB
AC-F2*	Fuse	20A 250V	AC PWB (Except North America)
AC-F3*	Fuse	T2.0AH 250V	AC PWB
AC-F4*	Fuse	T2.0AH 250V	AC PWB (Except North America)

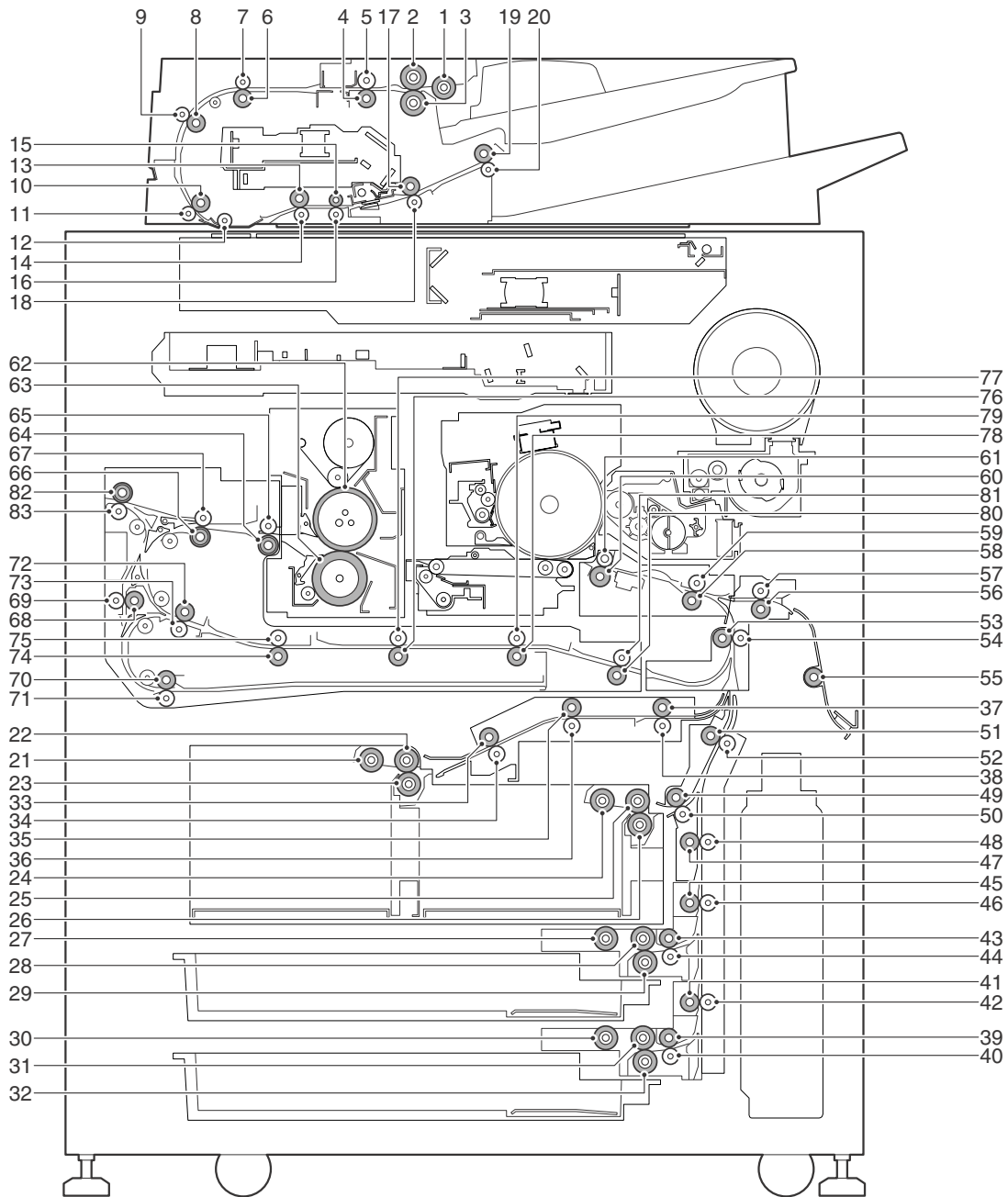
* For AC-F1 to AC-F4

 **WARNING !**

For continued protection against risk of fire.

Replace only with the same type and rating of fuse.

O. Roller



No.	Name	Function / Operation
1	Document pickup roller	Picks up a document and transport it to the paper feed roller.
2	Paper feed roller	Performs paper feed operation of a document.
3	Separation roller	Separates a document, preventing double feed.
4	No. 1 resist roller (Drive)	Performs resist of document transport.
5	No. 1 resist roller (Idle)	Apply a pressure to a document and the resist roller to give transport drive of the resist roller to the document.
6	Transport roller 1 (Drive)	Transports document from No. 1 resist roller to No.2 resist roller.
7	Transport roller 1 (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
8	Transport roller 2 (Drive)	Transports document from the transport roller 1 to No.2 resist roller.
9	Transport roller 2 (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
10	No. 2 resist roller (Drive)	Synchronizes the document lead edge and the scan start position.
11	No. 2 resist roller (Idle)	Apply a pressure to a document and the resist roller to give transport drive of the resist roller to the document.
12	Platen roller	Apply a pressure to document to prevent fluctuation in the document operation.
13	Transport roller 3 (Drive)	Transports document from the platen roller to the transport roller 4.
14	Transport roller 3 (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
15	Transport roller 4 (Drive)	Transport document from the transport roller 3 to the transport roller 5.
16	Transport roller 4 (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
17	Transport roller 5 (Drive)	Transport document from the transport roller 4 to the paper exit roller.
18	Transport roller 5 (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
19	Paper exit roller (Drive)	Discharges document.

No.	Name	Function / Operation
20	Paper exit roller (Idle)	Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.
21	Paper pickup roller (Tandem No. 1 paper feed tray)	Feeds paper to the paper feed roller.
22	Paper feed roller (Tandem No. 1 paper feed tray)	Feeds paper to the paper transport section.
23	Separation roller (Tandem No. 1 paper feed tray)	Separates paper to prevent double feed.
24	Paper pickup roller (Tandem No. 2 paper feed tray)	Feeds paper to the paper feed roller.
25	Paper feed roller (Tandem No. 2 paper feed tray)	Feeds paper to the paper transport section.
26	Separation roller (Tandem No. 2 paper feed tray)	Separates paper to prevent double feed.
27	Paper pickup roller (No. 3 paper feed tray)	Feeds paper to the paper feed roller.
28	Paper feed roller (No. 3 paper feed tray)	Feeds paper to the paper transport section.
29	Separation roller (No. 3 paper feed tray)	Separates paper to prevent double feed.
30	Paper pickup roller (No. 4 paper feed tray)	Feeds paper to the paper feed roller.
31	Paper feed roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.
32	Separation roller (No. 4 paper feed tray)	Separates paper to prevent double feed.
33	Transport roller 8 (Drive)	Transports paper from the tandem No. 1 paper feed tray to the transport roller 9.
34	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
35	Transport roller 9 (Drive)	Transports paper from the transport roller 8 to the transport roller 10.
36	Transport roller 9 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
37	Transport roller 10 (Drive)	Transports paper from the transport roller 9 to the transport roller 11.
38	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
39	Transport roller 1 (Drive)	Transports paper from the paper feed tray 4 to the transport roller 2.
40	Transport roller 1 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
41	Transport roller 2 (Drive)	Transports paper from the transport roller 1 to the transport roller 2.
42	Transport roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
43	Transport roller 3 (Drive)	Transports paper from the paper feed tray 3 to the transport roller 4.
44	Transport roller 3 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
45	Transport roller 4 (Drive)	Transports paper from the transport roller 2 and the transport roller 3 to the transport roller 5.
46	Transport roller 4 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
47	Transport roller 5 (Drive)	Transports paper from the transport roller 4 to the transport roller 7.
48	Transport roller 5 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
49	Transport roller 6 (Drive)	Transports paper from the tandem No. 2 paper feed tray to the transport roller 7.
50	Transport roller 6 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
51	Transport roller 7 (Drive)	Transports paper from the transport roller 5 and the transport roller 6 to the transport roller 11.
52	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
53	Transport roller 11 (Drive)	Transports paper from the transport roller 7 and the transport roller 10 to the transport roller 14.
54	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
55	Transport roller 12 (Drive)	Transports paper from the paper feed option to the transport roller 13.
56	Transport roller 13 (Drive)	Transports paper from the transport roller 12 to the transport roller 14.
57	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
58	Transport roller 14 (Drive)	Transports paper from the transport roller 11 and the transport roller 13 to the PS roller.
59	Transport roller 14 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
60	PS roller (Drive)	Transports paper to the transfer section. Controls the paper transport timing to adjust relative relations between images and paper.
61	PS roller (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the PS roller to paper.
62	Upper heat roller	Heats toner on paper, and press and fuse paper.
63	Lower heat roller	Applies a pressure to the upper heat roller.
64	Transport roller 15 (Drive)	Transports paper from the upper and lower heat rollers to the transport roller 16.
65	Transport roller 15 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
66	Transport roller 16 (Drive)	Transports paper from the transport roller 15 to the paper exit roller when discharging paper in face-up./ Transports paper from the transport roller 15 to the reverse roller 2 when discharging paper in face-down./ Transports paper from the transport roller 15 to the transport roller 17 when duplex printing.
67	Transport roller 16 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
68	Decurler roller (Drive)	Decurls paper transported from the transport roller 16 in duplex printing, and transports paper to the reverse roller 1.
69	Decurler follower roller (Idle)	Applies a pressure to paper and the decurler unit, decurling the paper and providing transport power of the transport roller.
70	Reverse roller 1 (Drive)	Transports paper from the transport roller 17 to the reverse roller 2 when duplex printing.
71	Reverse roller 1 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the reverse roller to paper.
72	Reverse roller 2 (Drive)	Transports paper from the reverse roller 1 to the transport roller 18 when duplex printing / Switches back paper that was transported from the transport roller 16, and transports it to the transport roller when discharging paper in face-down.
73	Reverse roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
74	Transport roller 18 (Drive)	Transports paper from the reverse roller 2 to the transport roller 19 when duplex printing.

No.	Name	Function / Operation
75	Transport roller 18 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
76	Transport roller 19 (Drive)	Transports paper from the transport roller 18 to the transport roller 20 when duplex printing.
77	Transport roller 19 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
78	Transport roller 20 (Drive)	Transports paper from the transport roller 19 to the transport roller 21 when duplex printing.
79	Transport roller 20 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
80	Transport roller 21 (Drive)	Transports paper from the transport roller 20 to the transport roller 11 when duplex printing.
81	Transport roller 21 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.
82	Paper exit roller (Drive)	Discharges paper that was transported from the transport roller 16 or the reverse roller 2.
83	Paper exit roller (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.

[5] ADJUSTMENTS

1. Outline

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.

There is, however, no need to perform all the adjustments. Perform only the necessary adjustments.

Unnecessary adjustments can be omitted.

If adjustments are omitted, the sequence of adjustments must be observed in ascending order. Failure to follow this procedure may result in improper adjustment or failure of operation.

2. Adjustment item list

Job No	Adjustment item list			Simulation
ADJ1	High voltage values adjustment	ADJ 1A	Main charger grid voltage adjustment	8-2
		ADJ 1B	Developing bias voltage adjustment	8-1
		ADJ 1C	Transfer current adjustment	8-6
		ADJ 1D	Photoconductor dark potential adjustment	44-3
ADJ2	Developing unit adjustment	ADJ 2A	Developing doctor gap adjustment	
		ADJ 2B	Developing roller main pole position adjustment	
		ADJ 2C	Toner density control reference value setting	25-2
ADJ3	Print image distortion, position, magnification ratio adjustment (Manual adjustment)	ADJ 3A	Print image distortion manual adjustment (LSU parallelism adjustment)	64-2
		ADJ 3B	Print image magnification ratio manual adjustment (Main scanning direction)	50-10
		ADJ 3C	Print image lead edge void area manual adjustment/Front-rear void area, rear edge void area manual adjustment	50-5
ADJ4	Scan image distortion adjustment (OC mode)	ADJ 4A	Scanner (reading) unit parallelism adjustment	
		ADJ 4B	Scan image sub scanning direction distortion adjustment	
		ADJ 4C	Scan image main scanning direction distortion adjustment	
ADJ5	Scan image distortion adjustment (DSPF mode)	ADJ 5A	DSPF level adjustment	
		ADJ 5B	DSPF skew adjustment (Front surface mode)	64-2
		ADJ 5C	DSPF skew adjustment (Back surface mode)	
ADJ6	Scan image focus adjustment	ADJ 6A	Image focus adjustment (Document table mode/ DSPF front surface mode)	
		ADJ 6B	Image focus adjustment (DSPF back surface mode)	
ADJ7	Scan image magnification ratio adjustment	ADJ 7A	Main scanning direction image magnification ratio adjustment (Document table mode)	48-1, 48-5
		ADJ 7B	Sub scanning direction image magnification ratio adjustment (Document table mode)	48-1, 48-5
		ADJ 7C	Main scanning direction image magnification ratio adjustment (DSPF front surface mode)	48-1, 48-5
		ADJ 7D	Main scanning direction image magnification ratio adjustment (DSPF back surface mode)	48-1, 48-5
		ADJ 7E	Sub scanning direction image magnification ratio adjustment (DSPF mode)	48-1, 48-5
ADJ8	Print/scan image off-center, lead edge position adjustment (Manual adjustment)	ADJ 8A	Print image off-center, lead edge position manual adjustment (Software adjustment) (105/120cpm machine)	50-10
		ADJ 8B	Paper feed off-center manual adjustment (Manual paper feed unit) (MX-MF11) (Mechanical adjustment)	50-10
		ADJ 8C	Paper feed off-center manual adjustment (No.1 - 4 paper feed unit in main unit) (Mechanical adjustment)	50-10
		ADJ 8D	Paper feed off-center manual adjustment (LCC) (Mechanical adjustment)	50-10
		ADJ 8E	Scan image off-center manual adjustment (Document table mode)	50-12
		ADJ 8F	Scan image off-center manual adjustment (DSPF (Front surface) mode)	50-12
		ADJ 8G	Scan image off-center manual adjustment (DSPF (Back surface) mode)	50-12
ADJ9	Print/scan image lead edge position, off-center, magnification ratio adjustment (Automatic adjustment)	ADJ 9A	Print image magnification ratio automatic adjustment (Main scanning direction) (Corresponding to ADJ3B)	50-28
		ADJ 9B	Scan image magnification ratio automatic adjustment (Sub scanning direction) (Document table mode) (Corresponding to ADJ7B) Scan image off-center automatic adjustment (Document table mode) Scan image lead edge reference position automatic adjustment (Document table mode) (Corresponding to SIM 50-1 RRCA)	50-28
		ADJ 9C	Scan image magnification ratio automatic adjustment (Sub scanning direction) (DSPF mode) (Corresponding to ADJ7E) Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8F/ADJ8G) Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9B)	50-28
ADJ10	Image position, image loss, and void area adjustment	ADJ10A	Copy mode image loss void area adjustment (Document table mode)	50-1
		ADJ10B	Document scan position adjustment (Scanner scanning position adjustment when scanning the front surface in the DSPF mode)	53-8
		ADJ10C	Copy mode image loss adjustment (DSPF mode)	50-6
		ADJ10D	Image send mode, image loss adjustment	50-27

Job No	Adjustment item list				Simulation	
ADJ11/ SET1	Gray balance/density adjustment		Note before execution of the image quality adjustment			
			Copy image quality check			
			Printer image quality check			
		ADJ 11A	Scanner calibration (CCD calibration)		63-3 (63-5)	
		SET1	Gray balance adjustment target setup	1A	Copy gray balance adjustment target setup	63-7/8/11
				1B	Printer gray balance adjustment target setup	67-26/27/28
		ADJ 11B	Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustment)		46-74	
		ADJ 11C	Copy quality adjustment (Basic adjustment)	11C (1)	Copy gray balance and density adjustment (Automatic adjustment)	46-24
				11C (2)	Copy gray balance and density adjustment (Manual adjustment)	46-16
		ADJ 11D	Copy/Image send image quality adjustment (Individual adjustment)	11D (1)	Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)	46-2
				11D (2)	Copy gray balance, gamma adjustment (No need to adjust normally)	46-10
				11D (3)	Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)	46-16
				11D (4)	Automatic monochrome (Copy/Scan) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)	46-19
				11D (5)	Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan) mode (No need to adjust normally) (Background density adjustment in the scanning section)	46-32
				11D (6)	Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)	46-63
				11D (7)	Monochrome (Copy/Scan) mode color document reproduction adjustment (No need to adjust normally)	46-37
				11D (8)	Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)	46-60
				11D (9)	Copy high density image density reproduction setting (Normally unnecessary to the setting change)	46-23
				11D (10)	DSPF mode (Copy/Scan) density adjustment (No need to adjust normally)	46-9
				11D (11)	Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)	26-53
				11D (12)	Copy gamma, gray balance adjustment for each dither (Automatic adjustment)	46-54
				11D (13)	Dropout color adjustment (Normally not required)	46-55
				11D (14)	Watermark adjustment (Normally not required)	46-66
		ADJ 11E	Printer image quality adjustment (Basic adjustment)	11E (1)	Printer gray balance adjustment (Automatic adjustment)	67-24
				11E (2)	Printer gray balance adjustment (Manual adjustment)	67-25
		ADJ 11F	Printer image quality adjustment (Individual adjustment)	11F (1)	Printer density adjustment (Low density section density adjustment) (No need to adjust normally)	67-36
				11F (2)	Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)	67-34
11F (3)	Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)			67-54		
11F (4)	Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change)			26-53		
ADJ12	Image send, image quality adjustment	ADJ12A	Color image send mode, image density and gradation adjustment (by each mode)	46-4		
		ADJ12B	Monochrome image send mode, image density and gradation adjustment (by each mode)	46-5		
		ADJ12C	Image send mode, image color balance adjustment	46-8		
ADJ13	Setting of the auto exposure mode operating conditions in copy and scan			46-19		
ADJ14	Paper size detection adjustment	ADJ14A	Manual paper feed tray paper width sensor adjustment	40-2		
		ADJ14B	Paper feed tray 4 paper width sensor adjustment	40-12		
		ADJ14C	DSPF paper feed tray document width sensor adjustment	53-6		
ADJ15	Touch panel coordinate adjustment			65-1		

Job No	Adjustment item list			Simulation
ADJ16	Waste toner full detection adjustment			30-1
ADJ17	Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position)			
ADJ18	Decurler roller adjustment			
ADJ19	DSPF CCD calibration	ADJ19A	DSPF shading adjustment	63-2
		ADJ19B	CCD gamma adjustment (CCD calibration) (DSPF mode)	63-3

3. Details of adjustment

ADJ 1 High voltage values adjustment

(Note)

To check and adjust the output voltage, use the unit which can measure an effective value of 1000M Ω or more internal impedance. In addition, use a high voltage probe as well. (FLUKE87FLUKE80K-40 is recommended.)

1-A Main charger grid voltage adjustment

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.

- 1) Enter the Sim. 8-2 mode.
- 2) Select the output mode to be adjusted with the scroll button.

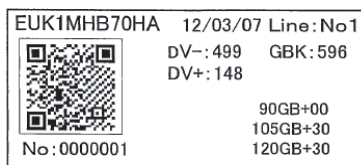
Item/ Display	Content	Setting range	Default	Monitor connector		Actual output voltage
			105/120cpm machine	Connector	Pin No.	105/120cpm machine
A GB_K	Main charger grid voltage adjustment value	200-1000	605	CN3	7	-625 +/- 5 V

- 3) Enter the adjustment value with 10-key, and press [OK] button.
The adjustment value is set.

Remark:

Normally when the default value is set, the specified voltage is outputted.

The adjustment value of each color mode is specified on the label attached to the high voltage PWB. Enter that value.



GBK:XXX

When [EXECUTE] key is pressed, the voltage entered in the procedure 3) is outputted for 30 sec and the set value is saved.

When [EXECUTE] key is pressed again, the output is stopped.

CAUTION: Note that the adjustment value may differ depending on the high voltage PWB.

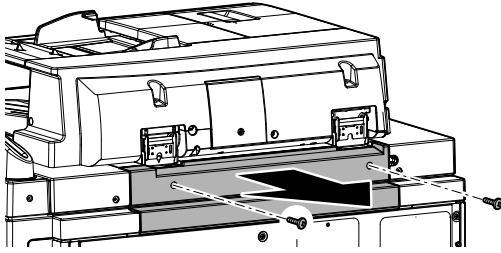
CAUTION: The default values specified for each model must be changed as follows:

105/120cpm machine: + 30

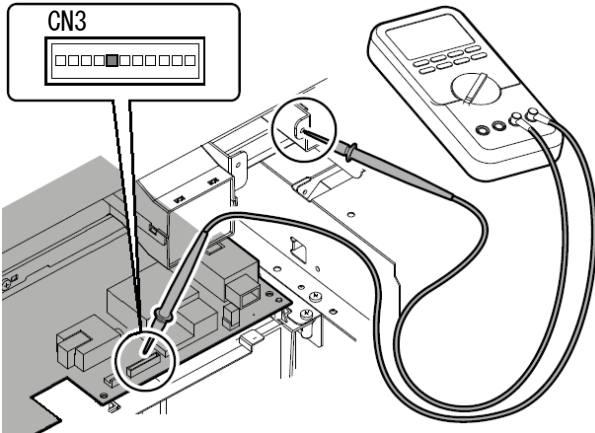
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

When the output voltage must be checked to be normal or not or when an adjustment is required while checking the output voltage, follow the procedures below:

- 1) Remove the upper rear cover of the machine



- 2) Attach the digital multi-meter between the connector CN3 pin (7) on the high voltage pwb and GND.



- 3) Enter the adjustment value with 10-key, and press [EXECUTE] key.

The main charger voltage is outputted for 10sec.

Note:

Perform this procedure timely as extended charge output will stress the photoconductor.

- 4) Check the output voltage with the digital multi-meter.

If the output voltage is outside the specified range described in the above table, perform procedures 2 thru 4 until the specified value is reached.

NOTE:

If the specified voltage is not obtained by changing the adjustment value, one of the following parts may be defective.

- High voltage PWB
- PCU PWB
- OPC drum unit
- High voltage circuit electrode

1-B Developing bias voltage adjustment

This adjustment is needed in the following situations:

- * The high voltage PWB 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. 8-1 mode. .
- 2) Select the output mode to be adjusted with the scroll button.

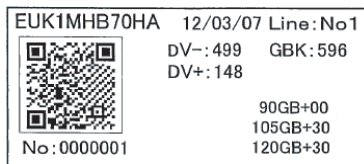
Item/Display	Content	Setting range	Default	Monitor connector		Actual output voltage	
				Connector	Pin No.		
A	DVB_K	Developing bias adjustment value	0-750	496	CN3	11	-500 +/- 5 V
B	DVB_K_PLUS	Reverse developing bias voltage	0-250	164	CN3	11	+150 +/- 5 V

- 3) Enter the adjustment value with 10-key, and press [OK] button.
The adjustment value is set.

Remark:

Normally when the default value is set, the specified voltage is outputted.

The adjustment value of each color mode is specified on the label attached to the high voltage PWB. Enter that value.



DV-:XXX DV+:XXX

When [EXECUTE] key is pressed, the voltage entered in the procedure 3) is outputted for 30 sec and the set value is saved.

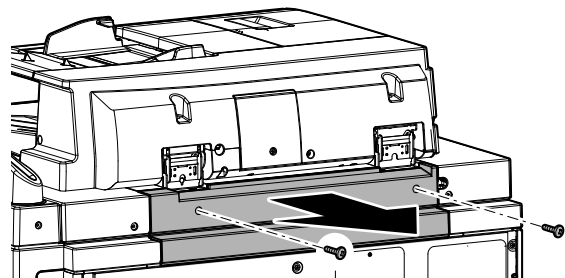
When [EXECUTE] key is pressed again, the output is stopped.

CAUTION: Note that the adjustment value may differ depending on the high voltage PWB.

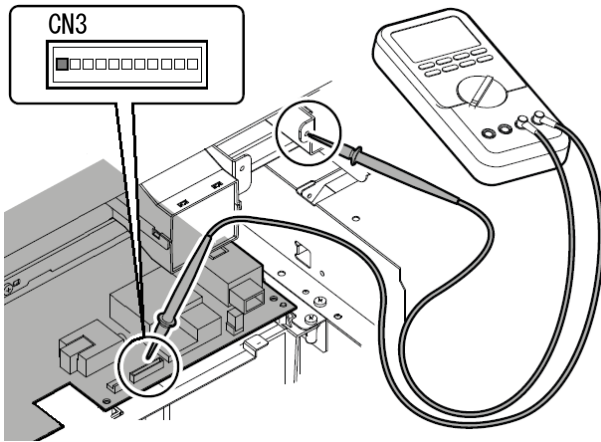
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

When the output voltage must be checked to be normal or not or when an adjustment is required while checking the output voltage, follow the procedures below:

- 1) Remove the upper rear cover of the machine



- 2) Attach the digital multi-meter between the connector CN3 pin (11) on the high voltage pwb and GND.



- 3) Enter the adjustment value with 10-key, and press [EXECUTE] key.

The DV BIAS voltage is outputted for 30sec.

- 4) Check the output voltage with the digital multi-meter.
If the output voltage is outside the specified range described in the above table, perform procedures 2 thru 4 until the specified value is reached.

NOTE:

If the specified voltage is not obtained by changing the adjustment value, one of the following parts may be defective.

- High voltage PWB
- PCU PWB
- Development unit
- High voltage circuit electrode

1-C Transfer current adjustment

This adjustment is needed in the following situations:

- * The high voltage PWB 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. 8-6 mode.
- 2) Select the output mode to be adjusted with the scroll button.

Item/Display	Description of item	Setting range	Default	Actual output current
			105/120cpm machine	105/120cpm machine
A THV+ (FACE)	THV (Transfer) output Front surface mode	0-255	174	55 +/- 1μA
B THV+ (BACK)	Back surface mode	0-255	147	45 +/- 1μA

- 3) Enter the adjustment value with 10-key, and press [OK] button.
The adjustment value is set.

Normally when the default value is set, the specified voltage is outputted.

When [EXECUTE] button is pressed, the adjustment value is saved and the transfer voltage is outputted simultaneously.

Since the actual output cannot be checked, if it is presumed to be abnormal even though the adjustment value is set to the default value, replace the high voltage pwb.

1-D Photoconductor dark potential adjustment

This adjustment is needed in the following situations:

- * When the photoconductor drum is replaced.
- * When the front surface potential sensor is replaced.
- * When the main charger unit is replaced.
- * When the main high voltage PWB is replaced.
- * When the photoconductor unit (process unit) is disassembled.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.
- * Before executing the image adjustment

- 1) Enter the Sim.44-3 mode.
- 2) Select the adjustment mode.

- **INI DARK VO:**
When the OPC drum is replaced, select this mode.
- **DARK VO:**
In the other cases, select this mode.

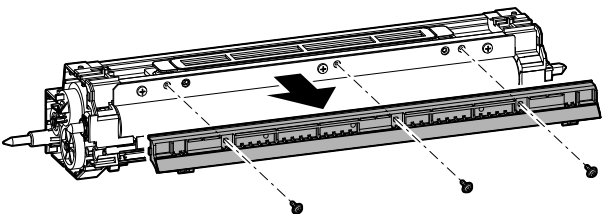
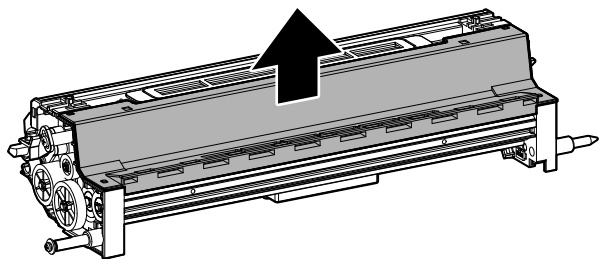
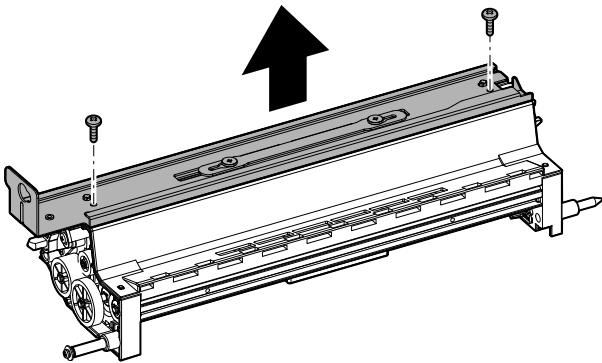
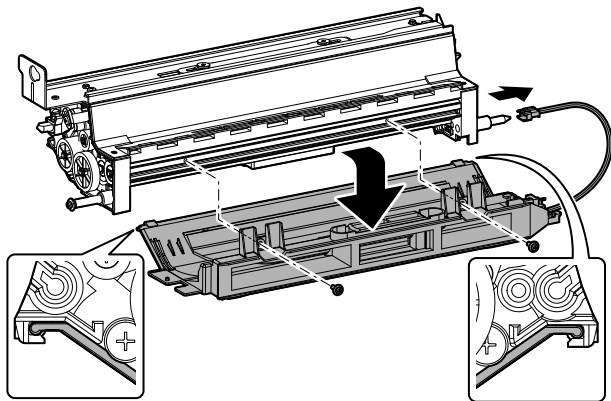
- 3) Press [EXECUTE] key.
[EXECUTE] button is highlighted, and the OPC drum is rotated to start the OPC drum dark potential adjustment operation.
After completion of the adjustment, [EXECUTE] button returns to the normal display.
The main charger grid voltage is automatically corrected until the OPC drum dark potential becomes the specified value.

ADJ 2 Developing unit adjustment

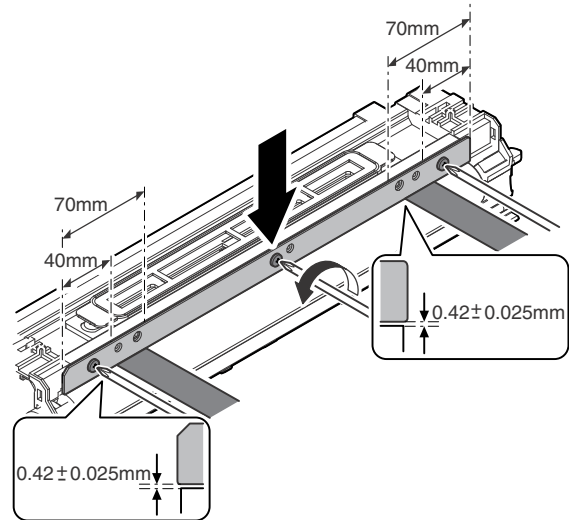
2-A Developing doctor gap adjustment

The check and the adjustment are required in the following cases:

- * When the developing unit is disassembled.
 - * When the print image density is too low.
 - * When there is a thin spot on a print image.
 - * When the print image density is uneven.
 - * When there is abnormally much toner dispersion.
- 1) Remove the developing unit from the machine, and remove the cover and the guide as shown in the figure below.



- 2) Loosen the developing doctor blade fixing screw.



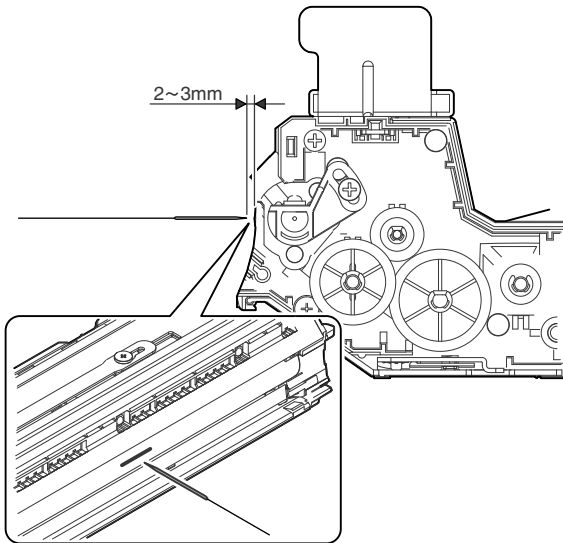
- 3) Insert a thickness gauge of 0.42mm into the gap of 40mm - 70mm from the edge of the developing doctor blade.
- 4) Push the developing doctor blade in the direction of the developing roller (arrow direction), and tighten the fixing screw of the developing doctor blade. (Perform the similar procedure for the front frame and the rear frame.)
- 5) Check to confirm that the doctor gap is in the range of $0.42 \pm 0.025\text{mm}$ at two positions in 40mm - 70mm from the both sides of the developing doctor blade. When inserting the thickness gauge, be sure not to scratch the developing doctor blade and the developing roller.

2-B Developing roller main pole position adjustment

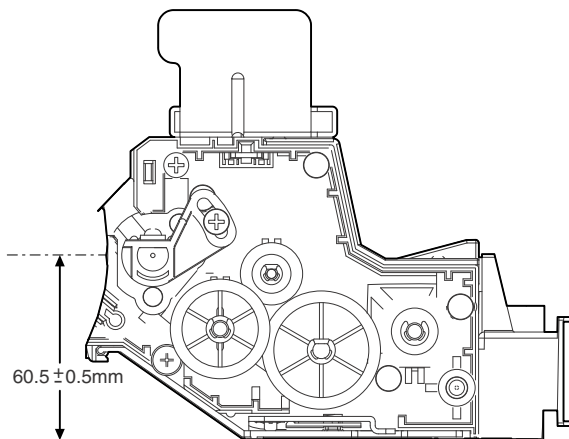
The check and the adjustment are required in the following cases:

- * When the developing unit is disassembled.
 - * When the print image density is too low.
 - * When there is a thin spot on a print image.
 - * When the print image density is uneven.
 - * When there is abnormally much toner dispersion.
- 1) Place the developing unit on a flat surface.
 - 2) Remove developer from the developing roller.
 - 3) Put a string on a needle or a pin. (Do not use a paper clip, which cannot provide an accurate position.)

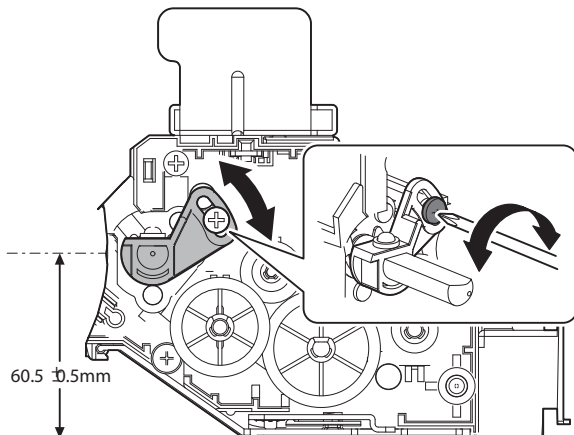
- 4) Hold the string, and put the needle closer to the developing roller.



- 5) With the needle 2 - 3mm apart from the developing roller, mark the intersect of the extended line and the developing roller surface. (Do not bring the needle into contact with the developing roller.)



- 6) Measure the height of the marking position, and check to confirm that it is $60.5 \pm 0.5\text{mm}$.
If the height is not in the above range, adjust the developing roller main pole position by the following procedure. Loosen the fixing screw of the developing roller main pole adjustment plate, and move the adjustment plate in the arrow direction to make an adjustment.



Repeat the procedures 4 thru 6 until the developing roller main pole position is within the specified range.

After completion of the adjustment of the developing roller main pole position, tighten the fixing screw of the developing roller main pole adjustment plate.

2-C Toner density control reference value setting

This adjustment is required in the following case:

- * When developer is replaced.

Note:

Never execute this adjustment unless developer is replaced.

Select the most suitable simulation mode according to the maintenance case.

[Setting with the Sim. 25-2 mode]

- 1) Enter an input of Sim. 25-2 with the front cover open.
- 2) After entering the input, close the front cover.
- 3) Open the toner cartridge tray.
- 4) Press [EXECUTE] key.

[EXECUTE] key is highlighted, and the developing roller rotates. The toner density is detected by the toner density sensor, and the output value is displayed.

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

After completion of the reference toner density control value setting, [EXECUTE] key returns to the normal display. This indicates completion of the setting.

When setting of the reference toner density control value has failed, [EE-EU], [EE-EL] or [EE-EC] is displayed.

<<Error display list (AUTO DEVE ADJUSTMENT)>>

Error display	Error name	Detail of error	Remark
EE-EL	EL abnormality	The sensor output level is less than 26, or the control voltage level exceeds 197.	In case of an error, the humidity area, the execution transition target, and the execution control voltage are not registered.
EE-EU	EU abnormality	The sensor output level exceeds 200, or the control voltage level is less than 49.	
EE-EC	EC abnormality	The sample level is not 120 ± 5 when the automatic density adjustment is being performed.	

ADJ 3 Print image distortion, position, magnification ratio adjustment (Manual adjustment)

3-A Print image distortion manual adjustment (LSU parallelism adjustment)

This adjustment is needed in the following situations:

- * The LSU has been replaced or removed.
- * Print images are distorted.

This adjustment should be followed by:

- * ADJ3C Adjust the print image off-center (print engine section)

- 1) Enter the Sim.64-2 mode.
- 2) Set the conditions as shown below.

Item	Display Item	Description	Set value	
A	PRINT PATTERN (1 - 22, 53 - 58, 71 - 78)	Used to specify the print pattern. (* For details, refer to the following descriptions.)	5	
B	DOT1 (DOT1>=2 IF A : 2, 11)	Used to set the print dot number. (Self print pattern: for m by n)	1	
C	DOT2 (DOT2 <= 100 IF A : 59)	Used to set the empty dot number. (Self print pattern: for m by n)	254	
D	DENSITY (FIXED "255" IF A : 9)	Used to specify the print gradation.	255	
E	RESOLUTION (DPI)	Used to select the resolution. (600DPI, 1200DPI)	1	
F	MULTI COUNT	Number of print	1	
G	EXPOSURE (2 to 8 IF A : 14 to 19)	Used to specify the exposure mode	8 (STANDARD DITHER)	
	THROUGH			No process (Through)
	CHAR/PIC			Text/Printed Photo
	CHAR/PRPIC			Text/Photograph
	CHAR			Text
	PRINT PIC			Printed Photo
	PRINT PAPER			Photograph
	MAP			Map
	STANDARD DITHER	Dither without correction		

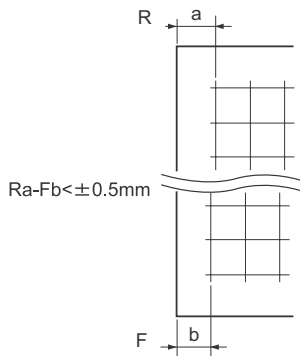
The paper feed tray with A3 (11 X 17) paper in it is selected.

- 3) Press [EXECUTE] button.
The grid pattern image is outputted.
- 4) Check the printed grid pattern for distortions.

[Check Method 1]

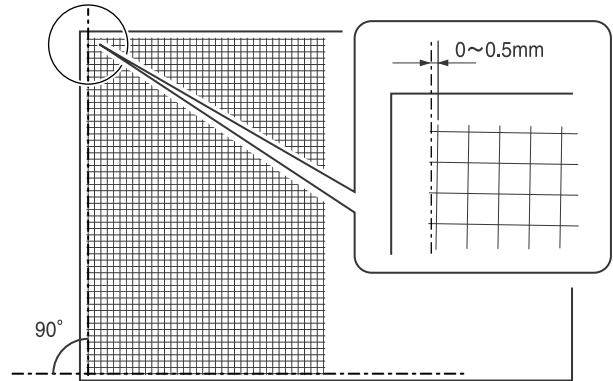
Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

No adjustment is needed if the difference between these dimensions is within 0.5 mm.



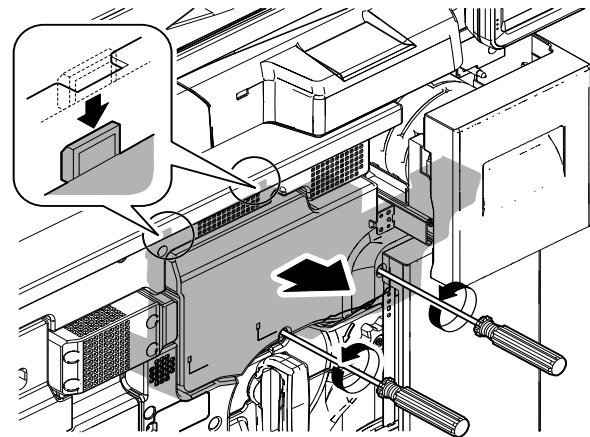
[Check Method 2]

If the right-angle level of the traverse print line is 0.5mm or less with respect to the longitudinal print line of paper, no adjustment is needed.

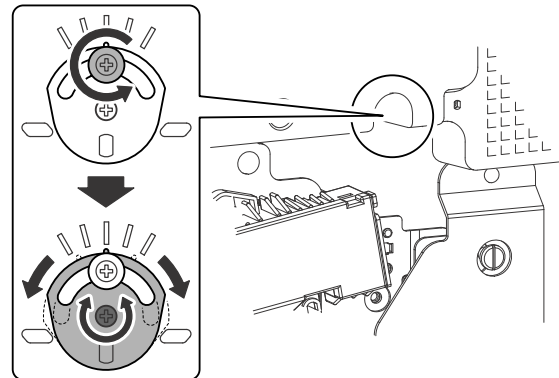


Carry out the following work if the situation is unsatisfactory.

- 5) Open the front cabinet. Remove the toner cartridge unit.
- 6) Remove the process cover.



- 7) Loosen the fixing screw of the print image distortion adjustment cam. Adjust the angle of the print image distortion adjustment cam to set the print image distortion to the minimum.



When the vertical line image is tilted to the left with the front frame side as the reference, turn the print image distortion adjustment cam clockwise to change the angle.

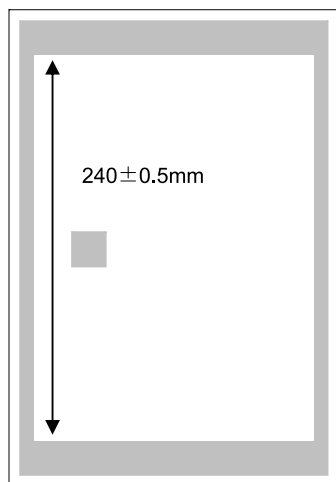
When the vertical line image is tilted to the right with the front frame side as the reference, turn the print image distortion adjustment cam counterclockwise to change the angle.

Repeat steps 3 to 7 until an acceptable result is obtained.

3-B Print image magnification ratio manual adjustment (Main scanning direction)

This adjustment is needed in the following situations:

- * LSU (write) 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.50-10 mode.
The check pattern is printed out.
 - 2) Select A4 (11 X 8.5) paper.
 - 3) Press [EXECUTE] key.
 - 4) 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.

- 5) 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 main scanning direction image magnification ratio in the main scanning direction is increased. When the set value is decreased, the main scanning direction image magnification ratio in the main scanning direction is decreased.
Repeat procedures 3 thru 5 until a satisfactory result is obtained.

3-C Print image lead edge void area manual adjustment/Front-rear void area, rear edge void area manual adjustment

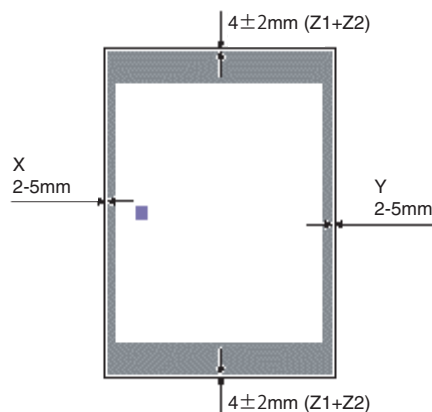
This adjustment is needed in the following situations:

- * When the resist 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.

- 1) Enter the Sim. 50-5 mode.
The adjustment pattern is printed.
- 2) Press [EXECUTE] key.

Check the adjustment pattern to confirm that the following items are the standard values.

		Standard adjustment value
X	Lead edge void area	2-5mm
Y	Rear edge void area	2-5mm
Z1/Z2	FRONT / REAR void area	Total $4 \pm 2\text{mm}$



(Note)

Check by feeding from all the paper feed trays.
If the above conditions are not satisfied or the adjustment value is set to an optional value, perform the following procedures.

- 3) Select the adjustment item with the scroll key.

Display/Item	Content	Setting range	Default value	Remark
A DEN-C	(Void quantity) Printer print lead edge adjustment value	1 - 99	30	Adjustment value to fit the print lead edge in the printer mode. When the adjustment value is decreased by 1, the printer print start position is shifted to the lead edge in the paper transport direction by 0.1mm.
B DEN-B	(Void quantity) Sub scanning direction print area adjustment value	1 - 99	30	Void quantity generated at the paper rear edge. When the adjustment value of B (DEN-B) is decreased by 1, the sub scanning direction print area adjustment value is decreased in the paper transport direction by 0.1mm.
C FRONT/REAR	(Void quantity) FRONT / REAR void quantity adjustment	1 - 99	20	Adjustment of the void quantity generated at the right and left edges of paper. When the value is increased, the void quantity is increased.
D DENB-MFT	(Sub scanning direction print area) Manual paper feed correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the manual feed is adjusted for the adjustment value of item B (DEN-B), this value is changed.
E DENB-CS1	(Sub scanning direction print area) Cassette 1 correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 1 is adjusted for the adjustment value of item B (DEN-B), this value is changed.
F DENB-CS2	(Sub scanning direction print area) Cassette 2 correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 2 is adjusted for the adjustment value of item B (DEN-B), this value is changed.

Display/Item	Content	Setting range	Default value	Remark
G	DENB-CS3 (Sub scanning direction print area) Cassette 3 correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 3 is adjusted for the adjustment value of item B (DEN-B), this value is changed.
H	DENB-CS4 (Sub scanning direction print area) Cassette 4 correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 4 is adjusted for the adjustment value of item B (DEN-B), this value is changed.
I	DENB-LC (Sub scanning direction print area) LCC/LCT/LCT manual paper feed correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the LCC/LCT/LCT manual feed is adjusted for the adjustment value of item B (DEN-B), this value is changed.
J	DENB_ADU (Sub scanning direction print area) ADU correction vaule	1 - 99	55	Adjustment of the void quantity generated at the rear edge of paper. When only the ADU is adjusted for the adjustment value of item B (DEN-B), this value is changed.
K	DENB-HV (Sub scanning direction print area) Heavy paper correction value	1 - 99	50	Adjustment of the void quantity generated at the rear edge of paper. When only the heavy paper is adjusted for the adjustment value of item B (DEN-B), this value is changed.
L	MULTI COUNT Print quantity	1 - 999	1	
M	PAPER Cassette select	1 - 99	3	
N	DUPLEX Duplex print select	0 - 1	1	

- 4) Enter the adjustment value with 10-key, and press [OK] key or [EXECUTE] key.
When [EXECUTE] key is pressed, the adjustment pattern is printed.
When the adjustment value is changed by 1, it is changed by about 0.1mm.
Repeat procedures 2 thru 4 until the conditions of procedure 2) are satisfied.

ADJ 4 Scan image distortion adjustment (OC mode)

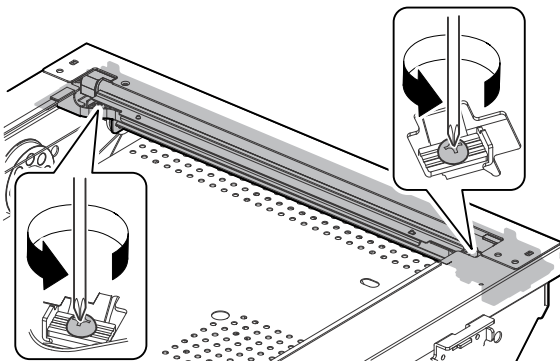
This adjustment is needed in the following situations:

- * The scanner (reading) section has been disassembled.
- * When a distortion is produced in copy and scan images.

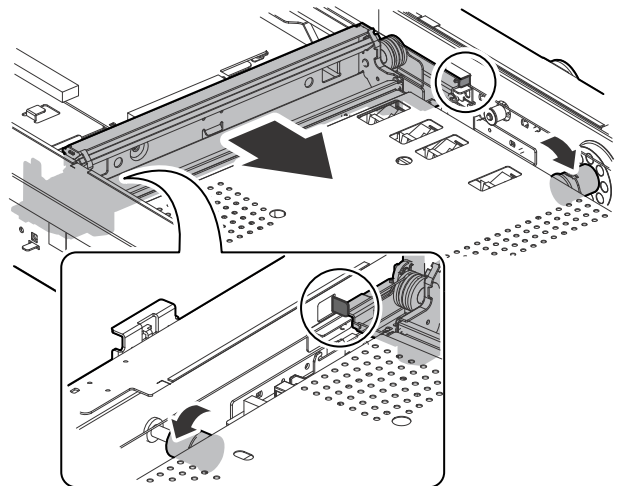
4-A Scanner (reading) unit parallelism adjustment

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

- 1) Loosen the screw which is fixing the scanner unit A and the drive wire, and remove the scanner unit A from the drive wire.

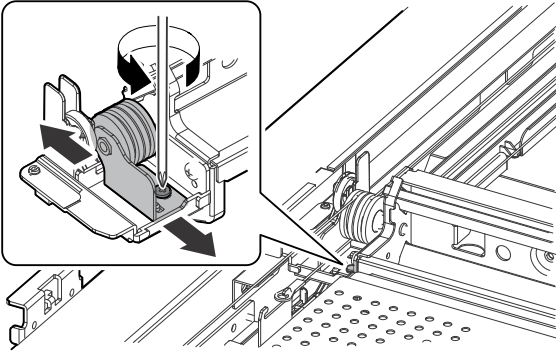


- 2) Manually turn the scanner drive pulley, to move the scanner unit B until it is in contact with the stopper.
If the scanner unit B is in contact with the stoppers at the front and the rear frames simultaneously, the parallelism of the scanner unit B is proper.



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.

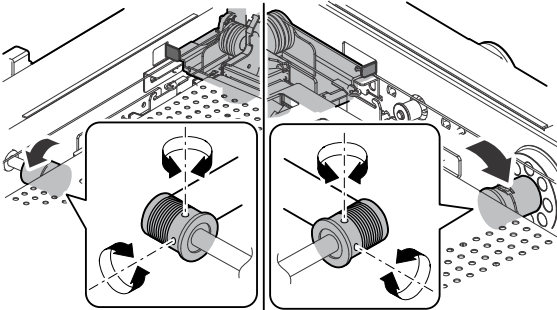


- 4) Adjust the pulley angle position on the front frame side of the scanner unit B so that the scanner unit B is in contact with the stoppers on the front and the rear frames of the scanner unit B simultaneously.

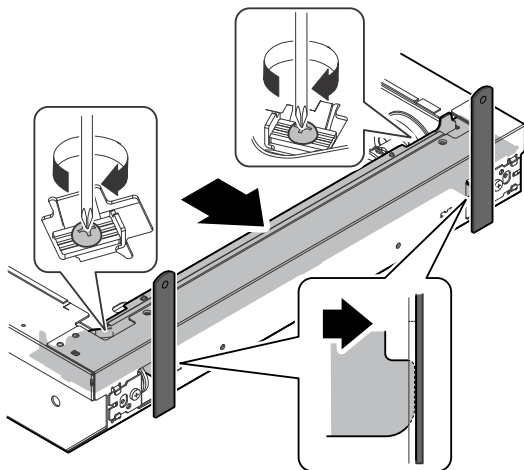
- 5) Fix the pulley angle on the front frame side of the scanner unit B.
If the adjustment result is unsatisfactory, perform the following procedure.

Loosen the fixing screws of the scanner unit drive pulley on the side of of the mirror assembly that does not contact the stopper.

Adjust so that the scanner unit B is in contact with the stoppers on the front and the rear frames simultaneously when the scanner unit drive pulley is manually turned without moving the scanner unit drive shaft. (Change the relative position of the scanner unit drive pulley and the drive shaft.) Fix the fixing screws of the scanner unit drive pulley.

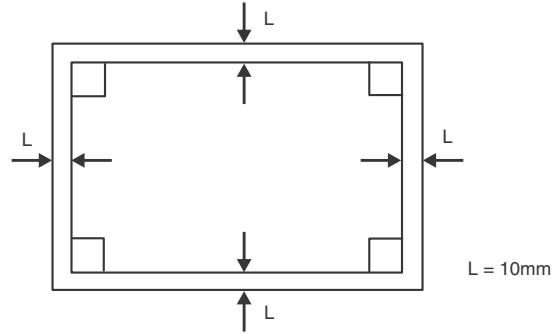


- 6) With the scanner unit B in contact with the stoppers simultaneously, fit the edge of the scanner unit A and the right edge of the frame (top of the Mylar), and secure the scanner unit A with the screw.

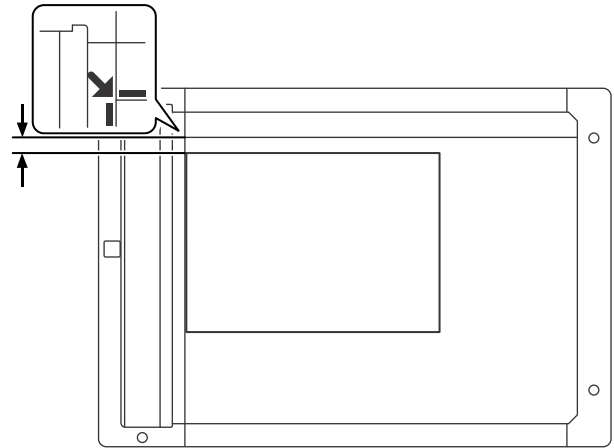


4-B Scan image sub scanning direction distortion adjustment

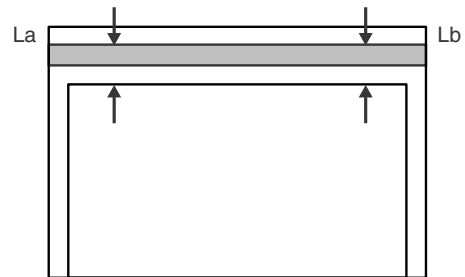
- 1) Make a test chart (a rectangular pattern with four right angles) on A3 (11 X 17) paper as shown below.



- 2) Set the test chart made in the procedure 1) on the document table so that the test chart is shifted toward you by 30mm from the document set reference position. With the document cover open, make a copy on A3 (11" X 17") paper.

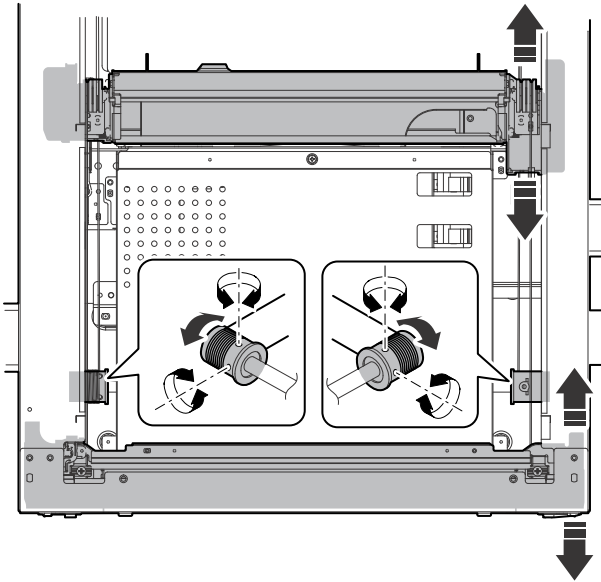


- 3) Check for any distortion in the sub scanning direction.
If $L_a = L_b$, there is no distortion.



- 4) If there is a distortion in the sub scanning direction, perform the following procedure.

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



- 5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to adjust the parallelism of the scanner unit A and B. (Change the relative positions of the scanner unit drive pulley and the drive shaft.)

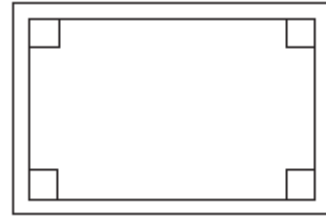
Tighten the fixing screw of the scanner unit drive pulley.

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

If a distortion in the sub scanning direction cannot be removed in the above procedures, perform "ADJ 4C Scan image overall distortion adjustment."

- 2) Set the test chart made in the procedure 1) on the document table, and make a copy on A3 (11" X 17") paper.

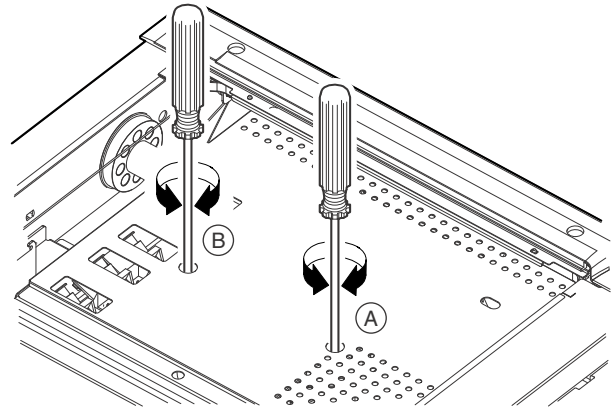
- 3) Check for any distortion in the main scanning direction. If the four angles of the copy image (rectangle) is right angles, there is no distortion. (Work completed)



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

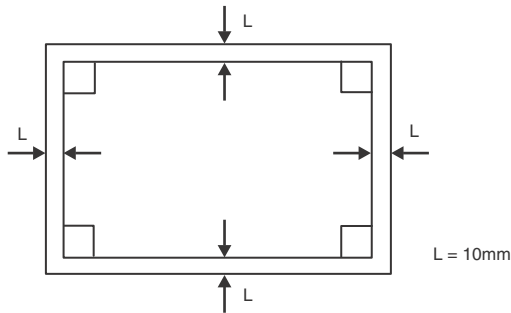
(Left side distortion adjustment)

- 1) Turn the horizontal level adjustment screw of the CCD unit. (There are two adjustment screws in the front (A) and at the back (B). Be sure to use only the screw in the front (A)) (When adjusting with the screw at the back (B), use a great care for generation of shades of images.)



4-C Scan image main scanning direction distortion adjustment

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



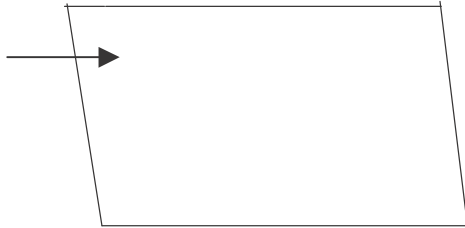
If the left side inclines to the left:

Turn the CCD unit horizontal adjustment screw (A) clockwise. (When adjusting the adjustment screw (B) on the front frame side, turn the screw counterclockwise. When adjusting the adjustment screw on the rear frame side, turn the screw counterclockwise.)



If the left side inclines to the right:

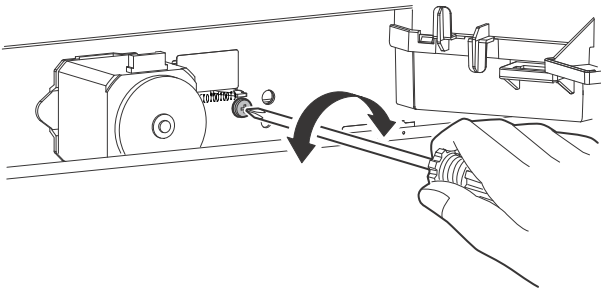
Turn the CCD unit horizontal adjustment screw (A) clockwise. (When adjusting the adjustment screw (B) on the front frame side, turn the screw clockwise. When adjusting the adjustment screw on the rear frame side, turn the screw clockwise.)



- 2) Make a copy of the distortion check test chart, and check for any distortion on the left side. Repeat the above procedures until the distortion on the left side is minimized. Variation 0.7/260mm, 0.5 revolution

(Right side distortion adjustment)

- 1) Change the balance of the scanner rail height on the rear frame side.



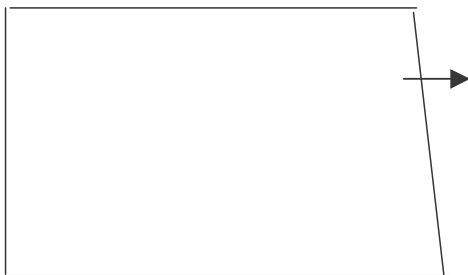
Remove the rear upper cabinet. Loosen the scanner rail fixing screw (red screw) on the left side when viewed from the front to change the height balance of the left and right sides of the scanner rail. There are two fixing screws (red screws) of the scanner rail.

(NOTE)

There is a scanner rail also on the front frame side, and its height balance can be adjusted. However, it is not advisable to adjust it because many parts must be removed for the adjustment.

When the right side inclines to the right:

Lift the level of the left side of the rear frame scanner rail. (When viewed from the rear frame side)



When the right side inclines to the left:

Lower the level of the left side of the rear frame scanner rail. (When viewed from the rear frame side)



- 2) Make a copy of the distortion check test chart, and check for any distortion on the right side. Repeat the above procedures until the distortion on the right side is minimized.

Note:

The right side distortion adjustment and the left side distortion adjustment affect each other. When, therefore, one of the adjustments is performed, be sure to check the other distortion and repeat the adjustment procedures until the both distortions are minimized.

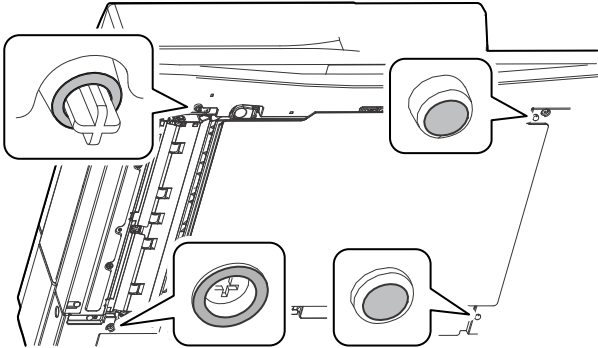
ADJ 5 Scan image distortion adjustment (DSPF mode)

5-A DSPF level adjustment

This adjustment is required in the following cases:

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

- 1) Check the contact pressures between the four projections (2 on the front side and 2 on the rear side of the DSPF unit) and the cover top and the glass surface of the document table of the machine.



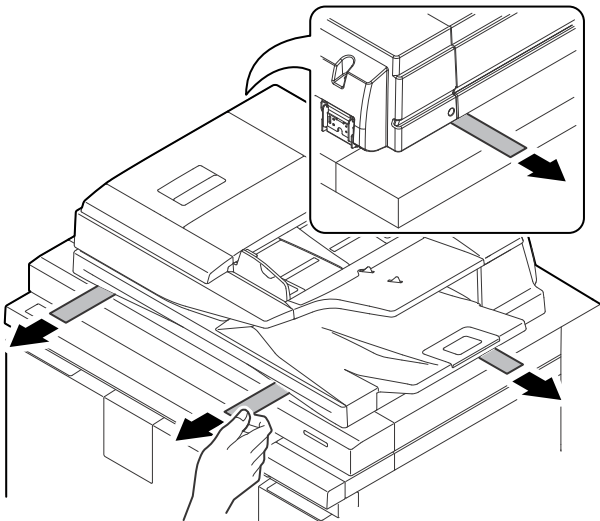
(Check procedure)

Insert paper between the projections of the DSPF unit and the cover top and the glass surface of the document table, and pull out the paper slowly. Feel and check to confirm that the resistances at the four contacts are the same level.

Allowable range: Front frame side 0mm

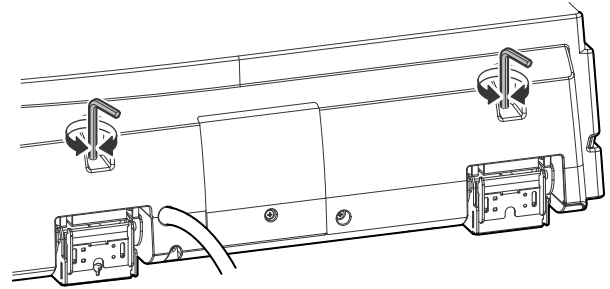
Rear frame side 0 - 1mm

- * Check the contact pressure with the unit from which the OC mat is removed.



If not, perform the following procedure.

- 2) Turn the DSPF unit level adjustment screw on the rear side of the DSPF unit to adjust the horizontal level (front and rear, left and right).



(Adjustment procedure)

When the front frame side is higher and the rear frame side is lower	Turn the DSPF rear frame height adjustment screws R and L clockwise.
When the front frame side is lower and the rear frame side is higher	Turn the DSPF rear frame height adjustment screws R and L counterclockwise.
When the right side is higher and the left side is lower	Turn the DSPF rear frame height adjustment screw R counterclockwise.
When the right side is lower and the left side is higher	Turn the DSPF rear frame height adjustment screw L counterclockwise.

Repeat the above procedures until a satisfactory result is obtained.

5-B DSPF skew adjustment (Front surface mode)

This adjustment is required in the following cases:

- * When the DSPF section is disassembled.
- * When the DSPF unit is replaced.
- * When there is a distortion (skew) on a front surface scan image of the DSPF unit.

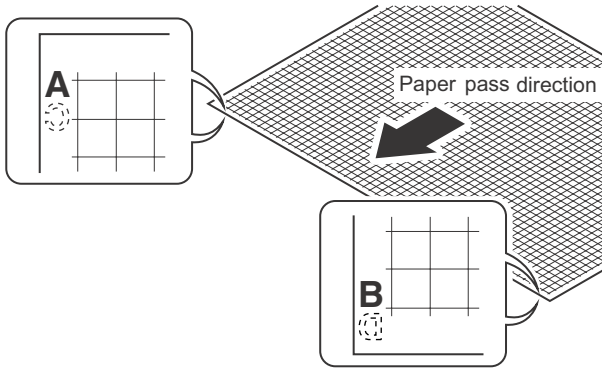
1) Enter the Sim. 64-2 mode.

2) Set the conditions as shown below:

The self print pattern 5 (grid pattern) of Sim. 64-2 is printed in the duplex print mode.

Display/Item		Content		Setting range		Set value	
A	PRINT PATTERN (1 - 22, 53 - 58, 71 - 78)	Select of print pattern (For details, refer to the following)		1-22, 53-58, 71-78 (1-22, 53-58, 71-78 Printable)		5	
B	DOT1 (DOT1>=2 IF A: 2, 11)	Print dot number setting (Self print pattern: For m by n)		Pattern 2, 11: 2-255 Other than the above: 1-255		1	
C	DOT2 (DOT2<=100 IF A: 59)	Empty dot number setting (Self print pattern: For m by n)		Pattern 59: 0-100 Other than the above: 0-255		254	
D	DENSITY (FIXED "255" IF A: 9)	Select of print gradation		Pattern 9: 255 fixed Other than the above: 1-255		255	
E	RESOLUTION (DPI)	Select of resolution. (600DPI, 1200DPI)		0 (600DPI) -1 (1200DPI)		1	
F	MULTI COUNT	Print quantity		1 - 999		1	
G	EXPOSURE (2-8 IF A: 14-19)	THROUGH	Select of exposure mode	No process (through)	Pattern 14-19: 2-8 Other than the above: 1-8	1	8 (STANDARD DITHER)
		CHAR/PIC		Text/Printed Photo		2	
		CHAR/PRPIC		Text/ Photograph		3	
		CHAR		Text		4	
		PRINT PIC		Printed Photo		5	
		PRINT PAPER		Photograph		6	
		MAP		Map		7	
		STANDARD DITHER		Dither without correction		8	
H	PAPER	MFT	Select of paper feed tray	Manual paper feed	1-8	1	Select a paper feed tray with A3 (11 X 17) paper in it.
		CS1		Cassette 1		2	
		CS2		Cassette 2		3	
		CS3		Cassette 3		4	
		CS4		Cassette 4		5	
		LCC1		LCC1		6	
		LCC2		LCC2		7	
		LCC3		LCC3		8	
I	DUPLEX	YES	Select of duplex print	Yes	0-1	0	0
		NO		No		1	
J	PAPER TYPE	PLAIN	Select of paper type	Plain paper	1-4	1	1 (PLAIN)
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	

- 3) Select a paper feed tray with A3 (11 X 17) paper in it.
- 4) Press [EXECUTE] button.
The grid pattern image is printed.
- 5) Check to confirm that the printed grid pattern is virtually in parallel with the paper edges, and put the position marks A and B on the front and the rear side of the front surface and the back surface of paper.



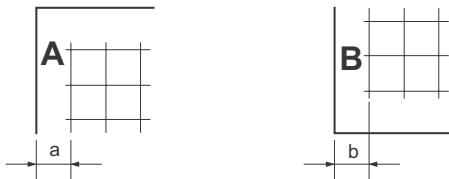
- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern so that the marked side is on the lead edge side.)

Check in one of the following methods:

[Check method 1]

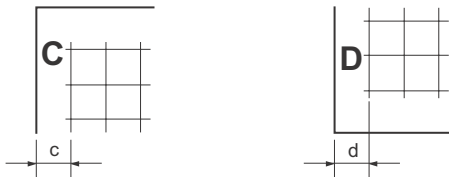
(Front side)

Condition that should be satisfied: $|a-b| \leq 1 \text{ mm}$



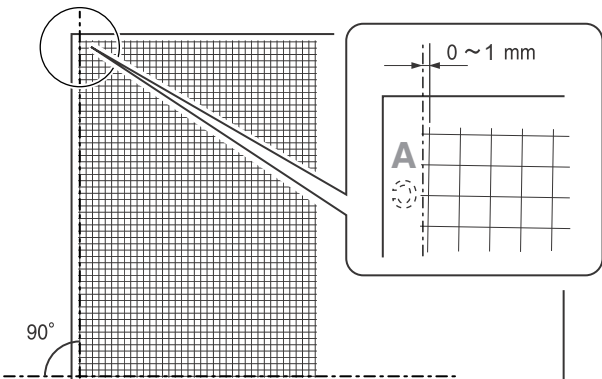
(Back side)

Condition that should be satisfied: $|c-d| \leq 1 \text{ mm}$



[Check method 2]

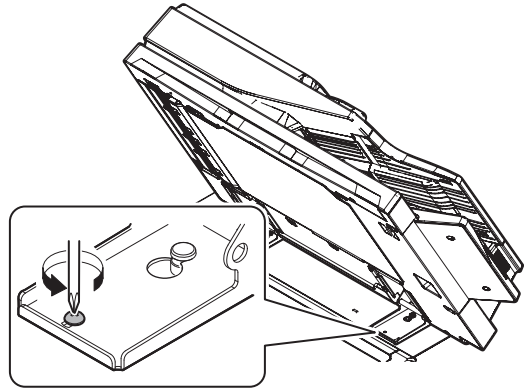
Check to confirm that the right angle degrees of the print lines in the main scanning direction are within 1.0mm with the paper longitudinal direction print line as the reference.



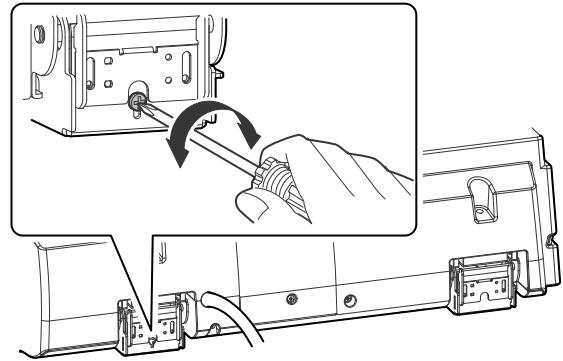
If the front surface copy image satisfies the above condition the back surface copy image does not, go to "ADJ 5C DSPF skew adjustment (Back surface mode)."

If the front surface copy image does not satisfy the above condition, perform the following procedure.

- 7) Open the DSPF unit, and loosen the hinge section fixing screw on the right side of the DSPF unit.



- 8) Turn the DSPF skew adjustment screw on the left side when viewed from the rear frame to minimize the skew.



When the main scanning direction print line inclines to the left (Adjustment pattern $a < b$)	Turn the DSPF skew adjustment screw counterclockwise.
When the main scanning direction print line inclines to the right (Adjustment pattern $a > b$)	Turn the DSPF skew adjustment screw clockwise.

Repeat the procedures 6 thru 9 until a satisfactory result is obtained.

5-C DSPF skew adjustment (Back surface mode)

This adjustment is required in the following cases:

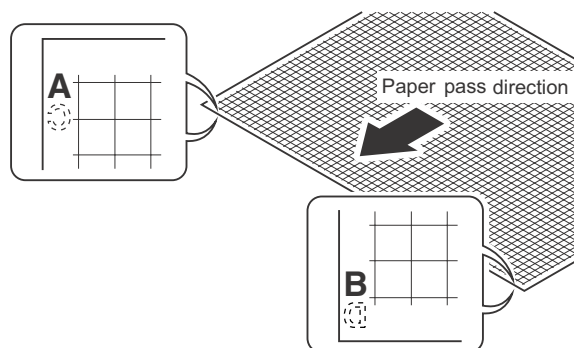
- * When the DSPF section is disassembled.
- * When the DSPF unit is replaced.
- * When there is a distortion (skew) on the back surface scan image of the DSPF unit.

- 1) Enter the Sim. 64-2 mode.
- 2) Set the adjustment values as shown below.

The self print pattern 5 (Grid pattern) of Sim. 64-2 is printed in the duplex print mode.

Display/Item		Content		Setting range		Set value	
A	PRINT PATTERN (1 - 22, 53 - 58, 71 - 78)	Select of print pattern (For details, refer to the following)		1 - 22, 53 - 58, 71 - 78 (1 - 22, 53 - 58, 71 - 78 printable)		1	
B	DOT1 (DOT1>=2 IF A: 2, 11)	Print dot number setting (Self print pattern: For m by n)		Pattern 2, 11: 2 - 255 Other than the above: 1 - 255		1	
C	DOT2 (DOT2<=100 IF A: 59)	Empty dot number setting (Self print pattern: For m by n)		Pattern 59: 0 - 100 Other than the above: 0 - 255		254	
D	DENSITY (FIXED "255" IF A: 9)	Select of print gradation		Pattern 9: 255 Fixed Other than the above: 1 - 255		255	
E	RESOLUTION (DPI)	Select of resolution. (600dpi, 1200dpi)		0 (600DPI) - 1 (1200DPI)		1	
F	MULTI COUNT	Print quantity		1 - 999		1	
G	EXPOSURE (2-8 IF A: 14-19)	THROUGH	Select of exposure mode	No process (through)	Pattern 14 - 19: 2 - 8 Other than the above: 1 - 8	1	8 (STANDARD DITHER)
		CHAR/PIC		Text/Printed Photo		2	
		CHAR/PRPIC		Text/ Photograph		3	
		CHAR		Text		4	
		PRINT PIC		Printed Photo		5	
		PRINT PAPER		Photograph		6	
		MAP		Map		7	
		STANDARD DITCH		Dither without correction		8	
H	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 8	1	Select a paper feed tray with A3 (11 X 17) paper in it.
		CS 1		Cassette 1		2	
		CS 2		Cassette 2		3	
		CS 3		Cassette 3		4	
		CS 4		Cassette 4		5	
		LCC1		LCC1		6	
		LCC2		LCC2		7	
		LCC3		LCC3		8	
I	DUPLEX	YES	Select of duplex print	Yes	0 - 1	0	0
		NO		No		1	
J	PAPER TYPE	PLAIN	Select of paper type	Plain paper	1 - 4	1	1 (PLAIN)
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	

- 3) Select a paper feed tray with A3 (11 X 17) paper in it.
- 4) Press [EXECUTE] button.
The grid pattern image is printed.
- 5) Check to confirm that the printed grid pattern is virtually in parallel with the paper edges, and put the position marks A and B on the front and the rear side of the front surface and the back surface of paper.



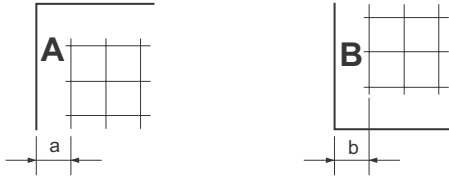
- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern on the DSPF paper feed tray so that the marked side is on the lead edge side.)

Check in one of the following methods:

[Check method 1]

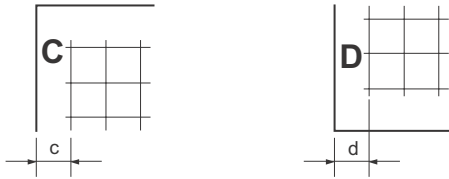
(Front side)

Condition that should be satisfied: $|a-b| \leq 1 \text{ mm}$



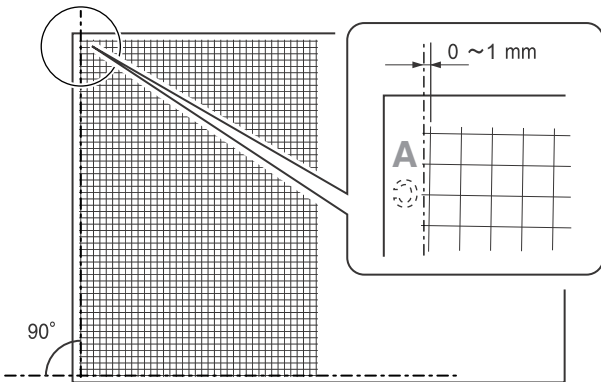
(Back side)

Condition that should be satisfied: $|c-d| \leq 1 \text{ mm}$



[Check method 2]

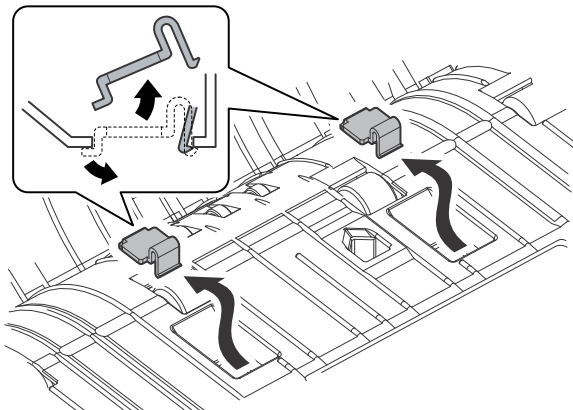
Check to confirm that the right angle degrees of the print lines in the main scanning direction are within 1.0mm with the paper longitudinal direction print line as the reference.



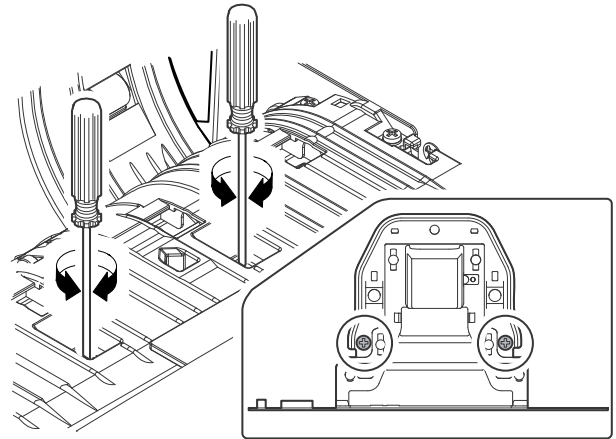
If the back surface copy image satisfies the above condition the front surface copy image does not, go to "ADJ 5B DSPF skew adjustment (Front surface mode)."

If the back surface copy image does not satisfy the above condition, perform the following procedure.

- 7) Open the upper cover of the DSPF unit, and remove the protection cap.



- 8) Turn the DSPF skew adjustment screw on the CCD unit to minimize the skew.



When the adjustment screw is turned by 180 degrees, the skew is changed by about 0.5mm.

When the main scanning direction print line inclines to the left (Adjustment pattern $c < d$)	Turn the DSPF skew adjustment screw A counterclockwise, or turn the adjustment screw B clockwise.
When the main scanning direction print line inclines to the right (Adjustment pattern $c > d$)	Turn the DSPF adjustment screw A clockwise, or turn the adjustment screw B counterclockwise.

Note:

Turn the DSPF skew adjustment screw within the range of one turn (360 degrees) clockwise or counterclockwise. If the screw is turned further than 1 turn, an image may not be copied.

Note that the DSPF skew adjustment screws A and B must be adjusted equally.

For example, If screw a is turned clockwise and the adjustment doesn't work, shouldn't screw a be turned back to the original position and then screw B be turned in the opposite direction.

Repeat the procedures 6 thru 9 until a satisfactory result is obtained.

ADJ 6 Scan image focus adjustment

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

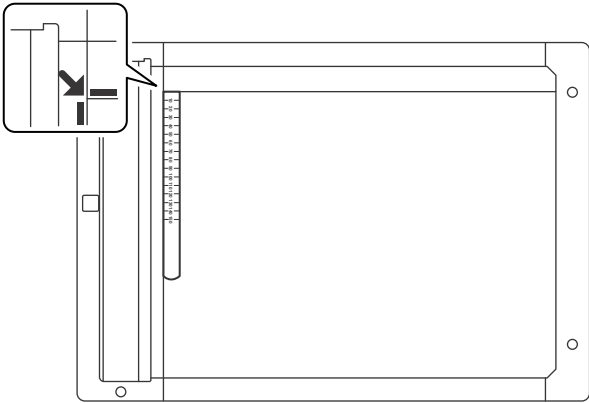
This adjustment is needed in the following situations:

- * The CCD unit has been removed from the machine.
- * The CCD unit has been replaced.
- * When the focus of a copy and a scan image in the document table mode or in the DSPF front surface mode is improper.
- * When the copy magnification ratio of a copy or a scan image in the main scanning direction is improper.

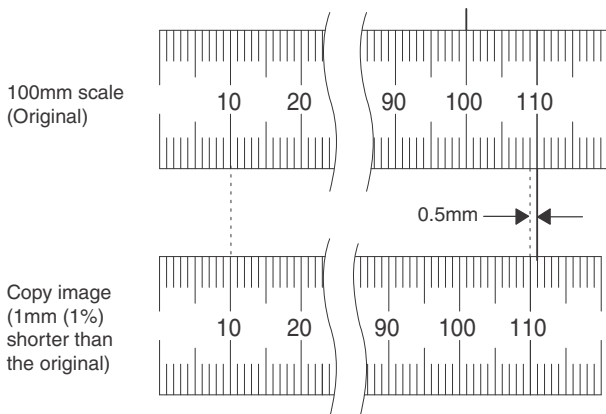
- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of CCD (MAIN) and SPF (MAIN) to 50 (default).

Select the adjustment item with the scroll button, and enter the adjustment value with 10-key and press [OK] key.

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



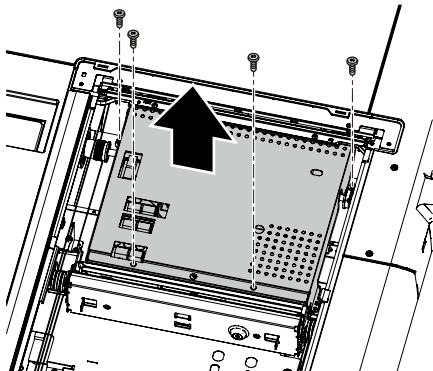
- 4) Make a normal copy on A4 paper.
Press [CLOSE] key to jump from the simulation mode to the copy mode, and make a copy.
- 5) Compare the scale image length on the copy paper and the actual scale length.
If the copy magnification ratio is within the specification ($100 \pm 0.5\%$) and the resolution is satisfactory, the adjustment is not required.



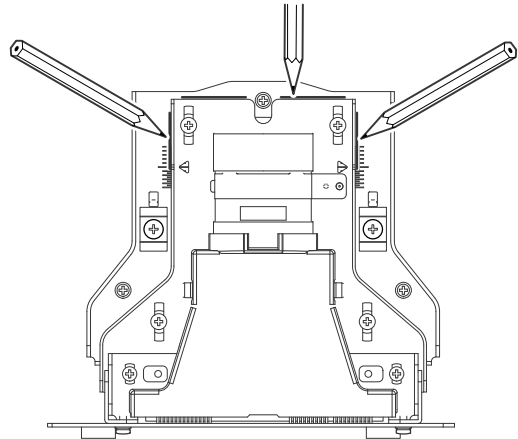
Example: Fit the scale of 10mm with that on the copy scale image, and compare them.

If the copy magnification ratio is not within the specified range, perform the following procedure.

- 6) Remove the document table glass.
7) Remove the dark box cover.

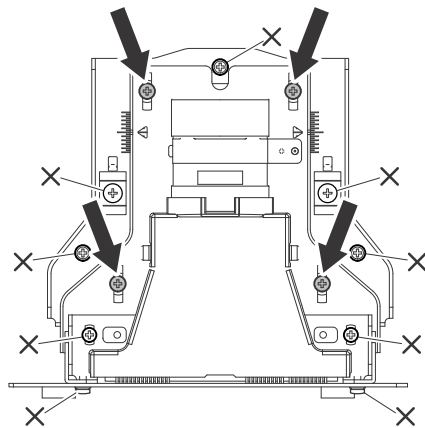


- 8) To prevent the optical axis shift of the CCD unit, mark on the CCD unit base as shown in the figure below.



Perform this procedure when replacing the CCD unit, too.

- 9) Loosen the CCD unit fixing screw.



Never loosen the screws marked with X.

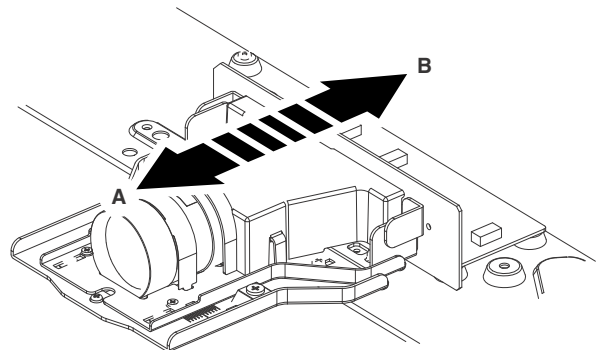
If one of these screws is loosened, the CCD unit base position and angle may be changed. In this case, the adjustment cannot be made in the field, and the whole scanner unit may have to be replaced.

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

When the copy image is longer than the original, move the unit in the direction of B. If the copy image is shorter than the original, move the unit in the direction of A.

One scale of mark-off line corresponds to a change of 0.2%. At that time, fix the CCD unit so that it is in parallel with the scales on the front and the rear frame side of the CCD unit base.

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



- 11) Fix the CCD unit, and make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF mode in the similar way as the procedures 3 and 4. Check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$) and that a satisfactory resolution is obtained.
Repeat the procedures 9 thru 11 until the above conditions are satisfied.

Note:

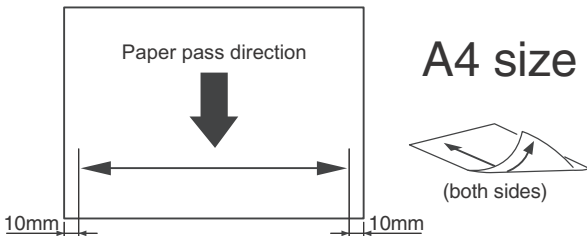
Check to confirm that the copy magnification ratio is adjusted within the specified range ($100 \pm 0.5\%$) by changing the CCD unit fixing position when the adjustment value of Sim. 48-1 is 50 on the optical system structure and that the satisfactory result is obtained.
Check the document off-center.

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

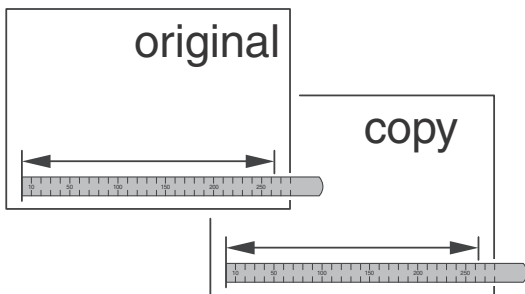
This adjustment is needed in the following situations:

- * When the DSPF CCD unit is disassembled.
- * When the DSPF CCD unit is replaced.
- * When the focus of a copy or a scan image in the DSPF back surface mode is improper.
- * When the copy magnification ratio of a copy or a scan image in the main scanning direction in the DSPF back surface mode is improper.

- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of SPFB (MAIN) to 50 (default).
Select the adjustment item with the scroll button, and enter the adjustment value with 10-key and press [OK] key.
- 3) Make an adjustment chart with A4 (11 X 8.5) paper as shown below.
Draw a line at 10mm inside from the paper edge in parallel with the paper transport direction.



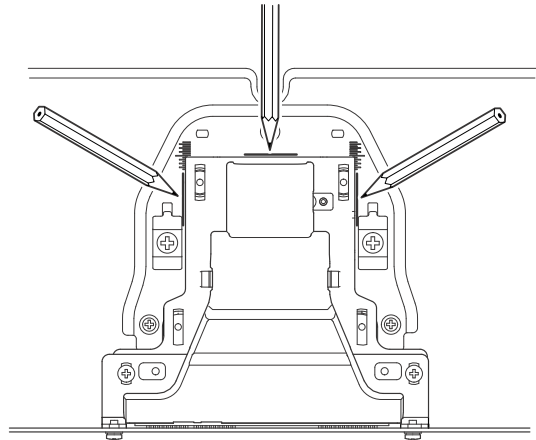
- 4) Place the adjustment chart on the DSPF document tray so that the drawn line comes on the lower side.
- 5) Make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF mode.
- 6) Measure the length of the image on the copy paper (back surface) and the adjustment chart image.
If the copy magnification ratio is within the specified range ($100 \pm 0.5\%$) and the resolution is satisfactory, the adjustment is not required.



If the copy magnification ratio is not within the specified range, perform the following procedure.

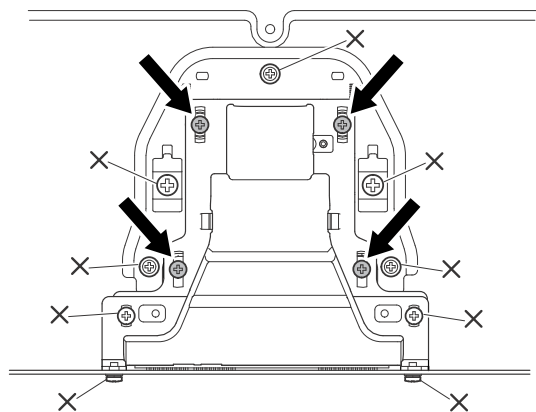
- 7) Remove the DSPF optical unit.
For disassembly, refer to "[C] DSPF" section.

- 8) To prevent the optical axis shift of the DSPF optical unit, mark the DSPF CCD unit base as shown in the figure below.



This procedure must be performed when replacing the DSPF CCD unit, too.

- 9) Loosen the fixing screw of the DSPF optical unit.



Never loosen the screws marked with X.

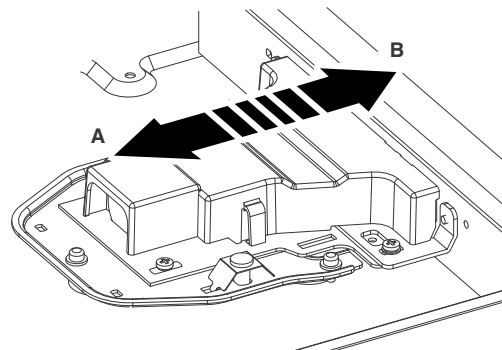
If one of these screws is loosened, the CCD unit base position and angle may be changed. In this case, the adjustment cannot be made in the field, and the whole DSPF optical unit must be replaced.

- 10) Slide the DSPF CCD unit in the arrow direction (CCD sub scanning direction) to change the mounting position.

If the copy image is longer than the original, shift the unit in the direction of B. If the copy image is shorter than the original, shift the unit in the direction of A.
Each line of the scale corresponds to a change of 0.2 %.

At that time, secure so that the DSPF CCD unit is in parallel with the scales on the front and the back frame sides of the DSPF CCD unit.

Secure so that the DSPF CCD unit is in parallel with the marked line made in the procedure 8).



- Assemble the DSPF optical unit to the DSPF unit, and make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF duplex mode. Check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$) and the resolution is satisfactory.

Repeat the procedures 4 thru 11 until the above conditions are satisfied.

Note:

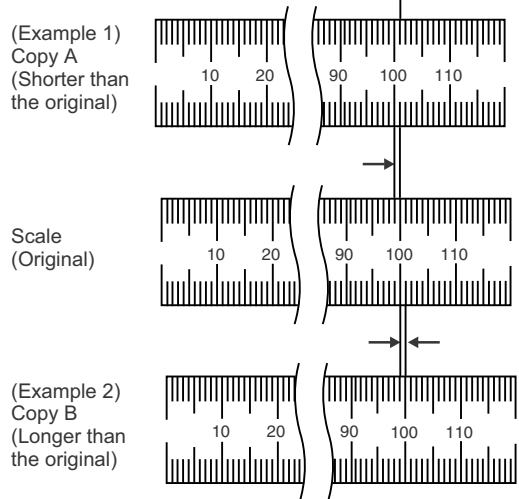
Check to confirm that the copy magnification ratio is adjusted within the specified range ($100 \pm 0.5\%$) by changing the CCD unit fixing position when the adjustment value of Sim. 48-1 is 50 on the optical system structure and that the satisfactory result is obtained.

Check the document off-center.

- Make a normal copy in the document table mode, and check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$)

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

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



When the copy magnification ratio is within the specified range ($100 \pm 0.5\%$), this adjustment is not required.

When the copy magnification ratio is not within the specified range ($100 \pm 0.5\%$), perform the following procedure.

- Change the CCD (MAIN) adjustment value of Sim. 48-1. When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased. A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%. Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ($100 \pm 0.5\%$).

ADJ 7 Scan image magnification ratio adjustment

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

This adjustment is required in the following cases:

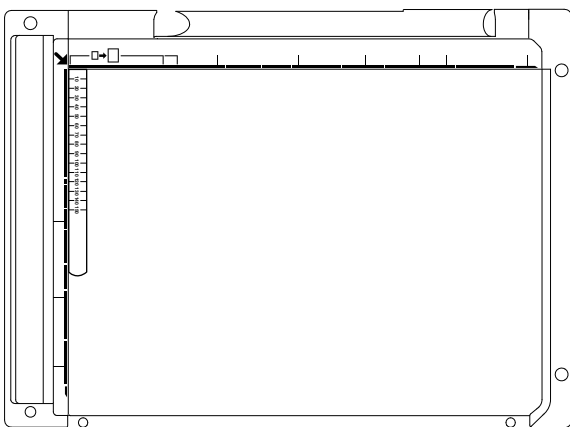
- * When the copy magnification ratio of a scan image in the main scanning direction in the document table mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

(Note)

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been properly adjusted.

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



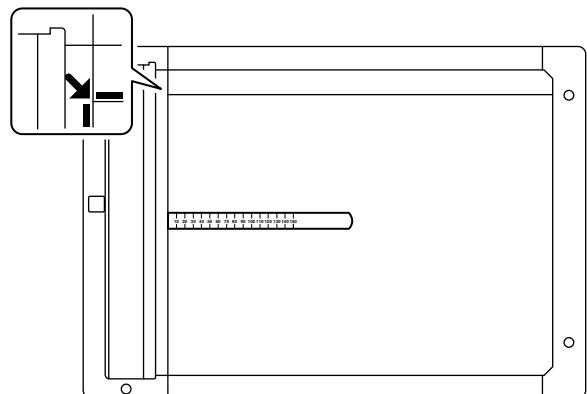
- Enter the Sim. 48-1 mode.

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

This adjustment is required in the following cases:

- * When the copy magnification ratio of a scan image in the sub scanning direction in the document table mode is improper.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

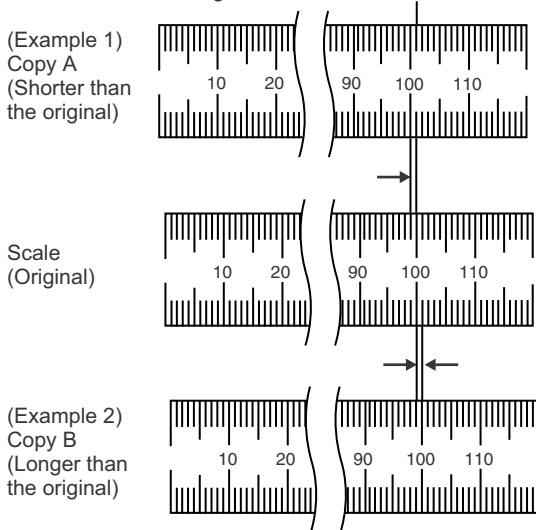
- Place a scale on the document table as shown in the figure below.



- 2) Enter the Sim. 48-1 mode.
 - 3) Make a normal copy in the document table mode, and check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$)
- Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

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



When the copy magnification ratio is within the specified range ($100 \pm 0.5\%$), this adjustment is not required.

When the copy magnification ratio is not within the specified range ($100 \pm 0.5\%$), perform the following procedure.

- 4) Change the CCD (SUB) adjustment value of Sim. 48-1.
Enter the adjustment value with 10-key, and press [OK] button or [START] button.
When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased.
A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.1%.
Repeat the procedures 3 and 4 until the scan image magnification ratio is within the specified range ($100 \pm 0.5\%$).

7-C Main scanning direction image magnification ratio adjustment (DSPF front surface mode)

This adjustment is required in the following cases:

- * When the copy magnification ratio of a scan image in the main scanning direction in the DSPF front surface mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.
- * When the MFP control PWB is replaced.
- * When the EEPROM on the MFP control PWB is replaced.

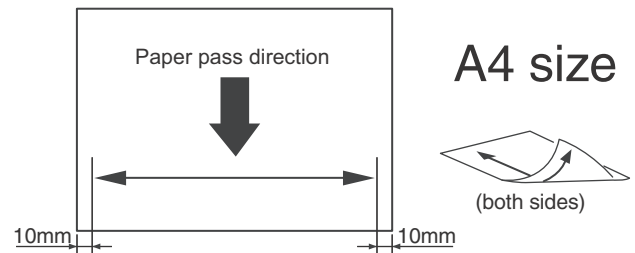
(Note)

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

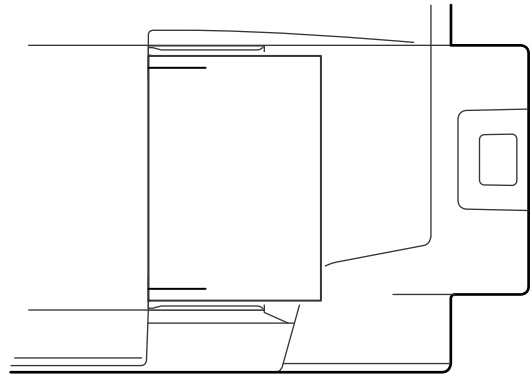
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in parallel with the paper transport direction.



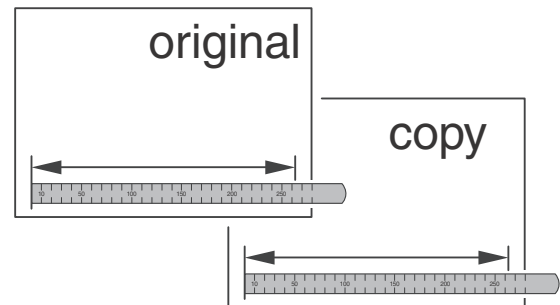
- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the upper side.



- 3) Enter the Sim. 48-1 mode.
 - 4) Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$)
- Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ($100 \pm 0.5\%$), this adjustment is not required.

When the copy magnification ratio is not within the specified range ($100 \pm 0.5\%$), perform the following procedure.

- 5) Change the SPF (MAIN) adjustment value of Sim. 48-1.
Enter the adjustment value with 10-key, and press [OK] button or [START] button.

When the adjustment value is increased, the scan image magnification ratio in the main scanning direction is increased.

A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%.

Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ($100 \pm 0.5\%$).

7-D Main scanning direction image magnification ratio adjustment (DSPF back surface mode)

This adjustment is required in the following cases:

- * When the copy magnification ratio of the scan image in the main scanning direction in the DSPF back surface mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.
- * When the MFP control PWB is replaced.
- * When the EEPROM on the MFP control PWB is replaced.

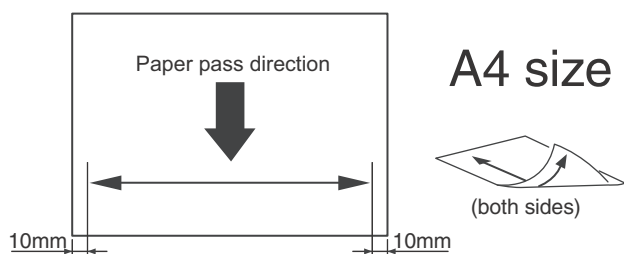
(Note)

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

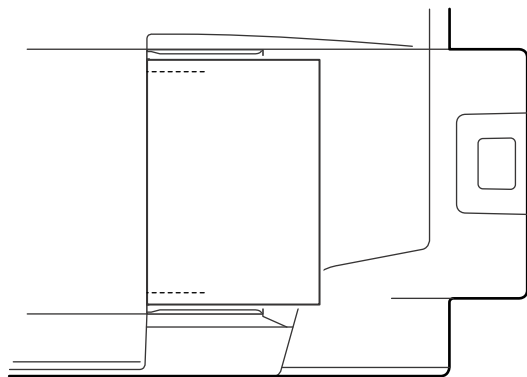
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in parallel with the paper transport direction.



- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the lower side.



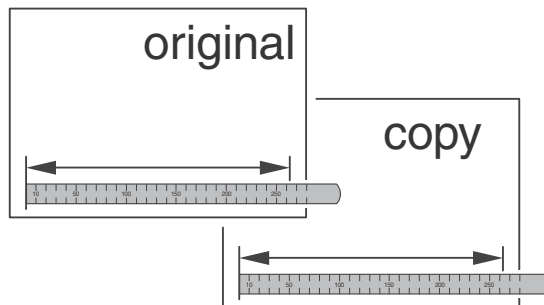
- 3) Enter the Sim. 48-1 mode.

- 4) Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$).

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ($100 \pm 0.5\%$), this adjustment is not required.

When the copy magnification ratio is not within the specified range ($100 \pm 0.5\%$), perform the following procedure.

- 5) Change the SPFB (MAIN) adjustment value of Sim. 48-1. Enter the adjustment value with 10-key, and press [OK] button or [START] button.

When the adjustment value is increased, the scan image magnification ratio in the main scanning direction is increased.

A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%.

Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ($100 \pm 0.5\%$).

7-E Sub scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment is required in the following cases:

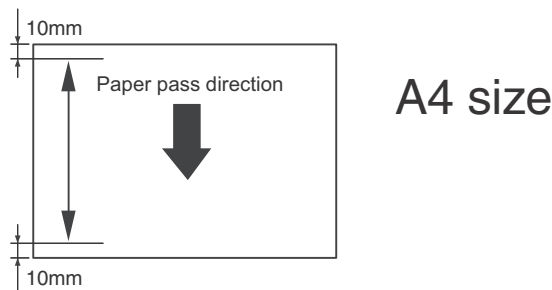
- * When the copy magnification ratio of the scan image in the sub scanning direction in the DSPF mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.
- * When the MFP control PWB is replaced.
- * When the EEPROM on the MFP control PWB is replaced.

(Note)

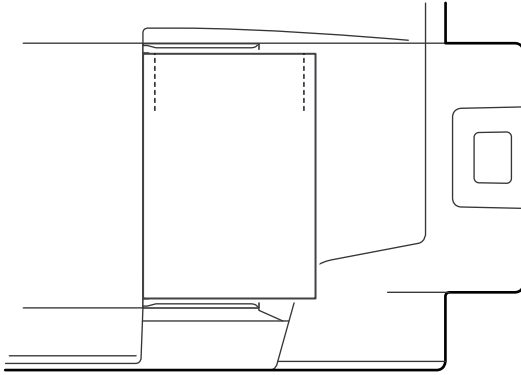
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in the right angle with the paper transport direction.



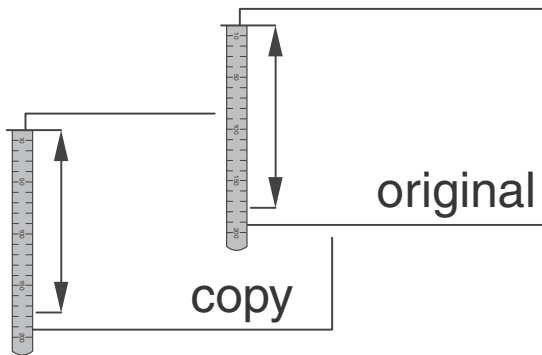
- Place the adjustment chart on the DSPF document tray so that the drawn line is on the lower side.



- Enter the Sim. 48-1 mode.
- Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ($100 \pm 0.5\%$)
Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ($100 \pm 0.5\%$) and the resolution is satisfactory, this adjustment is not required.

When the copy magnification ratio is not within the specified range ($100 \pm 0.5\%$), perform the following procedure.

- Change the SPF (SUB) adjustment value of Sim. 48-1
Enter the adjustment value with 10-key, and press [OK] button or [START] button.
When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased.
A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.1%.
Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ($100 \pm 0.5\%$).

(Enlargement/reduction scan image magnification ratio correction)

When the scan image magnification ratio is set to 100%, the ratio is within the specified range but when the scan image magnification ratio is set to reduction or enlargement, the ratio is unsatisfactory, use Sim. 48-5 to adjust the scan image magnification ratio for reduction or enlargement.

Only the scan image magnification ratio in the sub scanning direction can be adjusted.

(Adjustment procedure)

- Enter the Sim. 48-5 mode.
- Select a mode to be adjusted with the scroll button

Display/Item	Content	Setting range	Default
A MR (HI)	Scanner motor rotating speed (100% 300dpi mode)	1 - 99	50
B MR (MID)	Scanner motor rotating speed (100% 600dpi mode)	1 - 99	50
C MR (LO)	Scanner motor rotating speed (Enlargement 600dpi mode)	1 - 99	50
D SPF (HI)	Document feed (SPF) motor rotating speed (100% 300dpi mode)	1 - 99	50
E SPF (MID)	Document feed (SPF) motor rotating speed (100% 600dpi mode)	1 - 99	50
F SPF (LO)	Document feed (SPF) motor rotating speed (Enlargement 600dpi mode)	1 - 99	50

- Enter the adjustment value with 10-key, and press [OK] button.
When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is decreased.
- Select the copy mode, and make a copy at the maximum enlargement ratio and the maximum reduction ratio. Check the scan image magnification ratio.
(Make a copy in the mode corresponding to the adjustment mode.)
Repeat the above procedures until the satisfactory scan image magnification ratio is obtained.

ADJ 8 Print/scan image off-center, lead edge position adjustment (Manual adjustment)

The off-center adjustment is made by the mechanical method or by the software method with Sim. 50-10.

Basically the software method with Sim. 50-10 is used for the adjustment. If the software method cannot be performed, the mechanical method is used.

Since the mechanical method of the off-center adjustment provides lower accuracy, it is advisable to perform the mechanical method of the off-center adjustment first and then to perform the software method of the off-center adjustment with Sim. 50-10.

For the 105/120cpm machines, since the offcenter and the lead edge position are adjusted by the automatic centering adjustment where the paper edge position is detected, there is basically no need to execute Sim. 50-10 adjustment items B - Y.

For the adjustment procedures, refer to 8-B.

(Classification of off-center adjustments)

- The software method with the simulation (Print image off-center)
- The method by changing the forward/backward direction of the paper feed unit (Paper off-center)
- The software method with the simulation (Scan image off-center)

(NOTE)

When the manual paper feed unit (MX-MFX1) is installed, use this unit as the reference of the off-center adjustment.

The paper off-center of the manual paper feed unit (MX-MFX1) is used as the reference to perform the print image off-center adjustment and the other paper feed unit off-center adjustment.

This is because the manual paper feed unit (MX-MFX1) cannot perform the off-center adjustment mechanically.

SIM	Item content	Display item	Min. value	Max. value	Default value	Item	
					105/120cpm machine		
50	10	Main scan print magnification ratio	BK-MAG	60	140	100	A
		(Print off center) Manual paper feed adjustment value	MAIN-MFT	1	99	50	B
		(Print off center) Tray 1 adjustment value	MAIN-CS1	1	99	50	C
		(Print off center) Tray 2 adjustment value	MAIN-CS2	1	99	50	D
		(Print off center) Tray 3 adjustment value	MAIN-CS3	1	99	50	E
		(Print off center) Tray 4 adjustment value	MAIN-CS4	1	99	50	F
		(Print off center) LCC adjustment value	MAIN-LCC	1	99	50	G
		Print off center adjustment value (LCT1)	MAIN-LCT1	1	99	50	H
		Print off center adjustment value (LCT2)	MAIN-LCT2	1	99	50	I
		Print off center adjustment value (LCT3)	MAIN-LCT3	1	99	50	J
		Print off center adjustment value (LCT4)	MAIN-LCT4	1	99	50	K
		Print off center adjustment value (LCT_manual feed)	MAIN-LCT-MFT	1	99	50	L
		(Print off center) ADU adjustment value	MAIN-ADU	1	99	50	M
		(Lead edge adjustment registration motor ON timing) Tray 1 adjustment value	SUB-CS12	1	99	50	N
		(Lead edge adjustment registration motor ON timing) Desk adjustment value	SUB-CS34	1	99	50	O
		(Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value	SUB-LC	1	99	50	P
		(Lead edge adjustment registration motor ON timing) Manual paper feed adjustment value	SUB-MFT	1	99	50	Q
		(Lead edge adjustment registration motor ON timing) ADU adjustment value	SUB-ADU	1	99	50	R
		(Lead edge adjustment registration motor ON timing) Main unit tray adjustment value (Heavy paper A)	SUB-CS-HV-A	1	99	50	S
		(Lead edge adjustment registration motor ON timing) Main unit tray adjustment value (OHP)	SUB-HV-OHP	1	99	50	T
		(Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value (Heavy paper A)	SUB-LC-HV-A	1	99	50	U
		(Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value (Heavy paper B)	SUB-LC-HV-B	1	99	50	V
		(Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper A)	SUB-MFT-HV-A	1	99	50	W
		(Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper B)	SUB-MFT-HV-B	1	99	50	X
		(Lead edge adjustment registration motor ON timing) ADU adjustment value (Heavy paper A)	SUB-ADU-HV-A	1	99	50	Y
		Number of print	MULTI COUNT	1	999	1	Z
		Tray selection	PAPER	1	9	3	AA
		Duplex print selection	DUPLEX	0	1	1	AB
		Print position correction_Reference correction amount (Off-center direction)	MAIN-STD	1	99	50	AC
		Print position correction_Reference correction amount (Transport direction)	SUB-STD	1	99	50	AD
		Print position correction_Back surface shift correction amount (Transport direction)	SFT	0	3	1	AE
		Print position correction_Correction control ON/OFF switch (Off-center direction)	SWT1	0(OFF)	1(ON)	1(ON)	AF
		Print position correction_Correction control ON/OFF switch (Transport direction)	SWT2	0(OFF)	1(ON)	1(ON)	AG
		Print position correction_Correction control mode select switch	SWT3	0(OFF)	1(ON)	0(OFF)	AH
		Print position correction_Correction control mode select switch (Off-center direction)	SWT4	0(OFF)	1(ON)	0(OFF)	AI
		Print position correction_POS adjustment mode select switch	SWT5	0 (STANDARD)	1(POS)	0 (STANDARD)	AJ

Heavy paper A: Heavy paper 1 - 2, Embossed paper, Label sheet, Tab sheet, Glossy paper

Heavy paper B: Heavy paper 3 - 4

8-A Print image off-center, lead edge position manual adjustment (Software adjustment) (105/120cpm machine)

This adjustment is required in the following cases:

- * When the LSU is replaced or removed.
- * When the paper feed tray is replaced.
- * When the paper feed tray section is disassembled.
- * When "ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)" is performed.
- * When the manual paper feed tray is replaced.
- * When the manual paper feed tray is disassembled.
- * When the duplex section is disassembled.
- * When the duplex section is installed or replaced.
- * When the resist roller section is disassembled.
- * When the U2 trouble occurs.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.
- * Since the 105/120-sheet machine is provided with the automatic centering adjustment, the values of SUB-*** and MAIN=** of SIM50-10: (B - Y) are not basically changed.

If, however, it is required to adjust the balance of the off-center position, the values of the above items are changed.

Because the off-center position is adjusted by detecting the paper edge position in the automatic centering adjustment (automatic off-center position adjustment).

(Note)

Before execution of this adjustment, check to confirm that the following item is properly adjusted.

ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction) has been properly adjusted.

- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source "3" (CS2).
- 3) Set A4 (11 X 8.5) paper on the CS2 paper feed tray.
- 4) Change SWT5 to "1" and press [EXECUTE] button. (Either of SWT1 or SWT2 should be "1.")

The adjustment pattern is printed.

NOTE:

Since the paper position is detected by the CIS and the lead edge sensor during printing, it must be an adjustment value for the printed adjustment pattern.

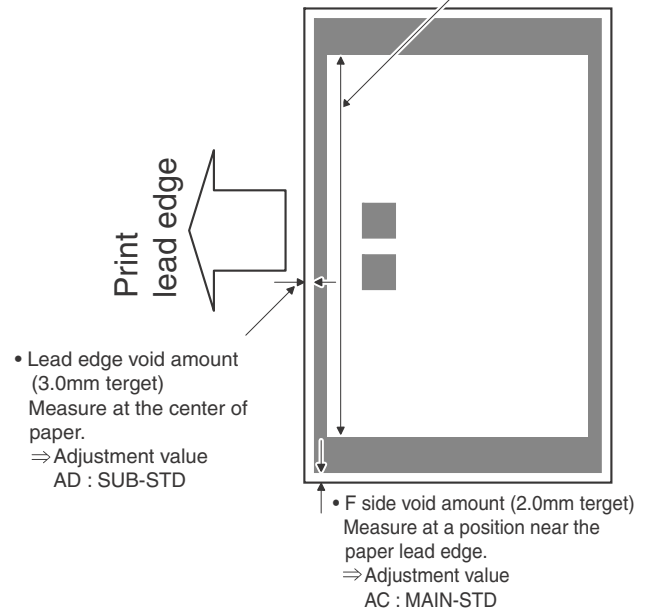
- 5) Check to confirm that the inside dimension of the printed half-tone pattern is $240 \pm 0.5\text{mm}$.

If the above condition is not satisfied, follow and repeat the procedures of ADJ3B until a satisfactory result is obtained.

- 6) Measure the void area size of the adjustment pattern in the front/rear frame direction (F side void amount) and that in the transport direction (Lead edge void amount).

Check to confirm that all the following conditions are satisfied.

Main scanning magnification ratio ($240 \pm 0.5\text{mm}$)
 Measure the dimension near the inner frame line and the paper lead edge in parallel with the line.
 ⇒ Adjustment value A : BK-MAG



Calculation and input procedures of adjustment values

(Example) Lead edge void amount

- (1) Measure by visual inspection.

→Measurement result: 3.5mm

- (2) Calculate the shift amount.

The target value is the specification value (center value) of 3mm.

* For the F side void amount, the target is 2mm.

→ $[3 - 3.5 = -0.5 \text{ (mm)}]$

- (3) Calculate the adjustment value.

Subtract 5 from the shift amount of -0.5mm.

* For the shift amount of 0.1mm, the adjustment value is varied by 1.

→When the current value is 50:

$[50 - 5 = 45]$

- (4) Enter the adjustment value for SUB-STD.

→Enter the [45].

- 7) Enter MAIN-STD (F side void) and SUB-STD (Lead edge void), and press OK button.

Enter the calculated adjustment values for the shift amount to MAIN-STD/SYB-STD, and press OK button. (The cursor can be used instead of the button.)

- 8) After entering the adjustment values, print again and check to confirm that the void amounts are adjusted to the target range.

- 9) Change SWT5 to "0" and terminate the adjustment.

* If SWT5 is remained to "1," the automatic centering adjustment may malfunction.

Automatic centering adjustment

* General

The automatic centering adjustment is the print position correction control where the paper edge position is detected by sensors to correct variations in printing positions on the front and back surface of paper caused by different trays and paper types, shifting the print position to the proper position.

* Automatic centering adjustment item

SIM 50-10	Item	Content	Default value	
AC	MAIN-STD	Automatic centering adjustment_ Reference correction amount (Offcenter direction)	50	-
AD	SUB-STD	Automatic centering adjustment_ Reference correction amount (Transport direction)	50	-
AE	SFT	Automatic centering adjustment_ Back surface shift correction amount (Transport direction)	1	-
AF	SWT1	Automatic centering adjustment_ Correction control ON/OFF switch (Offcenter direction)	1	ON
AG	SWT2	Automatic centering adjustment_ Correction control ON/OFF switch (Transport direction)	1	ON
AH	SWT3	Automatic centering adjustment_ Correction control mode select switch	0	Standard mode
AI	SWT4	Automatic centering adjustment_ Correction control mode select switch (Offcenter direction)	0	Standard mode
AJ	SWT5	Automatic centering adjustment_ POS adjustment mode select switch	0	OFF

* MAIN-STD/SUB-STD

This is the reference correction amount of the automatic centering adjustment, and is applied to all the trays and all the paper types.

* SFT

Shift correction amount for an increase in the magnification ratio on the back surface. The printing position in the transport direction on the back surface is shifted.

The amount increases by 0.1mm in the transport direction for 1 scale of the SFT table.

SFT table

		SIM adjustment value			
		0	1	2	3
Transport direction size (mm)	216 or less	0	2	4	6
	297 or less	0	3	6	9
	Or above	0	4	8	12

* SWT1/SWT2

Automatic centering adjustment correction control ON/OFF switch

* SWT3

Correction control mode select switch

0: Standard mode (Correction control on the front/back surfaces independent from each other)

1: Front/back register priority mode (In order to correct by superposing the front and back surfaces, the back surface is corrected according to a shift on the front surface.)

* SWT4

Correction control mode select switch (Offcenter direction)

0: Standard mode (The paper position under registration state is detected to shift the printing position properly.)

The printing position is corrected according to the paper position detected previously.

1: Real time correction mode (The paper position under registration state is detected to shift the printing position properly. The printing position is corrected according to the paper position detected currently.)

NOTE:

Since, in the real time correction mode, the paper under registration state is remained for correction of the printing position, the CPM is reduced.

* SWT5

When the ADJ8A print image offcenter adjustment and the manual lead edge position adjustment (software adjustment) are executed, the switch is turned ON and the edge detection point (sensor reading value) which is used as the reference point for correction control is acquired.

Normally set to "0" and changed to "1" only when the above adjustment is executed.

8-B Paper feed off-center manual adjustment (Manual paper feed unit) (MX-MF11) (Mechanical adjustment)

This adjustment is needed in the following situations:

* When the manual paper feed tray is replaced.

* When the manual paper feed tray is disassembled.

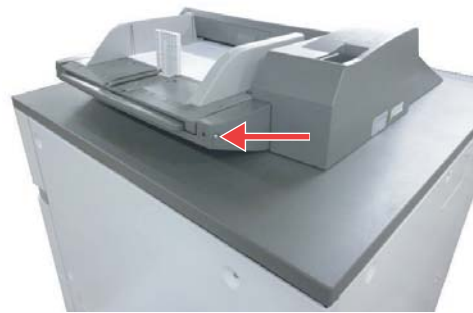
- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source for an adjustment target with the scroll button.
- 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2.
- 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
- 5) Press [EXECUTE] key.
The adjustment pattern is printed.
- 6) Check that the adjustment pattern image is printed in the correct position.

When the adjustment pattern is printed virtually at the center, go to the procedure 10).

If not, go to the procedure 7).

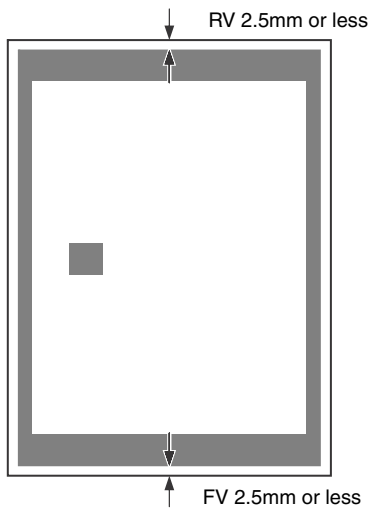
- 7) Turn the manual paper feed unit off-center adjustment screw to adjust the off-center.

Adjust so that the adjustment pattern is virtually at the center.



When the off-center adjustment screw is turned clockwise, the paper position is shifted to the rear frame side. When it is turned counterclockwise, the paper is shifted to the front frame side.

- 8) Press [EXECUTE] key.
The adjustment pattern is printed.
- 9) Check the image position on the adjustment pattern.
Perform the procedures 7 thru 9 until the adjustment pattern comes virtually at the center.
- 10) When the adjustment pattern comes virtually to the center by the adjustment, perform the fine adjustment with the simulation.
Enter the adjustment value, and press [EXECUTE] button.
The adjustment pattern is printed.
When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.
A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.
- 11) Check that the adjustment pattern image is printed in the correct position.
Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.



RV: REAR VOID AREA
FV: FRONT VOID AREA
 $RV+FV=4\pm 2\text{mm}$
 $RV = 2.5\text{mm or less}$
 $FV = 2.5\text{mm or less}$

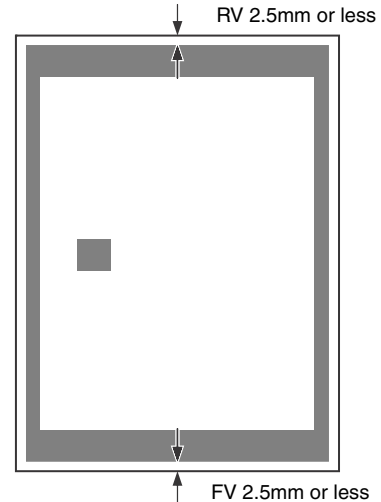
Perform the procedures 10 and 11 until the above conditions are satisfied.

8-C Paper feed off-center manual adjustment (No.1 - 4 paper feed unit in main unit) (Mechanical adjustment)

This adjustment is needed in the following situations:

- * When the paper feed tray section is replaced.
 - * When the paper feed tray section is disassembled.
- 1) Enter the Sim. 50-10 mode.
 - 2) Select a paper feed source for an adjustment target with the scroll button.
 - 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2).
 - 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
 - 5) Press [EXECUTE] key.
The adjustment pattern is printed.
 - 6) Check that the adjustment pattern image is printed in the correct position.

When the adjustment pattern is printed virtually at the center, go to the procedure 10).
If not, go to the procedure 7).



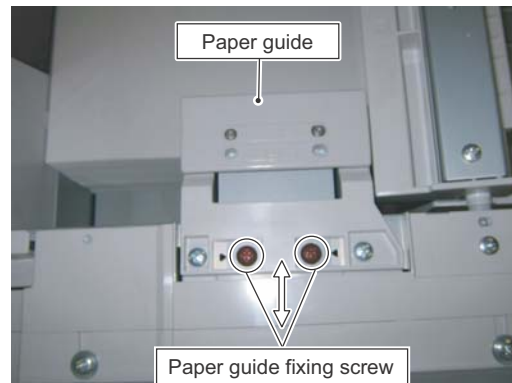
$$RV+FV=4\pm 2\text{mm}$$

- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center. Adjust so that the adjustment pattern comes virtually to the center.

(No. 1 paper feed tray)

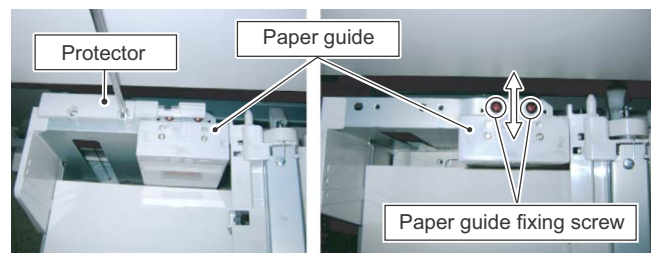
* Front frame side

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



* Rear frame side

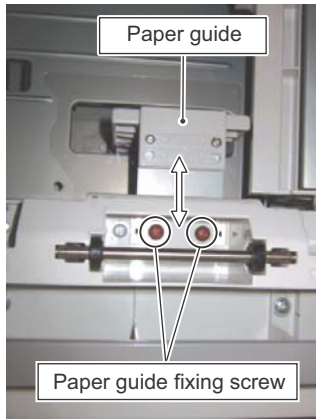
After removing the protector, loosen the paper guide fixing screw and shift the paper guide position back and forth.



(No. 2 paper feed tray)

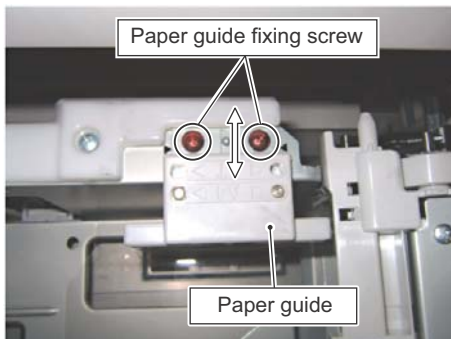
* Front frame side

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



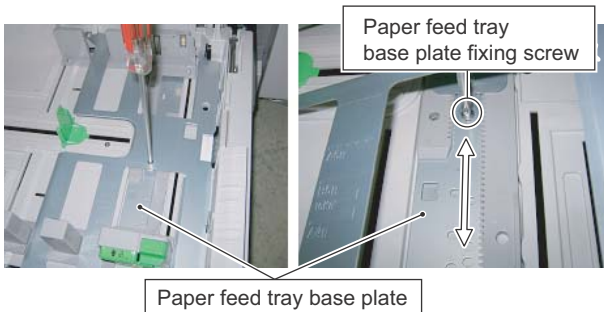
* Rear frame side

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



(No. 3 paper feed tray / No. 4 paper feed tray)

Loosen the paper feed tray base plate fixing screw, and shift the paper feed tray base plate position back and forth.



- 8) Press [EXECUTE] key.
The adjustment pattern is printed.
- 9) Check that the adjustment pattern image is printed in the correct position.
Perform the procedures 7 thru 9 until the adjustment pattern comes virtually at the center.

- 10) When the adjustment pattern comes virtually to the center by the adjustment, perform the fine adjustment with the simulation.

Enter the adjustment value, and press [EXECUTE] button.

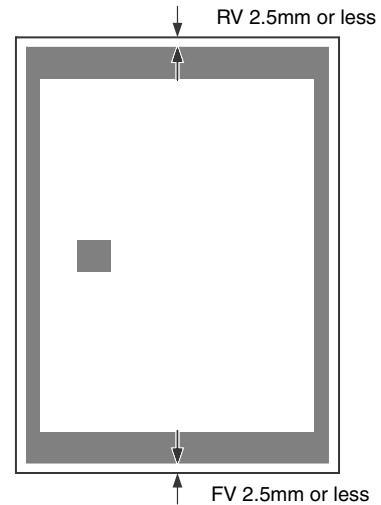
The adjustment pattern is printed.

When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.

A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.

- 11) Check that the adjustment pattern image is printed in the correct position.

Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.



RV: REAR VOID AREA
FV: FRONT VOID AREA
 $RV+FV=4\pm 2\text{mm}$
 $RV = 2.5\text{mm or less}$
 $FV = 2.5\text{mm or less}$

Perform the procedures 10 and 11 until the above conditions are satisfied.

8-D Paper feed off-center manual adjustment (LCC) (Mechanical adjustment)

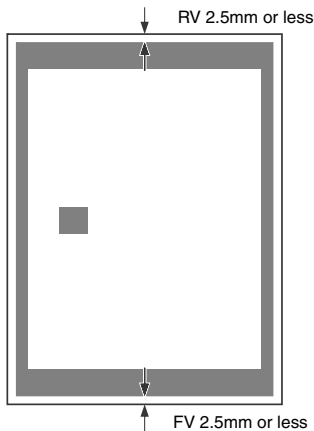
This adjustment is needed in the following situations:

- * When the paper feed tray section is replaced.
 - * When the paper feed tray section is disassembled.
- 1) Enter the Sim. 50-10 mode.
 - 2) Select a paper feed source for an adjustment target with the scroll button.
 - 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2.
 - 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
 - 5) Press [EXECUTE] key.
The adjustment pattern is printed.

- 6) Check that the adjustment pattern image is printed in the correct position.

When the adjustment pattern is printed virtually at the center, go to the procedure 10).

If not, go to the procedure 7).



$$RV + FV = 4 \pm 2 \text{mm}$$

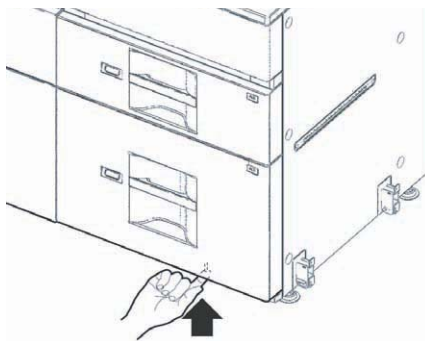
- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center. Adjust so that the adjustment pattern is virtually at the center.

a) In the case of MX-LC13N

Since the off-center adjustment has been made at shipping, there is normally no need to adjust. If the center is shifted, however, adjust with the simulation. If the shift is not recovered, perform the following steps to adjust.

- 1) Manually pull out the cassette.

Push the shaft at the bottom of the front cabinet to release the lock, and pull out the cassette.

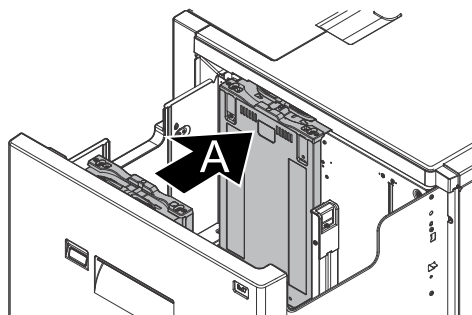


a. When shifted to the front side

When shifting the line of printing from the center of the paper in the direction A of arrow as shown below:

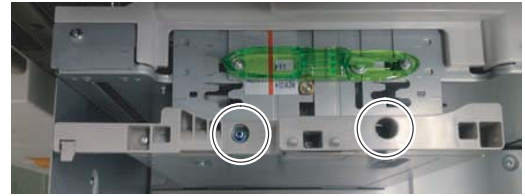
- 1) Loosen the blue off-center adjustment screws (each 2pcs.), and move the side plate by the dimension shifted in the direction A (R side), and tighten the blue screws.

MEMO: The side cabinet front moves in conjunction with the side cabinet rear.

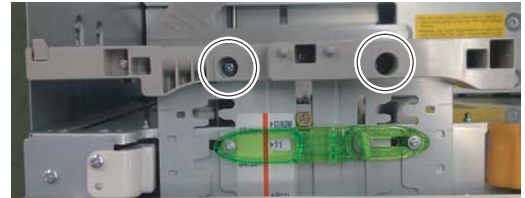


- 2) Set a sheet of paper on the paper feed base tray. Check that the front regulation plate is at the marked center, and push it in contact with the front regulation plate. Loosen the blue screw of the rear regulation plate.

[R side]

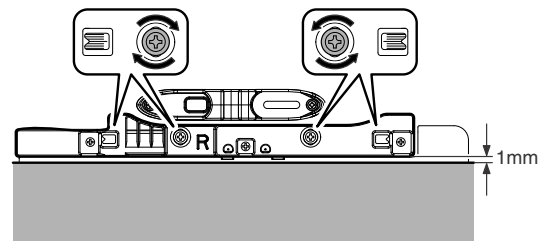


[F side]



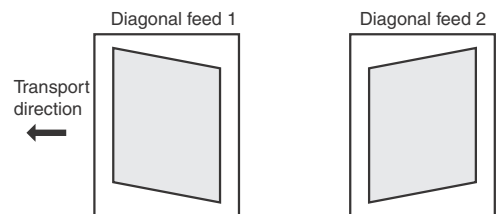
- 3) Use the mark of the rear regulation plate, and fix the blue screw at the position so that the clearance between paper and the rear regulation plate is evenly 1mm.

NOTE: The positions of the regulation plates are even to the right and left marks.



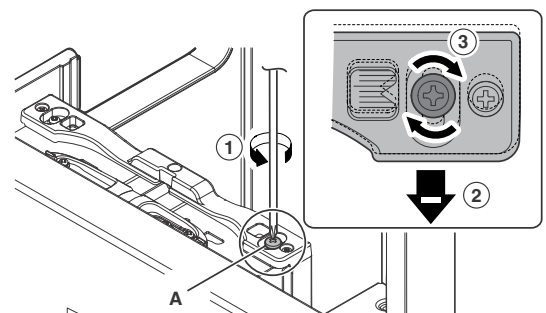
b. Diagonal feed adjustment

- 1) Press the lock button on the front cabinet and lower the paper feed base tray to the paper supply position. Pull out the tray.
2) Adjust the diagonal feed.



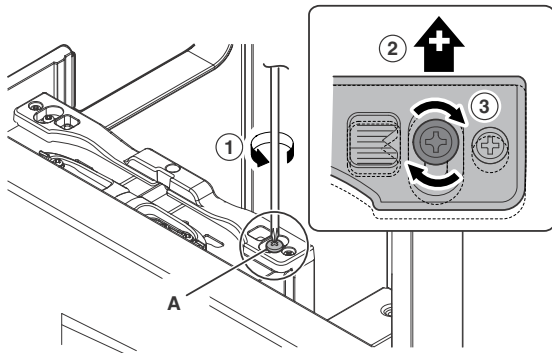
In the case of diagonal feed 1

Loosen the blue screw (A) on the front regulation plate. Referring to the degree of diagonal feed, move the regulation plate in the direction of (-) and fix the blue screw.



In the case of diagonal feed 2

Loosen the blue screw (A) on the front regulation plate. Referring to the degree of diagonal feed, move the regulation plate in the direction of (+) and fix the blue screw.



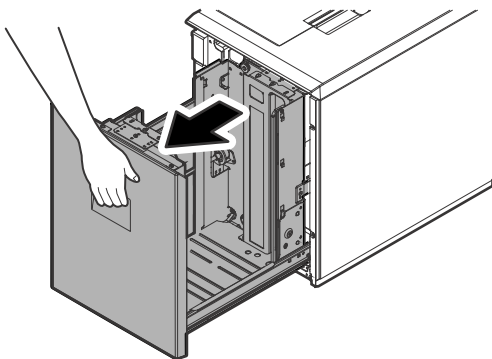
3) Set a sheet of paper on the paper feed base tray and adjust the regulation plate width.

NOTE: After completion of the adjustment, check that the front regulation plate and the rear regulation plate are in parallel to each other.

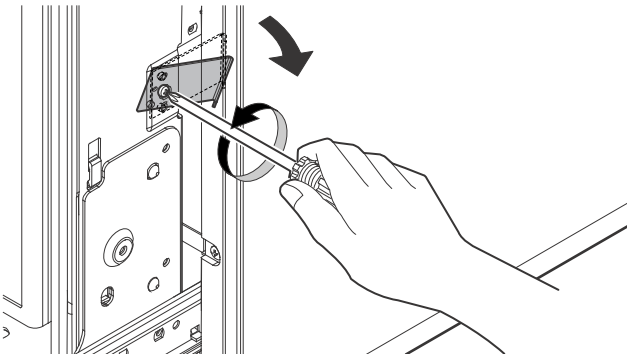
NOTE: When installing this machine in a place of low atmospheric pressure, check and conform to the adjustment contents in the MX-LC13N Service Manual.

b) In the case of MX-LC12

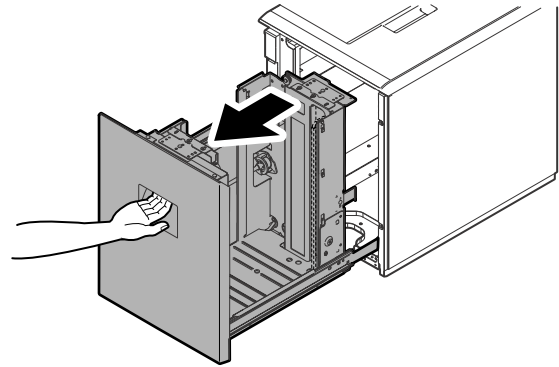
a) Pull out the paper feed tray until it stops.



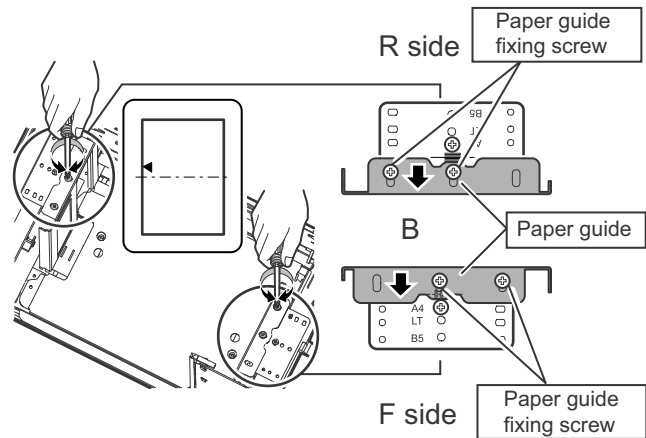
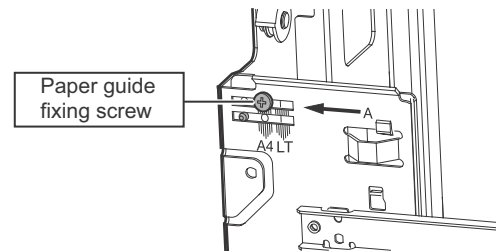
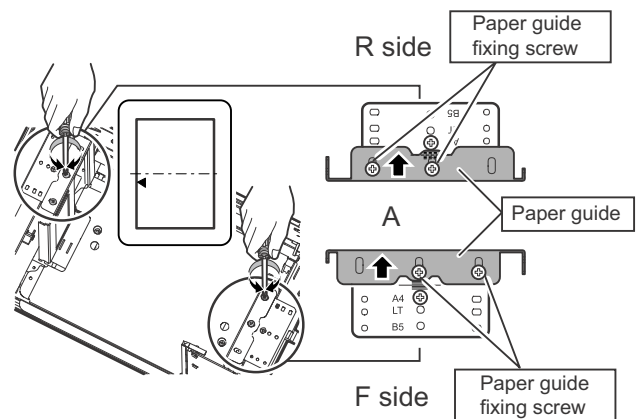
b) Loosen the stopper fixing screw on the lower right side of the paper feed tray to disable the stopper function.



c) Then pull out the paper feed tray again until it stops.



d) Loosen the front/rear paper guide fixing screw, and shift the paper guides on the front and the rear sides back and forth.

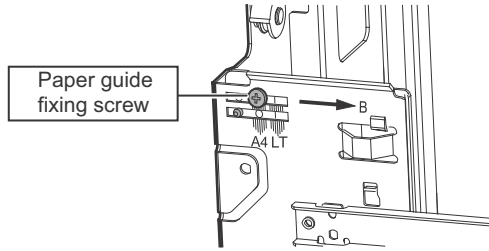


8-F Scan image off-center manual adjustment (Document table mode)

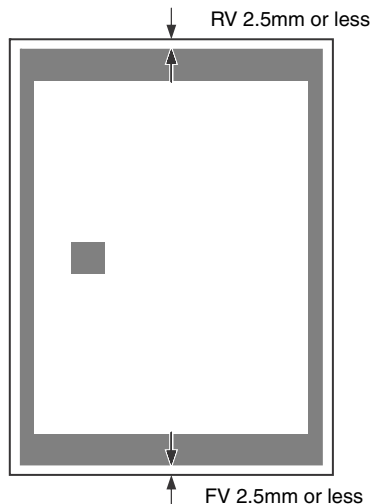
This adjustment is required in the following cases:

- * When the scanner (reading) section is disassembled.
- * When the scanner (reading) unit is replaced.
- * When the CCD unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.

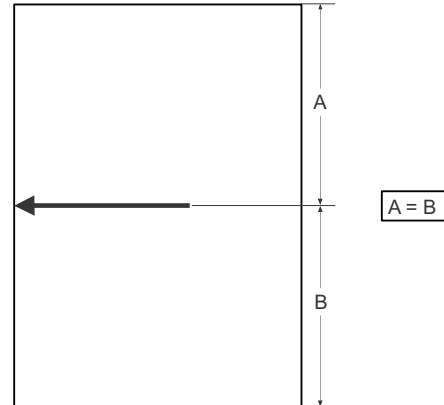


- e) Shift the auxiliary paper guide back and forth by the same amount as the change in the paper guide position.
 - f) Tighten the fixing screws of the paper guide and the auxiliary paper guide.
 - g) Push the paper feed tray in enough to reattach the stopper plate. Once the stopper plate has been reattached, confirm its operation.
- 8) Press [EXECUTE] key.
The adjustment pattern is printed.
- 9) Check that the adjustment pattern image is printed in the correct position.
Perform the procedures 7 thru 9 until the adjustment pattern is center aligned.
- 10) When the adjustment pattern is center aligned, perform the fine adjustment by simulation if necessary.
Enter the adjustment value, and press [EXECUTE] button.
The adjustment pattern is printed.
When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.
A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.
- 11) Check that the adjustment pattern image is printed in the correct position.
Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.

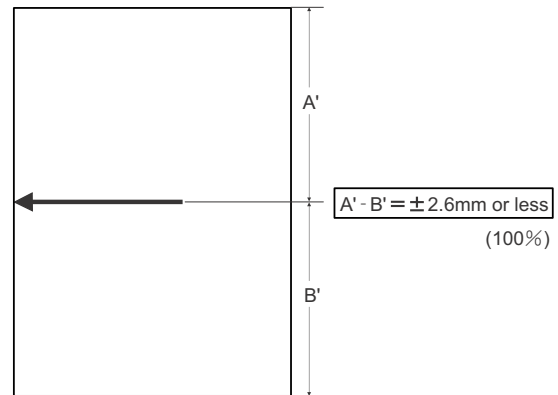


RV: REAR VOID AREA
FV: FRONT VOID AREA
 $RV + FV \leq 5.0\text{mm}$
 $RV = 2.5\text{mm or less}$
 $FV = 2.5\text{mm or less}$

Perform the procedures 10 and 11 until the above conditions are satisfied.



- 2) Set the adjustment chart on the document table, and make a copy.
- 3) Check the copy image center position.
If $A - B = \pm 2.6\text{mm}$ or less, the adjustment is not required.



If the above condition is not satisfied, perform the following procedures.

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode OC with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key.

The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode.

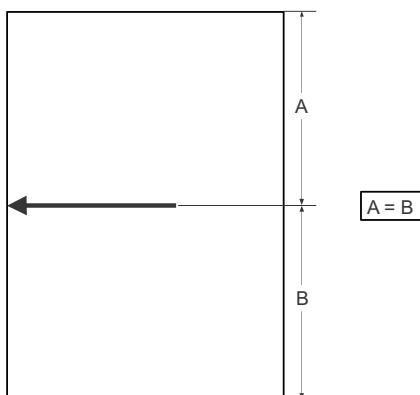
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

8-G Scan image off-center manual adjustment (DSPF (Front surface) mode)

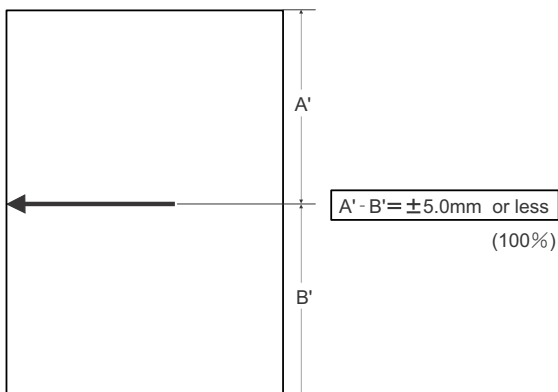
This adjustment is required in the following cases:

- * When the MFP control PWB is replaced.
- * When the EEPROM on the MFP control PWB is replaced.
- * 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 the U2 trouble occurs.
- * When the DSPF section is disassembled.
- * The DSPF unit has been replaced.
- * When the DSPF CCD unit is replaced.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 2) Set the adjustment chart on the DSPF unit and make a copy in the duplex copy mode.
- 3) Check the image center position on the copy front surface. If $A-B = \pm 5.0\text{mm}$ or less, the adjustment is not required.



If the above condition is not satisfied, perform the following procedure.

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode SPF (SIDE 1) with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key. The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

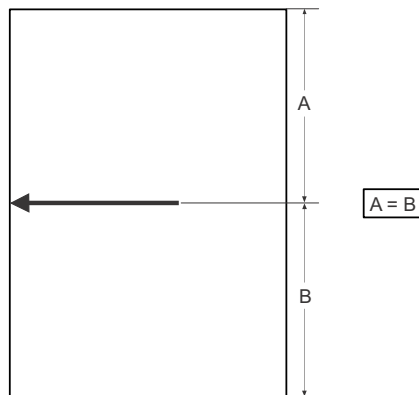
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

8-H Scan image off-center manual adjustment (DSPF (Back surface) mode)

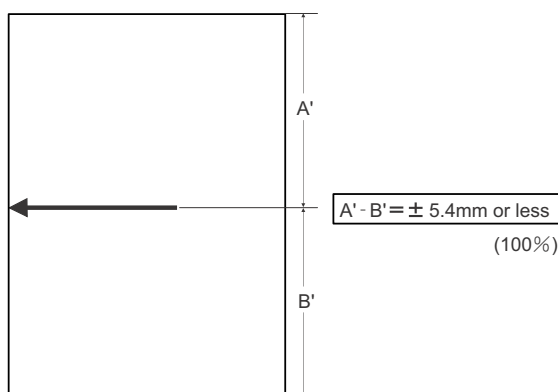
This adjustment is required in the following cases:

- * When the MFP control PWB is replaced.
- * When the EEPROM on the MFP control PWB is replaced.
- * 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 the U2 trouble occurs.
- * When the DSPF section is disassembled.
- * The DSPF unit has been replaced.
- * When the DSPF CCD unit is replaced.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 2) Set the adjustment chart on the DSPF unit and make a copy in the duplex copy mode.
- 3) Check the image center position on the copy back surface. If $A-B = \pm 5.4\text{mm}$ or less, the adjustment is not required.



If the above condition is not satisfied, perform the following procedures.

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode SPF (SIDE 2) with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key. The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Repeat the procedures 2 thru 6 until the above conditions are satisfied.

ADJ 9 Print/scan image lead edge position, off-center, magnification ratio adjustment (Automatic adjustment)

The following adjustment items can be automatically performed with Sim. 50-28.

- * ADJ 3B Print image magnification ratio manual adjustment (Main scanning direction)
- * ADJ 3C Print image lead edge void area manual adjustment/ Front-rear void area, rear edge void area manual adjustment
- * ADJ 7B Sub scanning direction image magnification ratio adjustment (Document table mode)
- * ADJ 7E Sub scanning direction image magnification ratio adjustment (DSPF mode)
- * ADJ8E Scan image off-center manual adjustment (Document table mode)
- * ADJ8F Scan image off-center manual adjustment (DSPF (Front surface) mode)
- * ADJ8G Scan image off-center manual adjustment (DSPF (Back surface) mode)
- * ADJ 9B Copy mode image loss adjustment (DSPF mode)

Automatic adjustment items of Sim. 50-28 and the corresponding manual adjustment items, simulation

Automatic adjustment items	Corresponding manual adjustment items, simulation
OC ADJ	(Corresponding to ADJ8E) (Corresponding to ADJ7B) (Corresponding to Sim.50-1 RRCA)
BK-MAG ADJ	(Corresponding to ADJ3B)
SPF ADJ	(Corresponding to ADJ9B) (Corresponding to ADJ8F) (Corresponding to ADJ8G) (Corresponding to ADJ7E)
SETUP/PRINT ADJ	(Corresponding to ADJ3C) NOTE: The automatic adjustment is inhibited. Execute ADJ3C and ADJ8A (manual adjustments).

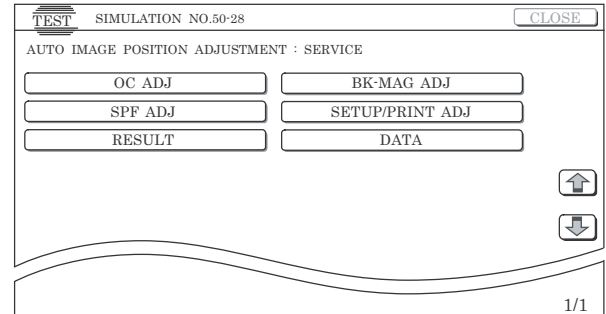
(Sim. 50-28 mode menu)

Section		Adjustment item	Adjustment menu	
Scanner	OC	Scan image lead edge reference position adjustment	OC ADJ	
		Scan image off-center adjustment		
		Sub scanning direction scan image magnification ratio adjustment		
	DSPF	SIDE1 (Front surface)	Scan image lead edge reference position adjustment	SPF ADJ (DSPF)
			Scan image off-center adjustment	
			Sub scanning direction scan image magnification ratio adjustment	
SIDE2 (Back surface)	SIDE2 (Back surface)	Scan image lead edge reference position adjustment	SPF ADJ (DSPF)	
		Scan image off-center adjustment		
		Sub scanning direction scan image magnification ratio adjustment		

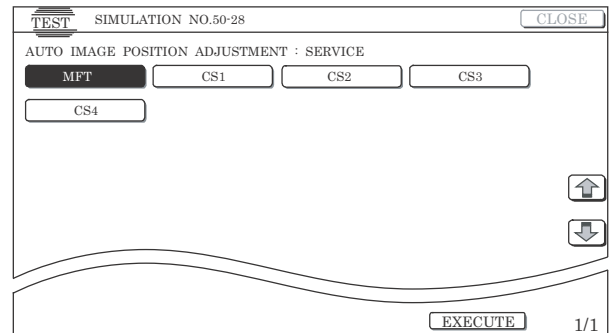
Section		Adjustment item	Adjustment menu	
Engine	—	Main scanning direction print image magnification ratio adjustment	BK-MAG ADJ SETUP/PRINT ADJ	
	CS (Common to paper feed trays)	Print image lead edge position adjustment		
	CS1	Print image off-center adjustment		
	CS2	Print image off-center adjustment		
	CS3	Print image off-center adjustment		
	CS4	Print image off-center adjustment		
	ADU	ADU		Print image off-center adjustment
				Print image lead edge position adjustment
	MFT	Print image off-center adjustment		
	LCC1 (LCC)	Print image off-center adjustment		
	LCC2	Print image off-center adjustment		
LCC3	Print image off-center adjustment			

9-A Print image magnification ratio automatic adjustment (Main scanning direction) (Corresponding to ADJ3B)

- 1) Enter the Sim. 50-28 mode.



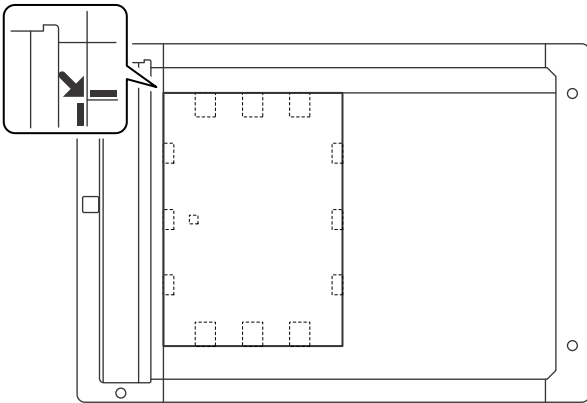
- 2) Press [BK-MAG ADJ] button to select [BK-MAG ADJ] mode.
- 3) Select the paper feed tray with A4/11 X 8.5 paper init with the paper feed tray button. (A4/11 X 8.5)



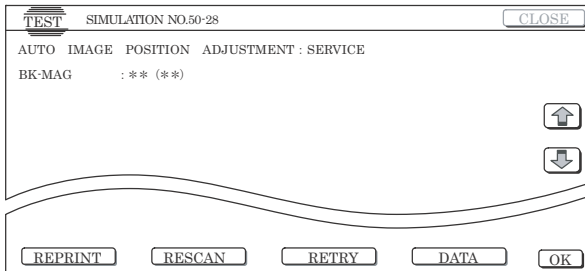
- 4) Press [EXECUTE] key.
The adjustment pattern is printed.

- Set the adjustment pattern on the document table. (No need to take care of the setting direction.)

Note: Set the adjustment pattern so that it fits precisely with the document guide.



- Press [EXECUTE] key.
The automatic adjustment is executed.



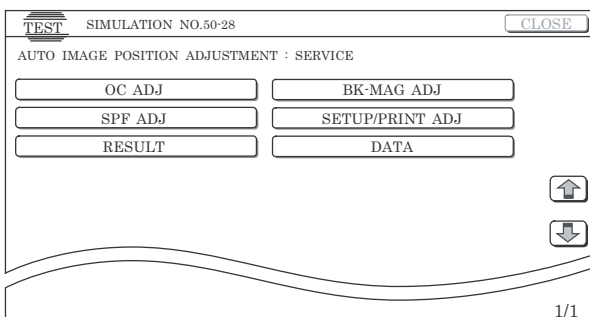
- Press [OK] key.
The adjustment result becomes valid.

9-B Scan image magnification ratio automatic adjustment (Sub scanning direction) (Document table mode) (Corresponding to ADJ7B)

Scan image off-center automatic adjustment (Document table mode)

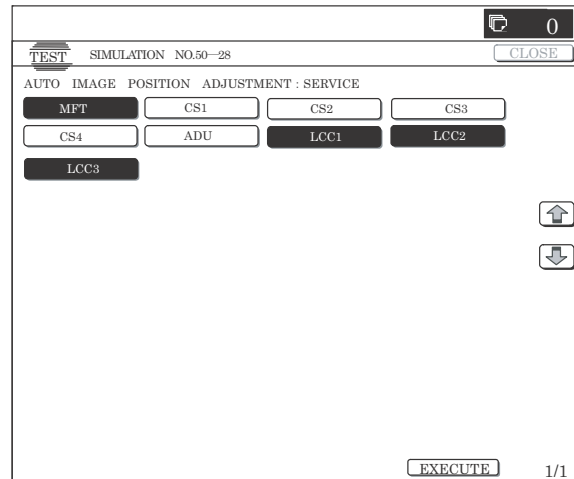
Scan image lead edge reference position automatic adjustment (Document table mode) (Corresponding to SIM 50-1 RRCA)

- Enter the Sim. 50-28 mode.

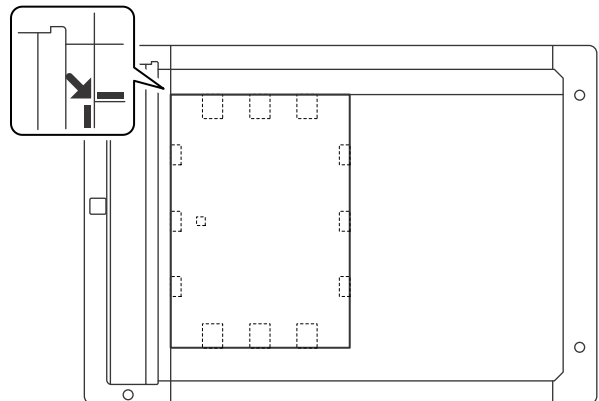


- Press [OC ADJ] button to select [OC ADJ] mode.

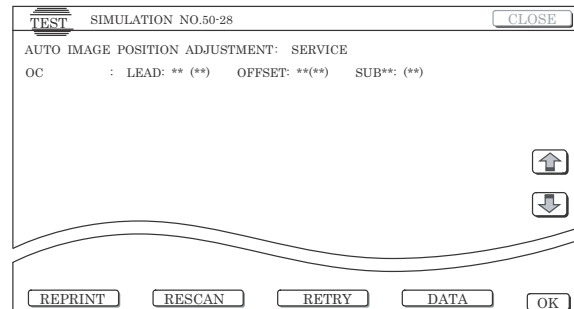
- Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)



- Press [EXECUTE] key.
The adjustment pattern is printed.
- Set the adjustment pattern on the document table. (No need to take care of the setting direction.)
Note: Set the adjustment pattern so that it fits precisely with the document guide.



- Press [EXECUTE] key.
The automatic adjustment is executed.



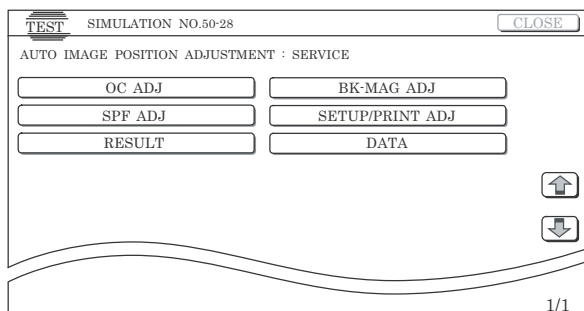
- Press [OK] button.
The adjustment result becomes valid.

9-C Scan image magnification ratio automatic adjustment (Sub scanning direction) (DSPF mode) (Corresponding to ADJ7E)

Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8F/ADJ8G)

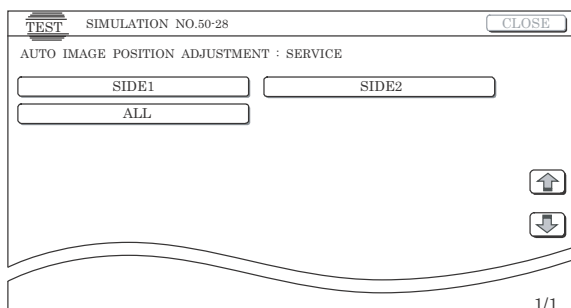
Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9B)

- 1) Enter the Sim. 50-28 mode.

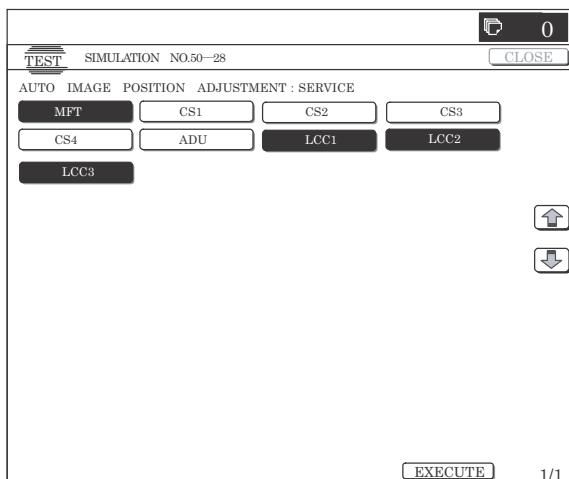


- 2) Press [SPF ADJ] button to select [SPF ADJ] mode.
- 3) Select an item (front, rear, both) to be adjusted.

Item	Content
SIDE1	SPF adjustment front surface
SIDE2	SPF adjustment back surface
ALL	SPF adjustment front/rear surfaces

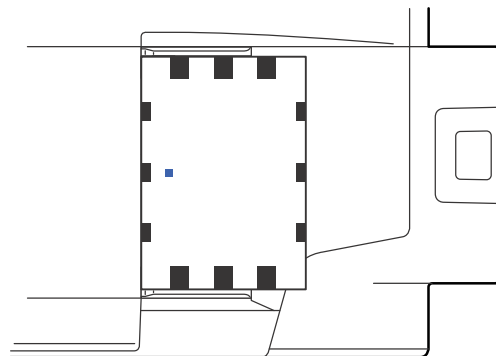


- 4) Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)

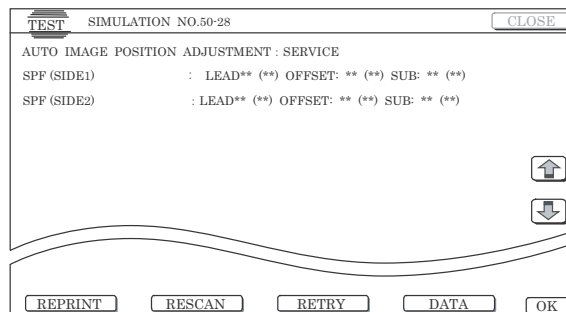


- 5) Press [EXECUTE] key.
The adjustment pattern is printed.
- 6) Set the adjustment pattern on the DSPF tray in either direction.
(Placing the adjustment pattern)
Placing manner of the adjustment pattern differs depending on the adjustment mode. Refer to the description below and set the adjustment pattern properly.

Adjustment mode	Placing the adjustment pattern
SIDE1 or first time of ALL (Front surface mode adjustment)	Place with the adjustment pattern print surface facing up.
SIDE2 or second time of ALL (Back surface mode adjustment)	Place with the adjustment pattern print surface facing down.



- 7) Press [EXECUTE] key.
The automatic adjustment selected in the procedure 3) is executed.
If [ALL] mode is selected in the procedure 3), perform the procedures 6 and 7 again.



- 8) Press [OK] button.
The adjustment result becomes valid.

ADJ 10 Image position, image loss, and void area adjustment

10-A Copy mode 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 replace or removed.
- * When the resist 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.

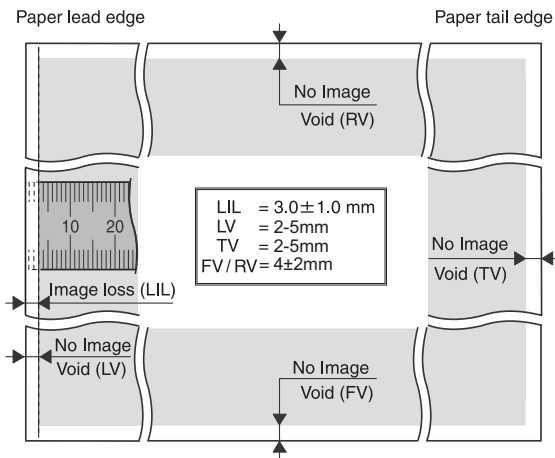
NOTE:

Before execution of this adjustment, the following adjustment must have been completed:

- * ADJ3A Print engine image distortion adjustment (LSU parallelism adjustment)
- * ADJ3B Print engine image magnification adjustment (Main scanning direction)
- * ADJ3C Print engine image off-center adjustment
- * ADJ3D Printer mode lead edge void area adjustment, print engine front/rear void area adjustment, rear edge void edge area adjustment

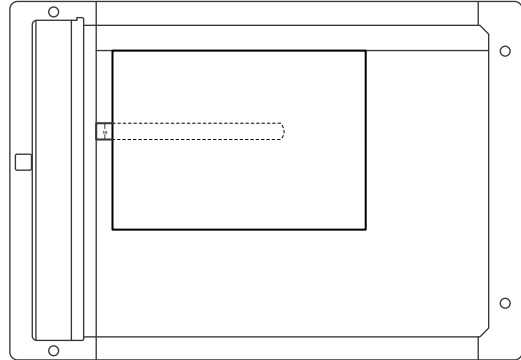
Standard image loss, void area

- LV : Lead edge void area 2-5mm
- TV : Rear edge void area 2-5mm
- FV+RV: 4±2mm
- LIL : Lead edge image loss 3.0 ± 1.0mm



- 1) Place a scale on the document table as shown below.
Set the scale so that it is in parallel with the scanning direction and the scale tip is in close contact with the document guide plate.

Place white paper on the document table so that the scale tip can be seen.



- 2) Enter the Sim. 50-1 mode.
- 3) Set the items RRCA, LEAD, and SIDE to the default values.

Item	Display/Item	Content	Setting range	Default		
Lead edge adjustment value	A	RRCA (ADJUSTMENT)	Document lead edge reference position (OC)	10 - 99	50	
	B	RRCB (ADJUSTMENT)	Resist motor ON timing adjustment	Main unit paper feed	1 - 99	50
	C	RRCB-ADU (ADJUSTMENT)				
Image loss quantity setting value	D	LEAD (IMAGE LOSS)	Lead edge image loss quantity setting	0 - 99	30	
	E	SIDE (IMAGE LOSS)	Side image loss quantity setting	0 - 99	20	
Void quantity setting	F	DEN-A (VOID)	Print lead edge void quantity adjustment	1 - 99	35	
	G	DEN-B (VOID)	Print rear edge void quantity adjustment	1 - 99	35	
	H	FRONT/REAR (VOID)	FRONT/REAR void quantity adjustment	1 - 99	35	

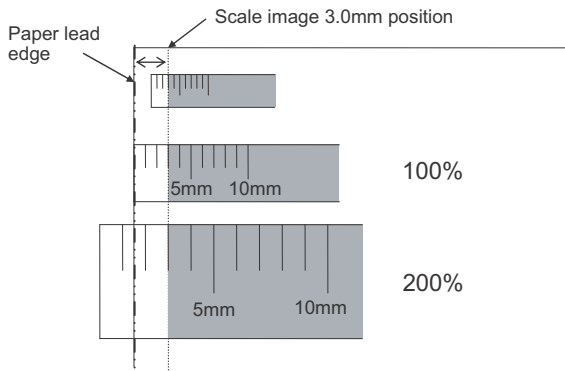
- 4) Perform the image lead edge reference position adjustment.
Press [CLOSE] key to shift from the simulation mode to the copy mode. Make a copy at 100% and at 200% in the document mode.

If the lead edge section from 3.0mm position of scale in the copy images of both 100% and 200% is not copied, the adjustment value of RRCA is proper.

If the above conditions are not satisfied, change the adjustment value of RRCA to adjust.

(Adjust the adjustment value of RRCA so that the lead edge section from 3.0mm position of scale is not copied for different copy magnification ratios.)

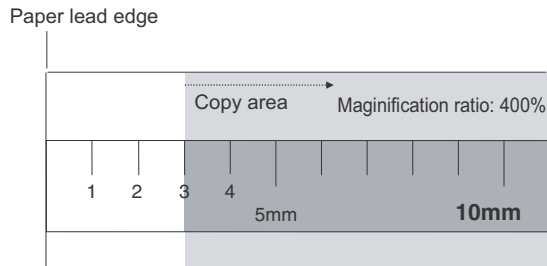
Repeat the above procedures until a satisfactory result is obtained.



- 5) Lead edge image loss adjustment

The lead edge image loss is set to the standard level if the following adjustment items are adjusted to the default values.

If they are not the standard level or are set to optional values, change and adjust them.



Void area: 3.0mm Image loss: 3.0mm

Display /Item	Content		Adjustment range	Default	Standard adjustment value
LEAD	Image loss adjustment	Lead edge image loss adjustment	0-99	30	$3.0 \pm 1.0\text{mm}$
SIDE		Side image loss adjustment	0-99	20	$2.0 \pm 2.0\text{mm}$

To change the adjustment value, enter the desired adjustment value and press [OK] key.

When the adjustment value is increased, the image loss becomes greater.

When the adjustment value is decreased, the image loss becomes smaller.

(Change rate for change in the adjustment value: 0.1mm/step)

10-B Document scan position adjustment (Scanner scanning position adjustment when scanning the front surface in the DSPF mode)

This adjustment is needed in the following situations:

- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * When the scanner (reading) section is disassembled.
- * When the scanner (reading) unit is replaced.
- * U2 trouble has occurred.
- * When the DSPF section is disassembled.
- * The DSPF unit has been replaced.

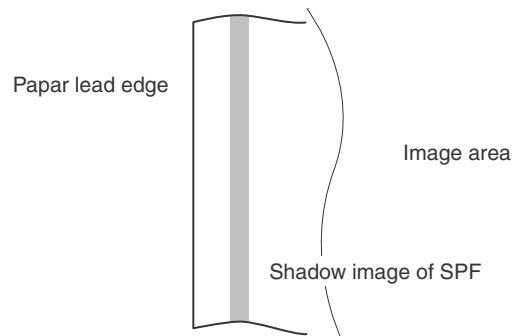
This adjustment is used to adjust the scanner reading position when scanning the front surface in the DSPF mode.

If this adjustment is improper, the scanner stop position is shifted to the specified position, and a shade of the document table may be copied in the lead edge section of the scan image in the DSPF (front surface) mode.

(Note)

After completion of this adjustment, be sure to perform the "ADJ9B copy mode image loss adjustment (DSPF mode)".
(The value of "SIDE2" in Sim. 50-6 is adjusted.)

Make a copy of white paper in the DSPF (front surface) mode, and check to confirm that no shade is printed in the lead edge section of the copy image.



If the printed image at the leading edge of the copied image contains a shadow of the original table, then do the following steps.

(In the case of the manual adjustment)

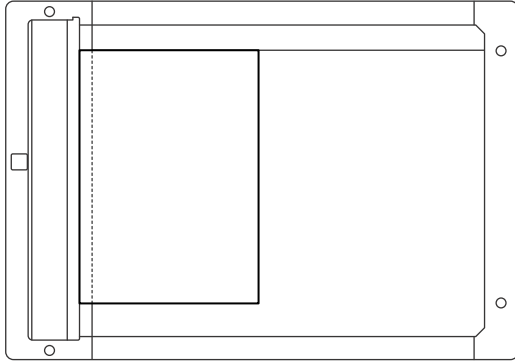
- 1) Enter the Sim. 53-8 mode.
- 2) Press the manual button to select the manual mode.
- 3) Enter the adjustment value with 10-key, and press [OK] button.
When the adjustment value is increased, the scanner reading position when scanning the front surface in the DSPF mode is shifted further from the scanner home position.
When the adjustment value is changed by 1, the scanner reading position when scanning the front surface in the DSPF mode is shifted by 0.1mm.
- 4) Select the copy mode, and check the adjustment result.
Repeat the above procedures until a satisfactory result is obtained.

(In the case of the automatic adjustment)

- 1) Make a copy on A4 (11 X 8.5) paper in the sky shot mode. (All black copy is made.)
- 2) Set the copy paper so that the all black surface of the copy paper is overlapped with the document guide at the left edge of the document table, and close the DSPF unit.

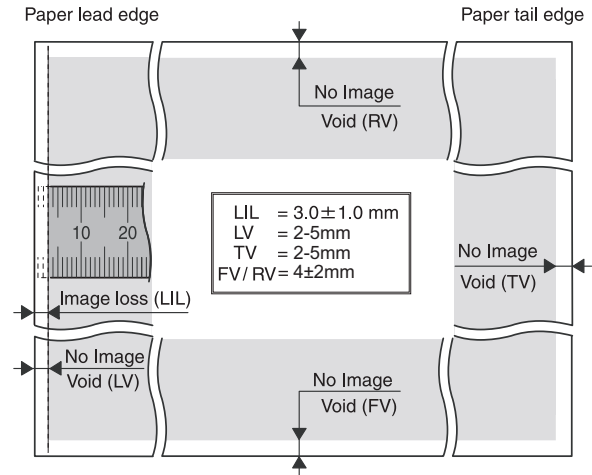
NOTE:

If copy paper is not set in a overlapped state, the SPF scanning position is shifted by the lead edge void quantity.



Standard image loss, void area

LV :	Lead edge void area	2-5mm
TV :	Rear edge void area	2-5mm
FV+RV :	4±2mm	
LIL :	Lead edge image loss	3.0 ± 1.0mm



- 3) Enter the Sim. 53-8 mode.
- 4) Press the auto button to select the auto mode.
- 5) Press [EXECUTE] key. [EXECUTE] button is highlighted, and the scanner reading position adjustment when scanning the front surface in the DSPF mode is automatically performed. After completion of the adjustment, the adjustment value is displayed and [EXECUTE] button returns to the normal display. When an error occurs, MEASUREMENT DISTANCE/RRCA "--" is displayed. In this case, the adjustment is made in the manual mode.
- 6) Select the copy mode, and check the adjustment result. Repeat the procedures 2 thru 4 until a satisfactory result is obtained.

10-C Copy mode image loss adjustment (DSPF mode)

This adjustment is needed in the following situations:

- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * When the scanner (reading) section is disassembled.
- * When the scanner (reading) unit is replaced.
- * U2 trouble has occurred.
- * When the DSPF section is disassembled.
- * The DSPF unit has been replaced.

NOTE:

Before execution of this adjustment, the following adjustment must have been completed:

- * ADJ3A Print engine image distortion adjustment (LSU parallelism adjustment)
- * ADJ3B Print engine image magnification ratio adjustment (Main scanning direction)
- * ADJ3C Print engine image off-center adjustment
- * ADJ3D Printer mode lead edge void area adjustment/ Print engine front/rear void area and rear edge void area adjustment
- * ADJ9A Copy mode image loss/ void area adjustment (Document table mode)

- 1) Enter the Sim. 50-6 mode.

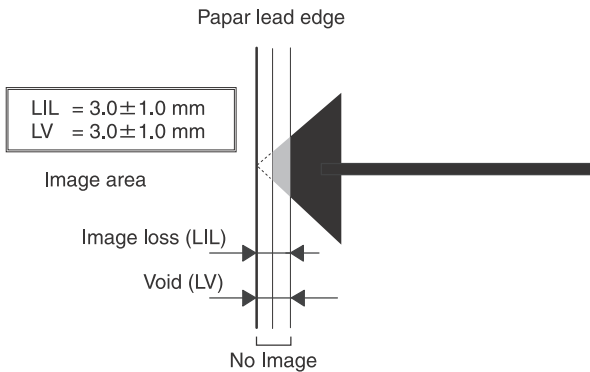
Display/Item		Content	Default
A	SIDE1	Front surface document scanning start position (CCD)	50
B	SIDE2	Back surface document scanning start position (CCD)	50
C	Image loss quantity setting SIDE1	LEAD_EDGE (SIDE1)	20
D		FRONT_REAR (SIDE1)	20
E		TRAIL_EDGE (SIDE1)	30
F	Image loss quantity setting SIDE2	LEAD_EDGE (SIDE2)	30
G		FRONT_REAR (SIDE2)	20
H		TRAIL_EDGE (SIDE2)	20

(Leading edge image loss adjustment)

- 1) Adjust the lead edge image loss adjustment values (LEAD_EDGE) of the front and back surfaces as shown below: (Standard setting values)
 C: LEAD_EDGE (SIDE1) : 20
 F: LEAD_EDGE (SIDE2) : 30
 Set "C: LEAD_EDGE (SIDE1)" and "F: LEAD_EDGE (SIDE2)" to 30. (Enter the adjustment value with 10-key, and press [OK] button.

- Use the DSPF to make a duplex copy at 100%. Check to confirm that the lead edge image loss is 3.0 ± 1.0 mm on the front surface and the back surface.

Press [CLOSE] button in the simulation mode to jump to the copy mode. Make a duplex copy and check the adjustment result.



If an acceptable result is not obtained, do the following steps.

- Change the adjustment values of SIDE1 and SIDE2 and make an adjustment.

(Change the adjustment values of SIDE1 and SIDE2, and press [OK] key.)

SIDE1: DSPF front surface lead edge scanning position adjustment value

SIDE2: DSPF back surface lead edge scanning position adjustment value

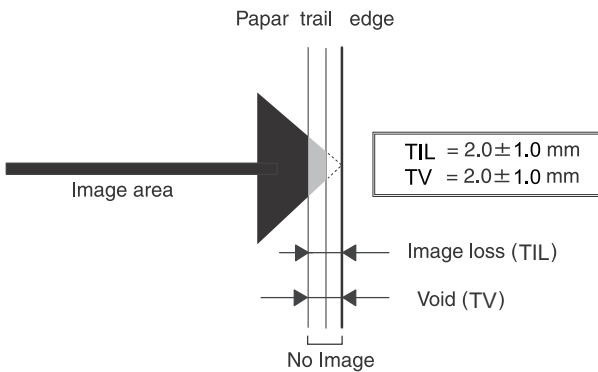
(Change rate for change in the adjustment value: 0.1mm/step)

Repeat the procedures 2 and 3 until a satisfactory result is obtained.

(Rear edge image loss adjustment)

- Use the DSPF at the magnification ratio of 100%, and make a duplex copy. Check to confirm that the rear edge image loss is 2.0 ± 1.0 mm on the front surface and the back surface.

Press [CLOSE] button in the simulation mode to jump to the copy mode. Make a duplex copy and check the adjustment result.



If the result is not acceptable, do the following steps.

- Change the adjustment value of TRAIL_EDGE and make an adjustment.

(Enter the adjustment value of TRAIL_EDGE with 10-key, and press [OK] button.)

Repeat the above adjustments until an acceptable result is obtained.

(FRONT/REAR frame image loss adjustment)

- Set the adjustment values of the front surface and the back surface to 20.

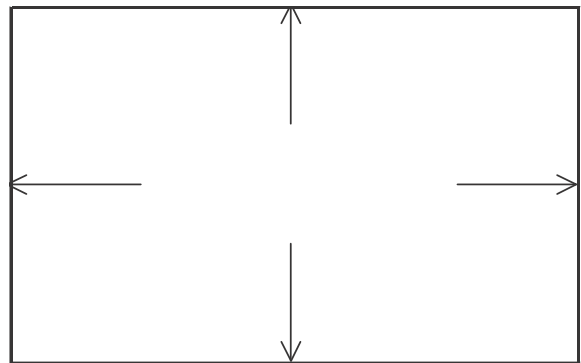
(Enter 20 for the adjustment values of FRONT_REAR (SIDE1) and FRONT_REAR (SIDE2), and press [OK] key.)

10-D Image send mode, image loss adjustment

This adjustment is needed in the following situations:

- * When shading is copied on the scanned image in the image send mode.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * The scanner (reading) section has been disassembled.
- * The scanner (reading) unit has been replaced.
- * U2 trouble has occurred.
- * When the DSPF section is disassembled.
- * The DSPF unit has been replaced.

- Use A3 (11X17) paper and make a chart shown below.



Write arrow marks on the four sides of the front surface and the back surface.

- Scan the chart made in the procedure 1) by the SCAN to USB mode, SCAN to PC mode, and SCAN to e-MAIL mode in the following modes.

- * Original table mode
- * DSPF mode (Duplex mode)

- Open the scanned image file on PC, and check every edge of the arrow marks to confirm that the image loss is "0".

(If there is no void on the arrow marks, it is judged that the image loss is "0".)

If the above conditions are not satisfied, perform the following procedure.

- Enter the Sim. 50-27 mode.
- Press [SCANNER] button, and select the image send mode and the image loss adjustment mode.

6) Select a mode to be adjusted with the scroll button

		Display/Item	Content	Setting range	Default	
Image send mode image loss adjustment (Except for copy mode)	A	Image loss	LEAD_EDGE (OC)	OC lead edge image loss quantity setting	0-100	0 (0mm)
	B	quantity setting	FRONT_REAR (OC)	OC side image loss quantity setting	0-100	0 (0mm)
	C	OC	TRAIL_EDGE (OC)	OC rear edge image loss quantity setting	0-100	0 (0mm)
	D	Image loss	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss quantity setting	0-100	0 (0mm)
	E	quantity setting	FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0-100	0 (0mm)
	F	SPF SIDE1	TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity setting	0-100	0 (0mm)
	G	Image loss	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss quantity setting	0-100	0 (0mm)
	H	quantity setting	FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0-100	0 (0mm)
	I	SPF SIDE2	TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0-100	0 (0mm)

7) Enter the adjustment value with 10-key, and press [OK] button.

When the adjustment value is increased, the image loss becomes greater. (Change rate for a change in the adjustment value: 0.1mm/step)

Repeat the above procedures until a satisfactory result is obtained.

ADJ 11 Gray balance/density adjustment

(1) Note before execution of the gray balance/density adjustment

* Requisite conditions before execution of the gray balance/density adjustment

Before execution of the gray balance/density adjustment, check to insure that the adjustments which affect the gray balance/density have been completed properly.

(Though the following items affect the gray balance/density, there is no need to adjust them frequently. When, however, a trouble occurs, they must be checked and adjusted.)

- 1) The following items must be adjusted properly.

Job No	Adjustment item		Simulation
ADJ 1	High voltage values adjustment	ADJ 1A Main charger grid voltage adjustment	8-2
		ADJ 1B Developing bias voltage adjustment	8-1
		ADJ 1C Transfer current adjustment	8-6
		ADJ 1D Photoconductor dark potential adjustment	44-3
ADJ 2	Developing unit adjustment	ADJ 2A Developing doctor gap adjustment	
		ADJ 2B Developing roller main pole position adjustment	
		ADJ 2C Toner density control reference value setting	25-2 (25-6)
ADJ 6	Scan image focus adjustment		48-1
ADJ 11	Gray balance/density adjustment	ADJ 11A Scanner calibration (CCD calibration)	63-3

Note for the gray balance/density check and adjustments

When setting the adjustment pattern on the document table in the automatic gray balance 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.

(2) Relationship between the servicing job contents and the gray balance/density check and adjustment

Note that the jobs before and after execution of the gray balance/density check and adjustment depend on the machine status and the servicing conditions.

Follow the flowchart of the gray balance/density adjustment procedures depending on the actual conditions.

There are following four, major cases.

- 1) When installing (When a printer option is installed)
- 2) When a periodic maintenance is performed.
- 3) When a repair, an inspection, or a maintenance is performed. (When a consumable part is replaced.)
- 4) When an installation, a repair, or inspection is performed. (Without replacement of a consumable part)

(3) Copy gray balance and density check

NOTE: Before checking the copy gray balance and density, 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)

Method 1

Make a copy of the gray test chart (6LS06275000), and check that they are proper.

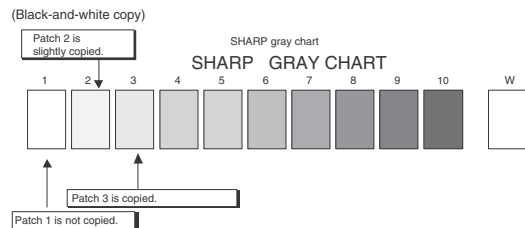
Note for checking the density

To check the density, use the gray test chart (6LS06275000) and the servicing color test chart (6LS06276000). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

In addition, all the gray balance adjustments in the user adjustment mode must be set to the default (center).

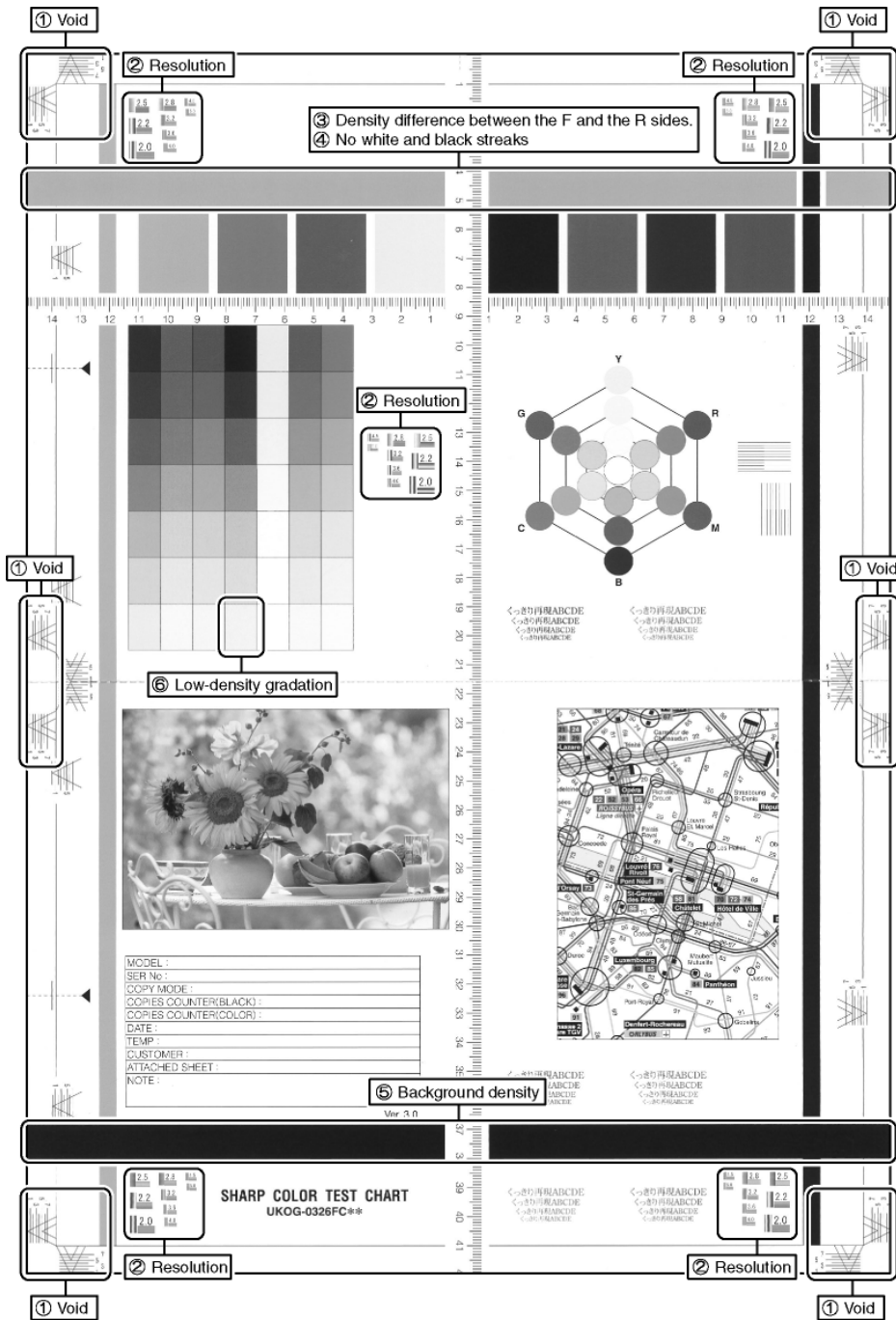
Check with the gray test chart (6LS06275000)

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



Monochrome copy check items (Check to confirm the following:)

	Display/Item	Adjustment items		
1	There are 12 void areas.	Main machine S/M	ADJ3-A to C	Sim50-28
2	The resolution of 5.0 (5 points) can be seen.	Main machine S/M	Check the dirt of the OC glass Clean the OC glass Clean the mirror of the scanner ADJ11-D12	Sim46-54 Copy gamma, gray balance adjustment for each dither (Automatic adjustment)
3	The color difference in gray balance between the F and the sides is not so great.	Main machine S/M	ADJ11-B	Sim61-11 Sim46-74 Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment)
4	There are no white and black streaks.		Clean the mirror of the LSU. Clean the Main Charger Clean the mirror of the scanner	
5	The background density is not so light.	Main machine S/M	ADJ11-B	Sim46-74 Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustment)
6	The black low-density gradation is copied slightly.	Main machine S/M	ADJ11-B	Sim46-74 Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment)



(4) Printer gray balance/density check

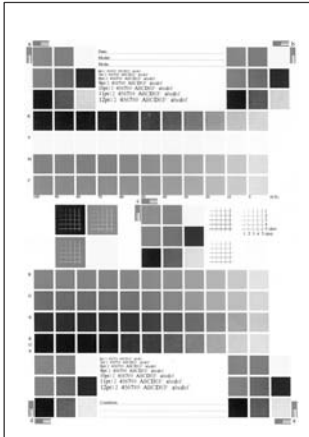
NOTE: Before checking the copy gray balance and the density, be sure to execute the following procedures in advance.

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

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.

11-A Scanner calibration (CCD calibration)

This adjustment must be performed in the following cases:

- * 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

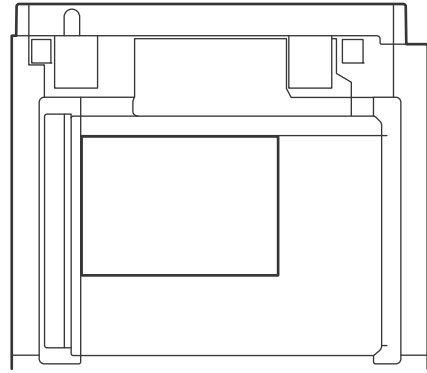
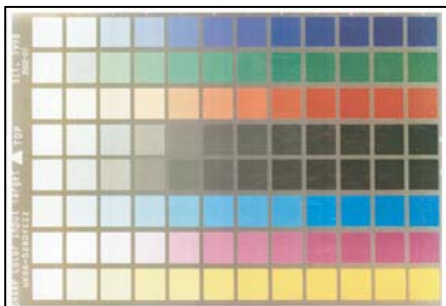
- Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust. (If there is some dust and dirt, wipe and clean with alcohol.)
- Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (6LS06277000) are free from dirt and scratches.

If they are dirty, clean them.

If they are scratched or streaked, replace with new one.

(2) Adjustment procedures

- 1) Set the SIT chart (6LS06277000) 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 (6LS06277000) is in close contact with the document table.

- 2) Enter the SIM 63-3 mode 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 (6LS06277000) 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.

SET 1 Gray balance adjustment target setup

a. General

When the automatic gray balance adjustment is executed, a certain gray balance (gamma) is used as the target.

There are following three kinds of the target.

- Factory gray balance (gamma) target
- Service gray balance (gamma) target
- User gray balance (gamma) target

In the above three, only the service gray balance target can be set to a desired level.

This setting is required in the following cases.

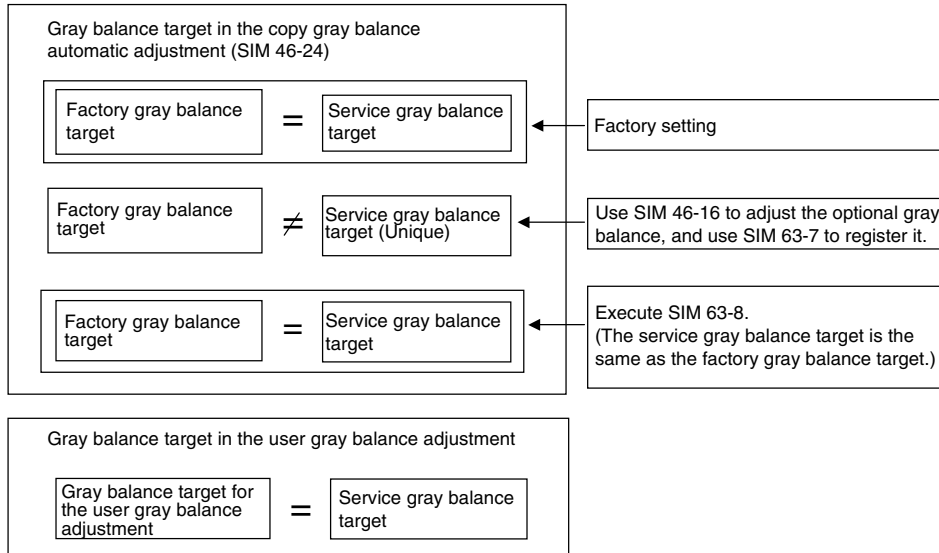
- * When the gray balance and density adjustments are executed manually (SIM46-16) (SIM67-25)
- * U2 trouble has occurred.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been replaced.
- * When the user requests for customizing the gray balance.
- * When the service gray balance target gamma is judged as improper.

SET 1A Copy gray balance adjustment target setup

Each gray balance target for the copy gray balance adjustment

Type		Descriptions
A	Factory gray balance (gamma) target	The factory target is fixed.
B	Service gray balance (gamma) target	This target is used when the user requests to customize the gray balance to user's desired level. In advance, the user's unique gray balance must be registered as the service gray balance target. The above registration (setting) is made by the serviceman with SIM 46-16 to adjust the gray balance and with SIM 63-7 to register it. This gray balance target is used when the user executes the gray balance adjustment. When, therefore, the service gray balance target is changed, the gray balance target of the user's gray balance adjustment is also changed. The default setting (factory setting) of the gray balance is same as the factory gray balance target. If the user does not request for customizing the gray balance, be sure to use SIM 63-8 to set the gray balance to the factory gray balance target.
C	User gray balance (gamma) target	Same gray balance as the service gray balance (gamma) target. When the service gray balance target is changed, this gray balance target is also changed accordingly.

Relationship between the factory target and the service target and the gray balance target for the user gray balance adjustment in the copy gray balance adjustment (Automatic adjustment) (SIM 46-74/46-24)



Factory target in the copy gray balance adjustment (SIM 46-74/46-24)

Service gray balance target in the copy gray balance adjustment ((Automatic adjustment) SIM 46-74/46-24).

For the service gray balance target, an optional gray balance can be adjusted with SIM 46-16 and registered with SIM 63-7.

Gray balance target in the user gray balance adjustment

This gray balance is same as the service gray balance target in the copy gray balance adjustment (Automatic adjustment) (SIM 46-74/46-24). When, therefore, the service gray balance target is changed, this target is also changed accordingly.

Meaning of the service gray balance target gamma data and the purpose of registration

This procedure must be executed only when the gray balance is customized with SIM 46-16.

If the gray balance is not customized, this procedure is not required.

After completion of the customized gray balance adjustment (Manual) with SIM 46-16 according to the user's request, use SIM 63-7 to register the service gray balance target data by using adjustment pattern that was printed in this mode.

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-16.

By this procedure, the service gray balance target is revised.

It is recommended to keep the printed adjustment pattern created with SIM 46-16. This adjustment pattern can be used to register the same gray balance target to another machine.

It is also useful to register the service gray balance target data. Do not fold it and keep it under the circumstances which protect it from discoloration and dirt.

The service gray balance target data is registered immediately after the gray balance adjustment (Manual) with SIM 46-16.

If a considerable time has passed after completion of the gray balance adjustment (Manual) with SIM 46-16, the gray balance of the adjustment pattern at the time of adjustment differs from the gray balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The accuracy of the service gray balance target data can be judges as follows.

When result of the gray valance adjustment (Auto) with selecting the service gray balance target in SIM 46-74/46-24 is unsatisfactory or abnormal.

In that case, the registered service target data for the gray balance adjustment (Auto) may be improper.

This may be caused when an improper or abnormal gray balance adjustment pattern was used to register the service gray balance target data for the gray balance adjustment with SIM 63-7.

The gray balance adjustment pattern used in registration was made and printed by the gray balance adjustment (Manual) with SIM 46-16. This procedure may have been executed erroneously

a. Setting procedure

(Setting procedure of an optional gray balance (gamma) as the service gray balance target)

- 1) Use SIM 46-16 (Copy gray balance adjustment (manual adjustment) mode) to print two sheets of the gray patch image (adjustment pattern).

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-16.

If the gray balance is shifted from the standard, an adjustment is required. If not, an adjustment is not required. When an optional gray balance is requested by the user, make an adjustment.

- 2) Enter the SIM 63-7 mode.
- 3) Press [SETUP] key.
- 4) Set the gray patch image (adjustment pattern) correctly adjusted and printed in the copy gray balance adjustment (Manual adjustment) (SIM 46-16) (ADJ 11C (2)) on the document table.

The gray patch image (adjustment pattern) printed with SIM 64-7 can be used instead. In this case, however, check that the printed pattern is normal.

(When the gray patch image (adjustment pattern) is printed by SIM 64-7, set the item B (PROC ADJ) to "0 (YES)" and press [EXECUTE] key to print.)

A gray patch image (adjustment pattern) printed by another machine can be used.

Set the pattern so that the light density side is on the left side. Place 5 sheets of white paper on the gray patch image (adjustment pattern).

- 5) Press [EXECUTE] key.
The gray patch image (adjustment pattern) is read.
- 6) Press [REPEAT] key, set the second gray patch image (adjustment pattern), and execute the procedure 5) again.
Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.
In case of an abnormality, repair the problem and try again.
- 7) Press [OK] key.
The gray balance (gamma) of the gray patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(Procedures to set the service gray balance target and the gray balance target for the user gray balance adjustment to the same gray balance as the factory gray balance target)

NOTE: This procedure must not be executed when the copy gray balance was adjusted with SIM 46-16 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 63-7.

- 1) Enter the SIM 63-8 mode.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

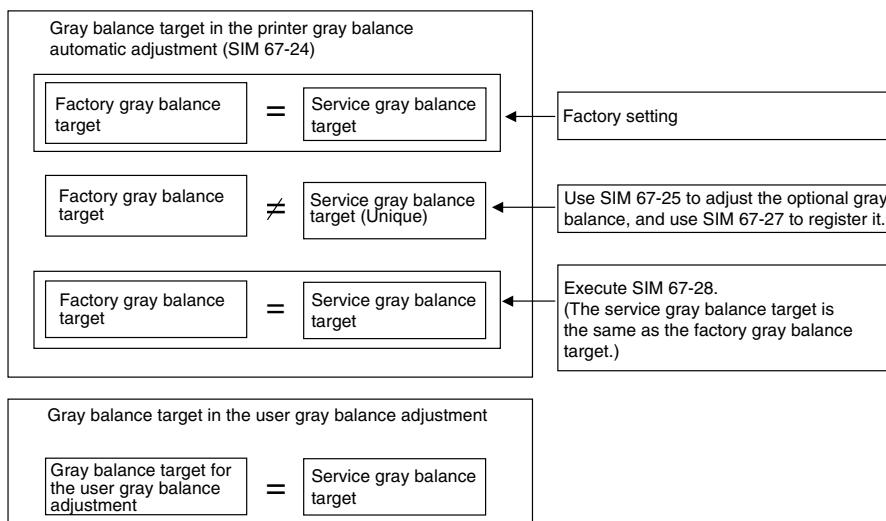
The service gray balance target and the gray balance target for the user gray balance adjustment are set to the same gray balance as the factory gray balance target.

SET 1B Printer gray balance adjustment target setup

Gray balance target for the printer gray balance adjustment

Type		Descriptions
A	Factory gray balance (gamma) target	The factory target is fixed.
B	Service gray balance (gamma) target	This target is used when the user requests to customize the gray balance to user's desired level. In advance, the user's unique gray balance must be registered as the service gray balance target. The above registration (setting) is made by the serviceman with SIM 67-25 to adjust the gray balance and with SIM 67-27 to register it. This gray balance target is used when the user executes the gray balance adjustment. When, therefore, the service gray balance target is changed, the gray balance target of the user's gray balance adjustment is also changed. The default setting (factory setting) of the gray balance is same as the factory gray balance target. If the user does not request for customizing the gray balance, be sure to use SIM 67-28 to set the gray balance to the factory gray balance target.
C	User gray balance (gamma) target	Same gray balance as the service gray balance (gamma) target. When the service gray balance target is changed, this gray balance target is also changed accordingly.

Relationship between the factory target and the service target and the gray balance target for the user gray balance adjustment in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/76-24)



Factory target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24)

Service gray balance target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24).

For the service gray balance target, an optional gray balance can be adjusted with SIM 67-25 and registered with SIM 67-27.

Gray balance target in the user gray balance adjustment

This gray balance is same as the service gray balance target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24). When, therefore, the service gray balance target is changed, this target is also changed accordingly.

Meaning of the service gray balance target gamma data and the purpose of registration

This procedure must be executed only when the gray balance is customized with SIM 67-25.

If the gray balance is not customized, this procedure is not required.

After completion of the customized gray balance adjustment (Manual) with SIM 67-25 according to the user's request, use SIM 67-27 to register the service gray balance target data by use of the printed adjustment pattern.

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 67-25.

By this procedure, the service gray balance target is revised.

It is recommended to keep the printed adjustment pattern created with SIM 67-25. This adjustment pattern can be used to register the same gray balance target to another machine.

It is also useful to register the service gray balance target data. Do not fold it and keep it under the circumstances which protect it from discoloration and dirt.

The service gray balance target data is basically registered immediately after the gray balance adjustment (Manual) with SIM 67-25.

If a considerable time has passed after completion of the gray balance adjustment (Manual) with SIM 67-25, the gray balance of the adjustment pattern at the time of adjustment differs from the gray balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The correctness of the service gray balance target data can be judged as follows.

When result of the color balance adjustment (Auto) with selecting the service gray balance target in SIM 67-24 is unsatisfactory or abnormal.

In that case, the registered service target data for the gray balance adjustment (Auto) may be improper.

This may be caused when an improper or abnormal gray balance adjustment pattern was used to register the service gray balance target data for the gray balance adjustment with SIM 67-27.

The gray balance adjustment pattern used in registration was made and printed by the gray balance adjustment (Manual) with SIM 67-25. This procedure may have been executed erroneously.

a. Setting procedure

(Setting procedure of an optional gray balance (gamma) as the service gray balance target)

- 1) Use SIM 67-25 (Printer gray balance adjustment (manual adjustment) mode) to print two sheets of the gray patch image (adjustment pattern).

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 67-25.

If the gray balance is shifted from the standard, an adjustment is required. If not, an adjustment is not required. When an optional gray balance is requested by the user, make an adjustment.

- 2) Enter the SIM 67-27 mode.
- 3) Press [SETUP] key.
- 4) Set the gray patch image (adjustment pattern) correctly adjusted and printed in the printer gray balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 11E (2)) on the document table.

A gray patch image (adjustment pattern) printed by another machine can be used.

Set the pattern so that the light density side is on the left side. Place 5 sheets of white paper on the gray patch image (adjustment pattern).

This procedure must not be executed when the copy gray balance (manual) was adjusted with SIM 67-25 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 67-27.

- 5) Press [EXECUTE] key.
The gray patch image (adjustment pattern) is read.
- 6) Press [REPEAT] key, set the second gray patch image (adjustment pattern), and execute the procedure 5) again.
Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.
In case of an abnormality, repair the problem and try again.
- 7) Press [OK] key.

The gray balance (gamma) of the gray patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(Procedures to set the service gray balance target and the gray balance target for the user gray balance adjustment to the same gray balance as the factory gray balance target)

NOTE: This procedure must not be executed when the copy gray balance was adjusted with SIM 67-25 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 67-27.

- 1) Enter the SIM 67-28 mode.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The service gray balance target and the gray balance target for the user gray balance adjustment are set to the same gray balance as the factory gray balance target.

**11-B Copy/Printer gray balance and density adjustment (Automatic adjustment)
(Basic adjustment)**

This adjustment must be performed in the following cases:

- * When a consumable part (developer, OPC drum, transfer belt) is replaced.
- * When the CCD unit is 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.

a. General

SIM46-74 is used to perform the automatic copy gray balance and density adjustment (SIM46-24) and the automatic printer gray balance and density adjustment (SIM67-24) continuously.

Since it is desirable to perform the copy gray balance adjustment (automatic adjustment) before the automatic printer gray balance and density adjustment, it is advisable to perform the adjustment in this mode.

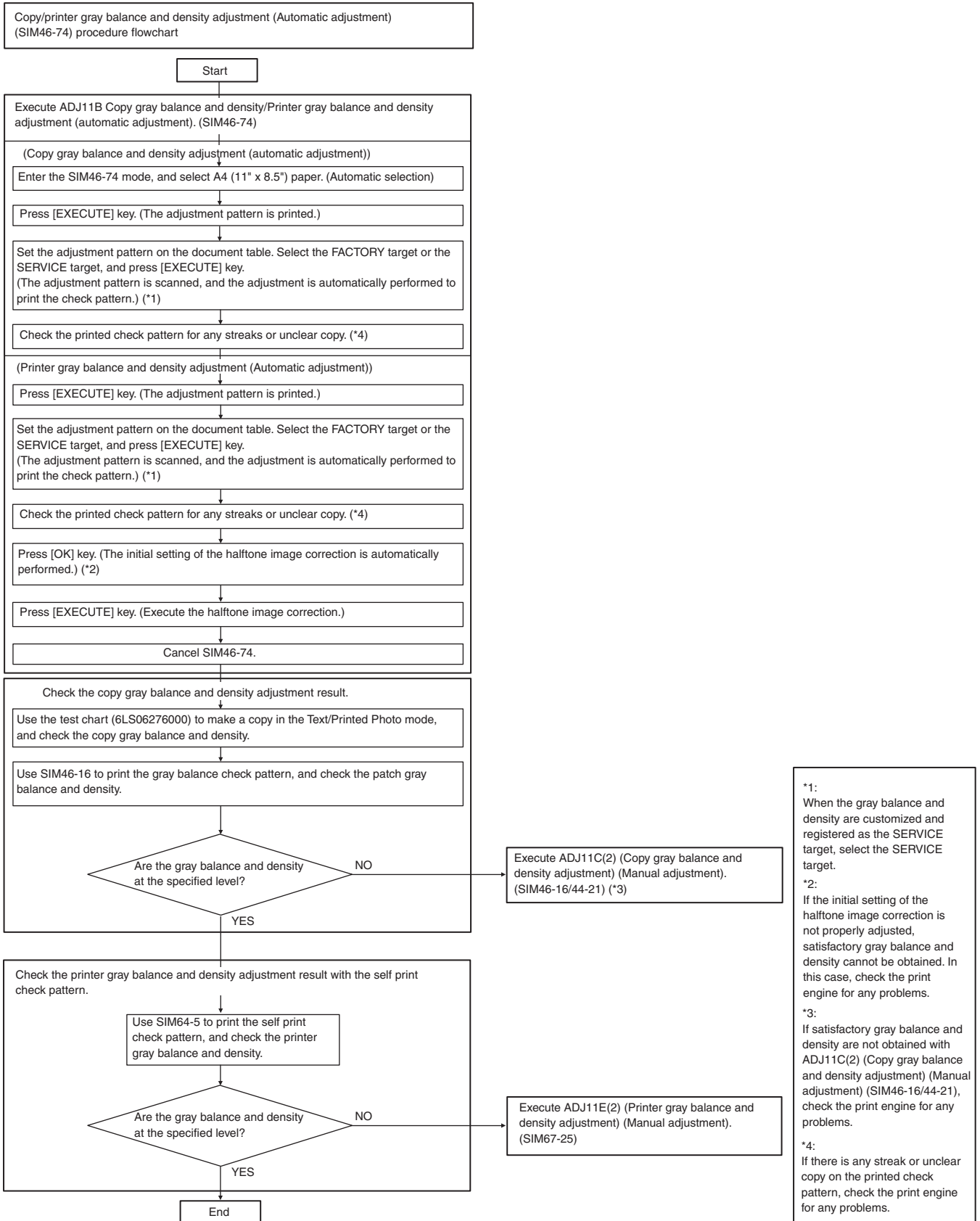
This mode is also advisable to effectively perform both of the automatic copy gray balance and density adjustment (SIM46-24) and the automatic printer gray balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer gray balance and the density adjustment individually.

The gray balance adjustment (automatic adjustment) is used to adjust the density automatically.

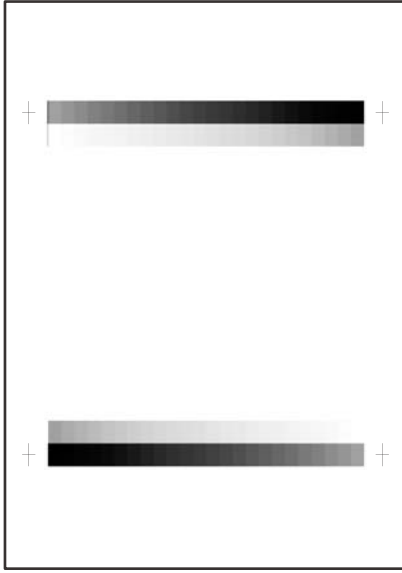
When this adjustment is executed, the gray balance adjustments of all the copy/printer modes are revised.

b. Adjustment procedures

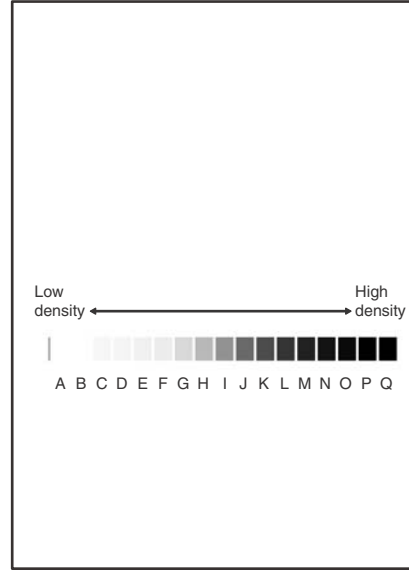
(Auto gray balance adjustment by the serviceman)



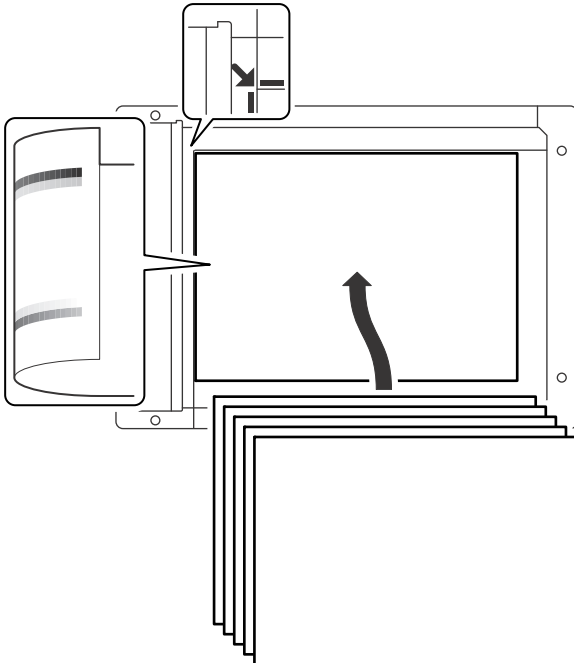
- 1) Enter the SIM46-74 mode.
- 2) Press [EXECUTE] key.
The high density process control is performed, and the copy gray patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



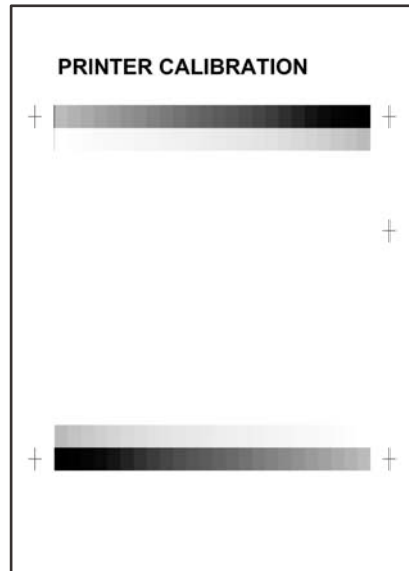
- 4) Select [FACTORY] target, and press [EXECUTE] key.
The copy gray balance adjustment is automatically executed and prints the gray balance check patch image. If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.



- 3) Set the gray patch image (adjustment pattern) paper printed in procedure 2) on the document table.
Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed gray patch image (adjustment pattern).

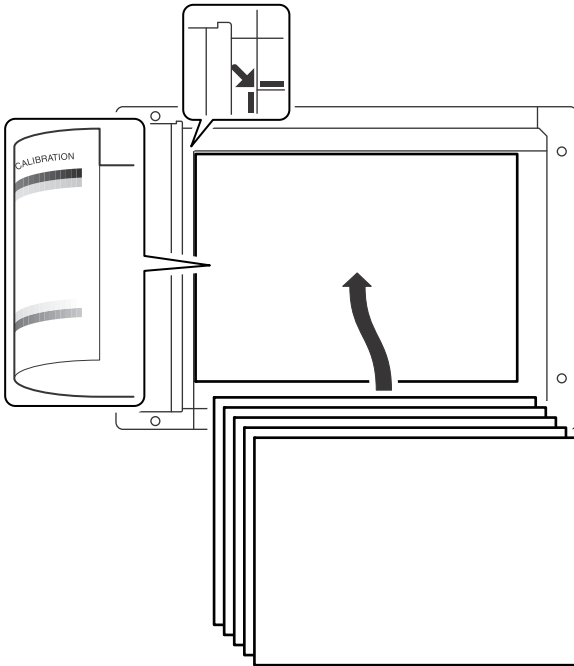


- 5) Press [EXECUTE] key.
The printer gray patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



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

Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed gray patch image (adjustment pattern).

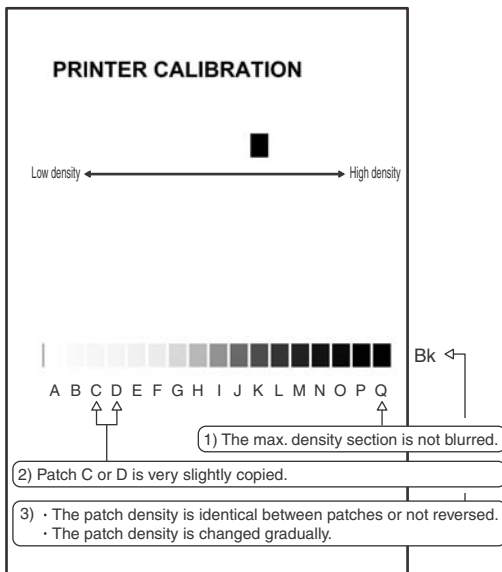


- 7) Select [FACTORY] target, and press [EXECUTE] key.

When the gray balance is customized with the manual gray balance adjustment (SIM 67-25) according to the user's request and the gray balance is registered as the service target with SIM 67-27, if the gray balance is adjusted to that gray balance, select the [SERVICE] target.

The printer gray balance adjustment (step 1) is automatically performed and the gray balance 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 halftone image correction is displayed. Press [OK] key.
The initial setting of the halftone image correction is performed.
- 9) Wait until [EXECUTE] key is displayed. When it is displayed, press it.
The halftone image correction is performed.
- 10) When "COMPLETED THIS PROCEDURE" is displayed, the adjustment operation is completed.
Cancel SIM46-74.

NOTE: The adjustment result becomes valid only when the both adjustments in the copy mode and in the printer mode are completed.

For example, if the copy gray balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is invalid.

- 11) Check the copy gray balance and density.
(Refer to the item of the copy gray balance and density check.)
When the gray balance and the density are unsatisfactory after the automatic adjustment by selecting the factory target in procedure 4), execute the manual gray balance adjustment (ADJ11C (2)).
Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11C (2)).

- 12) Check the printer gray balance and density.
(Refer to the item of the printer gray balance and density check.)

If a satisfactory result on the gray balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 11E (2)).

Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11E (2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

11-C Copy quality adjustment (Basic adjustment)

This adjustment must be performed in the following cases:

- * 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.

**11-C (1)
Copy gray balance and density adjustment
(Automatic adjustment)****a. General**

The gray balance adjustment (automatic adjustment) is used to adjust the copy density automatically.

When this adjustment is executed, the gray balance adjustments of all the copy modes are revised.

There are following two modes in the auto gray balance adjustment.

1) Auto gray balance adjustment by the serviceman (SIM 46-24 is used.)

2) Auto gray balance adjustment by the user (The user program mode is used.) (The gray balance target is the service target.)

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

If the copy gray balance is lost for some reason, the user can use this gray balance adjustment to recover the balance.

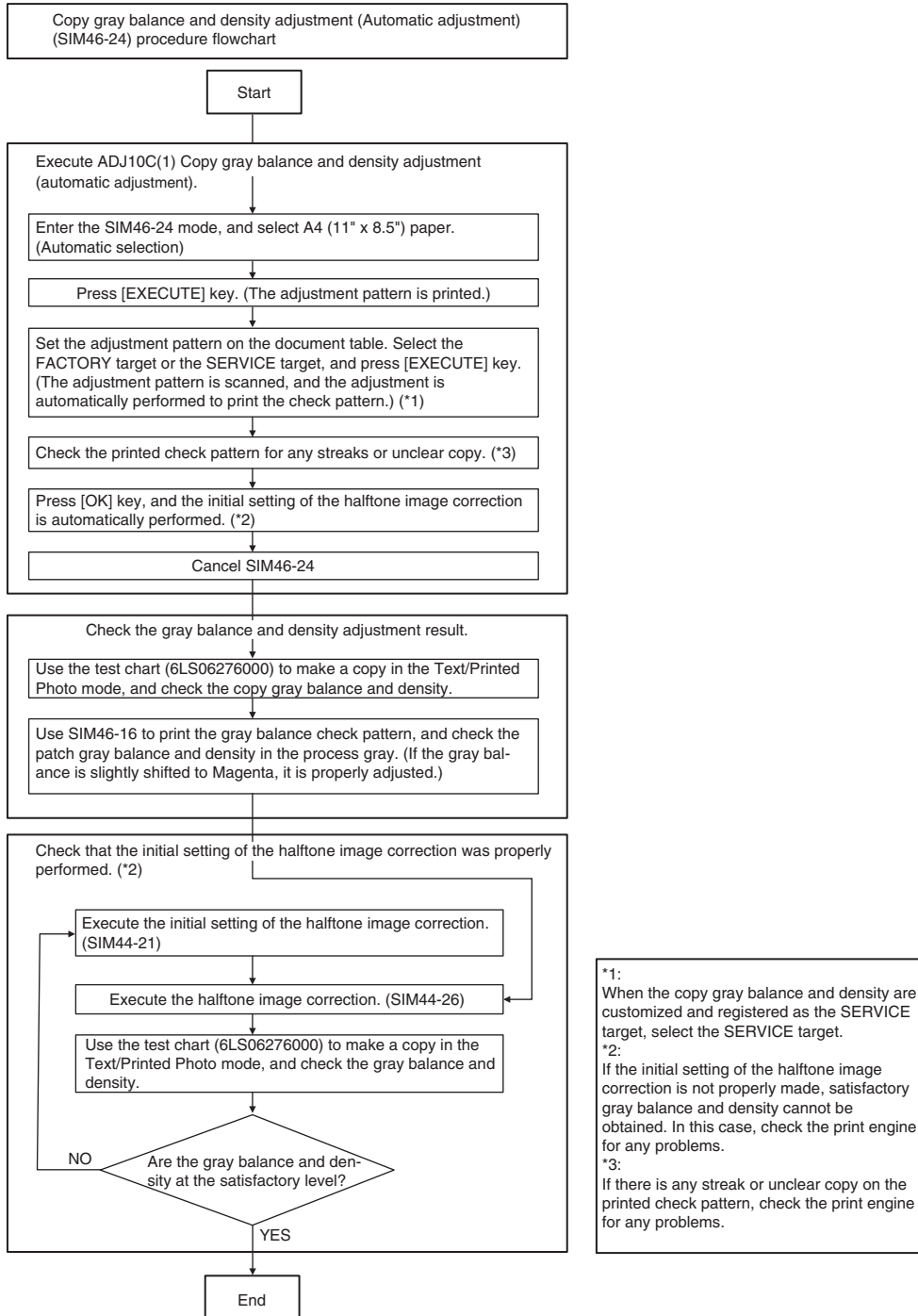
When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

If the machine condition is dramatically changed, a fatal problem occurs, or the normal gray targets cannot be obtained, service must recalibrate the machine to specification.

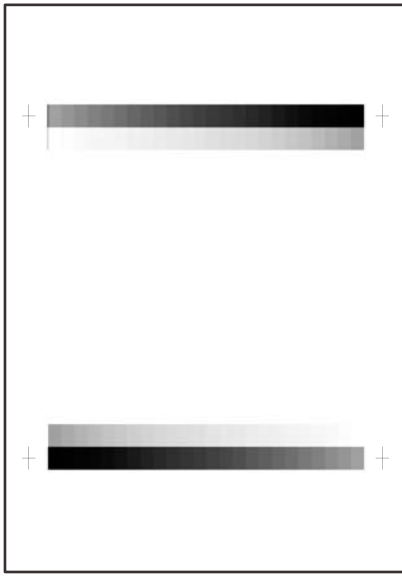
To perform the adjustment, the above difference must be fully understood.

b. Adjustment procedure

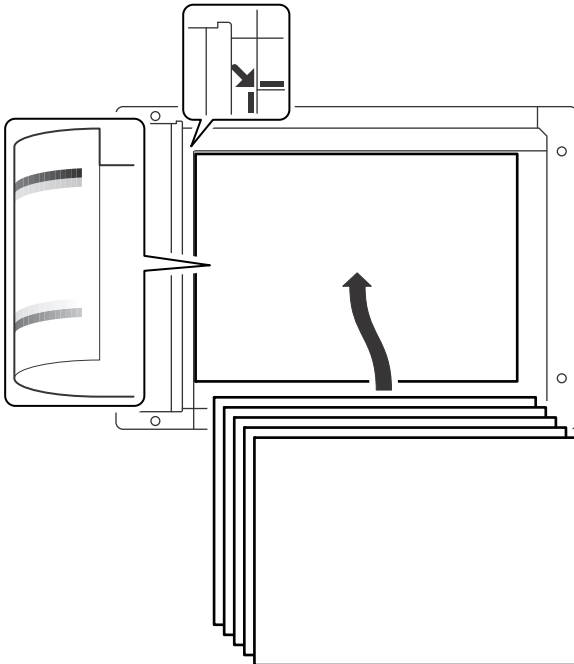
(Auto gray balance adjustment by the serviceman)



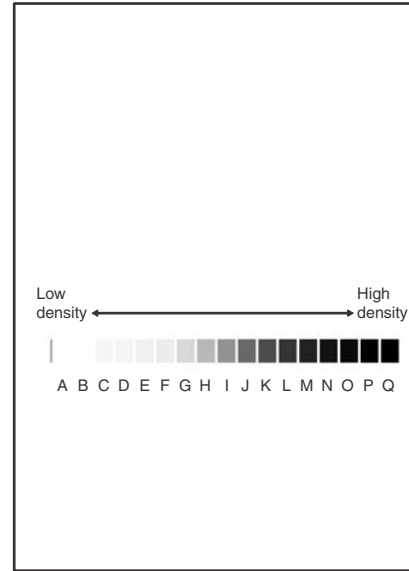
- 1) Enter the SIM 46-24 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
The patch image (adjustment pattern) is printed out.



- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.
Place the printed patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern) paper.



- 4) Select [FACTORY] target, and press [EXECUTE] key.
The copy gray balance adjustment is automatically executed to print the gray balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.



- 5) Press [OK] key on the operation panel.
According to data of this adjustment, the initial setting of the halftone image correction is performed.
NOTE:
After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed. This operation takes several minutes.
After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.
Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.
- 6) Check the gray balance and density.
(Refer to the item of the copy gray balance and density check.)
- 7) Use SIM44-26 to execute the halftone image correction. (Forcible execution)
Enter the SIM44-26 mode and press [EXECUTE] key.
[EXECUTE] key is highlighted and the operation is started.
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.
After completion of the operation, the simulation is canceled.
- 8) Use the servicing color test chart (6LS06276000) in the Text/Photo mode (Manual) to check the copy gray balance and density. (Refer to the item of the copy gray balance and density check.)
If the copy gray balance and density are not satisfactory, perform the following procedures.
- 9) Execute the initial setting of the halftone image correction. (SIM 44-21)
- 10) Execute the halftone image correction. (Forcible execution) (SIM44-26)
- 11) Use the servicing color test chart (6LS06276000) in the Text/Printed Photo mode (Manual) to check the copy gray balance/density. (Refer to the item of the copy gray balance and density check.)

Though the above procedures 9) - 11) are performed, the copy gray balance and density are not in the specified range, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

When the gray balance and the density are unsatisfactory after the automatic adjustment by selecting the factory target in procedure 4), execute the manual adjustment (SIM46-16)(ADJ11C (2)).

Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11C(2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

11-C (2)**Copy gray balance and density adjustment
(Manual adjustment)****a. General**

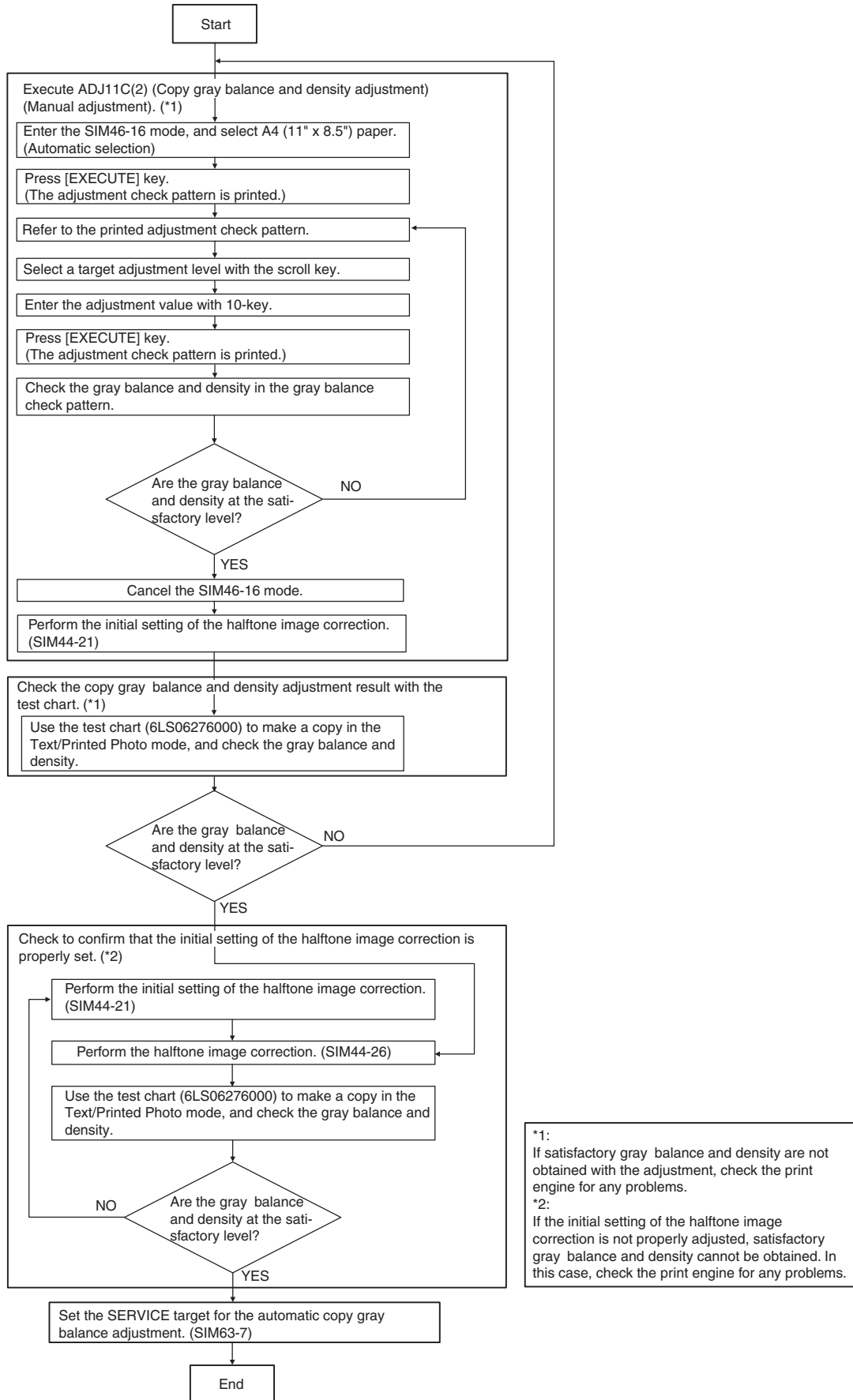
The gray balance adjustment (Manual adjustment) is used to adjust the copy density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the gray balance.

This manual adjustment is executed only for the gray patch which could not adjusted properly in the automatic adjustment.

If the gray balance is improper, execute the automatic gray balance adjustment in advance, and execute this adjustment for better efficiency.

b. Adjustment procedure

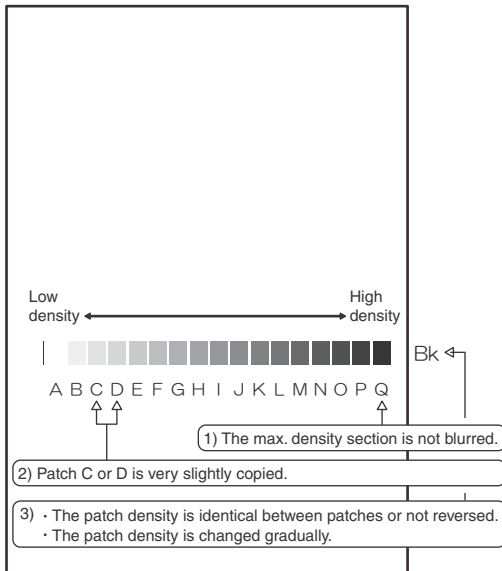
Copy gray balance and density adjustment (Manual adjustment) procedure flowchart (SIM46-16)



*1:
If satisfactory gray balance and density are not obtained with the adjustment, check the print engine for any problems.

*2:
If the initial setting of the halftone image correction is not properly adjusted, satisfactory gray balance and density cannot be obtained. In this case, check the print engine for any problems.

- 1) Enter the SIM46-16 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
The gray balance adjustment pattern is printed.
- 3) Check that the following specification is satisfied or the gray balance is 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 B may not be copied.

Patch A must not be copied.

When, however, the gray balance is adjusted according to a request from the user, there is no need to set to the standard gray balance stated above.

- 4) Enter the adjustment value with 10-key and press [OK] key.
The adjustment value is set in the range of (1 - 999). When SIM 46-24 is used to adjust the automatic gray balance and density, 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) - 4) 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.
- 5) Make a copy of the servicing color test chart (6LS06276000) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result.
(Refer to the item of the copy gray balance/density check.)
- 6) Execute SIM 44-21. (Execute the initial setting of the halftone image correction.)
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.
After completion of the operation, the simulation is canceled.
NOTE:
This procedure is to save the copy gray balance adjustment data as the reference data for the halftone correction.
Immediately after execution of ADJ 11C (2) (Gray balance adjustment, Manual) with SIM 46-16, be sure to execute this procedure.
When ADJ 11C (1) (Gray balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

- 7) Use SIM 44-26 to execute the halftone image correction. (Forcible execution)
Enter the SIM 44-26 mode and press [EXECUTE] key.
[EXECUTE] key is highlighted and the operation is started.
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.
After completion of the operation, the simulation is canceled.

- 8) Make a copy of the servicing color test chart (6LS06276000) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy gray balance/density check.)

If the copy gray balance and density 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.

NOTE:

If the gray balance is customized, use SIM 63-7 to register the gray balance as the service target.

If the gray balance is not customized, this procedure is not required.

If the customized gray balance is registered as the service target, the automatic gray balance adjustment can be made in the next gray balance adjustment.

11-D Copy / Image send image quality adjustment (Individual adjustment)

a. General

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 11B and ADJ 11C or there is a request from the user. Normally there is no need to execute this adjustment.

In this adjustment, the adjustment result may be applied to the image send mode as well as the copy mode.

This must be well understood for execution of the adjustment.

		Copy MODE		IMAGE SEND(SCAN) MODE				Printer
		Monochrome mode		Color mode		Monochrome mode		
		Auto	Manual	Auto	Manual	Auto	Manual	
46-02	Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)	○	○	-	-	-	-	-
46-04	Color image send mode image density adjustment (for each mode) (No need to adjust normally)	-	-	○	○	-	-	-
46-05	Monochrome image send mode image density adjustment (for each mode) (No need to adjust normally)	-	-	-	-	○	○	-
46-08	Image send mode RGB gray balance adjustment (separately for the low-density area and the high-density area) (No need to adjust normally)	-	-	○	○	-	-	-
46-09	DSPF mode (Copy/Scan) density adjustment (No need to adjust normally)	○	○	○	○	○	○	-
46-10	Copy gray balance, gamma adjustment (for each copy mode) (No need to adjust normally)	○	○	-	-	-	-	-
46-16	Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)	○	○	-	-	-	-	-
46-19	Automatic monochrome (Copy/Scan) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)	○	-	-	-	○	-	-
46-23	Copy high density image density reproduction setting (Normally unnecessary to the setting change)	○	○	-	-	-	-	-
46-24	Copy gray balance and density adjustment (Automatic adjustment)	○	○	-	-	-	-	-
46-27	Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)	-	-	-	-	-	-	-
46-32	Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan) mode (No need to adjust normally) (Background density adjustment in the scanning section)	○	-	-	-	○	-	-
46-37	Monochrome (Copy/Scan) mode color document reproduction adjustment (No need to adjust normally)	○	○	-	-	○	○	○
46-47	Copy image, image send image (JPEG) compression ratio setting (Normally unnecessary to the setting change)	○	○	○	○	○	○	○
46-48	Copy output resolution setting	○	○	-	-	-	-	-
46-51	Gamma manual adjustment for the copy mode heavy paper and the image process mode (dither) (No need to adjust normally)	○	○	-	-	-	-	-
46-52	Gamma default setting for the copy mode heavy paper and the image process mode (dither)	○	○	-	-	-	-	-
46-54	Copy gamma, gray balance adjustment for each dither (Automatic adjustment) (No need to adjust normally)	○	○	-	-	-	-	-
46-55	Dropout color setting	-	-	-	-	-	○	-
46-60	Color (Scan) mode sharpness adjustment (No need to adjust normally)	-	-	○	-	-	-	○
46-61	Area separation recognition level adjustment (No need to adjust normally)	○	○	○	○	○	○	-
46-62	ACS, area separation, background image process, automatic exposure mode operation conditions setting (Normally unnecessary to the setting change)	○	○	○	○	○	○	-
46-63	Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)	○	○	○	○	○	○	-
46-66	Watermark adjustment	○	○	-	-	-	-	-
46-74	Printer/Copy gray balance and density adjustment (Automatic adjustment) (Basic adjustment)	○	○	-	-	-	-	○
46-90	High-compression PDF image process operation setting (Normally unnecessary to the setting change)	-	-	○	○	-	-	-
46-91	Black text emphasis fine adjustment	-	-	○	○	-	-	-

11-D (1)

**Monochrome copy density adjustment
(for each monochrome copy mode)
(separately for the low-density area and the
high-density area)
(No need to adjust normally)**

The density is adjusted in each copy mode individually.

This adjustment must be performed in the following cases:

- * When there is necessity to change the copy density of the low density and high density part at each copy density individually.
 - * When there is necessity to change the density gradient of the copy by each the copy mode individually.
 - * When there is necessity to change all copy density by each the copy mode individually.
 - * When there is request from the user.
- 1) Enter the SIM 46-2 mode.
 - 2) Select the copy mode to be adjusted with the scroll key.

Display/Item	Content	Setting range	Default
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
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW 1 - 99 50
			HIGH 1 - 99 50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW 1 - 99 50
			HIGH 1 - 99 50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW 1 - 99 50
			HIGH 1 - 99 50
L	LIGHT	Light document	LOW 1 - 99 50
			HIGH 1 - 99 50

- 3) 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.
- 4) Make a copy and check the adjustment result.
Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.
Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

11-D (2)

**Copy gray balance, gamma adjustment
(No need to adjust normally)**

This adjustment is used to execute the gray balance adjustment for each density level.

This adjustment must be performed in the following cases:

- * When there is necessity to change the gray balance and gamma by each the copy mode individually.
 - * When there is request from the user.
- 1) Enter the SIM 46-10 mode.
 - 2) Select the copy mode to be adjusted with the mode key.
 - 3) Select the density level (point) to be adjusted with the scroll key.

Item/Display	Density level (Point)	Adjustment value range	Default
A	POINT1	Point 1	1 - 999 500
B	POINT2	Point 2	1 - 999 500
C	POINT3	Point 3	1 - 999 500
D	POINT4	Point 4	1 - 999 500
E	POINT5	Point 5	1 - 999 500
F	POINT6	Point 6	1 - 999 500
G	POINT7	Point 7	1 - 999 500
H	POINT8	Point 8	1 - 999 500
I	POINT9	Point 9	1 - 999 500
J	POINT10	Point 10	1 - 999 500
K	POINT11	Point 11	1 - 999 500
L	POINT12	Point 12	1 - 999 500
M	POINT13	Point 13	1 - 999 500
N	POINT14	Point 14	1 - 999 500
O	POINT15	Point 15	1 - 999 500
P	POINT16	Point 16	1 - 999 500
Q	POINT17	Point 17	1 - 999 500

- 4) 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.
This adjustment pattern can be used to check the gray balance and the density for each density level (point).
- 5) Make a copy and check the adjustment result.
Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.
Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

11-D (3)**Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)**

This adjustment is used to execute the density adjustment for each density level in each monochrome copy mode.

This adjustment must be performed in the following cases:

- * When it is required to change the gamma in each copy mode.
- * When there is request from the user.

- 1) Enter the SIM 46-16 mode.
- 2) Select the density level (point) to be adjusted with the scroll key.

Item/Display	Density level (Point)	Adjustment value range	Default	
A	POINT1	Point 1	1 - 999	500
B	POINT2	Point 2	1 - 999	500
C	POINT3	Point 3	1 - 999	500
D	POINT4	Point 4	1 - 999	500
E	POINT5	Point 5	1 - 999	500
F	POINT6	Point 6	1 - 999	500
G	POINT7	Point 7	1 - 999	500
H	POINT8	Point 8	1 - 999	500
I	POINT9	Point 9	1 - 999	500
J	POINT10	Point 10	1 - 999	500
K	POINT11	Point 11	1 - 999	500
L	POINT12	Point 12	1 - 999	500
M	POINT13	Point 13	1 - 999	500
N	POINT14	Point 14	1 - 999	500
O	POINT15	Point 15	1 - 999	500
P	POINT16	Point 16	1 - 999	500
Q	POINT17	Point 17	1 - 999	500

- 3) 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.

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

This adjustment pattern can be used to check the gray balance and the density for each density level (point).
- 4) Make a copy and check the adjustment result.

Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

11-D (4)**Automatic monochrome (Copy/Scan) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)**

Use for setting the condition of read operation (Exposure) for document density in monochrome auto copy mode.

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

This setting is required in the following cases.

- * When a proper density copy is not obtained in the monochrome automatic copy mode.
- * When a document with images near its lead edge is copied.
- * When a document with colored background is copied.

- 1) Enter the SIM 46-19 mode.
- 2) Set REALTIME, STOP or PRE-SCAN 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.

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

NOTE:

MODE1: Normal gamma

MODE2: High gamma (Improves the image contrast)

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.)

PRESCAN:

Once the densities on the document surface are scanned, the output image density is determined according to the average of the scanned densities. (The output image density is even for all the surface.)

AE WIDTH FULL:

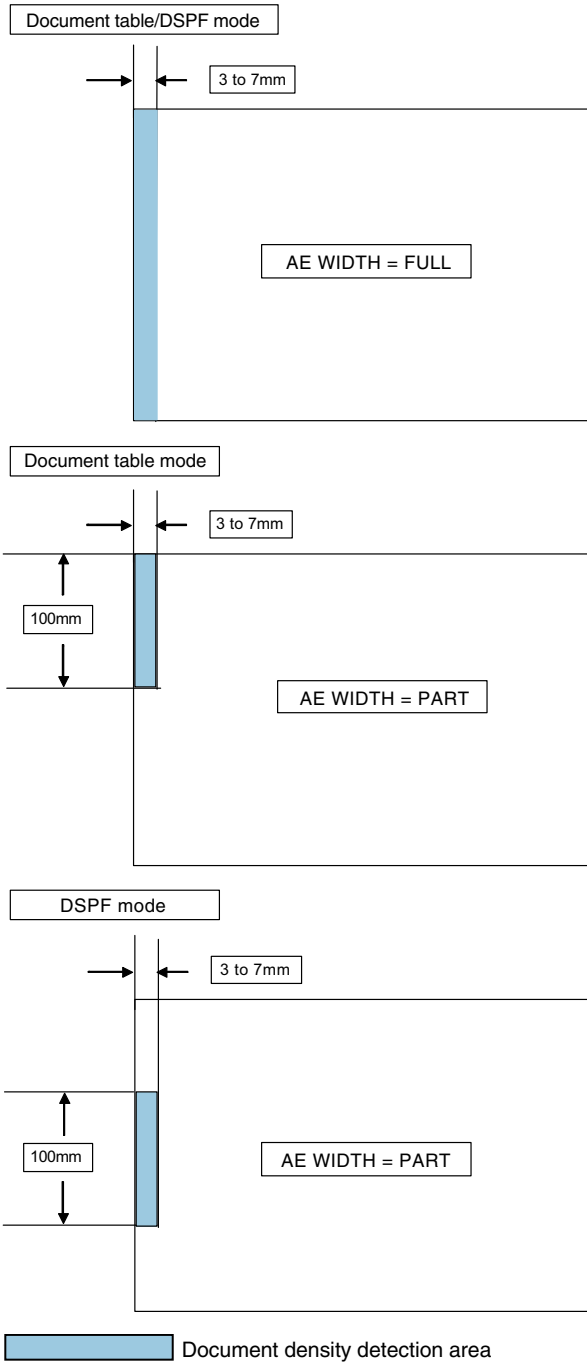
Document density reading area in monochrome auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

AE WIDTH PART:

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

Operation in monochrome 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.



11-D (5)

Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan) mode (No need to adjust normally) (Background density adjustment in the scanning section)

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

This adjustment is required in the following cases.

- * 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.
 - * When there is request from the user.
- 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.

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
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

11-D (6)

Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)

This adjustment is used to adjust the image density in the low density area in the copy/scanner mode.

This adjustment is required in the following cases.

- * 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.
 - * When there is request from the user.
- 1) Enter the SIM 46-63 mode.
 - 2) Select the copy mode to be adjusted with the scroll key.

Display/Item	Content	Set value	Default
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

- 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.

11-D (7)
Monochrome (Copy/Scan) mode color document reproduction adjustment (No need to adjust normally)

Use to adjust the reproducibility for the red image and the yellow image when printing color document that included the red/yellow image in monochrome copy mode.

This adjustment is required in the following cases.

* When there is desire to change reproducibility of yellow/red image in case of making a color copy of the color document in monochrome copy mode.

* When there is request from the user.

- 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 63
B	G-Ratio	Gray making setting (G)	0 - 1000 847
C	R-Ratio RIP	Print gray making setting (R)	0 - 1000 299
D	G-Ratio RIP	Print gray making setting (G)	0 - 1000 587

B-Ratio	Gray making setting (B) (1000-R-Ratio - G-Ratio)
B-Ratio RIP	Print gray making setting (B) (1000-R-Ratio RIP - G-Ratio RIP)

- 3) Enter the adjustment value with 10-key.
When the adjustment value of adjustment item A is increased, copy density of red image is decreased. When the adjustment value is decreased, copy density of red image is increased.
When the adjustment value of adjustment item B is increased, copy density of yellow image is decreased. When the adjustment value is decreased, copy density of yellow image is increased.
- 4) Press [OK] key.
- 5) Make a copy in monochrome text/printed photo copy mode (manual), check the copy.
If a satisfactory result is not obtained, return to the SIM 46-37 mode and change the adjustment value.
Repeat the above procedures until a satisfactory result is obtained.

11-D (8)
Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)

Use for sharpness adjustment of the high density image in monochrome copy/color scan mode.

This adjustment changes smoothness (asperity) in the image shade part.

This adjustment is required in the following cases.

* When changing the sharpness of copy image in copy mode. (obtain crispy image) (decreases moire)

* When there is desire to improving smoothness in the image shade part (for decrease of asperity)

* To make the black background and the dark area darker.

* To reproduce the gradation change in the dark area.

* When there is request from the user.

- 1) Enter the SIM 46-60 mode.
- 2) Select the mode to be adjusted with the scroll key.

Item/Display	Content	Setting range	Default value				
A	CPY PUSH AUTO FILTER LEVEL	SOFT	Sharpness: The sharpness is specified when the document mode is judged as A5 or A6 by the auto mode of PUSH.	SOFT	1 - 3	1	2 (CENTER)
		CENTER		CENTER		2	
		HIGH		HIGH		3	
B	B/W COPY	OFF	Filter mixture, Register select pattern, Monochrome copy	OFF	0 - 1	0	1(ON)
		ON		ON		1	
C	COLOR PUSH: RGB	OFF	Filter mixture, Register select pattern, Color push	OFF	0 - 1	0	1(ON)
		ON		ON		1	
D	B/W PUSH	OFF	Filter mixture, Register select pattern, Monochrome push	OFF	0 - 1	0	1(ON)
		ON		ON		1	
E	B/W PRINT	OFF	Filter mixture, Register select pattern, Monochrome print	OFF	0 - 1	0	0(OFF)
		ON		ON		1	

- 3) Input numeric value corresponding to sharpness level (filter process mode).
- Adjustment item A:
When selecting AUTO, filter is selected according to dot pattern state automatically and adjusts sharpness.
Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.
 - Adjustment item B:
Select HIGH to obtain clear images. Select SOFT to reduce moire.
 - Adjustment item C - J:
When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)
- 4) Press [OK] key.
- 5) Make a copy and check the copy image.
If a satisfactory result is not obtained, return to the SIM 46-60 mode and change the adjustment value.
Repeat the above procedures until a satisfactory result is obtained.

11-D (9)**Copy high density image density reproduction setting (Normally unnecessary to the setting change)**

If a tone gap occurs on part of high density in copy mode, or if there is necessity to increase the density of the part of high density, change the setting.

This setting is normally not required. When, however, there are case of following, change the setting.

- * When a tone gap occurs on part of high density.
- * When there is a necessity to increase the density of the part of high density.
- * When there is request from the user.

a. Adjustment procedure

- 1) Enter the SIM 46-23 mode.
- 2) Select the item A, B with the scroll key.

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 BLACK max. density correction	0 - 999	500

* If a tone gap occurs on part of high density, set 0 to item A and B
The density of high density part decreases. However, the tone gap is better.

* In case of more increase of the density on high density part, set 1 to item A and B.
The tone gap may occur in high density part.

NOTE: Do not change the setting values of item C, D, E and F. If these values are changed, density of the high density part is changed.

If these values are changed, be sure to execute the copy gray balance density adjustment. (Auto adjustment)

11-D (10)**DSPF mode (Copy/Scan) density adjustment (No need to adjust normally)**

This setting is normally not required, however, in the following cases, make changes to the setting:

- * When copy in DSPF mode differs from copy in document table mode.
- * When copy density in DSPF mode is low or too high.
- * When the DSPF unit is replaced.
- * When the DSPF unit is disassembled.
- * The CCD unit has been replaced.
- * U2 trouble has occurred.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

- 1) Enter the SIM 46-9 mode.
- 2) Select the mode to be adjusted with the scroll key.

When adjusting density on low density part, select "A (COPY SIDEA:LOW)". When adjusting density on high density part, select "D (COPY SIDEA:HIGH)".

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		COPY SIDEA: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	52
D		SCAN SIDEA: HIGH	DSPF scanner mode exposure adjustment (High density side)	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		COPY SIDEB: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	50
D		SCAN SIDEB: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	50
E		BALANCE SIDEB: R	DSPF gray balance R	1 - 99	50
F		BALANCE SIDEB: G	DSPF gray balance G	1 - 99	50
G		BALANCE SIDEB: B	DSPF gray balance B	1 - 99	50

- 3) Enter the adjustment value with 10-key.

In case of increase of image density, input large numeric value. Or in case of diluting the image density, input small numeric value.

- 4) Press [OK] key.

- 5) Make a copy in the DSPF mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-9 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

11-D (11)**Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)****a. General**

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the copy gray balance and density).

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 gray balance and density and the user's operational ability are judged adequate 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 set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of copy gray balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto gray balance adjustment))

NOTE: This adjustment is based on the service target gray balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.

2) Enter the copy setting mode.

3) Press the auto gray calibration key.

4) Press [EXECUTE] key.

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

5) Set the gray patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image so that the thin line is on the left side as shown in the figure.

At that time, place 5 sheets of white paper on the above gray patch image (adjustment pattern).

6) Press [EXECUTE] key, and the copy gray balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

The message, "Will you go on to the printer gray balance adjustment?" is displayed.

To execute the printer gray balance adjustment successively, perform the procedures same as the above.

11-D (12)**Copy gamma, gray balance adjustment for each dither (Automatic adjustment)****a. General**

This simulation is used to improve the image quality in a certain mode. (Refer to the list in procedure 6.)

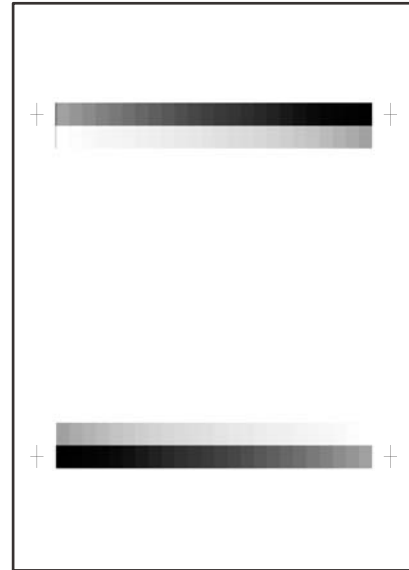
b. Adjustment procedures

1) Enter the SIM46-54 mode.

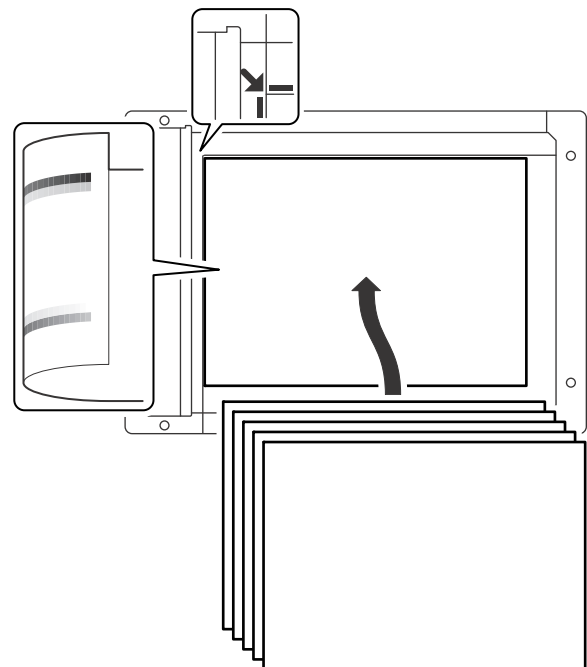
2) Press [EXECUTE] key.

A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.

The gray patch image (adjustment pattern) is printed.



3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).

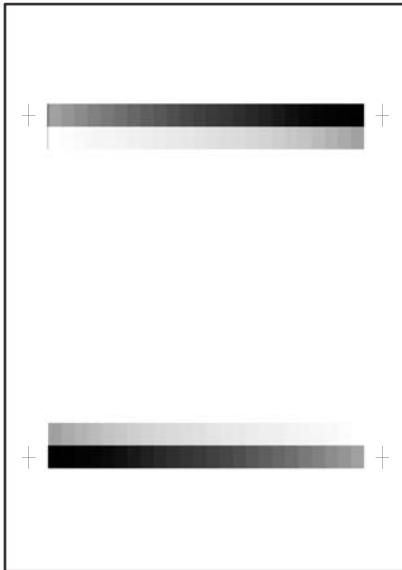


- 4) Press [EXECUTE] key.
The gray balance and the density are automatically adjusted.
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

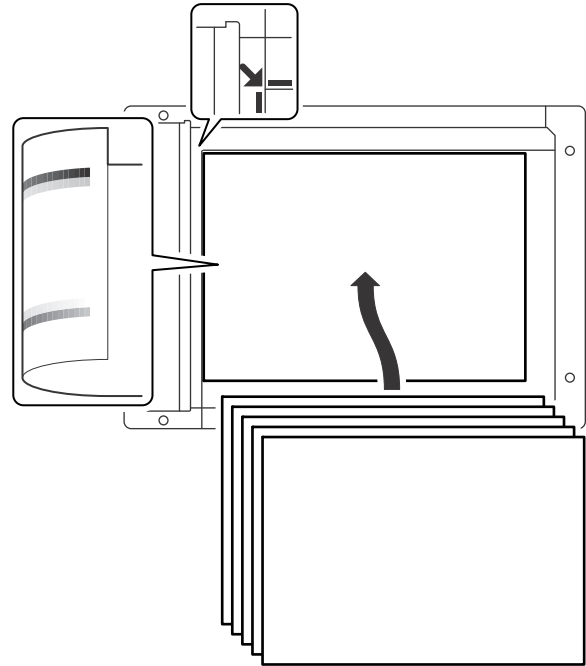
Select item (Mode/Image)	Content
Heavy Paper *1	Adjustment item to improve the gray balance in the heavy paper mode
B/W Ed	Adjustment item to improve the gray balance in the text mode, Text/Photograph mode, Light density document mode and the map mode.
B/W 1200	Adjustment item to improve the density and gradation in the monochrome printed photo mode and the photography mode.
WOVEN1	Adjustment item when adjusting the watermark density in the watermark mode 1
WOVEN2	Adjustment item when adjusting the watermark density in the watermark mode 2
WOVEN3	Adjustment item when adjusting the watermark density in the watermark mode 3
WOVEN4	Adjustment item when adjusting the watermark density in the watermark mode 4

*1: When performing adjustments in the heavy paper mode, load paper in the tray 3, 4.

- 7) Press [EXECUTE] key.
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
The patch image (adjustment pattern) is printed out.



- 8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



- 9) Press [EXECUTE] key.
The gray balance and the density are automatically adjusted, and the machine goes to the state of procedure 6).
To complete the adjustment and enable the adjustment result, press [OK] key.
- 10) Make a copy, and check the copy image quality.
(Refer to the item of the printer gray balance and density check.)

NOTE: Use SIM46-52 to reset the adjustment values to the default values.

11-D (13)**Dropout color adjustment
(Normally not required)****a. General**

This adjustment is used to adjust the range of reproduction of color document images as monochrome images in the image send mode (monochrome manual text mode).

In other words, it is used to adjust the level of chroma of color images which are reproduced as monochrome images.

This adjustment must be performed in the following cases:

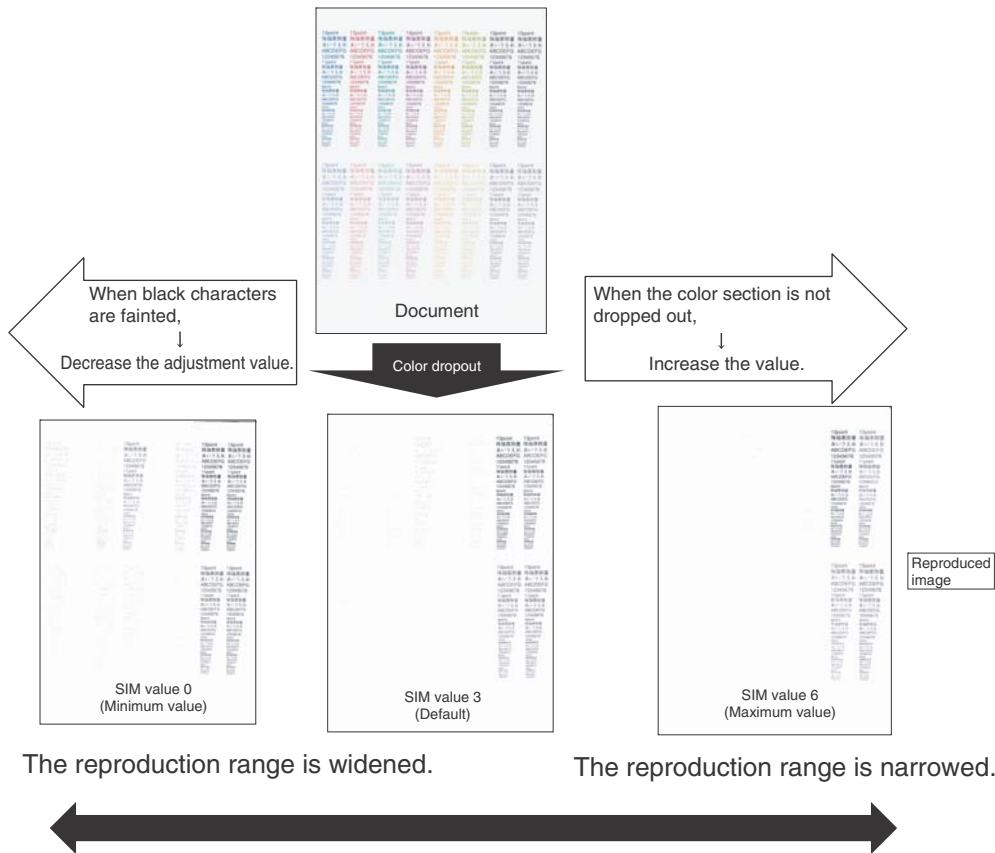
* When there is request from the user.

b. Adjustment procedures

- 1) Enter the SIM 46-55 mode.
- 2) Enter the adjustment value with 10-key and press [OK] key.
When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

Item/Display	Content	Setting range	Default value
A CHROMA	Dropout color range adjustment	0 - 6	3

- 3) Scan the document in the image send mode (monochrome manual text mode) and check the adjustment result.

**Effect and adverse effect when decreasing the value****[Effect]**

When black characters are faded by color shift, etc, the black area is outputted clearly.

[Adverse effect]

Dropout of color sections becomes difficult.

Effect and adverse effect when increasing the value**[Effect]**

Colors (of low chroma) which are difficult to be dropped out can be dropped out.

[Adverse effect]

Black characters are faded or cracked.

11-D (14)**Watermark adjustment
(Normally not required)****a. General**

This adjustment is used to adjust the reproduction capability of the watermark in the copy/printer mode.

This adjustment is used for watermark documents (primary output). The result of this adjustment affects the result of watermark print (secondary output).

In the printer mode, the watermark density can be adjusted by the printer driver. That adjustment is based on the result of this adjustment.

This adjustment must be performed in the following cases:

- * When there is request from the user. (When a satisfactory result is not obtained from the adjustment in the system setting mode.)
- * When there is request from the user. (When a satisfactory result is not obtained from the adjustment with the printer driver.)

b. Adjustment procedures

- 1) Enter the SIM 46-66 mode.
- 2) Select the PATTERN mode, then select an adjustment item in the following list according to the situation.

NOTE: Normally there is no need to adjust the PATTERN mode (items E and F), the COPY MODE, and the POSITION mode.

Category	Item	Display	Content	Setting range	Default value	
PATTERN	A	WOVEN DEN BK LOW	Watermark density level (Black LOW)	0 - 255	15	
	B	WOVEN DEN BK MIDDLE	Watermark density level (Black MIDDLE)	0 - 255	19	
	C	WOVEN DEN BK HIGH	Watermark density level (Black HIGH)	0 - 255	23	
	D	CONTRAST	Contrast adjustment	0 - 255	2	
	E	HT TYPE (POSI)	For halftone index watermark type positive	42 - 43	42	
	F	HT TYPE (NEGA)	For halftone index watermark type negative	42 - 43	42	
COPY MODE	A	TEXT/PRINTED PHOTO	Text/Printed Photo mode select Enable/Disable	OFF	0 - 1	1
				ON		
	B	TEXT	Text mode select Enable/Disable	OFF	0 - 1	1
				ON		
	C	PRINTED PHOTO	Printed Photo mode select Enable/Disable	OFF	0 - 1	1
				ON		
	D	PHOTOGRAPH	Photograph mode select Enable/Disable	OFF	0 - 1	1
				ON		
	E	TEXT/PHOTO	Text/Photograph mode select Enable/Disable	OFF	0 - 1	1
				ON		
F	MAP	Map mode select Enable/Disable	OFF	0 - 1	1	
			ON			
G	LIGHT	Light density document mode select Enable/Disable	OFF	0 - 1	1	
			ON			
H	AUTO	Automatic mode select Enable/Disable	OFF	0 - 1	1	
			ON			
I	DEFAULT MODE	Default exposure mode Used to specify the exposure mode set when the watermark is ON.	TEXT/PRINTED PHOTO	0 - 5	0	
			TEXT			
			PRINTED PHOTO			
			PHOTOGRAPH			
			TEXT/PHOTO			
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P) (*1)	0 - 200	20	
	B	LINE SPACE 2	Line space in the watermark print box (37P - 48P) (*1)	0 - 200	20	
	C	LINE SPACE 3	Line space in the watermark print box (49P - 64P) (*1)	0 - 200	20	
	D	LINE SPACE 4	Line space in the watermark print box (65P - 80P) (*1)	0 - 200	20	
	E	BLANK H/B 1	Upper margin/Lower margin in the watermark print box (24P - 36P) (*2)	0 - 200	10	
	F	BLANK H/B 2	Upper margin/Lower margin in the watermark print box (37P - 48P) (*2)	0 - 200	10	
	G	BLANK H/B 3	Upper margin/Lower margin in the watermark print box (49P - 64P) (*2)	0 - 200	10	
	H	BLANK H/B 4	Upper margin/Lower margin in the watermark print box (65P - 80P) (*2)	0 - 200	10	
	I	BLANK L/R 1	Left margin/Right margin in the watermark print box (24P - 36P) (*3)	0 - 200	60	
	J	BLANK L/R 2	Left margin/Right margin in the watermark print box (37P - 48P) (*3)	0 - 200	90	
	K	BLANK L/R 3	Left margin/Right margin in the watermark print box (49P - 64P) (*3)	0 - 200	120	
	L	BLANK L/R 4	Left margin/Right margin in the watermark print box (65P - 80P) (*3)	0 - 200	150	

*1: When the adjustment value is varied by ± 1 , the line space is varied by 0.1mm.

*2: When the adjustment value is varied by ± 1 , the upper and the lower margins are varied by 0.1mm.

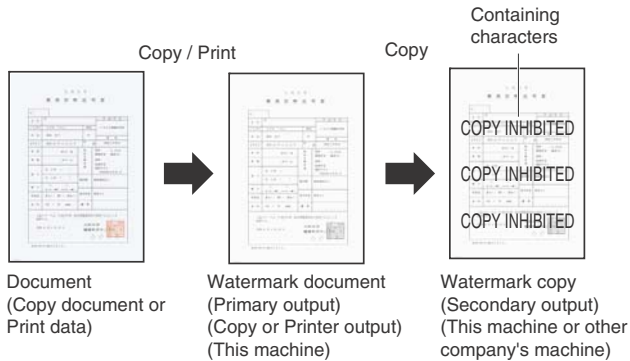
*3: When the adjustment value is varied by ± 1 , the left and the right margins are varied by 0.1mm.

Changing adjustment values of adjustment items A - C and trade off

Kinds of watermarks (Mode selected in the watermark copy mode)	Density value	Adjustment values of adjustment items A - C	Effect
Characters appearing.	Decrease.	The adjustment value is decreased.	The watermark images become easy to disappear. The containing characters become lighter.
	Increase.	The adjustment value is increased.	The containing characters become darker. The watermark images become difficult to disappear.
Background appearing.	Decrease.	The adjustment value is decreased.	The containing characters become easy to disappear. The watermark images become easy to disappear.
	Increase.	The adjustment value is increased.	The watermark images become darker. The containing characters become difficult to disappear.

- 3) Enter the adjustment value with 10-key and press [OK] key.
- 4) Make a copy, and check the adjustment result.

Descriptions on the watermark



Containing characters	Characters embedded in a watermark, such as "COPY INHIBITED," are called containing characters.
Kinds of watermarks	There are two kinds: "Character appearing" and "Background appearing." When a watermark of "Character appearing" is copied, the background disappears and the containing characters appear. When a watermark of "Background appearing" is copied, the watermark of the character area disappears and the containing characters become outline characters.
Principle of watermarks	A watermark is composed of two dots: fine dots and rough dots. Since fine dots disappear when copied, they are called disappearing patterns. Since rough dots remain when copied, they are called remaining patterns. In a watermark of "Character appearing," the background is a disappearing pattern and the containing characters are remaining patterns. In a watermark of "Background appearing," the background is a remaining pattern and the containing characters are disappearing patterns.

NOTE: Note for watermarks	<p>Watermarks have the following characteristics:</p> <ul style="list-style-type: none"> A watermark is presumed to be synthesized with text documents. If it is used with photos or images, the containing characters may be seen in the watermark document (primary output) or the containing characters may not appear properly in the watermark copy (secondary output). When a watermark is synthesized with newspapers or other dark-background documents, the containing characters may not appear in the watermark copy (secondary output). Containing characters may not appear in the watermark copy (secondary output) depending on the kind of the copier which makes the watermark copy (secondary output) and the copy mode. Containing characters may not appear clearly in the watermark copy (secondary output) depending on the copy mode in which the watermark document (primary output) is made. When the print engine status changes, the containing characters may not be concealed properly in the watermark document (primary output). In this case, follow the procedures below to conceal the containing characters. <ul style="list-style-type: none"> * Use SIM46-24 to execute the gray balance adjustment. * Use SIM46-54 to execute the gray balance adjustment for each dither. * Adjust the watermark print contrast in the system setting. The preview screen of the watermark only indicates the setting of the watermark color, and does not indicate an actual copy image. When the document control (printer mode) is used together, it is advisable to use "Characters appearing" setting. If "Background appearing" setting is used together, the detection accuracy of document control may be reduced. In the printer mode watermark, setting of 1200dpi and a watermark cannot be used together.
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Watermark adjustment in the system setting

System setting → Security setting → Watermark print → Contrast tab

Watermark kind mode selection	Density	Adjustment
Character appearing	To increase the text density	Decrease the contrast value. (Default: 5)
	To decrease the text density	Increase the contrast value. (Default value: 5)
Background appearing	To increase the text density	Increase the contrast value. (Default value: 5)
	To decrease the text density	Decrease the contrast value. (Default: 5)

NOTE:

Note for adjusting the watermark with SIM46-54

When the gray balance automatic adjustment is executed with SIM46-74 or SIM46-24 but the containing characters are reproduced, use SIM46-54 to execute the gray balance automatic adjustment for each dither.

However, note the following items.

- When either of item E or F of the PATTERN mode is 42, the adjustment must be executed for the both modes of WOVEN1 and WOVEN2 of SIM46-54.
- When either of item E or F of the PATTERN mode is 43, the adjustment must be executed for the both modes of WOVEN3 and WOVEN4 of SIM46-54.
- WOVEN1 and WOVEN2 must be adjusted in a pair as well as WOVEN3 and WOVEN4.
If it is ignored, the containing characters remain reproduced.

**11-E Printer image quality adjustment
(Basic adjustment)****Requisite condition before execution of the printer gray balance/density adjustment**

Before execution of the printer gray balance/density adjustment, the copy gray balance/density adjustment must have been completed properly.

This adjustment is required in the following cases.

- * Basically same as when the copy gray balance/density adjustment is required.
- * After the copy gray balance/density adjustment.

**11-E (1)
Printer gray balance adjustment
(Automatic adjustment)****a. General**

The gray balance adjustment (auto adjustment) is used to adjust the print density of automatically with SIM 67-24 or the user program.

When this adjustment is executed, the gray balance adjustments of all the print modes are revised.

There are following two modes in the auto gray balance adjustment.

- 1) Auto gray balance adjustment by the serviceman (SIM 67-24 is used.)
- 2) Auto gray balance adjustment by the user (The user program mode is used.) (The gray balance target is the service target.)

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

If the print gray balance is lost for some reasons, the user can use this gray balance adjustment to recover the balance.

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

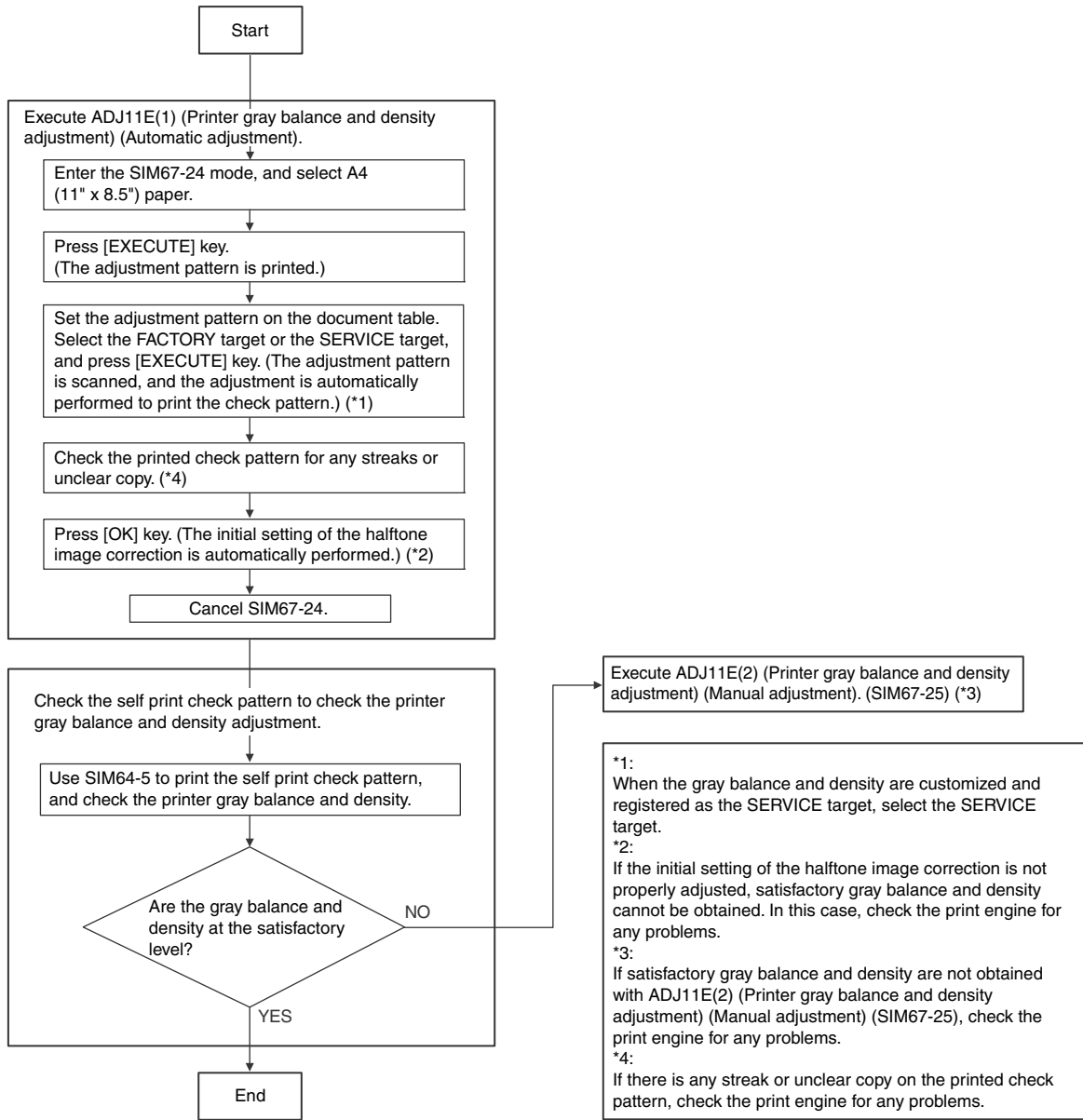
On the other hand, the auto gray balance adjustment by the serviceman functions to recover the normal gray balance though the machine condition is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal gray balance.

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

b. Adjustment procedure

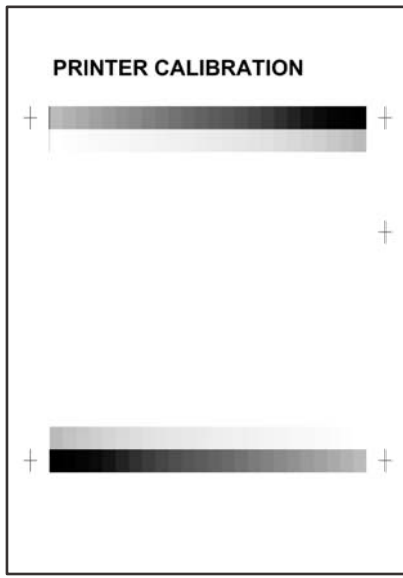
(Auto gray balance adjustment by the serviceman)

Printer gray balance and density adjustment (Automatic adjustment) procedure flowchart (SIM67-24)



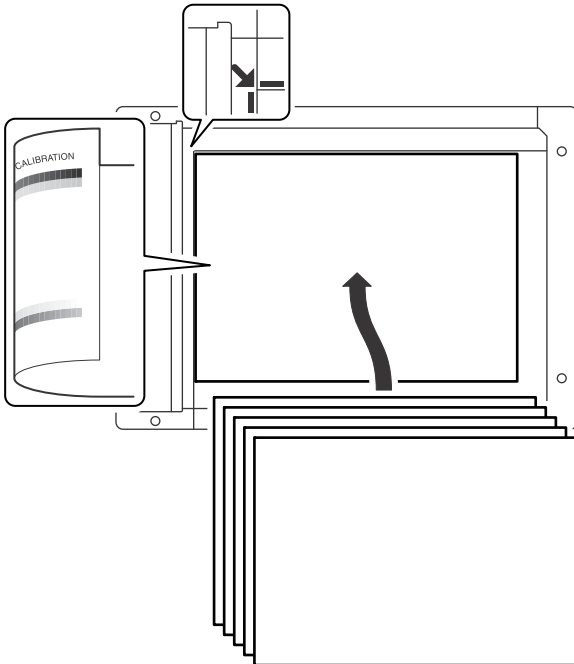
- 1) Enter the SIM 67-24 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

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



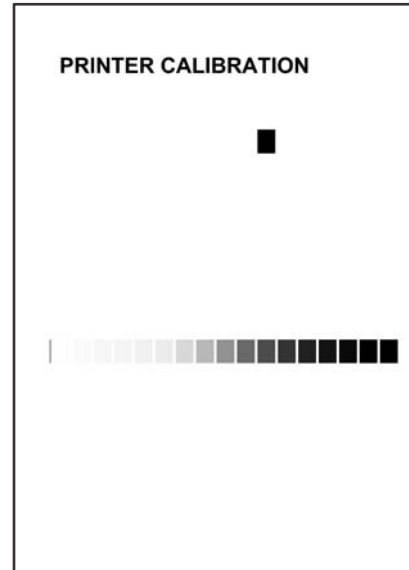
- 3) Set the gray patch image (adjustment pattern) paper printed in procedure 2) on the document table.

Place the printed gray patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed gray patch image (adjustment pattern) paper.



- 4) Select [FACTORY] key, and press [EXECUTE] key.
When the gray balance is customized with the manual gray balance adjustment (SIM 67-25) according to the user's request and the gray balance is registered as the service target with SIM 67-27, if the gray balance is adjusted to that gray balance, select the service target.

The copy gray balance adjustment is automatically executed and prints the gray balance check patch image. Wait until the operation panel shown in the procedure 5) is displayed.



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

NOTE:

After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed. This operation takes several minutes.

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

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

After completion of the operation, the simulation is canceled.

- 6) Check the gray balance and density.
(Refer to the item of the printer gray balance and density check.)

If a satisfactory result on the gray balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 11E (2)).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11E (2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

11-E (2)**Printer gray balance adjustment
(Manual adjustment)****a. General**

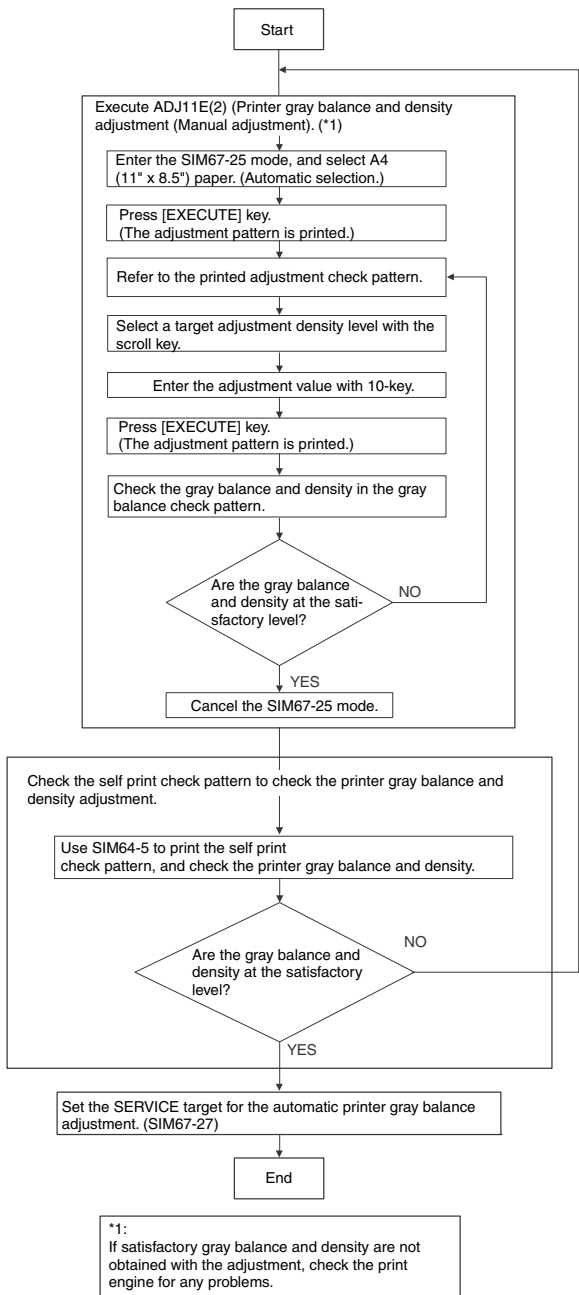
The gray balance adjustment (Manual adjustment) is used to adjust the printer density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the gray balance.

In this manual adjustment, adjust only the gray patch which could not adjusted properly in the automatic adjustment.

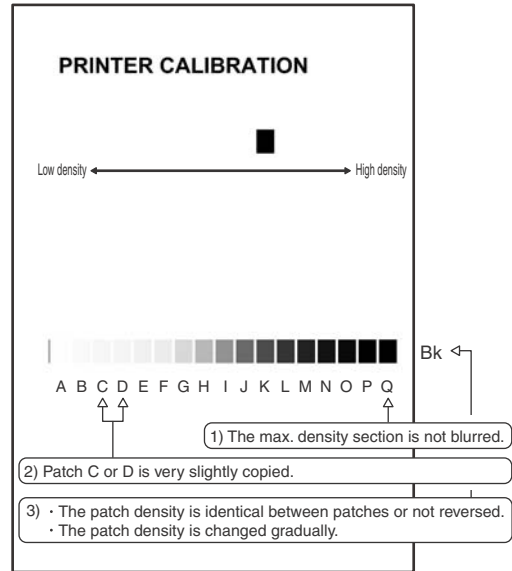
If the gray balance is improper, execute the automatic gray balance adjustment in advance, and execute this adjustment for better efficiency.

b. Adjustment procedure

Printer gray balance and density adjustment (Manual adjustment) procedure flowchart (SIM67-25)



- 1) Enter the SIM 67-25 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
The gray balance adjustment pattern is printed.
- 3) Check that the following specification is satisfied or the gray balance is 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 B may not be copied.

Patch A must not be copied.

When, however, the gray balance is adjusted according to a request from the user, there is no need to set to the standard gray balance stated above.

- 4) Enter the adjustment value with 10-key and press [OK] key.
The adjustment value is set in the range of (1 - 999). When SIM 67-24 is used to adjust the automatic gray balance and density, 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) - 4) 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.

- 5) Check the gray balance and density.
(Refer to the item of the printer gray balance and density check.)

NOTE:

If the gray balance is customized, use SIM 67-27 to register the gray balance as the service target.

If the gray balance is not customized, this procedure is not required.

If the customized gray balance is registered as the service target, the automatic gray balance adjustment can be made in the next gray balance adjustment.

11-F Printer image quality adjustment (Individual adjustment)

a. General

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 11E (1) and ADJ 11E (2) or there is a request from the user. Normally there is no need to execute this adjustment.

This must be well understood for execution of the adjustment.

11-F (1) Printer density adjustment (Low density section density adjustment) (No need to adjust normally)

This adjustment is used to adjust the image density in the low density area in the printer mode.

Adjust to reproduction setting of the low density image.

This adjustment is required in the following cases.

- * When it is required not to reproduce images in the low density section, or to reproduce low-density images.
- * When there is request from the user.

- 1) Enter the SIM 67-36 mode.
- 2) Enter the adjustment value and press the [OK] key.
In case of increase of the image density on low density part, increase the adjustment value. For diluting the image density on low density part, decrease the adjustment value.

11-F (2) Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)

When a tone gap is generated in the high density section in the printer mode, the setting is changed to lower the density in the high density section.

This setting is normally not required, however, in the following cases, a change of setting must be made.

- * When a tone gap occurs on part of high density.
- * To lower the density in the high density section.

a. Adjustment procedure

- 1) Enter the SIM 67-34 mode.
- 2) Select the item A, B with the scroll key.

Display/Item	Content	Setting range	Default		
A	K (0:ENABLE 1:DISABLE)	0	K engine maximum density correction mode Enable	0 - 1	1
	1	K engine maximum density correction mode Disable			
B	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction	0 - 999	500	

* If a tone gap occurs on part of high density, set 0 to item A and B
The density of high density part decreases. However, the tone gap is better.

* In case of more increase of the density on high density part, set 1 to item A and B.
The tone gap may occur in high density part.

NOTE: If the setting values of item C, D, E and F are changed, density of the high density part is changed.

When these values are changed, be sure to perform the printer gray balance and density adjustment. (Automatic adjustment)

11-F (3) Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)

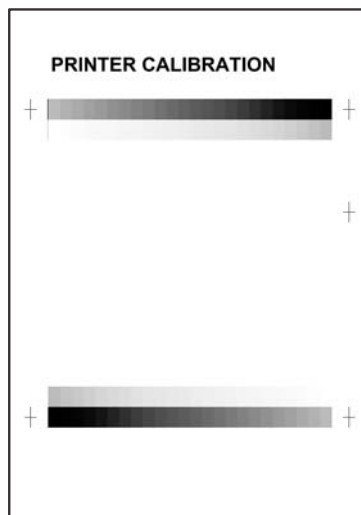
a. General

This adjustment is used to adjust the gray balance and the density in the monochrome mode, the heavy paper mode, and the gloss paper mode.

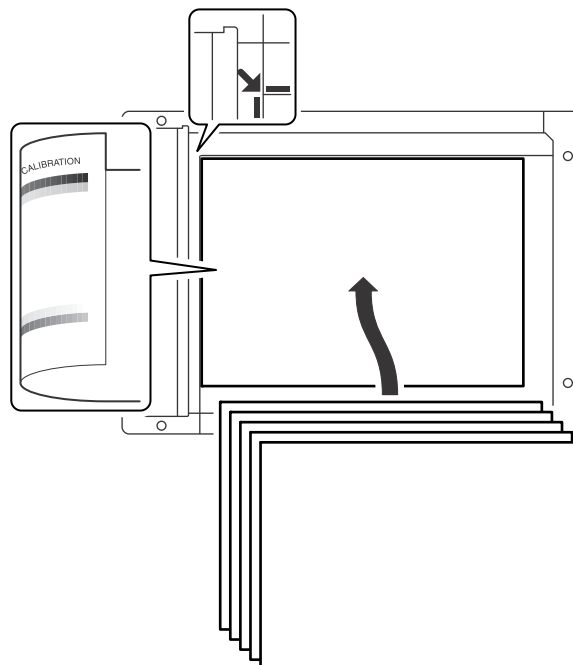
This simulation is used to improve image quality in these modes and images.

b. Adjustment procedures

- 1) Enter the SIM67-54 mode.
- 2) Press [EXECUTE] key.
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
The patch image (adjustment pattern) is printed out.



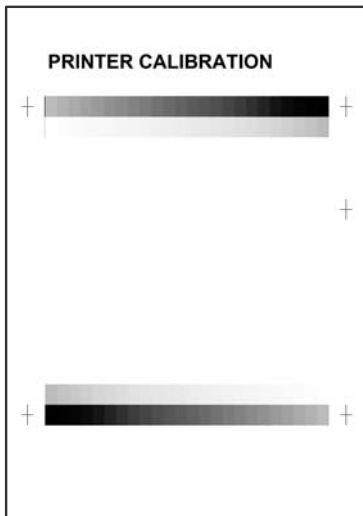
- 3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



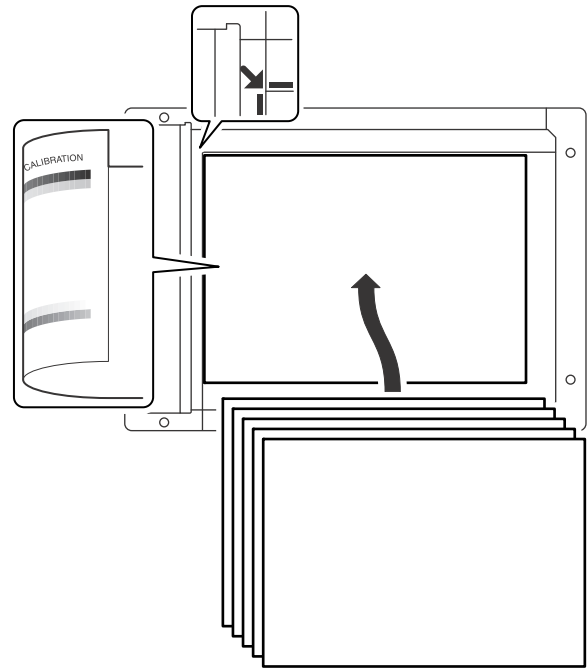
- 4) Press [EXECUTE] key.
The gray balance adjustment is automatically performed.
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

HEAVY PAPER	Adjustment for heavy paper and that for gloss paper
4BIT_HIGH	For adjustments for each screen of 600/4bit HIGH screen
4BIT_SHIGH	For adjustments for each screen of 600/4bit SHIGH screen
1200DPI_LOW	For adjustments for each screen of 1200/1bit LOW screen
1200DPI_HIGH	For adjustments for each screen of 1200/1bit HIGH screen
1200DPI_SHIGH	For adjustments for each screen of 1200/1bit SHIGH screen

- 7) Press [EXECUTE] key.
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
The patch image (adjustment pattern) is printed out.



- 8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



- 9) Press [EXECUTE] key.
The gray balance adjustment is automatically performed, and the machine goes to the state of procedure 6).
- 10) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.
To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.
After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
- 11) Make a print, and check the print image quality.
(Refer to the item of the printer gray balance and density check.)

NOTE: Use SIM67-52 to reset the adjustment values to the default values.

11-F (4) Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change)

a. General

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the printer gray balance and density).

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 printer gray balance and density and the user's operational ability are judged enough to execute the adjustment.

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

b. Setting procedure

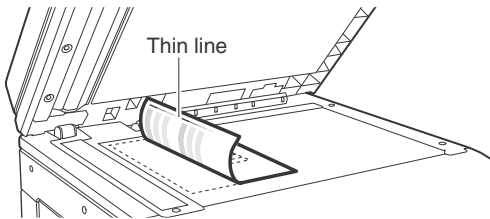
- 1) Enter the SIM 26-53 mode.
- 2) Select ENABLE or DISABLE with 10-key.
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
- 3) Press [OK] key.

When set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of printer gray balance and density) is not displayed in the user program mode.

(Auto gray calibration by the user (Auto gray balance adjustment))

NOTE: This adjustment is based on the service target gray balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

- 1) Enter the system setting mode.
- 2) Enter the printer setting mode.
- 3) Press the auto gray calibration key.
- 4) Press [EXECUTE] key.
The patch image (adjustment pattern) is printed out.
- 5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table.
Set the patch image so that the thin line is on the left side as shown in the figure.
At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



- 6) Press [EXECUTE] key, and the printer gray balance adjustment is executed automatically.
The message, "Will you go on to the copy gray balance adjustment?" is displayed.
To execute the copy gray balance adjustment successively, perform the procedures same as the above.

ADJ 12 Image send, image quality adjustment

12-A Color image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- * When the user requests to perform the adjustment.
 - * When there is a defective copy in a scan image.
 - * When the scan image density is too light.
- 1) Enter the Sim. 46-4 mode.
 - 2) Select a mode to be adjusted with the scroll button.

Item/Mode	Display	Document mode	Setting range	Default value	
A	LOW	AUTO	Auto	1 - 99	50
B		TEXT	Text	1 - 99	50
C		TEXT/PRINTEDPHOTO	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
H		RIP	-	1 - 99	50
A	HIGH	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
H		RIP	-	1 - 99	50

- 3) Enter the adjustment value with 10-key, and press [OK] button.
When the adjustment value is increased, the image density is increased. When the adjustment value is decreased, the image density is decreased.
- 4) Scan the color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.
Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.
4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

12-B Monochrome image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- * When the user requests to perform the adjustment.
- * When there is a defective copy in a scan image.
- * When the scan image density is too light.

- 1) Enter the Sim. 46-5 mode.
- 2) Select a mode to be adjusted with the scroll button.

Item/Mode	Display	Document mode	Setting range	Default value	
A	LOW	AUTOTEXT	Auto/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
H		RIP	-	1 - 99	50

Item/Mode	Display	Document mode	Setting range	Default value	
A	HIGH	AUTOTEXT	Auto/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
H		RIP	-	1 - 99	50

- 3) Enter the adjustment value with 10-key, and press [OK] button.
When the adjustment value is increased, the image density is increased. When the adjustment value is decreased, the image density is decreased.
- 4) Scan a monochrome document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.
Check can be made also in the copy mode by the following procedure.
- 4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

12-C Image send mode, image gray balance adjustment

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- * When the user requests to perform the adjustment.
 - * When the scan image gray balance is defective.
- 1) Enter the Sim. 46-8 mode.
 - 2) Select a color to be adjusted with [R], [G], [B] buttons.
 - 3) Select a mode (low density section or high density section) to be adjusted with the scroll button.

Display/Item	Content	Setting range	Default
A	LOW DENSITY POINT	Low density section gray balance adjustment value	1 - 99 50
B	HIGH DENSITY POINT	High density section gray balance adjustment value	1 - 99 50

- 4) Enter the adjustment value with 10-key, and press [OK] key.
To increase the density of the target color, increase the adjustment value. To decrease the density of the target color, decrease the adjustment value.
- 5) Scan a color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.
Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.
- 5) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

ADJ 13 Setting of the auto exposure mode operating conditions in copy and scan

This adjustment is required in the following cases:

- * When the U2 trouble occurs.
- * When the MFP PWB is replaced.

- * When the EEPROM on the MFP PWB is replaced.
 - * When the SCANNER CONTROL PWB is replaced.
 - * When the EEPROM on the SCANNER CONTROL PWB is replaced.
- 1) Enter the Sim. 46-19 mode.
 - 2) Select the auto mode exposure operating condition of each mode with the mode button.

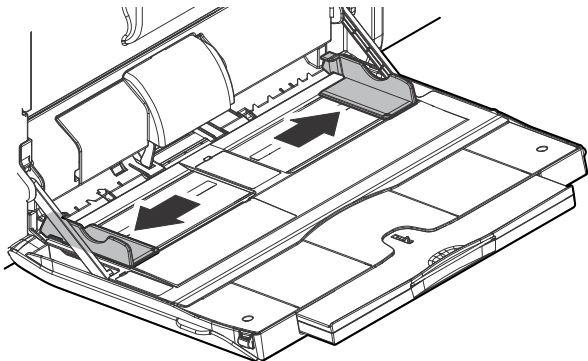
Item/Display	Content	Set value	Default	NOTE
AE_MODE	Auto exposure mode gamma select (for copy)	MODE1, MODE2	MODE1	MODE1: Normal gamma MODE2: High gamma
AE_STOP_COPY	Auto exposure mode document density detecting condition setting (for copy)	ON/OFF	ON	ON : The document lead edge section density is detected and exposure is adjusted. OFF : Real time exposure adjustment
AE_STOP_SCAN	Auto exposure mode document density detecting condition setting (for scanner)	ON/OFF	ON	ON : The document lead edge section density is detected and exposure is adjusted. OFF : Real time exposure adjustment
AE_FILTER	Auto exposure mode sharpness setting (for copy)	SOFT NORMAL SHARP	NORMAL	
AE_WIDTH	Auto exposure mode document density detecting width setting	FULL/PART	FULL	FULL : Document density detection in A4 (11 X 8.5) width PART : Document density detection in 10mm width on the rear frame side (Document table mode) / Document density detection in 10mm width on the center section (SPDF mode)

ADJ 14 Paper size detection adjustment

14-A Manual paper feed tray paper width sensor adjustment

This adjustment is required in the following cases:

- * When the manual paper feed tray section is disassembled.
 - * When the manual paper feed tray section is replaced.
 - * When the U2 trouble occurs.
 - * When the PCB PWB is replaced.
- 1) Enter the Sim. 40-2 mode.
 - 2) Open the manual paper feed guide to the maximum width, and press [EXECUTE] key.

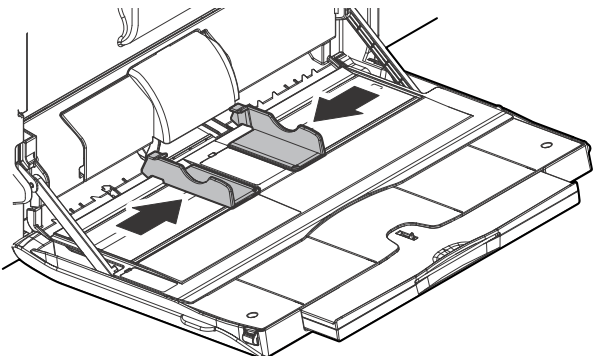


[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

Adjustment steps and display contents

Display/Item	Content
MAX POSITION	Maximum width detection level adjustment
P1 (A4) POSITION	A4 width detection level adjustment
P2 (A4R) POSITION	A4R width detection level adjustment
MIN POSITION	Minimum width detection level adjustment

- 3) Set the manual paper feed guide to the A4 width, and press [EXECUTE] key.
[EXECUTE] key is highlighted. When the A4 size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.
- 4) Set the manual paper feed guide to the A4R width, and press [EXECUTE] key.
[EXECUTE] key is highlighted. When the A4R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.
- 5) Set the manual paper feed guide to the minimum width, and press [EXECUTE] key.
[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

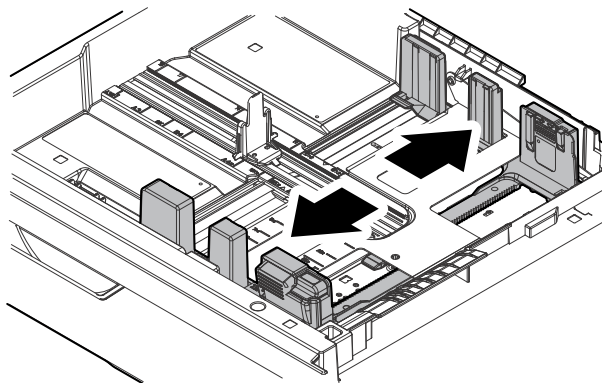


After completion of the adjustment, "COMPLETE" is displayed.

14-B Paper feed tray 4 paper width sensor adjustment

This adjustment is required in the following cases:

- * When the paper feed tray 4 section is disassembled.
 - * When the paper feed tray 4 section is replaced.
 - * When the U2 trouble occurs.
 - * When the PCU PWB is replaced.
- 1) Enter the Sim. 40-12 mode.
 - 2) Set the paper feed guide to the maximum width, and press [EXECUTE] key.

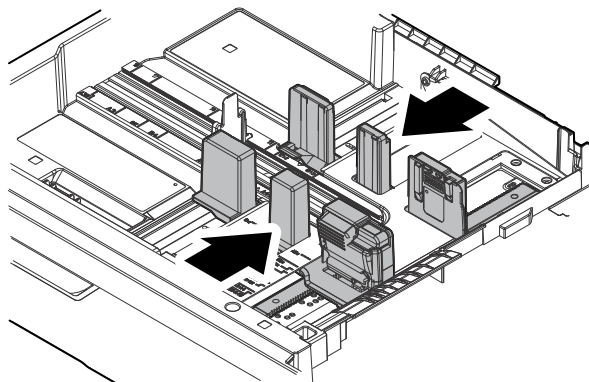


[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

Adjustment steps and display contents

Display/Item	Content
MAX POSITION	Maximum width detection level adjustment
MIN POSITION	Minimum width detection level adjustment

- 3) Set the paper feed guide to the minimum width, and press [EXECUTE] key.
[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.



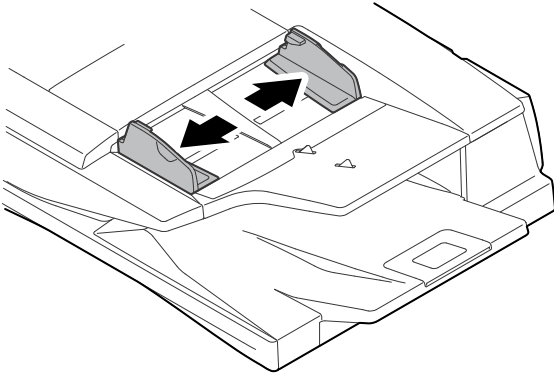
After completion of the adjustment, "COMPLETE" is displayed.

14-C DSPF paper feed tray document width sensor adjustment

This adjustment is required in the following cases:

- * When the DSPF paper feed tray section is disassembled.
- * When the DSPF paper feed tray section is replaced.
- * When the U2 trouble occurs.
- * When the scanner PWB is replaced.
- * When the EEPROM on the scanner PWB is replaced.

- 1) Enter the Sim. 53-6 mode.
- 2) Set the DSPF document guide to the maximum width, and press [EXECUTE] key.



[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

Adjustment steps and display contents

Display/Item	Content
TRAYVOLMAX	Maximum width detection level adjustment
TRAYVOLA4R	A4R width detection level adjustment
TRAYVOLA5R	A5R width detection level adjustment
TRAYVOLMIN	Minimum width detection level adjustment

- 3) Set the DSPF paper feed guide to the A4R width, and press [EXECUTE] key.

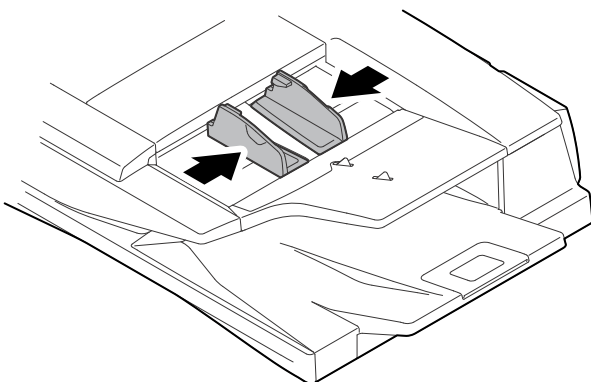
[EXECUTE] key is highlighted. When the A4R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 4) Set the DSPF paper feed guide to the A5R width, and press [EXECUTE] key.

[EXECUTE] key is highlighted. When the A5R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 5) Set the DSPF paper feed guide to the minimum width, and press [EXECUTE] key.

[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.



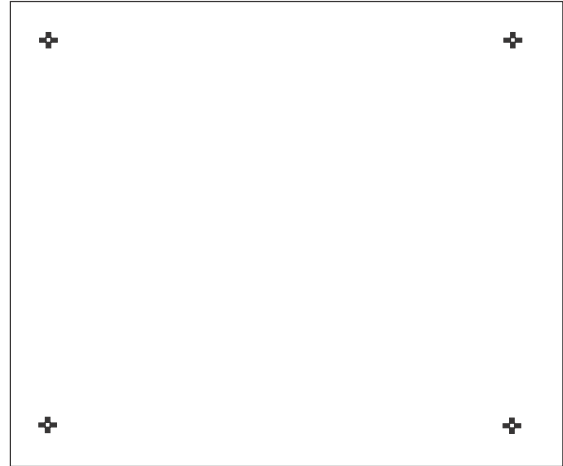
After completion of the adjustment, "COMPLETE" is displayed.

ADJ 15 Touch panel coordinate adjustment

This adjustment is required in the following cases:

- * When the operation panel is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

- 1) Enter the Sim. 65-1 mode.



- 2) Touch the four cross marks on the corners precisely. Do not use a finger.

When the cross marks are touched precisely, they are reversely displayed. When the touch panel adjustment is completed by touching all the four marks, the display returns to the sub code entry menu.

Note:

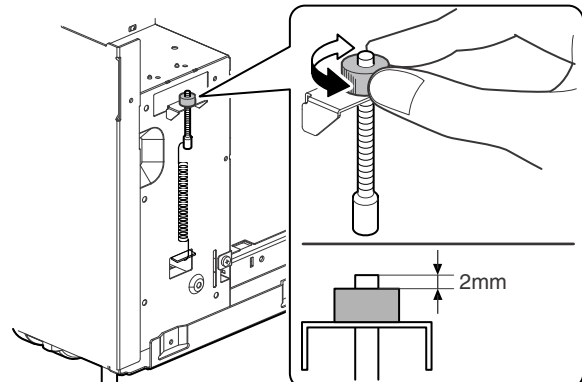
When touching the cross marks, never use a sharp tip (such as a needle and a pin).

ADJ 16 Waste toner detection level adjustment

This adjustment is required in the following cases:

- * The waste toner detection section has been disassembled.
- * One or more parts of the waste toner detection section have been replaced.

Turn the waste toner detection adjustment knob so that height from upper surface of the adjustment knob to head edge of the tension bar is 2.0 mm.

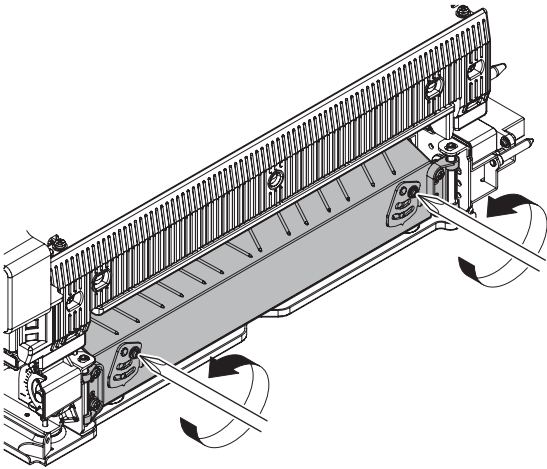


ADJ 17 Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position)

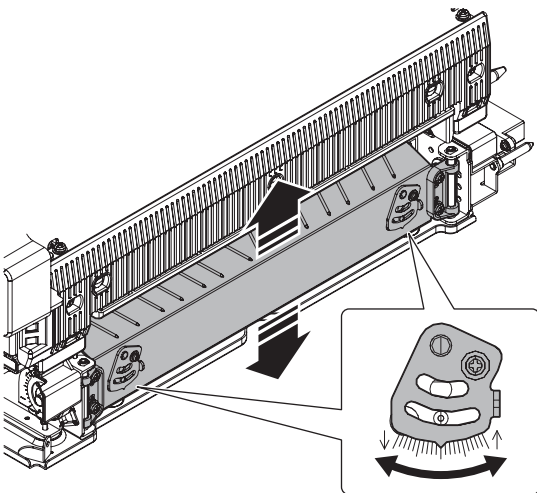
This adjustment is required in the following cases:

- * When a paper jam occurs in the fusing section.
- * When the lead edge of paper is folded in the fusing section.
- * When skew is generated in the fusing section.
- * When blur or improper focusing is generated on the lead edge section or the rear edge section of an image on paper.
- * When wrinkle is generated on paper.

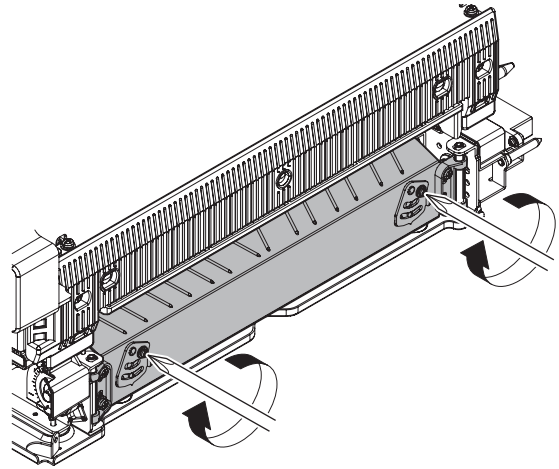
- 1) Remove the fusing unit.
- 2) Loosen the screw.



- 3) Rotate the PG adjust plate to move the fusing paper guide up and down.
 - * Check and mark the scale position before the adjustment (with a pencil, etc.), and slide to the left and the right evenly.



- 4) Tighten the screw, and fix the fusing paper guide.



- 5) Install the fusing unit to the main unit, and check the adjustment result in the copy mode.
 - * There is no jam.
 - * The paper lead edge is not folded.
 - * There is no skew.
 - * There is no blur of improper focusing on the lead edge and the rear edge of an image on paper.
 - * There is no wrinkle on paper.

ADJ 18 Decurler roller adjustment

This adjustment must be performed in the following cases:

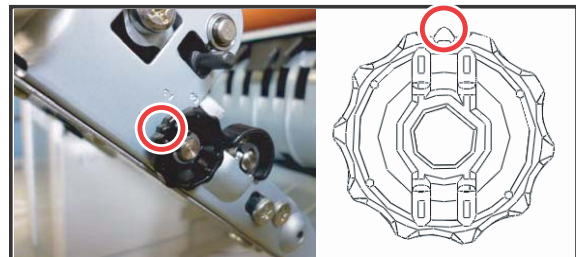
- * If there occurred a paper jam (POIND_N) with winding around the Drum when duplex copying.

The ADU section is provided with the decurler (curl correction) function. The curl correction amount can be adjusted by rotating the dial.

The adjustment can be made in 9 steps (Default value : 4). The normally value is 4. The greater the value is from 4, the greater the correction is.

NOTE: Perform a fine adjustment depending on the paper kind and the use environment.

The direction of being pointed by the dial which is surrounded with a O is the curl correction amount.



ADJ 19 DSPF CCD calibration

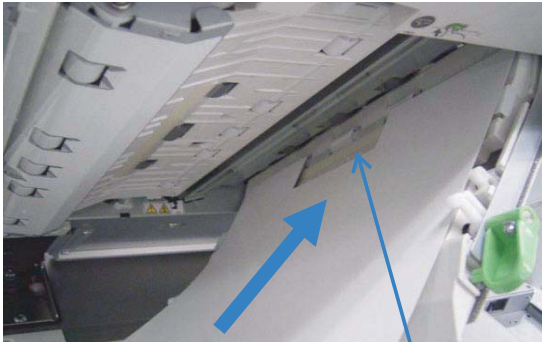
19-A DSPF shading adjustment

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.

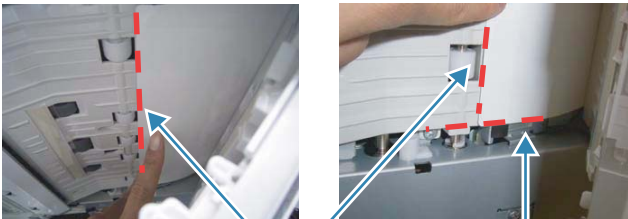
(1) Note before adjustment

- 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 scan section, and insert the white reference jig (6LS06278000). Then, close the DSPF document scan section, and close the DSPF.



Insert from the notch of the white reference jig, and set.

White reference jig set reference



Insert so that the rear edge of the white reference jig is in parallel with the transport roller (as shown with the dotted line in the figure).

Insert so that the rear edge of the white reference jig is fit with the upper transport PG edge.

- 3) Enter the SIM 63-2 mode.
- 4) Select "DSPF SHADING".
- 5) Press [EXECUTE] key. (The shading adjustment process is started.)
 - * 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

19-B CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

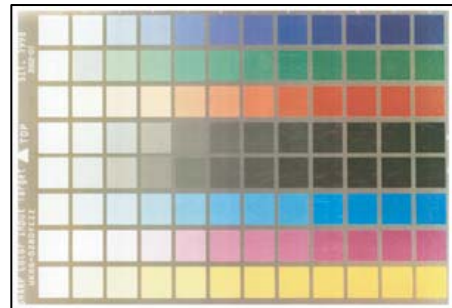
- * When the DSPF CCD unit is replaced.
- * When a U2 trouble occurs.
- * When the DSPF control PWB is replaced.

(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 (6LS06277000) are free from dirt and scratches. If they are dirty, clean them.
If they are scratched or streaked, replace with new one.

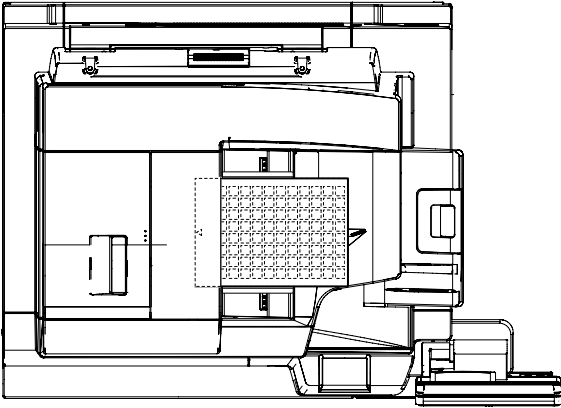
NOTE:

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 (6LS06277000) 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.

- 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 [\uparrow], 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 [\downarrow], 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.)

[6] SIMULATION

1. General and purpose

The simulation mode has the following functions, to display the machine operating status, identify the trouble position and causes in an earlier stage, and to efficiently setup and adjust the machine for improved serviceability.

- 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.

2. Starting the simulation

Entering the simulation mode

- 1) Double-click the [HOME] key. (Total use quantity/Toner remaining quantity display mode screen)



Touch the VER display section. Touch the [BACK] key.

(10-key mode input mode screen)



- 2) Touch the VER display section. (10-key mode input mode screen)
- 3) Touch the (#) key → Asterisk (*) key → Clear key → Asterisk (*) key → Ready for input of main code of simulation.
- 4) Enter a main SIM code with the 10-key pad then touch the [START] key or select a main code from the SIM key list on the touch panel.
- 5) Enter a sub code with the 10-key pad, then touch the [START] key or select a sub code from the code list on the touch panel.
- 6) Select an item with the scroll key and the item key.
- 7) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.

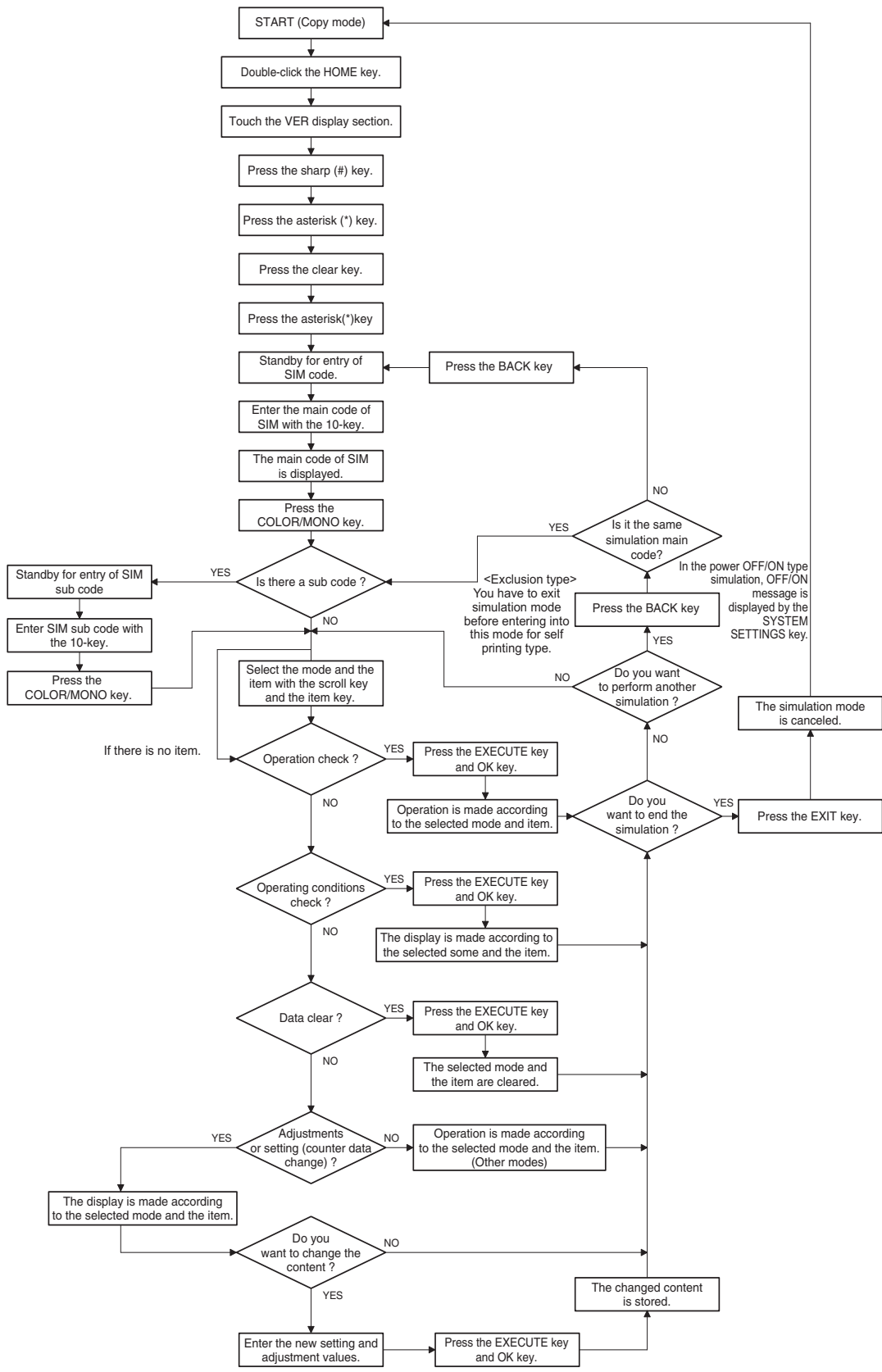
To cancel the current simulation mode and change the main code and the sub code, press [BACK] key.

Canceling the simulation mode to return to the normal mode

- 1) Press [EXIT] key.

NOTE: Do not turn OFF the power 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.



3. List of simulation codes

Main	Sub	Function (Purpose)	Section	Purpose
1	1	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)	Operation test/check
	2	Used to check the sensors in the scanner (reading) section and the related circuits.	Scanner (reading)	Operation test/check
	5	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)	Operation test/check
2	1	Used to check the operations of the auto document feed unit and the control circuits.	DSPF	Operation test/check
	2	Used to check the operations of the sensors and detectors in the auto document feed unit and the control circuits.	DSPF	Operation test/check
	3	Used to check the operations of the loads in the auto document feed unit and the control circuit.	DSPF	Operation test/check
	6	Used to check the operation of the scanner fan motor.	Scanner (reading)	Operation test/check
3	2	Used to check the operations of the sensors and the detectors in the finisher and the control circuits.	Finisher	Operation test/check
	3	Used to check the operations of the motors and the solenoids in the finisher and the control circuits.	Finisher	Operation test/check
	10	Used to adjust the jogger position, the lead edge stopper position, the staple jogging count number, and the paper folding count number.	Finisher	Finisher adjustment
	30	Used to check the operations of the sensors and the detectors in the inserter and the related circuits.	Inserter	Operation test/check
	31	Used to check the operations of the loads in the inserter and the control circuits.	Inserter	Operation test/check
	40	Used to check the operations of the sensors and the detectors in the paper folding unit and the related circuits.	Paper folding unit	Operation test/check
	41	Used to check the operations of the motors and the solenoids in the paper folding unit and the control circuits.	Paper folding unit	Operation test/check
	42	Paper folding unit adjustment	Paper folding unit	Adjustment
	50	Decurler sensor check	Decurler	Operation check
	51	Decurler individual load check	Decurler unit	Operation check
4	2	Used to check the operations of the sensors and the detectors in the large capacity tray (LCC) and the control circuits.	Large capacity tray (LCC)	Operation test/check
	3	Used to check the operations of the loads in the desk/large capacity tray (LCC) and the control circuits.	Desk/Large capacity tray	Operation test/check
	5	Used to check the operations of the transport clutch (LTRC) in the LCC and the monitor.	Large capacity tray (LCC)	Operation test/check
	10	LCT warm air heater temperature setting	LCT	Setting
	11	LCT fan Duty setting	LCT	Setting
	14	LCT temperature and humidity sensor monitor display	LCT	Check
5	1	Used to check the operations of the display lamp and the LCD on the operation panel and the control circuit.	Operation panel	Operation test/check
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing	Operation test/check
	3	Used to check the operations of the copy lamp and the control circuit.	Scanner (reading)	Operation test/check
	4	Used to check the operations of the discharge lamp and the control circuit.	Process	Operation test/check
6	1	Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.	Paper transport, paper exit	Operation test/check
	2	Used to check the operations of each fan motor and the control circuit.		Operation test/check
	3	Used to check the operations of the primary transfer separation.	Process (transfer)	Operation test/check
	4	Used to check the operation of the MC cleaner.	Process (charging)	Operation test/check
	90	Used to reset the machine to the factory setting. (The scanner is set to the lock enable position)	Scanner	Setting
7	1	Used to set the conditions of aging operation.		Setting
	6	Used to set the intermittent aging cycle.		Setting
	8	Used to display the warm-up time.		Operation display
	12	Used to set the document scan quantity. (For development and inspection)		Operation test, check
8	1	Used to check and adjust the developing voltage in each print mode and the control circuit.	Process (Development)	Operation test/check/adjustment
	2	Used to check and adjust the operations of the main charger grid voltage in each print mode and the control circuit.	Process	Operation test/check/adjustment
	6	Used to check and adjust the operation of the transfer plus bias current and the control circuit.	Process (transfer)	Operation test/check/adjustment
9	2	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.	Duplex	Operation test/check
	3	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.	Duplex	Operation test/check
10	1	Used to check the operation of the toner motor and the control circuit.	Process (Development)	Operation test/check
	2	Used to check the operation of the toner hopper empty sensor.	Process (Development)	Operation test/check
	3	Used to check the operation of the toner cartridge motor rotation sensor.	Process (Development)	Operation test/check
13	-	Used to cancel the self diag U1 trouble.		Cancel (trouble, etc.)
14	-	Used to cancel the self diag H3/H4/H5 troubles.	Fusing	Cancel (trouble, etc.)
15	-	Used to cancel the self diag U6-09 (large capacity paper feed tray) trouble.	LCC	Cancel (trouble, etc.)
16	-	Used to cancel the self diag U2 trouble.	MFPcnt PWB/PCU PWB/SCU PWB	Cancel (trouble, etc.)
17	-	Used to cancel the self diag PF trouble.		Cancel (trouble, etc.)
21	1	Used to set the maintenance cycle.		Setting

Main	Sub	Function (Purpose)	Section	Purpose	
22	1	Used to check the print count value of each section and each operation mode. (Used to check the maintenance timing.)		Adjustment, setting, operation data output and check	
	2	Used to check the total number of misfeed and trouble. (If the total number of JAM is considerably great, it is judged that repair is required.)		Adjustment/Setting/ Operation data check	
	3	Used to check the misfeed position and the number of misfeed. * This data can be used to estimate the trouble position.		Adjustment/Setting/ Operation data check	
	4	Used to check the trouble (self diag) history.		Adjustment/Setting/ Operation data check	
	5	Used to check the ROM version of each unit (section).		Other	
	6	Used to output the list of various setting and adjustment data (simulation, FAX soft switch, counter).		Adjustment/Setting/ Operation data check	
	8	Used to check the counter value of the finisher, DSPF, and the scan (reading).		Adjustment/Setting/ Operation data check	
	9	Used to check the use quantity (print quantity) of each paper feed section.	Paper feed, ADU, LCC	Adjustment/Setting/ Operation data check	
	10	Used to check the system configuration (option, internal hardware).		Adjustment/Setting/ Operation data check	
	12	Used to check the DSPF misfeed position and the number of each misfeed. (If the number of misfeed is considerably great, it is judged that repair is required.)	DSPF	Adjustment/Setting/ Operation data check	
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).		Adjustment/Setting/ Operation data check	
	14	Used to display the use status of the toner cartridge.	Process	Adjustment/Setting/ Operation data check	
	18	Used to display the user data delete history.		Adjustment/Setting/ Operation data check	
	19	Used to check the various scanner counters related to the network scanner.		Adjustment/Setting/ Operation data check	
	40	Used to display the error code list and the contents.		Error contents display	
	23	2	Used to print the paper jam, misfeed, and the trouble history. (If the number of misfeed or the troubles is considerably great, it is judged that repair is required.)		Adjustment/Setting/ Operation data check
		80	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.	Paper feed, Paper transport	Operation test/check
81		Use to export paper feed time list	Paper feed, Paper transport	Operation test/check	
90		Used to output the various setting data.		Adjustment/Setting/ Operation data check	
24	1	Used to clear the jam counter and the trouble counter. (After completion of maintenance, the counters are cleared.)		Data clear	
	2	Used to clear the counter value (print quantity) in each paper feed section.		Data clear	
	3	Used to clear the counter value of the finisher, DSPF, and the scan (reading).		Data clear	
	4	Used to clear the drum counter value of the maintenance counter, the transfer, and the fusing web cleaning feed counter. (After completion of maintenance, the counters are cleared.)		Data clear	
	5	Used to clear the developer counter value. (After replacement of developer, the counter is cleared.)		Data clear	
	6	Used to clear the copy counter value.		Data clear	
	9	Used to clear the printer mode print counter and the self print mode print counter.		Data clear	
	10	Used to clear the FAX counter value. (Only when the FAX is installed.)		Data clear	
25	1	Used to check the operation of the developing section.	Process (developing section)	Operation test/check	
	2	Used to initialize the toner density when replacing developer. (Automatic adjustment)	Process (Developing section)	Setting	
	4	Used to display the operation data of the toner supply quantity. (Not used in the market.)	Process	Adjustment/Setting/ Operation data check	
26	2	Used to set the paper size of the tandem tray/large capacity paper feed tray (LCC). (When the paper size is changed, this simulation must be used to change the paper size on the software.)	Paper feed	Setting	
	3	Used to set the auditor specification mode. Sim.26-3 is described in the service manual for the convenience sake, but the coin vendors of the machines destined for overseas are not guaranteed.	Auditor	Setting	
	5	Used to set the count mode of the total counter and the maintenance counter. (A3/11 x 17 size)		Setting	
	6	Used to set the specifications of each destination (paper, fixed magnification ratio, etc.)		Setting	
	7	Used to set the machine ID.		Setting	
	10	Used to set the trial mode of the network scanner.		Setting	
	18	Used to set YES/NO of the toner save mode operation. (For Japan and UK versions.)		Setting	
30	Used to set the CE mark support (Europe safety standards) operation mode. (Supporting slow start of the fusing heater lamp when driving it)		Setting		

Main	Sub	Function (Purpose)	Section	Purpose
26	32	Used to set the specifications of the fusing cleaning operation.	Fusing	Setting
	35	Used to set the display type of troubles in Sim. 22-4. When two or more same troubles occur continuously, the trouble history is displayed as one trouble or as two or more troubles occurring continuously.		Setting
	38	Used to set whether printing is terminated or not when the developer life is reached or when the fuser web end.		Setting
	41	Used to set YES/NO of the magnification ratio auto select function (AMS) in the center binding mode.		Setting
	49	Used to set the postcard copy speed mode.		Setting
	50	Used to set Enable/Disable of black/white reverse function.		Setting
	52	Used to set whether non-print paper (insertion, cover sheet) is counted or not.		Setting
	53	User auto calibration (auto balance adjustment) Inhibit/Allow setting.		Setting
	65	Used to set the finisher alarm mode.		Setting
	69	Used to set the operating conditions for toner near end.		Setting
	73	Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment		Setting
	78	Used to set the password of the remote operation panel.		Setting
	79	Used to set YES/NO of the pop-up display of user data delete result.		Setting
30	1	Used to check the operation of the sensors and the detectors in other than the paper feed section and the control circuits.		Operation test/check
	2	Used to check the operation of the sensors and the detectors in the paper feed section and the control circuits.		Operation test/check
	10	Used to check the operations of the Main unit double feed sensor.		Must not be used unless a special change is required.
40	2	Used to adjust the detection level of the manual paper feed tray paper width detector.	Paper feed	Adjustment/Setting
	7	Used to adjust the manual paper feed tray size width detection level.	Paper feed	Adjustment/Setting
	12	Used to adjust the tray 4 width detection level.	Paper feed	Adjustment/Setting
41	1	Used to check the operation of the document size sensor and the control circuit.		Operation test/check
	2	Used to adjust the document size sensor detection level.		Adjustment
	3	Used to check the operation of the document size sensor and the control circuit.		Operation test/check
43	1	Used to set the fusing temperature in each mode.		Setting
	2	Used to set the fusing operation and preheating.		Setting
	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.		Adjustment/Setup
	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.		Adjustment/Setup
	24	Used to set the correction of the temperature adjustment value of SIM 43-1.		Adjustment/Setup
	31	Used to check the operation of the fusing web cleaning motor and the control circuit.		Operation test/check
44	32	Used to set the forcible operation of the fusing web cleaning when job end.		Adjustment/Setting
	1	Used to set each correction function of the image forming (process) section.	Process (OPC drum, developing, transfer, cleaning)	Setting
	2	Used to adjust the process control sensor gain.	Process	Adjustment/Setting
	3	A change in the OPC drum surface potential VO due to the OPC drum environment and membrane decrease (life) is detected with the surface potential sensor to correct the grid potential Vg so that the cleaning field is maintained at a constant level.	Process	Operation test/check
	4	Used to set the operating conditions of the high density process control.		(Must not be used unless a special change is required.)
	5	Used to set the dark potential adjustment conditions.		Adjustment/Setting
	6	Used to perform forcible execution of the high density process correction.		Adjustment
	9	Used to display the process data.	Process (OPC drum, developing, transfer, cleaning)	(This simulation is normally not used in the market.)
	12	Used to display the result of the high density process control.	Process (OPC drum, development)	(This simulation is normally not used in the market.)
	14	Used to check the output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.	Process (OPC drum, development)	Adjustment/Setting/ Operation data check
	15	Used to set the OPC drum idle rotation.	Process	Setting
	21	Used to set the halftone process control target.	Process	Adjustment/Setup
	22	Used to display the toner patch density level in the halftone process control operation.	Process	Operation data display
	24	Used to display the correction target and the correction level in the halftone process control operation.	Process	Operation data display
	25	Used to set the calculating conditions of the correction value for the halftone process control.	Process	Setting
	26	Used to execute the halftone process control compulsory.	Process	Adjustment/Setup
	27	Used to clear the correction data of the halftone process control.	Process	Data clear
28	Used to set the process control execution timing.		Adjustment/Setting	
29	Used to set the operating conditions of the process control during a job.	Process	Setting	
33	Used to set the conditions of the half-tone potential adjustment.		Adjustment/Setting	
35	Used to display the half-tone potential adjustment result.			

Main	Sub	Function (Purpose)	Section	Purpose
44	37	Used to set the development bias correction level in the continuous printing operation.		Adjustment/Setup
	62	Used to set the process control execution conditions.	Process	Setup/Adjustment
46	2	Used to adjust the copy density in the copy mode.		Adjustment (Monochrome copy mode)
	4	Used to adjust the density in the image send mode.		Adjustment (Color scanner mode)
	5	Used to adjust the density in the image send mode.		Adjustment (Monochrome scanner mode)
	8	Used to adjust the scanner color balance RGB.		Adjustment (Color scanner mode)
	9	Used to adjust the copy density adjustment in the copy mode.		Adjust (DSPF mode)
	10	Used to perform the engine gray balance manual adjustment.		Adjustment
	16	Used to perform the engine balance manual adjustment. (Monochrome, all modes)		Adjustment
	19	Used to set the monochrome auto exposure mode.		Setting
	23	Used to set the half-tone max. density correction.		Adjustment/Setting
	24	Used to adjust the engine half-tone auto density adjustment.		Adjustment
	32	Adjustment of basic color density for AE mode.		Adjustment/Setting
	37	Used to adjust B/W image forming.		Adjustment/Setting
	47	Used to set the JPEG compression rate in copying and scanning.		Adjustment/Setting
	48	Copy output resolution setting		Adjustment/Setting
	51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.		Adjustment/Setup
	52	Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.)		Adjustment/Setup
	54	Used to perform the engine halftone automatic density adjustment (dither).		Adjustment
	55	Used to adjust the drop out color in the image send mode (monochrome manual text mode).		Adjustment/Setup
	60	Used to adjust the sharpness in the color auto mode.		Adjustment/Setup
	61	Used to adjust the area separation recognition level.		Adjustment/Setup
	62	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.		Adjustment/Setup
63	Used to adjust the density in the copy low density section.		Adjustment/Setup	
66	Used to adjust the reproduction capability of watermarks in the copy/printer mode.		Adjustment/Setup	
74	Copy gray balance adjustment (Auto adjustment)/Printer gray balance adjustment (Auto adjustment)		Adjustment	
90	Used to set the process operation of high-compression PDF images.		Adjustment	
91	Used to adjust the reproduction capability of black text.		Adjustment	
48	1	Used to adjust the copy magnification ratio (main/sub scanning direction).		Adjustment
	5	Used to adjust the copy magnification ratio (sub scanning direction). This adjustment is performed when Sim. 48-1 is used to adjust the sub scanning direction magnification ratio and a copy is made in a different copy magnification ratio and a satisfactory result is not obtained.	Scanner section	Adjustment
	6	Used to adjust the rotation speed of each motor.		Adjustment
49	1	Firmware update		
	3	Used to update the instruction manual stored in the HDD.		
	5	Used to perform the watermark update.		
	10	Used to perform ACU update.		
50	1	Used to adjust copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-5 and Sim. 50-2 (Simple method). (Document table mode))		Adjustment
	2	Used to adjust the copy image position on the paper and the void area (image loss) in the copy mode. (This simulation, similar to Sim. 50-1, provides more simplified adjustment.)		Adjustment
	5	Used to adjust the printer print lead edge.		Adjustment
	6	DSPF document lead edge adjustment. Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-7 (Simple method).) (DSPF mode)	DSPF	Adjustment
	7	DSPF document lead edge adjustment (Simple method) Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode (Sim. 50-6 simple method)	DSPF	Adjustment
	10	Used to adjust the print image off-center position. (The adjustment is made for each paper feed section.)		Adjustment
	12	Used to adjust the scan image off-center position. (The adjustment is made for each scan mode.)		Adjustment
	27	Used to adjust the image loss of a scan image in the FAX/Scanner mode.		Adjustment
28	Used to perform the OC adjustment, the BK main scan magnification ratio correction, the DSPF adjustment, and the print position adjustment.		Adjustment	
51	1	Used to adjust the ON/OFF timing of the secondary transport voltage.		Adjustment/Setting
	2	Used to adjust the contact pressure of paper against the resist roller (main unit paper feed, duplex paper feed, DSPF paper feed) in each section. (This adjustment is required when there is a great variation in the print image position for the paper or when paper jam occurred.)		Adjustment/Setting
53	6	Used to adjust the DSPF width detection level.		Adjustment
	7	Used to set the DSPF width adjustment value. (Sim. 53-6 manual input)		Adjustment/Setting
	8	Used to adjust the DSPF document scan start position.		Adjustment
	9	DSPF dirt detection setting		Adjustment/Setup

Main	Sub	Function (Purpose)	Section	Purpose	
53	10	DSPF dirt detection execution.			
	12	Used to check the operations of the DSPF double feed sensor.		Adjustment	
55	1	Used to set the specifications of the engine control operation.		(Must not be used unless a special change is required.)	
	2	Used to set the specifications of the controller operation.		(Must not be used unless a special change is required.)	
	3	Used to set the specifications of the controller operation.		(Must not be used unless a special change is required.)	
	10	Used to enter the special stamp text input.		Special stamp text setting	
56	1	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)		Backup	
	2	Used to backup the data in the EEPROM, SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)		Data backup	
	3	Used to back up the document filing data.		Backup	
	4	Used to back up the job log data.		Backup	
	5	Used to import the SIM22-6 data to a USB memory in the TEXT format.		Adjustment/Setting/ Operation data check	
	6	Used to output the JAM/trouble data.			
	7	Used to backup the system log.			
	99	Used to export sys log data to the USB memory.			
60	1	Used to check the operations (read/write) of the MFP control (SDRAM).		Operation test/check	
61	1	Used to check the polygon motor rotation and the BD signal detection.		Adjustment/Setting	
	2	Used to set the laser power.		Adjustment/Setup	
	3	Used to set the laser power.		Adjustment/Setting	
	4	Used to print the print image skew adjustment pattern. (LSU unit)		Adjustment	
	11	Used to correct the laser power automatically.		Adjustment	
	12	Laser power manual correction	LSU	Adjustment	
	13	Used to clear the laser power correction value.		Adjustment	
62	1	Used to format the hard disk. (Except for the operation manual area.)			
	2	Used to check the read/write operation of the hard disk. (Partial section)		Operation test/check	
	3	Used to check the read/write operation of the hard disk. (All area)		Operation test/check	
	6	Used to perform the self diag of the hard disk.		Operation test/check	
	7	Used to print the self diag error log of the hard disk.		Operation test/check	
	8	Used to format the hard disk. (Except for the system area and the operation manual area.)			
	10	Used to delete the job log data.		Data clear	
	11	Used to delete the document filing data.		Data clear	
	12	Used to set YES/NO of auto format in hard disk trouble.		Setting	
	13	Used to format the hard disk.(Operation manual area only).			
	14	Used to delete the document filing management data.	HDD	Data clear	
	20	Used to check the operation of the mirroring hard disk.	Mirroring hard disk	Operation test/check	
	63	1	Used to check the result of the shading correction.		Operation data check
		2	Used to execute shading forcibly.	Scanner	Adjustment
3		Used to perform the gamma correction and density conversion for RGB data inputted from the CCD. The gamma correction 1 of the SCAN ASIC and the set value of color correction are calculated and set from the specified image data.	Scanner	Adjustment	
4		The average value of the patch scan values for the RGB image data inputted from the CCD are calculated and displayed.	Scanner		
5		Used to reset the color balance of the scanner to the default.		Adjustment/Setting	
6		Used to set the auto adjustment pattern of the engine and gray balance.		Adjustment/Setting	
7		Used to set the auto density of the engine auto adjustment scanner target value. (Service)		Adjustment/Setting	
8		Used to reset the engine auto adjustment scanner target value to the default value.		Adjustment/Setting	
64	2	Self print (B/W mode)		Operation test /check	
	4	Used to make the self print of the printer.		Operation test/check	
	5	Printer self print (PCL)		Operation test/check	
	6	Printer self print (PS)		Operation test/check	
	7	Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-16 is printed.)		Operation test/check	
65	1	Used to adjust the touch panel (LCD display section) detection coordinates.	Operation panel section	Adjustment	
	2	Used to display the touch panel (LCD display section) detection coordinates.		Operation check/Test	
	5	Used to check the operation panel key input.		Operation check/Test	
66	1	Used to change and check the soft switch setting.		Setting	
	2	Used to clear the soft switch and set the default value.	FAX	Data clear	
	10	Used to clear all the data (memory receive and send) of the image memory.* The confidential receive data are cleared simultaneously.	FAX	Data clear	
	61	Used to display the FAX-related soft SW(151 - 250) on the LCD to allow changing the soft SW while checking with the LCD.	FAX	Setting	

Main	Sub	Function (Purpose)	Section	Purpose
67	17	Printer reset	Printer	Reset
	24	Used to set for auto gray calibration.		Adjustment/Setting
	25	Used to set the printer engine gray balance manual correction.		Adjustment/Setting
	27	Used to register the scanner target value of the printer engine auto density adjustment.		Adjustment/Setting
	28	Used to reset the printer engine auto adjustment scanner target value to the default value.		Adjustment/Setting
	31	Used to clear the printer calibration value.		Data clear
	32	Printer screen gamma table setting (300/600DPI).		Adjustment/Setting
	33	Used to perform the gamma correction of printer screens (for PCL).		Adjustment/Setting
	34	Used to set Enable/Disable of the printer half-tone max. density correction.		Adjustment/Setting
	36	Used to adjust the density in the low density section.	Printer	Adjustment/Setup
	45	Used to adjust the printer image filter and trapping.		Adjustment/Setup
	52	Used to set the default of the gamma of the printer screen.	Printer	Adjustment/Setup
	54	Printer color balance adjustment (Automatic adjustment for each dither)	Printer	Adjustment

4. Details of simulation

1

1-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.
The scanner scans at the speed corresponding to the operation mode.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Button	Content	Default value
OC SCAN	300DPI	300DPI (600mm/S)	300DPI (600mm/S)
	400DPI	400DPI (450mm/S)	
	600DPI	600DPI (300mm/S)	
	1200DPI	1200DPI (150mm/S)	

* (): Scan speed

1-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the sensors in the scanner (reading) section and the related circuits.
Section	Scanner (reading)

Operation/Procedure

The operation conditions of the sensors are displayed.

- * MHPS is highlighted when the scanner unit is in home position.
- * When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

1-5	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.
The scanner scans at the speed corresponding to the operation mode.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Button	Content	Default value
OC SCAN	300DPI	300DPI (600mm/S)	300DPI (600mm/S)
	400DPI	400DPI (450mm/S)	
	600DPI	600DPI (300mm/S)	
	1200DPI	1200DPI (150mm/S)	

* (): Scan speed

2

2-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the auto document feed unit and the control circuits.
Section	DSPF

Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.
The DSPF repeats feed, transport, and paper exit operations in the mode corresponding to the operation mode.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Button	Content	Default value
DSPF SCAN (SINGLE [Simplex])	300DPI	300DPI (600mm/S)	300DPI (600mm/S)
	400DPI	400DPI (450mm/S)	
	600DPI	600DPI (300mm/S)	
DSPF SCAN (DOUBLE [Duplex])	300DPI	300DPI (496mm/S)	300DPI (496mm/S)
	400DPI	400DPI (372mm/S)	
	600DPI	600DPI (248mm/S)	

* (): Scan speed

- * The operation is continued at the document tray detection size (fixed) when starting the operation. When there is no document, the operation is continued at the A4 size (fixed).

2-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the auto document feed unit and the control circuits.
Section	DSPF

Operation/Procedure

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted.

When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Sensor name (display)	Content
SSET	DSPF installation detection
S OCD	DSPF open/close detection
SCOV	DSPF upper door open/close detection
SLCOV	DSPF lower door open/close detection
SPED	DSPF document set/empty detection
SPPD1	DSPF document pass detection 1
SPPD2	DSPF document pass detection 2
SPPD3	DSPF document pass detection 3
SPPD4	DSPF document pass detection 4
SPPD5	DSPF document pass detection 5
SPPD6	DSPF document pass detection 6
SPPD7	DSPF document pass detection 7
SPOD	DSPF paper exit detection
SPRDMD1	DSPF random document feed size detection 1
SPRDMD2	DSPF random document feed size detection 2
STUD	DSPF document tray upper limit detection
STLD	DSPF document tray lower limit detection
SRDPUD	DSPF random document pickup detection
SPLS1	DSPF document length detection 1
SPLS3	DSPF document length detection 3
STMPU	DSPF stamp unit installation detection
SPRDMU	DSPF random unit installation detection

Sensor name (display)	Content
SWD_LEN	DSPF guide plate position (Unit; 0.1mm)
SWD_AD	DSPF document detection volume output AD value

2-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the auto document feed unit and the control circuit.
Section	DSPF

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.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
SPUM	DSPF paper feed motor
SRRM	DSPF resist motor
SPFM	DSPF transport motor
SPSM	DSPF PS motor
SRFM	DSPF scan transport motor
SPOM	DSPF paper exit motor
SLUM	DSPF lift-up motor
SPFFAN1	DSPF motor cooling fan 1
STMPS	DSPF stamp solenoid (*)

Note (*): This operation is valid only when the stamp solenoid (option) is installed.

2-6

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner fan motor.
Section	Scanner (reading)

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.
 - 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.
- <Description of load operation>

Display	Content
CCDFM	CCD cooling fan

3

3-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the finisher and the control circuits.
Section	Finisher

Operation/Procedure

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted. When [SYSTEM SETTINGS][SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<Finisher (50-sheet stapling)>

NO.	Display Item	Content
1	FINENT	Inlet port sensor
2	PSTRYEXT	Staple paper exit sensor
3	STSS	Edge binding stapler staple presence sensor
4	STES	Edge binding stapler staple lead edge sensor
5	SFTROLHP	Shift HP sensor
6	UPTRYEXT	Paper exit sensor
7	EXGPLTHP	Paper exit guide plate HP sensor
8	UTRPHNST	Paper surface detection: Staple
9	UTRPHSTP	Paper surface detection: Shift
10	PRFTRYEX	Proof tray paper exit sensor
11	PRFTRYFL	Proof tray full sensor
12	UPTRYLMT	Rear edge detection: Shift
13	STKROLHP	Oscillation return roller HP sensor
14	STPTRPAP	Staple tray paper empty sensor
15	JOGHPS	Jogger HP sensor
16	BLTHPS	Eject pawl HP sensor
17	CONSTPHP	Stapler shift HP sensor
18	STPROTHP	Stapler diagonal HP sensor
19	STRS	Edge binding stapler (1 rotation) sensor
20	UPTRFLNS	Full sensor: without center binding

<Finisher (100-sheet stapling)>

NO.	Display Item	Content
1	FNS103	Staple tray paper detection
2	FNS122	Tray 1 area 1 sensor
3	FNS123	Tray 1 area 2 sensor
4	FNS124	Tray 1 area 3 sensor
5	FNS146	Discharge paper surface sensor
6	FNS149	YO paper surface sensor
7	FNS118	Process tray paper surface sensor
8	FNS143	Lower tray paper surface sensor
9	FNS114	YOHP sensor
10	FNS112	Take-up swing HP sensor
11	FNS135	Paper holding lever HP sensor
12	FNS111	Roller nip HP sensor
13	FNS142	Buffer flapper HP sensor
14	FNS102	Discharged paper detection
15	FNS101	Inlet port paper detection
16	FNS131	Staple drive HP detection
17	FNS128	Staple area sensor
18	FNSW110	Tray 1 interference switch
19	FNS134	Staple cart sensor
20	FNS132	Staple lead edge position detection
21	FNS133	Staple empty detection
22	FNS104	Tray 1 paper detection
23	FNS105	Tray 2 paper detection
24	FNS130	Tray 3 paper detection
25	FNPCH_CON	Punch unit connection detection
26	FNSW2	PUSHSW2 detection
27	FNSW1	PUSHSW1 detection
28	FNS107	Staple shift HP detection

NO.	Display Item	Content
29	FNS108	Alignment plate front HP sensor
30	FNS109	Alignment plate rear HP sensor
31	FNS106	Shutter open detection
32	FNS110	Oscillation guide open detection
33	FNSW3-1	DIPSW1 detection
34	FNSW3-2	DIPSW2 detection
35	FNSW3-3	DIPSW3 detection
36	FNSW3-4	DIPSW4 detection
37	FNS129	Finisher front cover sensor
38	FNSW103	Stapler safety switch
39	FNSW101	Finisher front cover switch
40	FNS148	Shutter close detection
41	FNSW102	Oscillation guide switch
42	FNS125	Tray 2 area 1 sensor
43	FNS126	Tray 2 area 2 sensor
44	FNS127	Tray 2 area 3 sensor
45	FNS113	Rear edge falling HP sensor
46	FNS138	YO rear HP sensor
47	FNS139	YO front HP sensor
48	FNS136	Guide sub rear HP sensor
49	FNS137	Guide sub front HP sensor
50	FN24V-DET	24V-DETECT
51	FN24V1-DET	24V1-DETECT
52	FNAC-RELAY-ON	Relay on signal
53	FNS115	Gripper HP sensor
54	FNS140	Gripper front/rear sensor
55	FNS116	Gripper base front sensor
56	FNS117	Gripper base rear sensor
57	FNM19-LD	Load tray upper motor arm
58	FNM20-LD	Load tray lower motor arm
59	FNFAN2-ALM	Power supply fan alarm
60	FNFAN1-ALM	PWB cooling fan alarm
61	FNFAN5-ALM	Upper tray fan alarm
62	FNFAN4-ALM	Lower tray fan alarm
63	FNS200	Cut staple sensor
64	FNSDL_CON	Saddle connection detection
65	FNFLD_CON	Folding unit connection detection
66	FNFLD-ETR-ST-ACK	Folding unit EntryStartAck signal
67	FNFLD-EJCT-ST	Folding unit EjectStart signal
68	PIS150	Transfer unit bus sensor
69	PISW200	Transfer unit front cover switch
70	PIUNITMOT_ALM	Transfer unit transport motor lock detection signal
71	PIPASSUNIT-CON	Transfer unit connection detection

<Saddle stitch finisher (50-sheet stapling)>

NO.	Display Item	Content
1	FSDSTRR	Center binding stapler (1 rotation) sensor: rear
2	FSDSTER	Center binding stapler staple lead edge sensor: rear
3	FSDSTSR	Center binding stapler staple presence sensor: rear
4	FSDSTRF	Center binding stapler (1 rotation) sensor: front
5	FSDSTEF	Center binding stapler staple lead edge sensor: front
6	FSDSTSF	Center binding stapler staple presence sensor: front
7	CLPROLHP	Drive roller HP sensor
8	UPTRFLSD	Full sensor: with center binding
9	STKPRST	Lead edge sensor
10	FLDUNEXT	Folding pass sensor
11	FLDCMHP	Folding cam HP sensor
12	FLDPLTHP	Folding plate HP sensor
13	FLDBTMHP	Rear edge fence HP sensor
14	STJCTGHP	Bundle branch open/close HP sensor
15	FLDUNENT	Reach sensor
16	SDLFLLF	Saddle section full sensor: front
17	SDLFLLR	Saddle section full sensor: rear

<Saddle stitch finisher (100-sheet stapling)>

NO.	Display Item	Content
1	FSS213	Pushing clock sensor
2	FSS214	Folding clock sensor
3	FSS228	Saddle tray paper sensor
4	FSS219	Rear edge holding shift HP
5	FSS221	Rear edge holding HP
6	FSS206	Alignment plate HP
7	FSS205	Lead edge stopper HP
8	FSS222	Pulling separation HP
9	FSS229	Folding HP sensor
10	FSS223	Staple HP sensor
11	FSS208	Pushing HP
12	FSS203	Vertical path sensor
13	FSS226	Bundle paper exit path sensor 1
14	FST-CON	Trimmer connection detection
15	FSS225	Staple 2 sensor
16	FSS224	Staple 1 sensor
17	FSS207	Roller guide HP sensor
18	FSS227	Bundle paper exit bus sensor 2
19	FSS218	Rear edge sorting HP
20	FSS201	Inlet port path sensor
21	FS24V-DET	Interlock power supply (24V) detection

<Punch module (Finisher (50-sheet stapling))>

NO.	Display Item	Content
1	PNCHHPFL	Punch dust full sensor
2	PNCHMVHP	Punch shift HP sensor
3	PNCHENC	Punch RPS
4	PNCHHP	Punch drive HP
5	PAPPOSHP	Horizontal registration HP sensor
6	PAPPOS	Horizontal registration sensor

<Punch module (Finisher (100-sheet stapling))>

NO.	Display Item	Content
1	FCS105	Punch motor clock detection
2	FCPCB2	Punch dust sensor
3	FCS104	Punch HP detection
4	FCS101	Punch horizontal registration HP detection
5	FCPCB31	Punch horizontal registration A3 sensor
6	FCPCB32	Punch horizontal registration LD sensor
7	FCPCB33	Punch horizontal registration B4 sensor
8	FCPCB34	Punch horizontal registration A4R sensor
9	FCPCB35	Punch horizontal registration B5R sensor
10	FCS102	Punch hole motor position sensor
11	FCS103	Punch hole motor 2-hole/3-hole sensor
12	FCSW1-1	Punch DIPSW1
13	FCSW1-2	Punch DIPSW2

<Paper folding unit>

NO.	Display Item	Content
1	FLENTRY	Paper reception start request
2	FLEXIT_ACK	Paper exit start response
3	FLS30	Speed reduction timing sensor
4	FLS31	Separation timing sensor
5	FLS32	Folding position accurate sensor
6	FLS33	Upper stopper section paper sensor
7	FLS25	Lead edge hold guide HP sensor
8	FLS24	Internal 3-fold stopper HP sensor
9	FLS23	Upper stopper section HP sensor
10	FLS22	Paper exit 1 paper sensor
11	FLS28	Internal 3-fold tray (intermediate tray) home position sensor
12	FLS26	Internal 3-fold tray (paper exit tray) full sensor
13	FLS27	Internal 3-fold tray (intermediate tray) paper sensor
14	FLS29	Folding unit pull-out sensor
15	FLORIHAN_LOCK	Brushless motor lock detection signal
16	FLFSW1	Front cover sensor
17	FLS20	Inlet port sensor

NO.	Display Item	Content
18	FLS21	Paper exit 2 sensor
19	FLSW3-1	DipSW1
20	FLSW3-2	DipSW2
21	FLSW3-3	DipSW3
22	FLSW3-4	DipSW4
23	FLSW3-5	DipSW5
24	FLSW3-6	DipSW6
25	FLSW3-7	DipSW7
26	FLSW3-8	DipSW8
27	FLSW1	PushSW1
28	FLSW2	PushSW2
29	FLFAN3_LOCK	Power supply fan lock detection signal

<Trimmer unit>

NO.	Display Item	Content
1	FTS108	Cutter motor clock sensor
2	FTS105	Trimmer registration motor HP sensor
3	FTS106	Trimmer press motor HP sensor
4	FTS104	Trimmer rear estrangement motor HP sensor
5	FTS102	Trimmer front estrangement motor HP sensor
6	FTS103	Trimmer paper delivery sensor
7	FTS101	Trimmer inlet sensor
8	FTS111	Trimmer waste paper full sensor
9	FTS109	Trimmer waste paper box detection sensor
10	FTSW1-1	DIPSW1 detection
11	FTSW1-2	DIPSW2 detection
12	FTSW1-3	DIPSW3 detection
13	FTSW1-4	DIPSW4 detection
14	FTSW2	PUSHSW detection

3-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the motors and the solenoids in the finisher and the control circuits.
Section	Finisher

Operation/Procedure

- 1) Select a target 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.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Finisher (50-sheet stapling)

NO.	Display	Content
1	PORLDR_M	Tapping roller drive motor
2	SFT_M	Shift motor
3	ENT_M	Inlet port motor
4	UPTRS_M	Upper transport motor
5	LOTRS_M	Lower transport motor
6	TEGPRS_S	Rear edge holding SOL
7	POS_S	Tapping SOL
8	BLT_M	Eject motor
9	UPJCTG_S	Proof branch pawl SOL
10	LOJCTG_S	Staple branch pawl SOL
11	EXGPLT_M	Paper exit guide plate open/close motor
12	EXIT_M	Paper exit motor
13	STRLVI_M	Return roller oscillation motor
14	TRYLFT_M	Tray up/down motor
15	STPROT_M	Stapler diagonal motor
16	JOG_M	Jogger motor
17	STPMV_M	Stapler shift motor
18	STPMOV_M	Stapler

<Finisher (100-sheet stapling)>

NO.	Display	Content
1	FNM101	Inlet port transport motor
2	FNM104	Paper delivery transport motor
3	FNM108	Front alignment motor
4	FNM107	Stapler shift motor
5	FNM105	Load tray upper motor
6	FNM115	Staple motor
7	FNM110	Oscillation guide motor
8	FNM102	Buffer transport motor
9	FNM106	Load tray lower motor
10	FNM119	Roller nip motor
11	FNM114	YO motor
12	FNM120	Guide sub motor
13	FNM113	Rear edge falling motor
14	FNM117	Gripper belt motor
15	FNM116	Gripper arm motor
16	FNM121	Take-up transport motor
17	FNM112	Take-up swing motor
18	FNM118	Paper holding lever motor
19	FNM109	Rear alignment motor
20	FNCL102	Shutter clutch
21	FNM122	Paper delivery lower transport motor
22	FNSL101	Oscillation safety switch solenoid
23	FNFAN102	PWB cooling fan
24	FNFAN103	Upper tray cooling fan
25	FNFAN104	Lower tray cooling fan
26	PIM301	Transfer unit transport motor lock (*)

*: Operates only when the transport unit is installed.

<Saddle stitch finisher (50-sheet stapling)>

NO.	Display	Content
1	SDLPRS_S	Center binding holding SOL
2	BDJCTG_M	Bundle branch open/close motor
3	TALFNC_M	Rear edge fence motor
4	SDLSTF_M	Center binding stapler: front
5	SDLSTR_M	Center binding stapler: rear
6	FLDPLT_M	Folding plate drive motor
7	FLDROL_M	Folding roller motor
8	DRRLVI_M	Drive roller oscillation motor

<Saddle stitch finisher (100-sheet stapling)>

NO.	Display	Content
1	FSM200	Inlet port transport motor
2	FSM201	Transport motor
3	FSM212	Alignment roller (lead edge roller) motor
4	FSSL206	Inlet port path select solenoid
5	FSSL205	Lead edge stopper solenoid
6	FSSL203	Lead edge separation solenoid 1
7	FSSL204	Lead edge separation solenoid 2
8	FSM202	Alignment motor
9	FSM203	Lead edge stopper motor
10	FSM204	Roller guide motor
11	FSM210	Rear edge holding motor
12	FSM211	Rear edge shift motor
13	FSM213	Flapping motor
14	FSM214	Pull-in roller (separation) motor
15	FSM209	Staple motor
16	FSM206	Folding motor
17	FSM205	Push motor

<Punch module (Finisher (50-sheet stapling))>

NO.	Display	Content
1	STSMOV_M	Horizontal registration detection sensor shift motor
2	PNCHMV_M	Punch shift motor
3	PNCH_M	Punch drive motor

Punch module (Finisher (100-sheet stapling))

NO.	Display	Content
1	FCM102	Punch hole motor
2	FCM101	Punch horizontal registration motor

<Paper folding unit>

NO.	Display	Content
1	FLSOL2	Folding/Straight branch solenoid
2	FLSOL3	Separation solenoid
3	FLSOL5	Internal 3-fold stopper solenoid
4	FLM11	Folding transport motor
5	FLM15	Folding position adjustment motor
6	FLM13	Exit port motor 2
7	FLM14	Exit port motor 1
8	FLM5	Inlet port motor
9	FLSOL4	Internal 3-fold tray branch solenoid
10	FLM8	Upper stopper motor
11	FLM9	Internal 3-fold stopper adjustment motor
12	FLM10	Lead edge holding guide motor
13	FLM7	Internal 3-fold tray (intermediate tray) motor
14	FLCL3	Folding position adjustment clutch (normal)
15	FLCL4	Folding position adjustment clutch (reverse)

<Trimmer unit>

NO.	Display	Content
1	FTM101	Trimmer transport motor
2	FTM103	Inlet port separation motor
3	FTM104	Paper delivery separation motor
4	FTM102	Registration motor
5	FTM106	Cutter motor
6	FTSL101	Registration solenoid
7	FTM105	Press motor
8	FTSL102	Paddle solenoid

3-10

Purpose Finisher adjustment

Function (Purpose) Used to adjust the jogger position, the lead edge stopper position, the staple jogging count number, and the paper folding count number.

Section Finisher

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
Press [OK] key. (The set value is saved.)
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<Finisher (50-sheet stapling)>

Item	Display	Item	Setting range	Default value
A	STAPLE REAR	Stapling position adjustment (Other) (Rear)	65 - 110	100
B	STAPLE FRONT	Stapling position adjustment (Front)	90 - 135	100
C	JOGGER(OTHER)	Jogger position adjustment (Other)	85 - 115	100
D	JOGGER(A3)	Jogger position adjustment (A3)	85 - 115	100
E	JOGGER(B4)	Jogger position adjustment (B4)	85 - 115	100
F	JOGGER(A4R)	Jogger position adjustment (A4R)	85 - 115	100
G	JOGGER(A4)	Jogger position adjustment (A4)	85 - 115	100
H	JOGGER(B5R)	Jogger position adjustment (B5R)	85 - 115	100

Item	Display	Item	Setting range	Default value
I	JOGGER(B5)	Jogger position adjustment (B5)	85 - 115	100
J	JOGGER(11x17)	Jogger position adjustment (11 x 17)	85 - 115	100
K	JOGGER(8.5x14)	Jogger position adjustment (8.5 x 14)	85 - 115	100
L	JOGGER(8.5x11R)	Jogger position adjustment (8.5 x 11R)	85 - 115	100
M	JOGGER(8.5x11)	Jogger position adjustment (8.5 x 11)	85 - 115	100
N	JOGGER(12x18)	Jogger position adjustment (12 x 18)	85 - 115	100
O	PUNCH X	Punch position adjustment (X: Sub scanning direction)	70 - 130	100
P	PUNCH Y	Punch position adjustment (Y: Main scanning direction)	80 - 120	100

<Saddle stitch finisher (50-sheet stapling)>

Item	Display	Item	Setting range	Default value
A	STAPLE REAR	Stapling position adjustment (Other) (Rear)	65 - 110	100
B	STAPLE FRONT	Stapling position adjustment (Front)	90 - 135	100
C	JOGGER(OTHER)	Jogger position adjustment (Other)	85 - 115	100
D	JOGGER(A3)	Jogger position adjustment (A3)	85 - 115	100
E	JOGGER(B4)	Jogger position adjustment (B4)	85 - 115	100
F	JOGGER(A4R)	Jogger position adjustment (A4R)	85 - 115	100
G	JOGGER(A4)	Jogger position adjustment (A4)	85 - 115	100
H	JOGGER(B5R)	Jogger position adjustment (B5R)	85 - 115	100
I	JOGGER(B5)	Jogger position adjustment (B5)	85 - 115	100
J	JOGGER(11x17)	Jogger position adjustment (11 x 17)	85 - 115	100
K	JOGGER(8.5x14)	Jogger position adjustment (8.5 x 14)	85 - 115	100
L	JOGGER(8.5x11R)	Jogger position adjustment (8.5 x 11R)	85 - 115	100
M	JOGGER(8.5x11)	Jogger position adjustment (8.5 x 11)	85 - 115	100
N	JOGGER(12x18)	Jogger position adjustment (12 x 18)	85 - 115	100
O	PUNCH X	Punch position adjustment (X: Sub scanning direction)	70 - 130	100
P	PUNCH Y	Punch position adjustment (Y: Main scanning direction)	80 - 120	100
Q	SADDLE POSITION (OTHER)	Center binding position adjustment (Other)	70 - 130	100
R	SADDLE POSITION(A3)	Center binding position adjustment (A3)	70 - 130	100
S	SADDLE POSITION(B4)	Center binding position adjustment (B4)	70 - 130	100
T	SADDLE POSITION(A4R)	Center binding position adjustment (A4R)	70 - 130	100
U	SADDLE POSITION(B5R)	Center binding position adjustment (B5R)	70 - 130	100
V	SADDLE POSITION(11x17)	Center binding position adjustment (11 x 17)	70 - 130	100
W	SADDLE POSITION(8.5x14)	Center binding position adjustment (8.5 x 14)	70 - 130	100

Item	Display	Item	Setting range	Default value
X	SADDLE POSITION (8.5x11R)	Center binding position adjustment (8.5 x 11R)	70 - 130	100
Y	SADDLE POSITION(12x18)	Center binding position adjustment (12 x 18)	70 - 130	100
Z	FOLDING POSITION (OTHER)	Center folding position adjustment (Other)	70 - 130	100
AA	FOLDING POSITION(A3)	Center folding position adjustment (A3)	70 - 130	100
AB	FOLDING POSITION(B4)	Center folding position adjustment (B4)	70 - 130	100
AC	FOLDING POSITION(A4R)	Center folding position adjustment (A4R)	70 - 130	100
AD	FOLDING POSITION(B5R)	Center folding position adjustment (B5R)	70 - 130	100
AE	FOLDING POSITION(11x17)	Center folding position adjustment (11 x 17)	70 - 130	100
AF	FOLDING POSITION(8.5x14)	Center folding position adjustment (8.5 x 14)	70 - 130	100
AG	FOLDING POSITION (8.5x11R)	Center folding position adjustment (8.5 x 11R)	70 - 130	100
AH	FOLDING POSITION(12x18)	Center folding position adjustment (12 x 18)	70 - 130	100
AI	BEND ADJ COUNT	Bending number adjustment	1 - 30	2

<Finisher (100-sheet stapling)>

Item	Display	Item	Setting range	Default value
A	BUFFER SHIFT1	Buffer paper shift amount adjustment 1	50 - 150	100
B	BUFFER SHIFT2	Buffer paper shift amount adjustment 2	50 - 150	100
C	ALIGNMENT	Alignment width adjustment	50 - 150	100
D	STAPLE FRONT(S-WIDTH)	Stapling position adjustment (Front 1 position/Small width)	70 - 130	100
E	STAPLE FRONT (W-WIDTH)	Stapling position adjustment (Front 1 position/Wide width)	70 - 130	100
F	STAPLE REAR (S-WIDTH)	Stapling position adjustment (Rear 1 position/Small width)	70 - 130	100
G	STAPLE REAR (W-WIDTH)	Stapling position adjustment (Rear 1 position/Wide width)	70 - 130	100
H	STAPLE CENTER	Stapling position adjustment (Center 2 positions)	85 - 115	100
I	PUNCH Y (*1)	Punch hole position adjustment (Y: Main scanning direction)	85 - 115	100
J	PUNCH X (*1)	Punch hole position adjustment (X: Sub scanning direction)	50 - 150	100
K	PUNCH SKEW (*1)	Punch mode skew adjustment	80 - 120	100
L	PUNCH SKEW SHIN (*1)	Punch mode skew adjustment (Thin paper)	80 - 120	100

*1: Not saved when the punch is not installed.

<Saddle stitch finisher (100-sheet stapling)>

Item	Display	Item	Setting range	Default value
A	BUFFER SHIFT1	Buffer paper shift amount adjustment 1	50 - 150	100
B	BUFFER SHIFT2	Buffer paper shift amount adjustment 2	50 - 150	100
C	ALIGNMENT	Alignment width adjustment	50 - 150	100

Item	Display	Item	Setting range	Default value
D	STAPLE FRONT(S-WIDTH)	Stapling position adjustment (Front 1 position/Small width)	70 - 130	100
E	STAPLE FRONT (W-WIDTH)	Stapling position adjustment (Front 1 position/Wide width)	70 - 130	100
F	STAPLE REAR (S-WIDTH)	Stapling position adjustment (Rear 1 position/Small width)	70 - 130	100
G	STAPLE REAR (W-WIDTH)	Stapling position adjustment (Rear 1 position/Wide width)	70 - 130	100
H	STAPLE CENTER	Stapling position adjustment (Center 2 positions)	85 - 115	100
I	PUNCH Y (*1)	Punch hole position adjustment (Y: Main scanning direction)	85 - 115	100
J	PUNCH X (*1)	Punch hole position adjustment (X: Sub scanning direction)	50 - 150	100
K	PUNCH SKEW (*1)	Punch mode skew adjustment	80 - 120	100
L	PUNCH SKEW SHIN (*1)	Punch mode skew adjustment (Thin paper)	80 - 120	100
M	SDL FOLD	Saddle folding position adjustment	80 - 120	100
N	SDL STPL	Saddle stitch position adjustment	80 - 120	100
O	SDL DIVIDE	Saddle separation position adjustment	85 - 115	100
P	SDL WIDTH	Saddle alignment width adjustment	80 - 120	100
Q	STPL/FOLD 1	Stapling/Folding position adjustment value (13 x 19)	42 - 58	50
R	UNBOUND FOLD 1	Not-stapled folding position adjustment value (A4R/LTRR)	42 - 58	50
S	UNBOUND FOLD 2	Not-stapled folding position adjustment value (B4/LGL)	42 - 58	50
T	UNBOUND FOLD 3	Not-stapled folding position adjustment value (A3/LDR)	42 - 58	50
U	UNBOUND FOLD 4	Not-stapled folding position adjustment value (SRA3/12x18)	42 - 58	50
V	UNBOUND FOLD 5	Not-stapled folding position adjustment value (13x19)	42 - 58	50
W	UNBOUND FOLD 6	Not-stapled folding position adjustment value (User-defined size)	42 - 58	50
X	TRIMMER REG S (*1)	Trimmer registration position adjustment (Small size)	50 - 150	100
Y	TRIMMER REG L (*1)	Trimmer registration position adjustment (Large size)	50 - 150	100
Z	TRIMMER CUT S (*1)	Trimmer cut position adjustment (Small size)	50 - 150	100
AA	TRIMMER CUT L (*1)	Trimmer cut position adjustment (Large size)	50 - 150	100

*: Setting can be made only when the trimmer unit is installed.

*1: Not saved when the punch is not installed.

3-30

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the inserter and the related circuits.
Section	Inserter

Operation/Procedure

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are highlighted.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Sensor name
INSENT	Inlet port sensor
INSOUT	Paper exit sensor
VTRS2	No. 2 vertical transport sensor
VTRS1	No. 1 vertical transport sensor
PLOUT2	No. 2 pull-out sensor
PLOUT1	No. 1 pull-out sensor
INSFEED2	No. 2 paper feed sensor
INSFEED1	No. 1 paper feed sensor
NEREND1	No. 1 near end detection
LWRLMT2	No. 2 lower limit detection
LWRLMT1	No. 1 lower limit detection
UPRLMT2	No. 2 upper limit detection
UPRLMT1	No. 1 upper limit detection
INSHP2	No. 2 pickup arm HP detection
INSHP1	No. 1 pickup arm HP detection
INSEXT	Outlet port sensor
INSSZ13	No. 1 paper size sensor 3
INSSZ12	No. 1 paper size sensor 2
INSSZ11	No. 1 paper size sensor 1
PPRLNG2	No. 2 length sensor
PPRLNG1	No. 1 length sensor
PPREND2	No. 2 paper end detection
PPREND1	No. 1 paper end detection
NEREND2	No. 2 near end detection
FECVROP1	No. 1 cover open detection
INSSZ25	No. 2 paper size sensor 5
INSSZ24	No. 2 paper size sensor 4
INSSZ23	No. 2 paper size sensor 3
INSSZ22	No. 2 paper size sensor 2
INSSZ21	No. 2 paper size sensor 1
INSSZ15	No. 1 paper size sensor 5
INSSZ14	No. 1 paper size sensor 4
INSFDRSW	Front door SW
VTRCVRSW	Vertical transport cover SW
FECVROP2	No. 2 cover open detection

3-31

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the inserter and the control circuits.
Section	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] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Display Item	Content
1	PIKUP1_M	No. 1 pickup M (1 operation)
2	PIKUP2_M	No. 2 pickup M (1 operation)
3	FEED1_M	No. 1 paper feed M (continuous)
4	FEED2_M	No. 2 paper feed M (continuous)
5	PLOUT1_M	No. 1 pull-out M (continuous)
6	PLOUT2_M	No. 2 pull-out M (continuous)
7	TRSV_M	Vertical transport M (continuous)
8	TRSH_M	Horizontal transport M (continuous)
9	TRYLFT1M	No. 1 lift motor (lift operation)
10	TRYLFT2M	No. 2 lift motor (lift operation)

3-40

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the paper folding unit and the related circuits.
Section	Paper folding unit

Operation/Procedure

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are highlighted.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Sensor name (Display)	Content
FLENTRY	Paper transfer start request
FLEXIT_ACK	Paper exit start response
FLS30	Speed reduction timing sensor
FLS31	Separation timing sensor
FLS32	Folding position accurate sensor
FLS33	Upper stopper section paper sensor
FLS25	Lead edge hold guide HP sensor
FLS24	Internal 3-fold stopper HP sensor
FLS23	Upper stopper section HP sensor
FLS22	Paper exit 1 paper sensor
FLS28	Internal 3-fold tray (Intermediate tray) HP sensor
FLS26	Internal 3-fold tray (Paper exit tray) full sensor
FLS27	Internal 3-fold tray (Intermediate tray) paper sensor
FLS29	Folding unit pull-out sensor
FLORIHAN_LOCK	Brushless motor lock detection signal
FLFSW1	Front cover sensor
FLS20	Inlet port sensor
FLS21	Paper exit 2 sensor
FLSW3-1	DipSW1
FLSW3-2	DipSW2
FLSW3-3	DipSW3
FLSW3-4	DipSW4
FLSW3-5	DipSW5
FLSW3-6	DipSW6
FLSW3-7	DipSW7
FLSW3-8	DipSW8
FLSW1	PushSW1
FLSW2	PushSW2
FLFAN3_LOCK	Power supply fan lock detection signal

3-41

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the motors and the solenoids in the paper folding unit and the control circuits.
Section	Paper folding unit

Operation/Procedure

- 1) Select a target 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.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Display Item	Content
1	FLSOL2	Folding/Straight branch solenoid
2	FLSOL3	Separation solenoid
3	FLSOL5	Internal 3-fold stopper solenoid
4	FLM11	Folding transport motor
5	FLM15	Folding position adjustment motor
6	FLM13	Outlet port motor 2
7	FLM14	Outlet port motor 1
8	FLM5	Inlet port motor
9	FLSOL4	Internal 3-fold tray branch solenoid
10	FLM8	Upper stopper motor
11	FLM9	Internal 3-fold stopper adjustment motor
12	FLM10	Lead edge hold guide motor
13	FLM7	Internal 3-fold tray (Intermediate tray) motor
14	FLCL3	Folding position adjustment clutch (Normal)
15	FLCL4	Folding position adjustment clutch (Reverse)

3-42

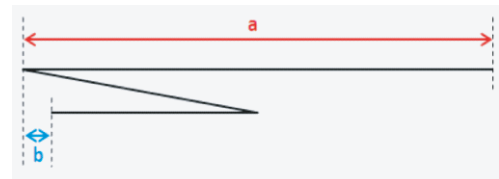
Purpose	Adjustment
Function (Purpose)	Paper folding unit adjustment
Section	Paper folding unit

Operation/Procedure

- 1) Select an adjustment item with the touch panel scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

Item	Display	Content	Setting range	Default value
A	FOLD S1 A3	A3 Z-fold first folding position adjustment	50 - 150	100
B	FOLD S2 A3	A3 Z-fold second folding position adjustment	50 - 150	100
C	FOLD S1 B4	B4 Z-fold first folding position adjustment	50 - 150	100
D	FOLD S2 B4	B4 Z-fold second folding position adjustment	50 - 150	100
E	FOLD S1 A4R	A4R Z-fold first folding position adjustment	50 - 150	100
F	FOLD S2 A4R	A4R Z-fold second folding position adjustment	50 - 150	100
G	FOLD S1 LDR	LDR Z-fold first folding position adjustment	50 - 150	100
H	FOLD S2 LDR	LDR Z-fold second folding position adjustment	50 - 150	100
I	FOLD S1 LGL	LGL Z-fold first folding position adjustment	50 - 150	100
J	FOLD S2 LGL	LGL Z-fold second folding position adjustment	50 - 150	100
K	FOLD S1 LTRR	LTRR Z-fold first folding position adjustment	50 - 150	100
L	FOLD S2 LTRR	LTRR Z-fold second folding position adjustment	50 - 150	100
M	FOLD IN T1 A4R	A4R internal 3-fold first folding position adjustment	50 - 150	100

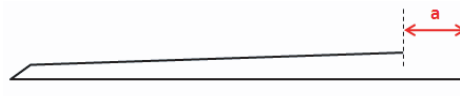
Item	Display	Content	Setting range	Default value
N	FOLD IN T2 A4R	A4R internal 3-fold second folding position adjustment	50 - 150	100
O	FOLD IN T1 LTRR	LTRR internal 3-fold first folding position adjustment	50 - 150	100
P	FOLD IN T2 LTRR	LTRR internal 3-fold second folding position adjustment	50 - 150	100
Q	FOLD OUT T1 A4R	A4R external 3-fold first folding position adjustment	50 - 150	100
R	FOLD OUT T2 A4R	A4R external 3-fold second folding position adjustment	50 - 150	100
S	FOLD OUT T1 LTRR	LTRR external 3-fold first folding position adjustment	50 - 150	100
T	FOLD OUT T2 LTRR	LTRR external 3-fold second folding position adjustment	50 - 150	100
U	FOLD Q1 A4R	A4R 4-fold first folding position adjustment	50 - 150	100
V	FOLD Q2 A4R	A4R 4-fold second folding position adjustment	50 - 150	100
W	FOLD Q1 LTRR	LTRR 4-fold first folding position adjustment	50 - 150	100
X	FOLD Q2 LTRR	LTRR 4-fold second folding position adjustment	50 - 150	100
Y	FOLD Q1 LGL	LGL 4-fold first folding position adjustment	50 - 150	100
Z	FOLD Q2 LGL	LGL 4-fold second folding position adjustment	50 - 150	100
AA	FOLD H1 A4R	A4R 2-fold first folding position adjustment	50 - 150	100
AB	FOLD H1 LTRR	LTRR 2-fold first position adjustment	50 - 150	100
AC	FOLD IN S FINE	Z-fold X position fine adjustment designation data	46 - 53	50
AD	FOLD IN T FINE	Internal 3-fold X position fine adjustment designation data	36 - 60	48
AE	FOLD OUT T FINE	External 3-fold X position fine adjustment designation data	36 - 60	48
AF	FOLD Q1 FINE	4-fold X position fine adjustment designation data	46 - 60	48
AG	FOLD Q2 FINE	4-fold Y position fine adjustment designation data	50 - 60	52
AH	FOLD H FINE	2-fold X position fine adjustment designation data	46 - 54	50



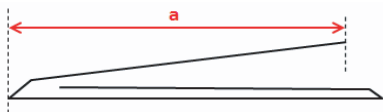
Item	Content	Variation value
A	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.1mm
B	When the adjustment value is increased, the length of b is increased. When the adjustment value is decreased, the length of b is decreased.	0.1mm
C	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.1mm
D	When the adjustment value is increased, the length of b is increased. When the adjustment value is decreased, the length of b is decreased.	0.1mm
E	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.1mm



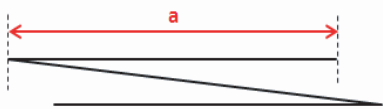
Item	Content	Variation value
AC	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



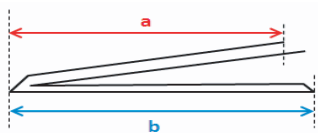
Item	Content	Variation value
AH	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



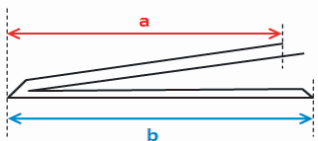
Item	Content	Variation value
AD	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



Item	Content	Variation value
AE	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



Item	Content	Variation value
AF	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



Item	Content	Variation value
AG	When the adjustment value is increased, the length of b is increased. When the adjustment value is decreased, the length of b is decreased.	0.5mm

3-50

Purpose	Operation check
Function (Purpose)	Decurler sensor check
Section	Decurler

Operation/Procedure

- 1) When each sensor is turned ON, the sensor name displayed on the screen is highlighted.
- 2) Use the touch panel scroll key to shift between pages.

NO.	Display	Content
1	DCS100	Decurler unit transport path sensor
2	DCTRS_MOT_FAULT	Decurler transport motor driver IC error detection signal
3	DCSW100	Decurler unit front cover switch
4	DCMOT_FAN_LOCK	Decurler unit fan 3 alarm signal
5	DCTOP_FAN_LOCK	Decurler unit fan 1 alarm signal
6	DCBTM_FAN_LOCK	Decurler unit fan 2 alarm signal
7	DCSW1-1	DIPSW1 detection
8	DCSW1-2	DIPSW2 detection
9	DCSW1-3	DIPSW3 detection
10	DCSW1-4	DIPSW4 detection
11	DCSW2	PUSHSW detection
12	PDPPD1	Finisher paper relay paper transport detector 1
13	PDPPD2	Finisher paper relay paper transport detector 2
14	PDOS	Finisher paper relay cover open/close sensor
15	FFANLK	Finisher fan motor lock detection

3-51

Purpose	Operation check
Function (Purpose)	Decurler individual load check
Section	Decurler unit

Operation/Procedure

- 1) Press the name of the signal to which a load is applied with the touch panel key.
- 2) Press [EXECUTE] key to start the load operation.
- 3) Press [EXECUTE] key again to stop the operation.

NO.	Display	Content
1	DCM100	Decurler transport motor
2	DCFAN100	Decurler unit fan 1
3	DCFAN101	Decurler unit fan 2
4	DCFAN103	Decurler unit fan 3
5	PDPTM	Finisher paper relay paper transport motor
6	PDPGS	Finisher paper relay paper gate solenoid
7	PDCF	Finisher paper relay cooling fan
8	PBM102	Relay unit transport motor 2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the large capacity tray (LCC) and the control circuits.
Section	Large capacity tray (LCC)

Operation/Procedure

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are high-lighted.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<A4 LCC sensor>

Display	Sensor name
LPFD	LCC transport detection
LUD	LCC tray upper limit detection
LDD	LCC tray lower limit detection
LPED	LCC tray paper empty detection
LCLD	LCC tray open/close detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder detection
L24VM	LCC 24V power monitor
LLSW	LCC upper limit SW
LCCD	LCC main unit connection detection

<A3 LCC sensor>

Display	Sensor name
LPFD	LCC transport detection
LUD	LCC tray upper limit detection
LDD	LCC tray lower limit detection
LPED	LCC tray paper empty detection
LCLD	LCC tray open/close detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder detection
L24VM	LCC 24V power monitor
LLSW	LCC upper limit SW
LPUSW	LCC paper upper surface detection SW
LRRSW	LCC reverse winding detection SW
LTLSW	LCC tray lift SW
LTLD	LCC tray lock sensor
LIPSW	LCC illegal paper detection SW
LTOD	LCC main unit connection detection

<LCT manual feed unit sensor>

Display	Sensor name
L1MPFS	Manual paper feed sensor
L1MTS	Manual feed transport sensor
L1DFB01	Manual feed paper entry sensor
L1MPES	Manual feed paper sensor
L1MSLIDE	Manual feed slide detector
L1MULS	Upper limit sensor
L1MLLS	Lower limit sensor
L1MPVS1	Remaining quantity sensor 1
L1MPVS2	Remaining quantity sensor 2
L1MLSW	Lift switch
L1MLS	Manual feed tray paper length sensor
L1MSIZ1	Size sensor 1
L1MSIZ2	Size sensor 2
L1MSIZ3	Size sensor 3
L1MSIZ4	Size sensor 4
L1MSIZ5	Size sensor 5

<LCT 1 series unit sensor>

Display	Sensor name
L1DFTRC	TRC signal (1 series)
L1DO001	2 series installation detection
L1DO002	Interface unit installation detection
L1DO003	Horizontal transport unit installation detection
L1DO004	Manual feed unit installation detection
L1DD001	Machine ↔ LCT1 connection sensor
L1DD002	LCT1 front door open/close sensor
L1DD003	Transport open/close sensor 1 (1 series)
L1DD004	Transport open/close sensor 2 (1 series)
L1DD005	Vertical transport open/close sensor (1 series)
L1DD006	Horizontal unit insertion sensor
L1DF001	Vertical transport sensor 1 (1 series)
L1DF002	Vertical transport sensor 2 (1 series)
L1DF003	Vertical transport sensor 3 (1 series)
L1DF004	Vertical transport sensor 4 (1 series)
L1DF005	LCT paper exit sensor (1 series)
L1DF006	Horizontal transport sensor 1
L1DF007	Horizontal transport sensor 2
L1DF008	Horizontal transport sensor 3
L1DF009	Horizontal transport sensor 4
L1DF010	Horizontal transport sensor 5

<LCT 2 series unit sensor>

Display	Sensor name
L2DFTRC	TRC signal (2 series)
L2DO005	Front LCT installation detection
L2DD001	Machine ↔ LCT2 connection sensor
L2DD002	LCT2 front door open/close sensor
L2DD003	Transport open/close sensor 1 (2 series)
L2DD004	Transport open/close sensor 2 (2 series)
L2DD005	Vertical transport open/close sensor (2 series)
L2DF001	Vertical transport sensor 1 (2 series)
L2DF002	Vertical transport sensor 2 (2 series)
L2DF003	Vertical transport sensor 3 (2 series)
L2DF004	Vertical transport sensor 4 (2 series)
L2DF005	LCT paper exit sensor (2 series)

<LCT cassette tray 1 sensor>

Display	Sensor name
L1DF101	Paper exit sensor 1cs
L1DT101	Cassette insertion detection SW 1cs
L1DT102	Upper limit SW 1cs
L1DT103	Paper empty sensor 1cs
L1DT104	Lift motor encoder 1cs
L1DT105	Tray lock sensor 1cs
L1DT106	Upper limit sensor 1cs
L1DT107	Lower limit sensor 1cs
L1DT108	Reverse winding detection SW 1cs
L1DT109	Tray descending SW 1cs
L1DT110	Paper upper surface sensor 1cs
L1DT111	Paper length sensor 1cs
L1DT112	Size sensor 1 1cs
L1DT113	Size sensor 2 1cs
L1DT114	Size sensor 3 1cs
L1DT115	Size sensor 4 1cs

<LCT cassette tray 2 sensor>

Display	Sensor name
L1DF201	Paper exit sensor 2cs
L1DT201	Cassette insertion detection SW 2cs
L1DT202	Upper limit SW 2cs
L1DT203	Paper empty sensor 2cs
L1DT204	Lift motor encoder 2cs
L1DT205	Tray lock sensor 2cs
L1DT206	Upper limit sensor 2cs
L1DT207	Lower limit sensor 2cs
L1DT208	Reverse winding detection SW 2cs
L1DT209	Tray descending SW 2cs
L1DT210	Paper upper surface sensor 2cs

Display	Sensor name
L1DT211	Paper length sensor 2cs
L1DT212	Size sensor 1 2cs
L1DT213	Size sensor 2 2cs
L1DT214	Size sensor 3 2cs
L1DT215	Size sensor 4 2cs

<LCT cassette tray 3 sensor>

Display	Sensor name
L2DF101	Paper exit sensor 3cs
L2DT101	Cassette insertion detection SW 3cs
L2DT102	Upper limit SW 3cs
L2DT103	Paper empty sensor 3cs
L2DT104	Lift motor encoder 3cs
L2DT105	Tray lock sensor 3cs
L2DT106	Upper limit sensor 3cs
L2DT107	Lower limit sensor 3cs
L2DT108	Reverse winding detection SW 3cs
L2DT109	Tray descending SW 3cs
L2DT110	Paper upper surface sensor 3cs
L2DT111	Paper length sensor 3cs
L2DT112	Size sensor 1 3cs
L2DT113	Size sensor 2 3cs
L2DT114	Size sensor 3 3cs
L2DT115	Size sensor 4 3cs

<LCT cassette tray 4 sensor>

Display	Sensor name
L2DF201	Paper exit sensor 4cs
L2DT201	Cassette insertion detection SW 4cs
L2DT202	Upper limit SW 4cs
L2DT203	Paper empty sensor 4cs
L2DT204	Lift motor encoder 4cs
L2DT205	Tray lock sensor 4cs
L2DT206	Upper limit sensor 4cs
L2DT207	Lower limit sensor 4cs
L2DT208	Reverse winding detection SW 4cs
L2DT209	Tray descending SW 4cs
L2DT210	Paper upper surface sensor 4cs
L2DT211	Paper length sensor 4cs
L2DT212	Size sensor 1 4cs
L2DT213	Size sensor 2 4cs
L2DT214	Size sensor 3 4cs
L2DT215	Size sensor 4 4cs

4-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the desk/large capacity tray (LCC) and the control circuits.
Section	Desk/Large capacity tray

Operation/Procedure

- 1) Select a target load 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.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<A4 LCC load item>

Display	Content
LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch

<A3 LCC load item>

Display	Content
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
LTLS	LCC tray lock solenoid
LFAN	LCC separation auxiliary fan

<Paper feed option: Manual feed unit load item>

Display	Content
L1MPUM	Manual paper feed motor
L1MREVM	Manual feed transport motor
L1MPFM	Manual feed interface motor
L1MPRM	Manual feed lift motor
L1MPUS	Manual feed pickup solenoid
L1MLED	Manual feed lift LED

<LCT unit 1 series load item>

Display	Content
L1MT001	Transport motor 1 (1 series)
L1PW001	Heat-retention heater relay (1 series)
L1CL001	Horizontal transport clutch

<LCT unit 2 series load item>

Display	Content
L2MT001	Transport motor 1 (2 series)
L2PW001	Heat-retention heater relay (2 series)

<LCT cassette tray 1 load item>

Display	Content
L1MT101	Lift motor 1cs
L1MT102	Inlet fan motor 1cs
L1MT103	Outlet fan motor 1cs
L1MT104	Assist fan motor 1cs
L1SL101	Suction valve solenoid 1cs
L1SL102	Lock solenoid 1cs
L1CL101	Paper feed clutch 1cs
L1CL102	Transport clutch 1cs
L1HT101	Hot air heater 1cs
L1LD101	Lift LED 1cs
L1CHK101	Wind pressure measuring operation 1cs

<LCT cassette tray 2 load item>

Display	Content
L1MT201	Lift motor 2cs
L1MT202	Inlet fan motor 2cs
L1MT203	Outlet fan motor 2cs
L1MT204	Assist fan motor 2cs
L1SL201	Suction valve solenoid 2cs
L1SL202	Lock solenoid 2cs
L1CL201	Paper feed clutch 2cs
L1CL202	Transport clutch 2cs
L1HT201	Hot air heater 2cs
L1LD201	Lift LED 2cs
L1CHK201	Wind pressure measuring operation 2cs

<LCT cassette tray 3 load item>

Display	Content
L2MT101	Lift motor 3cs
L2MT102	Inlet fan motor 3cs
L2MT103	Outlet fan motor 3cs
L2MT104	Assist fan motor 3cs
L2SL101	Suction valve solenoid 3cs
L2SL102	Lock solenoid 3cs
L2CL101	Paper feed clutch 3cs
L2CL102	Transport clutch 3cs
L2HT101	Hot air heater 3cs
L2LD101	Lift LED 3cs

Display	Content
L2CHK101	Wind pressure measuring operation 3cs

<LCT cassette tray 4 load item>

Display	Content
L2MT201	Lift motor 4cs
L2MT202	Inlet fan motor 4cs
L2MT203	Outlet fan motor 4cs
L2MT204	Assist fan motor 4cs
L2SL201	Suction valve solenoid 4cs
L2SL202	Lock solenoid 4cs
L2CL201	Paper feed clutch 4cs
L2CL202	Transport clutch 4cs
L2HT201	Hot air heater 4cs
L2LD201	Lift LED 4cs
L2CHK201	Wind pressure measuring operation 4cs

4-5

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the transport clutch (LTRC) in the LCC and the monitor.
Section	Large capacity tray (LCC)

Operation/Procedure

- Press [LTRC] key to check the synchronization signal.
When normal: ON (highlighted) When abnormal: OFF
- Press [LTRC] key with the display highlighted to check the synchronization signal.
When normal: OFF When abnormal: ON (highlighted)
When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Button	Content
LTRC	A4/A3LCC transport clutch

4-10

Purpose	Setting
Function (Purpose)	LCT warm air heater temperature setting
Section	LCT

Operation/Procedure

- Select a target item to be adjusted with scroll keys.
- Enter the setting value with 10-key.
- Press [OK] key to save the setting value into the EEPROM and the RAM.

Item/Display	Content	Setting range	Default value	
A WARM AIR TEMP. (PLAIN)	Warm air heater temperature setting: Normal paper	20 - 80	45	
B WARM AIR TEMP. (HEAVY1,2)	Warm air heater temperature setting: Heavy paper 1, 2	20 - 80	45	
C WARM AIR TEMP. (HEAVY3,4)	Warm air heater temperature setting: Heavy paper 3, 4	20 - 80	45	
D WARM AIR TEMP. (THIN)	Warm air heater temperature setting: Thin paper	20 - 80	45	
E WARM AIR TEMP. (GLOSSY)	Warm air heater temperature setting: Glossy paper	20 - 80	45	
F WARM AIR TEMP. (OTHER)	Warm air heater temperature setting: Other	20 - 80	45	
G WARM AIR CONTROL DISABLE (PLAIN)	Warm air heater temperature setting control disable: Normal paper	0: Enable	0 - 1	1
		1: Disable		
H WARM AIR CONTROL DISABLE (HEAVY1,2)	Warm air heater temperature setting control disable: Heavy paper 1, 2	0: Enable	0 - 1	0
		1: Disable		
I WARM AIR CONTROL DISABLE (HEAVY3,4)	Warm air heater temperature setting control disable: Heavy paper 3, 4	0: Enable	0 - 1	0
		1: Disable		
J WARM AIR CONTROL DISABLE (THIN)	Warm air heater temperature setting control disable: Thin paper	0: Enable	0 - 1	1
		1: Disable		
K WARM AIR CONTROL DISABLE (GLOSSY)	Warm air heater temperature setting control disable: Glossy paper	0: Enable	0 - 1	0
		1: Disable		
L WARM AIR CONTROL DISABLE (OTHER)	Warm air heater temperature setting control disable: Other	0: Enable	0 - 1	1
		1: Disable		

Purpose	Setting
Function (Purpose)	LCT fan Duty setting
Section	LCT

Operation/Procedure

- 1) Select a target item to be adjusted with scroll keys.
- 2) Enter the setting value with 10-key.
- 3) Press [OK] key to save the setting value into the EEPROM and the RAM.

When the set value is 50, the fan duty is 50%.

NOTE: When the fan duty is set to 0 - 14%, the fan does not rotate.

	Item/Display	Content	Setting range	Default value
A	VACUUM FAN DUTY (PLAIN - L)	Suction fan Duty: Normal paper Large size	30 - 100	60
B	VACUUM FAN DUTY (PLAIN - M)	Suction fan Duty: Normal paper Middle size	30 - 100	60
C	VACUUM FAN DUTY (PLAIN - S)	Suction fan Duty: Normal paper Small size	30 - 100	60
D	VACUUM FAN DUTY (HEAVY1,2 - L)	Suction fan Duty: Heavy paper 1, 2 Large size	30 - 100	90
E	VACUUM FAN DUTY (HEAVY1,2 - M)	Suction fan Duty: Heavy paper 1, 2 Middle size	30 - 100	90
F	VACUUM FAN DUTY (HEAVY1,2 - S)	Suction fan Duty: Heavy paper 1, 2 Small size	30 - 100	90
G	VACUUM FAN DUTY (HEAVY3,4 - L)	Suction fan Duty: Heavy paper 3, 4 Large size	30 - 100	90
H	VACUUM FAN DUTY (HEAVY3,4 - M)	Suction fan Duty: Heavy paper 3, 4 Middle size	30 - 100	90
I	VACUUM FAN DUTY (HEAVY3,4 - S)	Suction fan Duty: Heavy paper 3, 4 Small size	30 - 100	90
J	VACUUM FAN DUTY (THIN - L)	Suction fan Duty: Thin paper Large size	30 - 100	60
K	VACUUM FAN DUTY (THIN - M)	Suction fan Duty: Thin paper Middle size	30 - 100	60
L	VACUUM FAN DUTY (THIN - S)	Suction fan Duty: Thin paper Small size	30 - 100	60
M	VACUUM FAN DUTY (GLOSSY - L)	Suction fan Duty: Glossy paper Large size	30 - 100	60
N	VACUUM FAN DUTY (GLOSSY - M)	Suction fan Duty: Glossy paper Middle size	30 - 100	60
O	VACUUM FAN DUTY (GLOSSY - S)	Suction fan Duty: Glossy paper Small size	30 - 100	60
P	VACUUM FAN DUTY (OTHER - L)	Suction fan Duty: Other Large size	30 - 100	60
Q	VACUUM FAN DUTY (OTHER - M)	Suction fan Duty: Other Middle size	30 - 100	60
R	VACUUM FAN DUTY (OTHER - S)	Suction fan Duty: Other Small size	30 - 100	60
S	BLOWER FAN DUTY (PLAIN - L)	Separation fan Duty: Normal paper Large size	30 - 100	60
T	BLOWER FAN DUTY (PLAIN - M)	Separation fan Duty: Normal paper Middle size	30 - 100	60
U	BLOWER FAN DUTY (PLAIN - S)	Separation fan Duty: Normal paper Small size	30 - 100	60
V	BLOWER FAN DUTY (HEAVY1,2 - L)	Separation fan Duty: Heavy paper 1, 2 Large size	30 - 100	90
W	BLOWER FAN DUTY (HEAVY1,2 - M)	Separation fan Duty: Heavy paper 1, 2 Middle size	30 - 100	90
X	BLOWER FAN DUTY (HEAVY1,2 - S)	Separation fan Duty: Heavy paper 1, 2 Small size	30 - 100	90
Y	BLOWER FAN DUTY (HEAVY3,4 - L)	Separation fan Duty: Heavy paper 3, 4 Large size	30 - 100	90
Z	BLOWER FAN DUTY (HEAVY3,4 - M)	Separation fan Duty: Heavy paper 3, 4 Middle size	30 - 100	90
AA	BLOWER FAN DUTY (HEAVY3,4 - S)	Separation fan Duty: Heavy paper 3, 4 Small size	30 - 100	90
AB	BLOWER FAN DUTY (THIN - L)	Separation fan Duty: Thin paper Large size	30 - 100	60
AC	BLOWER FAN DUTY (THIN - M)	Separation fan Duty: Thin paper Middle size	30 - 100	60
AD	BLOWER FAN DUTY (THIN - S)	Separation fan Duty: Thin paper Small size	30 - 100	60
AE	BLOWER FAN DUTY (GLOSSY - L)	Separation fan Duty: Glossy paper Large size	30 - 100	60
AF	BLOWER FAN DUTY (GLOSSY - M)	Separation fan Duty: Glossy paper Middle size	30 - 100	60
AG	BLOWER FAN DUTY (GLOSSY - S)	Separation fan Duty: Glossy paper Small size	30 - 100	60
AH	BLOWER FAN DUTY (OTHER - L)	Separation fan Duty: Other Large size	30 - 100	60
AI	BLOWER FAN DUTY (OTHER - M)	Separation fan Duty: Other Middle size	30 - 100	60
AJ	BLOWER FAN DUTY (OTHER - S)	Separation fan Duty: Other Small size	30 - 100	60
AK	ASSIST FAN DUTY (PLAIN - L)	Side assist fan Duty: Normal paper Large size	0 - 100	10
AL	ASSIST FAN DUTY (PLAIN - M)	Side assist fan Duty: Normal paper Middle size	0 - 100	10
AM	ASSIST FAN DUTY (PLAIN - S)	Side assist fan Duty: Normal paper Small size	0 - 100	10
AN	ASSIST FAN DUTY (HEAVY1,2 - L)	Side assist fan Duty: Heavy paper 1, 2 Large size	0 - 100	10
AO	ASSIST FAN DUTY (HEAVY1,2 - M)	Side assist fan Duty: Heavy paper 1, 2 Middle size	0 - 100	10
AP	ASSIST FAN DUTY (HEAVY1,2 - S)	Side assist fan Duty: Heavy paper 1, 2 Small size	0 - 100	10
AQ	ASSIST FAN DUTY (HEAVY3,4 - L)	Side assist fan Duty: Heavy paper 3, 4 Large size	0 - 100	30
AR	ASSIST FAN DUTY (HEAVY3,4 - M)	Side assist fan Duty: Heavy paper 3, 4 Middle size	0 - 100	10
AS	ASSIST FAN DUTY (HEAVY3,4 - S)	Side assist fan Duty: Heavy paper 3, 4 Small size	0 - 100	10
AT	ASSIST FAN DUTY (THIN - L)	Side assist fan Duty: Thin paper Large size	0 - 100	10
AU	ASSIST FAN DUTY (THIN - M)	Side assist fan Duty: Thin paper Middle size	0 - 100	10
AV	ASSIST FAN DUTY (THIN - S)	Side assist fan Duty: Thin paper Small size	0 - 100	10
AW	ASSIST FAN DUTY (GLOSSY - L)	Side assist fan Duty: Glossy paper Large size	0 - 100	10
AX	ASSIST FAN DUTY (GLOSSY - M)	Side assist fan Duty: Glossy paper Middle size	0 - 100	10
AY	ASSIST FAN DUTY (GLOSSY - S)	Side assist fan Duty: Glossy paper Small size	0 - 100	10
AZ	ASSIST FAN DUTY (OTHER - L)	Side assist fan Duty: Other Large size	0 - 100	10
BA	ASSIST FAN DUTY (OTHER - M)	Side assist fan Duty: Other Middle size	0 - 100	10
BB	ASSIST FAN DUTY (OTHER - S)	Side assist fan Duty: Other Small size	0 - 100	10

Purpose	Check
Function (Purpose)	LCT temperature and humidity sensor monitor display
Section	LCT

Operation/Procedure

When the machine enters the simulation mode, the current data are displayed.

Since the value varies depending on the use conditions and the operating conditions, use the value as a reference only.

* Data are revised every 5 sec.

Display item	Description	Display range
LCT1 TEMP.	LCT1 series temperature sensor: Temperature	Temperature: 0 - 255°C
	LCT1 series temperature sensor: AD value	AD value: 0 - 65535
LCT1 RH	LCT1 series humidity sensor: Humidity	Humidity: 0 - 100%
	LCT1 series humidity sensor: AD value	AD value: 0 - 65535
LCT2 TEMP. *1	LCT2 series temperature sensor: Temperature	Temperature: 0 - 255°C
	LCT2 series temperature sensor: AD value	AD value: 0 - 65535
LCT2 RH *1	LCT2 series humidity sensor: Humidity	Humidity: 0 - 100%
	LCT2 series humidity sensor: AD value	AD value: 0 - 65535
CS1 HEATER TEMP.	CS1 CS heater temperature sensor: Temperature	Temperature: 0 - 255°C
	CS1 CS heater temperature sensor: AD value	AD value: 0 - 65535
CS1 WARM AIR TEMP.	CS1 CS warm air outlet port temperature sensor: Temperature	Temperature: 0 - 255°C
	CS1 CS warm air outlet port temperature sensor: AD value	AD value: 0 - 65535
CS1 TEMP.	CS1 CS temperature sensor: Temperature	Temperature: 0 - 255°C
	CS1 CS temperature sensor: AD value	AD value: 0 - 65535
CS1 RH	CS1 CS humidity sensor: Humidity	Humidity: 0 - 100%
	CS1 CS humidity sensor: AD value	AD value: 0 - 65535
CS2 HEATER TEMP.	CS2 CS heater temperature sensor: Temperature	Temperature: 0 - 255°C
	CS2 CS heater temperature sensor: AD value	AD value: 0 - 65535
CS2 WARM AIR TEMP.	CS2 CS warm air outlet port temperature sensor: Temperature	Temperature: 0 - 255°C
	CS2 CS warm air outlet port temperature sensor: AD value	AD value: 0 - 65535
CS2 TEMP.	CS2 CS temperature sensor: Temperature	Temperature: 0 - 255°C
	CS2 CS temperature sensor: AD value	AD value: 0 - 65535
CS2 RH	CS2 CS humidity sensor: Humidity	Humidity: 0 - 100%
	CS2 CS humidity sensor: AD value	AD value: 0 - 65535
CS3 HEATER TEMP. *1	CS3 CS heater temperature sensor: Temperature	Temperature: 0 - 255°C
	CS3 CS heater temperature sensor: AD value	AD value: 0 - 65535
CS3 WARM AIR TEMP. *1	CS3 CS warm air outlet port temperature sensor: Temperature	Temperature: 0 - 255°C
	CS3 CS warm air outlet port temperature sensor: AD value	AD value: 0 - 65535

Display item	Description	Display range
CS3 TEMP. *1	CS3 CS temperature sensor: Temperature	Temperature: 0 - 255°C
	CS3 CS temperature sensor: AD value	AD value: 0 - 65535
CS3 RH *1	CS3 CS humidity sensor: Humidity	Humidity: 0 - 100%
	CS3 CS humidity sensor: AD value	AD value: 0 - 65535
CS4 HEATER TEMP. *1	CS4 CS heater temperature sensor: Temperature	Temperature: 0 - 255°C
	CS4 CS heater temperature sensor: AD value	AD value: 0 - 65535
CS4 WARM AIR TEMP. *1	CS4 CS warm air outlet port temperature sensor: Temperature	Temperature: 0 - 255°C
	CS4 CS warm air outlet port temperature sensor: AD value	AD value: 0 - 65535
CS4 TEMP. *1	CS4 CS temperature sensor: Temperature	Temperature: 0 - 255°C
	CS4 CS temperature sensor: AD value	AD value: 0 - 65535
CS4 RH *1	CS4 CS humidity sensor: Humidity	Humidity: 0 - 100%
	CS4 CS humidity sensor: AD value	AD value: 0 - 65535

* The AD value is displayed by converting the above display range into hexadecimal number.

* "°C" is displayed as "deg" because of the display fonts.

*1: When the LCT2 is not installed, this is not displayed and the list is not printed.

5

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the display lamp and the LCD on the operation panel and the control circuit.
Section	Operation panel

Operation/Procedure

When this simulation is executed, all the LED's are lighted for 12 sec and then turned off.

- 1) With the upper half normally highlighted and the lower half normally displayed, the contrast is changed every 2sec from the current level → Max. → Min.. → the current level in this sequence.
- 2) Then, the upper half is normally displayed and the lower half is highlighted, and the contrast level is changed every 2sec from the current level → Max. → Min. → the current level in this sequence.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

5-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the heater lamp and the control circuit.
Section	Fusing

Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
The selected heater lamp performs ON/OFF operation.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
HL_UM	Heater lamp (Upper main)
HL_US	Heater lamp (Upper sub)
HL_EX	Heater lamp (Outside)

5-3	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the copy lamp and the control circuit.
Section	Scanner (reading)

Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
The selected copy lamp is lighted for 10 sec.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
OC COPY LAMP	OC copy lamp
DSPF COPY LAMP	DSPF copy lamp

5-4	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the discharge lamp and the control circuit.
Section	Process

Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
The selected discharge lamp is lighted for 30 sec.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item name	Description of item content
DL1	Discharge lamp
PTDL	Pre-transfer discharge lamp

6	
6-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.
Section	Paper transport, paper exit

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.
Section	Paper transport, paper exit

Operation/Procedure

- 1) Select an target item of the operation check with [↑] [↓] keys.
- 2) Press [EXECUTE] key.
The selected load performs the operation.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<Simultaneous load selection table>

	machine [Motor system]	machine [Clutch/Solenoid system (machine)]	machine [Clutch/solenoid system (manual feed)]
machine [Motor system]	×	○	○
machine [Clutch/Solenoid system (machine)]	○	×	×
machine [Clutch/solenoid system (manual feed)]	○	×	×

* However, only one load can be selected in each system.

Item/Display name	Content	
Motor	MM	Main motor
	FUM	Fusing motor
	MM2	Multi-stage motor
	TRM	PS front motor (TRM)
	VPM	PS front motor (VPM)
	PSM	PS motor
	FURM_H	Fusing rear roller drive motor (High speed)
	FURM_L	Fusing rear roller drive motor (Low speed)
	POM_H	Paper exit drive motor (High speed)
	POM_L	Paper exit drive motor (Low speed)
	SBRM_FH	Reverse roller drive motor (Normal) (High speed)
	SBRM_FL	Reverse roller drive motor (Normal) (Low speed)
	SBRM_RH	Reverse roller drive motor (Reverse) (High speed)
	SBRM_RL	Reverse roller drive motor (Reverse) (Low speed)
	C1LUM	Cassette 1 lift motor (T1LUM)
	C2LUM	Cassette 2 lift motor (T2LUM)
C3LUM	Cassette 3 lift motor	
C4LUM	Cassette 4 lift motor	
DCLM	Decurler motor	
Clutch	T1PFC	Tandem 1 paper transport clutch
	T2PFC	Tandem 2 paper transport clutch
	C3PFC	Cassette 3 paper transport clutch
	C4PFC	Cassette 4 paper transport clutch
	T1PTC	Horizontal transport clutch
	VPTC1	Vertical transport clutch control output 1 (Lower)
	VPTC2	Vertical transport clutch control output 2 (Intermediate)
	VPTC3	Vertical transport clutch control output 3 (Upper)
	LCCPTC	LCC transport clutch
	MPFTC	Manual feed transport clutch

Item/Display name	Content	
Solenoid	POCS	FU/FD select gate solenoid
	ADUCS	Duplex/FD select gate solenoid
	T1PUS	Tandem 1 pickup solenoid
	T2PUS	Tandem 2 pickup solenoid
	C3PUS	Tandem 3 pickup solenoid
	C4PUS	Tandem 4 pickup solenoid
	PSPS	Separation solenoid control output
	FRS	Fusing lower pawl separation solenoid
	MPFPUS	Manual feed pickup solenoid
	MPFGS	Manual feed gate solenoid

* For the items "Normal ↔ Reverse" of which are displayed as separate items, if two or more of them are selected simultaneously, "Normal" rotation is performed.

If the load is rotating, it will not accept reverse rotation unless it comes to a stop.

6-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of each fan motor and the control circuit.

Section	
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Operation/Procedure

- 1) Select a target 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.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
CFM_ADU1	Reverse transport cooling fan/Reverse cooling fan
CFM_ADU2/ CFM_PA1	ADU section paper cooling fan 1, 2/Paper cooling fan
CFM_CL/CFM_PO1	Process cooling fan 1, 2, 3, 4/Polygon cooling fan
CFM_DC	Power cooling fan 1, 2, 3
CFM_DV1/FM_DV1	Developing cooling fan/Toner suction fan
CFM-PS/CFM-Tr	PS cooling fan (120/105cpm machines only) / Process cooling fan
VFM_EX	Main unit exhaust heat fan
VFM_EX12	Ozone exhaust fan 1 / Ozone exhaust fan 2
CFM_PC	Process section peripheral cooling fan
MFPFAN	Controller fan motor / HDD fan motor
SPSFAN	Sub power cooling fan motor

6-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the primary transfer separation.

Section	Process (transfer)
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Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) When the transfer separation load operation is completed, [EXECUTE] key returns to the normal state.
* When [EXECUTE] key is pressed during the load operation, the separation operation is continued until it is completed. After completion of the operation, the load operation is terminated and [EXECUTE] key returns to the normal state.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

6-4

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the MC cleaner.

Section	Process (charging)
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Operation/Procedure

- 1) Select a target of the operation check with the touch panel.
- 2) Press [EXECUTE] key.
- 3) When the cleaner operation is completed normally, [OK] is displayed.
* The counter value is displayed when cleaning reaches R to F.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

6-90

Purpose	Setting
Function (Purpose)	Used to reset the machine to the factory setting. (The scanner is set to the lock enable position)

Section	Scanner
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Operation/Procedure

- 1) Press [EXECUTE] key.
The scanner is shifted to the lock enable position and stopped.

7

7-1

Purpose	Setting
Function (Purpose)	Used to set the conditions of aging operation.

Section	
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Operation/Procedure

- 1) Select a target of setting with the touch panel.
- 2) Press [EXECUTE] key.
The machine is rebooted in the aging mode.
Afterwards, the operation mode is continued until the power is turned off or resetting is made.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

AGING	Aging operation setting
INTERVAL	Intermittent setting
MISFEED DISABLE	JAM detection YES/NO setting
FUSING DISABLE	Fusing operation YES/NO setting
WARMUP DISABLE	Warm-up omission setting
DV CHECK DISABLE	Developing unit detection YES/NO setting
SHADING DISABLE	Shading omission setting
CCD GAIN FREE	CCD gain adjustment free setting

7-6

Purpose	Setting
Function (Purpose)	Used to set the intermittent aging cycle.

Section	
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Operation/Procedure

- 1) Enter the intermittent aging cycle (unit: sec) with 10-key.
- 2) Press [OK] key.
The time set in step 1 is set.
* The setting range of the interval time is 1 - 900 (sec).
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

7-8

Purpose	Operation display
Function (Purpose)	Used to display the warm-up time.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Counting of the warm-up time is started.
 - * Interruption during the execution with [EXECUTE] key is invalid.

7-12

Purpose	Operation test, check
Function (Purpose)	Used to set the document scan quantity. (For development and inspection)
Section	

Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key, and the currently set data are saved to the EPROM and the RAM.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the sub code entry menu.

Item	Display	Content	Setting range	Default value
A	ORIGINALS	Document scan quantity setting (for aging)	0 - 255	0

8-2

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operations of the main charger grid voltage in each print mode and the control circuit.
Section	Process

Operation/Procedure

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
 - * When Δ or ∇ key is pressed, the set value of each item is increased or decreased by 1. Collective change can be made.

Item	Display	Content	Setting range	Default	Monitor connector		Actual output voltage
				105/120cpm machine	Connector	Pin No.	105/120cpm machine
A	GB_K	Main charger grid voltage adjustment value (Copy mode)	200-1000	605	CN3	7	625 ± 5V

8

8-1

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the developing voltage in each print mode and the control circuit.
Section	Process (Development)

Operation/Procedure

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
 - * When Δ or ∇ key is pressed, the set value of each item is increased or decreased by 1. Collective change can be made.
- 3) Press [EXECUTE] key.
 - The currently set voltage is outputted and the set value is saved.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Display	Content	Setting range	Default value
				105/120cpm machine
A	DVB_K	K developing bias set value	0 - 750	496
B	DVB_K PLUS	K developing bias plus set value	0 - 250	164

- 3) Press [EXECUTE] key.
 - The currently set voltage is outputted and the set value is saved.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

8-6

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the transfer plus bias current and the control circuit.
Section	Process (transfer)

Operation/Procedure

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
The currently set voltage is outputted for 30 sec, and the set value is saved.
When [EXECUTE] key is pressed, the output is terminated.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Display	Content	Setting range	Default value
A	TC PLAIN SPX	Transfer current (THV+): Standard paper front surface	0 - 255	174
B	TC PLAIN DPX	Transfer current (THV+): Standard paper back surface	0 - 255	147
C	TC HEAVY SPX	Transfer current (THV+): Heavy paper front surface	0 - 255	174
D	TC HEAVY DPX	Transfer current (THV+): Heavy paper back surface	0 - 255	142
E	TC OHP	Transfer current (THV+): OHP	0 - 255	127
F	TC FRONT EDGE BIAS	Transfer current (THV+): Paper lead edge	0 - 255	32
G	TC ADSORPTION BIAS	Transfer current (THV+): Absorption process	0 - 255	127
H	TC INTERVAL BIAS	Transfer current (THV+): Between paper	0 - 255	48
I	TC CLEANING AC SPX	Transfer cleaning AC (THVAC)	0 - 255	191
J	TC CLEANING DC -	Transfer cleaning DC bias - (THV-)	0 - 255	201
K	TC CLEANING BRUSH +	Transfer CL brush print + (THVCL (+))	0 - 128	109
L	TC CLEANING BRUSH -	Transfer CL brush cleaning - (THVCL (-))	128 - 255	169
M	PTDL SPX	PTDL front surface	0 - 255	120
N	PTDL DPX	PTDL back surface	0 - 255	20

9

9-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.
Section	Duplex

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.

Display item name	Sensor name
APPD1	ADU paper pass detection 1
APPD2	ADU paper pass detection 2
APPD3	ADU paper pass detection 3
APFD1	Paper vertical transport (ADU paper feed)
APFD2	Paper vertical transport 2 (ADU paper feed)

9-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.
Section	Duplex

Operation/Procedure

- 1) Select the item to be 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.

Display	Content
ADUM2	ADU motor 2
ADUM1	ADU motor 1
ASRM	ADU reverse motor
ASBC	ADU reverse clutch

10

10-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the toner motor and the control circuit.
Section	Process (Development)

Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
The selected load performs the operation during 10 sec.
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Display	Content
1	TM1	Toner motor 1 (TM1 operates only when the developing unit is installed.) *1
2	TM2	Toner motor 2
3	BOTM	Bottle drive motor

*1: When the DV disable setting in Sim.07-01 is "NO", TM1 does not operate.

10-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the toner hopper empty sensor.
Section	Process (Development)

Operation/Procedure

- 1) When [EXECUTE] key is pressed, the toner motor is driven for 10 sec.
* When the toner hopper empty sensor (TFSD) is turned ON, the sensor name is highlighted.
- 2) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Display Item	Content
1	TFSD	Hopper toner remaining quantity sensor

10-3	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the toner cartridge motor rotation sensor.
Section	Process (Development)

Operation/Procedure

- 1) Press [EXECUTE] key, and the following operations are executed.
The toner cartridge motor is driven for 10 sec, and the toner cartridge motor rotating sensor status is displayed.
* When the sensor is turned ON, the sensor name corresponding to the sensor is displayed.
- 2) When [SYSTEM SETTINGS] key is pressed, the screen returns to the sub code input menu.

NO.	Display Item	Content
1	BOTD	Toner cartridge motor rotation sensor

13

13--	
Purpose	Cancel (trouble, etc.)
Function (Purpose)	Used to cancel the self diag U1 trouble.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Target trouble code	Description
1	U1-01	FAX battery trouble
2	U1-02	RTC read trouble

14

14--	
Purpose	Cancel (trouble, etc.)
Function (Purpose)	Used to cancel the self diag H3/H4/H5 troubles.
Section	Fusing

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Target trouble code	Description
1	H3-00	Fusing high temperature trouble (HL1)
2	H3-01	Fusing high temperature trouble (HL2)
3	H3-02	Fusing high temperature trouble (HL3)
4	H4-00	Fusing low temperature trouble (HL1)
5	H4-01	Fusing low temperature trouble (HL2)
6	H4-02	Fusing low temperature trouble (HL3)
7	H5-01	Fusing paper exit not-reached JAM continuous detection

15

15--	
Purpose	Cancel (trouble, etc.)
Function (Purpose)	Used to cancel the self diag U6-09 (large capacity paper feed tray) trouble.
Section	LCC

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Target trouble code	Description
1	U6-09	Tray 1, Tray 2, Side LCC lift motor trouble

16

16--	
Purpose	Cancel (trouble, etc.)
Function (Purpose)	Used to cancel the self diag U2 trouble.
Section	MFPcnt PWB/PCU PWB/SCU PWB

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

17

17--	
Purpose	Cancel (trouble, etc.)
Function (Purpose)	Used to cancel the self diag PF trouble.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Target trouble code	Description
1	PF-00	RIC copy inhibit signal reception

21

21-1	
Purpose	Setting
Function (Purpose)	Used to set the maintenance cycle.
Section	

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] 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	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (total)	0: DEFAULT 1 - 300:1K - 300K 999: FREE	0 (500K)

22

22-1	
Purpose	Adjustment, setting, operation data output and check
Function (Purpose)	Used to check the print count value of each section and each operation mode. (Used to check the maintenance timing.)
Section	

Operation/Procedure

- 1) Press [START] key to make printing.
- 2) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Target counter	Display	Description	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 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

22-2	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the total number of misfeed and trouble. (If the total number of JAM is considerably great, it is judged that repair is required.)
Section	

Operation/Procedure

- 1) The paper jam and the trouble counter values are displayed.
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

NO.	Display	Content	Default value
1	MACHINE JAM	Machine JAM counter	0
2	SPF JAM	SPF JAM counter	0
3	TROUBLE	Trouble counter	0

22-3

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the misfeed position and the number of misfeed. * This data can be used to estimate the trouble position.

Section**Operation/Procedure**

- 1) Paper JAM and misfeed data are displayed by max. 50 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

* For the JAM code list, refer to "1. Paper JAM code" in [12] OTHERS.

22-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the trouble (self diag) history.

Section**Operation/Procedure**

- 1) The trouble history is displayed by max. 30 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

* For the trouble code list, refer to "1-F. Error code list" in [7] TROUBLESHOOTING.

22-5

Purpose	Other
Function (Purpose)	Used to check the ROM version of each unit (section).

Section**Operation/Procedure**

- 1) The ROM version of each section or of the installed unit is displayed.
- 2) If there is any problem in any software program, use this simulation to check the ROM version and replace it with a new one.
- 3) Press [START] key to make printing.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display item	Description of item content
S/N	Serial No.
ICUM(MAIN)	ICUM (MAIN)
ICUM(SUB)	ICUM (SUB)
ICUM(BIOS)	ICUM (BIOS)
ICU1(MAIN)	ICU1 (Main section)
ICU1(BOOT)	ICU1 (Boot section)
ICU1(SUB)	ICU1 Sub section (ARM9)
ICU2	ICU2
LANGUAGE	Language support data version
UICONTENTS	Content data for display
PCU	PCU
SCU	SCU
SPF	SPF
LCC1	Side LCC or LCT 1 series
LCC2	Side LCT 2 series
FINISHER	Finisher
SADDLE	Saddle unit (Main section)
TRIMMER	Trimmer unit

Display item	Description of item content
INSERTER	Inserter
FOLDING UNIT	Folding unit
DECURLER	Relay unit (Decurler)
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
WATER MARK	Watermark (HDD storage)
ESCP	ESCP font ROM
ACRE(MAIN)	ACRE (Main section)
ACRE(DATA)	ACRE (Data section)
EOSA	Embedded OSA program

22-6

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the list of various setting and adjustment data (simulation, FAX soft switch, counter).

Section**Operation/Procedure**

* When installing or servicing, this simulation is executed to print the list of various adjustment and setting data for use in the next servicing. (Memory trouble, PWB replacement, etc.)

- 1) Select a print mode with 10-key. 1. List print
- 2) When [EXECUTE] key is pressed, the list selected in step 1 is printed.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Item	Button display	Content
DATA	NO.1	List print
PATTERN	NO.3	List print (Process control-related)
2SIDED	1-SIDED	Simplex surface print (Default)
PRINT	2-SIDED	Duplex surface print

22-8

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the counter value of the finisher, DSPF, and the scan (reading).

Section**Operation/Procedure**

- 1) The counter values of the finisher, DSPF, and the scanner are displayed.
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content	Number of digits of display or type	Default value
SPF	Document feed quantity	8 digits	0
SCAN	Scan counter	8 digits	0
STAPLER	Staple counter	8 digits	0
PUNCHER	Puncher counter	8 digits	0
STAMP	Stamp counter	8 digits	0
SADDLE STAPLER	Saddle staple counter	8 digits	0
SADDLE V FOLD	Saddle finisher V fold counter	8 digits	0
COVER	Cover open/close counter	8 digits	0
HP_ON	Number of HP detection	8 digits	0
TRIMMER	Trimmer counter	8 digits	0
FOLDING	Paper folding counter	8 digits	0
INSERTER	Inserter counter (Tray 1)	8 digits	0
INSERTER2	Inserter counter (Tray 2)	8 digits	0
INSERTER OFFLINE	Inserter offline counter	8 digits	0

Display	Content	Number of digits of display or type	Default value
DECURLER	Decurler counter	8 digits	0
OC LAMP TIME	Displays the total lighting time of the lamp in the OC section.	*****:**	0
DSPF LAMP TIME	Displays the total lighting time of the lamp in the DSPF section.	*****:**	0

The lamp lighting time is displayed in ** hours ** minutes.

The lamp lighting time is accumulated in all the modes.

22-9

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the use quantity (print quantity) of each paper feed section.

Section Paper feed, ADU, LCC

Operation/Procedure

- 1) The counter values related to paper feed are displayed.
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display item	Content	Number of digits of display	Default value
TRAY1	Tray 1 paper feed counter	8 digits	0
TRAY2	Tray 2 paper feed counter	8 digits	0
TRAY3	Tray 3 paper feed counter	8 digits	0
TRAY4	Tray 4 paper feed counter	8 digits	0
ADU	ADU paper feed counter	8 digits	0
MFT	Manual paper feed counter (*1)	8 digits	0
LCC	Side LCC paper feed counter (A4 LCC or A3 LCC) (*1)	8 digits	0
LCT1	Upper stage LCT paper feed counter (*1)	8 digits	0
LCT2	Lower stage LCT paper feed counter (*1)	8 digits	0
LCT3	Upper LCT paper feed counter (connected in two) (*1)	8 digits	0
LCT4	Lower LCT paper feed counter (connected in two) (*1)	8 digits	0
LCT_MFT	LCT manual paper feed counter (*1)	8 digits	0
TRAY1_TTL	Accumulated tray 1 paper feed counter	8 digits	0
TRAY2_TTL	Accumulated tray 2 paper feed counter	8 digits	0
TRAY3_TTL	Accumulated tray 3 paper feed counter	8 digits	0
TRAY4_TTL	Accumulated tray 4 paper feed counter	8 digits	0
ADU_TTL	Accumulated ADU paper feed counter	8 digits	0

Display item	Content	Number of digits of display	Default value
MFT_TTL	Accumulated manual paper feed counter (*1)	8 digits	0
LCC_TTL	Accumulated side LCC paper feed counter (A4 LCC or A3 LCC) (*1)	8 digits	0
LCT1_TTL	Accumulated upper stage LCT paper feed counter (*1)	8 digits	0
LCT2_TTL	Accumulated lower stage LCT paper feed counter (*1)	8 digits	0
LCT3_TTL	Accumulated upper LCT paper feed counter (connected in two) (*1)	8 digits	0
LCT4_TTL	Accumulated lower LCT paper feed counter (connected in two) (*1)	8 digits	0
LCT_MFT_TTL	Accumulated LCT manual paper feed counter (*1)	8 digits	0

(*1) Displayed only when option is installed.

22-10

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the system configuration (option, internal hardware).

Section

Operation/Procedure

- 1) The system configuration is displayed.
(The installed devices and options are displayed in their model names.)
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

22-12

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the DSPF misfeed position and the number of each misfeed. (If the number of misfeed is considerably great, it is judged that repair is required.)

Section DSPF

Operation/Procedure

- 1) Paper JAM and misfeed data are displayed by max. 50 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

* For the jam code list, refer to "1. Paper jam code" in [12] OTHERS.

22-13

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).
Section	

Operation/Procedure

- 1) The rotating time of the process section and the print quantity are displayed.
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display item	Content	Counter	RPM	Number of use days	Life meter (±1% unit)	Number of remaining days
MAINTENANCE ALL	Maintenance counter (Total)	Max. 8	Not displayed	0 - 999	0 - 100(%)	0 - 365 *
FUSING ROLLER	Fusing heat roller	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
PRESSURE ROLLER	Pressure roller	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
SEPARATE PAWL	Separation pawl	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
FUSING WEB UNIT	Fusing upper web unit	Max. 8	Not displayed	0 - 999	0 - 100(%)	0 - 365 *
FUSING WEB SEND	Fusing upper web cleaning send counter	Max. 8	Not displayed	Not displayed	Not displayed	Not displayed
TRANSFER BLADE	Transfer blade	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
TC BELT	Transfer belt	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
PS PAPER	PS paper dust removing	Max. 8	Not displayed	0 - 999	0 - 100(%)	0 - 365 *
OZONE/EXHAUST FILTER	Ozone filter/Exhaust filter	Max. 8	Not displayed	0 - 999	0 - 100(%)	0 - 365 *
DEVE CTRG(K)	Developer cartridge K	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
DRUM CTRG(K)	Drum unit K	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
MC CLEAN(K)	MC cleaner (K)	Not displayed	Max. 8	Not displayed	Not displayed	Not displayed
MAIN CHARGER(K)	Main charger K	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
DRUM BLADE(K)	Drum blade K	Max. 8	Max. 8	0 - 999	0 - 100(%)	0 - 365 *
TONER CTRG(K)	Toner cartridge K	Max. 8	Max. 8	0 - 999	0 - 100(%)	Not displayed

* For outside the range, "-----" is displayed.

22-14

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to display the use status of the toner cartridge.
Section	Process

Operation/Procedure

The status of the toner cartridge is displayed.

Display item	Content	Accumulated No. of installed cartridges (Unit)	Accumulated No. of near end (Unit)	Accumulated No. of end (Unit)	Remaining quantity (Unit: %)
		INSTALL	NN END	END	RESIDUAL
TONER (K)	Toner cartridge use counter (K)	0 - 255	0 - 255	0 - 255	0-25% 25-50% 50-75% 75-100%

22-18

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to display the user data delete history.
Section	

Operation/Procedure

The date and time of the user data delete are displayed.

Display item		Content
Item name	Date	
START	Year/month/day/hour/min.	Delete history (Date and time of operation start)
END	Year/month/day/hour/min.	Delete history (Date and time of operation end)

22-19

Purpose	Adjustment/Setting/Operation data check
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Function (Purpose)	Used to check the various scanner counters related to the network scanner.
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Section	
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Operation/Procedure

- 1) The counter values related to the network scanner are displayed.
- 2) Press [START] key to make printing.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display		Content	No. of digits	Default value
Network scanner	NET SCN ORG_B/W	Network scanner document scan quantity counter (B/W) (B/W scan job)	8	0
	NET SCN ORG_CL	Network scanner document scan quantity counter (COLOR) (Color scan job)	8	0
Internet FAX	INTERNET FAX OUTPUT	Number of internet FAX output	8	0
	INTERNET FAX SEND OUTPUT	Number of internet FAX sending page	8	0
	INTERNET FAX RECEIVE	Number of internet FAX receive	8	0
	INTERNET FAX SEND	Number of internet FAX send	8	0
E-Mail	MAIL COUNTER	Number of of E-MAIL send	8	0
FTP	FTP COUNTER	Number of FTP send	8	0
Other	SMB SEND	Number of SMB send	8	0
	USB CNT	Number of times of USB storage	8	0
	TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)	8	0
	SCAN TO HDD_B/W	Scan to HDD record quantity (B/W)	8	0
	SCAN TO HDD_CL	Scan to HDD record quantity (Color)	8	0

22-40

Purpose	Error contents display
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Function (Purpose)	Used to display the error code list and the contents.
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Section	
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Operation/Procedure

- 1) Select the main error code.
- The sub error code and the contents are displayed.

22-42

Purpose	Adjustment/Setting/Operation data check
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Function (Purpose)	Used to check the JAM/trouble data
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Section	
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Operation/Procedure

- 1) Select the item to be checked with the touch panel key.
- 2) Printable with [COLOR] and [MONO] keys.

Display data	Counter		Content			Max. number of histories	Remarks
	Display	Content	JAM CODE/TROUBLE CODE	DATE/TIME	TOTAL COUNT(BW)		
PAPER JAM	PAPER JAM COUNT	Number of machine JAM troubles	Generated JAM code (Machine)	Generated date/time (YY/MM/DD HH:MM:SS)	Total output quantity of black and white	50	The head is the latest, and the bottom is the oldest. The max. number of histories is 50.
SPF JAM	SPF JAM COUNT	Number of SPF JAM troubles	Generated JAM code (SPF)				
TROUBLE	TROUBLE COUNT	Number of troubles	Generated trouble code			30	The head is the latest, and the bottom is the oldest. The max. number of histories is 30. When 30 is exceeded, the oldest one is not displayed sequentially.

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	JAM data details display
Section	

Operation/Procedure

- Select the item to be checked with the touch panel key.
When [COUNTER] key is pressed, the JAM counter, the paper feed counter, and the paper feed retry counter are displayed.
When [HISTORY1] key is pressed, the JAM history is displayed.
When [HISTORY2] key is pressed, the temperature and humidity data are displayed.

- Printable with [COLOR] and [MONO] keys.

Display data and contents (COUNTER)

Item	Content
PAPER JAM COUNT	Number of machine JAM troubles
PAPER FEED COUNTER	Paper feed counter (Similar with SIM22-09 display content)
PAPER FEED RETRY COUNTER	Paper feed retry counter

Display data and contents (HISTORY1)

Item	Content	Description
NO	No	History number
JAM CODE	JAM Code	Jam code main
DATE/TIME	Date/Time	Occurrence date
TOTAL_BW	Total Count (BW)	Total counter (B/W)
P_S (*1)	Paper Size	Paper size
P_T (*1)	Paper Type	Paper type
JOB (*1)	Job Mode	Job mode
JN	Job No	First after JOB start or not
OF	Offset	Paper exit: Offset
EP	Exit Position	Paper exit: Exit position
PC	Punch	Paper exit: Punch
SP	Staple	Paper exit: Staple

*1: Refer to the detail display content of HISTORY1.

Display data and contents (HISTORY2)

Item	Content
NO.	History number
DATE/TIME	Occurrence date
TH_M	External air temperature sensor temperature/AD value
HUD_M	External air humidity sensor humidity/AD value
TH1_LSU	LSU thermistor 1 temperature/AD value
TH2_LSU	LSU thermistor 2 temperature/AD value
TH_UM	Fusing upper main thermistor (differential) temperature/AD value
TH_UM_CS	Fusing upper main thermistor (compensation) temperature/AD value
TUMD	Fusing upper main thermistor (detection) AD value
TH_US1	Fusing upper sub thermistor (differential) temperature/AD value
TH_US1_CS	Fusing upper sub thermistor (compensation) temperature/AD value
TU1D	Fusing upper sub thermistor (detection) AD value
TH_LM1	Fusing lower main thermistor (differential) temperature/AD value
TH_LM1_CS	Fusing lower main thermistor (compensation) temperature/AD value
TL1D	Fusing lower main thermistor (detection) AD value
TH_US2	Fusing upper sub thermistor 2 temperature/AD value
TH_LM2	Fusing lower main thermistor 2 temperature/AD value

Detail display content of HISTORY1

Display		Content
NON	Inch series fixed form	No paper size
WLG		Double Legal
WLR		Double Legal-R
LD		Ledger
LDR		Ledger-R (Double Letter)
LG		Legal
LGR		Legal-R
FC		Foolscap
FCR		Foolscap-R
LT		Letter
LTR		Letter-R
IV		Invoice (Mini)
IVR		Invoice-R (Mini)
EC		Executive
ECR		Executive-R
A3W		A3W (12x18 in)
AWR		A3W (12x18 in)-R
12		22x17
13		22x17R
14		22x34
15		22x34R
16		34x44
17		34x44R
18		44x68
19		44x68R
01A		9x12
01B		9x12R
01C		13x19
01D	13x19R	
MLG	Mexican-Legal	
MLR	Mexican-Legal-R	
ALG	Asian-Legal	
ALR	Asian -Legal-R	
EXT	Other	Extra (Special)
A1	AB series fixed form	A1
A1R		A1R
A2		A2
A2R		A2R
A3		A3
A3R		A3R
A4		A4
A4R		A4R
A5		A5
A5R		A5R
A6		A6
A6R		A6R
B3		B3
B3R		B3R
B4		B4
B4R		B4R
B5		B5
B5R		B5R
B6		B6
B6R		B6R
54		A0x2
55		A0x2 R
A0	A0	
A0R	A0R	
B0	B0	
B0R	B0R	
B1	B1	
B1R	B1R	
B2R	B2	

Display	Content		
B2R	AB series fixed form	B2R	
K8		K8	
K8R		K8R	
K16		K16	
16R		K16R	
K32		K32	
32R		K32R	
66		SRA3	
67		SRA3R	
68		SRA4	
69		SRA4R	
06A		318 x 469 mm	
06B		469 x 318 mm	
06C		234 x 318 mm	
06D		318 x 234 mm	
06E		312 x 440 mm	
06F		440 x 312 mm	
70		220 x 312 mm	
71		312 x 220 mm	
82		Domestic special (Envelope)	DBL Postcard
83			DBL Postcard-R
84	Postcard		
85	Postcard-R		
87	119 x 277 mm		
89	120 x 235 mm		
08B	90 x 205 mm		
08D	90 x 185 mm		
08F	240 x 332 mm		
91	216 x 277 mm		
93	197 x 267 mm		
95	190 x 240 mm		
97	162 x 229 mm		
99	142 x 205 mm		
09B	119 x 197 mm		
09D	120 x 176 mm		
09F	114 x 162 mm		
0A1	98 x 148 mm		
0A3	105 x 235 mm		
0A5	95 x 217 mm		
0A7	98 x 190 mm		
0A9	92 x 165 mm		
0AA	AB series E-version		
0AB	AB series L-version		
0AC	AB series panorama size		
0AD	AB series name card size		
0AE	AB series identification photo		
0AF	AB series name card small		
0B0	Other	A3 width	
0B1		B4 width	
0B2		A4 width	
0B3		A3 width (Long size)	
0B4		B4 width (Long size)	
0B5		A4 width (Long size)	
0BC		Custom (Large size)	
0BD		Custom (Small size)	
0BF	Custom		
0C2	Oversea special (Envelope)	Monarch	
0C3		Monarch-R	
0C4		DL	
0C5		DL-R	
0C6		C4	
0C7		C4-R	
0C8		C5	
0C9		C5-R	
0CA		C6	
0CB		C6-R	
0CC		C65	
0CD		C65-R	
0CE		ISOB5	
0CF		ISOB5-R	
0D0		Size6-1/2	

Display	Content	
0D1	Oversea special (Envelope)	Size6-1/2-R
0D2		Size9
0D3		Size9-R
0D8		Com-10
0D9		Com-10-R
0DA		Inch series E-version
0DB		Inch series L-version
0DC		Inch series panorama size
0DD		Inch series name card large
0DE		Inch series identification photo
0DF		Inch series name card small
0EC		Other
0ED	Extra (Special small size)	
0EF	Extra (Special/Not fixed)	
0F0	Long size	
0FF	JAM (Used for canceling temporary charging in a coin vendor.)	

Display content detail: Paper type (P_T)

Display	Content	
UST	User type	
LHP	Letter head paper	
PNP	Perforated sheet	
RCL	Recycled paper	
COL	Color paper	
PLN	Standard paper	
PRP	Pre printed	
OHP	OHP Transparency	
HV	Heavy paper	
LBL	Label sheet	
ENV	Envelope	
HG	Postcard	
TAB	Tab sheet	
THN	Thin paper	
US1	User type 1	
US2	User type 2	
US3	User type 3	
US4	User type 4	
US5	User type 5	
US6	User type 6	
US7	User type 7	
HV2	Heavy paper 2	
PL2	Plain paper 2 (not used)	
HV3	Heavy paper 3	
HV4	Heavy paper 4	
GLS	Glossy paper	

Display content detail: Job mode (JOB)

Display	Content	
SHD	Shading.	
PCL	Process control	
SIM	Test mode (Sim)	
ICP	Interruption copy	
CP	Copy	
FXS	FAX send scan	
AXS	AXIS	
FXP	FAX reception print	
PR	Printer	
FXC	FAX communication report print	
00A	Zaurus print	
SLF	Self/Test print	
00C	Document counter	
RMT	Remote maintenance	
00E	SIM 52-01	
00F	Tandem (Cordless handset)	
CFP	Confidential print	
NET	Network scanner	
PRF	Proof print	

22-90

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the various setting data.
Section	

Operation/Procedure

- 1) Select a target screen with [↑] [↓] keys.
- 2) Select a target list for printing.
- 3) When [EXECUTE] key is pressed, the self print is made.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

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
Address registration list	NIC PAGE
	INDIVIDUAL LIST
	GROUP LIST
	PROGRAM LIST
	MEMORY BOX LIST
Document filing list	ALL SENDING ADDRESS 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 rejection number list	ANTI JUNK FAX NUMBER LIST
Receive YES/NO address/domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
List of transfer table to E-mail	INBOUND ROUTING LIST
List of transfer to administrator	DOCUMENT ADMIN LIST
Web setting list	WEB SETTING LIST
Meta data set list	METADATA SET LIST

23

23-2

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to print the paper jam, misfeed, and the trouble history. (If the number of misfeed or the troubles is considerably great, it is judged that repair is required.)
Section	

Operation/Procedure

- 1) When [EXECUTE] key is pressed, print is made.
- 2) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

23-80

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.
Section	Paper feed, Paper transport

Operation/Procedure

- 1) Select target item.
- 2) Tap [EXECUTE] key. When [EXECUTE] key is tapped, the timing list of paper feed and paper transport is outputted.

Print item list

Item	Content
JAM CODE	JAM code
DATE/TIME	JAM occurrence date
MODE	Printing mode when JAM is occurred.
SIZE	Paper size
TYPE	Paper type
PIC TRAY	Paper feed tray
OUT TRAY	Paper exit tray
INF1(ILLEGAL)	Illegal detection
INF2(SENSOR)	Sensor information

23-81

Purpose	Operation test/check
Function (Purpose)	Export paper feed time list
Section	Paper feed, Paper transport

Operation/Procedure

- 1) Connect the USB flash drive to the main unit.
- 2) Tap [EXECUTE] key.
- 3) Tap [YES] key to execute cancellation of the trouble.

24

24-1

Purpose	Data clear
Function (Purpose)	Used to clear the jam counter and the trouble counter. (After completion of maintenance, the counters are cleared.)
Section	

Operation/Procedure

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

MACHINE	Machine JAM counter
SPF	SPF JAM counter
TROUBLE	Trouble counter

24-2

Purpose	Data clear
Function (Purpose)	Used to clear the counter value (print quantity) in each paper feed section.

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
ADU	ADU paper feed counter
MFT	Manual paper feed counter (*1)
LCC	Side LCC paper feed counter (A4 LCC or A3 LCC) (*1)
LCT1	Upper stage LCT paper feed counter (*1)
LCT2	Lower stage LCT paper feed counter (*1)
LCT3	Upper stage LCT paper feed counter (When connected in two) (*1)
LCT4	Lower stage LCT paper feed counter (When connected in two) (*1)
LCT_MFT	LCT manual paper feed counter (*1)

(*1) Displayed only when option is installed.

24-3

Purpose	Data clear
Function (Purpose)	Used to clear the counter value of the finisher, DSPF, and the scan (reading).

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
SPF	Document feed quantity
SCAN	Number of times of scan
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Number of stamps
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Cover open/close counter
HP_ON	Number of HP detection
TRIMMER	Trimmer counter
FOLDING	Paper folding counter
INSERTER	Insertion counter (Tray 1)
INSERTER2	Insertion counter (Tray 2)
INSERTER OFFLINE	Insertion offline counter
DECURLER	Decurler counter
OC LAMP TIME	OC section lamp total lighting time
DSPF LAMP TIME	DSPF section lamp total lighting time

24-4

Purpose	Data clear
Function (Purpose)	Used to clear the drum counter value of the maintenance counter, the transfer, and the fusing web cleaning feed counter. (After completion of maintenance, the counters are cleared.)

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content			
Maintenance	MAINTENANCE ALL	Maintenance counter (Total) (Counter) Maintenance counter (Total) (Number of use days)		
	Fusing	FUSING ROLLER	Fusing heat roller (Counter) Fusing heat roller (Number of use days) Fusing heat roller (Accumulated traveling distance)	
PRESS ROLLER		Pressure roller (Counter) Pressure roller (Number of use days) Pressure roller (Accumulated traveling distance)		
		Separation	SEPARATE PAWL	Separation pawl (Counter) Separation pawl (Number of use days) Separation pawl (Accumulated traveling distance)
			FUSING WEB	Fusing upper web unit (Counter) Fusing upper web unit (Number of use days) Fusing upper web cleaning send counter (Counter)
Transfer	TRANS BLADE	Transfer blade (Counter) Transfer blade (Number of use days) Transfer blade (Accumulated traveling distance)		
		TC BELT		Transfer belt (Counter) Transfer belt (Number of use days) Transfer belt (Accumulated traveling distance)
	Drum		DRUM CTRG K	Drum unit K (Counter) Drum unit K (Number of use days) Drum unit K (Accumulated number of rotations)
		Main charger		MAIN CHARGER K
MC CLEAN K				
Drum blade	DRUM BLADE K	Drum blade K (Counter) Drum blade K (Number of use days) Drum blade K (Accumulated number of rotations)		
		Other	PS PAPER	PS paper dust removing (Counter) PS paper dust removing (Number of use days)
OZONE/ EXHAUST FILTER	Ozone filter/Exhaust filter (Counter) Ozone filter/Exhaust filter (Number of use days)			

* The winding counter for the fusing web cleaning is cleared by being synchronized with the fusing web cleaning feed counter.

* When MAIN CHARGER is cleared, MC CLEAN K is also cleared.

24-5

Purpose	Data clear
Function (Purpose)	Used to clear the developer counter value. (After replacement of developer, the counter is cleared.)

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Content
Developer cartridge print counter (K)
Developer cartridge accumulated traveling distance (cm)(K)
Developer number of use days (day)(K)

24-6

Purpose	Data clear
Function (Purpose)	Used to clear the copy counter value.

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display	Content
COPY BW	Copy counter (B/W)

24-9

Purpose	Data clear
Function (Purpose)	Used to clear the printer mode print counter and the self print mode print counter.

Section**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
- 3) The target counter is cleared.
- 4) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

PRINT BW	Printer counter (B/W)
OTHER BW	Other counter (B/W)

24-10

Purpose	Data clear
Function (Purpose)	Used to clear the FAX counter value. (Only when the FAX is installed.)

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.

- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Display item	Content
FAX OUTPUT	FAX print quantity counter (for line 1)
FAX OUTPUT_L2	FAX print quantity counter (for line 2)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND IMAGES_L2	FAX send quantity counter (for line2)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time

24-12

Purpose	Data clear
Function (Purpose)	Used to clear the document filing 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.

Display	Content
DOC FIL (BW)	Black and white document filing print counter

24-15

Purpose	Data clear
Function (Purpose)	Clearing counters related to the network scanner

Section**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

	Display	Content	No. of digits	Default value
Network scanner	NET SCN ORG_B/W	Network scanner document scan quantity counter (B/W) (B/W scan job)	8	0
	NET SCN ORG_CL	Network scanner document scan quantity counter (COLOR) (Color scan job)	8	0
Internet FAX	INTERNET FAX OUTPUT	Number of internet FAX output	8	0
	INTERNET FAX SEND OUTPUT	Number of internet FAX sending page	8	0
	INTERNET FAX RECEIVE	Number of internet FAX receive	8	0
Internet FAX	INTERNET FAX SEND	Number of internet FAX send	8	0
E-Mail	MAIL COUNTER	Number of of E-MAIL send	8	0
FTP	FTP COUNTER	Number of FTP send	8	0

Display		Content	No. of digits	Default value
Other	SMB SEND	Number of SMB send	8	0
	USB CNT	Number of times of USB storage	8	0
	TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)	8	0
	SCAN TO HDD_B/W	Scan to HDD record quantity (B/W)	8	0
	SCAN TO HDD_CL	Scan to HDD record quantity (Color)	8	0

25

25-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the developing section.
Section	Process (developing section)

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) The developing motor and the OPC drum motor are rotated for 3 min, and the toner density sensor output level is displayed.

NO.	Sensor name (display)	Sensor name (Display)
1	TCS_K	Toner sensor output value (K)
2	TSG_K	Toner sensor control voltage input value (K)
3	DESS_VO	Surface potential sensor output value

25-2

Purpose	Setting
Function (Purpose)	Used to initialize the toner density when replacing developer. (Automatic adjustment)
Section	Process (Developing section)

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) After stopping the developing motor, the toner density sampling values is set as the reference toner density control level.

Note:1 When the above operation is interrupted in the middle, the reference toner density control level is not set.

Note:2 If the reference toner density control level is not set normally, the error code, EE-EL, EE-EU or EE-EC, is displayed.

Result display item name

Display item name	Descriptions of items	Display range	Default value
HUMIDITY AREA	Humidity area registered value	0 - 15	8
DEVE REFERENCE	Execution transition target registration value	0 - 255	120
CONTROL VOLTAGE	Execution control voltage registered value	0 - 255	128

Result display item name

Sensor name (Display)	Sensor name
HUMIDITY AREA	Humidity area
DEVE REFERENCE	TCS sensor value
CONTROL VOLTAGE	Control voltage

List of error displays

Error display	Error name	Details of error display	Remarks
EE-EL	EL abnormality	After completion of stirring: control voltage level exceeds 197	In case of an error, the humidity area, the execution transition target, and the execution control voltage are not registered.
EE-EU	EU abnormality	After completion of stirring: control voltage level is less than 49	
EE-EC	EC abnormality	When the toner density output value is outside the range of the toner density reference value (120) ±5(dec).	

25-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to display the operation data of the toner supply quantity. (Not used in the market.)
Section	Process

Operation/Procedure

The operation data of the toner supply quantity are displayed.

Display	Content	Display range
DV CTRG	Developer cartridge print counter	0 to 99999999
DV RANGE	Developer cartridge accumulated traveling distance (cm)	0 to 99999999
HUMIDITY AREA	Current humidity area	0 to 255
ALL VREF	All correction values for the toner density reference value	0 to 255
DELTA_VREF	Transition target correction amount	-127 to +127
ALL V0	All correction values for the control voltage value	0 to 255
HUM V0	Humidity correction amount	-127 to +127
LIFE V0	Life correction amount	-127 to +127
PROCON V0	Process control feedback correction amount	-127 to +127
AREA V0	Area correction amount	-127 to +127
PRINT RATE V0	Print ratio correction amount	-127 to +127
ENV V0	Environment multiple correction amount	-127 to +127
PROFIT R V0	Difference conversion correction	-127 to +127
JDV	Optimum effective developing potential	0 to 999
JDVB	Effective development potential	0 to 999

26-2

Purpose Setting

Function (Purpose) Used to set the paper size of the tandem tray/large capacity paper feed tray (LCC). (When the paper size is changed, this simulation must be used to change the paper size on the software.)

Section Paper feed

Operation/Procedure

Select a paper size to be changed with the touch panel.

Item	Setting value	Content
TRAY1	0	8.5X11
	1	A4
	2	B5
A4 LCC	0	8.5X11
	1	A4
	2	B5
G/LBS SET	0	GRAM
	1	LBS

26-3

Purpose Setting

Function (Purpose) Used to set the auditor specification mode. Sim.26-3 is described in the service manual for the convenience sake, but the coin vendors of the machines destined for overseas are not guaranteed.

Section Auditor

Operation/Procedure

Select a target of setting with the touch panel.

Item	Button display	Content	Default value
BUILT-IN AUDITOR (Built-in auditor)	P10	Built-in auditor mode (standard mode) operation	P10
OUTSIDE AUDITOR (External auditor)	NONE	Normal operation	NONE
	P VENDOR1	The machine enters the vendor mode for the conventional coin vendors. Only the copy mode is controlled. The multi job cueing is disabled.	
	P VENDOR2	The machine enters the vendor mode where a signal for DocuLyser connected to the PCU side is transferred by the parallel I/F. The multi job cueing is disabled.	
	P VENDOR3	The machine enters the vendor mode where a signal for Intercard connected to the PCU side is transferred by the parallel I/F	
	P OTHER	The machine enters the mode for an external auditor connected to the SCU side.	
	VENDOR-EX	Vendor I/F for EQUITRACK.	
	VENDOR-EX (MULTI)	VENDOR-EX + Multi job cueing Enable mode	
S_VENDOR	Serial vendor		

Item	Button display	Content	Default value
DOC ADJ	ON	Document filing function available	OFF
	OFF	Document filing function not available	
PF ADJ	ON	Continuous feeding is performed.	OFF
	OFF	Continuous feeding is not performed.	
VENDOR MODE	MODE1	Vendor mode 1	MODE3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	
COUNTUP TIMING	FUSER_IN	When the paper lead edge passes the sensor after fusing, counting is made.	EXIT_OUT
	FUSER_OUT	When the paper rear edge passes the sensor after fusing, counting is made.	
	EXIT_OUT	When the paper rear edge passes the paper-exit sensor of the tray (machine, right) after-process unit after fusing, counting is made.	

	Completion of the specified quantity (with money left)	Insufficient fee during a copy job		Completion of the specified quantity (with money left)
		With no money left	with money left	
	Condition 1	Condition 2	Condition 3	Condition 4
MODE1	Operation 1	Operation 2	Operation 2	Operation 1
MODE2	Operation 1	Operation 1	Operation 2	Operation 1
MODE3	Operation 1	Operation 3	Operation 2	Operation 3

Operation 1: Standby during auto clear setting time.

Default: 60 sec. Can be varied by the system setting.

Operation 2: Auto clear is not performed.

Operation 3: Shifts to the initial screen.

26-5

Purpose Setting

Function (Purpose) Used to set the count mode of the total counter and the maintenance counter. (A3/11 x 17 size)

Section

Operation/Procedure

- 1) Enter the set value with 10-key.
1=1 count-up, 2=2 count-up
- 2) Press [OK] key.

Item	Display	Content	Setting range	Default value
A	TOTAL (B/W)	Total counter (B/W)	1 - 2	2
B	MAINTE (B/W)	Maintenance counter (B/W)	1 - 2	2
C	DEV (B/W)	Developer counter (B/W)	1 - 2	2

26-6	
Purpose	Setting
Function (Purpose)	Used to set the specifications of each destination (paper, fixed magnification ratio, etc.)
Section	
Operation/Procedure	

26-7	
Purpose	Setting
Function (Purpose)	Used to set the machine ID.
Section	
Operation/Procedure	

- Enter the machine ID with the 10-key.
Max. 30 digits of numerals and alphabetical characters can be inputted.
To select a desired character, press the 10-key repeatedly.
Refer to the following list and enter characters.
Touch the "CONFIRM" section every time a character is inputted.
To modify an inputted character, delete it with "CLEAR" key and enter the correct character.
- Press [SET] key to set the contents entered in procedure 1).
NOTE:
The machine ID can be set also by the Web Page service mode function.
Conventionally, the machine ID has been set by the Web Page function. In this mode, this function is made available in the simulation mode.

10-key	Number of times of key input									
	1	2	3	4	5	6	7	8	9	10
1	1	-	-	-	-	-	-	-	-	-
2	A	B	C	a	b	c	2	-	-	-
3	D	E	F	d	e	f	3	-	-	-
4	G	H	I	g	h	i	4	-	-	-
5	J	K	L	j	k	l	5	-	-	-
6	M	N	O	m	n	o	6	-	-	-
7	P	Q	R	S	p	q	r	s	7	-
8	T	U	V	t	u	v	8	-	-	-
9	W	X	Y	Z	w	x	y	z	9	-
0	0	-	-	-	-	-	-	-	-	-

26-10	
Purpose	Setting
Function (Purpose)	Used to set the trial mode of the network scanner.
Section	
Operation/Procedure	
1) Enter the set value with 10-key.	
2) Press [OK] key. The set value of step 1 is saved.	
TRIAL MODE (0: YES 1: NO)	0 : Trial mode setting 1 : Trial mode cancel (Default)

26-18	
Purpose	Setting
Function (Purpose)	Used to set YES/NO of the toner save mode operation. (For Japan and UK versions.)
Section	
Operation/Procedure	

26-30	
Purpose	Setting
Function (Purpose)	Used to set the CE mark support (Europe safety standards) operation mode. (Supporting slow start of the fusing heater lamp when driving it)
Section	
Operation/Procedure	

26-32	
Purpose	Setting
Function (Purpose)	Used to set the specifications of the fusing cleaning operation.
Section	Fusing
Operation/Procedure	
1) Enter the set value with 10-key. Enable/Disable of the user fusing cleaning function is set.	
2) Press [OK] key.	

Item/Display	Content	Setting range	Default value
A CLEANING PRINT SET	User fusing cleaning function is Enable.	0 YES	0 (YES)
	User fusing cleaning function is Disable.	1 NO	

26-35	
Purpose	Setting
Function (Purpose)	Used to set the display type of troubles in Sim.22-4. When two or more same troubles occur continuously, the trouble history is displayed as one trouble or as two or more troubles occurring continuously.
Section	
Operation/Procedure	
1) Enter the set value with 10-key.	
2) Press [OK] key. The set value of step 1 is saved.	

Display	Content	Default value
(0 : ONCE 1 : ANY)	0 : Only once. If the trouble is the same as the previous one, it is not saved.	0
	1 : Any time. Though the trouble is the same as the previous one, it is saved.	

26-38

Purpose	Setting
Function (Purpose)	Used to set whether printing is terminated or not when the developer life is reached or when the fuser web end.

Section**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.
The set value of step 1 is saved.

Item/Display	Content	Setting range	Default value
A MAINTENANCE LIFE OVER (0: CONTINUE 1: STOP)	0 Print enable setting (print continue) when maintenance life is over	0 - 1	0
	1 Print disable setting (print stop) when maintenance life is over		
B FUSER WEB END (0: CONTINUE 1: STOP)	0 Print enable setting (print continue) when fusing web is end	0 - 1	1
	1 Print disable setting (print stop) when fusing web is end		

26-41

Purpose	Setting
Function (Purpose)	Used to set YES/NO of the magnification ratio auto select function (AMS) in the center binding mode.

Section**Operation/Procedure**

- 1) Enter the set value with 10-key.
0: AMS cancel 1: AMS setting
- 2) Press [OK] key.
The set value of step 1 is saved.

26-49

Purpose	Setting
Function (Purpose)	Used to set the postcard copy speed mode.

Section**Operation/Procedure**

Select a copy speed mode with the touch panel. (Default: LOW)

Item	Setting value	Content	Default value
POST CARD	LOW	Postcard copy speed LOW	LOW
	HIGH	Postcard copy speed HIGH	

26-50

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of black/white reverse function.

Section**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] 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 BW REVERSE	YES B/W reverse allowed	0 - 1	1
	NO B/W reverse inhibited		
B FINISHER FUNCTION	YES Finisher special paper discharge quantity limit setting (Limit enable)	0 - 1	0
	NO Finisher special paper discharge quantity limit setting (Limit disable)		
C FEED TRAY COLOR	YES Tray coloring ON during paper feed	0 - 1	0
	NO Tray coloring OFF during paper feed		
D MACHINE ADJ	YES The machine adjustment button is displayed.	0 - 1	1
	NO The machine adjustment button is not displayed.		
E MACHINE ADJ HIDDEN ITEM	YES The machine adjustment blind item is displayed.	0 - 1	1
	NO The machine adjustment blind item is not displayed.		
F STATUS LIGHT SETTING	YES The status display light setting is displayed.	0 - 1	1
	NO The status display light setting is not displayed.		
G POWER SHUT-OFF SET	YES Disable the setting of Auto power shut-off	0 - 1	1
	NO Enable the setting of Auto power shut-off		

26-52

Purpose	Setting
Function (Purpose)	Used to set whether non-print paper (insertion, cover sheet) is counted or not.

Section

Operation/Procedure

- 1) Enter the set value with 10-key.
0: Counted up. 1: Not counted.
- 2) Press [OK] key.
The set value of step 1 is saved.

26-53

Purpose	Setting
Function (Purpose)	User auto calibration (auto balance adjustment) Inhibit/Allow setting.

Section

Operation/Procedure

- 1) Enter the set value with 10-key.

Item/Display	Content	Setting range	Default value
A COPY (1:YES 0:NO)	Copy mode	Allow	1
		Inhibit	0
B PRINTER (1:YES 0:NO)	Printer mode	Allow	1
		Inhibit	0

- 2) Press [OK] key.
The set value in step 1) is saved.

26-65

Purpose	Setting
Function (Purpose)	Used to set the finisher alarm mode.

Section

Operation/Procedure

Use the touch key to set.

Item	Setting value	Content	Setting range	Default value
LIMIT COPIES	ON	Number of sheets of stapling: Limited	ON or OFF	ON
	OFF	Number of sets of stapling: Not Limited		

26-69

Purpose	Setting
Function (Purpose)	Used to set the operating conditions for toner near end.

Section

Operation/Procedure

- 1) Select an item to be set with scroll 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	0 - 1	1
	1		

Item/Display	Content	Setting range	Default value
B REMAINING TONER LEVEL	5 %	0	0 - 9
	10 %	1	
	15 %	2	
	20 %	3	
	25 %	4	
	30 %	5	
	35 %	6	
	40 %	7	
	45 %	8	
50 %	9	4	
C TONER NEAR END(0:YES 1:NO)	0	0	0 - 1
	1	0	
D TONER END	1	1	1 - 3
	2	2	
	3	2	
E TONER END JUDGMENT	1	1	1 - 2
	2	1	
F TONER E-MAIL ALERT	1	1	0 - 1
	2	1	

26-73

Purpose	Setting
Function (Purpose)	Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment

Section

Operation/Procedure

- 1) Select an item to be set with scroll 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)

26-78	
Purpose	Setting
Function (Purpose)	Used to set the password of the remote operation panel.

Section

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.

26-79	
Purpose	Setting
Function (Purpose)	Used to set YES/NO of the pop-up display of user data delete result.

Section

Operation/Procedure

- 1) Enter the set value with 10-key.
The value for the display operation specification after completion of user data delete is set.
- 2) Press [OK] key.

Item/Display		Content	Setting range		Default value
A	DISP SET	User data delete result pop-up display ON	YES	1	0 (NO)
		User data delete result pop-up display OFF	NO	0	

30

30-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the sensors and the detectors in other than the paper feed section and the control circuits.

Section

Operation/Procedure

The operating conditions of the sensors and the detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

No.	Display	Sensor name
1	PPD1	Paper vertical transport sensor
2	PPD2	Paper transport sensor 2
3	PPD3	Paper transport sensor 3
4	PPD4	Paper transport sensor 4
5	FDSBD	FD reverse sensor
6	DSBD1	Reverse vertical transport sensor 1
7	DSBD2	Reverse vertical transport sensor 2
8	DSBD3	Reverse vertical transport sensor 3
9	POD	Paper exit detection
10	POFD	Paper exit full detection
11	POIND	Paper exit section paper entry sensor
12	LPPD1	LCC paper feed detection 1
13	DSW-F	Front door detection
14	DSW_CS	Vertical transport door open/close detection
15	BOTSW	Toner tray switch
16	MCHPS1	MC cleaner position sensor 1
17	PTD	Paper lead edge detection
18	WEB_SPD	Web near end detection

No.	Display	Sensor name
19	TNF	Waste toner full detection
20	TFSD	Hopper toner remaining quantity detection
21	TNBOX	Toner collection container installation detection
22	WEB_END1	Web end detection

30-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the sensors and the detectors in the paper feed section and the control circuits.

Section

Operation/Procedure

The operating conditions of the sensors and the detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

Sensor name (Display)	Content
TANSET	Tandem tray insertion detection
VPPD	Paper vertical transport (multi-stage cassette)
T1PFD	Cassette 1 paper feed detection
T1LUD	Cassette 1 upper limit detection
T1PED	Cassette 1 paper empty detection
T1SPD	Cassette 1 paper remaining quantity detection
T2PFD	Cassette 2 paper feed detection
T1PPD1	Cassette 1 transport detection
T1PPD2	Cassette 1 transport detection
T2LUD	Cassette 2 upper limit detection
T2PED	Cassette 2 paper empty detection
T2SPD	Cassette 2 paper remaining quantity detection
C3PFD	Cassette 3 paper feed detection
C3LUD	Cassette 3 upper limit detection
C3PED	Cassette 3 paper empty detection
C3SPD	Cassette 3 paper remaining quantity detection
C3SS1	Cassette 3 paper rear edge detection 1
C3SS2	Cassette 3 paper rear edge detection 2
C3SS3	Cassette 3 paper rear edge detection 3
C3SS4	Cassette 3 paper rear edge detection 4
C4PFD	Cassette 4 paper transport detection
C4LUD	Cassette 4 upper limit detection
C4PED	Cassette 4 paper empty detection
C4SPD	Cassette 4 paper remaining quantity detection
C4SS1	Cassette 4 paper rear edge detection 1
C4SS2	Cassette 4 paper rear edge detection 2
C4SS3	Cassette 4 paper rear edge detection 3
C4SS4	Cassette 4 paper rear edge detection 4
MPLD1	Manual feed paper entry detection
MPLD1	Manual feed paper length detection
MTOP1	Manual feed tray retraction detection
MTOP2	Manual feed tray extension detection
MPED	Manual feed paper empty detection
PTD	PS section paper lead edge shift detection sensor

30-10	
Purpose	Must not be used unless a special change is required.
Function (Purpose)	Used to check the operations of the Main unit double feed sensor.

Section

Operation/Procedure

<check the operations>

Press [DPA EXE] key.

After completion of the detection operation, the sensor status is displayed.

<Item, setting range, and default values>

Display	Content	Range	Default value
GAIN	Gain adjustment value	1 - 100	50

<On sensor names>

Sensor name (Display)	Content	Range	Default value
DPAOUT	Paper thickness analog value	0 - 1023	800
STATUS	Paper detection state	NO PAPER ONE PAPER DOUBLE PAPER	ONE PAPER

<Gain reset>

Gain initial value: 50

* Do not use this setting unless specially required.

40

40-2

Purpose Adjustment/Setting

Function (Purpose) Used to adjust the detection level of the manual paper feed tray paper width detector.

Section Paper feed

Operation/Procedure

- 1) Set the manual paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key. The max. width (MAX) detection level is recognized.
- 3) Set the manual paper feed guide to the P1 width (A4).
- 4) Press [EXECUTE] key.
The P1 width (A4) detection level is recognized.
- 5) Set the manual paper feed guide to the P2 width (A4R).
- 6) Press [EXECUTE] key.
The P2 width (A4R) detection level is recognized.
- 7) Set the manual paper feed guide to the min. width (MIN).
- 8) Press [EXECUTE] key.
The min. width (MIN) detection level is recognized.
If the above operations are not completed normally, an error display is made. If completed normally, "COMPLETE" is displayed.

Display Item	Content
MAX POSITION	Manual feed max. width
P1 (A4) POSITION	Manual feed P1 position width (A4)
P2 (A4R) POSITION	Manual feed P2 position width (A4R)
MIN POSITION	Manual feed min. width

40-7

Purpose Adjustment/Setting

Function (Purpose) Used to adjust the manual paper feed tray size width detection level.

Section Paper feed

Operation/Procedure

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.
The set value of step 2 is saved.

Item	Item	Item Content	Setting range	Default value
A	MAX POSITION	Manual feed max. width	0 - 255	241

Item	Item	Item Content	Setting range	Default value
B	P1 (A4) POSITION	Manual feed P1 position width (A4)	0 - 255	231
C	P2 (A4R) POSITION	Manual feed P2 position width (A4R)	0 - 255	140
D	MIN POSITION	Manual feed min. width	0 - 255	19

40-12

Purpose Adjustment/Setting

Function (Purpose) Used to adjust the tray 4 width detection level.

Section Paper feed

Operation/Procedure

- 1) Set the tray 4 paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key.
The max. width (MAX) detection level is recognized.
- 3) Set to the tray 4 paper feed guide to the min. width (MIN).
- 4) Press [EXECUTE] key.
The min. width (MIN) detection level is recognized.

If the above operations are not completed normally, an error display is made. If completed normally, "COMPLETE" is displayed.

Display Item	Description
MAX POSITION	Tray 4 max. width
MIN POSITION	Tray 4 min. width

41

41-1

Purpose Operation test/check

Function (Purpose) Used to check the operation of the document size sensor and the control circuit.

Section

Operation/Procedure

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted.

Display	Sensor name (Display)
OCSW	Original cover SW
PD1	Document detection 1
PD2	Document detection 2
PD3	Document detection 3
PD4	Document detection 4
PD5	Document detection 5
PD6	Document detection 6
PD7	Document detection 7
PD8	Document detection 8
PD9	Document detection 9

* Since PD3 and PD9 are reserved, they do not change.

41-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the document size sensor detection level.
Section	

Operation/Procedure

- 1) Open the original cover. Set an A3 paper (11" x 17") on the original table. Press [EXECUTE] key.
- 2) Remove the paper from the original table. Keep the original cover open in 20° - 24° and press [EXECUTE] key.

When the sensor level setting is completed, the result is displayed.

No.	Display	Content	Setting range	Default value
1	PD1	Document detection sensor 1	0 - 255	255
2	PD2	Document detection sensor 2		
3	PD3	Document detection sensor 3*		
4	PD4	Document detection sensor 4		
5	PD5	Document detection sensor 5**		
6	PD6	Document detection sensor 6**	0 - 255	255
7	PD7	Document detection sensor 7**		
8	PD8	Document detection sensor 8**		
9	PD9	Document detection sensor 9*		

* Since PD3 and PD9 are reserved, they do not change.

** Since PD5-PD8 are changed sensor, they do not change.

41-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the document size sensor and the control circuit.
Section	

Operation/Procedure

The detection output levels (A/D values) of OCSW and the document detection sensors (PD1 - PD9) are displayed in real time.

In [] on the side of the sensor name, the threshold value/secured value adjusted in 41-2 is displayed.

No.	Display	Content	Setting range
1	OCSW	Original cover SW	0 - 1 (Close at "1")
2	PD1	Document detection sensor 1	0 - 255
3	PD2	Document detection sensor 2	
4	PD3	Document detection sensor 3*	
5	PD4	Document detection sensor 4	
6	PD5	Document detection sensor 5**	
7	PD6	Document detection sensor 6**	
8	PD7	Document detection sensor 7**	
9	PD8	Document detection sensor 8**	
10	PD9	Document detection sensor 9*	

* Since PD3 and PD9 are reserved, they do not change.

** Since PD5-PD8 are changed sensor, they do not change.

43

43-1

Purpose	Setting
Function (Purpose)	Used to set the fusing temperature in each mode.
Section	

Operation/Procedure

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

Display	Content	Setting range * (Button display)	Default value
PLAIN PAP&WUP&RDY GR	Used to change the fusing temperature setting of plain paper, WUP, and Ready series.	-10	0
		-5	
		0	
		5	
		10	
HEAVY PAPER GR	Used to change the fusing temperature setting of heavy paper series.	-10	0
		-5	
		0	
		5	
		10	
THIN PAPER GR	Used to change the fusing temperature setting of thin paper series.	-10	0
		-5	
		0	
		5	
		10	
RECYCLED PAPER GR	Used to change the fusing temperature setting of recycled paper series.	-10	0
		-5	
		0	
		5	
		10	
GLOSS PAPER GR	Used to change the fusing temperature setting of gloss paper series.	-10	0
		-5	
		0	
		5	
		10	

*: The values indicate the temperature. (5 = 5°C)

43-2

Purpose	Setting
Function (Purpose)	Used to set the fusing operation and pre-heating.
Section	

Operation/Procedure

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

<Setting range and default values of fusing temperature>

Item	Display	Content	Setting range	Default value
A	WARMUP FUMON HL_US T	Fusing motor previous rotation start TH_US set value	30 - 200	*
B	WARMUP FUMOFF	Fusing motor previous rotation complete time	0 - 255	*
C	WARMUP END TIME	Warm-up complete time	1 - 255	*
D	HI_WU_FM_ON_TMP	FM preliminary rotation start TH_UM when warm-up at alpha °C or above	30 - 200	*
E	HI_WU_END_TIME	Warm-up completion time when Warm-Up at alpha alpha °C or above	0 - 255	*
F	LO_WARMUP_TIME	Setting value applying time in warm-up of 120°C or below (Timer from Ready completion)	0 - 255	*
G	HI_WARMUP_TIME	Setting value applying time in warm-up of 120°C or above (Timer from Ready completion)	0 - 255	*
H	HI_WARMUP_BORDER	Threshold value alpha to apply the setting value in warm-up of alpha °C or above	1 - 119	*
I	ROT_TIME_AFTER_JOB	After-rotation time after completion of a job	0 - 255	*
J	HL_UM E-STAR	TH_UM set value when preheating	30 - 200	*
K	HL_US E-STAR	TH_US set value when preheating	30 - 200	*
L	HL_UM PRE-JOB	TH_UM set value when recovery from warm-up	30 - 200	*

* For the default values, refer to <List of the initial values>.

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)	HL_UM	Heater lamp main (Heat roller for front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)	HL_US	Heater lamp sub (Heat roller for front surface of paper)

<List of Default values>

Item	Default value (105cpm machine)		Default value (120cpm machine)	
	SW_A	SW_B	SW_A	SW_B
A	150	150	150	150
B	30	30	30	30
C	205	205	205	205
D	150	150	150	150
E	205	205	205	205
F	0	0	0	0
G	0	0	0	0
H	70	70	70	70
I	10	10	10	10
J	180	180	180	180
K	180	180	180	180
L	200	200	200	200

43-20

Purpose	Adjustment/Setup
Function (Purpose)	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 scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.
The set value in step 2) is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

<List of setting parameters>

Item/Display		Content	Setting range	Default value
A	WARMUP FUMON HL_US T LL	Correction value for fusing motor pre-rotation start TH_US set value under LL environment	1 - 99	*
B	WARMUP FUMOFF LL	Fusing motor prior rotation completion time under LL environment	1 - 99	*
C	WARMUP END TIME LL	Correction value for warm-up complete time under LL environment	1 - 99	*
D	HI_WU_FM_ON_TMP_LL	Correction value for FM prior rotation start TH_UM in warm-up at alpha alpha °C or above under LL environment	1 - 99	*
E	HI_WU_END_TIME_LL	Correction value for warm-up completion time in warm-up at alpha alpha °C or above under LL environment	1 - 99	*
F	LO_WARMUP_TIME_LL	Correction value of the setting value applying time in warm-up of 120°C or below under LL environment (Timer from Ready completion)	1 - 99	*
G	HI_WARMUP_TIME_LL	Correction value of the setting value applying time in warm-up of 120°C or above under LL environment (Timer from Ready completion)	1 - 99	*
H	HI_WARMUP_BORDER_LL	Correction value of the threshold value alpha to apply the setting value in warm-up of alpha °C or above under LL environment	1 - 99	*
I	ROT_TIME_AFTER_JOB LL	Correction value for the after rotation time when completing a job under LL environment	1 - 99	*
J	HL_UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	*
K	HL_E E-STAR LL	Correction value for preheating TH_US set value under LL environment	1 - 99	*
L	HL_UM PRE-JOB LL	Correction value for the set value of TH_UM when restoring from preheating under LL environment	1 - 99	*

* For the default values, refer to <List of Default values>.

<List of Default values>

- * WARMUP END TIME LL: 1 Count = 1s Change
Correction value for the other items: 1 count for 1°C change

Item	Default value	
	105cpm machine	120cpm machine
A	40	40
B	50	50
C	80	80
D	40	40
E	50	50
F	50	50
G	50	50
H	50	50
I	50	50
J	55	55
K	55	55
L	55	55

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)	HL_UM	Heater lamp main (Heat roller for front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)	HL_US	Heater lamp sub (Heat roller for front surface of paper)

43-21

Purpose	Adjustment/Setup
Function (Purpose)	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.

Section**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

<List of setting parameters>

Item/Display		Content	Setting range	Default value
A	WARMUP FUMON HL_US T HH	Fusing motor previous rotation start TH_UM set value	1 - 99	*
B	WARMUP FUMOFF HH	Fusing motor previous rotation complete time	1 - 99	*
C	WARMUP END TIME HH	Warm-up complete time	1 - 99	*
D	HI_WU_FM_ON_TMP HH	FM preliminary rotation start TH_UM when warm-up at alpha °C or above	1 - 99	*
E	HI_WU_END_TIME HH	Warm-up completion time when warm-up at alpha °C or above	1 - 99	*
F	LO_WARMUP_TIME_HH	Correction value of the setting value applying time in warm-up of 120°C or below under HH environment (Timer from Ready completion)	1 - 99	*
G	HI_WARMUP_TIME HH	Correction value of the setting value applying time in warm-up of 120°C or above under HH environment (Timer from Ready completion)	1 - 99	*
H	HI_WARMUP_BORDER_HH	Correction value of the threshold value alpha to apply the setting value in warm-up of alpha °C or above under HH environment	1 - 99	*
I	ROT_TIME_AFTER_JOB HH	After-rotation time after completion of a job	1 - 99	*
J	HL_UM E-STAR HH	TH_UM set value when preheating	1 - 99	*
K	HL_E E-STAR HH	TH_US set value when preheating	1 - 99	*
L	HL_UM PRE-JOB HH	TH_UM set value when recovery from warm-up	1 - 99	*

* For the default values, refer to <List of Default values>.

* WARMUP END TIME HH: 1 Count = 1s Change
Correction value for the other items: 1 count for 1°C change

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)	HL_UM	Heater lamp main (Heat roller for front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)	HL_US	Heater lamp sub (Heat roller for front surface of paper)

<List of Default values>

Item	Default value			
	105cpm machine		120cpm machine	
	Group B	Group C	Group B	Group C
A	50	50	50	50
B	50	50	50	50
C	50	50	50	50
D	50	50	50	50
E	50	50	50	50
F	50	50	50	50
G	50	50	50	50
H	50	50	50	50
I	50	50	50	50
J	50	50	50	50
K	50	50	50	50
L	50	50	50	50

43-24

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the correction of the temperature adjustment value of SIM 43-1.
Section	

Operation/Procedure

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

<Setting range of each set value and default>

Item/Display	Content	Setting range	Default value
A COOL_DOWN_HEAVY	Cool down time (Heavy paper)	1 - 60	*
B COOL_DOWN_OHP	Cool down time (OHP)	1 - 60	*
C FUS_MOTOR	Fusing web motor operating interval	3 - 20	*
D POWER_SET	Power voltage setting 1: 100V 2: 110 - 120V 3: 220 - 240V	1 - 3	*

* For the default values, refer to < List of Default values>.

* On the adjustment values

Each cool-down time: 1 count for 1 sec change

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)	HL_UM	Heater lamp main (Heat roller for front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)	HL_US	Heater lamp sub (Heat roller for front surface of paper)

<List of Default values>

Item	Default value (105 cpm machine)	Default value (120 cpm machine)
A	15	15
B	30	30
C	7	7
D	3	3

43-31

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the fusing web cleaning motor and the control circuit.
Section	

Operation/Procedure

Press [EXECUTE] key.

The fusing web cleaning motor is operated.

Fusing web unit installation detection state	Operation
Fusing web unit not installed	No operation
Fusing web unit installed	Operates predefined pulse times

43-32

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the forcible operation of the fusing web cleaning when job end.

Section

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.
The set value of step 2 is saved.

Item	Display	Item	Setting range	Default value
A	JOB END COMP ACT CHECK	YES NO	Fusing web motor forcible operation condition when job end Enable Disable	0 - 1 0 1 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 5

44

44-1

Purpose	Setting
Function (Purpose)	Used to set each correction function of the image forming (process) section.

Section	Process (OPC drum, developing, transfer, cleaning)
----------------	--

Operation/Procedure

- 1) An target item of setting is selected with the touch panel.
The selected item is highlighted.
- 2) Press [OK] key. (The set value is saved.)

Item	Content	Setting range	Default value	Remarks
DRK	Enable/Disable setting of the dark potential adjustment during normal operation	Black text on white background (Inhibit: 0=NO) White text on black background (Allow: 1=YES)	Allow	
HV	Enable/Disable setting of the high density process control in normal operation		Allow	
HTLD	Enable/Disable setting of the half-tone potential correction during normal operation		Allow	
HT	Enable/Disable setting of the medium density process control in normal operation		Allow	
TC	Enable/Disable setting of the transfer output correction		Allow	A variation of the transfer efficiency is corrected with temperature and humidity (absolute moisture). Enable/Disable setting. Correction of the output voltage of the high transfer voltage.
MD VG	Enable/Disable setting of the membrane decrease grid voltage correction		Allow	
MD EV	Enable/Disable setting of the membrane decrease environment grid voltage correction		Allow	
MD LD	Enable/Disable setting of the membrane decrease laser power voltage correction		Allow	
MD EV LD	Enable/Disable setting of the environment laser power voltage correction		Allow	
MULTI V0	Enable/Disable setting of the multi grid voltage correction between paper sheets		Allow	
TN_HUM	Enable/Disable setting of the toner density humidity correction	Allow		
TN_AREA	Enable/Disable setting of the toner density area correction	Allow		
TN_LIFE	Enable/Disable setting of the toner density life correction	Allow		
TN_COV	Enable/Disable setting of the toner density print ratio correction	Allow		

Item	Content	Setting range	Default value	Remarks
TN_FB	Enable/Disable setting of the toner density process control feedback correction	Black text on white background (Inhibit: 0=NO) White text on black background (Allow: 1=YES)	Allow	When set to Disable, toner supply is not made by the process control feedback.
TN_ENV	Toner density environment multi correction		Allow	
TN_DRIP	Enable/Disable setting of toner drip supply		Allow	
TN_SPEND	Enable/Disable setting of toner supply by the process control result		Inhibit	
TN_INT	Enable/Disable setting of toner intermittent supply		Allow	When set to Disable, toner supply is not made by the developer traveling distance.
TN_ABS	Enable/Disable setting of toner unconditional supply		Allow	
TN_P_RET	Enable/Disable setting of the toner difference return correction		Inhibit	
PRT_HT	Enable/Disable setting of the printer correction feedback of half tone process control		Allow	
PTDL	Enable/Disable setting of the PTDL correction		Inhibit	Enable: Correction ON
TN_VREF	Enable/Disable setting of the ΔVerf correction		Allow	
TN_DISCHARGE	Enable/Disable setting of the background discharge	Allow		

44-2	
Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the process control sensor gain.
Section	Process

Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is performed automatically.

After completion of the adjustment, the result is displayed.

If the adjustment is not completed normally, "ERROR" is displayed.

<Setting range and default values of fusing temperature>

Content	Item/Display name	Content	Setting range	Default value
PROCON	A PCS_K LED ADJ	Black sensor light emitting quantity adjustment value	1 - 255	21
	B PCS_K DARK	Black dark voltage	0 - 255	0
	C PCS_K GRND	Drum surface when the adjustment of item A is completed	0 - 255	0
	D PCS_K DRM MAX	Drum surface input max. value	0 - 255	0
	E PCS_K DRM MIN	Drum surface input min. value	0 - 255	0
	F PCS_K DRM DIF	Drum surface input difference (Item D - Item E)	0 - 255	0

<Error list>

Error name	Error content
Black sensor adjustment abnormality	→PCS_K LED ADJ error The target is not reached by 3 times of retries.
Surface scanning abnormality	→PCS_K GRND error Effective difference of the upper and the lower values of the drum element surface

44-3	
Purpose	Operation test/check
Function (Purpose)	A change in the OPC drum surface potential VO due to the OPC drum environment and membrane decrease (life) is detected with the surface potential sensor to correct the grid potential Vg so that the cleaning field is maintained at a constant level.
Section	Process

Operation/Procedure

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
The OPC drum is rotated to detect a trouble in the surface potential sensor.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

<Details of display and content description>

Item/Display name	Content	Setting range	Memory	Default value
A TARGET VO	Target VO	0 - 1000	NO	650
B VO RESULT	Final dark potential adjustment result	0 - 1000	YES	650
C GRID BIAS	Grid bias adjustment value	0 - 1000	NO	650
D VG_DRK1	Initial dark potential process control correction amount	-256 - 256	YES	0
E VG_DRK2	Life dark potential process control correction amount	-256 - 256	YES	0
F VG_MULTI	Multi VO correction amount	-256 - 256	YES	0
G VG_LIFE	Grid voltage correction amount by the OPC drum membrane decrease	0 - 255	NO	0
H VG_ENV	Grid voltage correction amount by the OPC drum environment	-255 - 255	NO	0

Item/Display name	Content	Setting range	Memory	Default value
I LIFE COUNTER	Membrane decrease correction counter in the dark potential adjustment	0 - 30	NO	0
J ENV AREA	Environment correction area in the dark potential adjustment	0 - 14	NO	0

<Result display list>

COMPLETE	No error
ERROR	Error
INTERRUPTION	Forcible termination

<Error list>

Display	Error name	Error content
S.P TROUBLE	Surface potential sensor abnormality	Surface potential sensor scan abnormality
DARK WIDE ERROR	Dark potential adjustment variation	The OPC drum surface potential variation is great.
VG LIMIT ERROR	Gird voltage output limit error	"Vg" reaches the upper or lower limit in the adjustment.

44-4	
Purpose	(Must not be used unless a special change is required.)

Function (Purpose)	Used to set the operating conditions of the high density process control.
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Section

Operation/Procedure

Item/Display	Content	Setting range	Default value
A PCS_K TARGET	Black sensor target set value	1 - 255	210
B LED_K OUTPUT	Black sensor light emitting quantity set value	1 - 255	21
C PCS ADJUSTMENT LIMIT	Sensor adjustment target limit value	1 - 255	10
D DRM GROUND DIF	Effective difference of the upper and the lower values of the drum element surface	1 - 255	1
E BIAS_BK STANDARD DIF	Bias (for black) reference calculation difference	0 - 255	0
F BIAS PATCH INTERVAL	Patch bias output interval	1 - 255	45
G K_PAT TARGET ID	Patch density standard value (black)	1 - 255	50
H HV BK_GROUND LIMIT	Surface light reception effective area value at the patch position	1 - 255	60
I JDVB	Optimum effective developing potential	10 - 60	30

44-5	
Purpose	Adjustment/Setting
Function (Purpose)	Used to set the dark potential adjustment conditions.

Section

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.

- 2) Enter the set value with 10-key.
Press [OK] key. (The set value is saved.)

Item/Display	Content	Setting range	Default value
A CLEANING FIELD GAP	The difference between the target surface potential VO and the developing bias is set.	0 - 250	150
B DV BIAS OUTPUT	The actual output of the developing bias voltage in the AE mode	0 - 750	500
C MULTI VO THRESHOLD	Multi VO correction revision threshold value	0 - 100	20
D MULTI VO DATA	Number of detection times of exceeding the threshold value of VO potential between paper sheets	0 - 100	10
E MULTI VO LIMIT	Multi VO correction limit	0 - 255	50
F MULTI RESET TIME	Multi VO correction reset leaving time (min)	0 - 255	30

44-6

Purpose Adjustment

Function (Purpose) Used to perform forcible execution of the high density process correction.

Section

Operation/Procedure

Press [EXECUTE] key.

When the operation is normally completed, the result is saved.

If the operation is terminated abnormally, "ERROR" is displayed.

Result display	Content description
COMPLETE	No error
ERROR	Error
INTERRUPTION	Forcible termination

<Detailed error display and content description>

Details of error display	Content description
DRK_WIDE_ERR	The dark potential process control variation is great.
VG_LIMIT_ERR	Gird voltage output limit error
S.P TROUBLE	Surface potential sensor abnormality
BK_SEN_ADJ_ERR	Black sensor adjustment abnormality
K_HV_ERR	High density process control abnormality Process control patch density not detected Process control patch potential not detected
K_LDP_ERR	Half tone potential process control abnormality Process control patch density not detected Process control patch potential not detected
TIMEOUT_ERR	Time-out

Purpose	(This simulation is normally not used in the market.)
Function (Purpose)	Used to display the process data.
Section	Process (OPC drum, developing, transfer, cleaning)

Operation/Procedure

When the simulation is executed, the process data are displayed.

Mode	Page		Item display (*: Correction value)	Descriptions of items	Display range	Default value	
CPY/ PRN *1	1/1	P (PROCON)	LEFT	BLACK : GB ***/** DV ***/**	High density process control GB/DV data (K)	GB:150 - 1000 DV:0 - 600	GB: 630 DV: 495
		N(M) (NORMAL (MIDDLE))		BLACK : GB ***/** DV ***/**	High density normal (display for middle speed) GB/DV data (K)	GB:150 - 1000 DV:0 - 600	GB: 630 DV: 495
		S.P		VO	OPC drum surface potential VO data	0 - 850	0
				VH	OPC drum surface potential VH data	0 - 600	0
				VL	OPC drum surface potential VL data	0 - 600	0
OTHER	1/2	TN/TC	LEFT	TN HUD AREA	Toner control display humidity area	1 - 14	9
				TN HUD DATA	Toner control display humidity AD value	0 - 1023	0
				TC TMP AREA	Transfer display temperature area	1 - 9	4
				TC TMP DATA	Transfer display temperature AD value	0 - 1023	0
			RIGHT	TC HUD AREA	Transfer display humidity area	1 - 9	4
		TC HUD DATA		Transfer display humidity AD value	0 - 1023	0	
		MD HUD AREA		Membrane decrease display humidity area	1 - 14	9	
		MD HUD DATA		Membrane decrease display humidity AD value	0 - 1023	0	
		DRUM	LEFT	MD K STEP	Drum membrane decrease correction STEP display (K)	0 - 4	0
			RIGHT	MD K DRUM COUNTER	Membrane decrease drum traveling distance area (K)	0 - 30	0
		DRK		MD K REVISE(DRK1)	Initial dark potential process control correction	-256 - 256	0
				MD K REVISE(DRK2)	Life dark potential process control correction	-256 - 256	0
				MD K REVISE(MULTI)	Multi VO correction	-256 - 256	0
		LIFE	LEFT	MD K REVISE(LIFE) : M ***	LIFE grid voltage correction display (K)	0 - 255	0
		EV		MD K REVISE(EV) : M ***	Environment grid voltage correction display (K)	-255 - 255	0
		ALL		MD K REVISE(ALL) : M ***	Grid voltage correction ALL display (K)	-255 - 255	0
		LD LIFE		MD K REVISE(LD LIFE) : M ***	Drum membrane decrease laser power voltage correction (K)	0 - 255	0
LD EV		MD K REVISE(LD EV) : M ***	Drum environment laser power voltage correction	-255 - 255	0		
LD HLD		MD K REVISE(LD HLD) : M ***	Half tone potential process control laser power voltage correction	-255 - 255	0		
LD ALL		MD K REVISE(LD ALL) : M ***	Laser power voltage correction ALL display	-255 - 255	0		

Purpose	(This simulation is normally not used in the market.)
Function (Purpose)	Used to display the result of the high density process control.
Section	Process (OPC drum, development)

Operation/Procedure

Select a page with [↑] [↓] keys.

<Details of display and content description>

Item	Display item	Descriptions of items		Display range	Default value
TARGET (1 page)	ADK_SL(K)	Development characteristics gradient coefficient		-9.99 - 9.99	0
	ADK_INT(K)	Development characteristics intercept coefficient		-999.9 - 999.9	0
	TARGET (K)	Sensor target set value		0.00 - 255.00	0
	PCS_K_DARK	BK sensor dark potential		0 - 255	0
PATCHID 1-5 (1 - 2 page)	n-1	Patch/Surface	Patch data (n)th time patch 1 density (n = 1 to 5)	0 - 255	0
	n-2		Patch data (n)th time patch 2 density (n = 1 to 5)	0 - 255	0
	n-3		Patch data (n)th time patch 3 density (n = 1 to 5)	0 - 255	0
	n-4		Patch data (n)th time patch 4 density (n = 1 to 5)	0 - 255	0
	n-5		Patch data (n)th time patch 5 density (n = 1 to 5)	0 - 255	0
PATCHID 6-10 (1 - 2 page)	n-1	Patch/Surface	Patch data (n)th time patch 1 density (n = 6 to 10)	0 - 255	0
	n-2		Patch data (n)th time patch 2 density (n = 6 to 10)	0 - 255	0
	n-3		Patch data (n)th time patch 3 density (n = 6 to 10)	0 - 255	0
	n-4		Patch data (n)th time patch 4 density (n = 6 to 10)	0 - 255	0
	n-5		Patch data (n)th time patch 5 density (n = 6 to 10)	0 - 255	0
PATCH S.P 1-5 (1 - 2 page)	n-1	Patch potential/ Surface potential	Patch data (n)th time patch potential 1 (n = 1 to 5)	0 - 255	0
	n-2		Patch data (n)th time patch potential 2 (n = 1 to 5)	0 - 255	0
	n-3		Patch data (n)th time patch potential 3 (n = 1 to 5)	0 - 255	0
	n-4		Patch data (n)th time patch potential 4 (n = 1 to 5)	0 - 255	0
	n-5		Patch data (n)th time patch potential 5 (n = 1 to 5)	0 - 255	0
PATCH S.P 6-10 (1 - 2 page)	n-1	Patch potential/ Surface potential	Patch data (n)th time patch potential 1 (n = 6 to 10)	0 - 255	0
	n-2		Patch data (n)th time patch potential 2 (n = 6 to 10)	0 - 255	0
	n-3		Patch data (n)th time patch potential 3 (n = 6 to 10)	0 - 255	0
	n-4		Patch data (n)th time patch potential 4 (n = 6 to 10)	0 - 255	0
	n-5		Patch data (n)th time patch potential 5 (n = 6 to 10)	0 - 255	0

44-14

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.
Section	Process (OPC drum, development)

Operation/Procedure

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

Display Item	Description	Display range	De-fault	Remark
TH_CL	Process temperature sensor	0 - 255	-	AD value
		0 - 255	-	Temperature (°C)
HUS-CL	Process humidity sensor	0 - 255	-	AD value
		0 - 100.0	-	Humidity (%) * The value multiplied by 10 is sent from the PCU.
TH-RA	Room temperature sensor	0 - 255	-	AD value
		0 - 255	-	Temperature (°C)
HUS-RA	Room humidity sensor	0 - 255	-	AD value
		0 - 100.0	-	Humidity (%) * The value multiplied by 10 is sent from the PCU.
RTH1	Fusing thermistor 1 (Differential)	0 - 1023	-	AD value
		0 - 255	-	Temperature (°C)
RTH1_AD1	Fusing thermistor 1 (Compensation)	0 - 1023	-	AD value
		0 - 100.0	-	Temperature (%) * The value multiplied by 10 is sent from the PCU.
RTH1_AD2	Fusing thermistor 1 (Detection)	0 - 1023	-	AD value * AD value only
RTH2	Fusing thermistor 2	0 - 1023	-	AD value
		0 - 255	-	Temperature (°C)

44-15

Purpose	Setting
Function (Purpose)	Used to set the OPC drum idle rotation.
Section	Process

Operation/Procedure

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The initial value must be set unless any special change is required.

Item/Display	Content	Setting range	Default value
A TIME	Idle rotation interval (time interval between the previous OPC drum idle rotation and the next one) setting (h)	0 - 255	6
B AREA1	Environmental area difference judgment threshold value setting (difference between the previous OPC drum idle rotation and the current one)	0 - 5	2
C AREA2	Environmental area conditions (AND condition of the previous OPC drum idle rotation and the current one)	1 - 15	1
D CYCLE	Previous rotation time setting (sec) in the process control when recovered from power ON, preheating/sleep mode.	0 - 255	0

44-21

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the halftone process control target.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

The halftone process control target is set and the operation data are displayed.

Display	Content
COMPLETE	Normal completion
ERROR BLACK SENSOR ADJUSTMENT	Black sensor adjustment abnormality
[K]	Halftone process control [K] error
OTHER	Other errors

44-22

Purpose	Operation data display
Function (Purpose)	Used to display the toner patch density level in the halftone process control operation.

Section	Process
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Operation/Procedure

- 1) Select the display mode with [1ST STEP], [2ND STEP] key.
The toner patch density level made in the halftone process control operation is displayed.

Display item	Content
ID_n	Patch data display (n = 1 - 14)
BASE1	Belt substrate data (START)
BASE3	Belt substrate data (LAST)

44-24

Purpose	Operation data display
Function (Purpose)	Used to display the correction target and the correction level in the halftone process control operation.

Section	Process
----------------	---------

Operation/Procedure

- 1) Select the display category with [NEXT] key.

Category	Display item	Content
Coefficient	[EX-LOW]	Coefficient value of the approximation formula of the min. density
	[LOW]	Coefficient value of the approximation formula of a low density
	[CONNECT]	Coefficient value of the approximation formula when a low density is connected with a half-tone density
	[MID]	Coefficient value of the approximation formula of a half-tone density
	[HIGH]	Coefficient value of the approximation formula of a high density
Coefficient	[CONNECT POINT]	Density section connection output ratio
Reference value	[SENSOR_TARGET]	Halftone process control reference value
Correction value	[S_VALUE]	Halftone process control correction amount

Category	Display item	Content
For the printer (*)	[PRINTER_S_VALUE]	Printer halftone process control correction amount
	[PRINTER_BASE_DITHER_VALUE]	Printer halftone process control reference dither value
	[PRINTER_AUTO_HT_VALUE]	Printer auto density adjustment correction value
Previous correction value	[BEFORE S_VALUE]	Previous halftone process control correction amount

44-25

Purpose	Setting
Function (Purpose)	Used to set the calculating conditions of the correction value for the halftone process control.
Section	Process

Operation/Procedure

- 1) Select a target adjustment density level with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

Item/Display	Setting range	Content	Default value
A LOW FIELD LOWER LIMIT	0 - 255	Lower limit value of the low density approximation formula data	98
B LOW FIELD UPPER LIMIT	0 - 255	Upper limit value of the low density approximation formula data	60
C MID FIELD LOWER LIMIT	0 - 255	Lower limit value of the intermediate density approximation formula data	90
D MID FIELD UPPER LIMIT	0 - 255	Upper limit value of the intermediate density approximation formula data	4
E HIGHLIGHT POINT	1 - 8	Reference point of the highlight correction amount	7
F HIGHLIGHT VALUE LIMIT	0 - 128	Highlight correction amount limit value	20
G MAX VALUE LIMIT	0 - 128	Maximum density value correction limit value	20

44-26

Purpose	Adjustment/Setup
Function (Purpose)	Used to execute the halftone process control compulsory.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

The halftone process control is performed and the operation data are displayed.

Display	Content
COMPLETE	Normal completion
ERROR BLACK SENSOR ADJUSTMENT	Black sensor adjustment abnormality
[K]	Halftone process control [K] error
OTHER	Other errors

44-27

Purpose	Data clear
Function (Purpose)	Used to clear the correction data of the halftone process control.
Section	Process

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The correction data of the halftone process control are cleared.

44-28

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the process control execution timing.
Section	

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Category	Display		Content		Setting range		Default value	
A	Process control Enable/ Disable setting	INITIAL	YES	When warming up after clearing the OPC drum and the developer unit counters	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	2
						BK process control Enable		2	
						Pixel count judgment		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	2
						BK process control Enable		2	
						Pixel count judgment		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	
E		HUM			The temperature and humidity inside the machine are monitored only in a job. When a change in the temperature and humidity compared from the previous process control execution is greater than the specified level (when item 10 is greater than the set value).	Process control Disable	1 - 2	1	2
						BK process control Enable		2	
F		REV1	YES	When a certain level of the accumulated traveling distance of BK position OPC drum unit is reached after the power is supplied.	Enable	0 - 1	0	0	
			NO		Disable		1		
G		REV2_BK	YES	When a certain level of the accumulated traveling distance of BK position OPC drum unit is reached after execution of the previous density correction.	Enable	0 - 1	0	0	
			NO		Disable		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		
I		Process control execution condition setting	DAY		After job after passing a certain days from execution of the previous process control. When next warming up if there is no job.	0: Disable of the specified days judgment	0 - 999	0	1
						1 - 999: 1 - 999 days passing		999	
J	HI-COV			The average print ratio is monitored in a certain interval, and the high print process control execution is judged. (The soft SW No. 11 bit 4 is expanded and implanted.)	Process control interval setting for every 10 pages	0 - 2	0	0	
					High print judgment disable		1		
					Judgment at the 30th paper (continuous).		2		
K	LO-COV			Low print document continuous printing process control execution judgment	Enable	0 - 1	0	1	
					Disable		1		
L	TonerCA-END			When the toner cartridge remaining quantity reached 25% or below, the process control interval is changed.	Enable	0 - 1	0	1	
					Disable		1		
M	JOB STOP			Enable/Disable setting of Job interruption process control execution	Enable	0 - 1	0	0	
					Disable		1		
N	AVERAGE-PAGE			Average print ratio paper number setting (The soft SW No. 11 bit 5 - 7 are expanded and implanted.)	1: 10 pages - 10: 100 pages	1 - 10	1	5	
					Corresponds to 1 step/10 pages.		10		
O	LIMIT PAGE			Setting of the job connection number of sheets/ limitation of the number of sheets (The soft SW No. 11 bit 1 - 3 are expanded and implanted.)	1: 10 pages - 10: 100 pages	1 - 10	1	10	
					Corresponds to 1 step/10 pages.		10		
P	PIX_RATIO_BK			Magnification ratio setting (%) of the BK toner count specified value When 100 is entered, it corresponds to 1kp at 5% print.	1 - 999		10		
Q	INTERVAL TIME			Setting of the leaving time when turning ON the power (including the sleep recovery time) (h: hour)	1 - 255 (1 - 255, 1 - 255h passing)		2		
R	HUM HOUR			Interval setting of the temperature and humidity monitoring time of "HUM" (unit: 10 minutes)	1 - 24		2		
S	HUM_DIF			Area difference specified value when compared with the execution of the previous process control of "HUM" and "HUM_LIMIT"	1 - 9		2		
T	BK_RATIO			[REV2_BK] BK position OPC drum traveling distance value magnification ratio setting (%)	1 - 999 (When 20 is entered, it corresponds to 100,000mm.)		70		
U	HT_DIF			Used to judge the execution of HT process control. Bias variation difference value	1 - 255		40		
V	REV1_RATIO			[REV1_BK] BK position OPC drum traveling distance value magnification ratio setting (%)	1 - 255		20		
W	LDP_DIF			LDP variation difference value used for HT process control execution judgment	1 - 255		10		
X	MC cleaner control	MC_CLEAN_TIME		MC automatic cleaning execution interval	0: Not executed 1 - 200: Executed (Unit: K)	0 - 200		10	

44-29

Purpose	Setting
Function (Purpose)	Used to set the operating conditions of the process control during a job.
Section	Process

Operation/Procedure

- 1) Select a target item of setting with scroll 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	2
B PRINTER	During print job	0: No execution 1: HV only 2: HV → HT	2
C FAX	During FAX print job		2
D SELF PRINT	During self print		2
E CPY TO PRT TABLE	Half-tone process control copier - printer conversion table select		0 - 1

HV: High density process control

HT: Half-tone process control

44-33

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the conditions of the half-tone potential adjustment.
Section	

Operation/Procedure

- 1) Select a target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. The set value is saved.

Item	Display	Item Content	Setting range	Default value
A	VH TARGET	Target set value	1 - 100	70
B	LDP PATCH INTERVAL	Laser power variable width	1 - 32	5

44-35

Purpose	
Function (Purpose)	Used to display the half-tone potential adjustment result.
Section	

Operation/Procedure

44-37

Purpose	Adjustment/Setup
Function (Purpose)	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 scroll keys.
- 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.

Button	Item	Display	Content	Setting range	Default value
K	A	DV_ADJ_BK_H_DATA_1	Developing bias correction data 1 in black-white printing (high speed)	0 - 5	0
	B	DV_ADJ_BK_H_DATA_2	Developing bias correction data 2 in black-white printing (high speed)	0 - 5	0
	C	DV_ADJ_BK_H_DATA_3	Developing bias correction data 3 in black-white printing (high speed)	0 - 5	0
	D	DV_ADJ_START_BK_H_1	Developing bias correction start position data 1 (K) in black-white printing (less than 10[s]) (high speed)	1 - 12	4
	E	DV_ADJ_START_BK_H_2	Developing bias correction start position data 2 (K) in black-white printing (more than 10 [s] less than 60 [s]) (high speed)	1 - 12	3
	F	DV_ADJ_START_BK_H_3	Developing bias correction start position data 3 (K) in black-white printing (more than 60 [s] less than 240 [s]) (high speed)	1 - 12	1
	G	DV_ADJ_START_BK_H_4	Developing bias correction start position data 4 (K) in black-white printing (more than 240 [s]) (high speed)	1 - 12	1

Purpose	Setup/Adjustment
Function (Purpose)	Used to set the process control execution conditions.
Section	Process

Operation/Procedure

This simulation allows collective change in the set contents of SIM44-4 and SIM44-28.

A suitable one is selected among a number of options depending on the condition.

Select an item to be set.

- To change the image density in the high density area, select PROCON TARGET.
- To change the frequency of the process control operations, select PROCON MODE.

<Descriptions of items>

Item	Descriptions
PROCON TARGET	Process control reference value registration (SIM44-04)
PROCON MODE	Density correction execution timing mode (SIM44-28)

<Setting mode descriptions>

Item	Mode name	Descriptions
PROCON TARGET	ID DOWN(-2)	The registered values of the process control reference values are collectively changed.
	ID DOWN(-1)	The registered values of the process control reference values are collectively changed.
	ID UP(+1)	The registered values of the process control reference values are collectively changed.
	ID UP(+2)	The registered values of the process control reference values are collectively changed.
	NORMAL(0)	The registered values of the process control reference values are collectively changed to the default values.
	CUSTOM	The value set by SIM44-04 is restored.
PROCON MODE	HIGH QUALITY(-2)	The values of the density correction execution timing mode are collectively changed.
	HIGH QUALITY(-1)	The values of the density correction execution timing mode are collectively changed.
	PRINT PERFORMANCE(+1)	The values of the density correction execution timing mode are collectively changed.
	PRINT PERFORMANCE(+2)	The values of the density correction execution timing mode are collectively changed.
	NORMAL(0)	The values of the density correction execution timing mode are collectively changed to the default values.
	CUSTOM	The value set by SIM44-28 is restored.

When PROCON TARGET is selected.

- 1) Select the density level.

When PROCON MODE is selected.

- 1) Select the execution frequency of the process control.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

NOTE:

This simulation may not function with some firmware versions.

In such a case, the firmware must be upgraded to the latest version.

46-2

Purpose	Adjustment (Monochrome copy mode)
Function (Purpose)	Used to adjust the copy density in the copy mode.

Section**Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
 - * When the Δ ∇ 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	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
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW 1 - 99	50
			HIGH 1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW 1 - 99	50
			HIGH 1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW 1 - 99	50
			HIGH 1 - 99	50
L	LIGHT	Light document	LOW 1 - 99	50
			HIGH 1 - 99	50

46-4

Purpose	Adjustment (Color scanner mode)
Function (Purpose)	Used to adjust the density in the image send mode.

Section**Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
 - * When the Δ ∇ 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.

Mode	Item/Display	Content	Setting range	Default value	
LOW	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
	H	RIP	–	1 - 99	50
HIGH	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
	H	RIP	–	1 - 99	50

46-5

Purpose	Adjustment (Monochrome scanner mode)
Function (Purpose)	Used to adjust the density in the image send mode.

Section**Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
 - * When the Δ ∇ 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.

Mode	Item/Display	Content	Setting range	Default value	
LOW	A	AUTO TEXT	Auto/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
	H	RIP	–	1 - 99	50
HIGH	A	AUTO TEXT	Auto/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
	H	RIP	–	1 - 99	50

46-8

Purpose	Adjustment (Color scanner mode)
Function (Purpose)	Used to adjust the scanner color balance RGB.

Section**Operation/Procedure**

- 1) Select a target color of the adjustment with [R], [G], and [B] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)
When [START] key is pressed, copying is performed.

Item	Display	Item Content	Setting range	Default value
A	LOW DENSITY POINT	Set value of the low density correction amount	1 - 99	50
B	HIGH DENSITY POINT	Set value of the high density correction amount	1 - 99	50

46-9

Purpose	Adjust (DSPF mode)
Function (Purpose)	Used to adjust the copy density adjustment in the copy mode.

Section**Operation/Procedure**

- 1) Select a target item of the adjustment with [OC] [DSPF] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
* When △ or ▽ key is pressed, the set value of each item is increased or decreased by 1.
Collective change can be made.
- 4) Press [OK] key. (The set value is saved.)
When [START] key is pressed, copying is performed.

Item	Button	Display	Content	Setting range	Default value
A	OC	COPY SIDEA: LOW	DSPF coy 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		COPY SIDEA: HIGH	DSPF copy mode exposure adjustment (high density side)	1 - 99	52
D		SCAN SIDEA: HIGH	DSPF scanner mode exposure adjustment (high density side)	1 - 99	52
A	DSPF	COPY SIDEB: LOW	DSPF coy 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		COPY SIDEB: HIGH	DSPF copy mode exposure adjustment (high density side)	1 - 99	50
D		SCAN SIDEB: HIGH	DSPF scanner mode exposure adjustment (high density side)	1 - 99	50

Item	Button	Display	Content	Setting range	Default value
E	DSPF	BALANCE SIDEB: R	DSPF color balance R	1 - 99	50
F		BALANCE SIDEB: G	DSPF color balance G	1 - 99	50
G		BALANCE SIDEB: B	DSPF color balance B	1 - 99	50

46-10

Purpose	Adjustment
Function (Purpose)	Used to perform the engine gray balance manual adjustment.

Section**Operation/Procedure**

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
* When △ or ▽ key is pressed, the set value of each item is increased or decreased by 1.
Collective change can be made.
- 4) Press [OK] key. (The set value is saved.)

<Setting items>

Item	Content
AUTO	Auto (AE) 1/Auto (AE) 2
TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
TEXT/PHOTO	Text/Photograph
PRINTED PHOTO	Printed photo
PHOTO	Photograph
MAP	Map
LIGHT	Light document

<Setting range of each set value and default>

Item	Display	Item	Setting range	Default value
A	POINT1	Point 1	1 - 999	500
B	POINT2	Point 2	1 - 999	500
C	POINT3	Point 3	1 - 999	500
D	POINT4	Point 4	1 - 999	500
E	POINT5	Point 5	1 - 999	500
F	POINT6	Point 6	1 - 999	500
G	POINT7	Point 7	1 - 999	500
H	POINT8	Point 8	1 - 999	500
I	POINT9	Point 9	1 - 999	500
J	POINT10	Point 10	1 - 999	500
K	POINT11	Point 11	1 - 999	500
L	POINT12	Point 12	1 - 999	500
M	POINT13	Point 13	1 - 999	500
N	POINT14	Point 14	1 - 999	500
O	POINT15	Point 15	1 - 999	500
P	POINT16	Point 16	1 - 999	500
Q	POINT17	Point 17	1 - 999	500

46-16

Purpose	Adjustment
Function (Purpose)	Used to perform the engine balance manual adjustment. (Monochrome, all modes)
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.
 - * When Δ or ∇ key is pressed, the set value of each item is increased or decreased by 1.
 - Collective change can be made.
- 3) Press [OK] key. (The set value is saved.)

Item	Display	Item	Setting range	Default value
A	POINT1	Point 1	1 - 999	500
B	POINT2	Point 2	1 - 999	500
C	POINT3	Point 3	1 - 999	500
D	POINT4	Point 4	1 - 999	500
E	POINT5	Point 5	1 - 999	500
F	POINT6	Point 6	1 - 999	500
G	POINT7	Point 7	1 - 999	500
H	POINT8	Point 8	1 - 999	500
I	POINT9	Point 9	1 - 999	500
J	POINT10	Point 10	1 - 999	500
K	POINT11	Point 11	1 - 999	500
L	POINT12	Point 12	1 - 999	500
M	POINT13	Point 13	1 - 999	500
N	POINT14	Point 14	1 - 999	500
O	POINT15	Point 15	1 - 999	500
P	POINT16	Point 16	1 - 999	500
Q	POINT17	Point 17	1 - 999	500

46-19

Purpose	Setting
Function (Purpose)	Used to set the monochrome auto exposure mode.
Section	

Operation/Procedure

- Select a target item of setting with the touch panel.
The selected item is highlighted, and the setting is saved.

Item	Content	Setting value	Default value
AE_MODE	Auto exposure mode	MODE1, MODE2	MODE1
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/ STOP/ PRESCAN	STOP
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

Descriptions of each item

AE_MODE	Copy auto mode γ setting can be selected from MODE1 and MODE2. MODE1 : Provides good reproduction in the lower density, and suitable for copy of printed photos. For duplex copy on thin paper, images on the back surface may appear on the front surface. MODE2 : Images on the back surface of thin paper in duplex copy hardly appear on the front surface. However, the density in the lower density section is lower than that in MODE1.
AE_STOP_COPY	The auto exposure system of the copy auto mode can be selected from Lead edge stop ON and Lead edge stop OFF (Real time system). AE_STOP_COPY ON : The γ correction table of the whole images is automatically set according to the scan data of several mm at the document lead edge. AE_STOP_COPY OFF : The γ correction table is automatically set for every one line of the document. When γ changes in the document, and the half-tone density changes accordingly. However, it is effective for prevention of appearing back images on the front.
AE_STOP_SCAN	Scan to xx auto mode auto exposure system select (The system is similar with the item of AE_STOP_COPY.)
AE_FILTER	The copy auto mode filter setting can be selected from SOFT, NORMAL, and SHARP. SOFT : Used to delete moire in copy. However, images are softly focused. NORMAL : Default SHARP : Used to make clear and sharp photos and thin lines in the copy. However, moire may be easily produced.
AE_WIDTH	The main scanning direction width of the background judgment scan data used in the auto exposure in the copy, FAX, Scan auto mode can be selected from FULL and PART. FULL : Full scan data of the main scanning direction width of the detected document size are used. PART : Scan data of about 100mm width in the main scanning direction from the document reference position are used. When an uncertain size document such as a newspaper clipping is copied, images on the back may not easily appear on the front.

46-23

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the half-tone max. density correction.
Section	

Operation/Procedure

- 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	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	BLACKMAX TARGET	Scanner target value for BLACK max. density correction	0 - 999	500

46-24

Purpose	Adjustment
Function (Purpose)	Used to adjust the engine half-tone auto density adjustment.

Section

Operation/Procedure

- 1) Press [EXECUTE] key.
The half-tone auto density adjustment is performed and the self print is made.
- 2) Place the printed self print patch on the glass table, and select the process mode with [FACTORY] and [SERVICE] keys on the touch panel.
- 3) Press [EXECUTE] key.
The patches are read, and the self print of 17 patches is made.
The correction value is saved, and the reference value registration is performed.

46-32

Purpose	Adjustment/Setting
Function (Purpose)	Adjustment of basic color density for AE mode.

Section

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press the [OK] key. (The set value is saved.)

Item	Display	Item Content	Setting range	Default value
A	COPY: OC	Copy mode (OC)	1 - 250	196
B	COPY: DSPF (SIDE1)	Copy mode (DSPF front surface)	1 - 250	196
C	COPY: DSPF (SIDE2)	Copy mode (DSPF back surface)	1 - 250	196
D	SCAN: OC	Scan mode (OC)	1 - 250	196
E	SCAN: DSPF (SIDE1)	Scan mode (DSPF front surface)	1 - 250	196
F	SCAN: DSPF (SIDE2)	Scan mode (DSPF back surface)	1 - 250	196

46-37

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust B/W image forming.

Section

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
 - 2) Enter the set value with 10-key.
 - 3) Press [YES] key. (The set value is saved.)
- <Setting range of each set value and default>

Item/Display	Content	Setting range	Default value
A	R-Ratio	Gray making setting (R)	0 - 1000 63
B	G-Ratio	Gray making setting (G)	0 - 1000 847
C	R-Ratio RIP	Print gray making setting (R)	0 - 1000 299
D	G-Ratio RIP	Print gray making setting (G)	0 - 1000 587

B-Ratio	Gray making setting (B) (1000-R-Ratio - G-Ratio)
B-Ratio RIP	Print gray making setting (B) (1000-R-Ratio RIP - G-Ratio RIP)

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the JPEG compression rate in copying and scanning.
Section	

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] 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	FILLING(C)	LOW	Low compression (Color)	0	0 (LOW)
		MIDDLE	Medium compression (Color)	1	
		HIGH	High compression (Color)	2	
B	FILLING(G)	LOW	Low compression (Gray)	0	0 (LOW)
		MIDDLE	Medium compression (Gray)	1	
		HIGH	High compression (Gray)	2	
C	PRINT(C)	LOW	Low compression (Color)	0	0 (LOW)
		MIDDLE	Medium compression (Color)	1	
		HIGH	High compression (Color)	2	
D	PRINT(G)	LOW	Low compression (Gray)	0	0 (LOW)
		MIDDLE	Medium compression (Gray)	1	
		HIGH	High compression (Gray)	2	
E	SCAN(C)	MIDDLE1	Medium compression mode 1 Q table for compression (for brightness and color difference) Medium compression mode 1 Q table for decompression (for brightness and color difference)	0	1 (MIDDLE2)
		MIDDLE2	Medium compression mode 2 Q table for compression (for brightness and color difference) Medium compression mode 2 Q table for decompression (for brightness and color difference)	1	
		MIDDLE3	Medium compression mode 3 Q table for compression Medium compression mode 3 Q table for decompression	2	
F	SCAN(G)	MIDDLE1	Medium compression mode 1 Q table for compression Medium compression mode 1 Q table for decompression	0	1 (MIDDLE2)
		MIDDLE2	Medium compression mode 2 Q table for compression Medium compression mode 2 Q table for decompression	1	
		MIDDLE3	Medium compression mode 3 Q table for compression Medium compression mode 3 Q table for decompression	2	

46-48

Purpose	Adjustment/Setting
Function (Purpose)	Copy output resolution setting
Section	

Operation/Procedure

- 1) Use the touch panel to press the set value key to be changed.
- 2) The set value is saved to the EEPROM and the RAM.

<Setting range of each set value and default>

Item	Button display	Content	Default value
TEXT/PRT PHOTO	600DPI ED	Text/Printed Photo	600DPI ED
	600DPI DT		
	1200DPI DT		
TEXT/PHOTO	600DPI DT	Text/Photograph	600DPI DT
	1200DPI DT		
PRINTED PHOTO	600DPI DT	Printed photo	1200DPI DT
	1200DPI DT		
PHOTO	600DPI DT	Photograph	1200DPI DT
	1200DPI DT		

* ED: Error diffusion, DT: Dither

46-51

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.
Section	

Operation/Procedure

- 1) Select a target adjustment mode with the touch panel key [PAPER/DITHER].
- 2) Select a target adjustment density level with scroll 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.

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.

<Setting items>

Item	Item content	Color
HEAVY	Copier heavy paper gamma	K
DITH1	Monochrome error diffusion	K
DITH2	Monochrome dither (1200dpi)	K

<Setting range of each set value and default>

Item/Display	Item	Setting range	Default value	
A	POINT1	Point 1	1 - 999	500
B	POINT2	Point 2	1 - 999	500
C	POINT3	Point 3	1 - 999	500
D	POINT4	Point 4	1 - 999	500
E	POINT5	Point 5	1 - 999	500
F	POINT6	Point 6	1 - 999	500
G	POINT7	Point 7	1 - 999	500
H	POINT8	Point 8	1 - 999	500
I	POINT9	Point 9	1 - 999	500
J	POINT10	Point 10	1 - 999	500
K	POINT11	Point 11	1 - 999	500
L	POINT12	Point 12	1 - 999	500
M	POINT13	Point 13	1 - 999	500
N	POINT14	Point 14	1 - 999	500
O	POINT15	Point 15	1 - 999	500
P	POINT16	Point 16	1 - 999	500
Q	POINT17	Point 17	1 - 999	500

46-52

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.)
Section	

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.

Display		Content
Dither	HEAVYPAPER	Copier/Heavy paper gamma
	B/W ED	Monochrome error diffusion
	B/W 1200	Monochrome dither 1200dpi
	WOVEN1	Watermark 1
	WOVEN2	Watermark 2
	WOVEN3	Watermark 3
	WOVEN4	Watermark 4

46-54

Purpose	Adjustment
Function (Purpose)	Used to perform the engine halftone automatic density adjustment (dither).
Section	

Section**Operation/Procedure**

- 1) Press [EXECUTE] key.

The high density process control is started to make 48 patch self print. (A4 (11" x 8.5") or A3 (11" x 17") paper in the paper feed tray is used.)
- 2) Place the 48 patch self print on the document table, and press [EXECUTE] key.

Scanning the 48 patch self print is started.

After scanning the 48 patch self print, the 17 patch self print is automatically printed.
- 3) Press [OK] key.

After completion of the correction amount registration, the screen shifts to the dither selection menu.
- 4) Select an item (dither) to be adjusted.
- 5) Press [EXECUTE] key.

The 48 patch self print is printed.
- 6) Place the 48 patch self print on the document table, and press [EXECUTE] key.

Scanning the 48 patch self print is started.

After scanning the patch, the screen automatically shifts to the dither selection menu.
- 7) After completion of the adjustment of all the density adjustment items (dither), press [OK] key.

46-55

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the drop out color in the image send mode (monochrome manual text mode).

Section**Operation/Procedure**

In the image send mode (monochrome manual text mode), the range where color images are reproduced as monochrome images is adjusted.

- 1) Enter the adjustment value with 10-key and press [OK] key.
When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

Item/Display	Content	Setting range	Default value
A CHROMA	Dropout color range adjustment	0 - 6	3

- 2) Scan the document in the image send mode (monochrome manual text mode), and check the adjustment result.

46-60

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the sharpness in the color auto mode.

Section**Operation/Procedure**

- 1) Select a target item with scroll keys on the touch panel.
- 2) Input numeric value corresponding to sharpness level (filter process mode).
- 3) Press [OK] key.

This is used to adjust the sharpness in the color auto mode and the smoothness (roughness) in the dark area.

Item	Display	Content	Setting range	Default value			
A	CPY PUSH AUTO FILTER LEVEL	SOFT	Sharpness: The sharpness is specified when the document mode is judged as A5 or A6 by the auto mode of PUSH.	SOFT	1 - 3	1	2(CENTER)
		CENTER		CENTER		2	
		HIGH		HIGH		3	
B	B/W COPY	OFF	Filter mixture, Register select pattern, Monochrome copy	OFF	0 - 1	0	1(ON)
		ON		ON		1	
C	COLOR PUSH:RGB	OFF	Filter mixture, Register select pattern, Color push	OFF	0 - 1	0	1(ON)
		ON		ON		1	
D	B/W PUSH	OFF	Filter mixture, Register select pattern, Monochrome push	OFF	0 - 1	0	1(ON)
		ON		ON		1	
E	B/W PRINT	OFF	Filter mixture, Register select pattern, Monochrome print	OFF	0 - 1	0	0(OFF)
		ON		ON		1	

46-61

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the area separation recognition level.
Section	

Operation/Procedure

- 1) Select an adjustment mode.
- 2) Select a target adjustment item with scroll key on the touch panel.
- 3) Enter the adjustment value using the 10-key.
- 4) Press [OK] key.

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, image quality trouble may occur for some documents.

Item/Display		Content
COLOR	AUTO	[Color/Gray] Auto
	TPP	[Color/Gray] Manual (Text print)
	COPY(TPP)	[Color/Gray] Copy document (Text print)
MONO	AUTO	[Monochrome] Auto
	TPP	[Monochrome] Manual (Text print)
	COPY(TPP)	[Monochrome] Copy document (Text print)

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: SWITCH [HIGH LPI]	Detection ON/OFF: High line number judgment select	0 - 1	0
E SEGMENT: SWITCH [TXT ON SCR IMAGE SEND]	Detection ON/OFF: Text on image send dots	0 - 1	0
F SEGMENT: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 99	50
G SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 99	50
H SEGMENT: ADJUST [BK TXT 2, CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 49	25
I SEGMENT: ADJUST [TXT ON SCR 1]	Detection level adjustment: Text 1 on dots	1 - 99	50
J SEGMENT: ADJUST [TXT ON SCR 2]	Detection level adjustment: Text 2 on dots	1 - 99	50
K SEGMENT: ADJUST [TXT ON SCR AREA]	Detection level adjustment: Detection area of text on dots	1 - 15	8
L SEGMENT: ADJUST [HIGH LPI]	Detection level adjustment: High line number judgment	1 - 49	25
M SEGMENT: ADJUST [BK]	Detection level adjustment: No chrome judgment	1 - 99	50
N SEGMENT: ADJUST [CL]	Detection level adjustment: Chrome judgment	1 - 99	50
O SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 99	50
P SEGMENT: ADJUST [SCR 1 HIGH]	Detection level adjustment: High density dots	1 - 49	25

Item/Display	Content	Setting range	Default value
Q SEGMENT: ADJUST [SCR 1 MIDDLE]	Detection level adjustment: Medium density dots	1 - 49	25
R SEGMENT: ADJUST [SCR 1 LOW]	Detection level adjustment: Low density dots	1 - 49	25
S SEGMENT: ADJUST [SCR 2]	Detection level adjustment: Dot 2	1 - 15	8
T SEGMENT: ADJUST [SCR 3]	Detection level adjustment: Dot 3	1 - 15	8
U SEGMENT: ADJUST [LINE HALFTONE]	Detection level adjustment: line screen	1 - 49	25

46-62

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.

Section**Operation/Procedure**

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

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, image quality trouble may occur for some documents.

Item/Display	Content	Setting range	Default value
A SW_ACS	ACS judgment reference area select	0 - 1	1
B TEXT_IMAGE	Text/Image judgment priority level adjustment	0 - 6	3
C TEXT_BLANK	Text/Blank judgment priority level adjustment	0 - 6	4
D HT_LV	Dot area judgment threshold value adjustment	0 - 6	1
E AE_AREA_LV	Color AE judgment target area adjustment	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 value adjustment (lower limit)	0 - 4	0
K AE_JUDGE_LV_L_O	Color AE background density threshold value adjustment (upper limit)	0 - 10	0
L AE_JUDGE_LV_C	Color AE background detection level adjustment (chroma)	0 - 10	5

Item/Display			Content	Setting range		Default value
M	AE _ONOFF _CC	ON	AE mode ON/	ON	0 - 1	0
		OFF	OFF switch : For color copy	OFF		
N	AE _ONOFF _MC	ON	AE mode ON/	ON	0 - 1	0
		OFF	OFF switch : For mono- chrome copy	OFF		
O	AE _ONOFF _CS	ON	AE mode ON/	ON	0 - 1	0
		OFF	OFF switch : For color scan	OFF		
P	AE _ONOFF _MS	ON	AE mode ON/	ON	0 - 1	0
		OFF	OFF switch : For mono- chrome copy	OFF		
Q	BLANK_JUDGE_ LV_L	Blank judgment level adjustment (value)		0 - 10	0	
R	BLANK_JUDGE_ LV_C	Blank judgment level adjustment (chroma)		0 - 10	0	
S	MODE0_UNDER	Mode 0 developing paper mode select		0 - 6	0	
T	MODE1_UNDER	Mode 1 developing paper mode select		0 - 6	0	
U	MODE5_UNDER	Mode 5 developing paper mode select		0 - 6	0	
V	MODE6_UNDER	Mode 6 developing paper mode select		0 - 6	0	
W	SW_CHANGE_ MODE0	Mode 0: Mode judgment select		0 - 6	0	
X	SW_CHANGE_ MODE1	Mode 1: Mode judgment select		0 - 6	1	
Y	SW_CHANGE_ MODE2	Mode 2: Mode judgment select		0 - 6	2	
Z	SW_CHANGE_ MODE3	Mode 3: Mode judgment select		0 - 6	3	
AA	SW_CHANGE_ MODE4	Mode 4: Mode judgment select		0 - 6	4	
AB	SW_CHANGE_ MODE5	Mode 5: Mode judgment select		0 - 6	5	
AC	SW_CHANGE_ MODE6	Mode 6: Mode judgment select		0 - 6	6	

46-63

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the density in the copy low density section.
Section	

Operation/Procedure

- 1) Select a target adjustment item with scroll 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

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the reproduction capability of watermarks in the copy/printer mode.
Section	

Operation/Procedure

This is to adjust the reproduction capability of watermarks in the copy/printer mode.

- 1) Select the adjustment mode.
- 2) Select an adjustment item according to the necessity.
- 3) Enter the adjustment value with 10-key and press [OK] key.
- 4) Make a copy, and check the adjustment result.

Category	Item	Display	Content	Setting range	Default value	NOTE	
PATTERN	A	WOVEN DEN BK LOW	Watermark density level (Black LOW)	0 - 255	15	The adjustment value is changed to increase or decrease the density of the watermark of background documents (primary output). To increase the watermark density, increase the adjustment value. To decrease the watermark density, decrease the adjustment value. NOTE: When the adjustment value is increased, the watermark area which is originally not reproduced becomes difficult to disappear. When the adjustment value is decreased, the watermark area which is originally reproduced becomes easy to disappear.	
	B	WOVEN DEN BK MIDDLE	Watermark density level (Black MIDDLE)	0 - 255	19		
	C	WOVEN DEN BK HIGH	Watermark density level (Black HIGH)	0 - 255	23		
	D	CONTRAST	Contrast adjustment	0 - 255	2	This is used to adjust the variation in the watermark density when the adjustment value of the watermark print/contrast adjustment in the system setting is changed by 1. When this value is increased, the variation is also increased. When the value is decreased, the variation is also decreased. When the adjustment value is 0, the result of the contrast adjustment is not reflected. * The adjustment value must be set to 1 or greater.	
	E	HT TYPE (POSI)	For halftone index watermark type positive	42 - 43	42	To reproduce the containing characters of watermark copy (secondary output) more clearly, set to 43. In that case, however, the containing characters of the watermark document (primary output) can be easily reproduced.	
	F	HT TYPE (NEGA)	For halftone index watermark type negative	42 - 43	42		
COPY MODE	A	TEXT/PRINTED PHOTO	Text/Printed Photo mode select	OFF	0 - 1	1	Normally set to the default. ON 1 No need to change in the market.
			Enable/Disable	ON			
	B	TEXT	Text mode select Enable/Disable	OFF	0 - 1	1	
				ON			
	C	PRINTED PHOTO	Printed Photo mode select	OFF	0 - 1	1	
			Enable/Disable	ON			
	D	PHOTOGRAPH	Photograph mode select Enable/Disable	OFF	0 - 1	1	
				ON			
	E	TEXT/PHOTO	Text/Photograph mode select	OFF	0 - 1	1	
Enable/Disable			ON				
F	MAP	Map mode select Enable/Disable	OFF	0 - 1	1		
			ON				
G	LIGHT	Light density document mode select Enable/Disable	OFF	0 - 1	1		
			ON				
H	AUTO	Automatic mode select Enable/Disable	OFF	0 - 1	1		
			ON				
I	DEFAULT MODE	Default exposure mode	TEXT/PRINTED PHOTO	0 - 5	0		
		Used to specify the exposure mode set when the watermark is ON.	TEXT				
			PRINTED PHOTO				
			PHOTOGRAPH				
			TEXT/PHOTO				
			MAP				

Category	Item	Display	Content	Setting range	Default value	NOTE
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P)	0 - 200	20	Normally set to the default. ON 1 No need to change in the market.
	B	LINE SPACE 2	Line space in the watermark print box (37P - 48P)	0 - 200	20	
	C	LINE SPACE 3	Line space in the watermark print box (49P - 64P)	0 - 200	20	
	D	LINE SPACE 4	Line space in the watermark print box (65P - 80P)	0 - 200	20	
	E	BLANK H/B 1	Upper margin/Lower margin in the watermark print box (24P - 36P)	0 - 200	10	
	F	BLANK H/B 2	Upper margin/Lower margin in the watermark print box (37P - 48P)	0 - 200	10	
	G	BLANK H/B 3	Upper margin/Lower margin in the watermark print box (49P - 64P)	0 - 200	10	
	H	BLANK H/B 4	Upper margin/Lower margin in the watermark print box (65P - 80P)	0 - 200	10	
	I	BLANK L/R 1	Left margin/Right margin in the watermark print box (24P - 36P)	0 - 200	60	
	J	BLANK L/R 2	Left margin/Right margin in the watermark print box (37P - 48P)	0 - 200	90	
	K	BLANK L/R 3	Left margin/Right margin in the watermark print box (49P - 64P)	0 - 200	120	
	L	BLANK L/R 4	Left margin/Right margin in the watermark print box (65P - 80P)	0 - 200	150	

46-74	
Purpose	Adjustment
Function (Purpose)	Copy gray balance adjustment (Auto adjustment)/Printer gray balance adjustment (Auto adjustment)

Section

Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy gray balance adjustment (Automatic adjustment) and the printer gray balance adjustment (Automatic adjustment), use this simulation for efficient adjustment operations.

- 1) Press [EXECUTE] key, and the high density process control is performed. Then, the copy gray balance adjustment pattern is printed.
- 2) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
- 3) Press [EXECUTE] key, and the copy gray balance adjustment is performed and the adjustment result pattern is printed.
- 4) Press [EXECUTE] key, and the printer gray balance adjustment pattern is printed.
- 5) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
- 6) Press [EXECUTE] key, and the printer gray balance adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
- 7) Press [OK] key, and the halftone correction target is registered.
- 8) When [EXECUTE] key is displayed, press it.

When "COMPLETED THIS PROCEDURE" is displayed, the adjustment is completed.

NOTE: The adjustment result becomes effective only when the adjustment procedure for both copy and print mode have completed successfully. For example, when the copy gray balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

46-90	
Purpose	Adjustment
Function (Purpose)	Used to set the process operation of high-compression PDF images.

Section

Operation/Procedure

- 1) Select a target adjustment mode.
- 2) Select an adjustment target item with the scroll key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. The set value is saved.

Mode	Item/Display	Content	Setting range	Default value	
TEXT	A	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
COLOR	A	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
BG LAYER	A	BG LAYER INTENT 1	Speed priority setting	0 - 2	1
	B	BG LAYER INTENT 2	Image quality priority setting	0 - 2	1

46-91

Purpose	Adjustment
Function (Purpose)	Used to adjust the reproduction capability of black text.

Section**Operation/Procedure**

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The adjustment value is set.

When COLOR key or MONO key is pressed, the adjustment value is set and a copy is made simultaneously.

Item	Display	Content	Description	Setting range	Default value
A	SEGMENT PARAM COMMON SPECIAL	Area separation setting select	0: Other than image send mode black text emphasis (simple, high compression) 1: Image send mode black text emphasis (simple, high compression)	0 - 1	0
B	BG: JPEG QUALITY LV [COL: COMPACT]	JPEG recompression level adjustment [Color: High compression mode]	The JPEG compression ratio of the background layer is selected. 0: Low 1: Middle 2: High	0 - 2	1
C	BG: JPEG QUALITY LV [COL: ULTRA FINE]	JPEG recompression level adjustment [Color: Ultra fine mode]		0 - 2	1
D	BG: JPEG QUALITY LV [GRY: COMPACT]	JPEG recompression level adjustment [Gray: High compression mode]		0 - 2	1
E	BG: JPEG QUALITY LV [GRY: ULTRA FINE]	JPEG recompression level adjustment [Gray: Ultra fine mode]		0 - 2	1
F	FG: TARGET AREA TYPE0 TYPE1 TYPE2	Front ground extraction area select	0: type0 1: type1 2: type2	0 - 2	0
G	FG: TEXT DENSITY [COL]	Front ground black text density adjustment [Color]	The black text density in the front ground layer is changed. 0: Dark - 5: Default - 10: Light	0 - 10	5
H	FG: TEXT DENSITY [GRY]	Front ground black text density adjustment [Gray]		0 - 10	5
I	ULTRA FINE MODE OFF ON	High compression/Ultra Fine mode select	0: High compression mode 1: Ultra fine mode	0 - 1	0

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is changed greatly from the initial value, an image quality trouble may occur.

48

48-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio (main/sub scanning direction).

Section**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] 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 CCD (MAIN)	SCAN main scanning magnification adjustment (CCD)	1 - 99	50
B CCD (SUB)	SCAN sub scan magnification adjustment (CCD)	1 - 99	50
C SPF (MAIN)	DSPF document surface magnification adjustment (main scan)	1 - 99	50
D SPF (SUB)	DSPF document magnification adjustment (sub scan)	1 - 99	50
E SPFB (MAIN)	DSPF document back surface magnification adjustment (main scan)	1 - 99	50

48-5

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio (sub scanning direction). This adjustment is performed when Sim.48-1 is used to adjust the sub scanning direction magnification ratio and a copy is made in a different copy magnification ratio and a satisfactory result is not obtained.

Section

Scanner section

Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] 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 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
F SPF(LO)	Document feed (SPF) motor (Low speed)	1 - 99	50

Purpose	Adjustment
Function (Purpose)	Used to adjust the rotation speed of each motor.

Section
Operation/Procedure

- 1) Select an adjustment target mode with [COLOR] [MONO] [HEAVY] keys on the touch panel.
- 2) Select a target adjustment item with scroll 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.

Item/Display	Content	Mode select	Setting range	Default value		
A	RRM	Registration motor correction value	Standard paper	NORMAL	1 - 99	47
B	DM	Drum motor correction value	Standard paper	NORMAL	1 - 99	50
C	DVM	Developing motor correction value	Standard paper	NORMAL	1 - 99	50
D	FSM	Fusing motor correction value	Standard paper	NORMAL	1 - 99	50
E	TRM	Transport motor correction value	Standard paper	NORMAL	1 - 99	50
F	POM	Paper exit motor correction value	Standard paper	NORMAL	1 - 99	50
G	DCLM	Decurler motor correction value	Standard paper	NORMAL	1 - 99	50
H	FURM	Fusing rear motor correction value	Standard paper	NORMAL	1 - 99	50
I	FUSER SETTING	Fusing speed select timing		HEAVY	1 - 99	52

Purpose	
Function (Purpose)	Firmware update
Section	

Operation/Procedure

- 1) Install the firmware to the USB memory.
- 2) Insert the USB memory into the machine.
- 3) Select a target firmware of update with the touch panel.
- 4) Select a target of firmware update.
- 5) Press [EXECUTE] key.
- 6) Press [YES] key.

The selected firmware update is performed.

When the operation is completed normally, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

Display item	Descriptions of items	VER (No. of digits)	Error display
ICUM(MAIN)	ICUM Main	8 digits	ICUMM
ICUM(SUB)	ICUM Sub	8 digits	ICUMS
ICUM(OS)	ICUM OS	8 digits	ICUMO
ICUM(CN)	ICUM CN	8 digits	ICUMC
ICUM(BOOT)	ICUM BOOT	8 digits	ICUMT
ICUM(BIOS)	ICUM BIOS	8 digits	ICUMB
ICU1(MAIN)	ICU1 Main section former half	8 digits	ICU1M
ICU1(BOOTM)	ICU1 Boot section main	8 digits	ICU1B
ICU1(SUB)	ICU1 Sub section (ARM9)	8 digits	ICU1S
ICU2	ICU2 program	8 digits	ICU2
LANGUAGE	Language support data program (General term)	8 digits	LANG
SLIST	SLIST data for L-LCD	8 digits	SLIST
UICONTENTS	Content data for display	8 digits	UICON
EOSA	embedded OSA	8 digits	EOSA
PCU(BOOT)	PCU Boot section	8 digits	PCUB
PCU(MAIN)	PCU Main section	8 digits	PCUM
A4LCC(BOOT)	Side LCC (A4) Boot section	8 digits	LCC4B
A4LCC(MAIN)	Side LCC (A4) Main section	8 digits	LCC4M
LCT1(BOOT)	A3 LCT 1 series, Boot section	8 digits	LCT1B
LCT1(MAIN)	A3 LCT 1 series, Main section	8 digits	LCT1M
LCT2(BOOT)	A3 LCT 2 series, Boot section	8 digits	LCT2B
LCT2(MAIN)	A3 LCT 2 series, Main section	8 digits	LCT2M
INSERTER(BOOT)	Inserter Boot section	8 digits	INSB
INSERTER(MAIN)	Inserter Main section	8 digits	INSM
4KFIN100(BOOT)	4K finisher (100-sheet stapling) Boot section	8 digits	100FB
4KFIN100(MAIN)	4K finisher (100-sheet stapling) Main section	8 digits	100FM
SADDLE100(BOOT)	Saddle unit (100-sheet stapling) Boot section ROM	8 digits	S100B
SADDLE100(MAIN)	Saddle unit (100-sheet stapling) Main section ROM	8 digits	S100M
TRIMMER(BOOT)	Trimmer unit (100-sheet stapling) Boot section ROM	8 digits	TRIMB
TRIMMER(MAIN)	Trimmer unit (100-sheet stapling) Main section ROM	8 digits	TRIMM

Display item	Descriptions of items	VER (No. of digits)	Error display
FOLDER(BOOT)	Folding unit (100-sheet stapling) Boot section ROM	8 digits	FOLDB
FOLDER(MAIN)	Folding unit (100-sheet stapling) Main section ROM	8 digits	FOLDM
DECURLER(BOOT)	Decurler Boot section ROM	8 digits	DECB
DECURLER(MAIN)	Decurler Main section ROM	8 digits	DECM
SCU(BOOT)	SCU Boot section	8 digits	SCUB
SCU(MAIN)	SCU Main section	8 digits	SCUM
DSPF(BOOT)	DSPF Boot section	8 digits	DSPFB
DSPF(MAIN)	DSPF Main section	8 digits	DSPFM
ACRE(BOOT)	ACRE Boot section	8 digits	ACREB
ACRE(MAIN)	ACRE Main section	8 digits	ACREM
ACRE_DATA	ACRE table	8 digits	ACRED

49-3	
Purpose	
Function (Purpose)	Used to update the instruction manual stored in the HDD.
Section	

Operation/Procedure

- 1) Store the instruction manual data into the USB memory.
- 2) Insert the USB memory into the machine.
- 3) Select the target instruction manual data of instruction manual update with the touch panel.
- 4) Press [EXECUTE] key.
- 5) Press [YES] key.
Update of the selected instruction manual data is executed.
When the operation is completed normally, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

49-5	
Purpose	
Function (Purpose)	Used to perform the watermark update.
Section	

Operation/Procedure

- 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.

49-10	
Purpose	
Function (Purpose)	Used to perform the ACU Firmware update.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key to update ACU firmware.
- 2) Press [YES] key.
The selected firmware is updated.
When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

50

50-1	
Purpose	Adjustment
Function (Purpose)	Used to adjust copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim.50-5 and Sim.50-2 (Simple method). (Document table mode))
Section	

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display item		Descriptions	Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)	0 - 99 50
B	Image loss amount setting value	LEAD	Lead edge image loss amount setting	0 - 99 30
C		SIDE	Side image loss amount setting	0 - 99 20
D	Void amount setting	DENA	Print lead edge adjustment	1 - 99 30
E		DENB	Sub scanning direction print range adjustment	1 - 99 30
F	FRONT/ REAR	FRONT/ REAR	Front/Rear void amount adjustment	1 - 99 20
G	Off-center adjustment	OFFSET_ OC	OC document off-center adjustment	1 - 99 50
H	Magnification ratio correction	SCAN_ SPEED_OC	Scan sub scanning magnification ratio adjustment (CCD)	1 - 99 50

Item/Display item		Descriptions	Setting range	Default value	
I	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value	1 - 99	50
J		DENB-CS1	Tray 1 correction value	1 - 99	50
K		DENB-CS2	Tray 2 correction value	1 - 99	50
L		DENB-CS3	Tray 3 correction value	1 - 99	50
M		DENB-CS4	Tray 4 correction value	1 - 99	50
N		DENB-LC	LCC/LCT/LCT manual feed correction value	1 - 99	50
O		DENB-ADU	ADU correction value	1 - 99	55
P		DENB-HV	Heavy paper correction value	1 - 99	50

Item/Display item		Descriptions	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)	0 - 999	-
		L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)	0 - 999	0
C	Image loss amount setting value	LEAD	Lead edge image loss amount setting	0 - 99	30
		SIDE	Side image loss amount setting	0 - 99	20
E	Void amount setting	DENA	Print lead edge adjustment	1 - 99	30
		DENB	Sub scanning direction print range adjustment	1 - 99	30
G		FRONT/ REAR	Front/Rear void amount adjustment	1 - 99	20

50-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position on the paper and the void area (image loss) in the copy mode. (This simulation, similar to Sim. 50-1, provides more simplified adjustment.)

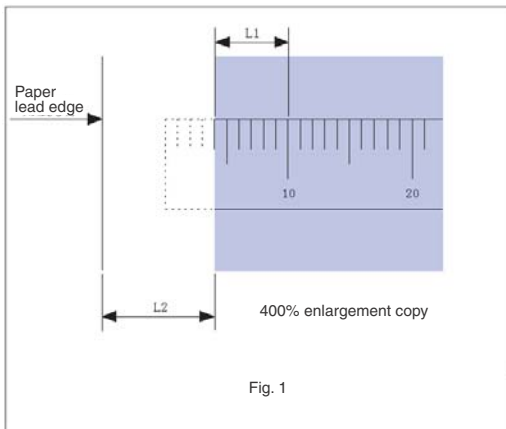
Section

Operation/Procedure

* In advance, the magnification ratio adjustment in the sub scanning direction must be executed. (Sim. 48-1)

- 1) Set Item A (L1) and B (L2) to 0.
- 2) Place a ruler on the left edge of the document table, and make a B/W copy at 400%.
- 3) Measure the copied image (see the figure below). Measure the distances L1 and L2 in the unit of 0.1mm. Multiple the measured values by 10. Enter the obtained values to L1 and L2.

Be sure to enter L1 and L2 together in a combination.
L1: Distance from the copy image lead edge to the scale of 10mm.
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 100%, and adjust the rear edge void.

Purpose	Adjustment
Function (Purpose)	Used to adjust the printer print lead edge.
Section	

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. .

The set value is saved and the adjustment print is made

- 4) Measure the void area quantities on the right and left frames on the printed adjustment pattern, and check to confirm that they are as shown below.

DEN-C = 2-5mm DEN-B = 2-5mm

If the values are within the range shown on the left, there is no need to adjust. IF not, go to step 5.

- 5) Change the adjustment item A (DEN-C) and B (DEN-B).
When the item A (DEN-C) is decreased by 1, the print start position in the sub scanning direction is shifted to the paper lead edge by 0.1mm.
When the item B (DEN-B) adjustment value is decreased by 1, the paper transport direction print area is extended to the rear edge by 0.1mm.
- 6) Repeat steps 1 to 5 until the conditions of step 4 are satisfied.

Item	Display item/Details of display		Descriptions of items		Setting range		Default value	Remarks
A	DEN-C		Printer print lead edge adjustment		1 - 99		30	Adjustment value for fitting 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		Sub scanning direction print range 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 amount adjustment		1 - 99		20	Adjustment of the void amount generated on the left and right edges of paper. When the value is increased, the void amount is increased.
D	DENB-MFT		Manual feed correction value		1 - 99		50	
E	DENB-CS1		Tray 1 correction value		1 - 99		50	
F	DENB-CS2		Tray 2 correction value		1 - 99		50	
G	DENB-CS3		Tray 3 correction value		1 - 99		50	
H	DENB-CS4		Tray 4 correction value		1 - 99		50	
I	DENB-LC		LCC/LCT/LCT manual feed correction value		1 - 99		50	
J	DENB-ADU		ADU correction value		1 - 99		55	
K	DENB-HV		Heavy paper correction value		1 - 99		50	
L	MULTI COUNT		Number of print		1 - 999		1	
M	PAPER	MFT	Tray selection	Manual feed	1 - 9	1	2 (CS1)	
		CS1		Tray 1		2		
		CS2		Tray 2		3		
		CS3		Tray 3		4		
		CS4		Tray 4		5		
		LCC		LCC *1		6		
		LCT1_1		LCT first series, first stage *2		6		
		LCT1_2		LCT first series, second stage *2		7		
		LCT2_1		LCT second series, first stage *3		8		
LCT2_2	LCT second series, second stage *3	9						
N	DUPLEX	YES	Duplex print selection	Select	0 - 1	0	1(NO)	
		NO		Not select		1		

* Items M, N are "Item name : Details display."

Example: PAPER:CS1

*1: Displayed only when A4/A3 LCC is connected.

*2: Displayed only when 2-stage LCT is installed.

*3: Displayed only when two units of 2-stage LCT are connected.

50-6

Purpose	Adjustment
Function (Purpose)	DSPF document lead edge adjustment. Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-7 (Simple method).) (DSPF mode)
Section	DSPF

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Display item	Descriptions	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	SIDE1	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	SIDE2	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 image off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface image off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50

A, B: When the adjustment value is increased, the scan timing is delayed.

C - H: When the adjustment value is increased, the image loss is increased.

A - H: 1step=0.1m

The SPF rear edge image loss is provided against for shade.

* For the off-center adjustment, same as SIM50-12.

* For the magnification ratio adjustment, same as SIM48-01.

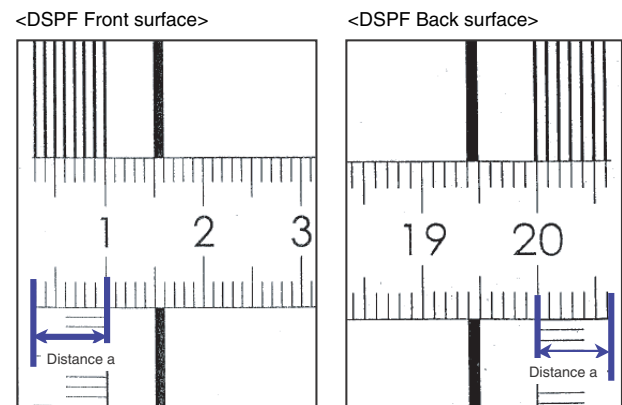
50-7

Purpose	Adjustment
Function (Purpose)	DSPF document lead edge adjustment (Simple method) Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode (Sim. 50-6 simple method)
Section	DSPF

Operation/Procedure

* In advance, the magnification ratio in the sub scanning direction must be adjusted. (Sim. 48-1)

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Set Item A (L4) and B (L5) to 0.
- 3) Set the magnification ratio to 200%, and press [START] key to make a print.
- 4) Measure the printed image, and enter the measure value of distance a (DSPF) to L4 and L5 in the unit of 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 Item	Description	Setting range	Default value
A	L4	Distance from the front surface image lead edge to the scale of 10mm (SPF, 200%, 0.1mm unit)	0 - 999	-
B	L5	Distance from the back surface image lead edge to the scale of 10mm (SPF, 200%, 0.1mm unit)	0 - 999	-
C	LEAD_EDGE (SIDE1)	Image loss quantity setting SIDE1	0 - 99	20
D	FRONT_REAR (SIDE1)		0 - 99	20
E	TRAIL_EDGE (SIDE1)		0 - 99	30
F	LEAD_EDGE (SIDE2)	Image loss quantity setting SIDE2	0 - 99	30
G	FRONT_REAR (SIDE2)		0 - 99	20
H	TRAIL_EDGE (SIDE2)		0 - 99	20

C - H: When the adjustment value is increased, the image loss is increased.

A - H: 1step=0.1m

* Items C - H are interlocked with items C - H of SIM50-06.

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image off-center position. (The adjustment is made for each paper feed section.)
Section	

Operation/Procedure

- 1) Select an adjustment item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

Item	Display item/Details of display		Item 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 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-LCT1		Print off center adjustment value (LCT 1 series, first stage)	1 - 99		50	
I	MAIN-LCT2		Print off center adjustment value (LCT 1 series, second stage)	1 - 99		50	
J	MAIN-LCT3		Print off center adjustment value (LCT 2 series, first stage)	1 - 99		50	
K	MAIN-LCT4		Print off center adjustment value (LCT 2 series, second stage)	1 - 99		50	
L	MAIN-LCT-MFT		Print off center adjustment value (LCT_manual feed)	1 - 99		50	
M	MAIN-ADU		Print off center adjustment value (ADU)	1 - 99		50	
N	SUB -CS12		Registration motor ON timing adjustment	Standard tray		1 - 99	
O	SUB -CS34			Standard tray		1 - 99	
P	SUB -LC			LCC /LCT/LCT manual feed		1 - 99	
Q	SUB -MFT			Manual feed (Main machine)		1 - 99	
R	SUB -ADU			ADU		1 - 99	
S	SUB-CS-HV-A			Main unit tray adjustment value (Heavy paper A)		1 - 99	
T	SUB-HV-OHP			Main unit tray adjustment value (OHP)		1 - 99	
U	SUB-LC-HV-A			LCC/LCT adjustment value (Heavy paper A)		1 - 99	
V	SUB-LC-HV-B			LCC/LCT adjustment value (Heavy paper B)		1 - 99	
W	SUB-MFT-HV-A			Manual feed tray adjustment value (Heavy paper A)		1 - 99	
X	SUB-MFT-HV-B			Manual feed tray adjustment value (Heavy paper B)		1 - 99	
Y	SUB-ADU-HV-A			ADU adjustment value (Heavy paper A)		1 - 99	
Z	MULTI COUNT			Number of print	1 - 999		1
AA	PAPER	MFT		Tray selection	Manual feed	1 - 9	1
		CS1	Tray 1		2		
		CS2	Tray 2		3		
		CS3	Tray 3		4		
		CS4	Tray 4		5		
		LCC	LCC *1		6		
		LCT1_1	LCT 1 series, first stage *2		6		
		LCT1_2	LCT 1 series, second stage *2		7		
		LCT2_1	LCT 2 series, first stage *3		8		
		LCT2_2	LCT 2 series, second stage *3		9		
AB	DUPLEX	YES	Duplex print selection	Select	0 - 1	0	
		NO		Not select			1
AC	MAIN-STD		Print position correction_Reference correction amount (Off-center direction)	1 - 99		50	
AD	SUB-STD		Print position correction_Reference correction amount (Transport direction)	1 - 99		50	
AE	SFT		Print position correction_Back surface shift correction amount (Transport direction)	0 - 3		2	
AF	SWT1	OFF	Print position correction_Correction control ON/OFF switch (Off-center direction)	OFF	0 - 1	0	
		ON		ON			1
AG	SWT2	OFF	Print position correction_Correction control ON/OFF switch (Transport direction)	OFF	0 - 1	0	
		ON		ON			1
AH	SWT3	OFF	Print position correction_Correction control mode select switch	OFF	0 - 1	0	
		ON		ON			1
AI	SWT4	OFF	Print position correction_Correction control mode select switch (Off-center direction)	OFF	0 - 1	0	
		ON		ON			1
AJ	SWT5	STANDARD	Print position correction_POS adjustment mode select switch	STANDARD	0 - 1	0	
		POS		POS			1

*1 Displayed only when A4/A3 LCC is connected.

*2 Displayed only when 2-stage LCT is installed.

*3 Displayed only when two units of 2-stage LCT are connected.

50-12

Purpose	Adjustment
Function (Purpose)	Used to adjust the scan image off-center position. (The adjustment is made for each scan mode.)

Section**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Item display	Setting range	Setting value	Default value
A	OC	OC document off-center adjustment	1 - 99	50
B	SPF (SIDE1)	SPF front surface document off-center adjustment	1 - 99	50
C	SPF (SIDE2)	SPF back surface off-center adjustment	1 - 99	50

50-27

Purpose	Adjustment
Function (Purpose)	Used to adjust the image loss of a scan image in the FAX/Scanner mode.

Section**Operation/Procedure**

- 1) Select a target mode of the adjustment with [FAX] and [SCANNER] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

Category	Item	Display Item	Description	Setting range	Default value	
FAX send	A	Image loss quantity setting OC	LEAD_EDGE (OC)	OC lead edge image loss quantity setting	0 - 100	30 (3mm)
	B		FRONT_REAR (OC)	OC side image loss quantity setting	0 - 100	20 (2mm)
	C		TRAIL_EDGE (OC)	OC rear edge image loss quantity setting	0 - 100	20 (2mm)
	D	Image loss quantity setting SPF SIDE1	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss quantity setting	0 - 100	20 (2mm)
			FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0 - 100	20 (2mm)
			TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity	0 - 100	30 (3mm)
	G	Image loss quantity setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity	0 - 100	30 (3mm)
			FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0 - 100	20 (2mm)
			TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0 - 100	20 (2mm)
Scanner mode (Except for FAX, copy)	A	Image loss quantity setting OC	LEAD_EDGE (OC)	OC lead edge image loss quantity setting	0 - 100	0 (0mm)
	B		FRONT_REAR (OC)	OC side image loss quantity setting	0 - 100	0 (0mm)
	C		TRAIL_EDGE (OC)	OC rear edge image loss quantity setting	0 - 100	0 (0mm)
	D	Image loss quantity setting SPF SIDE1	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss quantity setting	0 - 100	0 (0mm)
			FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0 - 100	0 (0mm)
			TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity	0 - 100	0 (0mm)
	G	Image loss quantity setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity	0 - 100	0 (0mm)
			FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0 - 100	0 (0mm)
			TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0 - 100	0 (0mm)

Purpose	Adjustment
Function (Purpose)	Used to perform the OC adjustment, the BK main scan magnification ratio correction, the DSPF adjustment, and the print position adjustment.

Section

Operation/Procedure

<Adjustment item>

No.	Menu display item	Content	General
1	OC ADJ	OC adjustment	Adjustment of the OC document lead edge, the off-center, and the sub scan magnification ratio.
2	BK-MAG ADJ	BK main scan magnification ratio correction	Adjustment of the BK main scan magnification ratio
3	SPF ADJ	SPF adjustment	Adjustment of the DSPF (front/back) document lead edge, the off-center, and the sub scan magnification ratio.
4	SETUP/PRINT ADJ	Print position adjustment	Print lead edge adjustment, all-cassette print off-center adjustment (individual cassette, ADU)
5	RESULT	Result display	Adjustment results are displayed.
6	DATA	Data display	Data used in execution of the adjustment is displayed.

(1) Adjustment of the OC document lead edge, the off-center, and the sub scan magnification ratio

- 1) Select [OC ADJ] on the touch panel.
- 2) Select a tray for self print of the OC adjustment pattern.
- 3) Press [EXECUTE] key to start self print of the OC adjustment pattern.
- 4) Set the OC adjustment pattern on the OC in the center reference.
- 5) Press [EXECUTE] key to start scanning of the OC adjustment pattern.
- 6) The adjustment result is displayed.
 - * The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ().
 - * Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the OC adjustment pattern can be made again.
 - * Press [RESCAN] button to start rescanning of the OC adjustment pattern.
 - * Press [RETRY] button to save the adjustment value to the EEPROM and RAM.
 - * Press [DATA] button, and the data used for execution of the adjustment are displayed.
- 7) Press [OK] key, and the adjustment value is displayed.

(2) BK main scan magnification ratio

- 1) Select [BK-MAG ADJ] on the touch panel.
- 2) Select the tray for the self print of the BK magnification ratio adjustment pattern.
- 3) Press [EXECUTE] key, and the self print of the BK magnification ratio adjustment pattern is started.
- 4) Set the BK magnification ratio adjustment pattern on the OC.
- 5) Press [EXECUTE] key, and scanning of the BK magnification ratio adjustment pattern is started.
- 6) The adjustment result is displayed.
 - * The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ().

- * Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the BK magnification ratio adjustment pattern can be made again.
- * Press [RESCAN] button, and rescanning of the BK magnification ratio adjustment pattern is started.
- * Press [RETRY] button, and the adjustment value is not saved to the EEPROM and RAM and the screen is shifted to the top menu.
- * Press [DATA] button, and the data used for execution of this adjustment are displayed.

- 7) Press [OK] key, and the adjustment value is displayed.

(3) The DSPF (front, back) document lead edge adjustment, the off-center adjustment, and the sub scan magnification ratio adjustment

- 1) Select [SPF ADJ] on the touch panel.
- 2) Select a target item of the adjustment, and select a tray for self print of the DSPF adjustment pattern.
- 3) Press [EXECUTE] key, and the self print of the DSPF adjustment pattern is started.
- 4) Set the DSPF adjustment pattern on the DSPF in face up.
- 5) Press [EXECUTE] key, and scanning of the DSPF adjustment pattern is started.
- 6) Set the DSPF adjustment pattern on the DSPF in face down.
- 7) Press [EXECUTE] key, and scanning of the DSPF adjustment pattern is started.
- 8) The adjustment result is displayed.

- * The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ().

- * Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the DSPF adjustment pattern (front, back) can be made again.

- * Press [RESCAN] button, and scanning of the SPF adjustment pattern (front and back) is started again.

- * Press [RETRY] button, and the adjustment value is not saved to the EEPROM and RAM and the screen is shifted to the top menu.

- * Press [DATA] button, and the data used for execution of this adjustment are displayed.

- 9) Press [OK] key, and the adjustment value is displayed.

(4) Print lead edge adjustment, all tray print off-center (each paper feed tray, duplex tray) adjustment

- 1) Select [SETUP/PRINT ADJ] on the touch panel.

Menu display item	Content
LEAD	Print lead edge adjustment
OFFSET	Print off-center adjustment
ALL	Print lead edge adjustment, print off-center adjustment

- 1) Press the adjustment item key, and press a tray for the self print of the print position adjustment pattern.
- 2) Press [EXECUTE] key, and self print of the print position adjustment pattern is started.
- 3) Set the print position adjustment pattern on the OC.
- 4) Press [EXECUTE] key, and scanning of the print position adjustment pattern is started.

- * The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in (). (For those which are not adjusted yet, "*" is displayed.)

- * Press [REPRINT] button, and the screen returns to the cassette selection menu and self print of the print position adjustment pattern can be executed.

- * Press [RESCAN] button, and scanning of the print position adjustment pattern is started again.

- * Press [RETRY] button, and the adjustment value is not saved to the EEPROM and RAM and the screen is shifted to the top menu.
 - * Press [DATA] button, and the data used for execution of this adjustment are displayed.
- 5) Press [OK] key, and the adjustment value is displayed.

(5) Adjustment result display

- 1) Select [RESULT] on the touch panel.
 - * Press [RESULT] button, and the adjustment result is displayed.

(6) The data used for the adjustment are displayed.

When [OC-SPF] button is pressed, the data used for the OC adjustment and the SPF adjustment are displayed.

When [BK-MAG] button is pressed, the data used for the BK main scan magnification ratio correction adjustment are displayed.

When [PRINT] button is pressed, the data used for the print position adjustment are displayed.

51

51-1	
Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the ON/OFF timing of the secondary transport voltage.
Section	

Operation/Procedure

- 1) Select an adjustment item with the touch panel scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the set value is decreased, the ON/OFF timing of the transfer current (THV+) is advanced. When the value is increased, it is delayed.
 (When the adjustment value is changed by 1, the timing is changed by about 1ms.)

Item/Display item	Descriptions of items	Setting range	Default value	
			90 cpm machine	105/120 cpm machine
A TC ON TIMING	Transfer current (THV+) ON timing setting	1 - 99	48	45
B TC OFF TIMING	Transfer current (THV+) OFF timing setting	1 - 99	50	50

51-2	
Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the contact pressure of paper against the resist roller (main unit paper feed, duplex paper feed, DSPF paper feed) in each section. (This adjustment is required when there is a great variation in the print image position for the paper or when paper jam occurred.)
Section	

Operation/Procedure

- 1) Select a target mode of the adjustment with [REGI1] [REGI2] [ENGIN] keys.
- 2) Select a target item of the adjustment with [↑] [↓] keys.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

Item	Button	Display item	Descriptions of items (Mode, document, paper feed speed)	Transport direction	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_MID	DSPF deflection amount adjustment value 1 (Normal/Plain paper/MID)		1 - 99	50	
C		NORMAL_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Plain paper/LOW)		1 - 99	50	
D		NORMAL_THIN_HIGH	DSPF deflection amount adjustment value 1 (Normal/Thin paper/HIGH)		1 - 99	50	
E		NORMAL_THIN_MID	DSPF deflection amount adjustment value 1 (Normal/Thin paper/MID)		1 - 99	50	
F		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Thin paper/LOW)		1 - 99	50	
G		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Plain paper/HIGH)		1 - 99	50	
H		RANDOM_PLAIN_MID	DSPF deflection amount adjustment value 1 (Random/Plain paper/MID)		1 - 99	50	
I		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Random/Plain paper/LOW)		1 - 99	50	
J		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Thin paper/HIGH)		1 - 99	50	
K		RANDOM_THIN_MID	DSPF deflection amount adjustment value 1 (Random/Thin paper/MID)		1 - 99	50	
L		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_MID		DSPF deflection amount adjustment value 2 (Normal/Plain paper/MID)	1 - 99	50
C	NORMAL_PLAIN_LOW		DSPF deflection amount adjustment value 2 (Normal/Plain paper/LOW)	1 - 99	50		
D	NORMAL_THIN_HIGH		DSPF deflection amount adjustment value 2 (Normal/Thin paper/HIGH)	1 - 99	50		

Item	Button	Display item	Descriptions of items (Mode, document, paper feed speed)	Transport direction	Setting range	Default value
E	REGI2	NORMAL_THIN_MID	DSPF deflection amount adjustment value 2 (Normal/Thin paper/MID)	-	1 - 99	50
F		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 2 (Normal/Thin paper/LOW)		1 - 99	50
G		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Plain paper/HIGH)		1 - 99	50
H		RANDOM_PLAIN_MID	DSPF deflection amount adjustment value 2 (Random/Plain paper/MID)		1 - 99	50
I		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 2 (Random/Plain paper/LOW)		1 - 99	50
J		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Thin paper/HIGH)		1 - 99	50
K		RANDOM_THIN_MID	DSPF deflection amount adjustment value 2 (Random/Thin paper/MID)		1 - 99	50
L		RANDOM_THIN_LOW	DSPF deflection amount adjustment value 2 (Random/Thin paper/LOW)		1 - 99	50
A		ENGINE	TRAY1(S)		Tray 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size or less
B	TRAY2(S)		Tray 2 (Lower stage)/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
C	MANUAL PLAIN PAPER(S)		Manual feed tray/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
D	MANUAL PLAIN PAPER(L)		Manual feed tray/deflection adjustment value (Plain paper/Large size)	Longer size than the above	1 - 99	36
E	MANUAL HEAVY APAPER(S)		Manual feed tray/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
F	MANUAL HEAVY APAPER(L)		Manual feed tray/deflection adjustment value (Heavy paper A/Large size)	Longer size than the above	1 - 99	26
G	MANUAL HEAVY B PAPER(S)		Manual feed tray/deflection adjustment value (Heavy paper B/Small size)	LT size or less	1 - 99	26
H	MANUAL HEAVY B PAPER(L)		Manual feed tray/deflection adjustment value (Heavy paper B/Large size)	Longer size than the above	1 - 99	26
I	MANUAL OHP		Manual feed tray/deflection adjustment value (OHP)	-	1 - 99	26
J	ADU PLAIN PAPER(S)		ADU/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
K	ADU PLAIN PAPER(L)		ADU/deflection adjustment value (Plain paper/Large size)	Longer size than the above	1 - 99	36
L	ADU HEAVY A PAPER(S)		ADU/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
M	ADU HEAVY A PAPER(L)		ADU/deflection adjustment value (Heavy paper A/Large size)	Longer size than the above	1 - 99	26
N	TRAY3/4(S)		Tray 3, 4/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
O	TRAY3/4 HEAVY A PAPER(S)		Tray 3, 4/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
P	TRAY3/4(L)		Tray 3, 4/deflection adjustment value (Plain paper/Large size)	LT size or above	1 - 99	36
Q	TRAY3/4 HEAVY A PAPER(L)		Tray 3, 4/deflection adjustment value (Heavy paper A/Large size)	LT size or above	1 - 99	26
R	TRAY4 OHP		Tray 4/deflection adjustment value (OHP)	-	1 - 99	26
S	LCC/LCT(S)		LCC/LCT, deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
T	LCC/LCT HEAVY A PAPER(S)		LCC/LCT, deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
U	LCC/LCT HEAVY B PAPER(S)		LCC/LCT, deflection adjustment value (Heavy paper B/Small size)	LT size or less	1 - 99	26
V	LCC/LCT(L)	LCC/LCT, deflection adjustment value (Plain paper/Large size)	LT size or above	1 - 99	36	
W	LCC/LCT HEAVY A PAPER(L)	LCC/LCT, deflection adjustment value (Heavy paper A/Large size)	LT size or above	1 - 99	26	
X	LCC/LCT HEAVY B PAPER(L)	LCC/LCT, deflection adjustment value (Heavy paper B/Large size)	LT size or above	1 - 99	26	
Y	LCT MANUAL OHP	LCT, warp adjustment value (OHP) manual feed adjustment value	-	1 - 99	26	

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).

Adjustment value

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.)

53-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the DSPF width detection level.

Section

Operation/Procedure

- 1) Set the DSPF paper feed guide to the max. width.
- 2) Press [EXECUTE] key.
The max. width detection level is recognized.
- 3) Set the DSPF paper feed guide to the A4R width.
- 4) Press [EXECUTE] key.
The A4R width detection level is recognized.
- 5) Set 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 min. width.
- 8) Press [EXECUTE] key.
The min. width detection level is recognized.
If the above operations are not completed normally, "ERROR" is displayed.
If completed normally, "COMPLETE" is displayed.

NO.	Display	Content
1	TRAYVOLMAX	Tray volume max. value
2	TRAYVOLA4R	Tray volume A4R size adjustment value
3	TRAYVOLA5R	Tray volume A5R size adjustment value
4	TRAYVOLMIN	Tray size volume min. value

53-7

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the DSPF width adjustment value. (Sim. 53-6 manual input)

Section

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Display Item	Regulation plate position value	Setting range	Default value
A	AD_MAX	Max. width position	0 - 1023	66
B	AD_P1	Middle position (L)	0 - 1023	456
C	AD_P2	Middle position (S)	0 - 1023	714
D	AD_MIN	Min. width position	0 - 1023	898

53-8

Purpose	Adjustment
Function (Purpose)	Used to adjust the DSPF document scan start position.

Section

Operation/Procedure

Select a target mode of the adjustment with the touch panel key.

Menu display item	Content
AUTO	Shifted to the mirror scan position auto adjustment menu of SPF document.
MANUAL	Shifted to the mirror scan position manual adjustment menu of SPF document.

When [AUTO] is selected:

- 1) Set a stripe document on the DSPF, and press [EXECUTE] key. During the auto adjustment, "EXECUTING.." is displayed.
- 2) When the auto adjustment is completed, [EXECUTE] key returns to the normal display.

<Auto adjustment item, setting range, and default value>

Display Item	Description	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measured distance	0 - 255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

When [MANUAL] is selected:

- 1) Enter the set value with 10-key.
- 2) Press [OK] key. (The set value is saved.)

<Manual adjustment item. Setting range, and default value>

Item	Display Item	Description	Setting range	Default value
A	ADJUST VALUE	SPF scan position adjustment	1 - 99	30

53-9

Purpose	Adjustment
Function (Purpose)	DSPF dirt detection setting
Section	

Operation/Procedure

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

Item/Display item, Details of display			Content		Setting range		Default value
A	SIDEA_SCAN_POSITION_SET_START	OFF	DSPF front surface optimum scan position detection setting (when starting)	OFF	0 - 1	0	0 (OFF)
		ON		ON		1	
B	SIDEA_SCAN_POSITION_SET_JOB	OFF	DSPF front surface optimum scan position detection setting (After a job)	OFF	0 - 1	0	1 (ON)
		ON		ON		1	
C	SIDEA_SCAN_POSITION_LV	WEAK	DSPF front surface optimum scan position detection level setting	Low	0 - 2	0	1 (MIDDLE)
		MIDDLE		Medium		1	
		STRONG		High		2	
D	OC_DIRT_LV	WEAK	OC dirt level setting	Low	0 - 2	0	1 (MIDDLE)
		MIDDLE		Medium		1	
		STRONG		High		2	
E	SIDEA_DIRT_ALARM_LV	WEAK	DSPF front surface dirt alarm level setting	Low	0 - 2	0	1 (MIDDLE)
		MIDDLE		Medium		1	
		STRONG		High		2	
F	SIDEB_DIRT_ALARM_LV	WEAK	DSPF back surface dirt alarm level setting	Low	0 - 2	0	1 (MIDDLE)
		MIDDLE		Medium		1	
		STRONG		High		2	
G	SIDEA_DIRT_SHADING_SET	OFF	DSPF front surface streak delete shading setting	OFF	0 - 1	0	1 (ON)
		ON		ON		1	
H	SIDEB_DIRT_SHADING_SET	OFF	DSPF back surface streak delete shading setting	OFF	0 - 1	0	1 (ON)
		ON		ON		1	
I	SCAN_POSITION_PRIORITY_SET	MVIEW	DSPF front surface MVIEW/SCU priority setting (Optimum scan position)	MVIEW	0 - 1	0	1 (SCU)
		SCU		SCU		1	
J	DIRT_ALARM_PRIORITY_SET	MVIEW	DSPF common MVIEW/SCU priority setting (Alarm)	MVIEW	0 - 1	0	1 (SCU)
		SCU		SCU		1	
K	SIDEB_EXT_SHADING_SET		DSPF back surface expansion shading setting	Default	0 - 1	0	0
				BOTH OFF		1	
				BOTH ON		2	
				When starting ON/ After a job OFF		3	
				When starting OFF/ After a job ON		4	

53-10

Purpose	Adjustment/Setup
Function (Purpose)	DSPF dirt detection execution.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.

<Descriptions of items>

Item	Content
SPF SIDEA	SPF front glass dirt position (Main scan 8 areas 1 - 8) ".". No dirt, "***": Dirt
SPF SIDEB	DSPF back glass dirt position (Main scan 8 areas 1 - 8) ".". No dirt, "***": Dirt
OC	OC glass dirt position (Main scan 8 areas 1 - 8) ".". No dirt, "***": Dirt

* For the display content of each item, "1" indicates the front side and "8" the rear side.

<Descriptions on buttons>

Item	Content
OC	Forcible execution of OC/SPF SIDE A and the result display are made.
DSPF	Forcible execution of SPF SIDE B and the result display are made.

53-12

Purpose	Adjustment
Function (Purpose)	Used to check the operations of the DSPF double feed sensor.
Section	

Operation/Procedure

<Operation Check>

Press [DPA EXE] key.

After completion of the detection operation, the sensor status is displayed.

Display	Content	(Set range)
DPAOUT	Paper thickness analog value	0 - 1023
STATUS	Paper detection state	NO PAPER
		ONE PAPER
		DOUBLE PAPER

<Gain reset>

Gain initial value: 50

* Do not use this setting unless specially required.

55

55-1

Purpose (Must not be used unless a special change is required.)

Function (Purpose) Used to set the specifications of the engine control operation.

Section

Operation/Procedure

55-2

Purpose (Must not be used unless a special change is required.)

Function (Purpose) Used to set the specifications of the controller operation.

Section

Operation/Procedure

55-3

Purpose (Must not be used unless a special change is required.)

Function (Purpose) Used to set the specifications of the controller operation.

Section

Operation/Procedure

55-10

Purpose Special stamp text setting

Function (Purpose) Used to enter the special stamp text input.

Section

Operation/Procedure

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key. When [C] key is pressed, the entered value is cleared.
- 3) Press [OK] key. (The set value is saved.)

Item	Display	Content	Setting range	Default value			
A	1ST DIGIT	First digit (Left edge)	1 - 90	1			
B	2ND DIGIT	Second digit	32				
C	3RD DIGIT	Third digit	[Empty:20H] 65 - 90				
D	4TH DIGIT	Fourth digit	[Alphabet: 41H ("A") - 5AH ("Z")]				
E	5TH DIGIT	Fifth digit	48 - 57				
F	6TH DIGIT	Sixth digit	[Numeric figure: 30H ("0") - 39H ("9")]				
G	TYPE	PATTERN 1	Print composition method	Bordering type	0 - 2	0	0
		PATTERN 2		OR process type		1	
		PATTERN 3		Type of composition not deleted		2	

<Input value>

Print	Space	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Input	32	65	66	67	68	69	70	71	72	73	74	75	76	77	78

Print	O	P	Q	R	S	T	U	V	W	X	Y	Z
Input	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

56

56-1

Purpose Backup

Function (Purpose) Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)

Section

Operation/Procedure

- 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.

EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM

56-2

Purpose Data backup

Function (Purpose) Used to backup the data in the EEPROM. SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)

Section

Operation/Procedure

- 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, SD Card HDD

<EXPORT>
From EEPROM, SD Card, 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.

<Data list outside the backup targets>
(EEPROM/SD Card)

PWB Type	Content	NOTE
Controller	Machine serial No.	
	Product key information	
	Various counter	
	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.
Operation manual	E-manual	

56-3	
Purpose	Backup
Function (Purpose)	Used to back up the document filing data.
Section	

Operation/Procedure

- 1) Insert the USB memory into the machine.
- 2) Select a target item of transfer on the touch panel.
DOC FIL EXPORT: Data are saved to the USB memory.
DOC FIL IMPORT: The saved data are restored.
- 3) Press [EXECUTE] key, and press [YES] key.
The data of the item selected in step 2 are transferred.
When the above operation is normally completed, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

56-4	
Purpose	Backup
Function (Purpose)	Used to back up the job log data.
Section	

Operation/Procedure

- 1) Insert the USB memory into the machine.
- 2) Select a target of the JOG LOG EXPORT with the touch panel.
- 3) Press [EXECUTE] key, and press [YES] key.
The data of the item selected in step 2 are transferred.
When the above operation is normally completed, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

56-5	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to import the SIM22-6 data to a USB memory in the TEXT format.
Section	

Operation/Procedure

- 1) Insert the USB memory into the main unit.
- 2) Select a kind of data to be imported.
- 3) Press [EXECUTE] key, and press [YES] key.
Procedure 2) The selected data are imported.
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

56-6	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the JAM/trouble data.
Section	

Operation/Procedure

- 1) Insert the USB memory into the main unit.
- 2) Select the output target item with the touch panel key.
- 3) Press [EXECUTE] key.
- 4) Press [YES] key.

56-7	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to import the syslog data to a USB flash drive.
Section	

Operation/Procedure

- 1) Insert the USB flash drive into the main unit.
- 2) Select SYSLOG EXPORT to be imported.
- 3) Press [EXECUTE] key, and press [YES] key.

56-99	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to import the log data to a USB flash drive.
Section	

Operation/Procedure

- 1) Insert the USB flash drive into the main unit.
- 2) Select the log item data to be imported.
- 3) Press [EXECUTE] key, and press [YES] key.

Item	Contents
SIM56-5	Import SIM56-5 data.
SIM56-6	Import SIM56-6 data.
SIM00-11	Import SIM00-11 data.
SIM56-4	Import SIM56-4 job log data.
SIM56-7	Import SIM56-7 system log data.
SIM56-2	Perform simplified output of SIM56-2.

60

60-1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations (read/write) of the MFP control (SDRAM).
Section	

Operation/Procedure

Press [EXECUTE] key.
Test is performed.
<Result display>

Result display	Description
OK	Success
NG	Fail
NONE	Not installed (Including DIMM trouble)
INVALID	Execution disable

<SLOT descriptions>

SLOT	Descriptions
ICUM SLOT1	ICUM standard 1
	SLOT1

SLOT	Descriptions	
ICUM SLOT2	ICUM standard 2	SLOT2
ICU1 SLOT1	ICU1 standard	DIMM1
ICU1 SLOT2	ICU1 expansion	DIMM2
ICU2 SLOT1	ICU2 standard	DIMM3
ACRE SLOT	ACRE	ACRE

* If the memory target board is not installed, no display is made.

* When an NG occurs in the ICUM SLOT1 or SLOT2, the both slots must be replaced.

61

61-1

Purpose	Adjustment/Setting
Function (Purpose)	Used to check the polygon motor rotation and the BD signal detection.

Section

Operation/Procedure

Press [EXECUTE] key.

Test is performed.

Display	Content	Operation
LSU TESTRESULT OK	LSU check normal	Normal completion
LSU TESTRESULT NG	LSU check abnormal	Interruption during operation

61-2

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the laser power.

Section

Operation/Procedure

- 1) Select a target mode for adjustment with [PR600] on the touch panel.
- 2) Select an adjustment target item with scroll 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.

Category	Item/Display	Content	Setting range	Default value
				105/120 CPM machine
PR600	A LASER POWER (K1)	Laser power setting speed/ K1	64 - 255	112
	B LASER POWER (K2)	Laser power setting speed/ K2	64 - 255	112
	C LASER POWER (K3)	Laser power setting speed/ K3	64 - 255	112
	D LASER POWER (K4)	Laser power setting speed/ K4	64 - 255	112
	E LASER DUTY (K)	Laser DUTY select speed/K	0 - 255	0
	F LASER DUTY (K 1BIT)	Laser DUTY select speed/K 1BIT	0 - 255	0

Category	Item/Display	Content	Setting range	Default value
				105/120 CPM machine
PR1200	A LASER POWER (K1)	Laser power setting speed/ K1	64 - 255	112
	B LASER POWER (K2)	Laser power setting speed/ K2	64 - 255	112
	C LASER POWER (K3)	Laser power setting speed/ K3	64 - 255	112
	D LASER POWER (K4)	Laser power setting speed/ K4	64 - 255	112
	E LASER DUTY (K)	Laser DUTY select speed/K	0 - 255	0

61-3

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the laser power.

Section

Operation/Procedure

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Select an adjustment item with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

Category	Item/Display	Content	Setting range	Default value	
				90cpm machine	105/120cpm machine
COPY 600	A LASER POWER (K1)	Laser power setting/K1	64 - 255	81	112
	B LASER POWER (K2)	Laser power setting/K2	64 - 255	81	112
	C LASER POWER (K3)	Laser power setting/K3	64 - 255	81	112
	D LASER POWER (K4)	Laser power setting/K4	64 - 255	81	112
	E LASER DUTY (K)	Laser DUTY select/K	0 - 255	0	0
COPY 1200	A LASER POWER (K1)	Laser power setting/K1	64 - 255	81	112
	B LASER POWER (K2)	Laser power setting/K2	64 - 255	81	112
	C LASER POWER (K3)	Laser power setting/K3	64 - 255	81	112
	D LASER POWER (K4)	Laser power setting/K4	64 - 255	81	112
	E LASER DUTY (K)	Laser DUTY select/K	0 - 255	0	0
PR600/ FAX	A LASER POWER (K1)	Laser power setting/K1	64 - 255	81	112
	B LASER POWER (K2)	Laser power setting/K2	64 - 255	81	112
	C LASER POWER (K3)	Laser power setting/K3	64 - 255	81	112

Category	Item/Display	Content	Setting range	Default value		
				90cpm machine	105/120cpm machine	
PR600/FAX	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81	112
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	0	0
	F	LASER DUTY (K 1BIT)	Laser DUTY select/ K 1BIT	0 - 255	0	0
PR1200	A	LASER POWER (K1)	Laser power setting/K1	64 - 255	81	112
	B	LASER POWER (K2)	Laser power setting/K2	64 - 255	81	112
	C	LASER POWER (K3)	Laser power setting/K3	64 - 255	81	112
	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81	112
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	0	0

61-4

Purpose	Adjustment
Function (Purpose)	Used to print the print image skew adjustment pattern. (LSU unit)

Section

Operation/Procedure

- 1) Select a target item with scroll key on the touch panel.
- 2) Enter the print conditions setting value with 10-key.
- 3) Press [EXECUTE] key.

The print image skew adjustment pattern is printed.

Item/Display	Content	Setting range	Default value			
A MULTI COUNT	Number of print	1 - 999	1			
B PAPER	MFT Tray selection	Manual paper feed	1	4 (CS3)		
			CS1		Tray 1	2
			CS2		Tray 2	3
			CS3		Tray 3	4
			CS4		Tray 4	5

61-11

Purpose	Adjustment
Function (Purpose)	Used to correct the laser power automatically.

Section

Operation/Procedure

- 1) Select a target item with touch panel key.

Items	Contents	Outline
AUTO CORRECTION	Automatic correction	Adjustment by scanner
DATA	Data display screen	Data display when executing the automatic correction

- 2) Press [AUTO CORRECTION] key.
- 3) Select the adjustment density pattern.
- 4) Press [EXECUTE] key.
- 5) The adjustment pattern is printed out.

- 6) Place the printed adjustment pattern on the document table (A4R direction), and press [EXECUTE] key. The automatic correction of the laser power is performed, and then the adjustment result pattern is outputted.
- 7) To perform the correction again, press [RETRY] key.
- 8) When [DATA] key is pressed on the initial screen, the display is shifted to the automatic adjustment result display screen.

61-12

Purpose	Adjustment
Function (Purpose)	Laser power manual correction
Section	LSU

Operation/Procedure

Press an item button to be adjusted.

When [MEASURING INSTRUMENT] is pressed:

- 1) Select the adjustment density pattern.
- 2) Press [EXECUTE] key.
- 3) The adjustment pattern is printed out.
- 4) Enter the adjustment value by the density meter.
- 5) Press [EXECUTE] key.

Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.

- 6) To perform the correction again, press [RETRY] key.

When [VISUAL INSPECTION] is pressed:

- 1) Select the adjustment density pattern.
- 2) Press [EXECUTE] key.
- 3) The adjustment pattern is printed out.
- 4) Press [4POINT CORRECTION] or [31POINT CORRECTION].
- 5) Enter an adjustment value.
- 6) Press [EXECUTE] key.

Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.

- 7) To perform the correction again, press [RETRY] key.

When [DATA] is pressed:

The display is shifted to the manual adjustment result display screen.

Items	Contents	Outline
MEASURING INSTRUMENT	Density meter correction *	Adjustment with the density meter.
VISUAL INSPECTION	Visual check adjustment	Adjustment by visual check
DATA	Data display screen	Data display during execution of the manual correction

*: Since a special tool is required for measurement, this simulation is executed only in the factory.

61-13

Purpose	Adjustment
Function (Purpose)	Used to clear the laser power correction value.

Section

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

Reference value reset item
Laser power automatic correction amount (K) 32 data (point)
Laser power manual correction amount (K) 32 data (point)

62

62-1	
Purpose	
Function (Purpose)	Used to format the hard disk. (Except for the operation manual area.)
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
Formatting of the hard disk is performed.	

62-2	
Purpose	Operation test/check
Function (Purpose)	Used to check the read/write operation of the hard disk. (Partial section)
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
Read/write is executed.	

62-3	
Purpose	Operation test/check
Function (Purpose)	Used to check the read/write operation of the hard disk. (All area)
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
Read/write is executed.	

62-6	
Purpose	Operation test/check
Function (Purpose)	Used to perform the self diag of the hard disk.
Section	
Operation/Procedure	
1) Select a target item of the self diag.	
2) Press [EXECUTE] key.	
The self diag is executed.	

Target data	Content
SHORT S.T	Partial check
EXTENDED S.T	All area check

62-7	
Purpose	Operation test/check
Function (Purpose)	Used to print the self diag error log of the hard disk.
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
The error log print is started.	

62-8	
Purpose	
Function (Purpose)	Used to format the hard disk. (Except for the system area and the operation manual area.)
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
Formatting of the hard disk is performed.	

62-10	
Purpose	Data clear
Function (Purpose)	Used to delete the job log data.
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
The job log data are deleted.	

62-11	
Purpose	Data clear
Function (Purpose)	Used to delete the document filing data.
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
The document filing data are deleted.	

62-12	
Purpose	Setting
Function (Purpose)	Used to set YES/NO of auto format in hard disk trouble.
Section	
Operation/Procedure	
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	(0: YES 1:NO)	0 Auto format Enable	0 - 1	1 (Disable)
		1 Auto format Disable		

62-13	
Purpose	
Function (Purpose)	Used to format the hard disk. (Operation manual area only).
Section	
Operation/Procedure	
1) Press [EXECUTE] key.	
2) Press [YES] key.	
Formatting of the hard disk is executed.	

62-14

Purpose	Data clear
Function (Purpose)	Used to delete the document filing management data.
Section	HDD

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The document filing management data are cleared.

At the same time, the job log data are also cleared.

This simulation is executed in the following trouble cases.

- * The document filing function does not work normally.
- * The job log is not recorded normally.

62-20

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the mirroring hard disk.
Section	Mirroring hard disk

Operation/Procedure

Enter the simulation mode, and the operation status of the HDD is displayed.

The status display is renewed in every second.

Display	Content description
OK	Normal operation
NONE	Not connected
REBUILDING	Data rebuilding
ERROR	Error occurrence
TROUBLE	Trouble

63

63-1

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the result of the shading correction.

Section**Operation/Procedure**

Select a target color of display with [R] [G] [B] keys on the touch panel.

Button	Display item	Descriptions	Remarks
OC (Front surface)	GAIN ODD (F/R)	Gain adjustment value (odd number)	
	GAIN EVEN (F/R)	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)	0: No error 1: STAGE1. Loop number over 2: STAGE2. The target value is less than the specified level. 3: STAGE3. The gain set value is negative. 4: END is not asserted. (Gain adjustment) 5: STAGE2. Retry max 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 starting/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		

Button	Display item	Descriptions	Remarks	
OC (Back surface)	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)	0: No error 1: STAGE1. Loop number over 2: STAGE2. The target value is less than the specified level. 3: STAGE3. The gain set value is negative. 4: END is not asserted. (Gain adjustment) 5: STAGE2. Retry max 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 starting/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			

Button	Display item	Descriptions	Remarks	
DSPF	ANALOG GAIN ODD	Analog gain adjustment value (odd number)		
	ANALOG GAIN EVEN	Analog gain adjustment value (Even number)		
	DIGITAL GAIN ODD	Digital gain adjustment value (odd number)		
	DIGITAL GAIN EVEN	Digital gain adjustment 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)	0: No error 1: STAGE1. Loop number over 2: STAGE2. The target value is less than the specified level. 3: STAGE3. The gain set value is negative. 4: END is not asserted. (Gain adjustment) 5: STAGE2. Retry max 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 starting/Gain) 14: Register check error. (Before light quantity correction)	
	DSPF BACK WHITE LEVEL 1ST	First scan DSPF back surface white reference level		
DSPF BACK WHITE LEVEL 2ND	DSPF back surface white reference level of the second or later scanning			

63-2	
Purpose	Adjustment/Setting
Function (Purpose)	Used to execute shading forcibly.
Section	Scanner

Operation/Procedure

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Press [EXECUTE] key.

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

Display	Content
COMPLETE	(Normal) Completion
ERROR	Abnormal completion (DSPF SHADING)
INCOMPLETE	Incomplete, interruption (DSPF SHADING)

63-3

Purpose	Adjustment/Setting
Function (Purpose)	Used to perform the gamma correction and density conversion for RGB data inputted from the CCD. The gamma correction 1 of the SCAN ASIC and the set value of color correction are calculated and set from the specified image data.

Section	Scanner
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Operation/Procedure

- 1) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 2) Select a target mode with [OC] [DSPF] keys.
- 3) Press [EXECUTE] key.
The color auto adjustment is executed.

63-4

Purpose	Adjustment/Setting
Function (Purpose)	The average value of the patch scan values for the RGB image data inputted from the CCD are calculated and displayed.

Section	Scanner
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Operation/Procedure

- 1) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 2) Select a target mode with [OC] [DSPF] keys.
- 3) Press [EXECUTE] key.
The result is displayed.

63-5

Purpose	Adjustment/Setting
Function (Purpose)	Used to reset the color balance of the scanner to the default.

Section	
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Operation/Procedure

- 1) Select a target of the default reset with [SIDE A (OC)] [SIDE B (DSPF)] keys on the touch panel.
- 2) Press [EXECUTE] key, and press [OK] key.
The default value is saved.

Display	Content
SIDE A (OC)	Copy gamma correction 1 and color correction coefficient
	TWAIN gamma correction 1 and color correction coefficient
	Auto adjustment gamma correction 1 and color correction coefficient
SIDE B (DSPF)	Copy gamma correction 1 and color correction coefficient
	TWAIN gamma correction 1 and color correction coefficient

63-6

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the auto adjustment pattern of the engine and gray balance.

Section	
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Operation/Procedure

- 1) Place the self-print chart printed with Sim.46-16 on the glass table.
- 2) Press [EXECUTE] key.
- 3) The sampling value of each patch from the high density side is displayed.

63-7

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the auto density of the engine auto adjustment scanner target value. (Service)

Section	
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Operation/Procedure

- 1) Press [SETUP] key on the touch panel.
Sampling is executed.
- 2) Place the self-print chart printed with Sim.46-16 on the glass table.
- 3) Press [EXECUTE] key.
Sampling of each patch is executed.
- 4) Press [OK] key.
The displayed sampling result is saved as the target value.

Display data	Display Content
B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Background sampling value

63-8

Purpose	Adjustment/Setting
Function (Purpose)	Used to reset the engine auto adjustment scanner target value to the default value.

Section	
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Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The engine auto adjustment scanner target value is reset to the default value.

64-2

Purpose	Operation test /check
Function (Purpose)	Self print (B/W mode)
Section	

Operation/Procedure

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
Printing of the pattern is executed.

Item	Display item		Descriptions of items	Setting range	Default value		
A	PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22, 29)		Print pattern specification (* For details, refer to the description below.)	1 - 58 (Printable only 1, 2, 9 - 11, 17 - 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 (Pattern 2, 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 - 9 IF A: 17 - 19)	THROUGH	Exposure mode specification	No process (through)	1 - 9 (Pattern 17 - 19: 2 - 9 except above: 1 - 8)	1 2 3 4 5 6 7 8 9	8 (STANDARD DITHER)
		CHAR/PIC		Text/Printed Photo			
		CHAR/PRPIC		Text/Photograph			
		CHAR		Text			
		PRINT PIC		Printed photo			
		PRINT PAPER		Photograph			
		MAP		Map			
		STANDARD DITHER		Dither without correction			
		AUTO		Auto			
G	PAPER	MFT	Tray selection	Manual feed	1 - 9	1 2 3 4 5 6 6 7 8 9	2 (CS1)
		CS1		Tray 1			
		CS2		Tray 2			
		CS3		Tray 3			
		CS4		Tray 4			
		LCC		LCC *1			
		LCT1_1		LCT 1 series, first stage *2			
		LCT1_2		LCT 1 series, second stage *2			
		LCT2_1		LCT 2 series, first stage *3			
		LCT2_2		LCT 2 series, second stage *3			
H	DUPLEX	YES	Duplex print selection	Select	0 - 1	0 1	1 (NO)
		NO		Not select			
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 6	1 2 3 4 5 6	1 (PLAIN)
		HEAVY		Heavy paper			
		OHP		OHP			
		HEAVY2		Heavy paper 2			
		HEAVY3		Heavy paper 3			
		HEAVY4		Heavy paper 4			

*1: Displayed only when A4/A3 LCC is connected.

*2: Displayed only when 2-stage LCT is installed.

*3: Displayed only when two units of 2-stage LCT are connected.

<Item A print pattern>

No.	Content	Pattern generating section	
1	Grid pattern	LSU-ASIC	
2	Dot print		
3	—		
4	—		
5	—		
6	—		
7	—		
8	—		
9	Each color 10% area (A4/4R) density print		
10	8-color belt print	—	
11	4-color dot print (sub scan)		
12	—		
13	—		
14	—		
15	—		
16	—		
17	All background (halftone)		Halftone (IMG-ASIC after-process)
18	256 gradations pattern (Other dither)		
19	256 gradations pattern (Dither for text)		
20	—		—
21	4-point dot print (main scan)		LSU-ASIC

No.	Content	Pattern generating section
22	Slant line	LSU-ASIC
23	—	—
24	—	—
25	—	—
26	—	—
27	—	—
28	—	—
29	Dot print 1200dpi	LSU-ASIC
30	—	—
31	—	—
32	—	—
51	—	—
52	—	—
53	—	—
54	—	—
55	—	—
56	—	—
57	—	—
58	—	—

64-4

Purpose	Operation test/check
Function (Purpose)	Used to make the self print of the printer.
Section	

Operation/Procedure

- 1) Select a target item of print with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

Item	Display item/Details of display		Descriptions of items		Setting range		Default value
A	PRINT PATTERN		Print pattern specification (* 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	Manual 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	HALFTONE	LOW	Halftone	Low line number	0 - 2	0	0 (LOW)
		HIGH		High line number		1	
		SHIGH		Ultra high line number		2	
F	QUALITY	STANDARD	Image quality setting	Standard	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		High quality		1	
		FINE		Ultra fine		2	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	0 - 1	0	1 (CALIB)
		CALIB		Calibration		1	
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 5	0	0
		HEAVY		Heavy paper		1	
		HEAVY2		Heavy paper 2		2	
		HEAVY3		Heavy paper 3		3	
		HEAVY4		Heavy paper 4		4	
		GLOSSY		Glossy paper		5	

<Descriptions for print pattern at Item A>

No.	Content
1	256 gradation pattern (B/W)
2	half-tone pattern (B/W)
3	Background dot print

Purpose	Operation test/check
Function (Purpose)	Printer self print (PCL)
Section	

Operation/Procedure

- 1) Select a print target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

Item	Display item/Details of display		Descriptions of items	Setting range	Default value	
A	PRINT PATTERN		Print pattern specification (* For details, refer to the description below.)	1 - 2	1	
B	DENSITY		Print gradation specification	1 - 255	255	
C	MULTI COUNT		Number of print	1 - 999	1	
D	PAPER	MFT	Paper feed tray selection	Manual feed	1 - 6	2 (CS1)
		CS1		Tray 1		
		CS2		Tray 2		
		CS3		Tray 3		
		CS4		Tray 4		
		LCC		LCC		
E	HALFTONE	LOW(IMAGE)	Halftone	Photograph	0 - 3	3 (AUTO)
		HIGH(TEXT)		Text		
		SHIGH(FINE TEXT)		Fine text		
		AUTO		Auto (Photograph/Text)		
F	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 1	1 (HIGHQUALITY)
		HIGHQUALITY		High quality (600dpi, 4bit)		
		FINE		Ultra fine (1200dpi, 1bit)		
G	DITHER	STRAIGHT	Specification of dither correction	0: Straight	0 - 1	1
		CALIB		1: Calibration		
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 5	0 (PLAIN)
		HEAVY		Heavy paper		
		HEAVY2		Heavy paper 2		
		HEAVY3		Heavy paper 3		
		HEAVY4		Heavy paper 4		
		GLOSSY		Glossy paper		
I	TONER SAVE	OFF	Toner save mode	not set.	0 - 1	0 (OFF)
		ON		set.		

<Descriptions for print pattern at Item A>

No.	Content	Remarks
1	PCL process inspection pattern (B/W)	Printing is made at the process speed of the B/W mode.
2	Service chart (B/W)	Printing is made at the process speed of the B/W mode.

In No. 1 and 2, the set values of SOURCE and INTENT are effective.

Purpose	Operation test/check
Function (Purpose)	Printer self print (PS)
Section	

Operation/Procedure

- 1) Select a print target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

Item	Display item/Details of display		Descriptions of items	Setting range	Default value		
A	PRINT PATTERN		Print pattern specification (* For details, refer to the description below.)	1 - 1	1		
B	DENSITY		Print gradation specification	1 - 255	255		
C	MULTI COUNT		Number of print	1 - 999	1		
D	PAPER	MFT	Paper feed tray selection	Manual feed	1A`6	2 (CS1)	
		CS1					Tray 1
		CS2					Tray 2
		CS3					Tray 3
		CS4					Tray 4
		LCC					LCC
E	HALFTONE	LOW(IMAGE)	Halftone	Photograph	0 - 3	3 (AUTO)	
		HIGH(TEXT)					Text
		SHIGH(FINE TEXT)					Fine text
		AUTO					Auto (Photograph/Text)
F	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 1	1 (HIGHQUALITY)	
		HIGHQUALITY					High quality (600dpi, 4bit)
		FINE					Ultra fine (1200dpi, 1bit)
G	DITHER	STRAIGHT	Specification of dither correction	0: Straight	0 - 1	1 (CALIB)	
		CALIB					1: Calibration
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 5	0 (PLAIN)	
		HEAVY					Heavy paper
		HEAVY2					Heavy paper 2
		HEAVY3					Heavy paper 3
		HEAVY4					Heavy paper 4
		GLOSSY					Glossy paper
I	TONER SAVE	OFF	Toner save mode	not set.	0 - 1	0 (OFF)	
		ON					set.

<Descriptions for print pattern at Item A>

No.	Content	Gradation select Dither select	Remarks
1	PS inspection pattern (B/W)	1: Straight 2: Calibration	Printing is made at the process speed of the B/W mode.

64-7

Purpose	Operation test/check
Function (Purpose)	Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-46 is printed.)

Section

Operation/Procedure

- 1) Set the print conditions.
Select an item to be print condition with scroll keys.
Set the print conditions with 10-key.
- 2) Press [EXECUTE] key.
The adjustment pattern of SIM46-21 is printed.

Item/Display	Content	Setting range	Default value	Writing
A COPIES	Number of print	1 - 999	1	No
B PROC ADJ	YES 0	0 - 1	1	Yes
	NO 1			

65

65-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the touch panel (LCD display section) detection coordinates.

Section

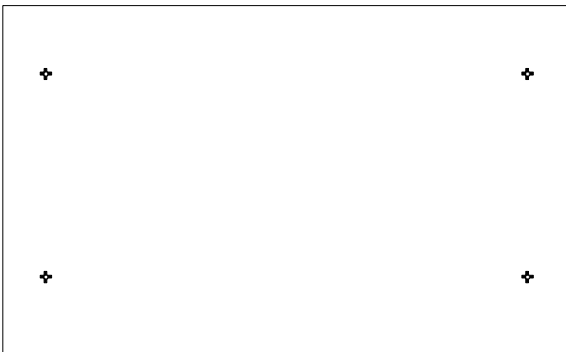
Operation panel section

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.



Because the touch panel of this model is capacitive sensing method, use not "a pen" but "a finger" or "a stylus device" for panel touch.

65-2

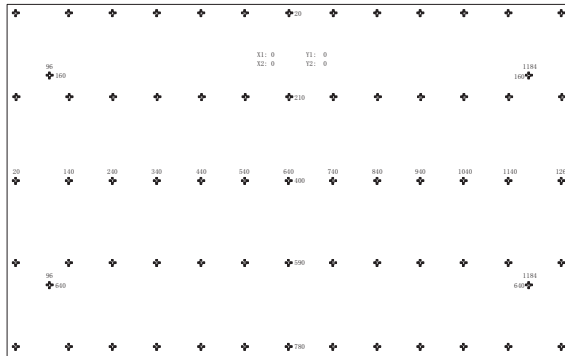
Purpose	Operation check/Test
Function (Purpose)	Used to display the touch panel (LCD display section) detection coordinates.

Section

Operation/Procedure

Touch the touch panel.

The coordinates X (horizontal direction) and Y (vertical direction) of the touched position is displayed in real time.



Because the touch panel of this model is capacitive sensing method, use not "a pen" but "a finger" or "a stylus device" for panel touch.

65-5

Purpose	Operation check/Test
Function (Purpose)	Used to check the operation panel key input.

Section

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>

15.4 Inch LCD model
HOME

66

66-1

Purpose	Setting
Function (Purpose)	Used to change and check the soft switch setting.

Section

Operation/Procedure

- 1) Press [SW No.] key.
- 2) Enter the soft switch number to be checked or changed with 10-key.
- 3) Press [DATA] key.
The current setting status is displayed.
- 4) Enter the number corresponding to the BIT to be changed with 10-key.
For details, refer to "5-A. Soft switch list."
- 5) Press [EXECUTE] key.
The setting content is saved.

66-2

Purpose	Data clear
Function (Purpose)	Used to clear the soft switch and set the default value.
Section	FAX

Operation/Procedure

- 1) Enter the country code with 10-key.
 - * When [DEST CODE] key is pressed, the country code list is displayed.
 - When [BACK] key is pressed on the destination code list screen, the display returns to the destination code entry screen.
 - 2) Press [SET] key.
 - 3) Press [EXECUTE] key.
 - 4) Press [YES] key.
- Clearing the soft switch is executed.

JAPAN	00000000	SWITZERLAND	10100110
U.S.A	10110101	AUSTRIA	00001010
AUSTRALIA	00001001	INDONESIA	01010100
U.K	10110100	THAILAND	10101001
FRANCE	00111101	MALAYSIA	01101100
GERMANY	00000100	INDIA	01010011
SWEDEN	10100101	PHILIPPINES	10001001
NEW ZEALAND	01111110	HONGKONG	01010000
CHINA	00100110	RUSSIA	10111000
SINGAPORE	10011100	SOUTH AFRICA	10011111
TW	11111110	SPAIN	10100000
MIDDLE AND NEAR EAST	11111101	PORTUGUESE	10001011
SLOVAKIA	11111100	LUXEMBURG	01101001
OTHER3	11111011	BELGIUM	00001111
FINLAND	00111100	CZECH	00101110
NORWAY	10000010	HUNGARY	01010001
DENMARK	00110001	GREECE	01000110
NETHERLANDS	01111011	POLAND	10001010
ITALY	01011001	Korea	01100001

66-10

Purpose	Data clear
Function (Purpose)	Used to clear all the data (memory receive and send) of the image memory. * The confidential receive data are cleared simultaneously.
Section	FAX

Operation/Procedure

- 1) Press [EXECUTE] key.
 - 2) Press [YES] key.
- The image memory is cleared.

66-61

Purpose	Setting
Function (Purpose)	Used to display the FAX-related soft SW(151 - 250) on the LCD to allow changing the soft SW while checking with the LCD.
Section	FAX

Operation/Procedure

- 1) Enter the [SW NO] with 10-key.
- 2) Press [DATA] key.
The soft SW data entered in procedure 1) is displayed.
- 3) Enter the number corresponding to the bit to be changed with 10-key.
 - * [1] - [0]
 - [0] - [1]
- 4) When [EXECUTE] key is pressed, it is highlighted and the settings saved.

67**67-17**

Purpose	Reset
Function (Purpose)	Printer reset
Section	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.

67-24

Purpose	Adjustment/Setting
Function (Purpose)	Used to set for auto gray calibration.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
The high density process control is started, and the self print is outputted.
- 2) Place the printed self print patch on the glass table, and select a process mode with [FACTORY] [SERVICE] keys on the touch panel.
- 3) Press [EXECUTE] key. After scanning the patch, the self print of 17 patches is printed.
- 4) Press [OK] key.
The correction print is saved, and the reference value registration is processed.

67-25

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the printer engine gray balance manual correction.

Section**Operation/Procedure**

- 1) Select an adjustment item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item	Display name	Setting range	Default value
A	POINT1	1 - 999	500
B	POINT2	1 - 999	500
C	POINT3	1 - 999	500
D	POINT4	1 - 999	500
E	POINT5	1 - 999	500
F	POINT6	1 - 999	500
G	POINT7	1 - 999	500
H	POINT8	1 - 999	500
I	POINT9	1 - 999	500
J	POINT10	1 - 999	500
K	POINT11	1 - 999	500
L	POINT12	1 - 999	500
M	POINT13	1 - 999	500
N	POINT14	1 - 999	500
O	POINT15	1 - 999	500
P	POINT16	1 - 999	500
Q	POINT17	1 - 999	500

67-27

Purpose	Adjustment/Setting
Function (Purpose)	Used to register the scanner target value of the printer engine auto density adjustment.

Section**Operation/Procedure**

- 1) Press [SETUP] key.
- 2) Place the self print patch printed with Sim. 67-25 on the glass table, and press [EXECUTE] key.
- 3) Press [OK] key.
The target value is saved.

Item	Display Content
B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Background sampling value

67-28

Purpose	Adjustment/Setting
Function (Purpose)	Used to reset the printer engine auto adjustment scanner target value to the default value.

Section**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The engine auto adjustment scanner target value is reset to the default value.

67-31

Purpose	Data clear
Function (Purpose)	Used to clear the printer calibration value.

Section**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The printer calibration value is cleared.

67-32

Purpose	Adjustment/Setting
Function (Purpose)	Printer screen gamma table setting (300/600DPI).

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.

Item	Display	Content	Setting range	Default value
A	STANDARD GAMMA TABLE (600DPI)	Standard gamma table setting 600DPI	1 - 3	1
B	STANDARD GAMMA TABLE (1200DPI)	Standard gamma table setting 1200DPI	1 - 3	1

67-33

Purpose	Adjustment/Setting
Function (Purpose)	Used to perform the gamma correction of printer screens (for PCL).

Section**Operation/Procedure**

- 1) Select an adjustment target color with [K] [C] [M] [Y] keys on the touch panel.
- 2) Select a target item with [SCREEN] key.
- 3) Select an adjustment item with [↑] [↓] keys.
- 4) Enter the set value with 10-key.
- 5) Press [OK] key.
The set value is saved.

Item	Display	Description	Setting range	Default value
A	POINT1	Point 1	0 - 255	128
B	POINT2	Point 2	0 - 255	128
C	POINT3	Point 3	0 - 255	128
D	POINT4	Point 4	0 - 255	128
E	POINT5	Point 5	0 - 255	128
F	POINT6	Point 6	0 - 255	128
G	POINT7	Point 7	0 - 255	128
H	POINT8	Point 8	0 - 255	128
I	POINT9	Point 9	0 - 255	128
J	POINT10	Point 10	0 - 255	128
K	POINT11	Point 11	0 - 255	128
L	POINT12	Point 12	0 - 255	128
M	POINT13	Point 13	0 - 255	128
N	POINT14	Point 14	0 - 255	128
O	POINT15	Point 15	0 - 255	128
P	POINT16	Point 16	0 - 255	128
Q	POINT17	Point 17	0 - 255	128

<Items selected by SCREEN>

Display	Content
HEAVY PAPER	Heavy paper or Glossy paper
SCREEN1	B/W 600dpi 1bit
SCREEN2	B/W 600dpi 4bit LOW (Photo)
SCREEN3	B/W 600dpi 4bit HIGH (Graphics)
SCREEN4	B/W 600dpi 4bit SHIGH
SCREEN5	B/W 1200dpi 1bit LOW
SCREEN6	B/W 1200dpi 1bit HIGH
SCREEN7	B/W 1200dpi 1bit SHIGH

67-34

Purpose	Adjustment/Setting
Function (Purpose)	Used to set Enable/Disable of the printer half-tone max. density correction.

Section**Operation/Procedure**

- 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	0: ENABLE 1: DISABLE	0 Engine max. density correction mode: Enable	0 - 1	1
		1 Engine max. density correction mode: Disable		
B	BLACK MAX TARGET	BLACK MAX density correction scanner value	0-999	500

67-36

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the density in the low density section.

Section**Operation/Procedure**

- 1) Enter the adjustment value using the 10-key.
- 2) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.

Item/Display	Content	Setting range	Default value
A A PATCH INPUT	A patch input value	0 - 13	1

67-45

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the printer image filter and trapping.

Section**Operation/Procedure**

- 1) Select an adjustment item with the scroll key.
- 2) Enter the set value.
- 3) Press [OK] key.

Item/Display	Content	Setting range	Default value	NOTE	
A	SHARPNESS: COLOR PRINT	Color print	0 - 4	2	The greater the set value is, the stronger the filter enhancement is. The smaller the set value is, the stronger the filter smoothness is. (0: Soft High, 1: Soft Low, 2: Center, 3: Sharp Low, 4: Sharp High)
B	SHARPNESS: B/W PRINT	Monochrome print	0 - 4	2	
C	TRAPPING: CMY (PCL & DIRECTPRINT)	CMY (PCL, Direct Print)	0 - 5	3	The greater the set value is, the stronger the trapping is. (0: OFF, (Low) 1 < 2 < 3 < 4 < 5) (The target is vector images. There is no effect for the raster images.) However, the sharpness also varies.
D	TRAPPING: K (PCL & DIRECTPRINT)	K (PCL, Direct Print)	0 - 5	3	
E	TRAPPING: CMY (PS)	CMY (PS)	0 - 5	3	
F	TRAPPING: K (PS)	K (PS)	0 - 5	0	
G	TRAPPING: CMY (XPS)	CMY (XPS)	0 - 5	0	
H	TRAPPING: K (XPS)	K (XPS)	0 - 5	0	

67-52

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the default of the gamma of the printer screen.
Section	Printer

Operation/Procedure

- 1) Select a target default setting mode with the touch panel.
Press [ALL] key to select all the modes.
- 2) Press [EXECUTE] key and press [YES] key.

When the printer screen gamma was changed by SIM 67-33, SIM67-54, it is reset to the default.

	Display	Content
Screen	HEAVYPAPER	Heavy paper screen Printer heavy paper automatic density correction amount
	1200DPI_1BIT	SCREEN5 (1200dpi 1bit Photo) SCREEN6 (1200dpi 1bit Graphics)
	600DPI_1BIT	SCREEN1 (600dpi 1bit Photo) SCREEN2 (600dpi 1bit Graphics)
	B/W	SCREEN7 (600dpi 1bit) SCREEN8 (600dpi 4bit) SCREEN9 (1200dpi 1bit) Printer B/W toner save automatic density correction amount SCREEN11(PCL B/W 600dpi 1bit Graphics) SCREEN12(PCL B/W 600dpi 4bit Graphics) SCREEN13(PCL B/W 1200dpi 1bit Graphics)
	GLOSSPAPER	SCREEN10 (Glossy paper screen)
	4BIT_GRAPHICS	SCREEN4 (600dpi 4bit Graphics)
	DOT_SCREEN1	SCREEN14(Dot(HIGH))
	DOT_SCREEN2	SCREEN14(Dot(LOW))
	DOT_SCREEN1_BW	SCREEN16(BW 600dpi DOT)
	DOT_SCREEN2_BW	SCREEN17(BW 1200dpi DOT)

67-54

Purpose	Adjustment
Function (Purpose)	Printer color balance adjustment (Automatic adjustment for each dither)
Section	Printer

Operation/Procedure

This simulation is used to adjust the color balance, the density, and the gradation in the monochrome mode, the heavy paper mode, the 1200dpi mode, and the 600dpi 1bit mode.

This simulation is used to improve image quality in these modes and images.

- 1) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)
The color patch image (adjustment pattern) is printed out.
- 2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
- 3) Press [EXECUTE] key.
The color balance adjustment is automatically performed.
The adjustment pattern is printed out. Check it for any abnormality.
- 4) Press [OK] key.
The list of the adjustment items (for each dither) is displayed.
- 5) Select an adjustment item (for each dither).

	Display	Content
Screen	HEAVYPAPER	Heavy paper screen Printer heavy paper automatic density correction amount
	1200DPI_1BIT	SCREEN5 (1200dpi 1bit Photo) SCREEN6 (1200dpi 1bit Graphics)
	600DPI_1BIT	SCREEN1 (600dpi 1bit Photo) SCREEN2 (600dpi 1bit Graphics)
	B/W	SCREEN7 (600dpi 1bit) SCREEN8 (600dpi 4bit) SCREEN9 (1200dpi 1bit) Printer B/W toner save automatic density correction amount SCREEN11(PCL B/W 600dpi 1bit Graphics) SCREEN12(PCL B/W 600dpi 4bit Graphics) SCREEN13(PCL B/W 1200dpi 1bit Graphics)
	GLOSSPAPER	SCREEN10 (Glossy paper screen)
	4BIT_GRAPHICS	SCREEN4 (600dpi 4bit Graphics)
	DOT_SCREEN1	SCREEN14(Dot(HIGH))
	DOT_SCREEN2	SCREEN14(Dot(LOW))
	DOT_SCREEN1_BW	SCREEN16(BW 600dpi DOT)
	DOT_SCREEN2_BW	SCREEN17(BW 1200dpi DOT)

- 6) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)
The color patch image (adjustment pattern) is printed out.
- 7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
- 8) Press [EXECUTE] key.
The color balance adjustment is automatically performed, and the color balance check patch image is printed out.
- 9) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.
To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.
After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
- 10) Make a print, and check the print image quality.

NOTE: Use SIM67-52 to reset the adjustment values to the default values.

[7] TROUBLESHOOTING

1. Error code and troubleshooting

A. General

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.

B. 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.)

C. Self diag message kinds

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	-

D. Self diag operation

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

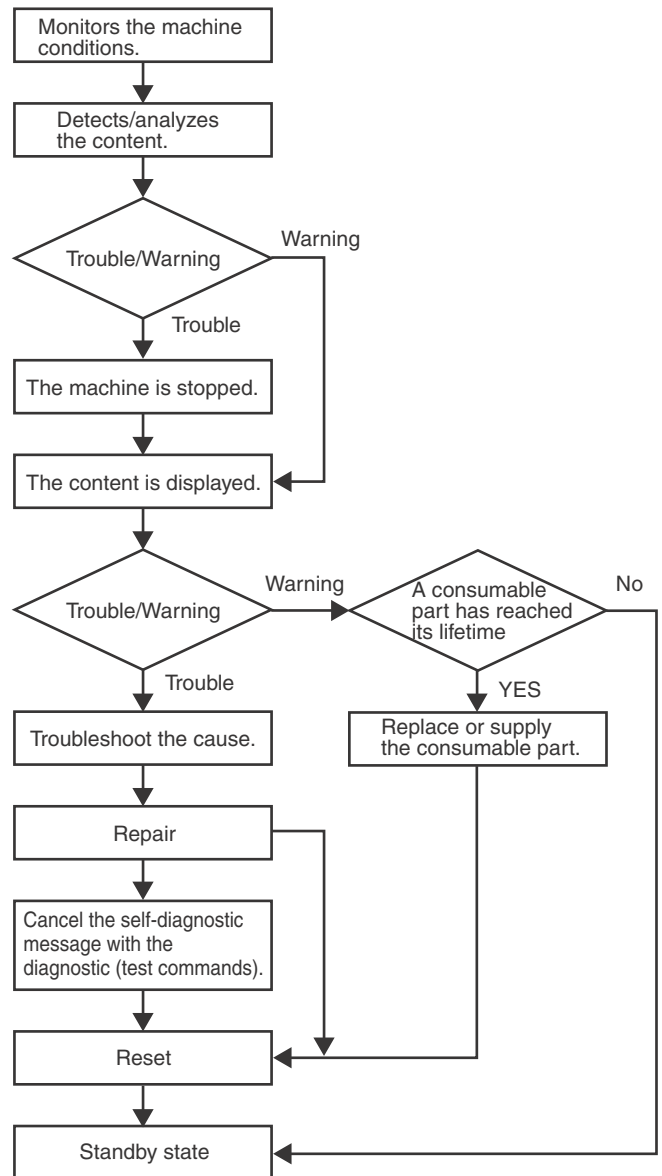
A warning message is displayed when a consumable part life is nearly expired or is expired.

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.



E. Breakdown sequence

(1) Error code and operatable mode

Trouble content		Judgment block	Trouble code	Operatable mode					
				Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print
HDD trouble	CF memory trouble	MFP	E7 (A6)	×	×	×	×	×	×
	SD card breakdown		E7 (07)	×	×	×	×	×	×
	HDD breakdown		E7 (03, A5)	×	×	×	×	×	×
	HDD-ASIC breakdown		E7 (04)	×	×	×	×	×	×
Scanner communication trouble	SCU communication error		A0 (02) E7 (80)	×	×	×	×	○	○
Engine communication trouble	PCU communication error		A0 (01) E7 (90)	×	×	×	×	×	×
Option communication trouble	ACU communication error		A0 (04, 05)	×	×	×	×	×	×
Printer port system trouble	Printer port system trouble		F9 (91, 92)	○	×	×	○	×	△
Backup battery voltage fall trouble	Backup battery voltage fall		U1 (01)	×	×	×	×	×	×
Operation disable trouble 1	Controller fan motor trouble		L4 (28, 30)	×	×	×	×	×	×
Operation disable trouble 2	External communication disable (RIC)	U7 (50, 51)	×	×	×	×	×	×	
	Memory error (included not installed the expansion RAM)	U2 (00, 11, 40, 41, 42)	×	×	×	×	×	×	
	Connection trouble (MFP detection)	A0 (10, 11, 14, 15, 16, 17, 20) E7 (60, 61, 62, 65, 89)	×	×	×	×	×	×	
	Serial number discrepancy	U2 (30)	×	×	×	×	×	×	
	HDD registration data check sum error	U2 (50)	×	×	×	×	×	×	
Operation disable trouble 3	Memory check error when booting	E7 (95, 96)	×	×	×	×	×	×	
	Image memory trouble, decode error	E7 (01, 49, 91, 92, 93, 94)	×	×	×	×	×	×	
	Image memory trouble, decode error (related to ACRE, 1)	E7 (42, 46, 48)	×	△17	×	×	×	○	
Operation disable trouble 4	Personal counter not-installed trouble	PC (00)	×	×	×	×	×	×	
Power controller trouble	Power controller trouble	L8 (20)	×	×	×	×	×	×	
Special function trouble	Special function error	P1 (00, 01, 02) U2 (60)	○	○	○	○	○	○	
Laser trouble	LSU breakdown	PCU	E7 (20, 21, 24, 28, 29, A0) L6 (10)	×	×	×	×	×	×
Engine trouble 1	Connection trouble (PCU detection)		A0 (21) E7 (50, 55, 58) F1 (50)	×	×	×	×	×	×
Engine trouble 2	PCU troubles (motor, fusing, etc.)		C1 (01, 10) C4 (20) F2 (22, 40, 64, 70, 74, 91) H2 (00, 01, 02, 03) H3 (00, 01, 02) H4 (00, 01, 02, 30) H5 (01) H7 (10, 11, 12) L4 (01, 02, 03, 04, 14, 17, 27, 31, 32, 34, 36, 38, 39, 40, 41, 43, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58) L8 (01, 02) U2 (90, 91)	×	×	×	×	×	×

Trouble content		Judgment block	Trouble code	Operatable mode					
				Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print
Paper feed tray 0 trouble	Paper feed tray 0 breakdown	PCU	U6 (63, 68, 69)	△3	○	○	○	△3	△3 *10
Paper feed tray 1 trouble	Paper feed tray 1 breakdown		F3 (12)	△3	○	○	○	△3	△3 *10
Paper feed tray 2 trouble	Paper feed tray 2 breakdown		F3 (22)	△3	○	○	○	△3	△3 *10
Paper feed tray 3 trouble	Paper feed tray 3 breakdown		F3 (32)	△3	○	○	○	△3	△3 *10
Paper feed tray 4 trouble	Paper feed tray 4 breakdown		F3 (42)	△3	○	○	○	△3	△3 *10
Paper feed tray 5 trouble	Paper feed tray 5 breakdown		U6 (09, 20, 21, 23, 24, 29, 51) UE (10, 11, 12, 13, 14, 15, 16, 17, 18, 19)	△3	○	○	○	△3	△3 *10
Paper feed tray 6 trouble	Paper feed tray 6 breakdown		U6 (33, 34, 39) UE (20, 21, 22, 23, 24, 25, 26, 27, 28, 29)	△3	○	○	○	△3	△3 *10
Paper feed tray 7 trouble	Paper feed tray 7 breakdown		U6 (43, 44, 49) UE (30, 31, 32, 33, 34, 35, 36, 37, 38, 39)	△3	○	○	○	△3	△3 *10
Paper feed tray 8 trouble	Paper feed tray 8 breakdown		U6 (73, 74, 79) UE (40, 41, 42, 43, 44, 45, 46, 47, 48, 49)	△3	○	○	○	△3	△3 *10
Paper feed tray other troubles	Paper feed tray other breakdown		U6 (22, 53, 54, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90)	△11	○	○	○	△11	△11 *10
Saddle stitch section trouble	Saddle stitch section breakdown		F1 (31, 47, 48)	△4	△4	△4	△4	△4	△4 *10
Finisher trouble	After-process breakdown		F0 (03, 08, 10, 11, 14, 15, 18, 19, 20, 23, 25, 28, 29, 30, 31, 32, 33, 34, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 60, 61, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 76, 77, 80, 81, 82, 83, 84, 85, 86, 90, 91, 92, 93, 94, 95) F1 (00, 13, 23, 60, 90, 96, 97, 98, 99)	△4	△4	△4	△4	△4	△4 *10
Inserter trouble	Inserter breakdown (except for communication trouble)		F1 (64, 65, 66, 67)	△3	○	○	○	△3	△3 *10
Other troubles	Other troubles		EE (EC, EL, EU)	○	○	○	○	○	○
Double feed detection trouble	Double feed detection trouble		FF (00)	○	○	○	○	○	○
Process control trouble	Process control breakdown (PCU detection)	F2 (33, 39, 58, 78)	○ *12	○	○	○	○	○	
Operation disable trouble	Connection trouble (SCU detection)	SCU	A0 (22) E7 (70, 71, 76)	×	×	×	×	×	×
Color system trouble (SCU detection)	SCU color system breakdown (SCU detection)		UC (02)	△9	△9	△9	△9	○	○
Anti-copy trouble	Anti-copy system		UC (20)	×	×	×	×	○	○
Anti-copy trouble (DSPF detection)	Anti-copy system (DSPF detection)		UC (30)	△7	△7	△7	△7	○	○
Scanner trouble 1	EEPROM system		U2 (80, 81)	×	×	×	×	○	○
Scanner trouble 2	Scanner section breakdown (mirror motor, lens, copy lamp)		L1 (00) L2 (10) L3 (00) U9 (01)	×	×	×	×	○	○
CCD trouble	CCD breakdown (shading, etc.)		E7 (10, 11, 14)	×	×	×	×	○	○
DSPF/DF trouble	DSPF/DF breakdown		U5 (00, 16, 30, 31)	△6	△6	△6	△6	○	○
SPF back surface trouble	General troubles in the SPF back surface scanning section		E6 (10, 11, 14)	△7	△7	△7	△7	○	○
Double feed detection trouble	Double feed detection trouble		FF (10)	○	○	○	○	○	○

Error where only history data are saved

Trouble content	Judgment block	Trouble code	Operatable mode					
			Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print
Error history	PCU	E7 (35, 36, 37) F2 (47, 59)	○	○	○	○	○	○
	MFP	E7 (02) U2 (05)	○	○	○	○	○	○

○: Operation enabled ×: Operation disabled

△3: When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△4: 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.

△6: When detected during other than a job, the operation is enabled in the OC mode.

△7: When detected in other than a job, the operation is enabled in the OC mode/single surface scan mode.

△8: When detected in other than a job, the operation is enabled in other than the duplex color scan mode.

△9: When detected during other than a job, the operation is enabled in the black and white mode.

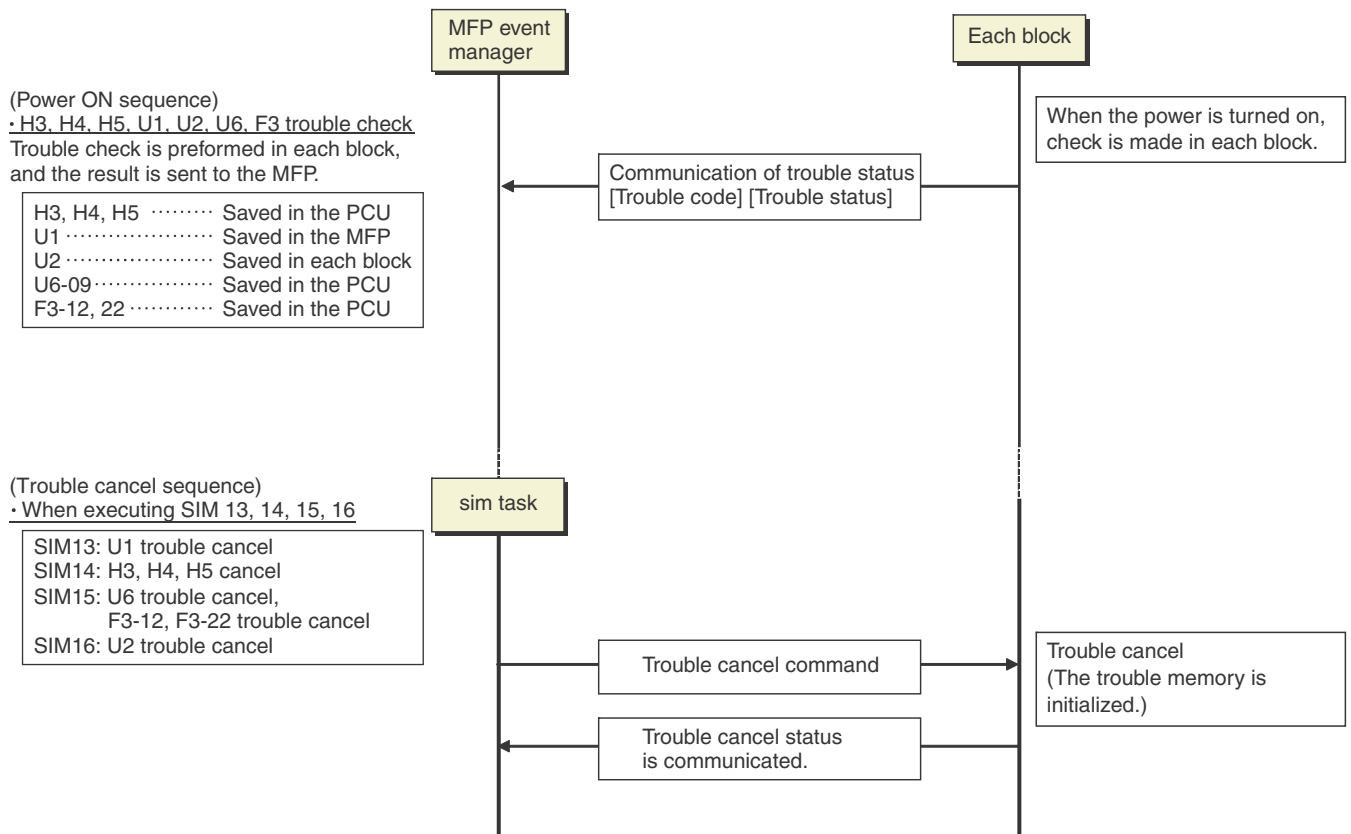
*10: Since communication is enabled, reception can be transferred. (Noted in the list print category of the system setting screen operation because it is an operation on the system setting screen.)

△11: When detected during other than a job, the operation is enabled in other than the DESK and the LCC.

*12: Trouble display message is displayed in 2 lines. (Example: Ready to copy. F2 trouble)

△17: Job execution enable only in a format other than high compression PDF.

(2) Trouble detection sequence and trouble cancel sequence when turning on the power



The process has priority when the power is turned ON with the MFP.

When booting, two or more troubles in the list below may be detected. In this case, the trouble code of higher priority is displayed.

Process sequence	Error code	Content	
First (Low priority)	U2	60 Watermark check error	
		50 HDD user authentication data check sum error	
		30 MFPC PWB and PCU PWB manufacturing No. data inconsistency	
↑	A0	20 Conflict firmware and EEPROM data version (MFP)	
		U2	11 MFPC PWB EEPROM counter check sum error
↓	E7	00 MFP EEPROM read/write error	
		48 Scanner expansion PWB (ACRE) ASIC memory error	
		42 Image data trouble (Scanner expansion PWB (ACRE) ASIC)	
		96 MFPC PWB DIMM memory check error (MFPC PWB)	
Last (High priority)	U1	95 Printer PWB DIMM memory check error (PRINTER section)	
		01 Battery trouble	
		E7	60 Combination error between PWB and firmware (MFPC PWB detection)
		A0	04 Scanner expansion PWB (ACU) (ACRE) ROM error

F. Error code list

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	Supply	
Main code	Sub code							
A0	01	PCU PWB ROM error	MFP			○		
	02	SCU PWB ROM error	MFP			○		
	04	Scanner expansion PWB (ACU) (ACRE) ROM error	MFP			○		
	17	Inconsistency between the UI data and the CPU firmware version	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			○		
C1	01	Charger cleaner trouble (K)	PCU			○		
	10	Main charger trouble (Monochrome)	PCU			○		
C4	20	Transfer high voltage output trouble	PCU			○		
E6	10	DSPF shading error (Black correction)	SCU			○		
	11	DSPF shading error (White correction)	SCU			○		
	14	DSPF CCD-ASIC error	SCU			○		
E7	01	MFP image data error	MFP			○		
	02	HDD trouble when the mirroring kit is installed	MFP		○			
	03	HDD trouble (When the mirroring kit is not installed)	MFP			○		
	03	HDD trouble (When the mirroring kit is installed)	MFP			○		
	04	HDD-ASIC error	MFP			○		
	07	SD card error	MFP			○		
	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection and deterioration error (K)	PCU			○		
	21	LSU laser deterioration trouble	PCU			○		
	24	LSU LD driver trouble	PCU			○		
	28	LSU - PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			○		
	35	Communication trouble with the CIS-ASIC	PCU			○		
	36	CIS-ASIC black level detection abnormality	PCU			○		
	37	CIS-ASIC white level detection abnormality	PCU			○		
	42	Image data trouble (Scanner expansion PWB (ACRE) ASIC)	MFP			○		
	46	Image data decode error (Scanner expansion PWB (ACRE) ASIC)	MFP			○		
	47	Combination error between MFP and ACRE firmware (ACRE ASIC)	MFP			○		
	48	Scanner expansion PWB (ACRE) ASIC memory error	MFP			○		
	49	Water Mark data error	MFP			○		
	50	Engine connection trouble	PCU			○		
	55	PWB information sum error (engine detection)	PCU			○		
	58	PWB information sum error (engine other detection)	PCU			○		
	60	Combination error between PWB and firmware (MFPC PWB detection)	MFP			○		
	61	Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection)	MFP			○		
	62	Controller connection trouble (scanner)	MFP			○		
	70	Scanner connection trouble	SCU			○		
	71	DSPF connection trouble	SCU			○		
	80	MFP - SCU PWB communication error	MFP			○		
	90	MFP - PCU PWB communication error	MFP			○		
	92	Copy image data error	MFP			○		
	93	Copy, image send, filing, print image data process error	MFP			○		
	94	Image file data process error (when importing file data)	MFP			○		
	95	Printer PWB DIMM memory check error	MFP			○		
	96	MFPC PWB DIMM memory check error	MFP			○		
	A0	LSU EEPROM/LD driver read/write error (K)	PCU			○		
	A5	Installation error of HDD which was used in the mirroring kit	MFP		○			
	A6	CF card memory error	MFP			○		
	EE	EC	Automatic toner density adjustment error	PCU			○	
		EL	Automatic toner density adjustment error (Over toner)	PCU			○	
EU		Automatic toner density adjustment error (Under toner)	PCU			○		
F0	03	Finisher paper exit roller lift motor section abnormality (FNM110)	PCU		○			
	08	Finisher stapler shift motor section abnormality (FNM107)	PCU		○			
	10	Finisher staple motor section abnormality (FNM115)	PCU		○			
	11	Finisher bundle exit motor section abnormality (FNM116)	PCU		○			
	14	Finisher paper rear edge falling motor section abnormality (FNM113)	PCU		○			
	15	Finisher tray lift motor section abnormality (FNM106)	PCU		○			
	18	Finisher rear edge hold motor section abnormality (FNM118)	PCU		○			
	19	Finisher paper alignment motor F section abnormality (FNM108)	PCU		○			
	20	Finisher paper alignment motor R section abnormality (FNM109)	PCU		○			
23	Shutter trouble (FNCL102)	PCU		○				

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	Supply
Main code	Sub code						
F0	25	Finisher paper transport roller lift motor section abnormality (FNM119)	PCU		○		
	28	Finisher paper alignment roller lift motor section abnormality (FNM112)	PCU		○		
	29	Finisher PWB cooling fan abnormality (FNFAN102)	PCU		○		
	30	Communication trouble between the finisher and the saddle	PCU		○		
	31	Finisher saddle folding motor section abnormality (FSM206)	PCU		○		
	32	Finisher relay unit transport motor section abnormality (PIM301)	PCU		○		
	33	Finisher punch shift motor section abnormality (FCM101)	PCU		○		
	34	Finisher punch motor section abnormality (FCM102)	PCU		○		
	37	Finisher backup RAM trouble	PCU		○		
	40	Communication trouble between the finisher saddle and the trimmer.	PCU		○		
	41	Finisher saddle lead edge stopper motor section abnormality (FSM203)	PCU		○		
	42	Finisher saddle folding roller guide motor section abnormality (FSM204)	PCU		○		
	43	Finisher saddle alignment motor section abnormality (FSM212)	PCU		○		
	44	Finisher saddle rear edge hold motor section abnormality (FSM210)	PCU		○		
	45	Finisher saddle staple motor section abnormality (FSM209)	PCU		○		
	46	Finisher saddle rear edge shift motor section abnormality (FSM211)	PCU		○		
	47	Finisher saddle flap motor section abnormality (FSM213)	PCU		○		
	48	Finisher saddle push motor section abnormality (FSM205)	PCU		○		
	49	Finisher saddle separation motor section abnormality (FSM214)	PCU		○		
	51	Finisher trimmer cutter motor abnormality (FTM106)	PCU		○		
	52	Finisher trimmer registration motor section abnormality (FTM102)	PCU		○		
	53	Finisher trimmer inlet port separation motor abnormality (FTM103)	PCU		○		
	54	Finisher trimmer paper exit separation motor section abnormality (FTM104)	PCU		○		
	55	Finisher trimmer bundle press motor section abnormality (FTM105)	PCU		○		
	56	Paper remaining trouble in the finisher trimmer	PCU		○		
	70	Communication trouble between the finisher and the folding unit	PCU		○		
	71	Folding unit lead edge holding guide motor section abnormality (FLM10)	PCU		○		
	72	Folding unit backup RAM trouble	PCU		○		
	73	Folding unit power fan abnormality	PCU		○		
	74	Folding unit folding tray paper exit motor section abnormality (FLM14)	PCU		○		
	75	Folding unit upper stopper motor section abnormality (FLM8)	PCU		○		
	76	3-fold stopper motor section in the folding unit is abnormal (FLM9)	PCU		○		
	77	Folding unit transport motor section abnormality (FLM11)	PCU		○		
	80	Finisher power cooling fan motor abnormality (FNFAN101)	PCU		○		
	81	Finisher upper tray fan abnormality (FNFAN103)	PCU		○		
	82	Finisher lower tray fan abnormality (FNFAN104)	PCU		○		
83	Finisher paper guide motor section abnormality (FNM120)	PCU		○			
84	Finisher grip section abnormality (FNM116)	PCU		○			
86	Finisher discharged paper hold motor section abnormality (FNM118)	PCU		○			
F1	00	Finisher - PCU PWB communication error	PCU		○		
	01	Jogger motor trouble	PCU		○		
	50	Main unit - Finisher combination error	PCU		○		
	60	Communication trouble between peripheral devices (Inserter detection)	PCU		○		
	64	No. 1 pickup motor trouble	PCU		○		
	65	No. 2 pickup motor trouble	PCU		○		
	66	No. 1 lift motor trouble	PCU		○		
	67	No. 2 lift motor trouble	PCU		○		
	90	Communication trouble between the decurler and the downstream units.	PCU		○		
	96	Decurler transport motor abnormality (DCM100)	PCU		○		
	97	Decurler unit fan 1 (Upper cooling fan) abnormality (DCFAN100)	PCU		○		
	98	Decurler unit fan 2 (Lower cooling fan) abnormality (DCFAN103)	PCU		○		
	99	Decurler unit fan 3 (Transport motor cooling fan) abnormality (DCFAN101)	PCU		○		
F2	22	Discharge lamp trouble (K)	PCU				○
	33	Surface potential sensor trouble					○
	39	Process temperature sensor trouble	PCU				○
	40	Toner density sensor trouble (K)	PCU				○
	47	Room temperature thermistor trouble	PCU				○
	58	Process humidity sensor trouble	PCU				○
	59	Room temperature/humidity thermistor trouble	PCU				○
	64	Toner supply operation trouble (K)	PCU				○
	70	Improper toner cartridge detection (K)	PCU				○
	74	Toner cartridge CRUM error (K)	PCU				○
	78	Image density sensor adjustment trouble	PCU				○
91	High density process control high voltage error (K)	PCU				○	
F3	12	Paper feed tray 1 lift operation trouble	PCU	○			
	22	Paper feed tray 2 lift operation trouble	PCU	○			
	32	Main body cassette 3 lift trouble	PCU			○	

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	Supply
Main code	Sub code						
F3	42	Main body cassette 4 lift trouble	PCU			○	
F9	00	Communication error between the MFPC and Printer controller	MFP			○	
FF	00	Double feed detection trouble (PCU)	PCU			○	
	10	Double feed detection trouble (SCU)	SCU			○	
H2	00	Thermistor open trouble (TH_UM_AD2)	PCU	○			
	02	Contact thermistor upper sub detection thermistor open	PCU	○			
	03	Non-contact thermistor upper main compensation thermistor open	PCU	○			
H3	00	Fusing section high temperature trouble (TH_UM)	PCU	○			
	02	Fusing section high temperature trouble (TH_US)	PCU	○			
H4	00	Fusing section low temperature trouble (TH_UM_AD2)	PCU	○			
	02	Fusing section low temperature trouble (TH_US)	PCU	○			
	30	Upper main thermistor differential input abnormality (TH_UM)	PCU	○			
H5	01	5 times continuous POD1 not-reach jam	PCU	○			
H7	10	Recovery error from low fuser temp. (TH_UM_AD2)	PCU	○			
	12	Recovery error from low fuser temp. (TH_US)	PCU	○			
L1	00	Scanner feed trouble	SCU	○			
L2	10	CCD cooling fan motor trouble	SCU			○	
L3	00	Scanner return trouble	SCU	○			
L4	01	Main motor lock trouble	PCU			○	
	02	Main motor 2 lock trouble	PCU			○	
	03	Fusing motor lock trouble	PCU			○	
	04	Toner hopper motor/Developing motor trouble	PCU			○	
	14	Toner cartridge motor lock trouble	PCU			○	
	17	Drum motor lock trouble (K)	PCU			○	
	27	Decurler motor lock trouble	PCU			○	
	28	Sub power source cooling fan motor	MFP			○	
	30	Controller fan motor	MFP			○	
	31	Machine heat-exhaust fan trouble	PCU			○	
	32	Power source cooling fan trouble	PCU			○	
	34	Polygon cooling fan trouble	PCU			○	
	36	Toner suction fan trouble	PCU			○	
	38	Reverse transport cooling fan trouble	PCU			○	
	39	Reverse cooling fan trouble	PCU			○	
	40	Ozone fan motor 1 trouble	PCU			○	
	41	Ozone fan motor 2 trouble	PCU			○	
	43	Paper cooling fan trouble	PCU			○	
	46	Development cooling fan 1 trouble	PCU			○	
	47	Power cooling fan 3 trouble	PCU			○	
	48	ADU paper cooling fan 1 trouble	PCU			○	
	49	ADU paper cooling fan 2 trouble	PCU			○	
	50	Process suction fan 1 trouble	PCU			○	
	51	Process cooling fan 2 trouble	PCU			○	
	52	Process cooling fan 3 trouble	PCU			○	
	53	Process cooling fan 4 trouble	PCU			○	
	54	PS cooling fan trouble	PCU			○	
	55	Process cooling fan trouble	PCU			○	
58	Process section peripheral fan 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 MFPC PWB/Mother board	MFP			○	
PC	-	Personal counter not detected	MFP	○			
U1	01	Battery trouble	MFP			○	
U2	00	MFP EEPROM read/write error	MFP			○	
	05	Erroneous detection of account management data	MFP			○	
	11	MFPC PWB EEPROM counter check sum error	MFP			○	
	30	MFPC PWB and PCU PWB manufacturing No. data inconsistency	MFP			○	
	40	SD card system storage data area error	MFP			○	
	41	HDD system storage data area error	MFP			○	
	42	Machine adjustment data (system storage data area) error	MFP			○	
	50	HDD user authentication data check sum error	MFP			○	
	60	Watermark 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 trouble	SCU			○	

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	Supply
Main code	Sub code						
U5	30	Document feed unit tray lift up trouble	SCU			○	
	31	Document feed unit tray lift down trouble	SCU			○	
U6	09	LCC lift motor trouble	PCU		○		
	20	LCC control PWB - PCU PWB communication error	PCU		○		
	21	LCC transport motor trouble	PCU		○		
	22	LCC 24V power abnormality	PCU		○		
	23	A3 LCC tray descending trouble (Reverse winding detection) (A3 LCC)	PCU		○		
	24	A3 LCC tray lock detection trouble	PCU		○		
	29	LCT1 lift trouble	PCU		○		
	33	LCT2 reverse winding detection trouble	PCU		○		
	34	LCT2 lock detection trouble	PCU		○		
	39	LCT2 lift trouble	PCU		○		
	43	LCT3 reverse winding detection trouble	PCU		○		
	44	LCT3 lock detection trouble	PCU		○		
	49	LCT3 lift trouble	PCU		○		
	51	LCC - Main unit combination trouble	PCU		○		
	53	Communication trouble between LCT's	PCU		○		
	54	Option installation combination trouble	PCU		○		
	63	Manual feed tray descending trouble	PCU		○		
	68	Manual feed tray paper feed position abnormality	PCU		○		
	69	Manual feed tray lift trouble	PCU		○		
	73	LCT4 reverse winding detection trouble	PCU		○		
	74	LCT4 lock detection trouble	PCU		○		
	79	LCT4 lift motor trouble	PCU		○		
	81	Power unit cooling fan motor trouble (1 series)	PCU		○		
	82	EEPROM trouble (1 series)	PCU		○		
	83	Room temperature thermistor breakdown (1 series)	PCU		○		
	84	Room humidity thermistor breakdown (1 series)	PCU		○		
	85	Transport motor 1 trouble (2 series)	PCU		○		
	86	24V power trouble (2 series)	PCU		○		
	87	Power unit cooling fan motor trouble (2 series)	PCU		○		
	88	EEPROM trouble (2 series)	PCU		○		
89	Room temperature thermistor breakdown (2 series)	PCU		○			
90	Room humidity thermistor breakdown (2 series)	PCU		○			
U7	50	MFPC PWB - Vendor machine communication error	MFP			○	
	51	Vendor machine error	MFP			○	
U9	01	Touch panel trouble	SCU			○	
UC	02	IPD/DOCC-ASIC (CPT function) trouble	SCU			○	
	12	IPD/DOCC-ASIC (CPT function) trouble [DSPF detection]	SCU			○	
	20	IPD/DOCC-ASIC (DOCC function) trouble	SCU			○	
	30	IPD/DOCC-ASIC (DOCC function) trouble [DSPF detection]	SCU			○	
UE	10	LCT1 suction fan motor trouble	PCU		○		
	11	LCT1 exhaust fan motor trouble	PCU		○		
	12	LCT1 warm air heater thermistor open	PCU		○		
	13	LCT1 warm air heater thermistor low temperature trouble	PCU		○		
	14	LCT1 warm air heater thermistor high temperature trouble	PCU		○		
	15	LCT1 warm air outlet port thermistor open	PCU		○		
	16	LCT1 warm air outlet port thermistor low temperature	PCU		○		
	17	LCT1 warm air outlet port thermistor high temperature	PCU		○		
	18	LCT1 Room temperature thermistor trouble	PCU		○		
	19	LCT1 Room humidity thermistor trouble	PCU		○		
	20	LCT2 suction fan motor trouble	PCU		○		
	21	LCT2 exhaust fan motor trouble	PCU		○		
	22	LCT2 warm air heater thermistor open	PCU		○		
	23	LCT2 warm air heater thermistor low temperature trouble	PCU		○		
	24	LCT2 warm air heater thermistor high temperature trouble	PCU		○		
	25	LCT2 warm air outlet port thermistor open	PCU		○		
	26	LCT2 warm air outlet port thermistor low temperature	PCU		○		
	27	LCT2 warm air outlet port thermistor high temperature	PCU		○		
	28	LCT2 Room temperature thermistor trouble	PCU		○		
	29	LCT2 Room humidity thermistor trouble	PCU		○		
	30	LCT3 suction fan motor trouble	PCU		○		
	31	LCT3 exhaust fan motor trouble	PCU		○		
	32	LCT3 warm air heater thermistor open	PCU		○		
	33	LCT3 warm air heater thermistor low temperature trouble	PCU		○		
	34	LCT3 warm air heater thermistor high temperature trouble	PCU		○		
	35	LCT3 warm air outlet port thermistor open	PCU		○		
	36	LCT3 warm air outlet port thermistor low temperature	PCU		○		

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	Supply
Main code	Sub code						
UE	37	LCT3 warm air outlet port thermistor high temperature	PCU		○		
	38	LCT3 Room temperature thermistor trouble	PCU		○		
	39	LCT3 Room humidity thermistor trouble	PCU		○		
	40	LCT4 suction fan motor trouble	PCU		○		
	41	LCT4 exhaust fan motor trouble	PCU		○		
	42	LCT4 warm air heater thermistor open	PCU		○		
	43	LCT4 warm air heater thermistor low temperature trouble	PCU		○		
	44	LCT4 warm air heater thermistor high temperature trouble	PCU		○		
	45	LCT4 warm air outlet port thermistor open	PCU		○		
	46	LCT4 warm air outlet port thermistor low temperature	PCU		○		
	47	LCT4 warm air outlet port thermistor high temperature	PCU		○		
	48	LCT4 Room temperature thermistor trouble	PCU		○		
49	LCT4 Room humidity thermistor trouble	PCU		○			

G. Details of error codes and countermeasures

A0-01 PCU PWB ROM error

Trouble content	
Section	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. PCU PWB trouble.
Check & Remedy	Use SIM49-1 to perform the firmware version-up procedure again. Replace the PCU PWB.

A0-02 SCU PWB ROM error

Trouble content	
Section	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. SCU PWB trouble.
Check & Remedy	Use SIM49-1 to perform the firmware version-up procedure again. Replace the SCU PWB.

A0-04 Scanner expansion PWB (ACU) (ACRE) ROM error

Trouble content	
Section	MFP
Cause	Scanner expansion PWB (ACU) (ACRE) ROM data error. An error occurs during firmware upgrading for some reasons.
Check & Remedy	Perform firmware upgrading again.

A0-17 Inconsistency between the UI data and the CPU firmware version

Trouble content	
Section	MFP
Cause	Combination error between the UI contents data and the CPU UI firmware version.
Check & Remedy	Install the firmware in the all-firmware version-up mode.

A0-20 Conflict firmware and EEPROM data version (MFP)

Trouble content	
Section	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	
Section	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	
Section	SCU
Cause	Inconsistency between the SCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

C1-01 Charger cleaner trouble (K)

Trouble content	
Section	PCU
Cause	The main charger unit (K) is not installed properly. There is an abnormality in the main charger unit (K). Connector connection trouble of the drum unit (K) HP sensor, the discharge lamp, or the after-transfer discharge lamp. Harness disconnection of the drum unit (K) HP sensor, the discharge lamp, or the after-transfer discharge lamp. HP sensor dirt. Charger cleaner motor (K) trouble. PCU PWB connector connection trouble/PWB trouble.
Check & Remedy	Use SIM6-4 to check the operation of the charger cleaner. Check disconnection of the main charger unit./ Replace. Check for disconnection of the connector of the drum unit (K) HP sensor, the discharge lamp, and the after-transfer discharge lamp. Check the harness of the drum unit (K) HP sensor, the discharge lamp, and the after-transfer discharge lamp. (Since the earth wire is common to them, check the three positions.) Clean the HP sensor. Check disconnection of the PCU PWB connector./ Replace PWB. Replace the charger cleaner motor (K).

C1-10 Main charger trouble (Monochrome)

Trouble content	
Section	PCU
Cause	The main charger unit (K) is not installed properly. There is an abnormality in the main charger unit (K). Disconnection of the high voltage PWB connector. Breakage of the high voltage harness. 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 high voltage PWB. Replace the PCU PWB.

C4-20 Transfer high voltage output trouble

Trouble content	When the transfer output is delivered, the output voltage exceeds the specified level.
Section	PCU
Cause	Transfer unit abnormality. Transfer unit insertion trouble. TC output harness disconnection, breakage. Transfer unit separation operation trouble. OPC drum abnormality (Does not rotate.) High voltage PWB trouble. PCU PWB trouble. PCU PWB - high voltage PWB harness disconnection, breakage.
Check & Remedy	Replace the transfer unit. Reinsert the transfer unit. Check or replace the TC output harness. Replace the high voltage PWB. Replace the PCU PWB. Check the harness between the PCU PWB and the high voltage PWB, and replace as needed.

E6-10 DSPF shading error (Black correction)

Trouble content	
Section	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	
Section	SCU
Cause	Installation error of the CCD unit harness. Copy lamp lighting trouble. Dirt on the mirror, the lens, or the reference white plate. CCD unit trouble. DSPF PWB trouble. Shading SIM not executed / Shading ROM abnormality.
Check & Remedy	Check the installing state of the harness the CCD unit. Check the installing state of the harness to the copy lamp unit. Clean the mirror, the lens, or the reference white plate. Check the CCD unit. Check the DSPF PWB.

E6-14 DSPF CCD-ASIC error

Trouble content	
Section	SCU
Cause	DSPF PWB trouble.
Check & Remedy	Check the DSPF PWB.

E7-01 MFP image data error

Trouble content	
Section	MFP
Cause	Image data transfer error in the MFPC PWB. MFPC PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFPC PWB. Check or replace the MFPC PWB.

E7-02 HDD trouble when the mirroring kit is installed

Trouble content	
Section	MFP
Cause	When installing the mirroring kit, the HDD of the machine or the HDD of the mirroring kit breaks down or connection fails. • Defective installation of the mirroring kit • Breakdown of the HDD of the mirroring kit • Defective connection between the HDD and the mirroring kit harness • MFPC PWB trouble
Check & Remedy	• Use SIM62-20 to check the trouble. • Check installation of the mirroring kit (connector and harness), and replace if necessary. • Replace the broken HDD. • Replace the mirroring kit. • Replace the MFPC PWB.

E7-03 HDD trouble (When the mirroring kit is not installed)

Trouble content	
Section	MFP
Cause	Connector, harness connection trouble in the MFPC PWB and HDD. HDD (error file management area) data abnormality (FAT breakage). MFPC PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFPC PWB and HDD. Use SIM62-2, 3 to check read/write operations of the HDD. Replace the HDD. Check or replace the MFPC PWB.
Cause (When the mirroring kit is not installed)	RAID PWB trouble. A HDD which has been used for mirroring is installed. Both HDD's go into trouble under the use environment of mirroring.
Check & Remedy (When the mirroring kit is installed)	Check the RAID PWB, and replace if necessary. Replace the HDD. (For details, refer to the HDD and RAID PWB replacement procedures under mirroring environment.)

E7-03 HDD trouble (When the mirroring kit is installed)

Trouble content	
Section	MFP
Cause	Connector, harness connection trouble in the MFPC PWB and HDD. HDD (error file management area) data abnormality (FAT breakage). MFPC PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFPC PWB and HDD. Use SIM62-2, 3 to check read/write operations of the HDD. Replace the HDD. Check or replace the MFPC PWB.
Cause (When the mirroring kit is installed)	RAID PWB trouble. A HDD which has been used for mirroring is installed. Both HDD's go into trouble under the use environment of mirroring.
Check & Remedy (When the mirroring kit is installed)	Check the RAID PWB, and replace if necessary. Replace the HDD. (For details, refer to the HDD and RAID PWB replacement procedures under mirroring environment.)

E7-04 HDD-ASIC error

Trouble content	
Section	MFP
Cause	HDD-ASIC trouble. (MFPC PWB trouble.) An error occurs in the HDD-ASIC self test when booting.
Check & Remedy	Check or replace the MFPC PWB.

E7-07 SD card error

Trouble content	
Section	MFP
Cause	SD card trouble or contact error MFPC PWB trouble.
Check & Remedy	Replace the SD card. Check the SD card socket. Replace the MFPC PWB.

E7-10 Shading error (Black correction)

Trouble content	
Section	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	
Section	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. Scanner lamp drive PWB 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. Check or replace the scanner lamp. Check or replace the scanner lamp drive PWB. Clean or replace the mirror, the lens, and the reference white board. Check or replace the CCD unit. Check or replace the SCU PWB.

E7-14 CCD-ASIC error

Trouble content	
Section	SCU
Cause	SCU PWB trouble.
Check & Remedy	Check the SCU PWB. Replace the SCU PWB.

E7-20 LSU laser detection and deterioration error (K)

Trouble content	
Section	PCU
Cause	Laser optical axis misalignment Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check or replace the LSU control PWB. Check connection of the LSU harness. Replace the LSU.

E7-21 LSU laser deterioration error

Trouble content	
Section	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check or replace the LSU control PWB. Check connection of the LSU harness. Replace the LSU.

E7-24 LSU LD driver trouble

Trouble content	The LSU LD is lighted, the initialization process of the LD driver is not performed normally.
Section	PCU
Cause	Disconnection or improper connection of the harness and the connector between the LD PWB and the LSU control PWB. LD PWB/LSU control PWB trouble.
Check & Remedy	Use SIM61-01 to check the operations of the LSU. Check the harness and the connector between the LD PWB and the LSU control PWB. Replace the LD PWB/LSU control PWB.

E7-28 LSU - PCU connection error

Trouble content	
Section	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 trouble. LSU control PWB trouble. LSU trouble.
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU control PWB. Replace the LSU control PWB. Replace the PCU PWB. Replace the LSU.

E7-29 LSU ASIC frequency error

Trouble content	
Section	PCU
Cause	Oscillation abnormality of the external oscillator used in the LSU ASIC. LSU ASIC abnormality on the LSU control PWB.
Check & Remedy	Replace the LSU control PWB.

E7-35 Communication trouble with the CIS-ASIC

Trouble content	Communication trouble (clock synchronization) between the CPU and the CIS-ASIC in the PCU PWB
Section	PCU
Cause	Connector/harness trouble between the PCU PWB and the PEDCis PWB. PEDCis PWB trouble, PCU PWB trouble. PS unit drawer connector insertion trouble.
Check & Remedy	Check the harness between the PCU PWB and the PEDCis PWB. Check the PEDCis PWB, and the PCU PWB. If the trouble is not canceled, replace the PEDCis PWB and the PCU PWB.

E7-36 CIS-ASIC black level detection abnormality

Trouble content	The black reference plate scan level when the lamp is lighted is abnormal.
Section	PCU
Cause	The CIS unit is not installed properly. Harness trouble between the CIS unit and the PEDCis PWB. CIS unit trouble, PEDCis PWB trouble. Dirt on the reference black plate.
Check & Remedy	Check the installing state of the CIS unit Check the harness between the CIS unit and the PEDCis PWB. Clean the reference black plate. If the trouble is not canceled, replace the CIS unit and the PEDCis PWB.

E7-37 CIS-ASIC white level detection abnormality

Trouble content	The white reference plate scan level when the lamp is lighted is abnormal.
Section	PCU
Cause	The CIS unit is not installed properly. Harness trouble between the CIS unit and the PEDCis PWB. CIS unit trouble, PEDCis PWB trouble. Dirt on the reference white plate.
Check & Remedy	Check the installing state of the CIS unit Check the harness between the CIS unit and the PEDCis PWB. Clean the reference white plate. If the trouble is not canceled, replace the CIS unit and the PEDCis PWB.

E7-42 Image data trouble (Scanner expansion PWB (ACRE) ASIC)

Trouble content	
Section	MFP
Cause	An image data error occurs. An image data send error occurs. Scanner expansion PWB (ACRE) connection trouble. Scanner expansion PWB (ACRE) trouble. MFPC PWB trouble.
Check & Remedy	Check connection of the scanner expansion PWB (ACRE). Check the scanner expansion PWB (ACRE), and replace if necessary. Check the MFPC PWB, and replace if necessary.

E7-46 Image data decode error (Scanner expansion PWB (ACRE) ASIC)

Trouble content	
Section	MFP
Cause	A decode error occurs while high compression PDF images are made. (garbled data) Scanner expansion PWB (ACRE) connection trouble. Scanner expansion PWB (ACRE) trouble. MFPC PWB trouble.
Check & Remedy	Check connection of the scanner expansion PWB (ACRE). Check the scanner expansion PWB (ACRE), and replace if necessary. Check the MFPC PWB, and replace if necessary.

E7-47 Combination error between MFP and ACRE firmware (ACRE ASIC)

Trouble content	Unknown ACRE board recognition information is detected by MFP
Section	MFP
Cause	ACRE board whose firmware is not compatible with MFP is connected.
Check & Remedy	Check the kind and the version of the firmware. Use SIM49-1 or SIM49-10 to perform the firmware version-up procedure

E7-48 Scanner expansion PWB (ACRE) ASIC memory error

Trouble content	<ul style="list-style-type: none"> • DDR calibration error • DIMM insertion trouble, etc.
Section	MFP
Cause	Scanner expansion PWB (ACRE) DIMM trouble, memory slot trouble. Scanner expansion PWB (ACRE) DIMM insertion trouble. Scanner expansion PWB (ACRE) connection trouble. Scanner expansion PWB (ACRE) trouble. MFPC PWB trouble.
Check & Remedy	Check insertion of the scanner expansion PWB (ACRE) DIMM memory. Check the scanner expansion PWB (ACRE) DIMM memory, and replace if necessary. Check connection of the scanner expansion PWB (ACRE). Check the scanner expansion PWB (ACRE), and replace if necessary. Check the MFPC PWB, and replace if necessary.

E7-49 Water Mark data error

Trouble content	
Section	MFP
Cause	Watermark data trouble. HDD trouble.
Check & Remedy	Use SIM49-5 to upload the watermark data. Replace the HDD.

E7-50 Engine connection trouble

Trouble content	
Section	PCU
Cause	A PWB/firmware/LSU which is not compatible with the machine specifications is detected. PCU PWB trouble LSU trouble
Check & Remedy	Check the kind and the version of the firmware. Check or replace the LSU. Check or replace the PCU PWB.

E7-55 PWB information sum error (engine detection)

Trouble content	EEPROM PWB information sum error
Section	PCU
Cause	EEPROM device trouble. EEPROM device contact trouble. Device access error due to noises.
Check & Remedy	Replace the PWB.

E7-58 PWB information sum error (engine other detection)

Trouble content	LSU PWB information sum error (engine other detection)
Section	PCU
Cause	LSU connection failure PCU PWB trouble. LSU trouble.
Check & Remedy	Replace the LSU control PWB. Replace the PCU PWB. Replace the LSU.

E7-60 Combination error between PWB and firmware (MFPC PWB detection)

Trouble content	
Section	MFP
Cause	A PWB/firmware which is not compatible with the machine specifications is detected in the MFPC PWB. MFPC PWB trouble.
Check & Remedy	Check the kind and the version of the firmware. Check or replace the MFPC PWB.

E7-61 Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection)

Trouble content	
Section	MFP
Cause	Combination error between the MFPC PWB and the PCU PWB. MFPC PWB trouble. PCU PWB trouble.
Check & Remedy	Check the combination between the MFPC PWB and the PCU PWB. Replace the MFPC PWB. Replace the PCU PWB.

E7-62 Controller connection trouble (scanner)

Trouble content	Controller connection trouble. Compatibility trouble between the controller and the scanner.
Section	MFP
Cause	Combination error between the controller PWB and the engine.
Check & Remedy	Check the controller PWB. Check combination between the controller PWB and the scanner.

E7-70 Scanner connection trouble

Trouble content	Unknown PWB identification information is detected on the SCU PWB
Section	SCU
Cause	The PWB /firmware which is not supported by the machine specifications is connected. SCU PWB trouble. DSPF PWB trouble.
Check & Remedy	Check the firmware kind and the version. Check the SCU PWB. Check the DSPF PWB.

E7-71 DSPF connection trouble

Trouble content	An unknown PWB identification information is detected in the DSPF PWB/ combination abnormality with the SCU PWB
Section	SCU
Cause	PWB / firmware which does not support the machine specifications is connected.
Check & Remedy	Firmware kind / Version check.

E7-80 MFP - SCU PWB communication error

Trouble content	
Section	MFP
Cause	SCU PWB - MFPC PWB connection trouble. SCU PWB trouble. MFPC PWB trouble.
Check & Remedy	Check connection of the SCU PWB and the MFPC PWB. Check the ground. Replace the SCU PWB. Replace the MFPC PWB.

E7-90 MFP - PCU PWB communication error

Trouble content	
Section	MFP
Cause	PCU PWB - MFPC PWB connection trouble. PCU PWB trouble. MFPC PWB trouble.
Check & Remedy	Check connection of the PCU PWB and the MFPC PWB. Check the ground. Replace the PCU PWB. Replace the MFPC PWB.

E7-91 FAX reception image data error

Trouble content	An error of FAX reception image data process occurs.
Section	MFP
Cause	Image data process abnormality HDD trouble SD card trouble or contact error Image compression data corruption MFPC PWB trouble DIMM memory trouble or contact error FAX control PWB trouble
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the HDD. Replace or check installation of the SD card. Replace the MFPC PWB. Replace or check installation of the DIMM memory. Replace the FAX control PWB.

E7-92 Copy image data error

Trouble content	An error of copy image data process occurs. (In Non ERDH)
Section	MFP
Cause	Image data process abnormality HDD trouble Image compression data corruption MFPC PWB trouble DIMM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the HDD. Replace the MFPC PWB. Replace or check installation of the DIMM memory.

E7-93 Copy, image send, filing, print image data process error

Trouble content	An image data process error occurs in the following operation mode: <ul style="list-style-type: none"> • Copy (in ERDH) • Copy composing system function (Water mark) • When in image send • When filing documents • When displaying the preview • When printing with the GDI/PCL printer • Copy composing system function (Water mark)
Section	MFP
Cause	Image data process abnormality HDD trouble Image compression data corruption MFPC PWB trouble DIMM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the HDD. Replace the MFPC PWB. Replace or check installation of the DIMM memory.

E7-94 Image file data process error (when importing file data)

Trouble content	File image process error (backup restore error) when importing filing data
Section	MFP
Cause	Image data process abnormality HDD trouble Image compression data corruption MFPC PWB trouble DIMM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the HDD. Replace the MFPC PWB. Replace or check installation of the DIMM memory.

E7-95 Printer PWB DIMM memory check error

Trouble content	SOC DIMM memory access trouble
Section	MFP
Cause	Memory data corruption occurs MFPC PWB trouble DIMM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the MFPC PWB. DIMM memory socket check Replace the DIMM memory.

E7-96 MFPC PWB DIMM memory check error

Trouble content	MFPC PWB DIMM memory access trouble
Section	MFP
Cause	Memory data corruption occurs MFPC PWB trouble DIMM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the MFPC PWB. DIMM memory socket check Replace the DIMM memory.

E7-A0 LSU EEPROM/LD driver read/write error (K)

Trouble content	Write error in write sequence of the serial EEPROM/LD driver for Black
Section	PCU
Cause	EEPROM/LD driver trouble. EEPROM/LD driver access circuit trouble.
Check & Remedy	Check connection of the connector and the harness of the LD PWB and the PCU PWB. Replace the PCU PWB. If the above remedies cannot delete the trouble, replace the LSU.

E7-A5 Installation error of HDD which was used in the mirroring kit

Trouble content	When a HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit, its operation is restricted in order to prevent against malfunction.
Section	MFP
Cause	A HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit.
Check & Remedy	Replace the HDD with one which has not been used in the mirroring kit.

E7-A6 Compact flash memory error

Trouble content	
Section	MFP
Cause	Compact flash memory trouble. MFPC PWB trouble. File system control area data trouble.
Check & Remedy	Replace the compact flash memory. Replace the MFPC PWB.

EE-EC Automatic toner density adjustment error

Trouble content	The sampling level in the automatic toner density adjustment is outside of 120 ± 5 .
Section	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	When in the automatic toner density adjustment, the sample level is less than 67 or the control voltage value exceeds 197.
Section	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-EU Automatic toner density adjustment error (Under toner)

Trouble content	When in the automatic toner density adjustment, the sample level exceeds 154 or the control voltage value is less than 49.
Section	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.

F0-03 Finisher paper exit roller lift motor section abnormality (FNM110)

Trouble content	Finisher paper exit roller lifting operation abnormality.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit roller lift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-08 Finisher stapler shift motor section abnormality (FNM107)

Trouble content	The shift operation of the finisher stapler is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the stapler shift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-10 Finisher staple motor section abnormality (FNM115)

Trouble content	The operation of the finisher staple is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-11 Finisher bundle exit motor section abnormality (FNM116)

Trouble content	The grip expansion arm drive motor of the finisher for staple bundle exit is abnormal. HP sensor abnormality.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, HP sensor breakdown, disconnection of harness or connector.
Check & Remedy	Use SIM3-3 to check the operation of the gripper arm motor (FNM116). Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F0-14 Finisher paper rear edge falling motor section abnormality (FNM113)

Trouble content	The rear edge falling operation in the staple compiler of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the rear edge falling motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-15 Finisher tray lift motor section abnormality (FNM106)

Trouble content	The operation of the lift motor for the upper and the lower trays of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, area sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the upper tray lift motor and the lower tray lift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, and motor, and the sensor part.

F0-18 Finisher rear edge hold motor section abnormality (FNM118)

Trouble content	The operation of the paper hold arm in the staple compiler of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper hold motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-19 Finisher paper alignment motor F section abnormality (FNM108)

Trouble content	The operation of the front alignment plate in the staple compiler of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor F. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-20 Finisher paper alignment motor R section abnormality (FNM109)

Trouble content	The operation of the rear alignment plate in the staple compiler of the finisher.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor R. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-23 Shutter trouble (FNCL102)

Trouble content	The operation of the shutter open/close in the paper exit section.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the shutter clutch. Check connection from the control PWB to the clutch and the sensor. Replace the control PWB, the clutch, and the sensor part.

F0-25 Finisher paper transport roller lift motor section abnormality (FNM119)

Trouble content	The separation operation of the transport roller in the buffer section of the finisher or the path select operation of the flapper is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper transport roller lift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-28 Finisher paper alignment roller lift motor section abnormality (FNM112)

Trouble content	The lifting operation of the paper takeup roller arm in the staple compiler of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment roller lift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-29 Finisher PWB cooling fan abnormality (FNFAN102)

Trouble content	The operation of the PWB cooling fan in the finisher is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-3 to check the operation of the control PWB cooling fan. Check connection from the control PWB to the motor. Replace the control PWB and the fan motor.

F0-30 Communication trouble between the finisher and the saddle

Trouble content	Communication trouble between the finisher and the saddle No response for the command send from the saddle unit
Section	PCU
Cause	Noise on the communication line, control PWB trouble, disconnection of connector or harness.
Check & Remedy	Turn OFF/ON the power. Check the connector between the finisher and the saddle. Replace the control PWB of the saddle unit.

F0-31 Finisher saddle folding motor section abnormality (FSM206)

Trouble content	Saddle unit folding roller operation abnormality
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper folding motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-32 Finisher relay unit transport motor section abnormality (PIM301)

Trouble content	The operation of the paper transport in the paper relay unit of the finisher is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-3 to check the operation of the relay paper transport motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB and the motor.

F0-33 Finisher punch shift motor section abnormality (FCM101)

Trouble content	The horizontal registration shift operation of the punch unit in the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the punch shift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-34 Finisher punch motor section abnormality (FCM102)

Trouble content	The punching operation of the punch unit in the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the punch motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-37 Finisher backup RAM trouble

Trouble content	Data cannot be written into the backup RAM. The red values are abnormal.
Section	PCU
Cause	Finisher control PWB trouble, EEPROM chip breakdown.
Check & Remedy	Replace the finisher control PWB.

F0-40 Communication trouble between the finisher saddle and the trimmer

Trouble content	Communication trouble between the saddle unit and the trimmer unit. When a command is sent from the saddle unit to the trimmer unit, no response is made by the trimmer unit.
Section	PCU
Cause	Noise on the communication line, control PWB trouble, disconnection of connector or harness.
Check & Remedy	Turn OFF/ON the power. Check the connector between the saddle and the trimmer unit. Replace the control PWB of the saddle unit. Replace the control PWB of the trimmer unit.

F0-41 Finisher saddle lead edge stopper motor section abnormality (FSM203)

Trouble content	The operation of the finisher saddle unit lead edge stopper motor is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle lead edge stopper motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-42 Finisher saddle folding roller guide motor section abnormality (FSM204)

Trouble content	The operation of the saddle unit folding roller guide is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle folding roller guide motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-43 Finisher saddle alignment motor section abnormality (FSM212)

Trouble content	The jogger shift operation in the staple compiler of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper alignment motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-44 Finisher saddle rear edge hold motor section abnormality (FSM210)

Trouble content	The operation of the rear edge hold member of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle rear edge hold motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-45 Finisher saddle staple motor section abnormality (FSM209)

Trouble content	The staple operation of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-46 Finisher saddle rear edge shift motor section abnormality (FSM211)

Trouble content	The operation of the rear edge shift motor of the finisher saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle rear edge shift motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-47 Finisher saddle flap motor section abnormality (FSM213)

Trouble content	The operation of the rear edge flap unit of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle flap motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-48 Finisher saddle push motor section abnormality (FSM205)

Trouble content	The pushing operation of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle push motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-49 Finisher saddle separation motor section abnormality (FSM214)

Trouble content	The operation of the takeup separation roller of the saddle unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the saddle separation motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-51 Finisher trimmer cutter motor abnormality (FTM106)

Trouble content	The cutter operation of the trimmer unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer cutter motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-52 Finisher trimmer registration motor section abnormality (FTM102)

Trouble content	The operation of the registration taking unit of the trimmer unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer registration motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-53 Finisher trimmer inlet port separation motor abnormality (FTM103)

Trouble content	The separation operation of the inlet port roller of the trimmer unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer inlet port separation motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-54 Finisher trimmer paper exit separation motor section abnormality (FTM104)

Trouble content	The separation operation of the paper exit roller of the trimmer unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer paper exit separation motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-55 Finisher trimmer bundle press motor section abnormality (FTM105)

Trouble content	The nip and separation operations of the bundle press roller of the trimmer unit are abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer bundle press motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-56 Paper remaining trouble in the finisher trimmer

Trouble content	Paper bundle remained in the trimmer is not discharged by the automatic paper exit operation.
Section	PCU
Cause	Trimmer inlet port sensor breakdown The paper bundle is bent and cannot be transported.
Check & Remedy	Use SIM3-3 to check the operation of the trimmer transport motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part. Check the paper bundle can be transported or not.

F0-70 Communication trouble between the finisher and the folding unit

Trouble content	Communication trouble between the finisher and the folding unit. No response for a command from the folding unit.
Section	PCU
Cause	Noise on the communication line, control PWB trouble, disconnection of connector or harness.
Check & Remedy	Turn OFF/ON the power. Check connection between the finisher and the folding unit. Replace the control PWB of the folding unit.

F0-71 Folding unit lead edge holding guide motor section abnormality (FLM10)

Trouble content	The operations of the folding unit lead edge holding guide is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the folding unit lead edge holding guide motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-72 Folding unit backup RAM trouble

Trouble content	Data cannot be written into the backup RAM of the folding unit. The red values are abnormal.
Section	PCU
Cause	Folding unit control PWB trouble, EEPROM chip breakdown.
Check & Remedy	Replace the folding unit control PWB.

F0-73 Folding unit power fan abnormality

Trouble content	Cooling fan abnormality in the power unit section of the folding unit
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F0-74 Folding unit folding tray paper exit motor section abnormality (FLM14)

Trouble content	The paper exit operation to the folding unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the folding unit folding tray paper exit motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-75 Folding unit upper stopper motor section abnormality (FLM8)

Trouble content	The operation of the upper stopper of the folding unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the folding unit upper stopper motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-76 3-fold stopper motor section in the folding unit is abnormal (FLM9)

Trouble content	The operation of the 3-fold stopper in the folding unit is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-41 to check the operation of the 3-fold stopper motor in the folding unit. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-77 Folding unit transport motor section abnormality (FLM11)

Trouble content	The folding and transport operations of the folding unit are abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-41 to check the operation of the folding unit transport motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor.

F0-80 Finisher power cooling fan motor abnormality (FNFAN101)

Trouble content	The operation of the cooling fan in the power unit section of the finisher is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F0-81 Finisher upper tray fan abnormality (FNFAN103)

Trouble content	The operation of the cooling fan in the upper tray of the finisher is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-3 to check the operation of the upper tray fan. Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F0-82 Finisher lower tray fan abnormality (FNFAN104)

Trouble content	The operation of the cooling fan in the lower tray of the finisher is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-3 to check the operation of the lower tray fan. Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F0-83 Finisher paper guide motor section abnormality (FNM120)

Trouble content	The operation of the paper lead edge guide unit at the paper exit port of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the paper guide motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-84 Finisher grip section abnormality (FNM116)

Trouble content	The bundle grip operation when discharging paper bundle from the staple compiler of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the gripper motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F0-86 Finisher discharged paper hold motor section abnormality (FNM118)

Trouble content	The operation of the paper hold lever at the paper exit port of the finisher is abnormal.
Section	PCU
Cause	Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.
Check & Remedy	Use SIM3-3 to check the operation of the discharged paper hold motor. Check connection from the control PWB to the motor and the sensor. Replace the control PWB, the motor, and the sensor part.

F1-00 Finisher - PCU PWB communication error

Trouble content	
Section	PCU
Cause	Connection trouble of the connector and the harness between the finisher and the PCU PWB. Finisher control PWB trouble. PCU PWB trouble.
Check & Remedy	Check the connector and the harness between the finisher and the PCU PWB. Replace the finisher control PWB. Replace the PCU PWB.

F1-50 Main unit - Finisher combination error

Section	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.

F1-60 Communication trouble between peripheral devices (Inserter detection)

Trouble content	Communication abnormality between the units connected to the downstream of the inserter. No response for a command from the inserter. Motor abnormality.
Section	PCU
Cause	Noise on the communication line Control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector with the downstream units of the inserter. Replace the control PWB of the downstream units of the inserter.

F1-64 No. 1 pickup motor trouble

Trouble content	Abnormality of the paper feed roller driving motor in the upper side paper feed section of the inserter
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-31 to check the operation of the No. 1 pickup motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-65 No. 2 pickup motor trouble

Trouble content	Abnormality of the paper feed roller driving motor in the lower side paper feed section of the inserter
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-31 to check the operation of the No. 2 pickup motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-66 No. 1 lift motor trouble

Trouble content	Abnormality of the tray lift-up driving motor in the upper side paper feed section of the inserter
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-31 to check the operation of the No. 1 lift motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-67 No. 2 lift motor trouble

Trouble content	Abnormality of the tray lift-up driving motor in the lower side paper feed section of the inserter
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-31 to check the operation of the No. 2 lift motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-90 Communication trouble between the decurler and the downstream units.

Trouble content	Communication trouble of the decurler and the units connected to the downstream of the decurler.
Section	PCU
Cause	Noise on the communication line, control PWB trouble, disconnection of connector or harness.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector between main unit and decurler. Check connection of the connector between the decurler unit and the downstream units of the decurler. Replace the decurler control PWB. Replace the control PWB of the downstream units of the decurler.

F1-96 Decurler transport motor abnormality (DCM100)

Trouble content	The transport operation of the decurler transport motor is abnormal.
Section	PCU
Cause	Motor driver IC overcurrent detection, overheat detection.
Check & Remedy	Use SIM3-51 to check the operation of the decurler transport motor. Replace the control PWB.

F1-97 Decurler unit fan 1 (Upper cooling fan) abnormality (DCFAN100)

Trouble content	The operation of the fan in the decurler unit is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-51 to check the operation of the decurler unit fan 1 (Upper cooling fan). Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F1-98 Decurler unit fan 2 (Lower cooling fan) abnormality (DCFAN103)

Trouble content	The operation of the fan in the decurler unit is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-51 to check the operation of the decurler unit fan 2 (Lower cooling fan). Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F1-99 Decurler unit fan 3 (Transport motor cooling fan) abnormality (DCFAN101)

Trouble content	The operation of the fan in the decurler unit is abnormal.
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.
Check & Remedy	Use SIM3-51 to check the operation of the decurler unit fan 3 (Transport motor cooling fan). Check connection from the control PWB to the fan motor. Replace the control PWB. Replace the fan motor.

F2-22 Discharge lamp trouble (K)

Trouble content	When the discharge lamp open sensor is kept ON for a certain time from turning ON the discharge lamp, it is detected as a trouble.
Section	PCU
Cause	Contact trouble between the discharge lamp PWB (K) and the PCU PWB. Discharge lamp PWB (K) trouble. PCU PWB trouble.
Check & Remedy	Use SIM5-4 to check lighting of the discharge lamp (K) [DL_K]. Check the discharge lamp PWB (K). Check the harness and the connector. Replace the PCU PWB.

F2-33 Surface potential sensor trouble

Trouble content	Front surface potential sensor open or short, sensor detection trouble
Section	PCU
Cause	Sensor dirt, sensor trouble. Surface potential sensor harness connection trouble. PCU PWB trouble. Drum surface state abnormality. Grid high voltage output trouble. Drum charging abnormality due to dirt on the MC grid. The drum life is reached.
Check & Remedy	Check connection of the harness and the connector of the sensor. Check the PCU PWB. Check for dirt on the MC grid. Clean or replace as needed. Check the drum surface condition. Use Sim. 22-1 to check the drum life meter. If it is 100%, it means that the drum life is reached, and maintenance must be performed. Use Sim. 44-3 to execute DARK V0 and check the operation. Check the grid high voltage output.

F2-39 Process temperature sensor trouble

Trouble content	
Section	PCU
Cause	Process thermistor trouble. Process thermistor harness connection trouble. PCU PWB trouble.
Check & Remedy	Replace the process thermistor. Check connection of the process thermistor harness and the connector. Replace the PCU PWB.

F2-40 Toner density sensor trouble (K)

Trouble content	
Section	PCU
Cause	Toner density sensor output abnormality. Sensor connector and harness connection trouble. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Check connection of the sensor connector and the harness. Replace the developing unit. Replace the PCU PWB.

F2-47 Room temperature thermistor trouble

Trouble content	Room temperature thermistor open or short
Section	PCU
Cause	Room temperature thermistor trouble, room temperature thermistor harness connection trouble, PCU PWB trouble.
Check & Remedy	Check connection of the room temperature harness / connector. Check the PCU PWB.

F2-58 Process humidity sensor trouble

Trouble content	
Section	PCU
Cause	Temperature/humidity sensor trouble. Process humidity sensor harness and connector connection trouble PCU PWB trouble.
Check & Remedy	Replace the temperature/humidity sensor. Check connection of the temperature/humidity sensor harness and the connector. Replace the PCU PWB.

F2-59 Room temperature/humidity thermistor trouble

Trouble content	Room temperature humidity sensor open
Section	PCU
Cause	Room temperature humidity sensor trouble, room temperature humidity sensor harness connection trouble, PCU PWB trouble.
Check & Remedy	Check connection of the room temperature humidity sensor harness/connector. Check the PCU PWB.

F2-64 Toner supply operation trouble (K)

Trouble content	
Section	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble. Toner hopper section trouble
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector and harness check. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit. Check the toner hopper section.

F2-70 Improper toner cartridge detection (K)

Trouble content	
Section	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 (K)

Trouble content	
Section	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector and harness trouble between PCU PWB and toner cartridge
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Check the connector and the harness between the PCU PWB and the toner cartridge.

F2-78 Image density sensor adjustment trouble

Trouble content	Before registration, the transfer belt surface is scanned by the image density sensor to adjust the sensor gain so that the output is maintained at a constant level. When, however, the sensor gain is changed, the output level does not fall within the specified range.
Section	PCU
Section	Image density sensor trouble. Connection trouble of the harness between the PCU PWB and the image density sensor. Dirt on the image density sensor, transfer belt cleaning trouble Calibration plate solenoid operation trouble
Section	Check the sensor and the harness Check the operation of the calibration plate solenoid, and check the transfer belt surface conditions. If the trouble is not removed, perform the following procedures depending on the check results. Replace the registration image sensor. Replace the transfer belt. Replace the calibration plate solenoid. Replace the PCU PWB.

F2-91 High density process control high voltage error (K)

Trouble content	When executing the high density process control in the toner cartridge-less production process, the developing bias exceeds 500V.
Section	PCU
Cause	<ul style="list-style-type: none"> Image density sensor trouble, harness connection trouble between the PCU PWB and the image density sensor, dirt on the image density sensor, transfer belt cleaning trouble Developing tank abnormality
Check & Remedy	<ul style="list-style-type: none"> Use SIM44-02 to execute the gain adjustment of the process control sensor. When "Error" is displayed, it may be considered as breakdown. Check the sensor and the harness. When the adjustment is normally completed, check the drum surface and the belt surface. Replace the developing tank.

F3-12 Paper feed tray 1 lift operation trouble

Trouble content	
Section	PCU
Cause	LUD1 is not turned ON within the specified time. CLUD1 sensor trouble. Paper feed tray 1 lift unit trouble. PCU PWB trouble. Sensor harness and connector connection trouble
Check & Remedy	Check connection of the harness and the connector of LUD1. Replace the lift unit. Replace the PCU PWB.

F3-22 Paper feed tray 2 lift operation trouble

Trouble content	LUD2 does not turn ON within the specified time.
Section	PCU
Cause	LUD2 does not turn ON within the specified time. CLUD2 sensor trouble. Paper feed tray 2 lift unit trouble. PCU PWB trouble. Sensor harness and connector connection trouble
Check & Remedy	Check the harness and the connector of LUD2. Replace the lift unit. Replace the PCU PWB.

F3-32 Main body cassette 3 lift trouble

Trouble content	C3LUD does not turn ON within the specified time.
Section	PCU
Cause	C3LUD sensor trouble. Cassette 3 lift motor trouble. Harness connection trouble between the PCU PWB, the lift unit, and the paper feed unit
Check & Remedy	Check the harness and the connector of C3LUD. Check the lift unit.

F3-42 Main body cassette 4 lift trouble

Trouble content	C4LUD does not turn ON within the specified time.
Section	PCU
Cause	C4LUD sensor trouble. Cassette 4 lift motor trouble. Harness connection trouble between the PCU PWB, the lift unit, and the paper feed unit
Check & Remedy	Check the harness and the connector of C4LUD. Check the lift unit.

F6-00 MFPC PWB - FAX communication trouble

Trouble content	MFP - FAX communication establishment error / Framing / Parity / Protocol error
Section	MFP
Case 1	Cause FAX control PWB trouble. Check and Remedy Replace the FAX control PWB.
Case 2	Cause FAX control PWB - MFPC PWB connector and harness trouble Check and Remedy Check the connector and the harness between the FAX control PWB and the MFPC PWB.
Case 3	Cause FAX control PWB - Mother board connector and harness trouble Check and Remedy Check the connector and the harness between the FAX control PWB and the mother board.
Case 4	Cause FAX control PWB ROM trouble / ROM pin breakage Check and Remedy Check the ROM of the FAX control PWB.

F6-01 FAX control PWB EEPROM read/write error

Trouble content	FAX control PWB EEPROM access error (Read and write)
Section	FAX
Case 1	Cause FAX control PWB 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 control PWB EEPROM access circuit trouble Check and Remedy Replace the FAX control PWB.

F9-00 Communication error between the MFPC and Printer controller section.

Trouble content	Booting of the printer section cannot be recognized when booting.
Section	MFP
Cause	MFPC (section) PWB trouble. MFPC (section) PWB - printer (section) PWB connection trouble.
Check & Remedy	Replace the MFPC (section) PWB. Check connection between the MFPC (section) PWB and the printer (section) PWB.

FF-00 Double feed detection trouble (PCU) (105/120 ppm only)

Trouble content	Double feed sensor abnormality detection
Section	PCU
Cause	Double feed sensor abnormality. Harness / circuit trouble related to the double feed sensor. Insertion failure of the drawer connector of the PS unit.
Check & Remedy	Check the circuit related to the double feed sensor and the harness and the connector. Replace the double feed detection PWB and the sensor.

FF-10 Double feed detection trouble (SCU) (105/120 ppm only)

Trouble content	Double feed sensor abnormality detection
Section	SCU
Cause	Double feed sensor abnormality. Harness/circuit trouble related to the double feed sensor.
Check & Remedy	Check the circuit related to the double feed sensor and the harness and the connector. Replace the double feed detection PWB and the sensor.

H2-00 Thermistor open trouble (TH_UM_AD2)

Trouble content	
Section	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness connection trouble Fusing section connector connection trouble Fusing unit not installed
Check & Remedy	Use SIM44-14 to check the state of the thermistor. Replace the thermistor. Replace the PCU PWB. Check connection of the thermistor connector and the harness. Check the connector in the fusing section.

H2-02 Contact thermistor upper sub detection thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble Control PWB trouble Fusing section connector connection trouble AC power trouble Fusing unit not installed.
Check & Remedy	Check connection of the harness and the connector from the thermistor to the control PWB.

H2-03 Non-contact thermistor upper main compensation thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble Control PWB trouble Fusing section connector connection trouble AC power trouble Fusing unit not installed.
Check & Remedy	Check connection of the harness and the connector from the thermistor to the control PWB.

H3-00 Fusing section high temperature trouble (TH_UM)

Trouble content	
Section	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble PCU PWB trouble Thermistor connector and harness connection trouble HL control PWB trouble
Check & Remedy	Use SIM44-14 to check the state of the thermistor. 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 thermistor connector and the harness. Replace the HL control PWB.

H3-02 Fusing section high temperature trouble (TH_US)

Trouble content	
Section	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble PCU PWB trouble Thermistor connector and harness connection trouble HL control PWB trouble
Check & Remedy	Use SIM44-14 to check the state of the thermistor. 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 thermistor connector and the harness. Replace the HL control PWB.

H4-00 Fusing section low temperature trouble (TH_UM_AD2)

Trouble content	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL control PWB trouble. Power unit trouble.
Check & Remedy	Use SIM14 to cancel the trouble. Use SIM44-14 to check the state of the thermistor. Use SIM5-2 to check the flashing operation of the heater lamp. 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 control PWB. Replace the power unit.

H4-02 Fusing section low temperature trouble (TH_US)

Trouble content	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL control PWB trouble. Power unit trouble.
Check & Remedy	Use SIM14 to cancel the trouble. Use SIM44-14 to check the state of the thermistor. Use SIM05-02 to check the flashing operation of the heater lamp. 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 control PWB. Replace the power unit.

H4-30 Upper main thermistor differential input abnormality (TH_UM)

Trouble content	The values of TH_UM_AD1 and TH_UM_AD2 do not exceed the specified value within the specified time from turning ON the HL_UM.
Section	PCU
Cause	HL_UM does not turn on. Thermistor trouble. Harness trouble. PCU PWB trouble
Check & Remedy	Use SIM05-02 to check the flashing operation of the heater lamp. When the heater lamp flashes normally, check the thermistor and its harness. Check the thermistor input circuit section of the PCU PWB. When the lamp does not light up, check for disconnection in the heater lamp and breakage of the thermostat. Check the interlock switch. Check the lamp control circuit of the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H5-01 5 times continuous POD1 not-reach jam

Trouble content	
Section	PCU
Cause	A fusing jam is not canceled completely. (A jam paper remains.) POD1 sensor trouble Fusing unit installation trouble POD1 sensor connector and harness connection trouble PCU PWB trouble Fusing unit, drive section trouble
Check & Remedy	Replace the POD1 sensor. Check installation of the fusing unit. Replace the fusing unit. Check or repair the fusing drive section. Check connection of the POD1 sensor connector and the harness. Replace the PCU PWB. Use SIM14 to cancel the trouble.

H7-10 Recovery error from low fuser temp. (TH_UM_AD2)

Trouble content	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.
Section	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL control PWB trouble. Power unit 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 control PWB. Replace the power unit. Use SIM5-2 to check the flashing operation of the heater lamp.

H7-12 Recovery error from low fuser temp. (TH_US)

Trouble content	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.
Section	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL control PWB trouble. Power unit 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 control PWB. Replace the power unit. Use SIM5-2 to check the flashing operation of the heater lamp.

L1-00 Scanner feed trouble

Trouble content	Scanner feed is not completed within the specified time.
Section	SCU
Cause	Scanner unit trouble. SCU 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.

L2-10 CCD cooling fan motor trouble

Trouble content	The lock signal is detected during rotation of the fan / The non-lock state is detected when the motor is not rotated in booting
Section	SCU
Cause	Fan motor trouble, fan motor related harness and circuit trouble.
Check & Remedy	Check the fan motor related circuits (SCNcnt PWB) and their harness and connector.

L3-00 Scanner return trouble

Trouble content	Scanner return is not completed within the specified time.
Section	SCU
Cause	Scanner unit trouble SCU 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 lock trouble

Trouble content	The motor lock signal is detected during rotation of the main motor (MM/MM2)
Section	PCU
Cause	Main motor (MM/MM2) lock trouble. Connection failure or disconnection of the connector and the harness. Control circuit trouble.
Check & Remedy	Use Sim. 6-1 to check the operation of the main motor (MM/MM2) lock. Check the harness and the connector. (between the PCU PWB and the motor, between the HL PWB and the motor)

L4-02 Main motor 2 lock trouble

Trouble content	The lock signal is not detected within 1 sec when the paper feed motor is rotated in warming up or in canceling a paper jam.
Section	PCU
Cause	Paper feed motor trouble. Harness connection trouble between the PCU PWB and the paper feed motor. Control circuit trouble.
Check & Remedy	Use SIM6-1 to check the operation of the paper feed motor. Check connection of the connector and the harness between the PCU PWB and the toner paper feed motor.

L4-03 Fusing motor lock trouble

Trouble content	The motor lock signal is detected during rotation of the fusing motor.
Section	PCU
Cause	Fusing motor trouble Fusing motor harness and connector connection trouble PCU PWB trouble
Check & Remedy	Use SIM6-1 to check the operation of the fusing motor. Replace the Fusing motor. Check connection of the fusing motor harness and the connection. Replace the PCU PWB.

L4-04 Toner hopper/Developing motor trouble

Trouble content	The motor lock signal is detected during rotation of the toner hopper/developing motor
Section	PCU
Cause	Toner hopper/developing motor trouble. Harness connection trouble between the PCU PWB and the toner hopper/developing motor. Control circuit trouble.
Check & Remedy	Check the toner hopper/developing motor operation with Sim. 25-1. Check connection of the connector and the harness between the PCU PWB and the toner hopper/developing motor.

L4-14 Toner cartridge motor lock trouble

Trouble content	Though the toner cartridge motor is rotated for a certain time, the toner cartridge motor rotation sensor count value does not exceed the threshold value
Section	PCU
Cause	Toner cartridge motor trouble. Toner cartridge motor rotation sensor trouble. Harness connection trouble between the PCU PWB and the toner cartridge motor. Harness trouble between the PCU PWB and the toner cartridge motor rotation sensor. Toner cartridge trouble.
Check & Remedy	Use Sim. 10-1 to check the operation of the toner cartridge motor. Use Sim. 10-3 to check the operation of the toner cartridge motor rotation sensor. Check the harness and the connector between the PCU PWB and the toner cartridge motor. Check the harness and the connector between the PCU PWB and the toner cartridge motor rotation sensor. Replace the toner cartridge.

L4-17 Drum motor lock trouble (K)

Trouble content	The motor lock signal is detected during rotation of the drum motor (K).
Section	PCU
Cause	Drum motor trouble Harness connection trouble between the PCU PWB and the drum motor Control circuit trouble
Check & Remedy	Use SIM25-01 to check the operation of the drum motor. Check the harness and the connector between the PCU PWB and the developing motor. Replace the PCU PWB. Replace the drum motor.

L4-27 Decurler motor lock trouble

Trouble content	The lock signal is detected during rotation of the decurler motor.
Section	PCU
Cause	Decurler motor trouble. Harness connection trouble between the PCU PWB and the decurler motor. Control circuit trouble.
Check & Remedy	Use SIM06-01 to check the operation of the decurler motor. Replace the decurler motor. Check connection of the decurler motor harness and the connector. Replace the PCU PWB.

L4-28 Sub power source cooling fan motor

Trouble content	The motor lock signal is detected during rotation of the sub power cooling fan motor.
Section	MFP
Cause	Fan motor trouble, Mother PWB trouble, fan motor/Mother PWB harness connection trouble, control circuit trouble
Check & Remedy	Use SIM06-02 to check the operation of the fan motor. Check the mother PWB, and the harness and the connector between the fan motor and the Mother PWB.

L4-30 Controller fan motor trouble

Trouble content	The motor lock signal is detected during rotation of the controller fan motor or the HDD fan motor.
Section	MFP
Cause	Fan motor trouble, Mother PWB trouble, fan motor/Mother PWB harness connection trouble, control circuit trouble
Check & Remedy	Use SIM06-02 to check the operation of the fan motor. Check the Mother PWB, and the harness and the connector between the fan motor and the Mother PWB.

L4-31 Machine heat-exhaust fan trouble

Trouble content	The lock signal is detected during rotation of the machine heat-exhaust fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-32 Power source cooling fan trouble

Trouble content	The motor lock signal is detected during rotation of the power cooling fans 1 and 2.
Section	PCU
Cause	The fan does not rotate because of disconnection of the ozone exhaust fan or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-34 Polygon cooling fan trouble

Trouble content	The motor lock signal is detected during rotation of the polygon cooling fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-36 Toner suction fan trouble

Trouble content	The motor lock signal is detected during rotation of the toner suction fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-38 Reverse transport cooling fan trouble

Trouble content	The motor lock signal is detected during rotation of the reverse transport cooling fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-39 Reverse cooling fan trouble

Trouble content	The motor lock signal is detected during rotation of the reverse cooling fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-40 Ozone fan motor 1 trouble

Trouble content	The lock signal is detected during rotation of the ozone fan motor 1.
Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble. (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-41 Ozone fan motor 2 trouble

Trouble content	The lock signal is detected during rotation of the ozone fan motor 2.
Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble. (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-43 Paper cooling fan trouble

Trouble content	The motor lock signal is detected during rotation of the paper cooling fan.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L4-46 Development cooling fan 1 trouble

Trouble content	The lock signal is detected during operation of the developing cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-47 Power cooling fan 3 trouble

Trouble content	The lock signal is detected during operation of the power cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-48 ADU paper cooling fan 1 trouble

Trouble content	The lock signal is detected during rotation of the ADU transport cooling fan motor F.
Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble. (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-49 ADU paper cooling fan 2 trouble

Trouble content	The lock signal is detected during rotation of the ADU transport cooling fan motor R.
Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble. (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-50 Process cooling fan 1 trouble

Trouble content	The lock signal is detected during operation of the process cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-51 Process cooling fan 2 trouble

Trouble content	The lock signal is detected during operation of the process cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-52 Process cooling fan 3 trouble

Trouble content	The lock signal is detected during operation of the process cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-53 Process cooling fan 4 trouble

Trouble content	The lock signal is detected during operation of the process cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-54 PS cooling fan trouble

Trouble content	The lock signal is detected during operation of the PS cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-55 Process cooling fan trouble

Trouble content	The lock signal is detected during operation of the process cooling fan
Section	PCU
Cause	Harness connection trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.)
Check & Remedy	Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.

L4-58 Process section peripheral fan trouble

Trouble content	The motor lock signal is detected during rotation of the cooling fan around the process section.
Section	PCU
Cause	The fan does not rotate because of disconnection of the fan connector or other trouble.
Check & Remedy	Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating.

L6-10 Polygon motor trouble

Trouble content	The polygon motor does not reach the specified RPM within the specified time after starting rotation of the polygon motor.
Section	PCU
Cause	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 LSU. Replace the LSU control PWB.

L8-01 Full wave signal detection error

Trouble content	The full wave signal is not detected.
Section	PCU
Cause	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	
Section	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 MFPC PWB/ Mother board

Trouble content	
Section	MFP
Cause	Mother board PWB - MFPC PWB connection trouble. MFPC PWB trouble. Mother board trouble.
Check & Remedy	Check connection between the Mother board PWB and the MFPC PWB. Check the ground of the main unit. Replace the MFPC PWB. Replace the Mother board.

PC-- Personal counter not detected

Trouble content	
Section	MFP
Cause	The personal counter is not installed. The personal counter is not detected. SCU PWB trouble.
Check & Remedy	Check connection of the connectors and the harness. Replace the SCU PWB.

U1-01 Battery trouble

Trouble content	RTC backup battery voltage fall
Section	MFP
Cause	Battery life Battery circuit abnormality
Check & Remedy	Check to confirm that the battery voltage is about 2.5V or above. Replace the battery.

U2-00 MFP EEPROM read/write error

Trouble content	
Section	MFP
Cause	MFPC PWB EEPROM trouble EEPROM socket contact trouble MFPC PWB trouble Strong external noises.
Check & Remedy	Replace the MFPC PWB EEPROM. Replace the MFPC PWB. (Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.) Check the power environment.

U2-05 Erroneous detection of account management data

Trouble content	
Section	MFP
Cause	Breakage of the authentication DB is detected.
Check & Remedy	When breakage of the authentication DB is detected, the MFP is rebooted and the DB tables are reconstructed, generating "U2-05". The message, however, is not displayed and only the trouble history is saved. The authentication data are cleared.

U2-11 MFPC PWB EEPROM counter check sum error

Trouble content	
Section	MFP
Cause	MFPC PWB EEPROM trouble EEPROM socket contact trouble MFPC PWB trouble Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. (The previous writing data (about the latest 8 sheets) are written into the EEPROM.) Replace the MFPC PWB. (Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.)

U2-30 MFPC PWB and PCU PWB manufacturing No. data inconsistency

Trouble content	Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFPC PWB.
Section	MFP
Cause	When replacing the PCU PWB or the MFPC PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB. MFPC 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 MFPC PWB. (Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.) Replace the PCU PWB.

U2-40 SD card system storage data area error

Trouble content	
Section	MFP
Cause	A file error occurs in the SD card system storage data partition. SD card trouble MFPC PWB trouble
Check & Remedy	Turn OFF/ON the power, and the backup data in the HDD are written into the SD card and the machine is automatically booted. Check the MFPC PWB, and replace if necessary. Check the SD card, and replace if necessary.

U2-41 HDD system storage data area error

Trouble content	
Section	MFP
Cause	A file error occurs in the HDD system saved data area, disabling backup of the saved file of the machine adjustment values in the SD card. HDD trouble MFPC PWB trouble
Check & Remedy	Check the HDD, and replace if necessary. Check the MFPC PWB, and replace if necessary. When replacing the HDD and the MFPC PWB, refer to the chapter of "Necessary works and procedures of HDD and MFPC PWB replacement."

U2-42 Machine adjustment data (system storage data area) error

Trouble content	
Section	MFP
Cause	The saved file of the machine adjustment values in the SD card and the HDD cannot be found or is broken. Both of the SD card set data and the HDD system saved data area are broken. HDD trouble MFPC PWB trouble SD card trouble
Check & Remedy	Check the HDD, and replace if necessary. Check the MFPC PWB, and replace if necessary. Check the SD card, and replace if necessary. When replacing the HDD, the MFPC PWB, and the SD card, refer to the chapter of "Necessary works and procedures of HDD, MFPC PWB, and SD card replacement." Use SIM to adjust the machine again and set the adjustment values.

U2-50 HDD user authentication data check sum error

Trouble content	
Section	MFP
Cause	HDD trouble MFPC PWB trouble Strong external noises.
Check & Remedy	Check the data related to the check sum error (address book, image send system registration data (senders record, meta data)) and register again. Use SIM16 to cancel the U2 trouble. Replace the HDD. Replace the MFPC PWB. (Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.)

U2-60 Watermark check error

Trouble content	
Section	MFP
Cause	Watermark data trouble HDD trouble MFPC PWB trouble
Check & Remedy	Use SIM16 to cancel the U2 trouble. Use SIM49-5 to install the watermark data. Replace the HDD. Replace the MFPC PWB. (Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.)

U2-80 SCU PWB EEPROM read/write error

Trouble content	
Section	SCU
Cause	SCU PWB EEPROM trouble SCU PWB trouble SCU PWB EEPROM socket connection trouble
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check connection of the SCU PWB EEPROM socket. Check the SIM adjustment value of the following items, and adjust again if they are improper. <ul style="list-style-type: none"> • Scanner-related adjustments • Touch panel-related adjustments Use SIM16 to cancel the trouble.

U2-81 SCU PWB EEPROM check sum error

Trouble content	
Section	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. Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.)

U2-90 PCU PWB EEPROM read/write error

Trouble content	
Section	PCU
Cause	PCU PWB EEPROM trouble PCU PWB trouble EEPROM socket contact trouble
Check & Remedy	Replace the PCU PWB EEPROM. Check the SIM adjustment values of the engine, and adjust again if they are improper. Replace the PCU PWB. Check contact of the EEPROM socket. Use SIM16 to cancel the trouble.

U2-91 PCU PWB EEPROM check sum error

Trouble content	
Section	PCU
Cause	PCU PWB EEPROM trouble PCU PWB trouble EEPROM socket contact trouble
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.)

U5-00 Document feed unit communication error

Trouble content	
Section	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 trouble

Trouble content	
Section	SCU
Cause	When the fan is operated, the fan operation signal is not detected within the specified time. Fan motor trouble. Connector, harness connection trouble. DSPF PWB trouble.
Check & Remedy	Use SIM2-3 to check that the fan is rotating. Replace the fan motor. Check connection of the connector and the harness. Replace the DSPF PWB.

U5-30 Document feed unit tray lift up trouble

Trouble content	
Section	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	
Section	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 DSPF PWB.

U6-09 LCC lift motor trouble

Trouble content	No variation in the motor rotation sensor signal (encoder sign) is detected within the specified time after booting or stopping the LCC lift motor.
Section	PCU
Cause	LCC lift motor rotation sensor trouble LCC control PWB trouble LCC lift mechanism trouble LCC lift motor trouble
Check & Remedy	Use SIM4-2 and 4-3 to check the operation of the LCC sensor and the lift motor. Check the LCC lift motor rotation sensor, and replace if necessary. Check the LCC control PWB, and replace if necessary. Check the LCC lift mechanism, and repair if necessary. Check the LCC lift motor, and replace if necessary. Use SIM15 to cancel the trouble.

U6-20 LCC control PWB - PCU PWB communication error

Trouble content	
Section	PCU
Cause	Communication error between the LCC control PWB and the PCU PWB. Connection trouble of the harness and the connector between the machine and the LCC and those of the LCC control PWB. LCC control PWB trouble PCU PWB trouble Malfunction due to noises.
Check & Remedy	Check to confirm the LCC model. Check the connection of the harness and the connector between the machine and the LCC and those of the LCC control PWB, and replace if necessary. Check the LCC control PWB, and replace if necessary. Check the PCU PWB, and replace if necessary.

U6-21 LCC transport motor trouble

Trouble content	Transport motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor LCC control PWB trouble / A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the transport motor. Replace the motor Replace the LCC / A3 2-stage LCT control PWB.

U6-22 LCC 24V power abnormality

Trouble content	The DV 24V power is not supplied to the LCC / A3 2-stage LCT.
Section	PCU
Cause	Connection trouble or disconnection of the connector and the harness. LCC control PWB trouble / A3 2-stage LCT control PWB trouble Power unit trouble
Check & Remedy	Check the connector and the harness of the power line. Check the 24V voltage with the power unit, the LCC control PWB, and the A3 2-stage LCT control PWB.

U6-23 A3 LCC tray descending trouble (Reverse winding detection) (A3 LCC)

Trouble content	It is detected that the wire of the LCC tray is reversely wound. (A3 LCC / A3 2-stage LCT) The lower limit position (full state) is not detected within the specified time (A4: 10sec, A3: 8sec) from the start of descending the LCT1 tray. (A3 3-stage LCT / A4 3-stage LCT)
Section	PCU
Cause	Reverse winding detection SW ON The wire is reversely wound. Reverse winding detection SW trouble Connection trouble of the connector and the harness LCC control PWB trouble. (A3 LCC) A3 2-stage LCT control PWB trouble (A3 2-stage LCT) Remaining quantity sensor abnormality, LCT1 tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT)
Check & Remedy	Check the wire. Replace the reverse winding SW and the LCC control PWB. / Replace the A3 2-stage LCT control PWB. Check connection of the connector and the harness. (A3 LCC / A3 2-stage LCT) Use SIM04-02 and SIM04-03 to check the operations of the remaining quantity sensor and the LCT1 lift motor. Check the wiring. (A3 3-stage LCT / A4 3-stage LCT)

U6-24 A3 LCC tray lock detection trouble

Trouble content	The LCC / A3 2-stage LCT tray lock mechanism malfunctions.
Section	PCU
Cause	Tray lock mechanism breakdown Connection trouble of the connector and the harness Tray lock sensor trouble LCC control PWB trouble / A3 2-stage LCT control PWB trouble
Check & Remedy	Check the tray lock mechanism. Check connection of the connector and the harness. Replace the tray lock sensor. Replace the LCC control PWB. / Replace the A3 2-stage LCT control PWB.

U6-29 LCT1 lift trouble

Trouble content	The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting up. (A3 3-stage LCT / A4 3-stage LCT) The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)
Section	PCU
Cause	Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT) Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring. Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT) Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor. Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT)

U6-33 LCT2 reverse winding detection trouble

Trouble content	It is detected that the wire of the tray is reversely wound.
Section	
Cause	Reverse winding detection SW ON The wire is reversely wound. Reverse winding detection SW trouble Connection trouble of the connector and the harness A3 2-stage LCT control PWB trouble
Check & Remedy	Check the wire. Replace the reverse winding SW. Check connection of the connector and the harness. Replace the A3 2-stage LCT control PWB.

U6-34 LCT2 lock detection trouble

Trouble content	It is detected that the tray lock mechanism malfunctions.
Section	
Cause	Tray lock mechanism breakdown Connection trouble of the connector and the harness Tray lock sensor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the tray lock mechanism. Check connection of the connector and the harness. Replace the tray lock sensor. Replace the A3 2-stage LCT control PWB.

U6-39 LCT2 lift trouble

Trouble content	The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting. (A3 3-stage LCT / A4 3-stage LCT) The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)
Section	PCU
Cause	Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT) Sensor trouble, upper limit SW trouble, LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring. Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT) Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor. Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT)

U6-43 LCT3 reverse winding detection trouble

Trouble content	It is detected that the wire of the tray is reversely wound.
Section	PCU
Cause	Reverse winding detection SW ON The wire is reversely wound. Reverse winding detection SW trouble Connection trouble of the connector and the harness A3 2-stage LCT control PWB trouble
Check & Remedy	Check the wire. Replace the reverse winding SW. Check connection of the connector and the harness. Replace the A3 2-stage LCT control PWB.

U6-44 LCT3 lock detection trouble

Trouble content	It is detected that the tray lock mechanism malfunctions.
Section	PCU
Cause	Tray lock mechanism breakdown Connection trouble of the connector and the harness Tray lock sensor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the tray lock mechanism. Check connection of the connector and the harness. Replace the tray lock sensor. Replace the A3 2-stage LCT control PWB.

U6-49 LCT3 lift trouble

Trouble content	The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting. (A3 3-stage LCT / A4 3-stage LCT) The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)
Section	PCU
Cause	Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT) Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring. Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT) Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor. Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT)

U6-51 LCC - Main unit combination trouble

Trouble content	An LCC of a different model which is not supported by the machine is installed. (Improper combination of the machine and the LCC model code.)
Section	PCU
Cause	LCC control PWB trouble PCU PWB trouble
Check & Remedy	Check to confirm the LCC model. Check the LCC control PWB, and replace if necessary. Check the PCU PWB, and replace if necessary.

U6-53 Communication trouble between LCT's

Trouble content	Communication error between the A3 2-stage LCT (1 series) and the A3 2-stage LCT (2 series) Communication test error when turning ON the power or after canceling the exclusive simulation.
Section	PCU
Cause	Connection trouble or disconnection of the connector and the harness A3 2-stage LCT (1 series) control PWB trouble, A3 2-stage LCT (2 series) control PWB trouble Malfunction caused by noises
Check & Remedy	Cancel the trouble by turning OFF/ON the power. Check the connector and the harness of the communication line. Replace the A3 2-stage LCT control PWB.

U6-54 Option installation combination trouble

Trouble content	Relay unit installation detection signal abnormality, front LCT installation detection signal abnormality, 2-series installation detection signal abnormality
Section	PCU
Cause	Combination error Connection trouble of the connector and the harness A3 2-stage LCT control PWB trouble
Check & Remedy	Check the combination of options. Check connection of the harness and the connector from control PWB to each option unit. Replace the A3 2-stage LCT control PWB.

U6-63 Manual feed tray descending trouble

Trouble content	The lower limit position is not detected within the specified time (10sec) from the start of descending the manual feed tray.
Section	PCU
Cause	Lower limit sensor trouble. Manual feed tray lift motor lock. Connection trouble of the connector and the harness. PWB trouble.
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operations of the lower limit position sensor and the manual feed tray lift motor. Wiring check. Fix the trouble, and use SIM15 to cancel the trouble.

U6-68 Manual feed tray paper feed position abnormality

Trouble content	The upper limit sensor turns OFF before turning ON the pickup SOL. (Normally the upper limit sensor turns OFF after turning OFF the pickup SOL when starting lifting up.)
Section	PCU
Cause	Sensor trouble. Connection trouble of the connector and the harness. PWB trouble. The pickup roller remains in the lower position. (Mechanism trouble)
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operations of the upper limit sensor and lift operations. Wiring check.

U6-69 Manual feed tray lift trouble

Trouble content	The upper limit is not detected within the specified time (10sec) when lifting up.
Section	PCU
Cause	Upper limit sensor trouble. Tray lift motor lock. Connection trouble of the connector and the harness. PWB trouble.
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operations of the upper limit sensor and lift operations. Wiring check. Fix the trouble, and use SIM15 to cancel the trouble.

U6-73 LCT4 reverse winding detection trouble

Trouble content	It is detected that the wire of the tray is reversely wound.
Section	PCU
Cause	Reverse winding detection SW ON The wire is reversely wound. Reverse winding detection SW trouble Connection trouble of the connector and the harness A3 2-stage LCT control PWB trouble
Check & Remedy	Check the wire. Replace the reverse winding SW. Check connection of the connector and the harness. Replace the A3 2-stage LCT control PWB.

U6-74 LCT4 lock detection trouble

Trouble content	It is detected that the tray lock mechanism malfunctions.
Section	PCU
Cause	Tray lock mechanism breakdown Connection trouble of the connector and the harness Tray lock sensor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the tray lock mechanism. Check connection of the connector and the harness. Replace the tray lock sensor. Replace the A3 2-stage LCT control PWB.

U6-79 LCT4 lift motor trouble

Trouble content	The upper limit is not detected within the specified time when lifting. The upper limit SW ON is detected when lifting. The encoder signal does not vary when lifting.
Section	PCU
Cause	Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble
Check & Remedy	Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor. Fix the trouble, and use SIM15 to cancel the trouble.

U6-81 Power unit cooling fan motor trouble (1 series)

Trouble content	A3 2-stage LCT power unit section cooling fan motor abnormality
Section	PCU
Cause	Motor lock, motor harness short/open, A3 2-stage LCT control PWB trouble, harness and connector connection trouble
Check & Remedy	Check connection from the A3 2-stage LCT control PWB to the motor. Replace the A3 2-stage LCT control PWB. Replace the motor.

U6-82 EEPROM trouble (1 series)

Trouble content	The EEPROM contents are garbled.
Section	PCU
Cause	A3 2-stage LCT control PWB trouble Malfunction caused by noises
Check & Remedy	Replace the A3 2-stage LCT controller PWB.

U6-83 Room temperature thermistor breakdown (1 series)

Trouble content	Room temperature thermistor open or short
Section	PCU
Cause	Room temperature thermistor harness connection trouble Room temperature thermistor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check connection of the harness and the connector of the room temperature thermistor. Replace the temperature and humidity sensor. Check the A3 2-stage LCT control PWB.

U6-84 Room humidity thermistor breakdown (1 series)

Trouble content	Humidity thermistor open or short
Section	PCU
Cause	Humidity thermistor harness connection trouble Humidity thermistor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check connection of the harness and the connector of the humidity thermistor. Replace the temperature and humidity sensor. Check the A3 2-stage LCT control PWB.

U6-85 Transport motor 1 trouble (2 series)

Trouble content	Transport motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the transport motor. Replace the motor. Replace the A3 2-stage LCT control PWB.

U6-86 24V power trouble (2 series)

Trouble content	The DC24V power is not supplied to the A3 2-stage LCT.
Section	PCU
Cause	Connection trouble or disconnection of the connector and the harness. A3 2-stage LCT control PWB trouble Power unit trouble
Check & Remedy	Check the connector and the harness of the power line. Check the 24V voltage with the power unit and the A3 2-stage LCT control PWB.

U6-87 Power unit cooling fan motor trouble (2 series)

Trouble content	A3 2-stage LCT power unit section cooling fan motor abnormality
Section	PCU
Cause	Motor lock, motor harness short/open, A3 2-stage LCT control PWB trouble, harness and connector connection trouble
Check & Remedy	Check connection from the A3 2-stage LCT control PWB to the motor. Replace the A3 2-stage LCT control PWB. Replace the motor.

U6-88 EEPROM trouble (2 series)

Trouble content	The EEPROM contents are garbled.
Section	PCU
Cause	A3 2-stage LCT control PWB trouble Malfunction caused by noises
Check & Remedy	Replace the A3 2-stage LCT control PWB.

U6-89 Room temperature thermistor breakdown (2 series)

Trouble content	Room temperature thermistor open or short
Section	PCU
Cause	Room temperature thermistor harness connection trouble Room temperature thermistor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check connection of the harness and the connector of the room temperature thermistor. Replace the temperature and humidity sensor. Check the A3 2-stage LCT control PWB.

U6-90 Room humidity thermistor breakdown (2 series)

Trouble content	Humidity thermistor open or short
Section	PCU
Cause	Humidity thermistor harness connection trouble Humidity thermistor trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check connection of the harness and the connector of the humidity thermistor. Replace the temperature and humidity sensor. Check the A3 2-stage LCT control PWB.

U7-50 MFPC PWB - Vendor machine communication error

Trouble content	Communication error between the MFP and the serial vendor.
Section	MFP
Cause	Improper setting of the vendor machine specifications (SIM26-3). Vendor machine trouble. MFPC 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 (SIM26-3). Replace the MFPC PWB.

U7-51 Vendor machine error

Trouble content	
Section	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.

U9-01 Touch panel trouble

Trouble content	Communication error, Read / Write error, ICU internal error
Section	SCU
Cause	SUC PWB trouble.
Check & Remedy	Check connection signal between the SCU CPU and the touch panel controller.

UC-02 IPD/DOCC-ASIC (CPT function) trouble

Trouble content	IPD/DOCC-ASIC (CPT function) abnormality
Section	SCU
Cause	SCU PWB trouble. (IPD/DOCC-ASIC trouble.)
Check & Remedy	Replace the SCU PWB.

UC-12 IPD/DOCC-ASIC (CPT function) trouble [DSPF detection]

Trouble content	IPD/DOCC-ASIC (CPT function) abnormality
Section	SCU
Cause	DSPF PWB trouble (IPD/DOCC-ASIC trouble).
Check & Remedy	Replace the DSPF PWB.

UC-20 IPD/DOCC-ASIC (DOCC function) trouble

Trouble content	IPD/DOCC-ASIC (DOCC function) abnormality
Section	SCU
Cause	SCU PWB trouble. (IPD/DOCC-ASIC trouble.)
Check & Remedy	Replace the SCU PWB.

UC-30 IPD/DOCC-ASIC (DOCC function) trouble [DSPF detection]

Trouble content	IPD/DOCC-ASIC (DOCC function) abnormality
Section	SCU
Cause	DSPF PWB trouble (IPD/DOCC-ASIC trouble).
Check & Remedy	Replace the DSPF PWB.

UE-10 LCT1 suction fan motor trouble

Trouble content	Suction fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the suction fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT control PWB.

UE-11 LCT1 exhaust fan motor trouble

Trouble content	Exhaust fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the exhaust fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT control PWB.

UE-12 LCT1 warm air heater thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble
Check & Remedy	Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.

UE-13 LCT1 warm air heater thermistor low temperature trouble

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Warm air heater (thermistor) trouble Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-14 LCT1 warm air heater thermistor high temperature trouble

Trouble content	The warm air heater temperature exceeds the specified level.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-15 LCT1 warm air outlet port thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble. A3 2-stage LCT control PWB trouble Connector connection trouble
Check & Remedy	Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB.

UE-16 LCT1 warm air outlet port thermistor low temperature

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-17 LCT1 warm air outlet port thermistor high temperature

Trouble content	The temperature at the warm air outlet port exceeds the specified level.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-18 LCT1 Room temperature thermistor trouble

Trouble content	The output of the temperature thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-19 LCT1 Room humidity thermistor trouble

Trouble content	The output of the humidity thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-20 LCT2 suction fan motor trouble

Trouble content	Suction fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the suction fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT controller PWB.

UE-21 LCT2 exhaust fan motor trouble

Trouble content	Exhaust fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the exhaust fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT control PWB.

UE-22 LCT2 warm air heater thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble
Check & Remedy	Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.

UE-23 LCT2 warm air heater thermistor low temperature trouble

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Warm air heater (thermistor) trouble Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-24 LCT2 warm air heater thermistor high temperature trouble

Trouble content	The warm air heater temperature exceeds the specified level.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-25 LCT2 warm air outlet port thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble. A3 2-stage LCT control PWB trouble Connector connection trouble
Check & Remedy	Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB.

UE-26 LCT2 warm air outlet port thermistor low temperature

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-27 LCT2 warm air outlet port thermistor high temperature

Trouble content	The temperature at the warm air outlet port exceeds the specified level.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-28 LCT2 Room temperature thermistor trouble

Trouble content	The output of the temperature thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-29 LCT2 Room humidity thermistor trouble

Trouble content	The output of the humidity thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-30 LCT3 suction fan motor trouble

Trouble content	Suction fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the suction fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT control PWB.

UE-31 LCT3 exhaust fan motor trouble

Trouble content	Exhaust fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the exhaust fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT control PWB.

UE-32 LCT3 warm air heater thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble
Check & Remedy	Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.

UE-33 LCT3 warm air heater thermistor low temperature trouble

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Warm air heater (thermistor) trouble Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-34 LCT3 warm air heater thermistor high temperature trouble

Trouble content	The warm air heater temperature exceeds the specified level.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-35 LCT3 warm air outlet port thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble. A3 2-stage LCT control PWB trouble Connector connection trouble
Check & Remedy	Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB.

UE-36 LCT3 warm air outlet port thermistor low temperature

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-37 LCT3 warm air outlet port thermistor high temperature

Trouble content	The temperature at the warm air outlet port exceeds the specified level.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-38 LCT3 Room temperature thermistor trouble

Trouble content	The output of the temperature thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-39 LCT3 Room humidity thermistor trouble

Trouble content	The output of the humidity thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-40 LCT4 suction fan motor trouble

Trouble content	Suction fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the suction fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT controller PWB.

UE-41 LCT4 exhaust fan motor trouble

Trouble content	Exhaust fan motor abnormality
Section	PCU
Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Harness and connector connection trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Use SIM04-03 to check the operation of the exhaust fan motor. Check connection of the harness and the connector. Replace the A3 2-stage LCT controller PWB.

UE-42 LCT4 warm air heater thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble
Check & Remedy	Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.

UE-43 LCT4 warm air heater thermistor low temperature trouble

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Warm air heater (thermistor) trouble Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-44 LCT4 warm air heater thermistor high temperature trouble

Trouble content	The warm air heater temperature exceeds the specified level.
Section	PCU
Cause	Warm air heater (thermistor) trouble A3 2-stage LCT control PWB trouble Warm air heater harness and connector connection trouble Heater relay PWB trouble
Check & Remedy	Check the warm air heater (thermistor) and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-45 LCT4 warm air outlet port thermistor open

Trouble content	The thermistor is open.
Section	PCU
Cause	Thermistor trouble. A3 2-stage LCT control PWB trouble Connector connection trouble
Check & Remedy	Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB.

UE-46 LCT4 warm air outlet port thermistor low temperature

Trouble content	The temperature does not reach the specified level within the specified time after turning ON the power relay.
Section	PCU
Cause	Thermistor trouble. Warm air heater trouble Warm air heater harness and connector connection trouble A3 2-stage LCT control PWB trouble Thermostat trouble. AC power trouble Insertion detection switch 2 trouble Heater relay PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check for disconnection of the warm air heater and the thermostat. Check the insertion detection switch 2. Check the heater relay PWB. Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB.

UE-49 LCT4 Room humidity thermistor trouble

Trouble content	The output of the humidity thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-47 LCT4 warm air outlet port thermistor high temperature

Trouble content	The temperature at the warm air outlet port exceeds the specified level.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

UE-48 LCT4 Room temperature thermistor trouble

Trouble content	The output of the temperature thermistor is not within the specified range.
Section	PCU
Cause	Thermistor trouble. Warm air heater harness and connector connection trouble Heater relay PWB trouble A3 2-stage LCT control PWB trouble
Check & Remedy	Check the thermistor and its harness. Check the thermistor input circuit section of the A3 2-stage LCT control PWB. Check the heater relay PWB. Check the heater control circuit of the A3 2-stage LCT control PWB.

[8] MAINTENANCE

1. Necessary execution items in maintenance and servicing

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	1
Check the print count mode in each section and each operation mode.	22	1
Check the number of paper jam troubles.	22	2
Check the positions and contents of paper jams.	22	3
Check the positions and contents of paper jams (DSPF section).	22	12
Check the contents of troubles.	22	4
Print the setting values and the adjustment values.	22	6
Check the number of use of the DSPF, the scanner, the finisher, and inserter, 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

The necessary execution items in maintenance are shown below. (The items necessary to be executed are marked with "*" in the table below.)

The following items must be executed regardless of maintenance or not. (*).

() : When repairing and inspecting (without replacement of maintenance parts), installing, cleaning each section, etc.

No.	JOB No.	Work item	Simulation	When repairing (replacing consumable parts) / maintenance						When repairing (without replacement of consumable parts) / inspecting
				Installation	When replacing the OPC drum	When replacing developer	When replacing the fuser web roller	After cleaning the scanner (read) section	Periodic maintenance	
1	—	Toner concentration reference control level setting	25-2	*		*				
2	—	The photoconductor counter is cleared.	24-4		*					
3	—	Perform the dark potential adjustment. (Select INIDARK VO)	44-3		*					
4	—	Clear the fuser web cleaning send counter. (Select FUSER WEB SEND)	24-4				*			
5	ADJ11A	Auto copy density, gradation adjustment	46-24	*	*	*		*	*	
6	ADJ12A	Auto printer density, gradation adjustment	67-24	*	*	*			*	

- The JOB No. indicates the title number of the adjustment item described in the chapter of the adjustments.
- Refer to the details based on this number according to necessity.
- When replacing the TSC sensor and the developing unit (New/Old), set new developer and execute the procedures for developer replacement.

C. Execution items after maintenance and servicing

Item	Simulation	
The paper jam /trouble data are cleared.	24	1
The use quantity counter of each paper feed section is cleared.	24	2
The numbers of use of the DSPF, the scanner, the finisher, the inserter, the stapler, and the punch are cleared.	24	3
The maintenance counter is cleared. (Select MAINTENANCE ALL)	24	4
Clear the cleaning operation counter of the MC cleaner. (Select MC CLEANER)	24	4
The list of setting values and adjustment values is printed.	22	6

2. Life end definition

A. Definition of the drum life end

When the drum counter exceeds the specified level, it is judged as life end. In an actual use, however, wear is not solely determined by the copy quantity but other operating conditions. Therefore, the number of rotations of the drum is used as an indication of the product quality (wear level).

The number of rotations for the drum life end is 1000K. The drum life is affected by the number of sheets of one print job.

This is because the actual life is determined by rotations of the drum. The less the number of sheets of one print job is, the more the number of rotations for page is. Therefore, the number of sheets of drum life varies depending on the number of sheets of one print job.

As a reference of the drum life, "Life meter" can be checked with Sim. 22-13 from the accumulated number of rotations of the drum.

"Life meter" indicates the reached life (%) with the entire life as 100%.

(Example) If the used number of rotations is 550K :

$$550 \text{ (K rotations)} / 1000 \text{ (K rotations)} \times 100 = 55 \text{ (\%)}$$

	Drum counter	Number of rotations of drum
Life	1000K sheets	1000K rotations

B. Definition of the developer life end

When the developer counter exceeds the specified level, it is judged as life end. In an actual use, however, wear is not solely determined by the copy quantity but other operating conditions. Therefore, the number of rotations of the developer is used as an indication of the product quality (wear level).

The number of rotations for the developer life end is 1000K. The developer life is affected by the number of sheets of one print job.

This is because the actual life is determined by rotations of the developer unit. The less the number of sheets of one print job is, the more the number of rotations for page is. Therefore, the number of sheets of developer life varies depending on the number of sheets of one print job.

As a reference of the developer life, "Life meter" can be checked with Sim. 22-13 from the accumulated number of rotations of the developer unit.

"Life meter" indicates the reached life (%) of developer with the entire life as 100%.

	Developer counter	Number of rotations of developer
Life	1000K sheets	1000K rotations

3. Other related items

A. Maintenance timing display

The message of maintenance execution timing is displayed when each counter reaches the set value. The relationship between the messages and the counters is shown below.

(Maintenance timing) (Frameless)

Kinds of counter	Code	Content	Print job Enable/Disable	Remarks
Maintenance counter	TA	The maintenance counters (total) reaches 90% of the set value of Sim. 21-1, or they reaches the set value of Sim. 21-1 but Sim. 26-38 is set to Print Enable.	Enable	After completion of the maintenance, execute Sim. 24-4 (MEINTENANCE ALL clear).
Upper heat roller (Upper heat roller print counter)	FK1	The upper heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Enable.	Enable	After execution of the maintenance, execute Sim. 24-4 to clear the upper heat roller print counter, the accumulated number of rotations counter, and the use day counter.
Lower heat roller (Lower heat roller print counter)	FK2	The lower heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Enable.	Enable	After execution of the maintenance, execute Sim. 24-4 to clear the lower heat roller print counter, the accumulated number of rotations counter, and the use day counter.
Fusing upper web (Fusing upper web print counter)	FK3	When the near end detection sensor (WEBSPD) and the end detection sensor (WEBEND1) are OFF.	Enable	After completion of the maintenance, execute Sim. 24-4 (FUSER WEB SEND clear).
Transfer belt counter	TK	The transfer belt system counter reaches 1000K, and Sim. 26-38 is set to Print Enable.	Enable	After execution of the maintenance, execute Sim. 24-4 to clear the transfer belt print counter, the accumulated number of rotations counter, and the use day counter.
Drum cartridge counter	DK	The drum cartridge print counter reaches 1,000,000 sheets, or the accumulated number of rotations of the drum reaches 1000K.	Enable	After completion of the maintenance, execute Sim. 24-4 (Drum counters (number of the drum print counter, accumulated number of rotations of the drum) clear).
Developer cartridge system counter	VK	The developer print counter reaches 1,000,000 sheets, or the accumulated number of rotations of the developer reaches 1000K.	Enable	After completion of the maintenance, execute Sim. 24-5 (Developer counters (number of the developer print counter, accumulated number of rotations of the developer) clear).

(Maintenance timing) (Framed)

Kinds of counter	Code	Content	Print job Enable/Disable	Remarks
Maintenance counter	TA	The maintenance counters (total) reaches the set value of Sim. 21-1, and Sim. 26-38 is set to Print Disable.	Disable	After completion of the maintenance, execute Sim. 24-4 (MEINTENANCE ALL clear).
Upper heat roller (Upper heat roller print counter)	FK1	The upper heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Disable.	Disable	After execution of the maintenance, execute Sim. 24-4 to clear the upper heat roller print counter, the accumulated number of rotations counter, and the use day counter.

Kinds of counter	Code	Content	Print job Enable/Disable	Remarks
Lower heat roller (Lower heat roller print counter)	FK2	The lower heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Disable.	Disable	After execution of the maintenance, execute Sim. 24-4 to clear the lower heat roller print counter, the accumulated number of rotations counter, and the use day counter.
Fusing upper web (Fusing upper web print counter)	FK3	When the end detection sensor (WEBEND1) is turned ON.	Disable	After completion of the maintenance, execute Sim. 24-4 (FUSER WEB SEND clear). When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)
Transfer belt system counter	TK	The transfer belt print counter reaches 1000K, and Sim. 26-38 is set to Print Disable.	Disable	After execution of the maintenance, execute Sim. 24-4 to clear the transfer belt print counter, the accumulated number of rotations counter, and the use day counter.
Toner collection container	-	Waste toner full	Disable	After replacing the toner collection container with an empty one, close the front door to cancel the full detection.

4. Maintenance system table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

Unit name (Detailed page)	No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
Photoconductor Section (8 - 7)	1	OPC drum	×	×	▲	×	▲	×	▲	
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	
	3	Sub blade	×	▲	▲	▲	▲	▲	▲	
	4	Side seal F, R	×	▲	▲	▲	▲	▲	▲	
	5	Drum separation pawl	×	▲□	▲□	▲□	▲□	▲□	▲□	When replacing, shift the separation pawl mounting position.
	6	Discharge lamp	×	○	○	○	○	○	○	
	7	Procon sensor	×	○	○	○	○	○	○	
	8	Surface potential sensor	×	○	○	○	○	○	○	Hold the sensor so that no foreign material enters the port of the sensor. Wipe it with waste cloth. Use alcohol if it is dirtied with oil.
	9	Cleaning brush roller	×	○	○	○	○	○	▲	
	10	Charger wire	○	▲	▲	▲	▲	▲	▲	
	11	Screen grid	×	▲	▲	▲	▲	▲	▲	
	12	Charger cleaner		▲	▲	▲	▲	▲	▲	
	13	Charger cushion		▲	▲	▲	▲	▲	▲	
	14	Duct sheet		▲	▲	▲	▲	▲	▲	
	15	Blade side seal F, R	×	×	×	×	×	×	▲	
	16	Cleaning brush bearing							×	
	17	Cleaning brush drive bearing							×	
	18	Separation pawl oscillation bearing							×	
	19	Auxiliary cleaning brush bearing							×	
	20	Bearing							×	
	21	Separation pawl oscillation arm							×	
	22	Separation pawl oscillation shaft							×	
	23	Ball bearings							×	
	24	Gears							×	
	25	Cleaner base guide		▲	▲	▲	▲	▲	▲	
	26	Sub blade seal F, R		×	×	×	×	×	×	
	27	Main charger case		○	○	○	○	○	○	
	28	Before-transfer discharge lamp		○	○	○	○	○	○	Use dry cloth only. Never use alcohol.
Waste toner section (8 - 17)	1	Toner collection container (with cap)	×	▲	▲	▲	▲	▲	▲	
	2	Gears						×		
	3	Bearing (Waste toner resin bearing)						×		

Unit name (Detailed page)	No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
Transfer section (8 - 18)	1	Transfer belt	○	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
	2	Transfer roller		×	▲	×	▲	×	▲	
	3	Transfer cleaning brush		×	○	×	○	×	▲	
	4	Transfer CL blade	×	×	▲	×	▲	×	▲	
	5	Transfer sub blade	×	×	×	×	×	×	▲	
	6	Transfer side seal F, R	×	×	×	×	×	×	×	
	7	Transfer drive roller							×	
	8	Bearing (Waste toner resin bearing)							×	
	9	Ball bearings							×	
	10	Gears							×	
	11	Ball bearing for transfer roller		×	▲	×	▲	×	▲	
	12	Discharge plate	○	○	○	○	○	○	○	
	13	Discharge plate holder	○	○	○	○	○	○	○	
Developing section (8 - 23)	1	Developer	×	×	▲	×	▲	×	▲	Supply when installing
	2	Doctor cover UN/DV seal	○	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
	3	DV side plate F, R	○	○	○	○	○	○	○	Clean around the DV side seal F and R.
	4	DV duct cover	○	○	○	○	○	○	○	Clean the lower section of the MG roller.
	5	DV side seal F, R	×	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
	6	DV BOX filter	×	×	▲	×	▲	×	▲	
	7	Filter unit	×	×	▲	×	▲	×	▲	
Toner supply section (8 - 27)	1	Toner cartridge								Attach when installing. When it is emptied, replacement is made by the user.
	2	Toner hopper	○	○	○	○	○	○	○	Clean the shutter area.
Fusing section (8 - 28)	1	Upper heat roller	×	×	▲	×	▲	×	▲	Apply grease to the bearing section when replacing. (6LS06268000)
	2	Upper heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000)
	3	Upper heat roller insulation bush		×	▲	×	▲	×	▲	Apply grease when replacing. (6LS06268000)
	4	Upper heat roller gear	×	×	▲	×	▲	×	▲	Check / Apply grease when replacing. (6LS06268000)
	5	Upper heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	Clean and remove foreign material.
	6	Non-contact thermistor	×	×	×	×	×	×	×	
	7	Sub thermistor	×	×	×	×	×	×	▲	Clean and remove foreign material.
	8	Upper heater lamp	×	×	×	×	×	×	▲	
	9	Lower heat roller	×	×	▲	×	▲	×	▲	Apply grease to the bearing section when replacing. (6LS06268000)
	10	Lower heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000)
	11	Lower heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	Clean and remove foreign material.
	12	Paper guides	○	○	○	○	○	○	○	
	13	Upper heat roller drive gear	×	×	×	×	×	×	▲	Check / Apply grease when replacing. (6LS06268000)
	14	Web roller	×	▲	▲	▲	▲	▲	▲	
	15	Web backup roller	×	▲	▲	▲	▲	▲	▲	
	16	Web backup roller bearing	×	×	▲	×	▲	×	▲	
	17	Web motor	×	×	×	×	▲	×	×	
	18	Other ball bearing							×	Must be free from abnormal noises when rotating.
	19	Front upper paper guide	○	▲	▲	▲	▲	▲	▲	
	20	Web guide shaft	×	▲	▲	▲	▲	▲	▲	
	21	Web guide bearing	×	▲	▲	▲	▲	▲	▲	
Filter section (8 - 35)	1	Ozone filter		▲	▲	▲	▲	▲	▲	Or 6 months
	2	Exhaust filter		▲	▲	▲	▲	▲	▲	Or 6 months
Tray paper feed section (8 - 37)	1	Pickup roller	×	×	×	×	×	×	×	(Note 1)
	2	Paper feed roller	×	×	×	×	×	×	×	(Note 1)
	3	Separation roller	×	×	×	×	×	×	×	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	(Note 1)
	5	Optical reflection type sensor	○	○	○	○	○	○	○	
	6	Transport rollers	×	○	○	○	○	○	▲	

Unit name (Detailed page)		No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
Paper transport section (8 - 44)	1	Resist roller (Idle)	×	○	○	○	○	○	○	▲	
	2	Transport rollers	×	○	○	○	○	○	○	▲	
	3	Transport paper guides	○	○	○	○	○	○	○	○	
	4	Optical reflection type sensor	○	○	○	○	○	○	○	○	
	5	Paper dust cleaner	○	▲	▲	▲	▲	▲	▲	▲	
	6	Double feed detection unit	○	○	○	○	○	○	○	○	Ultrasonic sensor top surface (Air cleaning)
	7	PS section PWB protection sheet								○	
	8	PS gears	×	×	×	×	×	×	×	▲	
	9	CIS	○	○	○	○	○	○	○	○	
	10	Bearings								×	
ADU paper exit section (8 - 55)	1	Solenoids	×	×	×	×	×	×	×	▲	
	2	Gears	×	×	×	×	×	×	×	▲	
	3	Gates	×	×	×	×	×	×	×	▲	
	4	Transport rollers	×	○	○	○	○	○	○	▲	
	5	Bearings								×	
	6	Optical reflection type sensors	○	○	○	○	○	○	○	○	
	7	Discharge brush	×	×	×	×	×	×	×	×	
	8	Decurler roller	▲	▲	▲	▲	▲	▲	▲	▲	Check when calling or every 500K.
	9	Torque limiter	×	×	×	×	×	×	×	×	(Note 1)
Drive section (8 - 64)	1	Gears (Grease)	×	×	×	×	×	×	×	×	(6LS06283000)
	2	Gears (Grease)	×	×	×	×	×	×	×	×	(6LS06270000)
	3	Belts		×	×	×	×	×	×	×	
	4	Gears								×	
	5	Torque limiter	×	×	×	×	×	×	×	×	(Note 1)
	6	Clutches	×	×	×	×	×	×	×	×	(Note 2)
Image related sections	1		×	×	×	×	×	×	×		

(Document scanning section)

Unit name (Detailed page)		No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
Scanner section (8 - 73)	1	Lens		○	○	○	○	○	○	○	
	2	CCD		○	○	○	○	○	○	○	
	3	Mirror		○	○	○	○	○	○	○	
	4	Table glass	○	○	○	○	○	○	○	○	
	5	SPF glass	○	○	○	○	○	○	○	○	
	6	Reflector		○	○	○	○	○	○	○	
	7	Scanner lamp		○	○	○	○	○	○	○	Air cleaning
	8	Rail (Grease)		☆	☆	☆	☆	☆	☆	☆	(6LS06385000)
	9	Drive belt		×	×	×	×	×	×	×	
	10	Drive wire		×	×	×	×	×	×	×	
	11	Sensor		×	×	×	×	×	×	×	
DSPF section (8 - 77)	Paper feed, Transport section	1	Paper feed roller	○	○	○	○	○	○	○	(Note 1)
		2	Paper pickup roller	○	○	○	○	○	○	○	(Note 1)
		3	Separation roller	○	○	○	○	○	○	○	(Note 1)
		4	No. 1 resist roller	○	○	○	○	○	○	○	
		5	Torque limiter		×	×	×	×	×	×	(Note 1)
		6	Double feed detection unit							○	Ultrasonic sensor top surface (Air cleaning) (105/120cpm machine only)
		7	Transport roller 1	○	○	○	○	○	○	○	
		8	Transport roller 2	○	○	○	○	○	○	○	
		9	Second resist roller	○	○	○	○	○	○	○	
		10	Platen roller	○	○	○	○	○	○	○	
		11	Transport roller 3	○	○	○	○	○	○	○	
		12	Transport roller 4	○	○	○	○	○	○	○	

Unit name (Detailed page)		No.	Part name	When calling	500 K	100 0K	1500 K	2000 K	2500 K	3000 K	Remark
DSPF section (8-77)	Scanning section	13	Lens	X	○	○	○	○	○	○	
		14	CCD	X	○	○	○	○	○	○	
		15	Mirror	X	○	○	○	○	○	○	
		16	Reflector	X	○	○	○	○	○	○	
		17	Scanner lamp	X	○	○	○	○	○	○	Air cleaning
		18	Back surface scanning section glass Upper, Lower	○	○	○	○	○	○	○	
	Paper exit section	19	Transport roller 5	○	○	○	○	○	○	○	
		20	Paper exit roller	○	○	○	○	○	○	○	
	Drive section	21	Gears (Grease)	X	X	X	X	X	X	X	(6LS06270000)
		22	Belts		X	X	X	X	X	X	
	Others	23	Document mat	○	○	○	○	○	○	○	
		24	Scanning section paper guide (White Mylar)	○	○	○	○	○	○	○	
25		Discharge brush	X	X	X	X	X	X	X		
26		Optical reflection type sensors	○	○	○	○	○	○	○	(Note 3)	
27		Optical reflection type sensors	○	○	○	○	○	○	○		
28		Paper guides	X	○	○	○	○	○	○		

(Note 1) Replacement reference: Use the paper feed, DSPF counters values for replacement reference.

- Paper pickup roller, paper feed roller, separation roller: 200K or 1 year
- Torque limiter: 800K

*** Paper feed section roller life**

Each roller life is 200K. When, therefore, a certain unit is used intensively, the life will be expired before the maintenance cycle.

Since, however, sheets of different sizes are used with different paper feed trays actually, it is quite rare that the roller replacement is required before the maintenance cycle.

If a certain size of paper is intensively used, explain the user to use different paper feed trays for that size as far as possible.

When servicing, always check the use frequency of each paper feed tray, and replace the roller according to necessity.

When cleaning the roller, it is recommendable to use wet cloth.

The wear level is greater in the sequence of the separation roller, the paper feed roller, and the paper pickup roller.

(Note 2) The conditions of the clutches differ depending on the paper pass conditions from the paper tray. Refer to the table below for replacement of the clutches.

UN	Tandem drive			Multi-stage drive B		Transport drive		Tandem drive		Multi-stage drive B	
	Signal name	C1PFC	C1PTC	C2PFC	C3PFC	C4PFC	MPTFC	LCCPTC	VPTC3	VPTC2	VPTC1
P/N	6LS05339000	6LS05338000	6LS05339000	6LS05340000		6LS05339000	6LS05338000	6LS05338000		6LS05341000	
No. 1 tray	3000K	3000K									
No. 2 tray			3000K						Total 3000K	Total 3000K	Total 1500K
No. 3 tray				3000K							
No. 4 tray					3000K						
Manual paper feed						3000K					
LCC paper feed								3000K			

(Note 3) Optical reflection sensor cleaning

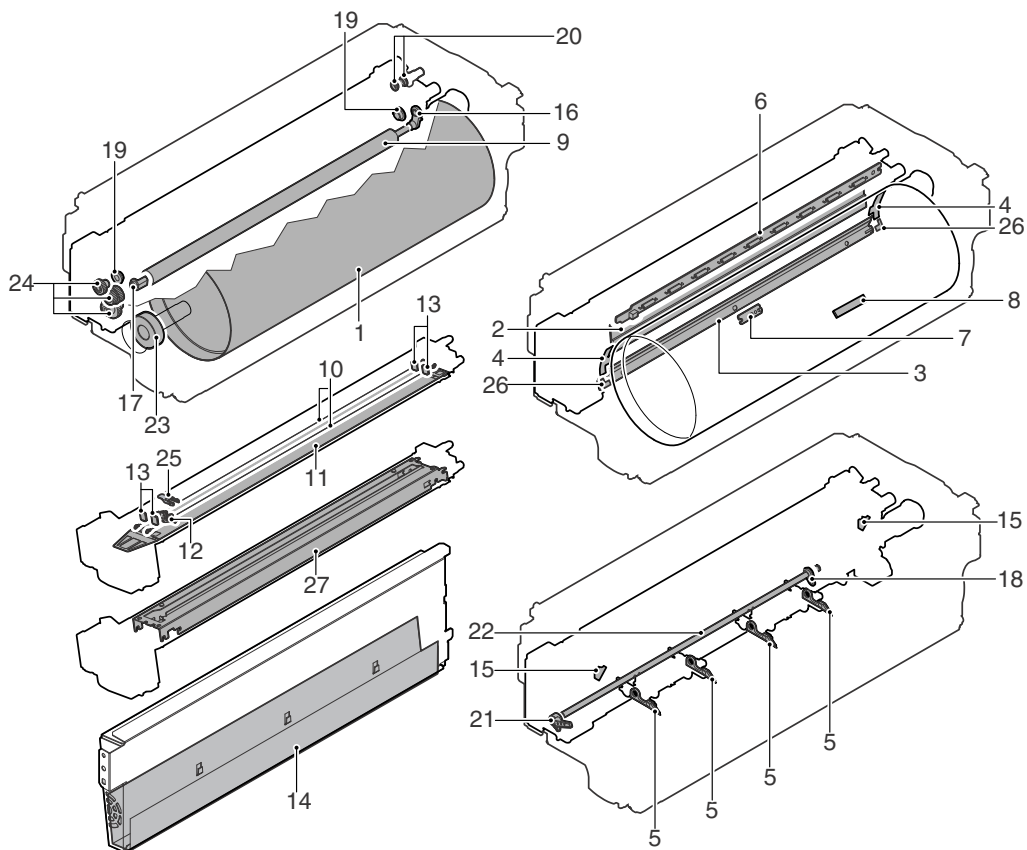
- * Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

5. Photoconductor section

A. Maintenance table

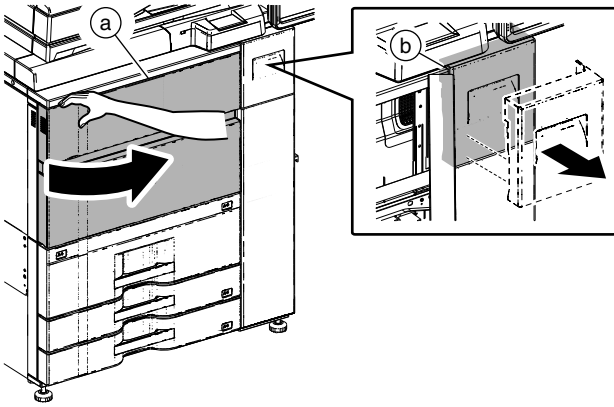
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	OPC drum	×	×	▲	×	▲	×	▲	
2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	
3	Sub blade	×	▲	▲	▲	▲	▲	▲	
4	Side seal F, R	×	▲	▲	▲	▲	▲	▲	
5	Drum separation pawl	×	▲□	▲□	▲□	▲□	▲□	▲□	When replacing, shift the separation pawl mounting position.
6	Discharge lamp	×	○	○	○	○	○	○	
7	Procon sensor	×	○	○	○	○	○	○	
8	Surface potential sensor	×	○	○	○	○	○	○	Hold the sensor so that no foreign material enters the port of the sensor. Wipe it with waste cloth. Use alcohol if it is dirtied with oil.
9	Cleaning brush roller	×	○	○	○	○	○	▲	
10	Charger wire	○	▲	▲	▲	▲	▲	▲	
11	Screen grid	×	▲	▲	▲	▲	▲	▲	
12	Charger cleaner		▲	▲	▲	▲	▲	▲	
13	Charger cushion		▲	▲	▲	▲	▲	▲	
14	Duct sheet		▲	▲	▲	▲	▲	▲	
15	Blade side seal F, R	×	×	×	×	×	×	▲	
16	Cleaning brush bearing							×	
17	Cleaning brush drive bearing							×	
18	Separation pawl oscillation bearing							×	
19	Auxiliary cleaning brush bearing							×	
20	Bearing							×	
21	Separation pawl oscillation arm							×	
22	Separation pawl oscillation shaft							×	
23	Ball bearings							×	
24	Gears							×	
25	Cleaner base guide		▲	▲	▲	▲	▲	▲	
26	Sub blade seal F, R		×	×	×	×	×	×	
27	Main charger case		○	○	○	○	○	▲	
28	Before-transfer discharge lamp		○	○	○	○	○	○	Use dry cloth only. Never use alcohol.

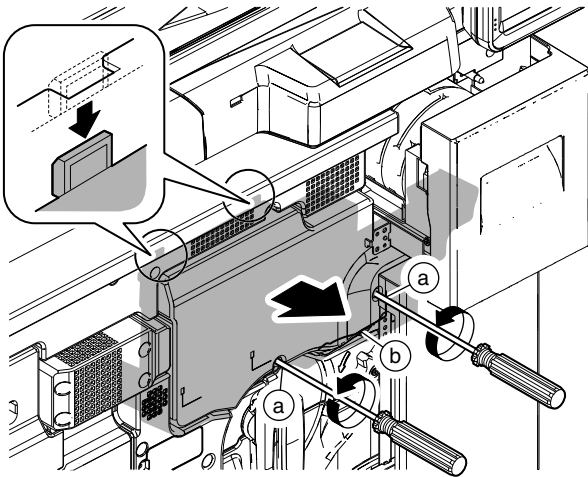


B. Details

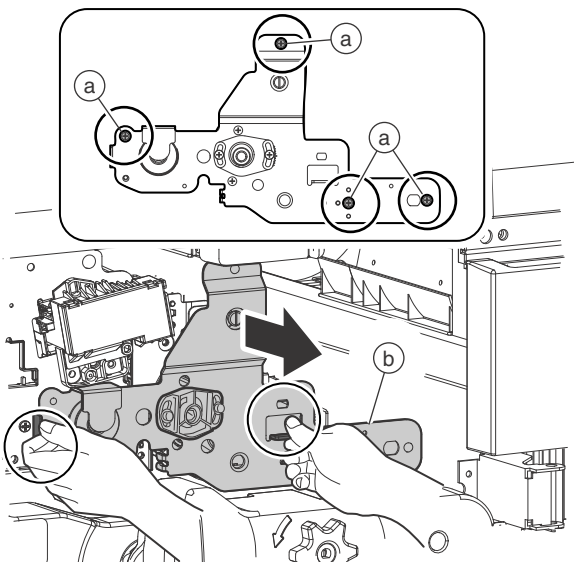
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



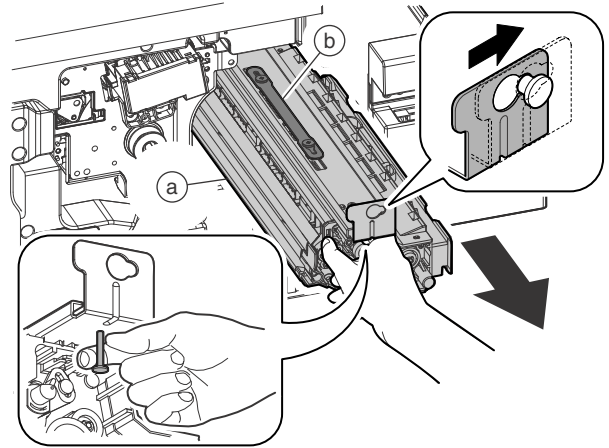
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

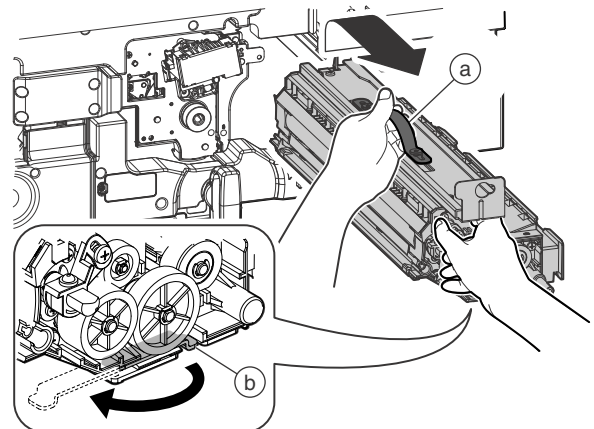


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

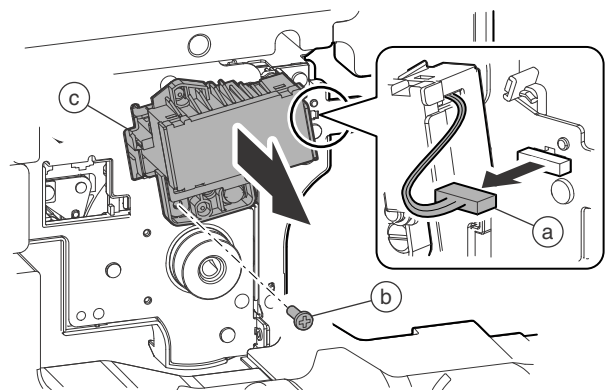


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

* When placing the developing unit, use the stand (b) and place the unit on it.

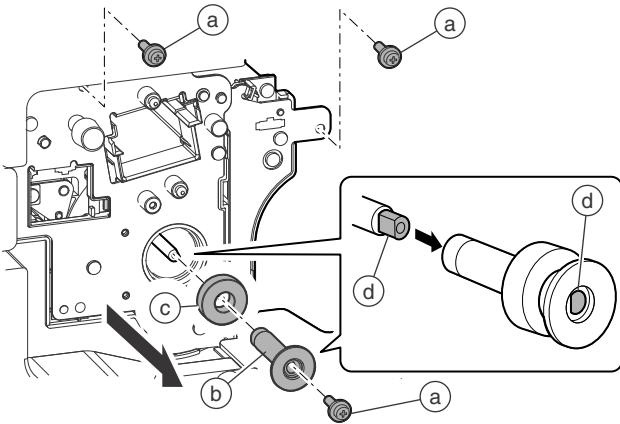


- 6) Disconnect the connector (a) and the blue screw (b), and pull out the Main charger unit (c).



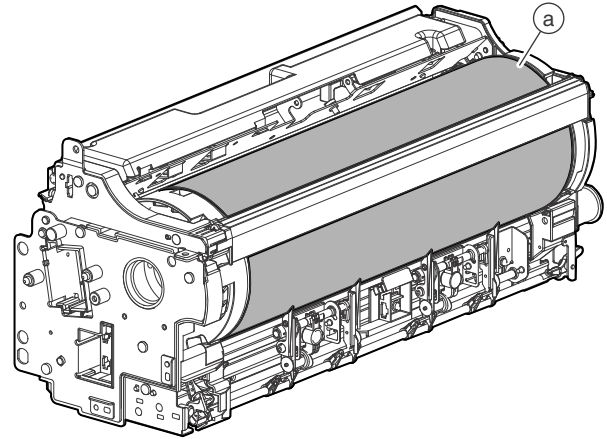
7) Remove the blue screw (a), and remove the bearing (b) and bearing (c).

* When installing the bearing, fit the D-cut direction and engage it properly.

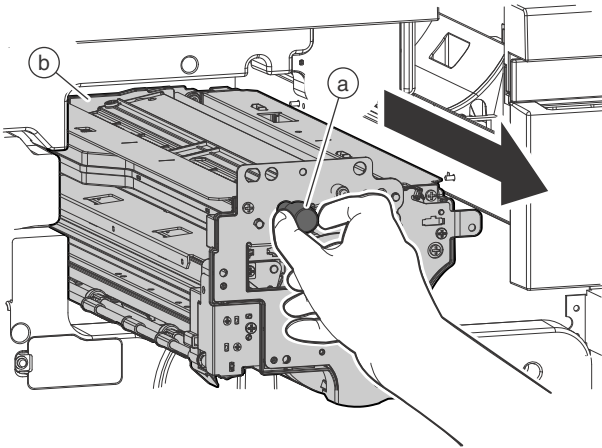


10) Check the OPC drum (a) at every 500K.

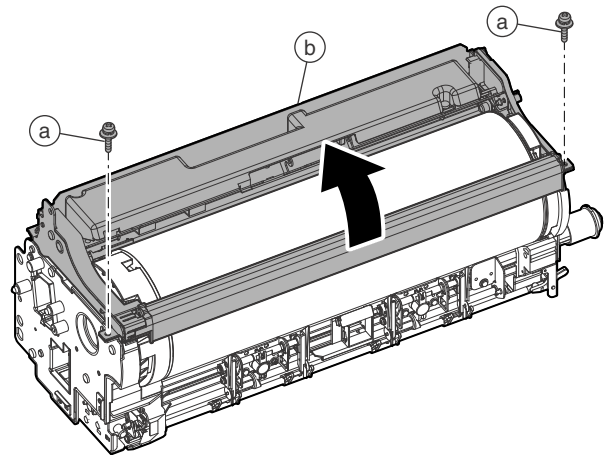
* Place the cleaner unit on the lower side.



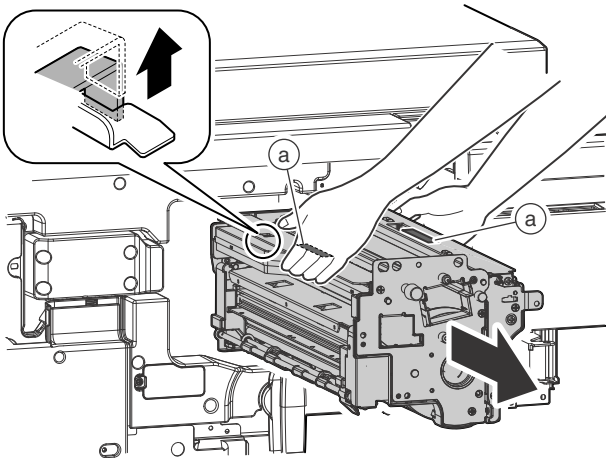
8) Hold the handle (a), and pull out the process unit (b) until it stops.



11) Remove the blue screw (a), and open the frame (b).

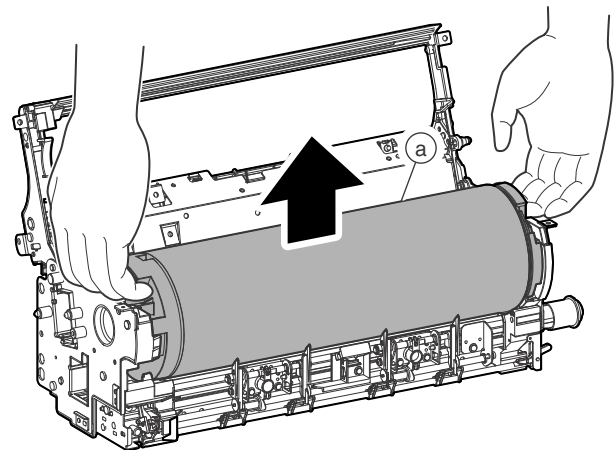


9) Hold the green label section (a) of the process unit frame, and lift it up and remove it completely.

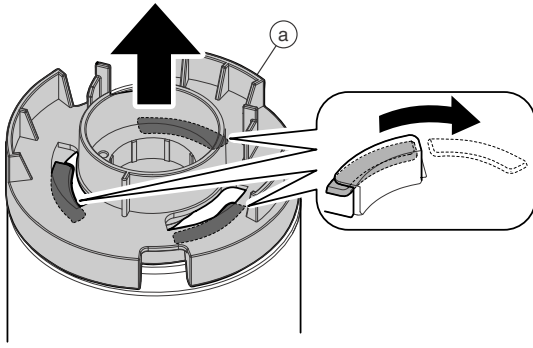


12) Remove the OPC drum unit (a).

* Use a great care not to damage the OPC drum.



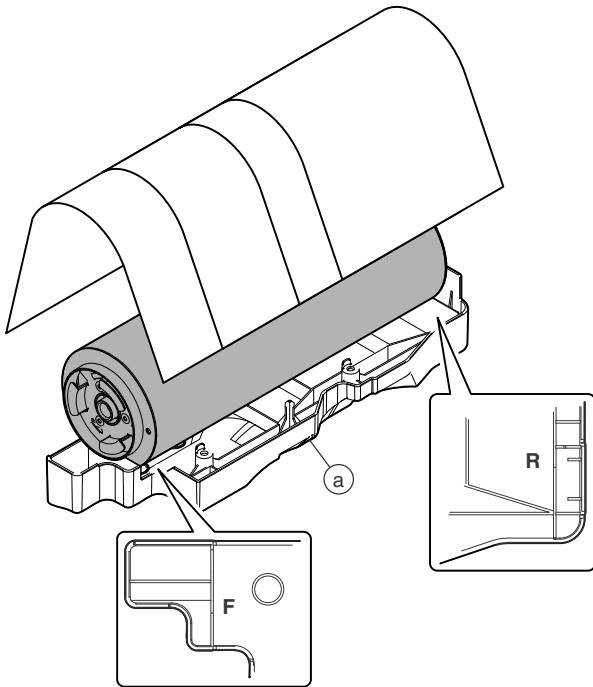
13) Rotate the bearing (a) and remove it.



* While performing the procedure, turn back the cover (a) that have been removed in step 2), and put the OPC drum unit on the cover.

When putting the OPC drum unit on the cover, in advance remove the bearing, place it according to "F" and "R" marked on the cover (a).

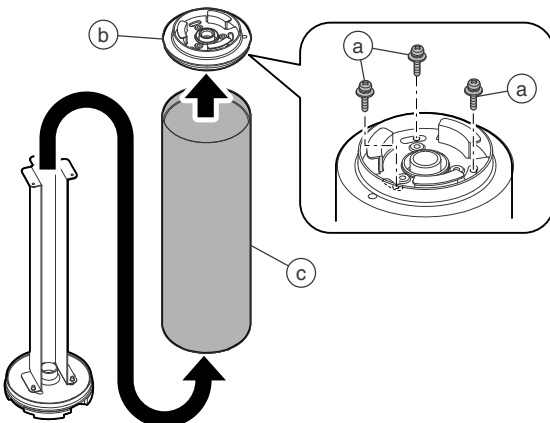
Cover the OPC drum unit with paper to prevent exposure.



14) Remove the blue screw (a), and remove the flange (b).

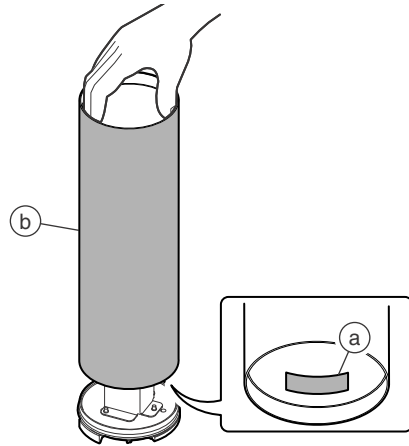
Replace the OPC drum (c) at every 1000K.

* If the drum flange cannot be removed easily, refer to "3. Drum flange removal" in [12] OTHERS.



* When installing the OPC drum, check to confirm that the label (a) inside the OPC drum comes on the rear side.

* When handling the OPC drum, be careful not to touch the photoconductor surface (b). Put your hand inside the OPC drum to install it.



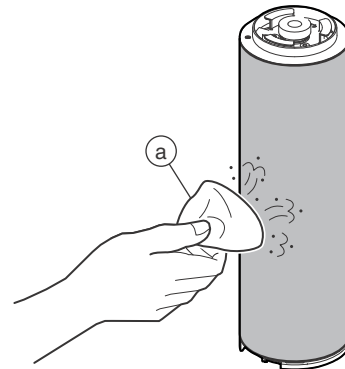
* After replacement, apply yellow toner (6LS06271000) (a) to the whole surface of the OPC drum

* After installing the OPC drum to the unit, rotate it one revolution in the normal direction.

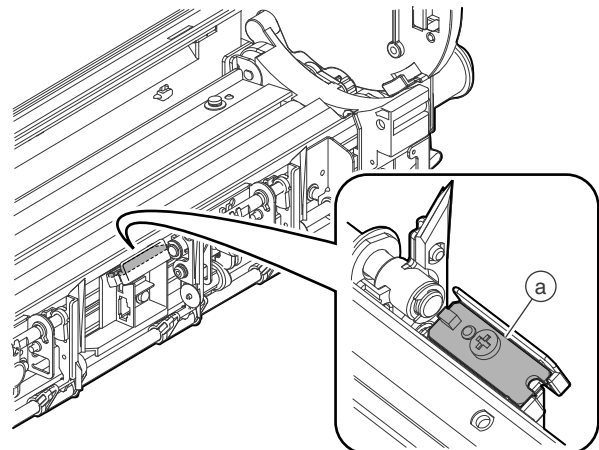
* Never apply powder other than yellow toner.

* Do not remove SETTING POWDER from the surface of the OPC drum for replacement. Apply yellow toner over SETTING POWDER.

* Use special care to apply yellow toner to the neighborhood (30mm) of the both ends of the OPC drum at the end of the cleaning blade.

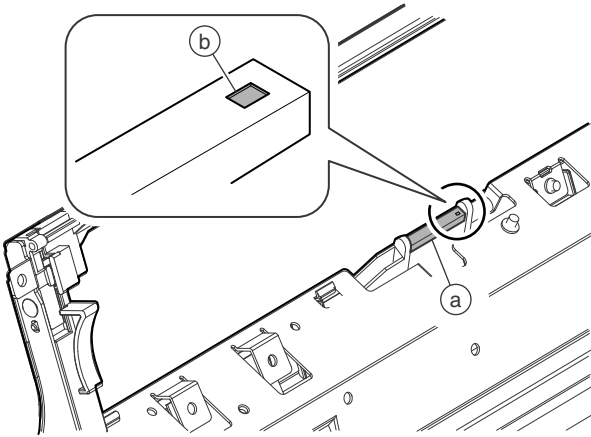


15) Clean the procon sensor (a) every 500K.



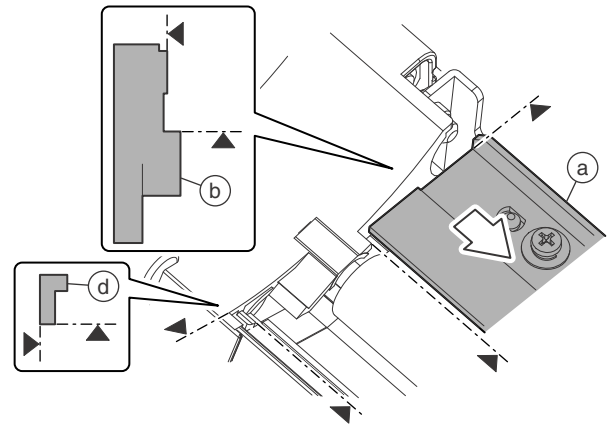
16) Clean the front surface potential sensor (a) at every 500K.

- * When cleaning, be careful not to drop a foreign material into the small window (b) of the surface potential sensor.



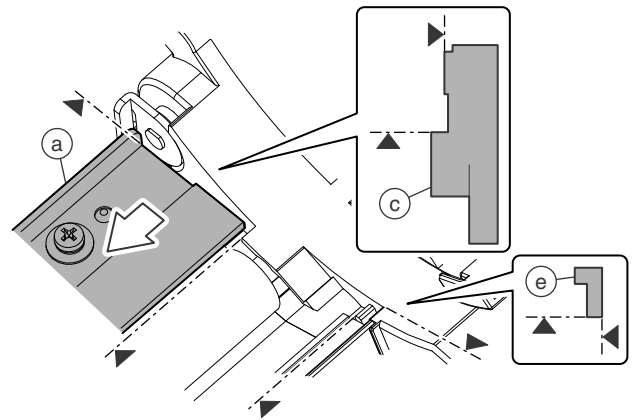
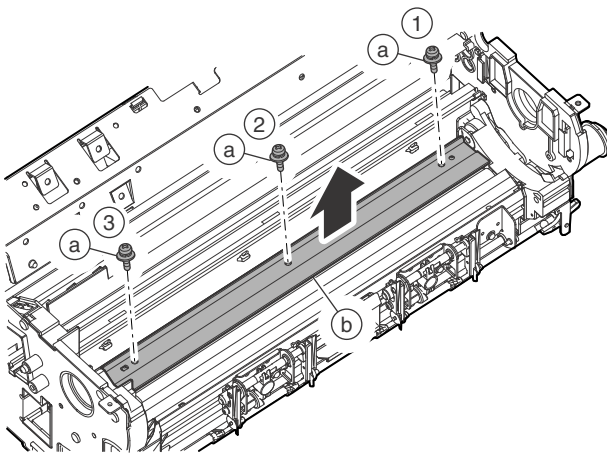
- * Slide the cleaning blade (a) in the arrow direction, and attach the side seal F (b), the side seal R (c), the sub blade seal F (d), and the sub blade seal R (e) according to the references.

- * When attaching the seal, check to confirm that the side seal is not covered with the cleaning blade.



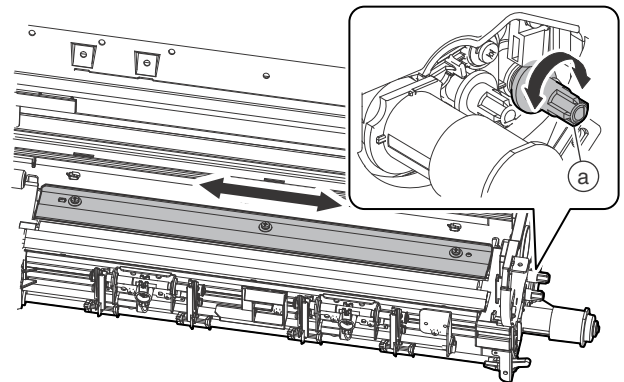
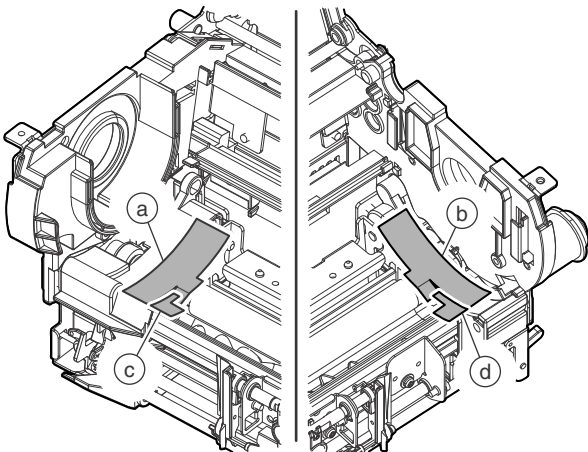
17) Remove the blue screw (a), and replace the cleaning blade (b).

- * Do not touch the urethane edge of the cleaning blade.
- * Tighten the blue screw (a) in the sequence of (1), (2), and (3).



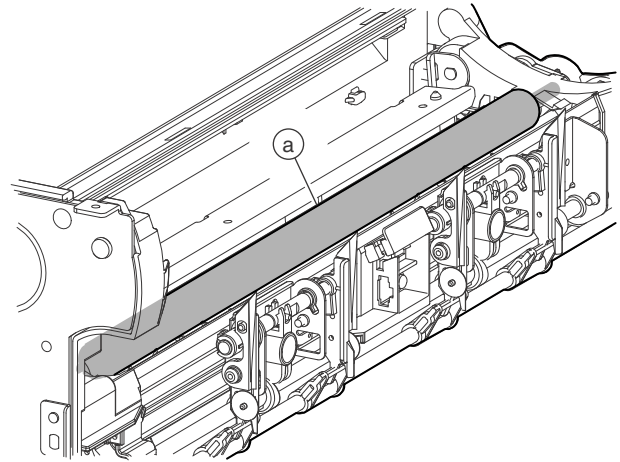
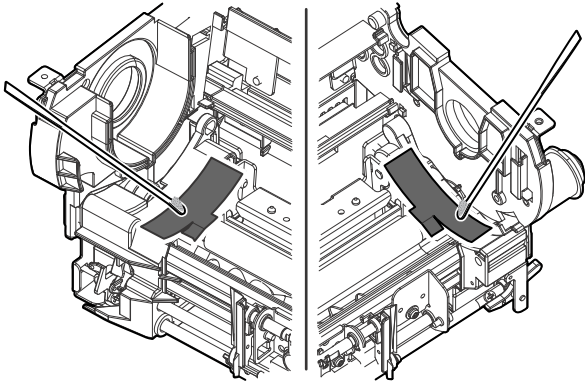
- * The cleaning blade can be shifted to the front side or the rear side by turning the knob (a) on the front side clockwise or counterclockwise.

18) Replace the side seal F (a) and the side seal R (b). Check the sub blade seal F (c) and the sub blade seal R (d).



* After attachment, apply side seal powder (6LS06272000) to the whole surfaces of the side seal F and side seal R evenly by using Patel (6LS06273000) .

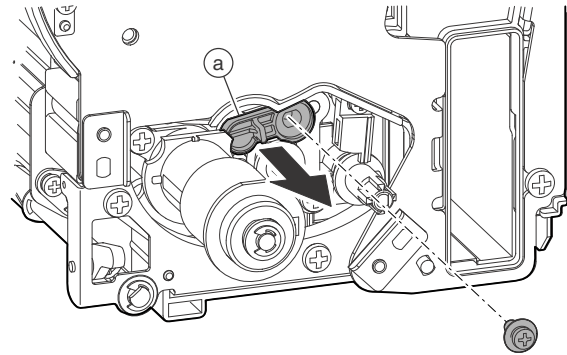
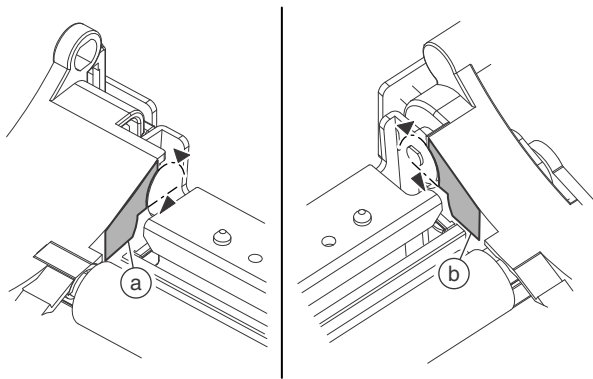
21) Clean the cleaning brush roller (a) at every 500K.



19) Check the blade side seal F (a) and the blade side seal R (b) at every 500K, and replace them at every 3000K.

22) Remove the screw (a). Remove the brush bearing (b), and check at every 3000K.

* When attaching them, attach according to the reference.

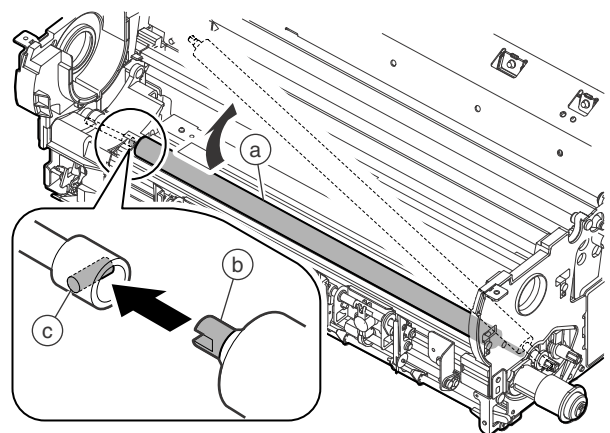
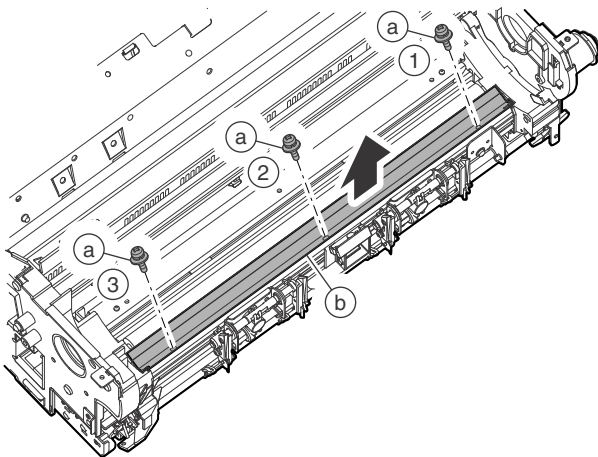


20) Remove the blue screw (a), and replace the sub blade (b).

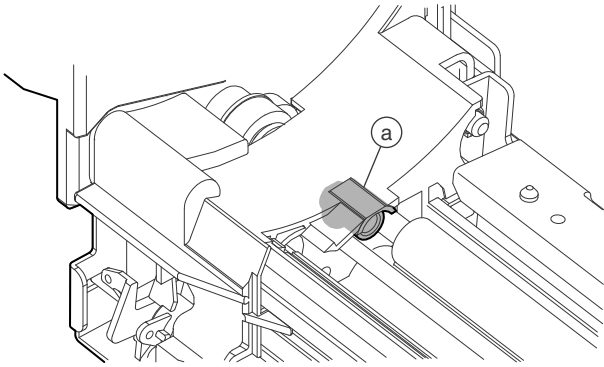
23) Replace the cleaning brush roller (a).

* Tighten the blue screw (a) in the sequence of (1), (2), and (3).

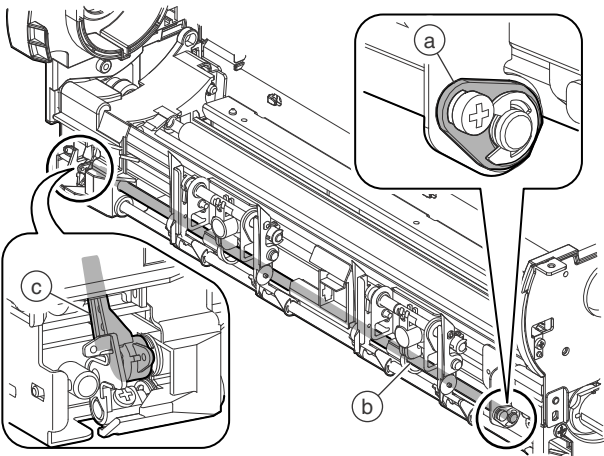
* When attaching, the cleaning brush roller, engage the slit (b) at the lead edge with the pin (c) in the shaft.



24) Check the brush drive bearing (a) at every 3000K.

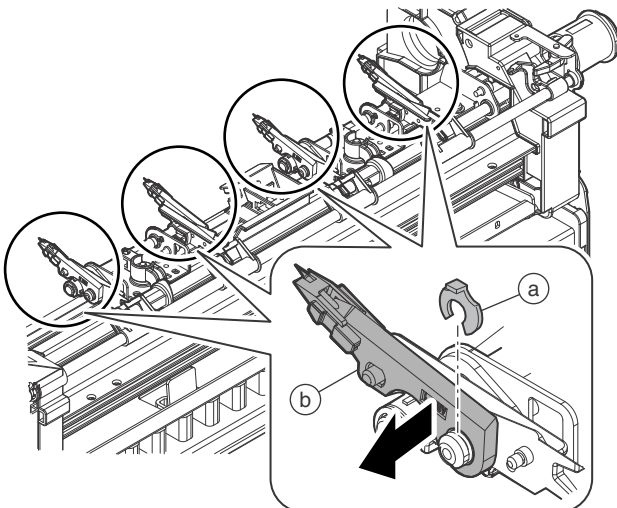


25) Check the separation pawl oscillation bearing (a), the separation pawl oscillation shaft and the separation pawl oscillation arm (c) at every 3000K.

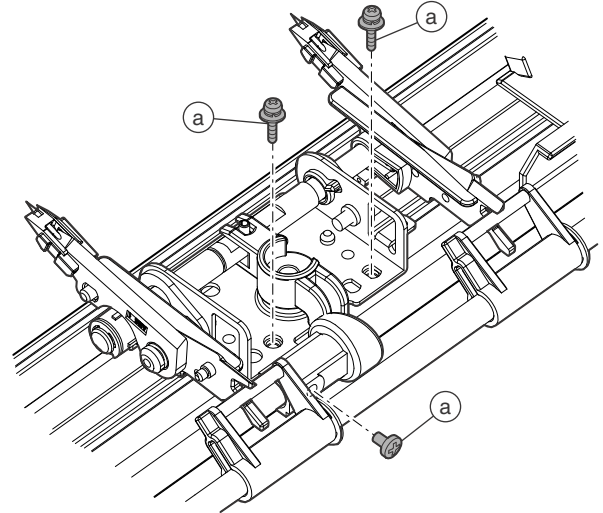


26) Remove the E-ring (a), and replace the drum separation pawl (b).

* Be careful not to touch the lead edge of the drum separation pawl and the paper pass section.

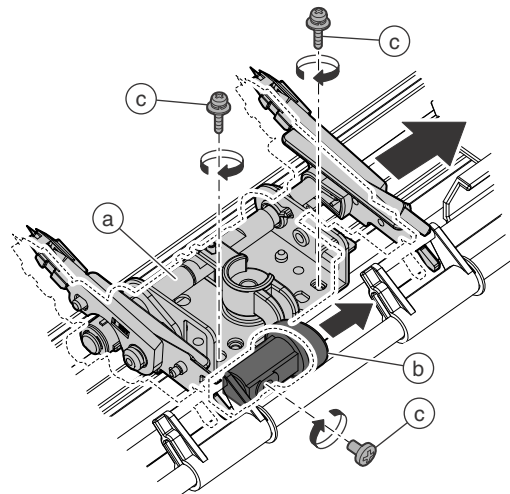


27) Remove the blue screw (a).

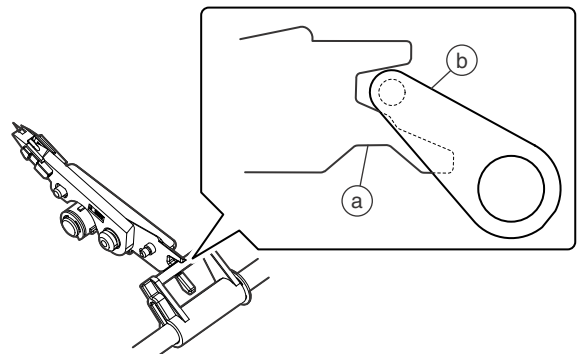


28) After replacing the drum separation pawl, shift the drum separation pawl unit (a) position. At the same time, shift the cam (b) position and fix it with the blue screw (c).

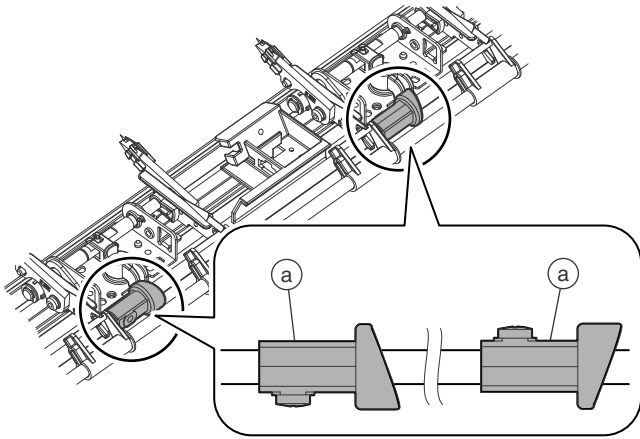
* When shifting the position of the drum separation pawl unit, shift and adjust both the front unit and the rear unit.



* Be careful to engage all of V-groove section (4 position) of the separation pawl holder with the separation pawl separation arm.

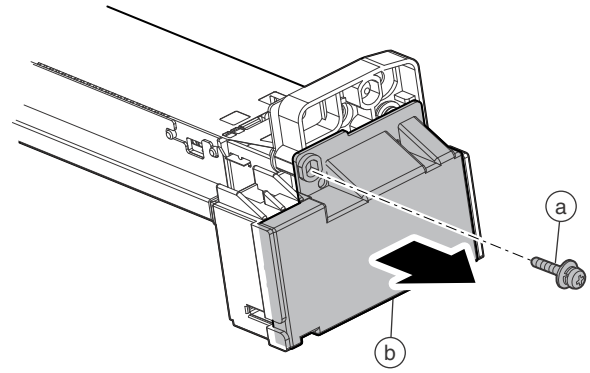


* When shifting the position, fix the cam (a) in the reversed direction.

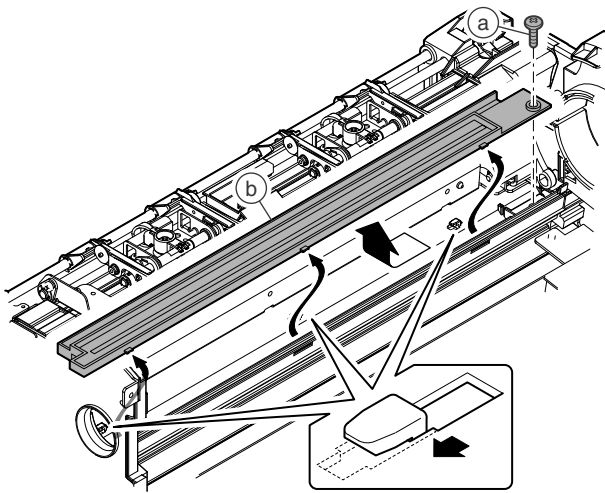


29) Remove the blue screw (a), and slide the cover (b) to remove.

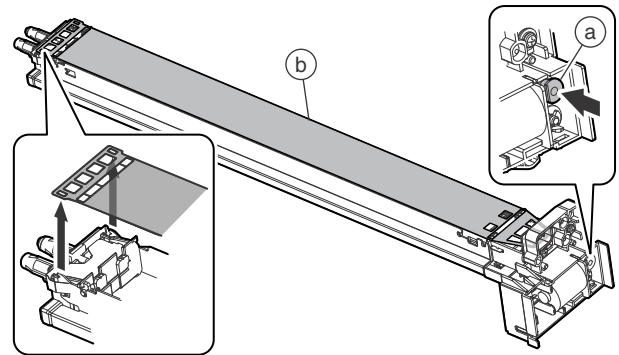
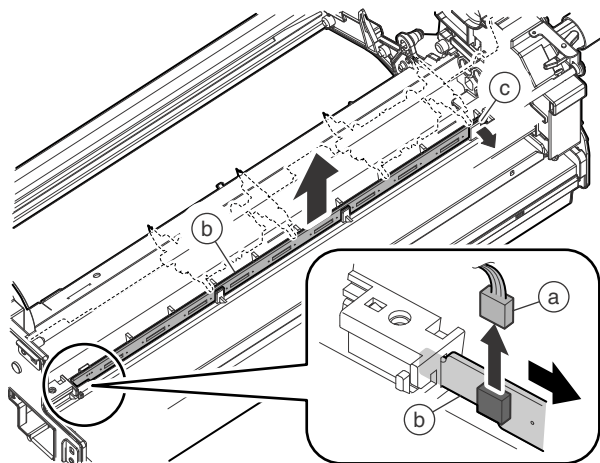
31) Remove the blue screw (a), and remove the cover (b).



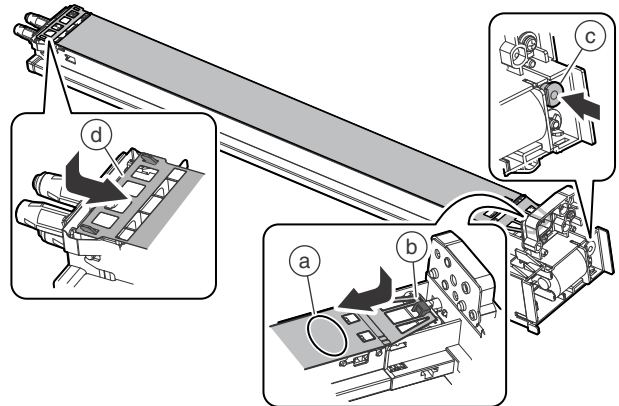
32) While pushing the push button (a), remove the screen grid (b) from the rear side and replace it.



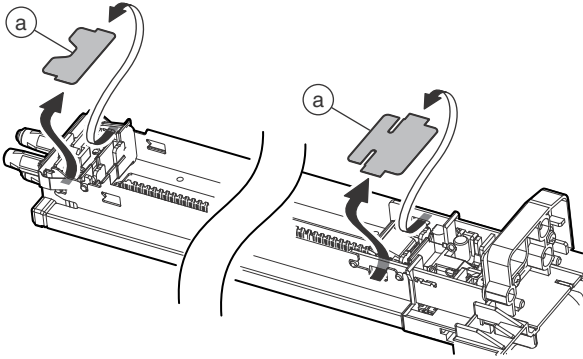
30) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp.
Clean the discharge lamp (b) at every 500K.
* Be careful not to break the pawl. (c).



* Be careful not to touch the mesh section of the screen grid.
* When installing the screen grid, face the marking (a) toward the front, and hang the front side (b) first, then hang the rear side (d) while pushing the push button (c).



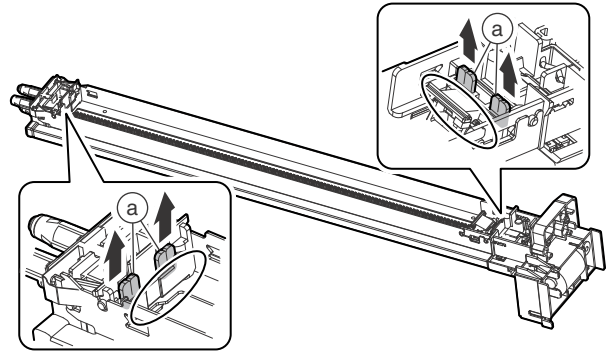
33) Remove the sheet (a).



35) Clean the main charger case at every 500K.

Clean the MC holder F/R and the MC case shown in a rounded sign part so that there is no dirt by toner etc.

36) Replace the charger cushion (a).

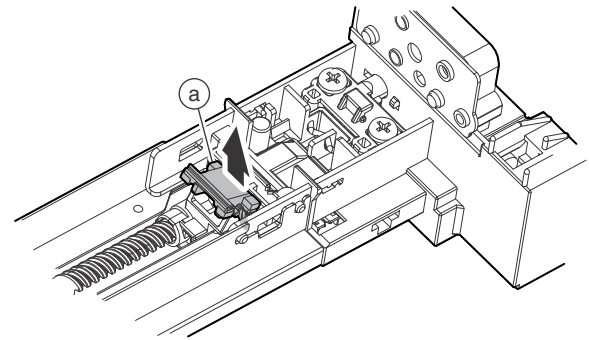
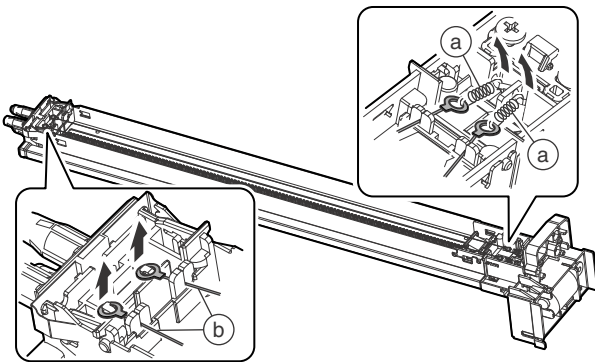


34) Remove the spring (a) in the front side, and remove the rear side (b) of the charger wire, and replace it.

- * When replacing the charger wire, wear polyethylene glove which is packed together with the 500K maintenance kit.
- * When handling the charger wire, be careful not to twist, fold, or break, and do not touch the wire section.

37) Replace the charger cleaner (a).

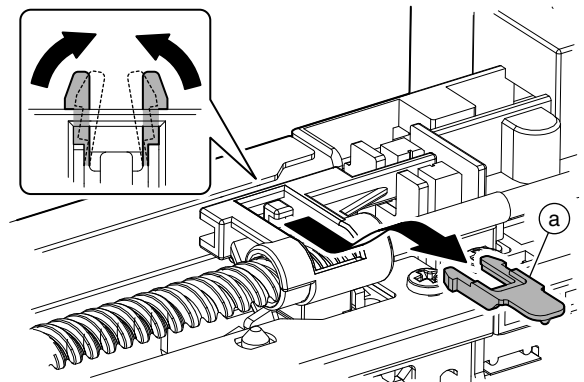
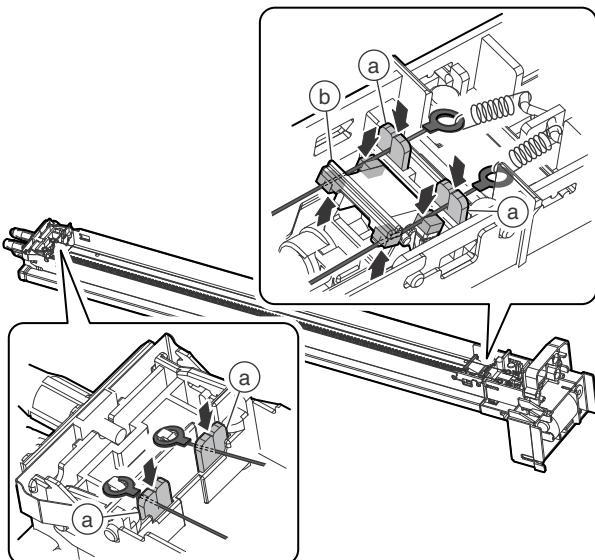
- * When attaching, be careful of the direction.
- * After attaching, check to confirm that it moves smoothly



* When installing the charger wire, insert the charger wire into the slit of the charger cushion (a) and the slit of the charger cleaner (b).

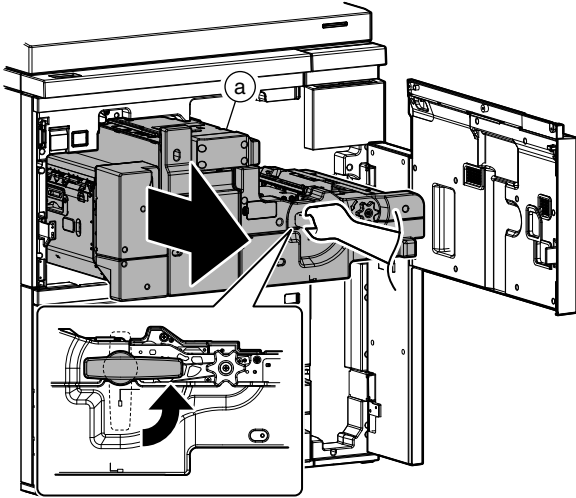
38) Replace the cleaner base guide (a).

- * When attaching, be careful of the direction. Be sure to engage the pawl securely.

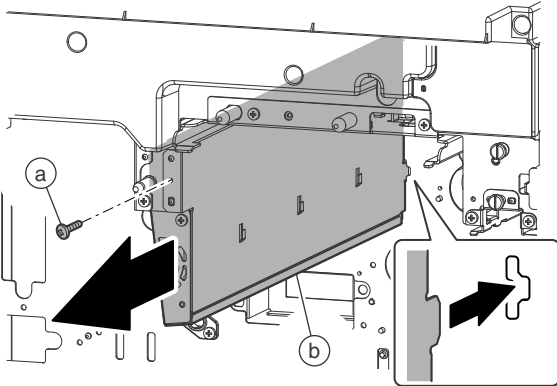


39) Replace the main charger case at every 3000K.

40) Pull out the intermediate frame (a).



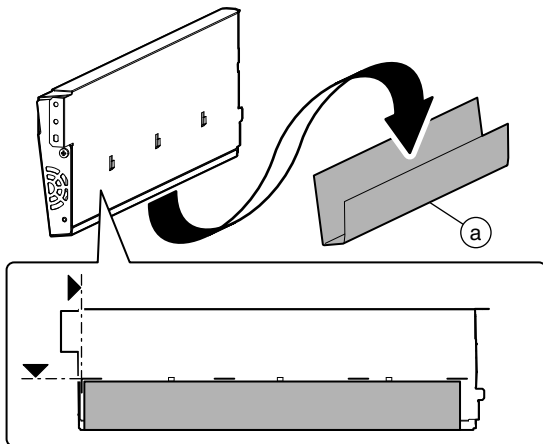
41) Remove the screw (a), and remove the duct (b).



42) Replace the duct sheet (a).

* When pasting, fit the reference line.

* When attaching, remove oily dirt from the attachment surface. Be careful not to include air bubbles. If any air bubbles are included, push and remove them out of the ends of the sheet so that air bubble of $\phi 5$ or greater is not remained.

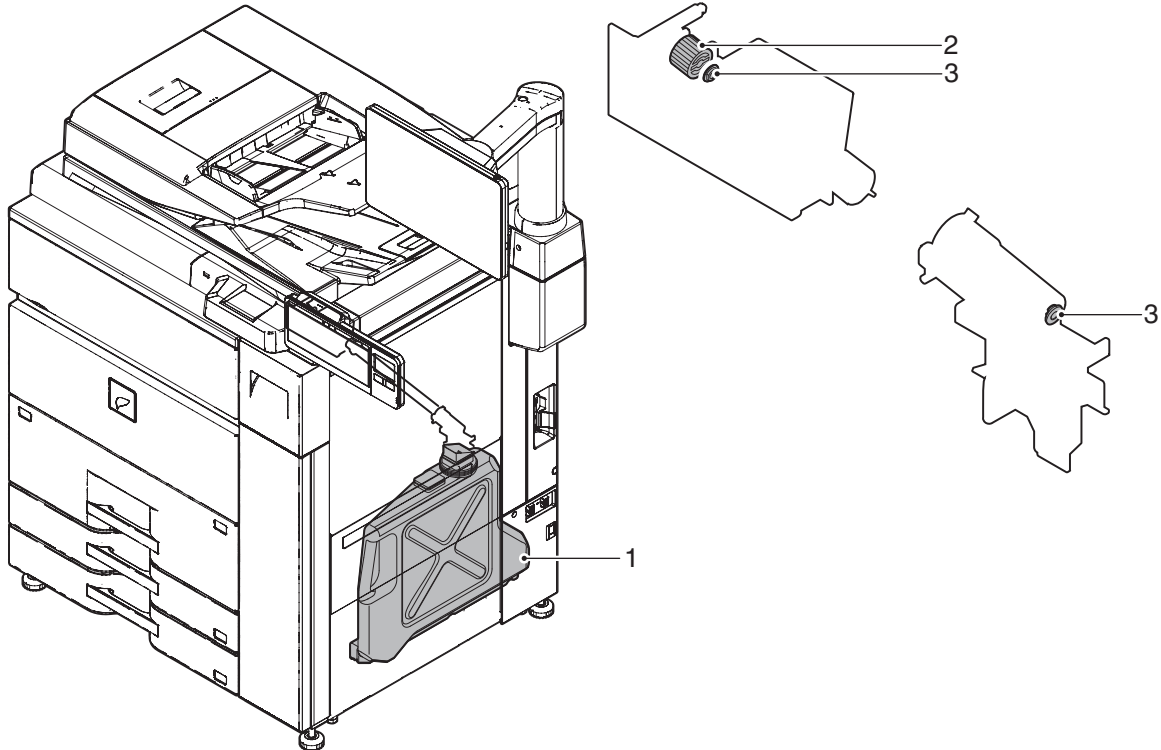


6. Waste toner section

A. Maintenance table

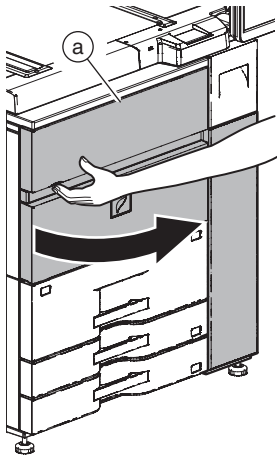
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Toner collection container (with cap)	×	▲	▲	▲	▲	▲	▲	
2	Gears							×	
3	Bearing (Waste toner resin bearing)							×	



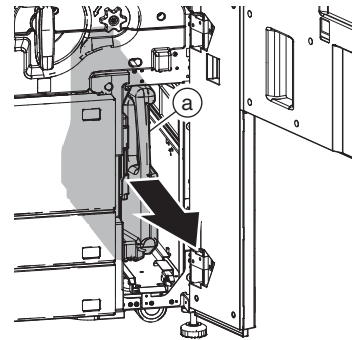
B. Details

1) Open the front cover (a).



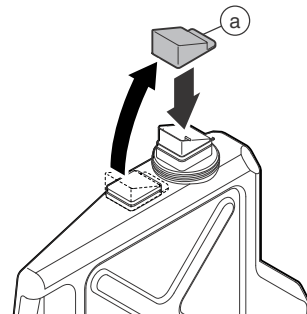
2) Replace the toner collection container (a).

* Be sure to insert a new toner collection container securely to the bottom.



3) Attach the cap (a).

* Check to confirm that it is securely attached.

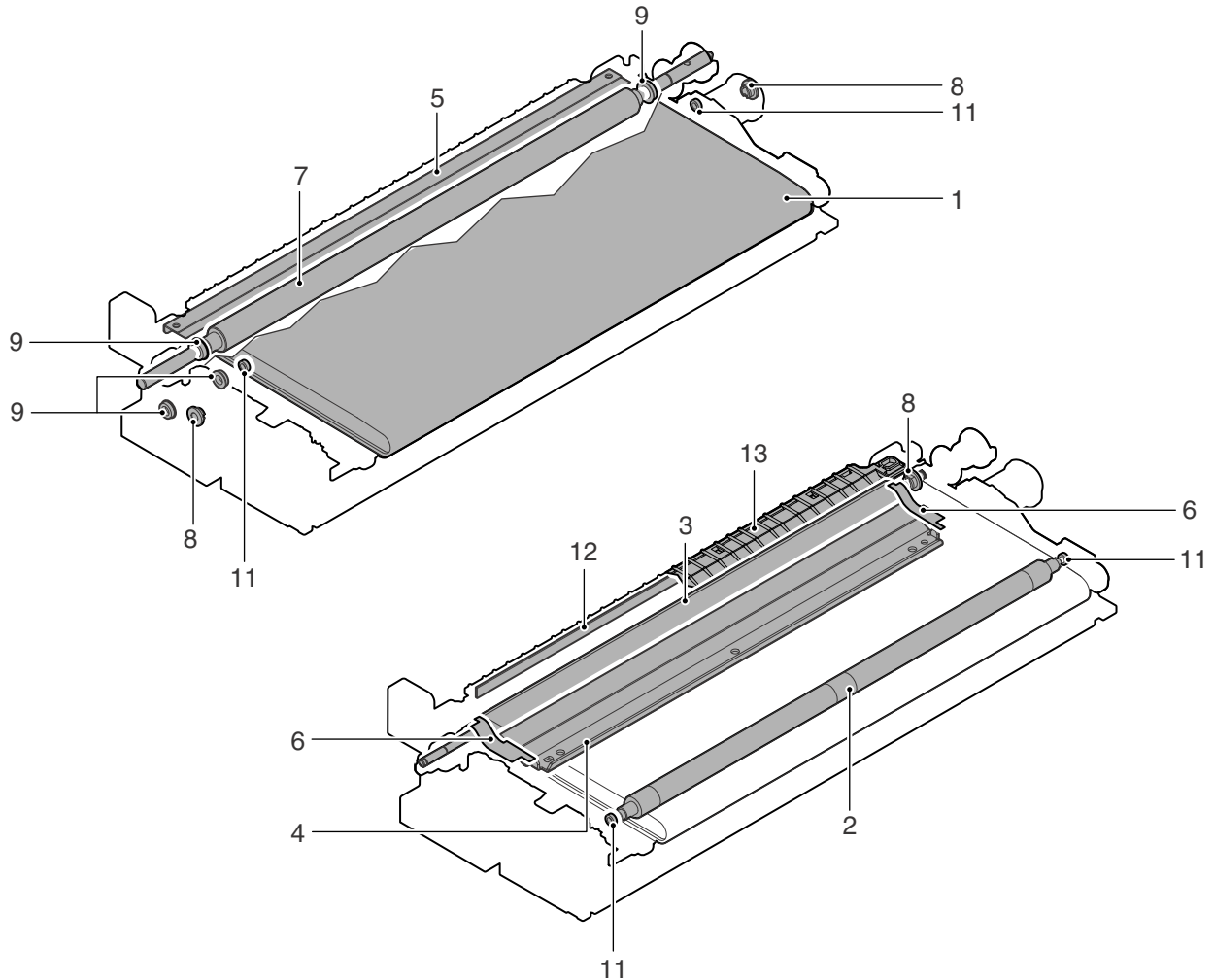


7. Transfer section

A. Maintenance table

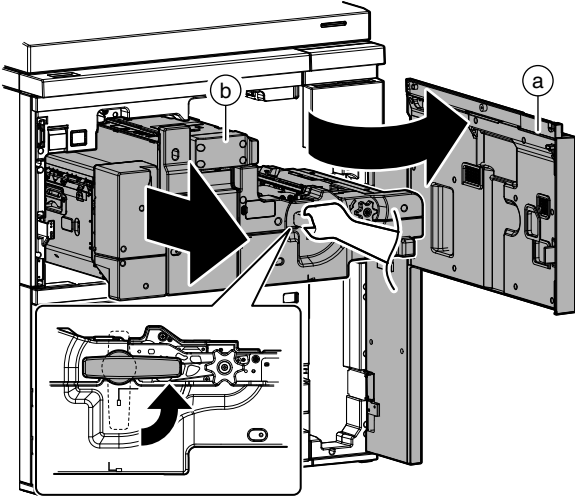
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Transfer belt	○	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
2	Transfer roller		×	▲	×	▲	×	▲	
3	Transfer cleaning brush		×	○	×	○	×	▲	
4	Transfer cleaning blade	×	×	▲	×	▲	×	▲	
5	Transfer sub blade	×	×	×	×	×	×	▲	
6	Transfer side seal F, R	×	×	×	×	×	×	×	
7	Transfer drive roller							×	
8	Bearing (Waste toner resin bearing)							×	
9	Ball bearings							×	
10	Gears							×	
11	Ball bearing for transfer roller		×	▲	×	▲	×	▲	
12	Discharge plate	○	○	○	○	○	○	○	
13	Discharge plate holder	○	○	○	○	○	○	○	

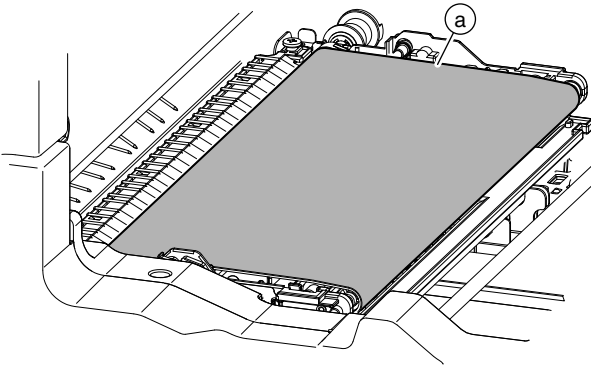


B. Details

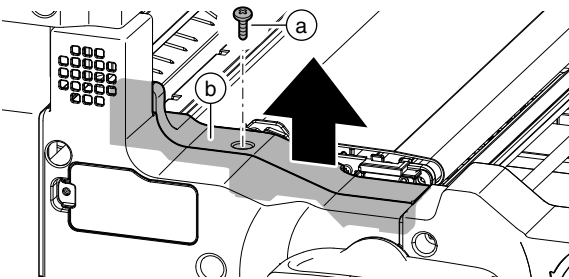
- 1) Open the front cover (a), and pull out the intermediate frame (b).



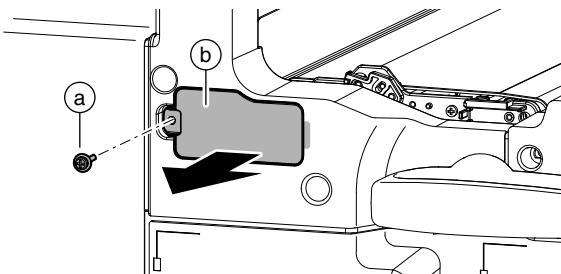
- 2) Check the transfer belt (a) at every 500K.



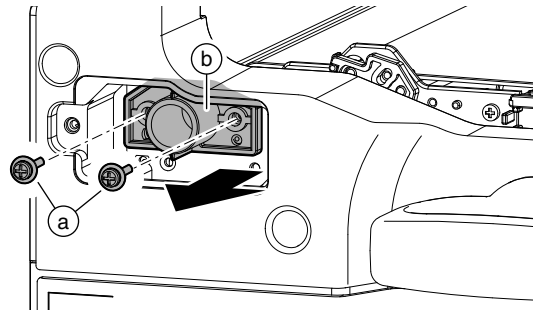
- 3) Remove the screw (a), and remove the cover (b).



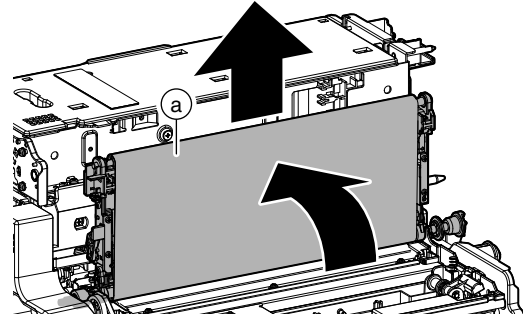
- 4) Remove the screw (a), and remove the cover (b).



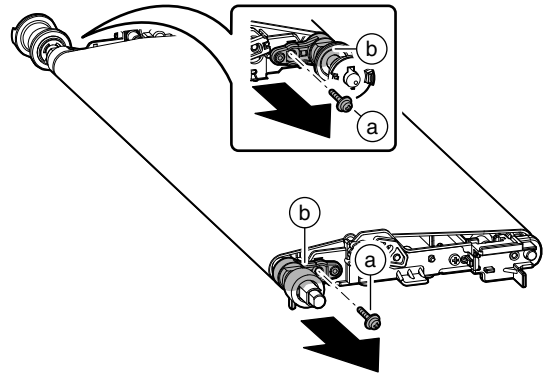
- 5) Remove the screw (a), and remove the holder (b).



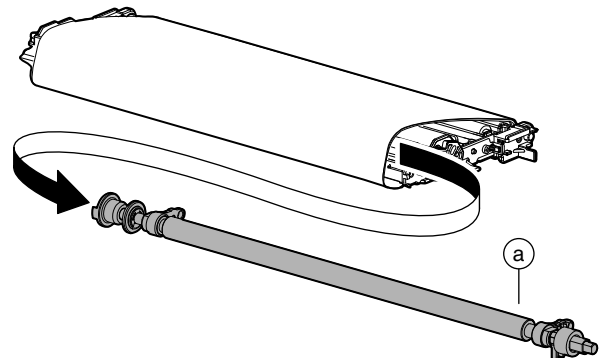
- 6) Remove the transfer belt unit (a).



- 7) Remove the screw (a), and remove the bearing (b).

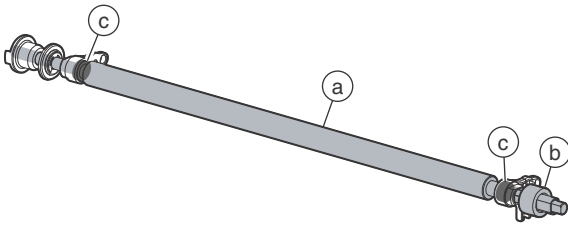


- 8) Remove the transfer drive roller unit (a).



- 9) Check the transfer drive roller (a), the gear (b) and the ball bearings (c) at every 3000K.

* In maintenance, clean the section (a) with alcohol.

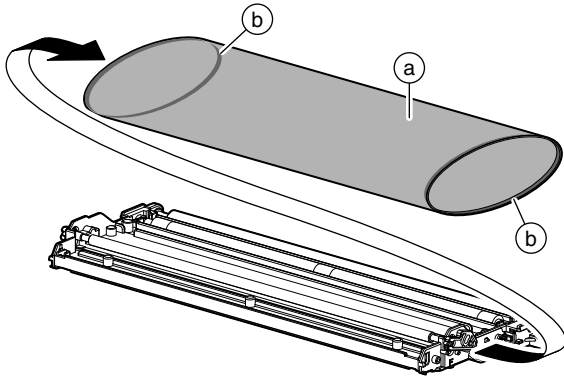


- 10) Replace the transfer belt (a) at every 1000K.

* After replacement of the transfer belt, apply stearic acid (6LS06274000) to all the circumference of the belt. After assembling the unit, rotate it one revolution in the normal direction.

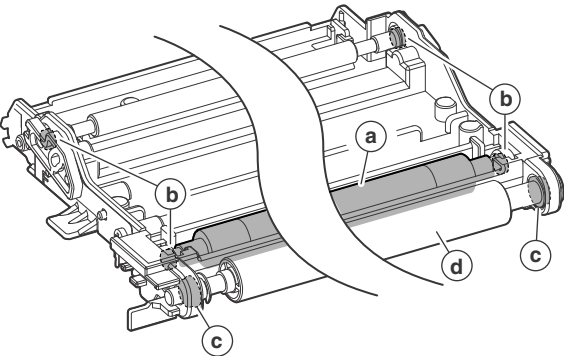
* Use care so that the beats (b) on the both edges of the back of the transfer belt are not on the drive roller and the follower roller.

* Never apply powder other than stearic acid.

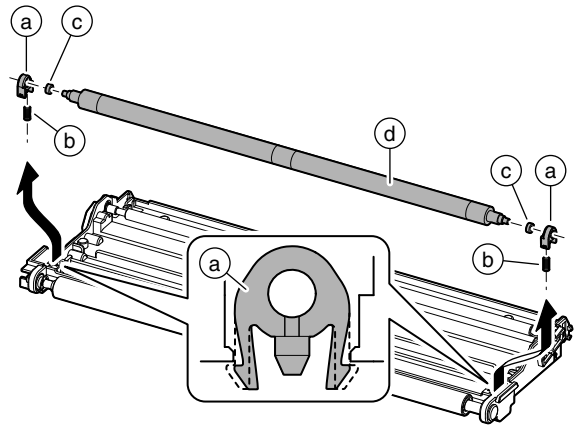


- 11) Check the transfer roller (a) and the ball bearing (b) for the transfer roller at every 500K, and check each ball bearing (c) at every 3000K.

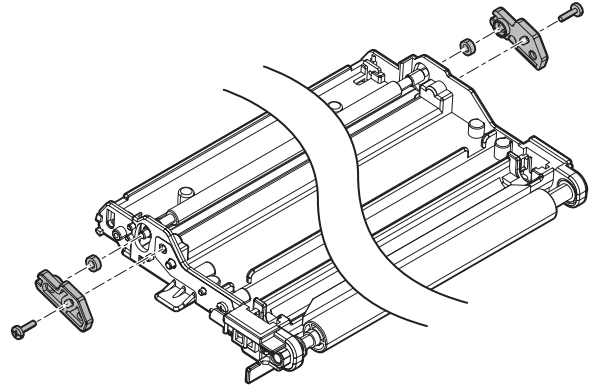
* In maintenance, clean the section (d) with alcohol.



- 12) Remove the bearing (a) and the spring (b), and replace the ball bearing (c) for the transfer roller and the transfer roller (d) at every 1000K.

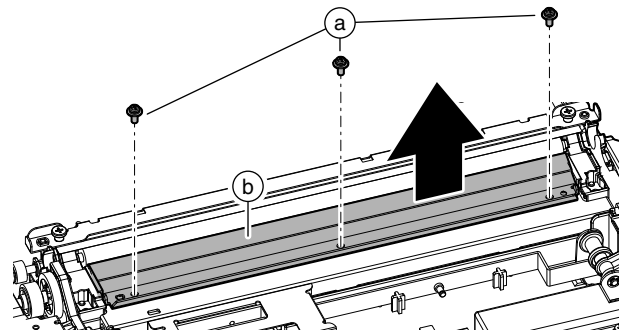


- 13) Remove the screws and remove the holder, and replace the ball bearings for the transfer separate adjust shaft at every 1000K.

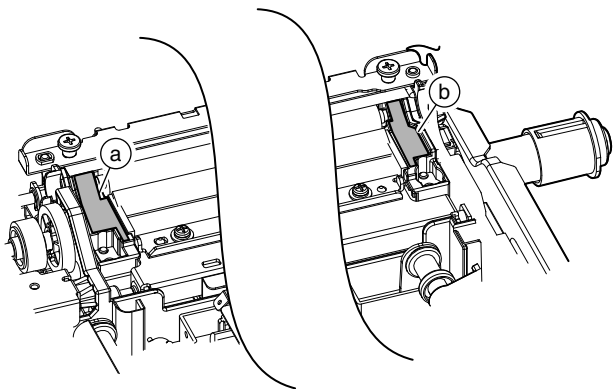


- 14) Check the screw (a), and replace the transfer cleaning blade (b) at every 500K, and replace it at every 1000K.

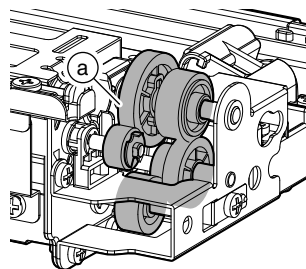
* Be careful not to touch the urethane edge of the transfer cleaning blade.



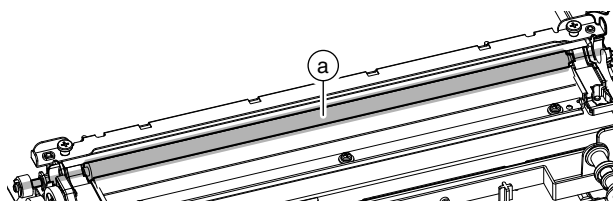
15) Check the side seal F (a) and the side seal R (b) at every 500K.



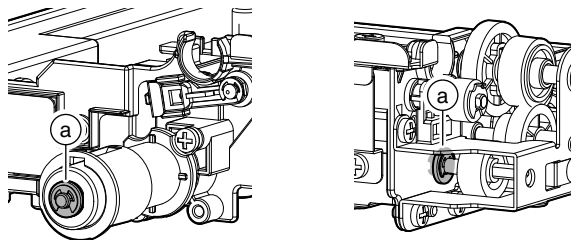
19) Check each gear (a) at every 3000K.



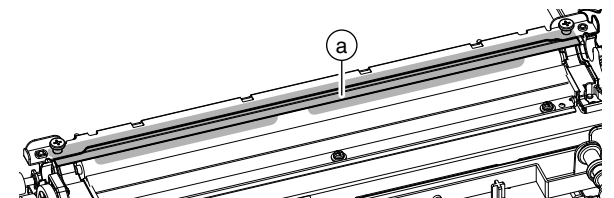
16) Check the transfer cleaning brush (a) at every 500K, and cleaning them at every 300K.



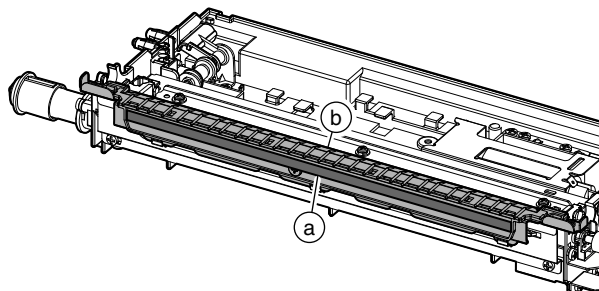
20) Check the bearing (a) at every 3000K.



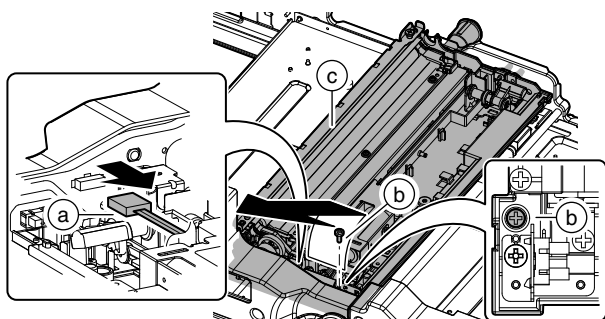
17) Check the transfer sub blade (a) at every 500K.



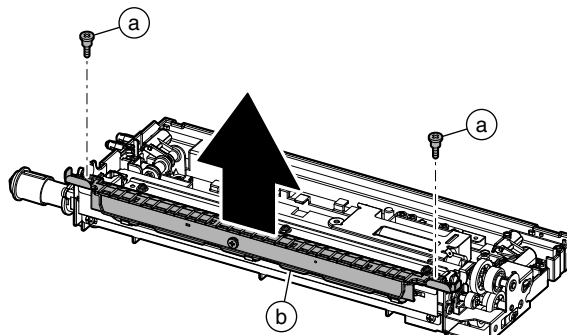
21) Clean the discharge plate (a), and the discharge plate holder (b) at every 500K.



18) Disconnect the connector (a), and remove the screw (b). Remove the transfer frame (c).

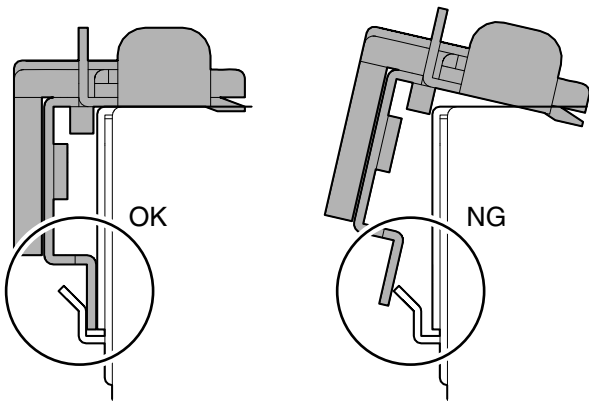


22) Remove the screw (a) and remove the holder unit (b).

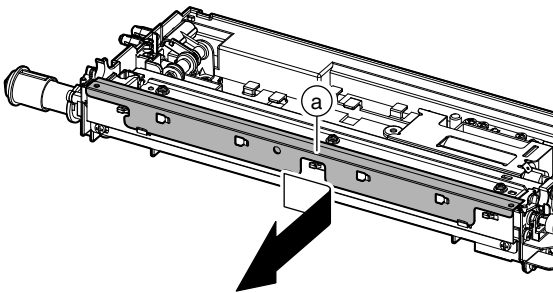


<<Note for installation>>

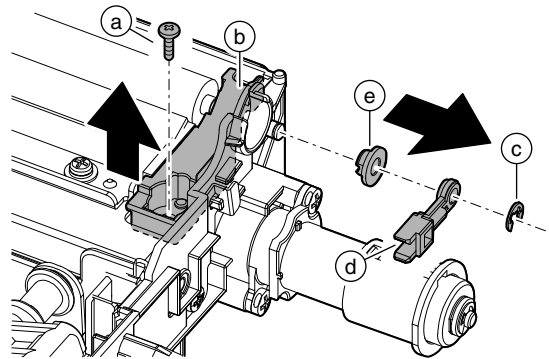
When installing the discharge plate holder, check to confirm that it is securely installed.



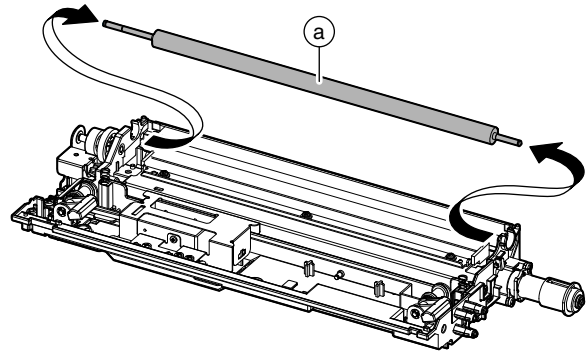
23) Slide remove the transfer sub blade (a), and replace it.



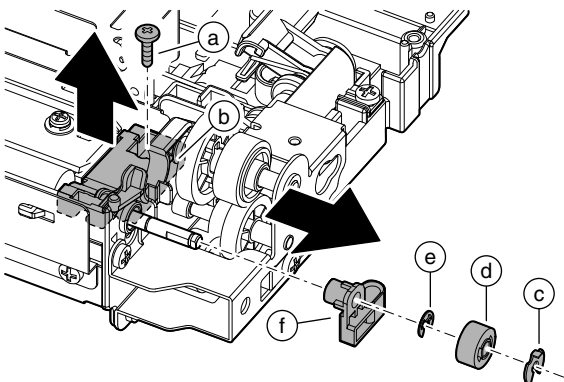
25) Remove the screw (a), and remove the mounting plate (b). Remove the E-ring (c), the bearing (d), and the bearing (e).



26) Replace the transfer cleaning brush (a).



24) Remove the screw (a), and remove the mounting plate (b). Remove the stopper (c), the gear (d), the E-ring (e), and the bearing (f).

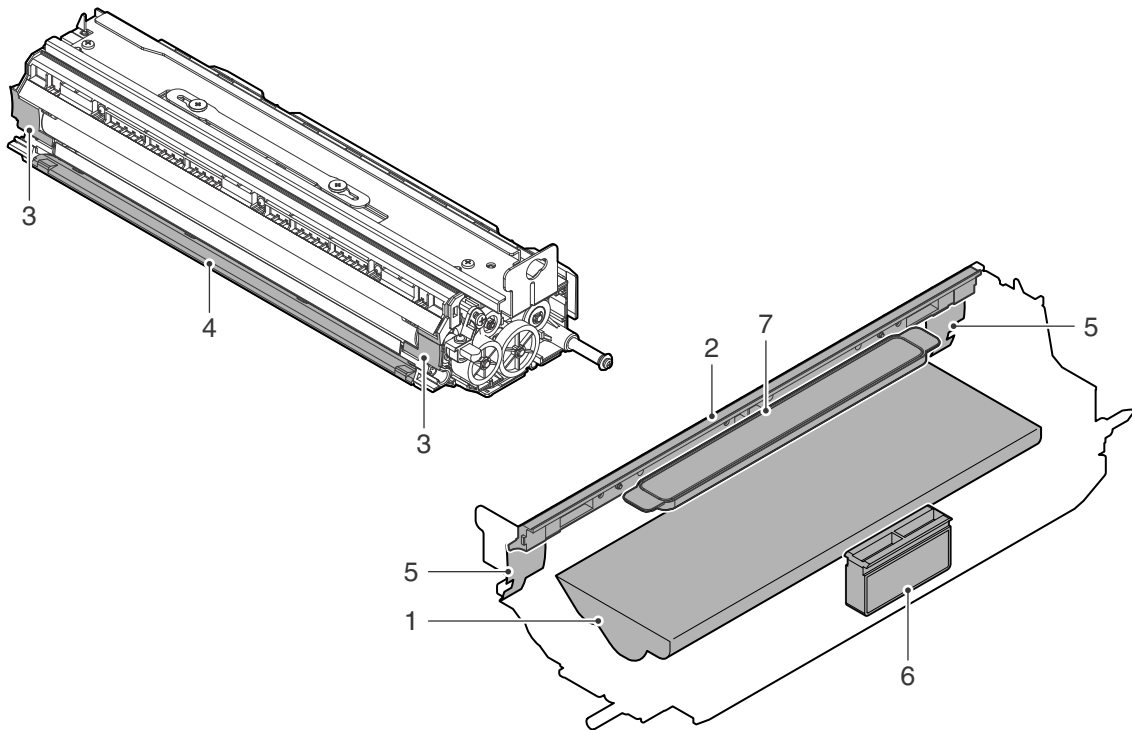


8. Developing section

A. Maintenance table

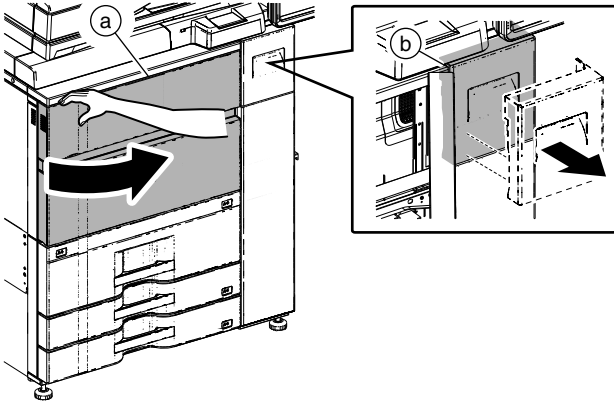
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Developer	×	×	▲	×	▲	×	▲	Supply when installing
2	Doctor cover UN/DV seal	○	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
3	DV side plate F, R	○	○	○	○	○	○	○	Clean around the DV side seal F and R.
4	DV duct cover	○	○	○	○	○	○	○	Clean the lower section of the MG roller.
5	DV side seal F, R	×	×	▲	×	▲	×	▲	Use dry cloth only. Never use alcohol.
6	DV BOX filter	×	×	▲	×	▲	×	▲	
7	Filter unit	×	×	▲	×	▲	×	▲	

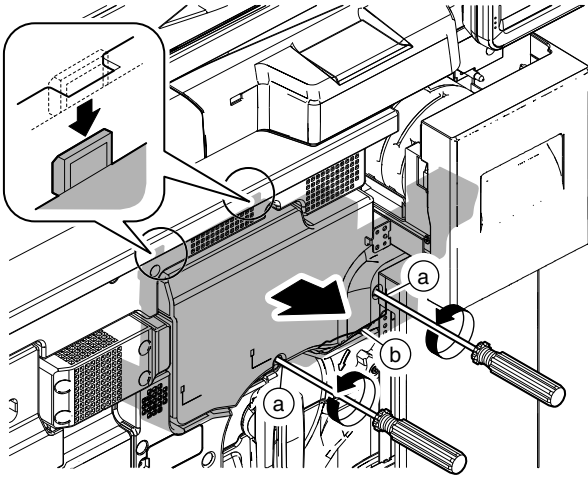


B. Details

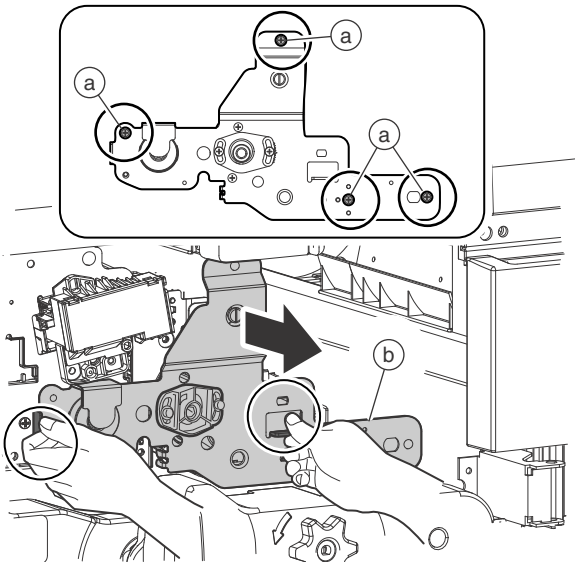
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



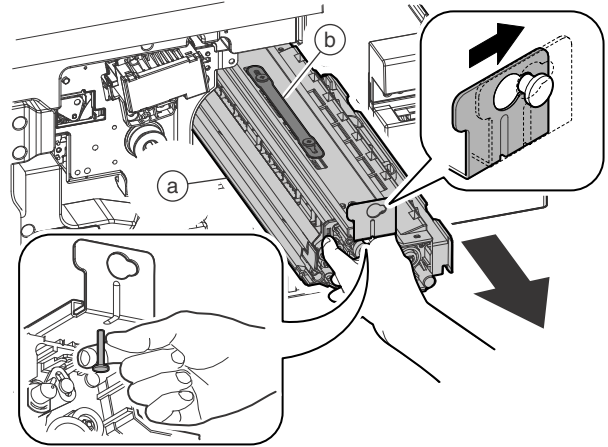
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

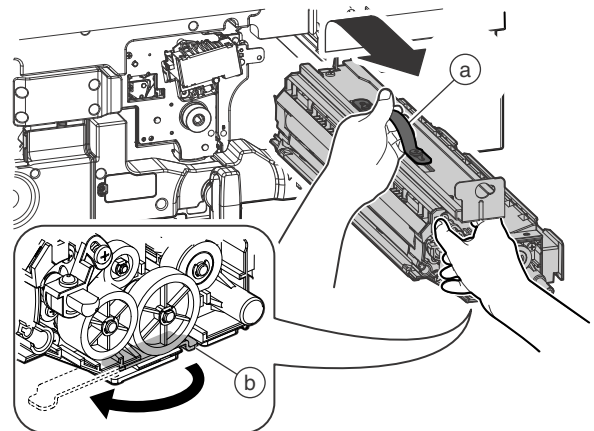


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

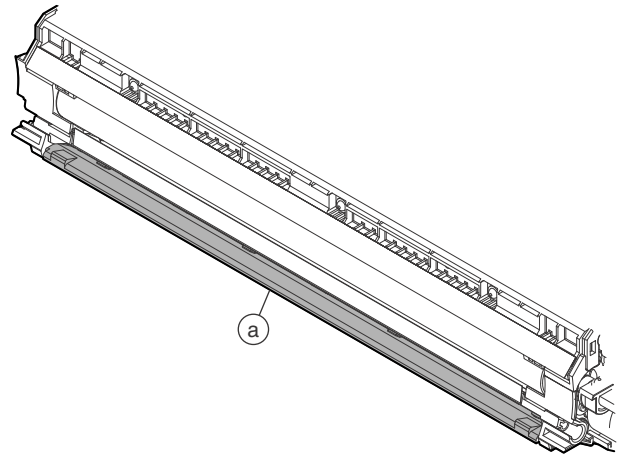


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

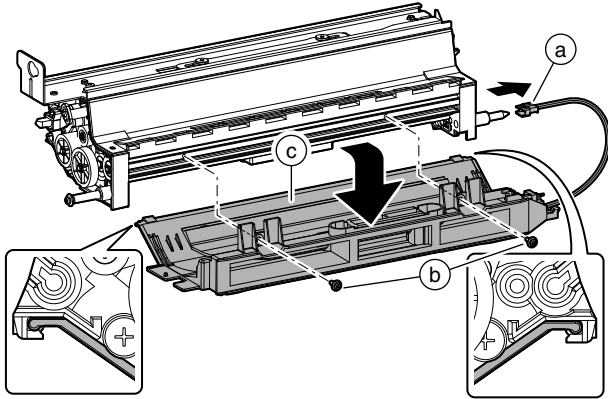
* When placing the developing unit, use the stand (b) and place the unit on it.



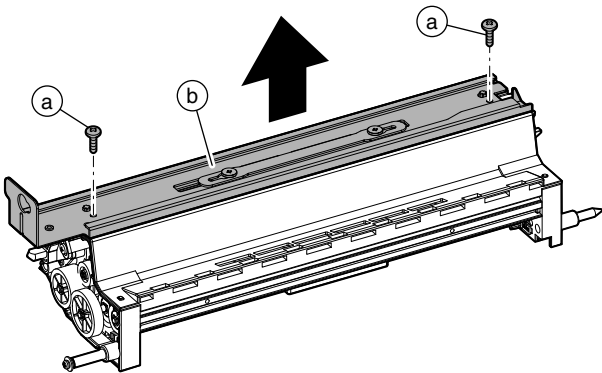
- 6) Clean the lower section (a) of the MG roller of the DV duct cover at every 500K.



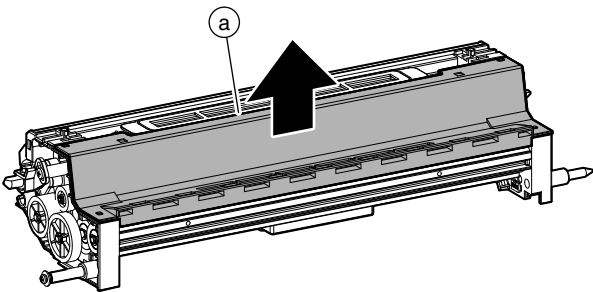
- 7) Disconnect the connector (a), and remove the screw (b).
Remove the DV duct cover (c).
* Use extra care not to foul the connector terminal section.



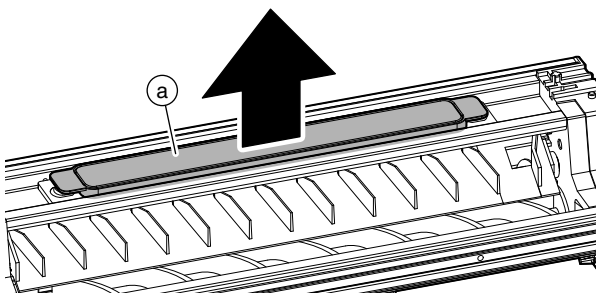
- 8) Remove the screw (a), and remove the guide (b).



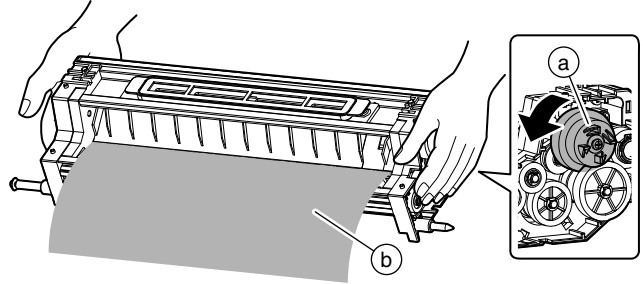
- 9) Remove the cover (a).



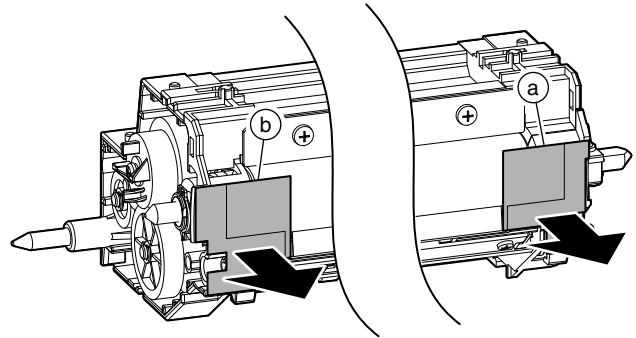
- 10) Remove the DV filter unit (a).



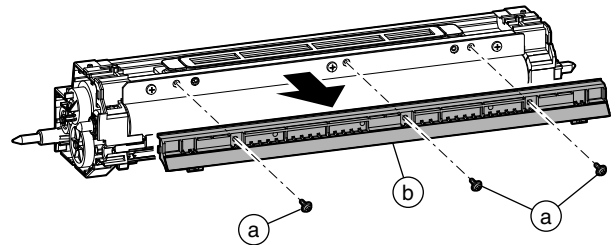
- 11) While rotating the coupling (a), discharge old developer (b).
* Rotate the MG roller clockwise and counterclockwise to remove developer from the MG roller.



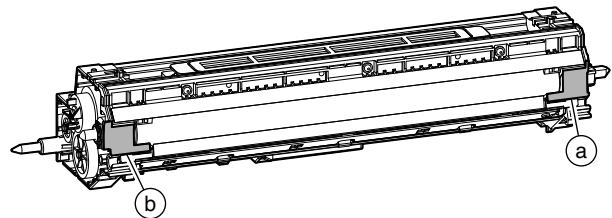
- 12) Remove the DV side seal F (a) and the DV side seal R (b).



- 13) Remove the screw (a), and remove the doctor cover unit (b).
Clean the doctor section with dry cloth. Do not use alcohol.
* Rotate the MG roller and check to confirm that there is no foreign material in the doctor gap section.



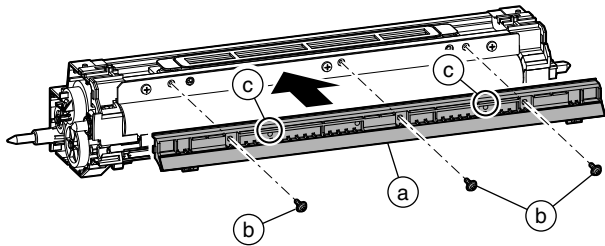
- 14) Clean the DV side seal attaching section of the DV side plate F (a) and the DV side plate R (b) with dry cloth. Do not use alcohol.



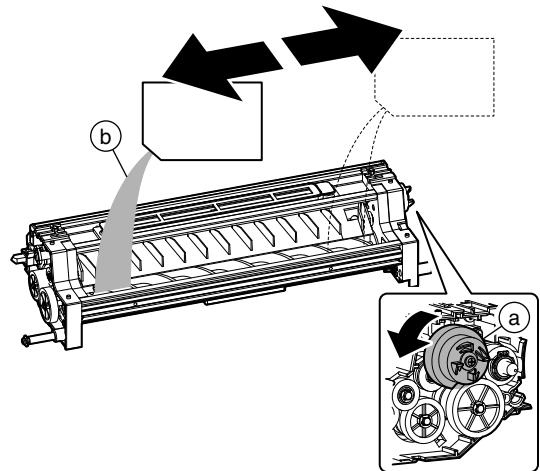
15) Replace the doctor cover unit (a) with new one, and install and fix with the screw (b).

* When installing, check to confirm that the positioning boss (c) is securely engaged.

* After installing, check to confirm that the cover is not deformed.

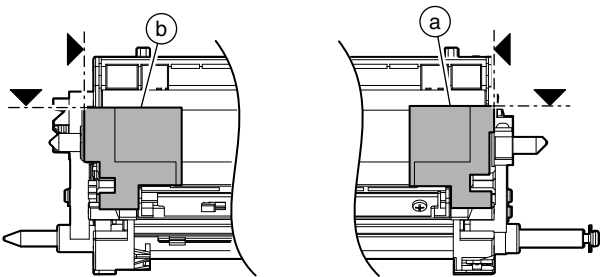


19) While rotating the coupling (a), supply new developer (b).

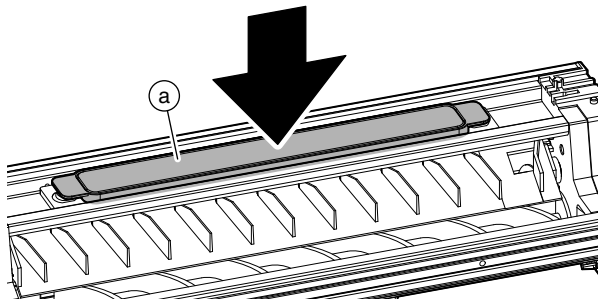


16) Replace the DV side seal F (a) and the DV side seal R (b) with new ones and attach them according to the reference.

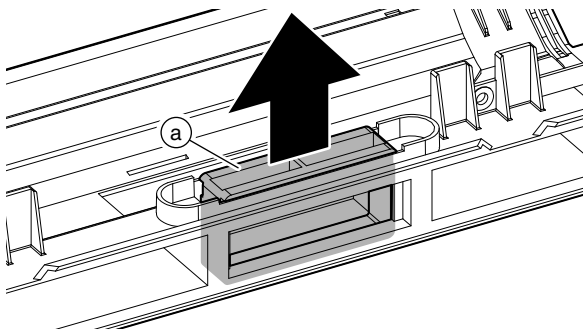
* When attaching the DV side seals F/R, be careful not to deform the seals and not to cover the DV blade with the DV side seals.



17) Attach the DV filter unit (a).



18) Replace the DV BOX filter (a).

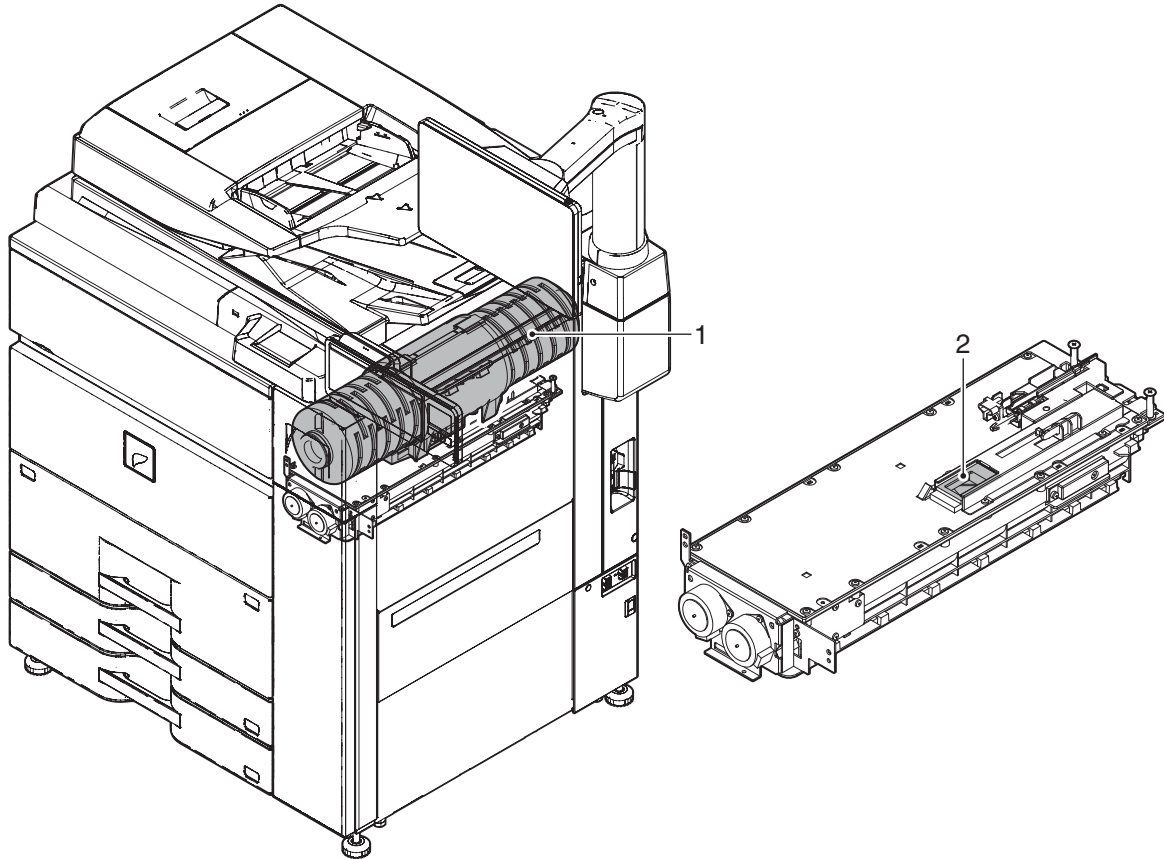


9. Toner supply section

A. Maintenance table

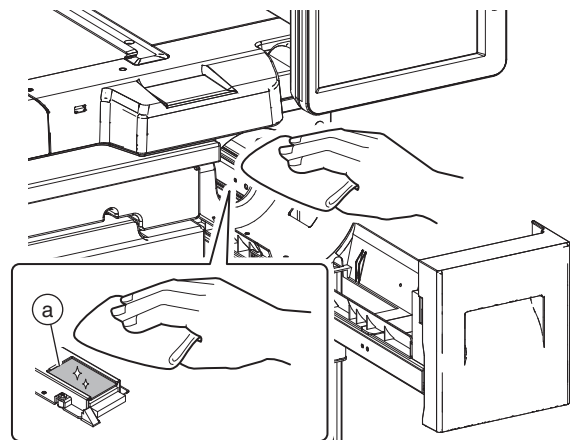
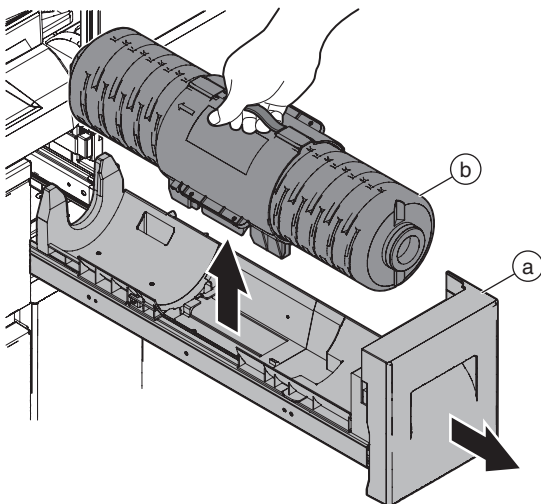
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Toner cartridge								Attach when installing. When it is emptied, replacement is made by the user.
2	Toner hopper	○	○	○	○	○	○	○	Clean the shutter area.



B. Details

- 1) Pull out the toner tray (a), and remove the toner cartridge (b).
* Replacement of the toner cartridge is performed by the user when toner is exhausted.
- 2) Put your hand into the toner tray and clean the shutter section (a) of the toner hopper unit at every 500K.

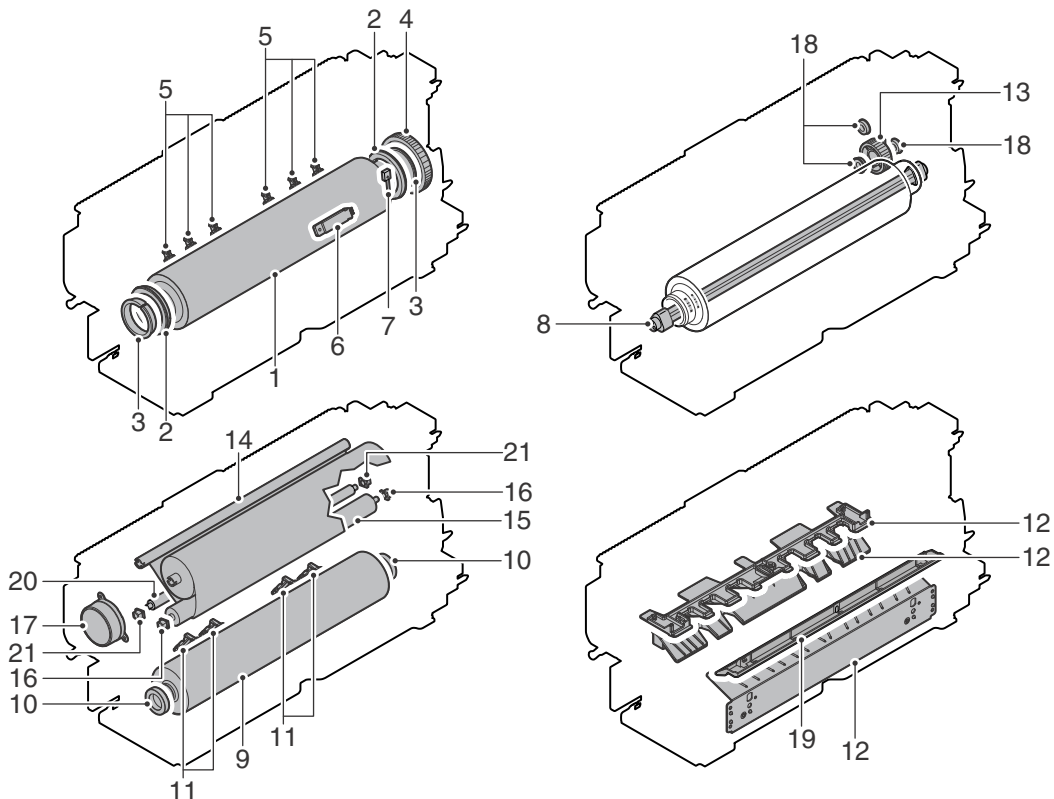


10. Fusing section

A. Maintenance table

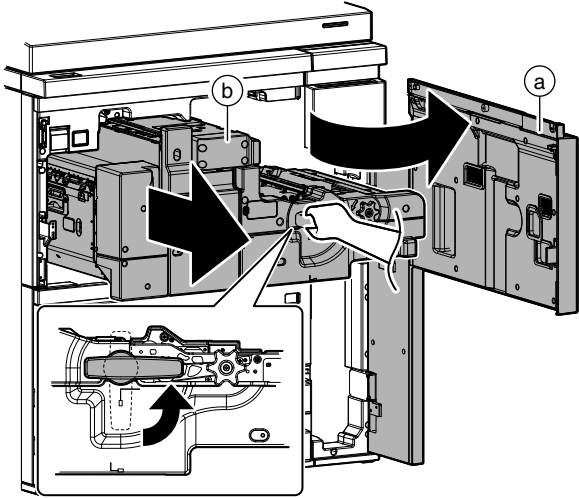
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Upper heat roller	×	×	▲	×	▲	×	▲	Apply grease to the bearing section when replacing. (6LS06268000)
2	Upper heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000)
3	Upper heat roller insulation bush		×	▲	×	▲	×	▲	Apply grease when replacing. (6LS06268000)
4	Upper heat roller gear	×	×	▲	×	▲	×	▲	Check/Apply grease when replacing. (6LS06268000)
5	Upper heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	Clean and remove foreign material.
6	Non-contact thermistor	×	×	×	×	×	×	×	
7	Sub thermistor	×	×	×	×	×	×	▲	Clean and remove foreign material.
8	Upper heater lamp	×	×	×	×	×	×	▲	
9	Lower heat roller	×	×	▲	×	▲	×	▲	Apply grease to the bearing section when replacing. (6LS06268000)
10	Lower heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000)
11	Lower heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	Clean and remove foreign material.
12	Paper guides	○	○	○	○	○	○	○	
13	Upper heat roller drive gear	×	×	×	×	×	×	▲	Check/Apply grease when replacing. (6LS06268000)
14	Web roller	×	▲	▲	▲	▲	▲	▲	
15	Web backup roller	×	▲	▲	▲	▲	▲	▲	
16	Web backup roller bearing	×	▲	▲	▲	▲	▲	▲	
17	Web motor	×	×	×	×	▲	×	×	
18	Other ball bearing							×	Must be free from abnormal noises when rotating.
19	Front upper paper guide	○	▲	▲	▲	▲	▲	▲	
20	Web guide shaft	×	▲	▲	▲	▲	▲	▲	
21	Web guide bearing	×	▲	▲	▲	▲	▲	▲	

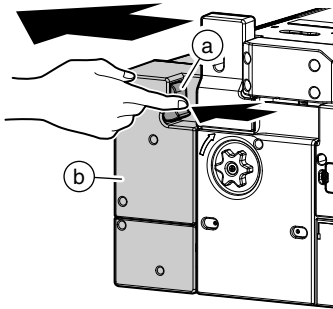


B. Details

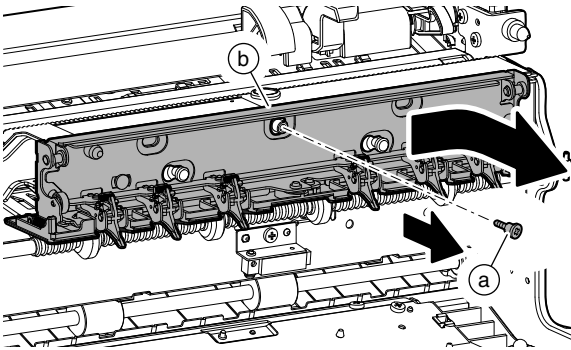
- 1) Open the front cover (a), and pull out the intermediate frame (b).



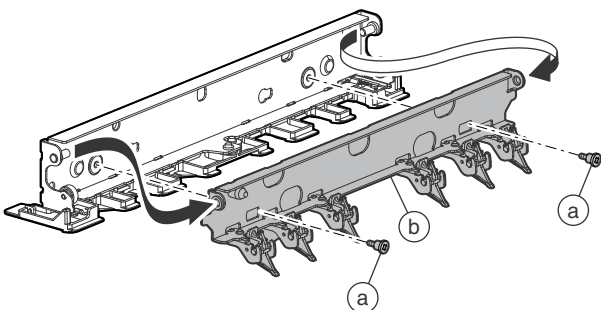
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



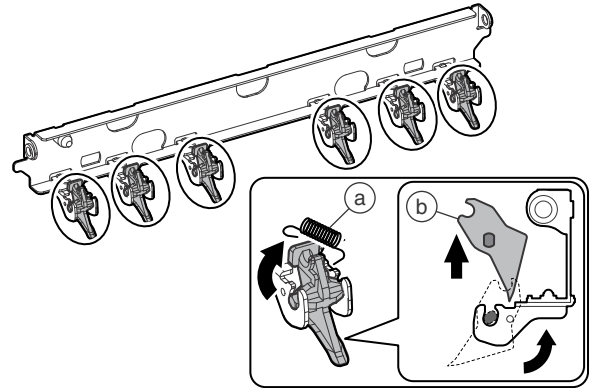
- 3) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



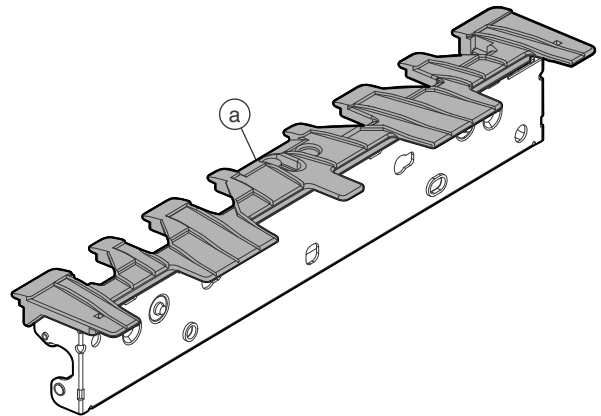
- 4) Remove the screw (a), and remove the upper heat roller separation pawl unit 2 (b).



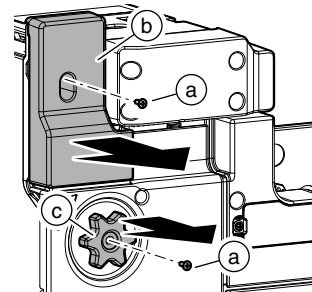
- 5) Remove the spring (a), and replace the upper heat roller separation pawl (b).



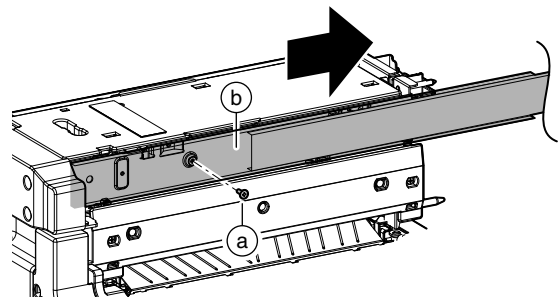
- 6) Clean the paper guide (a) at every 500K.



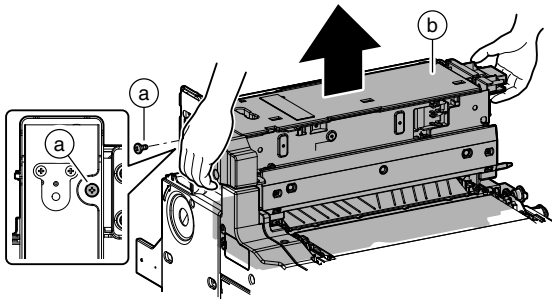
- 7) Remove the screw (a), and remove the cover (b) and the knob (c).



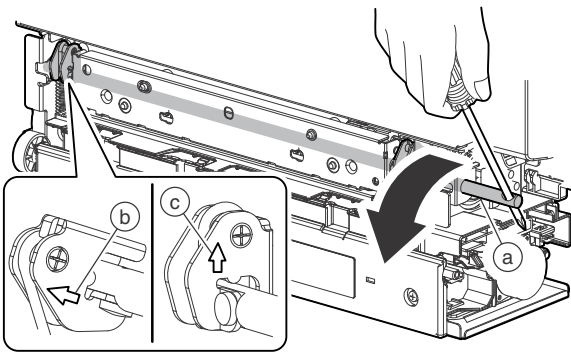
- 8) Remove the screw (a), and remove the rail (b).



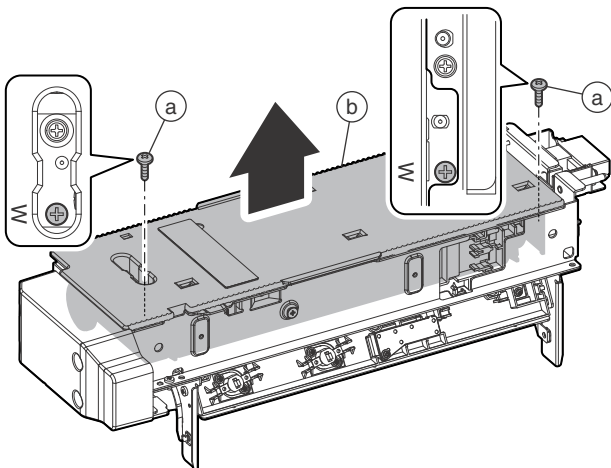
- 9) Remove the screw (a), and remove the fusing unit (b).
 * Be careful to handling of the fusing unit heated to a high temperature. When removing it, hold the resin sections on both sides of the fusing unit.



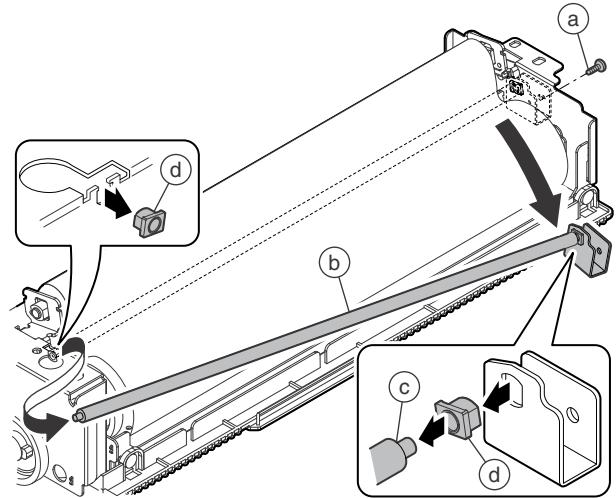
- 10) Insert a screwdriver into the pressure release shaft (a) to release the pressure.
 * When the pressure is released, the arrow on the pressure release shaft faces diagonally (b). When the pressure is applied, the arrow faces upward (c).



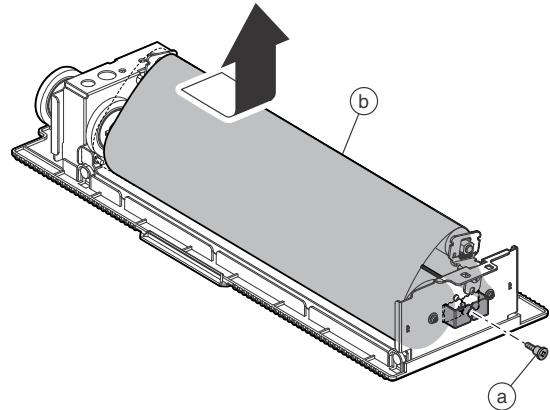
- 11) Remove the screw (a) on the side of "W" mark from the fusing upper unit, and remove the web unit (b).



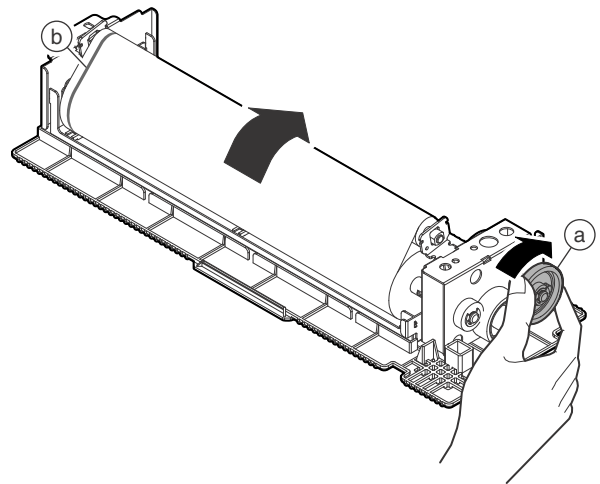
- 12) Remove the screw (a), and remove the web guide shaft unit (b). Replace the web guide shaft (c) and the web guide bearing (d).



- 13) Remove the screw (a), and slide and remove the WEB roller (b), and replace the WEB roller.



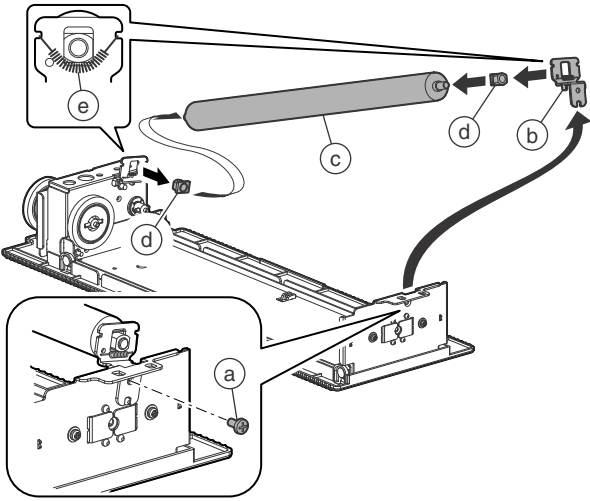
- * After replacement, rotate the gear (a) and manually wind the web roller until the red line (b) of the web roller is covered.



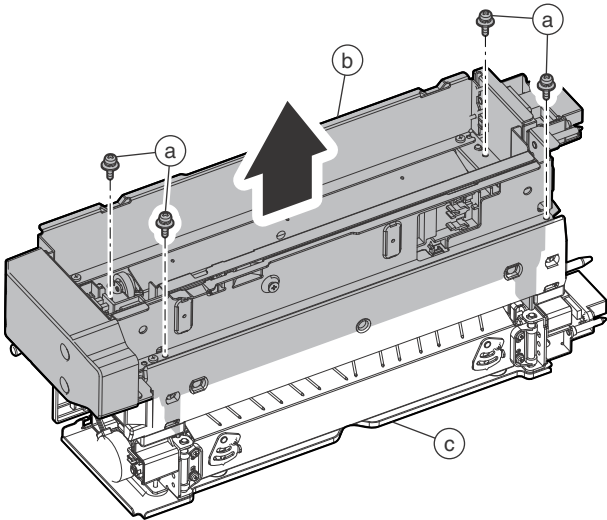
- * After completion of maintenance, execute SIM. 24-4 (Fusing web cleaning feed counter clear).
 * When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)

- 14) Remove the screw (a), and remove the metal fixture (b).
Replace the WEB backup roller (c) and the WEB backup roller bearing (d).

* When installing, be careful to the hang the spring (e) properly.

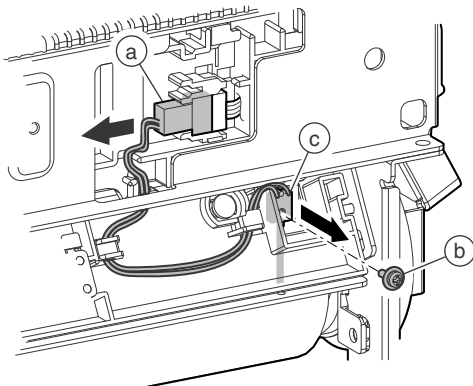


- 15) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).

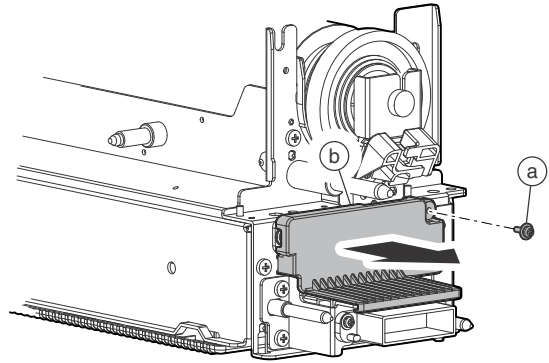


- 16) Disconnect the connector (a), and remove the screw (b), and remove the sub thermistor (c). Check or the sub thermistor (c) at every 500K, or replace it at every 3000K.

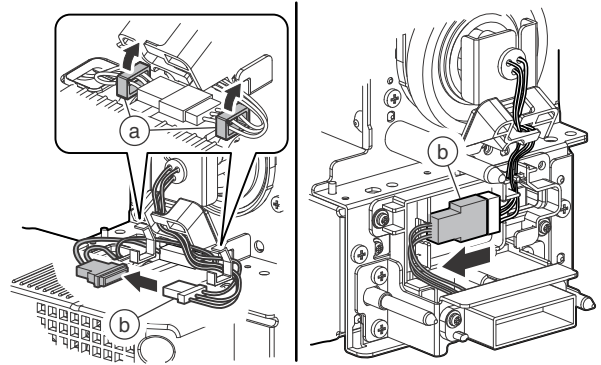
* When handling the thermistor, be careful not to deform it.



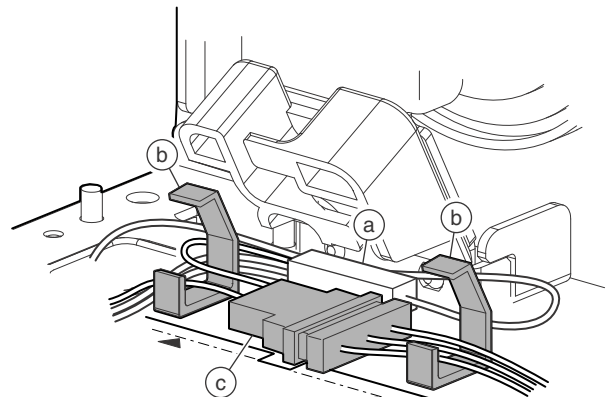
- 17) Turn the fusing upper unit upside down. Remove the screw (a), and remove the cover (b).



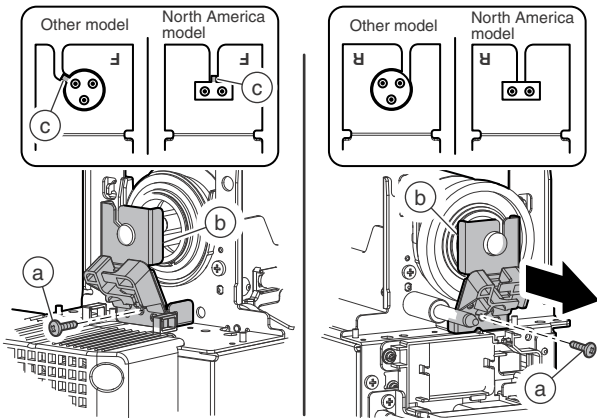
- 18) Open the clamp (a). Disconnect the connector (b) of the upper heater lamp.



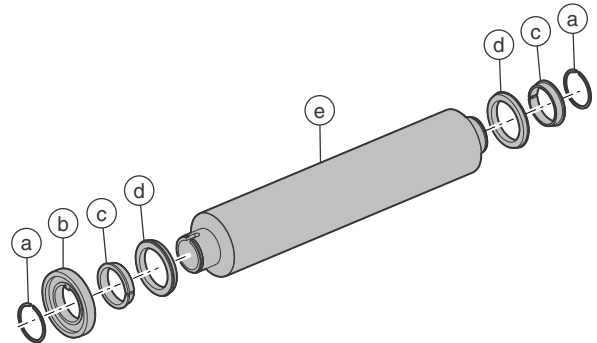
- * When assembling, store the white clamp (a) at the bottom of the clamp (b), and store the black connector (c) to the clamp (b).
- * Check to confirm that the black connector (c) does not extend from the reference line.
- * When storing each connector, be careful not to pinch it.



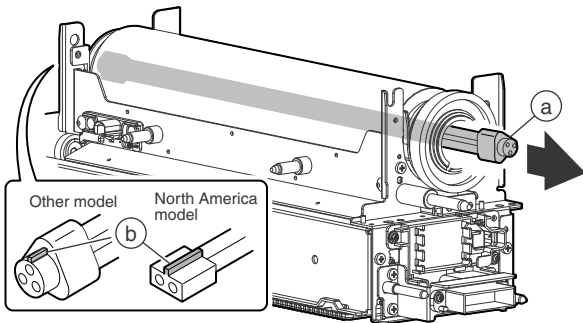
- 19) Remove the screw (a), and remove the lamp holder (b).
 * When installing, engage the positioning (c) of the upper heater lamp with the notch of the lamp holder.



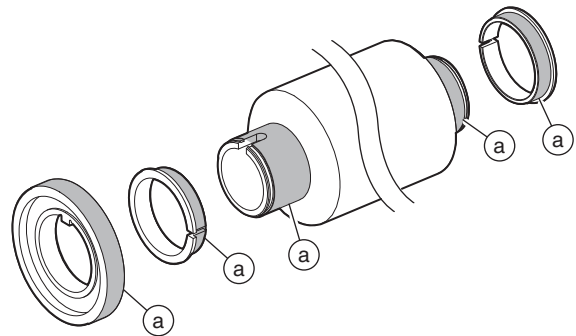
- 22) Remove the C-ring (a), and remove the upper heat roller gear (b), the upper heat roller insulation bush (c), and the upper heat roller ball bearing (d) from the upper heat roller (e).
 Check the upper heat roller gear (b), the upper heat roller insulation bush (c), the upper heat roller ball bearing (d), and the upper heat roller (e) at every 500K, or replace them at every 1000K.



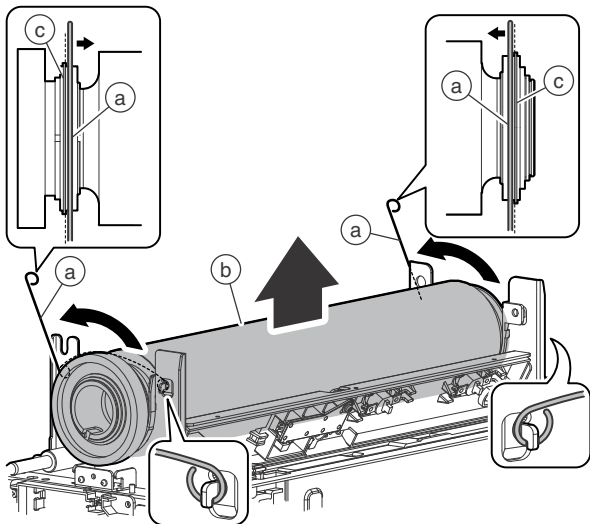
- 20) Remove the upper heater lamp (a), and check it at every 500K, or replace it at every 3000K.
 * Insert the positioning (b) into the upper heater lamp so that the positioning (b) is on the front side.



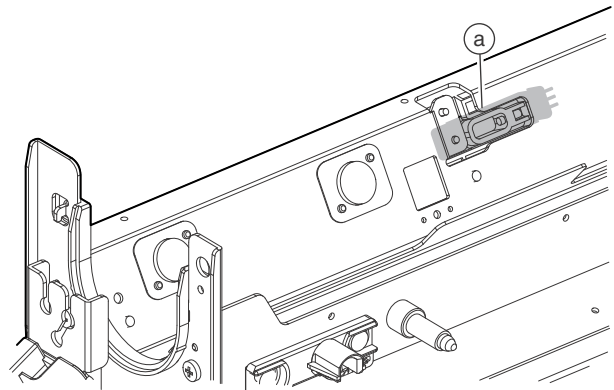
- * When replacing, apply grease (6LS06268000) to the upper heat roller insulation bush and the upper heat roller section and the upper heat roller gear (a).



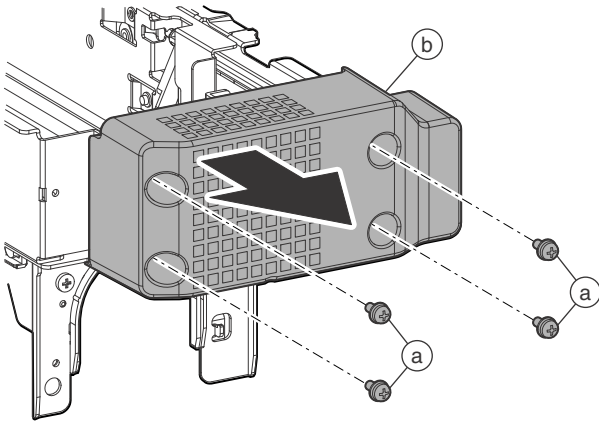
- 21) Remove the fixing fin (a), and remove the upper heat roller unit (b).
 * When installing, assemble the fixing fin (a) inside the bearing flange (c).



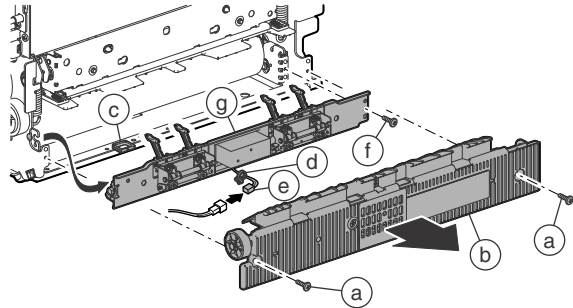
- 23) Check the non-contact thermistor (a) at every 500K.



24) Remove the screw (a), and remove the cover (b).

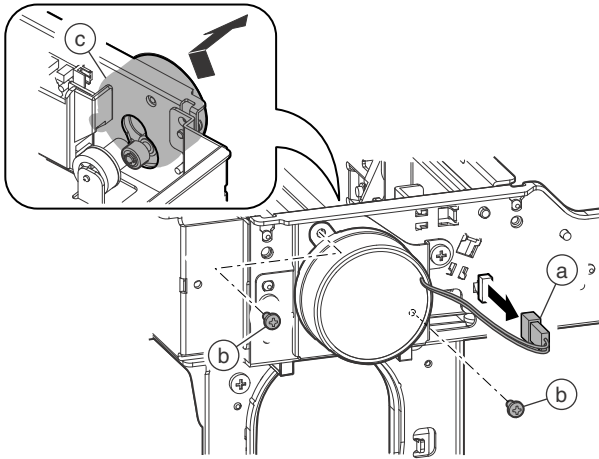


27) Remove the screw (a), and remove the cover (b). Remove the harness from the edge saddle (c). Remove the snap band (d) and disconnect the connector (e). Remove the screw (f), and remove the lower heat roller separation pawl unit (g).

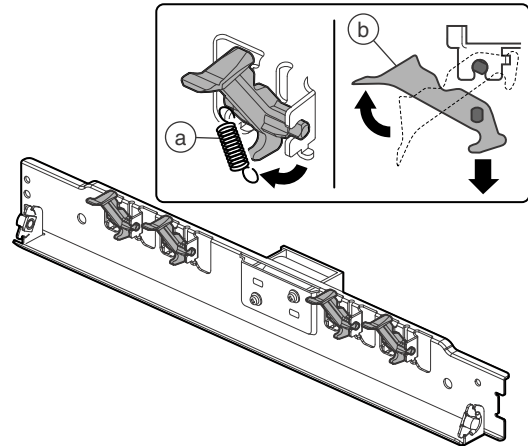


* When disconnecting the connector (e), do not pull the harness but hold the connector section and pull it out.

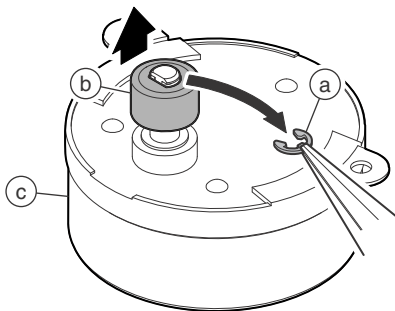
25) Disconnect the connector (a), and remove the screw (b). Remove the WEB motor unit (c).



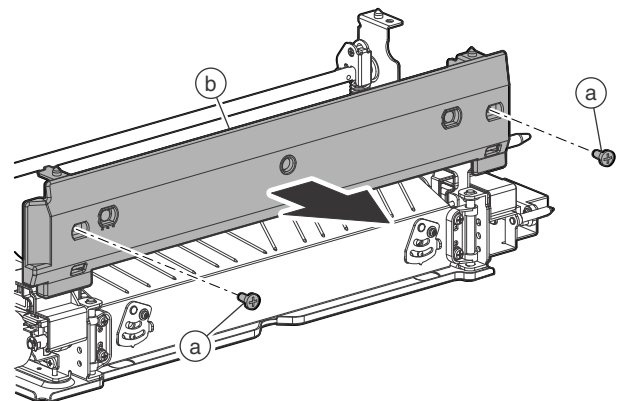
28) Remove the spring (a), and replace the lower heat roller separation pawl (b).



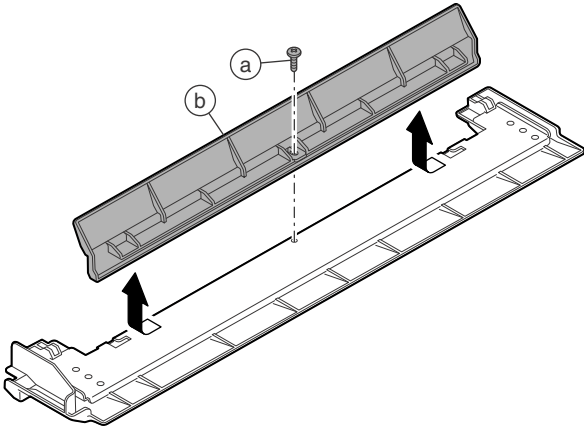
26) Remove the E-ring (a) and the gear (b), and check the web motor (c) at every 500K or replace it at every 2000K.



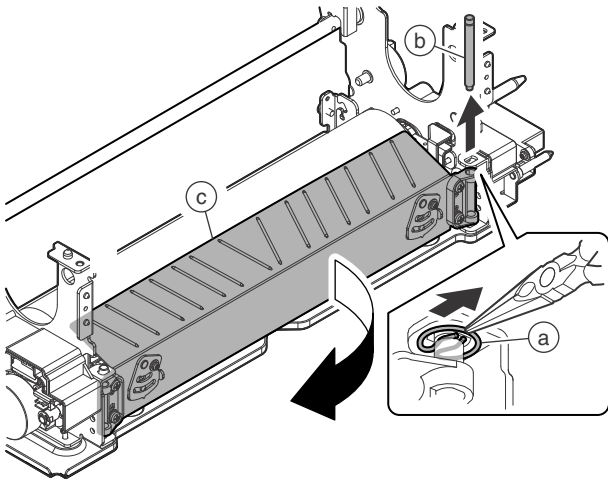
29) Remove the screw (a), and remove the cover (b).



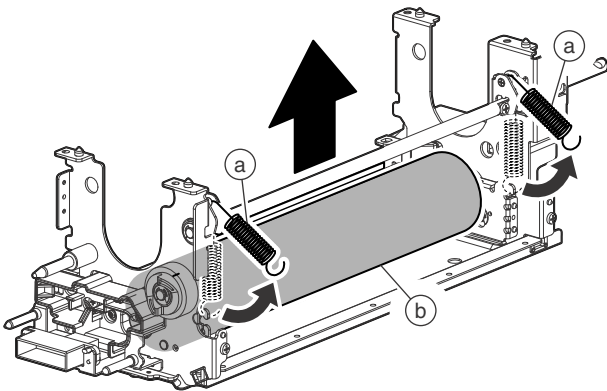
30) Remove the screw (a). Slide the front upper paper guide (b), and remove and replace it.



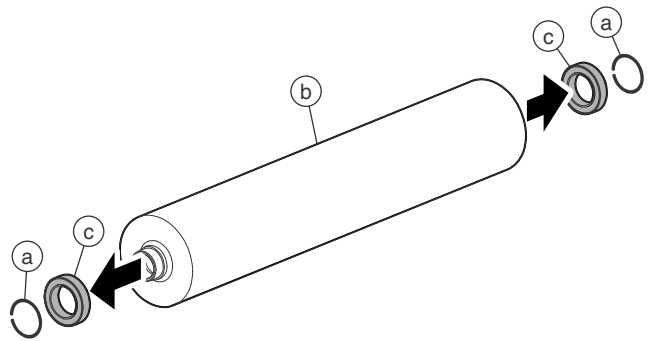
31) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c), and clean it at every 500K.



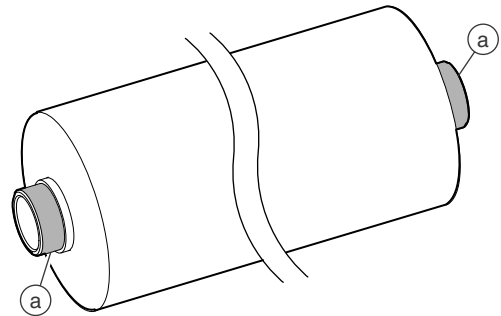
32) Remove the spring (a), and remove the lower heat roller unit (b).



33) Remove the C-ring (a). Check the lower heat roller (b) and the lower heat roller ball bearing (c) at every 500K or replace them at every 1000K.

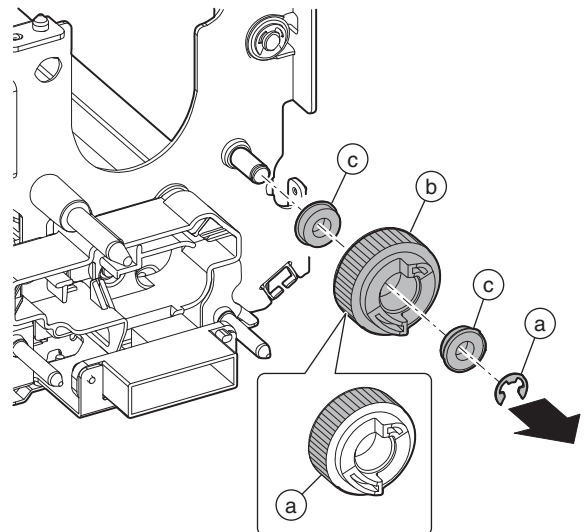


* When replacing, apply grease (6LS06268000) to each section (a) of the lower heat roller.



34) Remove the E-ring (a), and remove the upper heat roller drive gear (b) and the ball bearing (c). Check the upper heat roller drive gear (b) at every 500K, or replace it at every 3000K. Check the ball bearing (c) at every 3000K.

When replacing, apply grease (6LS06268000) to the upper heat roller drive gear section (a).

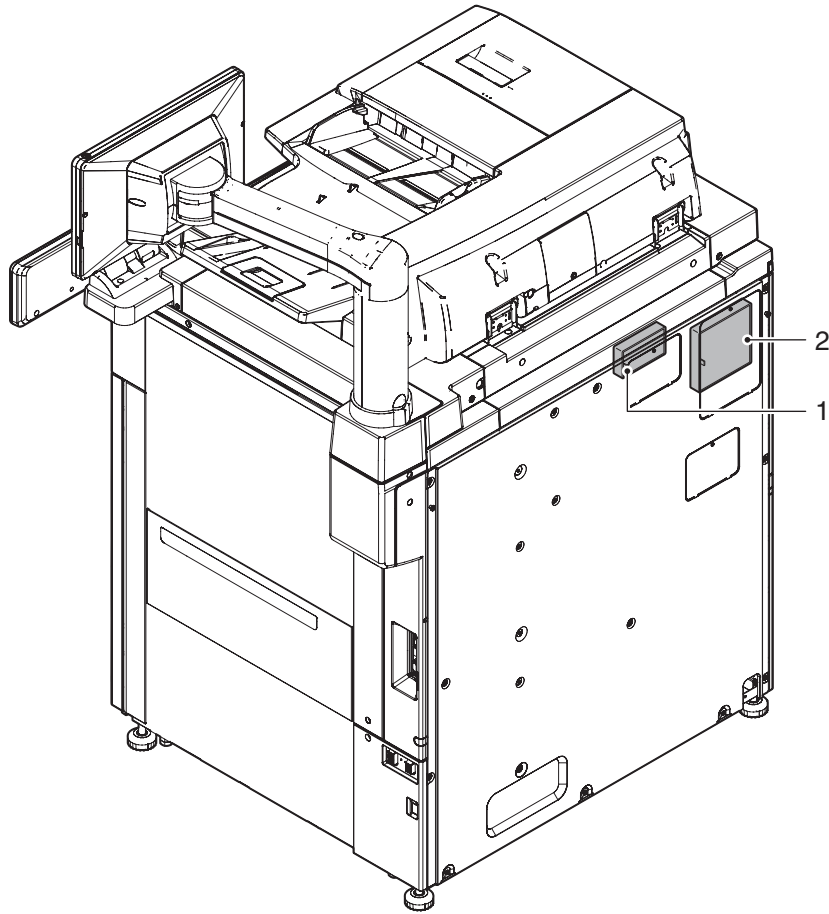


11. Filter section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

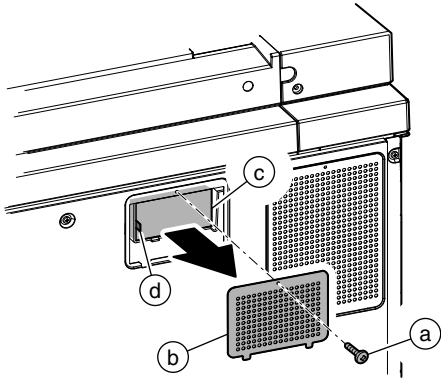
No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Ozone filter		▲	▲	▲	▲	▲	▲	Or 6 months
2	Exhaust filter		▲	▲	▲	▲	▲	▲	Or 6 months



B. Details

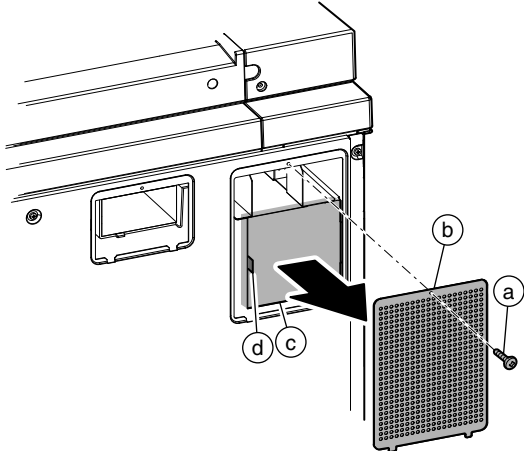
- 1) Remove the screw (a) on the back side of the machine, and remove the cover (b). Replace the ozone filter (c).

* Attach so that the filter knob (d) comes on the left side as shown below.



- 2) Remove the screw (a), and remove the cover (b). Replace the exhaust filter (c).

* Attach so that the filter knob (d) comes on the left side as shown below.



12. Tray paper feed section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Paper pickup roller	×	×	×	×	×	×	×	(Note 1)
2	Paper feed roller	×	×	×	×	×	×	×	(Note 1)
3	Separation roller	×	×	×	×	×	×	×	(Note 1)
4	Torque limiter	×	×	×	×	×	×	×	(Note 1)
5	Optical reflection type sensor	○	○	○	○	○	○	○	
6	Transport rollers	×	○	○	○	○	○	▲	

(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

- Paper pickup roller, paper feed roller, separation roller: 200K or 1 year
- Torque limiter: 800K

* Paper feed section roller life

Each roller life is 200K. When, therefore, a certain unit is used intensively, the life will be expired before the maintenance cycle.

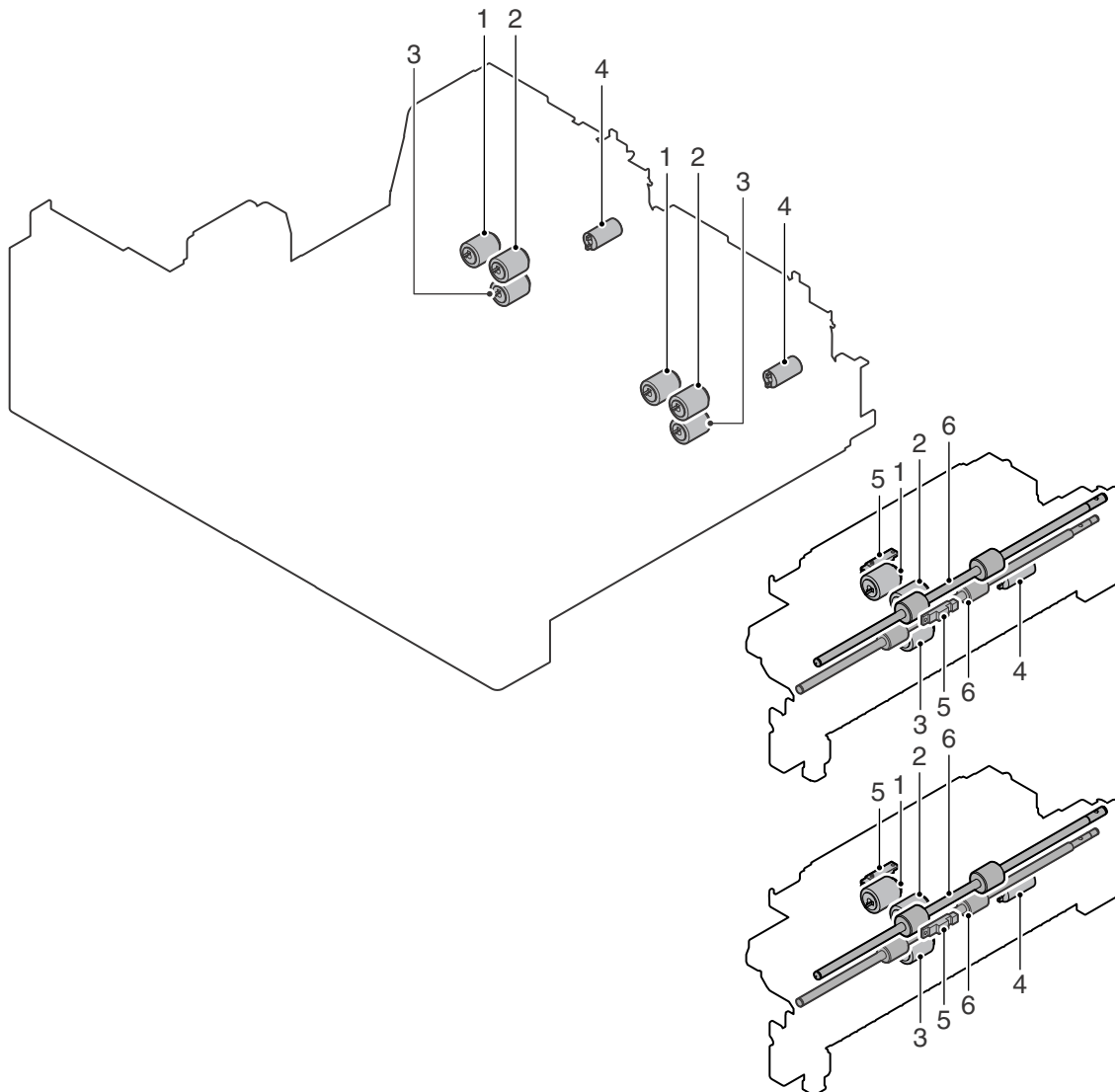
Since, however, sheets of different sizes are used with different paper feed trays actually, it is quite rare that the roller replacement is required before the maintenance cycle.

If a certain size of paper is intensively used, explain the user to use different paper feed trays for that size as far as possible.

When servicing, always check the use frequency of each paper feed tray, and replace the roller according to necessity.

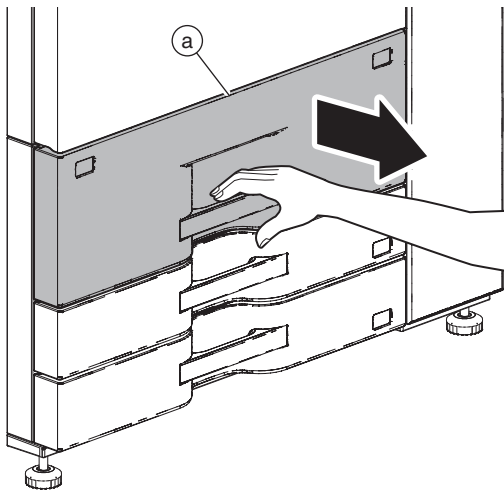
When cleaning the roller, it is recommendable to use wet cloth.

The wear level is greater in the sequence of the separation roller, the paper feed roller, and the paper pickup roller.

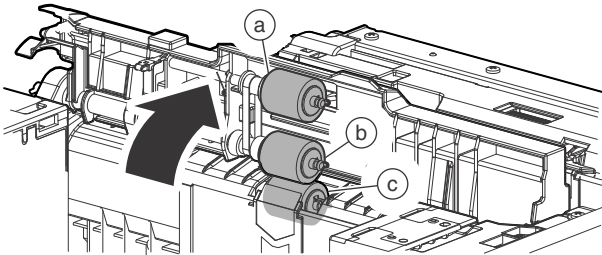


B. Details

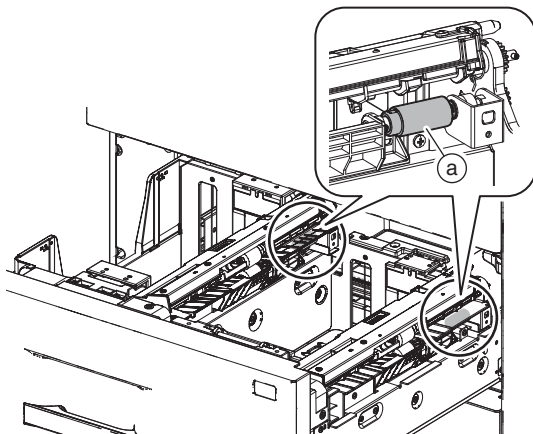
- 1) Pull out the tray 1/2 (a).



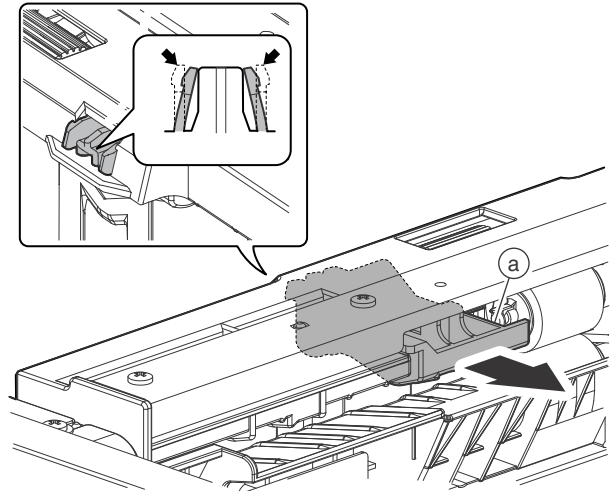
- 2) Check the paper pickup roller (a), the paper feed roller (b), and the separation roller (c) at every calling.



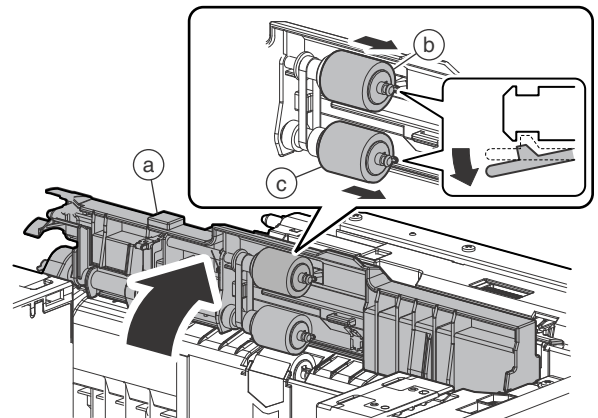
- 3) Check the torque limiter (a) at every 500K.



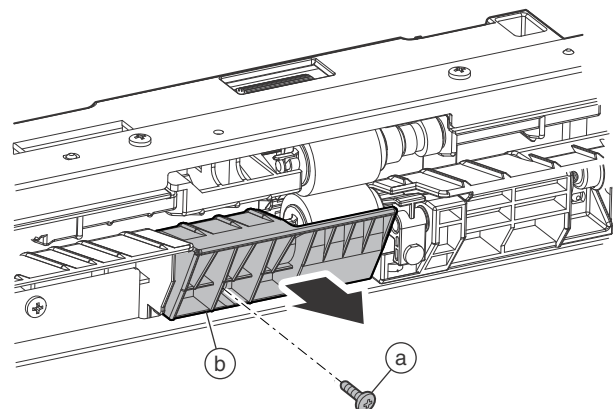
- 4) Remove the paper guide (a).



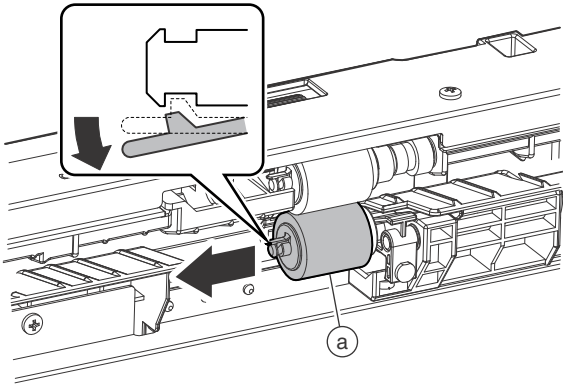
- 5) Open the paper feed unit (a), and replace the paper pickup roller (b) and the paper feed roller (c) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



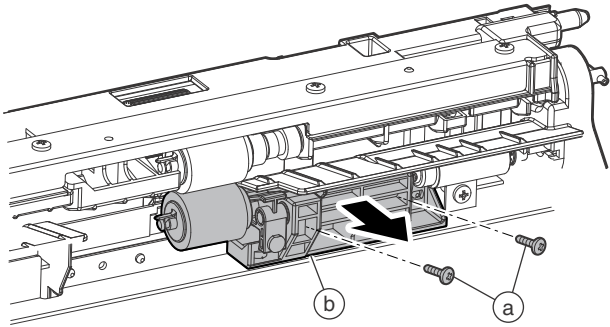
- 6) Remove the screw (a), and remove the paper guide (b).



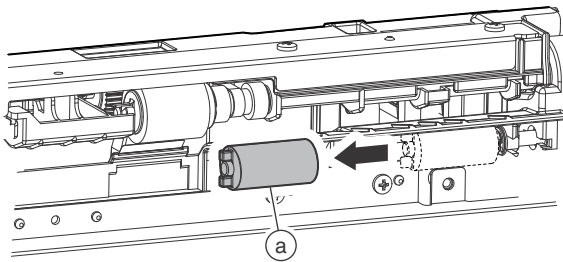
- 7) Replace the separation roller (a) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



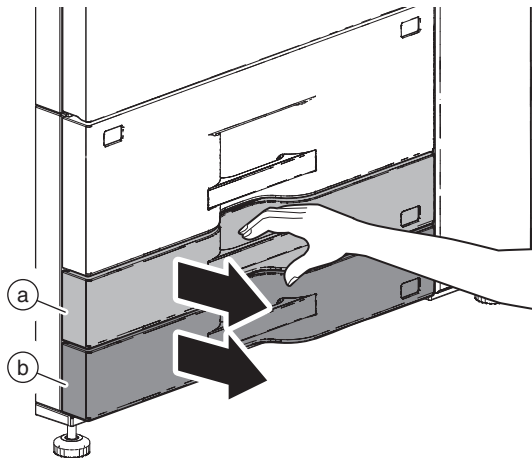
8) Remove the screw (a), and remove the separation roller unit (b).



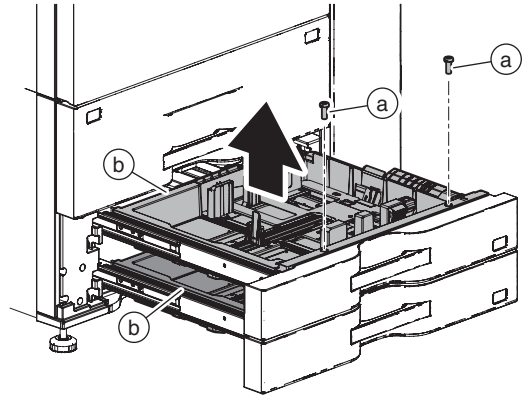
9) Replace the torque limiter (a) (when each paper feed counter value reaches 800K from the beginning of use).



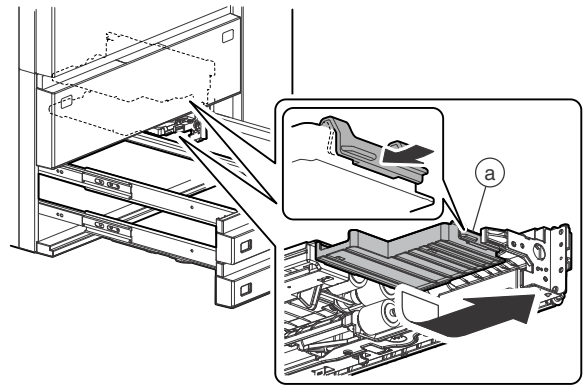
10) Pull out the tray 3 (a) and the tray 4 (b).



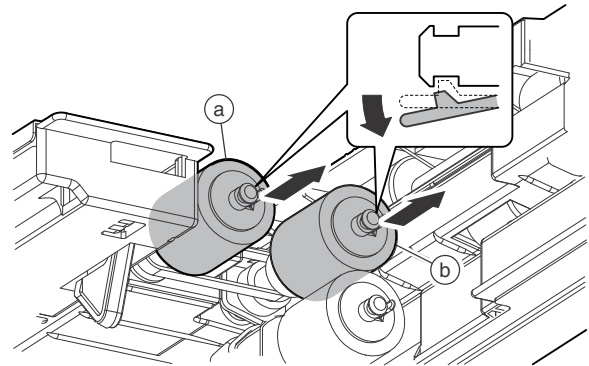
11) Remove the screw (a), and remove the trays 3 and 4 (b).



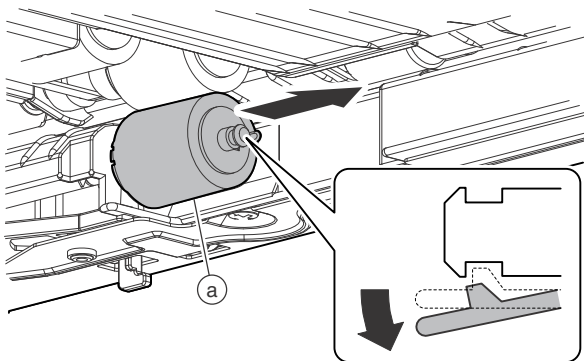
12) Remove the paper guide (a) of the tray 3 and 4 paper feed unit.



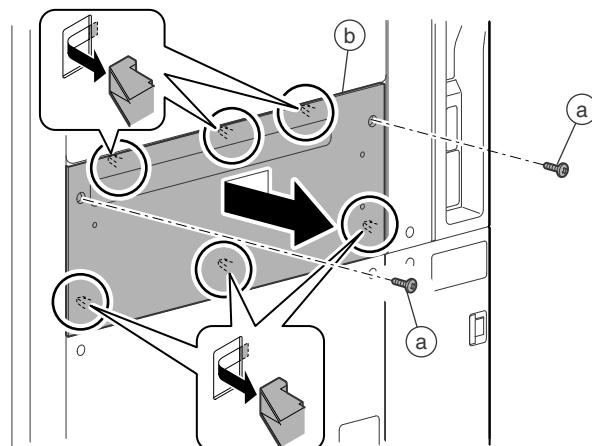
13) Check the paper pickup roller (a) and the paper feed roller (b) at every calling, or replace them (when each paper feed counter value reaches 200K from beginning of the use or 1 year).



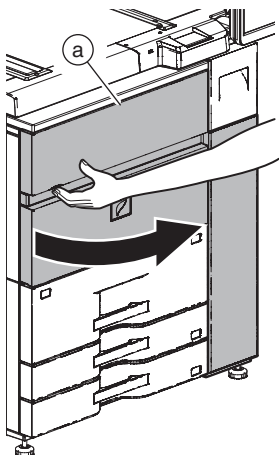
- 14) Remove the separation roller (a). Check at every calling, or replace (when each paper feed counter value reaches 200K from beginning of the use or 1 year.)



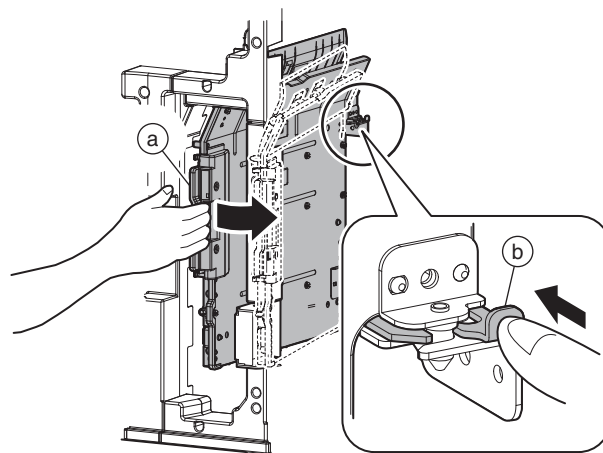
- 17) Remove the screw (a), and remove the cabinet (b).
 * The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



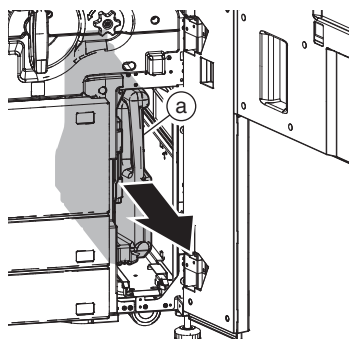
- 15) Open the front cover (a).



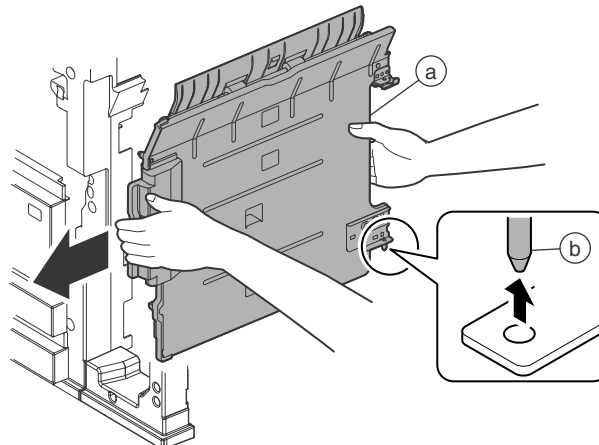
- 18) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



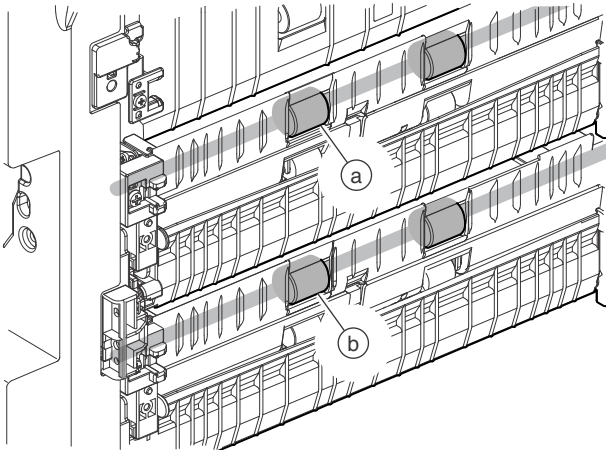
- 16) Remove the toner collection container (a).



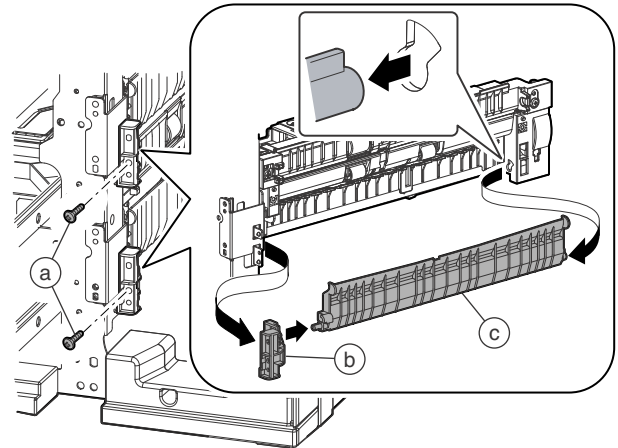
- 19) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



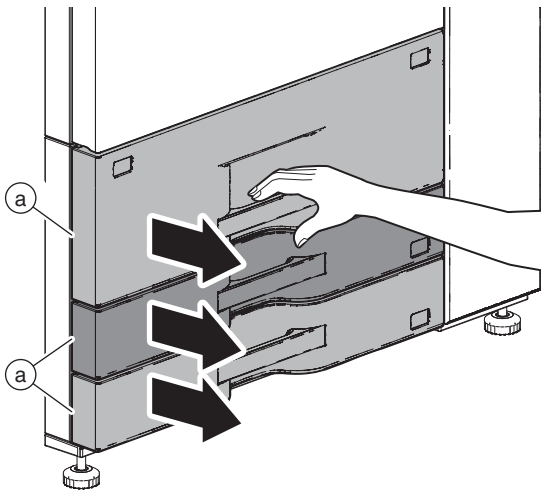
20) Clean the transport roller 4 (a) and the transport roller 2 (b) at every 500K.



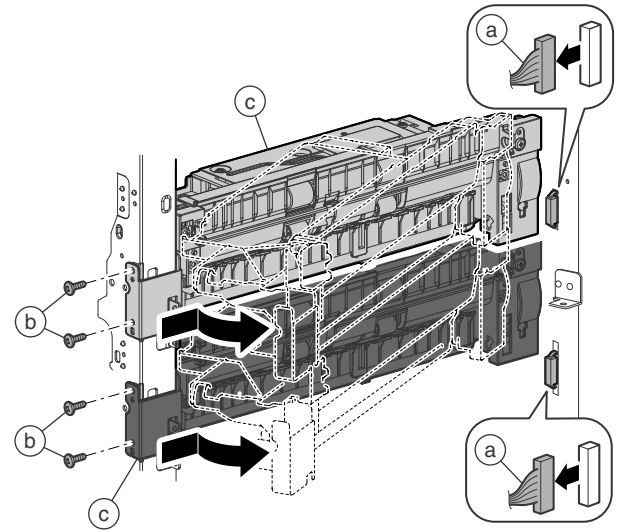
23) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).



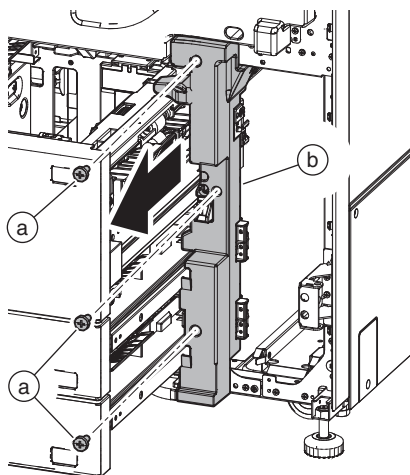
21) Pull out all tray (a).



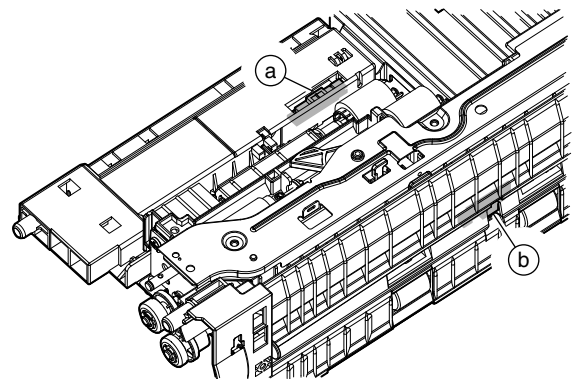
24) Disconnect the connector (a). Remove the screw (b), and remove the tray 3 and 4 paper feed unit (c).



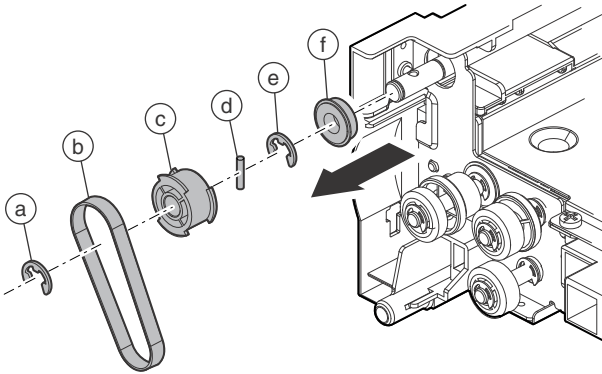
22) Remove the screw (a), and remove the cover (b).



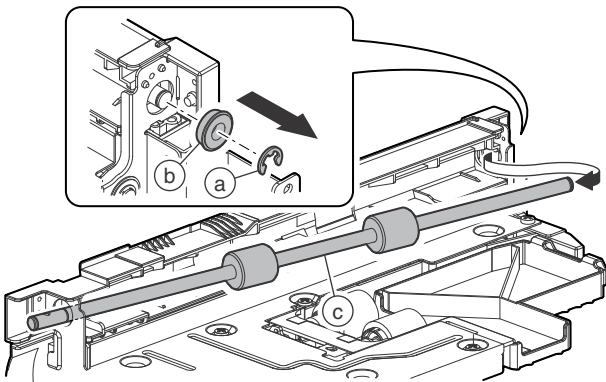
25) Clean the cassette 3 and 4 paper presence detection (a) and the cassette 3 and 4 paper entry detection (b) at every 500K.



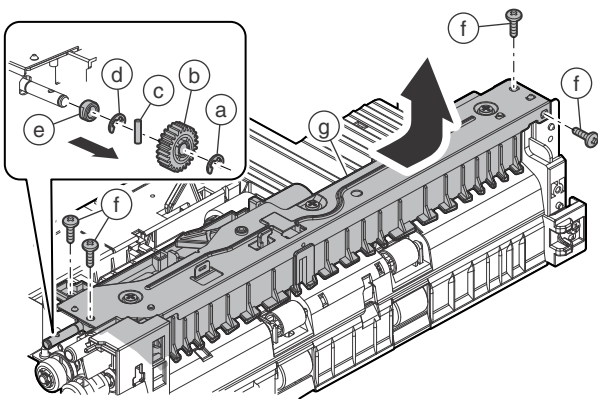
26) Remove the E-ring (a), and remove the belt (b), the pulley (c), and the parallel pin (d). Remove the E-ring (e) and the bearing (f).



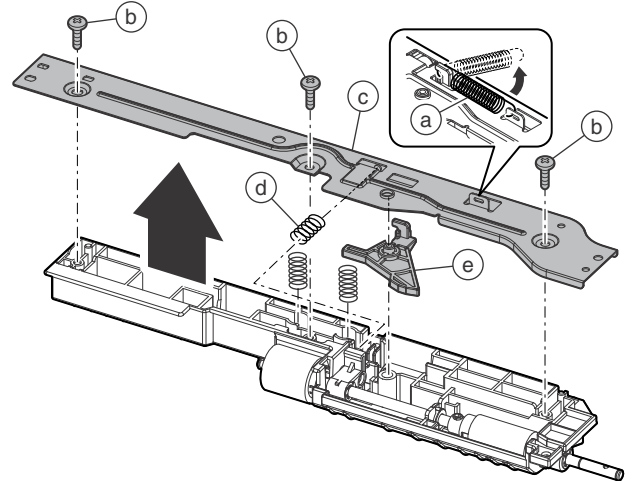
27) Remove the E-ring (a), the bearing (b), and replace the transport roller 2 and 4 (c).



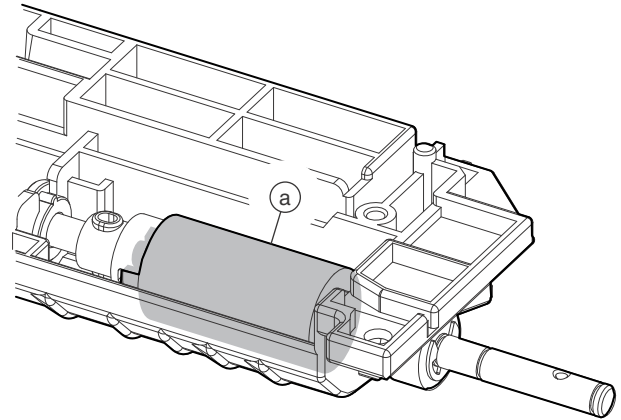
28) Remove the E-ring (a), the gear (b), the parallel pin (c), the E-ring (d), and the bearing (e). Remove the screw (f), and remove the paper guide unit (g).



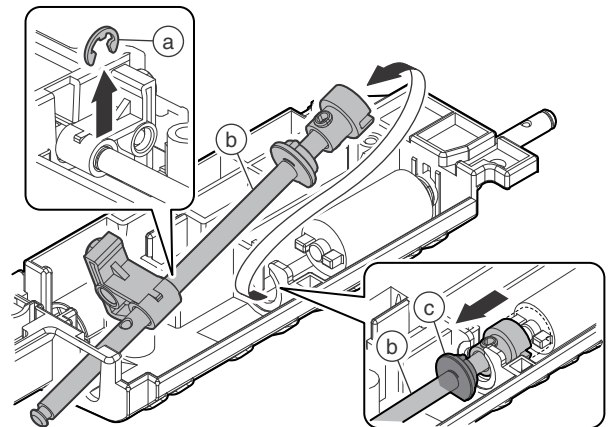
29) Remove the spring (a). Remove the screw (b) and the stay (c). Remove the spring (d) and the separation pressure release plate (e).



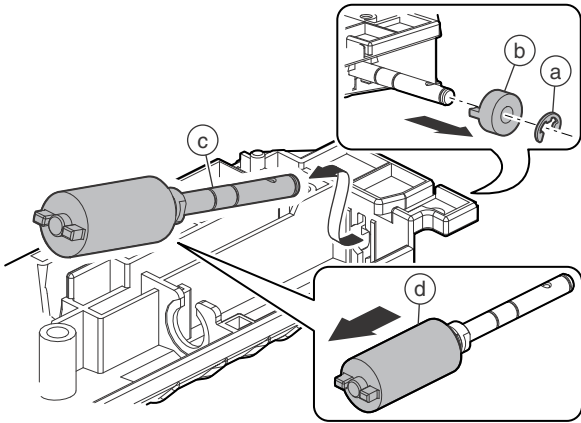
30) Check the torque limiter (a) at every 500K.



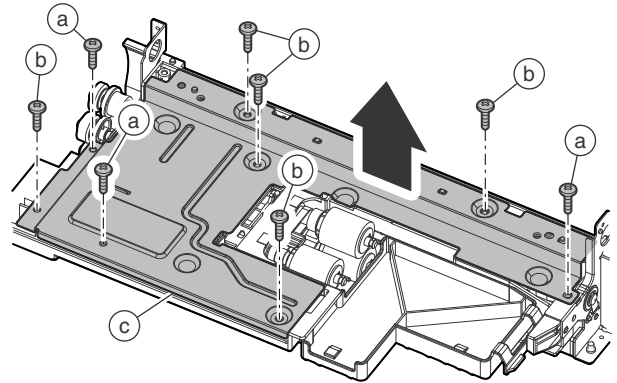
31) Remove the E-ring (a). Slide the shaft (b) and remove the bearing (c). Remove the shaft (b).



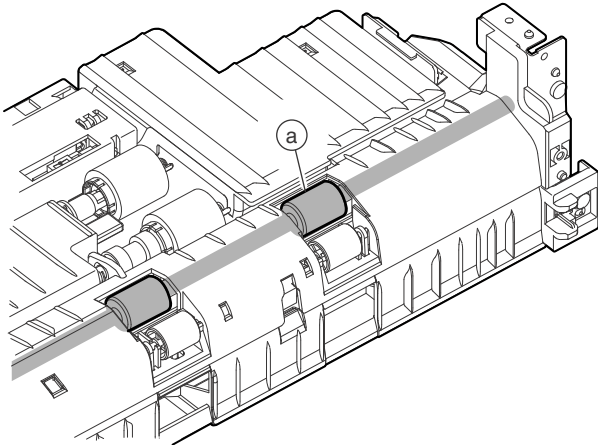
32) Remove the E-ring (a), and remove the coupling (b). Remove the shaft (c), and replace the torque limiter (d) (when each paper feed counter value reaches 800K from the beginning of use).



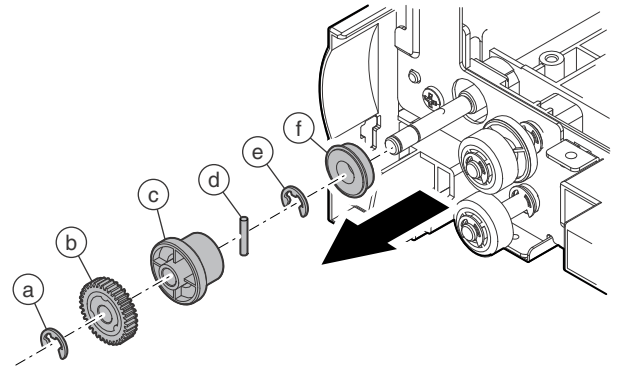
35) Remove the screw (a), the screw (b), and the cover (c).



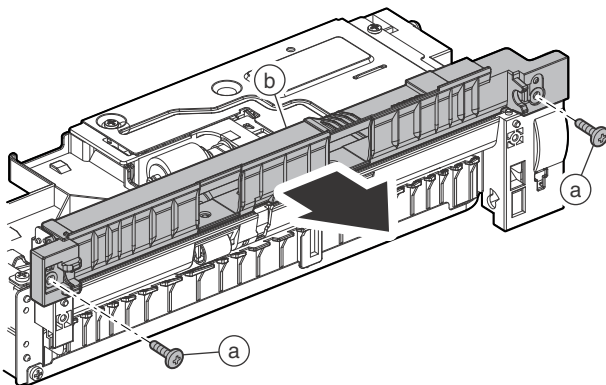
33) Clean the transport roller 1 and 3 (a) at every 500K.



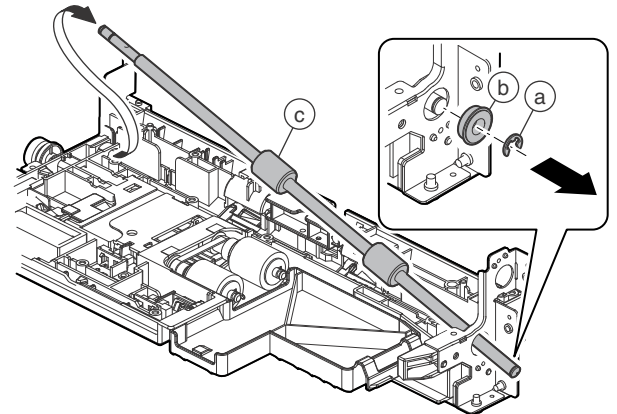
36) Remove the E-ring (a), and remove the gear (b), the pulley (c), and the parallel pin (d). Remove the E-ring (e), and remove the bearing (f).



34) Remove the screw (a), and remove the paper guide (b).



37) Remove the E-ring (a), the bearing (b), and replace the transport roller 1 and 3 (c).

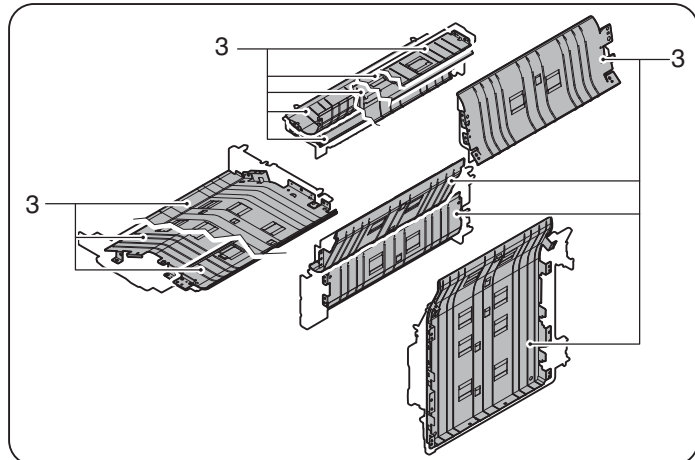
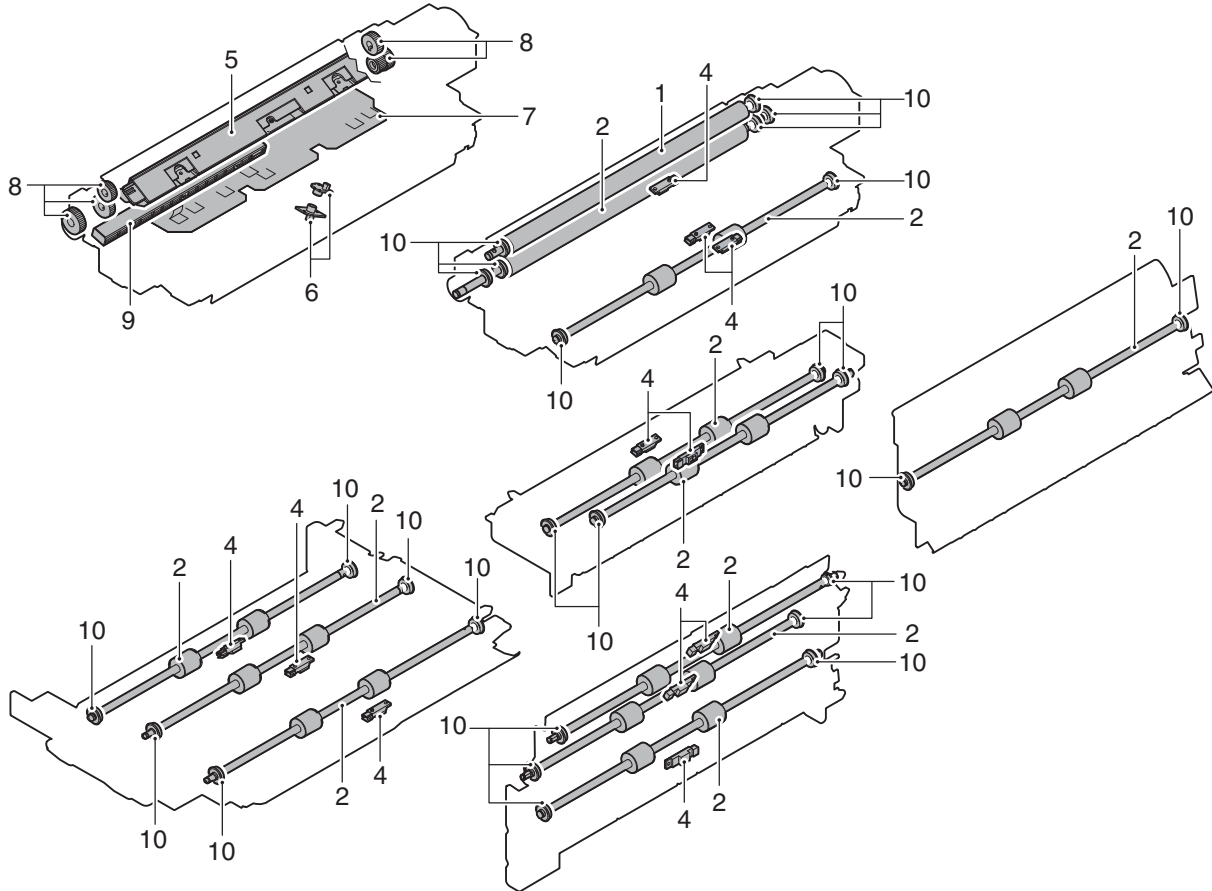


13. Paper transport section

A. Maintenance table

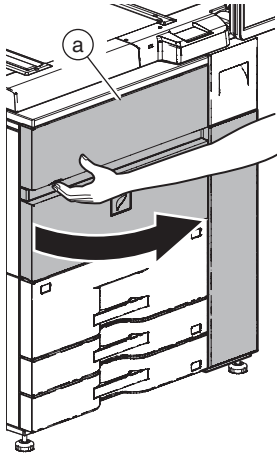
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Resist roller (Idle)	×	○	○	○	○	○	▲	
2	Transport rollers	×	○	○	○	○	○	▲	
3	Transport paper guides	○	○	○	○	○	○	○	
4	Optical reflection type sensor	○	○	○	○	○	○	○	
5	Paper dust cleaner	○	▲	▲	▲	▲	▲	▲	
6	Double feed detection unit	○	○	○	○	○	○	○	Ultrasonic sensor top surface (Air cleaning)
7	PS section PWB protection sheet							○	
8	PS gears	×	×	×	×	×	×	▲	
9	CIS	○	○	○	○	○	○	○	
10	Bearings							×	

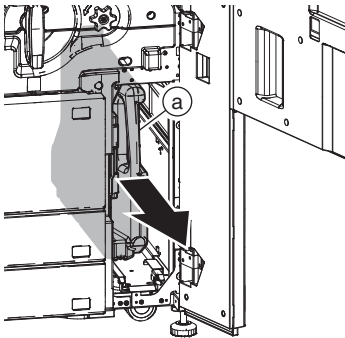


B. Details

- 1) Open the front cover (a).

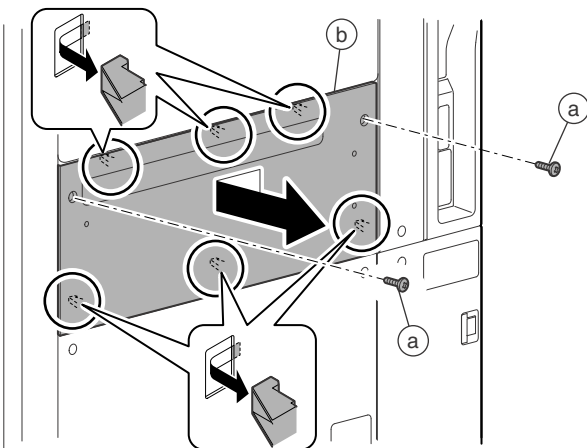


- 2) Remove the toner collection container (a).

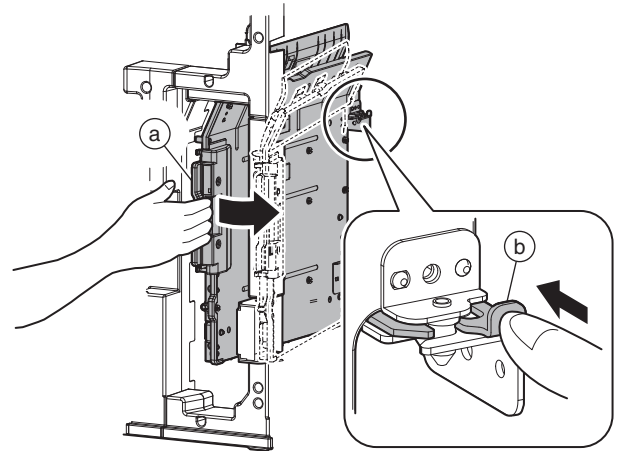


- 3) Remove the screw (a), and remove the cabinet (b).

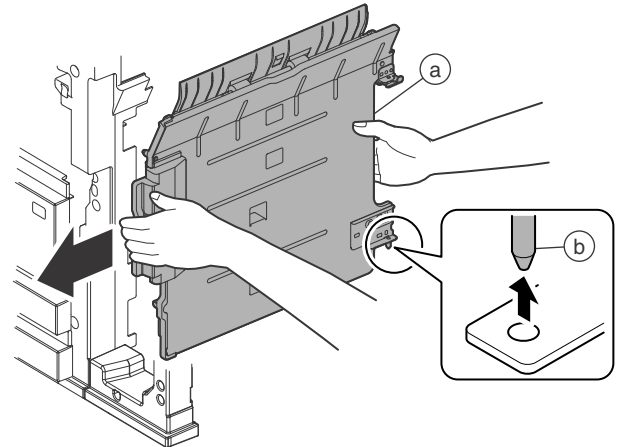
* The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



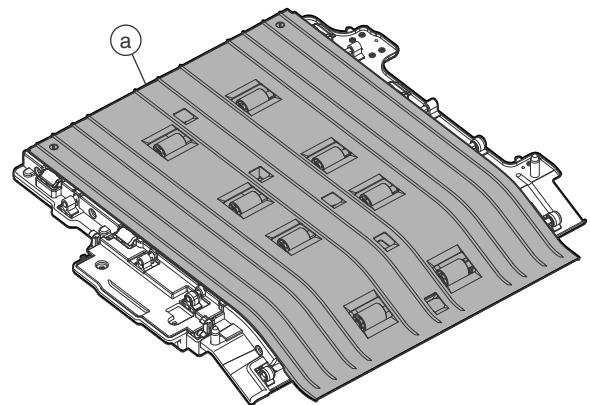
- 4) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



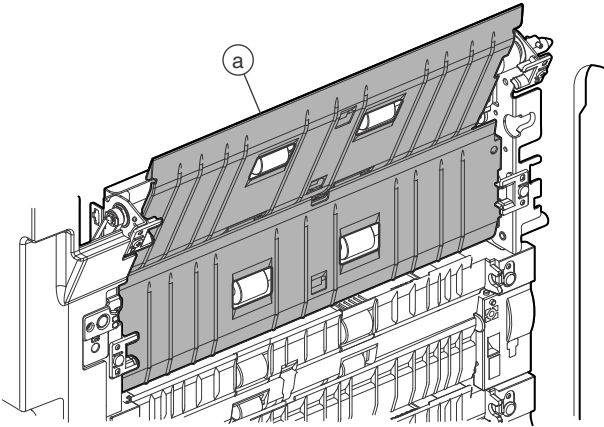
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



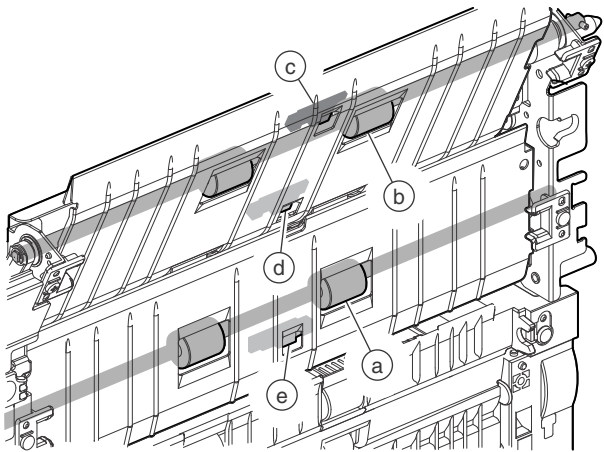
- 6) Clean the paper guide (a) of the vertical transport door unit at every 500K.



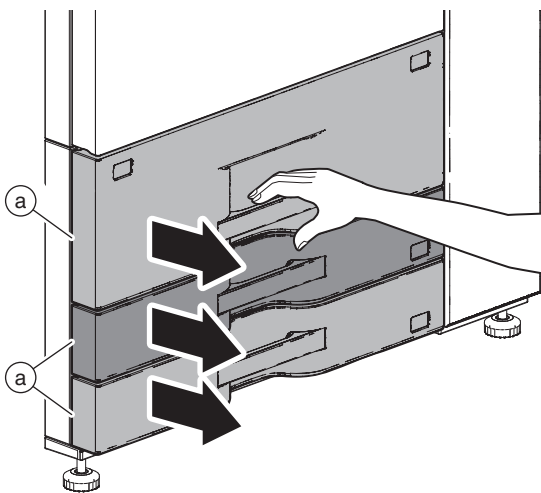
- 7) Clean the paper guide (a) of the vertical transport unit at every 500K.



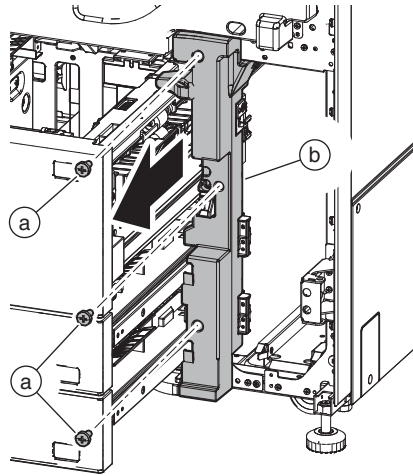
- 8) Clean the transport roller 5 (a), the transport roller 7 (b), the transport detection (c), the cassette 2 paper entry detection (d), and the vertical transport detection (e) at every 500K.



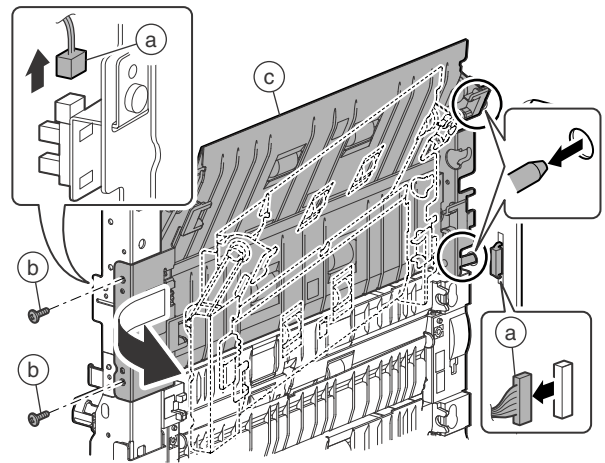
- 9) Pull out all tray (a).



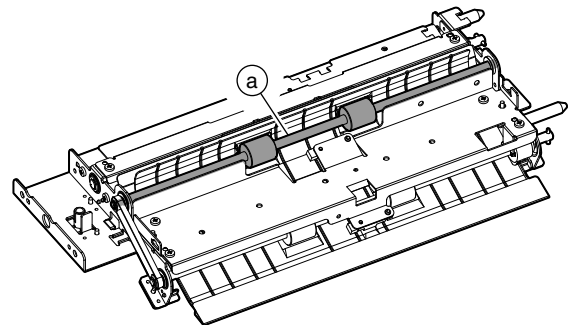
- 10) Remove the screw (a), and remove the cover (b).



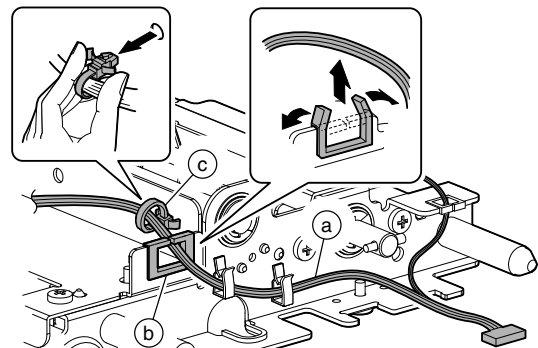
- 11) Disconnect the connector (a) and remove the screw (b). Remove the vertical transport unit (c).



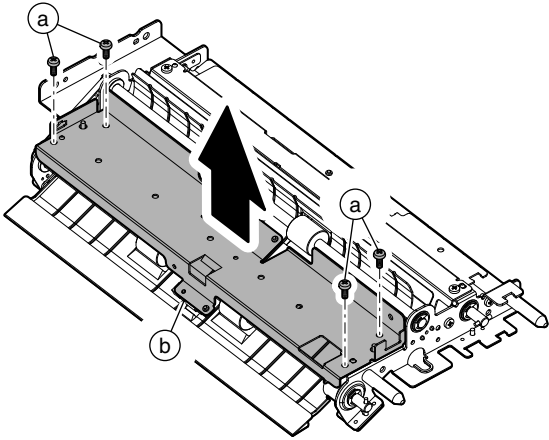
- 12) Clean the transport roller 6 (a) at every 500K.



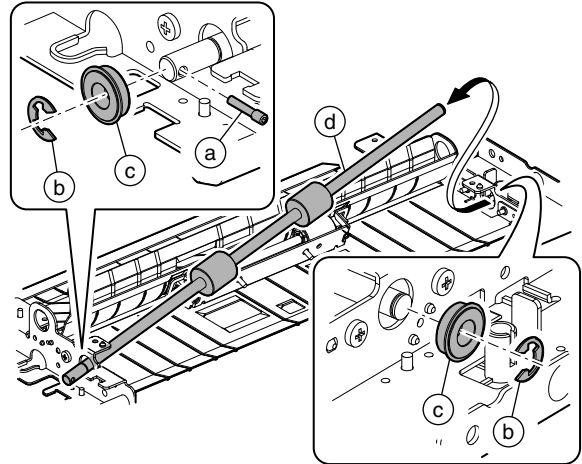
- 13) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



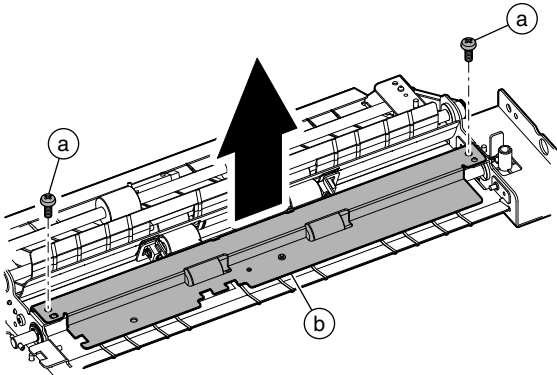
14) Remove the screw (a), and remove the frame (b).



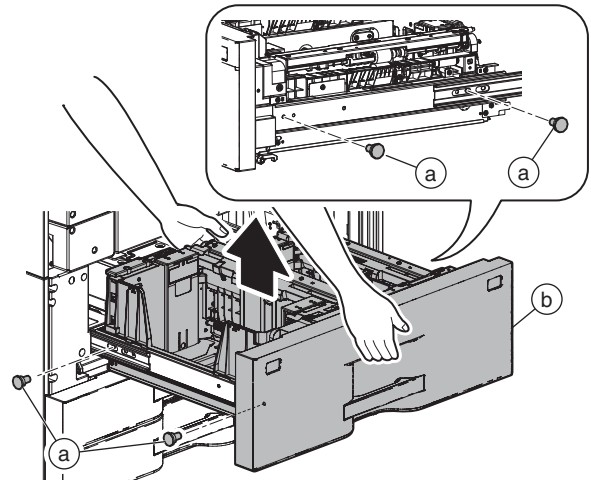
17) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 5 (d).



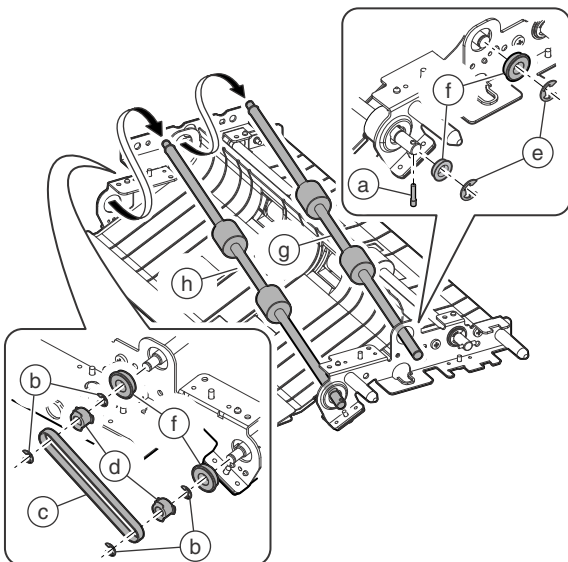
15) Remove the screw (a), and remove the frame (b).



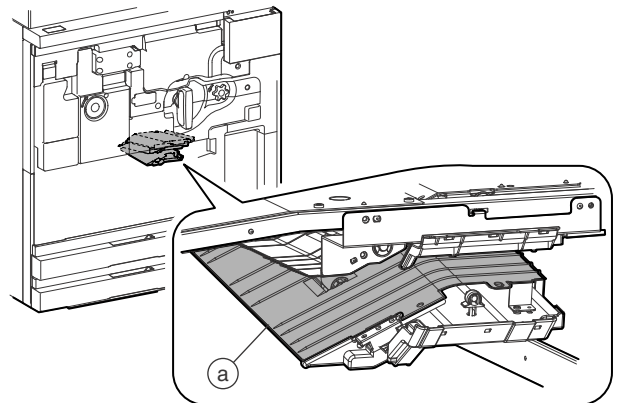
18) Remove the screw (a), and remove the tray 1/2 (b).



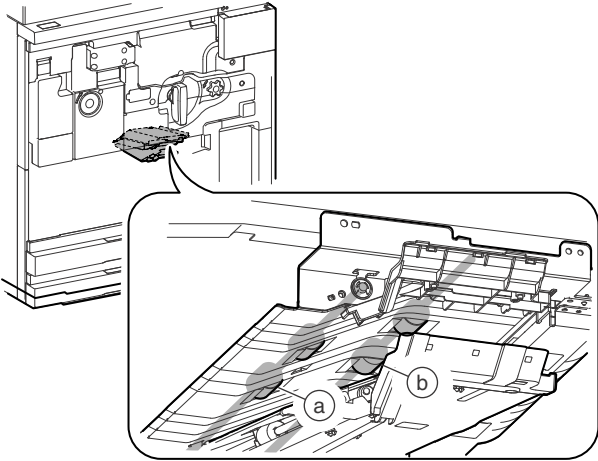
16) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 6 (g) and the transport roller 7 (h).



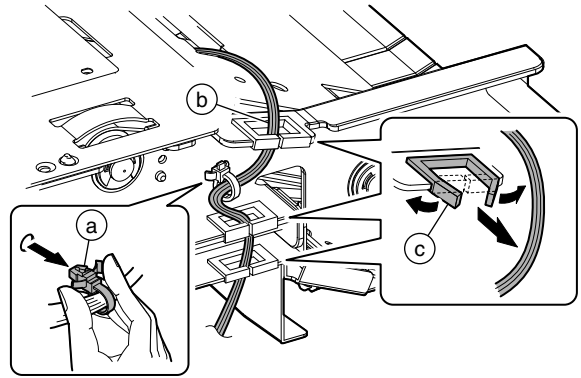
19) Clean the paper guide (a) of the interface pass unit at every 500K.



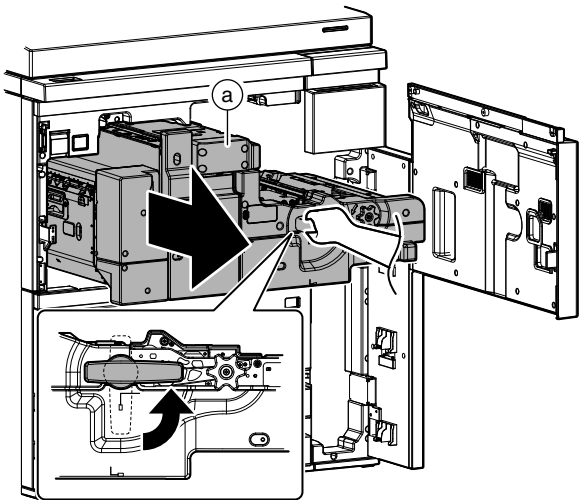
20) Clean the transport roller 8 (a) and the transport roller 9 (b) at every 500K.



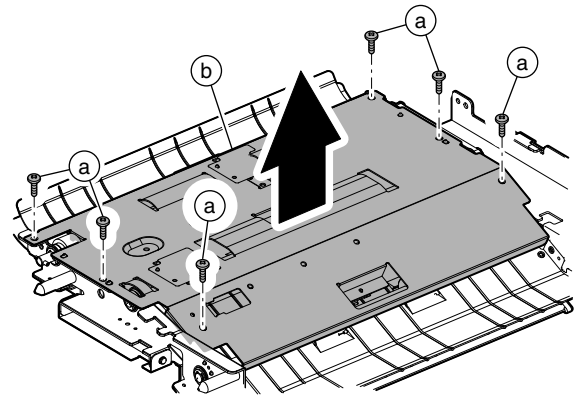
23) Remove the snap band (a), and remove the harness (b) from the harness holder (c).



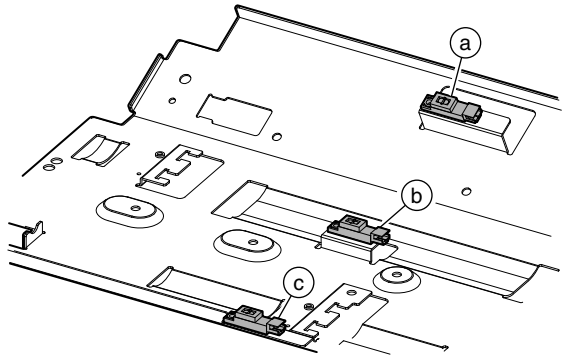
21) Pull out the intermediate frame (a).



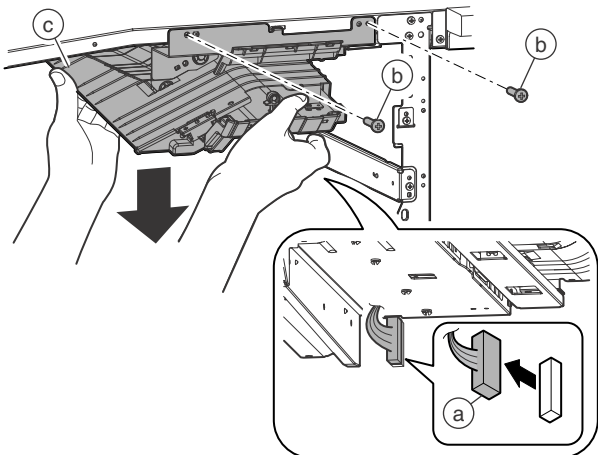
24) Remove the screw (a), and remove the frame (b).



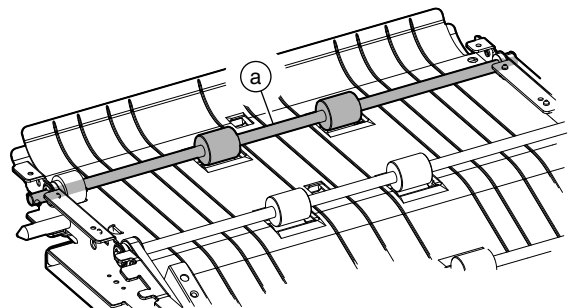
25) Clean the cassette 1 paper entry detection (a), the cassette 1 transport detection 1 (b), and the cassette 1 transport detection 2 (c) at every 500K.



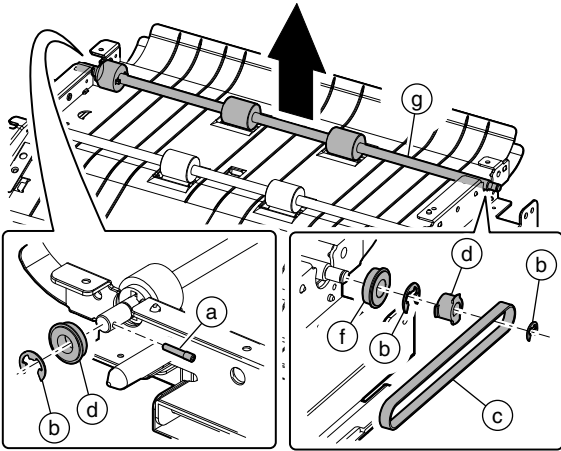
22) Disconnect the connector (a), and remove the screw (b). Remove the interface pass unit (c).



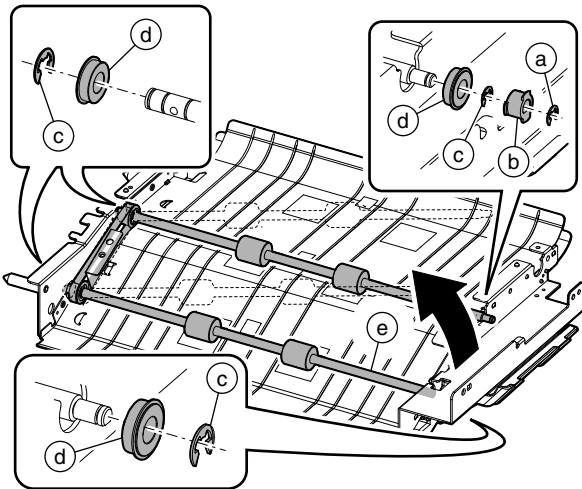
26) Clean the transport roller 10 (a) at every 500K.



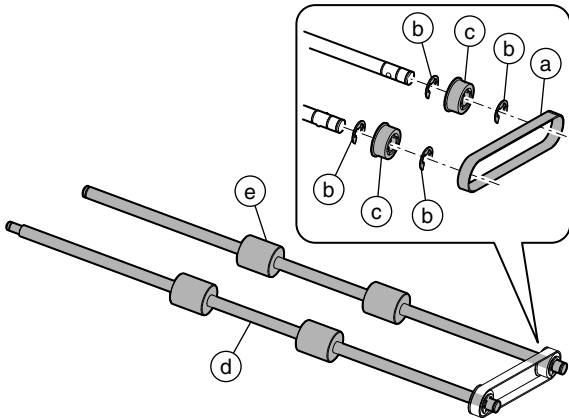
27) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 10 (g).



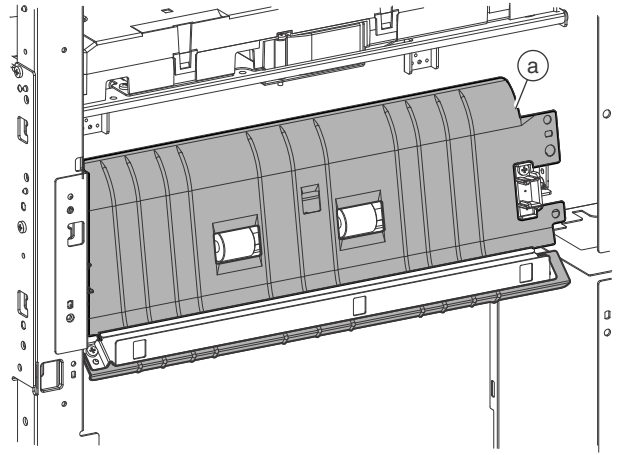
28) Remove the E-ring (a) and the pulley (b). Remove the E-ring (c) and the bearing (d). Remove the transport roller 8 and 9 unit (e).



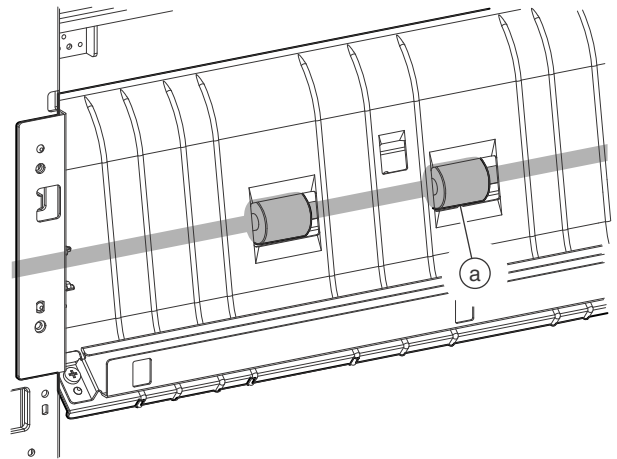
29) Remove the belt (a), the E-ring (b), and the pulley (c). Replace the transport roller 8 (d) and the transport roller 9 (e).



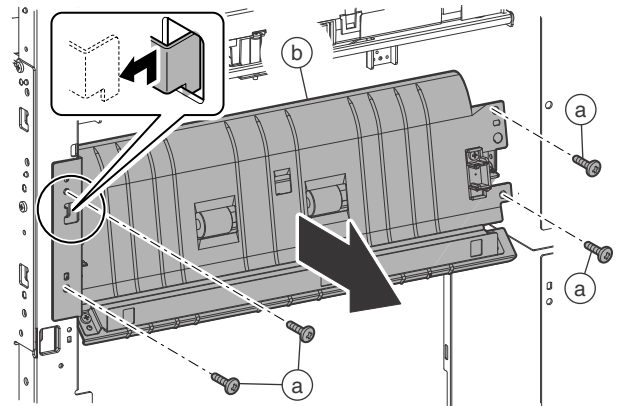
30) Clean the paper guide (a) of the LCC interface transport unit at every 500K.



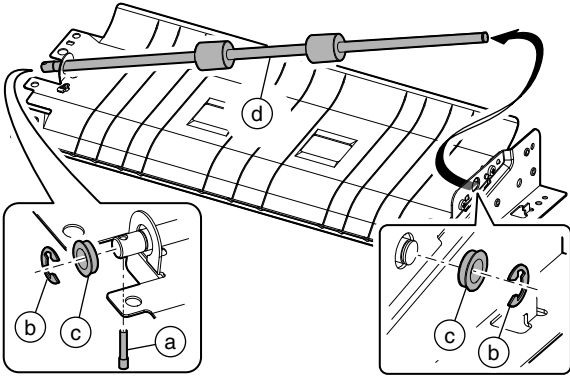
31) Clean the transport roller 12 (a) at every 500K.



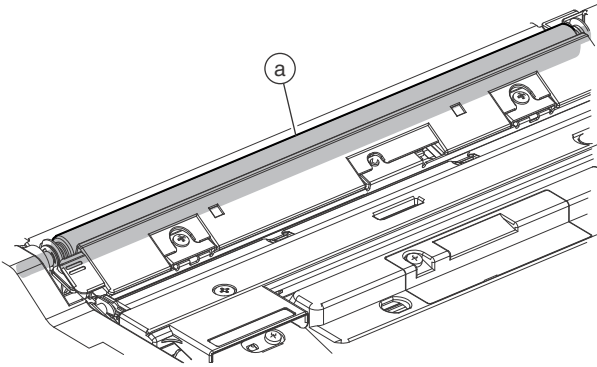
32) Remove the screw (a), and remove the LCC interface transport unit (b).



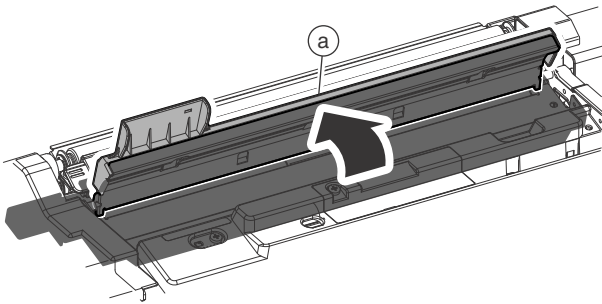
- 33) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 12 (d).



- 34) Clean the resist roller (idle) (a) at every 500K.

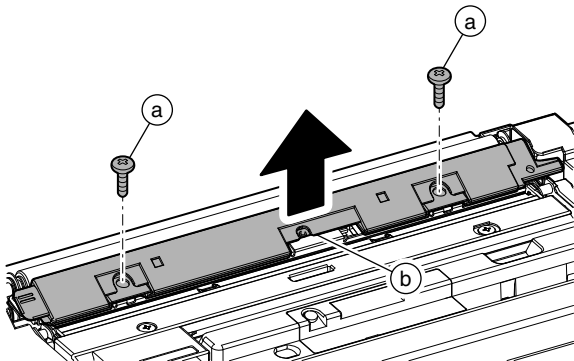


- 35) Open the paper guide (a) of the resist roller unit, and clean it at every 500K.

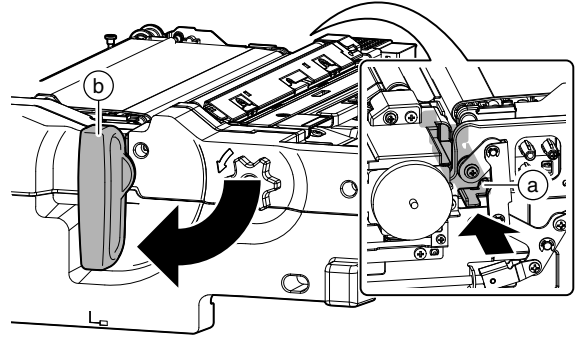


- 36) Clean the blue screw (a), and replace the paper dust cleaner (b).

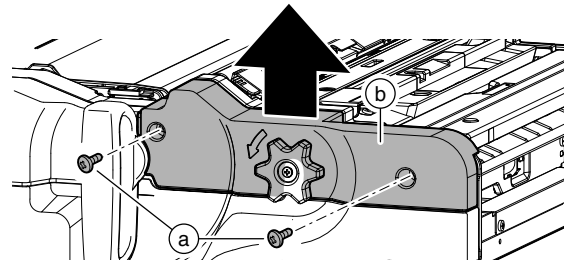
* When the paper dust cleaner is removed for another purpose than replacement, it must be cleaned.



- 37) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.

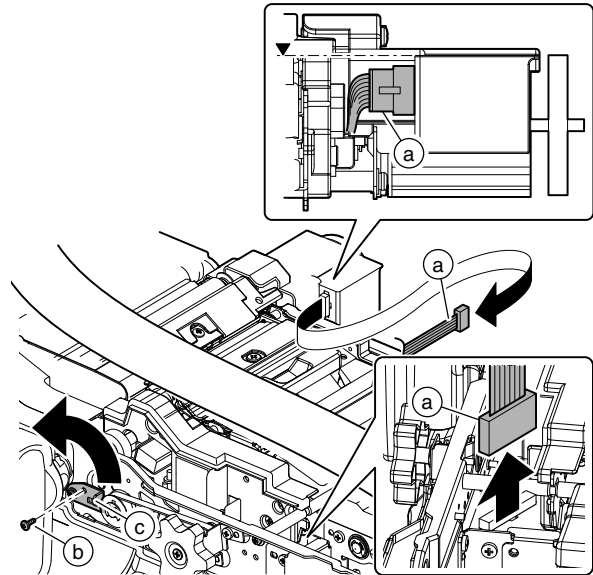


- 38) Remove the screw (a), and remove the cover (b).

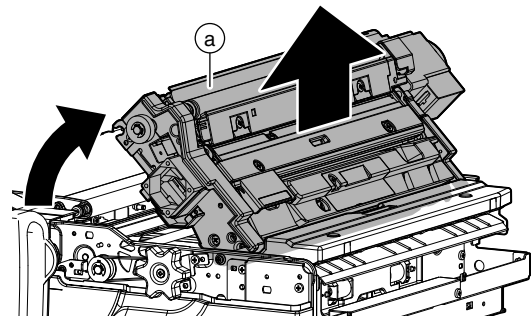


- 39) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c) to put it straight.

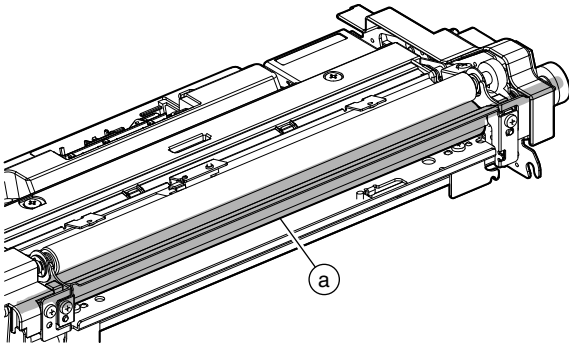
* When connecting, arrange so that the connector (a) does not extend over the PS roller unit.



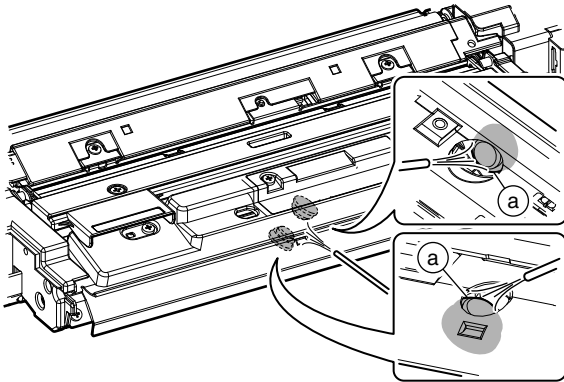
- 40) Remove the resist roller unit (a).



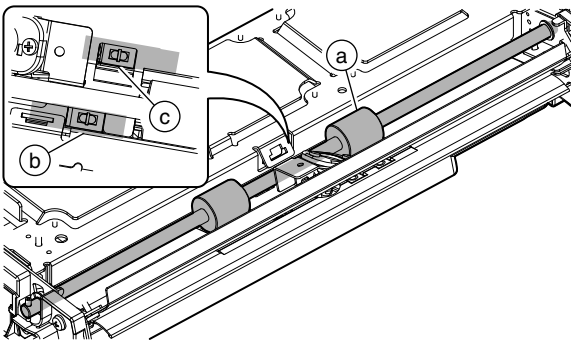
41) Clean the resist roller (drive) (a) at every 500K.



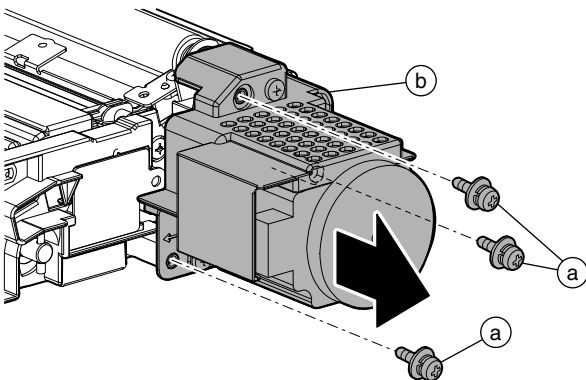
42) Blow air to the top of the double feed detection sensor (a) to clean at every 3000K.



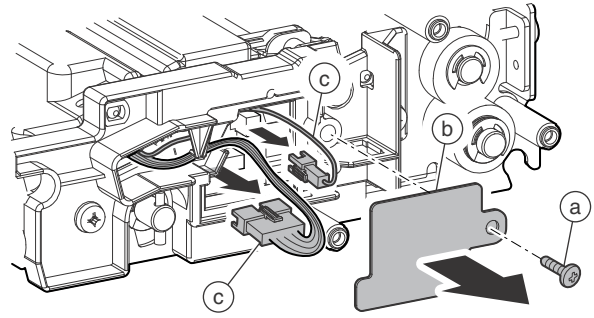
43) Clean the transport roller 14 (a), the transport detection 2 (b), and the transport detection 3 (c) at every 500K.



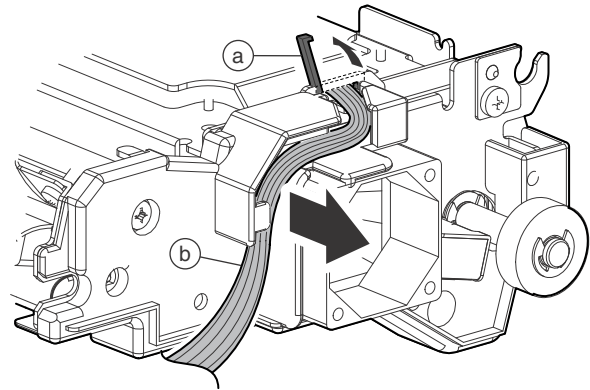
44) Remove the screw (a), and remove the PS motor unit (b).



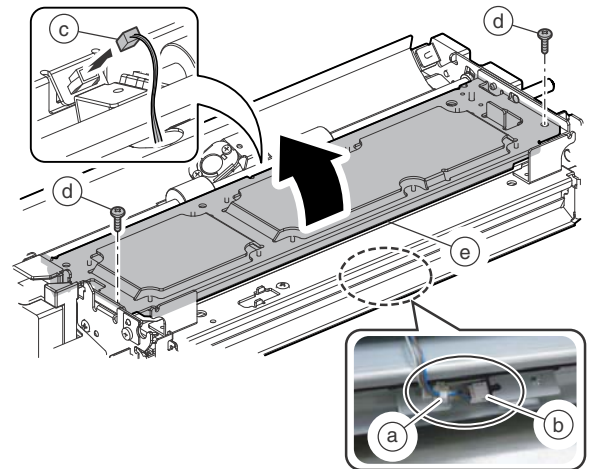
45) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



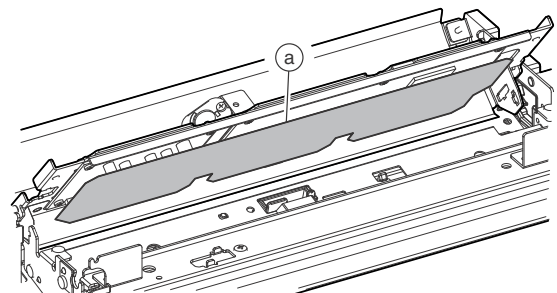
46) Open the harness holder (a), and remove the harness (b)



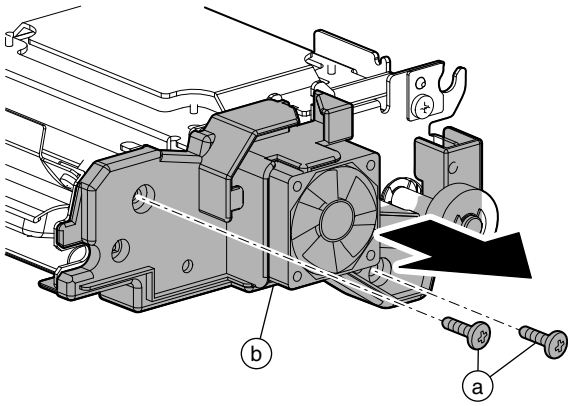
47) Remove the reuse band (a), and disconnect the connector (b). Disconnect the connector (c), and remove the screw (d). Open the frame (e).



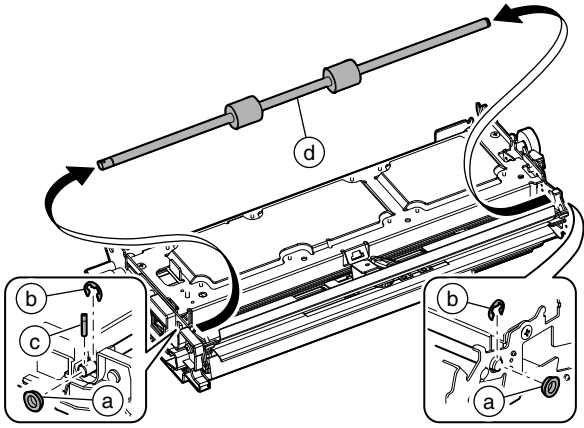
48) Clean the PS section PWB protection sheet (a) at every 3000K.



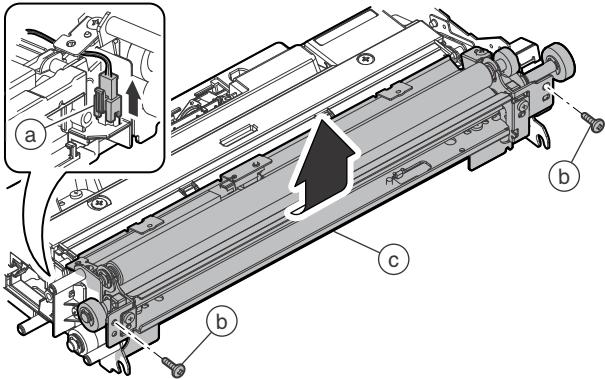
49) Remove the screw (a), and remove the cover (b).



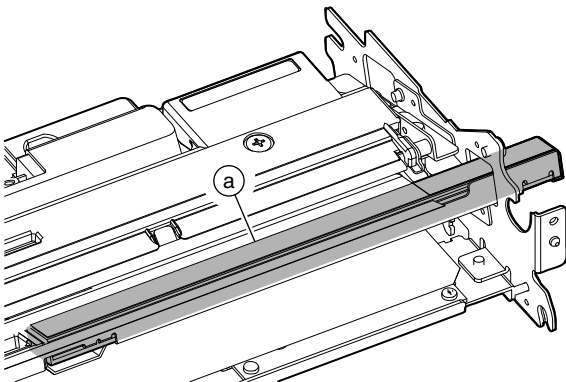
50) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 14 (d).



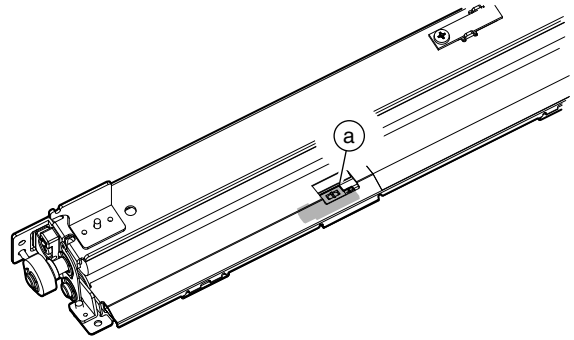
51) Disconnect the connector (a), and remove the screw (b). Remove the roller unit (c).



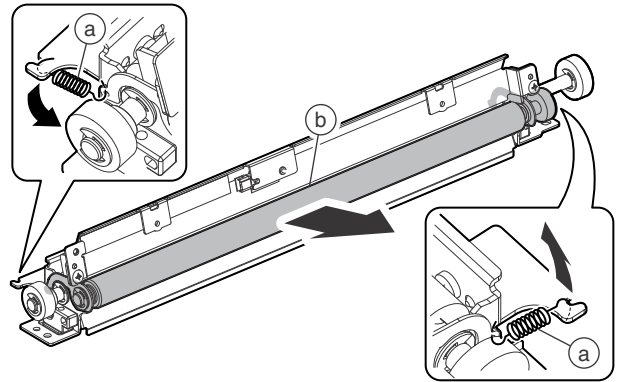
52) Clean the CIS (a) at every 3000K.



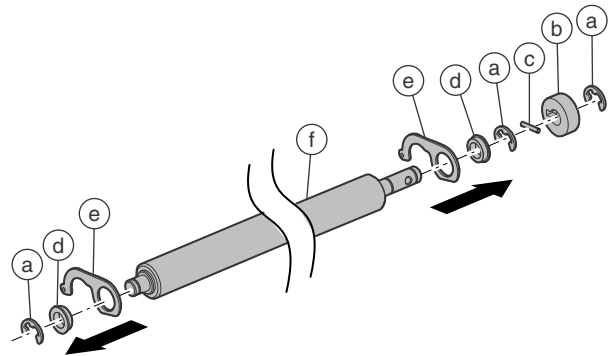
53) Clean the transport detection 4 (a) at every 500K.



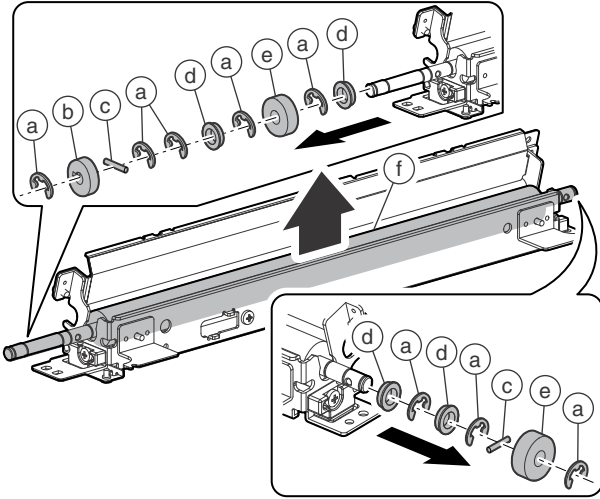
54) Remove the spring (a), and remove the resist roller (idle) unit (b).



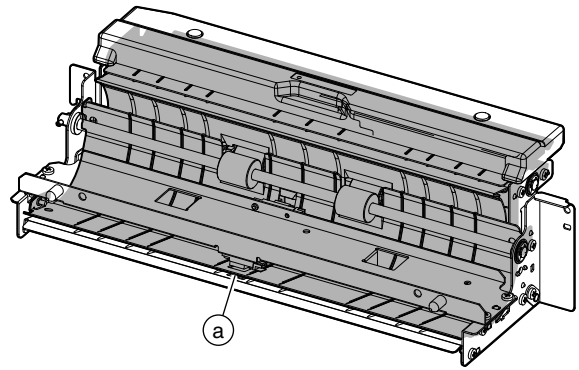
55) Remove the E-ring (a), the PS gear (b), the parallel pin (c), the bearing (d), and the plate (e). Replace the PS gear (b), and the resist roller (idle) (f).



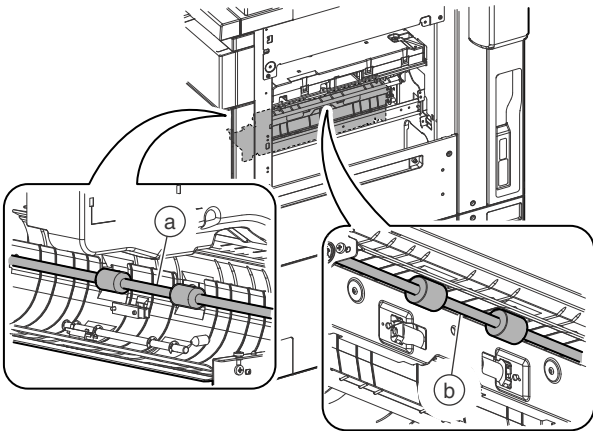
56) Remove the E-ring (a), the gear (b), the parallel pin (c), the bearing (d), and the PS gear (e). Replace the PS gear (e), and the resist roller (drive) (f).



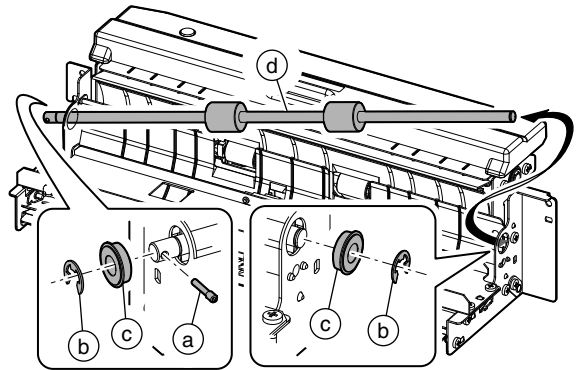
59) Clean the paper guide (a) of the upper transport unit at every 500K.



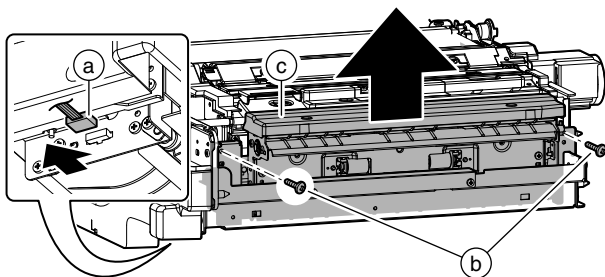
57) Clean the transport roller 11 (a) and the transport roller 13 (b) at every 500K.



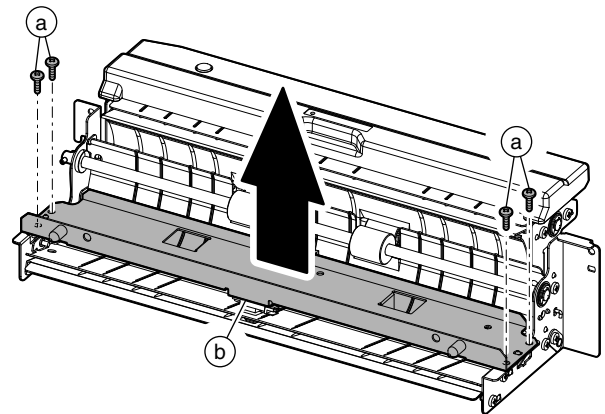
60) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 11 (d).



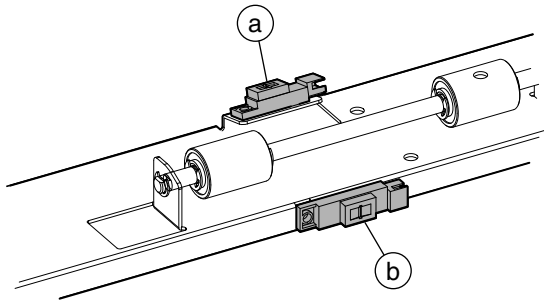
58) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



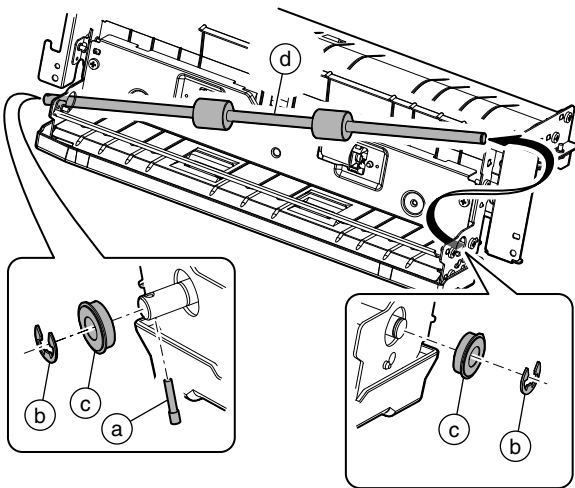
61) Remove the screw (a), and remove the frame (b).



62) Clean the ADU paper entry detection 1 (a) and the ADU paper entry detection 2 (b) at every 500K.



63) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 13 (d).



14. ADU paper exit section

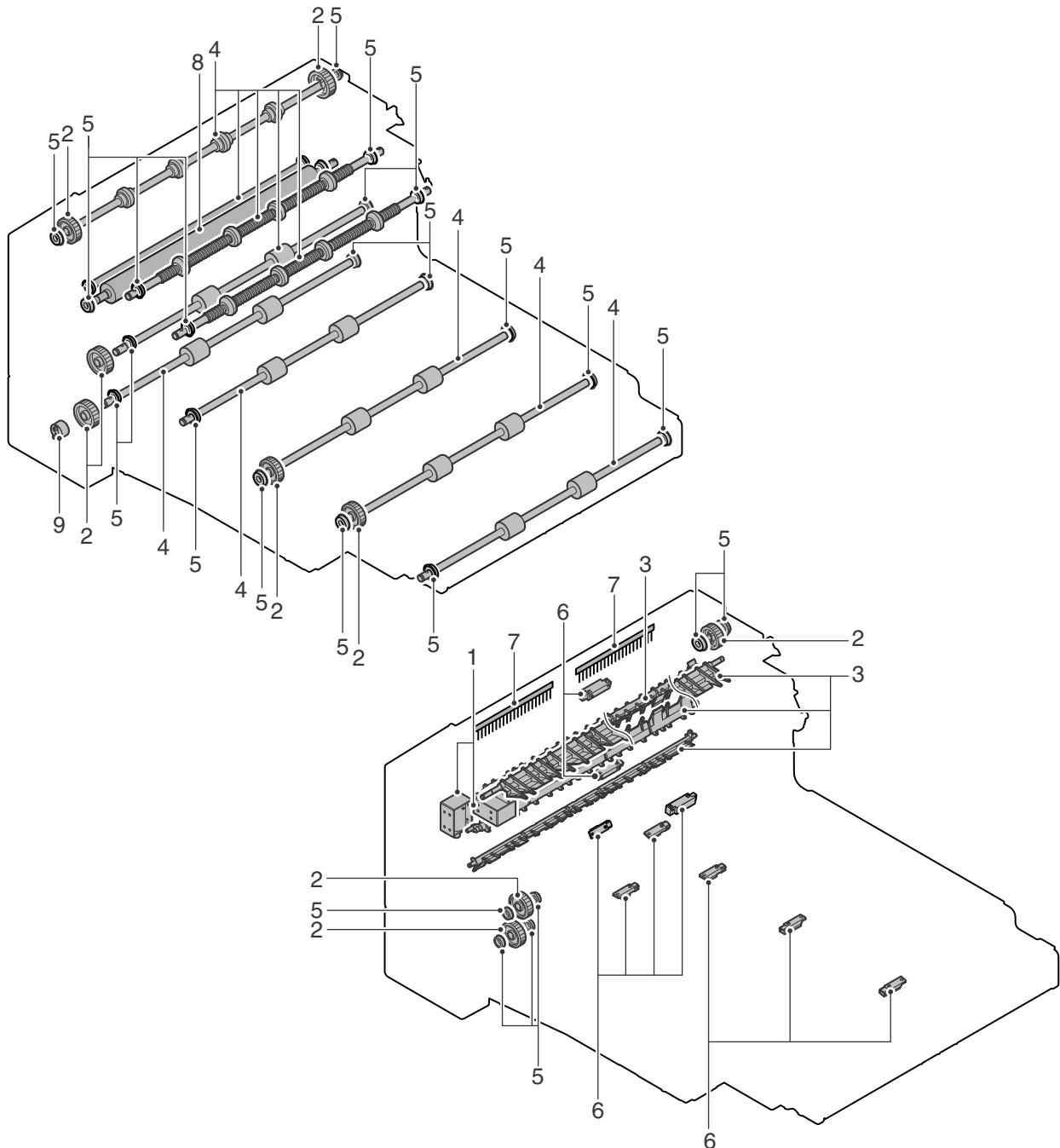
A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Solenoids	×	×	×	×	×	×	▲	
2	Gears	×	×	×	×	×	×	▲	
3	Gates	×	×	×	×	×	×	▲	
4	Transport rollers	×	○	○	○	○	○	▲	
5	Bearings							×	
6	Optical reflection type sensors	○	○	○	○	○	○	○	
7	Discharge brush	×	×	×	×	×	×	×	
8	Decurler roller	▲	▲	▲	▲	▲	▲	▲	Check when calling or every 500K.
9	Torque limiter	×	×	×	×	×	×	×	(Note 1)

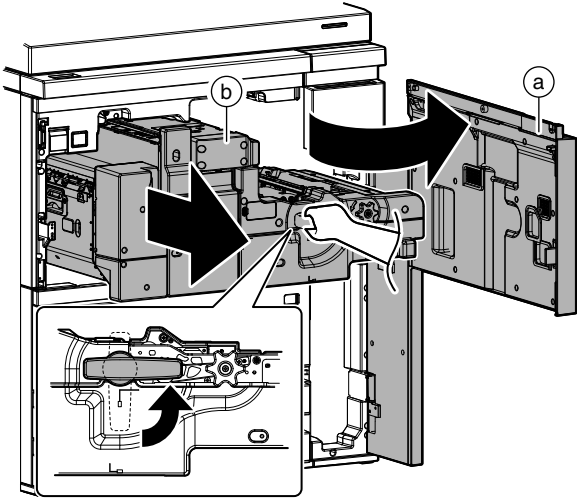
(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

- Torque limiter: 800K

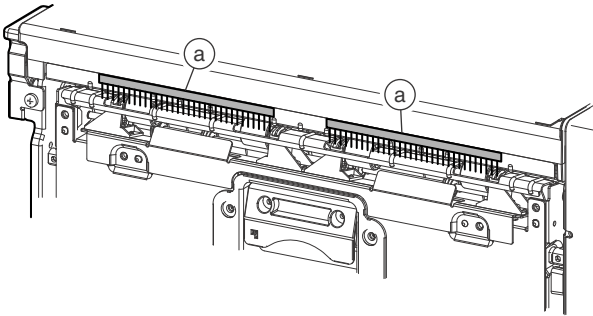


B. Details

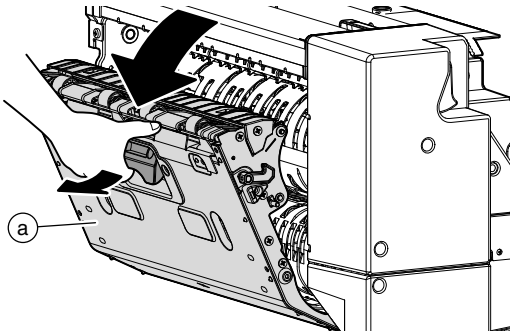
- 1) Open the front cover (a), and pull out the intermediate frame (b).



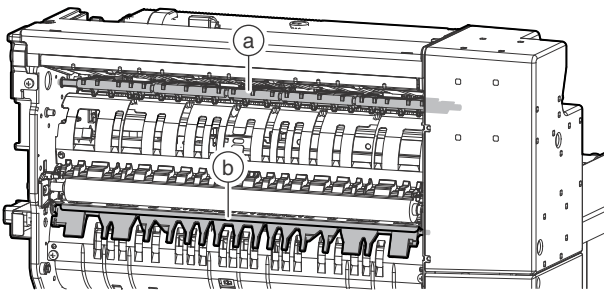
- 2) Check the discharge brush (a) at every 500K.



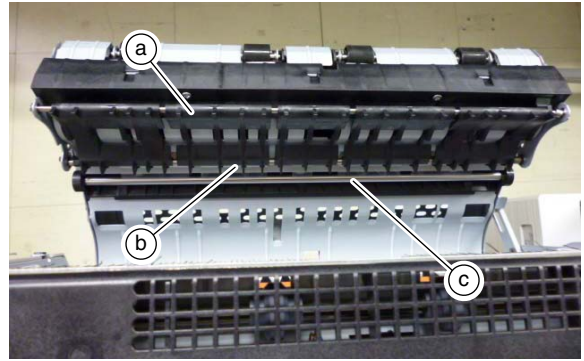
- 3) Open the left door (a).



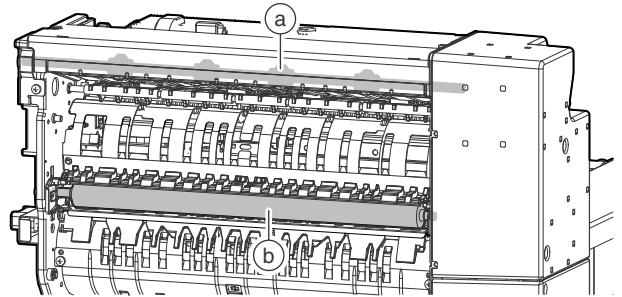
- 4) Check the face-up/face-down select gate solenoid (a), and the solenoid (b) at every 500K.



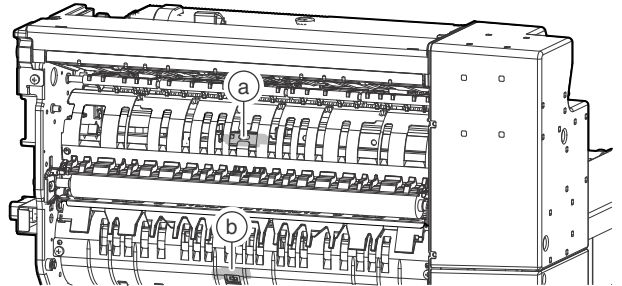
- 5) Check the paper exit/reverse select gate (a) and the reverse ADU gate (b) and the decurler follower roller (c) at every 500K.



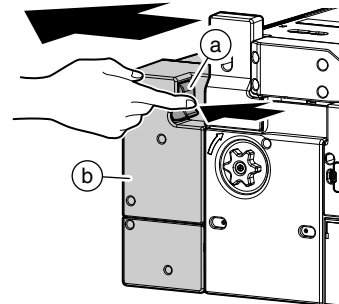
- 6) Clean the paper exit roller (a) and the decurler roller (b) at every 500K.



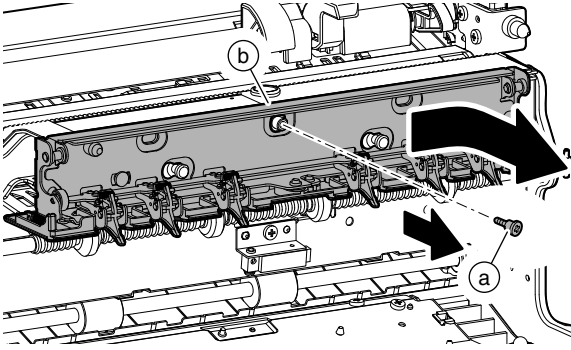
- 7) Clean the duplex reverse detection 1 (a) and the duplex reverse detection 2 (b) at every 500K.



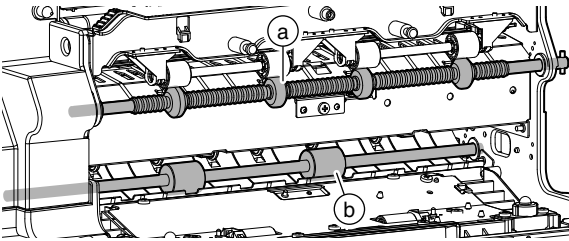
- 8) While pushing the lever (a), slide the ADU paper exit unit (b).



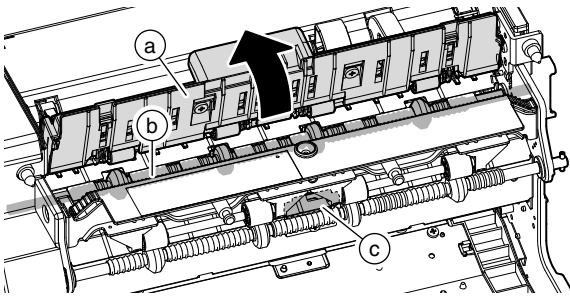
- 9) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



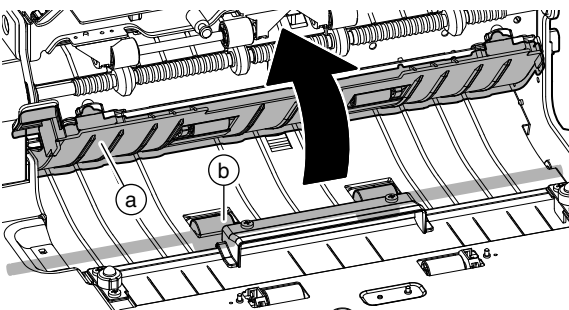
- 10) Clean the transport roller 15 (a) and the reverse roller 2 (b) at every 500K.



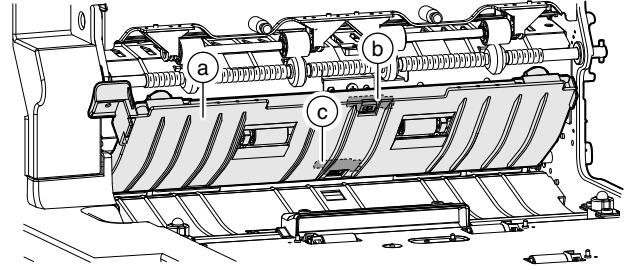
- 11) Open the paper guide (a), and clean the transport roller 16 (b) at every 500K. Clean the paper exit entry detection (c) at every 500K.



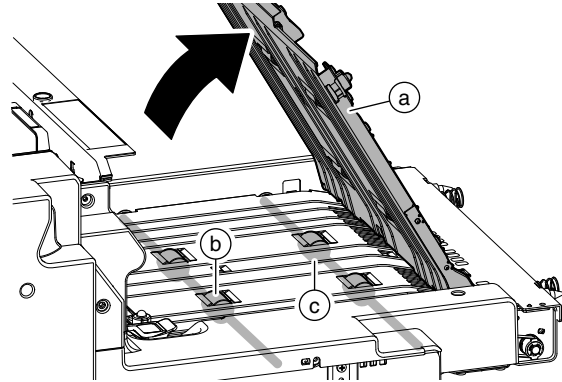
- 12) Open the paper guide (a), and clean the transport roller 18 (b) at every 500K.



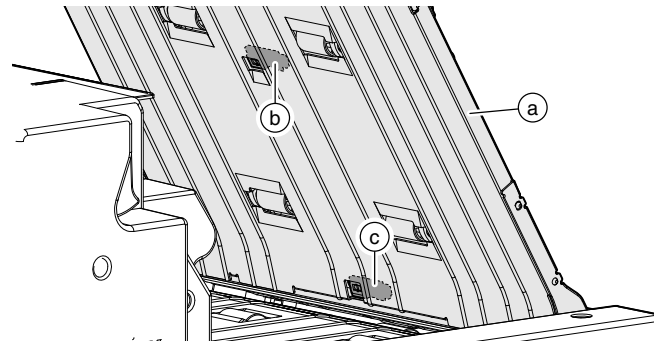
- 13) Open the paper guide (a), and clean the face-down reverse detection (b) and the ADU transport detection 1 (c) at every 500K.



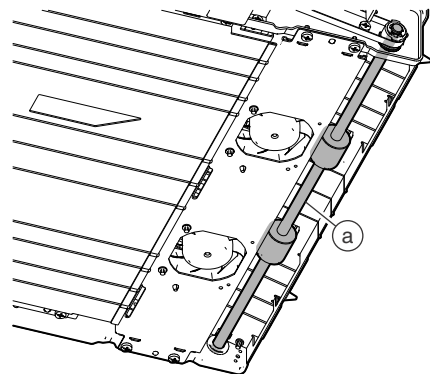
- 14) Open the paper guide (a), and clean the transport roller 19 (b) and the transport roller 20 (c) at every 500K.



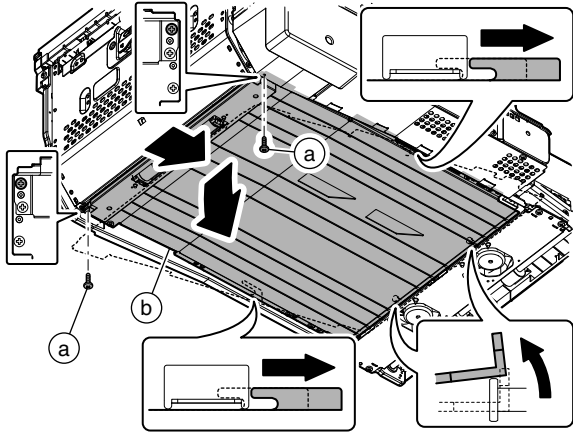
- 15) Open the paper guide (a), and clean the ADU transport detection 2 (b) and the ADU transport detection 3 (c) at every 500K.



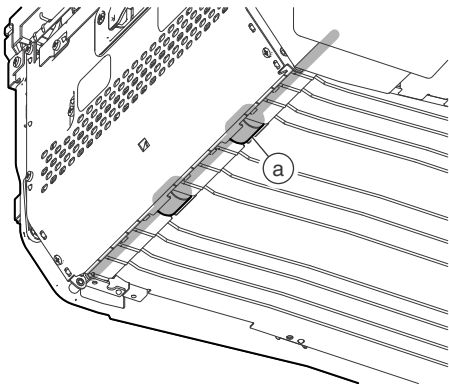
- 16) Clean the transport roller 21 (a) from the bottom side of the ADU paper exit unit at every 500K.



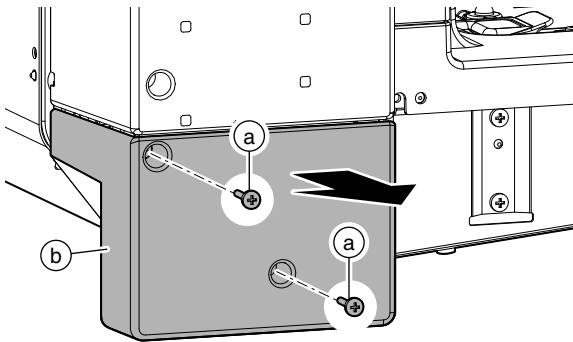
17) Remove the screw (a) from the bottom side, push into the paper guide (b) once, then remove it.



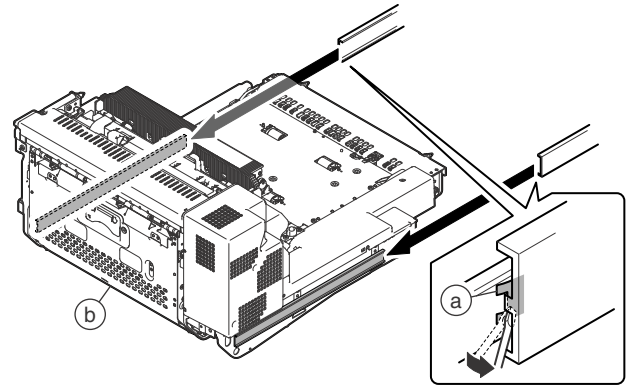
18) Clean the reverse roller 1 (a) at every 500K.



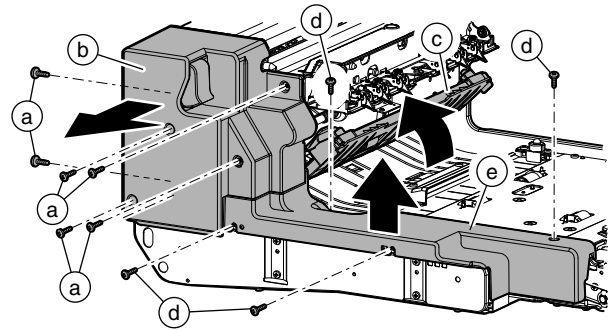
19) Remove the screw (a), and remove the cover (b).



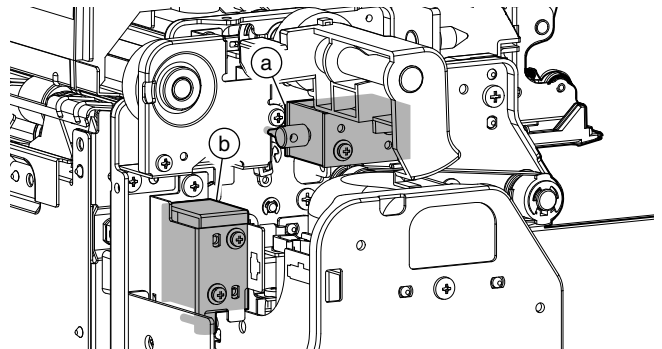
20) Release the lock (a) of the rail at two positions. Pull out the ADU paper exit unit (b) further to remove.



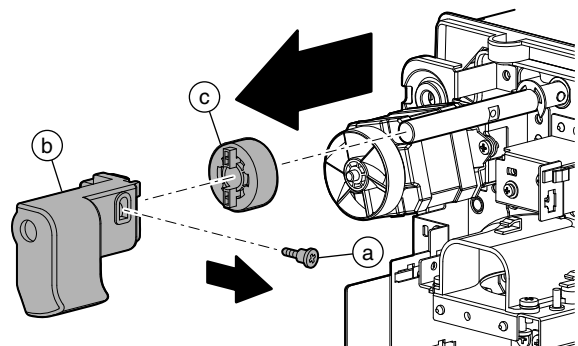
21) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



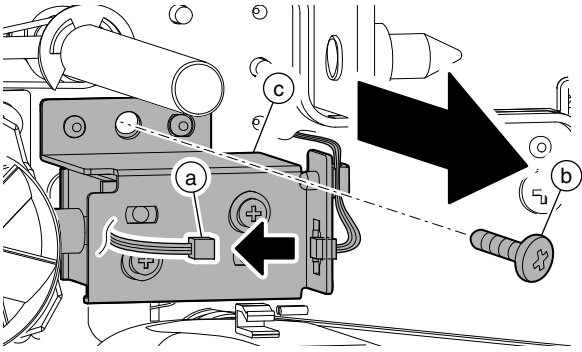
22) Check the face-up/face-down select gate solenoid (a), and the duplex select gate solenoid (b) at every 500K.



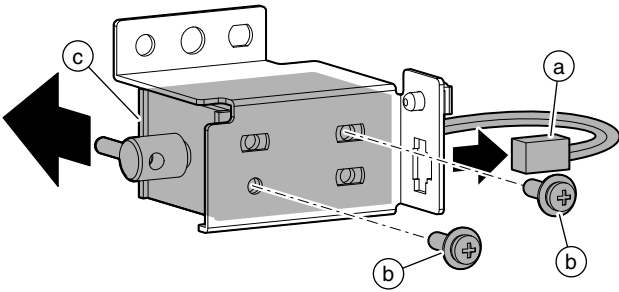
23) Remove the screw (a), and remove the lever (b) and the one-way clutch (c).



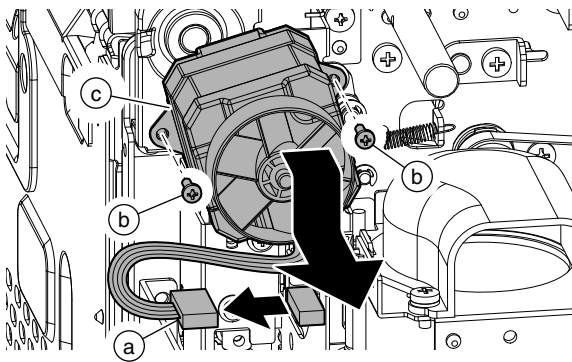
24) Disconnect the connector (a), and remove the screw (b).
Remove the face-up/face-down select gate solenoid unit (c).



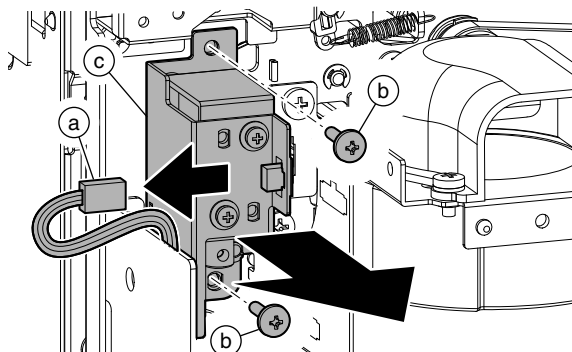
25) Disconnect the connector (a), and remove the screw (b).
Replace the face-up/face-down select gate solenoid (c).



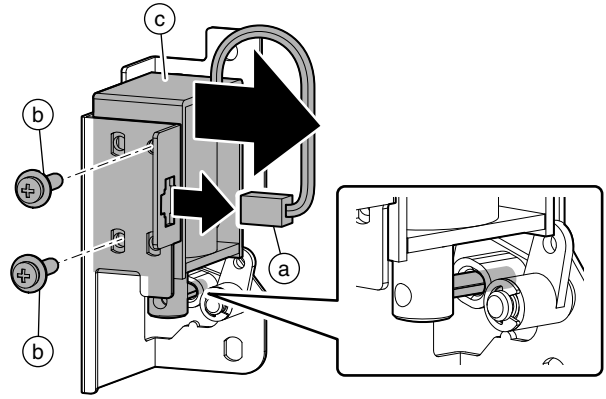
26) Disconnect the connector (a), and remove the screw (b).
Remove the paper exit motor (c).



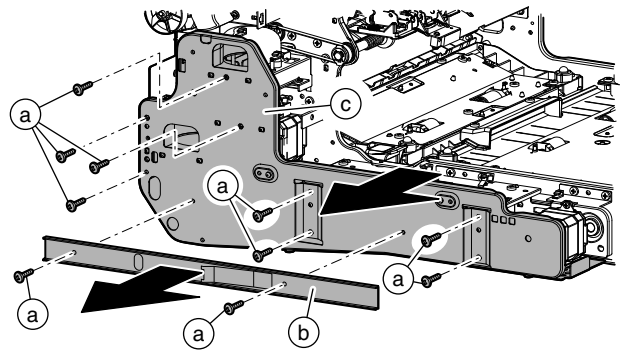
27) Disconnect the connector (a), and remove the screw (b).
Remove the duplex select gate solenoid unit (c).



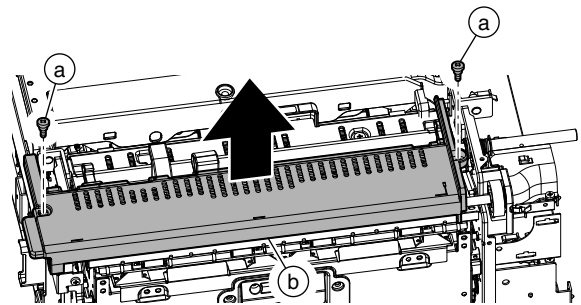
28) Disconnect the connector (a), and remove the screw (b).
Replace the Duplex select gate solenoid (c).



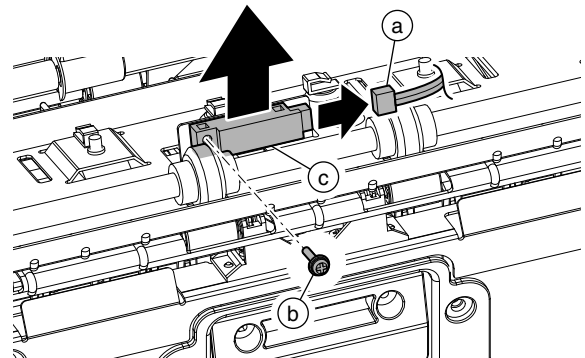
29) Remove the screw (a), and remove the rail (b) and the frame (c).



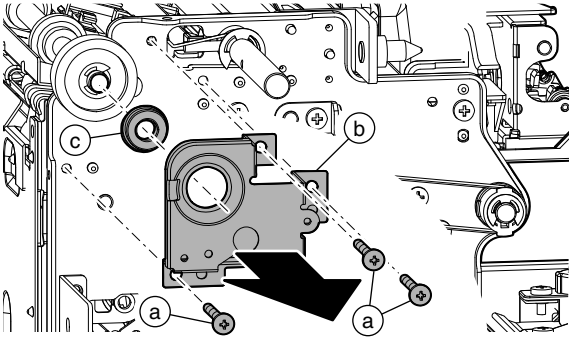
30) Remove the screw (a), and remove the cover (b).



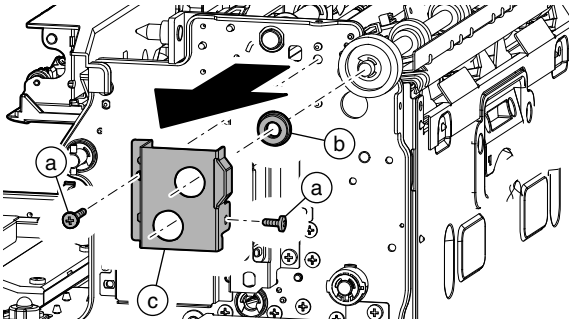
31) Disconnect the connector (a), and remove the screw (b).
Remove the paper exit detection (c). Clean it at every 500K.



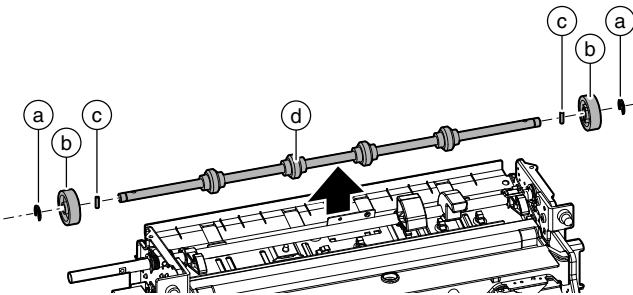
32) Remove the screw (a), and remove the mounting plate (b) and the bearing (c).



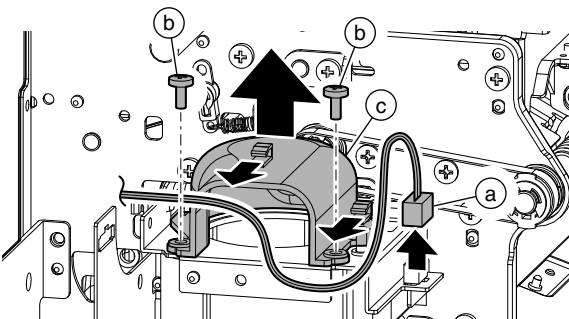
33) Remove the screw (a), the bearing (b), and the plate (c).



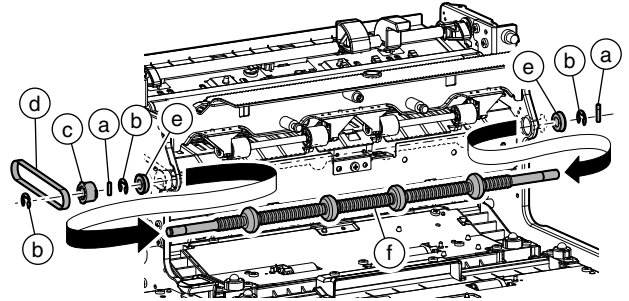
34) Remove the E-ring (a), the gear (b), and the parallel pin (c). Replace the paper exit roller (d).



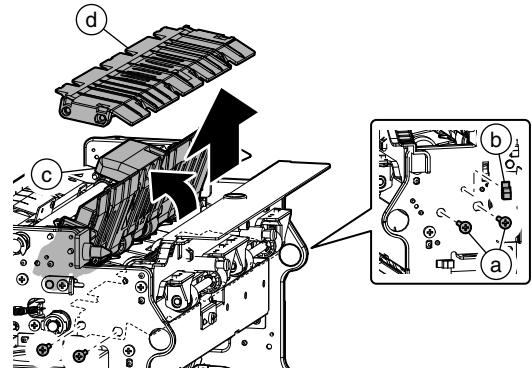
35) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



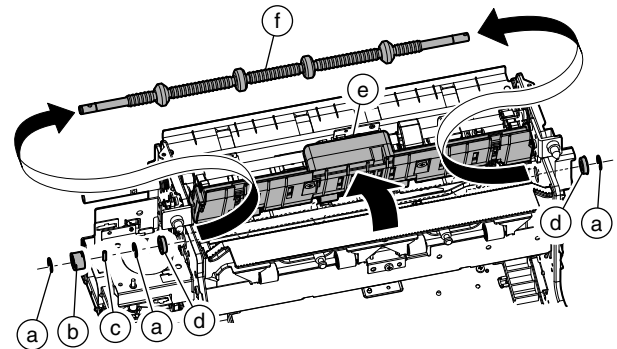
36) Remove the parallel pin (a), the E-ring (b), the pulley (c), the belt (d), and the bearing (e). Replace the transport roller 15 (f).



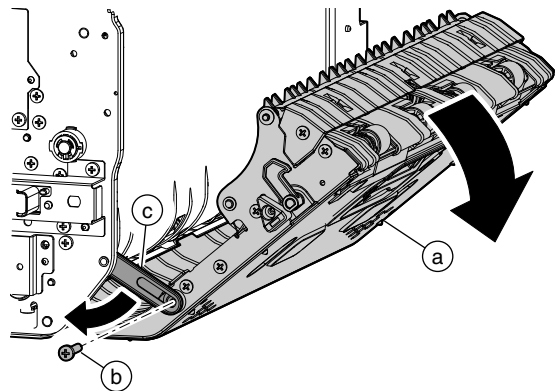
37) Remove the screw (a) and the snap band (b). Open the paper guide (c), and remove the paper guide (d).



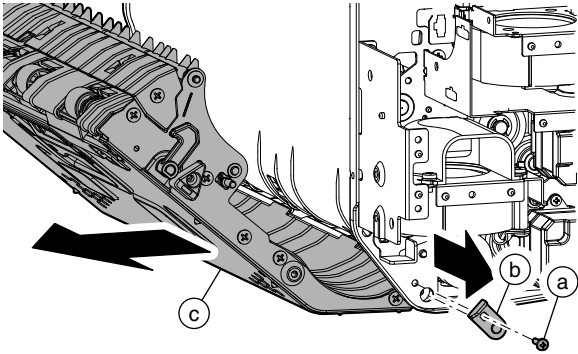
38) Remove the E-ring (a), the pulley (b), the parallel pin (c), and the bearing (d). Open the paper guide (e) and replace the transport roller 16 (f).



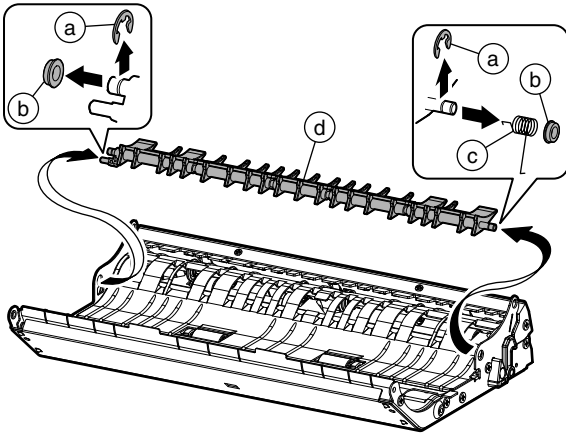
39) Open the left door (a). Remove the screw (b), and remove the stopper (c).



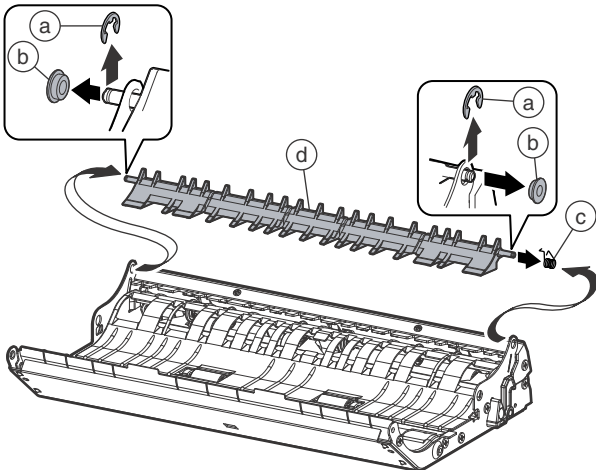
40) Remove the screw (a) and the fulcrum plate (b). Remove the left door (c).



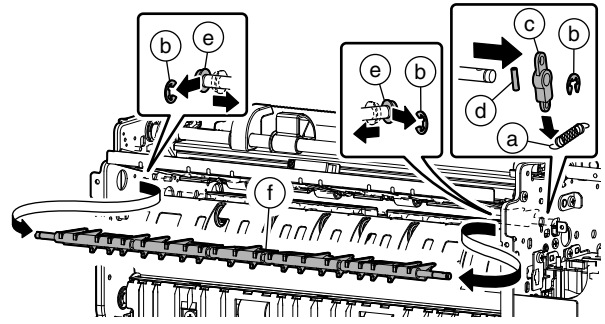
41) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the reverse ADU select gate (d).



42) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the paper exit/reverse select gate (d).

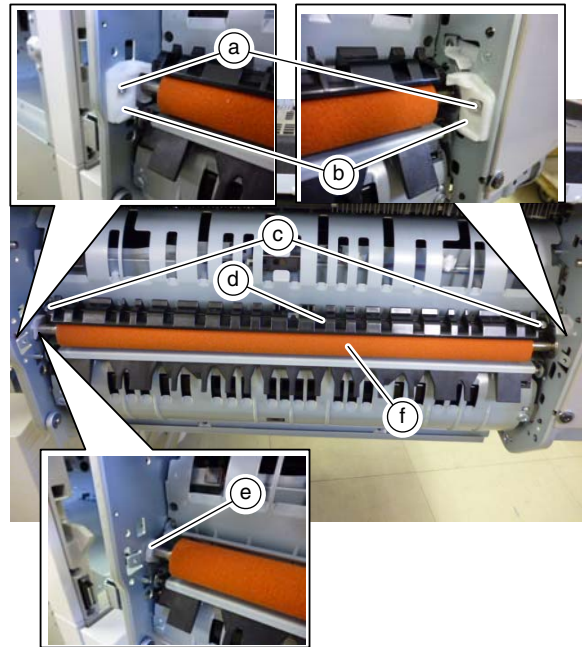


43) Remove the spring (a), the E-ring (b), the lever (c), the parallel pin (d), and the bearing (e). Replace the face-up/face-down select gate (f).

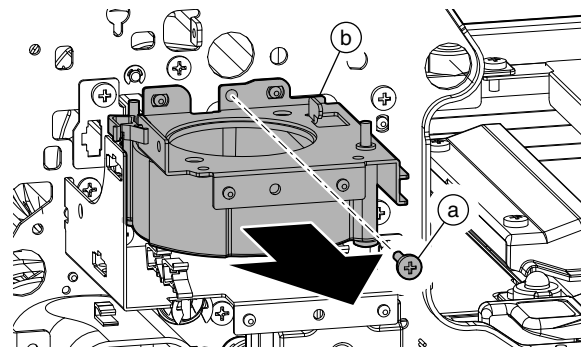


44) Remove the screw (a), and remove the alignment holder (b). Remove the screw (c), and remove the paper entry upper paper guide (d).

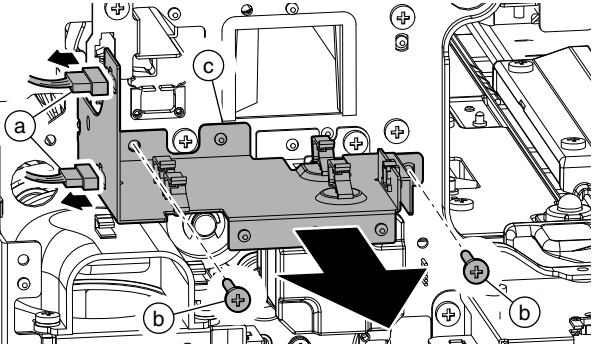
Remove the resin E-ring. Slide the decurler roller (f) to the rear side once, and remove the bearing. Slide the roller to the front side to remove.



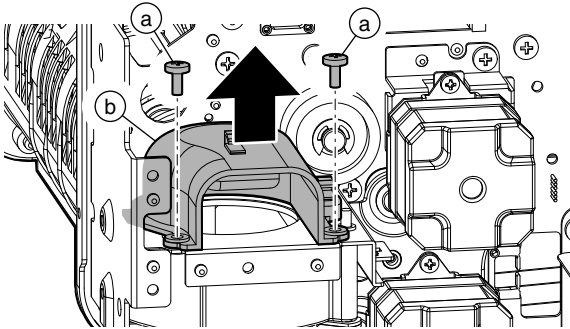
45) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



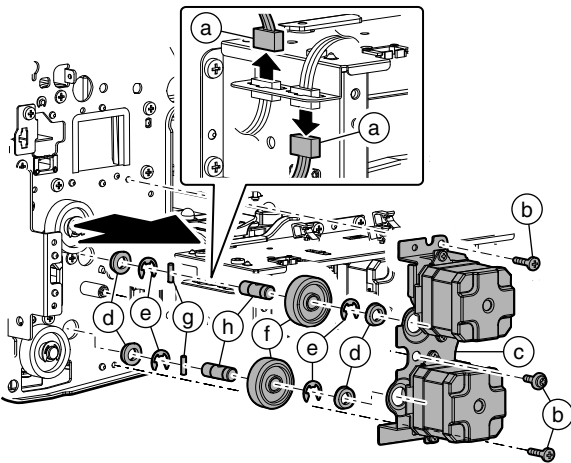
46) Disconnect the connector (a), and remove the screw (b), and the plate (c).



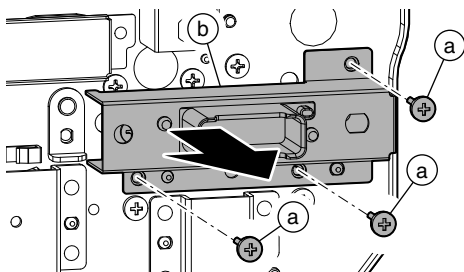
47) Remove the screw (a), and remove the duct (b).



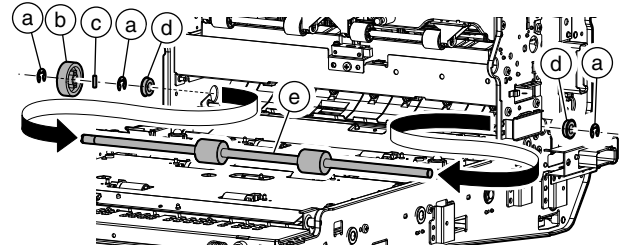
48) Disconnect the connector (a), and remove the screw (b). Remove the motor unit (c). Remove the bearing (d), the E-ring (e), the gear (f), the parallel pin (g), and the shaft (h).



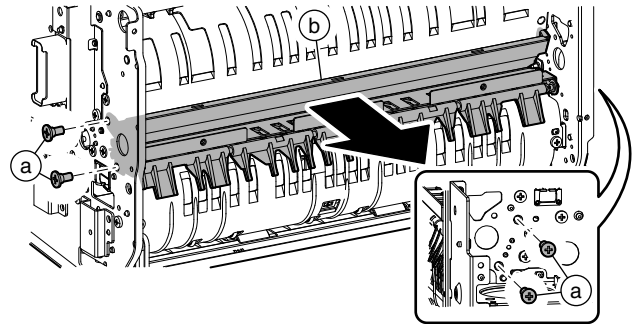
49) Remove the screw (a) on the rear side, and remove the drawer unit (b).



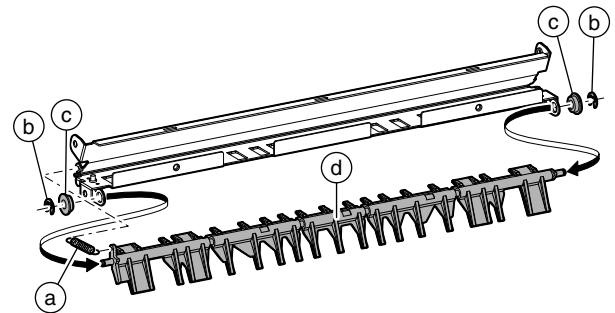
50) Remove the E-ring (a), the gear (b), the parallel pin (c), and the bearing (d). Replace the reverse roller 2 (e).



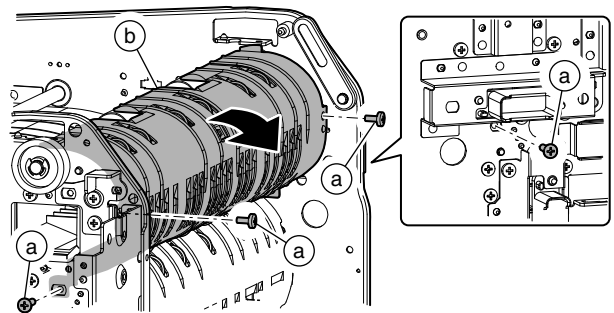
51) Remove the screw (a), and remove the paper guide (b).



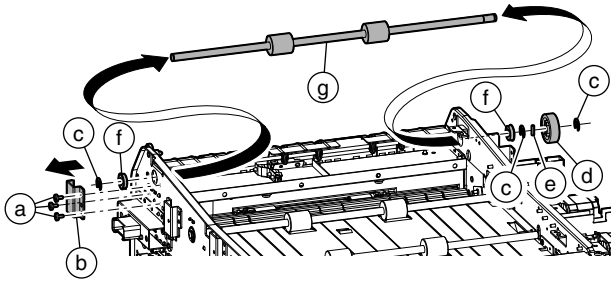
52) Remove the spring (a), the E-ring (b), and the bearing (c). Replace the ADU reverse select gate (d).



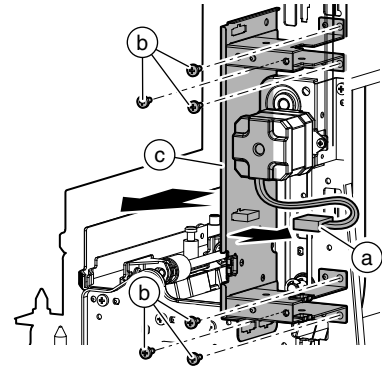
53) Remove the screw (a), and slide the paper guide (b).



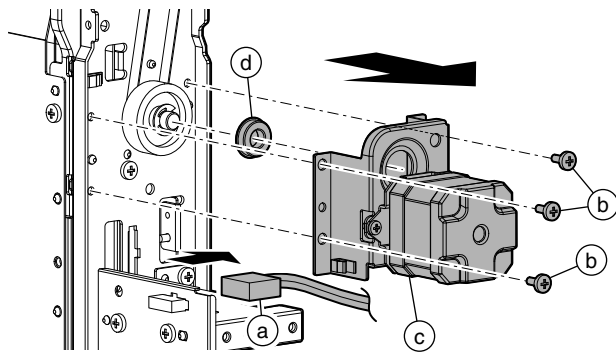
54) Remove the screw (a), and remove the plate (b). Remove the E-ring (c), the gear (d), the parallel pin (e), and the bearing (f). Replace the reverse roller 1 (g).



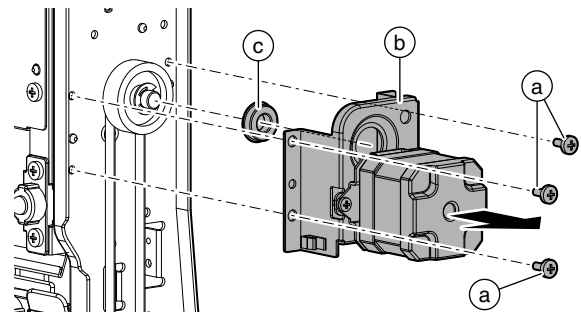
58) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).



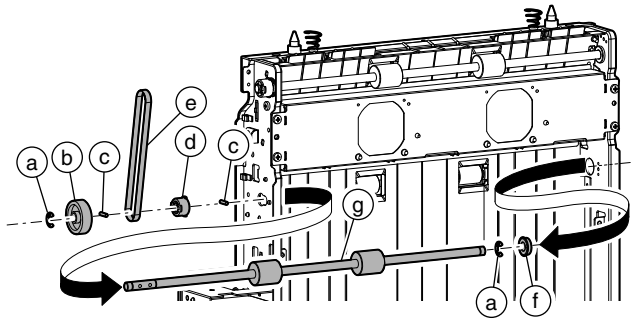
55) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport motor 2 unit (c) and the bearing (d).



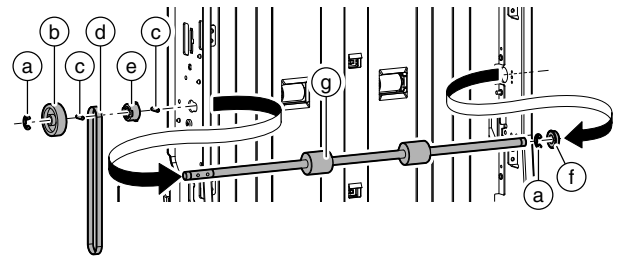
59) Remove the screw (a), and remove the ADU transport motor 1 unit (b) and the bearing (c).



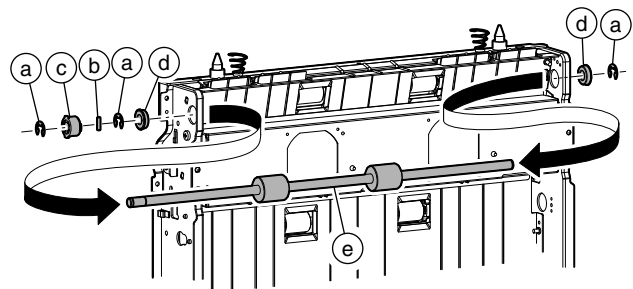
56) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 20 (g).



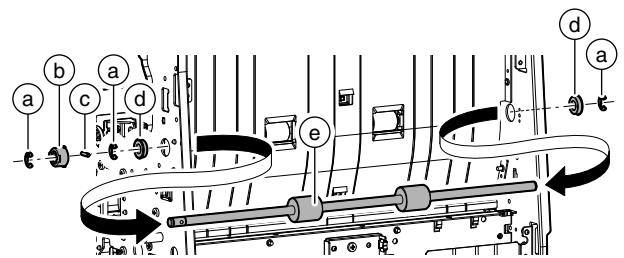
60) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 19 (g).



57) Remove the E-ring (a), the parallel pin (b), the pulley (c), and the bearing (d). Replace the transport roller 21 (e).



61) Remove the E-ring (a), the parallel pin (b), the pulley (c), and the bearing (d). Replace the transport roller 18 (e).



15. Drive section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

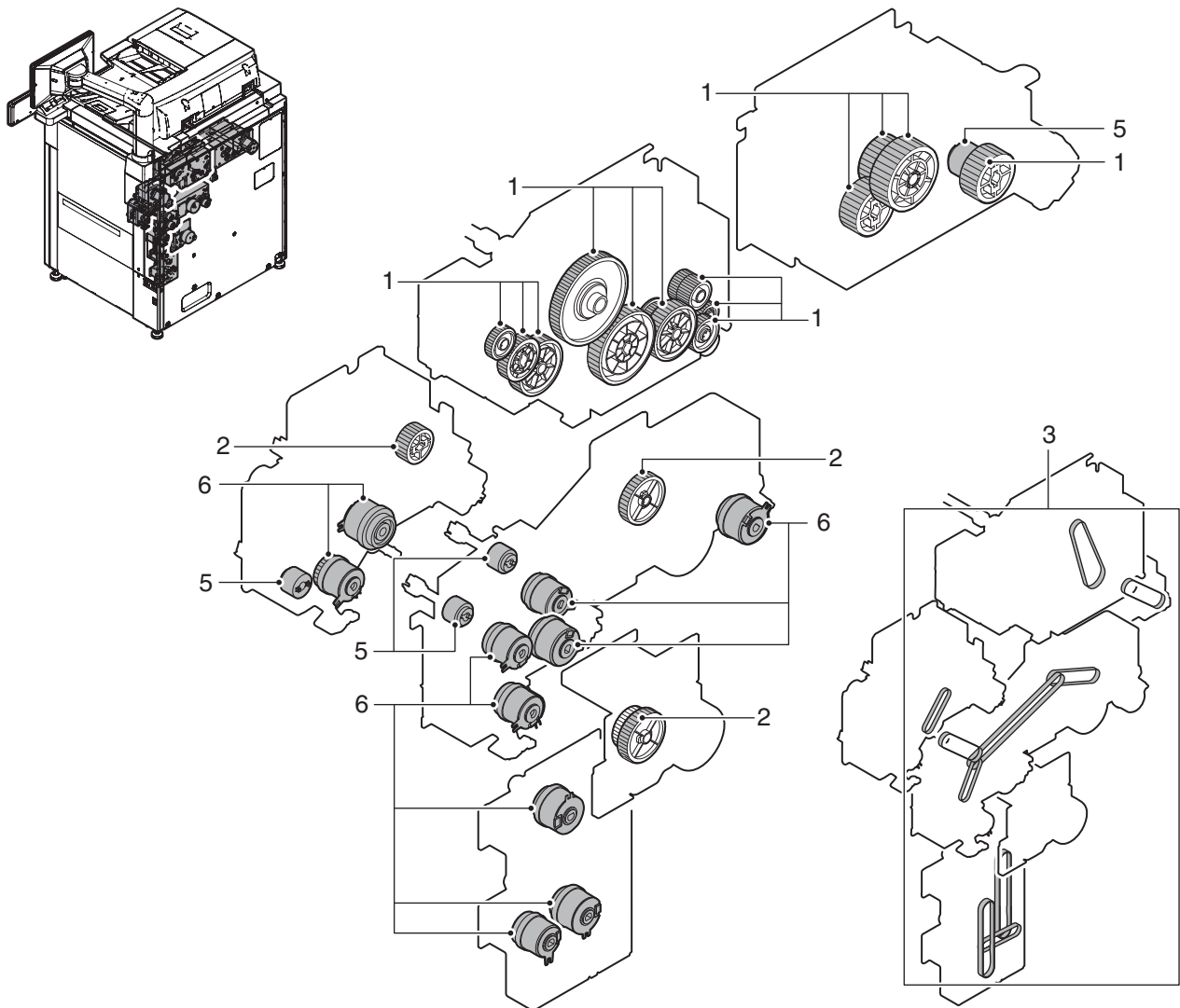
No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Gears (Grease)	×	×	×	×	×	×	×	(6LS06283000)
2	Gears (Grease)	×	×	×	×	×	×	×	(6LS06270000)
3	Belts		×	×	×	×	×	×	
4	Gears							×	
5	Torque limiter	×	×	×	×	×	×	×	(Note 1)
6	Clutches	×	×	×	×	×	×	×	(Note 2)

(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

• Torque limiter: 800K

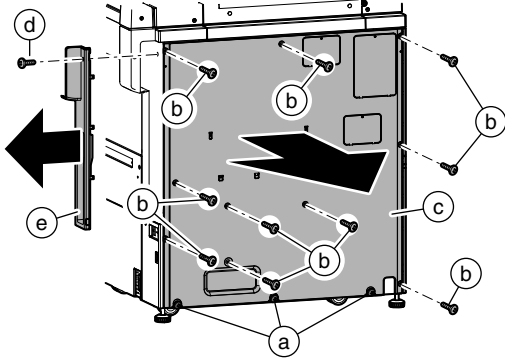
(Note 2) The conditions of the clutches differ depending on the paper pass conditions from the paper tray. Refer to the table below for replacement of the clutches.

UN	Tandem drive			Multi-stage drive B		Transport drive		Tandem drive		Multi-stage drive B
Signal name	C1PFC	C1PTC	C2PFC	C3PFC	C4PFC	MPTFC	LCCPTC	VPTC3	VPTC2	VPTC1
P/N	6LS05339000	6LS05338000	6LS05339000	6LS05340000		6LS05339000	6LS05338000	6LS05338000		6LS05341000
No. 1 tray	3000K	3000K								
No. 2 tray			3000K							
No. 3 tray				3000K						
No. 4 tray					3000K					
Manual paper feed						3000K				
LCC paper feed							3000K			
								Total 3000K	Total 3000K	Total 1500K

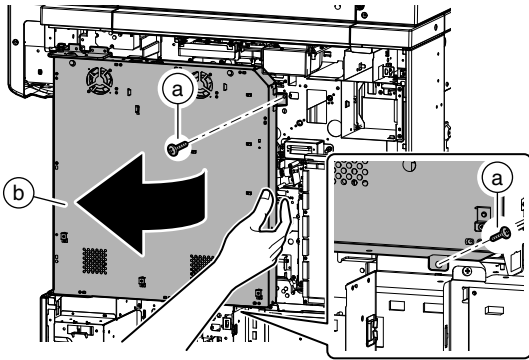


B. Details

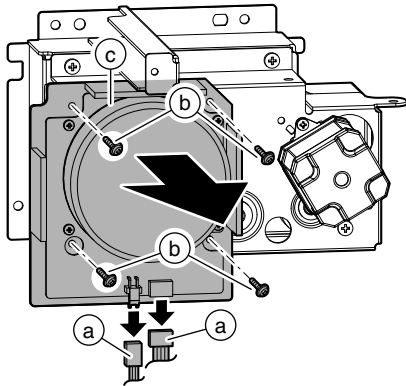
- 1) Loosen the screw (a). Remove the screw (b), and remove the rear cabinet (c). Remove the screw (d) and the cover (e).



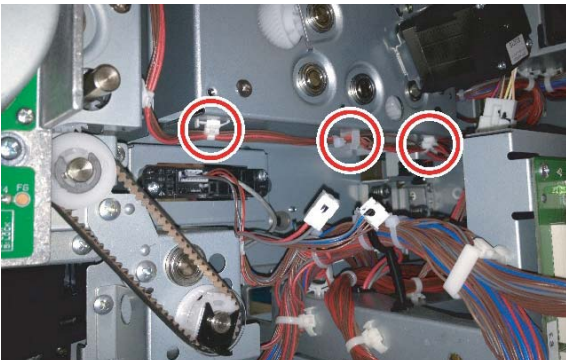
- 2) Remove the screw (a), and open the control box (b).



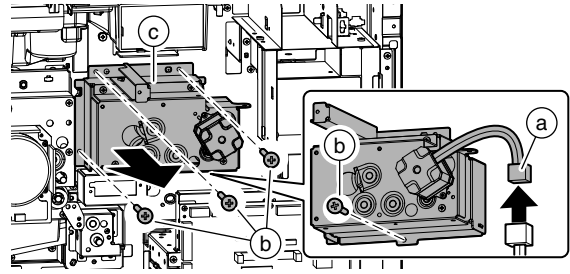
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing motor (c).



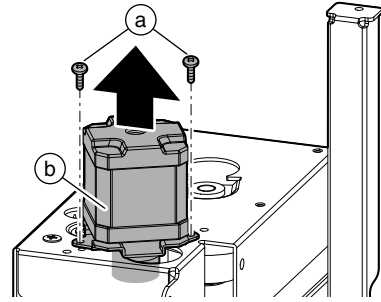
- 4) Remove the snap band, and remove the clamp to set it free.



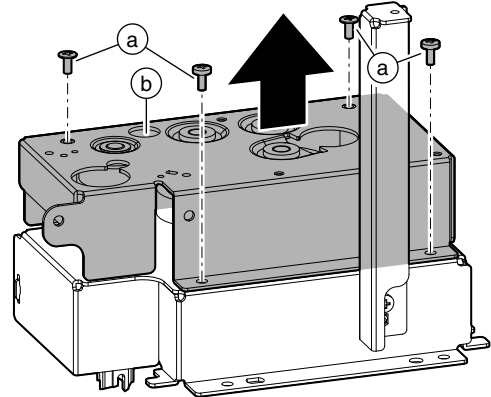
- 5) Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).



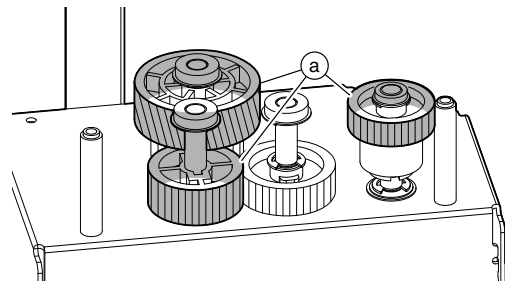
- 6) Remove the screw (a), and remove the fusing rear motor (b).



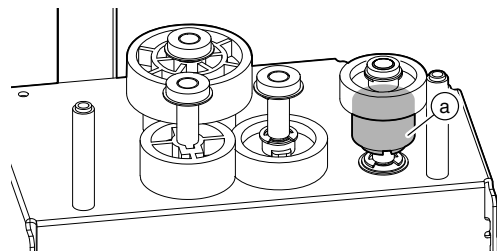
- 7) Remove the screw (a), and remove the plate (b).



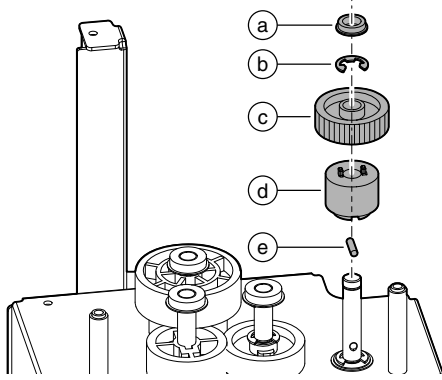
- 8) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



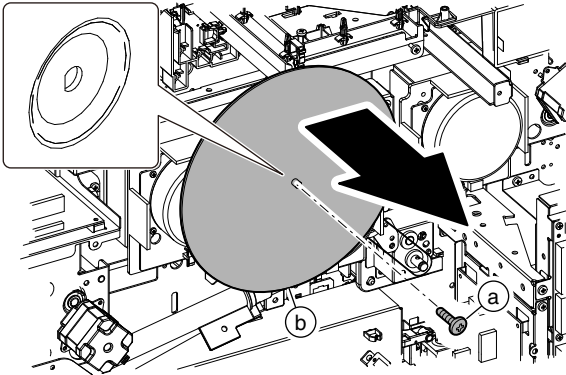
- 9) Check the torque limiter (a) at every 500K.



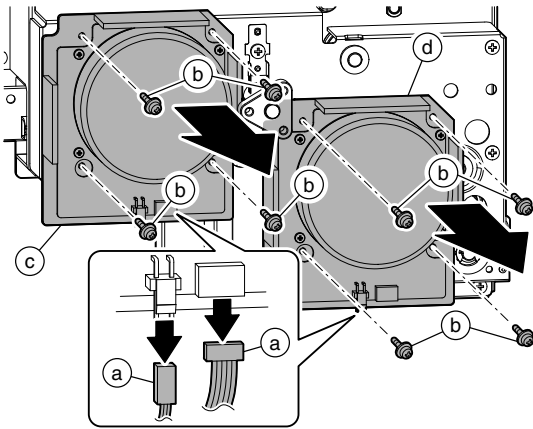
10) Remove the bearing (a) and the E-ring (b), and remove the gear (c), the torque limiter (d) and the parallel pin (e).



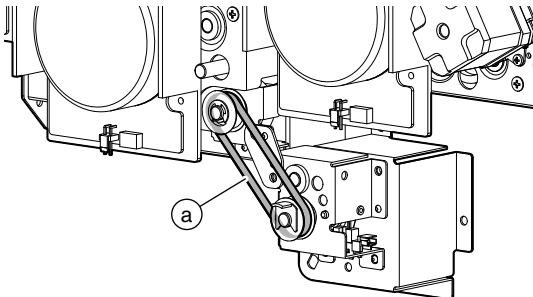
11) Remove the screw (a), and remove the flywheel (b).



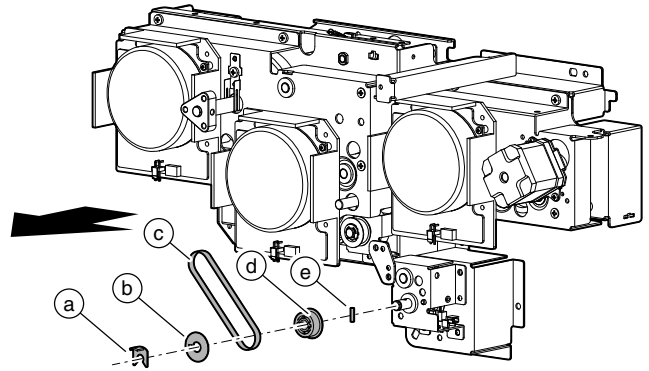
12) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



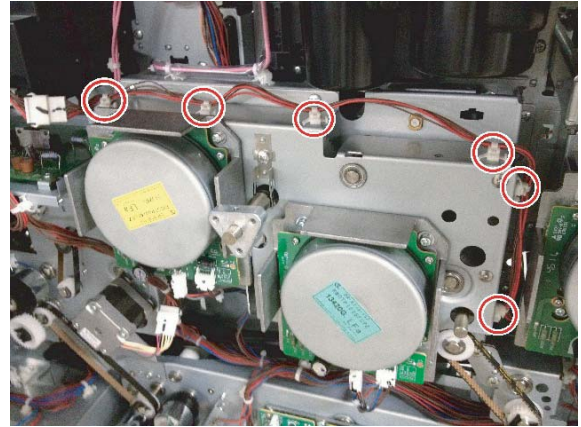
13) Check the belt (a) at every 500K.



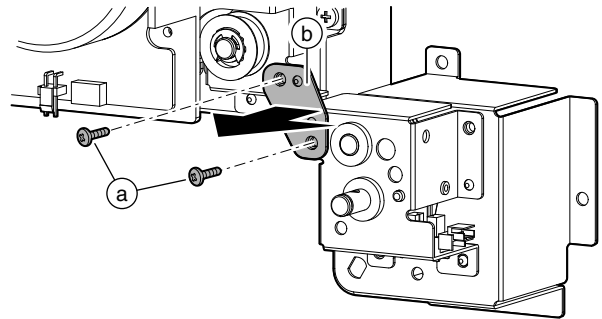
14) Remove the resin E-ring (a), and remove the sheet (b), the belt (c), the pulley (d), and the parallel pin (e).



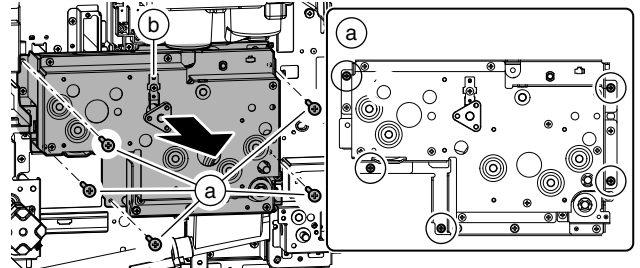
15) Remove the snap band, and set the harness free.



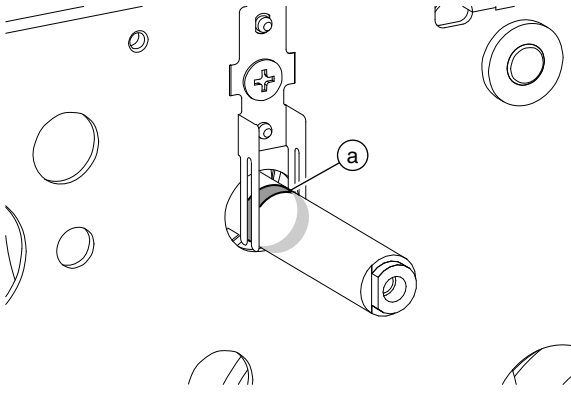
16) Remove the screw (a), and remove the plate (b).



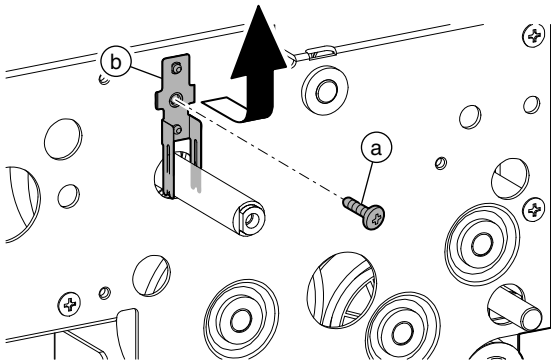
17) Remove the screw (a), and remove the drum drive unit (b).



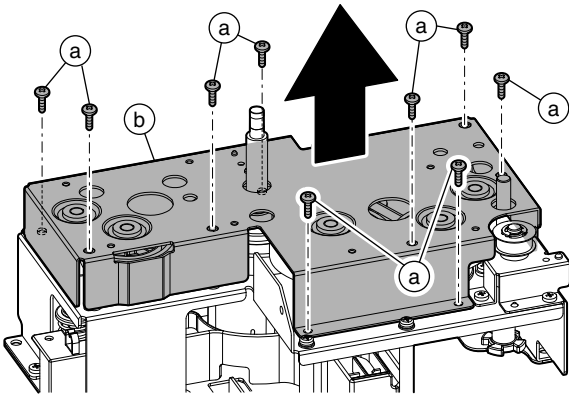
18) Check the conduction grease applying section (a) at every 500K. In necessary, apply conduction grease.



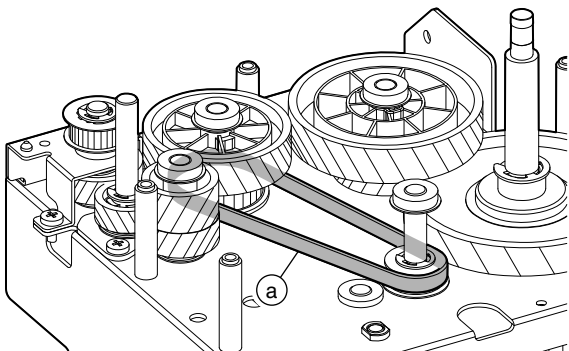
19) Remove the screw (a) and the earth plate (b).



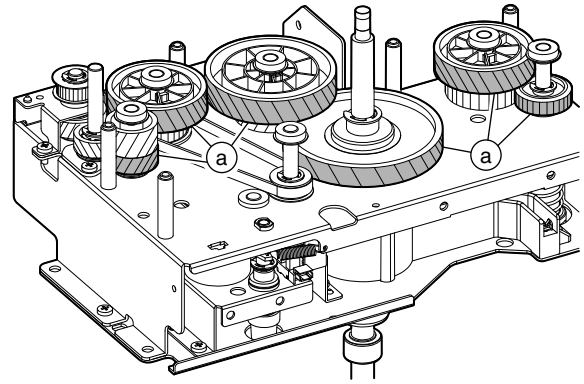
20) Remove the screw (a), and remove the plate (b).



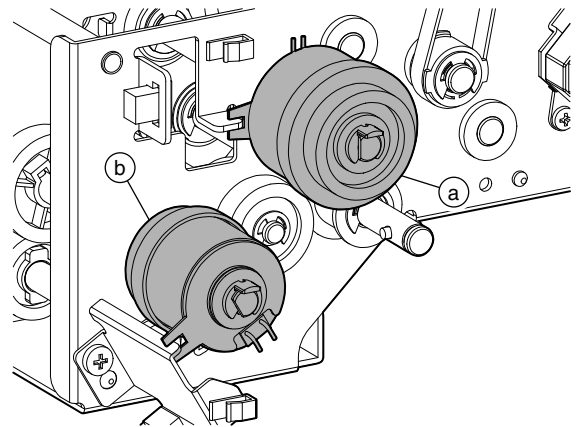
21) Check the belt (a) at every 500K.



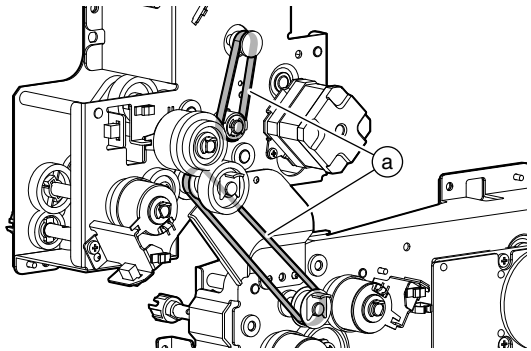
22) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



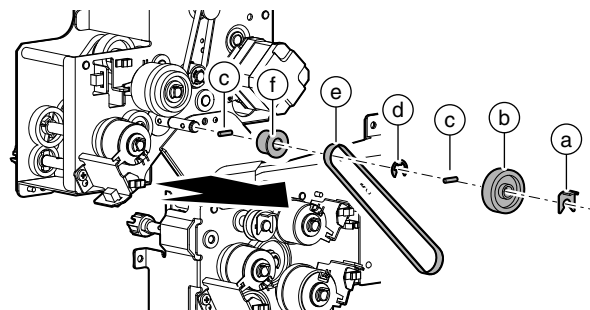
23) Check the manual feed clutch (a) and the LCC transport clutch (b) of the transport drive unit at every 500K.



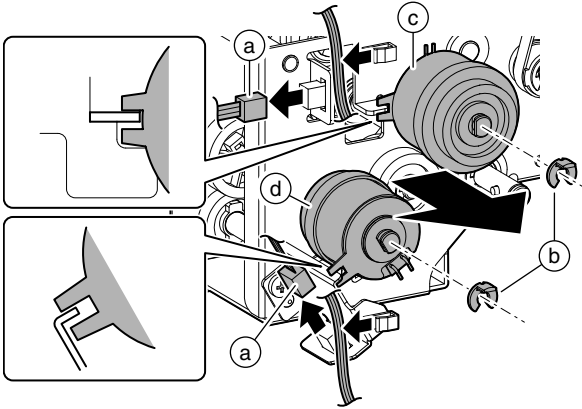
24) Check the belt (a) at every 500K.



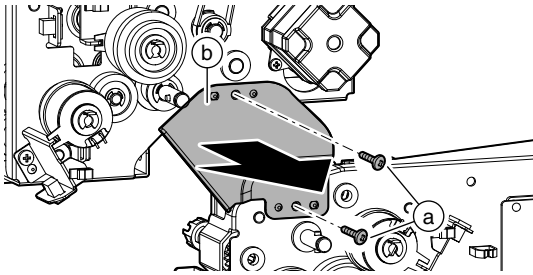
25) Remove the resin E-ring (a), remove the gear (b) and the parallel pin (c). Remove the e-ring (d), the belt (e), and the pulley (f).



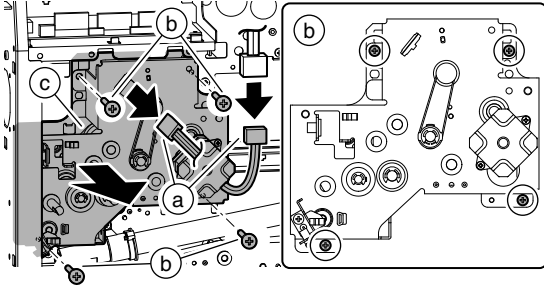
26) Disconnect the connector (a), and remove the resin E-ring (b), and replace the manual feed transport clutch (c) and the LCC transport clutch (d).



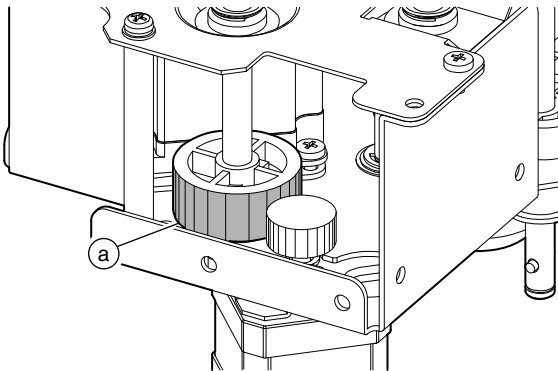
27) Remove the screw (a), and remove the plate (b).



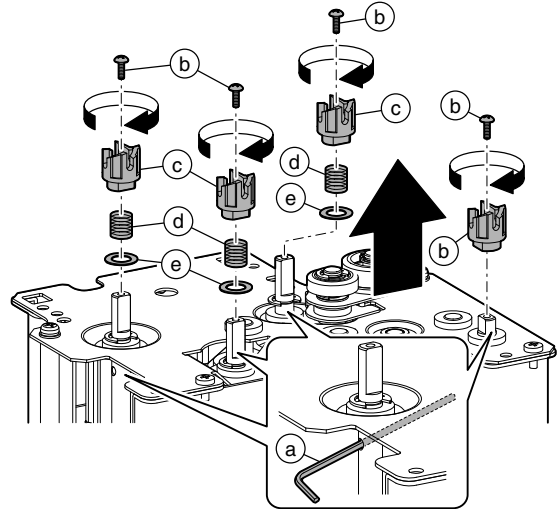
28) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).



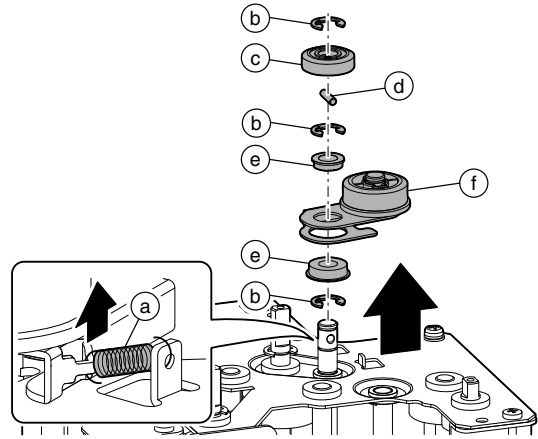
29) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



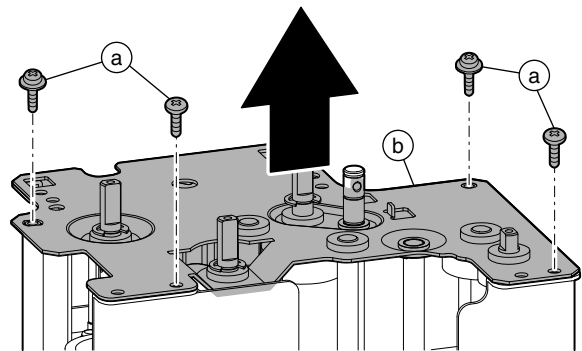
30) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



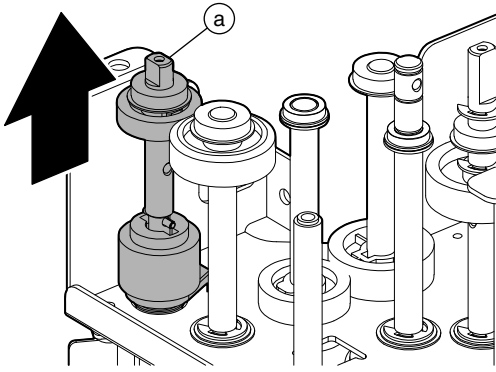
31) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



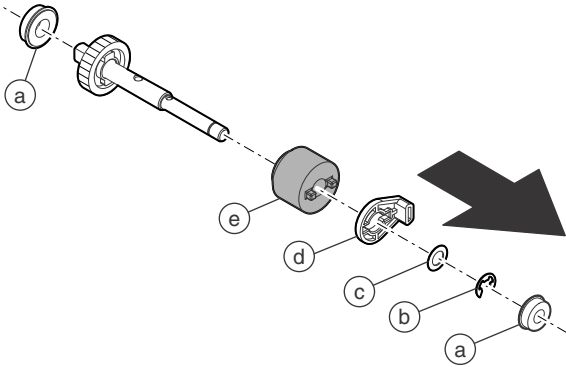
32) Remove the screw (a), and remove the plate (b).



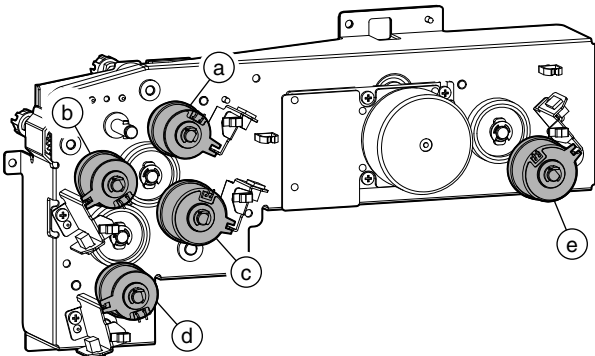
33) Remove the torque limiter unit (a).



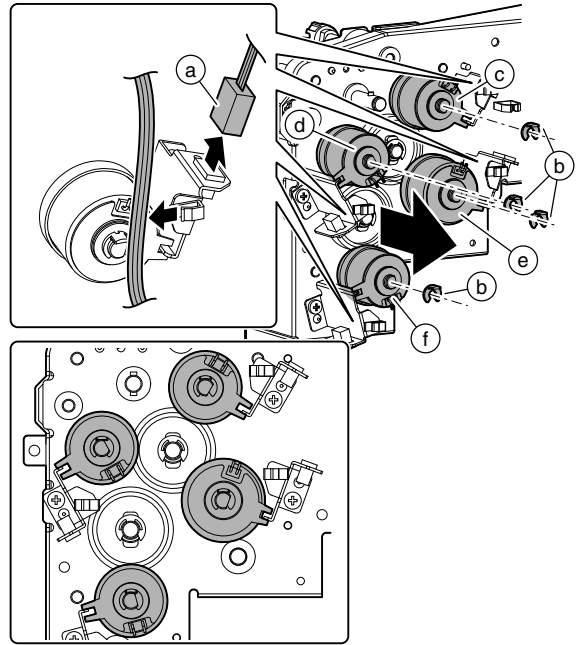
34) Remove the bearing (a) and the E-ring (b). Remove the washer (c), the resin part (d), the torque limiter (e). Replace the torque limiter (e).



35) Check the horizontal transport clutch (a) of the tandem drive, the vertical transport clutch (Upper) (b), the cassette 2 paper transport clutch (c), the vertical transport clutch (Middle) (d), and the cassette 1 paper transport clutch (e) at every 500K.

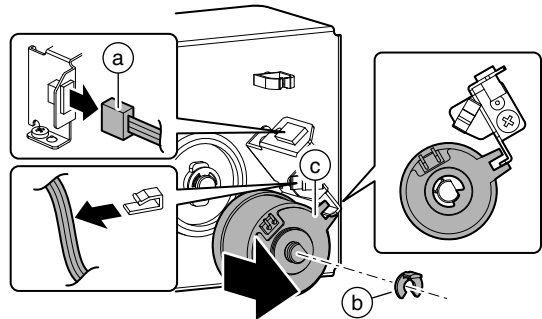


36) Disconnect the connector (a), and remove the resin ring (b), and replace the horizontal transport clutch (c), the vertical transport clutch (Upper) (d), the cassette 2 paper transport clutch (e), the Vertical transport clutch (Intermediate) (f).

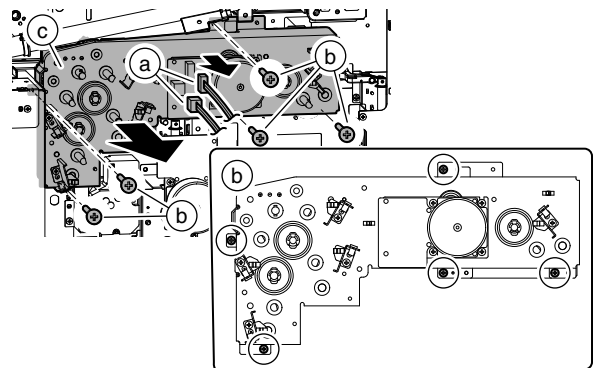


37) Disconnect the connector (a), and remove the resin ring (b), and replace the cassette 1 paper transport clutch (c).

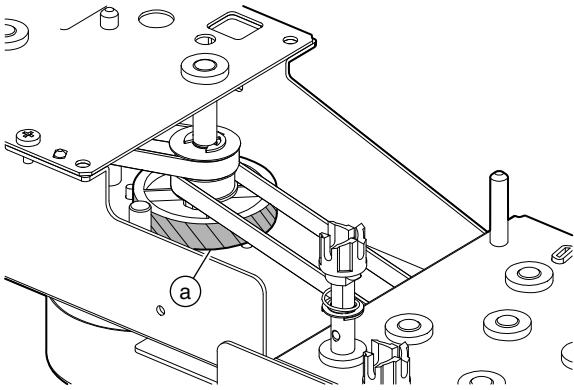
* Set the clutch so that the bent section of the plate is engaged with the notch of the clutch.



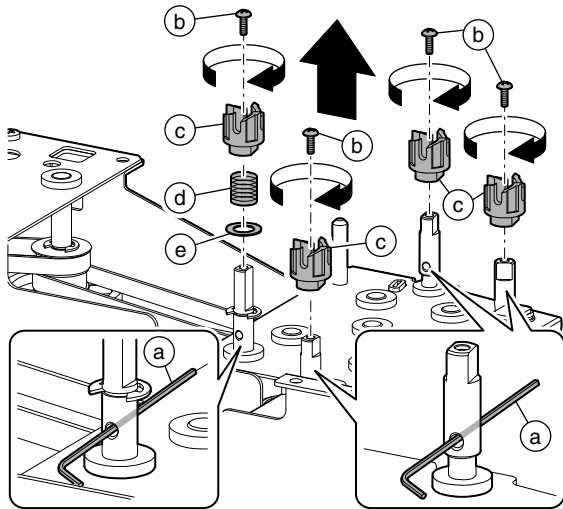
38) Disconnect the connector (a), and remove the screw (b). Remove the tandem drive unit (c).



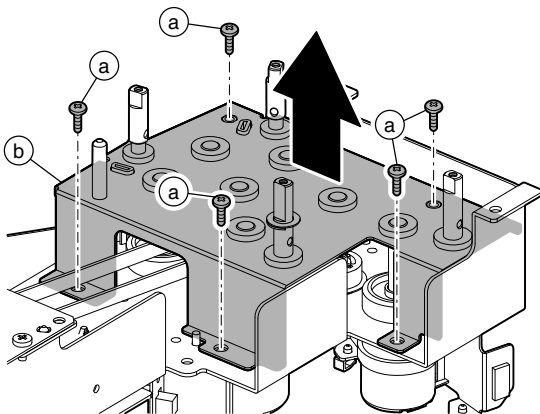
39) Check the grease applying section (a) at every 500K. If necessary, apply grease (HANARL) to the section.



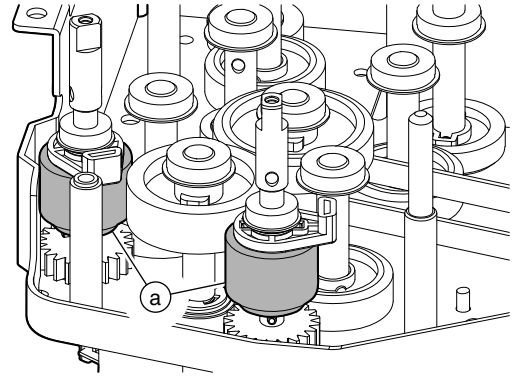
40) Insert the stopper (a) into the shaft, rotate the screw (b) **clockwise** to remove it, and remove the coupling (c), the spring (d), and the washer (e).



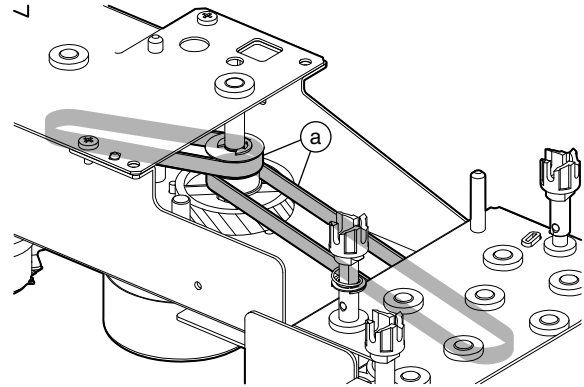
41) Remove the screw (a), and remove the plate (b).



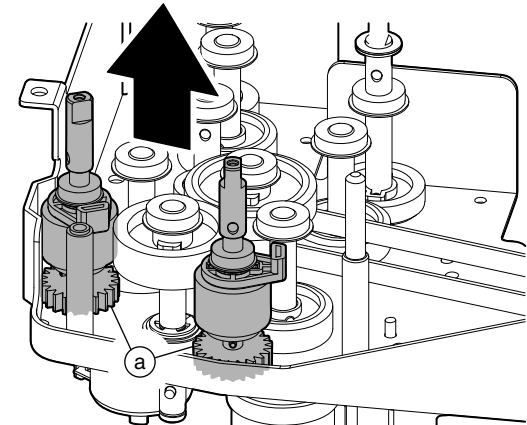
42) Check the torque limiter (a) at every 500K.



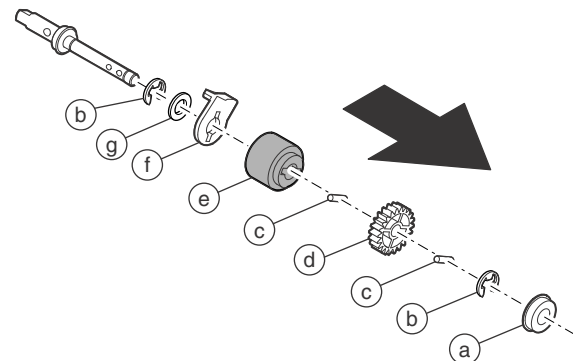
43) Check the belt (a) at every 500K.



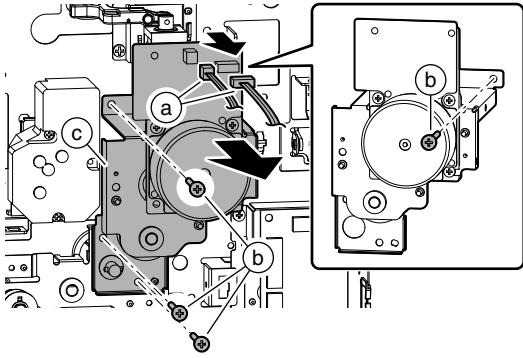
44) Remove the torque limiter unit (a).



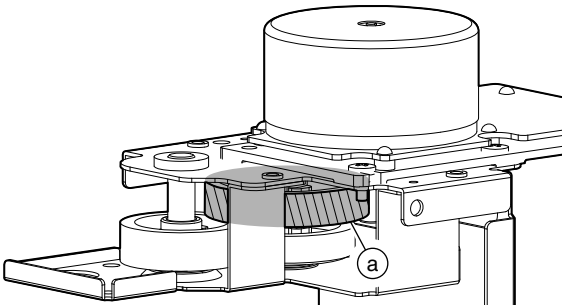
45) Remove the bearing (a), the E-ring (b), the parallel pin (c), and the gear (d). Remove the torque limiter (e), the resin part (f), and the washer (g). Replace the torque limiter (e).



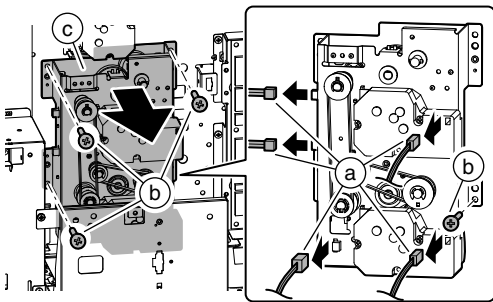
- 46) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).



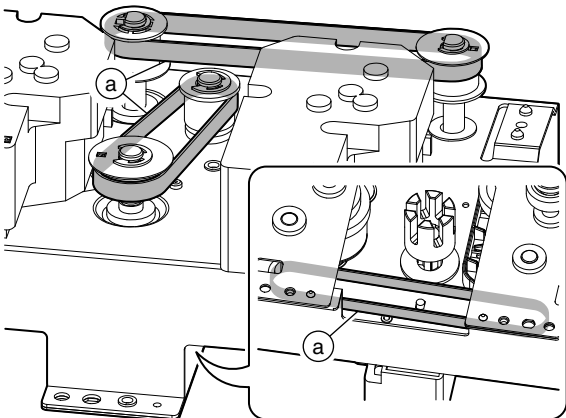
- 47) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



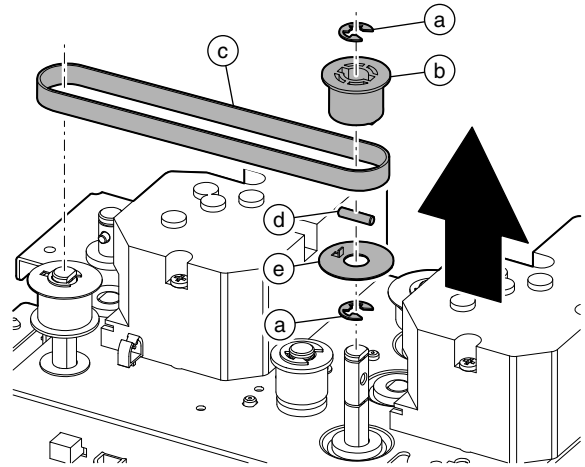
- 48) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive B unit (c).



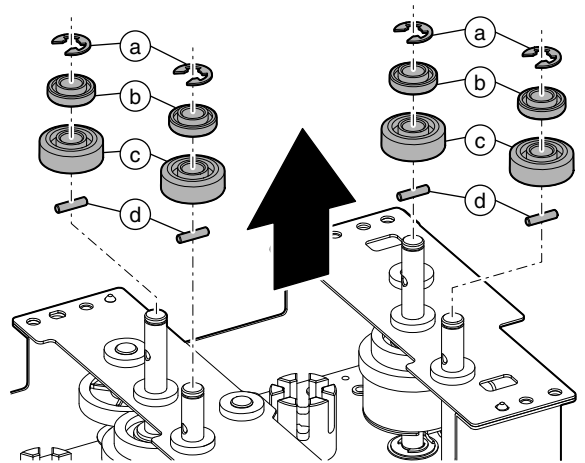
- 49) Check the belt (a) at every 500K.



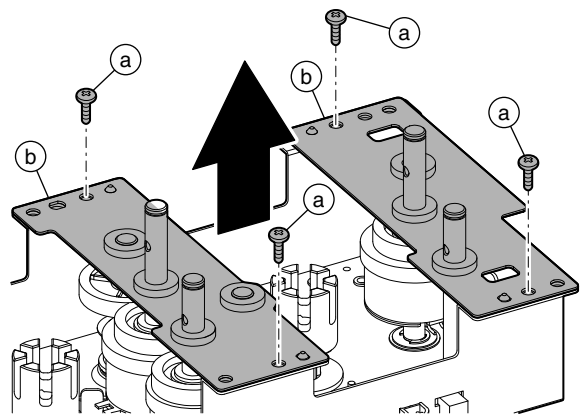
- 50) Remove the E-ring (a), the pulley (b), the belt (c), the parallel pin (d), and the seat (e).



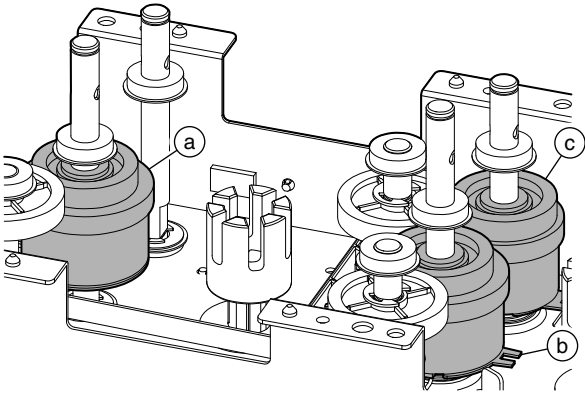
- 51) Remove the E-ring (a), the roller (b), the gear (c), and the parallel pin (d).



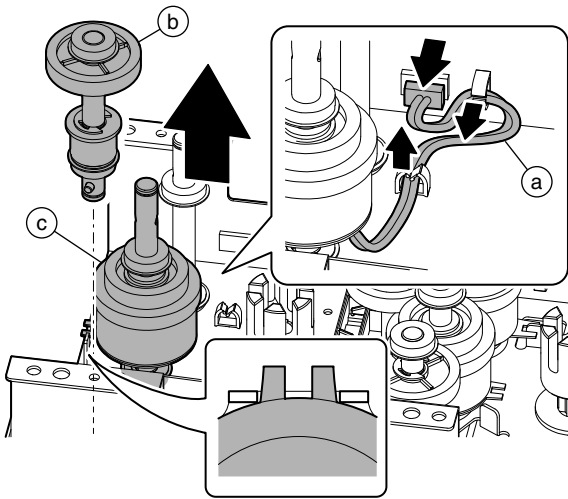
- 52) Remove the screw (a), and remove the plate (b).



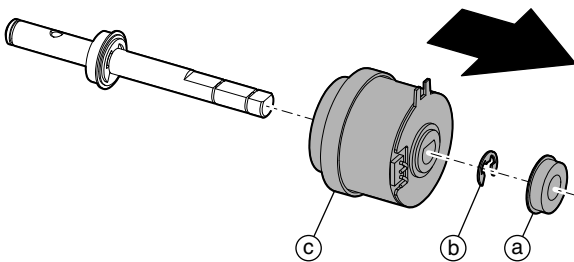
53) Check the cassette 3 paper transport clutch (a), the cassette 4 paper transport clutch (b), and the Vertical transport clutch (Lower) (c) at every 500K.



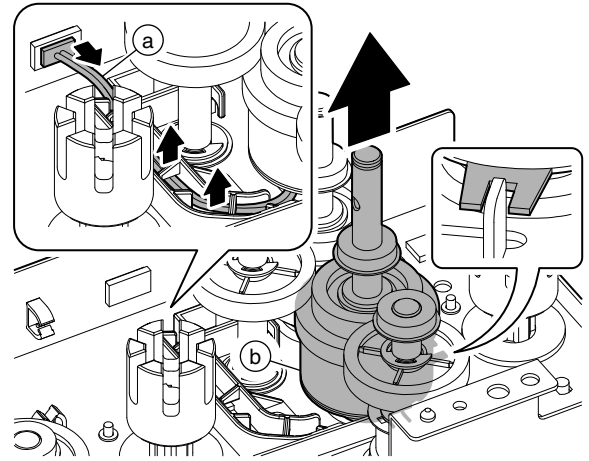
54) Disconnect the connector (a). Remove the gear unit (b), and remove the cassette 3 paper transport clutch unit (c).



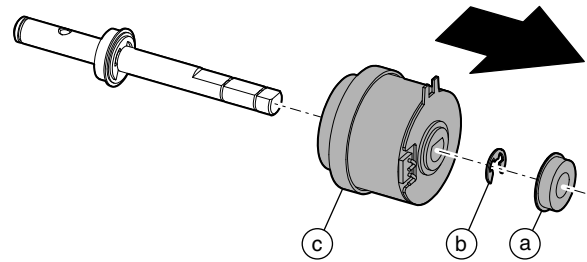
55) Remove the bearing (a), the E-ring (b). Replace the cassette 3 paper transport clutch (c).



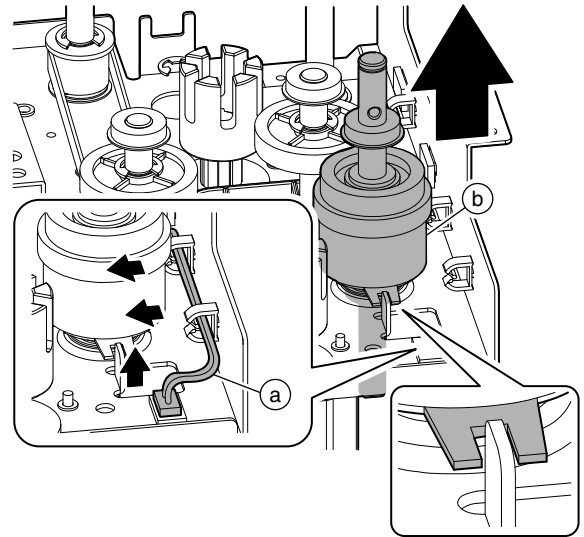
56) Disconnect the connector (a), and remove the cassette 4 paper transport clutch unit (b).



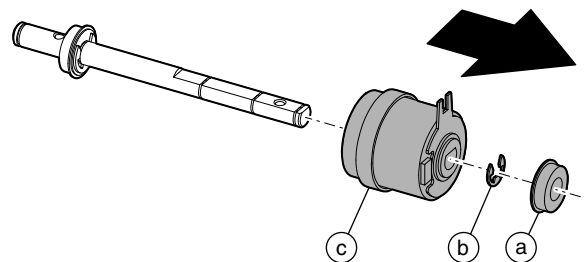
57) Remove the bearing (a), the E-ring (b), and replace the cassette 4 paper transport clutch (c).



58) Disconnect the connector (a), and remove the Vertical transport clutch (Lower) unit (b).



59) Remove the bearing (a), the E-ring (b), and replace the Vertical transport clutch (Lower) (c).

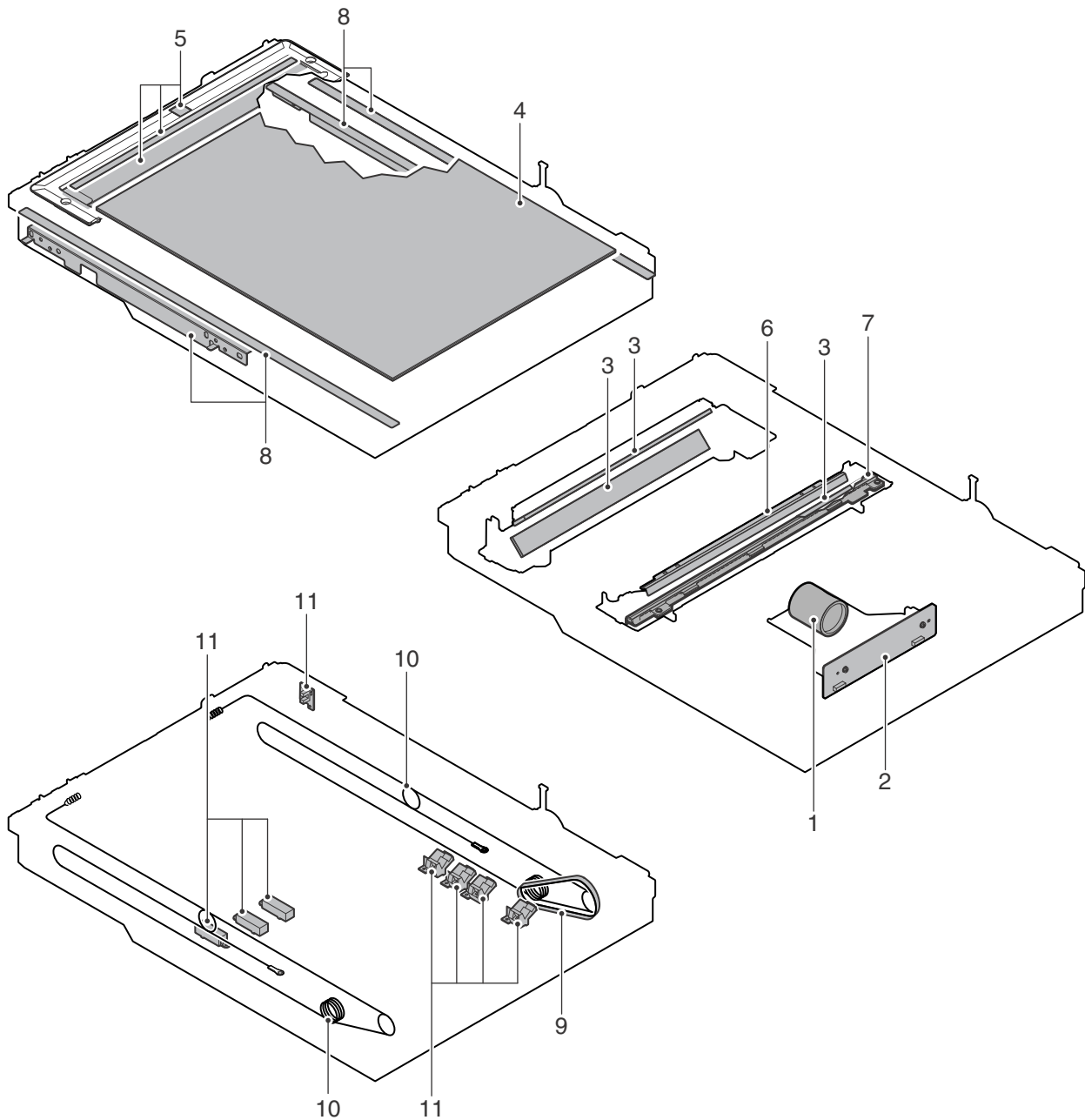


16. Scanner section

A. Maintenance table

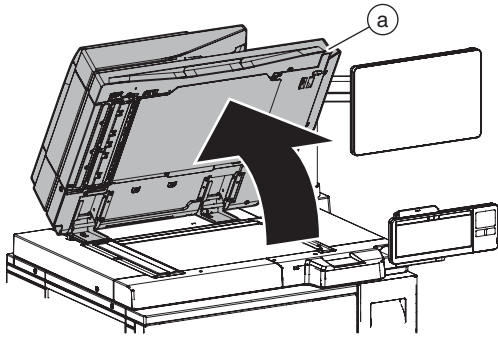
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Lens		○	○	○	○	○	○	
2	CCD		○	○	○	○	○	○	
3	Mirror		○	○	○	○	○	○	
4	Table glass	○	○	○	○	○	○	○	
5	SPF glass	○	○	○	○	○	○	○	
6	Reflector		○	○	○	○	○	○	
7	Scanner lamp		○	○	○	○	○	○	Air cleaning
8	Rail (Grease)		☆	☆	☆	☆	☆	☆	(6LS06385000)
9	Drive belt		×	×	×	×	×	×	
10	Drive wire		×	×	×	×	×	×	
11	Sensor		×	×	×	×	×	×	

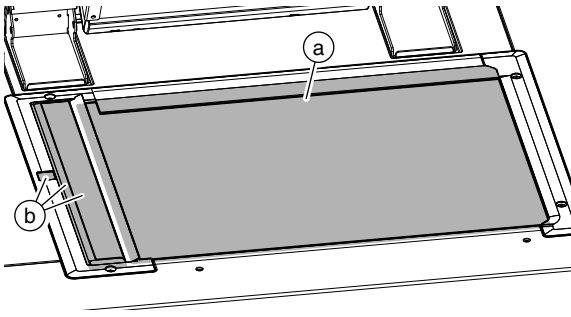


B. Details

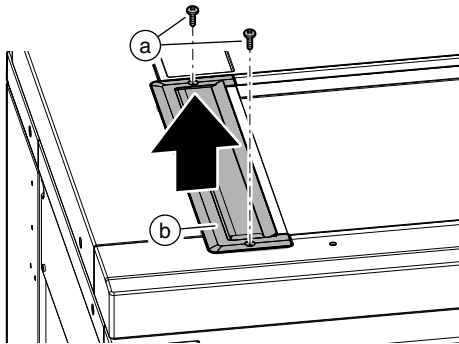
- 1) Open the DSPF unit (a).



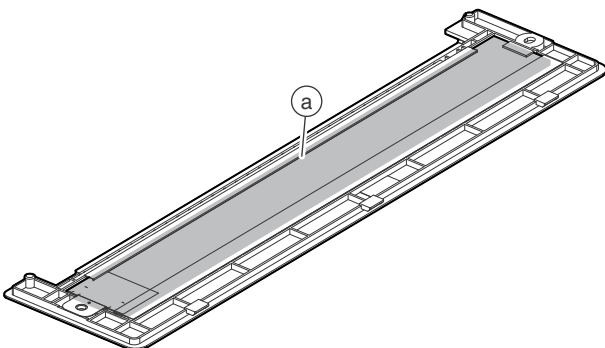
- 2) Clean the table glass (a) and the SPF glass (b) at every 500K. (Cleaning must be performed when calling, too.)



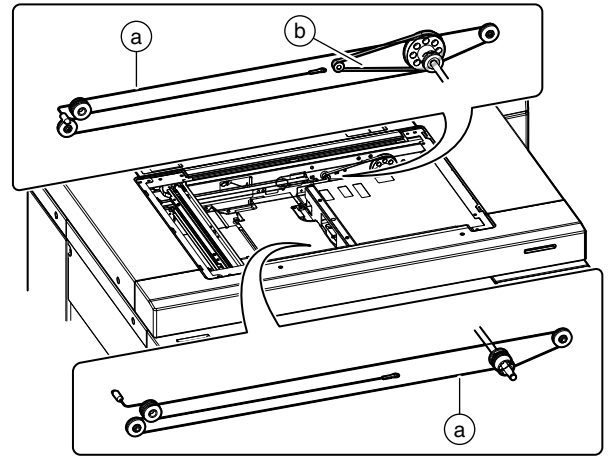
- 3) Remove the screw (a), and remove the SPF glass (b).



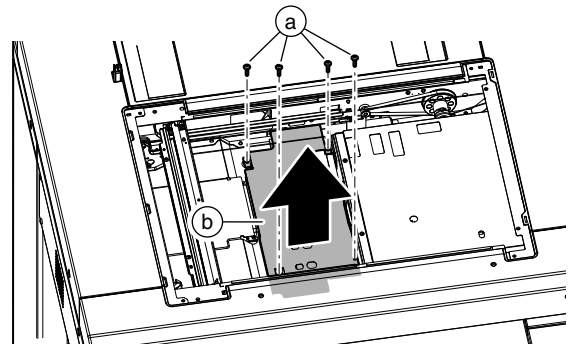
- 4) Clean the back surface of the SPF glass (a).



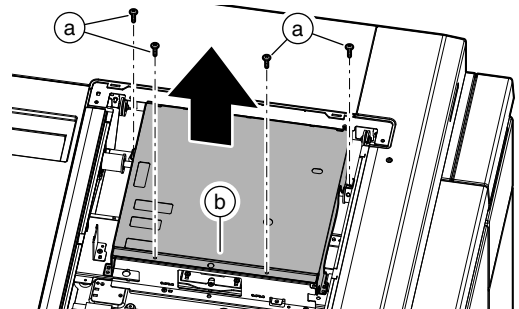
- 5) Check the drive wire (a) and the drive belt (b) at every 500K.



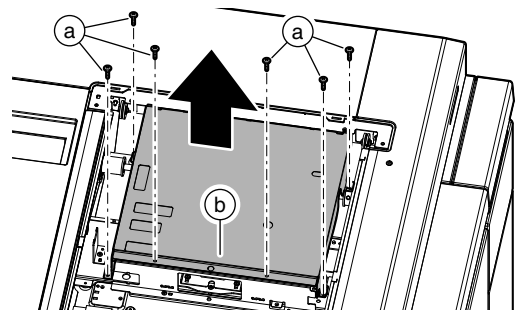
- 6) Remove the screw (a), and remove the plate (b).



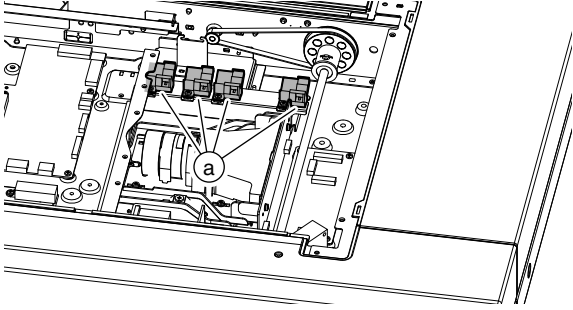
- 7) Check the main scanning document size sensor (a) at every 500K.



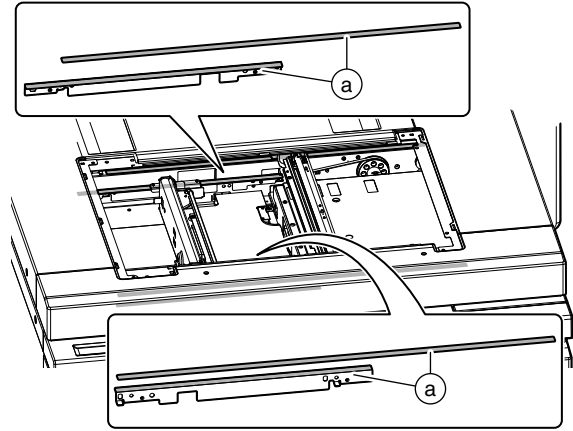
- 8) Remove the screw (a), and remove the dark box (b).



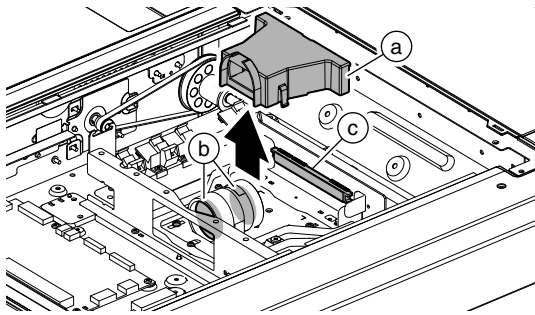
9) Check the sub scanning document size sensor (a) at every 500K.



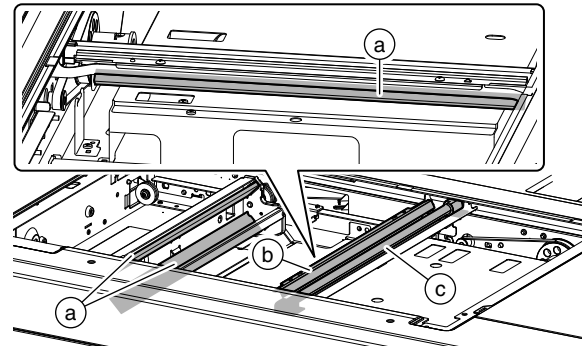
13) Apply grease (6LS06385000) to each rail (a) at every 500K.



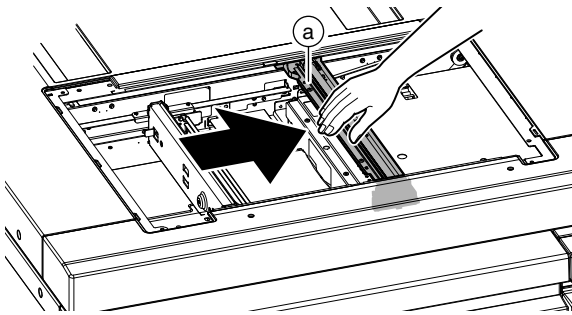
10) Remove the cover (a). Clean the lens (b), and the CCD (c) at every 500K.



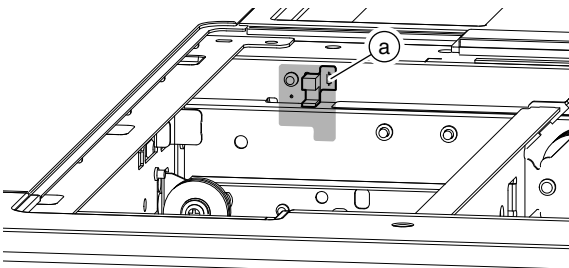
14) Clean the mirror (a), the reflector (b), and the scanner lamp (c) at every 500K.



11) Shift the lamp unit (a).



12) Check the scanner home position sensor (a) at every 500K.



17. DSPF section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

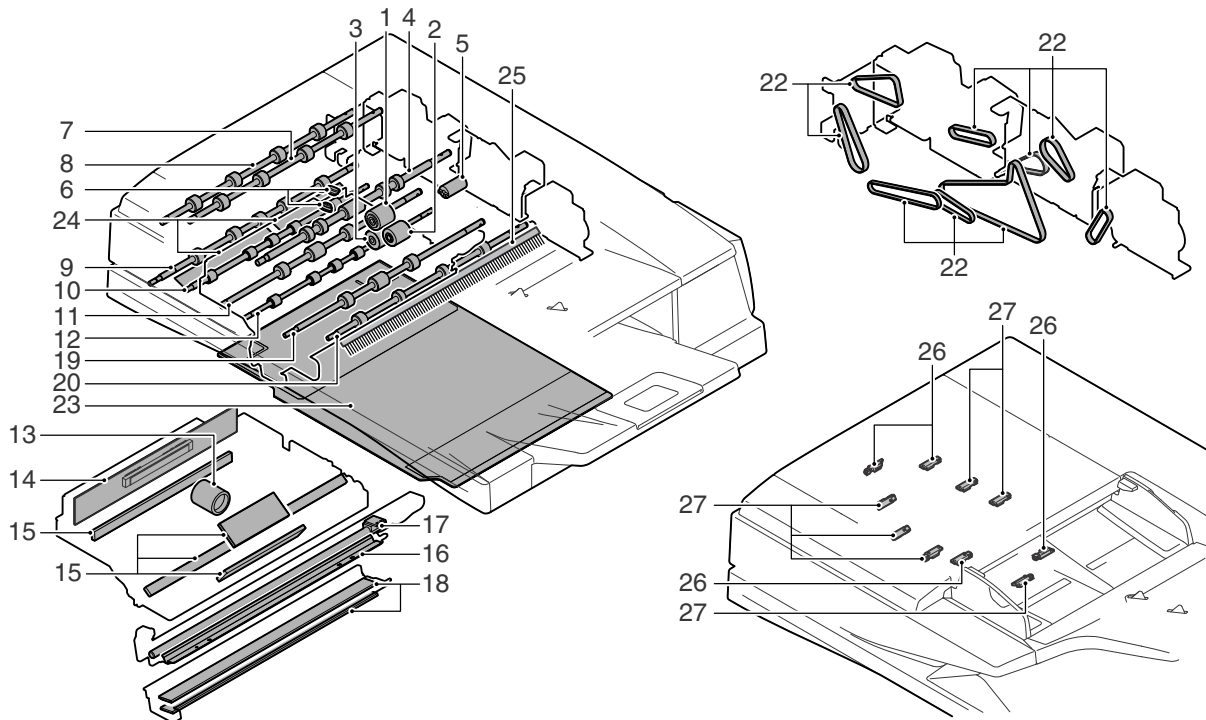
No.	Part name		When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark
1	Paper feed, transport section	Paper feed roller	○	○	○	○	○	○	○	(Note 1)
2		Paper pickup roller	○	○	○	○	○	○	○	(Note 1)
3		Separation roller	○	○	○	○	○	○	○	(Note 1)
4		No. 1 resist roller	○	○	○	○	○	○	○	
5		Torque limiter		×	×	×	×	×	×	(Note 1)
6		Double feed detection unit							○	Ultrasonic sensor top surface (Air cleaning) (105/120cpm machine only)
7		Transport roller 1	○	○	○	○	○	○	○	
8		Transport roller 2	○	○	○	○	○	○	○	
9		Second resist roller	○	○	○	○	○	○	○	
10		Platen roller	○	○	○	○	○	○	○	
11		Transport roller 3	○	○	○	○	○	○	○	
12		Transport roller 4	○	○	○	○	○	○	○	
13	Scanning section	Lens	×	○	○	○	○	○	○	
14		CCD	×	○	○	○	○	○	○	
15		Mirror	×	○	○	○	○	○	○	
16		Reflector	×	○	○	○	○	○	○	
17		Scanner lamp	×	○	○	○	○	○	○	Air cleaning
18		Back surface scanning section glass Upper, Lower	○	○	○	○	○	○	○	
19	Paper exit section	Transport roller 5	○	○	○	○	○	○	○	
20		Paper exit roller	○	○	○	○	○	○	○	
21	Drive section	Gears (Grease)	×	×	×	×	×	×	×	(6LS06270000)
22		Belts		×	×	×	×	×	×	
23	Others	Document mat	○	○	○	○	○	○	○	
24		Scanning section paper guide (White Mylar)	○	○	○	○	○	○	○	
25		Discharge brush	×	×	×	×	×	×	×	
26		Optical reflection type sensors	○	○	○	○	○	○	○	
27		Optical reflection type sensors	○	○	○	○	○	○	○	
28		Paper guides	×	○	○	○	○	○	○	

(Note 1) Replacement reference: Use the DSPF counter values for replacement reference.

- Pickup roller, paper feed roller, separation roller: 200K or 1 year
- Torque limiter: 800K

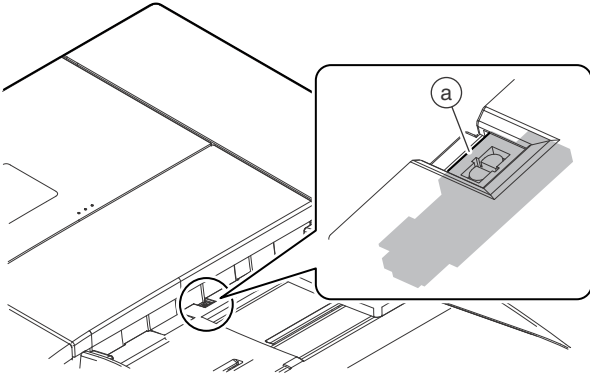
(Note2) Optical reflection sensor cleaning

- Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

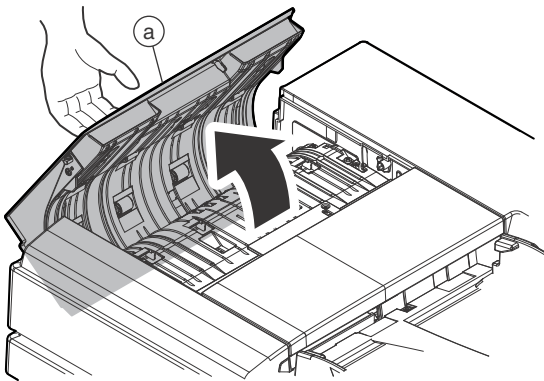


B. Details

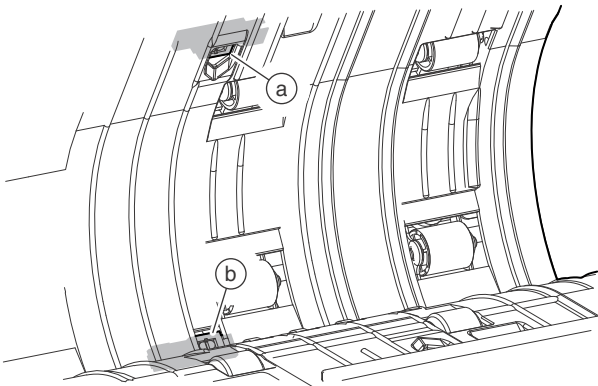
- 1) Clean the DSPF document empty sensor (a) of the document tray at every 200K.



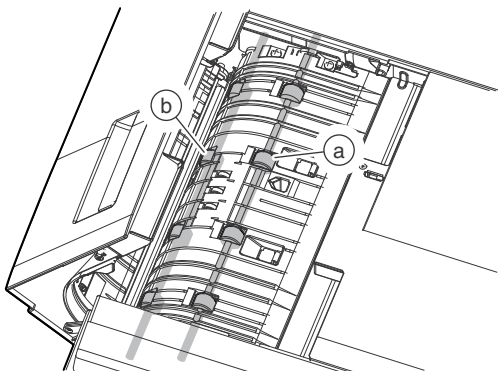
- 2) Open the upper door (a).



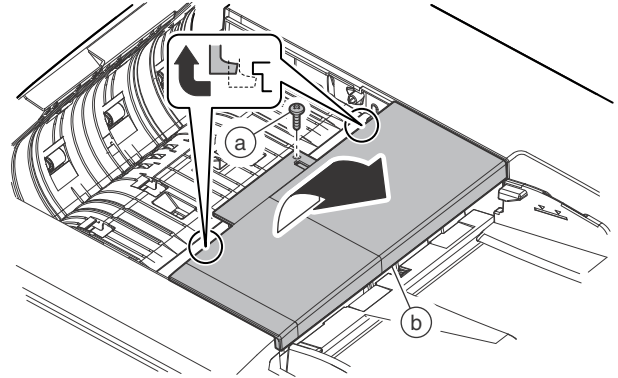
- 3) Clean the DSPF paper pass sensor 3 (a) and the DSPF paper pass sensor 4 (b) at every 200K.



- 4) Clean the transport roller 1 (a) and the transport roller 2 (b) at every 500K.

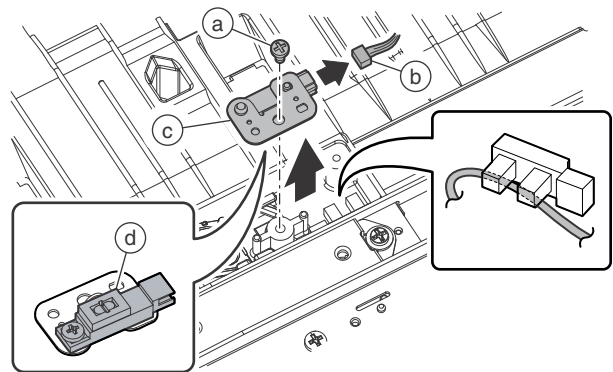


- 5) Remove the screw (a), and remove the cover (b).

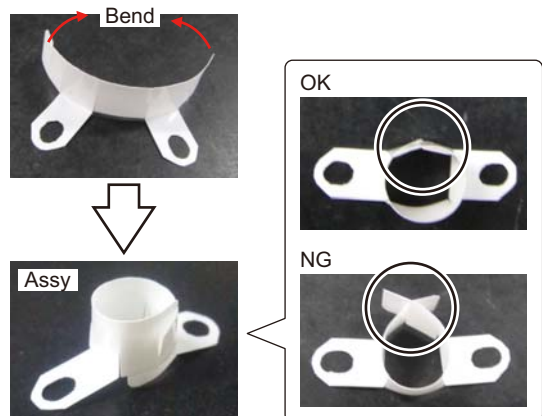
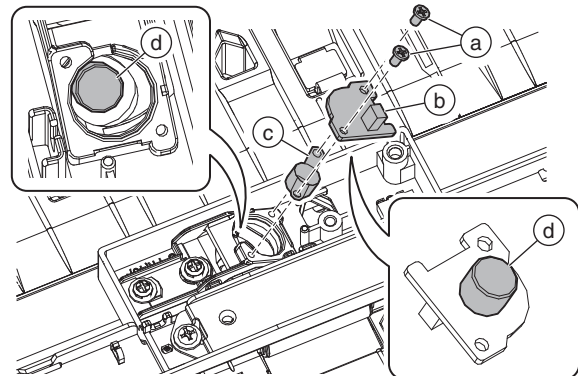


- 6) Remove the screw (a), and disconnect the connector. Remove the mounting plate (c). Clean the DSPF pass sensor 2 (d) at every 500K.

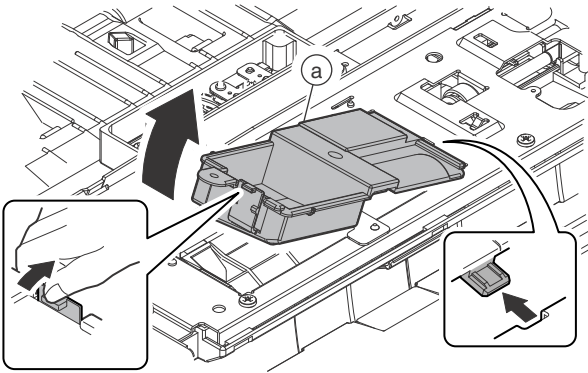
* When connecting, arrange the harness of the connector (b) under the sensor.



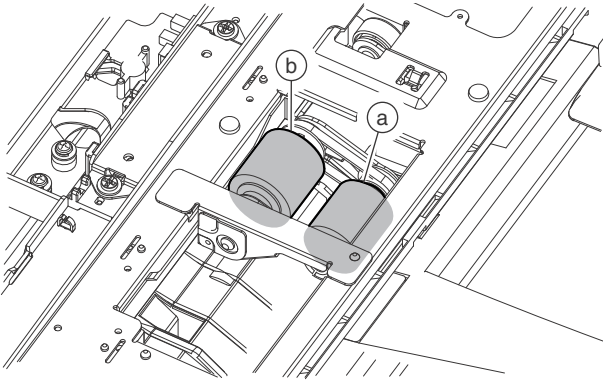
- 7) Remove the screw (a) and the DF S PWB (b). Remove the DFS shield sheet (c). Clean the double feed sensor by blowing air onto the top (d) of the double feed sensor at every 3000K.



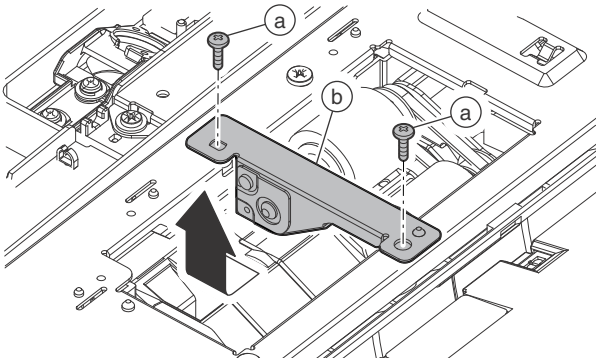
8) Remove the cover (a).



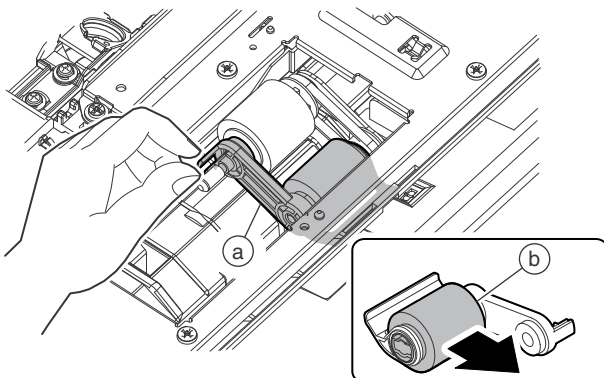
9) Check the paper pickup roller (a) and the paper feed roller (b) at every calling.



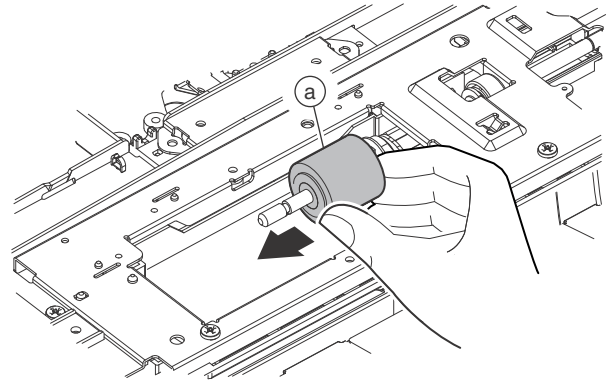
10) Remove the screw (a), and remove the stay (b).



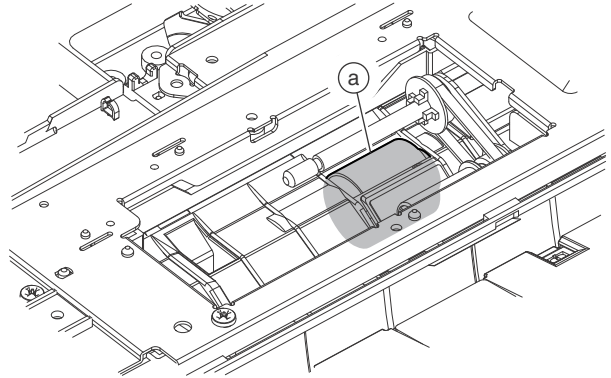
11) Remove the holder (a). Replace the paper pickup roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



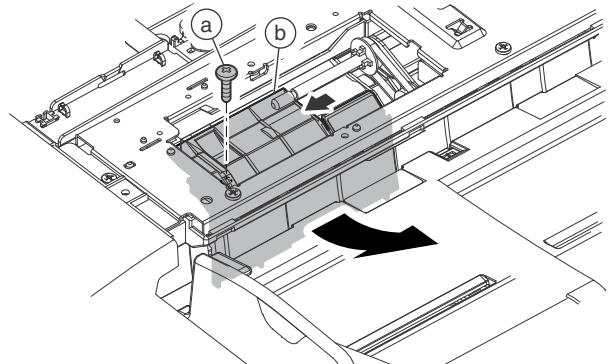
12) Replace the paper feed roller (a) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



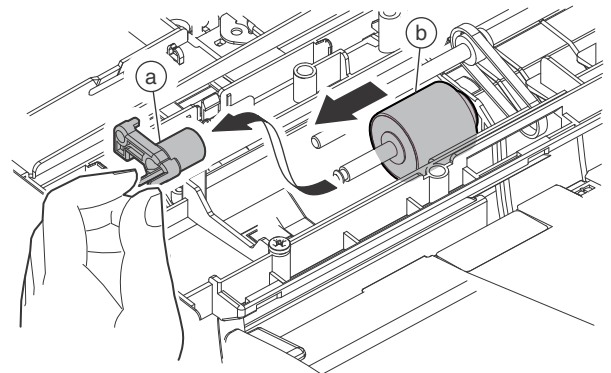
13) Check the separation roller (a) at every calling.



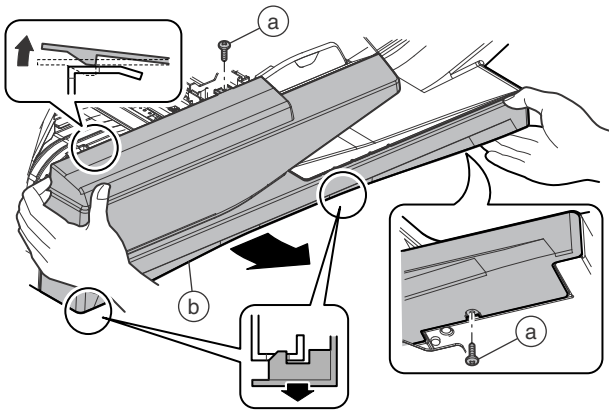
14) Remove the screw (a), and remove the cover (b).



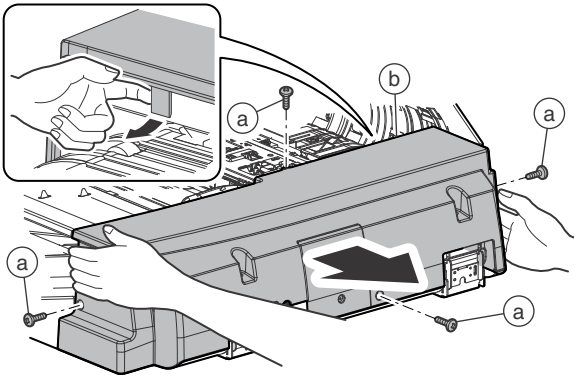
15) Remove the holder (a), and replace the separation roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



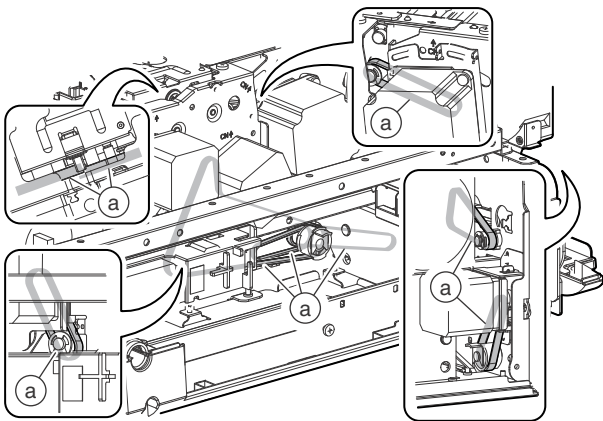
16) Remove the screw (a), and remove the front cabinet (b).



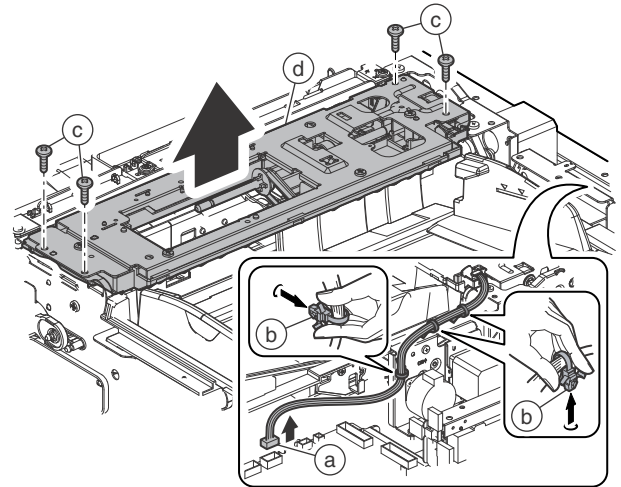
17) Remove the screw (a), and remove the rear cabinet (b).



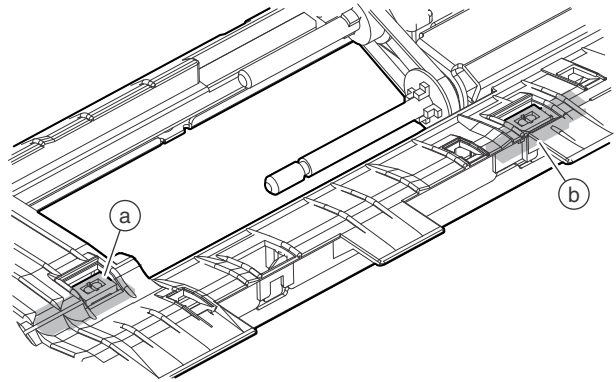
18) Check each belt (a) at every 500K.



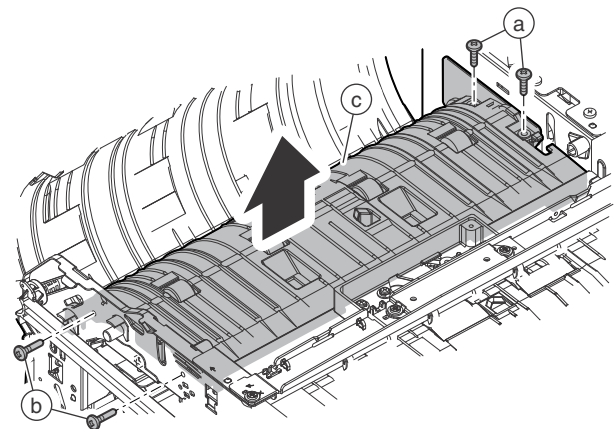
19) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the paper feed unit (d).



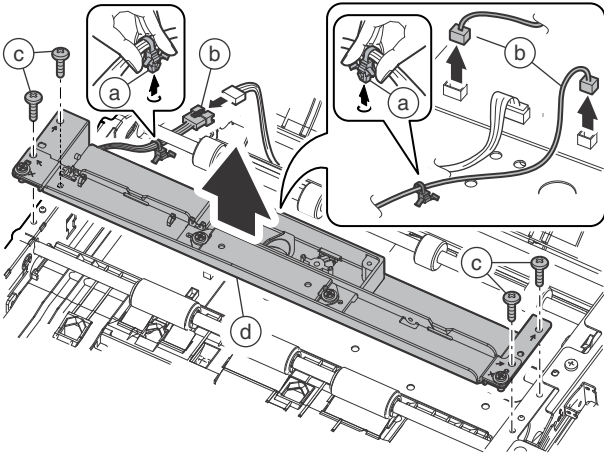
20) Turn back the paper feed unit, and clean the DSPF random sensor (a) and the DSPF paper pass sensor 1 (b) at every 500K. Clean the paper guide at every 500K.



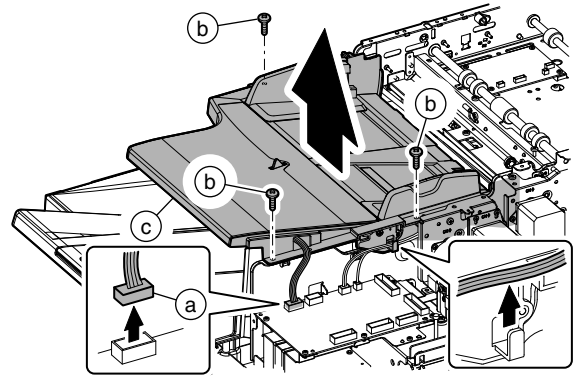
21) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



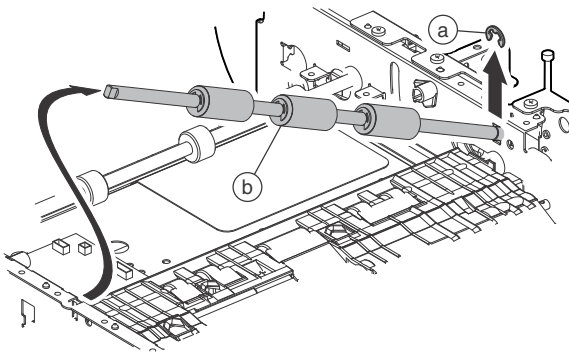
22) Remove the snap band (a), and disconnect the connector (b). Remove the screw (c), and remove the double feed detection unit (d).



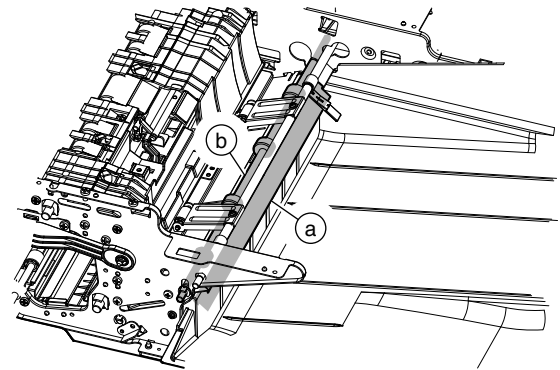
25) Disconnect the connector (a). Remove the screw (b), and remove the document tray unit (c). Clean the transport section of the document tray unit (c) at every 500K.



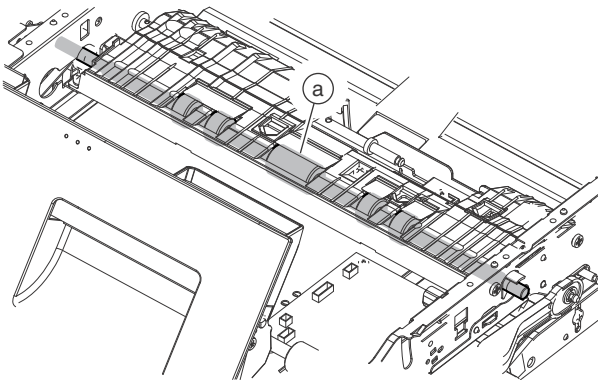
23) Remove the E-ring (a), and remove the No. 1 resist roller (Idle) (b).



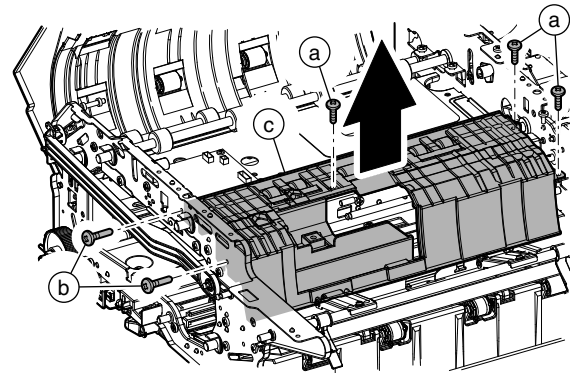
26) Check the discharge brush (a) at every 500K. Clean the paper exit roller (b) at every 500K.



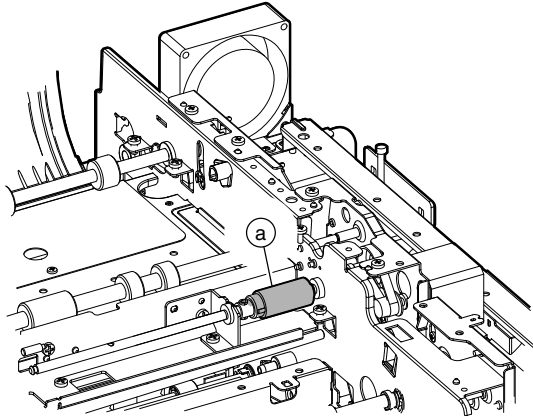
24) Clean the No. 1 resist roller (a) at every 500K.



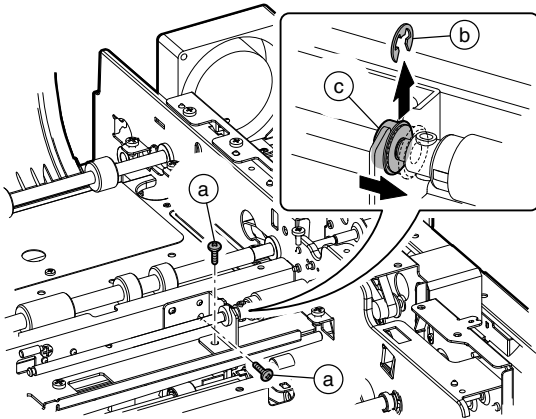
27) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



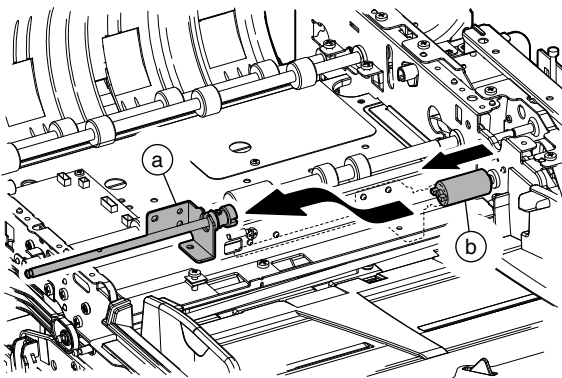
28) Check the torque limiter (a) at every 500K.



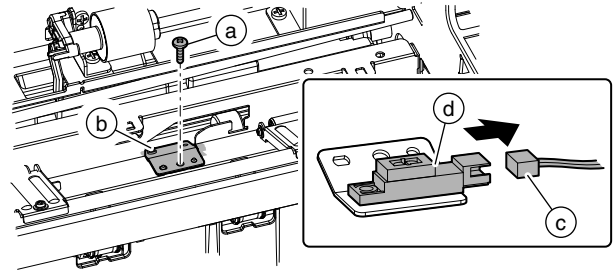
29) Remove the screw (a). Remove the E-ring (b), and slide the bearing (c).



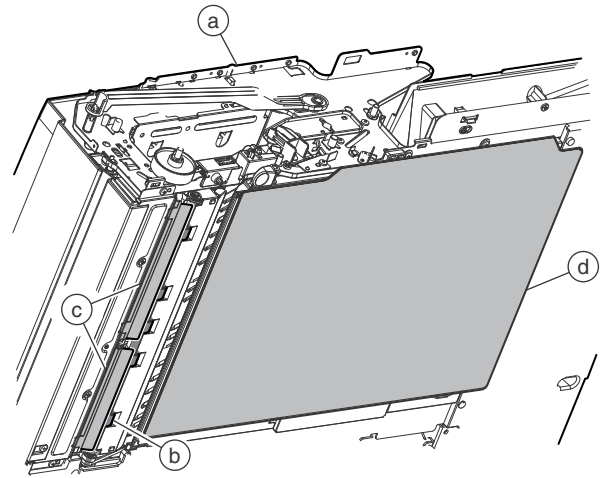
30) Remove the shaft (a), and replace the torque limiter (b) (when DSPF counter value reaches 800K from the beginning of use).



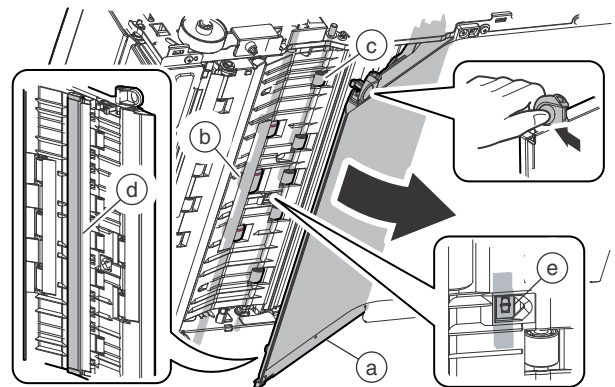
31) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c). Clean the DSPF paper exit sensor (d) at every 500K.



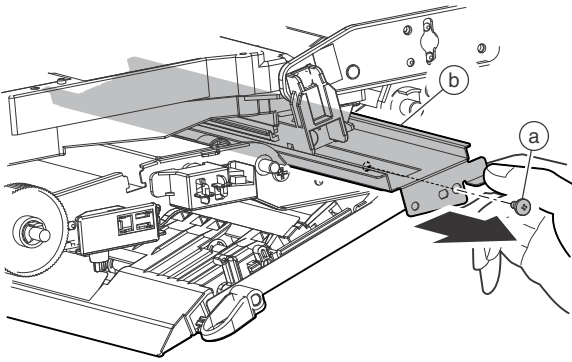
32) Open the DSPF unit (a), and clean the platen roller (b), the scanning section paper guide (c), and the document mat (d) at every 500K.



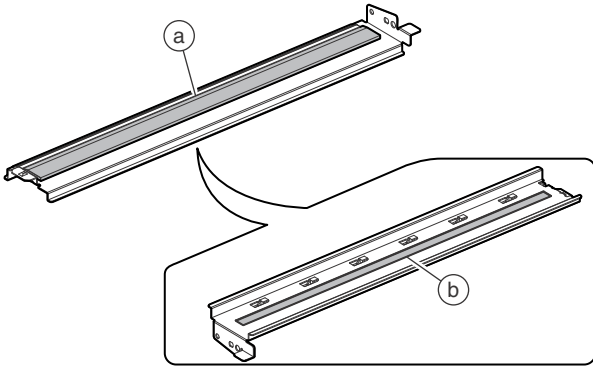
33) Open the lower door (a), and clean the transport roller 3 (b), the transport roller 4 (c), and the back surface scanning glass lower (d) at every 500K, and check the DSPF paper pass sensor 7 (e) at every 200K. Clean the paper guides at every 500K.



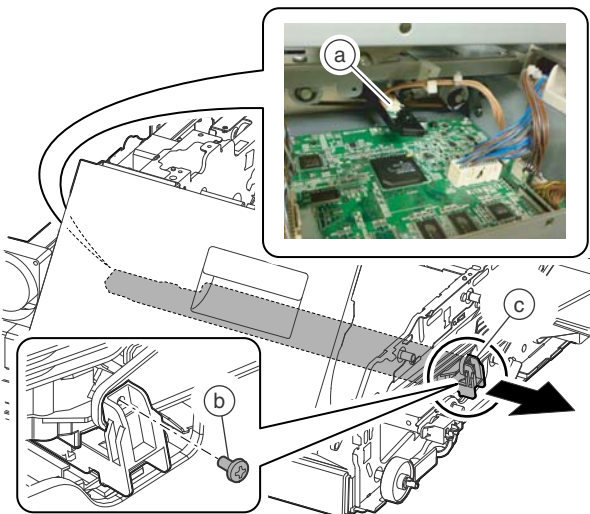
34) Remove the screw (a). Remove the back surface scanning section glass upper unit (b).



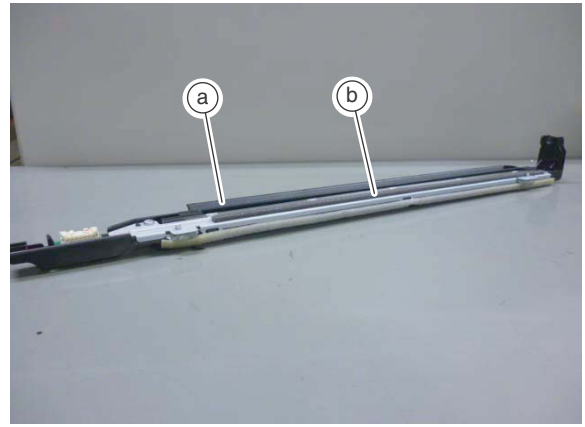
35) Clean the front surface (a) and the back surface (b) of the back surface scanning glass upper at every 500K.



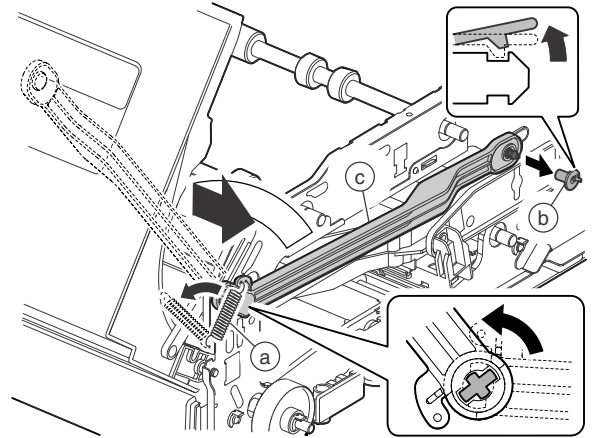
36) Disconnect the connector (a). Remove the screw (b), and remove the LED unit (c).



37) Clean the reflector (a) and the scanner lamp (b) at every 500K.

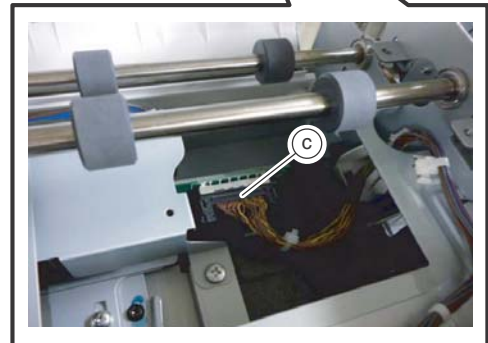
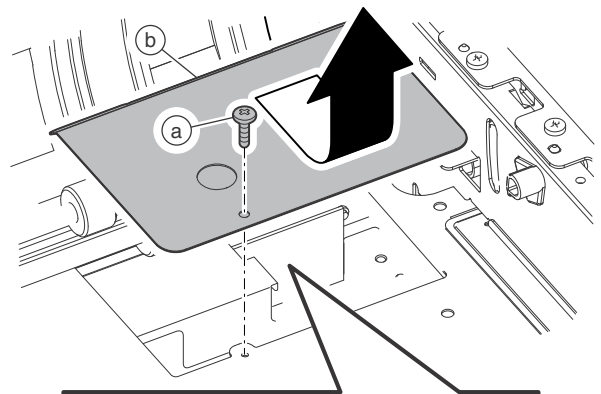


38) Remove the spring (a). Remove the holder (b) and the arm (c).

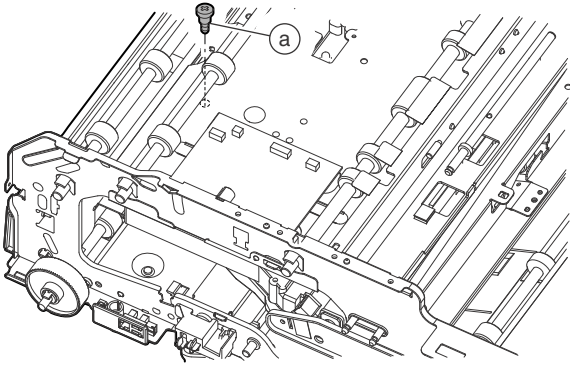


39) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).

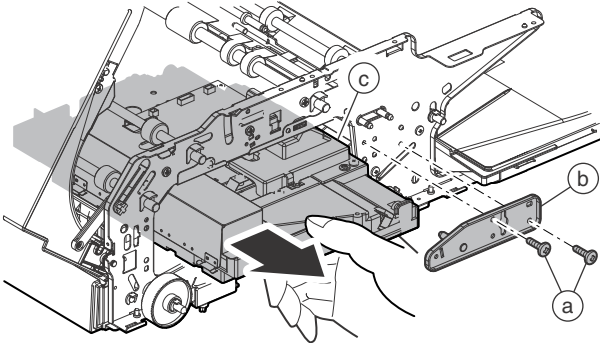
* When disconnecting the connector (c), release the lock and carefully disconnect the connector. Be careful not to use an excessive force when disconnecting the connector.



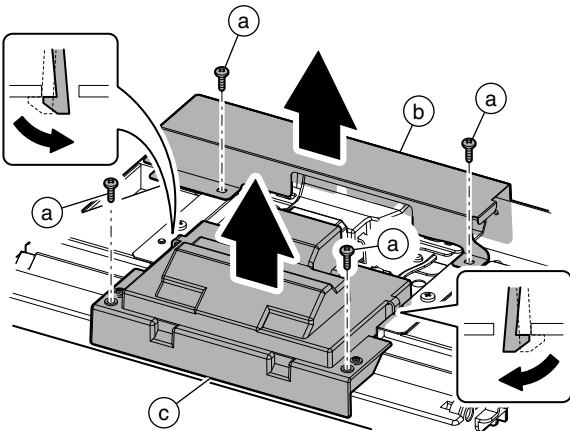
40) Remove the step screw (a).



41) Remove the screw (a), and remove the fulcrum plate (b). Remove the scanner unit (c).

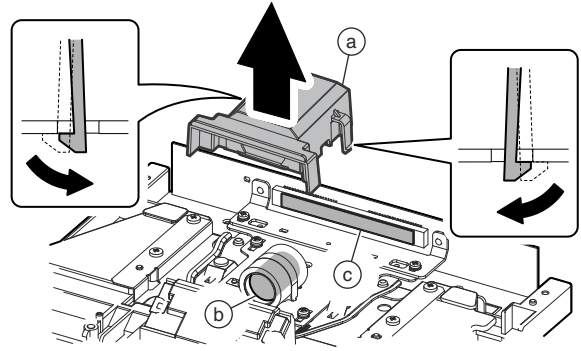


42) Clean the whole surface the scanner unit at every 500K. Remove the screw (a), and remove the dark box (b) and the cover (c).

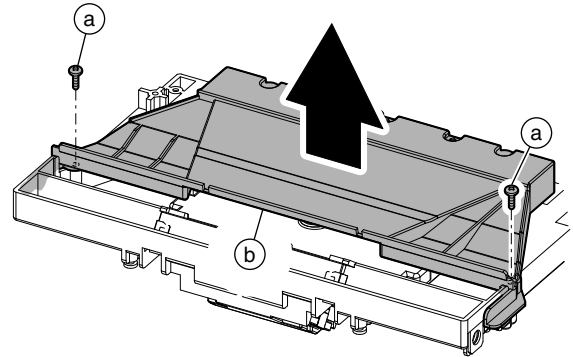


43) Remove the cover (a). Clean the lens (b) and the CCD (c) at every 500K.

* After completion of cleaning, visually check for any dust.

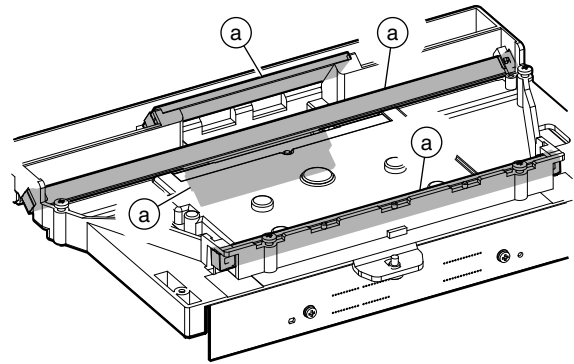


44) Remove the screw (a), and remove the cover (b).

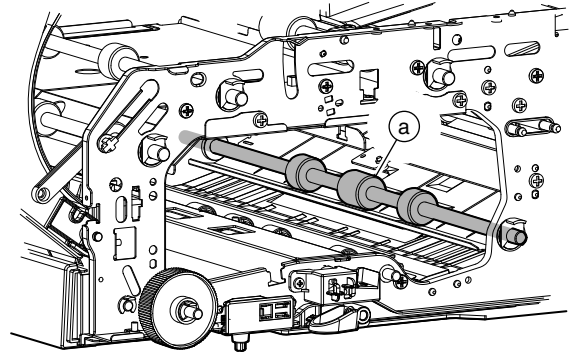


45) Clean the mirror (a) at every 500K.

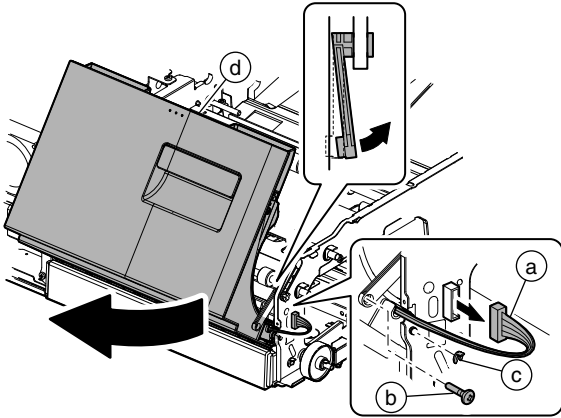
* After completion of cleaning, visually check for any dust.



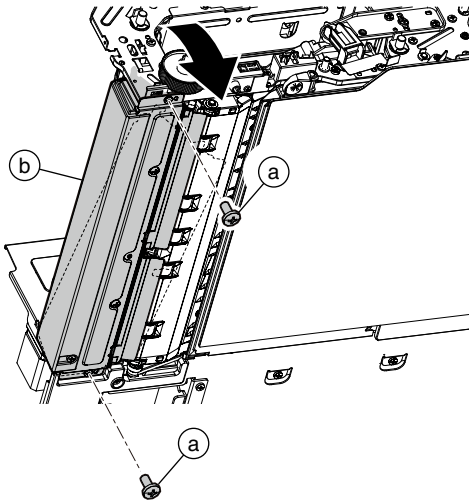
46) Clean the transport roller 5 (a) at every 500K.



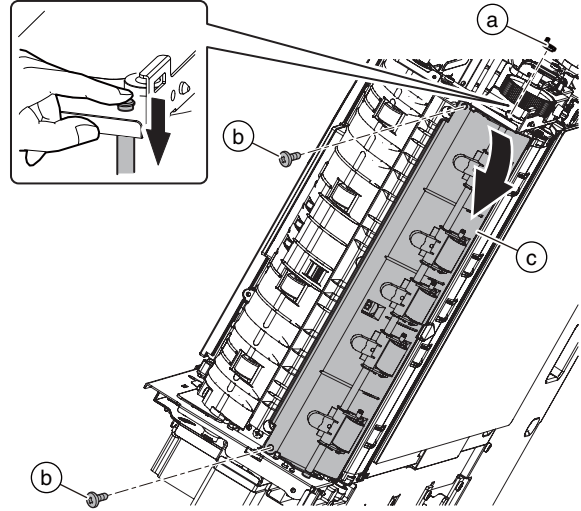
47) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d). Clean the paper guide of the upper door (d) at every 500K.



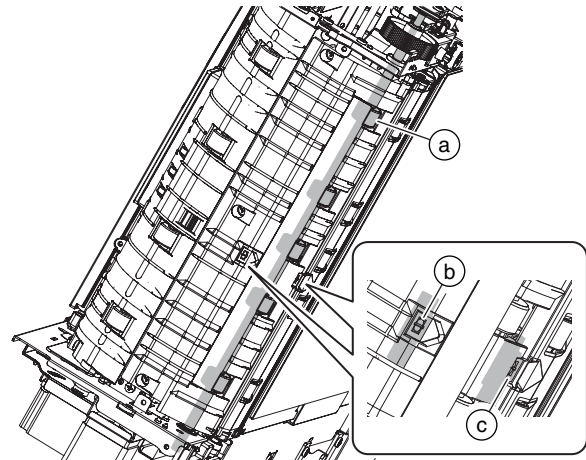
48) Remove the screw (a), and remove the stay (b). Clean the paper guide of the stay (b) at every 500K.



49) Remove the E-ring (a). Remove the screw (b), and remove the roller unit (c). Clean the paper guide of the roller unit (c) at every 500K.



50) Clean the No. 2 resist roller (a), the DSPF paper pass sensor 5 (b) at every 500K, and the DSPF paper pass sensor 6 (c) at every 200K. Clean the paper guides at every 500K.



[9] ROM VERSION-UP

1. General

A. Cases where version-up is required

ROM version-up is required in the following cases:

- 1) When there is a necessity to upgrade the performance.
- 2) When installing a new spare ROM to the machine for repair.
- 3) When installing a new spare PWB unit with ROM installed to it.
- 4) When there is a problem in the programs in ROM and it must be repaired.

B. Notes for version-up

(1) Relationship between each ROM and version-up

Before execution of ROM version-up, check combinations with ROMs installed in the other PWBs including options.

Some combinations of versions may cause malfunctions of the machine.

C. Update procedures and kinds of firmware

There are following methods of downloading of the firmware.

- 1) Firmware download using media
 - 2) Firmware download using FTP
 - 3) Firmware download using Web page
- Firmware types

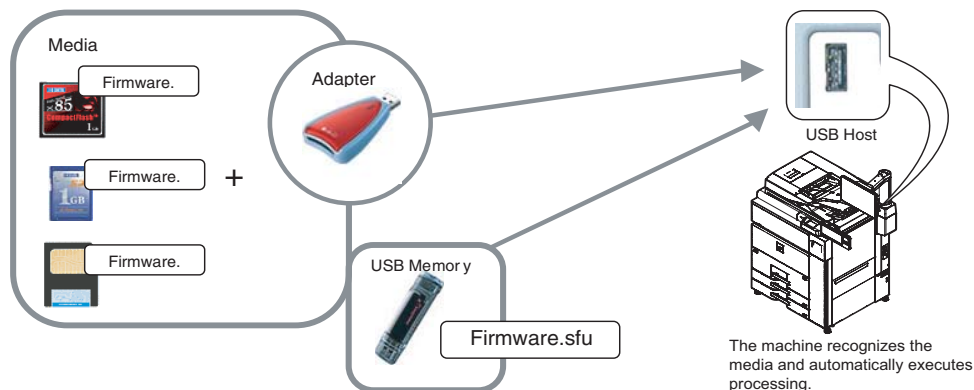
Display Item	Description of item content
ICUM(MAIN)	ICUM Main
ICUM(SUB)	ICUM Sub
ICUM(OS)	ICUM OS
ICUM(CN)	ICUM CN
ICUM(BOOT)	ICUM BOOT
ICUM(BIOS)	ICUM BIOS
ICU1(MAIN)	ICU1 Main section former half
ICU1(BOOTM)	ICU1 Boot section main
ICU1(SUB)	ICU1 Sub section (ARM9)
ICU2	ICU2 program
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD

Display Item	Description of item content
SLIST	SLIST data for L-LCD
UICONTENTS	Content data for display
EOSA	embedded OSA
PCU(BOOT)	PCU Boot section
PCU(MAIN)	PCU Main section
A4LCC(BOOT)	Side LCC (A4) Boot section
A4LCC(MAIN)	Side LCC (A4) Main section
LCT1(BOOT)	A3 LCT 1 series, Boot section
LCT1(MAIN)	A3 LCT 1 series, Main section
LCT2(BOOT)	A3 LCT 2 series, Boot section
LCT2(MAIN)	A3 LCT 2 series, Main section
INSERTER(BOOT)	Insertter Boot section
INSERTER(MAIN)	Insertter Main section
4KFIN100(BOOT)	4K finisher (100-sheet stapling) Boot section
4KFIN100(MAIN)	4K finisher (100-sheet stapling) Main section
SFIN(BOOT)	Finisher (50-sheet stapling) Boot section
SFIN(MAIN)	Finisher (50-sheet stapling) Main section
SADDLE100(BOOT)	Saddle unit (100-sheet stapling) Boot section ROM
SADDLE100(MAIN)	Saddle unit (100-sheet stapling) Main section ROM
TRIMMER(BOOT)	Trimmer unit (100-sheet stapling) Boot section ROM
TRIMMER(MAIN)	Trimmer unit (100-sheet stapling) Main section ROM
FOLDER(BOOT)	Folding unit (100-sheet stapling) Boot section ROM
FOLDER(MAIN)	Folding unit (100-sheet stapling) Main section ROM
DECURLER(BOOT)	Decurler Boot section ROM
DECURLER(MAIN)	Decurler Main section ROM
SCU(BOOT)	SCU Boot section
SCU(MAIN)	SCU Main section
DSPF(BOOT)	DSPF Boot section
DSPF(MAIN)	DSPF Main section
ANIMATION	Animation data
ACRE(BOOT)	ACRE Boot section
ACRE(MAIN)	ACRE Main section
ACRE_DATA	ACRE table

2. Version-up procedure

A. Update method using SIM 49-1

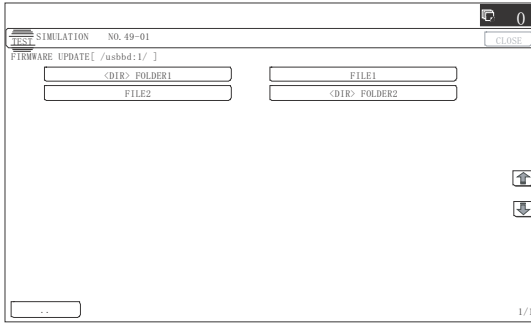
For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



- 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.

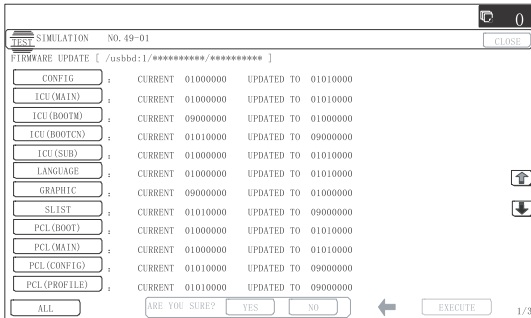
Execution of the firmware by SIM49-01

- 1) Insert the media or USB memory which stores the firmware into the main unit. (Be sure to use the USB I/F on the operation panel.)
- 2) Enter the SIM49-01.
Press the key of the file to be updated. The screen transfers to the update screen.

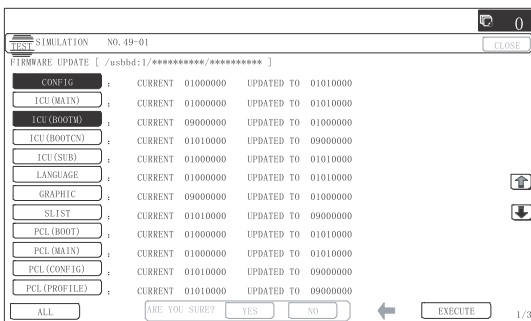


- * The number of key changes according to the number of the sfu file in the media or USB memory inserted.
- * If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE [OK]" is displayed on the screen. Insert the media or USB memory 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.

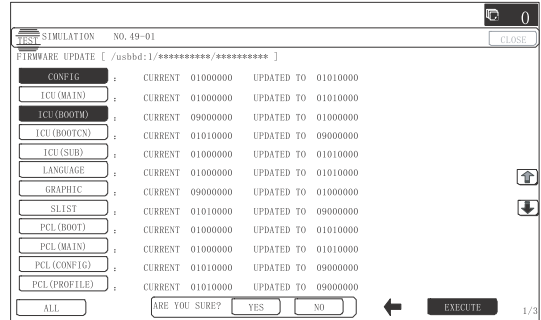


- 4) Press [ALL] key.
All the firmware programs are selected.

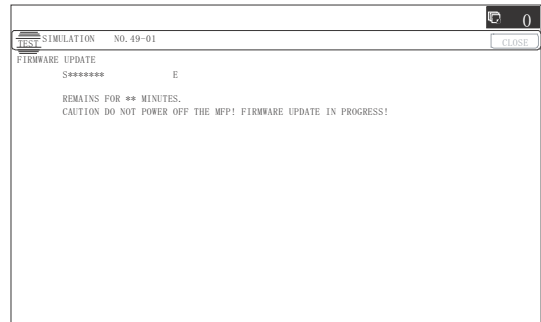


- * Normally select all the firmwares and execute updating.
- * In this case, firmwares which do not exist on the machine side are ignored.
To update a certain firmware only, select the firmware with the firmware display key.
- * If firmware's key is not selected, [EXECUTE] key is gray out and cannot be pressed.

- 5) Press [EXECUTE] key. "ARE YOU SURE? [YES] [NO]" becomes clear. Press [YES] key 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.

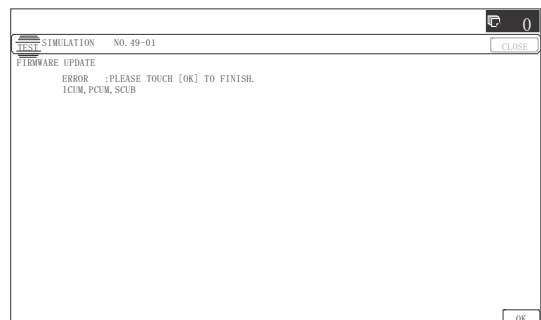
- 6) If the update is normal completion, following screen is displayed.



Press [OK] key. (The machine is rebooted.)

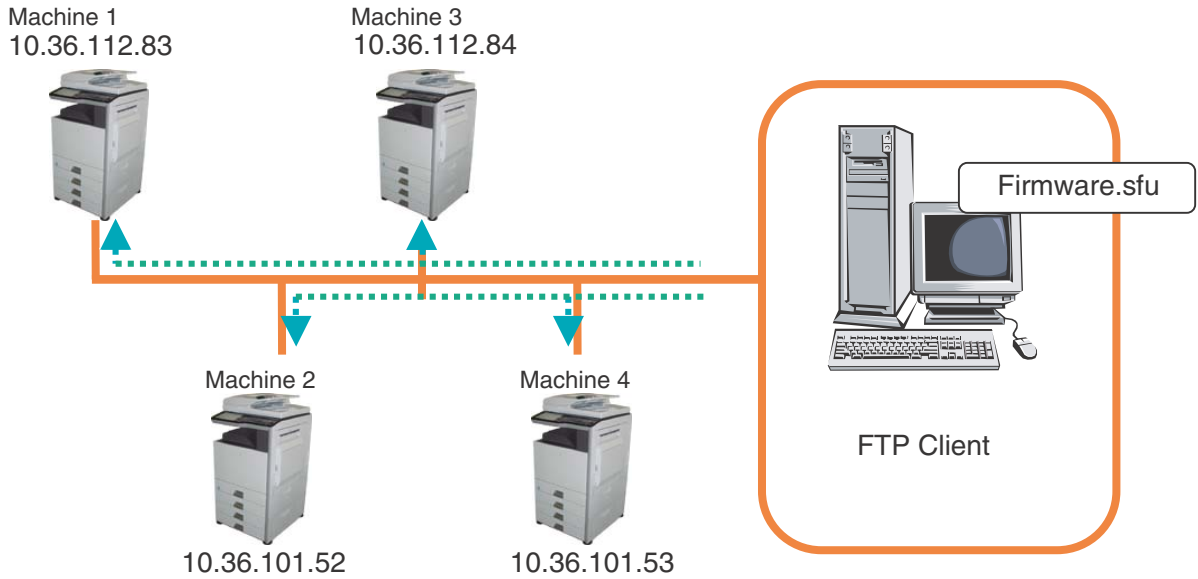
Go to SIM22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.



B. Firmware update using FTP

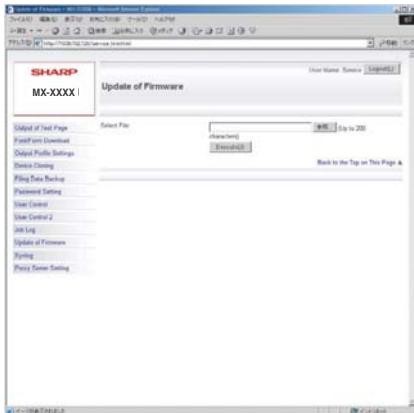
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



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 update method using the DIP SW of the MFP PWB is called the CN update.

a. Function

There are the following three functions in the CN update mode.

• 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 SD card and CompactFlash 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.

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.

• 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.)

b. Purpose

This function is used in the following cases:

- 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 an error occurs in the boot program, this method cannot be used. In such a case, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

c. DIP-SW used in the CN update mode

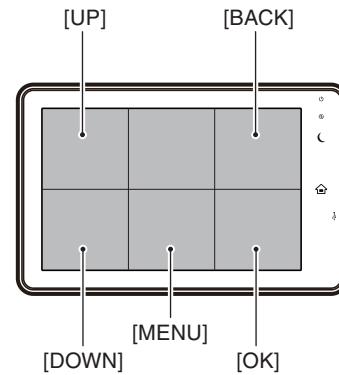
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

When terminating the CN update mode, reset UPDATE DIP-SW to OFF (normal mode).



d. 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.

(2) Operating procedures

a. Firmware update function

This function is used to revise the firmware by using the USB memory for the MFP PWB, the SCU PWB, the PCU PWB, the FAX PWB, and each option.

It is basically same as SIM 49-01, but differs in the following points.

- The update target ROM is automatically selected.
- 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 SD card and CompactFlash must be replaced with a new one having the normal boot program.

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 (SD card or CompactFlash).

a-1. Necessary items

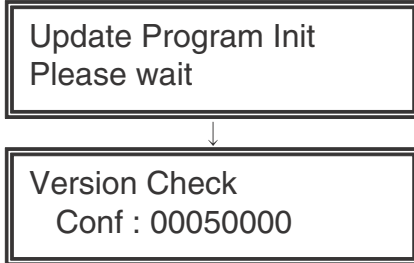
- 1) Insert the SD card and CompactFlash to the MFP PWB of the machine.
- 2) USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

a-2. Procedures

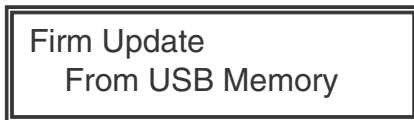
- 1) Turn OFF the power, and remove the cabinet and the MFP PWB cover.
- 2) Turn ON the DIP SW of the MFP PWB UP DATE.
- 3) Install the USB memory into the USB port.
- 4) Turn ON the power.
- 5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)

Display when booting is completed



- 6) Select the firmware update mode.
Select the update mode with [MENU] key and [BACK] key.

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.

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.

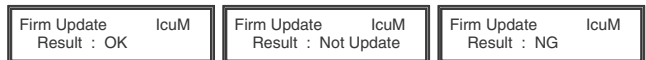
Display of the firmware update process



- * 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) Turn OFF the DIP SW of the MFP PWB UP DATE. (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 cabinet.

[10] SERVICE WEB PAGE

1. General

The following functions are available on the Hidden Web Page exclusively used for the serviceman.

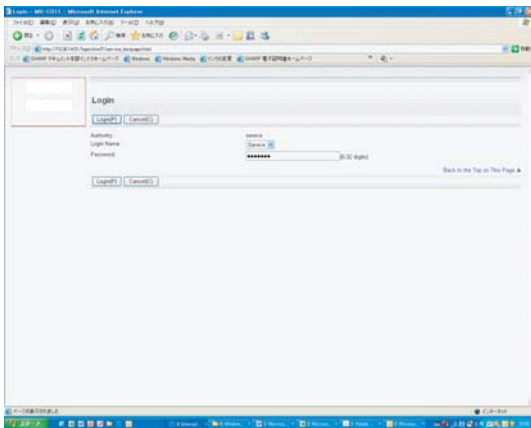
Menu/Item		Function and content
Password Setting		Used to set the password to enter the Hidden Web Page exclusively used for the serviceman.
Output of Test Page		Used to print out the test page (system setting contents).
Font/Form Download		Used to download Font/Form. Font/Form of PCL and PostScript, 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	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.

2. Details and operation procedures

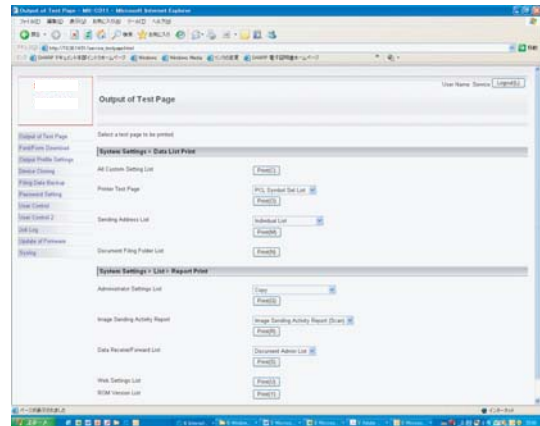
A. Procedures to enter the Hidden Web page exclusively used for the serviceman

- 1) Boot a browser program.
- 2) Enter the specified URL (http://xxx.xxx.xxx.xxx/service_login.html) and enter the servicing page menu.

Default password: "service"

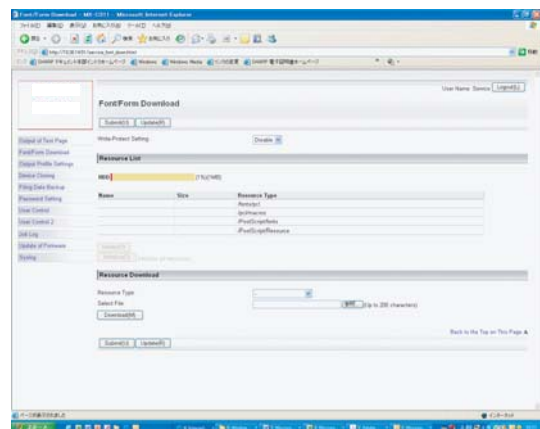


B. Output of Test Page



- 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.

C. 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)

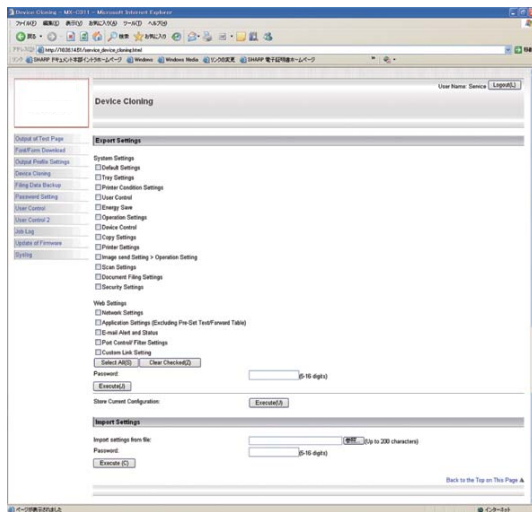
- 1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
- 2) Check that the confirmation message is displayed, and press Yes key.
- 3) Click "Submit" (registration) button.
The file in the HDD is deleted.

(3) Procedures to delete all the files at a time

- 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.

D. Device Cloning



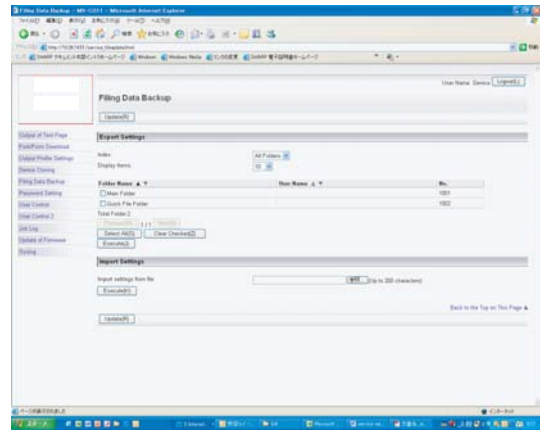
(1) Export

- 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.

E. Filing Data Backup



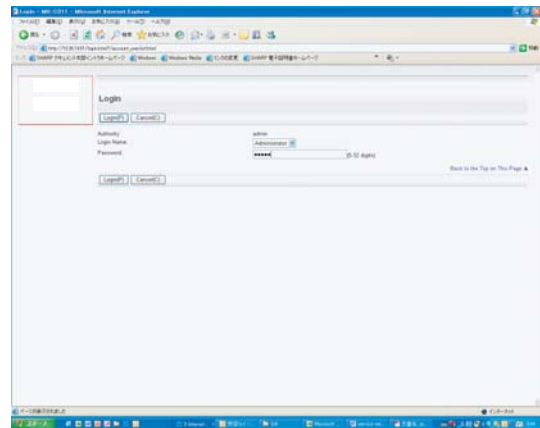
(1) Export

- 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

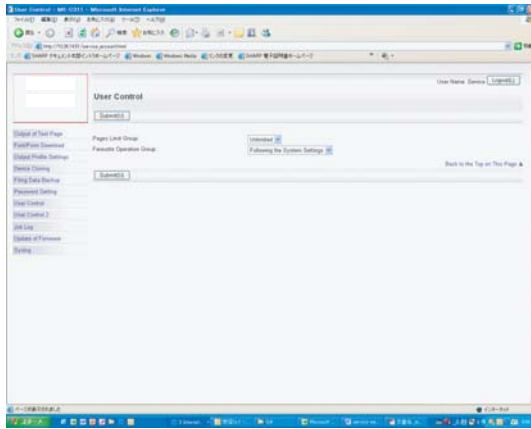
- 1) Click "Refer" button to select a target file. (File name: *****.bin)
- 2) Click "Execute" button.
The target file is imported.
- 3) Click "Update" button.

F. User Control 1



- 1) Enter the password to log in.
Default Password: admin
The screen is shifted to the setting menu of user management.

G. User Control 2



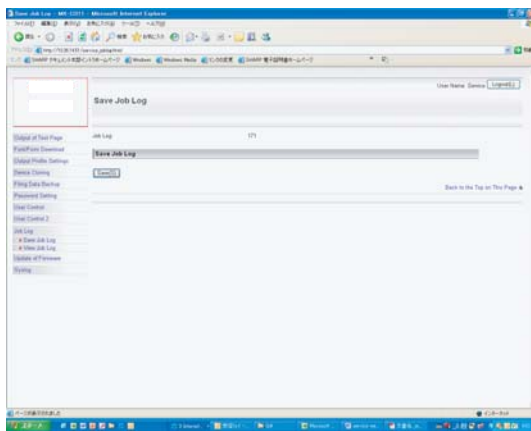
- 1) Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(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.

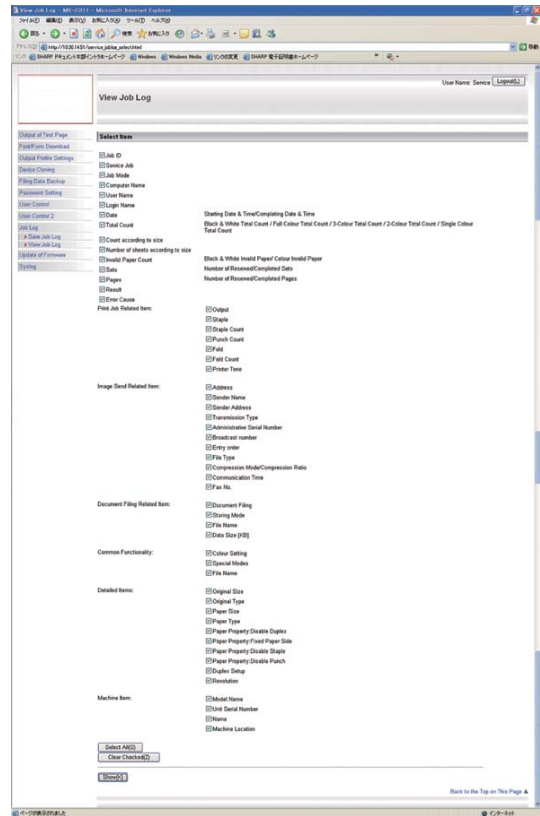
H. Job Log

(1) Save Job Log



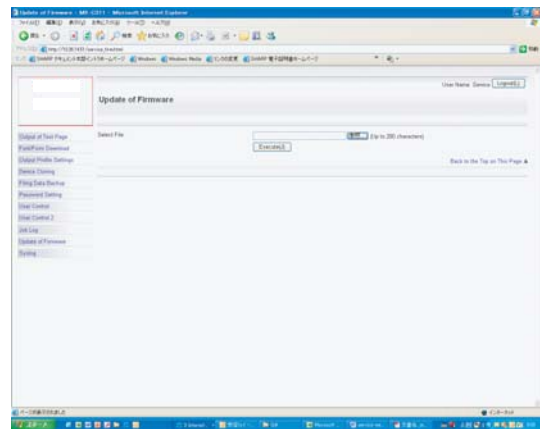
- 1) Click "Save" button, and specify the save position of the Job Log to save it.

(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.

I. 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.

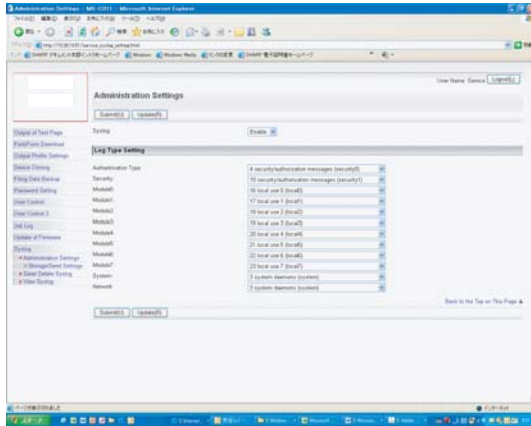
J. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

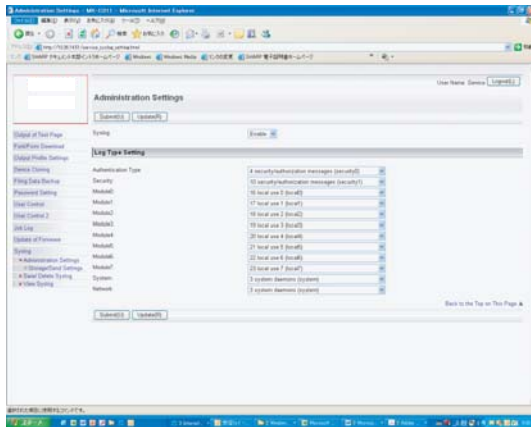
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

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



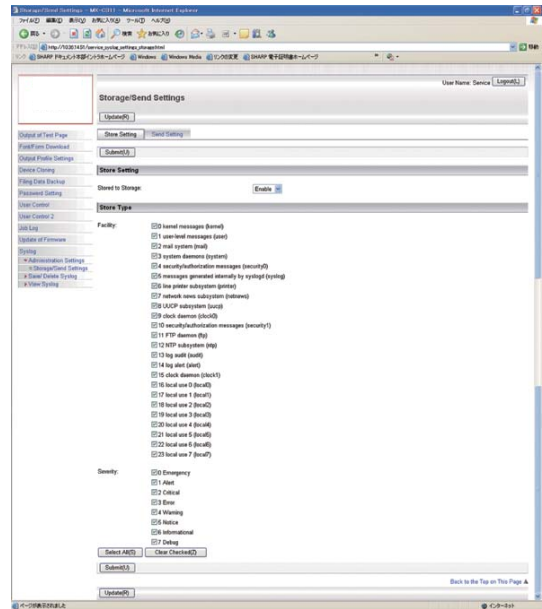
(1) Administration Settings/ Log Type Setting

Set to the default.

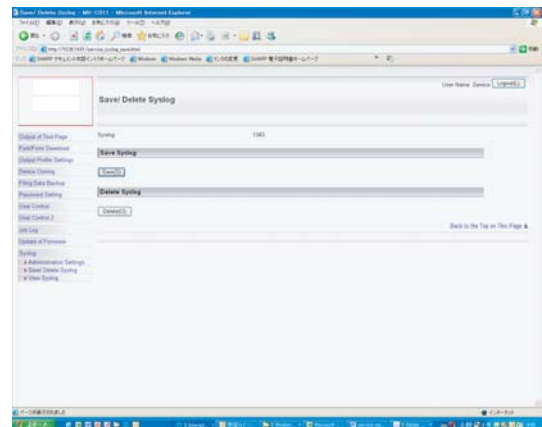


(2) Storage/Send Settings

Keep all the items selected.



(3) Save/ Delete Syslog

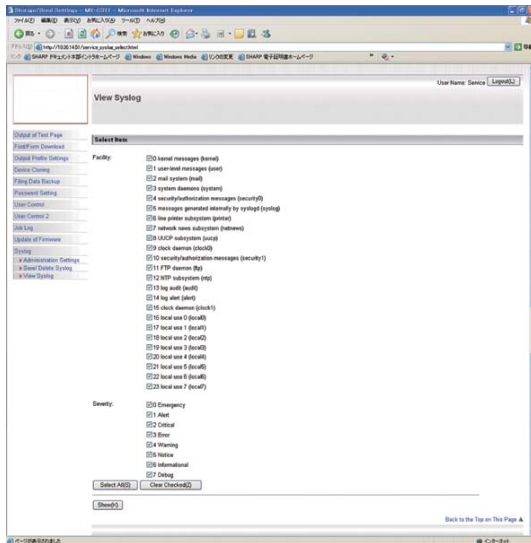


When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

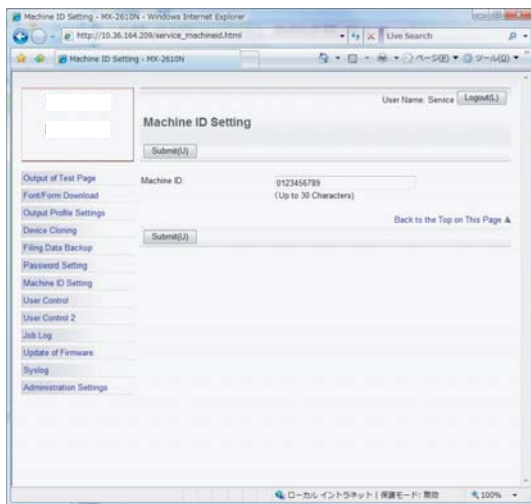
Check to confirm that the confirmation message is displayed, and press OK key.

(4) View Syslog



- 1) Select a Syslog item to be displayed.
- 2) Click "Show" button.
The Syslog is displayed.

K. Machine ID Setting



- 1) Enter the machine ID.
Max. 30 digits of numeral figures and characters can be entered.
- 2) Press the registration button.

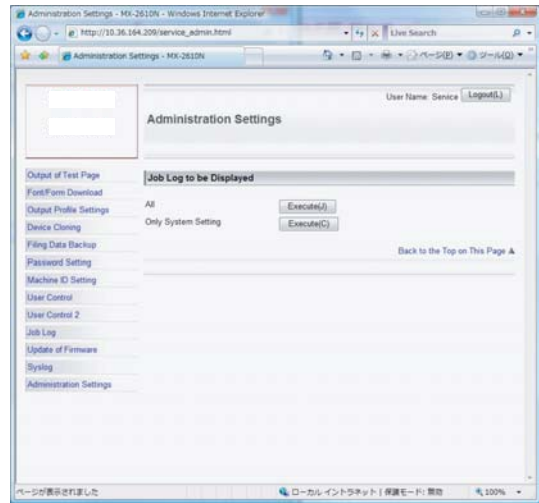
NOTE: The machine ID can be set with SIM26-7 as well as this function.

L. Administration Settings (Menu display setting)

This setting is to select whether to display all the menus of Web Page on the machine display or to display only the restricted system setting menu of the default.

Setting must be executed according to the user request.

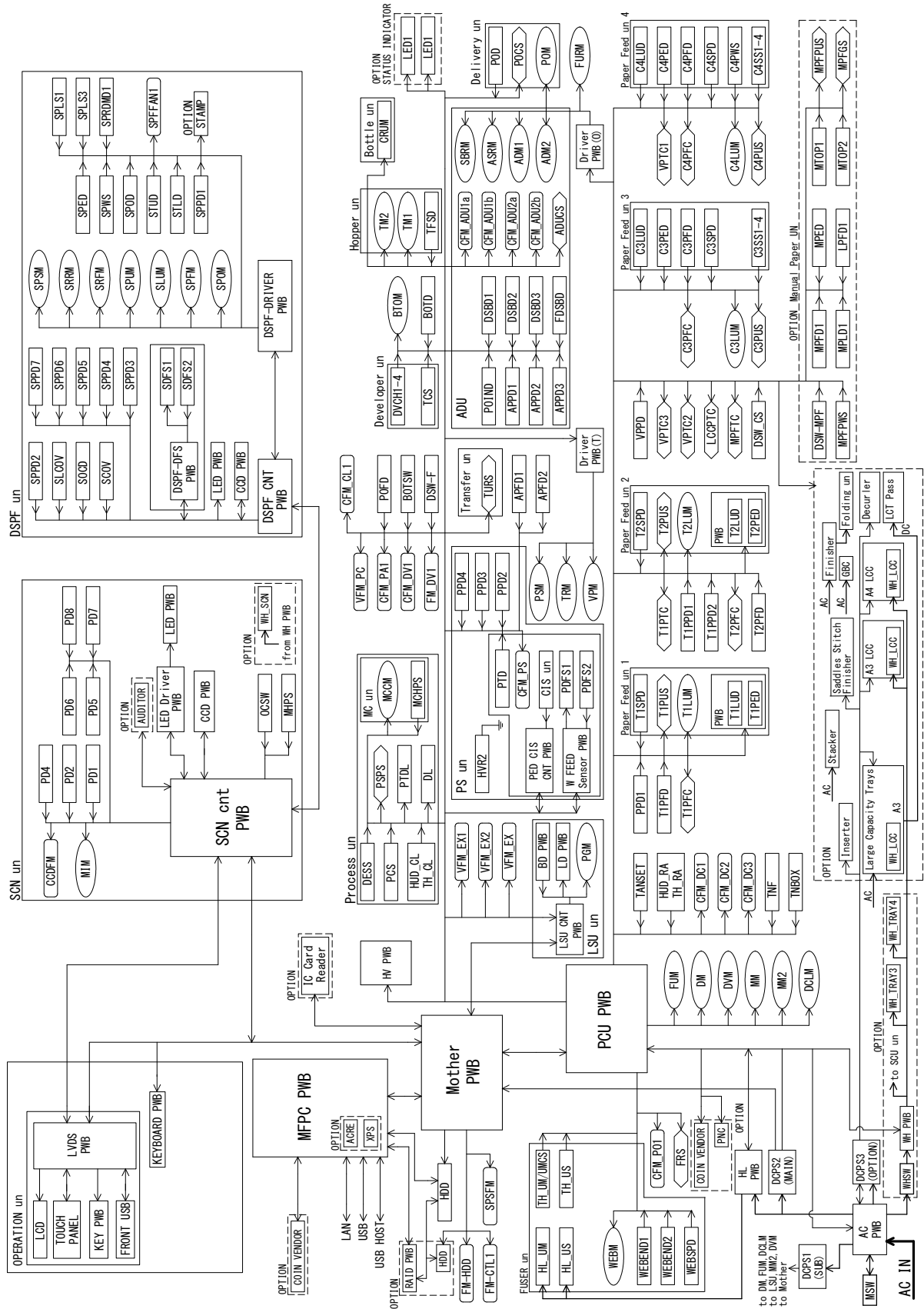
- 1) Press the setting execution button corresponding to the display mode.



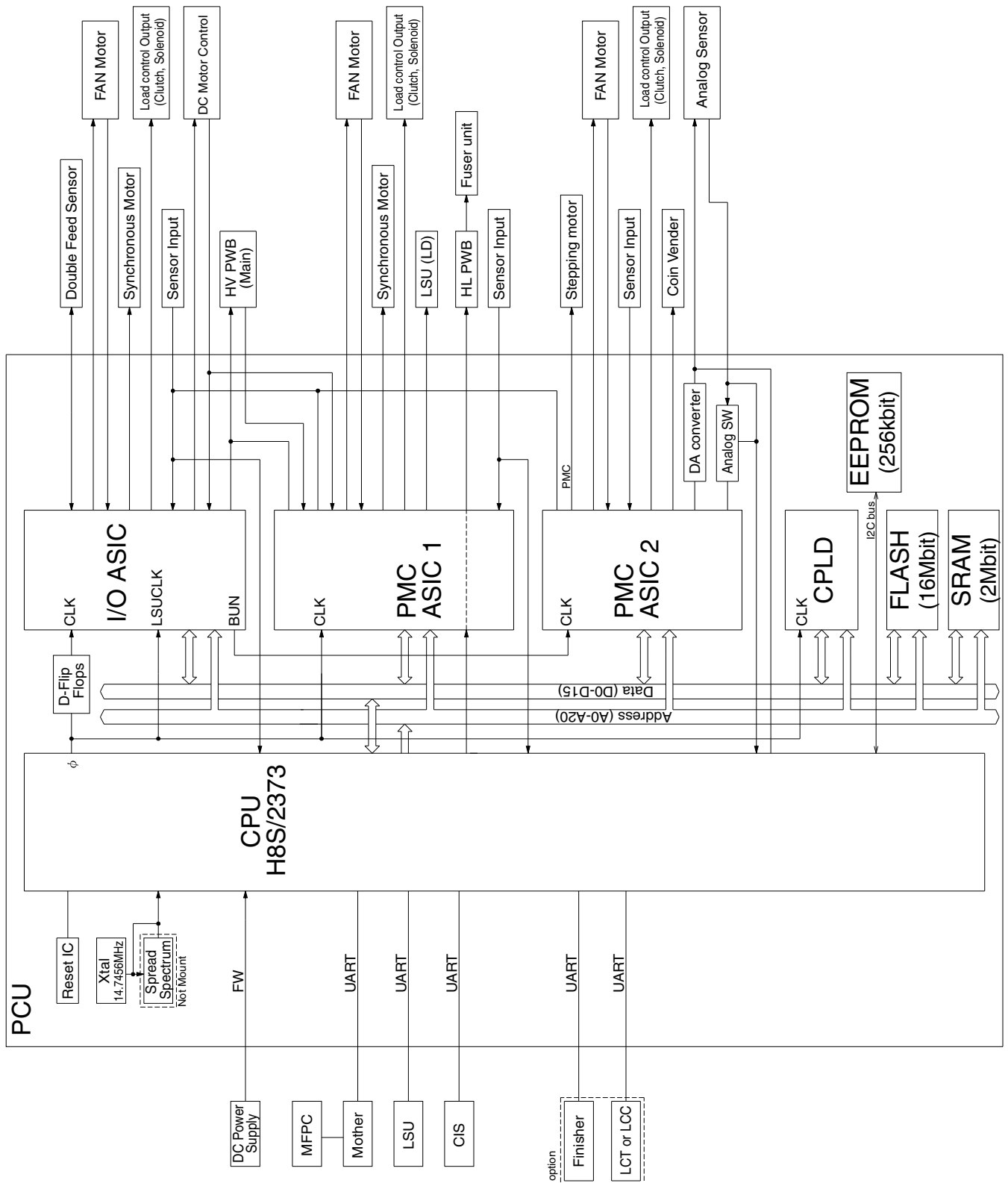
[11] ELECTRICAL SECTION

1. Block diagram

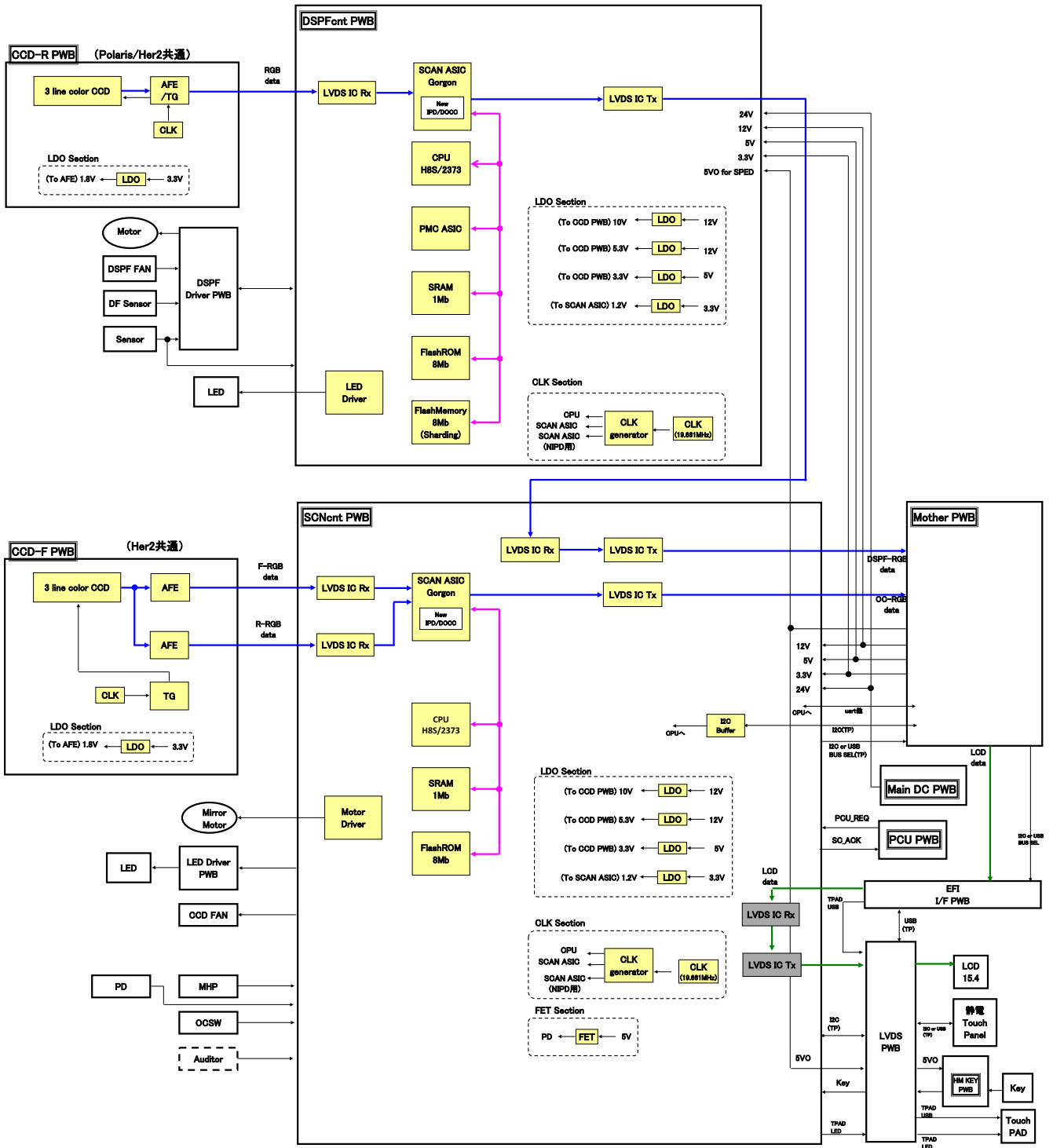
A. System block diagram



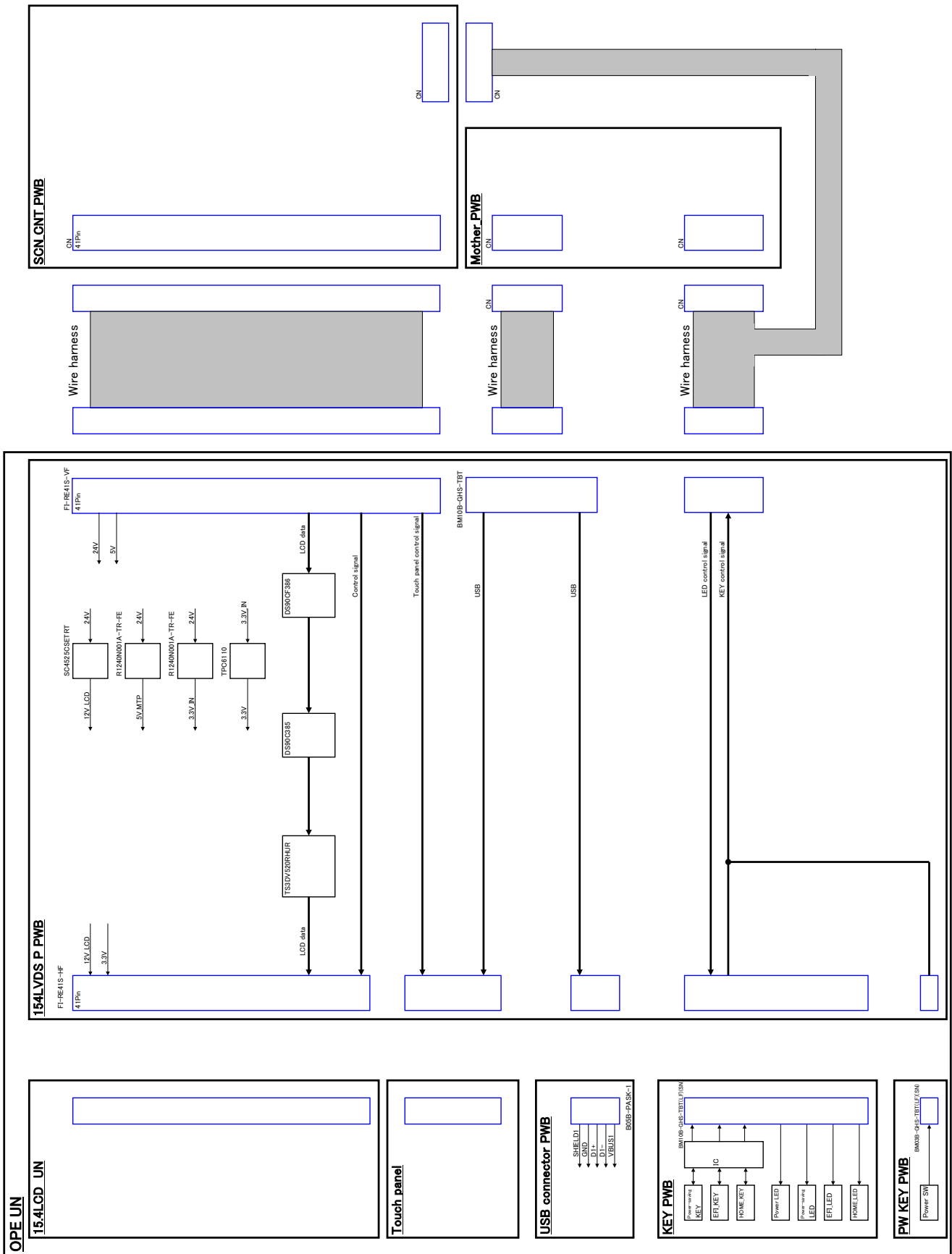
B. PCU PWB



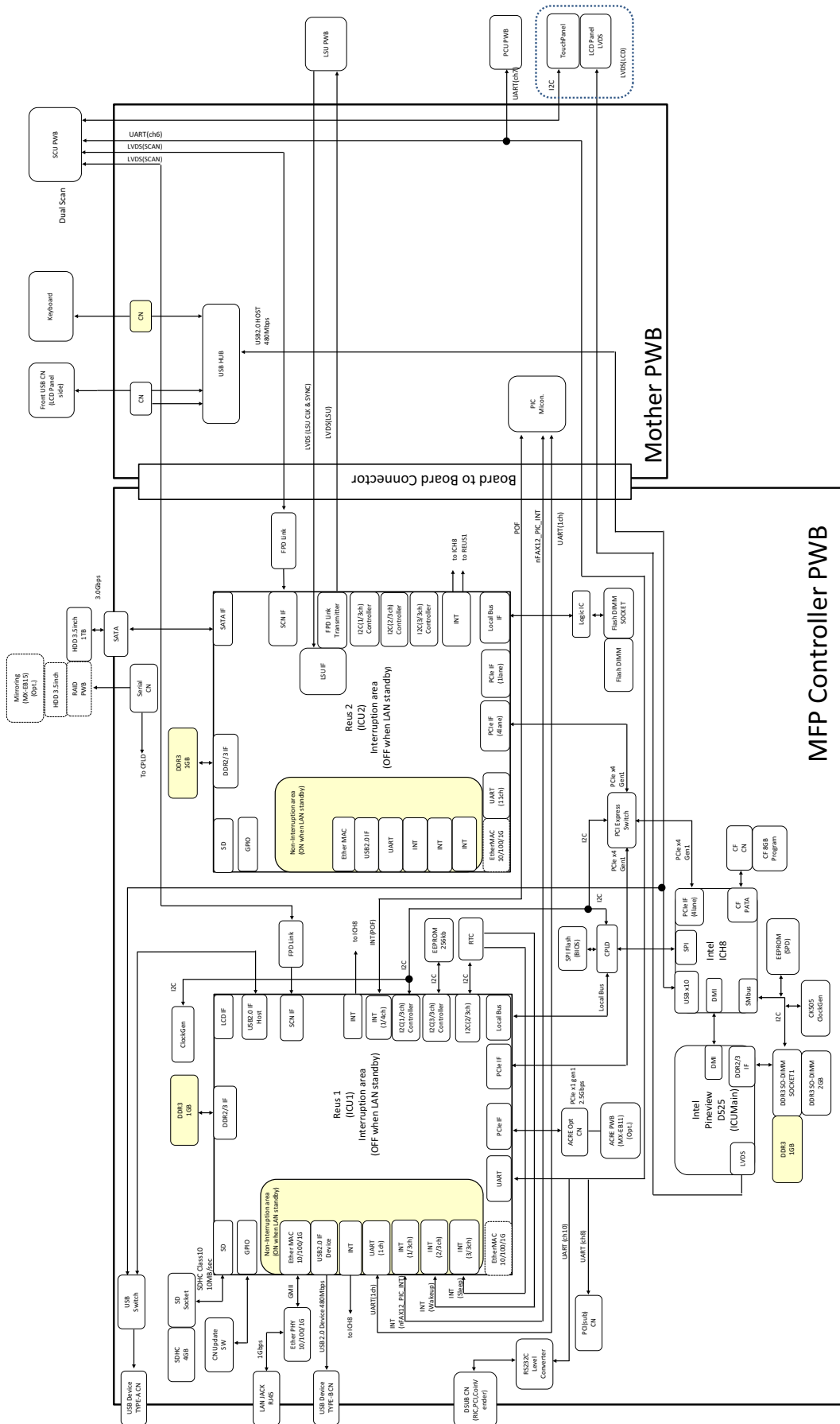
C. Scanner control PWB



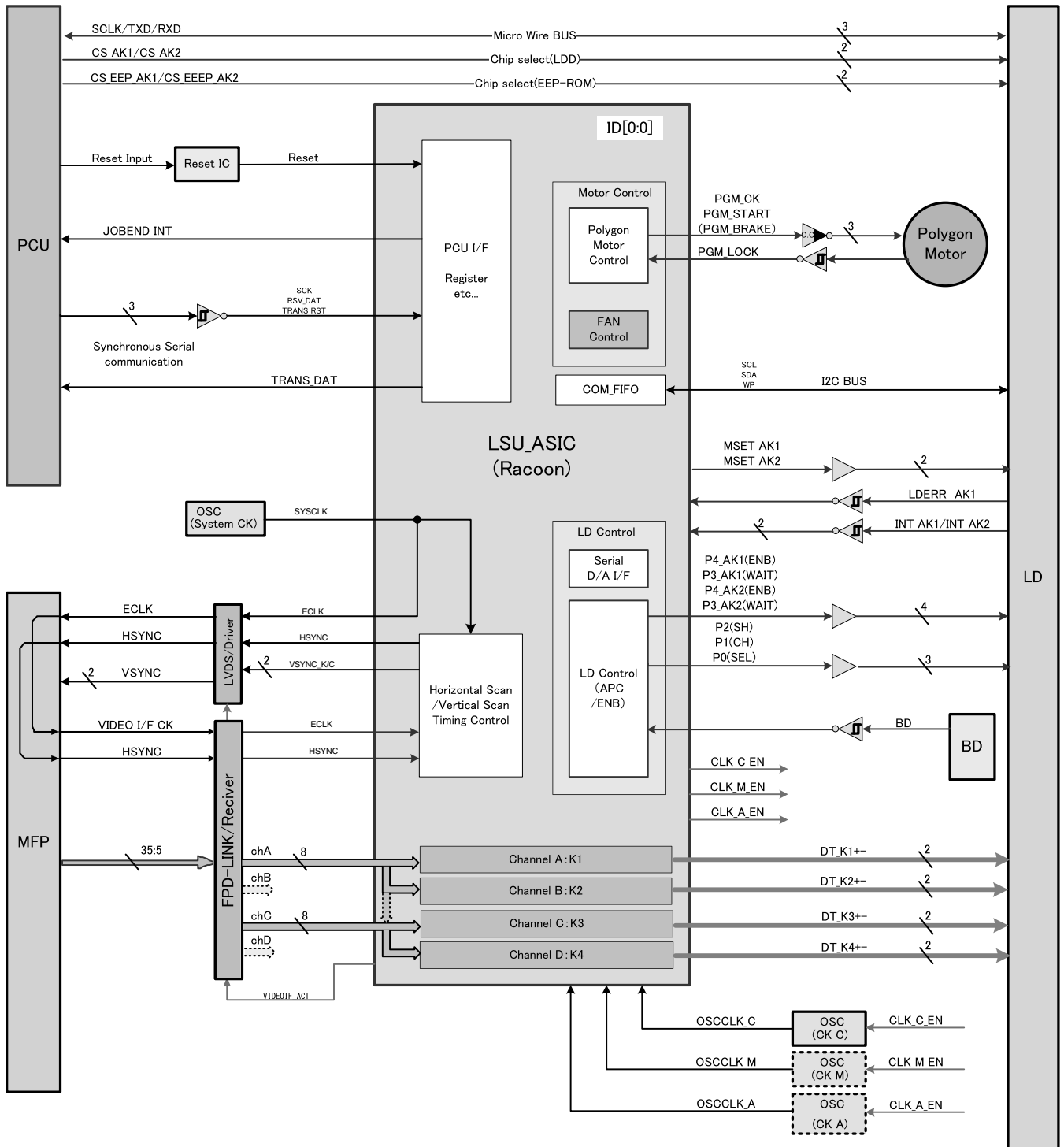
D. Operation unit



E. MFP control PWB



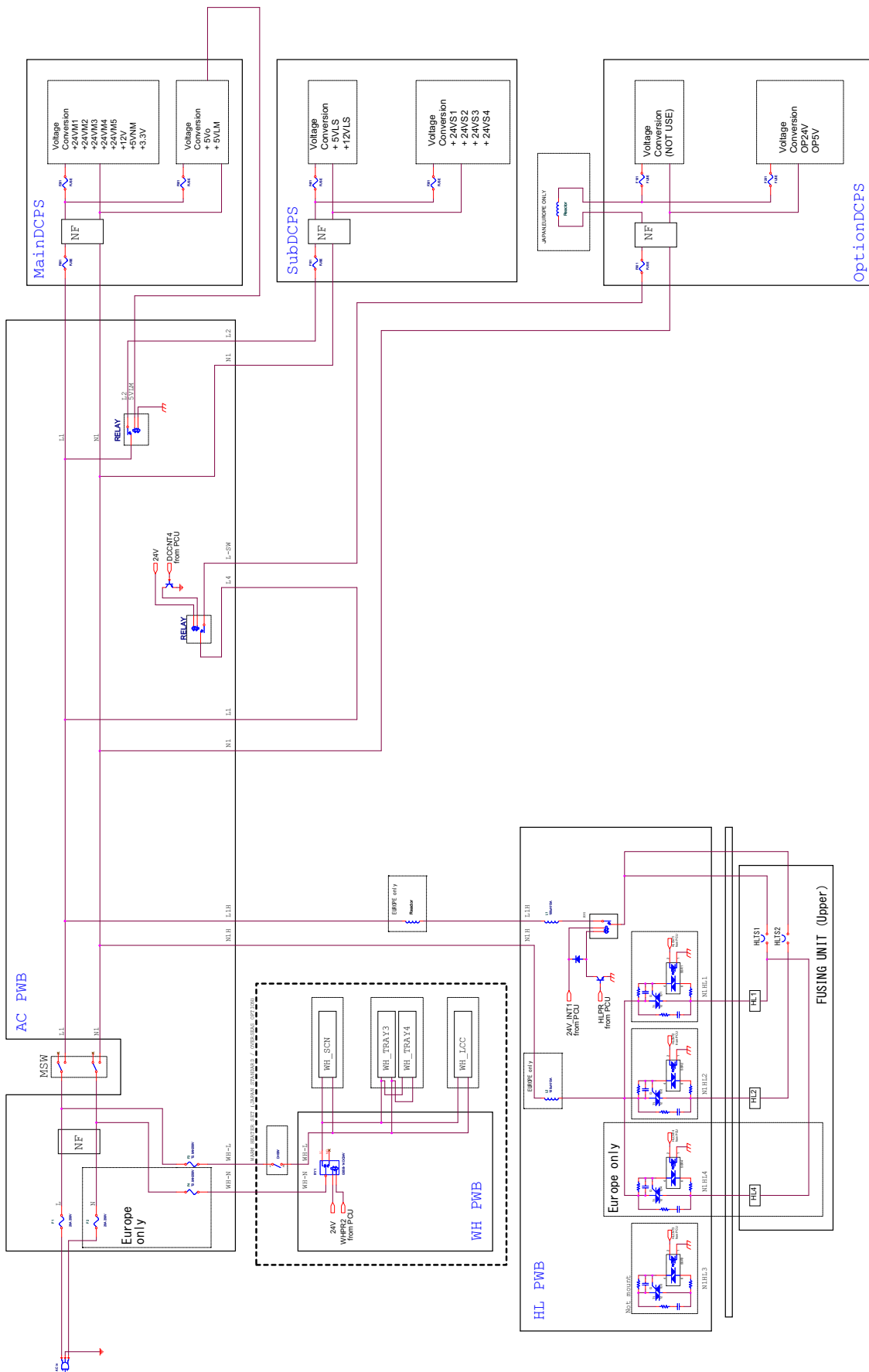
F. LSU CNT PWB



2. Power line diagram

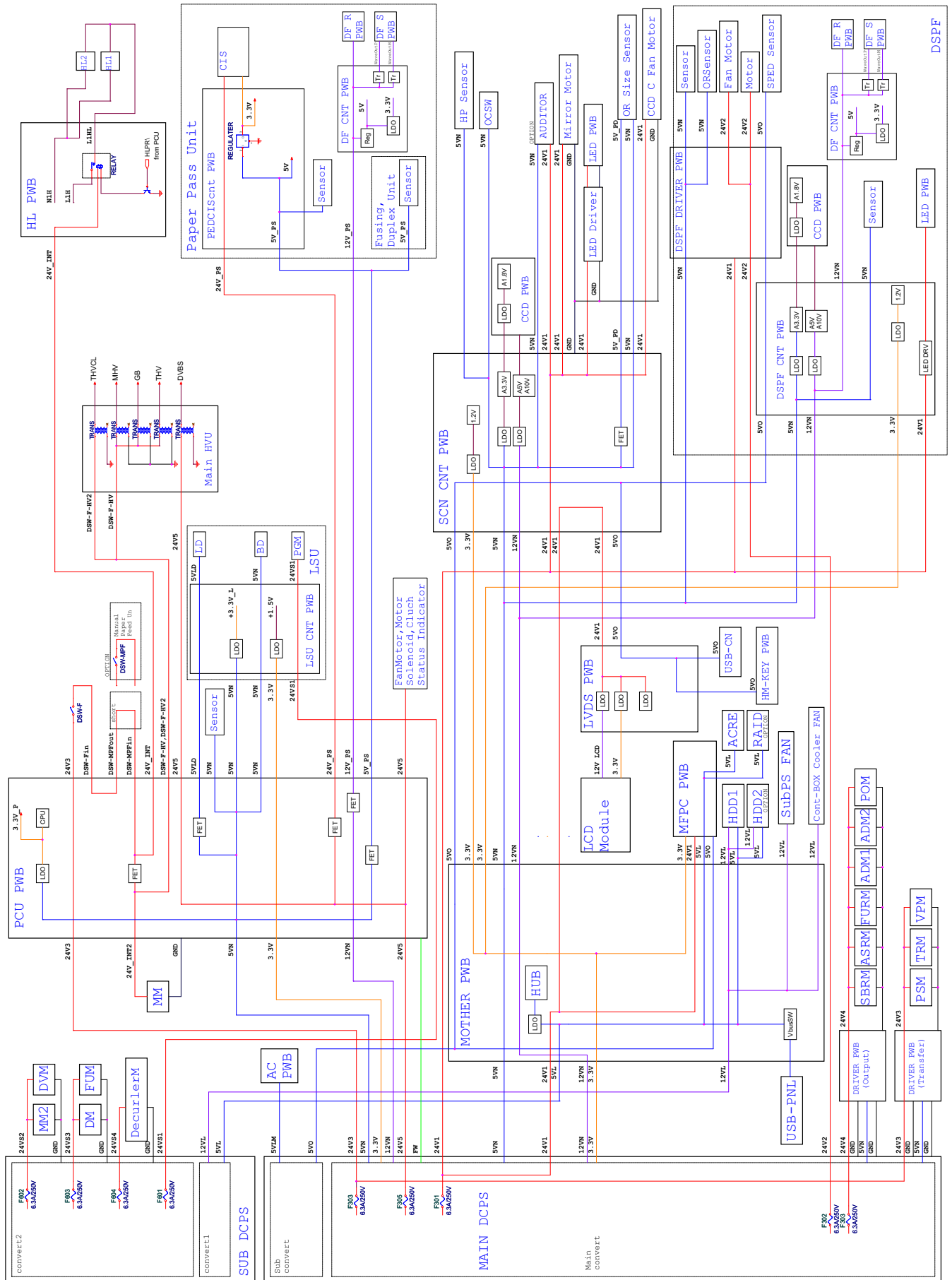
A. AC power line diagram

(1) AC power line diagram (North America 105/120cpm machines)

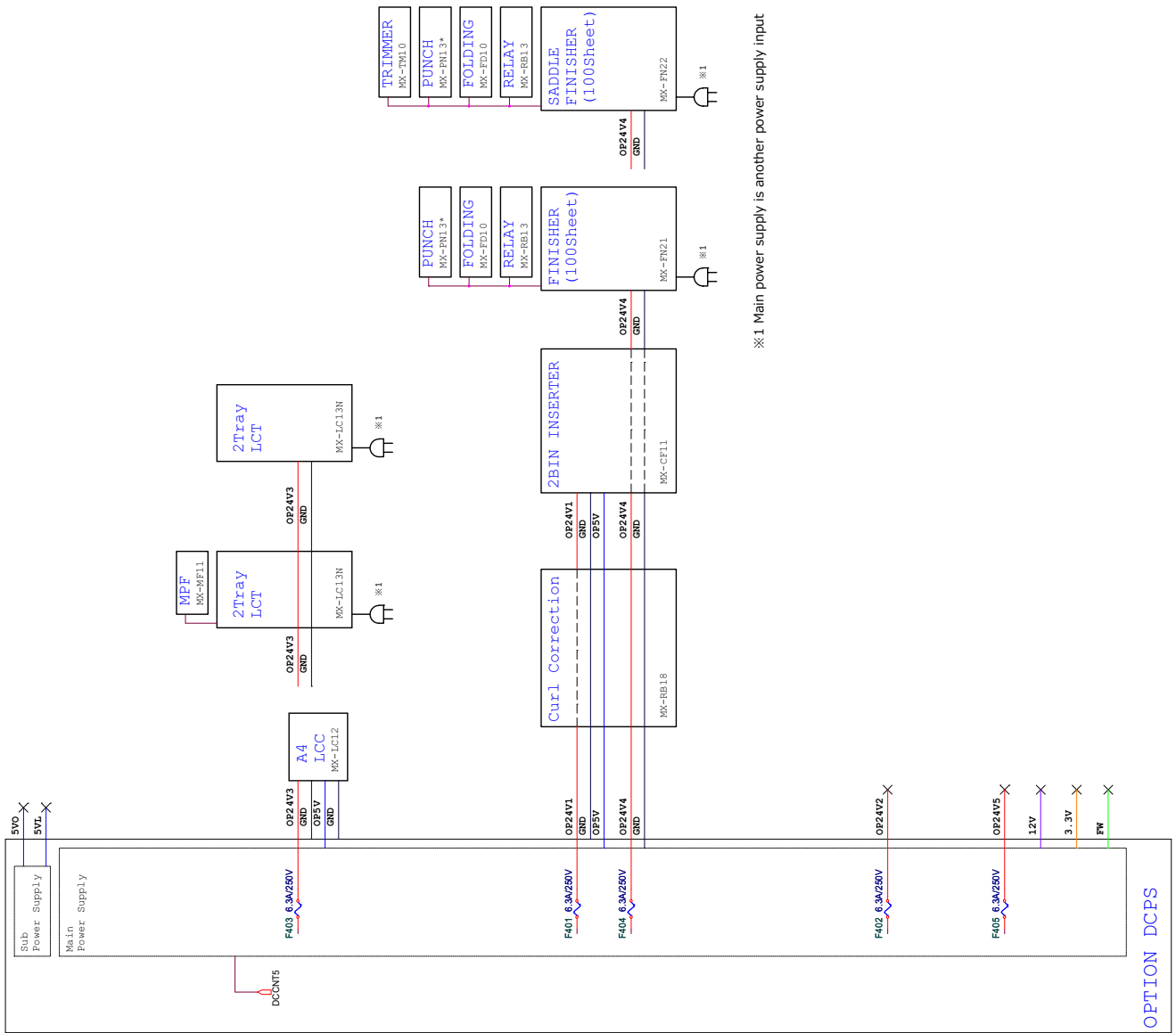


B. DC power line diagram

(1) DC power line diagram (MAIN/SUB DCPS)



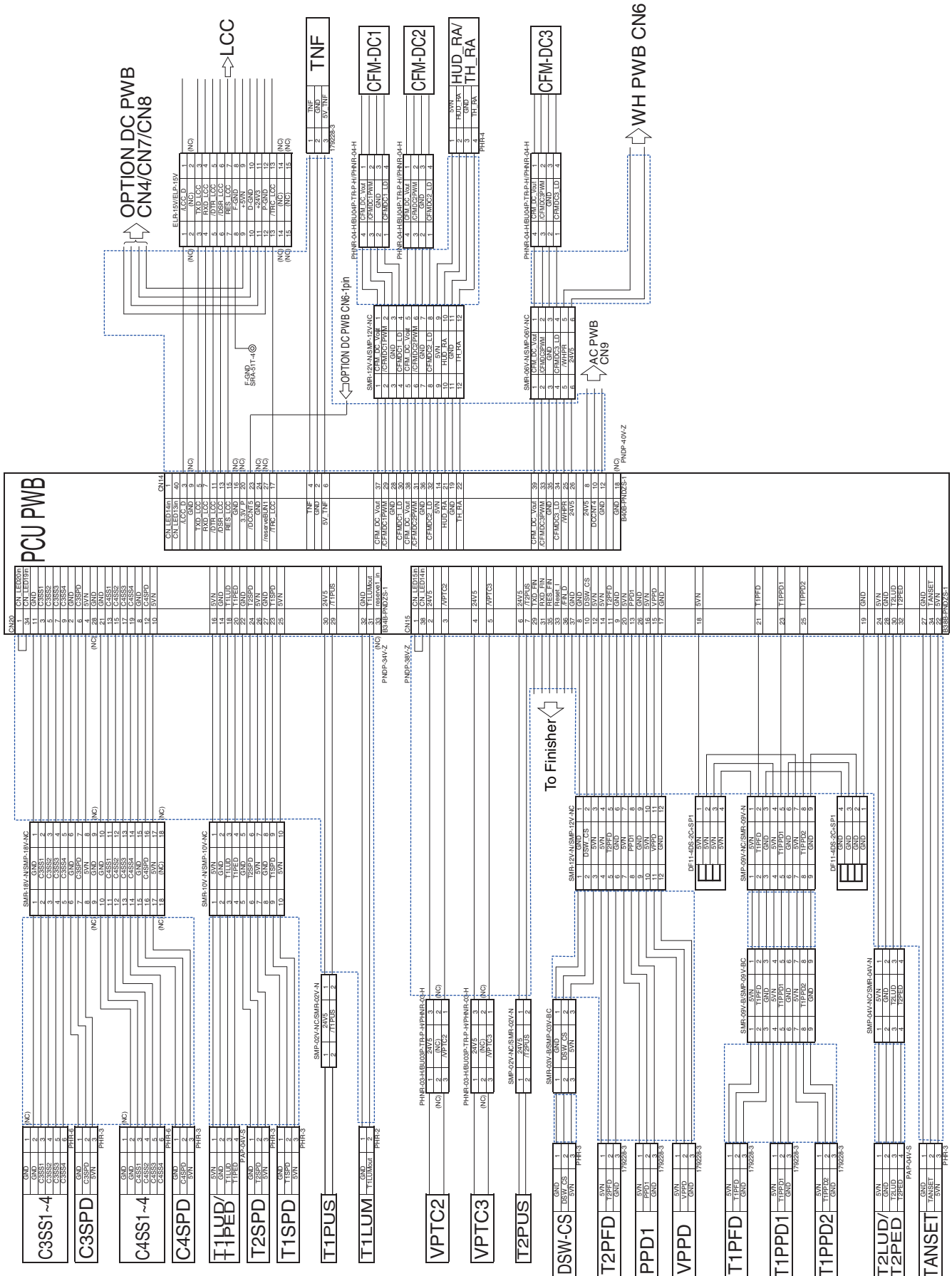
(2) DC power line diagram (OPTION DCPS)



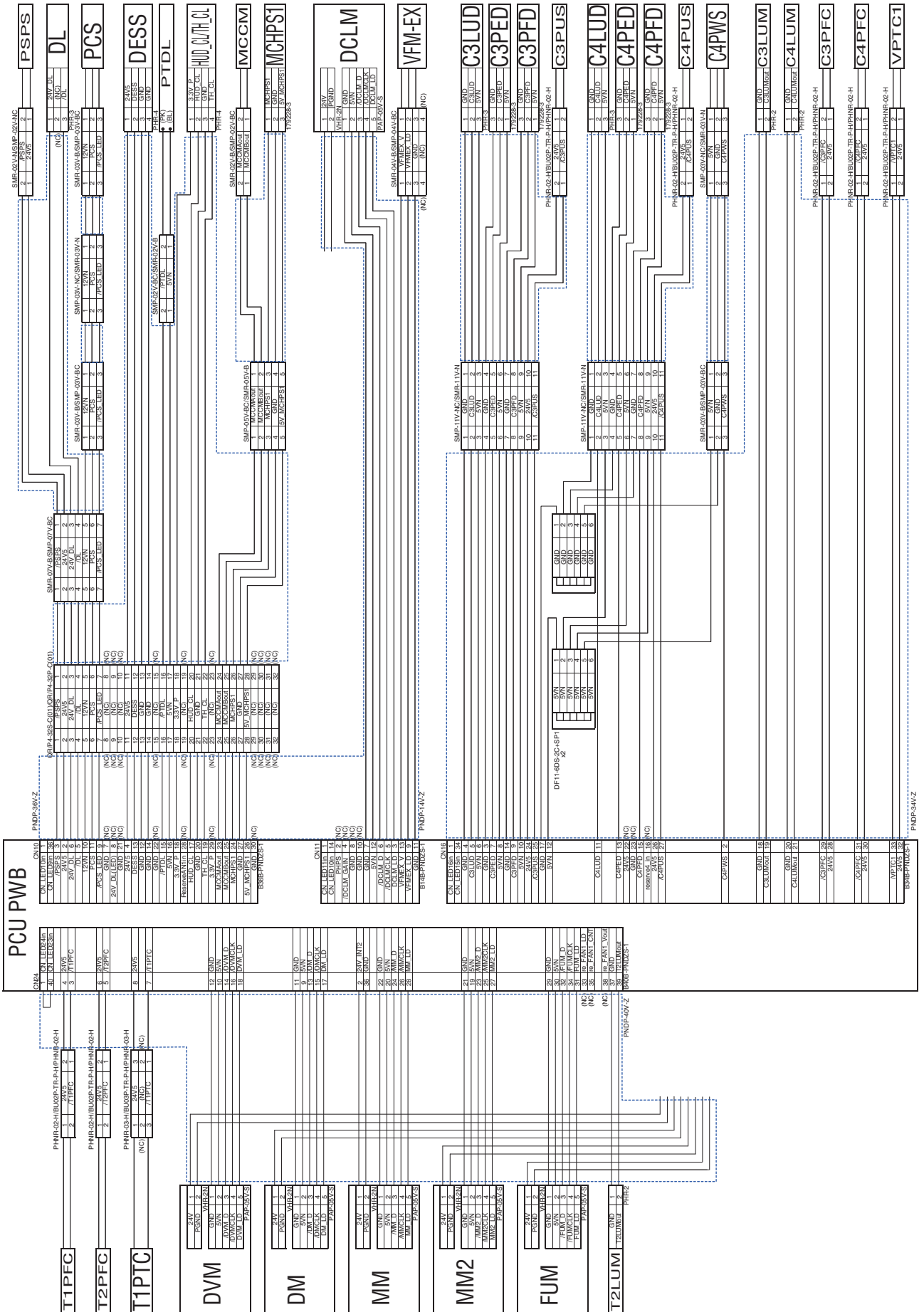
※1 Main power supply is another power supply input

3. Actual wiring chart

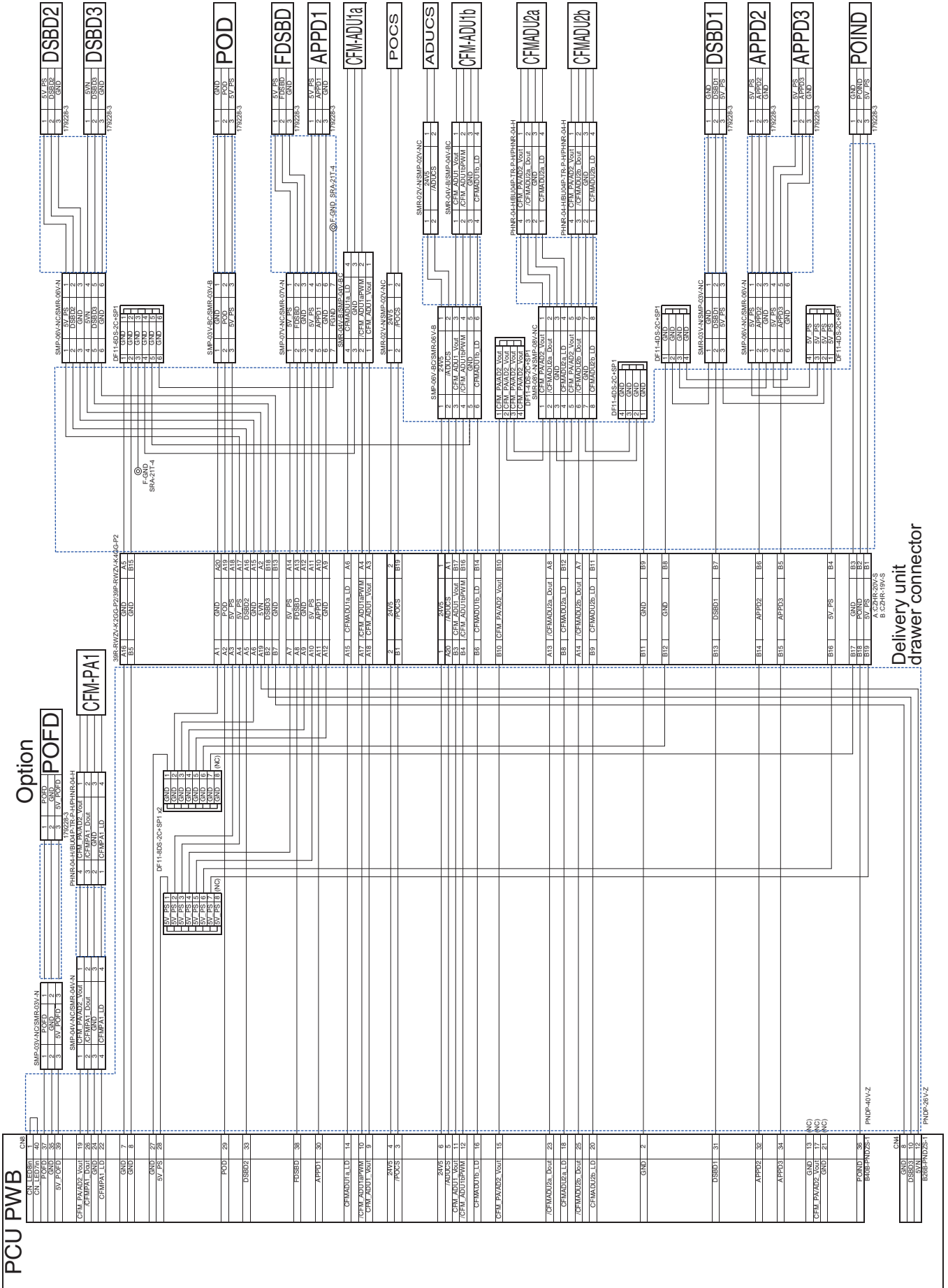
A. Tandem/Multi-purpose/Interface path/Vertical transport/Finisher/LCC/DC fan



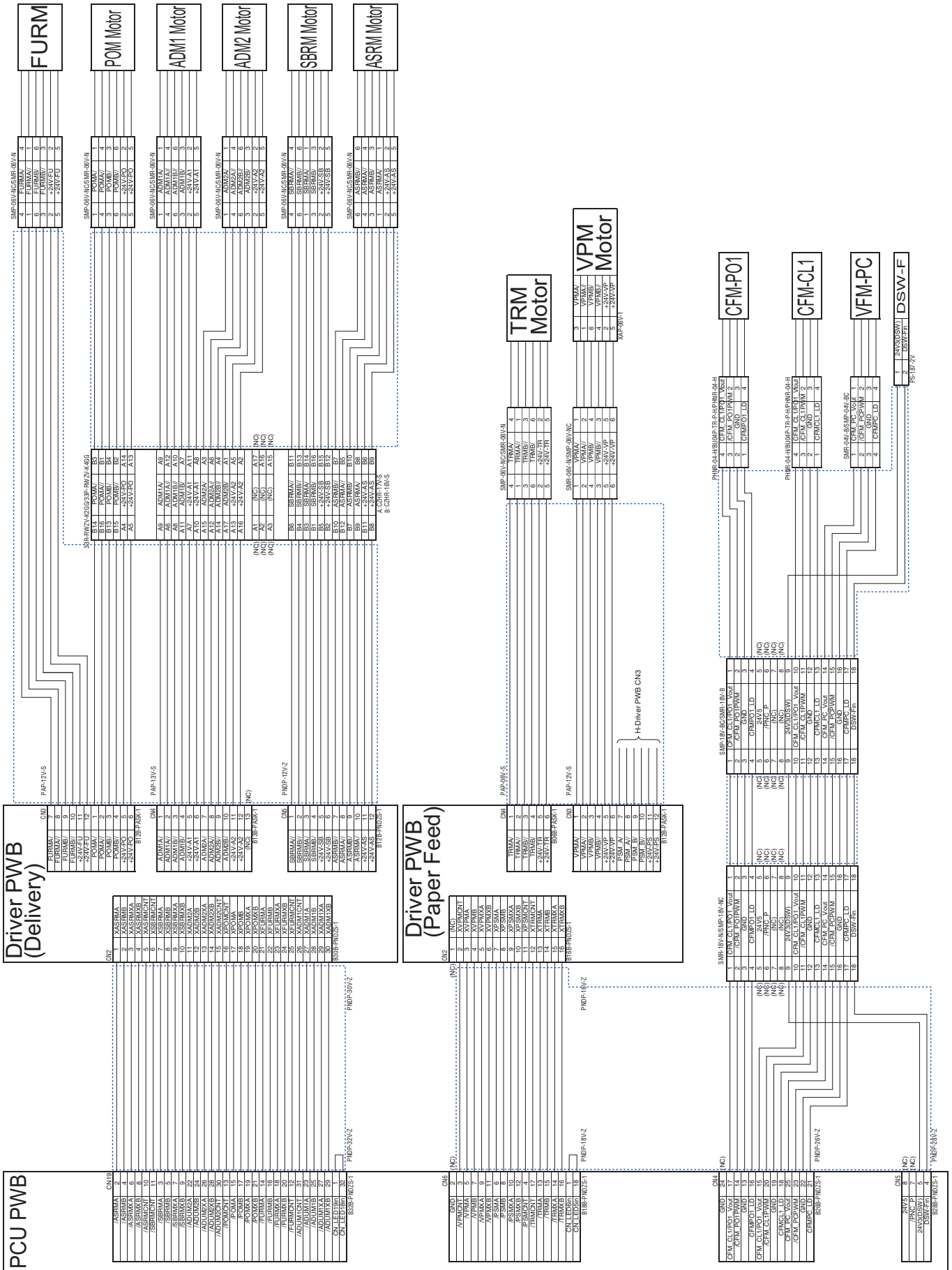
B. Process/MC/CS3/CS4/Drive motor



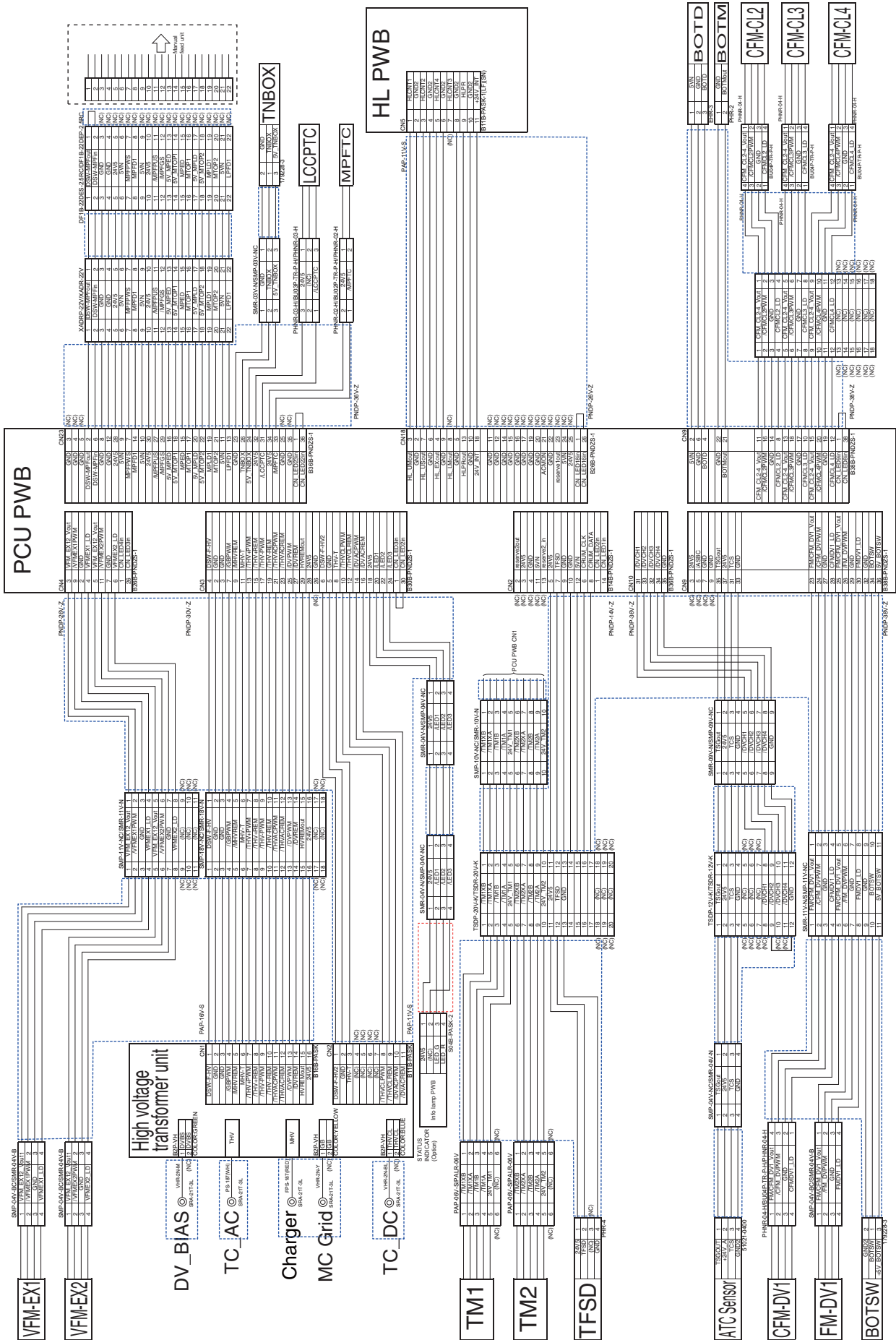
C. Paper exit



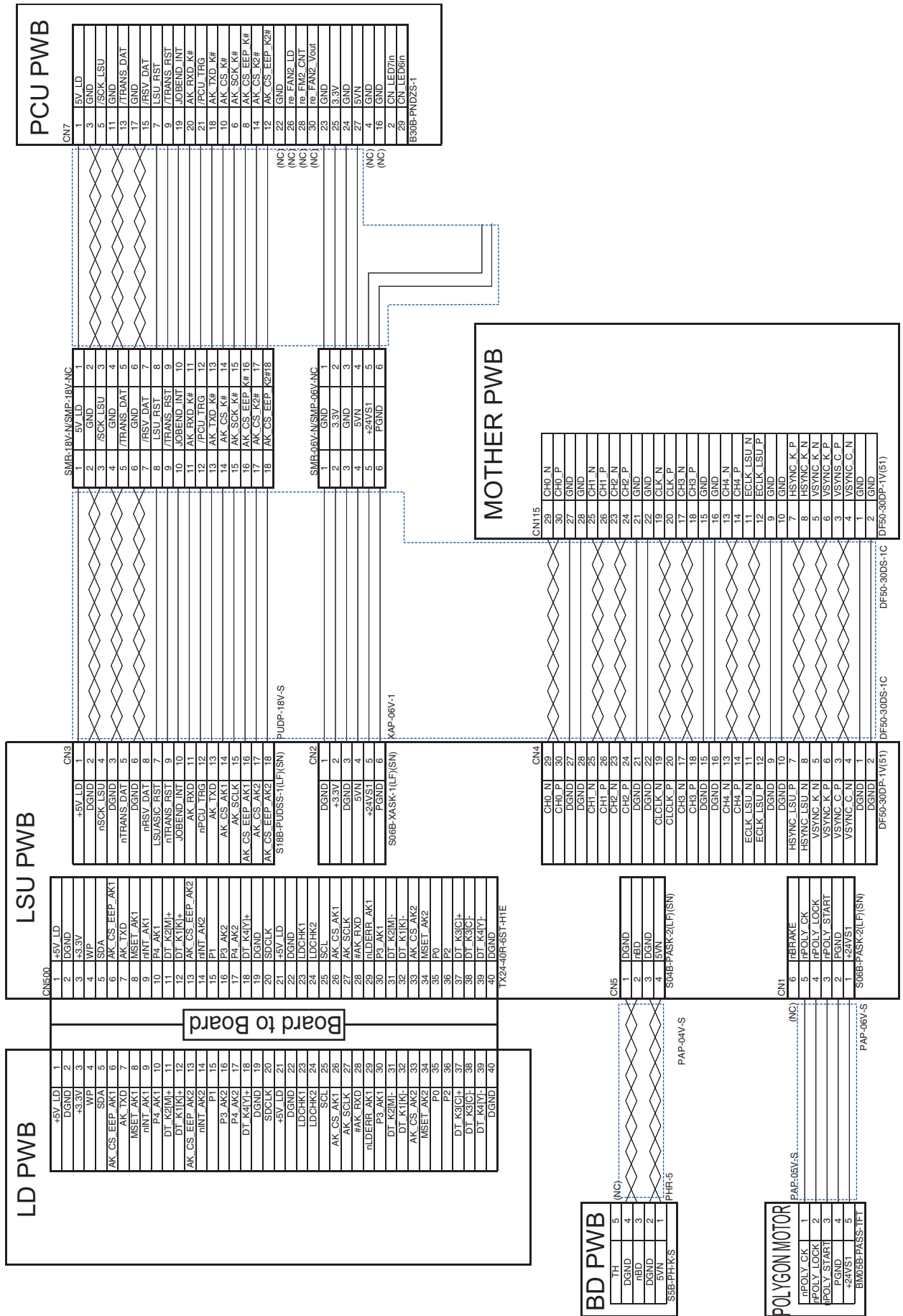
D. Motor driver/Process fan/Bottle motor/Bottle sensor



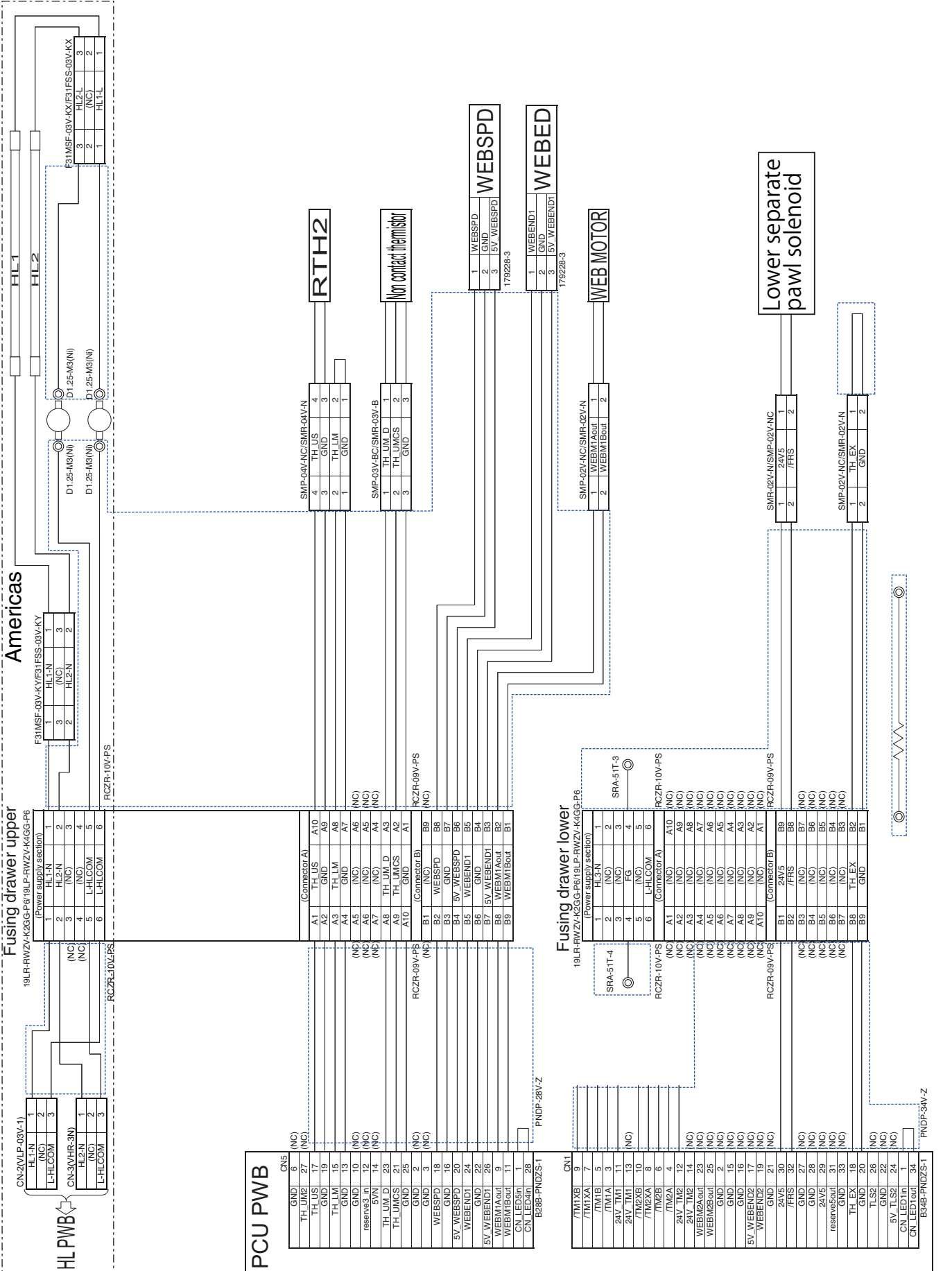
E. High voltage/DSW/DV/Intermediate hopper/Toner bottle/Manual feed/LCC transport/Toner motor



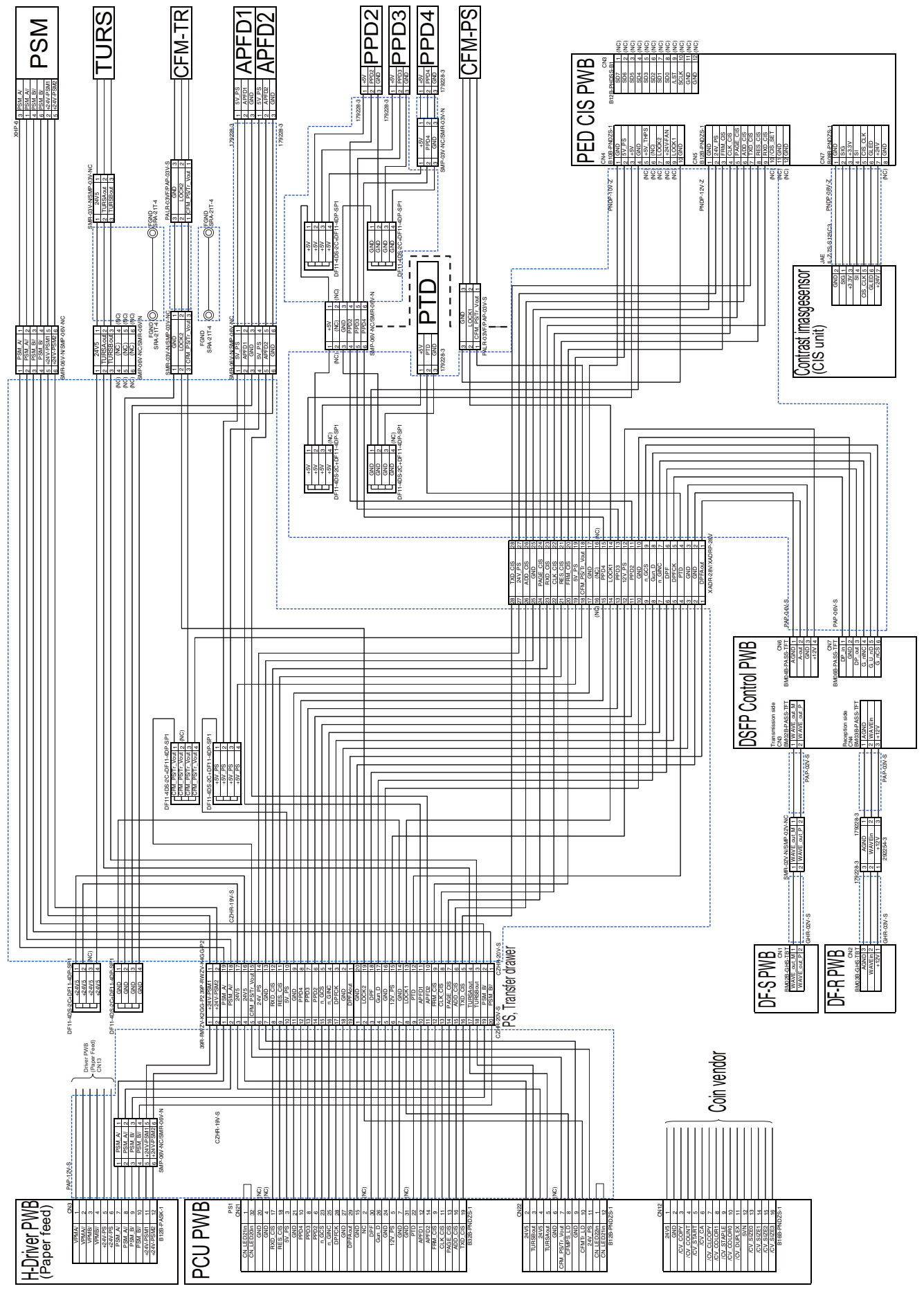
F. LSU



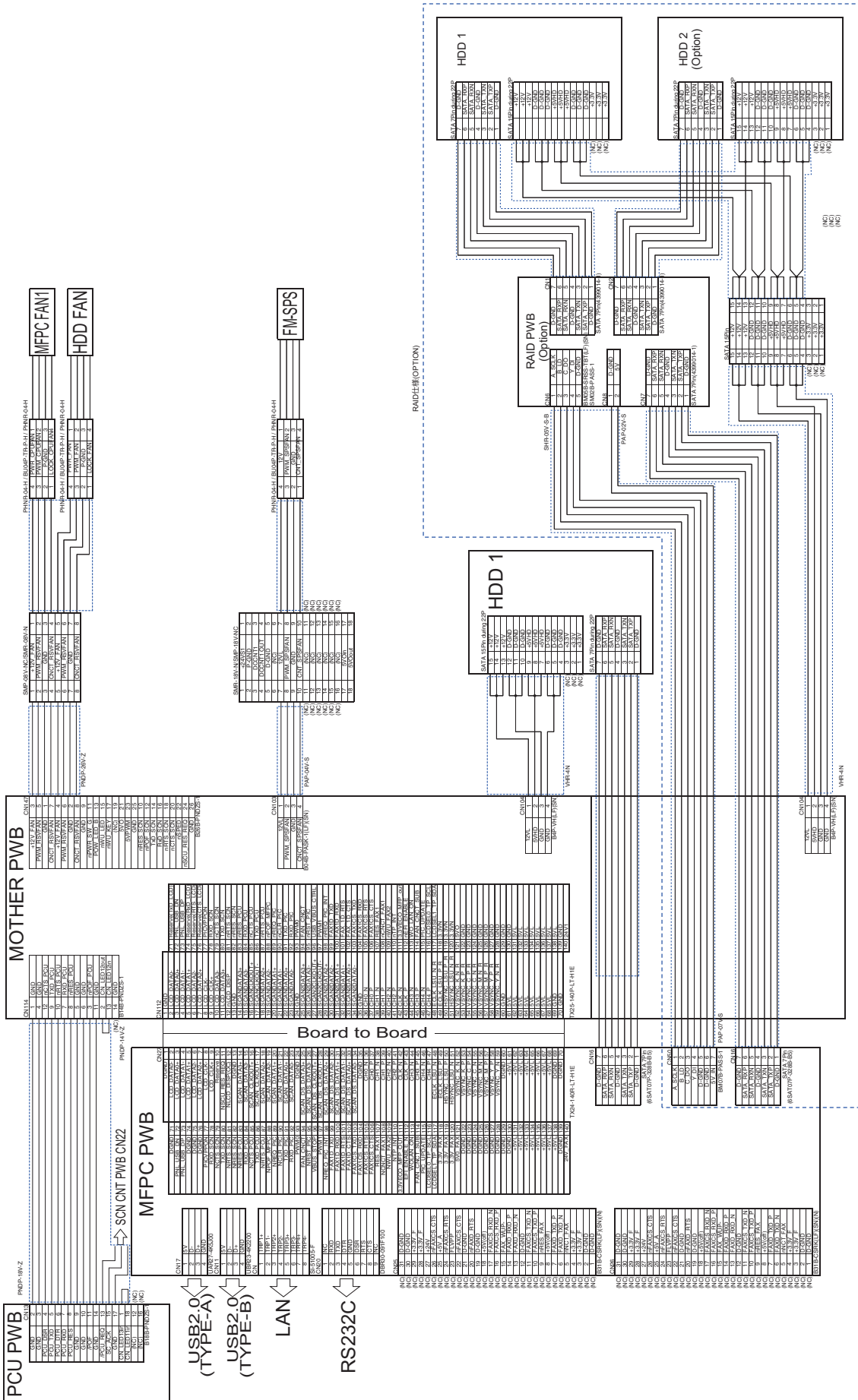
G. Fusing



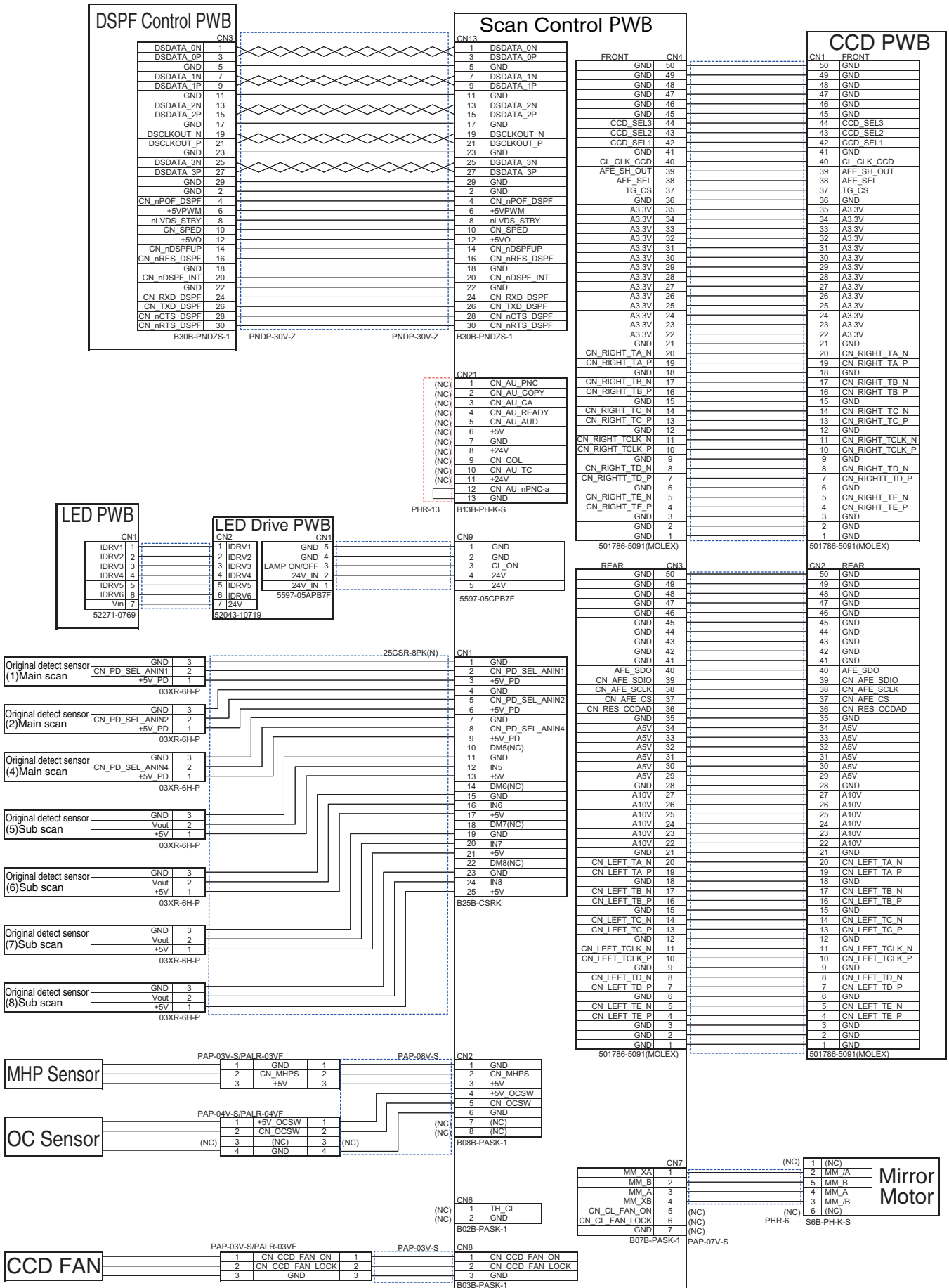
H. PS/Transfer



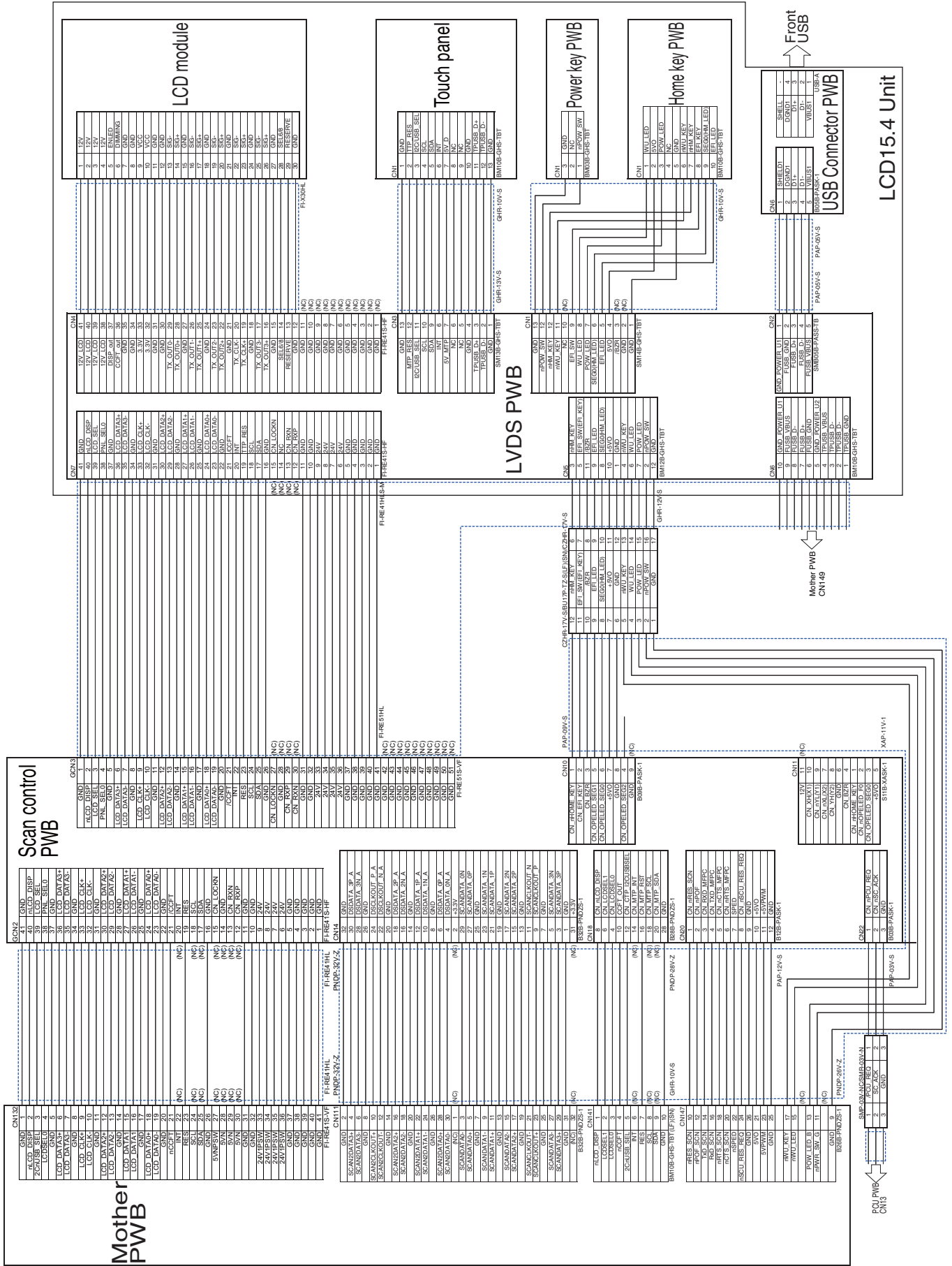
I. HDD



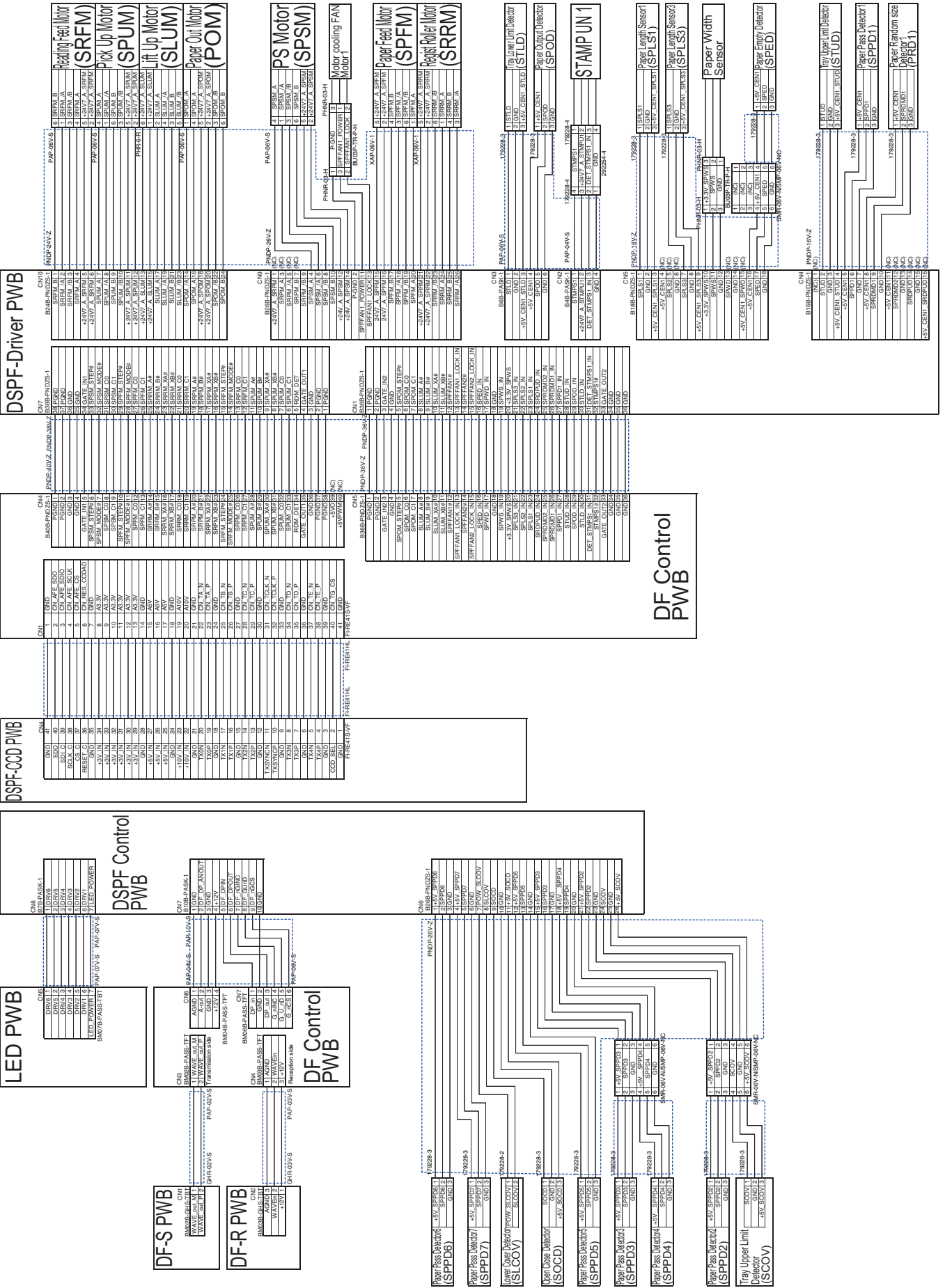
J. Scanner



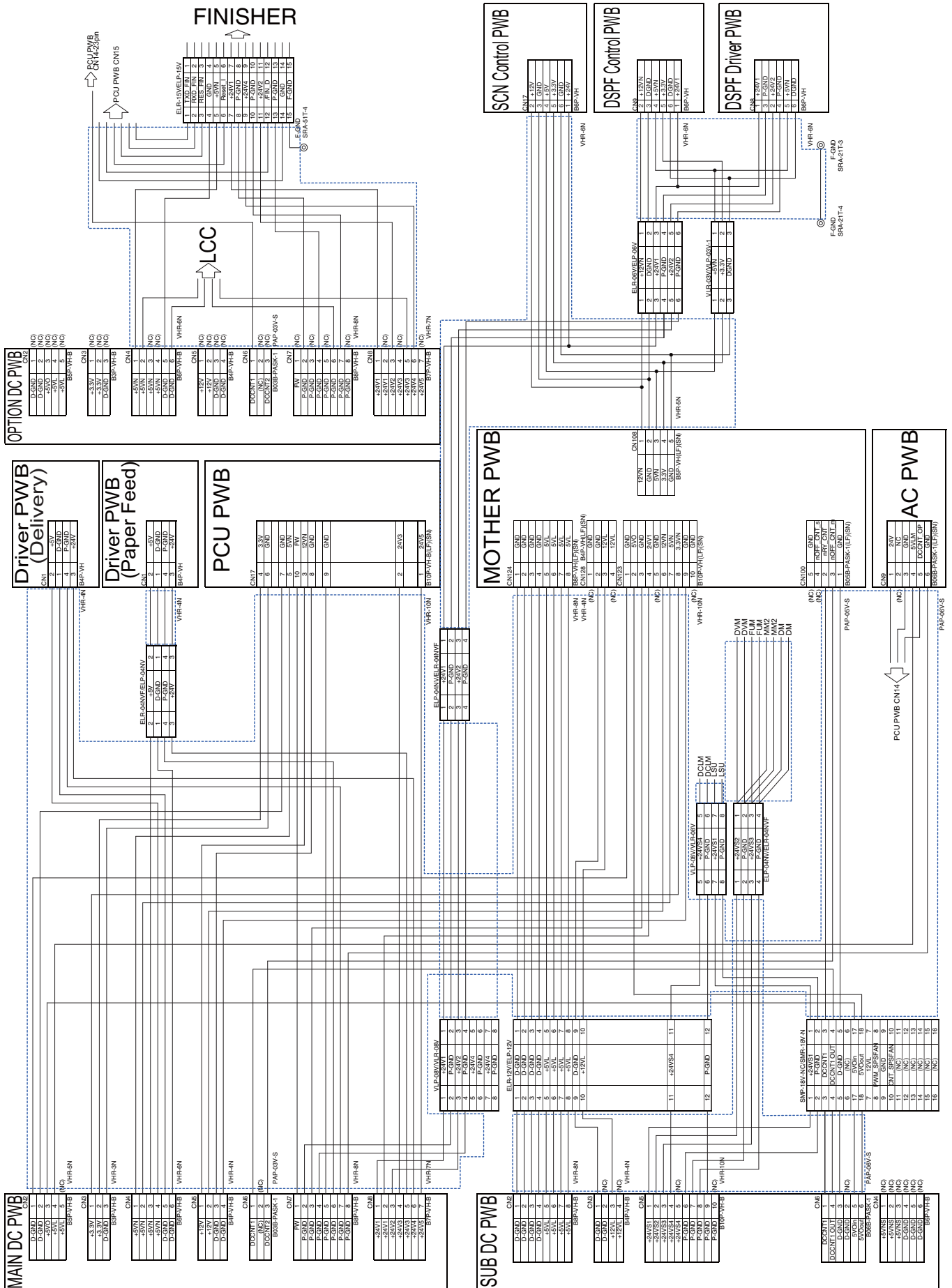
K. Operation unit



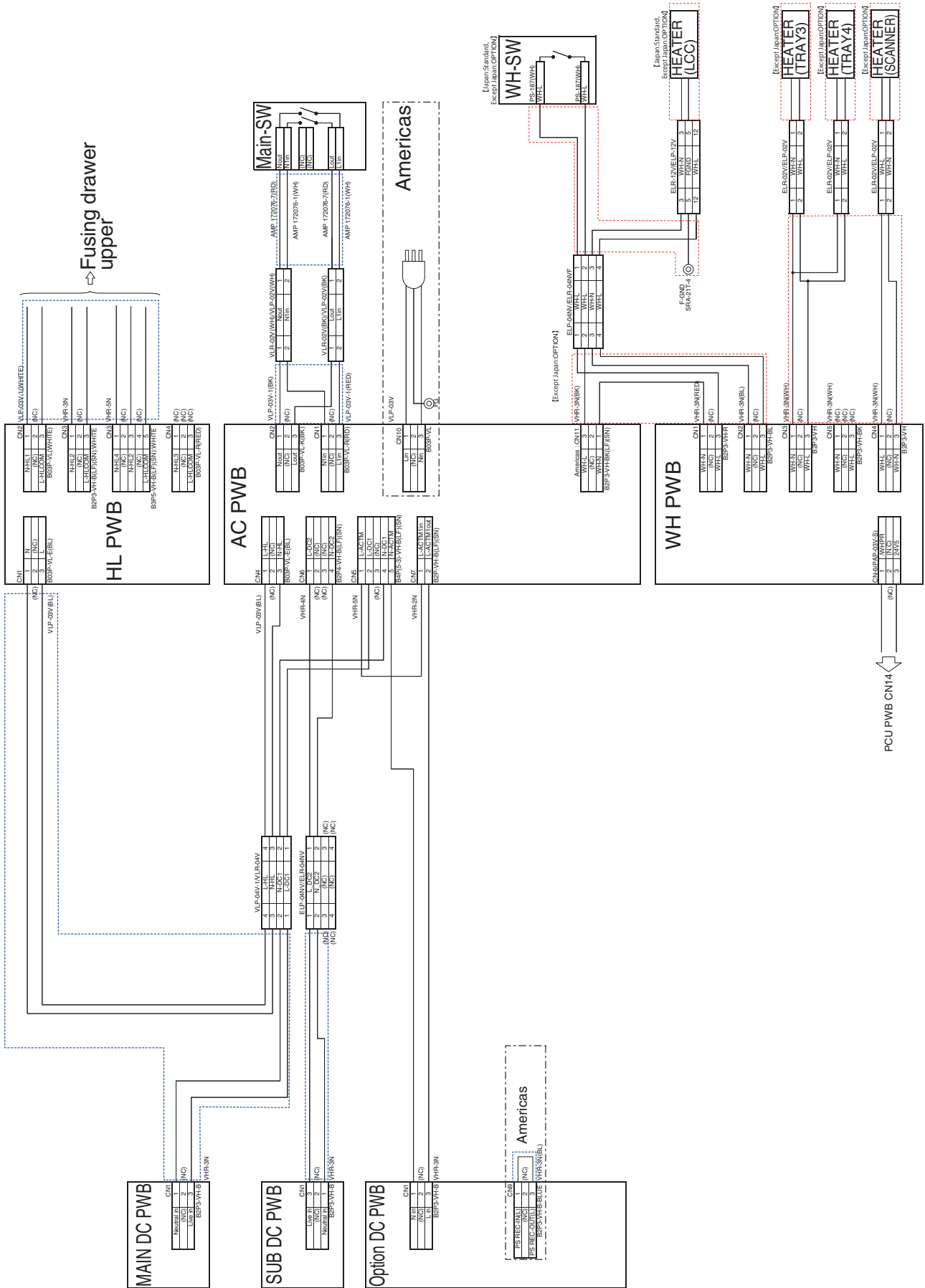
L. DSPF



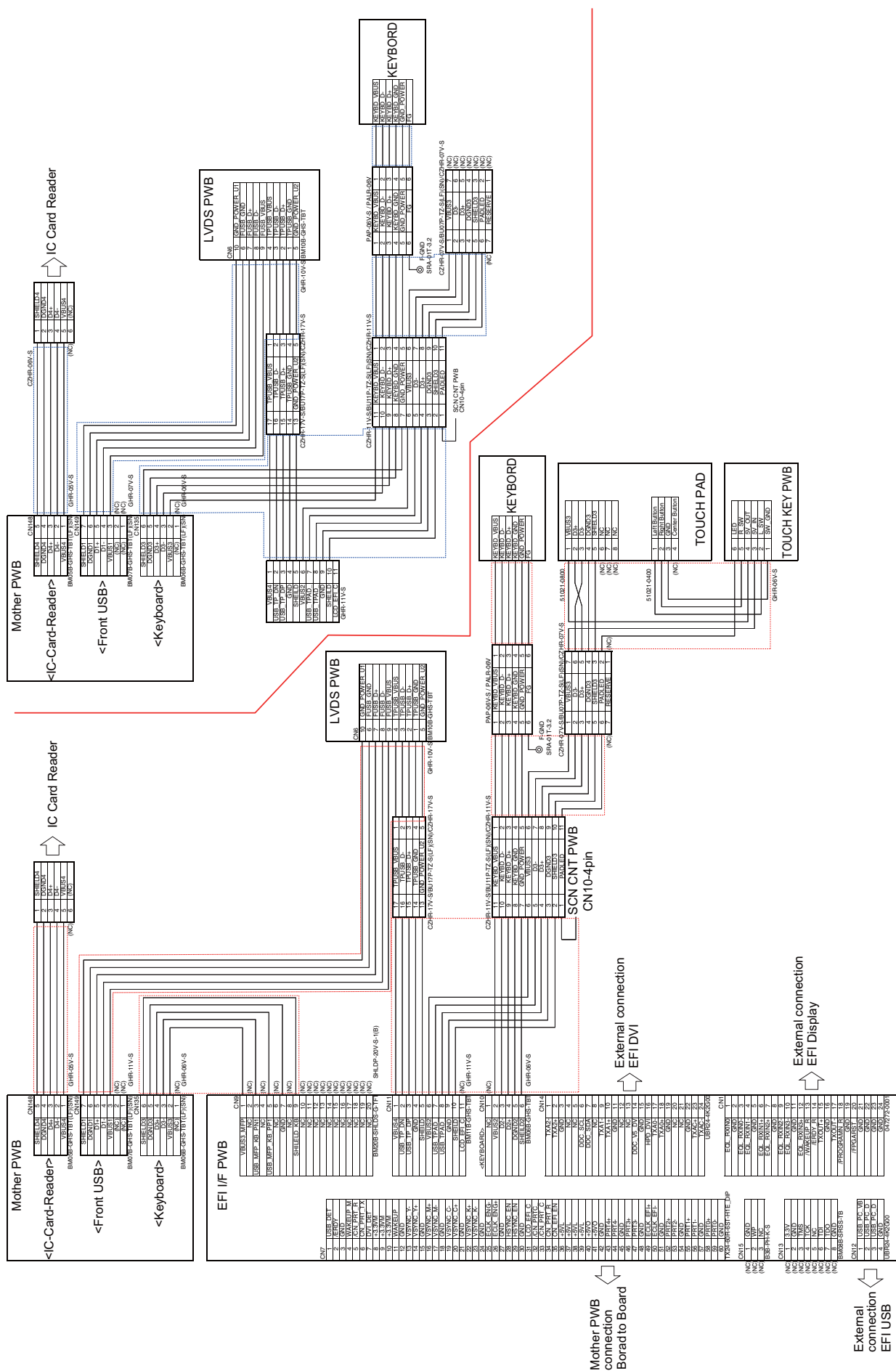
M. DC power supply



N. AC power supply



O. Keyboard



[12] OTHERS

1. Paper JAM code

A. JAM cause code list

(1) Main unit

JAM code	JAM content
MFT_L	Manual feed tray paper feed JAM (100K for the paper feed counter)*1
TRAY1_L	Tray 1 paper feed JAM (200K for the paper feed counter)*1
TRAY2_L	Tray 2 paper feed JAM (200K for the paper feed counter)*1
TRAY3_L	Tray 3 paper feed JAM (200K for the paper feed counter)*1
TRAY4_L	Tray 4 paper feed JAM (200K for the paper feed counter)*1
LCC_L	Side A4/A3LCC paper feed JAM (200K/100K for the paper feed counter)*1
INSTR1_L	Insert tray 1 paper feed JAM (60K for the paper feed counter)*1
INSTR2_L	Insert tray 2 paper feed JAM (60K for the paper feed counter)*1
MFT	Manual feed tray paper feed JAM (MPFD not-reached)
MPFD_S	MPFD remaining JAM
TRAY1	Tandem tray 1 paper feed JAM (T1PFD not-reached JAM)
T1PFD_S1	T1PFD remaining JAM
T1PPD1_N1	T1PPD1 not-reached JAM
T1PPD1_S1	T1PPD1 remaining JAM
T1PPD2_N1	T1PPD2 not-reached JAM
T1PPD2_S1	T1PPD2 remaining JAM
TRAY2	Tandem tray 2 paper feed JAM (T2PFD not-reached JAM)
T2PFD_N3	C2PFD not-reached JAM (cassette 3 paper feed paper)
T2PFD_N4	C2PFD not-reached JAM (cassette 4 paper feed paper)
T2PFD_S2	C2PFD remaining JAM (cassette 2 paper feed paper)
T2PFD_S3	C2PFD remaining JAM (cassette 3 paper feed paper)
T2PFD_S4	C2PFD remaining JAM (cassette 4 paper feed paper)
TRAY3	Cassette 3 paper feed JAM (C3PFD not-reached JAM)
C3PFD_N4	C3PFD not-reached JAM (cassette 4 paper feed paper)
C3PFD_S3	C3PFD remaining JAM (cassette 3 paper feed paper)
C3PFD_S4	C3PFD remaining JAM (cassette 4 paper feed paper)
TRAY4	Cassette 4 paper feed JAM (C4PFD not-reached JAM)
C4PFD_S4	C4PFD remaining JAM (cassette 4 paper feed paper)
LPPD1_NL	LPPD not-reached JAM (side A4/A3LCC paper feed paper)
LPPD1_NL1	LPPD not-reached JAM (large capacity paper feed tray 1 paper feed paper)
LPPD1_NL2	LPPD not-reached JAM (large capacity paper feed tray 2 paper feed paper)
LPPD1_NL4	LPPD not-reached JAM (large capacity paper feed tray 4 paper feed paper)
LPPD1_NL5	LPPD not-reached JAM (large capacity paper feed tray 5 paper feed paper)
LPPD1_NLM	LPPD not-reached JAM (large capacity paper feed tray manual paper feed paper)
LPPD1_SL	LPPD remaining JAM (side A4/A3LCC paper feed paper)
LPPD1_SL1	LPPD remaining JAM (large capacity paper feed tray 1 paper feed paper)

JAM code	JAM content
LPPD1_SL2	LPPD remaining JAM (large capacity paper feed tray 2 paper feed paper)
LPPD1_SL4	LPPD remaining JAM (large capacity paper feed tray 4 paper feed paper)
LPPD1_SL5	LPPD remaining JAM (large capacity paper feed tray 5 paper feed paper)
LPPD1_SLM	LPPD remaining JAM (large capacity paper feed tray manual paper feed paper)
VPPD_N3	VPPD not-reached JAM (tray 3 paper feed paper)
VPPD_N4	VPPD not-reached JAM (tray 4 paper feed paper)
VPPD_S3	VPPD remaining JAM (tray 3 paper feed paper)
VPPD_S4	VPPD remaining JAM (tray 4 paper feed paper)
PPD1_N2	PPD1 not-reached JAM (tandem tray 2 paper feed paper)
PPD1_N3	PPD1 not-reached JAM (cassette 3 paper feed paper)
PPD1_N4	PPD1 not-reached JAM (cassette 4 paper feed paper)
PPD1_S2	PPD1 remaining JAM (tandem tray 2 paper feed paper)
PPD1_S3	PPD1 remaining JAM (cassette 3 paper feed paper)
PPD1_S4	PPD1 remaining JAM (cassette 4 paper feed paper)
PPD2_NM	PPD2 not-reached JAM (manual paper feed tray paper)
PPD2_N1	PPD2 not-reached JAM (tandem tray 1 paper feed paper)
PPD2_N2	PPD2 not-reached JAM (tandem tray 2 paper feed paper)
PPD2_N3	PPD2 not-reached JAM (cassette 3 paper feed paper)
PPD2_N4	PPD2 not-reached JAM (cassette 4 paper feed paper)
PPD2_NL	PPD2 not-reached JAM (side A4/A3LCC paper feed paper)
PPD2_NL1	PPD2 not-reached JAM (large capacity paper feed tray 1 paper feed paper)
PPD2_NL2	PPD2 not-reached JAM (large capacity paper feed tray 2 paper feed paper)
PPD2_NL4	PPD2 not-reached JAM (large capacity paper feed tray 4 paper feed paper)
PPD2_NL5	PPD2 not-reached JAM (large capacity paper feed tray 5 paper feed paper)
PPD2_NLM	PPD2 not-reached JAM (large capacity paper feed tray manual paper feed paper)
PPD2_NA	PPD2 not-reached JAM (ADU refeed paper)
PPD2_SM	PPD2 remaining JAM (manual paper feed tray paper)
PPD2_S1	PPD2 remaining JAM (tandem tray 1 paper feed paper)
PPD2_S2	PPD2 remaining JAM (tandem tray 2 paper feed paper)
PPD2_S3	PPD2 remaining JAM (cassette 3 paper feed paper)
PPD2_S4	PPD2 remaining JAM (cassette 4 paper feed paper)
PPD2_SL	PPD2 remaining JAM (side A4/A3LCC paper feed paper)
PPD2_SL1	PPD2 remaining JAM (large capacity paper feed tray 1 paper feed paper)
PPD2_SL2	PPD2 remaining JAM (large capacity paper feed tray 2 paper feed paper)
PPD2_SL4	PPD2 remaining JAM (large capacity paper feed tray 4 paper feed paper)
PPD2_SL5	PPD2 remaining JAM (large capacity paper feed tray 5 paper feed paper)
PPD2_SLM	PPD2 remaining JAM (large capacity paper feed tray manual paper feed paper)
PPD2_SA	PPD2 remaining JAM (ADU refeed paper)
PPD2_NM_D	PPD2 not-reached JAM (manual paper feed tray paper) (Delay of paper just before the jam from PS)*2
PPD2_N1_D	PPD2 not-reached JAM (tandem tray 1 paper feed paper) (Delay of paper just before the jam from PS) *2

JAM code	JAM content
PPD2_N2_D	PPD2 not-reached JAM (tandem tray 2 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_N3_D	PPD2 not-reached JAM (cassette 3 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_N4_D	PPD2 not-reached JAM (cassette 4 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NL_D	PPD2 not-reached JAM (side A4/A3LCC paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NL11_D	PPD2 not-reached JAM (large capacity paper feed tray 1 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NL12_D	PPD2 not-reached JAM (large capacity paper feed tray 2 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NL21_D	PPD2 not-reached JAM (large capacity paper feed tray 4 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NL22_D	PPD2 not-reached JAM (large capacity paper feed tray 5 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NLM_D	PPD2 not-reached JAM (large capacity paper feed tray manual paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_NA_D	PPD2 not-reached JAM (ADU refeed paper) (Delay of paper just before the jam from PS) *2
PPD2_SM_D	PPD2 remaining JAM (manual paper feed tray paper) (Delay of paper just before the jam from PS) *2
PPD2_S1_D	PPD2 remaining JAM (tandem tray 1 paper feed paper) (Delay of paper just before the jam from PS)*2
PPD2_S2_D	PPD2 remaining JAM (tandem tray 2 paper feed paper) (Delay of paper just before the jam from PS)*2
PPD2_S3_D	PPD2 remaining JAM (cassette 3 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_S4_D	PPD2 remaining JAM (cassette 4 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SL_D	PPD2 remaining JAM (side A4/A3LCC paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SL11_D	PPD2 remaining JAM (large capacity paper feed tray 1 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SL12_D	PPD2 remaining JAM (large capacity paper feed tray 2 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SL21_D	PPD2 remaining JAM (large capacity paper feed tray 4 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SL22_D	PPD2 remaining JAM (large capacity paper feed tray 5 paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SLM_D	PPD2 remaining JAM (large capacity paper feed tray manual paper feed paper) (Delay of paper just before the jam from PS) *2
PPD2_SA_D	PPD2 remaining JAM (ADU refeed paper) (Delay of paper just before the jam from PS) *2
PPD3_NM	PPD3 not-reached JAM (manual paper feed tray paper)
PPD3_N1	PPD3 not-reached JAM (tandem tray 1 paper feed paper)
PPD3_N2	PPD3 not-reached JAM (tandem tray 2 paper feed paper)
PPD3_N3	PPD3 not-reached JAM (cassette 3 paper feed paper)
PPD3_N4	PPD3 not-reached JAM (cassette 4 paper feed paper)

JAM code	JAM content
PPD3_NL	PPD3 not-reached JAM (side A4/A3LCC paper feed paper)
PPD3_NL1	PPD3 not-reached JAM (large capacity paper feed tray 1 paper feed paper)
PPD3_NL2	PPD3 not-reached JAM (large capacity paper feed tray 2 paper feed paper)
PPD3_NL4	PPD3 not-reached JAM (large capacity paper feed tray 4 paper feed paper)
PPD3_NL5	PPD3 not-reached JAM (large capacity paper feed tray 5 paper feed paper)
PPD3_NLM	PPD3 not-reached JAM (large capacity paper feed tray manual paper feed paper)
PPD3_NA	PPD3 not-reached JAM (ADU refeed paper)
PPD3_SM	PPD3 remaining JAM (manual paper feed tray paper)
PPD3_S1	PPD3 remaining JAM (tandem tray 1 paper feed paper)
PPD3_S2	PPD3 remaining JAM (tandem tray 2 paper feed paper)
PPD3_S3	PPD3 remaining JAM (cassette 3 paper feed paper)
PPD3_S4	PPD3 remaining JAM (cassette 4 paper feed paper)
PPD3_SL	PPD3 remaining JAM (side A4/A3LCC paper feed paper)
PPD3_SL1	PPD3 remaining JAM (large capacity paper feed tray 1 paper feed paper)
PPD3_SL2	PPD3 remaining JAM (large capacity paper feed tray 2 paper feed paper)
PPD3_SL4	PPD3 remaining JAM (large capacity paper feed tray 4 paper feed paper)
PPD3_SL5	PPD3 remaining JAM (large capacity paper feed tray 5 paper feed paper)
PPD3_SLM	PPD3 remaining JAM (large capacity paper feed tray manual paper feed paper)
PPD3_SA	PPD3 remaining JAM (ADU refeed paper)
PPD4_NM	PPD4 not-reached JAM (manual paper feed tray paper)
PPD4_N1	PPD4 not-reached JAM (tandem tray 1 paper feed paper)
PPD4_N2	PPD4 not-reached JAM (tandem tray 2 paper feed paper)
PPD4_N3	PPD4 not-reached JAM (cassette 3 paper feed paper)
PPD4_N4	PPD4 not-reached JAM (cassette 4 paper feed paper)
PPD4_NL	PPD4 not-reached JAM (side A4/A3LCC paper feed paper)
PPD4_NL1	PPD4 not-reached JAM (large capacity paper feed tray 1 paper feed paper)
PPD4_NL2	PPD4 not-reached JAM (large capacity paper feed tray 2 paper feed paper)
PPD4_NL4	PPD4 not-reached JAM (large capacity paper feed tray 4 paper feed paper)
PPD4_NL5	PPD4 not-reached JAM (large capacity paper feed tray 5 paper feed paper)
PPD4_NLM	PPD4 not-reached JAM (large capacity paper feed tray manual paper feed paper)
PPD4_NA	PPD4 not-reached JAM (ADU refeed paper)
PPD4_SM	PPD4 remaining JAM (manual paper feed tray paper)
PPD4_S1	PPD4 remaining JAM (tandem tray 1 paper feed paper)
PPD4_S2	PPD4 remaining JAM (tandem tray 2 paper feed paper)
PPD4_S3	PPD4 remaining JAM (cassette 3 paper feed paper)
PPD4_S4	PPD4 remaining JAM (cassette 4 paper feed paper)
PPD4_SL	PPD4 remaining JAM (side A4/A3LCC paper feed paper)
PPD4_SL1	PPD4 remaining JAM (large capacity paper feed tray 1 paper feed paper)
PPD4_SL2	PPD4 remaining JAM (large capacity paper feed tray 2 paper feed paper)

JAM code	JAM content
PPD4_SL4	PPD4 remaining JAM (large capacity paper feed tray 4 paper feed paper)
PPD4_SL5	PPD4 remaining JAM (large capacity paper feed tray 5 paper feed paper)
PPD4_SLM	PPD4 remaining JAM (large capacity paper feed tray manual paper feed paper)
PPD4_SA	PPD4 remaining JAM (ADU refeed paper)
POIND_N	POIND not-reached JAM
POIND_SU	POIND remaining JAM ()
POIND_SD	POIND remaining JAM (Face-down paper exit)
POIND_SA	POIND remaining JAM (ADU transport)
POD_NU	POD not-reached JAM (Face-up paper exit)
POD_ND	POD not-reached JAM (Face-down paper exit)
POD_SU	POD remaining JAM (Face-up paper exit)
POD_SD	POD remaining JAM (Face-down paper exit)
DSBD1_ND	DSBD1 not-reached JAM (Face-down paper exit)
DSBD1_SD	DSBD1 remaining JAM (Face-down paper exit)
DSBD1_NA	DSBD1 not-reached JAM (ADU transport)
DSBD1_SA	DSBD1 remaining JAM (ADU transport)
DSBD2_N	DSBD2 not-reached JAM
DSBD2_S	DSBD2 remaining JAM
FDSBD_ND	FDSBD not-reached JAM (Face-down paper exit)
FDSBD_SD	FDSBD remaining JAM (Face-down paper exit)
FDSBD_NA	FDSBD not-reached JAM (ADU transport)
FDSBD_SA	FDSBD remaining JAM (ADU transport)
APPD1_ND	APPD1 not-reached JAM (Face-down paper exit)
APPD1_SD	APPD1 remaining JAM (Face-down paper exit)
APPD1_NA	APPD1 not-reached JAM (ADU transport)
APPD1_SA	APPD1 remaining JAM (ADU transport)
APPD2_ND	APPD2 not-reached JAM (Face-down paper exit)
APPD2_SD	APPD2 remaining JAM (Face-down paper exit)
APPD2_NA	APPD2 not-reached JAM (ADU transport)
APPD2_SA	APPD2 remaining JAM (ADU transport)
APPD3_N	APPD3 not-reached JAM
APPD3_S	APPD3 remaining JAM
APFD1_N	APFD1 not-reached JAM
APFD1_S	APFD1 remaining JAM
APFD2_N1	APFD2 not-reached JAM (tray 1 paper feed paper)
APFD2_N2	APFD2 not-reached JAM (tray 2 paper feed paper)
APFD2_N3	APFD2 not-reached JAM (tray 3 paper feed paper)
APFD2_N4	APFD2 not-reached JAM (tray 4 paper feed paper)
APFD2_NA	APFD2 not-reached JAM (ADU refeed paper)
APFD2_S1	APFD2 remaining JAM (tray 1 paper feed paper)
APFD2_S2	APFD2 remaining JAM (tray 2 paper feed paper)
APFD2_S3	APFD2 remaining JAM (tray 3 paper feed paper)
APFD2_S4	APFD2 remaining JAM (tray 4 paper feed paper)
APFD2_SA	APFD2 remaining JAM (ADU refeed paper)
DPF_SM	Compulsory stop by double-feed detection (Manual feed paper)
DPF_S1	Compulsory stop by double-feed detection (Tray 1 feed paper)
DPF_S2	Compulsory stop by double-feed detection (Tray 2 feed paper)
DPF_S3	Compulsory stop by double-feed detection (Tray 3 feed paper)
DPF_S4	Compulsory stop by double-feed detection (Tray 4 feed paper)
DPF_SL	Compulsory stop by double-feed detection (Side LCC feed paper)
DPF_SL1	Compulsory stop by double-feed detection (Large capacity feed Tray 1 feed paper)
DPF_SL2	Compulsory stop by double-feed detection (Large capacity feed Tray 2 feed paper)
DPF_SL4	Compulsory stop by double-feed detection (Large capacity feed Tray 4 feed paper)
DPF_SL5	Compulsory stop by double-feed detection (Large capacity feed Tray 5 feed paper)
DPF_SLM	Compulsory stop by double-feed detection (Large capacity feed Manual feed paper)
DPF_SA	Compulsory stop by double-feed detection (ADU re-feed paper)
DRUM	Drum lock detection

JAM code	JAM content
FUSER	Fusing winding detection
PRI_JAM	Image ready complete standby time-out
LCC_ERR	LCC communication abnormality detection
FIN_ERR	Finisher communication abnormality detection
MTR_ILG	Motor driver trouble JAM
SIZE_ILG	Size illegal JAM
STOP_JAM	Emergency stop request JAM (Controller request)
NO_MATCH	Parameter inconsistency
NO_JAM_CAUSE	No JAM. Also used when a JAM is canceled.

(2) MX-RB18

JAM code	JAM content
DCS100_N	Decurler unit transport pass sensor not-reached JAM
DCS100_S	Decurler unit transport pass sensor remaining JAM
DCTIME	Early reaching JAM
DCPAOF	Paper attribute data reception overflow

(3) MX-RB13

JAM code	JAM content
PIS150_N	Transport unit pass sensor not-reached JAM
PIS150_S	Transport unit pass sensor remaining JAM

(4) MX-FN21/22

JAM code	JAM content
FNS101_N	Inlet port not-reached JAM (FN pass)
FNS101_S	Inlet port remaining JAM (FN pass)
FNS102_N	Paper exit not-reached JAM
FNS102_S	Paper exit remaining JAM
FNM110	Paper exit roller lift motor JAM
FNM117	Gripper motor JAM
FNM115	Staple JAM
FNM114	Discharged paper HOLD motor JAM
FNM113	Paper rear edge fall motor JAM
FNM116	Gripper arm motor JAM
FNM112	Paper alignment roller lift motor JAM
FNM118	Paper rear edge hold motor JAM
FCM102	Punch JAM
FNPAOF	Paper attribute data reception overflow
FNTIME	Early reaching JAM
FSS201_N	Saddle inlet port pass sensor delay JAM
FSS201_S	Saddle inlet port pass sensor remaining JAM
FSS203_N	Saddle vertical pass sensor delay JAM
FSS226_N	Saddle transport paper pass sensor 1 delay JAM
FSS226_S	Saddle transport paper pass sensor 1 remaining JAM
FSS227_N	Saddle paper exit pass sensor 2 delay JAM
FSS227_S	Saddle paper exit pass sensor 2 remaining JAM
FSSTPLJ	Saddle staple JAM
FSM202	Saddle section saddle alignment motor JAM
FSM203	Saddle section lead edge stopper motor JAM
FSM204	Saddle section folding roller guide motor JAM
FSM210	Saddle section rear edge hold motor JAM
FSM211	Saddle section rear edge shift motor JAM
FSM213	Saddle section SADDLE flapping motor JAM
FSM214	Saddle section SEPARATION motor JAM
FSM206	Saddle section folding motor JAM
FSM205	Saddle section PUSH motor JAM

(5) MX-TM10

JAM code	JAM content
FTS103_N	Trimmer paper exit sensor delay JAM
FTS103_S	Trimmer paper exit sensor remaining JAM
FTS101_N	Trimmer inlet port sensor relay JAM
FTS101_S	Trimmer inlet port sensor remaining JAM
FTM103	Trimmer section inlet port separation motor JAM
FTM104	Trimmer section paper exit separation motor JAM
FTM102	Trimmer section registration motor JAM
FTM106	Trimmer section CUTTER motor JAM
FTM105	Trimmer section bundle press motor JAM

(6) MX-FD10

JAM code	JAM content
FLS30_N	Speed reduction timing sensor delay JAM
FLS30_S	Speed reduction timing sensor remaining JAM
FLS31_N	Separation timing sensor delay JAM
FLS31_S	Separation timing sensor remaining JAM
FLS32_N	Folding position adjustment sensor delay JAM
FLS32_S	Folding position adjustment sensor remaining JAM
FLS33_N	Upper stopper section paper detection sensor delay JAM
FLS33_S	Upper stopper section paper detection sensor remaining JAM
FLS22_N	Outlet port 1 sensor delay JAM
FLS22_S	Outlet port 1 sensor remaining JAM
FLS27_N	Folding tray empty sensor delay JAM
FLS27_S	Folding tray empty sensor remaining JAM
FLS20_N	Inlet port sensor delay JAM
FLS20_S	Inlet port sensor remaining JAM
FLS21_N	Outlet port 2 sensor delay JAM
FLS21_S	Outlet port 2 sensor remaining JAM
FLM8	Folding section upper stopper motor JAM
FLM9	Folding SECTION 3-fold stopper motor JAM
FLM10	Folding section lead edge hold guide motor JAM
FLM7	Folding section folding tray paper exit motor JAM
FLENT_ERR	EntryStart time out JAM
FLEJT_ERR	EjectStartAck time out JAM

(7) MX-CF11

JAM code	JAM content
INSFED1_N	No. 1 paper feed sensor not-reached JAM
INSFED1_S	No. 1 paper feed sensor remaining JAM
INSFED2_N	No. 2 paper feed sensor not-reached JAM
INSFED2_S	No. 2 paper feed sensor remaining JAM
INSPL1_N	No. 1 pull-out sensor not-reached JAM
INSPL1_S	No. 1 pull-out sensor remaining JAM
INSPL2_N	No. 2 pull-out sensor not-reached JAM
INSPL2_S	No. 2 pull-out sensor remaining JAM
INSVTR1_N	No. 1 vertical transport sensor not-reached JAM
INSVTR1_S	No. 1 vertical transport sensor remaining JAM
INSVTR2_N	No. 2 vertical transport sensor not-reached JAM
INSVTR2_S	No. 2 vertical transport sensor remaining JAM
INSOUT_N	Paper exit sensor not reached JAM
INSOUT_S	Paper exit sensor remaining JAM
INSENT_N	Inlet port sensor not-reached JAM
INSENT_S	Inlet port sensor remaining JAM
INSEXT_N	Outlet port sensor not-reached JAM
INSEXT_S	Outlet port sensor remaining JAM
INSLUP1J	No. 1 lift motor JAM
INSLUP2J	No. 2 lift motor JAM
INSPICM1J	No. 1 pickup motor JAM
INSPICM2J	No. 2 pickup motor JAM

(8) MX-MF11

JAM code	JAM content
L1MPFS_NLM	Manual paper feed sensor not-reached JAM (Multi-stage LCT manual paper feed)
L1MPFS_SLM	Manual paper feed sensor remaining JAM (Multi-stage LCT manual paper feed)
L1MTS_NLM	Manual paper transport sensor not-reached JAM (Multi-stage LCT manual paper feed)
L1MTS_SLM	Manual paper transport sensor remaining JAM (Multi-stage LCT manual paper feed)
L1DFB01_NLM	Manual feed paper entry sensor not-reached JAM (Multi-stage LCT manual paper feed)
L1DFB01_SLM	Manual feed paper entry sensor remaining JAM (Multi-stage LCT manual paper feed)
MFT2_L	Multi-stage LCT manual feed tray paper feed JAM (100K for the paper feed counter)*1

(9) MX-LC13N

JAM code	JAM content
L1DF101_NL1	Paper exit sensor 1cs not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF101_SL1	Paper exit sensor 1cs remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF201_NL2	Paper exit sensor 2cs not-reached JAM (Multi-stage LCT tray 2 paper feed)
L1DF201_SL2	Paper exit sensor 2cs remaining JAM (Multi-stage LCT tray 2 paper feed)
L1DF001_NL1	Vertical transport sensor 1 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF001_SL1	Vertical transport sensor 1 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF001_NLM	Vertical transport sensor 1 (1-series) not-reached JAM (Multi-stage LCT manual paper feed)
L1DF001_SLM	Vertical transport sensor 1 (1-series) remaining JAM (Multi-stage LCT manual paper feed)
L1DF002_NL1	Vertical transport sensor 2 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF002_SL1	Vertical transport sensor 2 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF002_NLM	Vertical transport sensor 2 (1-series) not-reached JAM (Multi-stage LCT manual paper feed)
L1DF002_SLM	Vertical transport sensor 2 (1-series) remaining JAM (Multi-stage LCT manual paper feed)
L1DF003_NL1	Vertical transport sensor 3 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF003_SL1	Vertical transport sensor 3 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF003_NLM	Vertical transport sensor 3 (1-series) not-reached JAM (Multi-stage LCT manual paper feed)
L1DF003_SLM	Vertical transport sensor 3 (1-series) remaining JAM (Multi-stage LCT manual paper feed)
L1DF004_NL1	Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF004_SL1	Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF004_NL2	Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 2 paper feed)
L1DF004_SL2	Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 2 paper feed)
L1DF004_NL3	Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF004_SL3	Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF004_NL4	Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF004_SL4	Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF004_NLM	Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT manual paper feed)
L1DF004_SLM	Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT manual paper feed)
L1DF005_NL1	LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)
L1DF005_SL1	LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)
L1DF005_NL2	LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 2 paper feed)
L1DF005_SL2	LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 2 paper feed)
L1DF005_NL3	LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF005_SL3	LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF005_NL4	LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF005_SL4	LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF005_NLM	LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT manual paper feed)
L1DF005_SLM	LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT manual paper feed)

JAM code	JAM content
L1DF006_NL3	Horizontal transport sensor 1 not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF006_SL3	Horizontal transport sensor 1 remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF006_NL4	Horizontal transport sensor 1 not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF006_SL4	Horizontal transport sensor 1 remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF007_NL3	Horizontal transport sensor 2 not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF007_SL3	Horizontal transport sensor 2 remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF007_NL4	Horizontal transport sensor 2 not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF007_SL4	Horizontal transport sensor 2 remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF008_NL3	Horizontal transport sensor 3 not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF008_SL3	Horizontal transport sensor 3 remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF008_NL4	Horizontal transport sensor 3 not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF008_SL4	Horizontal transport sensor 3 remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF009_NL3	Horizontal transport sensor 4 not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF009_SL3	Horizontal transport sensor 4 remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF009_NL4	Horizontal transport sensor 4 not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF009_SL4	Horizontal transport sensor 4 remaining JAM (Multi-stage LCT tray 4 paper feed)
L1DF010_NL3	Horizontal transport sensor 5 not-reached JAM (Multi-stage LCT tray 3 paper feed)
L1DF010_SL3	Horizontal transport sensor 5 remaining JAM (Multi-stage LCT tray 3 paper feed)
L1DF010_NL4	Horizontal transport sensor 5 not-reached JAM (Multi-stage LCT tray 4 paper feed)
L1DF010_SL4	Horizontal transport sensor 5 remaining JAM (Multi-stage LCT tray 4 paper feed)
L2DF101_NL3	Paper exit sensor 3cs not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF101_SL3	Paper exit sensor 3cs remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF201_NL4	Paper exit sensor 4cs not-reached JAM (Multi-stage LCT tray 4 paper feed)
L2DF201_SL4	Paper exit sensor 4cs remaining JAM (Multi-stage LCT tray 4 paper feed)
L2DF001_NL3	Vertical transport sensor 1 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF001_SL3	Vertical transport sensor 1 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF002_NL3	Vertical transport sensor 2 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF002_SL3	Vertical transport sensor 2 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF003_NL3	Vertical transport sensor 3 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF003_SL3	Vertical transport sensor 3 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF004_NL3	Vertical transport sensor 4 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF004_SL3	Vertical transport sensor 4 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF004_NL4	Vertical transport sensor 4 (2-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)
L2DF004_SL4	Vertical transport sensor 4 (2-series) remaining JAM (Multi-stage LCT tray 4 paper feed)
L2DF005_NL3	LCT paper exit sensor (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)
L2DF005_SL3	LCT paper exit sensor (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)
L2DF005_NL4	LCT paper exit sensor (2-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)

JAM code	JAM content
L2DF005_SL4	LCT paper exit sensor (2-series) remaining JAM (Multi-stage LCT tray 4 paper feed)

(10) MX-LCX3N/LC12

JAM code	JAM content
LCC	A4/A3LCC paper feed JAM (LPFD1 not-reached JAM)
LPFD_SL	LPFD remaining JAM (side A4/A3LCC paper feed paper)

B. SCU JAM case (Some parts are overlapped with the PCU code table.)

JAM code	JAM content
NO_JAM_CAUSE	No JAM. Also used when a JAM is canceled.
STOP_JAM	Emergency stop request JAM (Controller request)
SPPD1_N	SPPD1 not-reached JAM
SPPD1_S	SPPD1 remaining JAM
SPPD2_N	SPPD2 not-reached JAM
SPPD2_S	SPPD2 remaining JAM
SPPD3_N	SPPD3 not-reached JAM
SPPD3_S	SPPD3 remaining JAM
SPPD4_N	SPPD4 not-reached JAM
SPPD4_S	SPPD4 remaining JAM
SPPD5_N	SPPD5 not-reached JAM
SPPD5_S	SPPD5 remaining JAM
SPOD_N	SPOD not-reached JAM
SPOD_S	SPOD remaining JAM
SPSD_SCN	Exposure start notification timer end
SPPD6_N	SPPD6 not-reached JAM
SPPD6_S	SPPD6 remaining JAM
SPPD7_N	SPPD7 not-reached JAM
SPPD7_S	SPPD7 remaining JAM
P_SHORT	Short size JAM
SDFS_S	Double feed detection JAM/Accompanied feed JAM
ICU_REQ	ICU factor stop JAM

2. Service parts harness

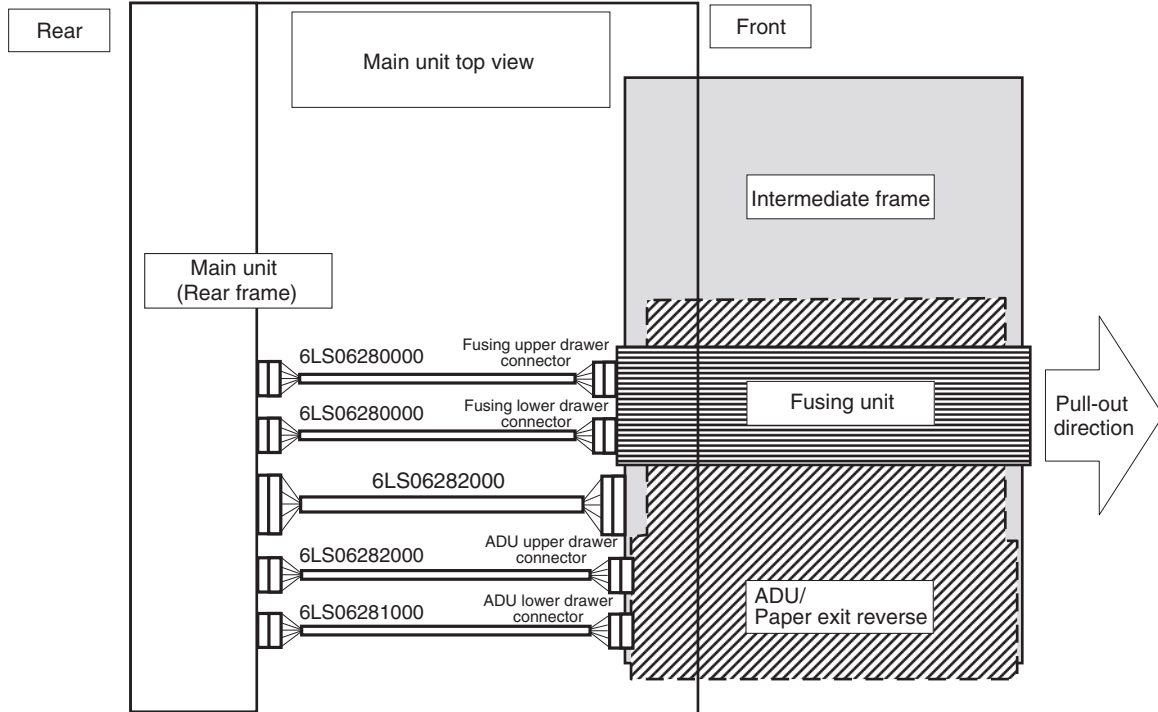
A. Extension cable for unit connection

When the following unit is pulled out. Use the following extension cable for unit connection.

(Note)

Never close the draws with the connection cable connected. as damage will occur.

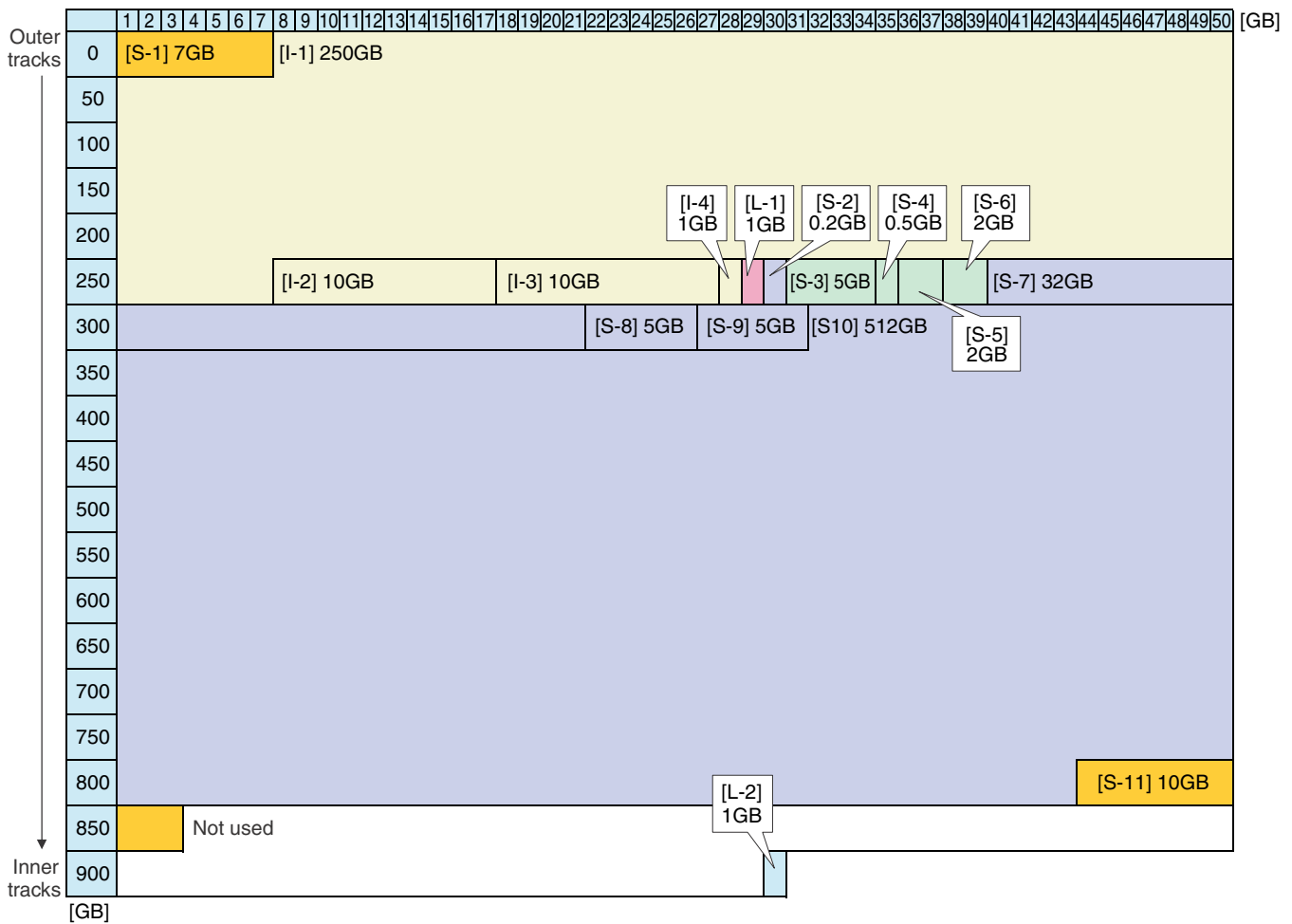
- * Parts code: 6LS06280000 (Drawer 19 pin connection harness)
- * Parts code: 6LS06281000 (Drawer 33 pin connection harness)
- * Parts code: 6LS06282000 (Drawer 39 pin connection harness)



3. HDD/SD card/CF card memory map

A. HDD partition

HDD size = 1TB (Actual size 930GB)



B. HDD data contents

No.	File system	Stored data	NOTE
S-1	Universal	e-manual Watermark	
I-1	Image data	Image data (ERDH/Document filing)	Upper limit: 5000 documents, 35000 images
I-2	Image data	Image data (Temporary storage)	Upper limit: 1000 documents, 10000 images
I-3	Image data	Image data (User watermark/stamp)	Upper limit: 1000 documents, 10000 images
I-4	Image data	FAX/Internet Fax receive images	Upper limit: 3000 documents, 5000 images
L-1	Not available	Image send system registration data (sender's information, meta data, etc.)	
S-2	Universal	System setting value data (Backup)	
S-3	Universal	Download font User macro Database system file System log FEP learning data SPN print data SPN collection data For saving difference update	
S-4	Universal	Document filing (Database) Job log (Database) Job completion list	
S-5	Universal	Address book (Database) Account management information (Database) Individual setting information for direct WEB browsing Cookie file for AEP application	

No.	File system	Stored data	NOTE
S-6	Universal	Database file (save area for collective erasing)	
S-7	Universal	PDL data (temporary area for print spool)	
S-8	Universal	Application work area (User file used in USB direct print)	
S-9	Universal	AEP application file	
S-10	Universal	User file saved in the SMB server	
S-11	Universal	User data of set values, etc. which must not be erased when installing the DSK. (Address book, account information)	
L-2	Not available	RAID system information	

C. SD card partition

SD card size = 4GB (Actual size 3.6GB)

	0	100	200	300	400	500	600	700	800	900	[MB]
0	[L-201] 500MB					[I-201] 1024MB					
1						Not used					
2											
3											

[GB]

D. SD card data contents

No.	File system	Stored data	NOTE
L-201	Not available	ICU firmware (Reus section)	
I-201	Image data	FAX/Internet Fax receive images (Backup)	

E. CF card data partition

CF card size = 8GB (Actual size 7.45GB)

	0	100	200	300	400	500	600	700	800	900	[MB]
0	[L-101] 2.4GB										
1											
2						[S-101] 512MB				[S-102] 200MB	
3	[L-102] 600MB										

[GB]

F. CF card data contents

No.	File system	Stored data	NOTE
L-101	Universal	ICU firmware (Including the OS section)	
S-101	Universal	font spd UI content file lang (message data) AEP Delegator Option FontROM	
S-102	Universal	System setting value data	
L-102	Not available	Operating system work area	

4. Necessary steps when replacing the PWB, HDD, SD Card and the CF card

A. MFP substrate replacement procedure (work flow)

CAUTION: Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (*1)

- 1) Attach the flash ROM, the memory, the EEPROM, the SD card etc. of the MFP PWB on the service parts MFP PWB and install it to the main unit.

CAUTION: Ground your body with grounding band during the work.

- 2) When U2 trouble occurs, use SIM16 to cancel it.
- 3) 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) Set the appropriate country code by Sim66-02 (clear the software switches related to FAX).

CAUTION: Make sure to execute even if the fax option is not installed on the machine.

B. 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

- HDD storage data and backup
- Replacement procedures when HDD storage data can be backed up
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD
- Reinstall and update procedures of Operation Manual data saved in HDD
- Reinstall and update procedures of watermark data.

(1) HDD storage data and backup

Some HDD storage data can be backed up, and some other data cannot. Some HDD storage data can be reinstalled, and some other storage data 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 Account management	Not available	Available	Enable	Sim56-2	Enable	Sim56-2	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
15	Mirroring information (When the mirroring kit is installed, the mirroring information is written.)	Not available	Available (After installation of the mirroring kit)	Disable	Not available	Enable	The mirroring information is erased by forcible build or RIB BUSTER.	Service
16	Individual setting information for direct WEB browsing	Not available	Available	Disable		Disable		Service
17	Cookie file for AEP application	Not available	Available	Disable		Disable		Service
18	AEP application file	Not available	Installation of application	Disable		Enable	Reinstallation of application	Service
19	User file saved in the SMB server (NAS)	Not available	Available	Disable		Disable		Service
20	FAX/Internet FAX reception data	Not available	Available	Enable	Sim66-62	Disable		—

*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	When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the HDD (BACKUP DATA) to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)	
Step 4	Replace the HDD.	
Step 5	Boot the complex machine. → Formatting is automatically performed.	Boot the complex machine.
Step 6		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 7	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 8	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 9	Use SIM49-3 to install the manual data to the HDD.	
Step 10	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 11	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 12	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.

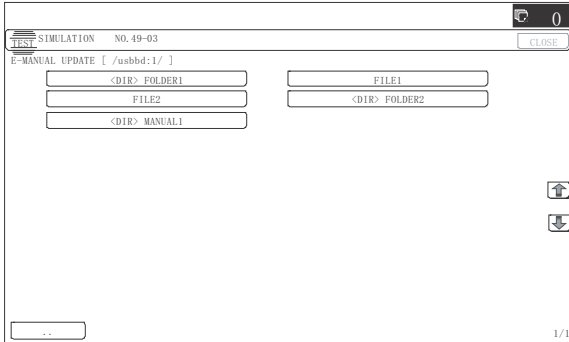
b. Work contents and procedures

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	When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the SD Card (ORIGINAL DATA) to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)	
Step 5	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 6	Use SIM49-3 to install the manual data to the HDD.	
Step 7	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.
- 2) Enter the SIM49-3 mode.



- 3) Insert the USB memory into the machine.
 - When the USB memory is not inserted, "INSERT A STORAGE-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.

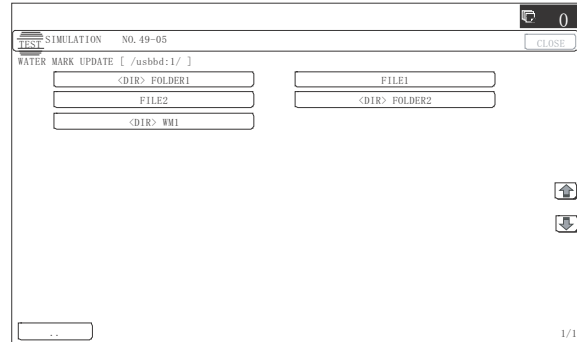
(5) Watermark data reinstall and update procedures

- 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.

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 STORAGE-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.

C. Procedures necessary for SD card replacement

(1) SD card data and backup

Some SD card storage data can be backed up, and some other cannot. Some SD card storage data can be reinstalled, and some other cannot. If the SD card operates normally before replacement and data can be backed up, back up the data before replacement of the SD card referring to the storage data list. Then reinstall the data after replacement of the SD card.

The SD card includes the following data.

SD card backup

Partition number	Stored data		Enable/Disable of data backup	Backup means	Enable/Disable of data reinstall	Data reinstall procedures
L-201	ICU firmware (Reus section)	ICU firmware (Including the OS section)	Disable		Enable	SIM49-1

- 1) Replace the SD card with a new one.
- 2) Upgrade the firmware to the latest version.
- 3) Use SIM66-10 to clear the image send memory. (Ensure consistency between the HDD data and the image-related memory.)

CAUTION: When replacing the SD card, be sure to use only the specified SD card supplied as a service part.

The firmware required for booting must be included in the SD card used in this machine. The commercially available SD cards have no such data.

NOTE: When E7-07 error occurs, there may be some trouble in the SD card.

D. Procedures necessary for CF card replacement

(1) CF card data and backup

Some CF card storage data can be backed up, and some other cannot. Some CF card storage data can be reinstalled, and some other cannot. If the CF card operates normally before replacement and data can be backed up, back up the data before replacement of the CF card referring to the storage data list. Then reinstall the data after replacement of the CF card.

The CF card includes the following data.

CF card backup

Partition number	Stored data		Enable/Disable of data backup	Backup means	Enable/Disable of data reinstall	Data reinstall procedures
L-101	ICU firmware	ICU firmware (Including the OS section)	Disable		Enable	SIM49-1
S-101	ICU firmware fixed data	font spdl UI content file lang (message data) AEP Delegator Option FontROM	Disable		Enable	SIM49-1
S-102	System data	Setting value data file (System setting/SIM setting data (Image quality adjustment)/FAX Soft SW)	Enable	SIM56-02	Enable	SIM56-02

- 1) Use SIM56-02 to backup the CF card data to the USB memory.
- 2) When the operation panel home screen has been customized, backup the CF card data by using the device cloning function.
- 3) Replace the CF card with a new one.
- 4) Upgrade the firmware to the latest version.
- 5) Use SIM56-02 to restore the data backed up in procedure 1).
- 6) Restore the data backed up in procedure 2) by using the device cloning function.

CAUTION: When replacing the CF card, be sure to use only the specified CF card supplied as a service part.

The firmware required for booting must be included in the CF card used in this machine. The commercially available CF cards have no such data.

NOTE: When E7-A6 error occurs, there may be some trouble in the CF card.

5. HDD/SD card/CF card SIM format operation

The relations between SIM62/66 and formatted (deleted) data are as follows:

*1: Physical format ("0" is written to the all area.)

*2: Logical format (Only the management area is initialized.)

*3: Nothing is done.

SIM66-10 FAX image memory clear

HDD

Partition number	Partition	
S-1	Pre-install data	*3
I-1	ERDH work + Temporary storage	*3
I-2	Document filing data (Standard + User)	*3
I-3	User watermark/stamp	*3
I-4	FAX reception data	*2
L-1	System storage data	*3
S-2	System data (Backup)	*3
S-3	Multipurpose	*3
S-4	Application #1	*3
S-5	Application #2	*3
S-6	Application #3	*3
S-7	Printer spooler	*3
S-8	Application work	*3
S-9	AEP work	*3
S-10	SMB server	*3
S-11	DSK data save	*3
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*2

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

SIM62-1 Hard disk format

HDD

Partition number	Partition	
S-1	Pre-install data	*3
I-1	ERDH work + Temporary storage	*1
I-2	Document filing data (Standard + User)	*1
I-3	User watermark/stamp	*1
I-4	FAX reception data	*1
L-1	System storage data	*1
S-2	System data (Backup)	*1
S-3	Multipurpose	*1
S-4	Application #1	*1
S-5	Application #2	*1
S-6	Application #3	*1
S-7	Printer spooler	*1
S-8	Application work	*1
S-9	AEP work	*1
S-10	SMB server	*1
S-11	DSK data save	*1
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*1

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

SIM62-8 Hard disk format (Excluding the system area)

HDD

Partition number	Partition	
S-1	Pre-install data	*3
I-1	ERDH work + Temporary storage	*1
I-2	Document filing data (Standard + User)	*1
I-3	User watermark/stamp	*1
I-4	FAX reception data	*1
L-1	System storage data	*3
S-2	System data (Backup)	*1
S-3	Multipurpose	*1
S-4	Application #1	*1
S-5	Application #2	*1
S-6	Application #3	*1
S-7	Printer spooler	*1
S-8	Application work	*1
S-9	AEP work	*1
S-10	SMB server	*1
S-11	DSK data save	*1
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*1

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

SIM62-10 Job complete list (Job log data) delete

HDD

Partition number	Partition	
S-1	Pre-install data	*3
I-1	ERDH work + Temporary storage	*3
I-2	Document filing data (Standard + User)	*3
I-3	User watermark/stamp	*3
I-4	FAX reception data	*3
L-1	System storage data	*3
S-2	System data (Backup)	*3
S-3	Multipurpose	*3
S-4	Application #1	*2
S-5	Application #2	*3
S-6	Application #3	*3
S-7	Printer spooler	*2
S-8	Application work	*3
S-9	AEP work	*3
S-10	SMB server	*3
S-11	DSK data save	*3
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*3

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

SIM62-11 Document filing data delete

HDD

Partition number	Partition	
S-1	Pre-install data	*3
I-1	ERDH work + Temporary storage	*2
I-2	Document filing data (Standard + User)	*2
I-3	User watermark/stamp	*3
I-4	FAX reception data	*3
L-1	System storage data	*3
S-2	System data (Backup)	*3
S-3	Multipurpose	*3
S-4	Application #1	*3
S-5	Application #2	*3
S-6	Application #3	*3
S-7	Printer spooler	*2
S-8	Application work	*3
S-9	AEP work	*3
S-10	SMB server	*3
S-11	DSK data save	*3
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*3

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

SIM62-13 Hard disk format (Manual area only)

HDD

Partition number	Partition	
S-1	Pre-install data	*2
I-1	ERDH work + Temporary storage	*3
I-2	Document filing data (Standard + User)	*3
I-3	User watermark/stamp	*3
I-4	FAX reception data	*3
L-1	System storage data	*3
S-2	System data (Backup)	*3
S-3	Multipurpose	*3
S-4	Application #1	*3
S-5	Application #2	*3
S-6	Application #3	*3
S-7	Printer spooler	*3
S-8	Application work	*3
S-9	AEP work	*3
S-10	SMB server	*3
S-11	DSK data save	*3
L-2	RAID management	*3

SD Card

Partition number	Partition	
L-201	ICU firmware	*3
I-201	FAX reception data	*3

CF Card

Partition number	Partition	
L-101	ICU firmware	*3
S-101	ICU firmware fixed data (Pre-install)	*3
S-102	System data	*3
L-102	Operating system work area	*3

6. Necessary works and notes for replacement of the mirroring kit HDD

NOTE:

Terminology and contents

Mirroring information: When the mirroring kit is installed and the power is turned ON, the mirroring information is written into the L-2 partition of the both HDD's.

Rebuilding: Copying operation of the whole contents of one HDD to the other HDD.

Forcible rebuilding: Erasing the mirroring information in the HDD and rewriting new information.

When the mirroring kit is installed, the two HDD's are named HDD1 and HDD2.

HDD1: Standard HDD for the machine

HDD2: Mirroring kit HDD




The status of each HDD can be checked with SIM62-20.

Outline / Description Items

Kinds of errors and remedies	A. Causes and remedies when the icon of HDD trouble is displayed
	B. Causes and remedies when the E7-03 error display is popped up
Specified remedies for each error (Details of remedies and procedures)	C. Replacement procedures of the HDD of the mirroring kit or that of the machine
	D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine
	E. Note for reuse of HDD

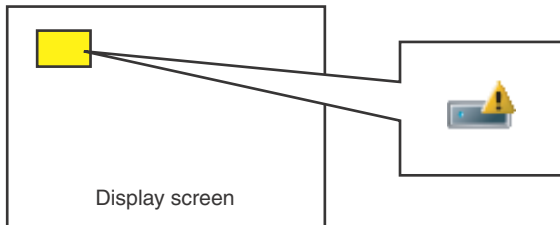
Mirroring kit status and status icons

When the mirroring kit is installed, one of the following icons is displayed on the operation panel.

Icon	Mirroring kit status
	Mirroring kit installed
	Mirroring kit/HDD trouble
	Mirroring kit/Rebuilding

A. Causes and remedies when the icon of HDD trouble is displayed

(When the icon shown below is displayed)



- 1) When one HDD goes into trouble, the UI icon which indicates HDD trouble of the mirroring kit is displayed.
- 2) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy.

SIM62-20 status and causes of troubles (When the icon of HDD trouble is displayed)

		HDD2				
		OK	NONE	REBUILDING	ERROR	TROUBLE
HDD1	OK	-	A	-	A	A
	NONE	A	-	-	-	-
	REBUILDING	-	-	-	-	-
	ERROR	A	-	-	-	-
	TROUBLE	A	-	-	-	-

- 3) Refer to the table below and check to confirm the remedy.

Table: Causes of troubles and remedies when the icon of HDD trouble is displayed

Case	State	Cause	Remedy
A	One HDD status is OK. The other HDD status is other than OK.	<ul style="list-style-type: none"> The HDD which indicates the status other than OK is in trouble. Connection failure of the connectors and harness of the mirroring kit 	<ul style="list-style-type: none"> Replace the HDD. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine") Replace the mirroring kit. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine")

- 4) Refer to the details of the remedy and perform the necessary procedures.

B. Causes and remedies when the E7-03 error display is popped up

- 1) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy. Refer to the table of "Causes of troubles and remedies when the E7-03 error occurs" and perform the necessary procedures. Backup the data from the HDD without trouble first.

SIM62-20 status and causes of troubles

		HDD2				
		OK	NONE	REBUILDING	ERROR	TROUBLE
HDD1	OK	B	B or C	B	B	B
	NONE	B or C	C	C	C	C
	REBUILDING	B	C	F	F	F
	ERROR	B	C	F	F	F
	TROUBLE	B	C	F	F	D or E

- 2) Refer to the table below, and check to confirm the remedy.

Causes of troubles and remedies when the E7-03 error occurs

Case	State	Cause	Remedy
B	When at least one HDD is OK.	<ul style="list-style-type: none"> Communication trouble through the SATA harness of HDD. Trouble of HDD which indicates the status other than OK. Broken data in HDD The mirroring kit side HDD is normal. The machine side HDD is in trouble or rebuild operation is not completed. RAID PWB trouble 	<ul style="list-style-type: none"> Replace the cable. Remove and connect. Replace the HDD which indicates other than OK. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
C	When at least one HDD is NONE.	<ul style="list-style-type: none"> Communication trouble through the SATA harness of HDD. Connection failure between the RAID PWB and the HDD. HDD trouble HDD SATA harness and connector trouble Both the mirroring kit side HDD and the machine side HDD are in trouble. RAID PWB trouble 	<ul style="list-style-type: none"> Replace the cable. Remove and connect. Check connection between the mirroring kit and the HDD. Replace the HDD which indicates NONE. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
D	When in TROUBLE-TROUBLE.	<ul style="list-style-type: none"> RAID PWB trouble (Both or one) HDD trouble Raid PWB is in trouble. The mirroring side HDD is normal. The machine side HDD is other than OK. 	<ul style="list-style-type: none"> Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
E	When in TROUBLE-TROUBLE. (Occurring when replacing the HDD)	<ul style="list-style-type: none"> The mirroring kit is composed of HDD's which have different mirroring information each other. (A HDD which has been used in the mirroring kit of another machine is used.) 	<ul style="list-style-type: none"> Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")

- 3) Refer to the details of the remedy and perform the necessary procedures.

Causes and remedies when cases B, C, D, and E are not applicable

Case	State	Cause	Remedy
F	Other than cases B, C, D, and E	<ul style="list-style-type: none"> RAID PWB trouble Both HDD's trouble 	<ul style="list-style-type: none"> Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")

C. Replacement procedures of the HDD of the mirroring kit or that of the machine (Details of the remedies and the procedures)

- When replacing the mirroring kit, follow the replacement procedures of the HDD of the mirroring kit only.

(1) Work contents and procedures

Data backup

NOTE: When E7-03 error code is popped up, procedures of Step 1 and Step 2 are not required.

Step 1	Back up the data in the HDD before replacement. (By servicing) Use SIM56-2, the device cloning, or the storage backup function to save the data. (Back up the data to the PC or a USB memory.) (Data which can be backed up: Address book data, image send registration data, user authentication data)
Step 2	Back up the data in the HDD before replacement. (By the user or by servicing) Back up the data to the PC by Web page. (Data which can be backed up: Document filing data, JOB log data)
Step 3	When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the HDD (BACKUP DATA) to a USB memory. (The backed up image data are in the PDF file type and cannot be returned to the machine.) Give the backed up data to the user.

HDD replacement procedures

Procedure	Procedure
Condition	When a new HDD (blank)(*1) (service part) is used.
Step 4	If HDD1 is in trouble, replace the HDD of the machine. If HDD2 is in trouble, replace the HDD of the mirroring kit. (*2)
Step 5	Boot the machine. → Rebuilding is automatically executed. → Check to confirm that E7-03 error (HDD trouble) does not occur, and that the UI icon which indicates rebuilding of the mirroring kit is displayed. Use SIM 62-20 to confirm that the status of the replaced HDD is displayed as REBUILDING.
Step 6	It takes about three hour to complete rebuilding.
Step 7	Check to confirm that the UI icon which indicated installation of the mirroring unit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK.

D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine (Details of the remedies and the procedures)

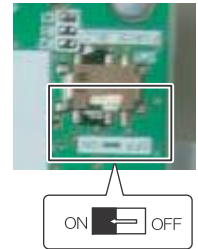
(1) Work contents and procedures

Data backup

Step 1	When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the SD Card (ORIGINAL DATA) to a USB memory. (The backed up image data are in the PDF file type and cannot be returned to the machine.) Give the backed up data to the use.
--------	---

HDD replacement procedures

Procedure	Procedure
Condition	When two new HDD's (blank)(*1) (service part) are used for the both.
Step 2	Replace the both HDD's (as well as the RAID PWB if necessary). (*2)
Step 3	Set DIPSW2 of the mirroring kit to ON, and turn on the main power of the machine. → Forcible rebuilding is executed. → Check to confirm that the E7-03 error (HDD trouble) does not occur and that the UI icon which indicates installation of the mirroring kit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK.
Step 4	Turn OFF the main power of the machine, and set DIPSW2 to OFF. Then, turn ON the main power of the machine again.
Step 5	Use SIM49-3 to install the e-Operation 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. → Use SIM16 to cancel the U2-60 error.



E. Note for reuse of HDD

When replacing the HDD for the mirroring kit, be sure to use a new HDD.

If a HDD which has been used in a mirroring kit is used for replacing the HDD, the operations and the data cannot be assured.

If a HDD which has been used in a mirroring kit is installed, the original data may be erased.

If, however, the mirroring information of the HDD is erased by RIB Buster as described later, it can be used. (*1) In addition, if the both HDD's are replaced with HDD's which have been used, SIM62-1 must be executed to format HDD's in addition to erasing the mirroring information.

When removing the HDD after installing the mirroring kit, be sure to remove the both HDD's together.

If only one HDD is removed then it is reinstalled, the data of both HDD's may not be identical, causing an error.

When removing the HDD and performing some work, first disconnect the HDD SATA connector of the MFP PWB and perform the work.

With the above procedure, the both HDD's are brought into the status disconnected from the machine.

Put mark on the mirroring kit HDD and the machine HDD to indicate that they have been used. (*2)

*1: Refer to "5-C. Deleting the HDD mirroring information."

*2: Refer to "5-B. How to check the usage history of a HDD in a mirroring kit."

7. Note for installing and repairing the mirroring kit

When installing or repairing the mirroring kit, fully understand the following descriptions to avoid erroneous handling and procedures. When a HDD which has once been used for the mirroring kit is reused without proper preparation, it may cause an error and destruction of user data, or other troubles.

The following three cases must be strictly avoided.

- When newly installing a mirroring kit, do not use one which has been once used.
- When replacing the HDD because of a HDD trouble, do not replace it with a HDD which has been once used in a mirroring kit.
- When replacing the HDD because of a HDD trouble in the machine, do not replace it with a HDD which has been once used in a mirroring kit.

NOTE: When a HDD is once used in a mirroring kit, the mirroring information is written into the HDD. This causes a trouble by erroneous using.

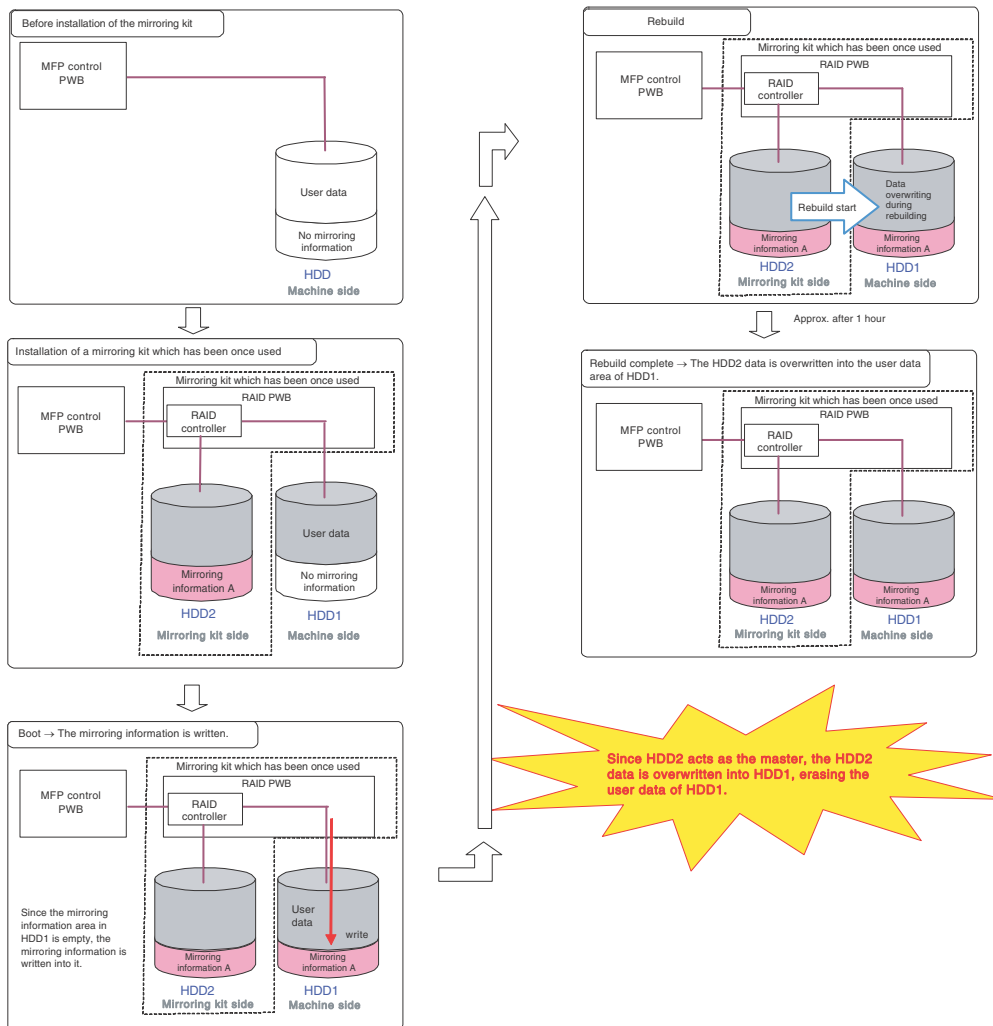
The details of inhibited items, results of erroneous procedures, and precautions for avoiding those errors are described below.

A. Details of inhibited items

(1) When newly installing a mirroring kit, do not use one which has been once used.

Trouble contents

If HDD2 which has been once used is used for new installation of a mirroring kit, the data in HDD2 will be written into HDD1. This causes erasure of the original user data, freeze of the machine, or other troubles. The "HDD which has been once used" includes a HDD which was just installed and conducted only.



Countermeasures

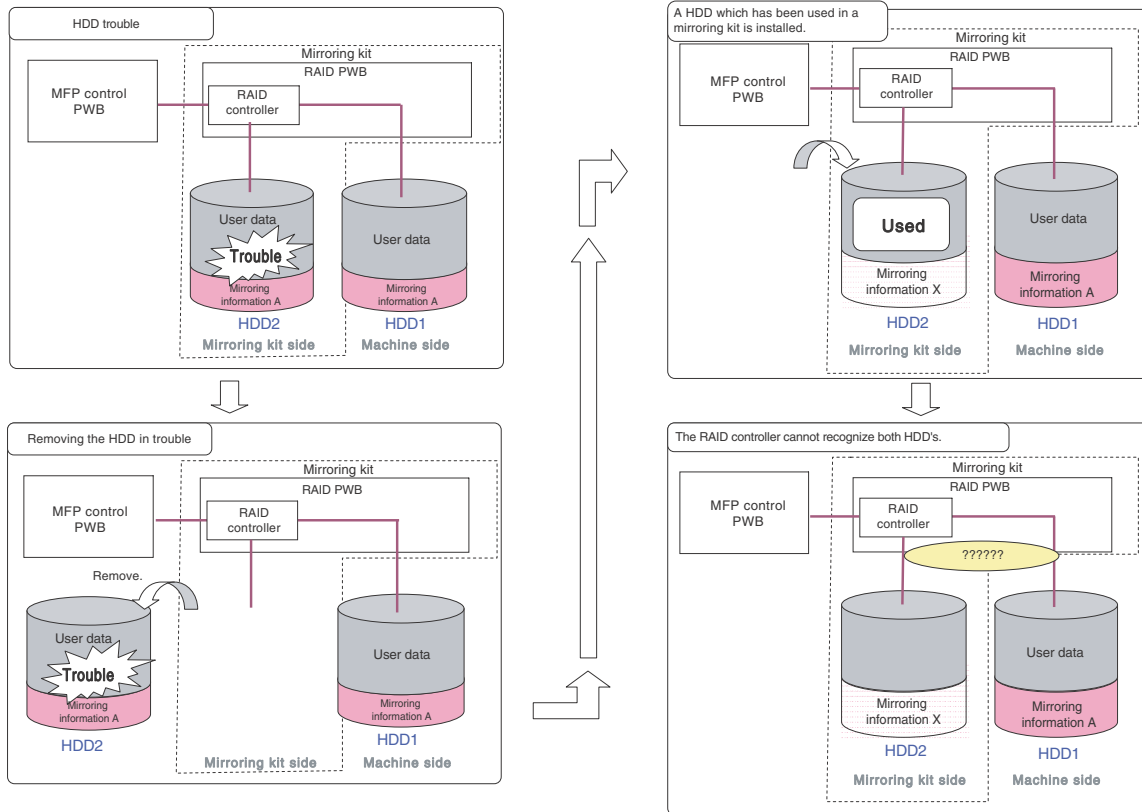
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

(2) When replacing the HDD in case of a trouble in the HDD, do not use a HDD which has been used in another mirroring kit of another machine.

Trouble contents

If a HDD which has been used in another mirroring kit, the RAID controller cannot recognize the HDD, causing E7-03 error, and the necessary data may be destructed in some cases.



Since the mirroring information of both HDD's does not synchronize each other, the RAID controller cannot recognize both HDD's.
 →E7-03 error occurs.
 The user data may be erased and the machine may freeze in some cases.

Countermeasures

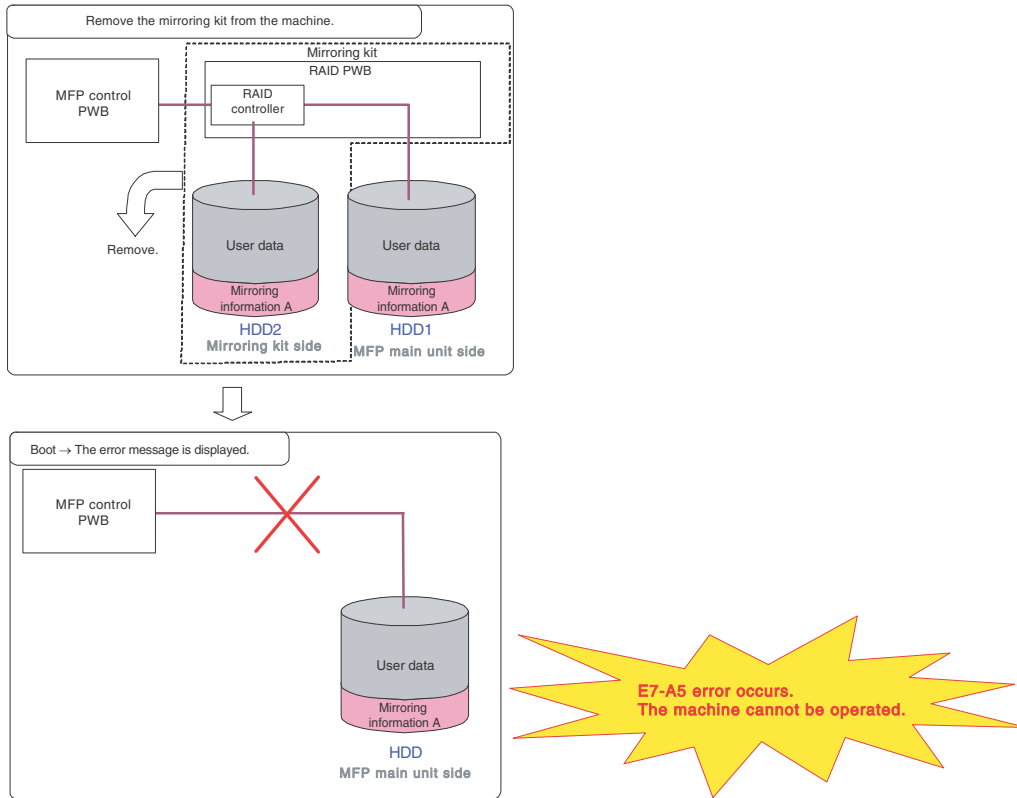
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

(3) When the HDD is replaced because of a HDD trouble, do not use a HDD which has been used in a mirroring kit of another machine.

Trouble contents

E7-A5 error occurs. If a HDD which has been used in a mirroring kit is used as the machine HDD, the machine does not operate normally. In this case, the trouble of erasing the original data is avoided.



Countermeasures

Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

When a HDD is used without any other HDD, the mirroring information must be erased before executing SIM62-1 to format.

This procedure allows the HDD being treated as a new HDD.

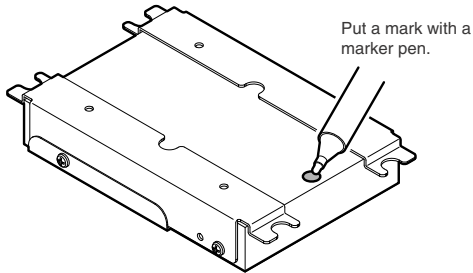
When removing the HDD after installation of the mirroring kit, remove both HDD's simultaneously. If only one HDD is removed and then installed again, the data of both HDD's may not match, causing a trouble.

[Simultaneous removal of both HDD's] Disconnect the HDD SATA connector of the MFP PWB, and both HDD's are brought into disconnected state from the machine.

B. How to check the usage history of a HDD in a mirroring kit

As stated before, when installing a mirroring kit or replacing a HDD, be sure to check the usage history of a HDD or a mirroring kit which is to be used.

For convenience of checking the usage history, put a mark on the mirroring kit HDD and the machine HDD when installing them to indicate that they have been used.



C. Deleting the HDD mirroring information

When stopping the use the mirroring kit, the mirroring information in the machine HDD must be deleted.

(1) Necessary tools

- RIB Buster software

The software is composed of the following two files. (They can be downloaded from Tech DS Web site.)

- RIB Buster{YYYYMMDD}.exe
- Setup.ini



- USB cable
- SATA connection cable
- SATA connector
- AC adaptor
- Windows PC

(Support OS: Windows XP, Windows VISTA, Windows 7 (32/64bit))

(2) Procedures

- 1) Connect the USB cable, the SATA connection cable, the SATA connector, and the AC adaptor to the HDD from which the mirroring information is deleted.



CAUTION: When disconnecting any cable, be sure to disconnect the USB cable from the PC in advance.

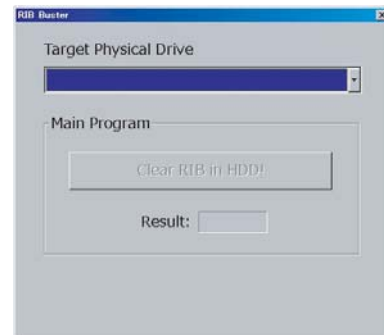
If this precaution is ignored, the HDD may be damaged.

- 2) Copy the RIB Buster software files (RIB Buster {YYYYMMDD}.exe and Setup.ini) to a same directory of the PC.
 - RIB Buster{YYYYMMDD}.exe
 - Setup.ini
- 3) Connect the HDD assembled in procedure 1) to the PC by use of the USB cable.



- 4) Double-click RIB Buster {YYYYMMDD}.exe to boot the RIB Buster software.

If the user account control is ON in VISTA or Windows 7 setting, the user account control menu is displayed. Click [Allow] on this menu.



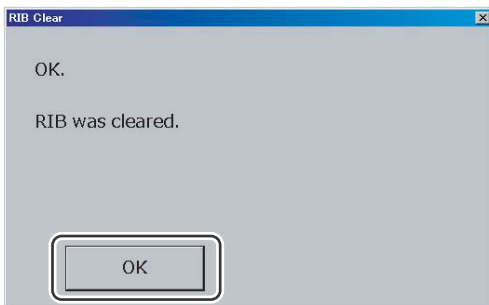
- 5) Select the target HDD to delete the mirroring information.



- 6) Click [Clear RIB in HDD] button.



- 7) Click [OK] button. (The mirroring information is deleted.)



- 8) After completion of deleting the mirroring information, "OK" is displayed.

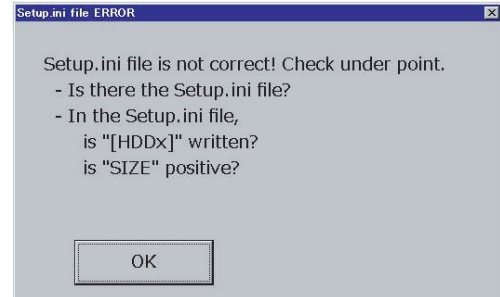


(3) Kinds of errors, causes and remedies

Phenomenon 1

An error indicating an abnormality in the Setup.ini file when booting the RIB Buster software.

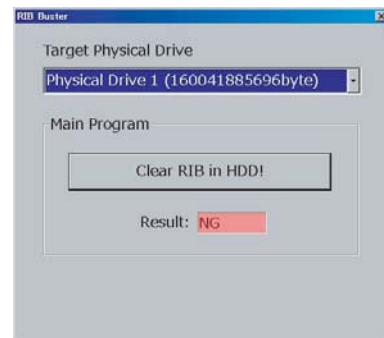
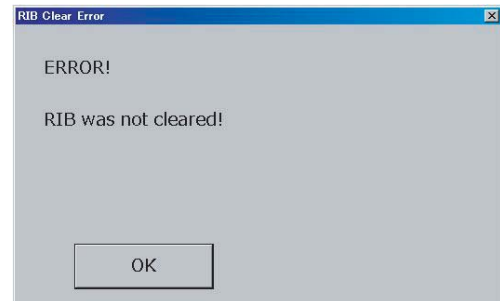
Cause	Setup.ini file does not exist, or there is any abnormality in the file.
Countermeasures	Check to confirm that there is Setup.ini file in the proper directory and that there is no abnormality in the descriptions.



Phenomenon 2

The mirroring information has not been deleted normally.

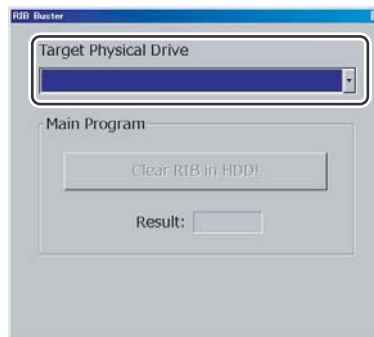
Cause	Temporary communication trouble, cable or other device trouble, HDD trouble
Countermeasures	1. Click [Clear RIB in HDD] button again. 2. If the trouble is not solved by procedure 1. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. .



Phenomenon 3

Though the target HDD is connected, it is not displayed.

Cause	The target HDD is not registered in the Setup.ini file. Cable or other device trouble, HDD trouble
Countermeasures	1. Reboot RIB Buster, and click the frame section. 2. If the trouble is not solved by procedure 1. , replace the Setup. ini file and the RIB Buster {YYYYMMDD} with the latest version, and execute procedure 1. . 3. If the trouble is not solved by procedure 2. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. .



8. Tool list

■Service tool for Main unit

No.	Parts code	Parts name	Purpose of use
1	6LS06268000	Grease	Apply grease to the bearing section when replacing upper heat roller and lower heat roller. upper heat roller ball bearing upper heat roller insulation upper heat roller drive gear
2	6LS06283000	Grease	Drive section
3	6LS06270000	Grease	Drive section
4	6LS06271000	Powder	Drum
5	6LS06272000	Powder	Side seal replacement
6	6LS06273000	Patel	Side seal replacement
7	6LS06274000	Powder	Transfer belt
8	6LS06275000	Gray test chart	gray balance and density check
9	6LS06276000	Color test chart	gray balance and density check
10	6LS06277000	SIT chart	CCD calibration
11	6LS06278000	white reference chart	DSPF shading adjustment
12	6LS06279000	Skid slope	Installation
13	6LS06280000	Extension cable	Connection check
14	6LS06281000	Extension cable	Connection check
15	6LS06282000	Extension cable	Connection check

■Service tool for Option

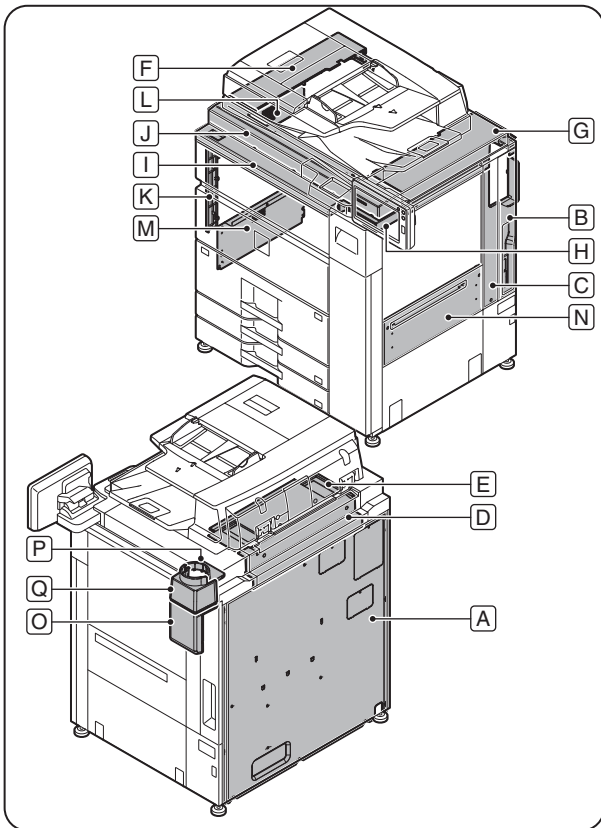
No.	Parts code	Parts name	Purpose of use
1	6LS06283000	Grease	Apply grease to paper feed drive gear
			Apply grease to drive shaft
			Apply grease to gear
2	6LS06284000	Air pressure meter	Air pressure adjustment
3	6LS06285000	Tube	Air pressure adjustment
4	6LS06286000	Grease	Apply grease to drive shaft

[A] EXTERNAL OUTFIT

1. Disassembly and assembly

A. Cabinet

Parts		Page
A	Rear cabinet	A-1/(1)
B	Right cabinet rear upper	A-1/(2)
C	Right cabinet rear center	A-1/(2)
D	Upper cabinet rear cover	A-1/(3)
E	Upper cabinet rear	A-1/(3)
F	Upper cabinet left	A-2/(4)
G	Upper cabinet right	
H	Upper cabinet front cover right	
I	Upper cabinet front cover left	
J	Upper cabinet front / Upper cabinet front right	
K	Left cabinet front upper	A-3/(5)
L	Left upper cabinet	A-3/(6)
M	Left center cabinet	A-3/(7)
N	Right cabinet center	A-3/(8)
O	Arm cover bottom	A-3/(9)
P	Upper left Arm cover	
Q	Arm cover upper	

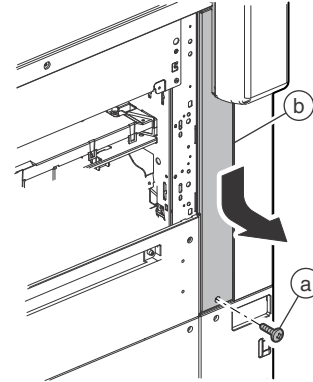


(1) Rear cabinet / Right cabinet rear upper

1) Remove the rear cabinet.

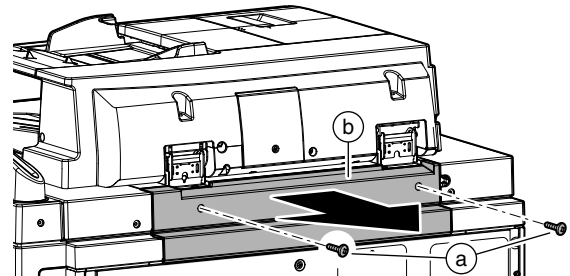
(2) Right cabinet rear center

1) Remove the screw (a), and remove the right cabinet rear center (b).



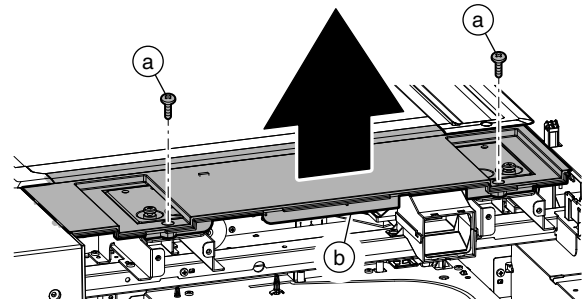
(3) Upper cabinet rear cover / Upper cabinet rear

1) Remove the screw (a), and remove the upper cabinet rear cover (b).



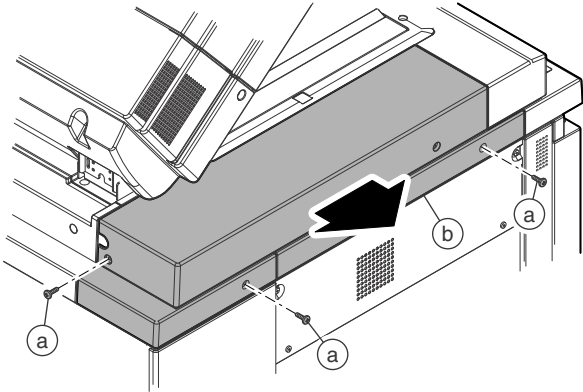
2) Remove the DSPF unit.

3) Remove the screw (a), and remove the upper cabinet rear (b).

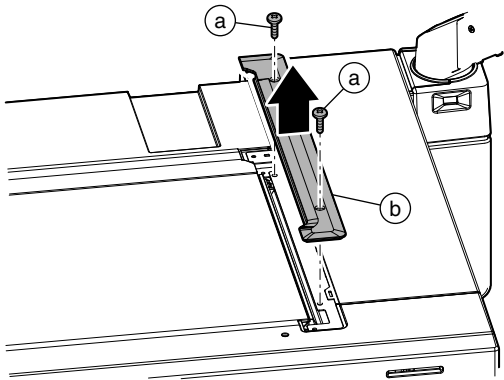


(4) Upper cabinet left / Upper cabinet right / Upper cabinet front cover left / Upper cabinet front cover right / Upper cabinet front / Upper cabinet front right

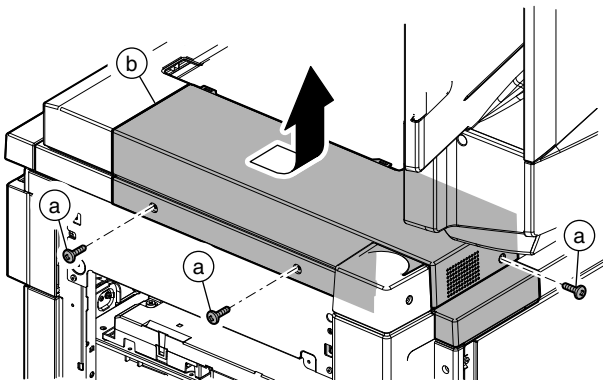
1) Remove the screw (a), and remove the upper cabinet left (b).



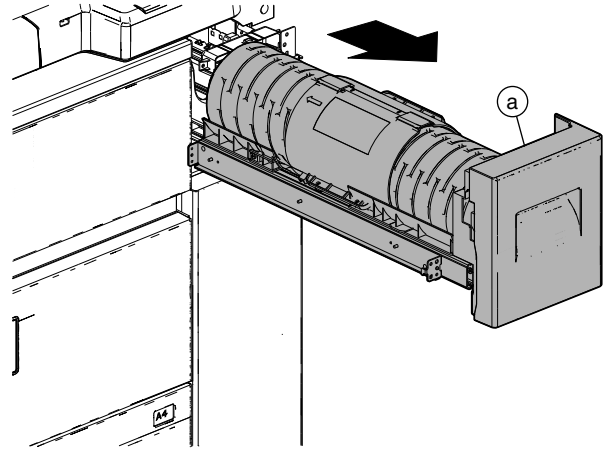
2) Remove the screw (a), and remove the table glass holder (b).



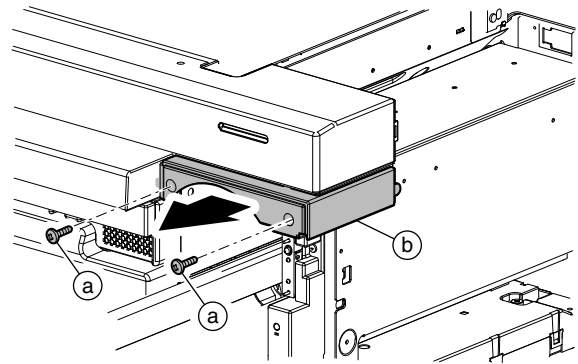
3) Remove the screw (a), and remove the upper cabinet right (b).



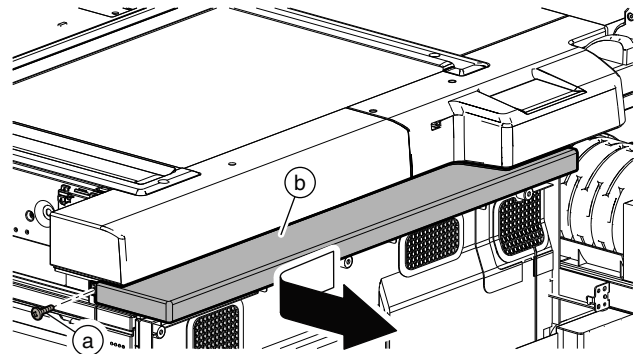
4) Pull out the toner tray (a).



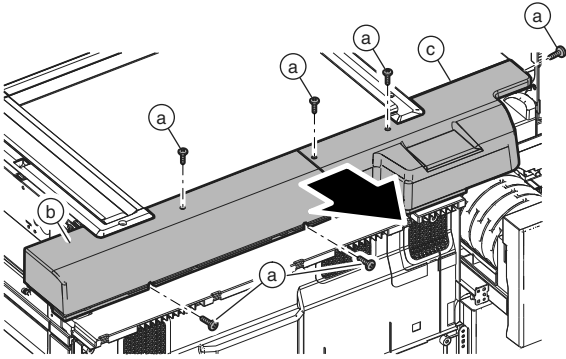
5) Remove the screw (a), and remove the upper cabinet front cover right (b).



6) Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.

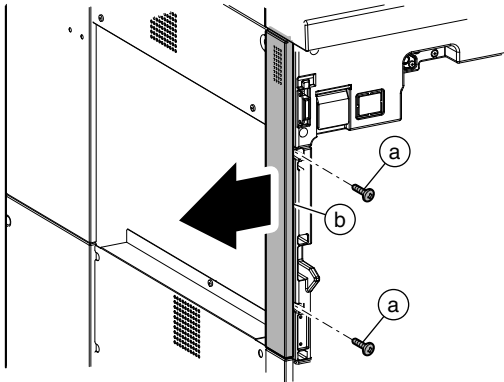


- 7) Remove the screw (a), and remove the upper cabinet front (b) and the upper cabinet front right (c).



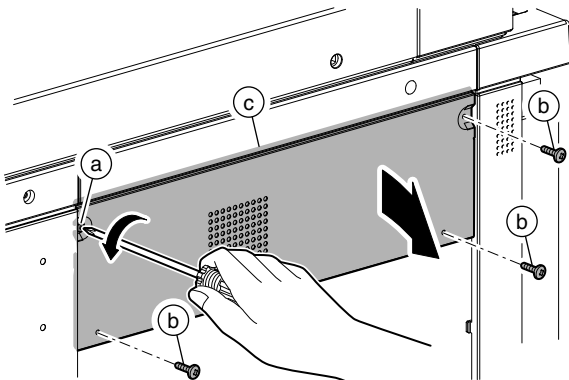
(5) Left cabinet front upper

- 1) Remove the screw (a), and remove the left cabinet front upper (b).



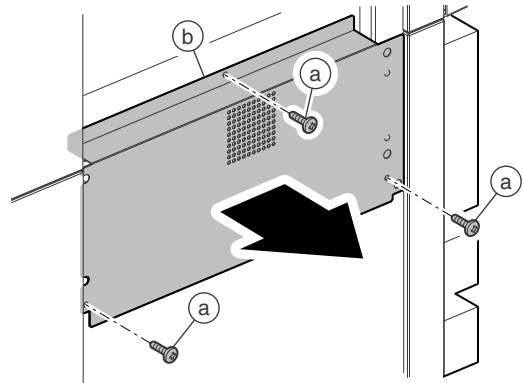
(6) Left upper cabinet

- 1) Loosen the screw (a), and remove the screw (b). Remove the left upper cabinet (c).



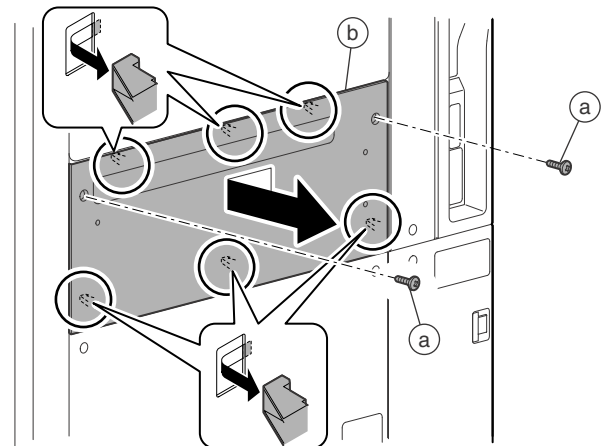
(7) Left center cabinet

- 1) Remove the screw (a), and remove the left center cabinet (b).



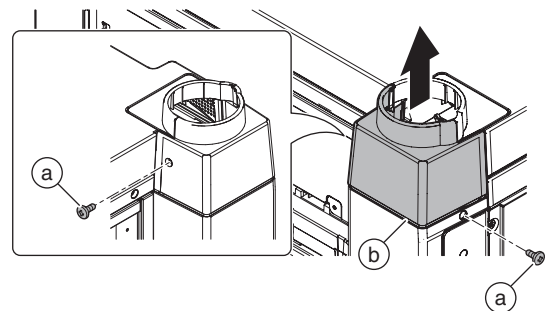
(8) Right cabinet center

- 1) Remove the screw (a), and remove the right cabinet center (b).

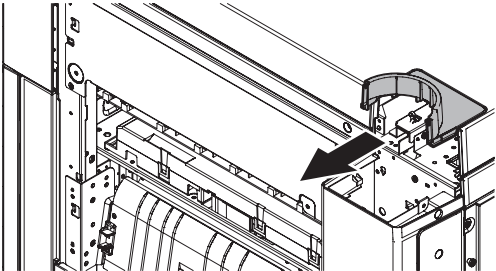


(9) Arm cover bottom / Upper left Arm cover / Arm cover upper

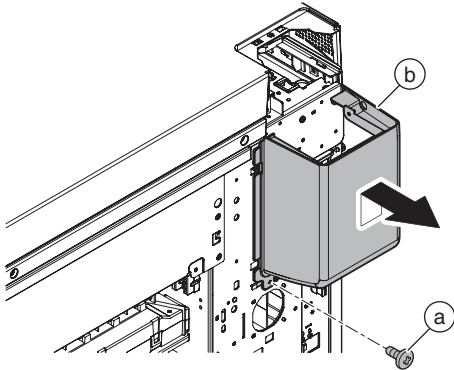
- 1) Remove the screw (a), and remove the arm cover upper (b).



2) Remove the upper left Arm cover.

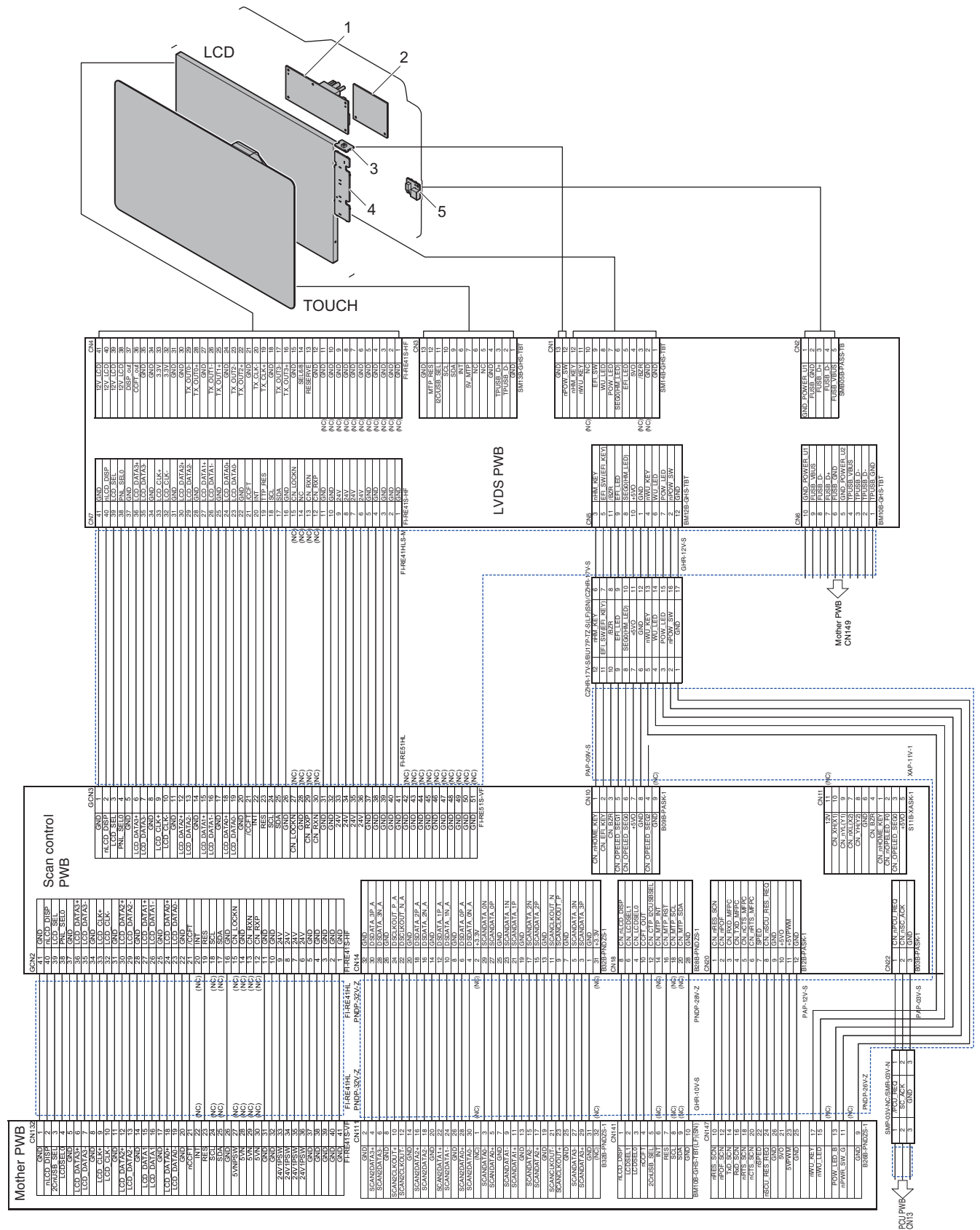


3) Remove the screw (a), and remove the arm cover bottom (b).



[B] OPERATION PANEL

1. Electrical and mechanism relation diagram



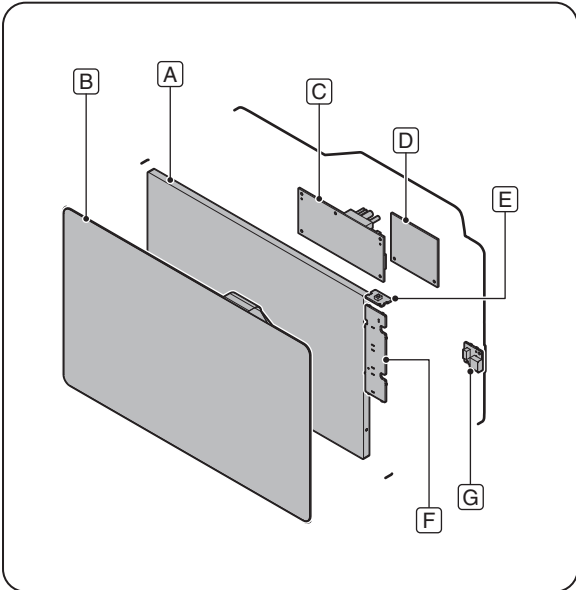
Code	Name	Function / Operation
LCD	LCD unit	Displays various menu information.
TOUCH	Touch panel	Used to make various adjustments and setting operations.

No.	Name	Function / Operation
1	LVDS PWB	Converts the display data signal to the LCD display signal.
2	TP-IF PWB	PWB Controls the touch panel.
3	PW-KEY PWB	Power display lamp.
4	HM-KEY PWB	Outputs the key operation signal.
5	USB I/F PWB	USB interface.

2. Disassembly and assembly

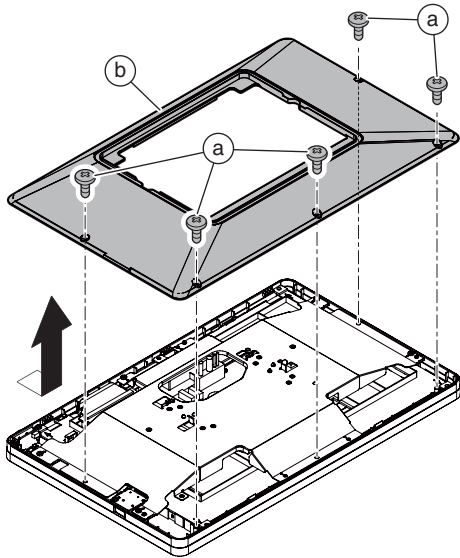
A. Operation panel unit

Unit	Parts
Operation panel unit	A LCD
	B Touch panel
	C LVDS PWB
	D TP-IF PWB
	E PW-KEY PWB
	F HM-KEY PWB
	G USB I/F PWB

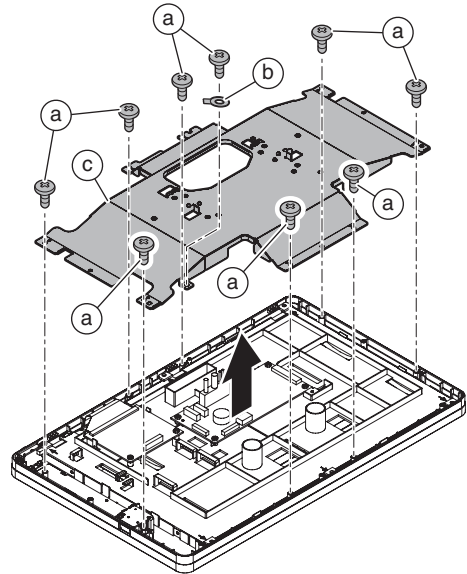


(1) Operation panel unit

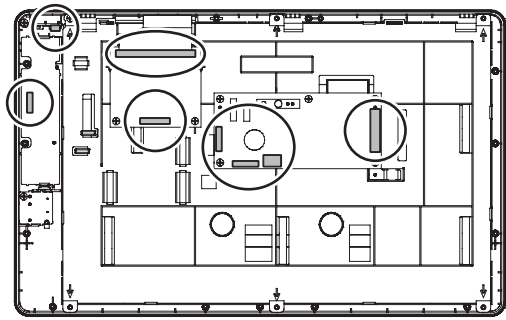
- 1) Remove the panel unit.
- 2) Remove the screw (a), and remove the operation base plate (b).



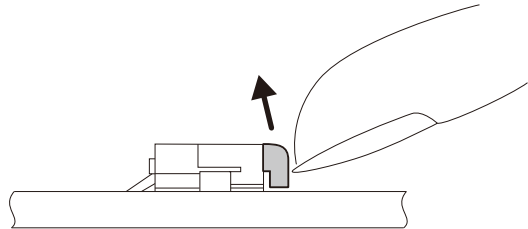
- 3) Remove the screw (a), remove the ground wire (b), and remove the panel fixing plate (c).



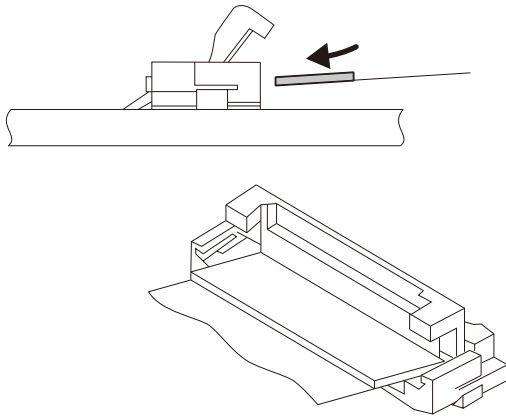
- 4) Disconnect the connector.



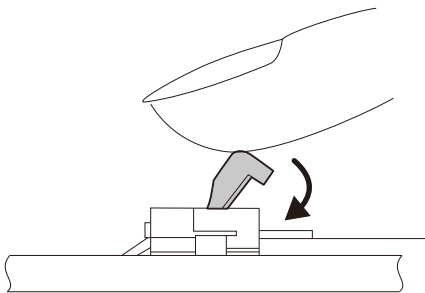
* Release lock



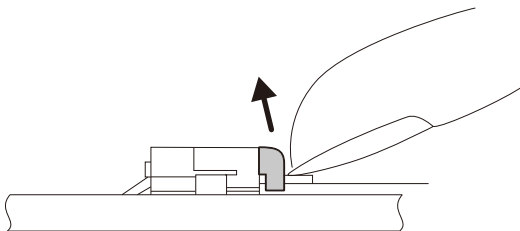
* Insert FFC



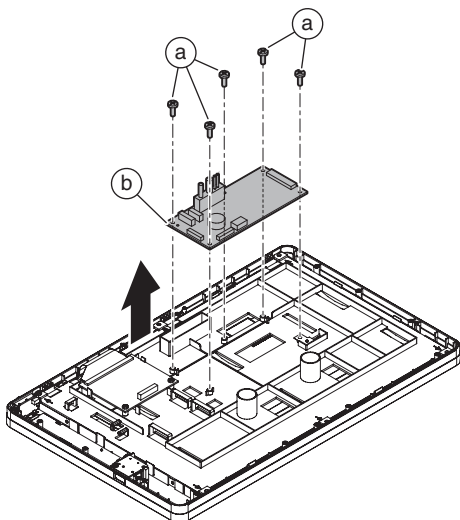
* Lock FFC



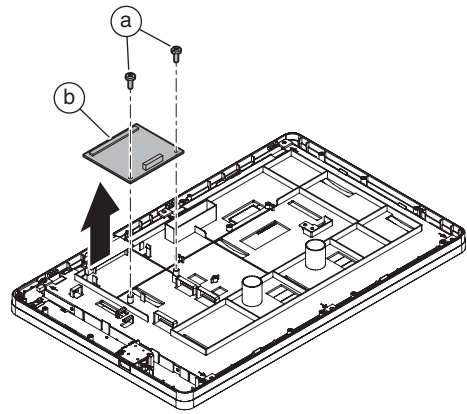
* Remove FFC



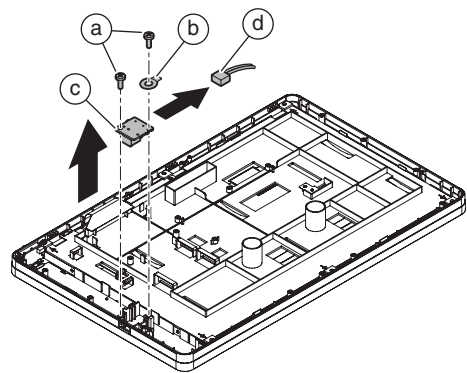
5) Remove the screw (a), and remove the LVDS PWB (b).



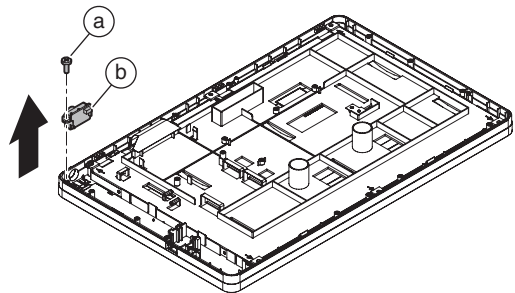
6) Remove the screw (a), and remove the TP-IF PWB (b).



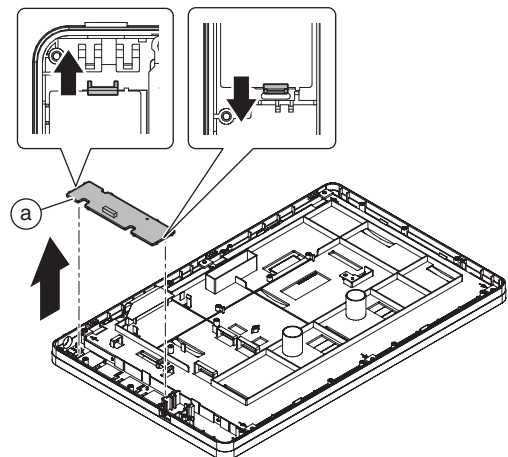
7) Remove the screw (a), remove the ground wire (b), remove the USB I/F PWB (c), and disconnect the connector (d).



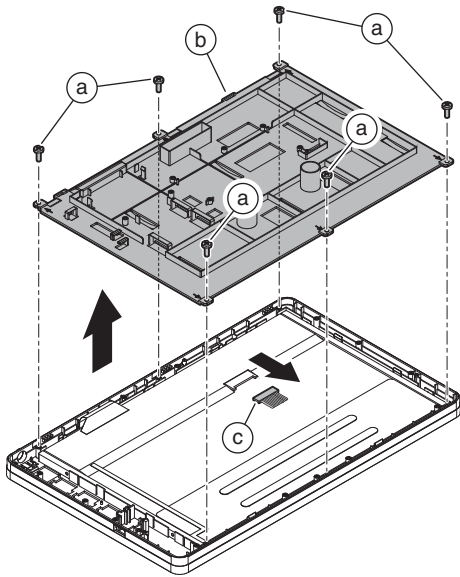
8) Remove the screw (a), and remove the PW-KEY PWB (b).



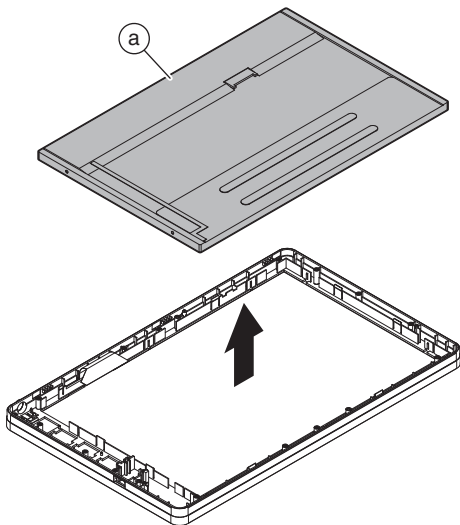
9) Remove the HM-KEY PWB (a).



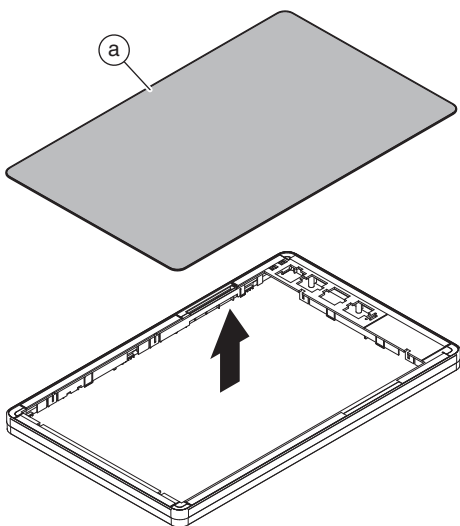
10) Remove the screw (a), remove the LCD holder B (b), and disconnect the connector (c).



11) Remove the LCD.



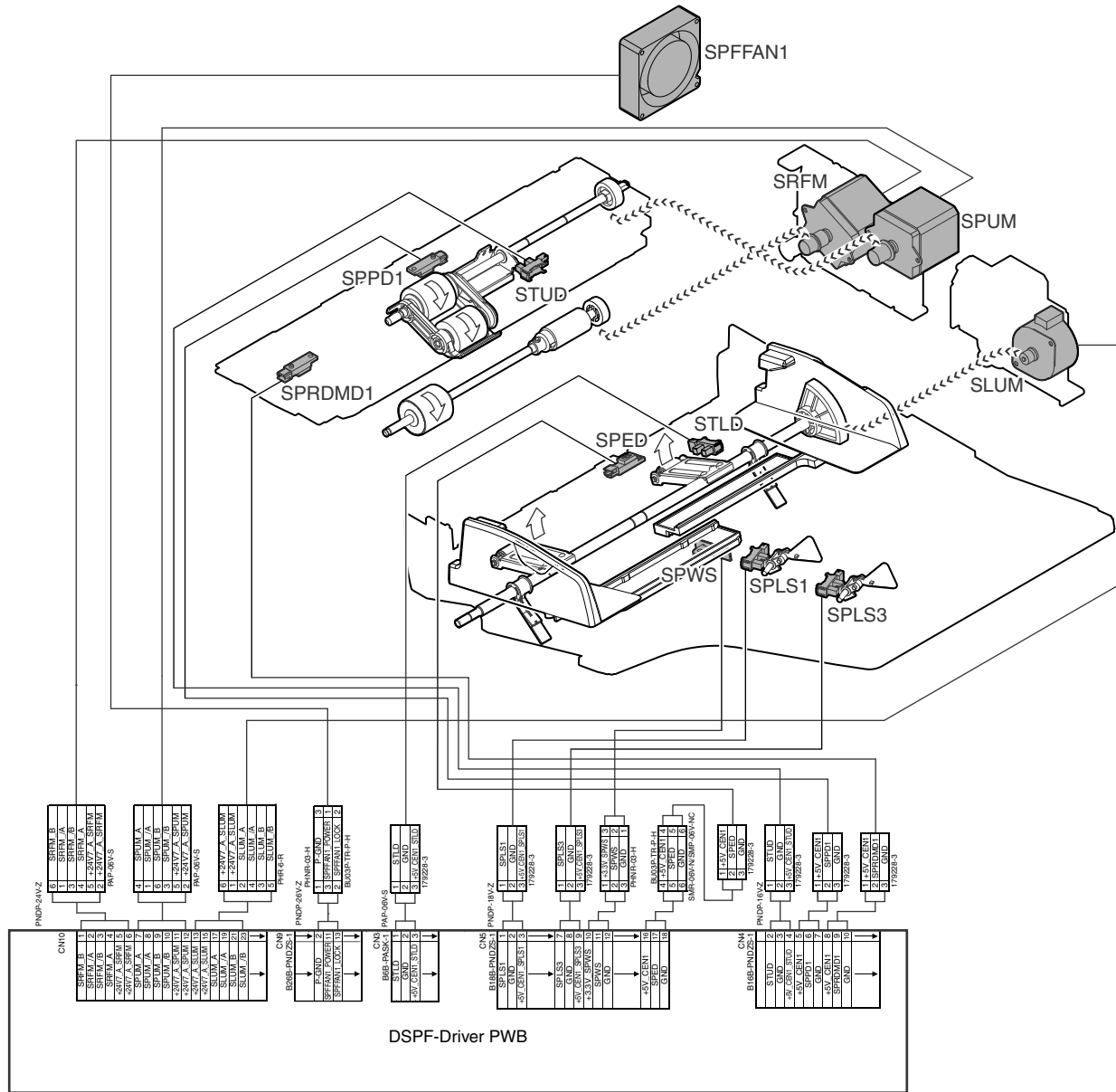
12) Remove the touch panel.



[C] DSPF SECTION

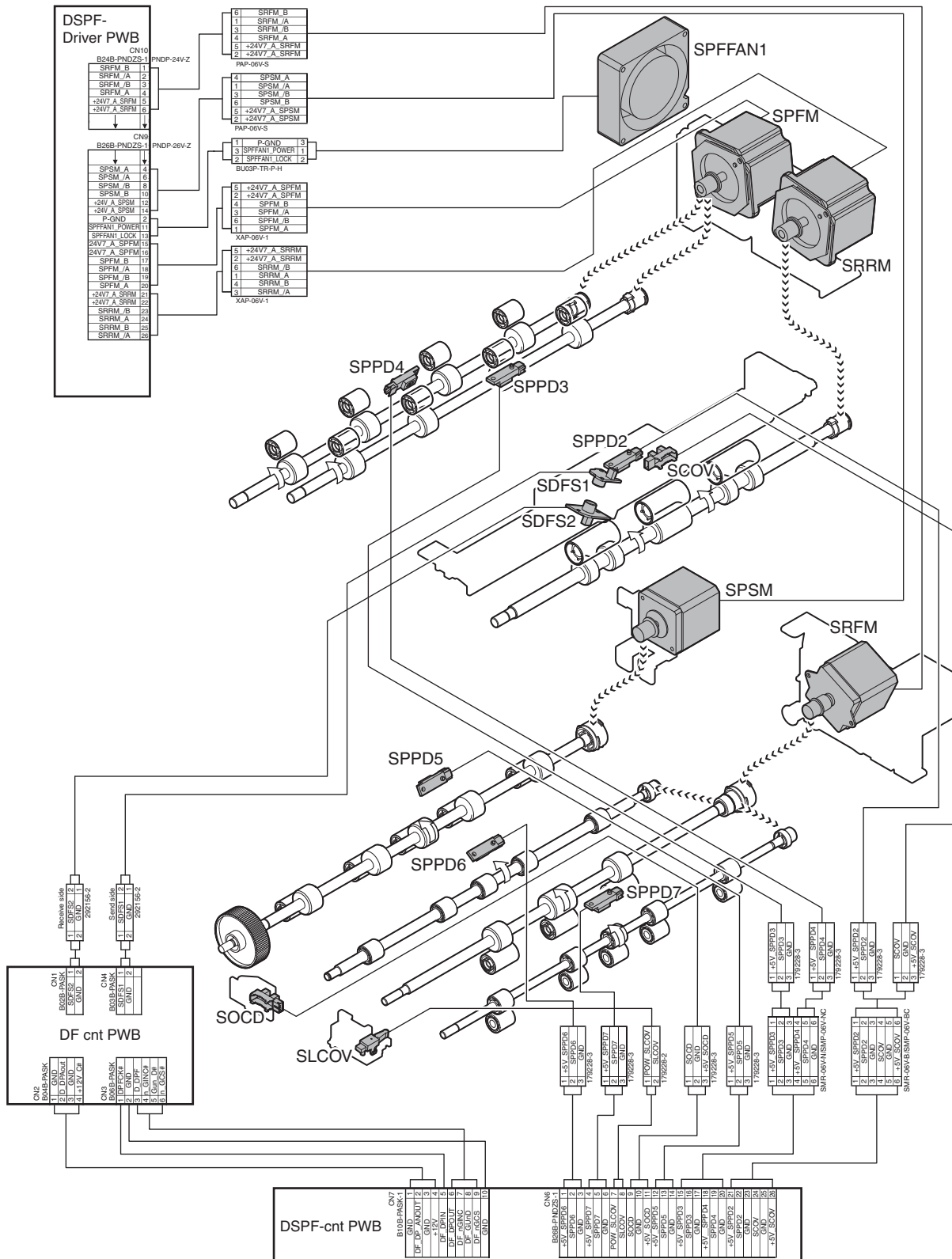
1. Electrical and mechanism relation diagram

A. Paper feed section



Signal name	Name	Type	Function/Operation
SLUM	DSPF lift-up motor	PM stepping motor	Lifts up and move down the document tray.
SPED	DSPF document empty sensor	Reflection type	Detects document empty on the document tray.
SPLS1	DSPF document length detection short sensor	Transmission type	Detects the length of the document on the document tray.
SPLS3	DSPF document length detection1 long sensor	Transmission type	Detects the length of the document on the document tray.
SPPD1	DSPF document pass sensor 1	Reflection type	Detects document pass.
SPRDMD1	DSPF document random sensor	Reflection type	Detects the paper size in random paper feed.
SPUM	DSPF paper feed motor	Stepping motor	Drives the paper feed roller.
SPWS	DSPF document width sensor	Volume resistor	Detects the width of the document.
SRFM	DSPF scan transport motor	Stepping motor	Drives the scan transport roller.
STLD	DSPF document tray lower limit sensor	Transmission type	Detects the lower limit of the DSPF document tray.
STUD	DSPF document tray upper limit sensor	Transmission type	Detects the upper limit of the DSPF document tray.

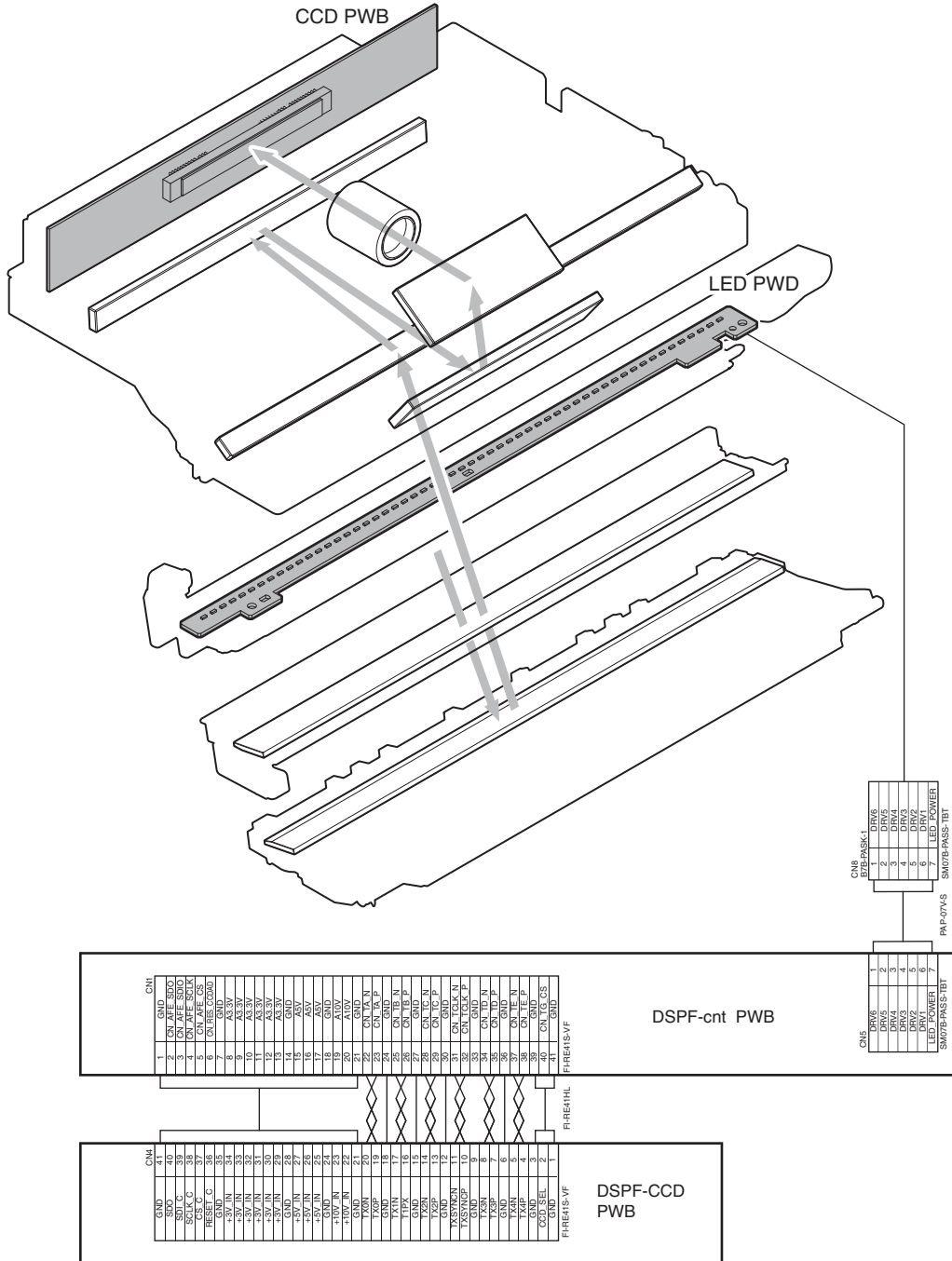
B. Transport section



Signal name	Name	Type	Function/Operation
SCOV	DSPF upper door open/close sensor	Transmission type	Detects open/close of the upper door.
SDFS1	DSPF double feed sensor (transmitting)	Supersonic sensor	Detects double feed.
SDFS2	DSPF double feed sensor (receiving)	Supersonic sensor	Detects double feed.
SLCOV	DSPF lower door open/close sensor	Transmission type	Detects open/close of the lower door.
SOCD	DSPF open/close sensor	Transmission type	Detects open/close of the DSPF unit.
SPFM	DSPF transport motor	Stepping motor	Drives the transport roller.
SPPD2	DSPF document pass sensor 2	Reflection type	Detects document pass.
SPPD3	DSPF document pass sensor 3	Reflection type	Detects document pass.

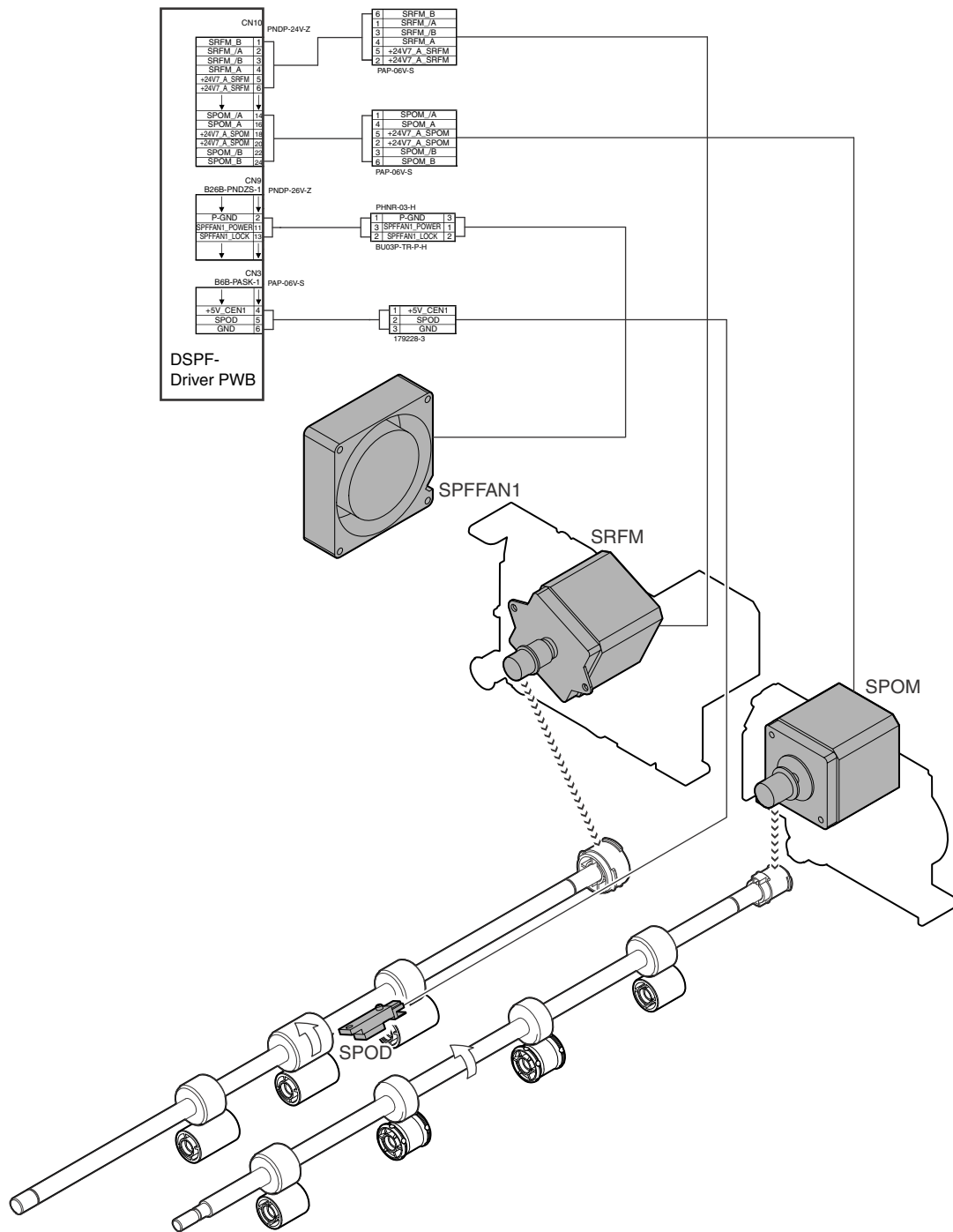
Signal name	Name	Type	Function/Operation
SPPD4	DSPF document pass sensor 4	Reflection type	Detects document pass.
SPPD5	DSPF document pass sensor 5	Reflection type	Detects document pass.
SPPD6	DSPF document pass sensor 6	Reflection type	Detects document pass.
SPPD7	DSPF document pass sensor 7	Reflection type	Detects document pass.
SPSM	DSPF PS motor	Stepping motor	Drives the PS roller.
SPFM	DSPF transport motor	Stepping motor	Drives the transport roller.
SRRM	DSPF resist motor	Stepping motor	Drive the resist roller.

C. Scanner section



Signal name	Name	Type	Function/Operation
DSPF COPY LUMP	DSPF copy lamp	LED lamp	Radiates lights onto a document for the CCD to scan the document image.

D. Paper exit section

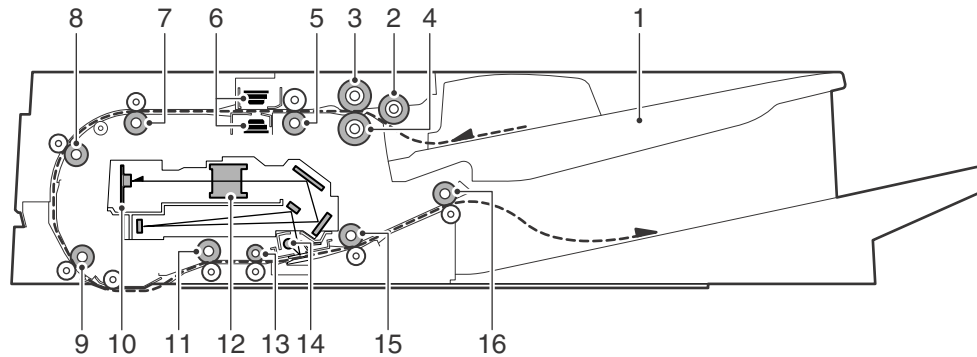


Signal name	Name	Type	Function/Operation
SPFFAN1	DSPF motor cooling fan	Fan motor	Cools the DSPF motor.
SPOD	DSPF paper exit sensor	Reflection type	Detects document pass.
SPOM	DSPF paper exit motor	Stepping motor	Drives the paper exit roller.
SRFM	DSPF scan transport motor	Stepping motor	Drives the scan transport roller.

2. Operational descriptions

Document sheets are automatically fed and transported for continuous scanning.

The front and the back surfaces of duplex sheet documents can be scanned at the same time.



No.	Name	Function/Operation
1	Document tray	Max.250 sheets (80g/m ² , 21lbs Bond) Max. height 32.5mm.
2	Document pickup roller	Picks up a document and transport it to the paper feed roller.
3	Paper feed roller	Performs paper feed operation of a document.
4	Separation roller	Separates a document, preventing double feed.
5	No. 1 resist roller (Drive)	Performs resist of document transport.
6	DSPF double feed sensor	Detects double feed.
7	Transport roller 1 (Drive)	Transports paper from No. 1 resist roller to No.2 resist roller.
8	Transport roller 2 (Drive)	Transports paper from the transport roller 1 to No.2 resist roller.
9	No. 2 resist roller (Drive)	Synchronizes the document lead edge and the scan start position.
10	CCD PWB	DSPF (back) scanning CCD.
11	Transport roller 3 (Drive)	Transports paper from the platen roller to the transport roller 4.
12	Lens	Reduces the document images (optical) and radiates them onto the CCD PWB.
13	Transport roller 4 (Drive)	Transport paper from the transport roller 3 to the transport roller 5.
14	DSPF copy lamp	Radiates lights onto a document for the CCD to scan the document image.
15	Transport roller 5 (Drive)	Transport paper from the transport roller 4 to the paper exit roller.
16	Paper exit roller (Drive)	Discharges paper.

A. Document tray lift operation

When a job is started, the document tray is lifted until a document at the top in the document tray turns on the document upper limit sensor (STUD).

The pressure between the document at the top in the document tray and the take-up roller is maintained at a constant level to improve the paper feed capability.

When paper to be scanned is exhausted, the document empty sensor (SPED) turns off and the document tray moves down automatically until the lower limit sensor detects it.

Up and down movements of the document tray are performed by the lift motor (normal rotation, reverse rotation) and the lift gear.

B. Document feed, transport, scan, paper exit, and operating speed

The document fed by the pick up roller is sent through the paper feed roller and the transport roller to the resist roller section.

In the resist roller section, the document lead edge and the scan start position are synchronized.

The document is transported to the scan section. After being scanned, the document is sent to the document exit tray by the exit rollers.

C. The original scan

The CCD is located inside the DSPF this items scan the document images.

When scanning document images in the DSPF mode, the front surface of the document is scanned by the CCD of the machine, and the back surface by the CCD in the DSPF.

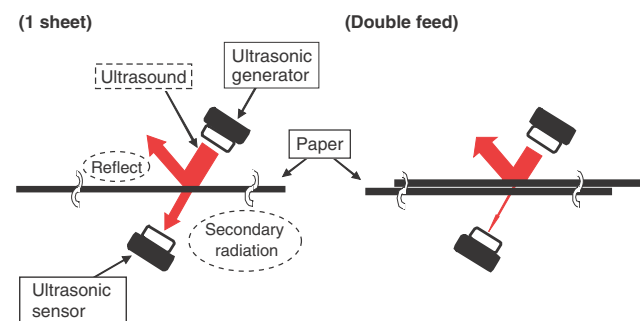
When scanning the front surface of the document by the CCD of the machine, the scanner unit of the machine moves to the specified position and scans images of the document which is being transported by the document transport mechanism.

D. Double-feed sensor operation

(1) Outline of the operation

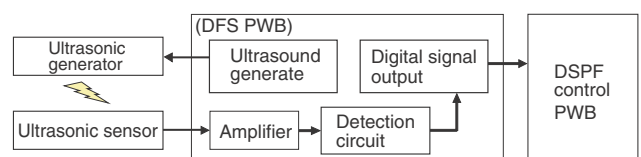
The double-feed sensor is on the DSPF of the 120/105cpm machines, and it detects double feed.

Paper transport stops when double feed is detected.



The ultrasonic generator generates sound frequency. The frequency level of the ultrasonic sensor changes (lower frequency) when double sheet feeding occurs. Double sheet feeding is then detected.

Block diagram



(2) Mechanism and operation of double-feed detection

The sensor is composed of ultrasonic generator part and ultrasonic detector. Doublesheet feeding is detected by the change in sound frequency.

Operation when sheets of document are normally fed one by one

Some of the ultrasound is reflected by the document, but the ultrasound reaches the sensor more than the specified level.

The sensor analog output level at that time is 300mV or more, and digital output level is "L."

Operation when double feed occurs

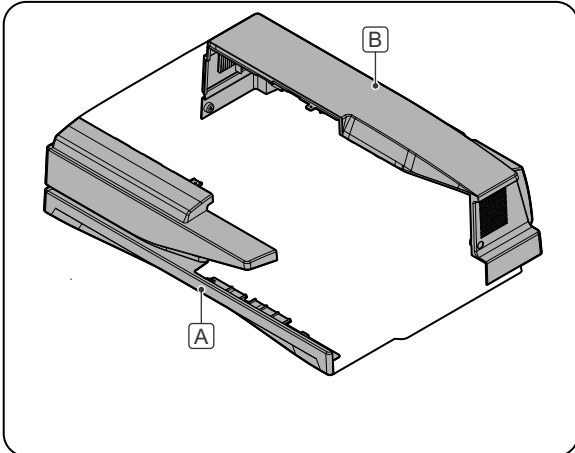
Most of ultrasound is reflected when double feed occurs, because the stiffness of document is high. As a result, the ultrasound which reaches the sensor is weak, and less than the specified level.

At that time, the sensor analog output level is 300mV or less, the digital output level is "H."

3. Disassembly and assembly

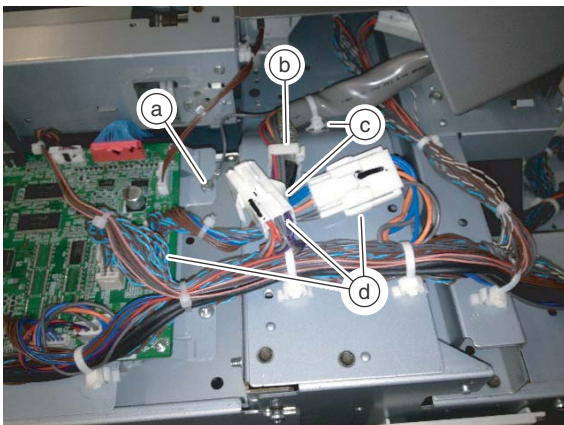
A. Exterior section

Unit	Parts	Page
DSPF unit	A Front cabinet	C-6/a
	B Rear cabinet	

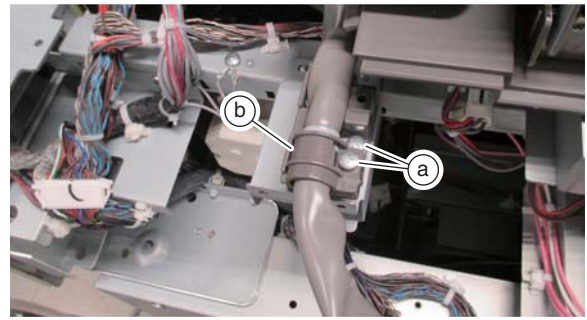


(1) DSPF unit

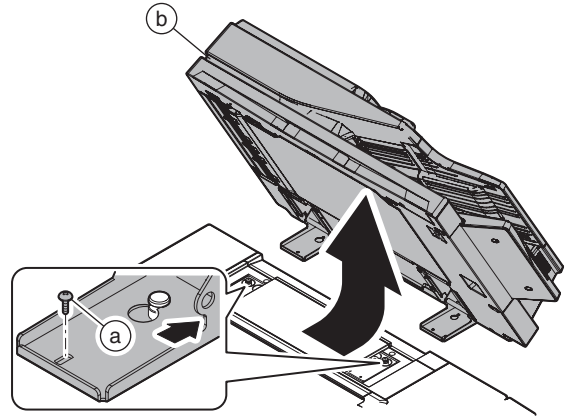
- 1) Remove the upper cabinet left of the machine.
- 2) Remove the earth wire (a), the edge saddle (b), the snap band (c), the connector (d).



- 3) Remove the screw (a), and remove the cover (b).

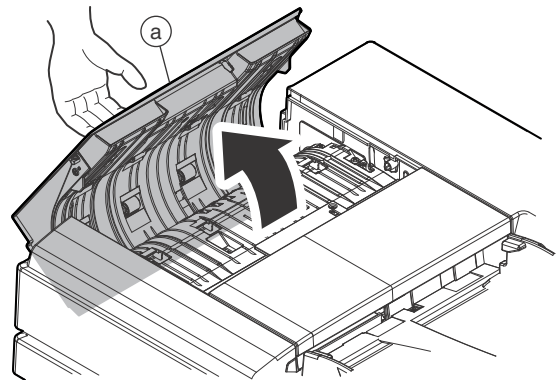


- 4) Remove the screw (a) and slide the DSPF unit (b) to the rear side to remove.

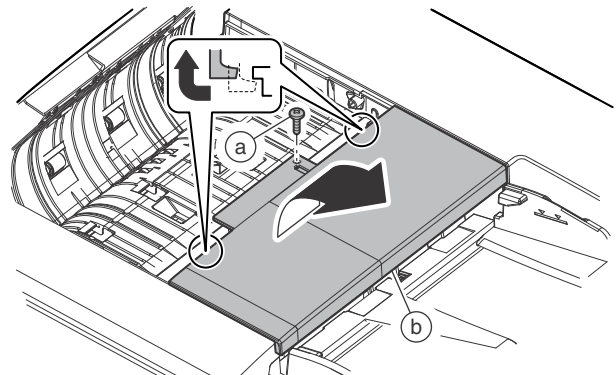


a. Front cabinet / Rear cabinet.

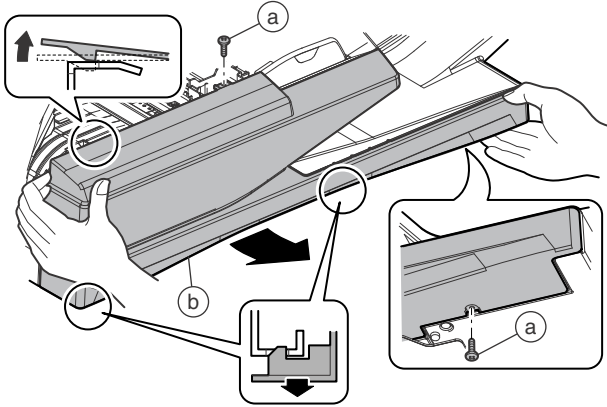
- 1) Open the upper door (a).



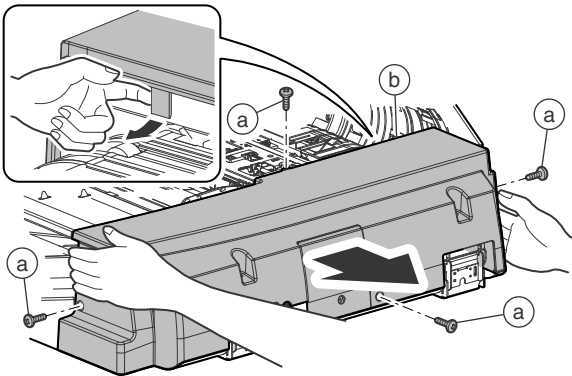
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the screw (a), and remove the front cabinet (b).
 * Disengage one pawl at the top and two pawls at the bottom, and turn the cabinet from the bottom to the top to remove.

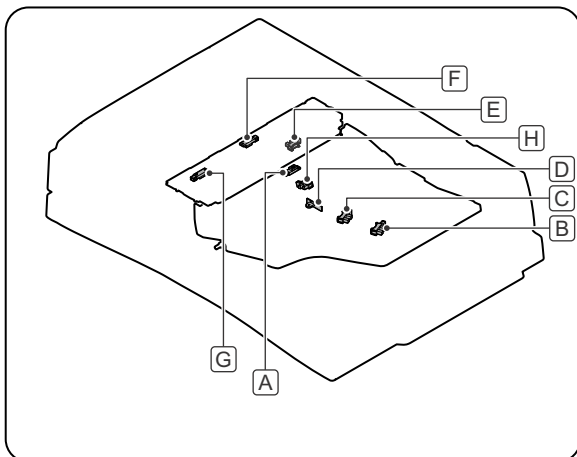


- 4) Remove the screw (a), and remove the rear cabinet (b).



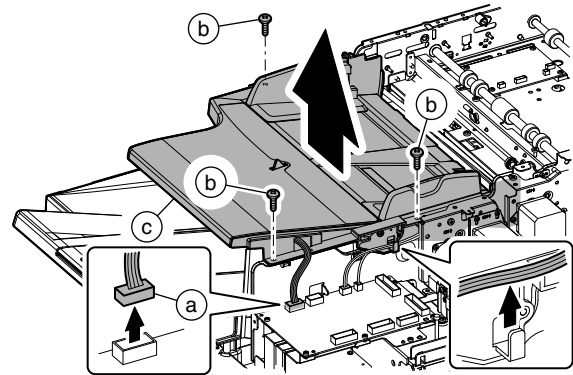
B. Paper feed section

Unit	Parts		Page
Document tray unit	A	DSPF document empty sensor	C-7/a
	B	DSPF document length long sensor	C-7/b
	C	DSPF document length short sensor	
	D	DSPF document width sensor	
Paper feed unit	E	DSPF document tray upper limit sensor	C-8/a
	F	DSPF document pass sensor 1	
	G	DSPF random sensor	
Others	H	DSPF document tray lower limit sensor	C-9/(3)



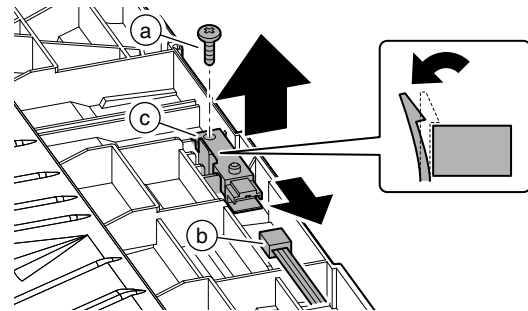
(1) Document tray unit

- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the document tray unit (c).



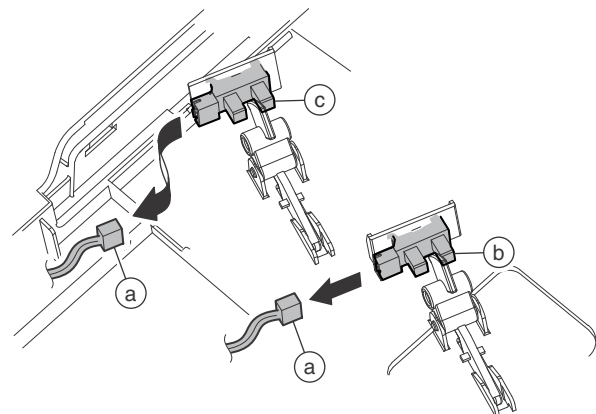
a. DSPF document empty sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the screw (a) and the connector (b), and remove the DSPF document empty sensor (c).

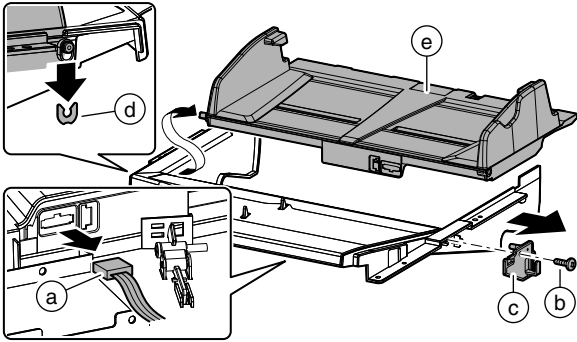


b. DSPF document length long sensor / DSPF document length short sensor / DSPF document width sensor

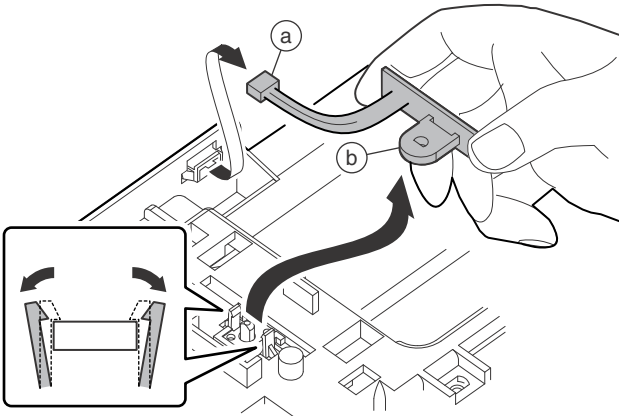
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Disconnect the connector (a), and remove the DSPF document length long sensor (b) and the DSPF document length short sensor (c).



- 4) Disconnect the connector (a). Remove the screw (b) and the shaft (c). Remove the E-ring (d) and the rotation tray (e).

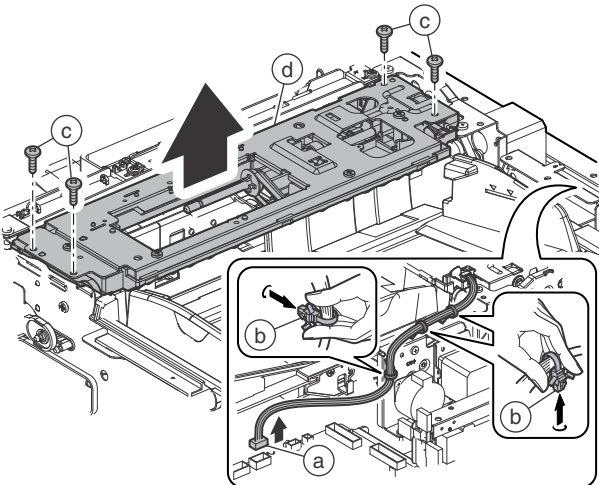


- 5) Disconnect the connector (a), and remove the DSPF document width sensor (b).



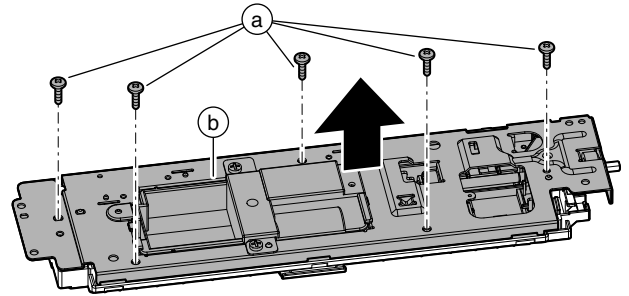
(2) Paper feed unit

- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the paper feed unit (d).

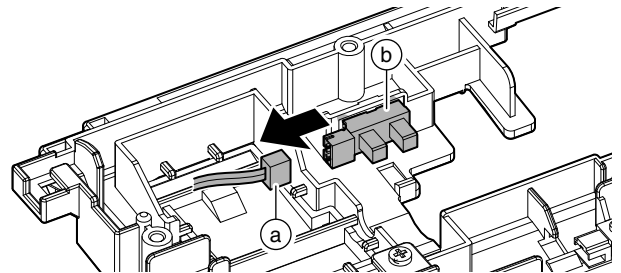


a. DSPF document tray upper limit sensor / DSPF document pass sensor 1 / DSPF random sensor

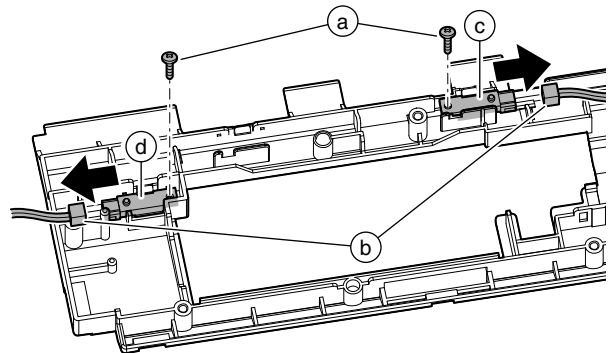
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the paper feed unit.
- 3) Remove the screw (a), and remove the cover (b).



- 4) Disconnect the connector (a), and remove the DSPF document tray upper limit sensor (b).



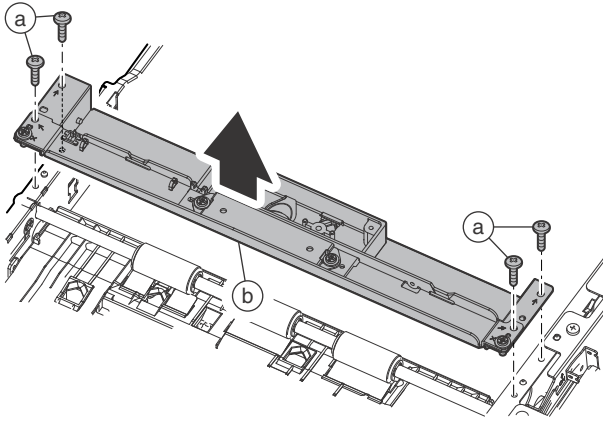
- 5) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 1 (c) and the DSPF random sensor (d).



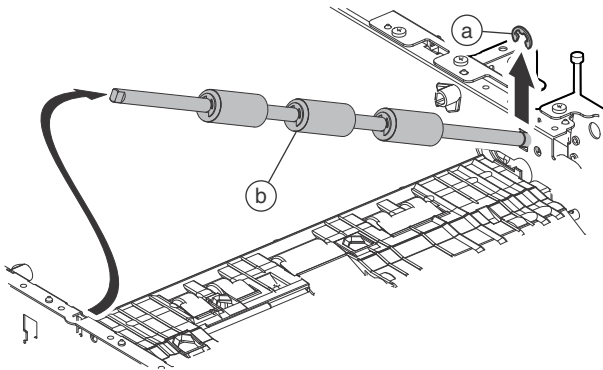
(3) DSPF document tray lower limit sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the paper feed unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).

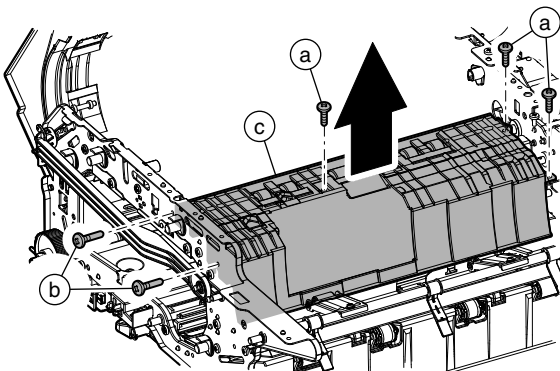
* Since the harness is kept connected, be careful not to break it.



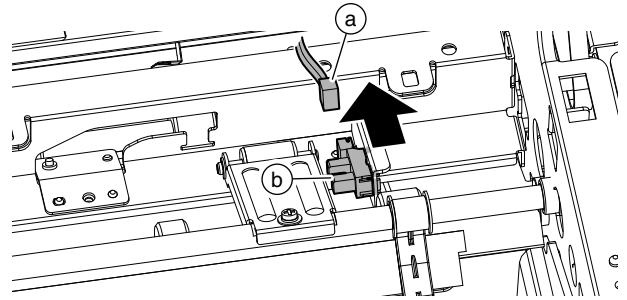
- 5) Remove the E-ring (a), and remove the No.1 resist roller (idle) (b).



- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

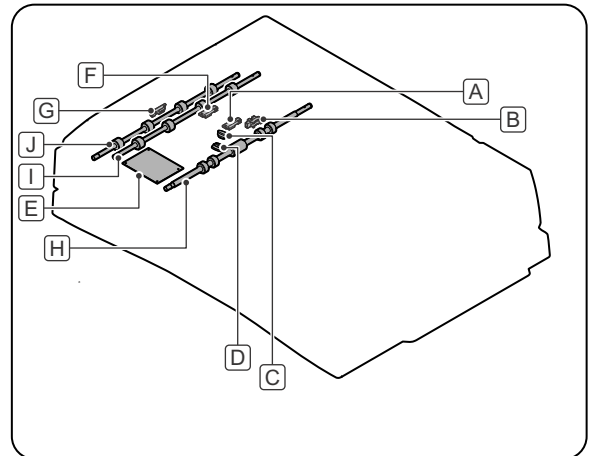


- 7) Disconnect the connector (a), and remove the DSPF document tray lower limit sensor (b).



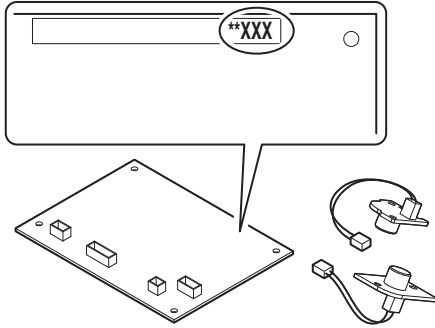
C. Upper transport section

Parts		Page
A	DSPF document pass sensor 2	C - 10/ (1)
B	DSPF upper door open/close sensor	
C	DF S PWB	
D	DF R PWB	
E	DF cnt PWB	C - 11/ (2)
F	DSPF document pass sensor 3	
G	DSPF document pass sensor 4	C - 12/ (3)
H	No. 1 resist roller	
I	Transport roller 1	C - 13/ (4)
J	Transport roller 2	

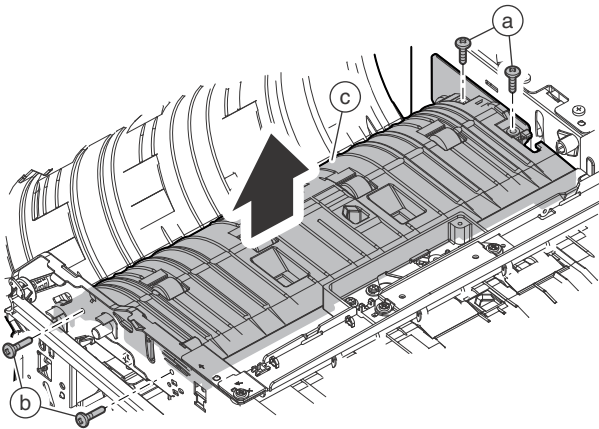


(1) DSPF document pass sensor 2 / DSPF upper door open/close sensor / DSPF double feed sensor (transmitting) / DSPF double feed sensor (receiving) / Double feed detection PWB

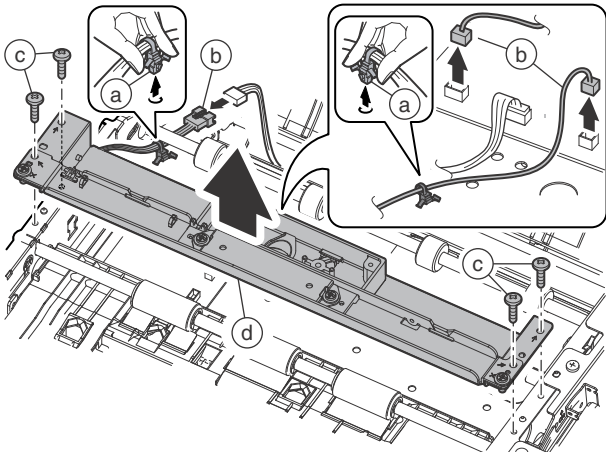
* Since the DSPF double feed sensor (transmitting), the DSPF double feed sensor (receiving), and the double feed detection PWB comprise one set, do not replace each one of them separately. Always replace them in one set. Each part is marked with its serial number. Before replacement, check to confirm that the serial number of each part corresponds.



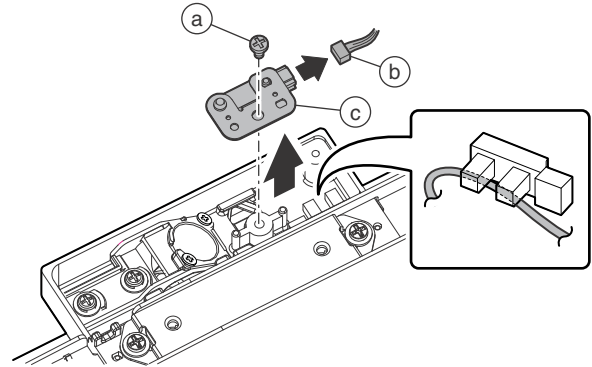
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



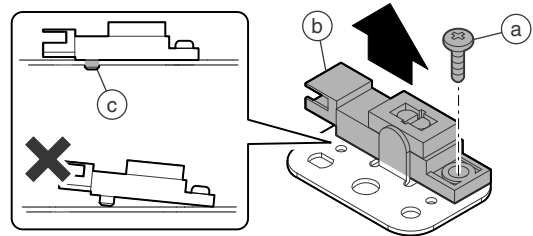
- 3) Remove the snap band (a), and disconnect the connector (b). Remove the screw (c), and remove the double feed detection unit (d).



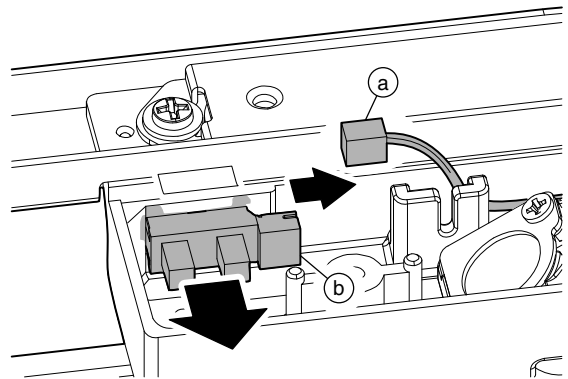
- 4) Remove the screw (a), and disconnect the connector (b). Remove the mounting plate (c).
 - * When connecting, arrange the harness of the connector (b) under the sensor.



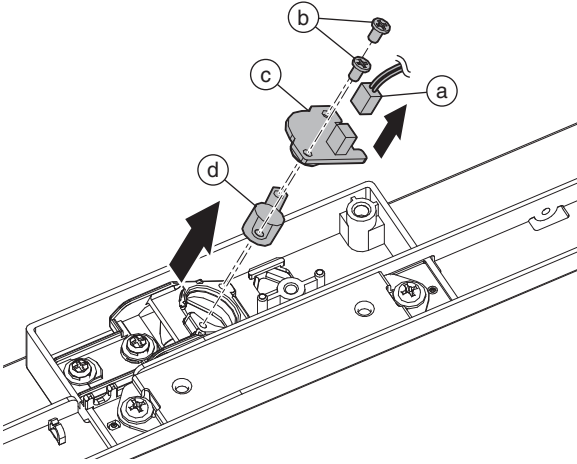
- 5) Remove the screw (a), and remove the DSPF document pass sensor 2 (b).
 - * When installing the sensor, check to confirm that the sensor boss (c) is securely engaged and fix it with the screw.



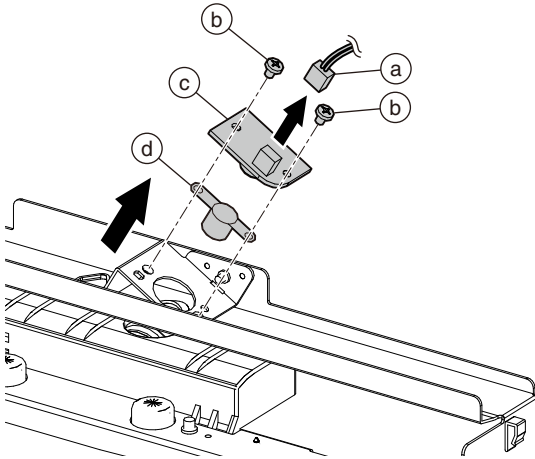
- 6) Disconnect the connector (a), and remove the DSPF upper door open/close sensor (b).



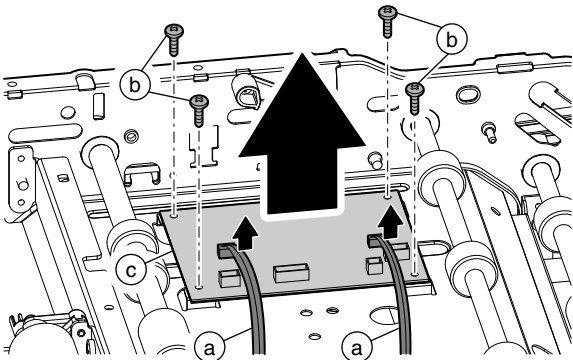
- 7) Disconnect the connector (a). Remove the screw (b) and the DF S PWB (c). Remove the DFS shield sheet (d).



- 8) Disconnect the connector (a). Remove the screw (b) and the DF R PWB (c). Remove the DFS shield sheet (d).

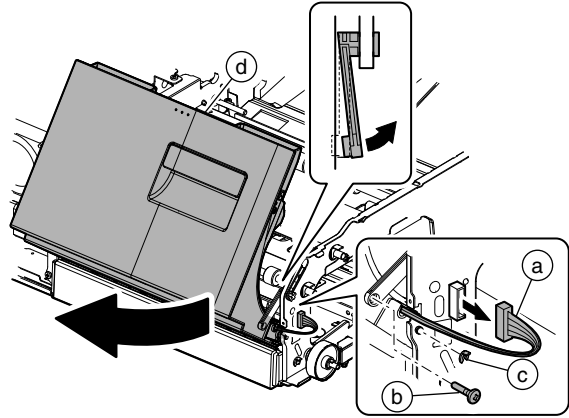


- 9) Disconnect the connector (a), and remove the screw (b), and remove the double feed detection PWB (c).

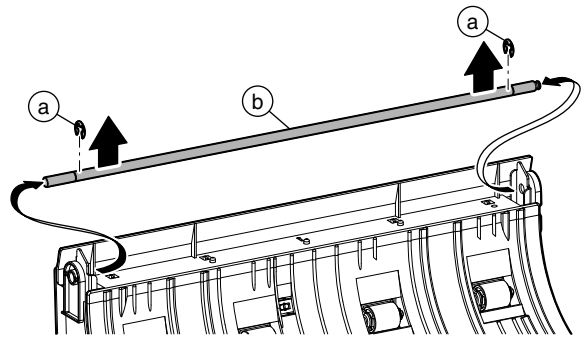


(2) DSPF document pass sensor 3 / DSPF document pass sensor 4

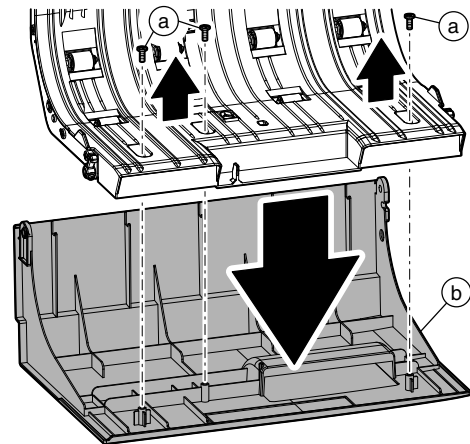
- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



- 3) Remove the E-ring (a), and remove the shaft (b).

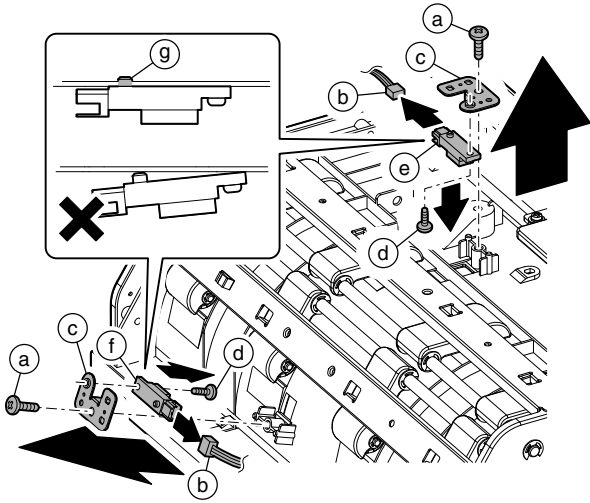


- 4) Remove the screw (a), and remove the cover (b).

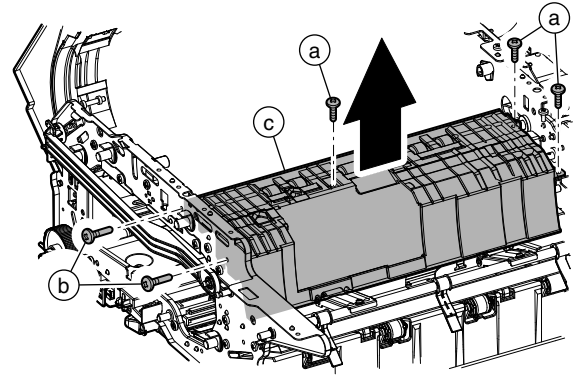


- 5) Remove the screw (a), and disconnect the connector (b), and remove the mounting plate (c). Remove the screw (d), and remove the DSPF document pass sensor 3 (e) and the DSPF document pass sensor 4 (f).

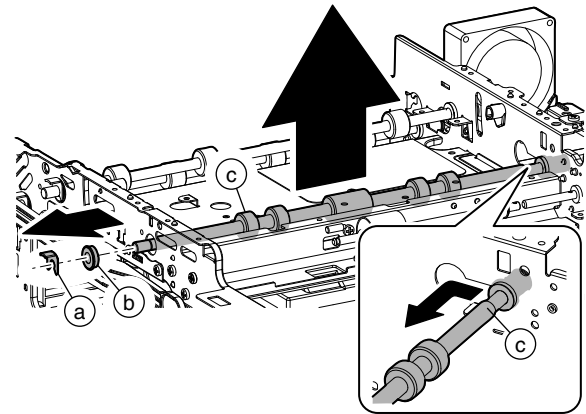
* When installing the sensor, check to confirm that the sensor boss (g) is securely engaged and fix it with the screw.



- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



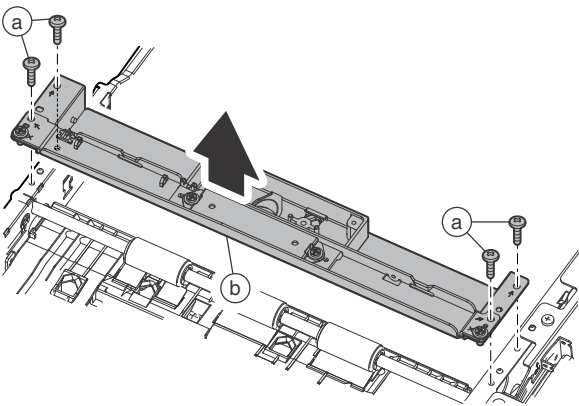
- 7) Remove the E-ring (a) and the bearing (b). Remove the No.1 resist roller unit (c).



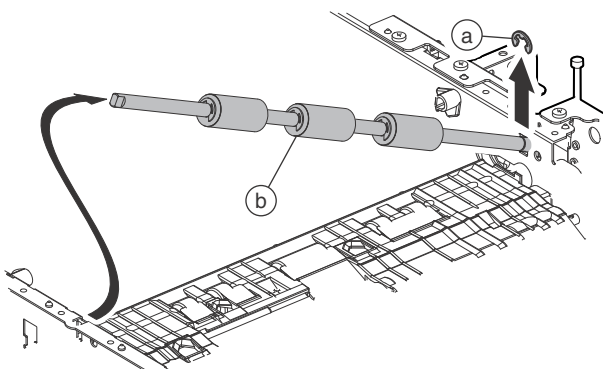
(3) No. 1 resist roller

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the paper feed unit.
- 3) Remove the upper transport drive unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).

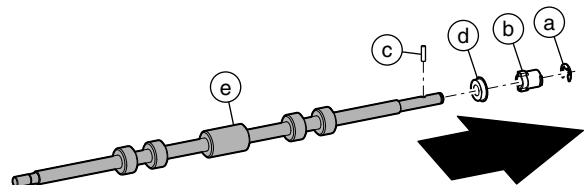
* Since the harness is kept connected, be careful not to disconnect it.



- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).

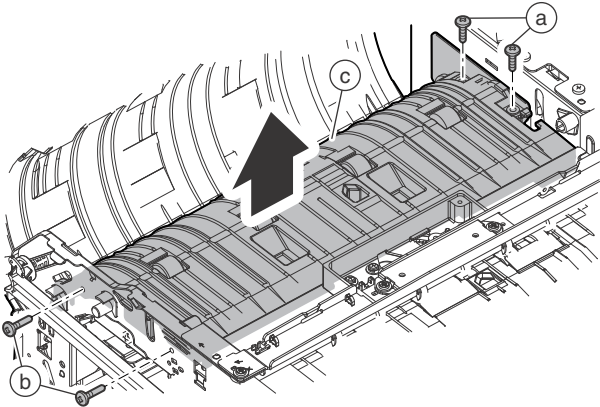


- 8) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the No. 1 resist roller (e).

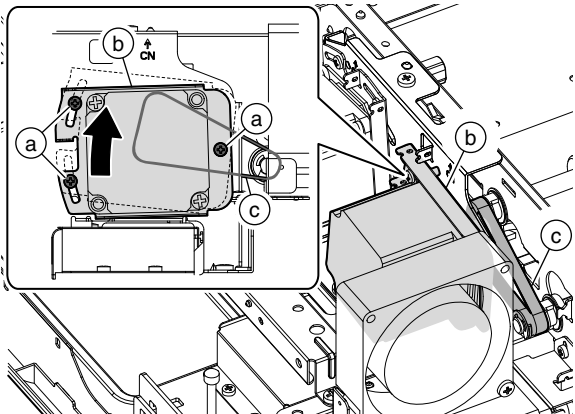


(4) Transport roller 1 / Transport roller 2

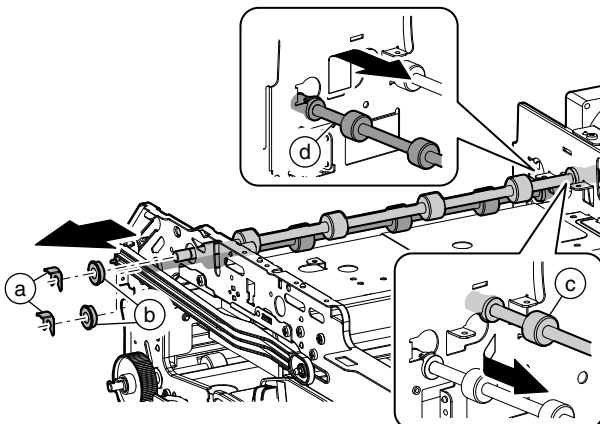
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



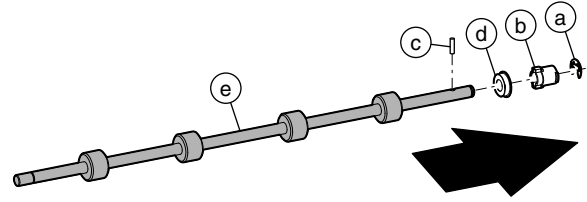
- 3) Loosen the screw (a). Slide the DSPF transport motor (b) to reduce the tension of the belt (c). Tighten the screw (a).
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 4) Remove the E-ring (a) and the bearing (b). Remove the transport roller 1 unit (c) and the transport roller 2 unit (d).

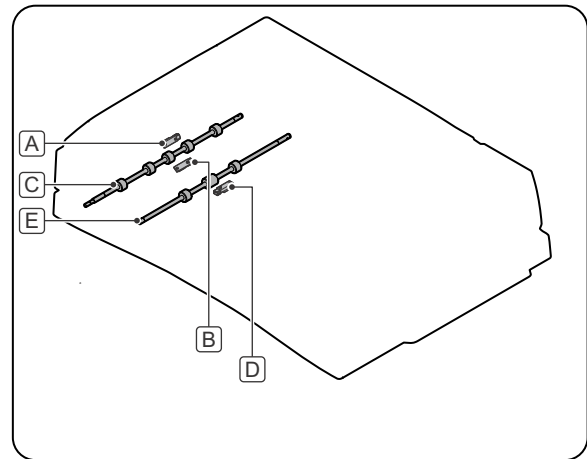


- 5) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 1 / transport roller 2 (e).



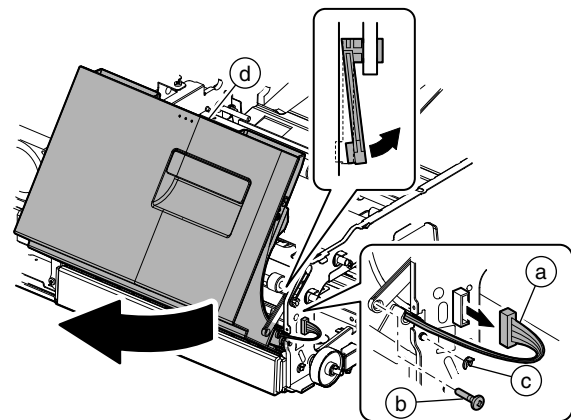
D. Lower transport section

Parts		Page
A	DSPF document pass sensor 5	C - 13/ (1)
B	DSPF document pass sensor 6	
C	No. 2 resist roller	C - 15/ (2)
D	DSPF document pass sensor 7	
E	Transport roller 3	

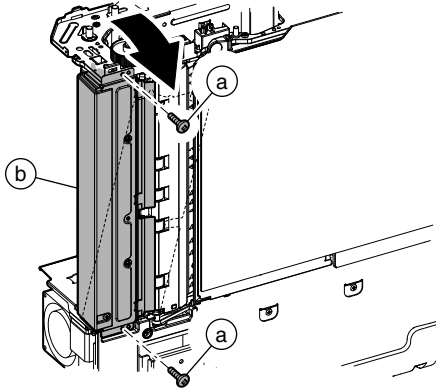


(1) DSPF document pass sensor 5 / DSPF document pass sensor 6 / No. 2 resist roller

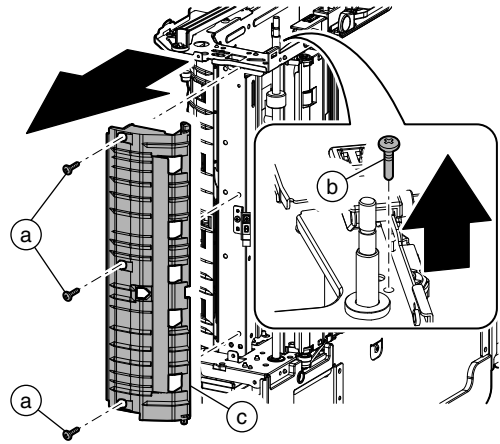
- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



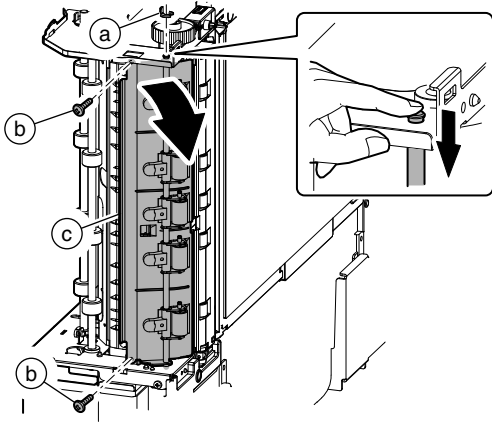
3) Remove the screw (a), and remove the stay (b).



6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

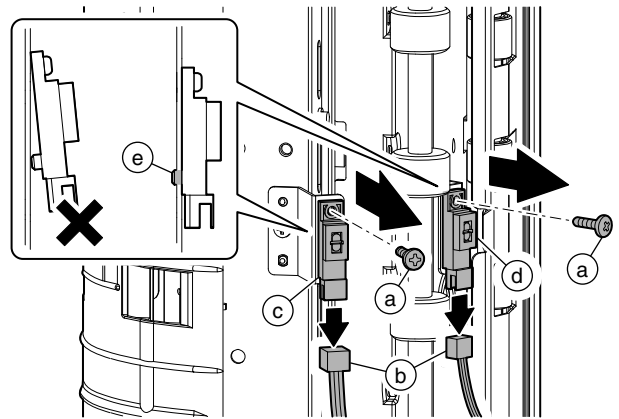


4) Remove the E-ring (a). Remove the screw (b), and remove the roller unit (c).

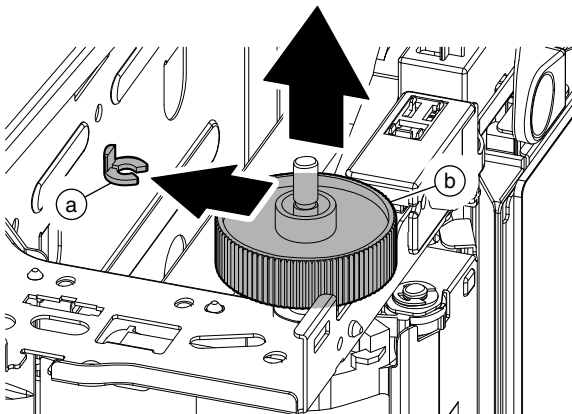


7) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 5 (c) and the DSPF document pass sensor 6 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.

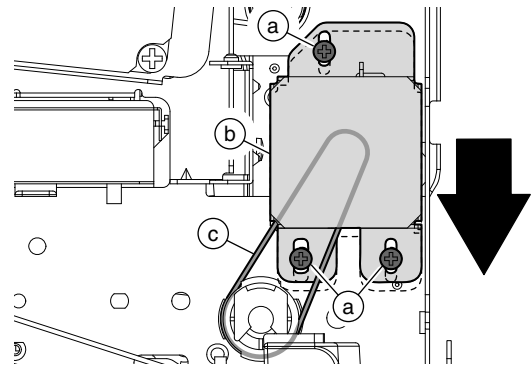


5) Remove the E-ring (a), and remove the knob (b).

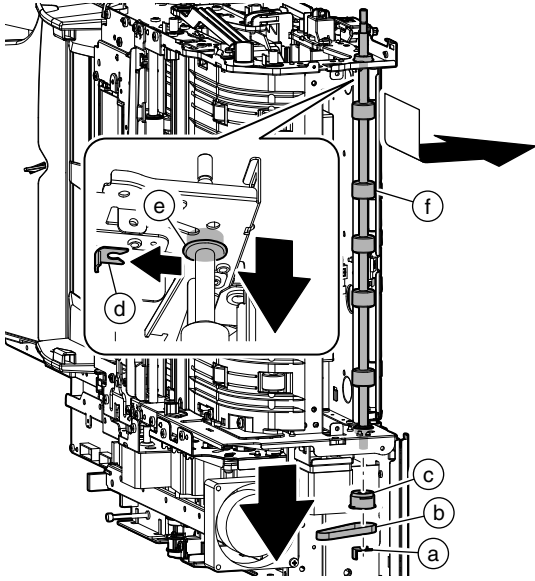


8) Loosen the screw (a). Slide the PS drive unit (b) to reduce the tension of the belt (c). Tighten the screw (a).

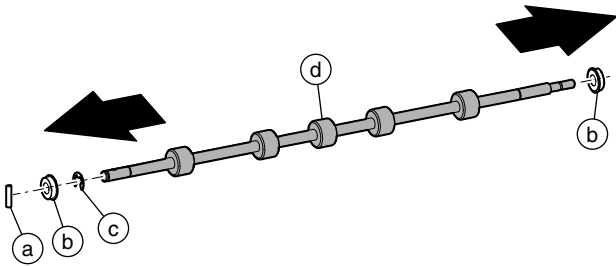
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- Remove the E-ring (a), the belt (b), and the pulley (c). Remove the E-ring (d), and slide the bearing (e) and remove the No. 2 resist roller unit (f).

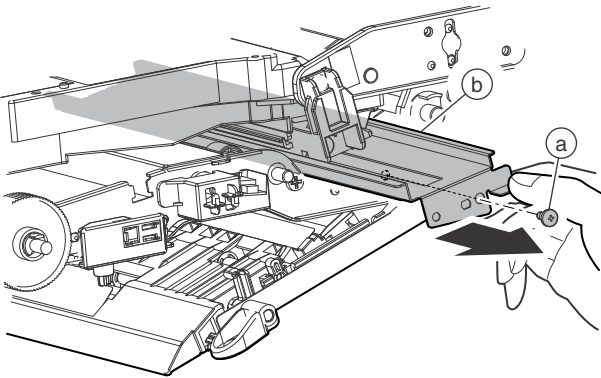


- Remove the pin (a), bearing (b) and the E-ring (c) from the No. 2 resist roller (d).

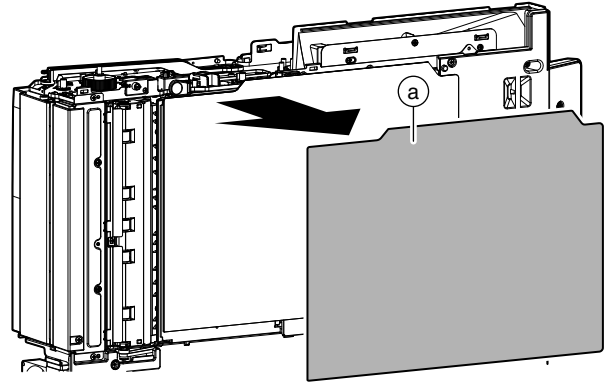


(2) DSPF document pass sensor 7 / Transport roller 3

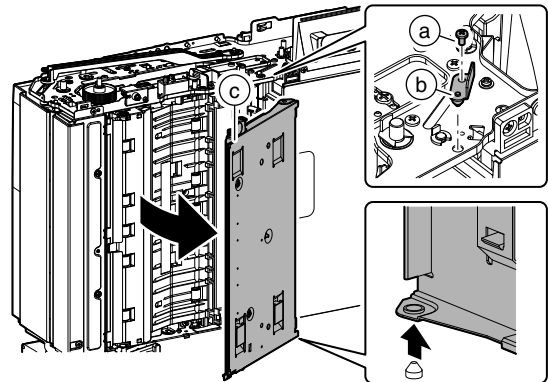
- Remove the front cabinet and the rear cabinet.
- Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



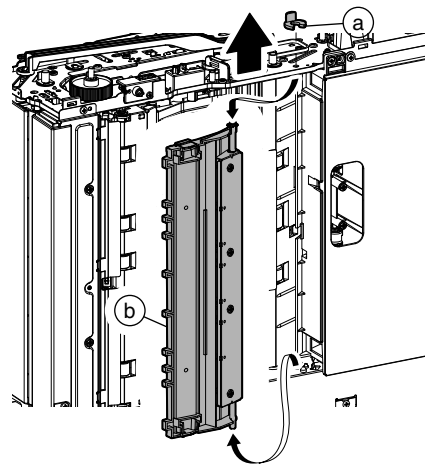
- Remove the document mat (a).



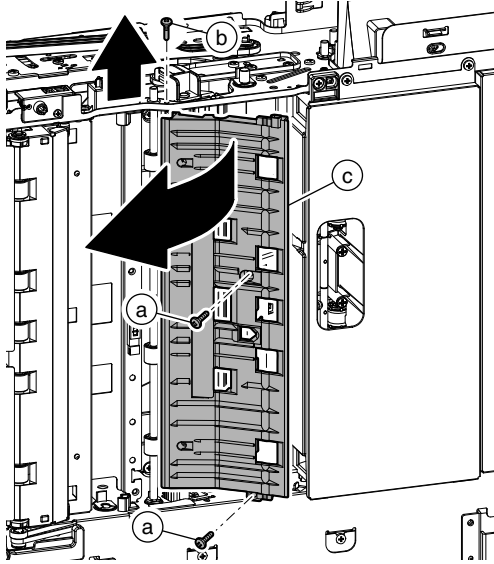
- Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).



- Remove the E-ring (a), and remove the paper guide (b).

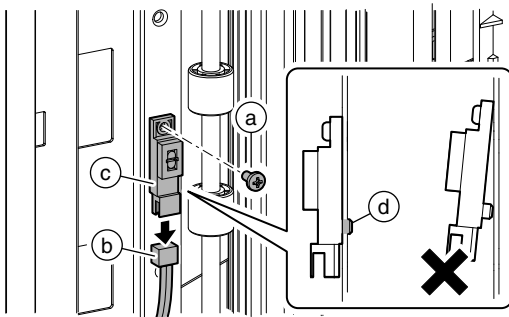


- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

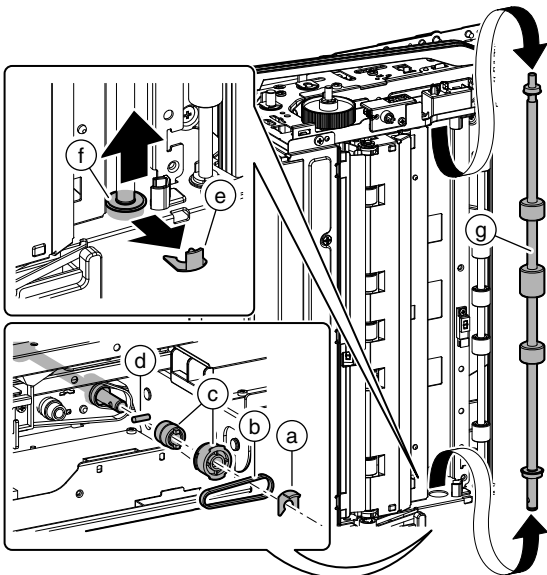


- 7) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 7 (c).

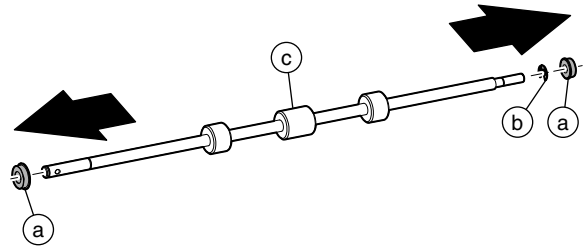
* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



- 8) Remove the E-ring (a), the belt (b), the pulley (c), and the pin (d). Remove the E-ring (e), and slide the bearing (f) and remove the transport roller 3 unit (g).

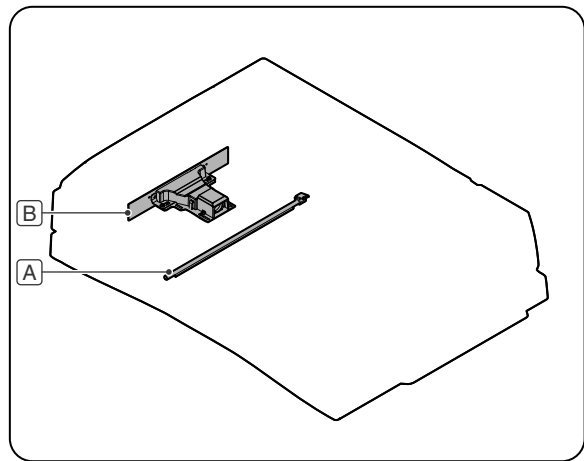


- 9) Remove the bearing (a) and the E-ring (b) from the transport roller 3 (c).



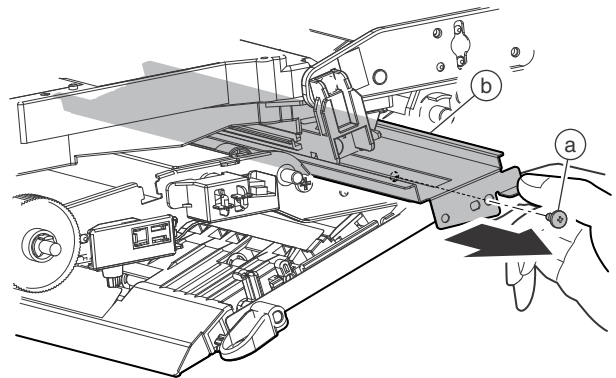
E. Scanner section

Parts		Page
A	Scanner lamp	C - 16 / (1)
B	CCD unit	

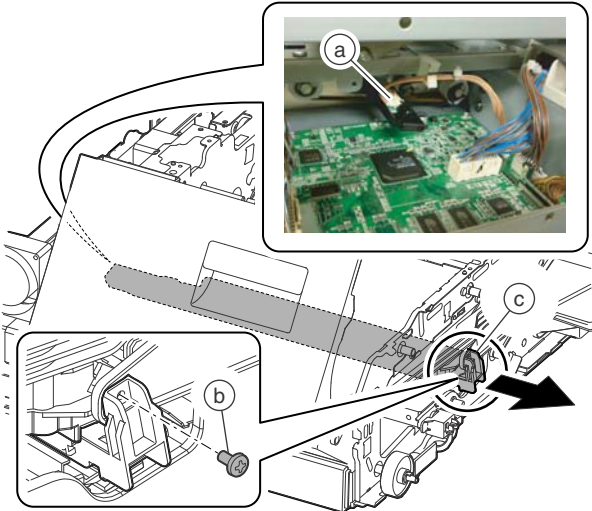


(1) Scanner lamp / CCD unit

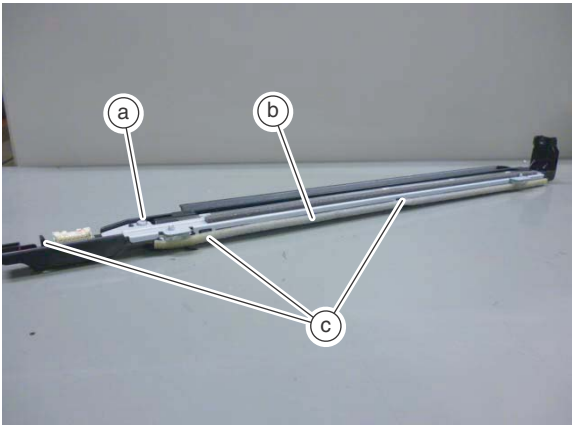
- 1) Remove the paper feed section cabinet and the front cabinet and the rear cabinet.
- 2) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



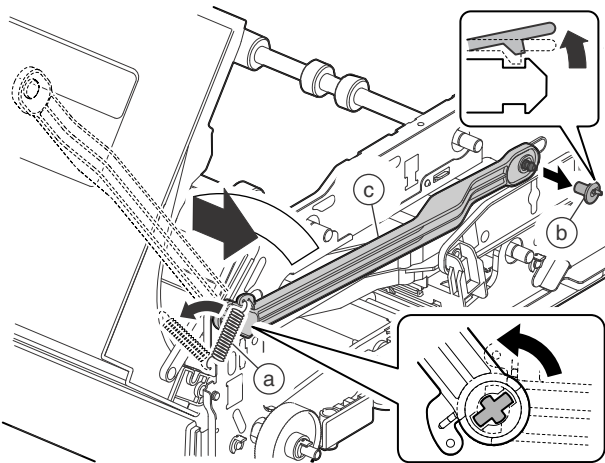
- 3) Disconnect the R side connector (a). Remove the screw (b), and remove the lamp unit (c).



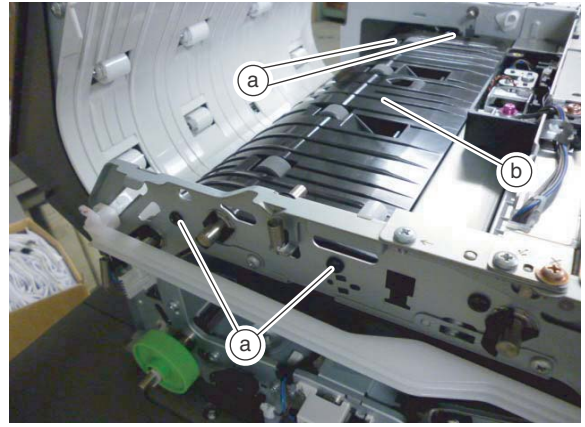
- 4) Remove the screw (a), and remove the sponge (b) and the hook (c) and the LED unit.



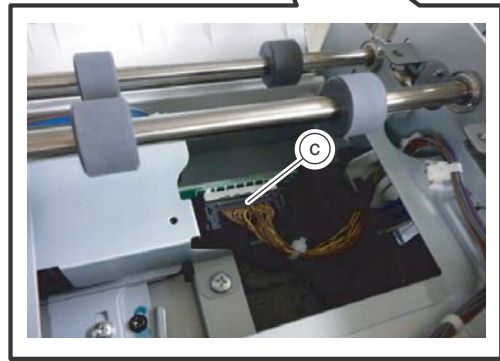
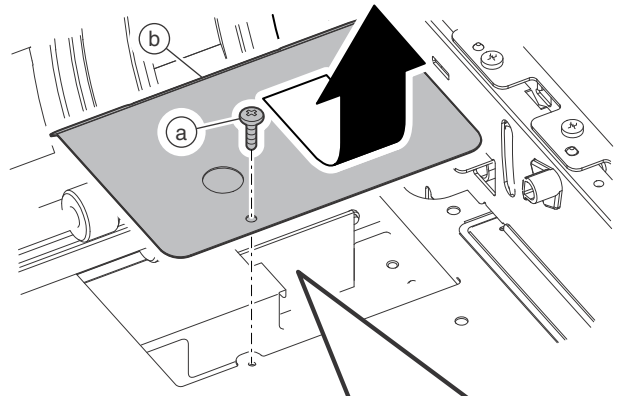
- 5) Remove the spring (a). Remove the holder (b), and remove the arm (c).



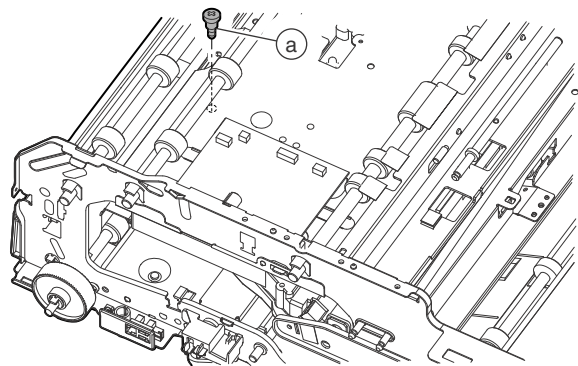
- 6) Remove the screw (a), and remove the paper guide (b).



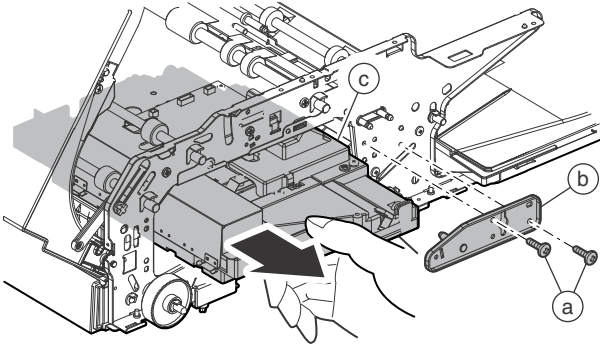
- 7) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



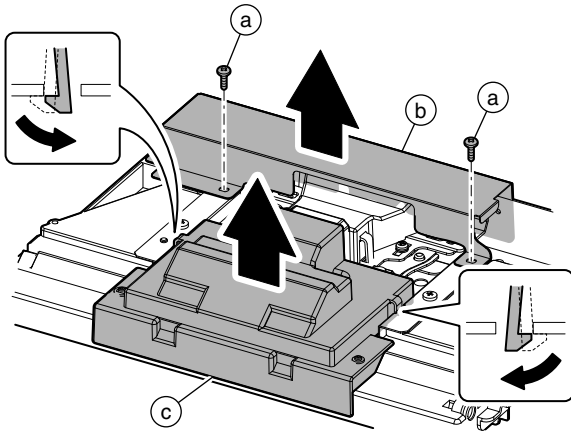
- 8) Remove the step screw (a).



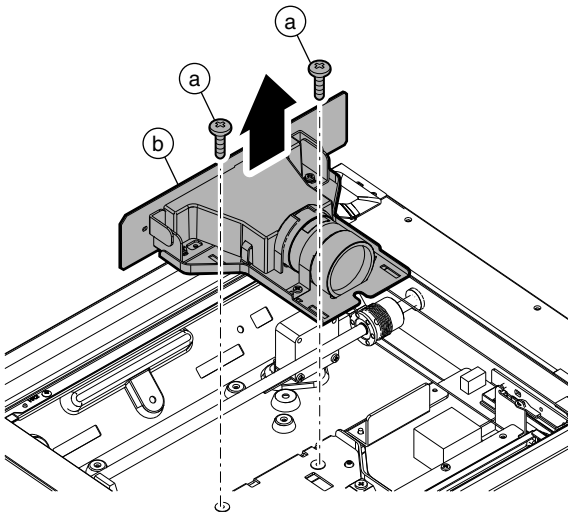
- 9) Remove the screw (a), and remove the fulcrum plate (b).
Remove the scanner unit (c).



- 10) Remove the screw (a). Remove the dark box (b) and the cover (c).

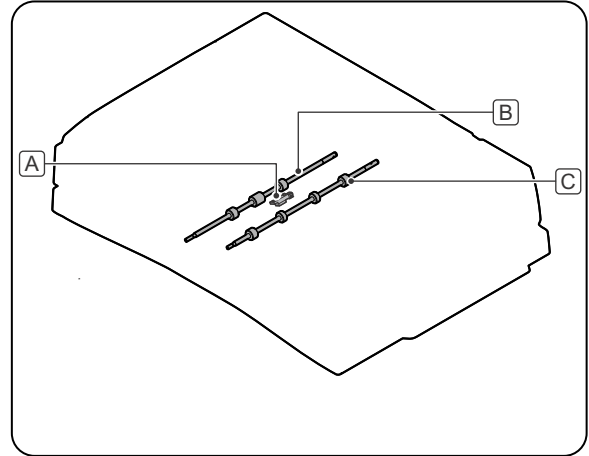


- 11) Remove the screw (a), and remove the CCD unit (b).



F. Paper exit section

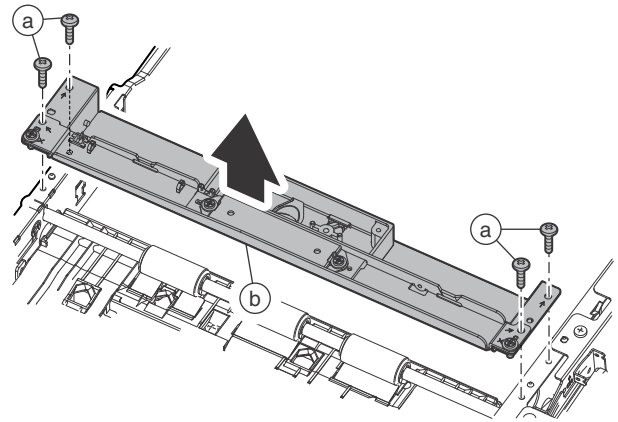
Parts		Page
A	DSPF paper exit detection sensor	C - 18/ (1)
B	Transport roller 5	C - 19/ (2)
C	Paper exit roller	



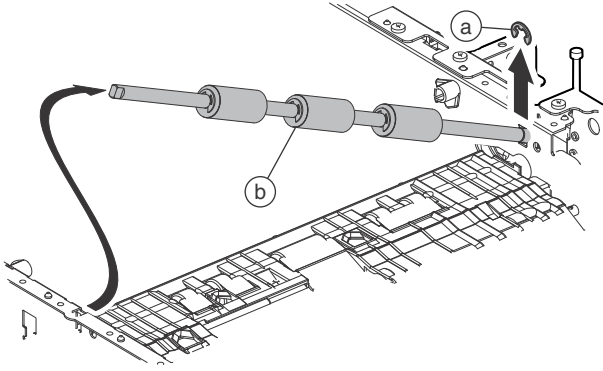
(1) DSPF paper exit detection sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the paper feed unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).

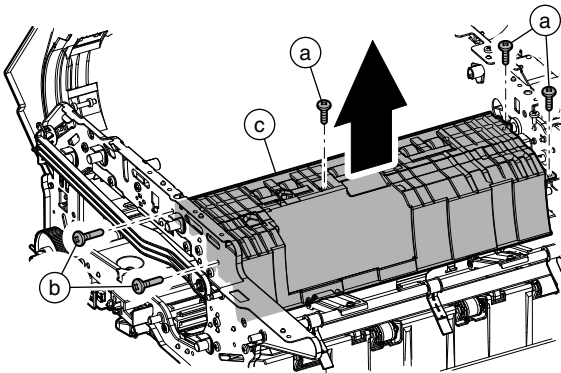
* The harness is connected, be careful not to disconnect it.



- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).

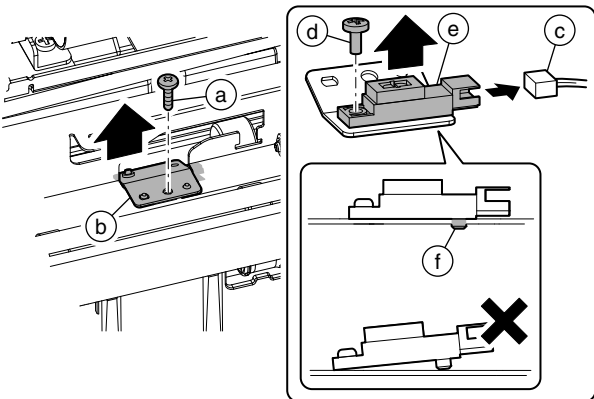


- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



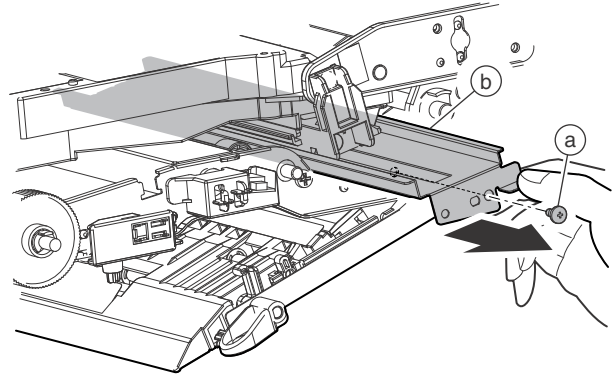
- 7) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector, and remove the screw (d). Remove the DSPF paper exit sensor (e).

* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.

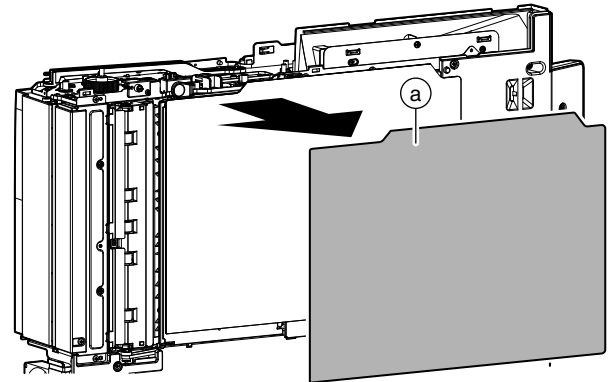


(2) Transport roller 5 / Paper exit roller

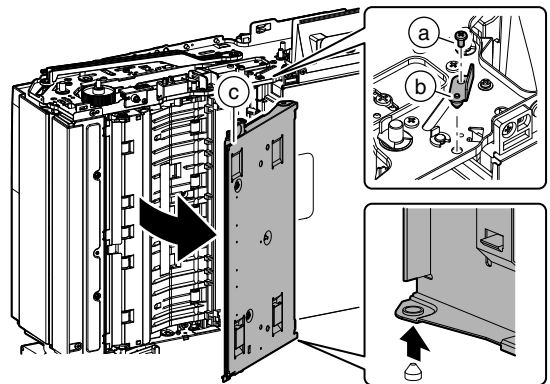
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



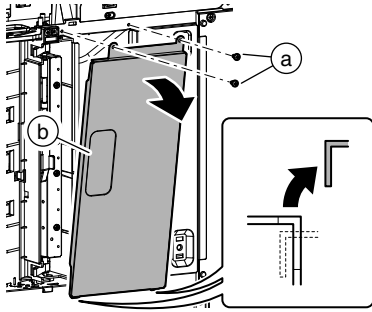
- 4) Remove the document mat (a).



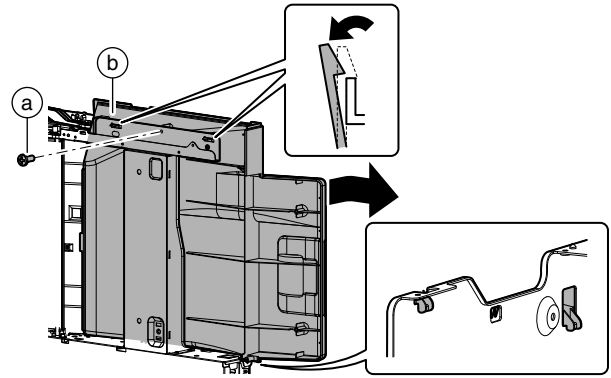
- 5) Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).



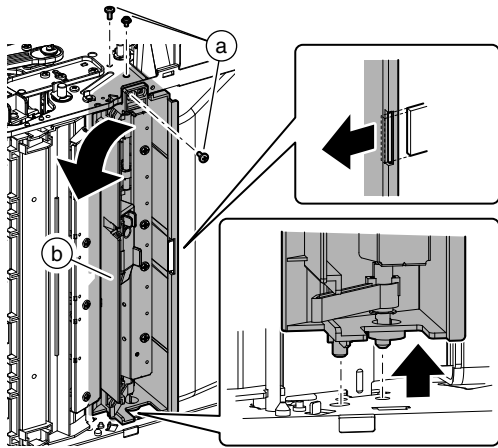
6) Remove the screw (a), and remove the cover (b).



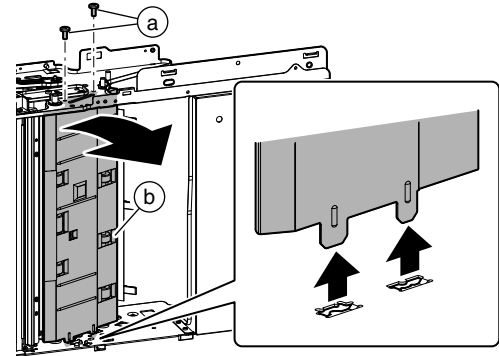
9) Remove the screw (a), and the paper exit tray (b).



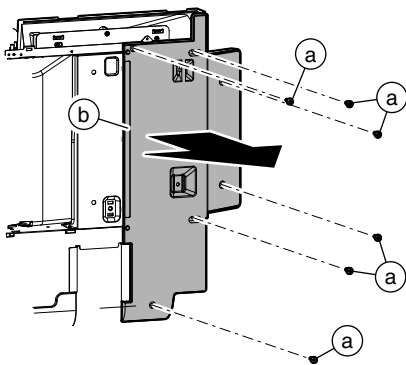
7) Remove the screw (a), and remove the follower roller unit (b).



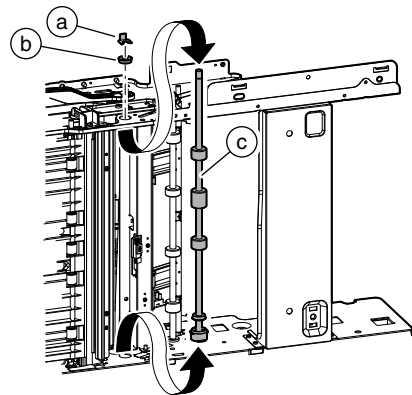
10) Remove the screw (a), and remove the paper guide (b).



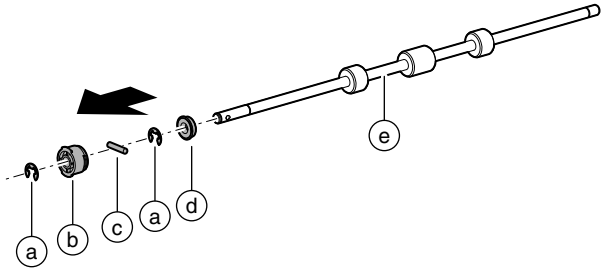
8) Remove the screw (a), and remove the cabinet (b).



11) Remove the E-ring (a), and remove the bearing (b). Remove the transport roller 5 unit (c).

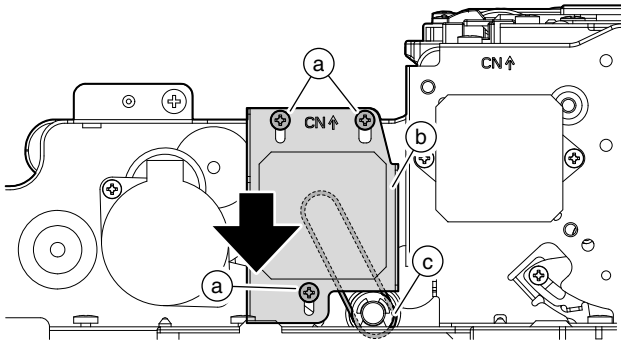


- 12) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 5 (e).

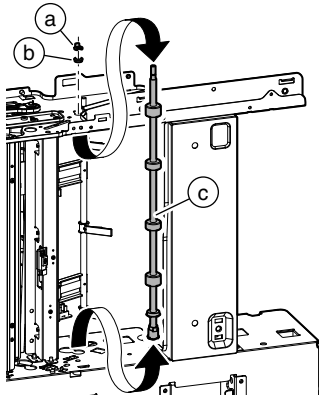


- 13) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

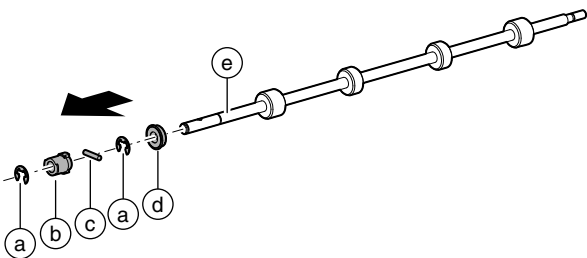
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 14) Remove the E-ring (a), and remove the bearing (b). Remove the paper exit roller unit (c).

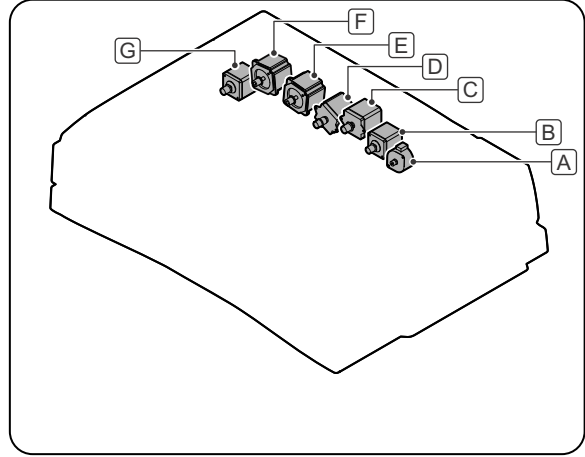


- 15) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the paper exit roller (e).



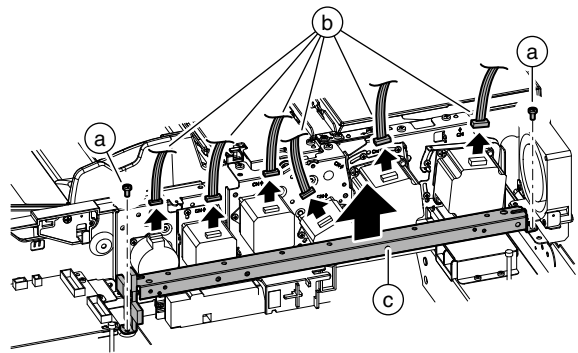
G. Drive section

Parts		Page
A	DSPF lift-up motor	C - 21 / (1)
B	DSPF paper exit motor	
C	DSPF document feed motor	C - 22 / (2)
D	DSPF scan transport motor	
E	DSPF resist motor	C - 23 / (3)
F	DSPF transport motor	
G	DSPF PS motor	C - 24 / (4)

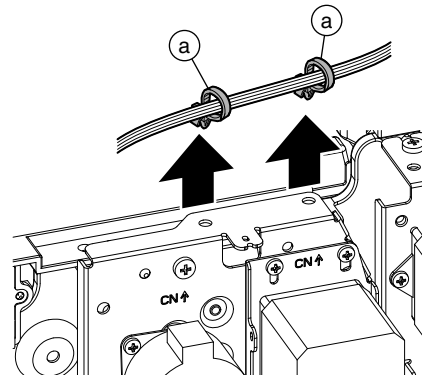


(1) DSPF lift-up motor / DSPF paper exit motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the stay (c).

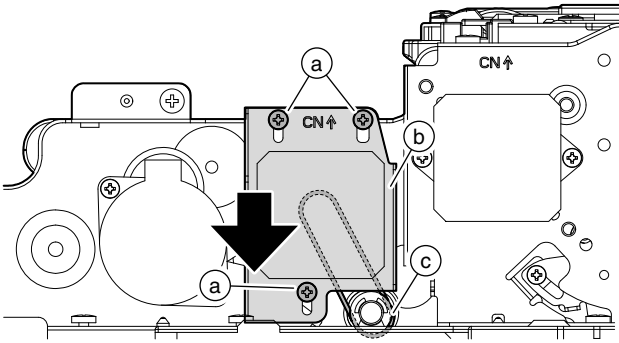


- 3) Remove the snap band (a).

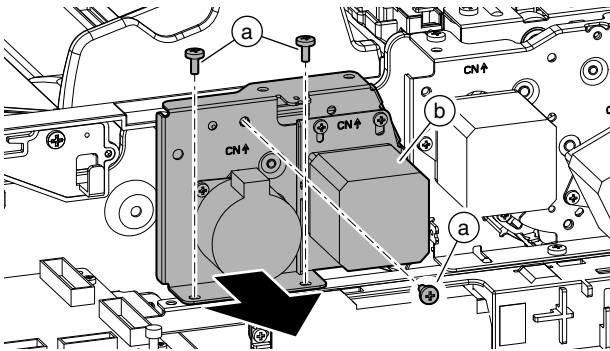


- 4) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

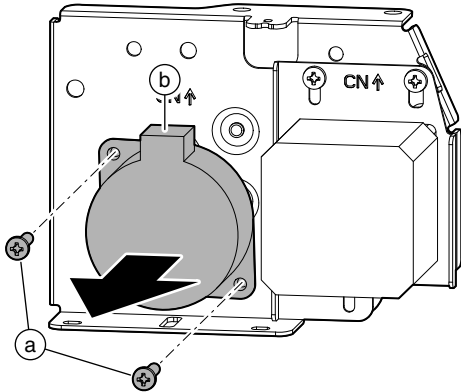
* Before installing the lift-up paper exit drive unit, perform this procedure. After installing the paper feed scan transport drive unit, set the spring in the compressed state by the same procedure to apply a tension to the belt.



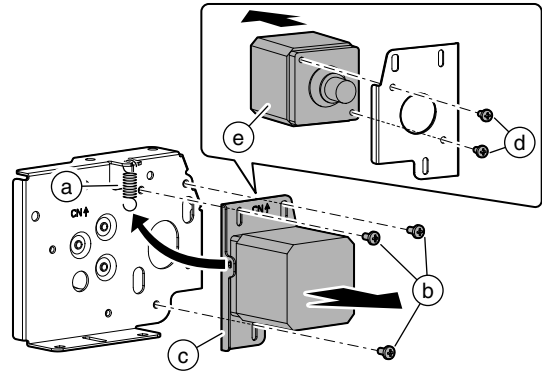
- 5) Remove the screw (a), and remove the lift-up paper exit drive unit (b).



- 6) Remove the screw (a), and remove the DSPF lift-up motor (b).

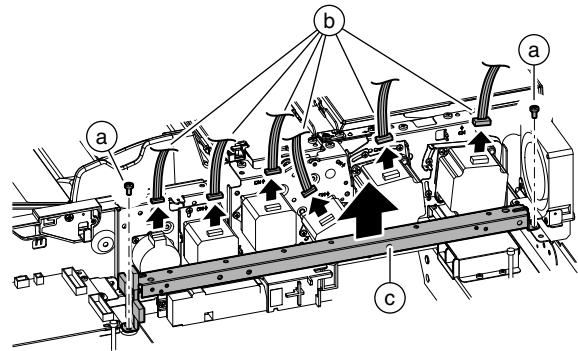


- 7) Remove the spring (a) and the screw (b). Remove the DSPF paper exit motor unit (c). Remove the screw (d), and remove the DSPF paper exit motor (e).

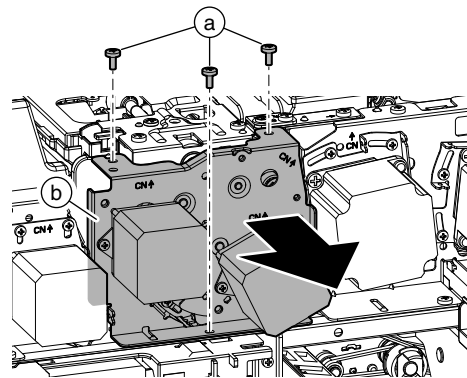


(2) DSPF document feed motor / DSPF scan transport motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the stay (c).

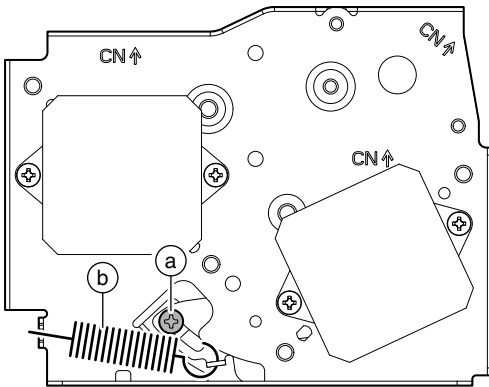


- 3) Remove the screw (a), and remove the paper feed scan transport drive unit (b).

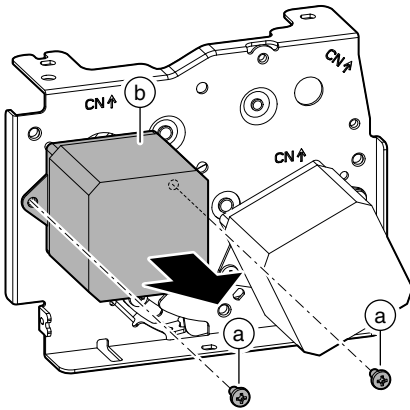


- 4) Loosen the screw (a), and stretch the spring (b). Tighten the screw (a).

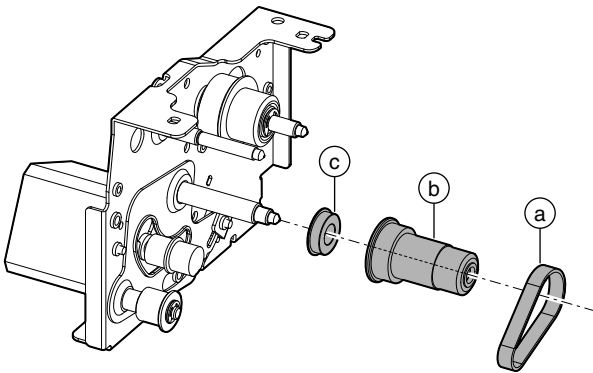
* Before installing the paper feed scan transport drive unit, perform this procedure. After installing the paper feed scan transport drive unit, perform the same procedure to compress the spring, applying a tension to the belt.



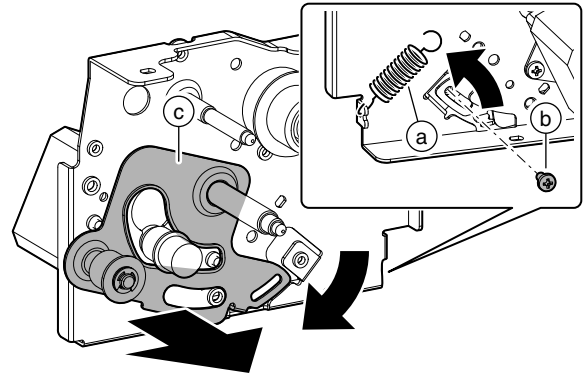
- 5) Remove the screw (a), and remove the DSPF document feed motor (b).



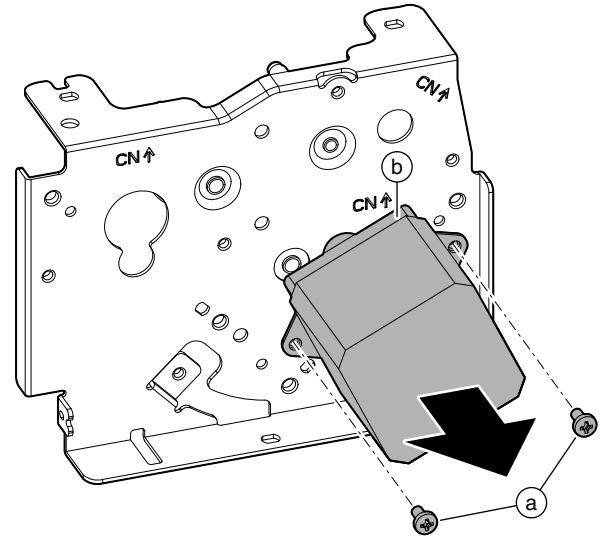
- 6) Remove the belt (a), the pulley (b), and the bearing (c).



- 7) Remove the spring (a) and the screw (b), and remove the plate (c).

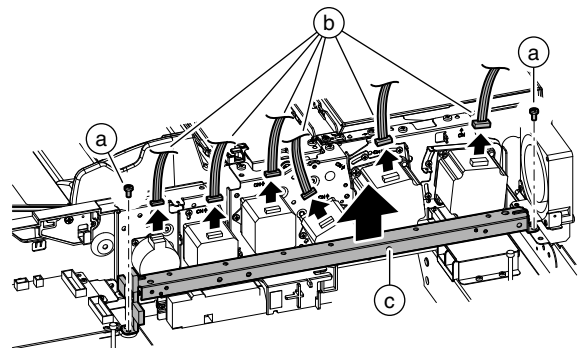


- 8) Remove the screw (a), and remove the DSPF scan transport motor (b).

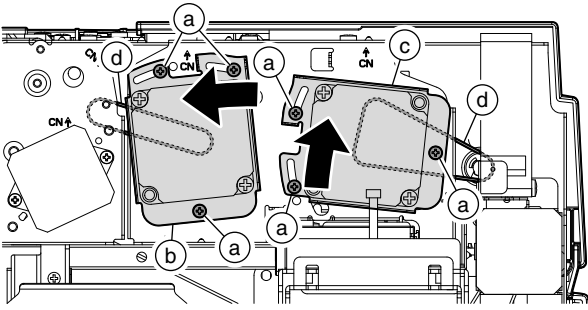


(3) DSPF resist motor / DSPF transport motor

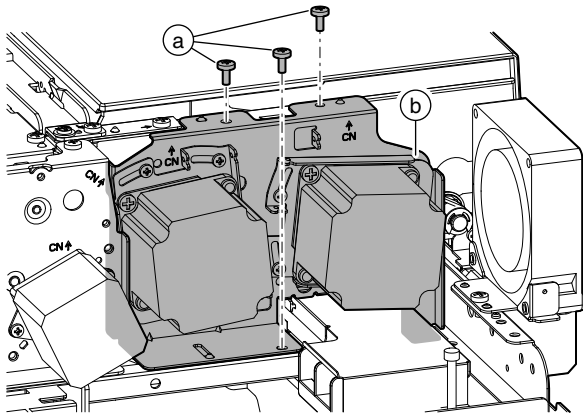
- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a) and the screw (b), and remove the stay (c).



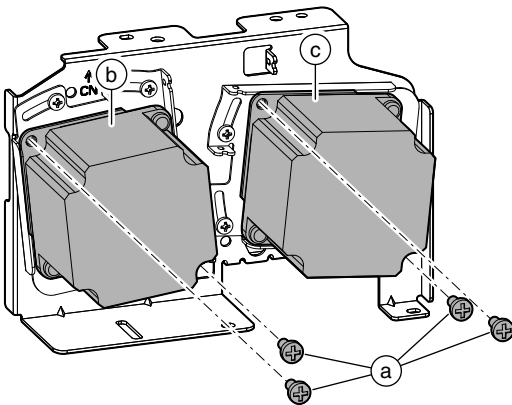
- 3) Loosen the screw (a). Slide the DSPF resist motor (b) and the DSPF transport motor (c) to reduce the tension of the belt (d). Tighten the screw (a).



- 1) Remove the screw (a), and remove the resist transport drive unit (b).



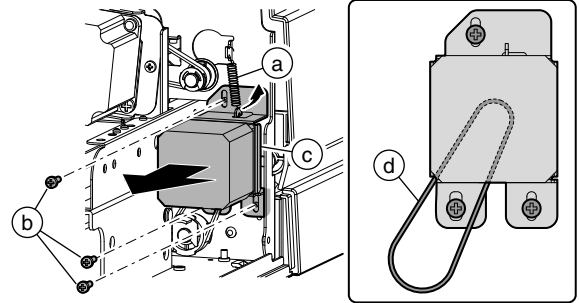
- 2) Remove the screw (a), and remove the DSPF resist motor (b) and the DSPF transport motor (c).



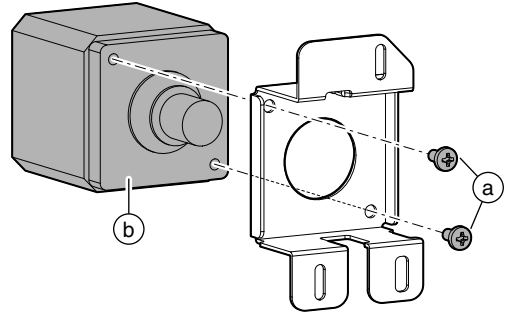
(4) DSPF PS motor

- 1) Remove the rear cabinet.
- 2) Remove the spring (a). Remove the screw (b), and remove the PS drive unit (c).

* When installing, temporarily tighten the screw (b) in loosened state and install the spring (a). Then apply a tension to the belt (c) and tighten the screw (b) securely.

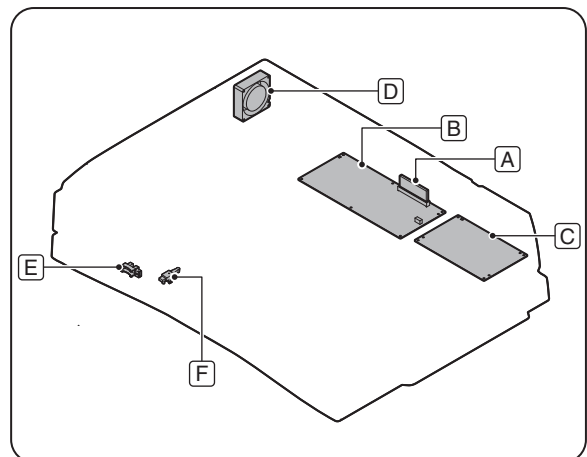


- 3) Remove the screw (a), and remove the DSPF PS motor (b).



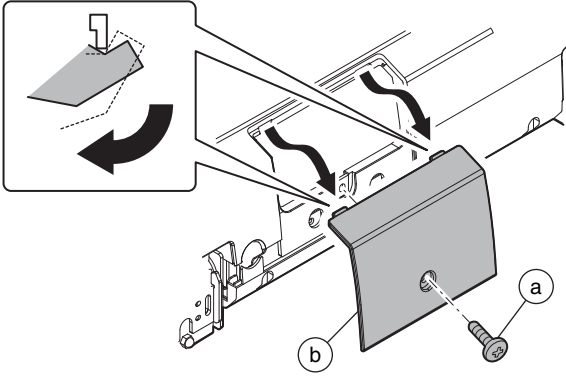
H. Others

Parts		Page
A	DSPF Flash PWB	C - 25/ (1)
B	DSPF cnt PWB	C - 25/ (2)
C	DSPF driver PWB	
D	DSPF motor cooling fan 1	C - 26/ (3)
E	DSPF open/close sensor	
F	DSPF lower door open/close sensor	

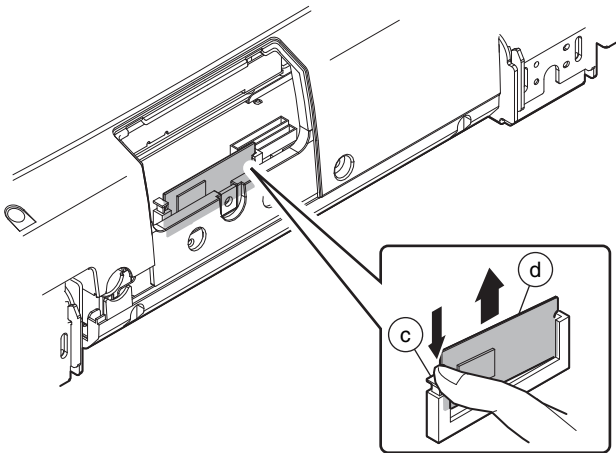


(1) DSPF flash PWB

- 1) Remove the screw (a), and remove the ROM cover (b).

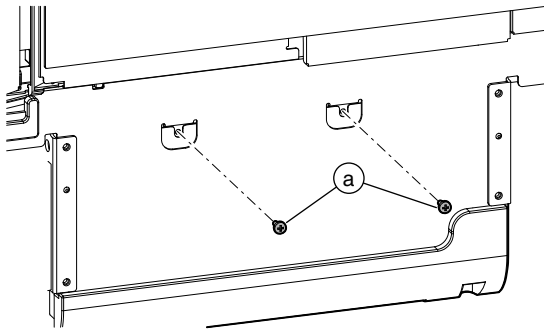


- 2) Release the lock (c), and remove the DSPF flash PWB (d).

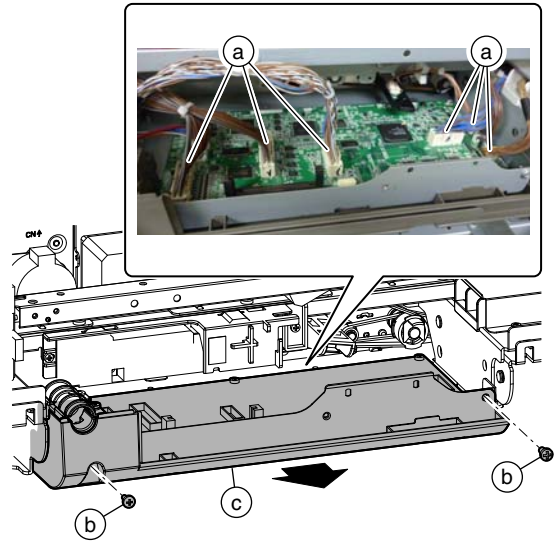


(2) DSPF cnt PWB / DSPF driver PWB / DSPF motor cooling fan 1

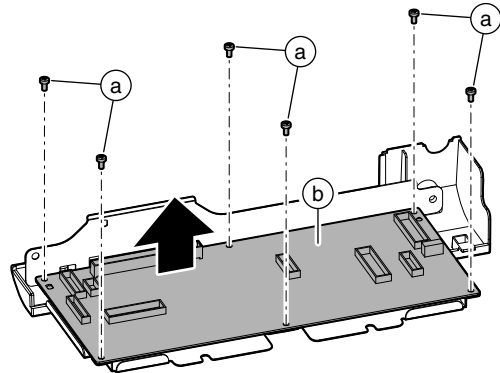
- 1) Remove the rear cabinet.
- 2) Remove the screw (a) at the bottom of the DSPF unit.



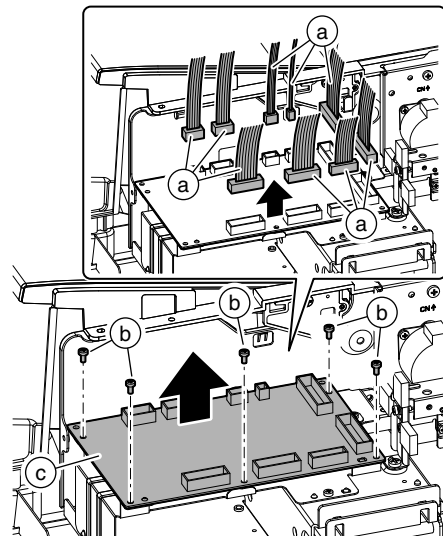
- 3) Disconnect the connector (a), and remove the screw (b). Pull out the DSPF cnt PWB unit (c).



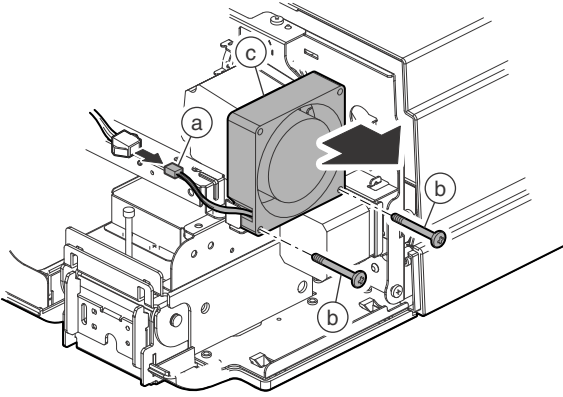
- 4) Remove the screw (a), and remove the DSPF cnt PWB (b).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the DSPF driver PWB (c).

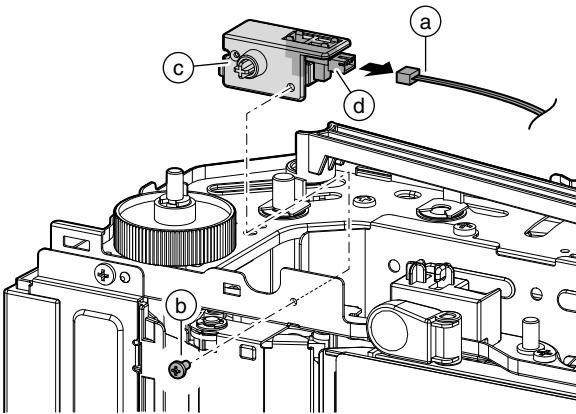


- 6) Disconnect the connector (a), and remove the screw (b).
Remove the DSPF motor cooling fan 1 (c).

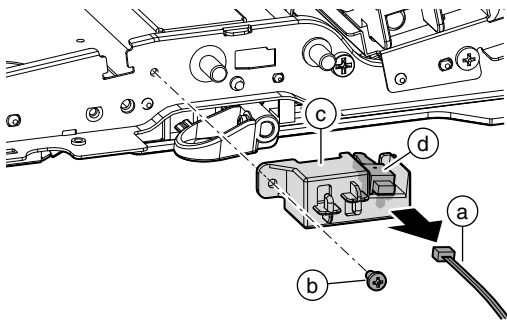


(3) DSPF open/close sensor / DSPF lower door open/close sensor

- 1) Remove the front cabinet.
- 2) Disconnect the connector (a), and remove the screw (b).
Remove the holder (c). Remove the DSPF open/close sensor (d).

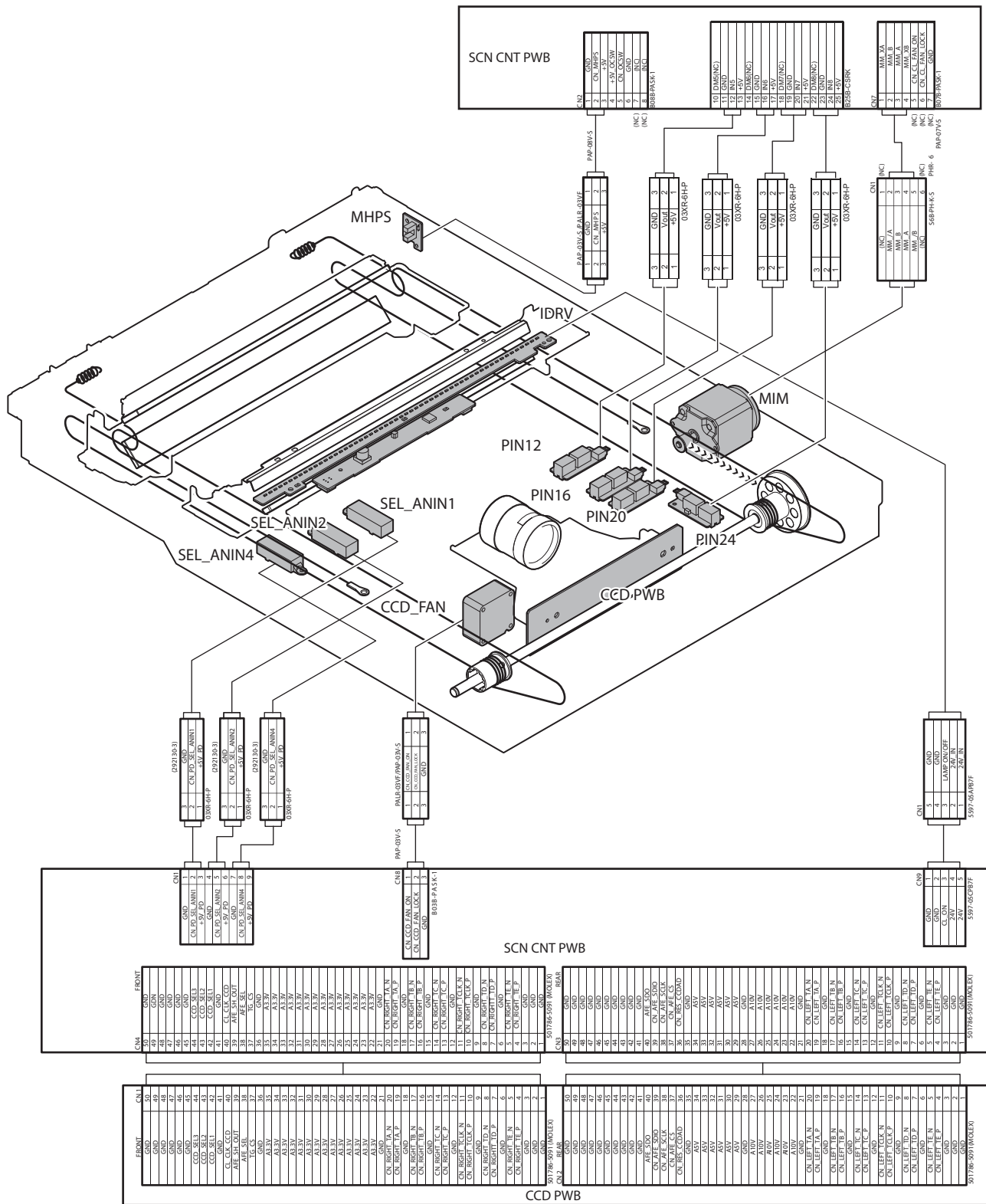


- 3) Disconnect the connector (a), and remove the screw (b).
Remove the holder (c). Remove the DSPF lower door open/close sensor (d).



[D] SCANNER SECTION

1. Electrical and mechanism relation diagram



Signal name	Name	Type	Function / Operation
MIM	Scanner (reading) motor	Stepping motor	Drives the copy lamp unit.
MHPS	Scanner home position sensor	Photo interrupter	Scanner home position detection.
CLI	Scanner lamp	LED lamp	Radiates lights onto the document.
SEL_ANIN 1	Main scanning document size sensor	Reflectin type	Detects the main scanning document size.
SEL_ANIN 2	Main scanning document size sensor	Reflectin type	Detects the main scanning document size.
SEL_ANIN 4	Main scanning document size sensor	Reflectin type	Detects the main scanning document size.

Signal name	Name	Type	Function / Operation
PIN12	Sub scanning document size sensor	Reflectin type	Detects the sub scanning document size.
PIN16	Sub scanning document size sensor	Reflectin type	Detects the sub scanning document size.
PIN20	Sub scanning document size sensor	Reflectin type	Detects the sub scanning document size.
PIN24	Sub scanning document size sensor	Reflectin type	Detects the sub scanning document size.
CCDFM	CCD cooling fan	Fan motor	Cools the CCD.

No.	Name	Function / Operation
1	CCD PWB	The Document image is scanned and is converted into a analog signal by the CCD.
2	SCNCNT PWB	Controls the scanner.

2. Operational descriptions

This machine employs the reduction optical type line CCD for scan resolution in the main scanning direction. Scan resolution is 600 DPI in the main scan direction and 300 DPI in the sub scan direction. Total of 7300 pixels.

Scanning is performed by moving mirror unit 1 and 2 in a sequential manner to scan the document.

Light reflected from the document to each mirror projects the image onto the CCD after its been reduced by the lens.

In the CCD, the optical energy is converted into electrical energy (analog) (Photo electric conversion), and is converted into digital signals (A/D conversion).

Image processes such as white balance and shading corrections are performed on the SCNCnt PWB. The signal is then sent to the MFP control PWB.

In the MFP control PWB, image process is performed according to the setting condition of the operation panel selected by the end user EX reduction, enlargement etc. etc..

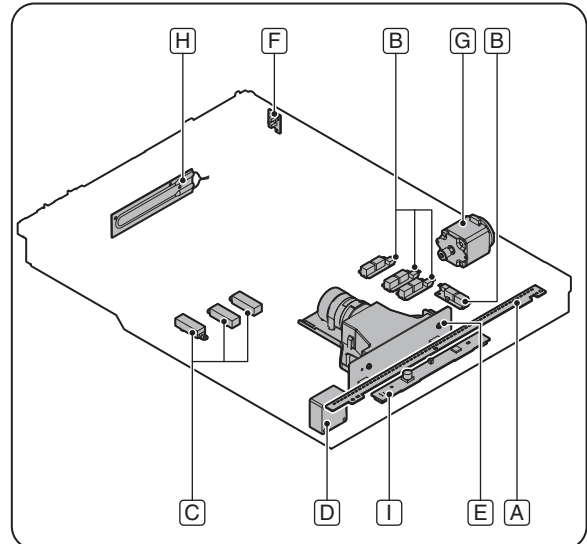
The image data is converted into video signal and sent to the PCU then to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signal is converted into laser beams, which are radiated onto the drum.

3. Disassembly and assembly

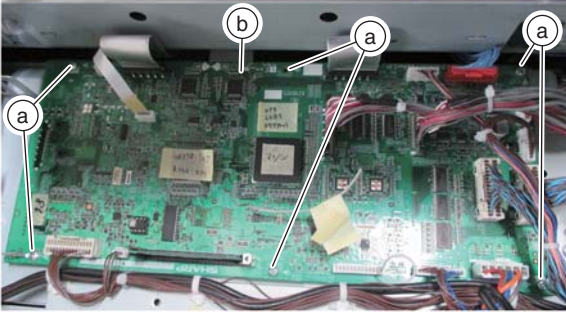
A. Scanner unit

Unit	Parts	Page
Scanner unit	A LED PWB	D - 3/a
	B Sub scanning document size sensor	D - 5/c
	C Main scanning document size sensor	
	D CCD cooling fan	D - 6/d
	E CCD unit	
	F Scanner home position sensor	D - 6/e
	G Scanner motor	D - 6/f
	H Scanner dehumidifying heater	D - 7/g
	I DRV PWB	D - 4/b

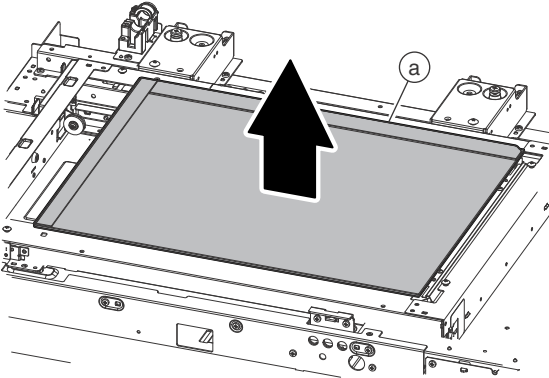


(1) Scanner unit

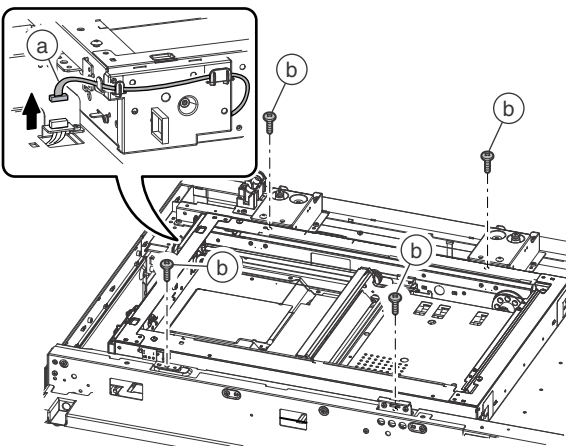
- 1) Remove the DSPF unit.
- 2) Remove the upper cabinet rear cover and the upper cabinet rear.
- 3) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, the upper cabinet front cover left and the upper cabinet front.
- 4) Disconnect the all connectors. Remove the screw (a), and pull out the SCNCNT PWB (b).



- 5) Remove the table glass (a).

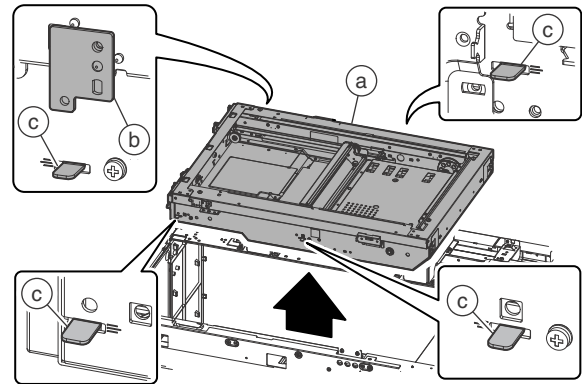


- 6) Disconnect the connector (a), and remove the screw (b).



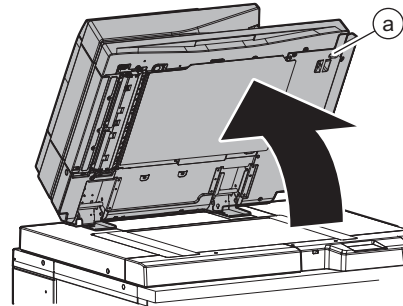
- 7) Remove the scanner unit (a).

* When installing, be careful not to bring the scanner home position sensor (b) and the rail collar (c) of the scanner unit into contact with the machine.

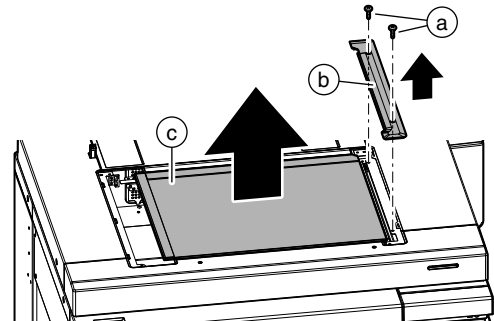


a. LED PWB

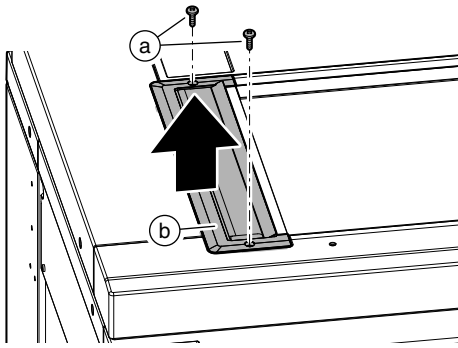
- 1) Open the DSPF unit (a).



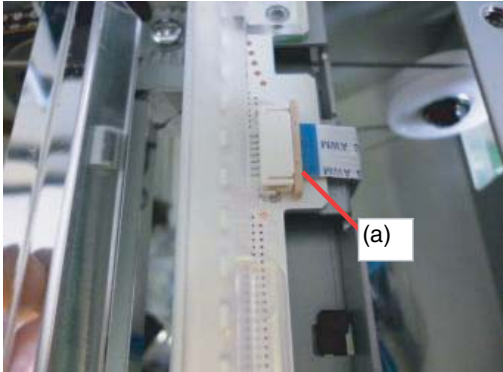
- 2) Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



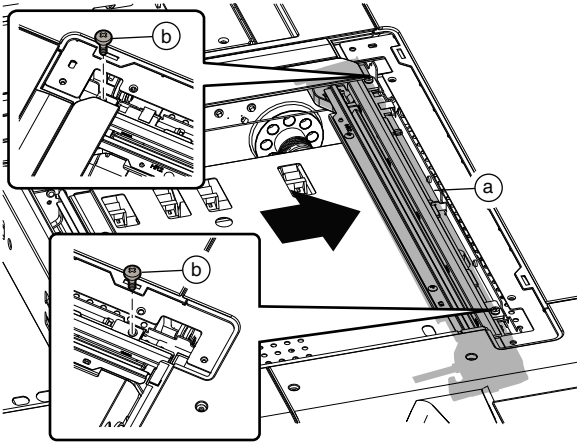
3) Remove the screw (a), and remove the SPF glass (b).



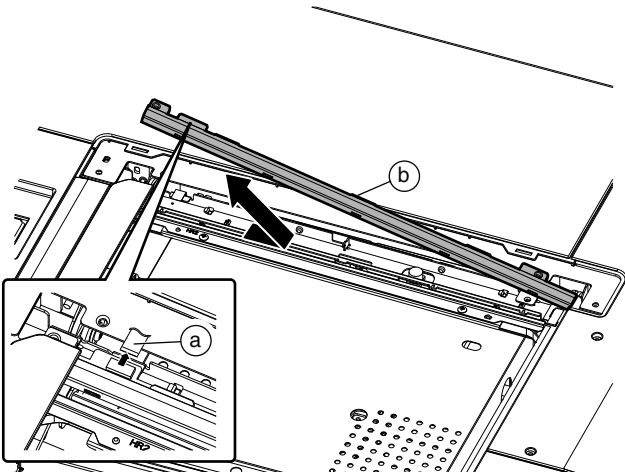
4) Disconnect the connector (a).



5) Shift the lamp unit (a) to the right, and remove the screw (b).

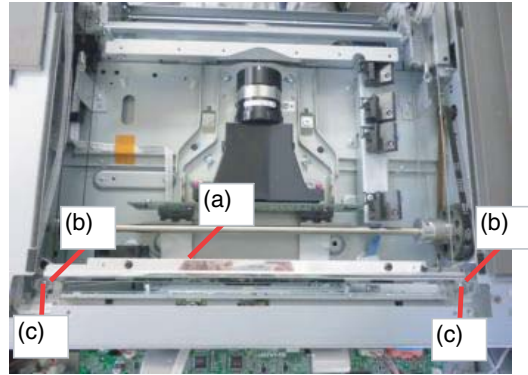


6) Remove the light guide plate (a) and the scanner lamp (b).

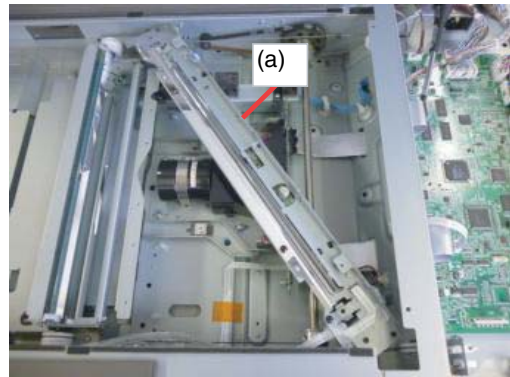


b. DRV PWB

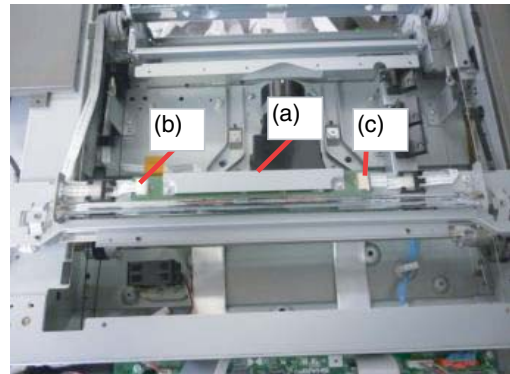
1) Remove the fixing screw (c) which is fixing the plate (b) which is holding the lamp unit (a) and the wire.



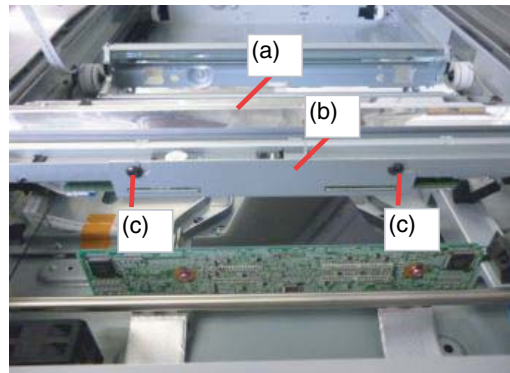
2) Remove the lamp unit (a).



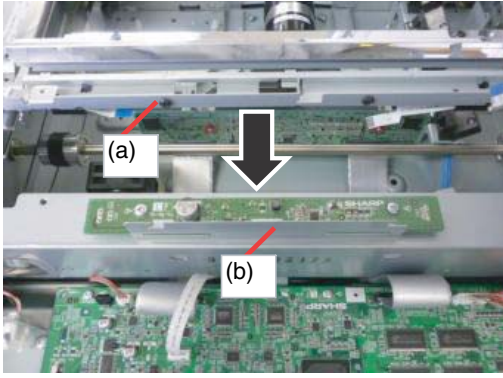
3) Disconnect the connector (b) and (c) of the lamp unit (a).



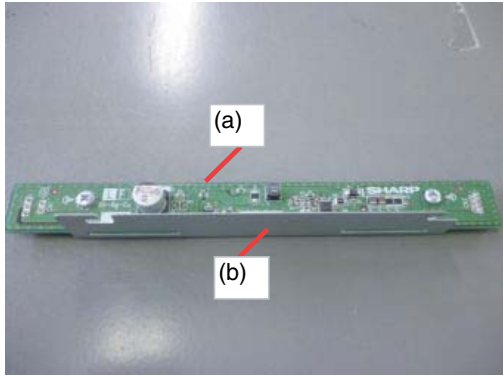
4) Loosen the screw (c) of the plate (b) which is fixing the lamp unit (a) and the DRV PWB.



- Remove the plate (b) which is fixing the DRV PWB from the lamp unit (a).

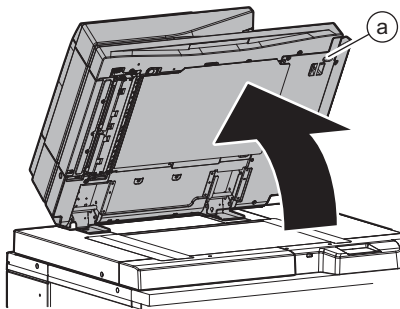


- Remove the DRV PWB (a) from the plate (b).

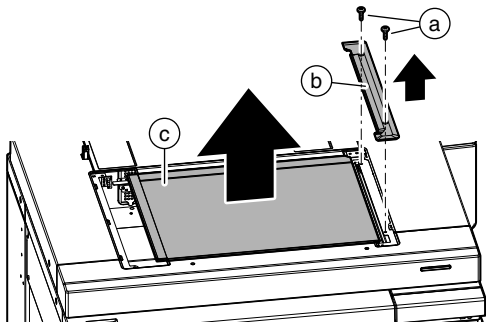


c. Sub scanning document size sensor / Main scanning document size sensor

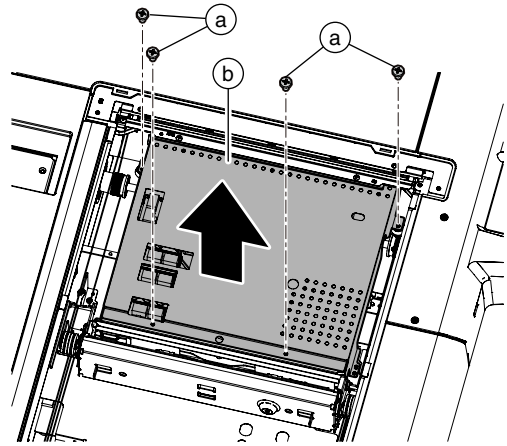
- Open the DSPF unit (a).



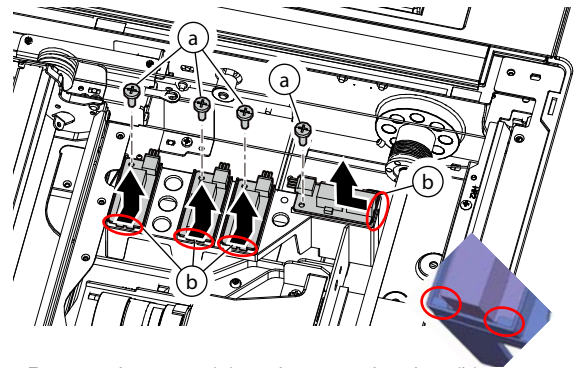
- Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



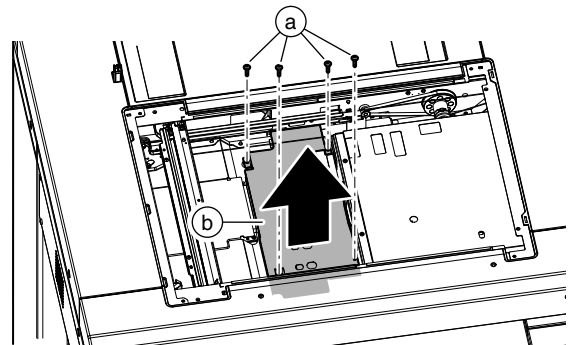
- Remove the screw (a), and remove the dark box cover (b).



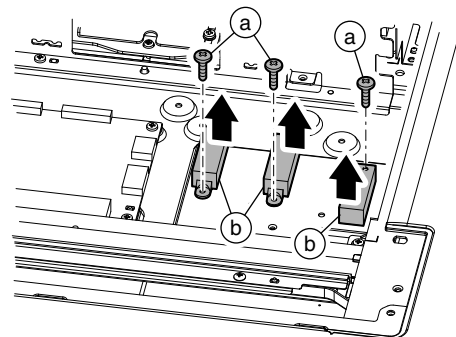
- Remove the screw (a), and remove the sub scanning document size sensor (b).



- Remove the screw (a), and remove the plate (b).

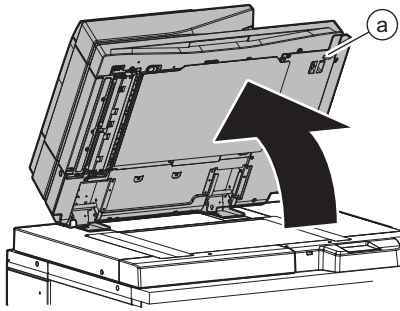


- Remove the screw (a), and remove the main scanning document size sensor (b).

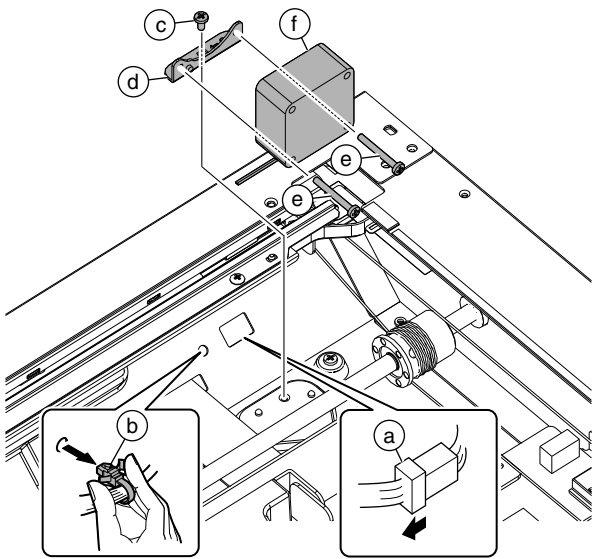


d. CCD cooling fan / CCD unit

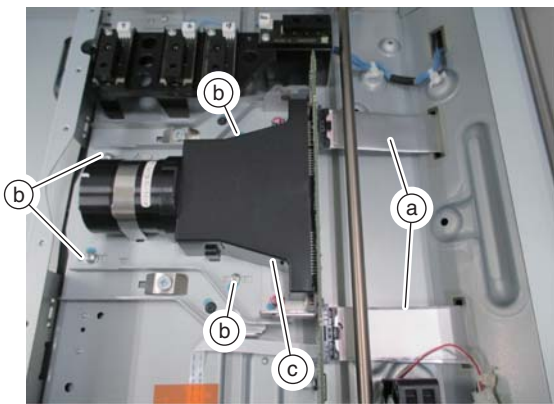
- 1) Open the DSPF unit (a).



- 2) Remove the table glass holder and the table glass.
- 3) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the plate (d). Remove the screw (e), and remove the CCD cooling fan (f).

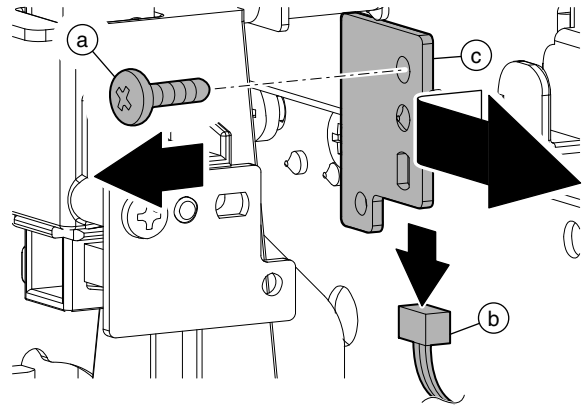


- 4) Remove the flat cable (a), and the screw (b). Remove the CCD unit (c).



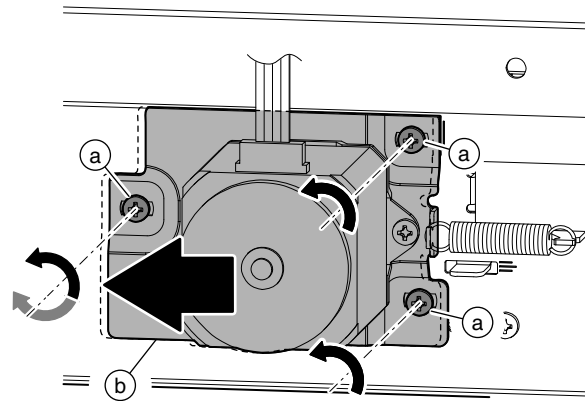
e. Scanner home position sensor

- 1) Remove the upper cabinet rear cover.
- 2) Remove the upper cabinet left.
- 3) Remove the screw (a), and disconnect the connector (b). Remove the scanner home position sensor (c).

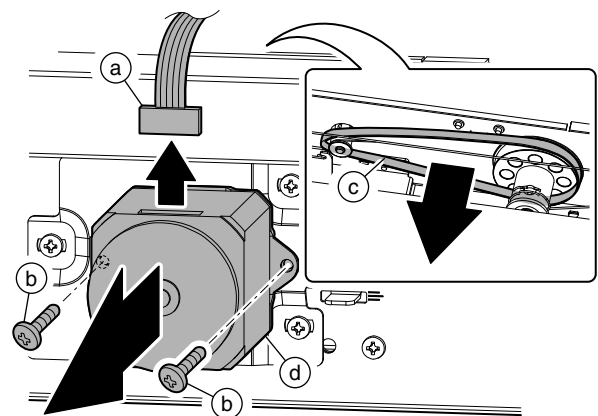


f. Scanner motor

- 1) Remove the upper cabinet rear cover and the upper cabinet rear.
- 2) Remove the table glass holder and the table glass.
- 3) Remove the SPF glass unit.
- 4) Loosen the screw (a). Slide the scanner motor unit (b), and tighten one screw to fix it.

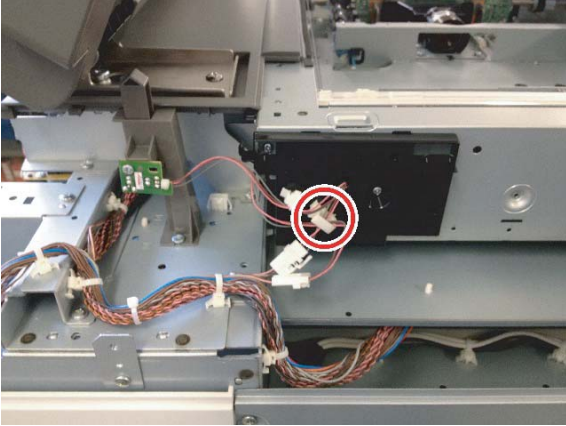


- 5) Disconnect the connector (a), and remove the screw (b). Remove the belt (c) and scanner motor (d).

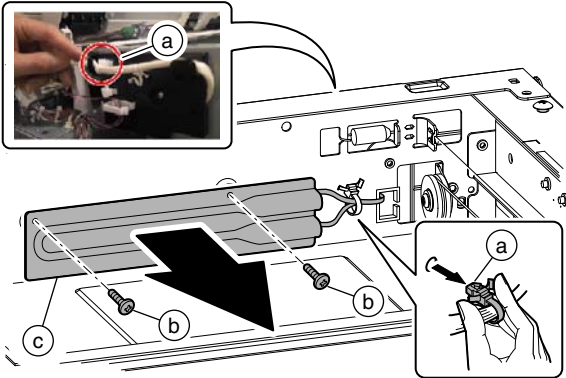


g. Scanner dehumidifying heater

- 1) Remove the upper cabinet left.
- 2) Remove the table glass holder and the table glass.
- 3) Remove the SPF glass unit.
- 4) Remove the screw, and remove the cover.



- 5) Remove the snap band (a). Remove the screw (b), and remove the scanner dehumidifying heater (c).



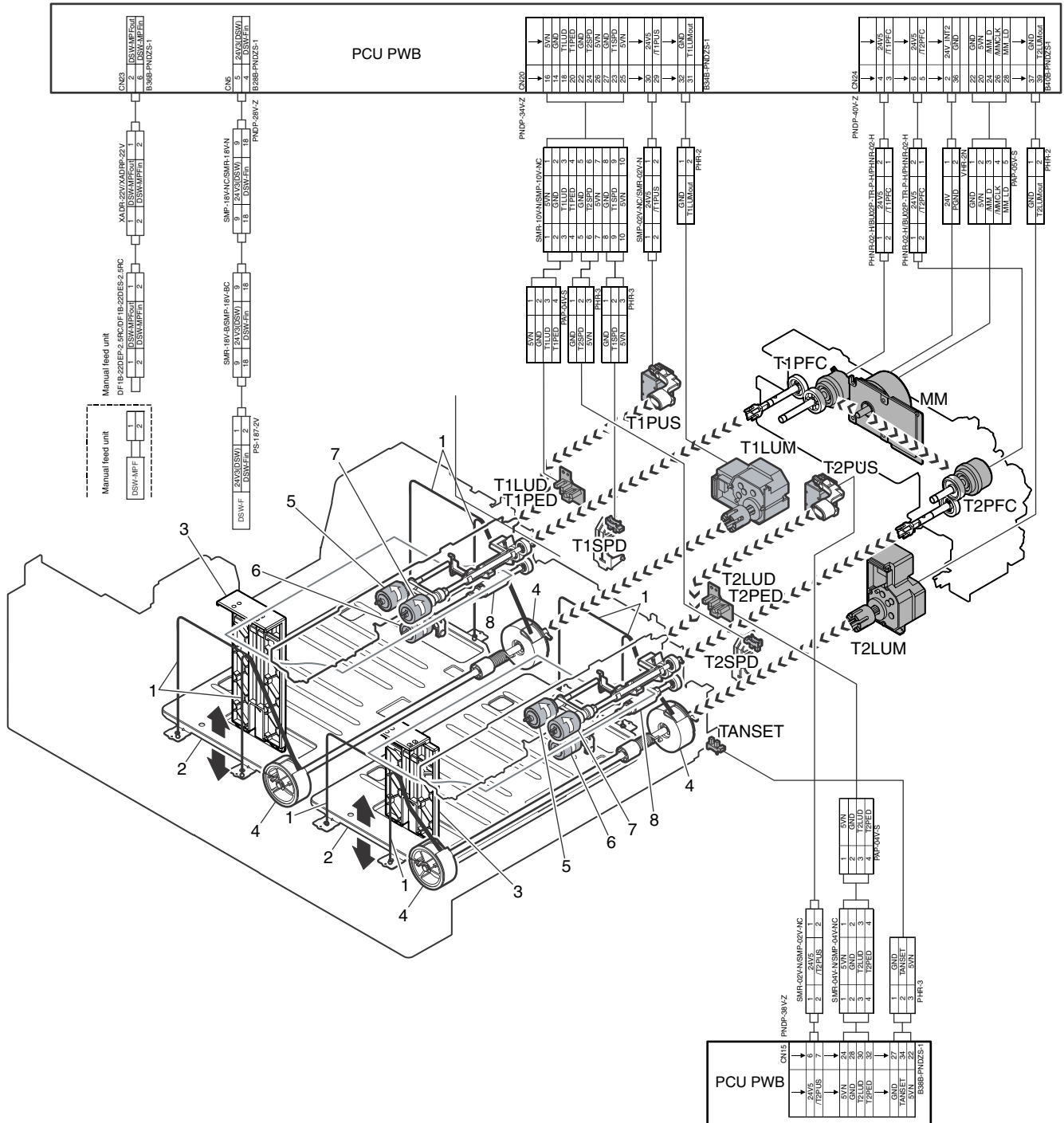
[E] TRAY PAPER FEED SECTION

Paper capacity for each tray is as follow.

- Paper feed tray (Left): 1200 sheets
- Paper feed tray 2 (Right): 800 sheets
- Paper feed tray 3, 4: 500 sheets

1. Electrical and mechanism relation diagram

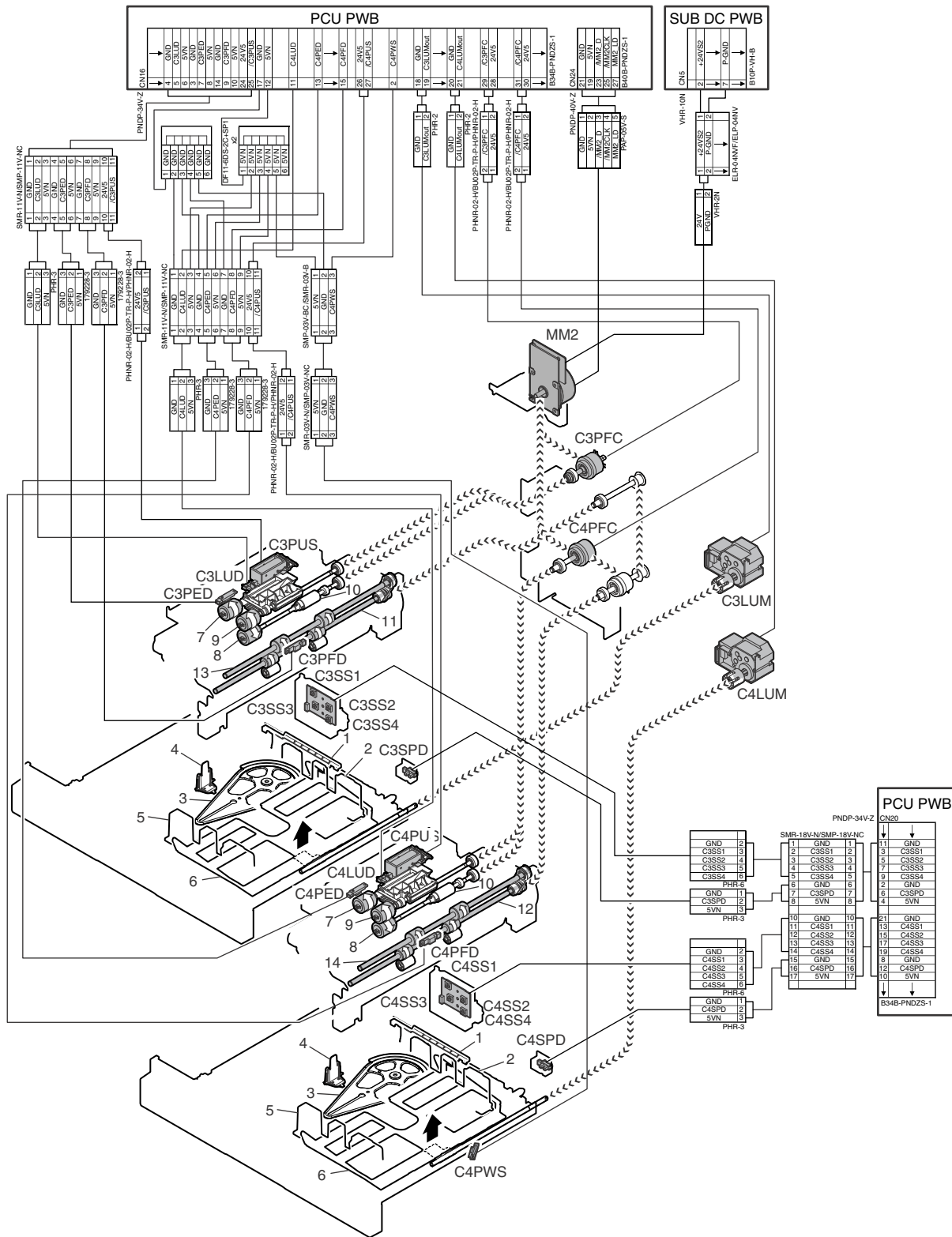
A. Paper feed tray 1 and 2 section



Signal name	Name	Type	Function / Operation
T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Transmission type	Paper remaining quantity detection. (Paper feed tray 1)
T1PED	Paper empty detector (Paper feed tray 1)	Photo interrupter	Paper empty detection.
T1PFD	Paper entry detector (Paper feed tray 1)	Reflection type	Detects paper pass.
T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	DC brush motor	Drives the lift plate of the paper feed tray. (This is the same as the T1LUM in the circuit diagram.)
T1LUD	Paper upper limit detection (Paper feed tray 1)	Photo interrupter	Detects lift up of the paper feed tray 1.
T1PUS	Paper pickup solenoid (Paper feed tray 1)	Electromagnetic clutch	Push down the paper pickup roller onto paper.
T1PFC	Paper feed clutch (Paper feed tray 1)	Electromagnetic clutch	Paper feed tray 1 section roller ON/OFF control.
T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Transmission type	Paper remaining quantity detection. (Paper feed tray 2)
T2PED	Paper empty detector (Paper feed tray 2)	Photo interrupter	Paper empty detection.
T2PFD	Paper entry detector (Paper feed tray 2)	Reflection type	Detects paper pass.
T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	DC brush motor	Drives the lift plate of the paper feed tray. (This is the same as the T2LUM in the circuit diagram.)
T2LUD	Paper upper limit detection (Paper feed tray 1)	Photo interrupter	Drives the lift plate of the paper feed tray.
T2PUS	Paper pickup solenoid (Paper feed tray 2)	Electromagnetic clutch	Push down the paper pickup roller onto paper.
T2PFC	Paper feed clutch (Paper feed tray 2)	Electromagnetic clutch	Paper feed tray 1 section roller ON/OFF control.
TANSET	Paper feed tray 1/2 (Tandem tray) detection signal	Transmission type	Paper feed tray 1/2 (Tandem tray) insertion detection.
MM1	Paper feed motor 1	DC brushless motor	Drives paper feed section 1 and 2.

No.	Name	Function / Operation
1	Lift wire	Transmits drive power of the paper feed tray lift motor to the paper feed tray.
2	Paper feed table	Paper load on this table.
3	Paper feed tray unit 1, 2 regulation plates L/R	Regulates the paper width to restrict skew to minimize.
4	Pulley	Transmits drive power of the paper feed tray lift motor 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.

B. Paper feed tray 3 and 4 section



Signal name	Name	Type	Function / Operation
C3LUD	Cassette 3 upper limit detection	Transmission type	Detects lift up of the cassette 3.
C3LUM	Paper lift up motor (Tray 3)	DC brush motor	Drives the paper tray lift.
C3PED	Cassette 3 paper presence detection	Reflection type	Detects the cassette 3 paper presence.
C3PFC	Cassette 3 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the tray 3 paper feed section.
C3PFD	Cassette 3 paper presence detection	Reflection type	Detects the cassette 3 paper presence.
C3PUS	Cassette 3 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 3)
C3SPD	Cassette 3 remaining quantity detection	Transmission type	Detects the cassette 3 remaining quantity.
C3SS1	Cassette 3 size detection 1	Tact switch	Detects the cassette 3 paper size. Detects insertion of the cassette 3 by detecting one of cassette 3 size detection 1 to 4.
C3SS2	Cassette 3 size detection 2	Tact switch	
C3SS3	Cassette 3 size detection 3	Tact switch	
C3SS4	Cassette 3 size detection 4	Tact switch	
C4LUD	Cassette 4 upper limit detection	Transmission type	Detects lift up of the cassette 4.
C4LUM	Paper lift up motor (Tray 4)	DC brush motor	Drives the paper tray lift.
C4PED	Cassette 4 paper presence detection	Reflection type	Detects the cassette 4 paper presence.
C4PFC	Cassette 4 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the tray 4 paper feed section.
C4PFD	Cassette 4 paper entry detection	Reflection type	Detects the cassette 4 paper pass.
C4PUS	Cassette 3 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 3)
C4PWS	Cassette 4 width detection	Volume resistor	Detects the cassette 4 width.
C4SPD	Cassette 4 remaining quantity detection	Transmission type	Detects the cassette 4 remaining quantity.
C4SS1	Cassette 4 size detection 1	Tact switch	Detects the cassette 4 paper size. Detects insertion of the cassette 4 by detecting one of cassette 4 size detection 1 to 4.
C4SS2	Cassette 4 size detection 2	Tact switch	
C4SS3	Cassette 4 size detection 3	Tact switch	
C4SS4	Cassette 4 size detection 4	Tact switch	
MM2	Paper feed motor 2	DC brushless motor	Drives the paper feed section 2.

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	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.
11	Transport roller 3 (Drive)	Transports paper from the paper feed tray 3 to the transport roller 4.
12	Transport roller 1 (Drive)	Transports paper from the paper feed tray 4 to the transport roller 2.
13	Transport roller 4 (Drive)	Transport paper from the transport roller 2 and the transport roller 3 to the transport roller 5.
14	Transport roller 2 (Drive)	Transports paper from the transport roller 1 to the transport roller 2.

2. Operational descriptions

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 operations to lift the tray.
- 3) The paper upper limit sensor turns on to stop the tray at the specified position.

C. Each paper feed tray paper size detection method

Paper feed tray (Paper feed tray 3), multi purpose 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 ± 6 mm).

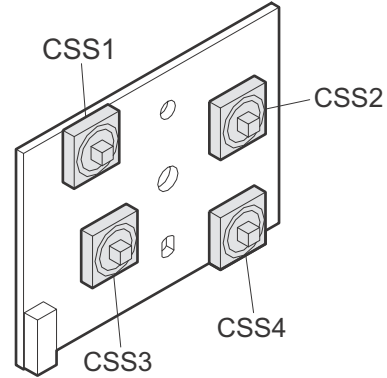
Width size detection pattern	Paper size	Standard value [mm]	Range [mm]
A	A3/A4	297.0	303.0 to 291.0
B	WLT/LT	279.4	285.4 to 273.4
C	B4/B5	257.0	263.0 to 251.0
D	LG/LTR/Foolscap	215.9	221.9 to 209.9
E	A4R	210.0	216.0 to 204.0
F	Exective-R	184.1	190.1 to 178.1
G	B5R	182.0	188.0 to 176.0

B. Paper feed operation

- 1) When copy/print operation is started, the motors (MM1, MM2) and the clutch (C1PFC) are turned on to turn on the colenoid (C1PUS) 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.

2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship between paper size and detection by the paper size detector.

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) Combination of size detection.

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

D. Remaining paper detection

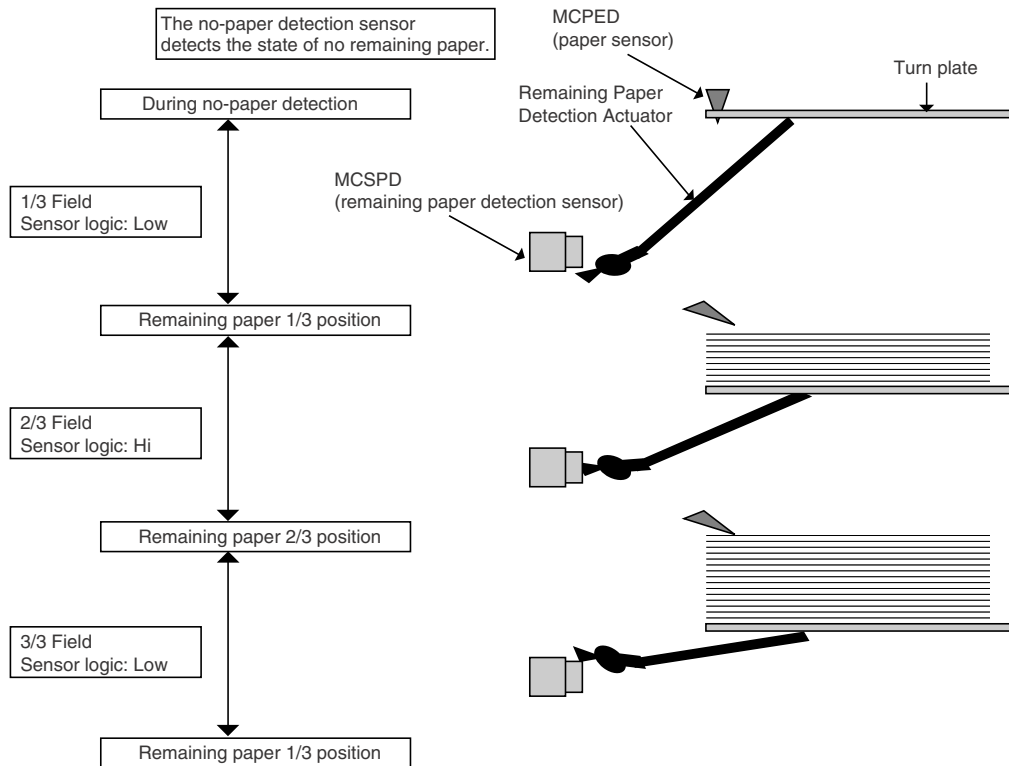
(1) Remaining paper detection

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.

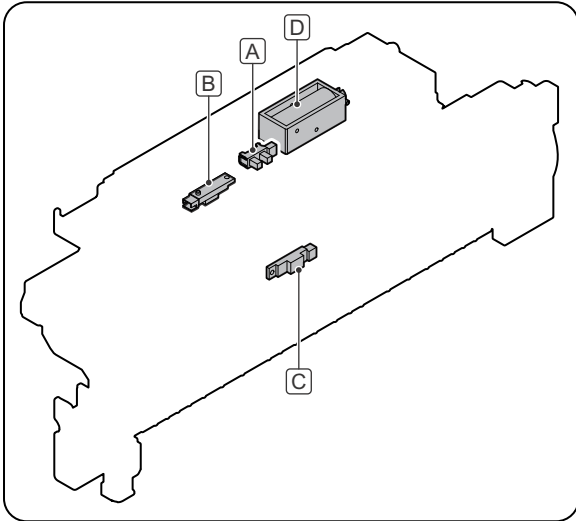
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



3. Disassembly and assembly

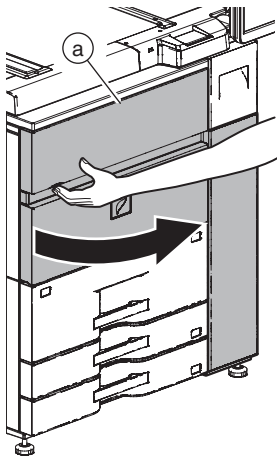
A. Tray 3, 4 paper feed unit

Unit	Parts	Page	
Tray 3, 4 paper feed unit	A	Cassette 3, 4 upper limit detection	E - 8/a
	B	Cassette 3, 4 paper empty detection	
	C	Cassette 3, 4 paper entry detection	
	D	Cassette 3, 4 paper pickup solenoid	

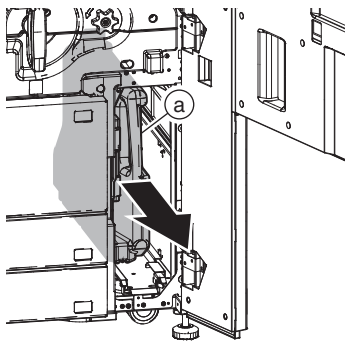


(1) Tray 3, 4 paper feed unit

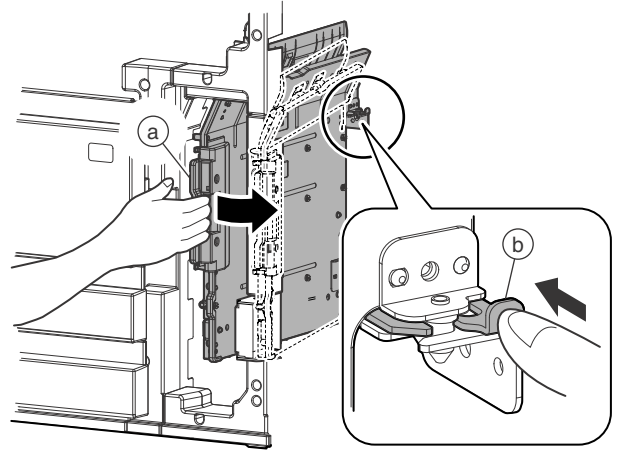
- 1) Open the front cover (a).



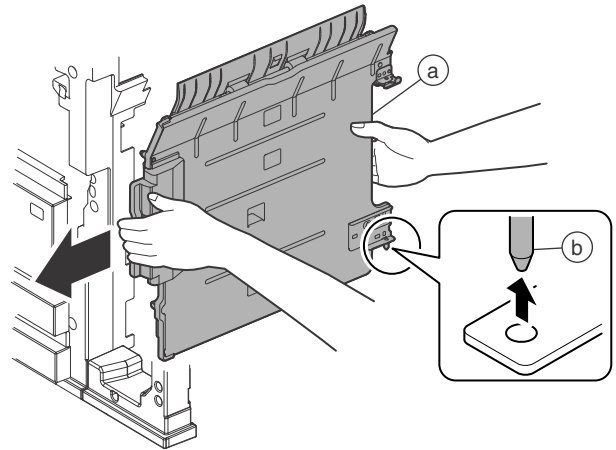
- 2) Remove the toner collection container (a).



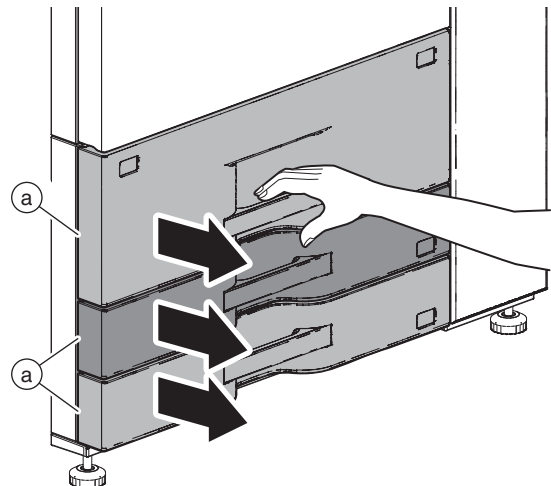
- 3) Remove the right cabinet center.
 - * The following procedure can be performed without removing the right cabinet center. However, the procedure is easier when the right lower cabinet is removed.
- 4) Open the vertical transport door unit (a). Push the lever (b) to release the lock of the vertical transport door unit (a).



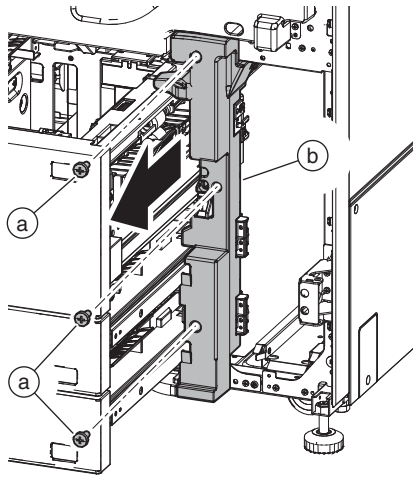
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



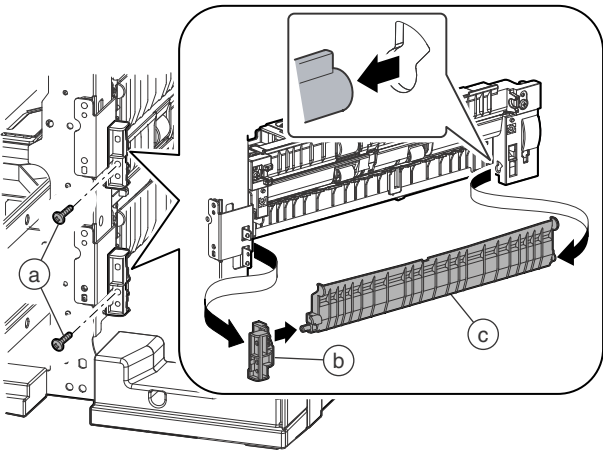
- 6) Pull out all paper feed tray (a).



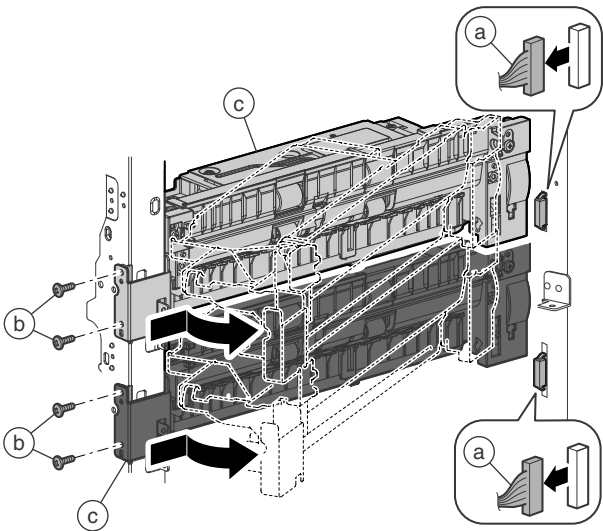
7) Remove the screw (a), and remove the cover (b).



8) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).

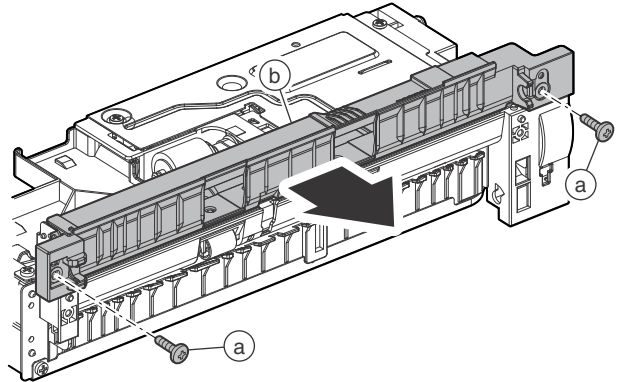


9) Disconnect the connector (a). Remove the screw (b), and remove the tray 3, 4 paper feed unit (c).

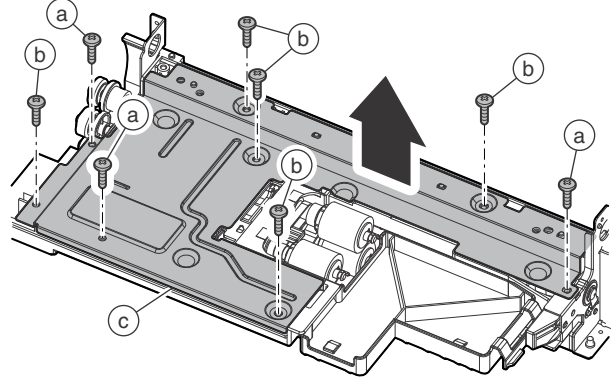


a. Cassette 3, 4 upper limit detection / Cassette 3, 4 paper empty detection / Cassette 3, 4 paper entry detection / Cassette 3, 4 paper pickup solenoid

- 1) Remove the tray 3, 4 paper feed unit.
- 2) Remove the screw (a), and remove the paper guide (b).

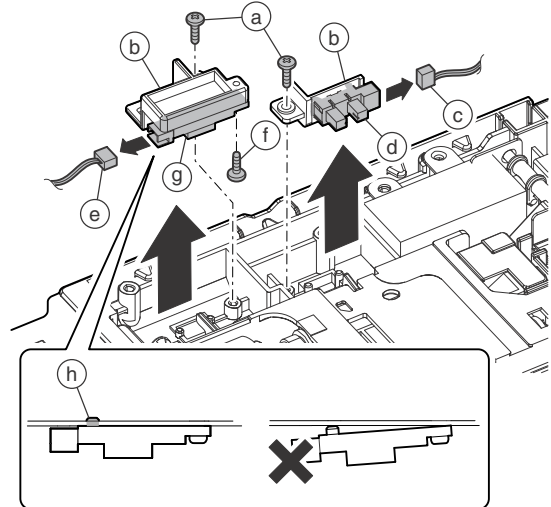


3) Remove the screw (a) and the screw (b). Remove the cover (c).



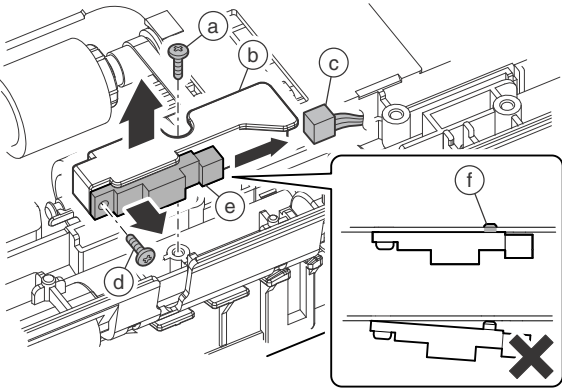
4) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the cassette 3, 4 upper limit detection (d). Disconnect the connector (e), and remove the screw (f). Remove the cassette 3, 4 paper empty detection (g).

* When installing the sensor, check that the boss (h) of the sensor is securely engaged, and then fix it with the screw.



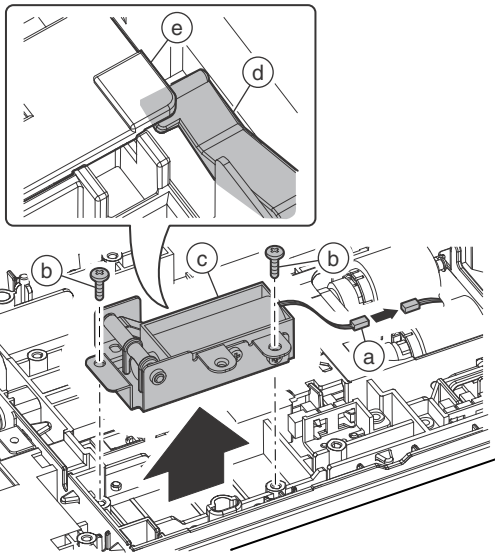
- 5) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the screw (d). Remove the cassette 3, 4 paper entry detection (e).

* When installing the sensor, check that the boss (f) of the sensor is securely engaged, and then fix it with the screw.



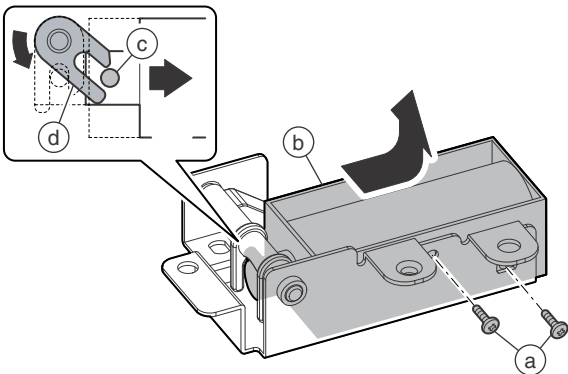
- 6) Disconnect the connector (a), and remove the screw (b). Remove the cassette 3, 4 paper pickup solenoid unit (c).

* When installing, arrange so that the arm (d) comes under the holder (e).



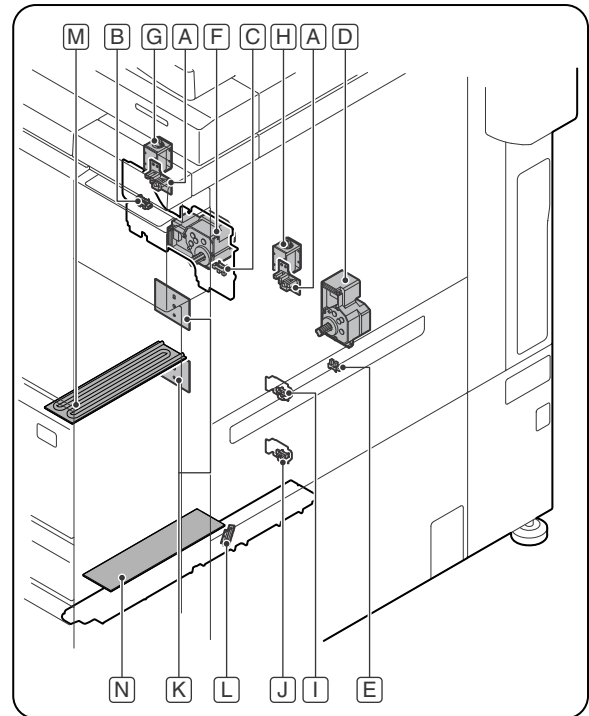
- 7) Remove the screw (a), and remove the tray 3, 4 paper pickup solenoid (b).

* When installing, check that the pin (c) of the solenoid is securely engaged in the arm (d).



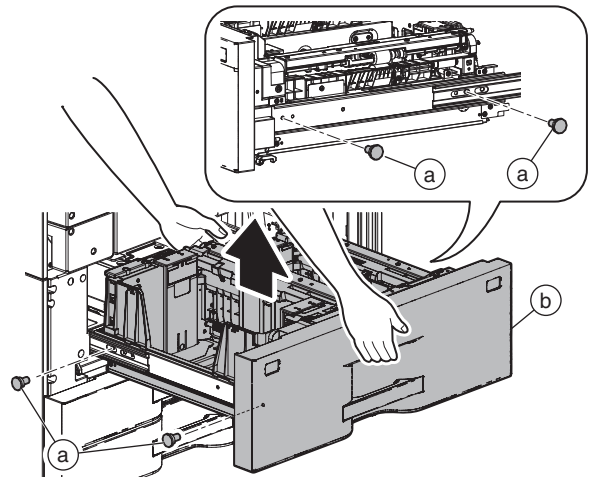
B. Others

Parts		Page
A	Tandem sensor PWB	E-9/(1)
B	Cassette 1 remaining quantity detection	
C	Cassette 2 remaining quantity detection	
D	Paper lift motor (Tray 2)	E-10/(2)
E	Tandem presence detection	
F	Paper lift motor (Tray 1)	E-11/(3)
G	Cassette 1 paper pickup solenoid	
H	Cassette 2 paper pickup solenoid	E-12/(4)
I	Cassette 3 remaining quantity detection	
J	Cassette 4 remaining quantity detection	E-13/(5)
K	Size detection PWB	
L	Cassette 4 width detection	E-13/(6)
M	Dehumidifying heater (Paper feed tray 1, 2)	
N	Dehumidifying heater (Paper feed tray 3, 4)	E-14/(7)

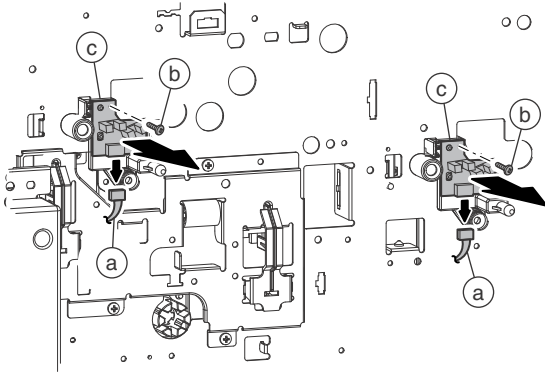


- (1) Tandem sensor PWB / Cassette 1 remaining quantity detection / Cassette 2 remaining quantity detection

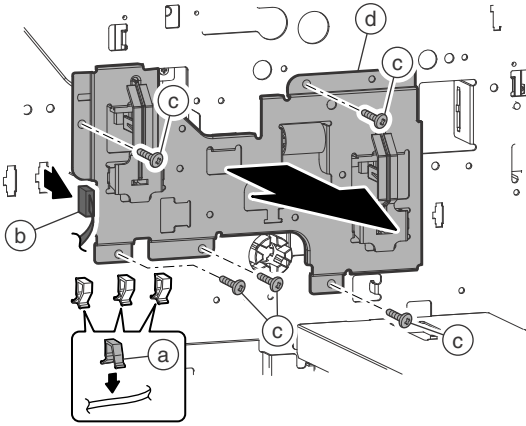
- 1) Remove the screw (a), and remove the tray 1, 2 (b).



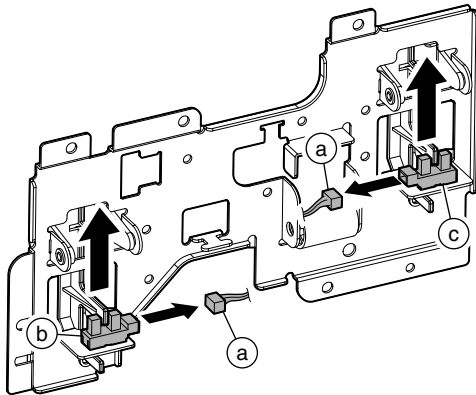
- 2) Disconnect the connector (a), and remove the screw (b). Remove the tandem sensor PWB (c).



- 3) Open the wire saddle (a), and disconnect the connector (b). Remove the screw (c), and remove the lock arm unit (d).

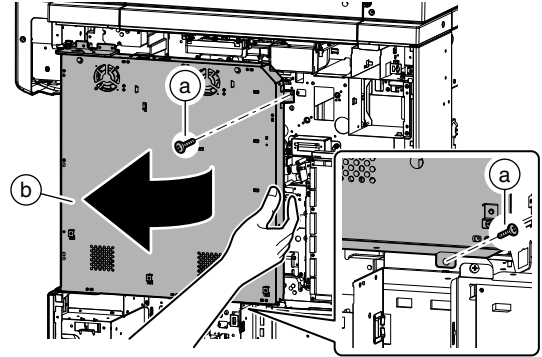


- 4) Disconnect the connector (a), and remove the cassette 1 remaining quantity detection (b) and the cassette 2 remaining quantity detection (c).

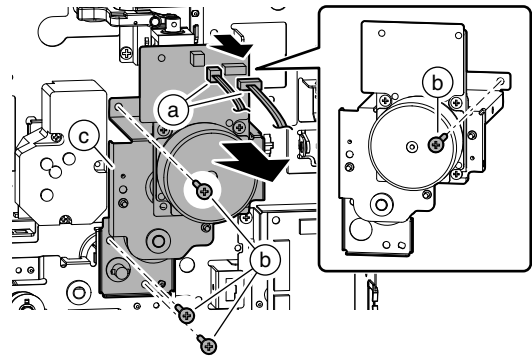


(2) Paper lift motor (Tray 2) / Tandem presence detection

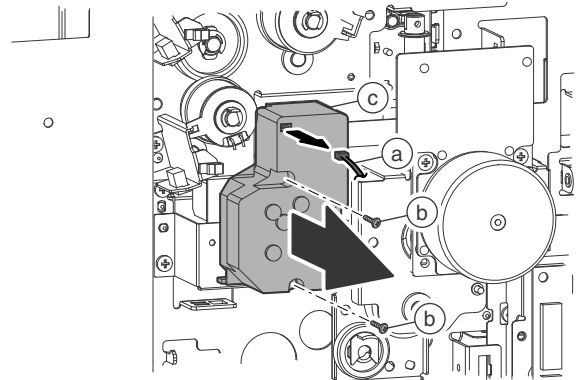
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



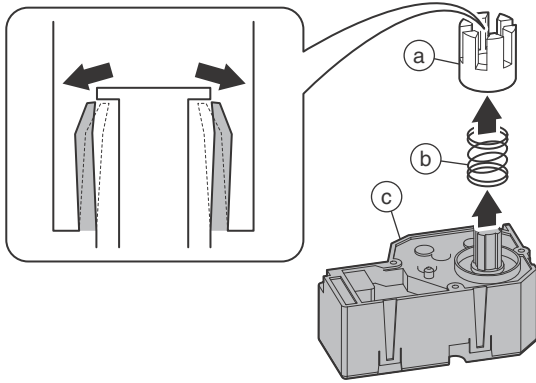
- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).



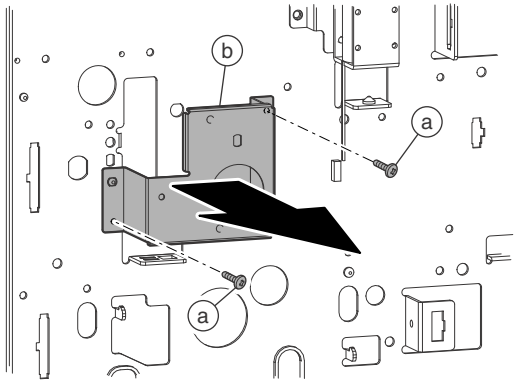
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 2) (c).



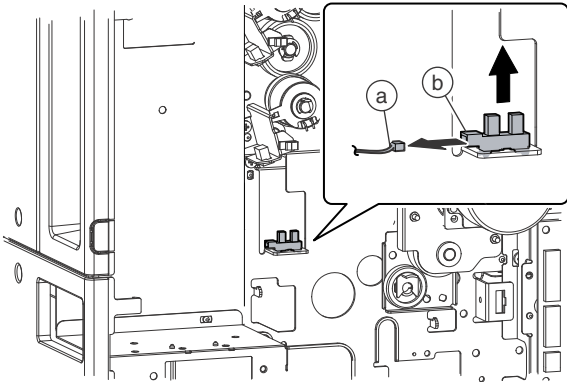
- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).



- 6) Remove the screw (a), and remove the mounting plate (b).

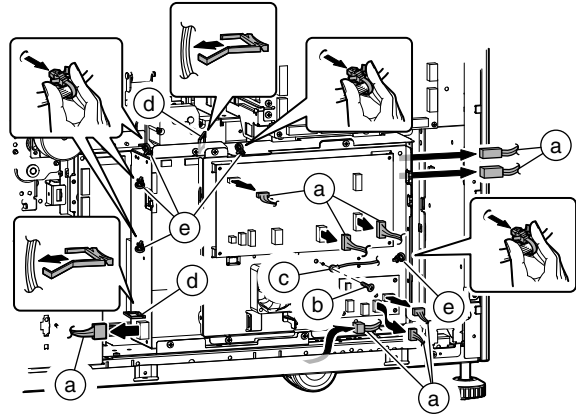


- 7) Disconnect the connector (a), and remove the tandem presence detection (b).

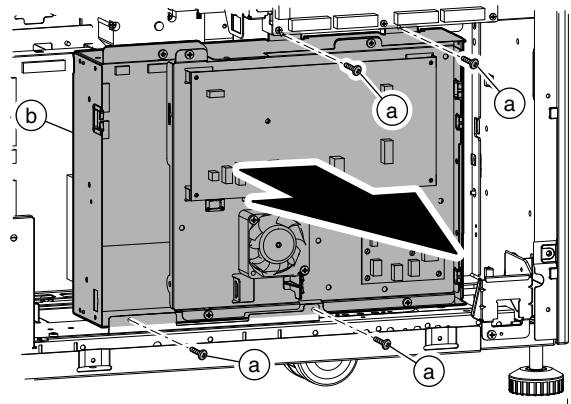


(3) Paper lift motor (Tray 1)

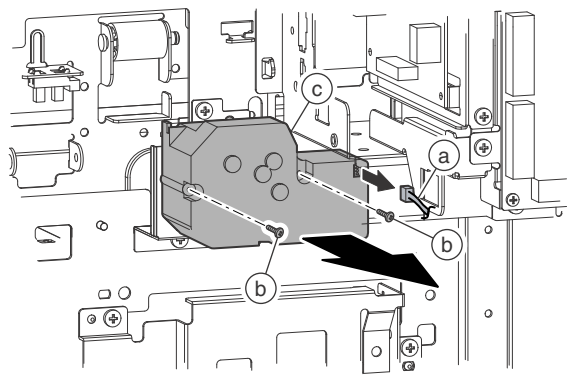
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Disconnect the connector (a), and remove the screw (b), and the earth wire (c). Open the edge saddle (d), and remove the snap band (e).



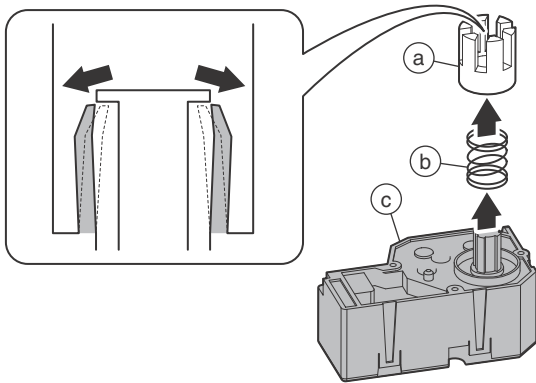
- 3) Remove the screw (a), and remove the AC-OP power unit (b).



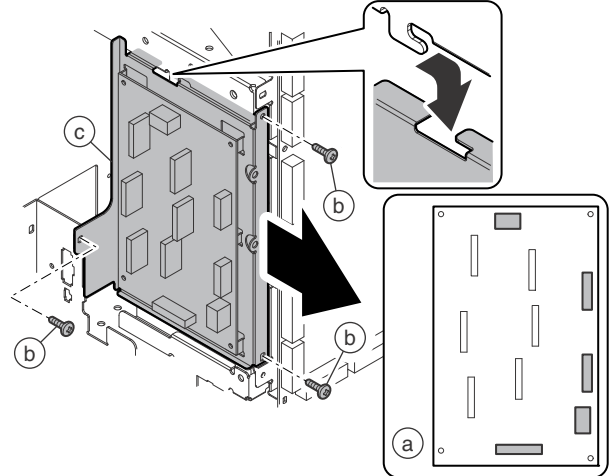
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 1) (c).



- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

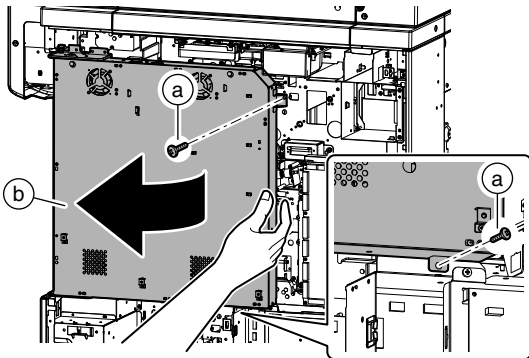


- 4) Disconnect the connector (a). Remove the screw (b), and remove the driver PWB (paper exit) unit (c).

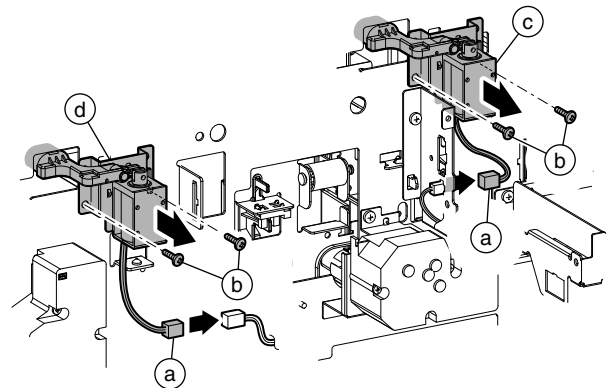


(4) Cassette 1 paper pickup solenoid / Cassette 2 paper pickup solenoid

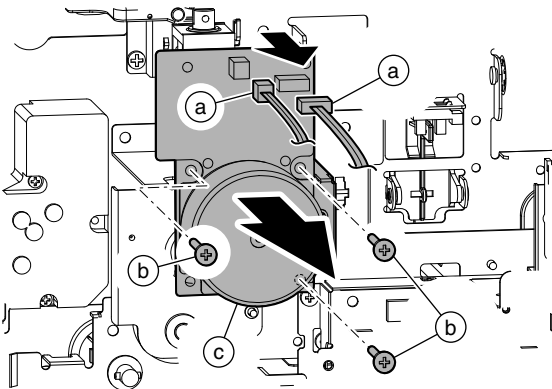
- 1) Remove the rear cabinet and the right cabinet rear upper.
2) Remove the screw (a), and open the control box (b).



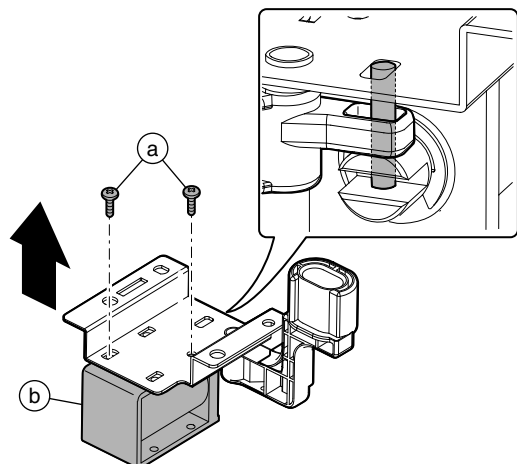
- 5) Disconnect the connector (a), and remove the screw (b). Remove the cassette 1 paper pickup solenoid unit (c) and the cassette 2 paper pickup solenoid unit (d).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).

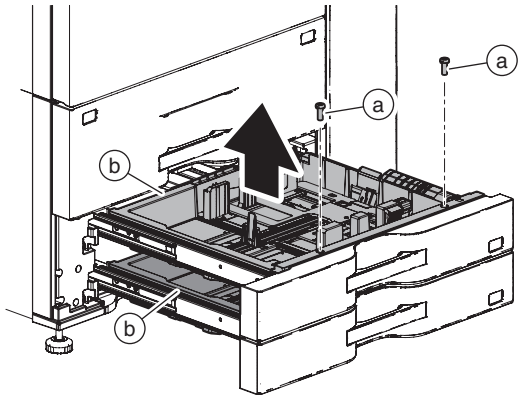


- 6) Remove the screw (a), and remove the cassette 1 and 2 paper pickup solenoid (b).

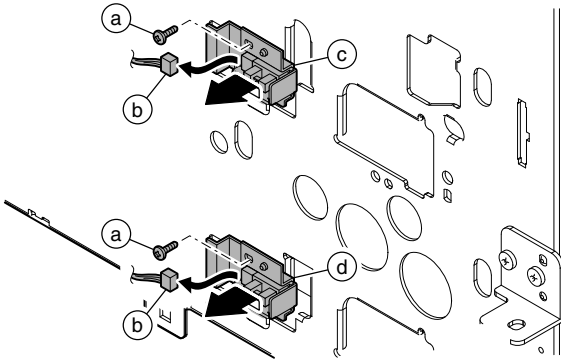


(5) Cassette 3 remaining quantity detection / Cassette 4 remaining quantity detection / Size detection PWB

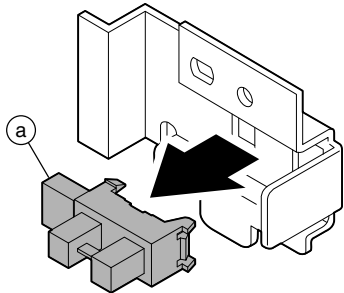
- 1) Remove the screw (a), and remove the trays 3 and 4 (b).



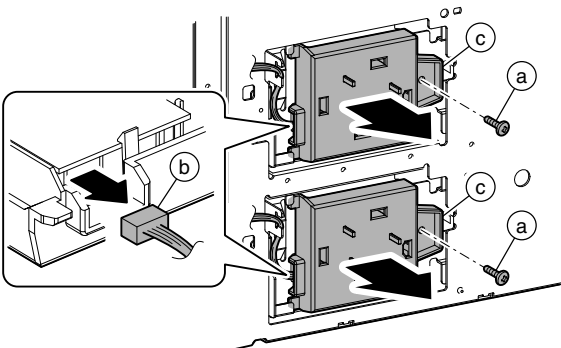
- 2) Remove the screw (a), and disconnect the connector (b). Remove the cassette 3 remaining quantity detection unit (c) and the cassette 4 remaining quantity detection unit (d).



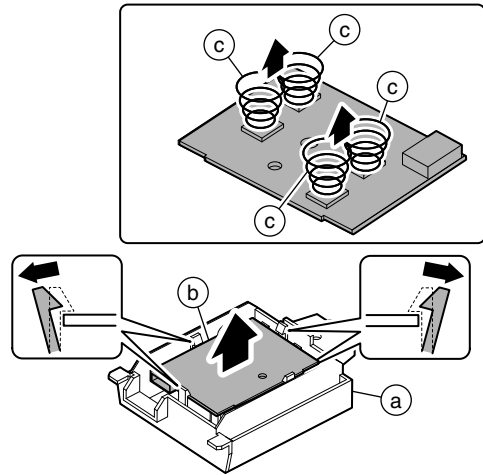
- 3) Remove the cassette 3 and 4 remaining quantity detection (a).



- 4) Remove the screw (a), and disconnect the connector (b). Remove the size detection PWB unit (c).

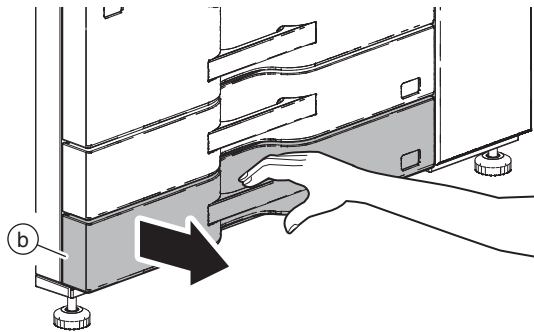


- 5) Remove the size detection PWB (b) from the holder (a). Remove the spring (c).

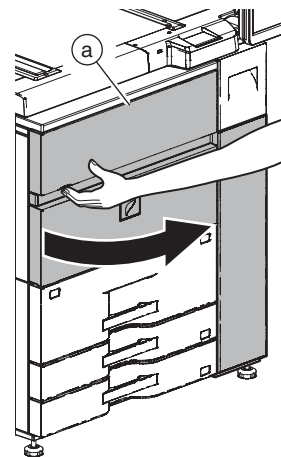


(6) Cassette 4 width detection

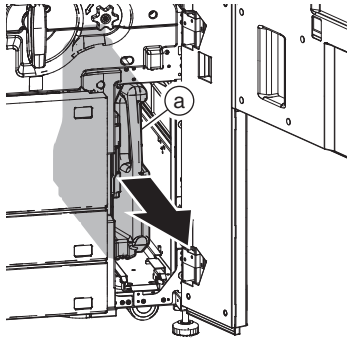
- 1) Remove the right cabinet center.
- 2) Pull out the tray 4 (a).



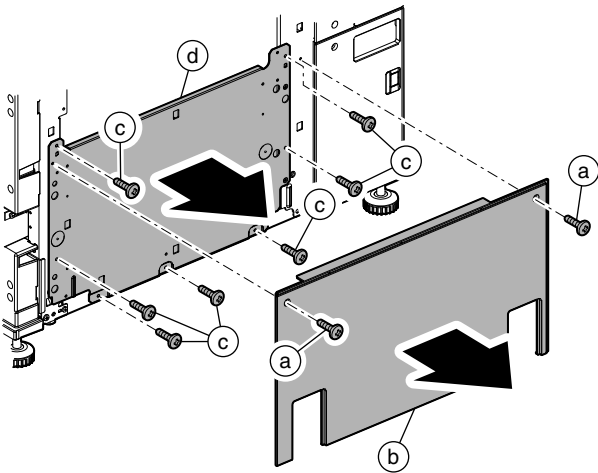
- 3) Open the front cover (a).



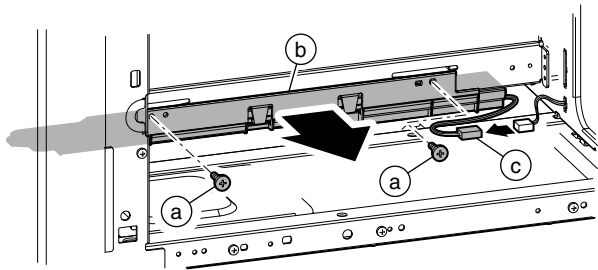
4) Remove the toner collection container (a).



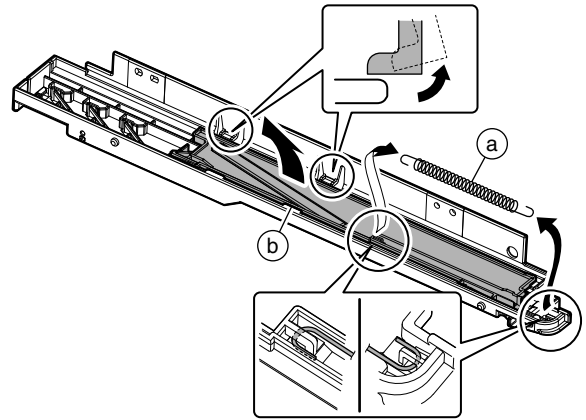
5) Remove the screw (a), and remove the cabinet (b). Remove the screw (c), and remove the plate (d).



6) Remove the screw (a), and remove the holder (b). Disconnect the connector (c).

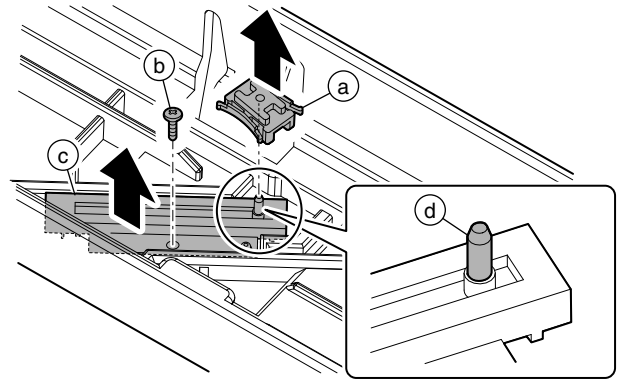


7) Remove the spring (a). Remove the mounting plate (b).



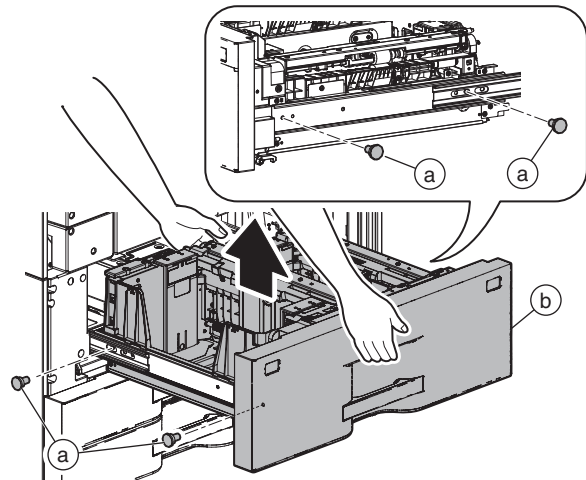
8) Remove the arm (a). Remove the screw (b), and remove the cassette 4 width detection (c).

* When installing, insert the projection (d) of the cassette 4 width detection into the arm.

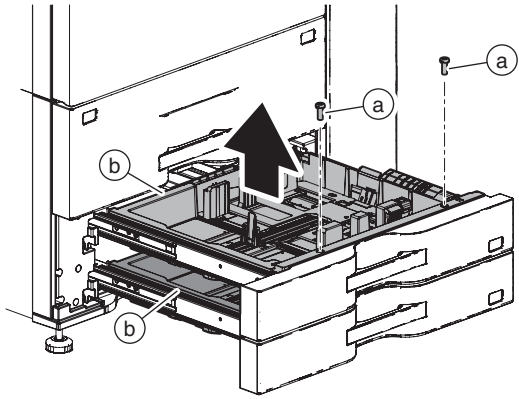


(7) Dehumidifying heater (Paper feed tray 1, 2) / Dehumidifying heater (Paper feed tray 3, 4)

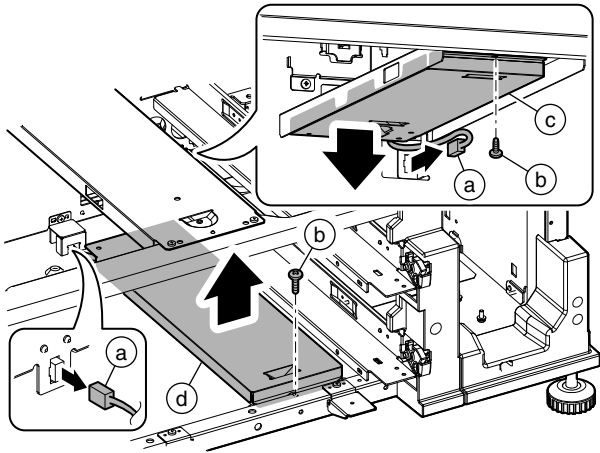
1) Remove the screw (a), and remove the tray 1, 2 (b).



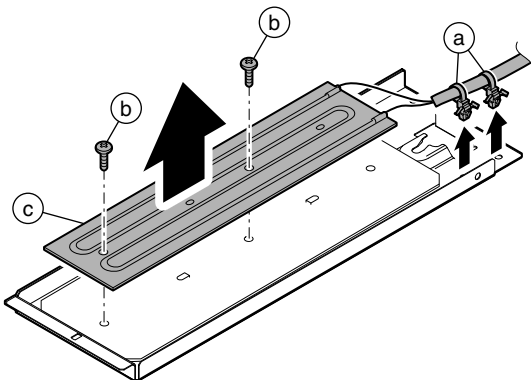
2) Remove the screw (a), and remove the trays 3 and 4 (b).



3) Disconnect the connector (a). Remove the screw (b), and remove the dehumidifying heater (Paper feed tray 1, 2) unit (c), and the dehumidifying heater (Paper feed tray 3, 4) unit (d).



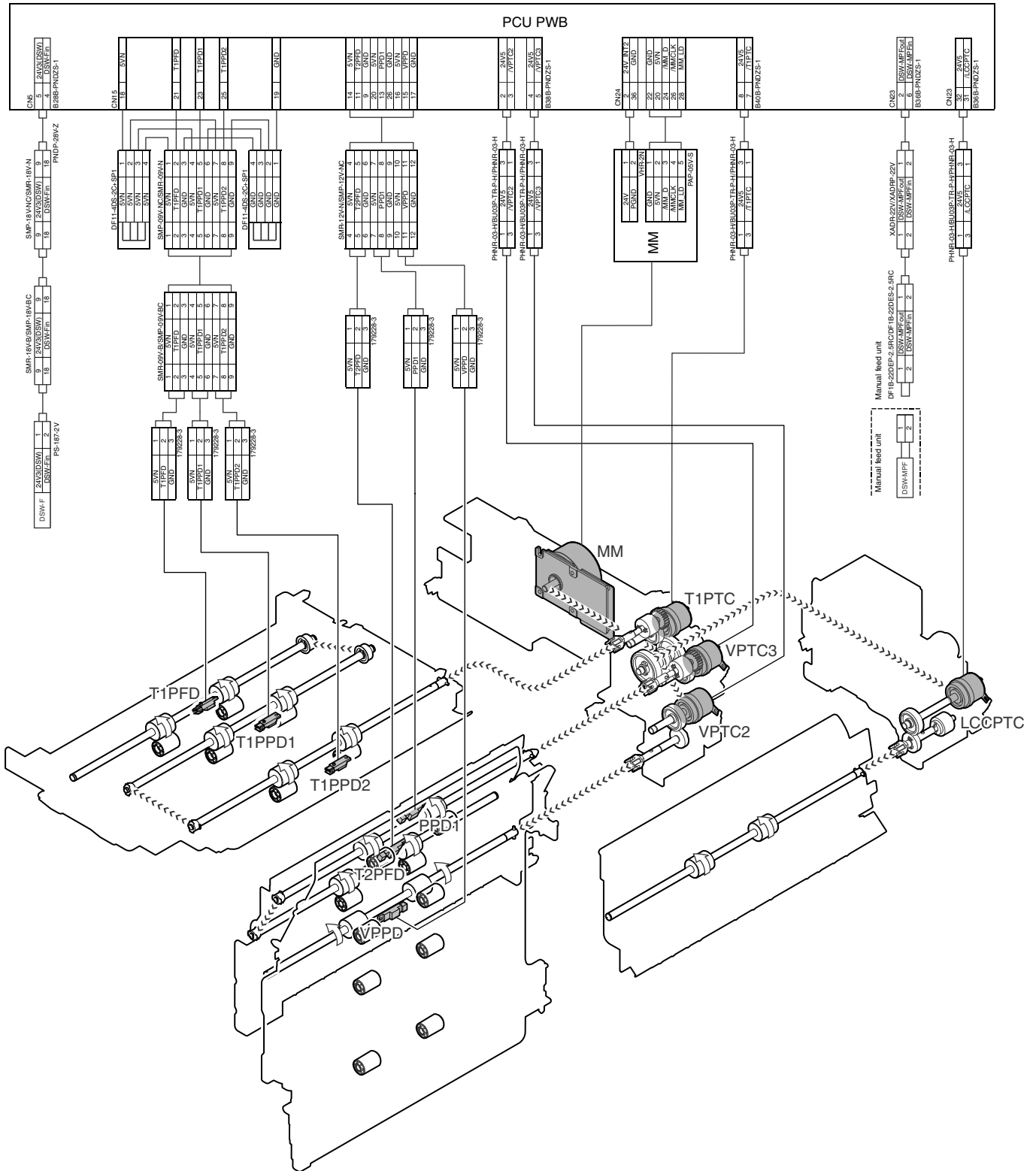
4) Remove the snap band (a). Remove the screw (b), and remove the dehumidifying heater (c).



[F] PAPER TRANSPORT SECTION

1. Electrical and mechanism relation diagram

A. Paper pass / Vertical transport / LCC interface transport section

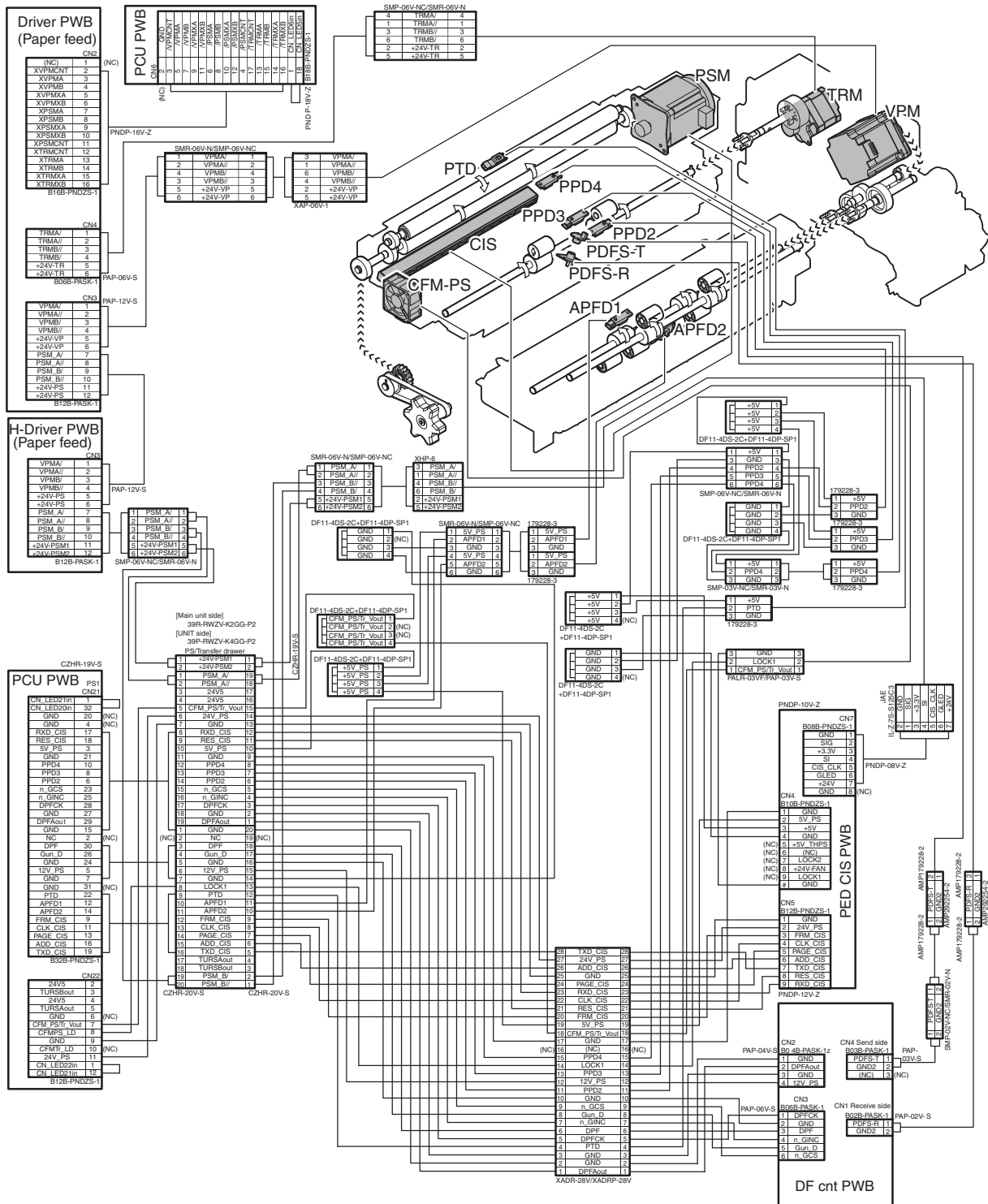


Signal name	Name	Type	Function / Operation
T1PFD	Cassette 1 paper entry detection	Reflection type	Detects the cassette 1 paper pass.
T1PPD1	Cassette 1 transport detection 1	Reflection type	Detects the cassette 1 paper transport.
T1PPD2	Cassette 1 transport detection 2	Reflection type	Detects the cassette 1 paper transport.
T1PTC	Horizontal transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
T2PFD	Cassette 2 paper entry detection	Reflection type	Detects the cassette 2 paper pass.

Signal name	Name	Type	Function / Operation
LCCPTC	LCC transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
MM1	Paper feed motor 1	DC brushless motor	Drives the paper feed section 1.
PPD1	Transport detection 1	Reflection type	Detects paper transport in the transport path.
VPPD	Vertical transport detection	Reflection type	Detects paper transport in the vertical transport path.
VPTC2	Vertical transport clutch (Intermediate)	Electromagnetic clutch	Controls ON/OFF of the vertical transport roller.
VPTC3	Vertical transport clutch (Upper)	Electromagnetic clutch	Controls ON/OFF of the vertical transport roller.

B. Upper transport / PS roller section

(1) 105/120cpm machine



Signal name	Name	Type	Function/Operation
APFD1	ADU paper entry detection 1	Reflection type	Detects the ADU paper pass.
APFD2	ADU paper entry detection 2	Reflection type	Detects the ADU paper pass.
CFM-PS	PS cooling fan (120/105cpm machine only)	Axial-flow fan (40)	Cools the PS section.
DPFS-R	DF S PWB	Supersonic sensor	Detects paper double feed.

Signal name	Name	Type	Function/Operation
DPFS-T	DF R PWB	Supersonic sensor	Detects paper double feed.
PPD2	Transport detection 2	Reflection type	Detects paper transport in the transport path.
PPD3	Transport detection 3	Reflection type	Detects paper transport in the transport path.
PPD4	Transport detection 4	Reflection type	Detects paper transport in the transport path.
PSM	PS motor	Stepping motor	Drive the PS roller.
PTD	PS section paper lead edge detection sensor	Reflection type	Detects a shift at the paper lead edge in the PS section. (105/120cpm machine only)
TRM	Transport motor	Stepping motor	Drives the transport roller.
VPM	Vertical transport motor	Stepping motor	Drives the vertical transport roller.

2. Operational descriptions

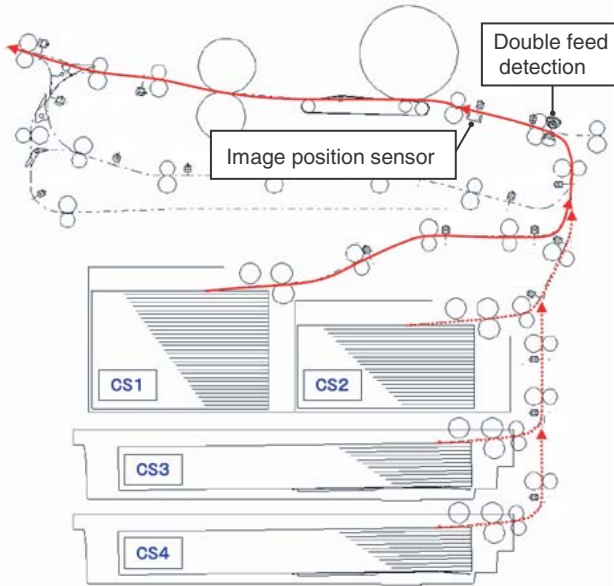
A. Outline

The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

Paper from paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

The detection of double-feed is done before transferring paper to the registration roller, and the check of the off-center is carried out by the image position sensor.

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.



[Operation of Image position sensor]

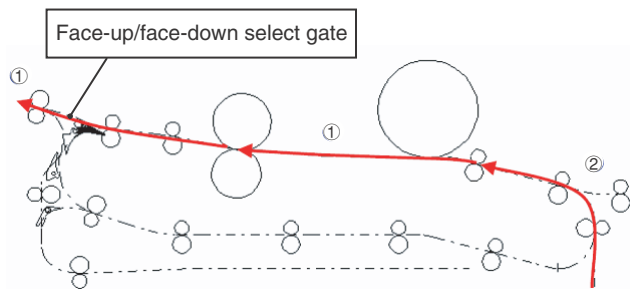
It detects the position of the paper transferred by the contact image sensor (CIS) and automatically adjusts the off center.

• CIS: Contact Image Sensor

It is a contact image sensor integrated with the light source, the lens (Selfoc®) and the sensor.

B. Paper transport operation

Straight-Through Path (No Inversion, No Duplexing)



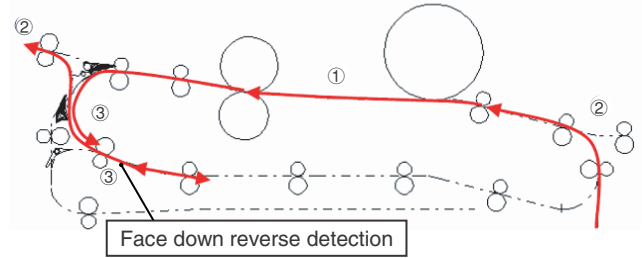
The paper transported from the each tray section is sent to the paper exit roller (which is driven by the paper exit motor (POM)) with the transport roller).

Paper transportation speed

	Papaer transport speed	Unit (mm/s)
①: Normal speed	540	(Process speed)
②: High speed I	600	(Paper feed and exit speed)
③: High speed II	1000	(Switchback speed)

C. Paper face-down output operation

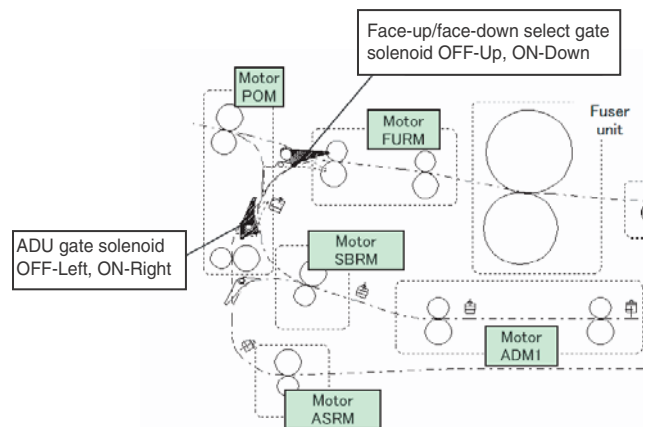
Inversion Path (Face-down Output, No Duplexing)



When face-down print is selected, the paper is passed under the Face-up/face-down select gate.

After paper passing, the paper exit gate guide falls down by its own weight.

When the specified time has passed from detection of the paper lead edge by Face down reverse detection, Paper exit reverse motor (SBRM) rotates reverse direction in the specified time. (The rotation time differs depending on the paper size.)

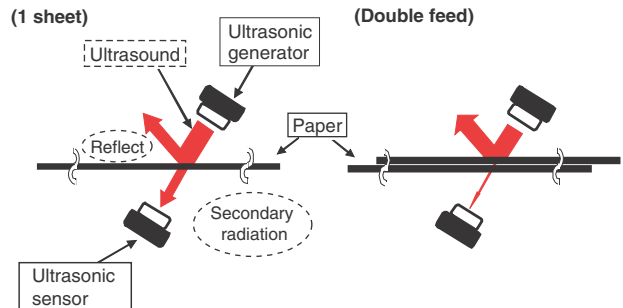


D. Double-feed sensor operation

(1) Outline of the operation

The double-feed sensor is incorporated in the paper transport section of 120/105cpm machines, and it detects double feed.

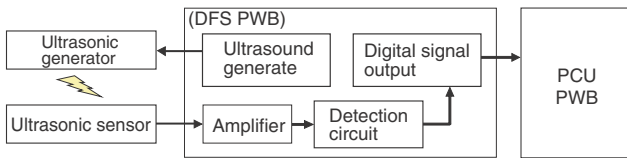
Paper transport stops when double feed is detected.



Ultrasonic generator generates ultrasound during paper transport.

The level of reception of the ultrasonic sensor largely changes (decreases) when double feed occurs. Double sheet feed is detected in this method.

Block diagram



(2) Mechanism and operation of double-feed detection

The sensor is composed of ultrasonic generator part and ultrasonic detector part. Double feed is detected using 220kHz ultrasound.

Operation when sheets of paper are normally fed one by one

Some of the ultrasound is reflected by the paper, but the ultrasound reaches the sensor more than the specified level.

The sensor analog output level at that time is 300mV or more, and digital output level is "L."

Operation when double feed occurs

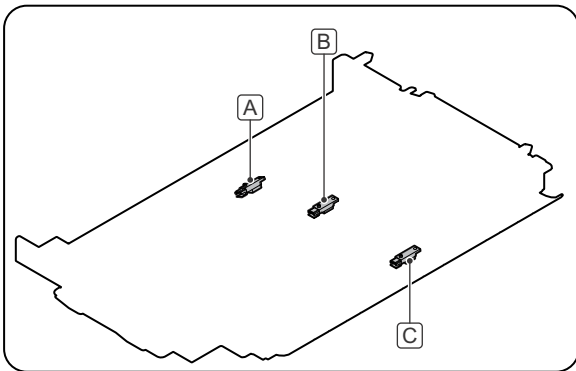
Most of ultrasound is reflected when double feed occurs, because the stiffness of paper is high. As a result, the ultrasound which reaches the sensor is weak, and less than the specified level.

At that time, the sensor analog output level is 300mV or less, the digital output level is "H."

3. Disassembly and assembly

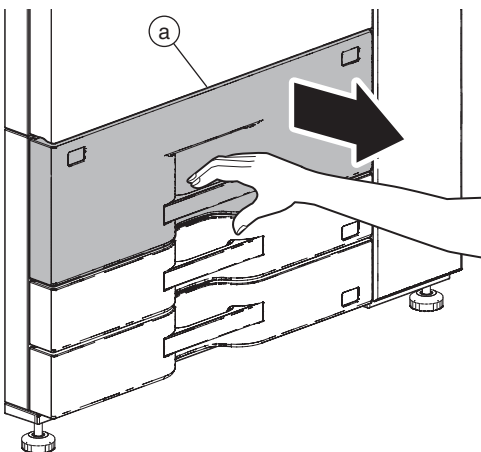
A. Paper pass unit

Unit	Parts	Page
Paper pass unit	A Cassette 1 paper entry detection	F - 6/a
	B Cassette 1 transport detection 1	
	C Cassette 1 transport detection 2	

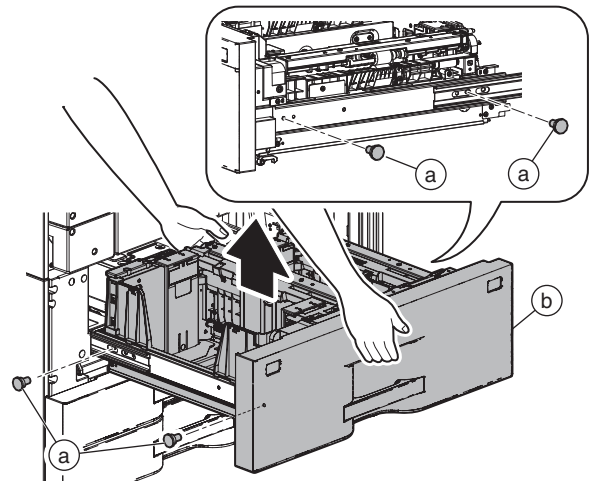


(1) Paper pass unit

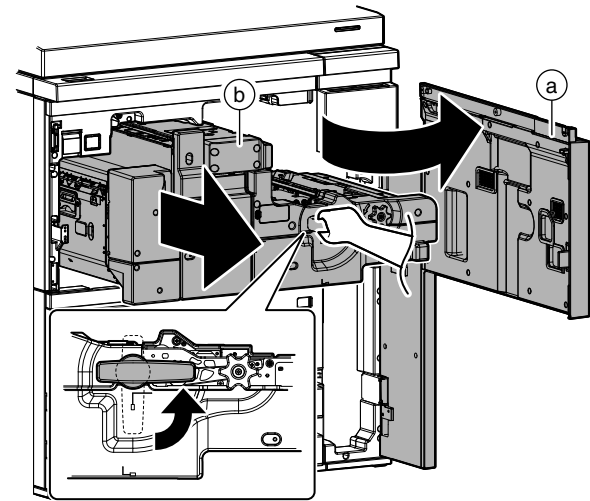
- 1) Pull out the tray 1, 2 (a).



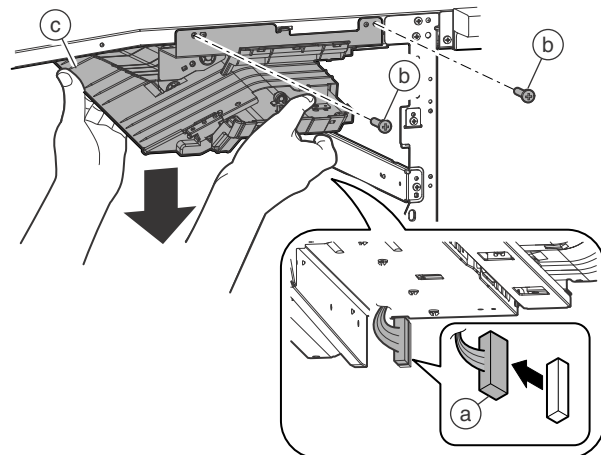
- 2) Remove the screw (a), and remove the tray 1, 2 (b).



- 3) Open the front cover (a), and pull out the intermediate frame (b).

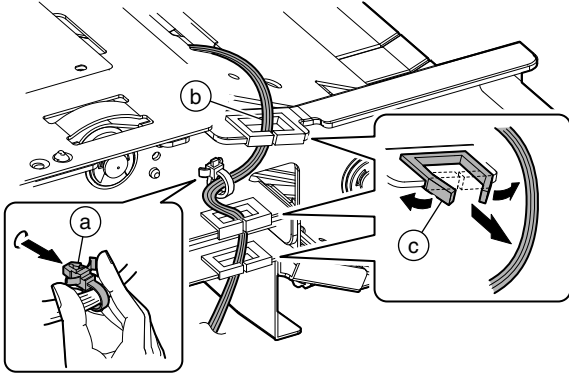


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper pass unit (c).

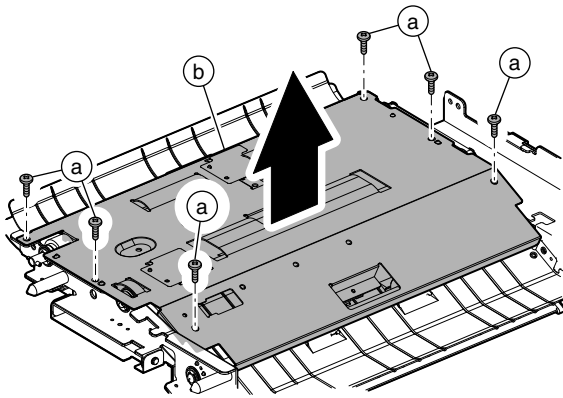


a. Cassette 1 paper entry detection / Cassette 1 transport detection 1/Cassette 1 transport detection 2

- 1) Remove the paper pass unit.
- 2) Remove the snap band (a). Remove the harness (b) from the harness holder (c).

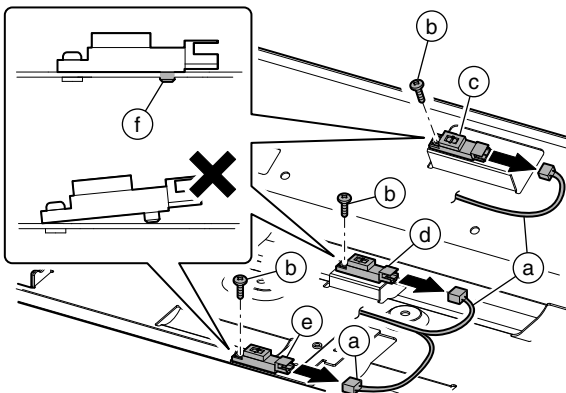


- 3) Remove the screw (a), and remove the frame (b).



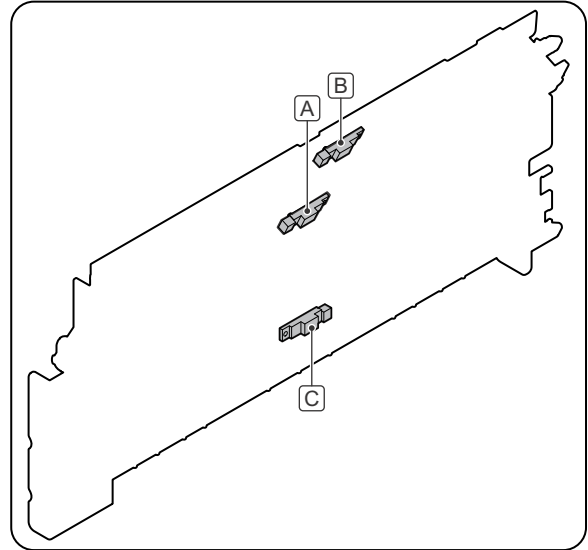
- 4) Disconnect the connector (a), and screw (b). Remove the cassette 1 paper entry detection (c), the cassette 1 transport detection 1 (d) and the cassette 1 transport detection 2 (e).

* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.



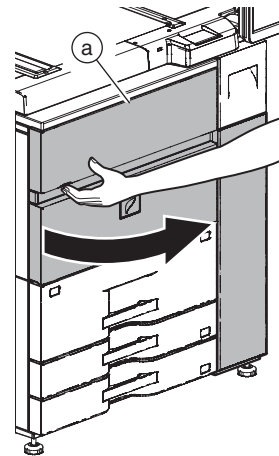
B. Vertical transport unit

Unit	Parts	Page
Vertical transport unit	A Cassette 2 paper entry detection	F - 7 / a
	B Transport detection 1	
	C Vertical transport detection	F - 8 / b

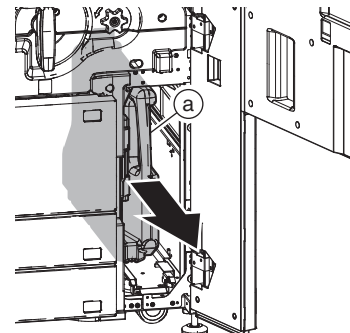


(1) Vertical transport unit

- 1) Open the front cover (a).



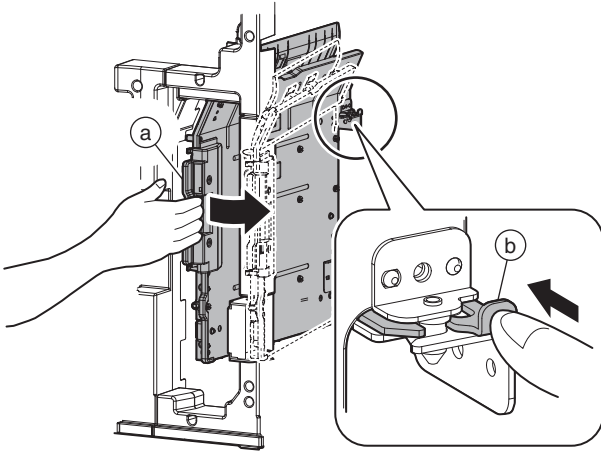
- 2) Remove the toner collection container (a).



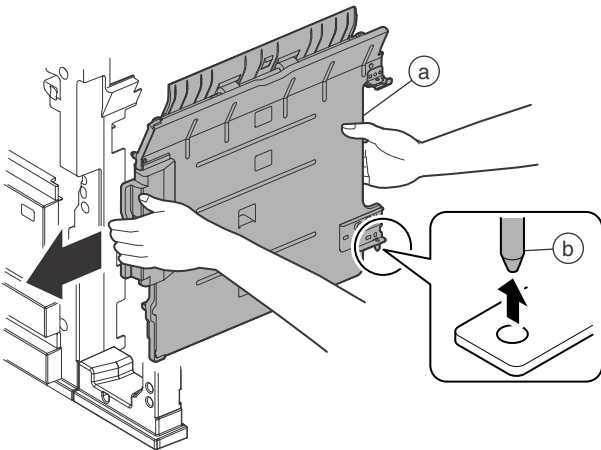
3) Remove the right cabinet middle.

* The following procedures can be performed without removing the right cabinet middle. However, it is advisable to remove it for easier work.

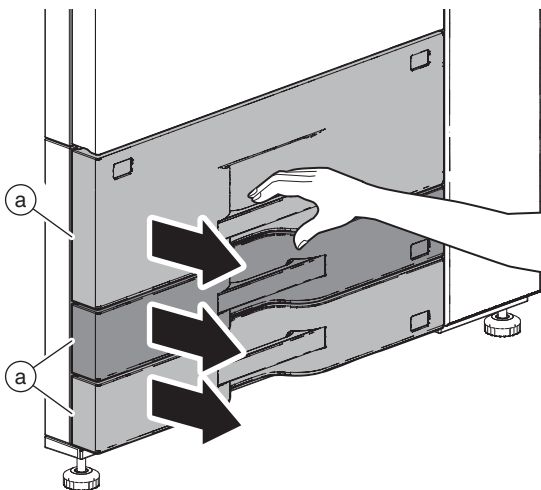
4) Open the vertical transport door unit (a). Release the lock of the vertical transport door unit (a) by pushing the lever (b).



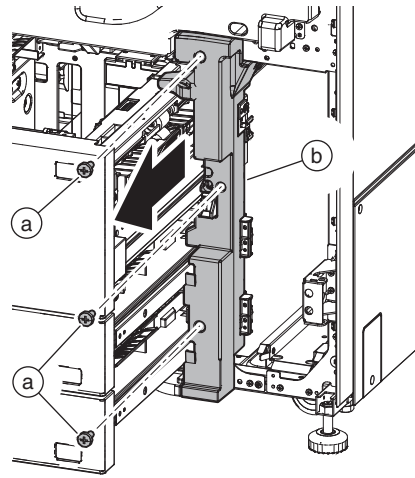
5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



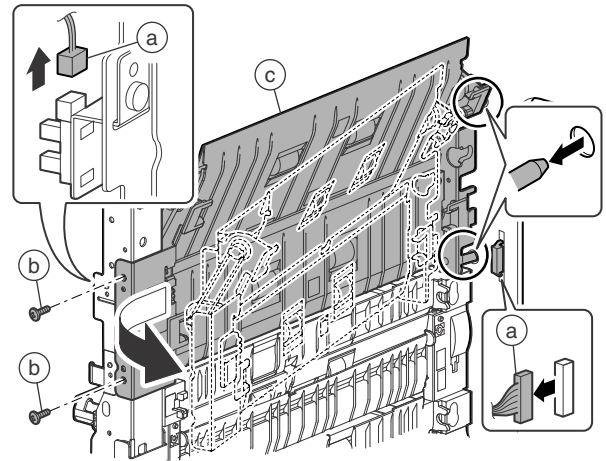
6) Pull out all paper feed tray (a).



7) Remove the screw (a), and remove the cover (b).

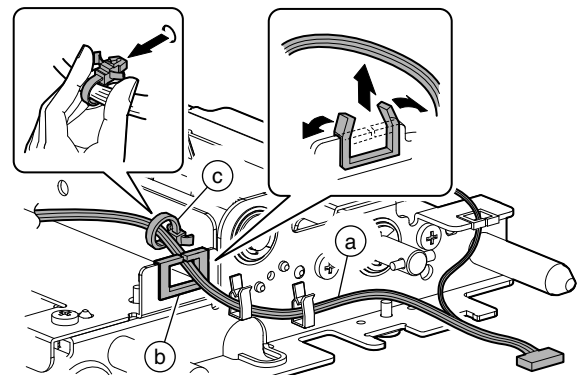


8) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport unit (c).

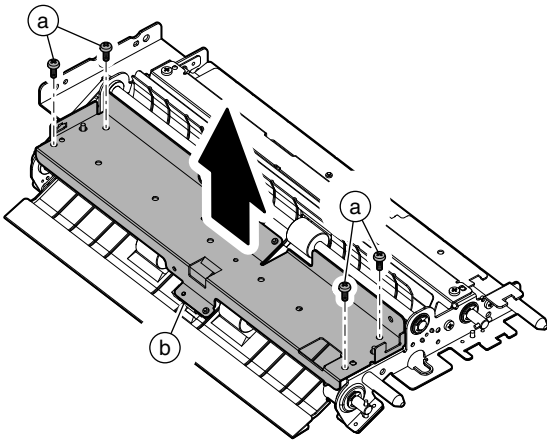


a. Cassette 2 paper entry detection / Transport detection 1

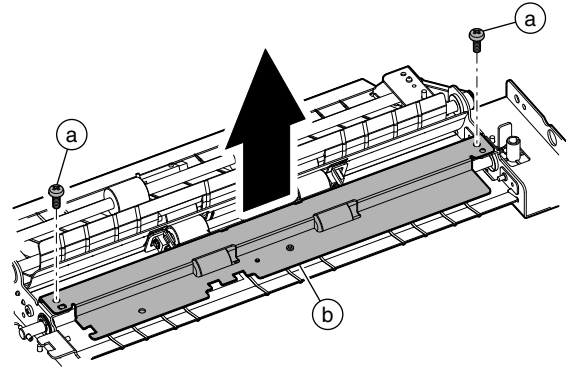
- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



3) Remove the screw (a), and remove the frame (b).

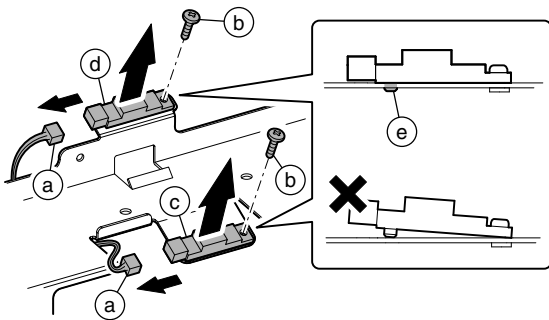


3) Remove the screw (a), and remove the frame (b).



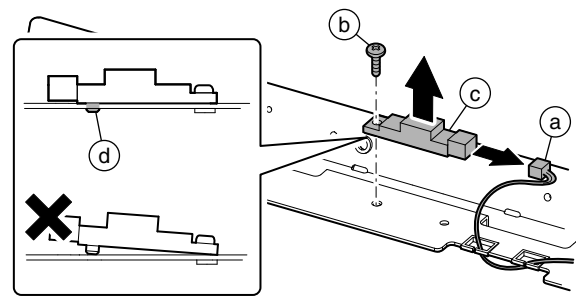
4) Disconnect the connector (a), and remove the screw (b). Remove the cassette 2 paper entry detection (c) and the transport detection 1 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



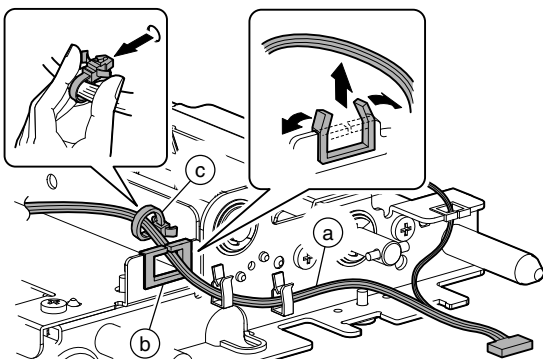
4) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport detection 1 (c).

* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



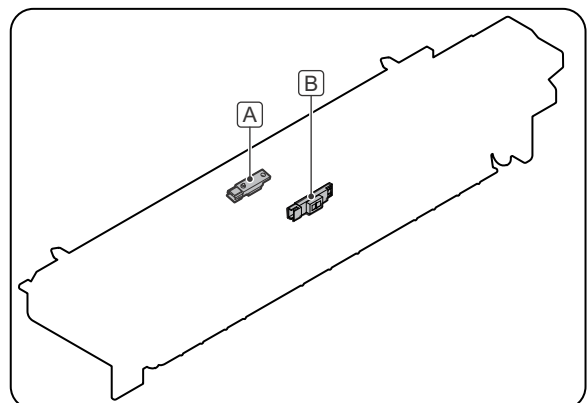
b. Vertical transport detection

- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



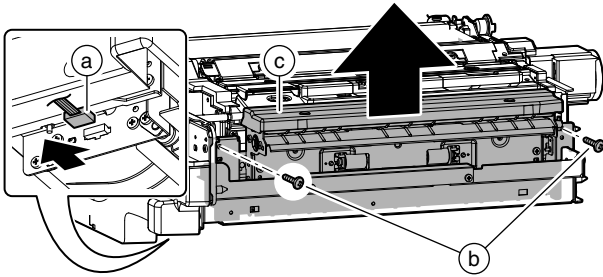
C. Upper transport unit

Unit	Parts	Page
Upper transport unit	A ADU paper entry detection 1	F-9/a
	B ADU paper entry detection 2	



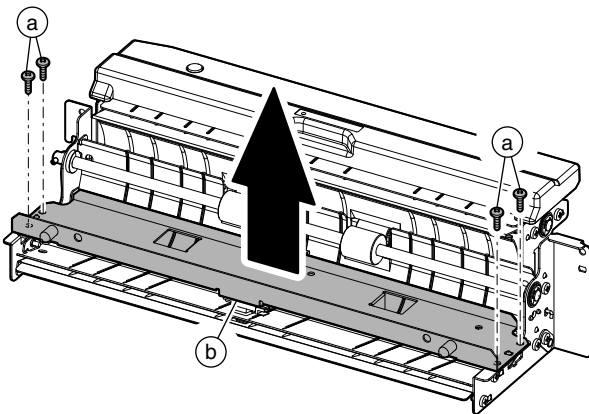
(1) Upper transport unit

- 1) Remove the PS roller unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



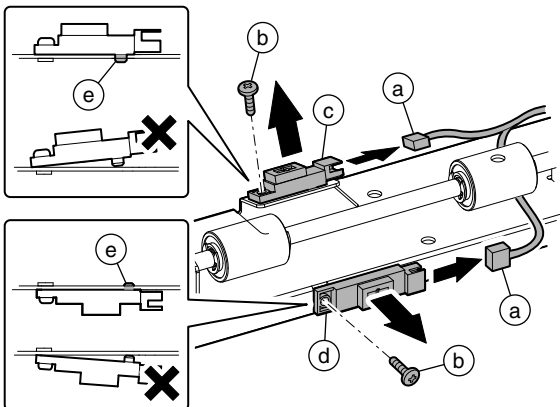
a. ADU paper entry detection 1 / ADU paper entry detection 2

- 1) Remove the PS roller unit.
- 2) Remove the upper transport unit.
- 3) Remove the screw (a), and remove the frame (b).



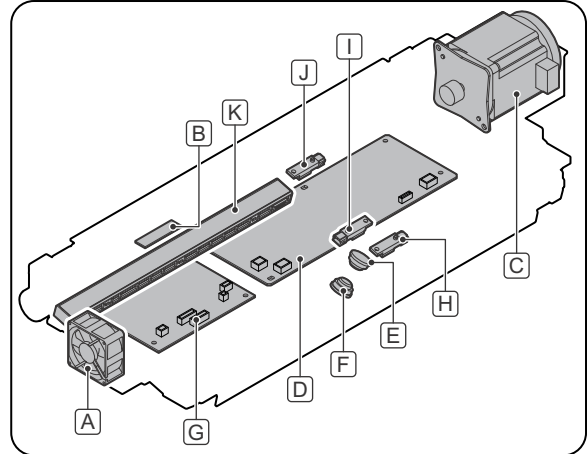
- 4) Disconnect the connector (a), and remove the screw (b). Remove the ADU paper entry detection 1 (c) and the ADU paper entry detection 2 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



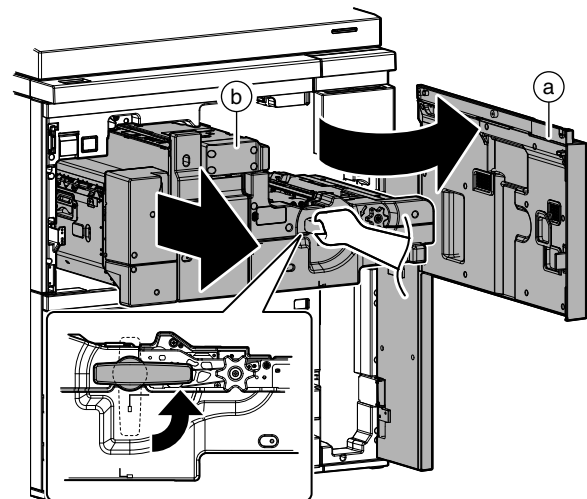
D. PS roller unit

Unit	Parts	Page	
PS roller Unit	A	PS cooling fan (120cpm/105cpm machines)	F-10/a
	B	High voltage resistor PWB	F-10/b
	C	PS motor	F-11/c
	D	PED cis PWB	
	E	DF S PWB	F-12/d
	F	DF R PWB	
	G	DF cnt PWB	
	H	Transport detection 2	F-14/e
	I	Transport detection 3	
	J	Transport detection 4	F-15/f
	K	CIS	

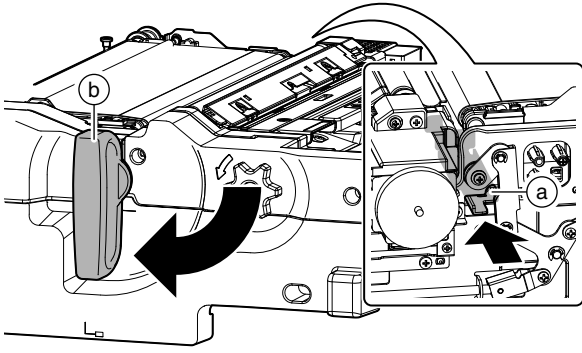


(1) PS roller unit

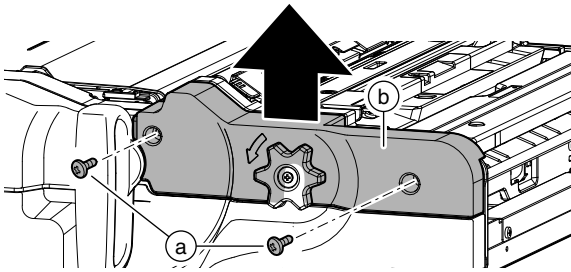
- 1) Open the front cover (a), and pull out the intermediate frame (b).



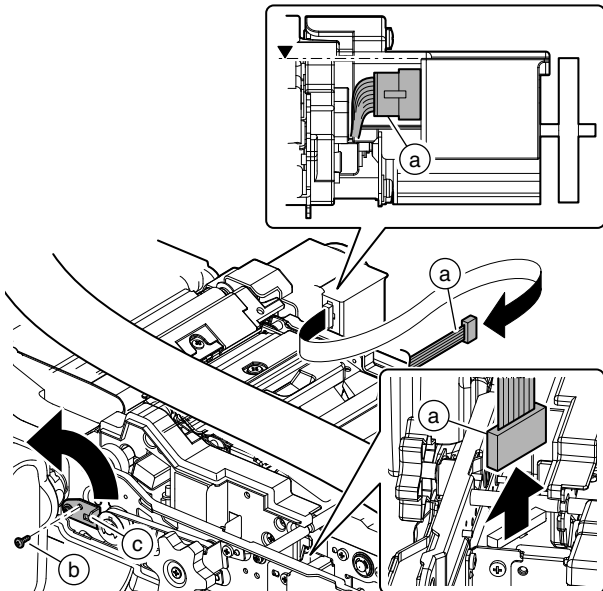
- 2) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.



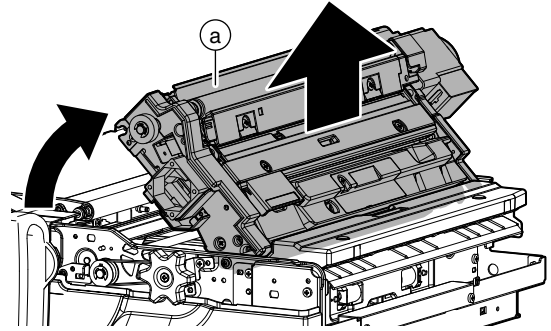
- 3) Remove the screw (a), and remove the cover (b).



- 4) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c).
 * When connecting, arrange so that the connector (a) does not extend over the PS roller unit.

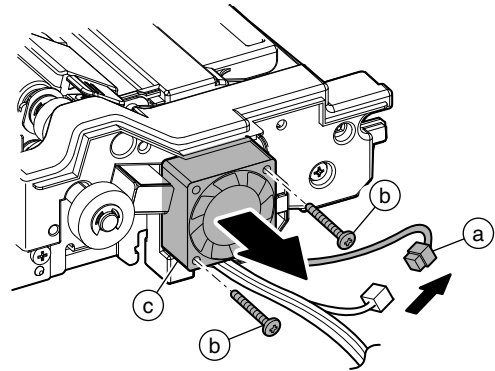


- 5) Remove the PS roller unit (a).



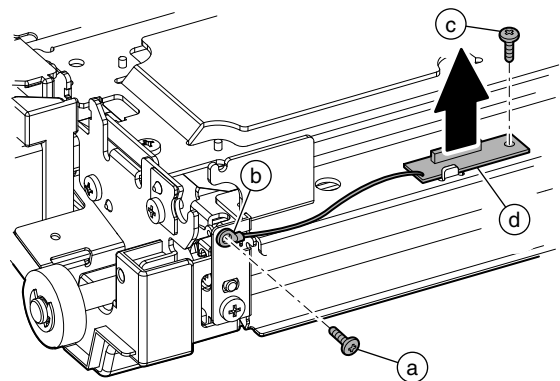
a. PS cooling fan (120cpm/105cpm machines)

- 1) Remove the PS roller unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the PS cooling fan (c).



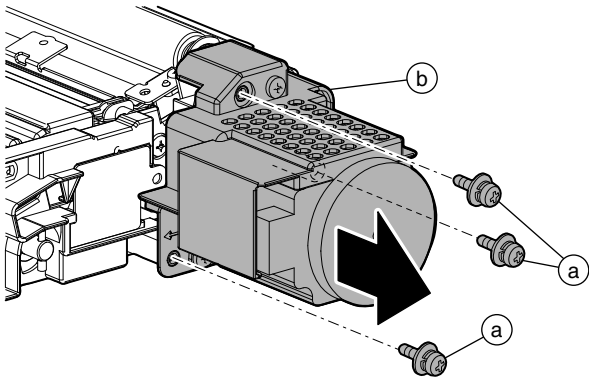
b. High voltage resistor PWB

- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the earth wire (b). Remove the screw (c), and remove the high voltage resistor PWB (d).

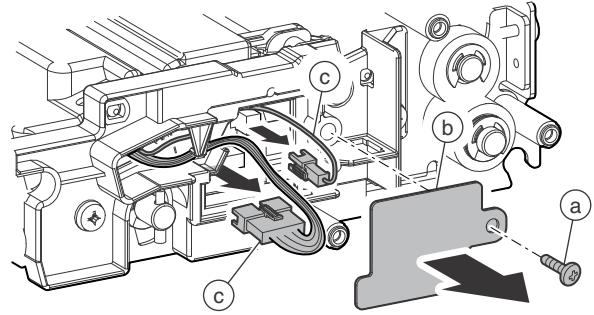


c. PS motor / PED cis PWB

- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the PS motor unit (b).

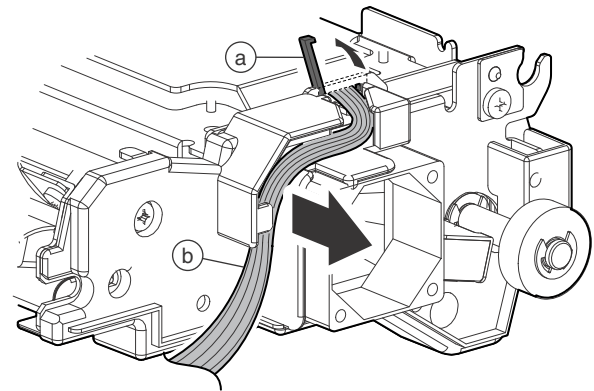
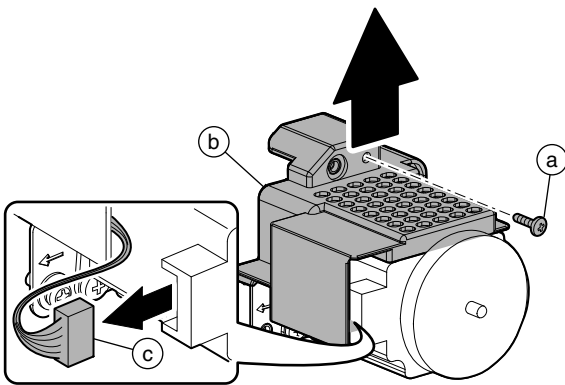


- 5) Remove the screw (a), and remove the cover (b). Remove the connector (c).



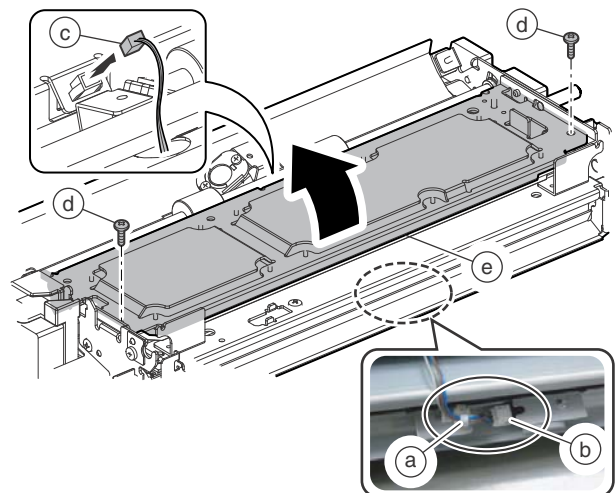
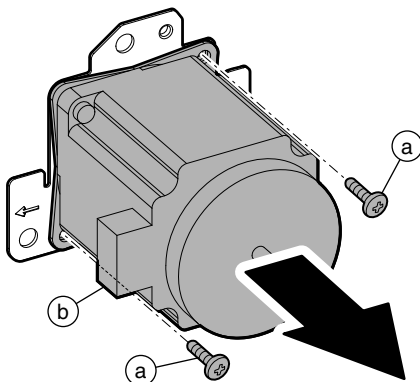
- 3) Remove the screw (a), and remove the cover (b). Remove the connector (c).

- 6) Open the harness holder (a), and remove the harness (b).

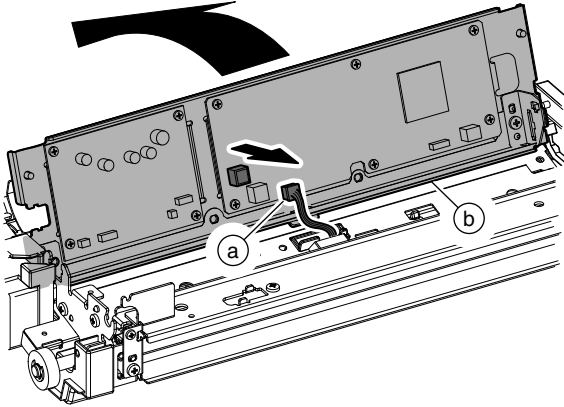


- 4) Remove the screw (a), and remove the PS motor (b).

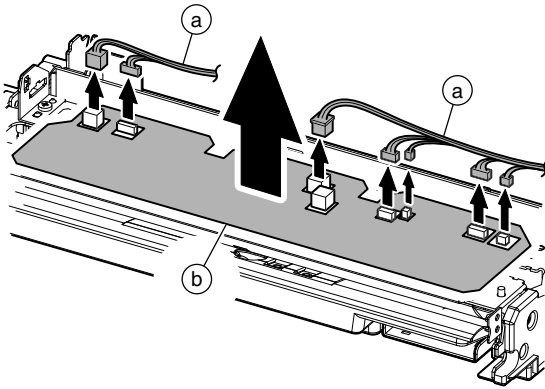
- 7) Remove the reuse band (a) and disconnect the connector (b). Disconnect the connector (c), and remove the screw (d). Open the frame (e).



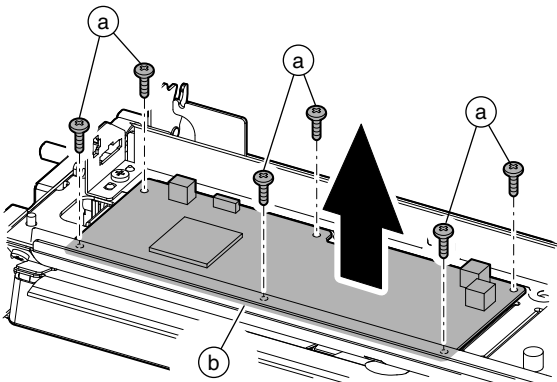
- 8) Disconnect the connector (a), and open the frame (b) further out.



- 9) Disconnect the connector (a), and remove the PS section PWB protection sheet (b).

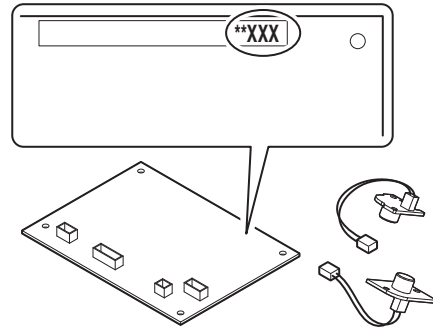


- 10) Remove the screw (a), and remove the PED CIS PWB (b).

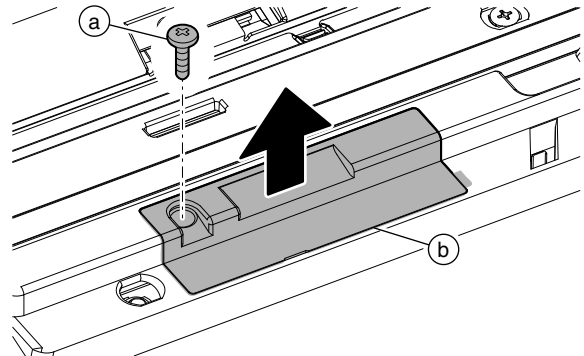


**d. Double feed sensor (transmitting) /
Double feed sensor (receiving) / Double feed detection PWB**

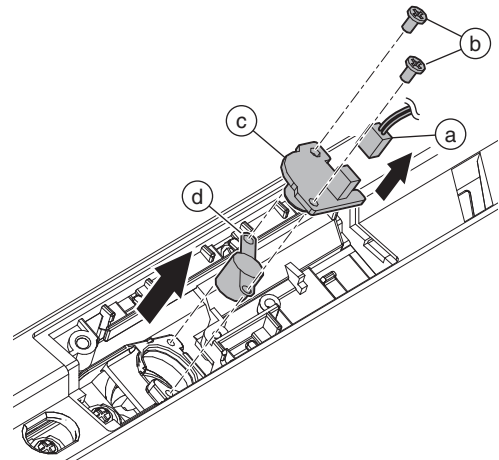
* Since the double feed sensor (transmitting), the double feed sensor (receiving), and the double feed detection PWB comprise one set, do not replace each one of them separately. Always replace them in one set. Each part is marked with its serial number. Before replacement, check to confirm that the serial number of each part corresponds.



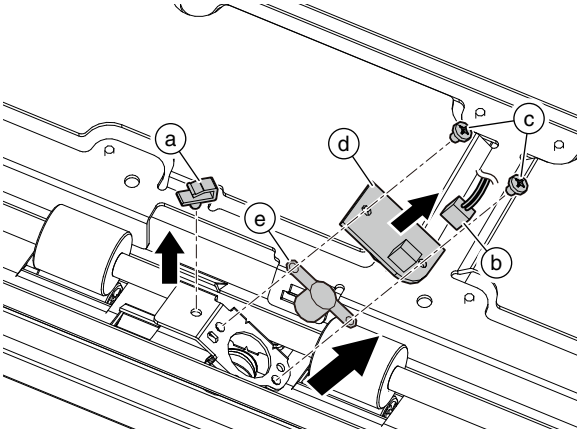
- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the cover (b).



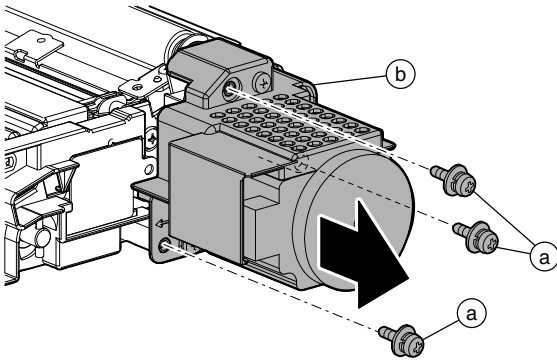
- 3) Disconnect the connector (a). Remove the screw (b) and the DF S PWB (c). Remove the DFS shield sheet (d).



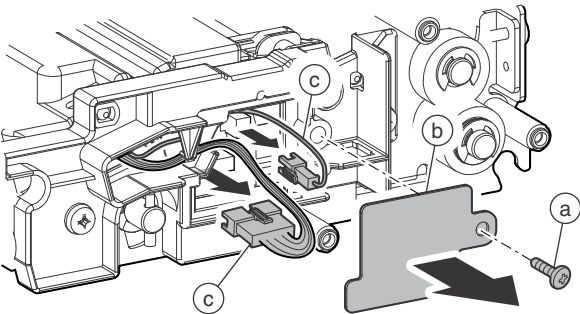
- 4) Remove the clump (a). Disconnect the connector (b). Remove the screw (c) and the DF R PWB (d). Remove the DFS shield sheet (e).



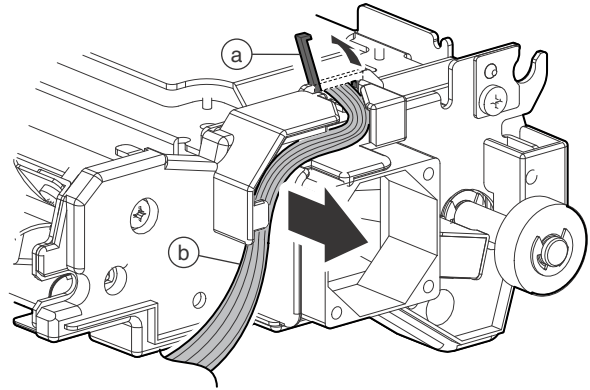
- 5) Remove the screw (a), and remove the PS motor unit (b).



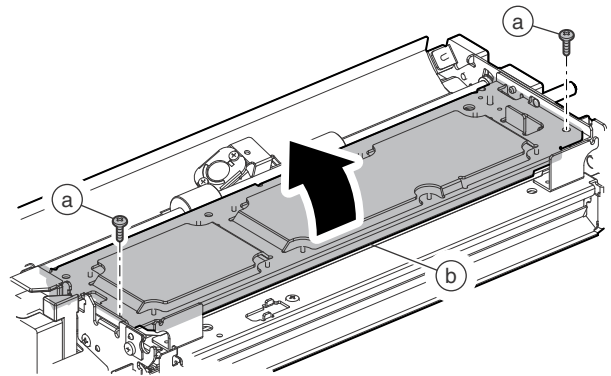
- 6) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



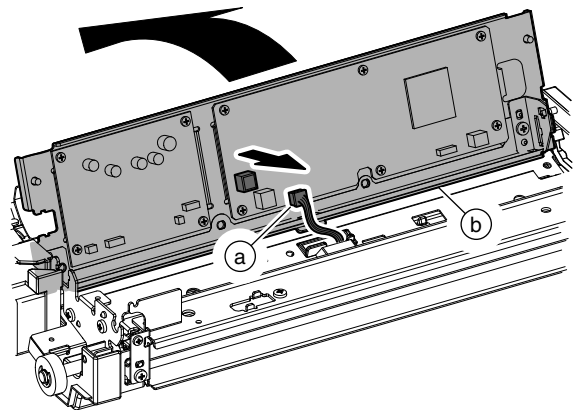
- 7) Open the harness holder (a), and remove the harness (b).



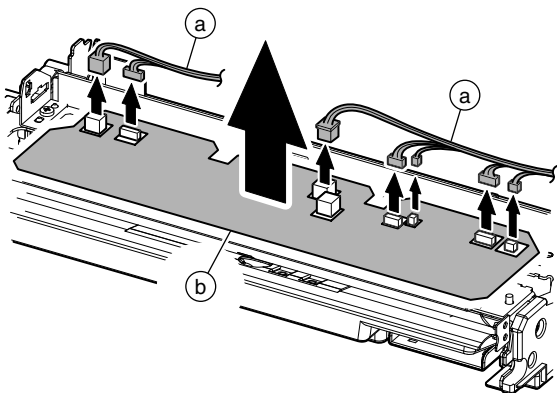
- 8) Remove the screw (a), and open the frame (b).



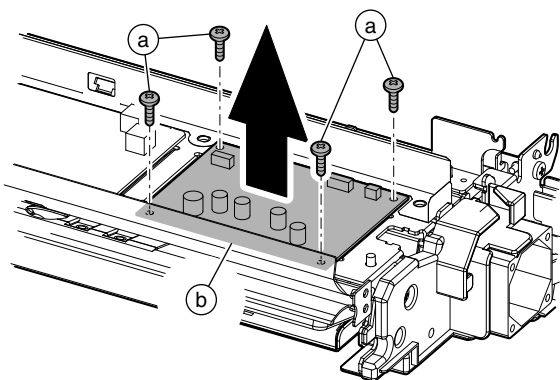
- 9) Disconnect the connector (a), and open the frame (b) further out.



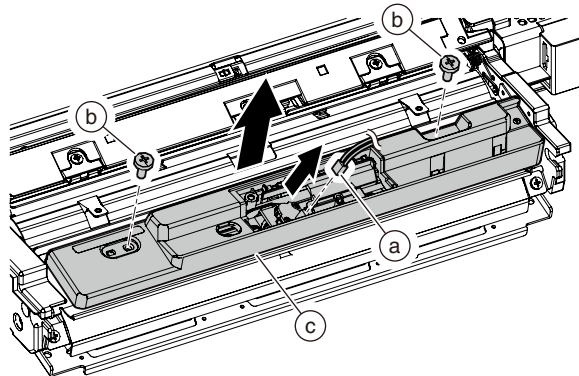
- 10) Disconnect the connector (a), and remove the PS section PWB protection sheet (b).



- 11) Remove the screw (a), and remove the double feed detector PWB (b).

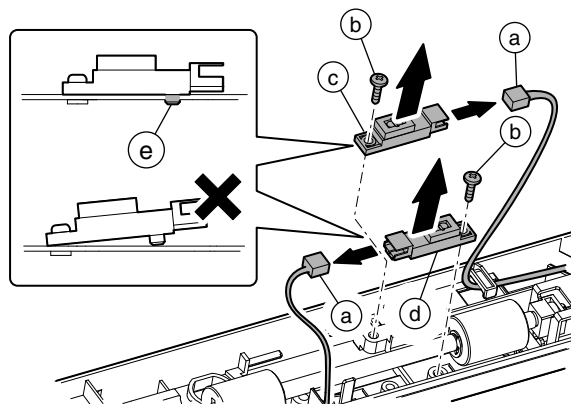


- 3) Disconnect the connector (a). Remove the screws (b), and remove the cover (c).



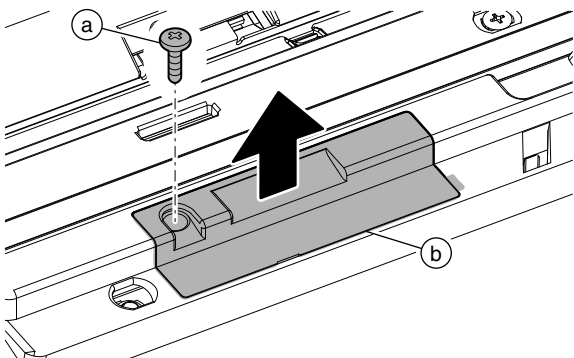
- 4) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 2 (c) and the transport detection 3 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



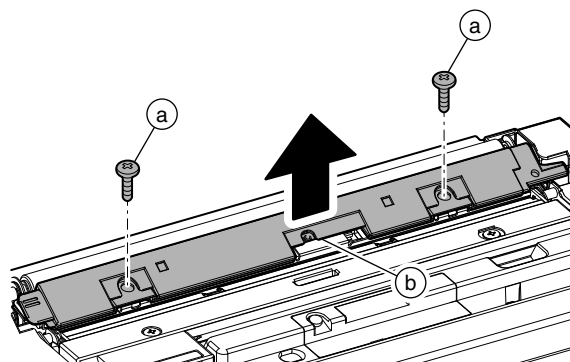
e. Transport detection 2 / Transport detection 3

- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the cover (b).

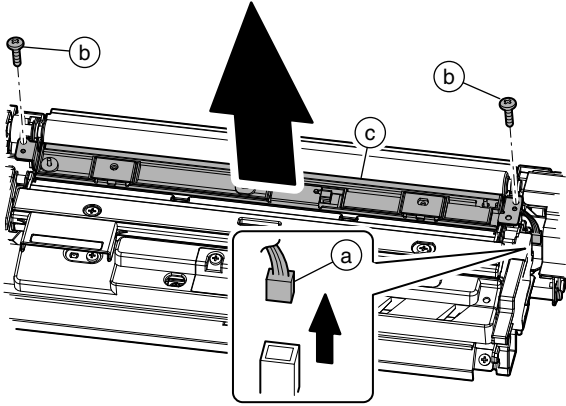


f. Transport detection 4 / CIS

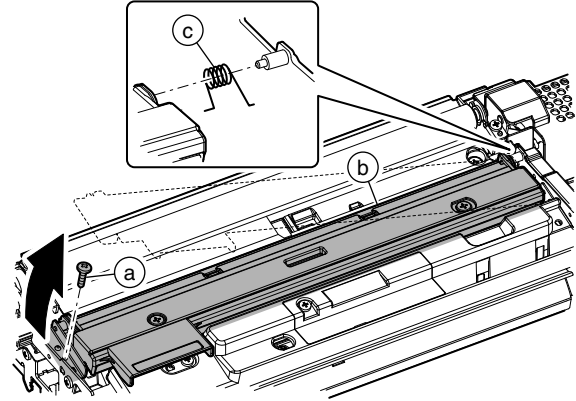
- 1) Remove the PS roller unit.
- 2) Remove the blue screw (a), and remove the paper dust cleaner (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper guide (c).

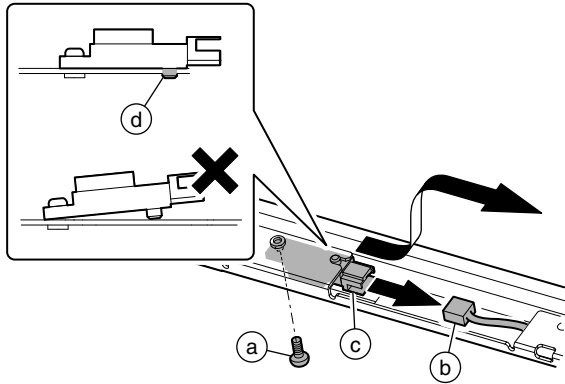


- 6) Remove the screw (a). Remove the paper guide (b) and the spring (c).

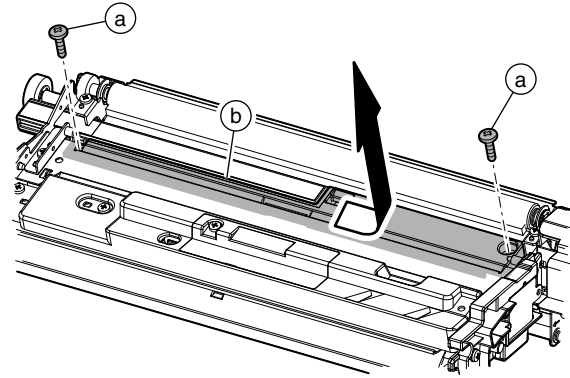


- 4) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 4 (c).

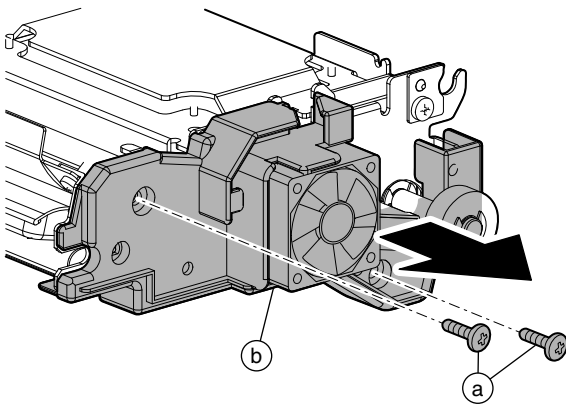
* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



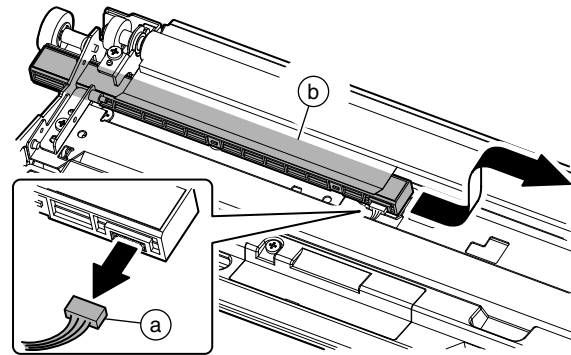
- 7) Remove the screw (a). Slide the cover (b) and remove it.



- 5) Remove the screw (a), and remove the cover (b).



- 8) Disconnect the connector (a), and remove the CIS (b).

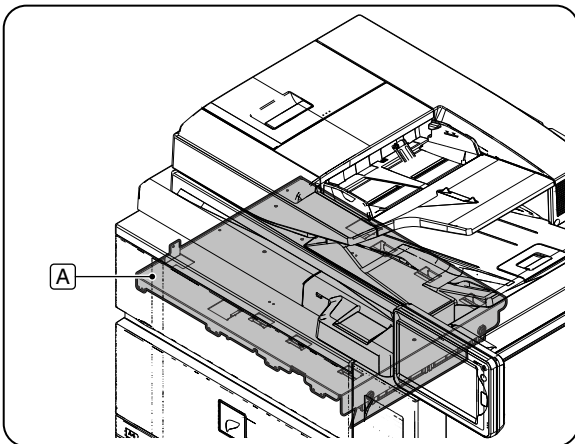


No	Name	Function
1	Scanning mirror (Polygon mirror motor)	Reflects the laser beam to expose the drum surface. Writes in the main scan direction.
2	Laser unit	Emits the laser beam.
3	No.1 cylindrical lens	Gathers the laser beams from the laser unit.
4	Incident mirror	Reflects the laser beams from the laser unit to send to the scanning mirror.
5	No.1 mirror	Reflects the laser beams from the scanning mirror to send to No.2 mirror.
6	No.2 mirror	Reflects the laser beams from No.1 mirror to send to No.3 mirror.
7	No.3 mirror	Reflects the laser beams from No.2 mirror to send to the photoreceptor.
8	No.2 cylindrical lens	Corrects the deflection caused by the tilted scanning mirror.
9	BD mirror	Guides the laser beams to BD PWB.
10	BD PWB	Detects the start timing of the laser scan. Detects the troubles of laser beams.
11	f θ lens 2	Bends the laser beams to equalize the laser scanning pitches on the OC drum.
12	Filter glass	Prevents contamination of dusts and foreign material.
13	f θ lens 1	Bends the laser beams to equalize the laser scanning pitches on the OC drum.
14	Laser control PWB	Converts the image signals to video signals and laser beams. Controls ON/OFF and output power of the laser.
15	Filter glass	Prevents contamination of dusts and foreign material from the outside.
16	Distortion adjustment cam	The cam for adjusting distortion of the print image.

2. Disassembly and assembly

A. LSU

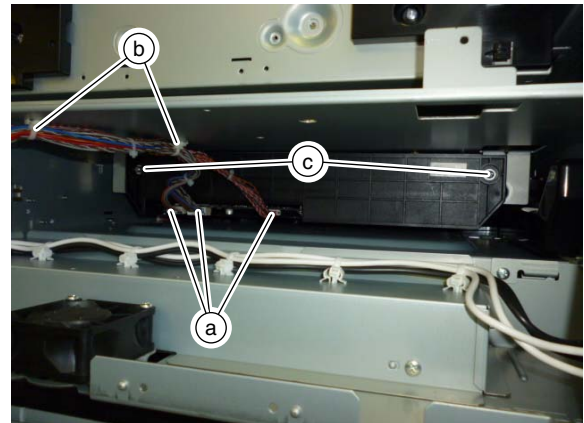
Parts		Page
A	LSU	G-2/(1)



(1) LSU

- 1) Remove the left upper cabinet.
- 2) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the LSU.

NOTE: Connector (a) is provided with lock for prevention against breakage.



[H] IMAGE PROCESS SECTION

1. Image process section operations

A. General

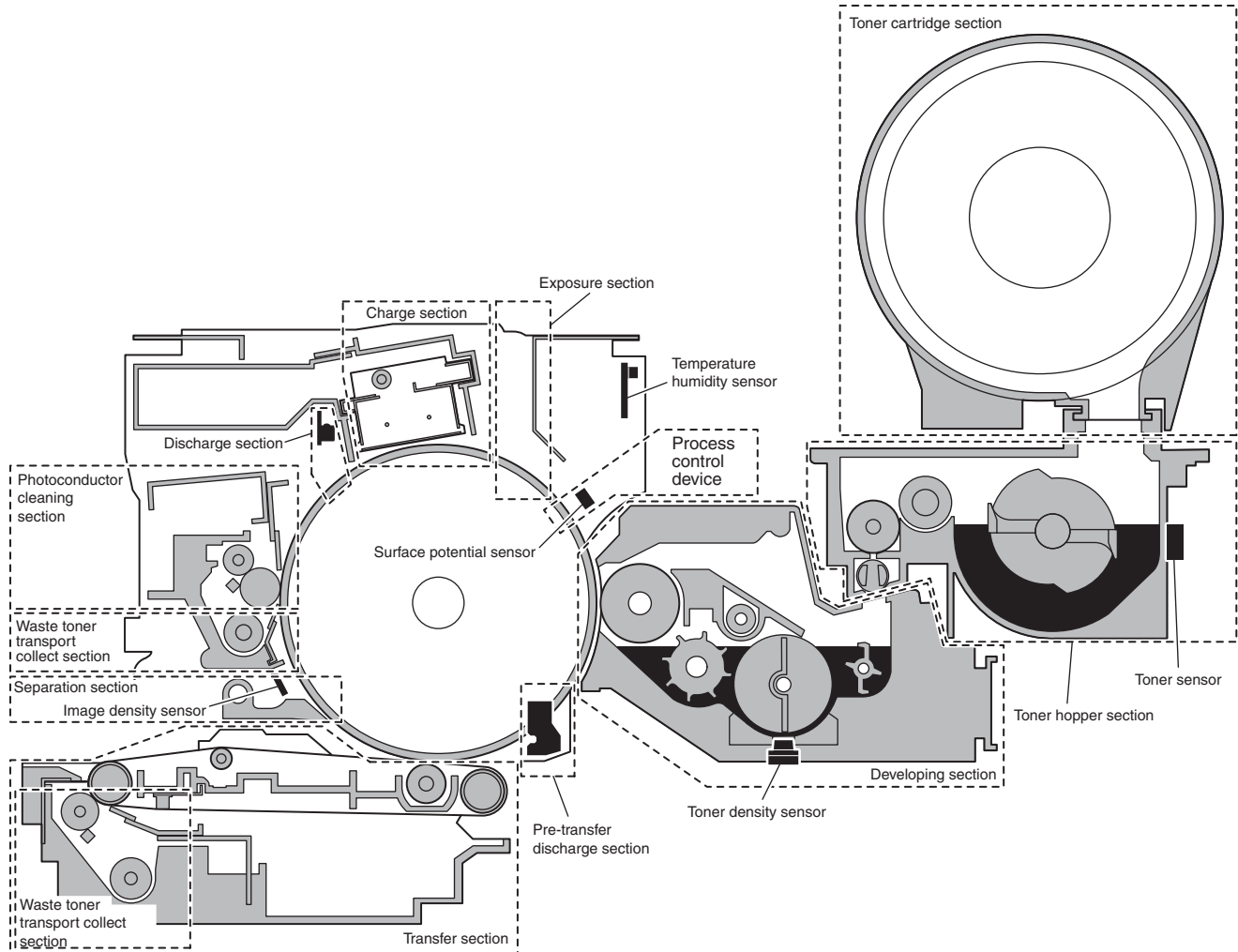
The optical dot image outputted from the LSU is converted into a visible toner image and transferred onto paper.

The image process section is composed of multiple sections and is controlled by the PCU PWB.

There are three models available in this series. Each model has a different process speed with a different print speed.

Model	Process speed
120/105cpm machine	580mm/sec

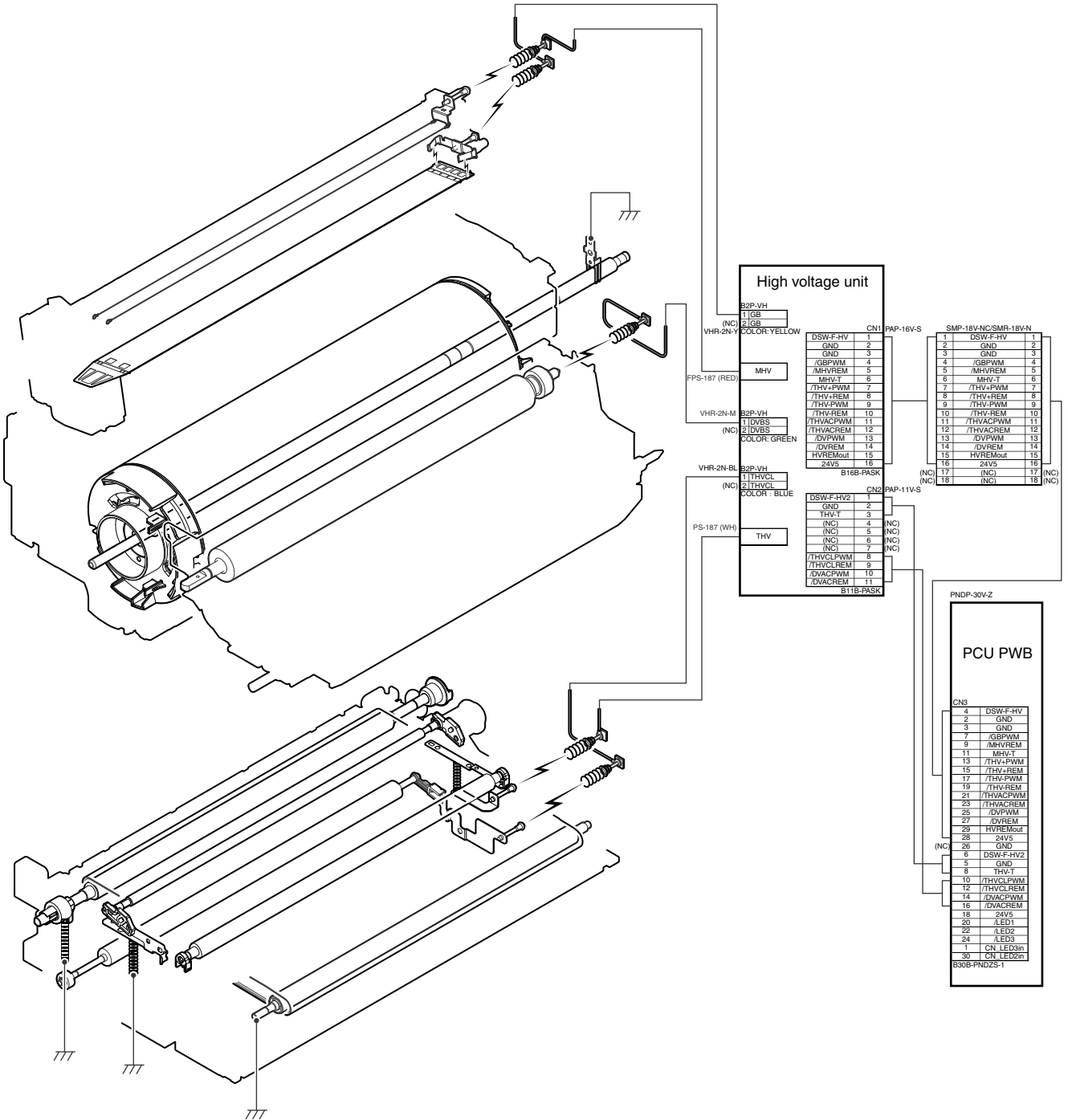
B. Process section composition



Section name	General of operations
Charge section	This section charges the OPC drum surface negatively with the main charger.
Exposure section	This section radiates laser beams onto the negatively charged OPC drum surface to form an electrostatic latent image.
Developing section	This section attaches toner to the electrostatic latent image generated in the exposure section, converting the image into a visible one.
Toner cartridge section	This section supplies toner to the hopper.
Toner hopper section	This section supplies toner to the developing section.
Pre-transfer discharge section	This section radiates light onto the OPC drum after development to discharge negative electric charges on the OPC drum, improving the transfer efficiency and the separation performance.
Transfer section	This section applies a high positive voltage to paper to transfer the toner image on the OPC drum onto paper.
Separation section	This section separates paper from the OPC drum mechanically by the separation pawl when paper is not separated from the OPC drum naturally.
Photoconductor cleaning section	This section removes residual toner from the OPC drum surface by the cleaning blade after transfer operation.
Discharge section	This section radiates light onto the OPC drum by the discharge lamp to discharge the whole surface of the OPC drum, resetting the surface potential of the OPC drum to the initial level.

Section name	General of operations
Waste toner transport collect section	This section cleans unnecessary residual toner from the OPC drum and transport it to the waste toner collection section. It cleans unnecessary residual toner in the transfer section and transports it to the waste toner collection section.
Process control device	This section controls each voltage and the laser power and the toner density control level and keeps them to the proper levels based on the outputs of the front surface potential sensor, the image density sensor, and the temperature/humidity sensor.

C. Image process section actual wiring diagram

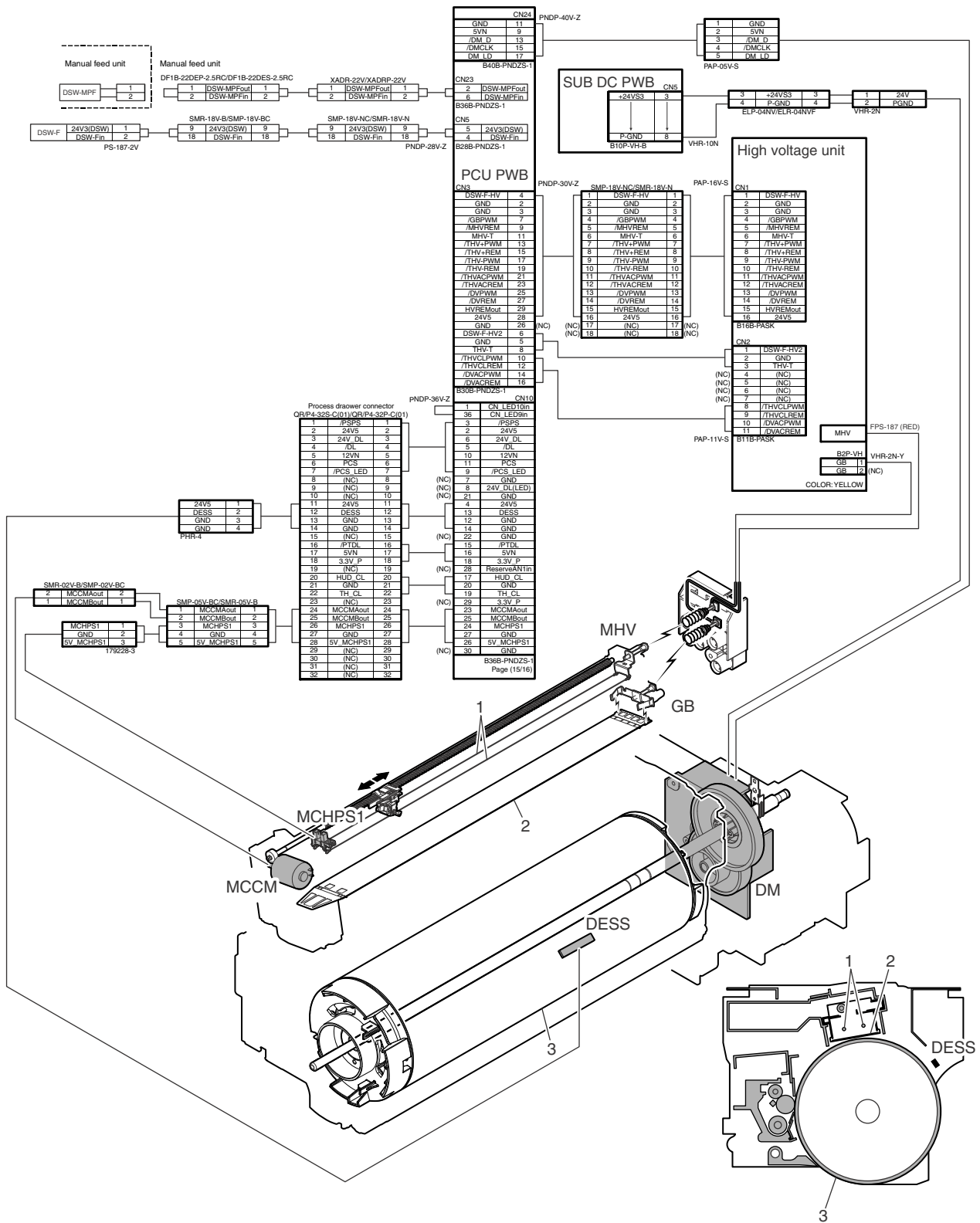


[i] PHOTOCONDUCTOR SECTION

1. Charging section

This section charges the OPC drum with a negative charge.

A. Electrical and mechanism relation diagram



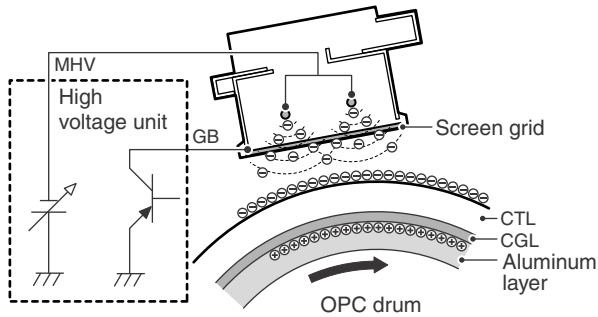
No.	Name	Function / Operation
1	Charger wire	Charges the OPC drum.
2	Screen grid	Charges the OPC drum evenly.
3	OPC drum	Forms electrostatic latent images by laser beams. Forms toner images from the electrostatic latent images through the developing process.
4	Main high voltage PWB	Outputs the main charger voltage.

Code	Name	Function / Operation	Type
MCCM	Charger wire cleaning motor	Drives the charger wire cleaner.	DC brush motor
MCHPS	Charger wire cleaner home position sensor	Detects the home position of the charger wire cleaner.	Transmission type photo sensor
DESS	Surface potential sensor	Detects the OPC drum surface potential after exposure and after non-exposure.	Feed-back type drum surface potential sensor
DM	OPC drum motor	Drives the OPC drum, the OPC drum cleaner section, and the transfer section.	DC brushless motor

B. Operational descriptions

(1) Charging operation

The screen grid is attached to the main charger unit, and the OPC drum is charged at a voltage virtually similar to the voltage applied to the screen grid.



Main charger grid voltage

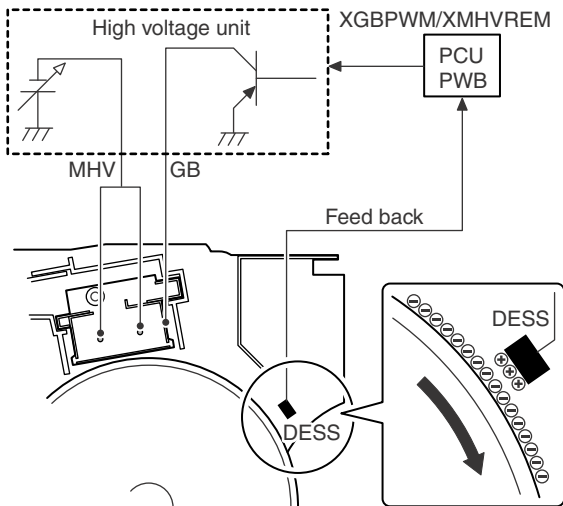
Operation mode	Output voltage	
	90cpm machine	105/120cpm machines
COPY	- 595v	- 625v

(2) Drum surface potential sensor

The front surface potential on the OPC drum is detected after charging and exposure. The drum surface is detected by potential sensor to ensure its specified charge level.

The output (DESS) of the drum surface potential sensor is inputted to the PCU PWB. The main charger grid voltage control signal (XGBPWM) duty is varied by the PCU PWB so that the OPC drum surface potential is specified level.

The main charger ON/OFF is controlled by the signal (XMHVREM).

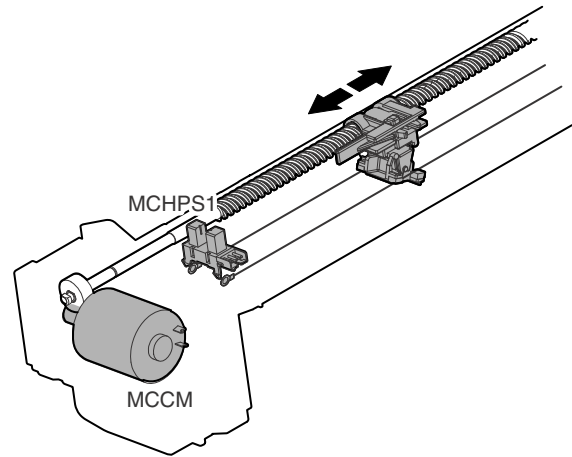


(3) Charger wire cleaning operation

The main charger wire is cleaned by the charger wire cleaner at the specified interval. The charger wire cleaner is reciprocated once for one cleaning operation.

The cleaning operation can be also executed with Sim. 6-4.

The charger wire cleaner is driven by the charger wire cleaning motor (MCCM), and the home position of the charger wire cleaner is detected by the sensor (MCHPS1).



2. Exposure section

A. Operational descriptions

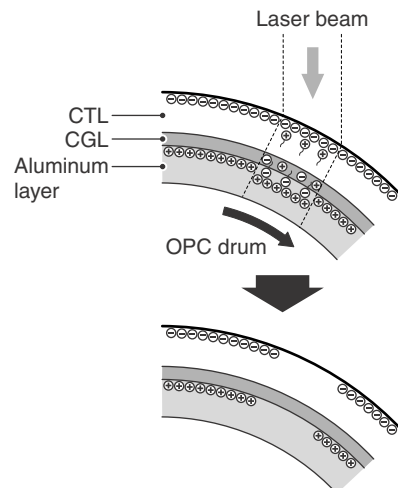
In this section, laser beams are exposed onto the negatively charged OPC drum surface to form electrostatic latent images.

When laser beams are exposing the CGL of the OPC drum, positive and negative electric charges are generated. The positive charges generated on the CGL are attracted and shifted by negative electric charges on the OPC drum surface. On the other hand, negative charges are attracted and shifted by positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are counterbalanced each other on the surface and in the aluminum layer of the OPC drum, reducing positive and negative charges and lowering the OPC drum surface potential.

In the section where laser beams are not exposed, negative charges remain.

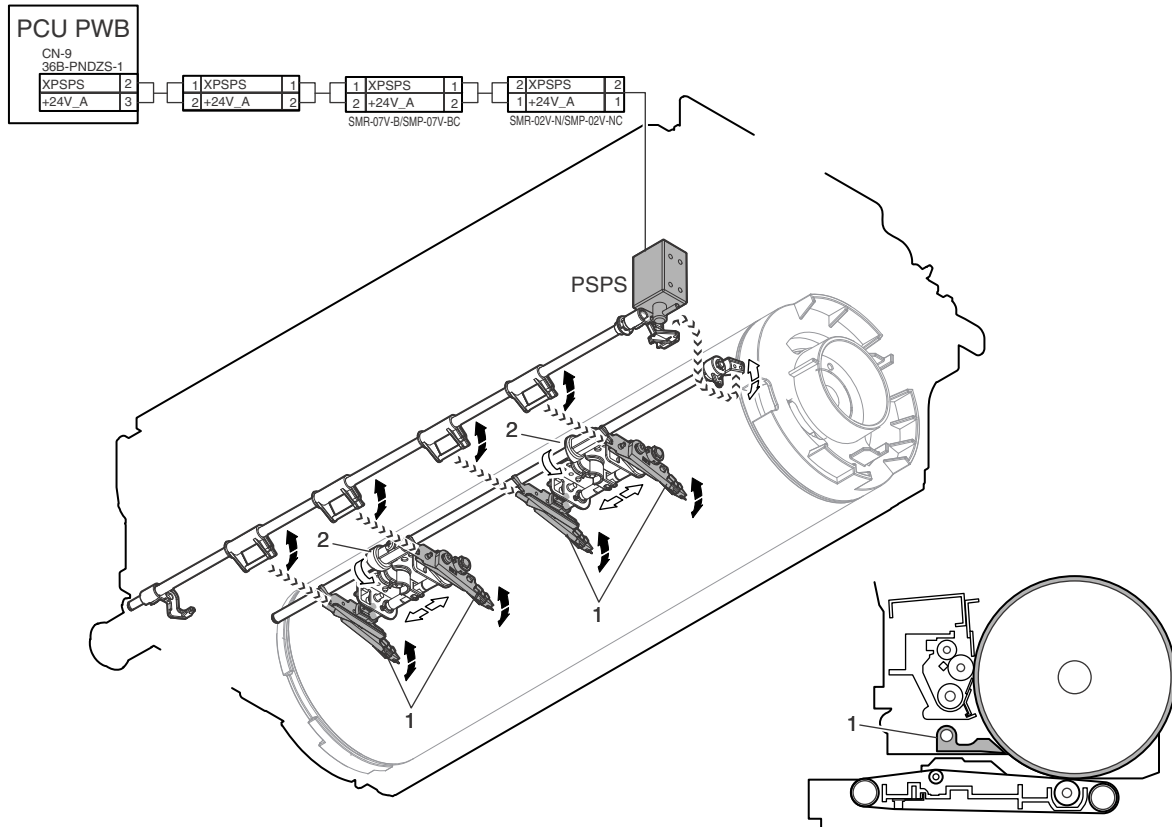
Through this operation, electrostatic latent images are formed on the OPC drum surface.



3. Separation section

When paper is not separated from the OPC drum naturally, the separation pawl separates paper mechanically.

A. Electrical and mechanism relation diagram



No.	Name	Function / Operation
1	OPC drum separation pawl	Separates paper from the OPC drum.
2	Separation pawl oscillation shaft drive cam	Converts the drive power of the OPC drum motor into the reciprocating rotation power of the separation pawl oscillation shaft.

Code	Name	Function / Operation	Type
PSPS	Separation pawl solenoid	Drives the separation pawl.	Solenoid

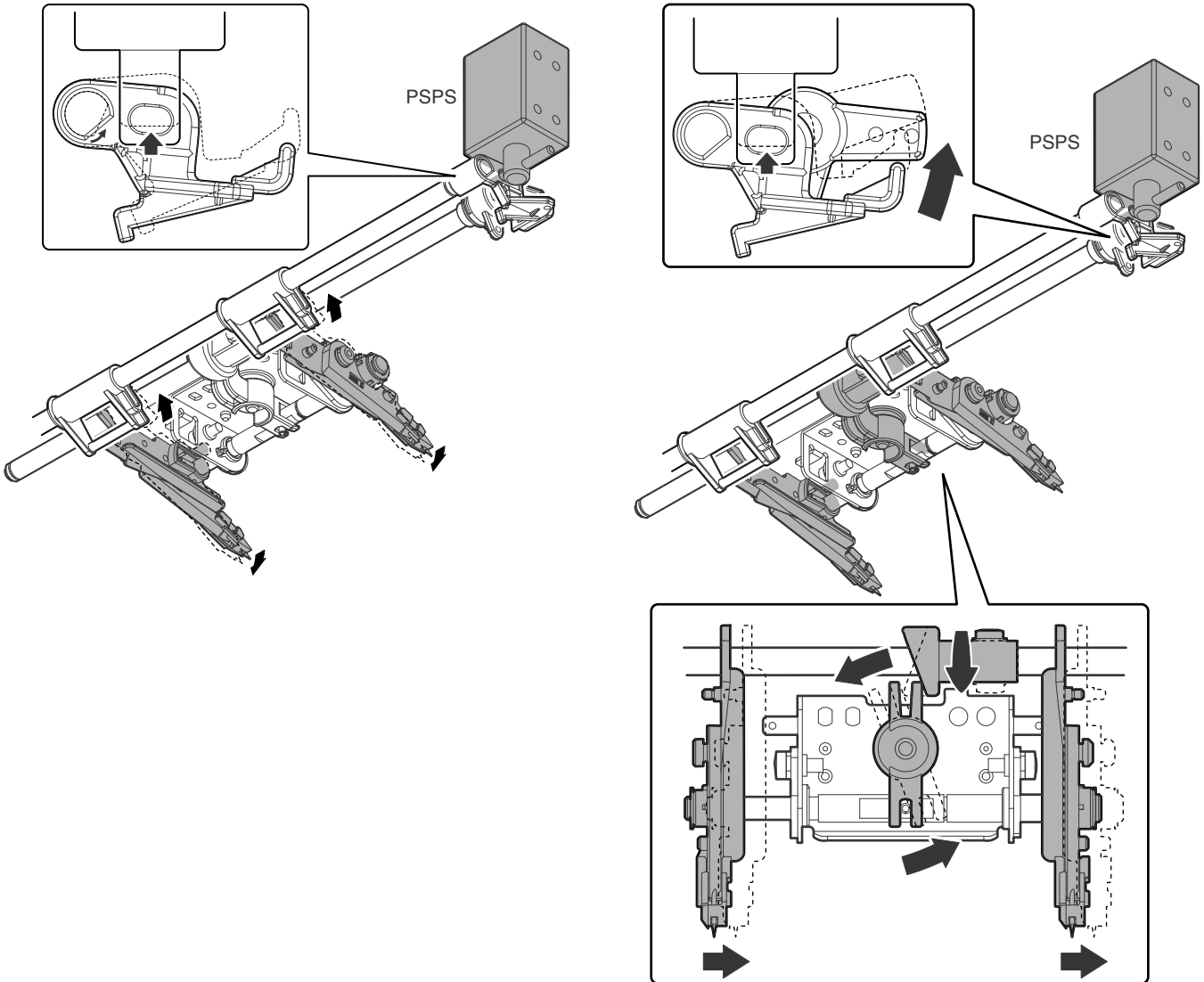
B. Operational descriptions

When paper is not separated from the OPC drum naturally, the separation pawl separates paper mechanically.

The separation pawl is driven by the separation solenoid (XSPSS), and is in contact with the OPC drum when paper passes through the transfer section.

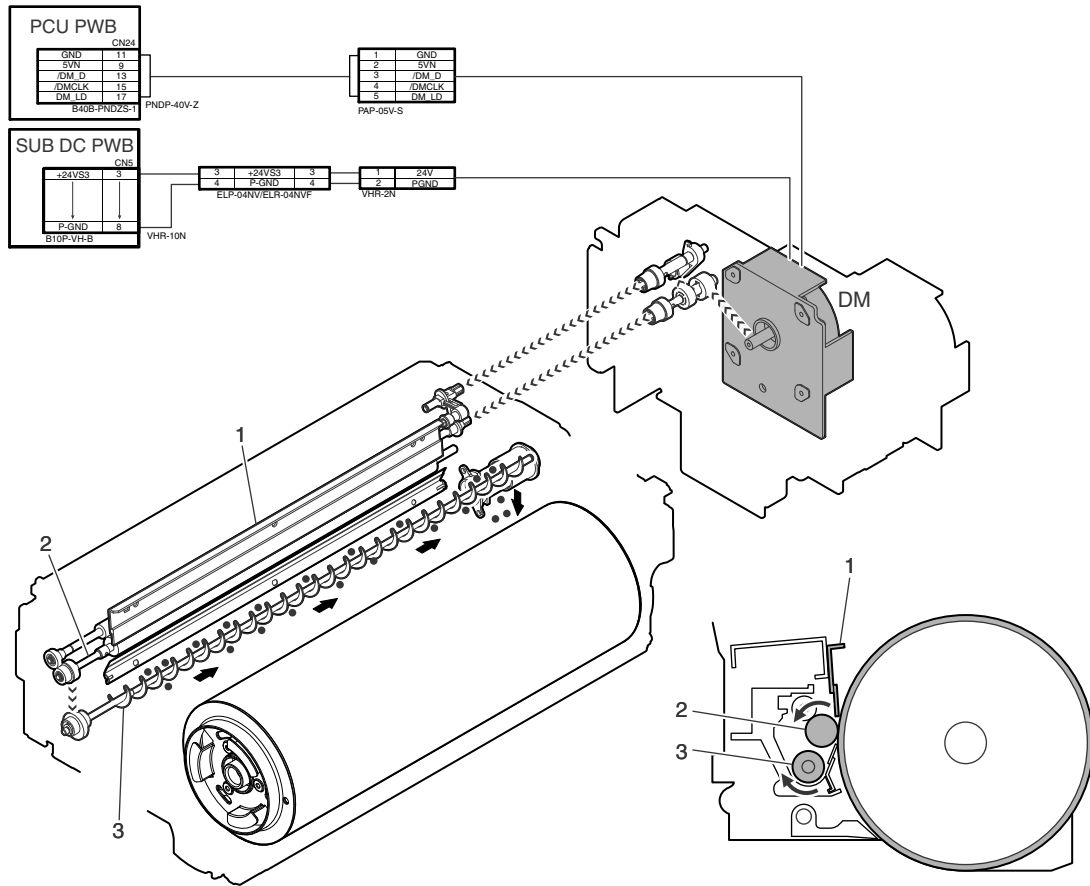
In the other cases, the separation pawl is separated from the OPC drum.

In addition, the separation pawl operates in conjunction with the separation solenoid and oscillates back and forth.



4. OPC drum cleaning section

A. Electrical and mechanism relation diagram



No	Name	Function / Operation
1	OPC drum cleaning blade	Removes unnecessary residual toner from the OPC drum for cleaning.
2	OPC drum cleaning brush roller	Removes unnecessary residual toner from the OPC drum for cleaning.
3	Waste toner transport screw (OPC drum cleaning section)	Transports waste toner in the transfer unit to the waste toner collection section.

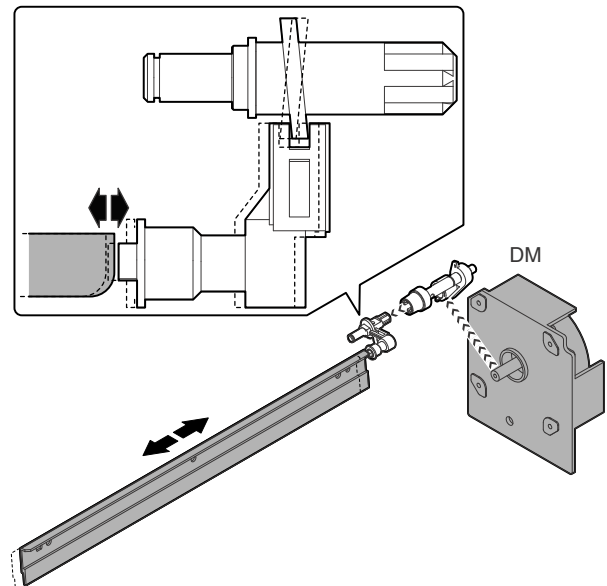
Code	Name	Function / Operation	Type
DM	OPC drum motor	Drives the OPC drum cleaner section.	DC brush-less motor

B. Operational descriptions

Residual toner on the OPC drum is removed by the cleaning roller and cleaning blade.

The residual toner removed from the OPC drum surface is transported to the waste toner collection section by the waste toner transport screw.

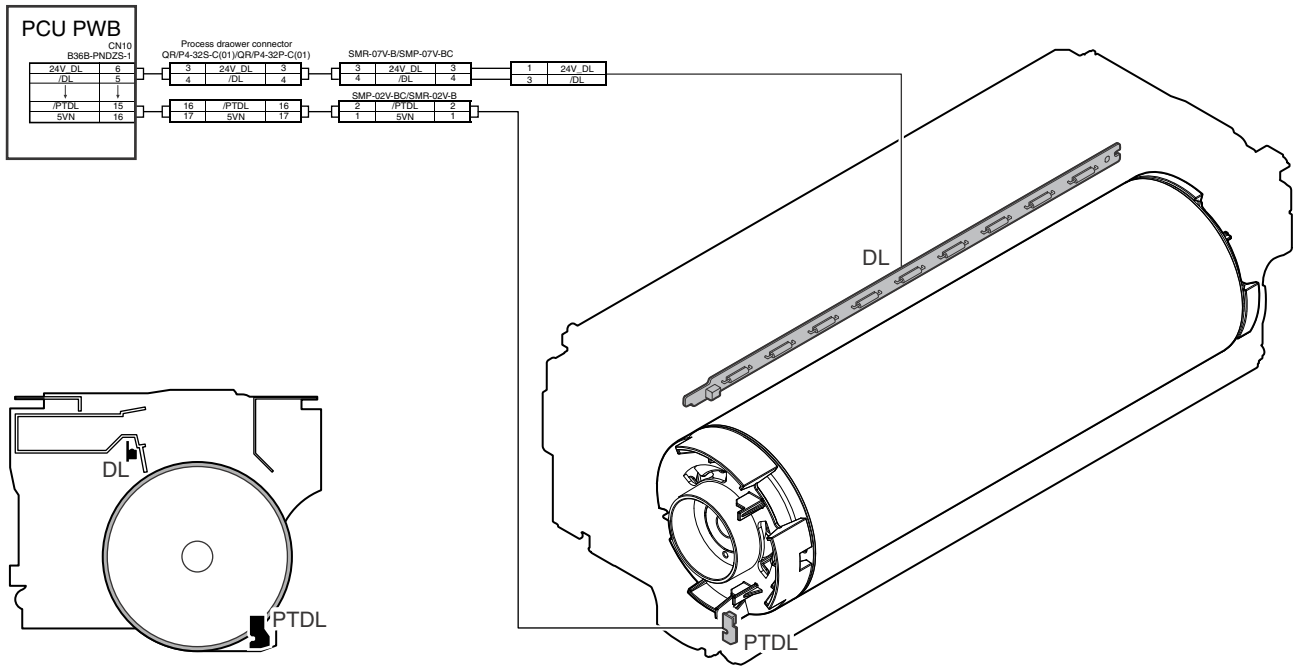
The cleaning blade oscillates back and forward in synchronization with the drum drive motor. By this movement, the cleaning performance is improved.



5. Discharge section

In this section, light is exposed onto the OPC drum to discharge the whole surface of the OPC drum.

A. Electrical and mechanism relation diagram



Code	Name	Function / Operation	Type
DL1	Discharge lamp	Discharges the residual potential on the OPC drum.	LED

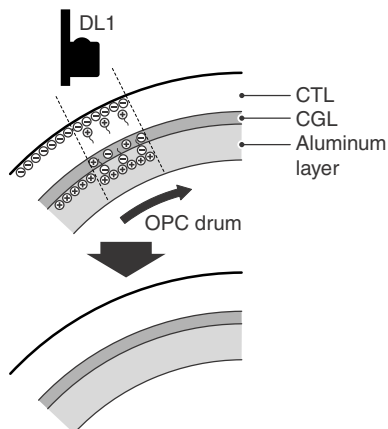
B. Operational descriptions

When the discharge lamp light is exposed to the OPC drum CGL layer, positive and negative charges are generated. Positive charges generated in the CGL are attracted by negative charges on the OPC drum surface.

On the other hand, negative charges are attracted by positive charges in the aluminum layer of the OPC drum.

Therefore, positive charges and negative charges are counterbalanced on the surface and in the aluminum layer of the OPC drum to reduce positive and negative charges, lowering the potential of the whole surface of the OPC drum.

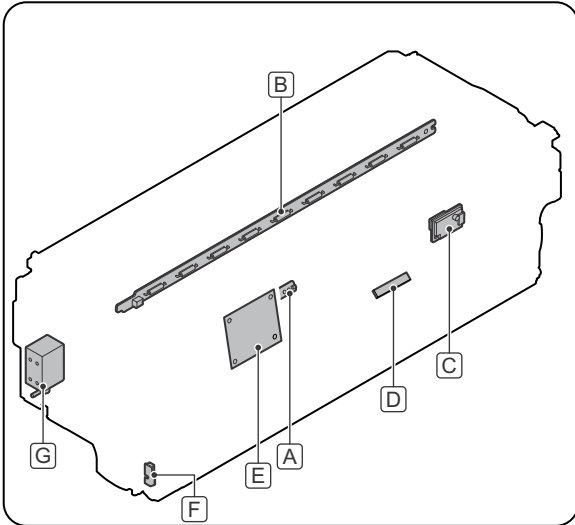
As a result, the surface potential of the OPC drum is reset to the initial level.



6. Disassembly and assembly

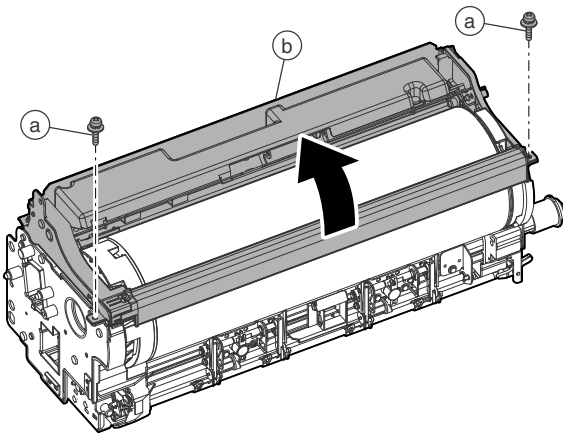
A. Process unit

Unit	Parts	Page
Process unit	A Process control sensor	i-10/a
	B Discharge lamp	
	C Temperature humidity sensor 1	i-10/b
	D Surface potential sensor	
	E Process control sensor PWB	i-11/c
	F PTDL unit	
	G Separation solenoid	i-12/d

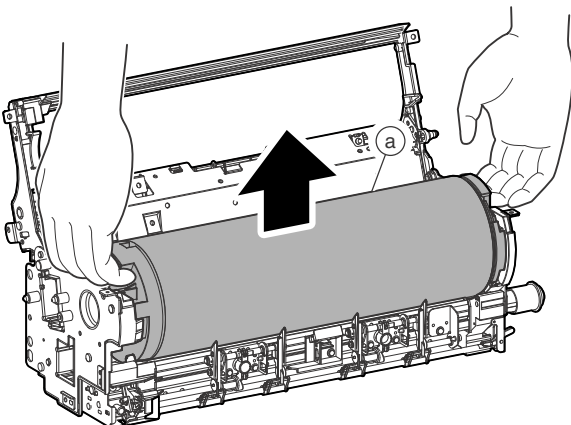


* When disassembling or assembling the process unit, remove the OPC drum unit by the following and keep it for a while.

- 1) Remove the blue screw (a), and open the frame (b).



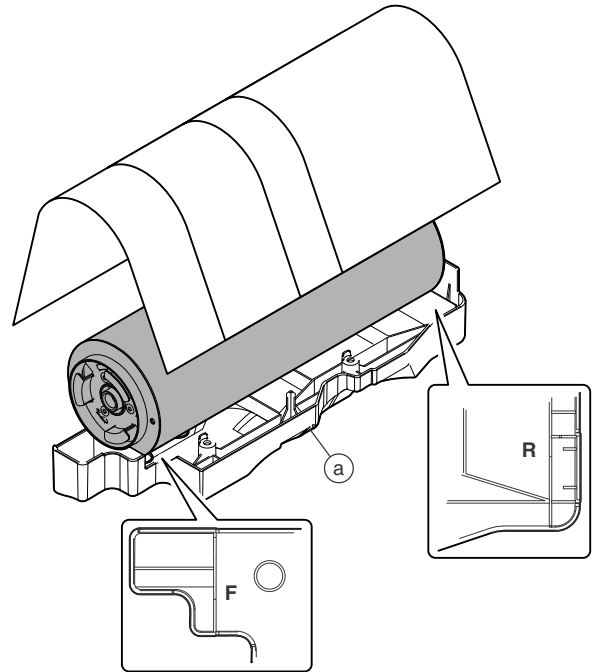
- 2) Remove the OPC drum unit.



- 3) Turn back the cover (a) that have been removed in step 2) of "(1)-Process unit" procedure, and put the OPC drum unit on the cover.

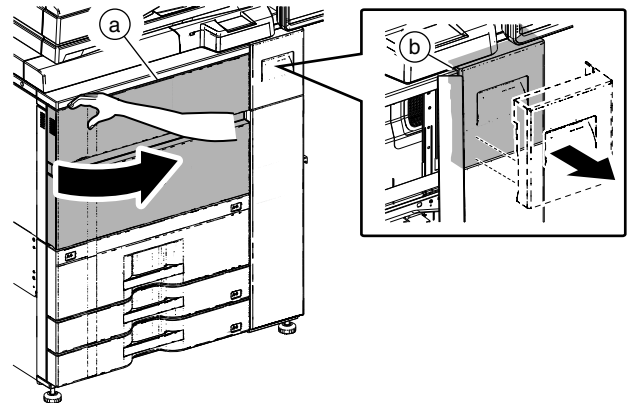
When putting the OPC drum unit on the cover, in advance remove the bearing, place it according to "F" and "R" marked on the cover (a).

Cover the OPC drum unit with paper to prevent exposure.

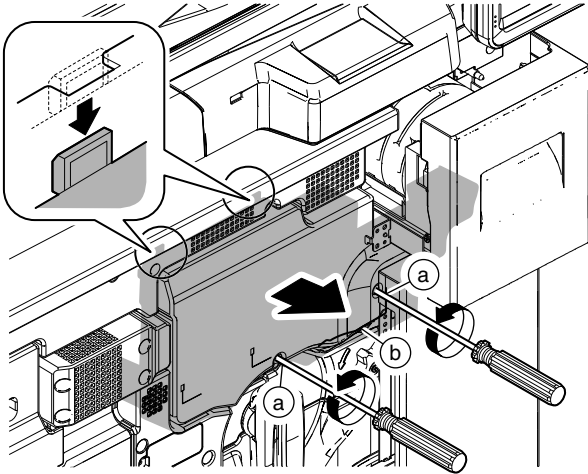


(1) Process unit

- 1) Open the front cover (a), and pull out the toner tray (b) slightly.

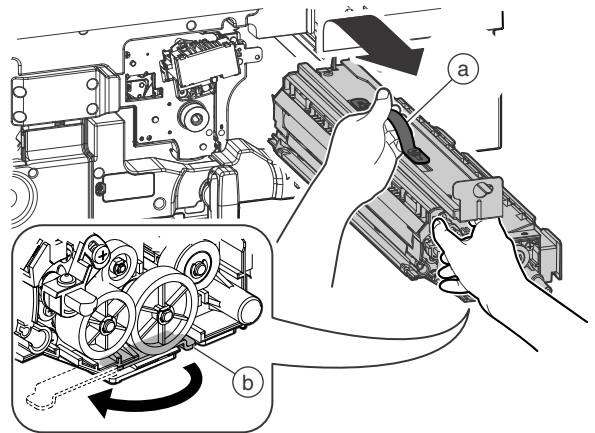


2) Remove the screw (a), and remove the cover (b).

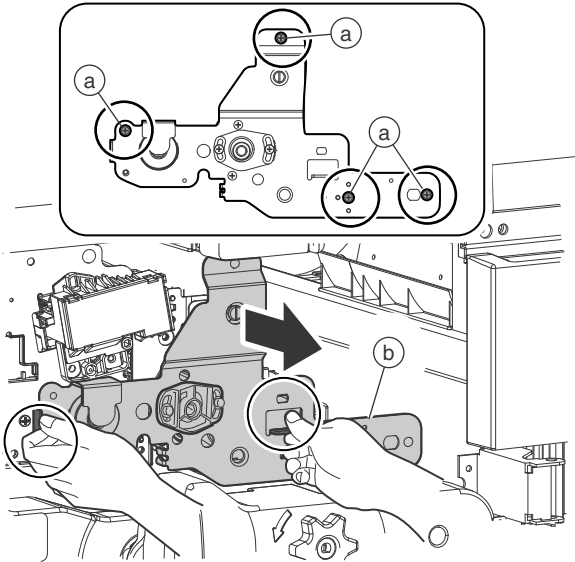


5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

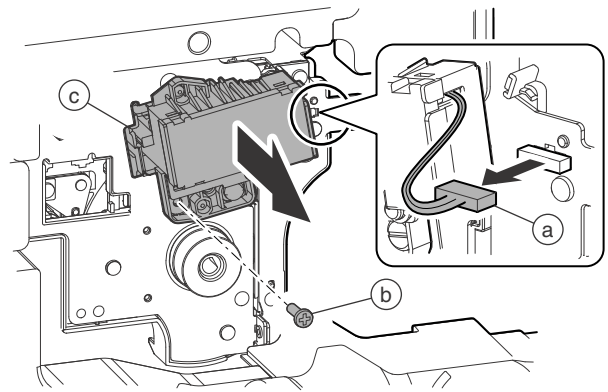
* When placing the developing unit on a floor, use the stand (b) and put the unit on it.



3) Remove the blue screw (a), and remove the plate (b).



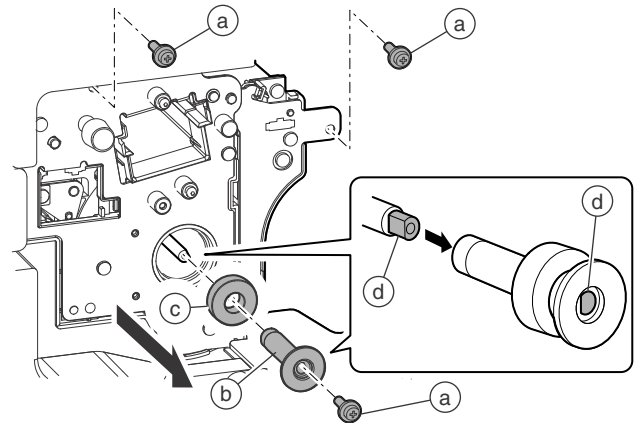
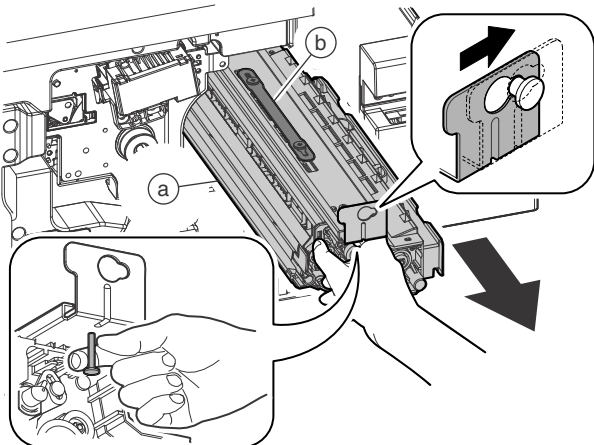
6) Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).



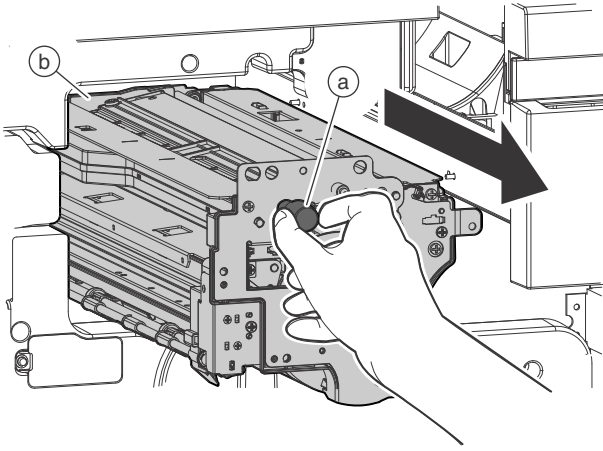
4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

7) Remove the blue screw (a). Remove the bearing (b) and the bearing (c).

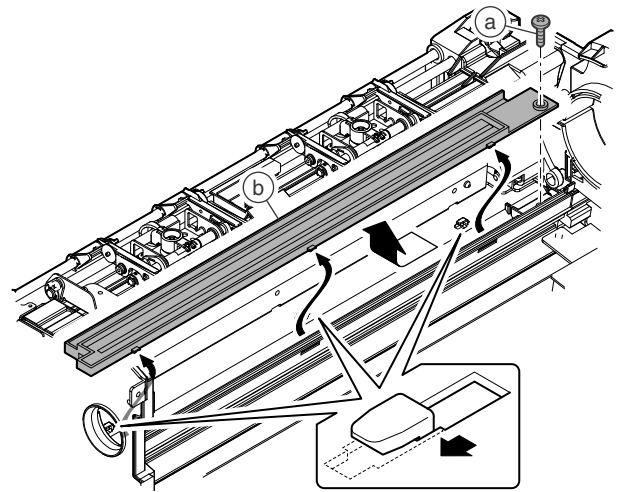
* When installing the bearing, fit the D-cut direction and engage it properly.



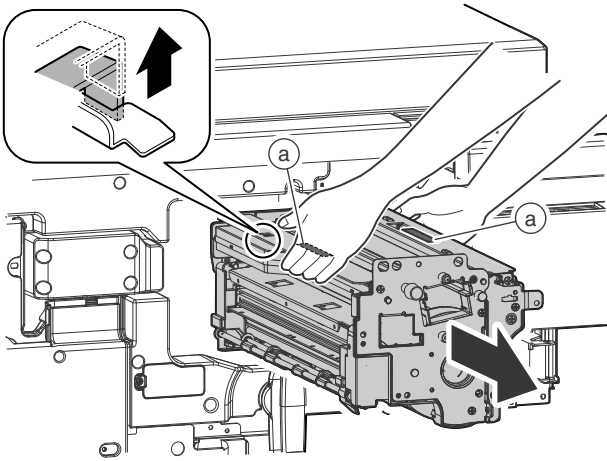
- 8) Hold the handle (a), and pull out the process unit (b) until it stops.



- 4) Remove the blue screw (a), and remove the cover (b).

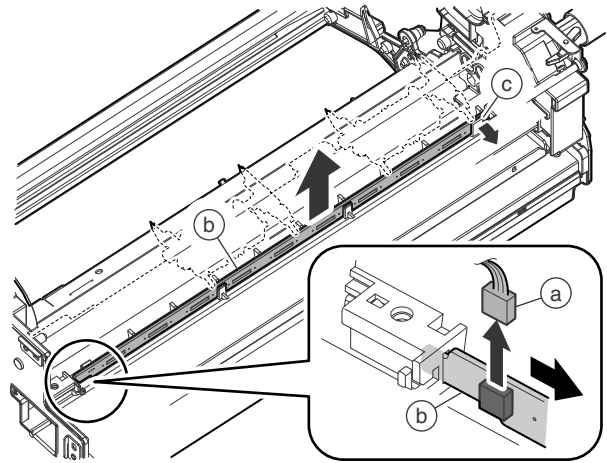


- 9) Hold the green label section (a) on the process unit frame, and lift it up to remove completely.



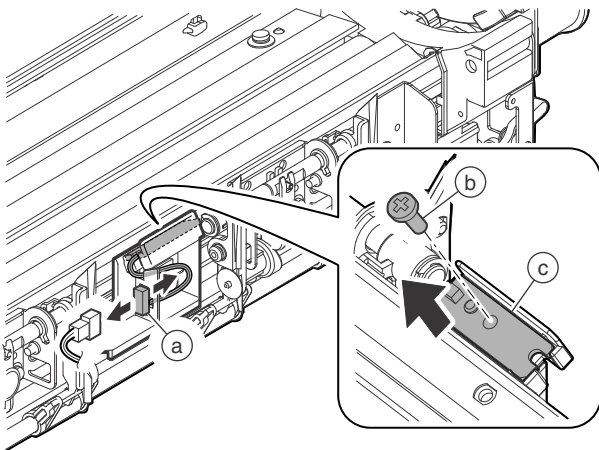
- 5) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp (b).

* Be careful not to break the pawl. (c).



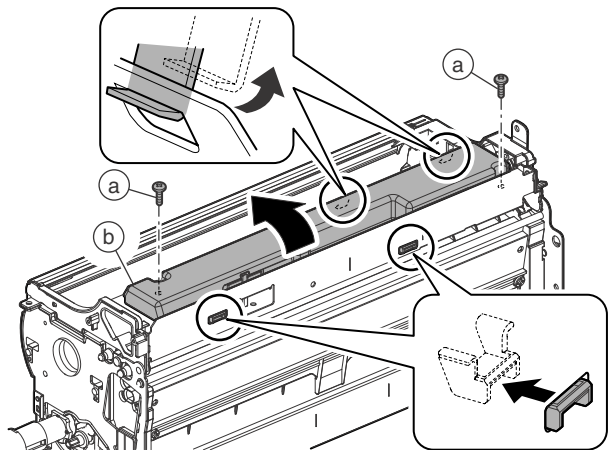
a. Process control sensor / Discharge lamp

- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Disconnect the connector (a), and remove the screw (b). Remove the process control sensor (c).

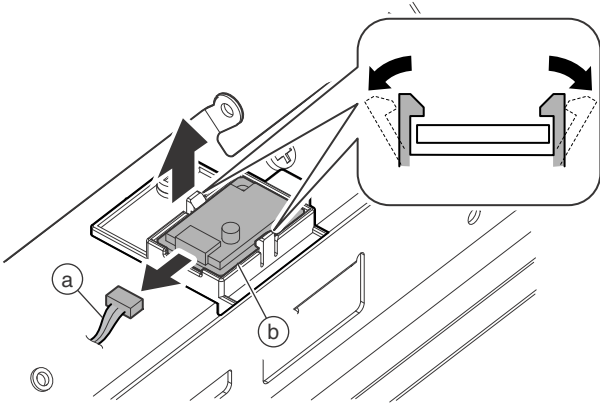


b. Temperature humidity sensor 1 / Surface potential sensor / Process control sensor PWB

- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the cover (b).

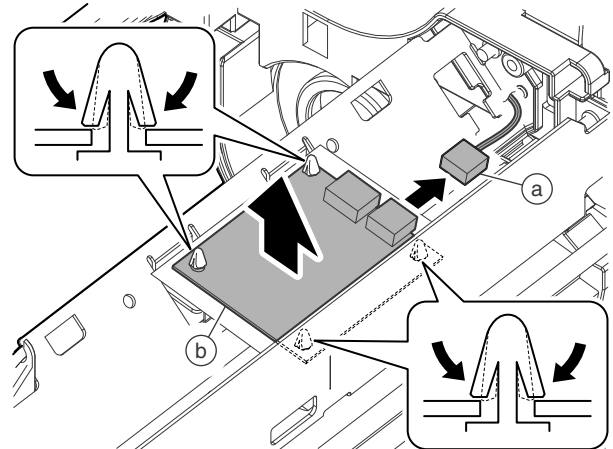


- 4) Disconnect the connector (a), and remove the temperature humidity sensor 1 (b).

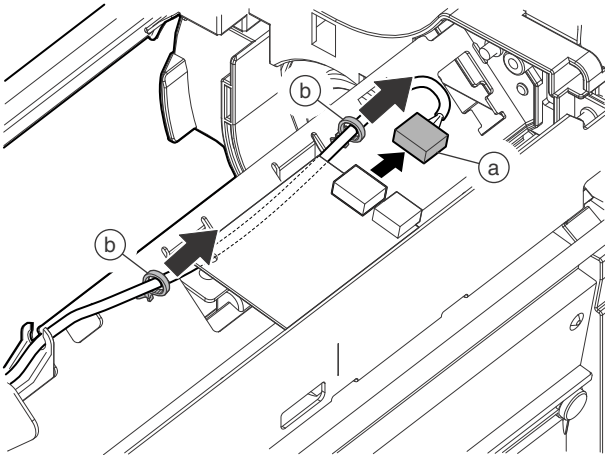


- 7) Disconnect the connector (a), and remove the process control sensor PWB (b).

* When replacing the process control sensor PWB, replace it together with the surface potential sensor.

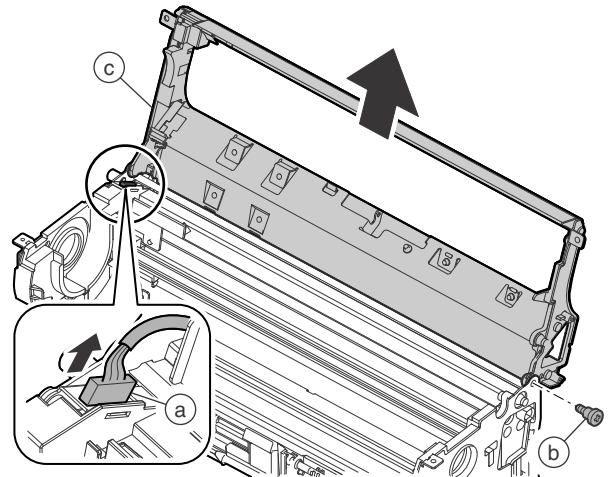


- 5) Disconnect the connector (a), and remove the snap band (b).

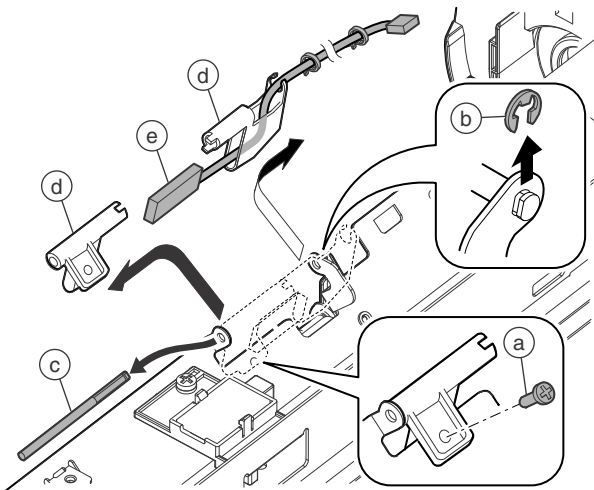


c. PTDL unit

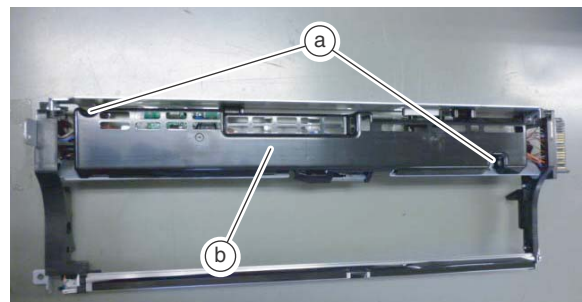
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Disconnect the connector (a), and remove the step screw (b). Remove the frame (c).



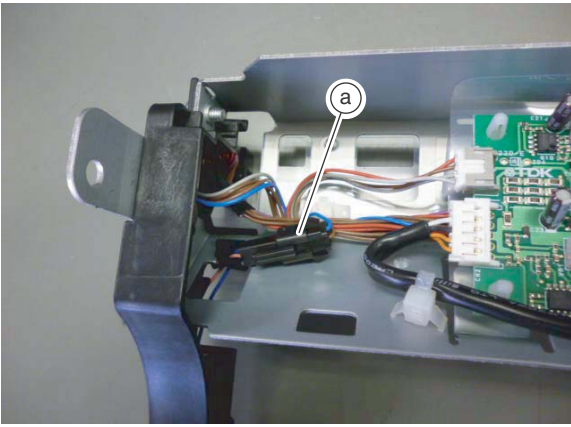
- 6) Remove the screw (a) and the E-ring (b). Remove the shaft (c). Remove the holder (d) from the surface potential sensor (e).



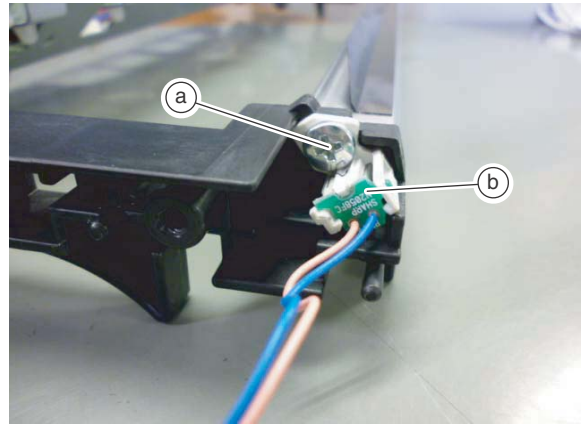
- 4) Remove the screw (a), and remove the cover (b).



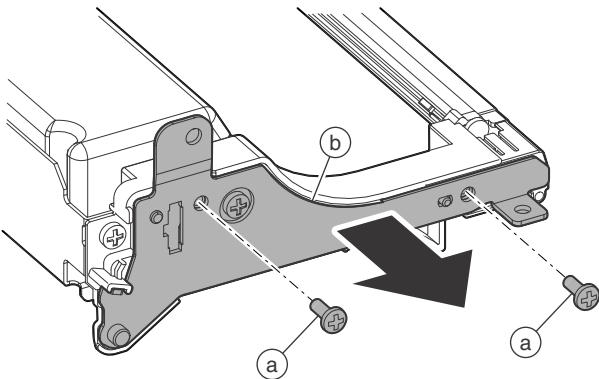
5) Disconnect the connector (a).



9) Remove the screw (a), and remove the PTDL unit.

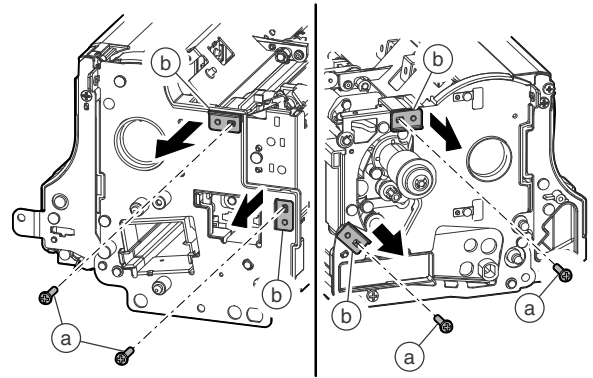


6) Remove the screw (a), and remove the plate (b).

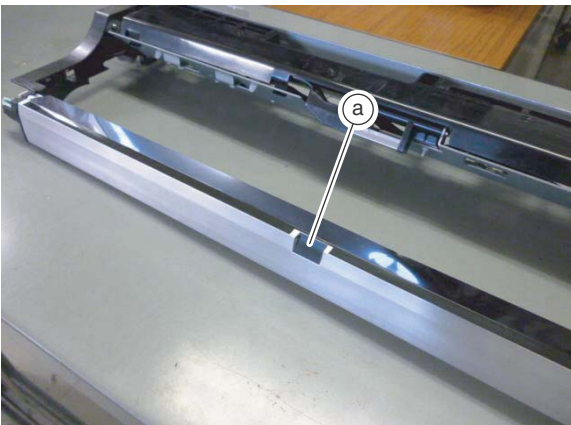


d. Separation solenoid

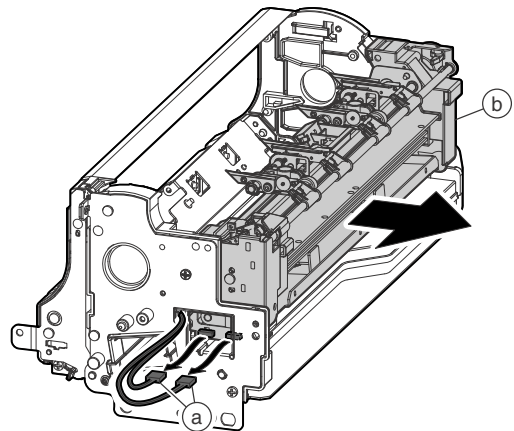
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the plate (b).



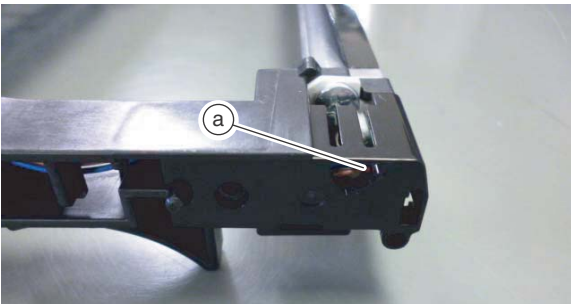
7) Remove the black mylar (a).



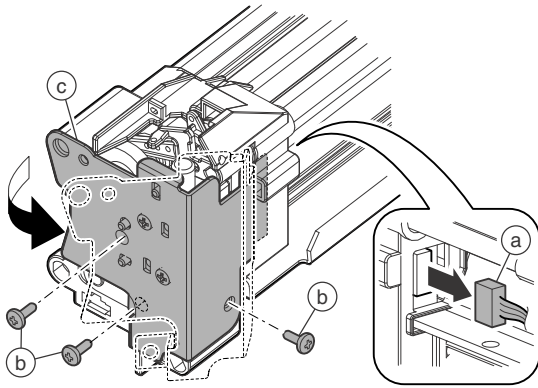
4) Disconnect the connector (a), and remove the frame (b).



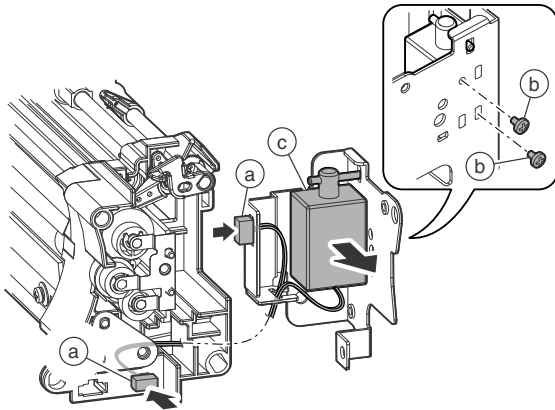
8) Remove the cover (a).



- 5) Disconnect the connector (a), and remove the screw (b).
Remove the separation solenoid unit (c).

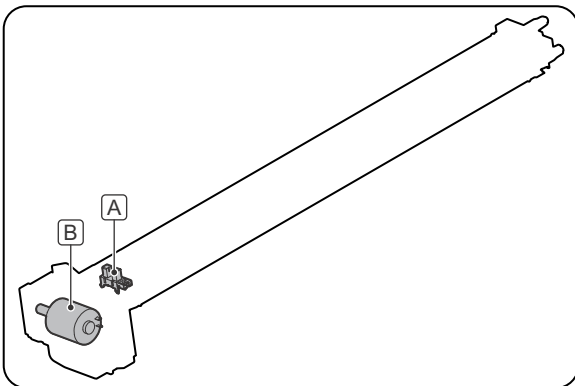


- 6) Disconnect the connector (a), and remove the screw (b).
Remove the separation solenoid (c).



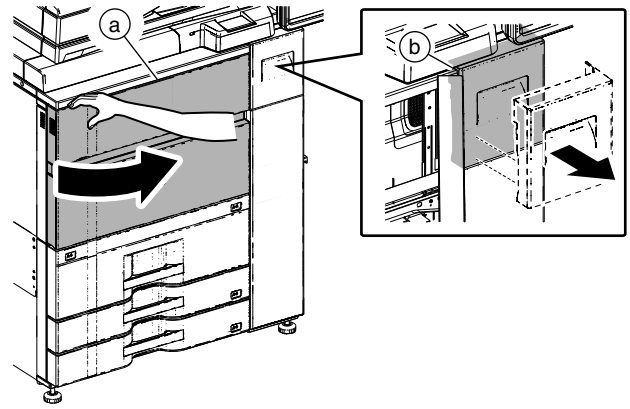
B. Main charger unit

Unit	Parts	Page
Main charger unit	A MC cleaner home position detection	i-14/a
	B Main charger cleaning motor	i-14/b

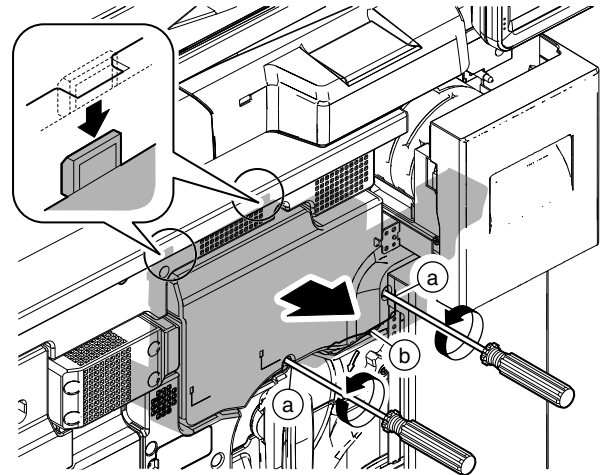


(1) Main charger unit

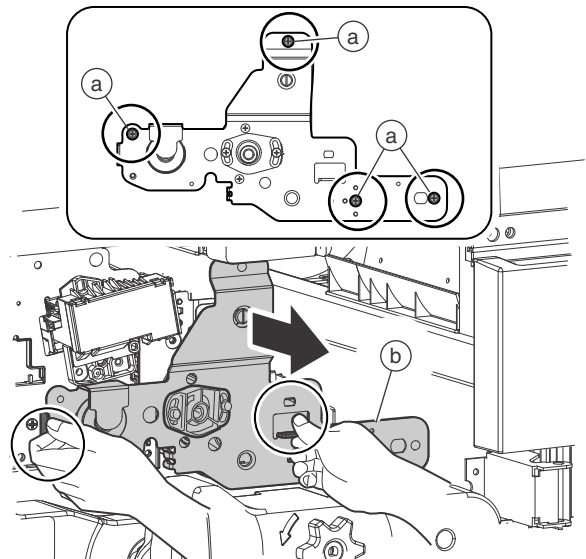
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



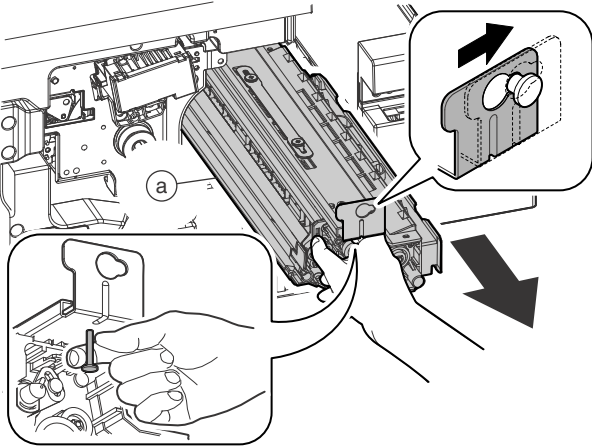
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

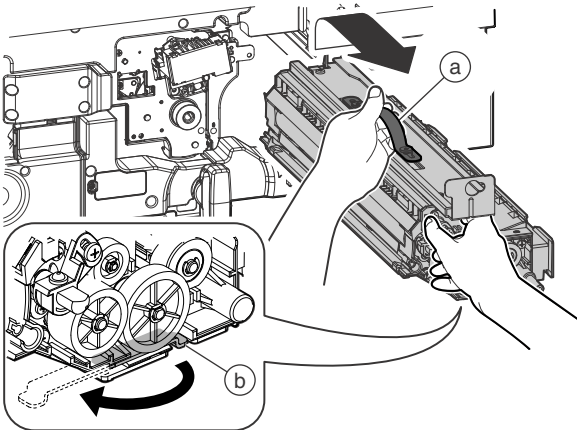


- Slide the developing unit (a) to the right, and pull it out until it stops.

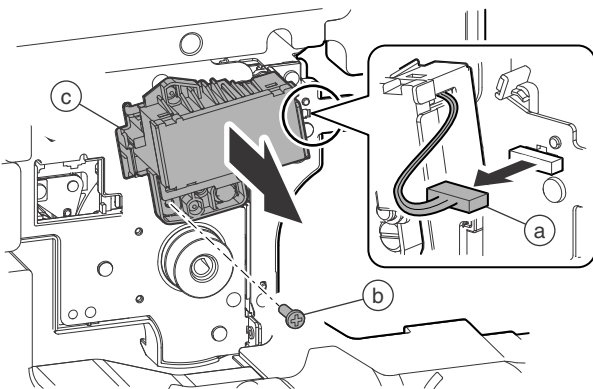


- Hold the handle (a) of the developing unit, and lift it up to remove completely.

* When placing the developing unit on a floor, use the stand (b) and put the unit on it.

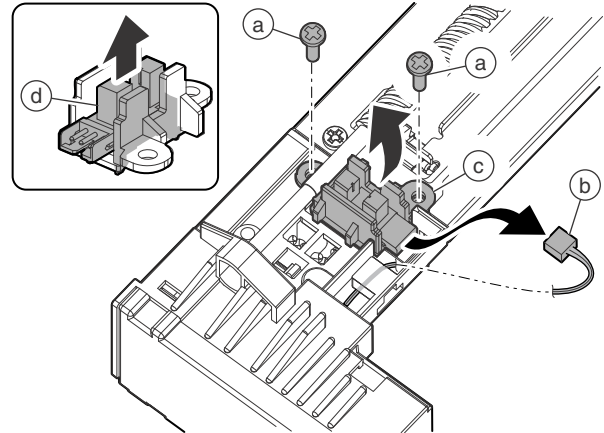


- Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).



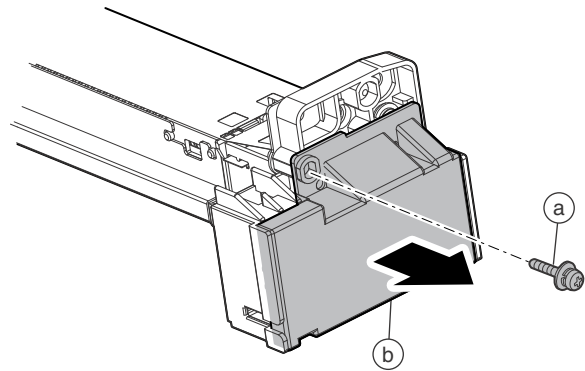
a. MC cleaner home position detection

- Remove the main charger unit.
- Remove the screw (a), and disconnect the connector (b). Remove the holder (c), and remove the MC cleaner home position detection (d).

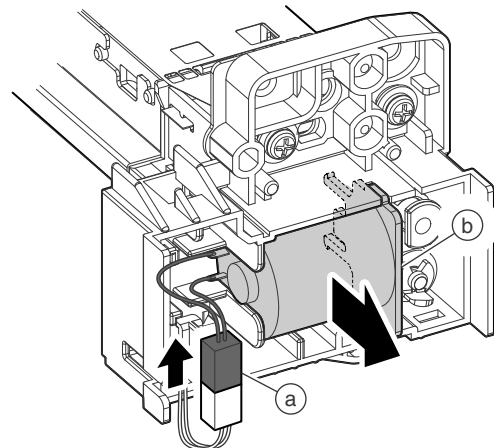


b. Main charger cleaning motor

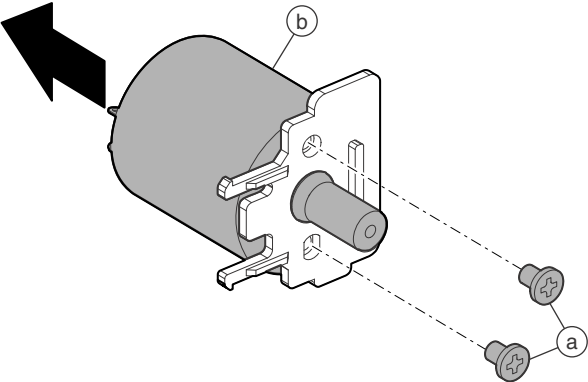
- Remove the main charger unit.
- Remove the blue screw (a), and remove the cover (b).



- Disconnect the connector (a), and remove the main charger cleaning motor unit (b).



4) Remove the screw (a), and remove the main charger cleaning motor (b).

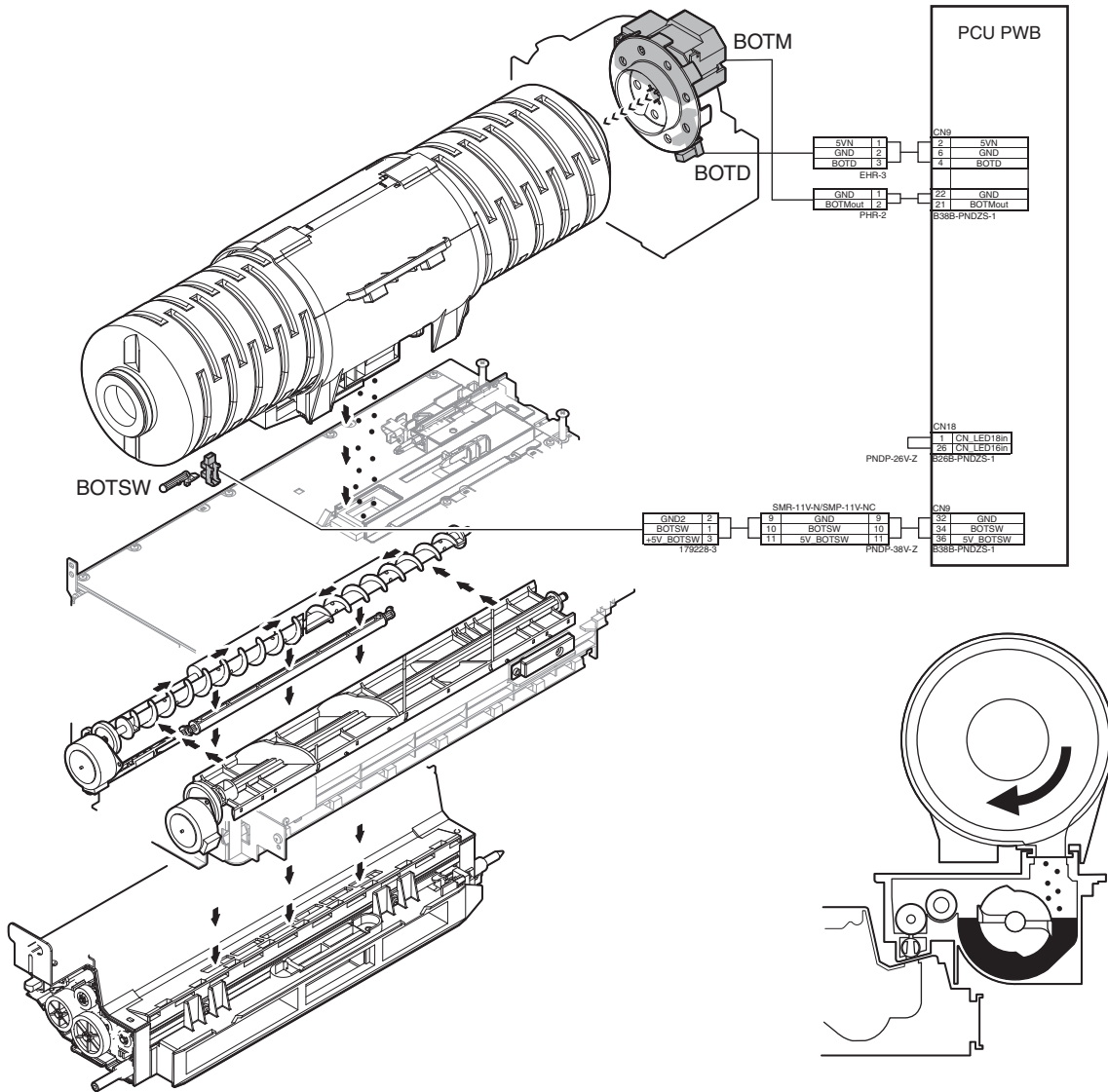


[J] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram

A. Toner cartridge section

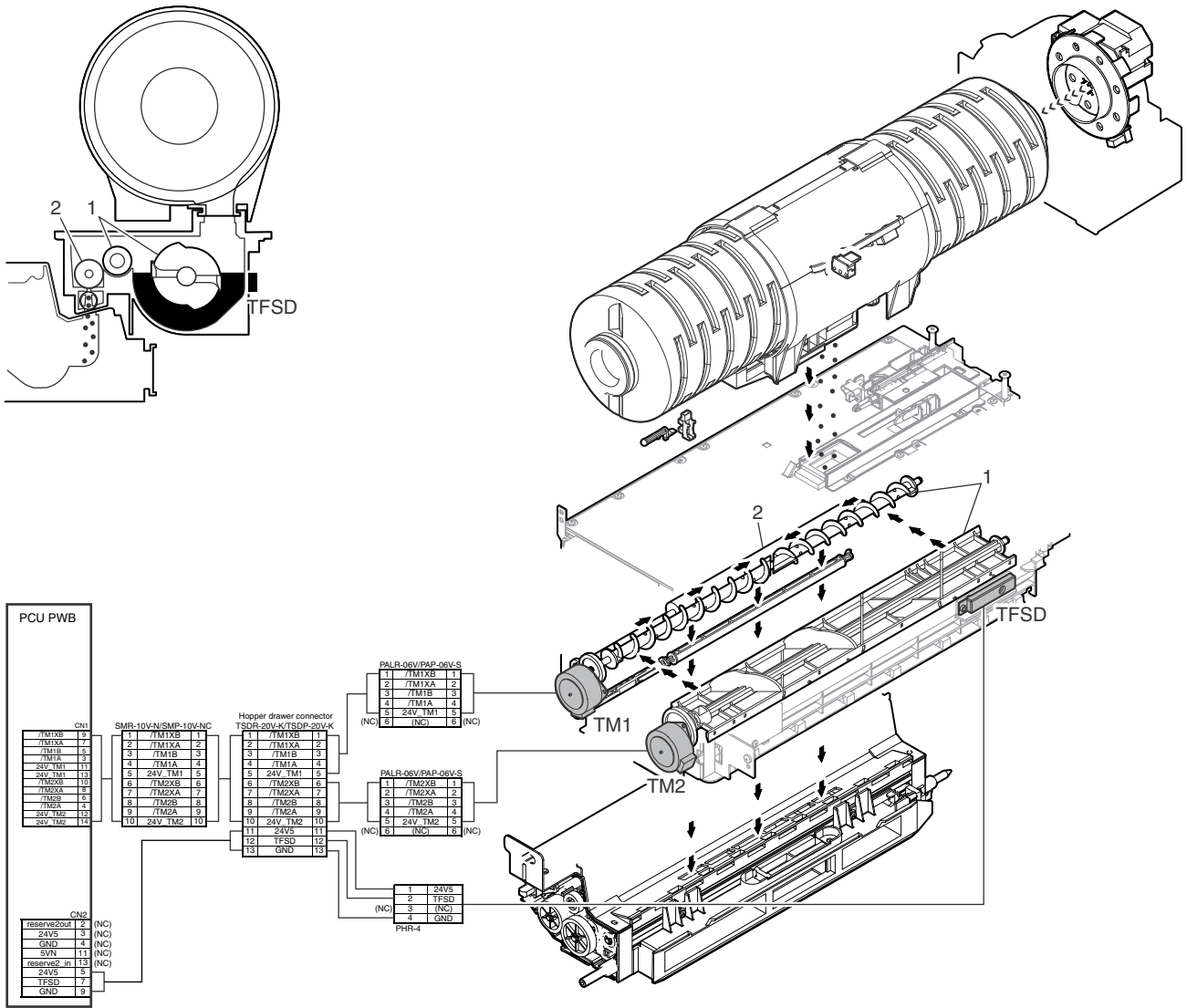
This section supplied toner in the toner cartridge to the toner hopper.



Code	Name	Function / Operation	Type
BOTM	Toner cartridge motor	Rotates the toner cartridge to supply toner in the toner cartridge to the toner hopper unit.	DC brush motor
BOTD	Toner cartridge rotation sensor	Detects rotation of the toner cartridge.	Transmission type photo sensor
BOTSW	Toner cartridge sensor	Detects open/close of the toner tray.	Transmission type photo sensor

B. Toner hopper section

This section supply toner to the developing section.



No.	Name	Function / Operation
1	Toner mixing roller	Mixes toner in the toner hopper.
2	Toner supply roller	Supplies toner in the toner hopper to the developing section.

Code	Name	Function / Operation	Type
TM1	Toner motor 1	Drives the toner supply roller to supply toner in the toner hopper to the developing section.	Stepping motor
TM2	Toner motor 2	Mixes toner in the toner hopper.	Stepping motor
TFSD	Hopper toner remaining quantity sensor	Detects the remaining quantity of toner in the toner hopper.	Magnetic sensor

2. Operational descriptions

A. Toner end judgment criteria

There are following two conditions for judging as Toner End.

When one of them is satisfied, it is judged as Toner End.

- 1) When the accumulated rotation time of the toner motor (TM1) reaches 840sec from the toner near end timing.
(This condition can be ignored by setting with the simulation.)
- 2) When Toner Low is detected by the toner density sensor (TCS) and Toner Near End is judged by the hopper toner remaining quantity sensor (TFSD). Or when the toner cartridge is not installed.

When Toner Low is detected by the toner density sensor in a state other than the Toner Near End condition, it is judged that toner is not supplied from the toner hopper to the developing section and that there is an abnormality in the toner hopper, displaying the F2-64 error and disabling the printing operation.

B. Relationship between toner cartridge installation and operation

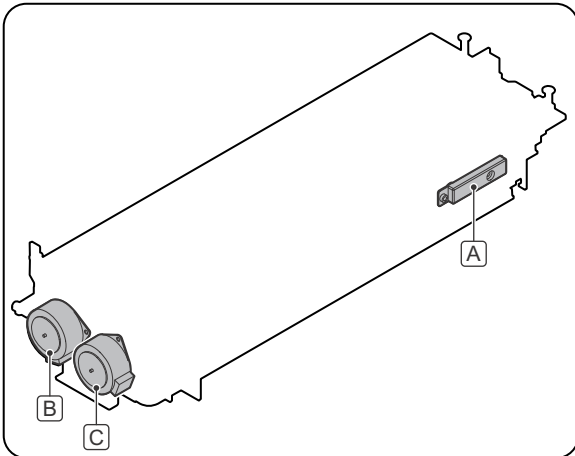
When the power is turned ON under toner empty with no toner cartridge installed, the message to urge installation of the toner cartridge is displayed and no print job can be executed.

When, however, in the normal state or in toner near end state with no toner cartridge installed, the message to urge installation of the toner cartridge but a job under execution is continued and a new job is accepted.

3. Disassembly and assembly

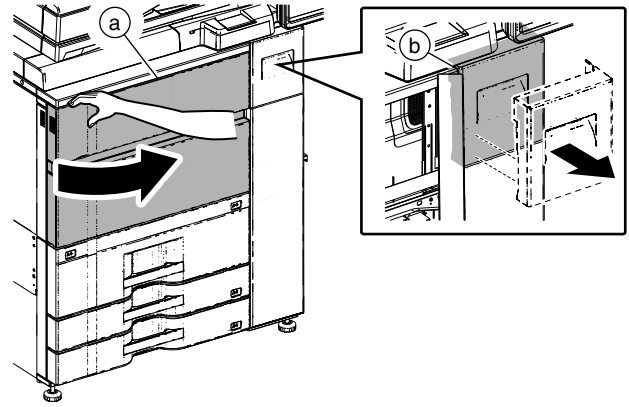
A. Toner hopper unit

Unit	Parts	Page
Toner hopper unit	A Toner remaining quantity sensor	J-5/a
	B Toner motor 1	J-5/b
	C Toner motor 2	

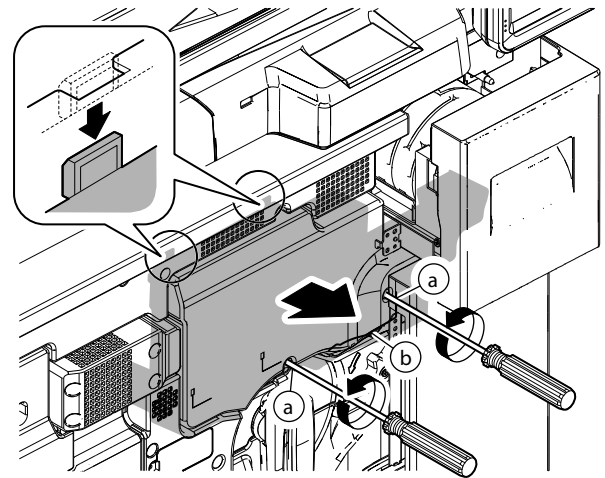


(1) Toner hopper unit

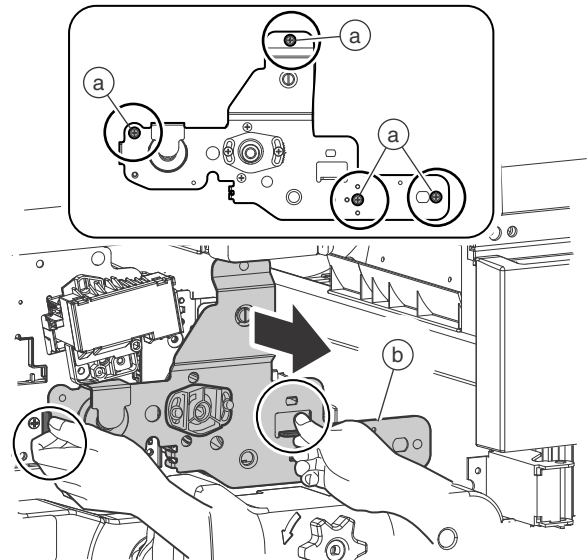
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



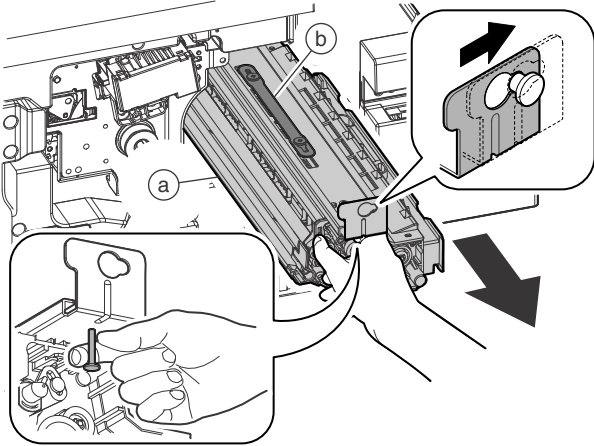
- 2) Remove the screw (a), and remove the cover (b).



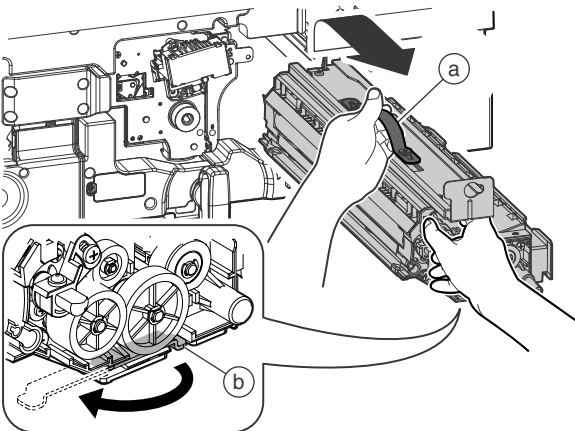
- 3) Remove the blue screw (a), and remove the plate (b).



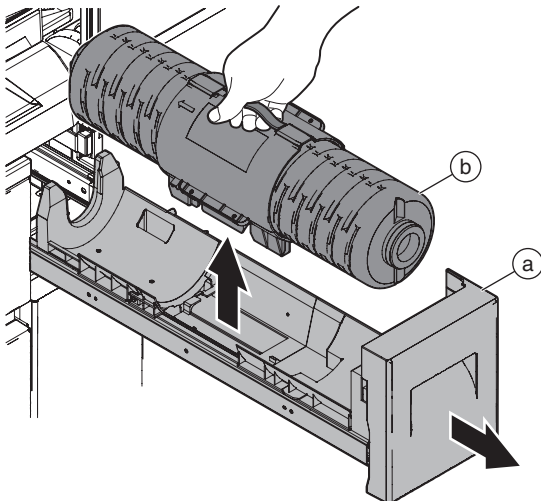
- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.



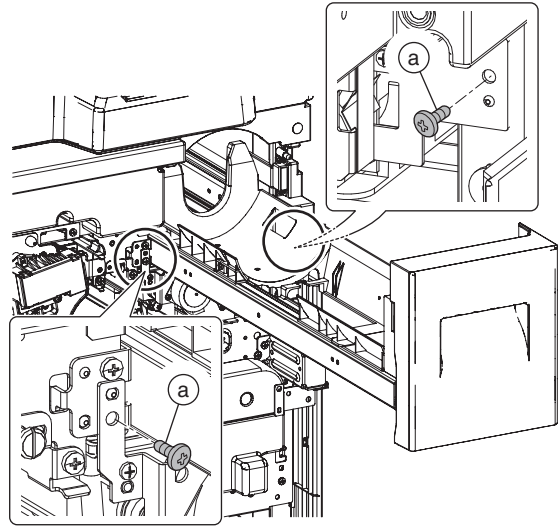
- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.
* When placing the developing unit, use the stand (b) and place the unit on it.



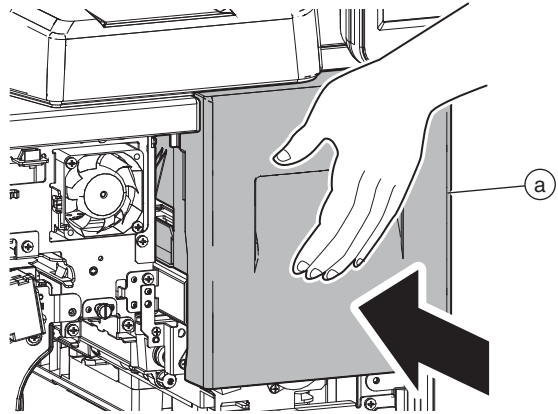
- 6) Pull out the toner tray (a), and remove the toner cartridge (b).



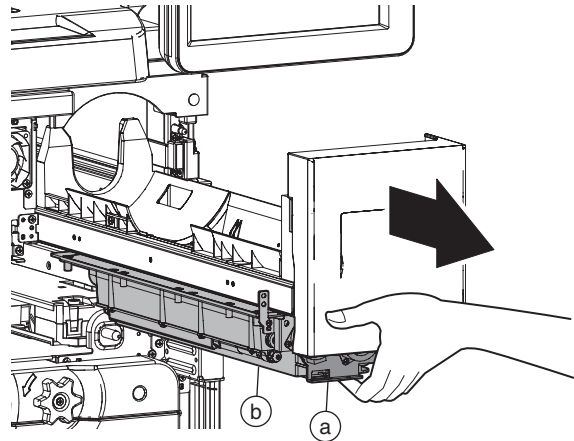
- 7) Remove the screw (a).



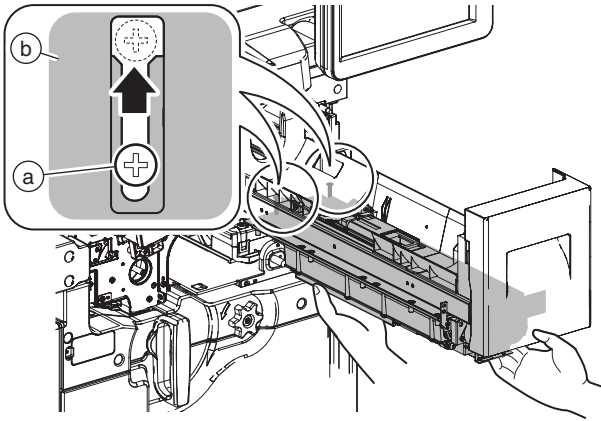
- 8) Install the toner tray (a).



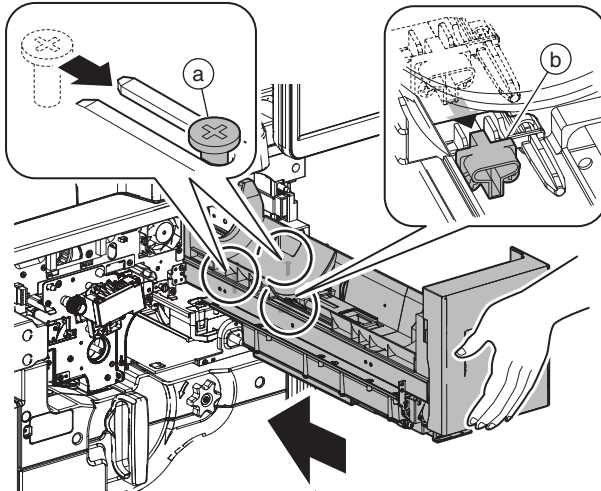
- 9) Hold the motor section (a), and pull out the toner hopper unit (b) together with the toner tray.



- Remove the step screw (a) in the rear section of the toner hopper unit from the toner tray (b).

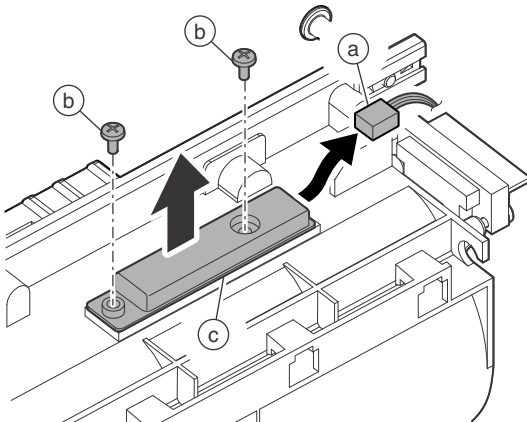


* When installing the toner hopper unit, pull out the toner tray and engage the step screw (a) and the connector (b), and store the toner hopper unit together with the toner tray.



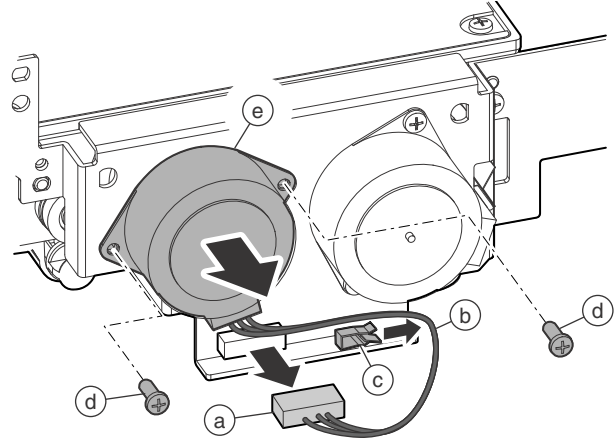
a. Toner remaining quantity sensor

- Remove the toner hopper unit.
 - Disconnect the connector (a), and remove the screw (b). Remove the toner remaining quantity sensor (c).
- * Use extra care not to foul the connector (a) terminal section.

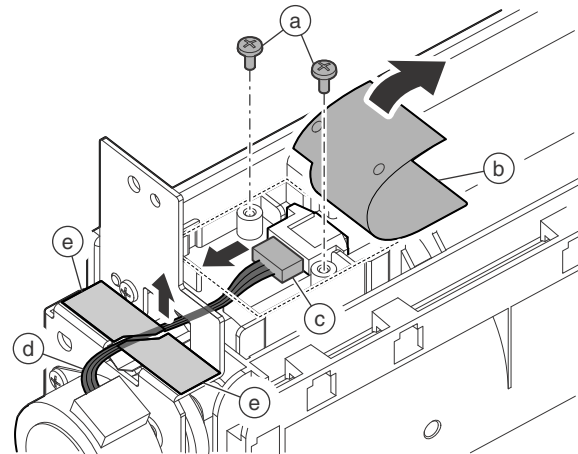


b. Toner motor 1 / Toner motor 2

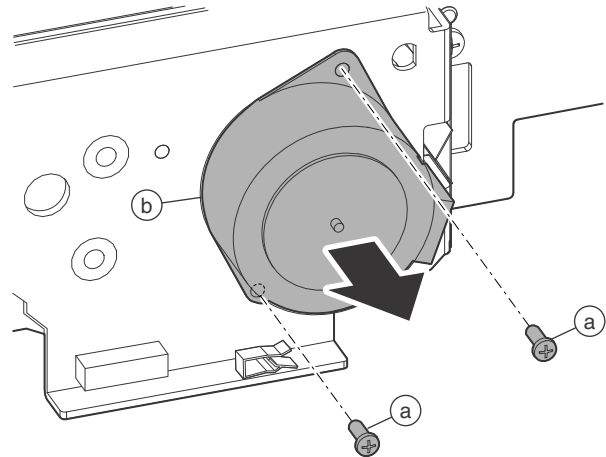
- Remove the toner hopper unit.
- Disconnect the connector (a), and remove the harness (b) from the harness holder (c). Remove the screw (d), and remove the toner motor 1 (e).



- Remove the screw (a). Pull up the sheet (b) and disconnect the connector (c). Remove the harness (d) from the sheet (e).

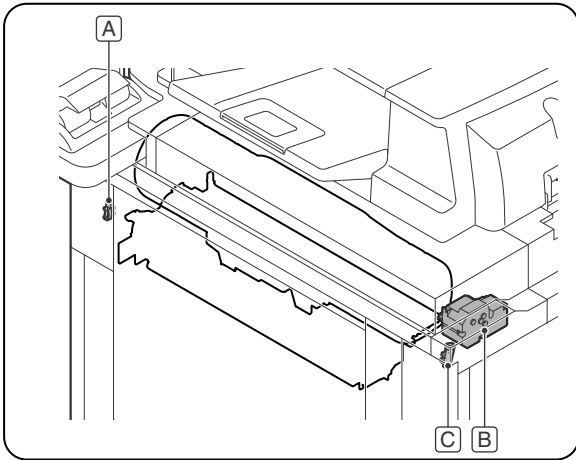


- Remove the screw (a), and remove the toner motor 2 (b).



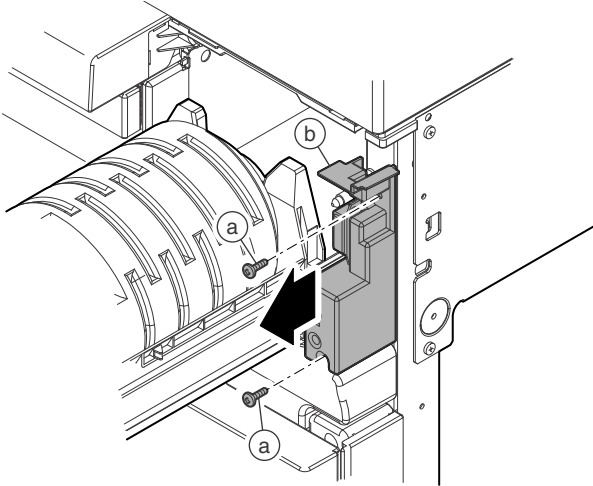
B. Others

	Parts	Page
A	Toner tray detection	J-6/(1)
B	Toner cartridge motor	J-6/(2)
C	Toner cartridge rotation detection	

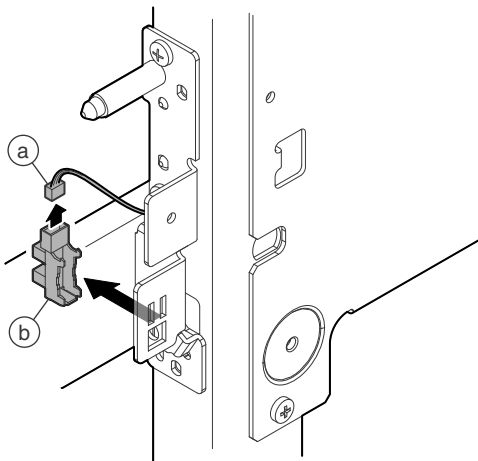


(1) Toner tray detection

- 1) Remove the upper cabinet right and the upper cabinet front cover right.
- 2) Remove the screw (a), and remove the cover (b).

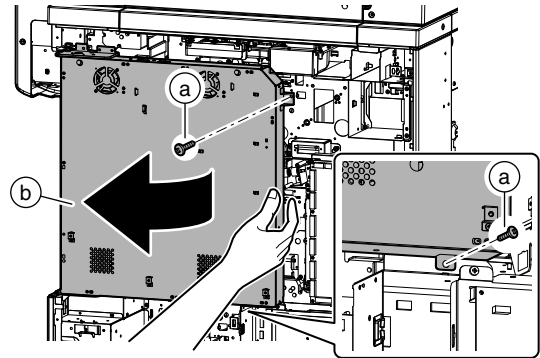


- 3) Disconnect the connector (a), and remove the toner tray detection (b).

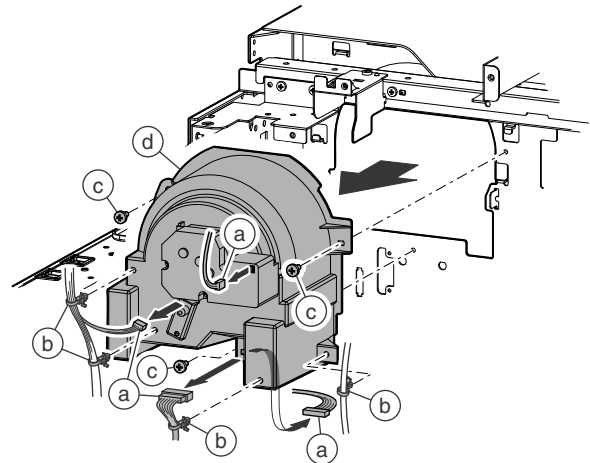


(2) Toner cartridge motor / Toner cartridge rotation detection

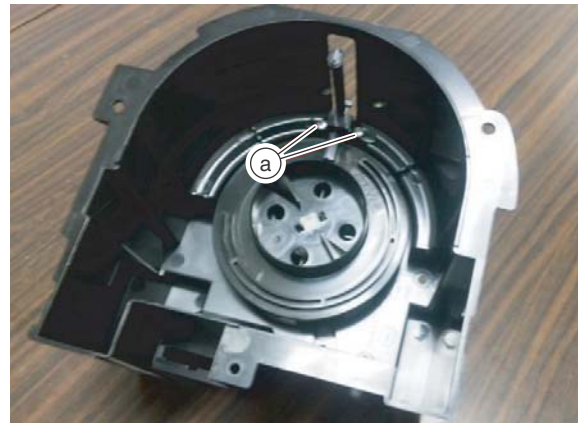
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the upper cabinet rear cover.
- 3) Remove the upper cabinet right.
- 4) Remove the screw (a), and open the control box (b).



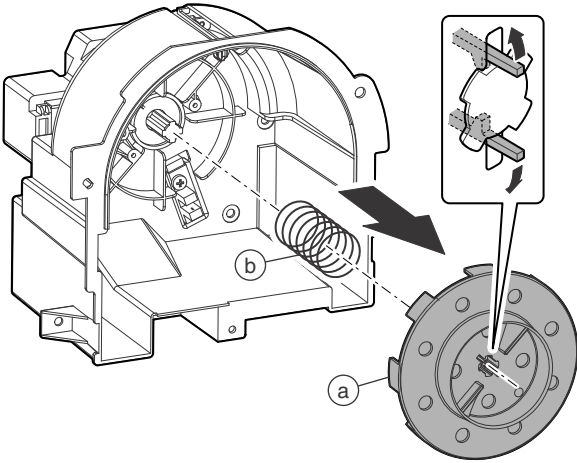
- 5) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the cover (d).



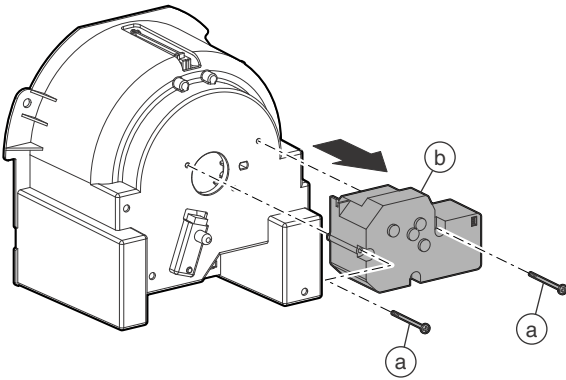
- 6) Remove the screw (a), and remove the bottle lever.



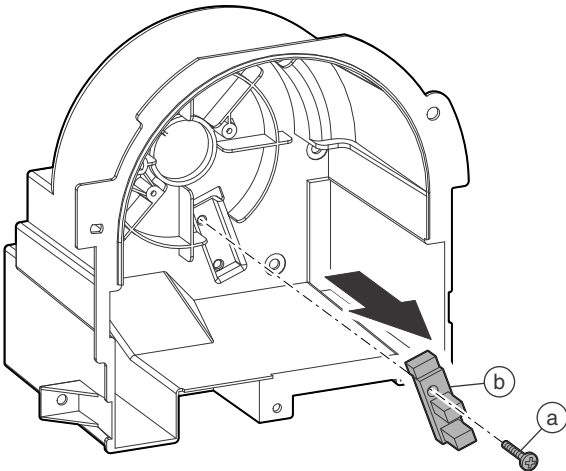
7) Remove the coupling (a) and remove the spring (b).



8) Remove the screw (a), and remove the toner cartridge motor (b).



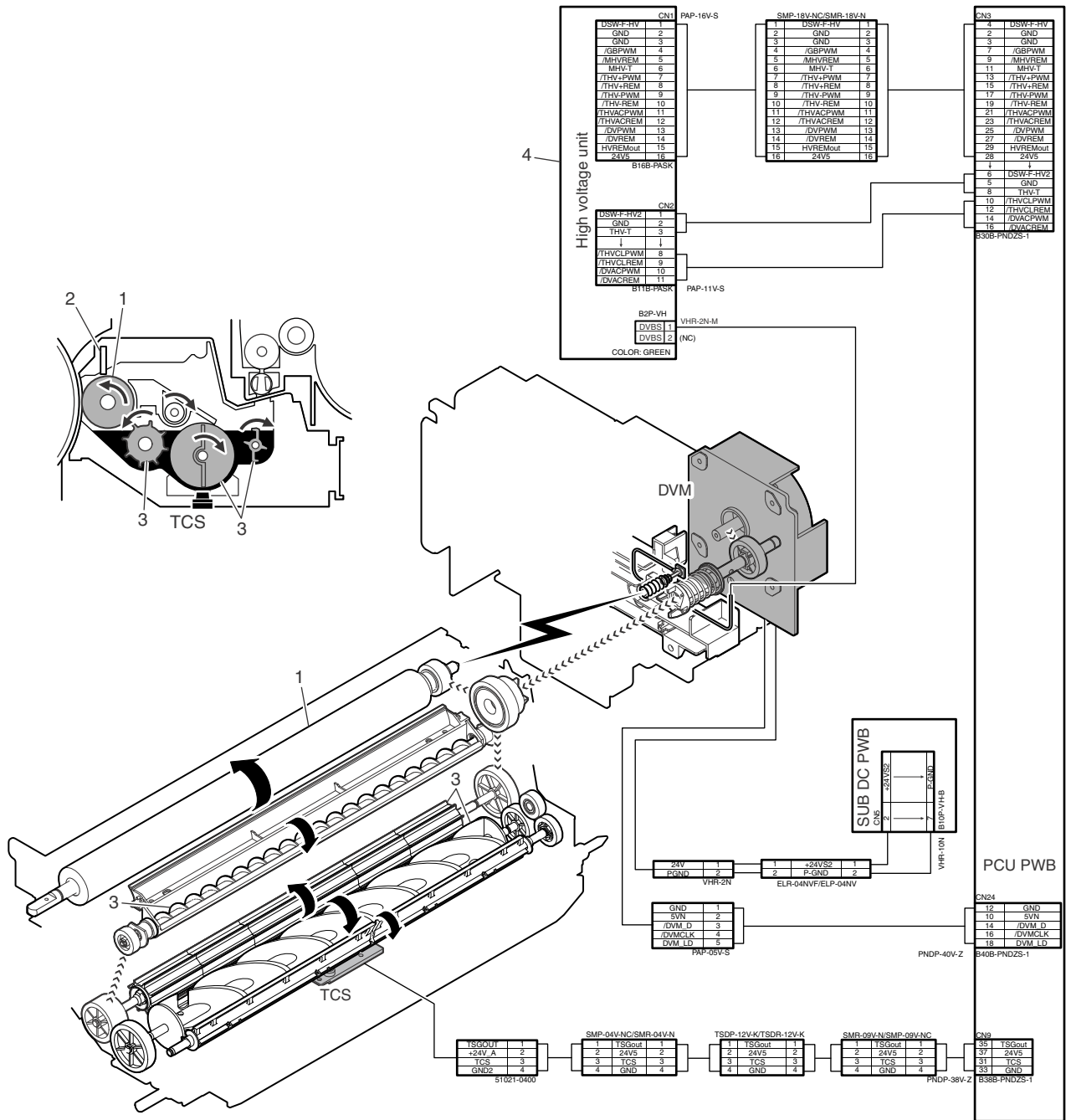
9) Remove the screw (a), and remove the toner cartridge rotation detection (b).



[K] DEVELOPING SECTION

1. Electrical and mechanism relation diagram

In this section, toner is attracted to electrostatic latent images generated in the exposure section, forming visible images.



No.	Name	Function / Operation
1	Developer roller	Forms a magnetic brush with developer, and forms toner images on the OPC drum.
2	Developing doctor	Controls the thickness and the quantity of developer and toner (magnetic brush) on the MG roller to the proper levels.
3	Toner mixing roller (Developing section)	Mixes and circulates developer (carrier) and toner to uniformize the toner density and to charge toner negatively.
4	Main high voltage PWB	Outputs the developing bias voltage.

Code	Name	Function / Operation	Type
TCS	Toner density sensor	Detects the toner density in the developing tank. The magnetic sensor is employed.	Magnetic sensor
DVM	Developing motor	Drives the developing unit.	DC brushless motor

2. Operational descriptions

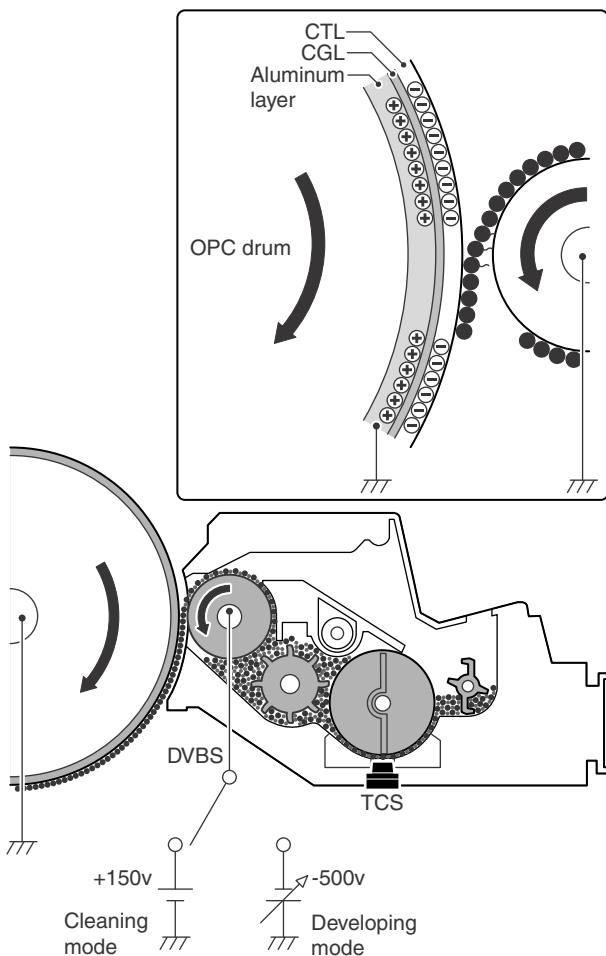
Toner and carrier in the developing unit are mixed and transported. At that time, toner is charged negatively by mechanical contact with carrier.

This process is known as triboelectrification. The suffix tribo means to rub in Greek, thus triboelectrification simply means to electrify (or charge) by rubbing, or by contact. Interestingly, it is not friction that results in the charging process, but rather a chemical reaction that occurs between the two dissimilar materials. By rubbing the two materials together a larger surface area is contacted resulting in a greater exchange in charge.

In addition, the developing bias voltage is applied to the developing roller.

Negatively charged toner is attached to the exposed section on the OPC drum surface (where the negative potential is reduced) by the developing bias voltage.

On the other hand, the surface potential of the non-exposed section on the OPC drum surface is higher than the developing bias, and toner is not attached to that section. Through this operation, visible images are formed on the OPC drum with toner.



A. Developing bias voltage

Immediately after starting rotation of the OPC drum and when the developing roller is stationary, the reverse bias (positive voltage) is applied to the developing roller, preventing unnecessary toner from attaching to the OPC drum.

Operation mode	Output voltage
When developing	-500v

By changing the developing bias voltage control signal (XDVPWM) duty, the polarity and the output voltage are controlled.

The developing bias voltage ON/OFF is controlled with the signal XDVREM.

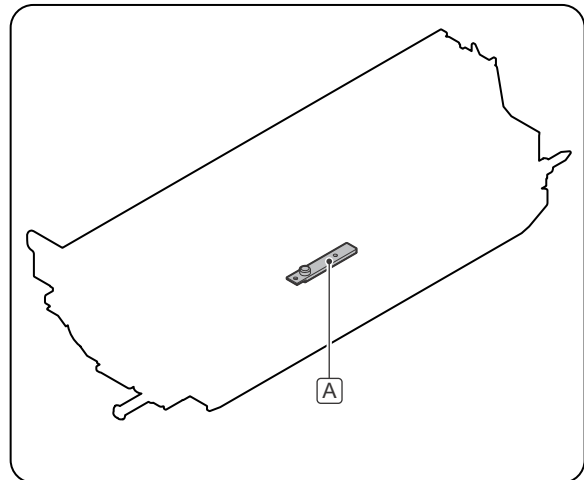
The toner density sensor (TCS) is provided in the lower section of the developing section to always detect the toner density.

This signal is inputted to the PCU PWB, which controls the toner supply quantity from the toner hopper and the toner cartridge so that the proper density is always maintained.

3. Disassembly and assembly

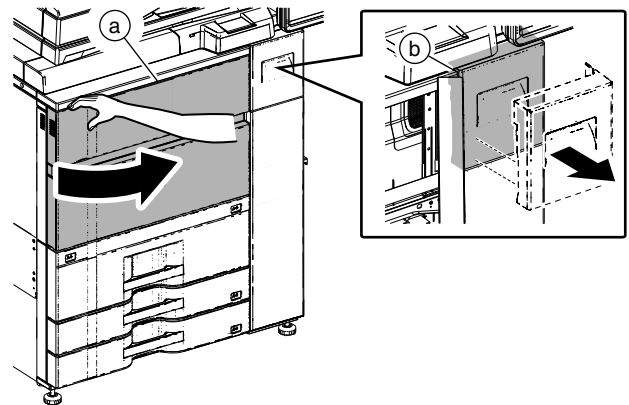
A. Development unit

Unit	Parts	Page
Development unit	A TCS sensor	K-3/a

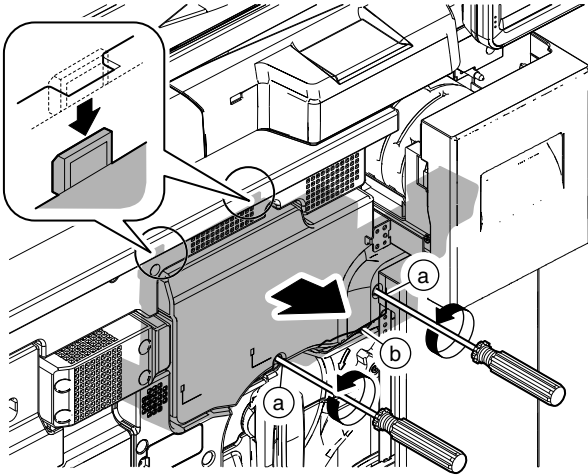


(1) Development unit

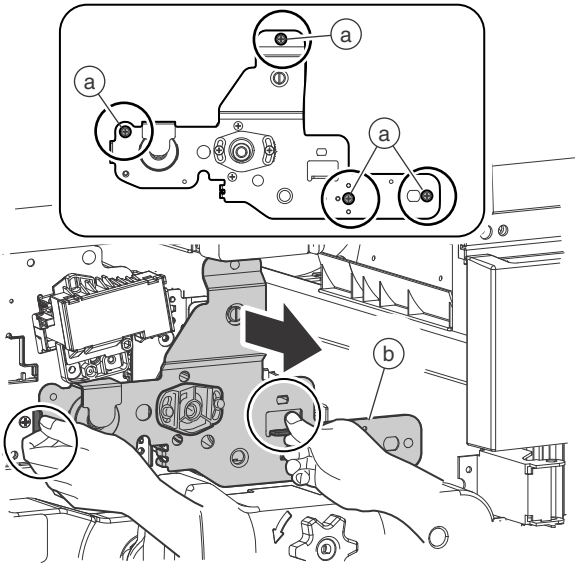
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



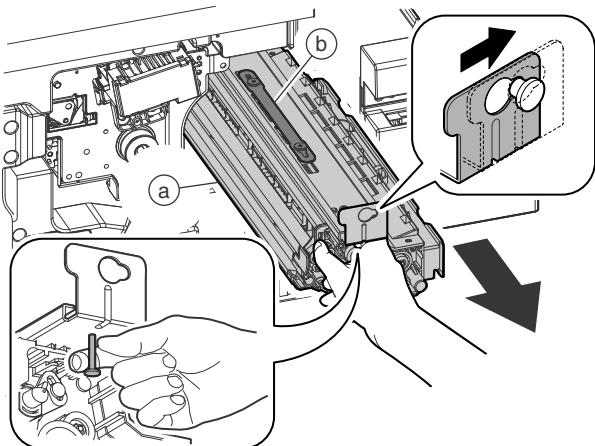
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

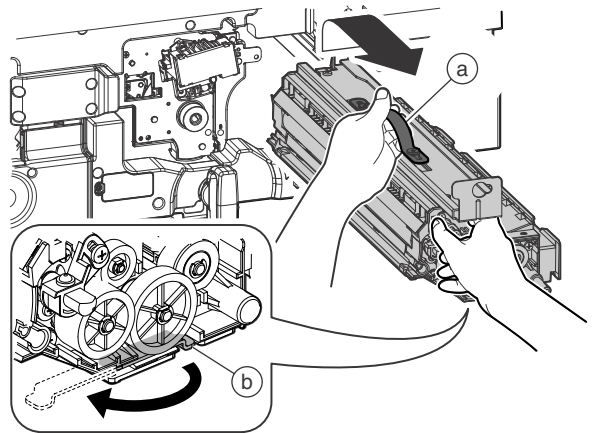


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.



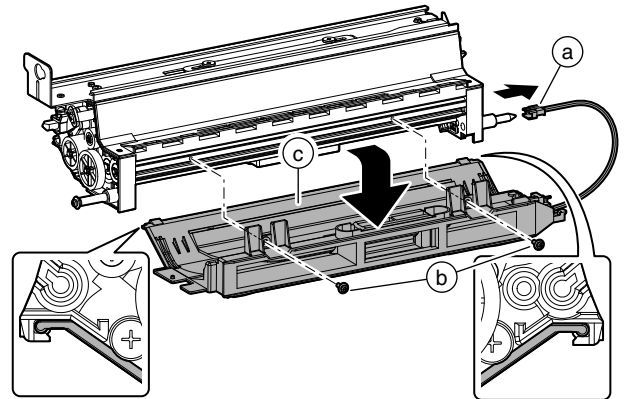
- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

* When placing the developing unit, use the stand (b) and place the unit on it.

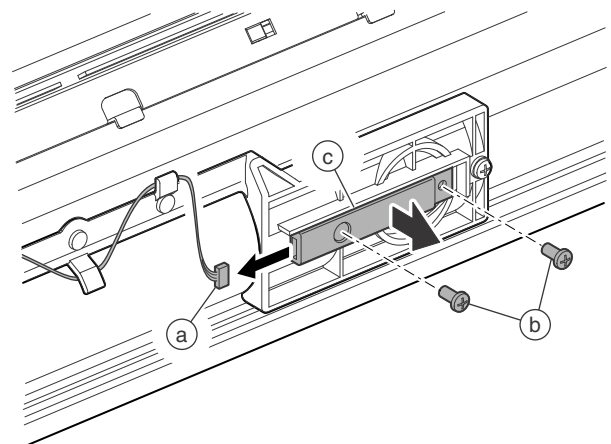


a. TCS sensor

- 1) Remove the development unit
 - 2) Disconnect the connector (a), and remove the screw (b). Remove the cover (c).
- * Use extra care not to foul the connector (a) terminal section.



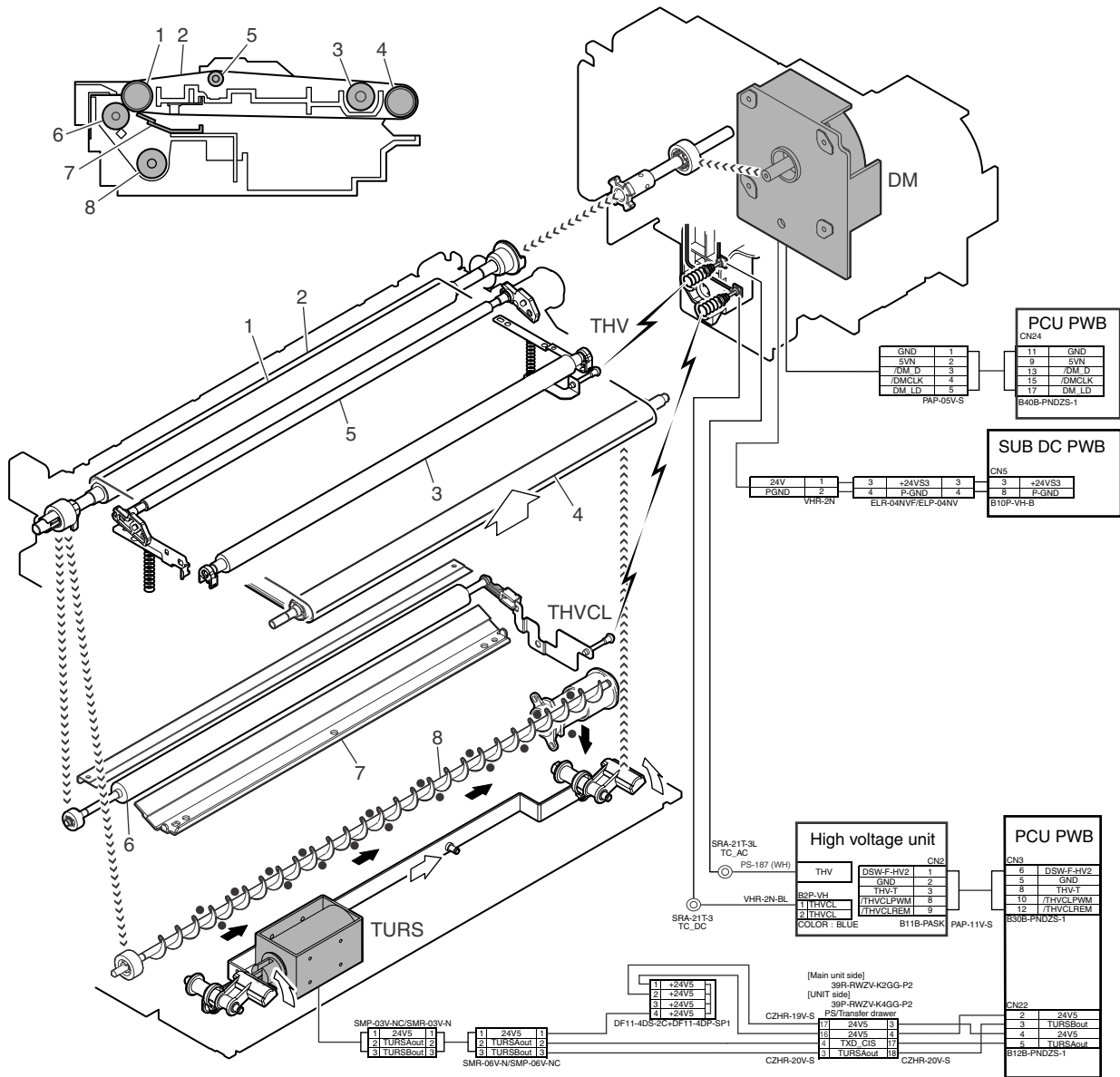
- 3) Disconnect the connector (a), and remove the screw (b). Remove the TCS sensor (c).
- * Use extra care not to foul the connector (a) terminal section.



[L] TRANSFER SECTION

1. Electrical and mechanism relation diagram

In this section, a positive high voltage is applied to paper to transfer toner images from the OPC drum to paper.



No.	Name	Function / Operation
1	Transfer drive roller	Drives the transfer belt.
2	Transfer belt	Transfers toner images from the OPC drum to paper.
3	Transfer roller	Applies a voltage for transfer of toner from the OPC drum to paper.
4	Transfer idle roller	Applies a pressure required for cleaning the transfer belt to the cleaning blade.
5	Transfer tension roller	Applies a proper tension to the transfer belt.
6	Transfer cleaning brush	Scrapes away residual toner from the transfer belt after transfer for cleaning.
7	Transfer cleaning blade	Scrapes away residual toner from the transfer belt after transfer for cleaning.
8	Waste toner transport screw (Transfer section)	Transports waste toner from the transfer unit to the waste toner collection section.
9	Main high voltage PWB	Outputs the transfer voltage and the transfer cleaning voltage.
10	Sub high voltage PWB	Outputs the transfer cleaning voltage.

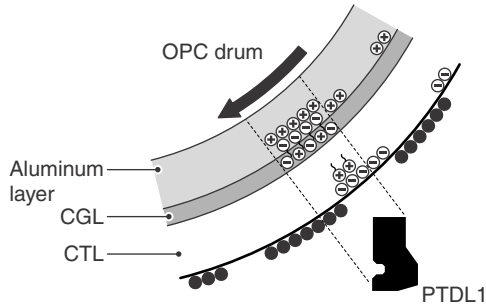
Code	Name	Function / Operation	Type
PTDL	Pre-transfer discharge lamp	Reduces the OPC drum potential before transfer to improve the transfer efficiency.	LED
TURS	Transfer solenoid	Separates/attaches the transfer belt from/to the OPC drum.	Solenoid
DM	OPC drum motor	Drives the transfer section.	DC brushless motor

2. Operational descriptions

A. Pre-transfer discharge operation

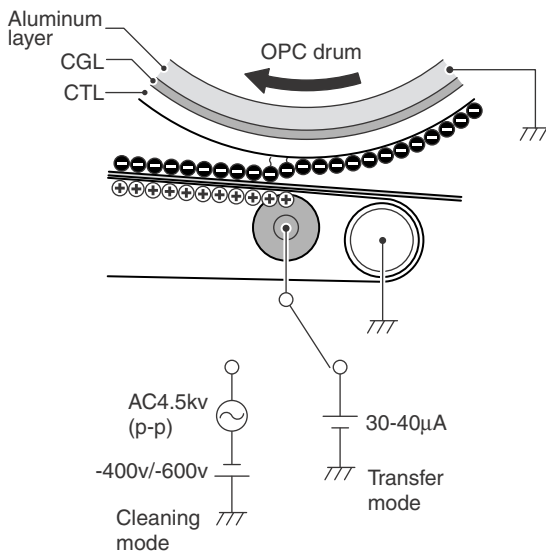
Light is radiated onto the OPC drum after development to reduce negative charges on the OPC drum. In the areas where toner is attached to, an electric attraction force between the OPC drum and toner is weakened to improve the efficiency in transfer operations.

In the areas where toner is not attached to, an electric attraction force between paper and the OPC drum after transfer is weakened to improve the separation performance.



B. Transfer operation

A positive high voltage is applied to the transfer roller to charge paper on the transfer belt positively, transferring negatively charged toner images onto paper.



(Transfer current)

Model	Operation mode	Output current
105cpm machine	Front print / Back print	40uA
120cpm machine	Front print / Back print	40uA

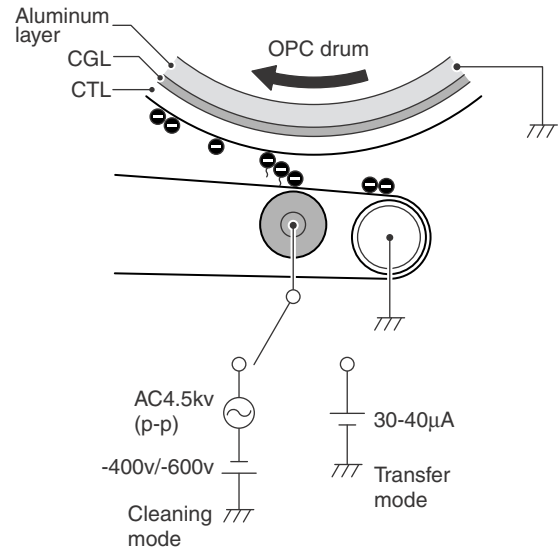
The transfer current control signal (XTHV+PWM) duty is changed to control the output current.

The transfer current ON/OFF is controlled by the signal (XTHV + REM).

In addition, the other transfer current control signal XTHV-PWM and the transfer current ON/OFF control signal (XTHV-REM) are outputted simultaneously.

C. Transfer belt cleaning operation

In the transfer belt cleaning operation, a negative high voltage including the AC component is applied to the transfer roller to attach unnecessary residual toner from the transfer belt to the OPC drum, cleaning the transfer belt.



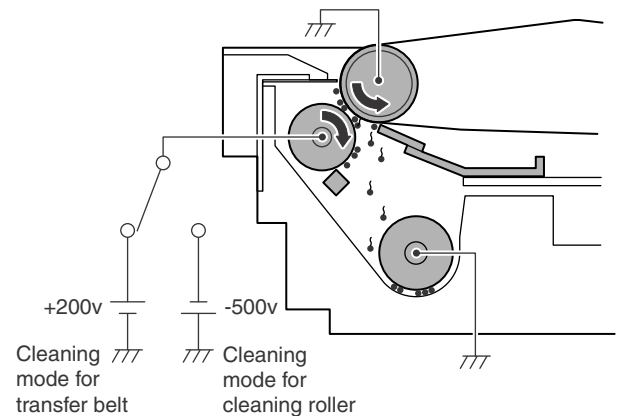
The transfer belt cleaning control signal (XTHV-PWM) duty is changed to control the output voltage.

The transfer belt cleaning ON/OFF is controlled by the signal (XTHV-REM).

On the other hand, the AC component controls the output voltage by changing the duty of XTHVACPWM. The AC component ON/OFF is controlled by the signal (XTHVACREM).

The transfer belt cleaning is executed mainly by the transfer blade belt cleaning belt.

Unnecessary residual toner on the transfer belt is removed and transported to the waste toner collection section by the waste toner transport screw.



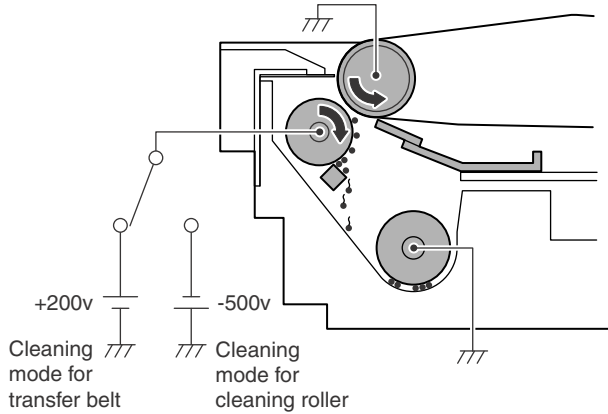
In addition, the cleaning brush is provided in the transfer section, where the transfer belt is cleaned, too.

In the transfer belt cleaning, the cleaning roller (brush type) removes unnecessary residual toner from the transfer belt, and a positive voltage (+200V) is applied to the removed toner to attach them to the cleaning roller.

The toner attached to the cleaning roller is then cleaned by the cleaning roller cleaning blade.

The transfer cleaning control signal (XTHVCLPWM) duty is changed to control the polarity and the output voltage.

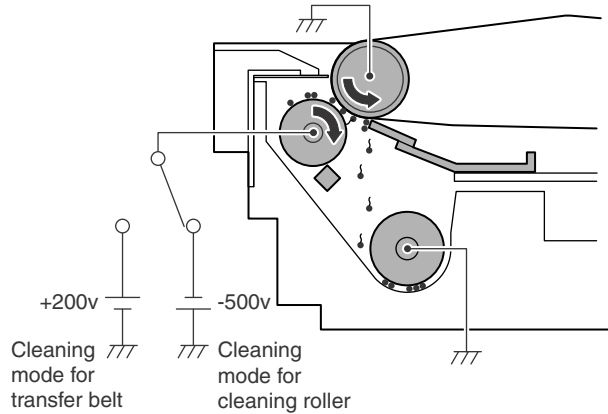
The transfer cleaning ON/OFF is controlled by the signal (XTHVCL-REM).



The cleaning roller itself is also cleaned. In this mode, a negative voltage (-500V) is applied to attach residual toner on the cleaning roller to the transfer belt. Then toner attached on the transfer belt is cleaned by the transfer belt cleaning blade.

The transfer cleaning control signal (XTHVCLPWM) duty is changed to control the polarity and the output voltage.

The transfer cleaning ON/OFF is controlled by the signal (XTHVCL-REM).

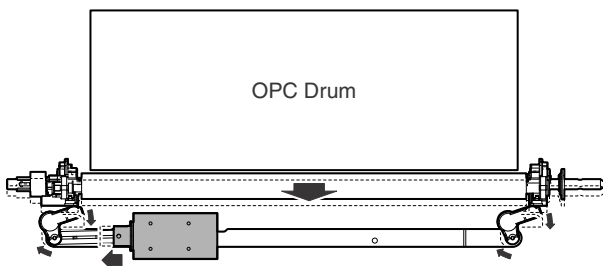


D. Transfer belt separation operation

The transfer belt separation is executed by the transfer solenoid. When the print engine receives print data and performs printing, the transfer belt is in close contact with the OPC drum.

In the following cases, the transfer belt is separated from the OPC drum.

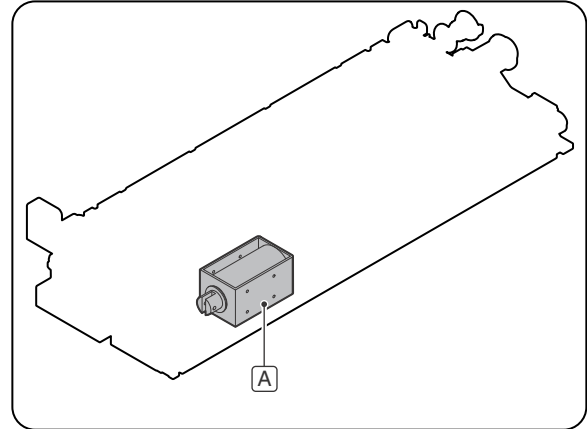
- * When the process control is executed.
- * When a jam occurs.
- * When the power is turned OFF.



3. Disassembly and assembly

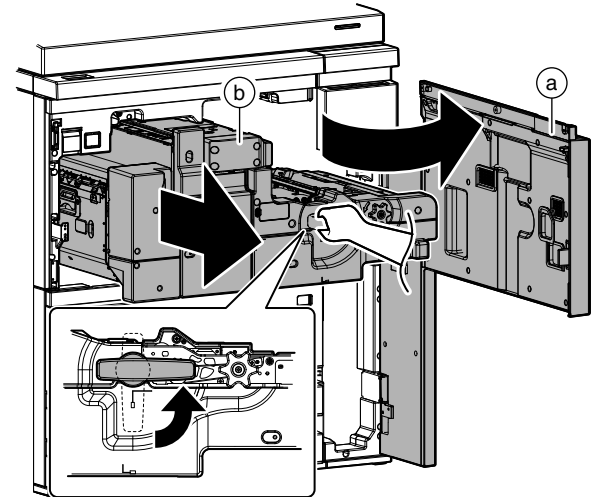
A. Transfer unit

Unit	Parts	Page
Transfer unit	A Transfer separation solenoid	L-4/a

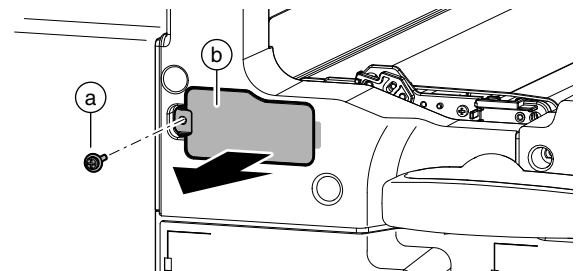


(1) Transfer unit

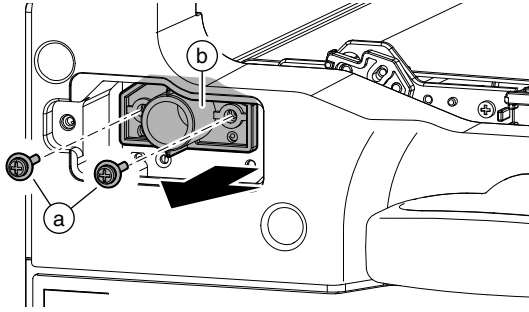
- 1) Open the front cover (a), and pull out the intermediate frame (b).



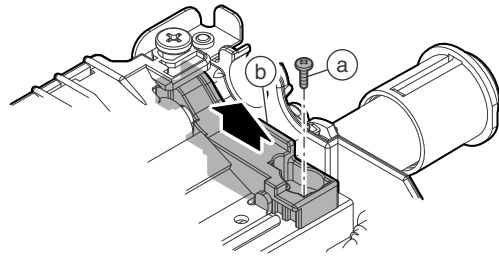
- 2) Remove the screw (a), and remove the cover (b).



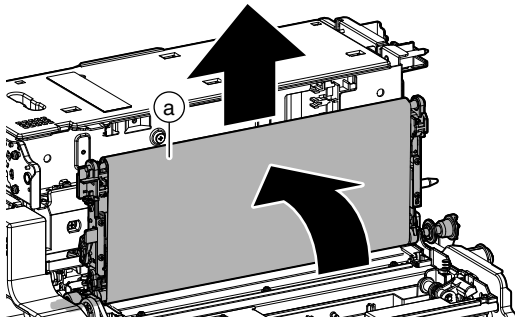
- 3) Remove the screw (a), and remove the holder (b).



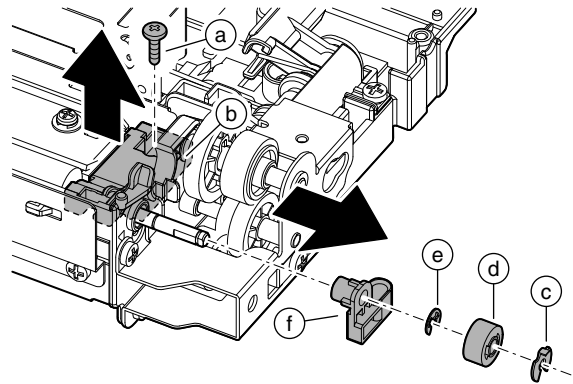
- 3) Remove the screw (a), and remove the mounting plate (b).



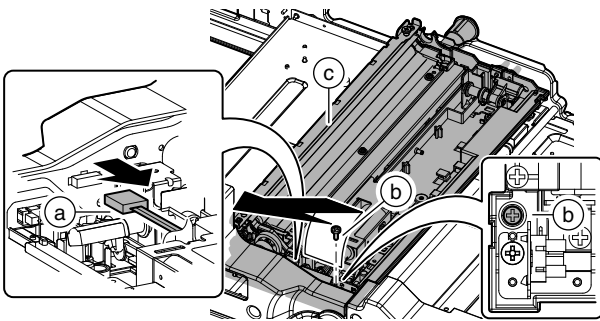
- 4) Remove the transfer belt unit (a).



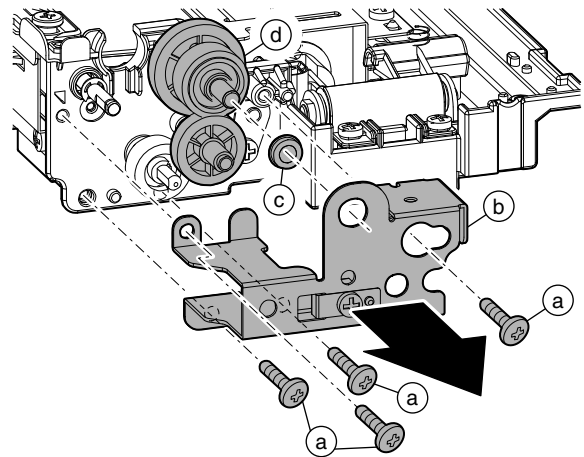
- 4) Remove the screw (a), and remove the mounting plate (b). Remove the stopper (c), the gear (d), the E-ring (e), and the bearing (f).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the transfer belt frame unit (c).

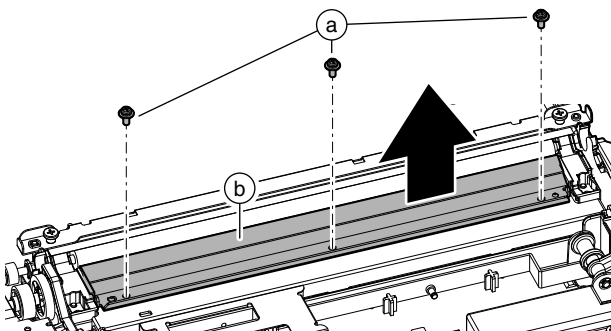


- 5) Remove the screw (a), and remove the plate (b). Remove the bearing (c) and the gear unit (d).

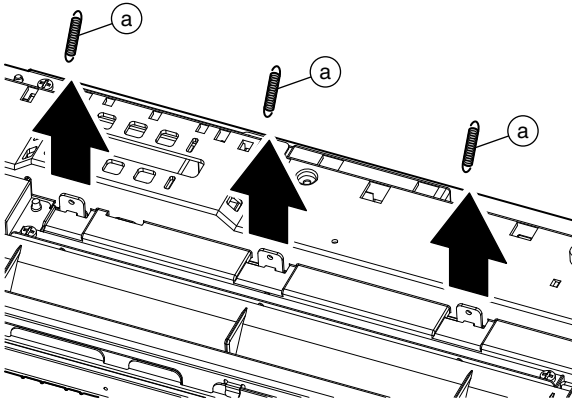


a. Transfer separation solenoid

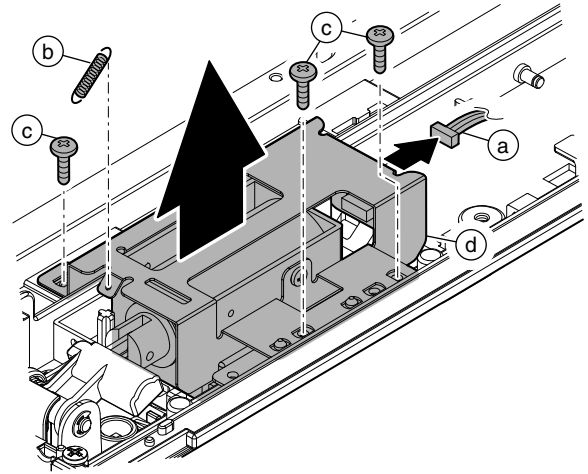
- 1) Remove the transfer unit.
- 2) Remove the screw (a), and remove the transfer cleaning blade (b).



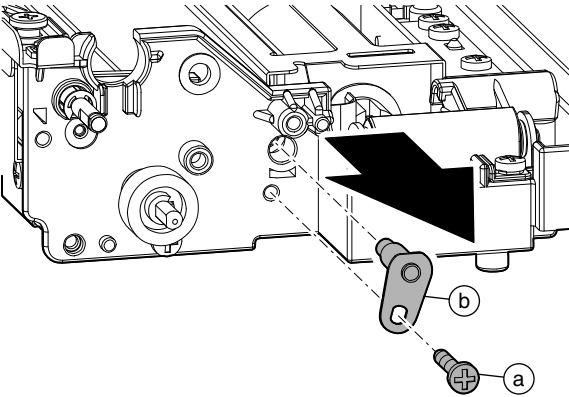
6) Remove the spring (a) from bottom side.



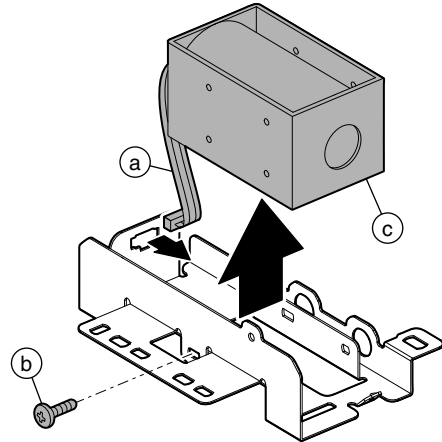
9) Disconnect the connector (a) and remove the spring (b). Remove the screw (c), and remove the transfer separation solenoid unit (d).



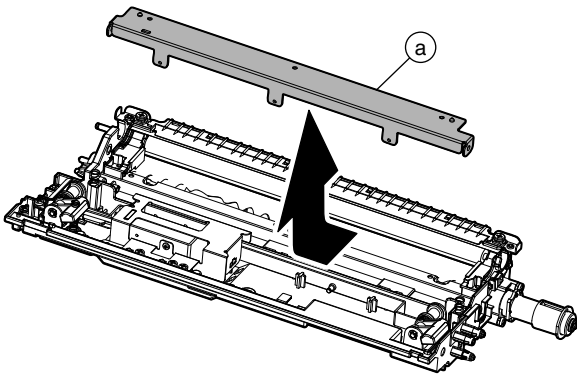
7) Remove the screw (a), and remove the positioning plate (b).



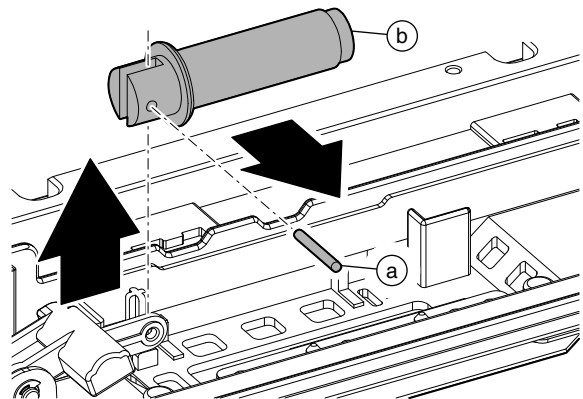
10) Disconnect the connector (a), and remove the screw (b). Remove the transfer separation solenoid (c).



8) Remove the stay (a).



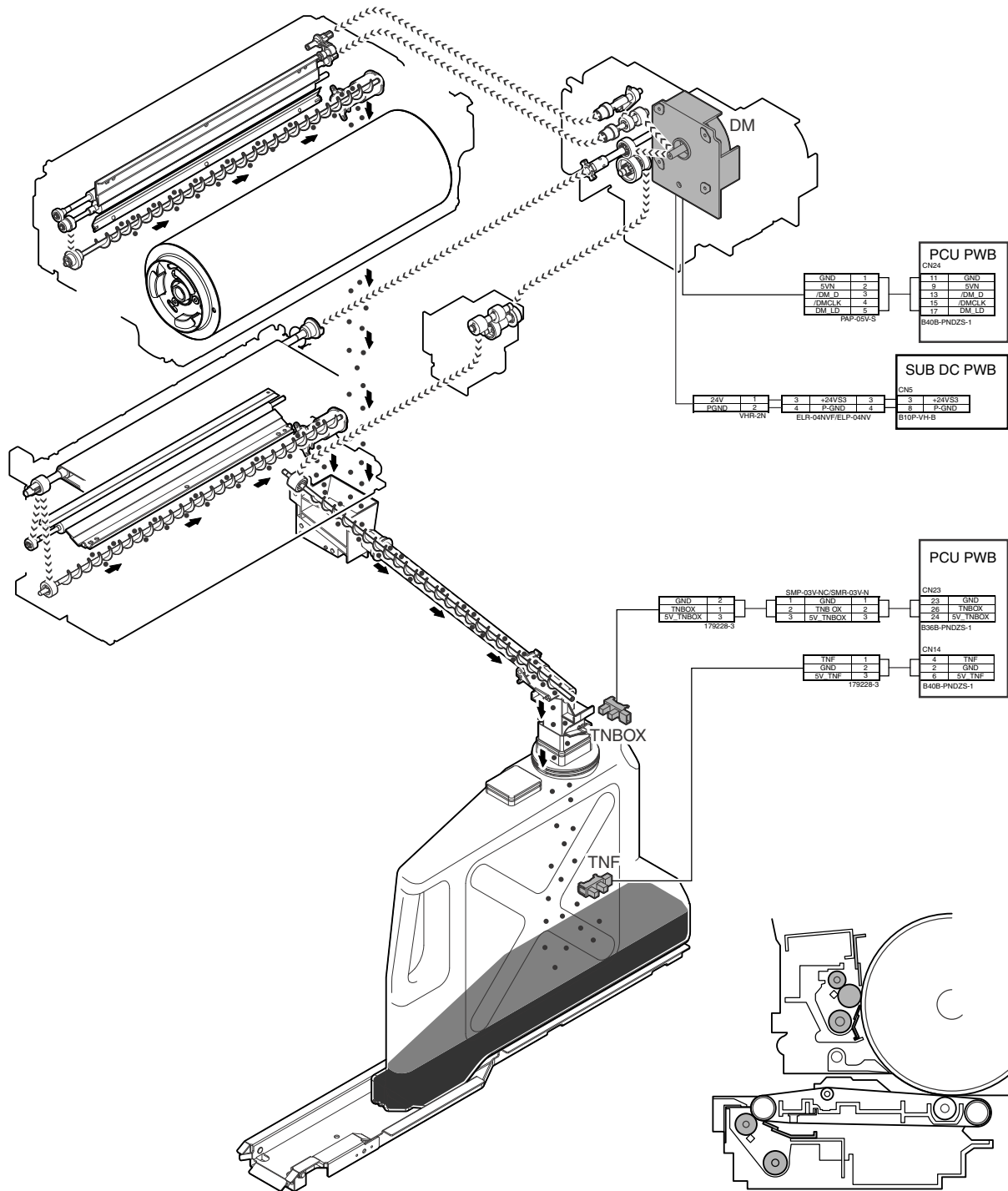
11) Remove the pin (a), and remove the solenoid plunger (b).



[M] WASTE TONER SECTION

1. Electrical and mechanism relation diagram

In this section, waste toner from the OPC cleaner section and the transfer cleaner section is collected.



Code	Name	Function / Operation	Type
DM	OPS drum motor	Transports waste toner in the OPC drum cleaner section and the transfer cleaner section.	DC brushless motor
TNBOX	Toner collection container detection sensor	Detects presence of the toner collection container.	Transmission type sensor
TNF	Waste toner full detection	Detects the waste toner full.	Transmission type sensor

2. Operational descriptions

A. Toner collection operation

Waste toner generated in the OPC drum cleaner and the transfer cleaner is transported to the waste toner collection section by the waste toner transport screw and collected in the toner collection container.

When the quantity of waste toner in the toner collection container reaches 2,500 g, the waste toner full sensor (TNF) detects it to indicate that the toner collection container full is near.

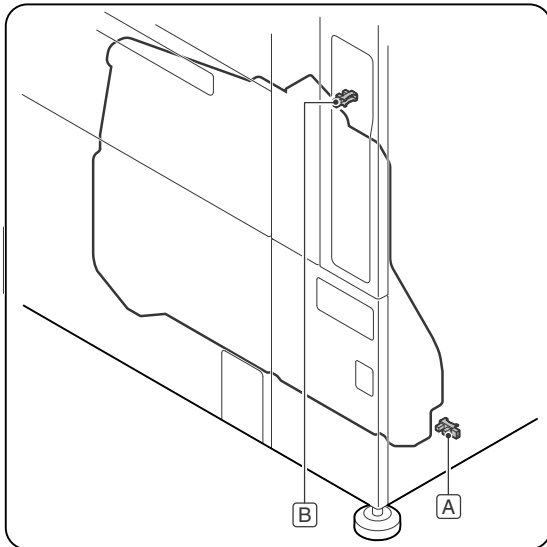
After 10K prints from the previous timing, the waste toner full is detected to urge replacement of the toner collection container. Unless it is replaced, printing cannot be performed further.

When the unit satisfied conditions of the waste toner full space while printing, the printing job is terminated.

3. Disassembly and assembly

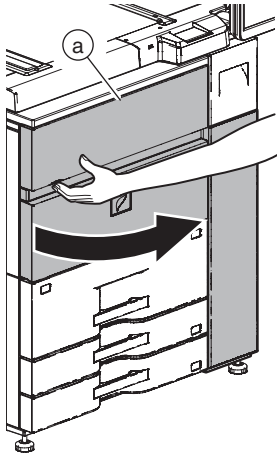
A. Waste toner section

Parts		Page
A	Toner collection container full detection	M - 3/(1)
B	Toner collection container presence detection	

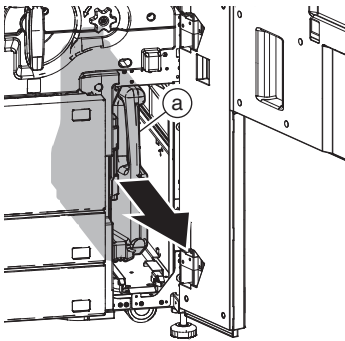


**(1) Toner collection container full detection /
Toner collection container presence detection**

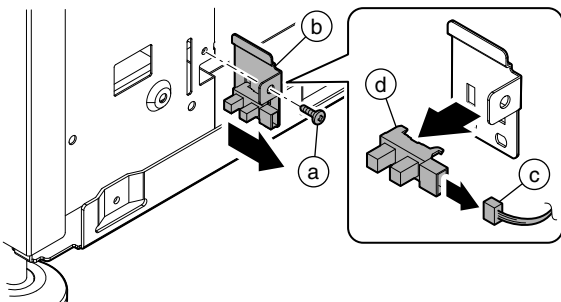
- 1) Remove the rear cabinet.
- 2) Open the front cover (a).



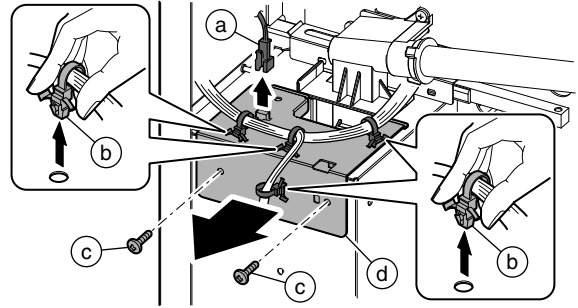
- 3) Remove the toner collection container (a).



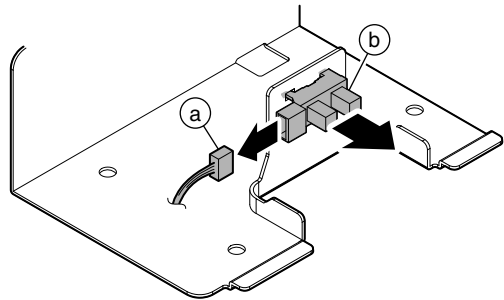
- 4) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c), and remove the toner collection container full detection (d).



- 5) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the mounting plate (d).

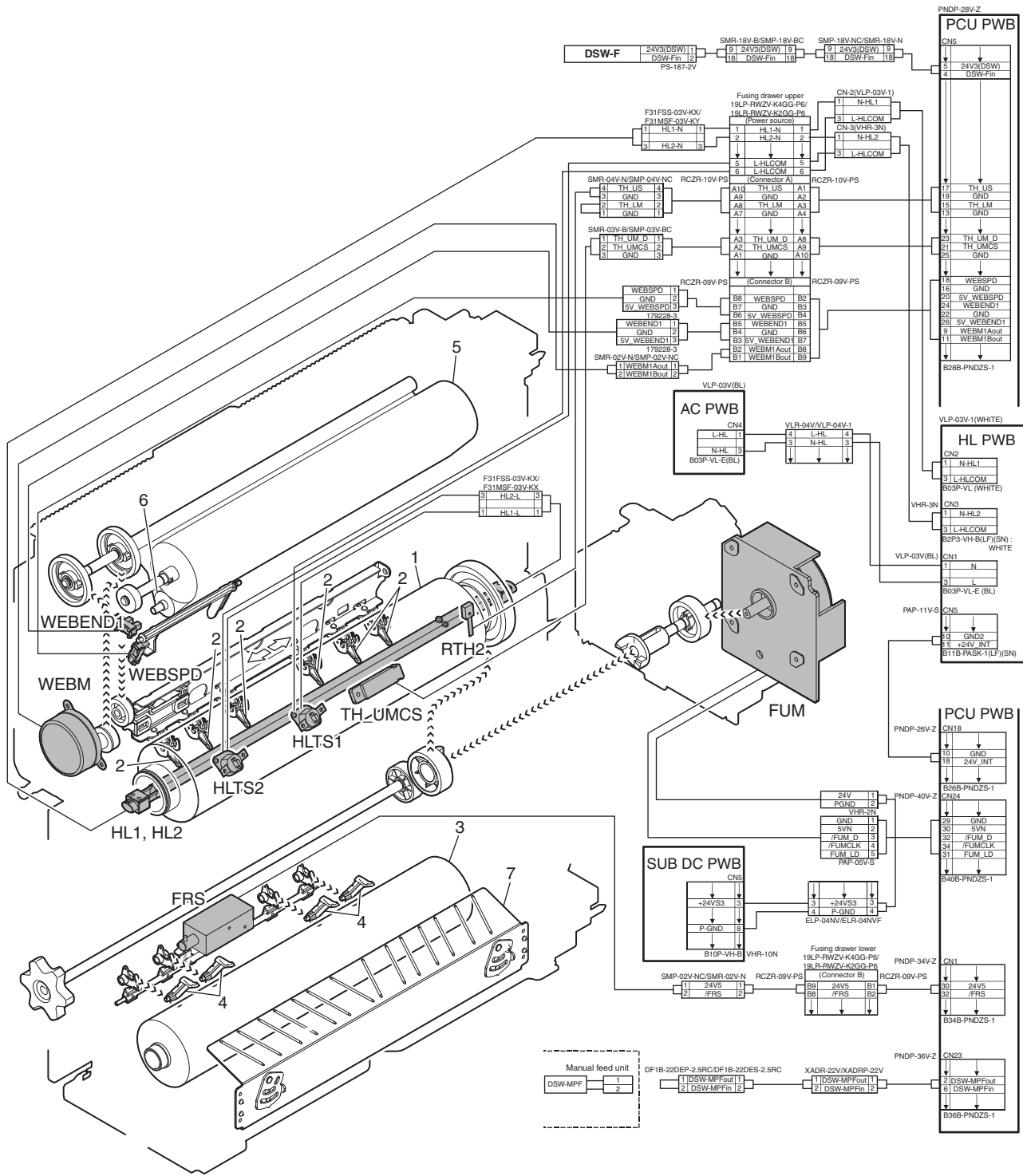


- 6) Disconnect the connector (a), and remove the toner collection container presence detection (b).



[N] FUSING SECTION

1. Electrical and mechanism relation diagram



Code	Name	Type	Function / Operation
FRS	Lower pawl separation solenoid		Controls the lower pawl separation solenoid.
FUM	Fusing roller drive motor		Drives the fusing roller.
HL1	Upper heat roller heater lamp 1		Controls heating the center section of the upper heat roller.
HL2	Upper heat roller heater lamp 2		Controls heating the both edges of the upper heat roller.
HLTS1	Thermostat (1)		Cuts conduction to the heater lamp when the temperature rises abnormally. (HL1, HL4)
HLTS2	Thermostat (2)		Cuts conduction to the heater lamp when the temperature rises abnormally. (HL2)
RTH1_com	Upper heat roller thermistor	Thermistor	Detects the temperature of the upper heat roller [Center section] (Non-contact, detection side)
RTH1_d	Upper heat roller thermistor	Thermistor	Detects the temperature of the upper heat roller [Center section] (Non-contact, detection side)
RTH2	Upper heat roller thermistor 2	Thermistor	Detects the temperature of the upper heat roller (Both edges)

Code	Name	Type	Function / Operation
WEBEND1	Web end sensor	Photo interrupter	Detects Web End.
WEBM	Web roller drive motor		Controls the web motor.
WEBSPD	Web remaining quantity sensor	Transmission	Detects the web remaining quantity.

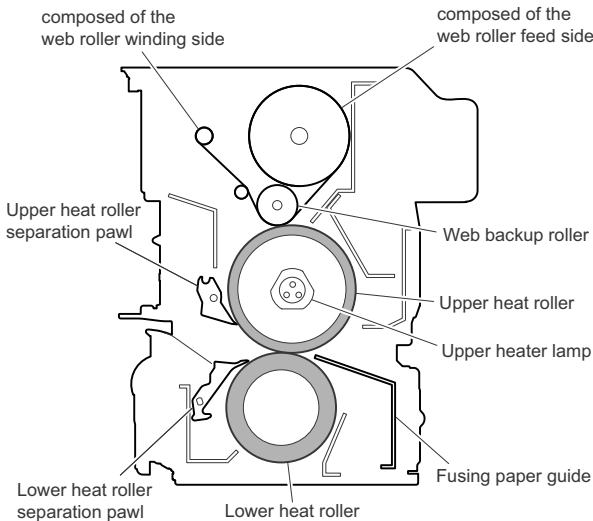
No.	Name	Function/Operation
1	Upper heat roller	Applies heat and pressure to toner on paper to fuse.
2	Upper heat roller separation pawl	Mechanically separates paper which is not separated naturally from the upper heat roller.
3	Lower heat roller	Applies heat and pressure to toner on paper to fuse.
4	Lower heat roller separation pawl	Mechanically separates paper which is not separated naturally from the lower heat roller.
5	Web roller	Cleans the upper heat roller.
6	Web backup roller	Applies a pressure to web paper to bring it into contact with the upper heat roller.
7	Fusing paper guide	Determines the height of paper stack in the fusing section.

2. Operational descriptions

(1) Outline

This section performs the following functions and operations.

- The fusing roller applies heat and pressure to toner attached to paper in the transfer section and fuses toner images onto paper.
 - Heat roller diameter:**
Upper heat roller 70 mm
Lower heat roller 60 mm
 - Heater lamp:**
HL1, HL2
- To clean the upper heat roller, the web unit is provided in the upper section of the upper heat roller. It is composed of the web sheet feed side, the winding side, and the back-up roller which is used to press the web sheet onto the upper heat roller. In addition, the sensor is provided to detect the remaining quantity of the web sheet and the end of the websheet.



- The thermistor is provided to detect the temperature in the fusing section.
 - Upper heat roller center:**
Non-contact type thermistor (Main thermistor)
 - Upper heat roller edges:**
Contact type thermistor (Sub thermistor)
 - Lower heat roller edges:**
Contact type thermistor (Europe, Other destinations)
- The thermostats are provided for safety of the fusing section.
 - HLTS1:** Thermostat (1) Cuts conduction to HL1 and HL4.
 - HLTS2:** Thermostat (2) Cuts conduction to HL2.

(2) Fusing roller drive

To drive the fusing roller, 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.

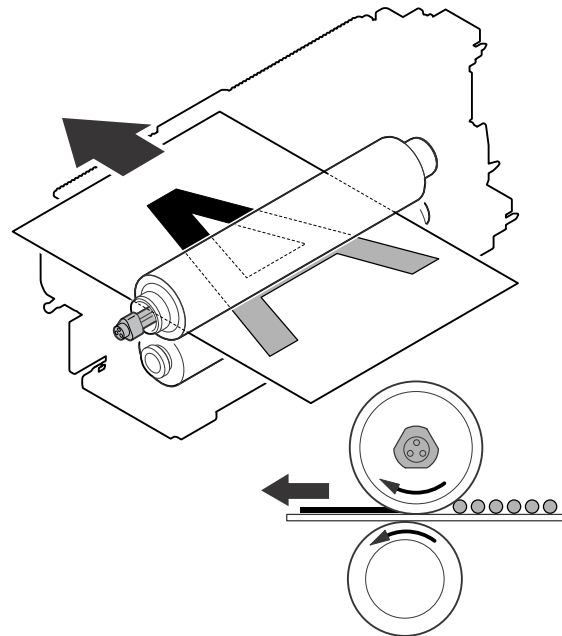
(3) Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU. When it is lower than the specified level, the PCU sends the heater lamp lighting signal to the heater lamp drive circuit in the HL PWB.

When the power triac is turned ON through the photo triac coupler in the heater lamp drive circuit, the AC power is supplied to the heater lamp to turn it on and heat the heat roller.

(4) Fusing operation

The upper and lower heat rollers apply heat and pressure to toner on paper, fusing toner images on paper.



A heat roller of silicon rubber is used in this fuser. This is due to the following:

- The upward separation is executed. (Since the hardness of the upper heat roller is high, the lower heat roller is deformed to face up paper).
- The nip quantity is increased as it will increase the heating capacity of the paper. (Nip quantity: 10 - 11mm)

- 3) A flexible roller allows the toner to fuse without deforming the toner shape.

(5) Fusing temperature control

Thermistors are provided at the center and the edges of the upper heat roller.

The roller temperature is detected by the installed thermistor, and the heater lamp is controlled to maintain the temperature at the specified level.

The initial values of the specified temperature are as shown in the table.

	State	Fusing temperature
		105/120cpm machine
Upper heat roller	Ready standby	200 °C
	Preheat standby	180 °C

(6) Fusing temperature control when heavy paper is fed though the fuser

When heavy paper is fed, the heater lamp is controlled to maintain the heat roller temperatures at the specified levels below. In addition, the SM (resist roller control motor) operation start temperature is set to improve the job efficiency and the fusing performance.

The default values of the specified levels are as shown in the table below. (The fusing temperature can be corrected to be the set value $\pm 5^{\circ}\text{C}$ or $\pm 10^{\circ}\text{C}$ with SIM43-1.)

		Fusing temperature
		105/120cpm machine
Upper heat roller	Fusing control temperature	210 °C
	PSM operation start temperature (RTH1, center section)	210 °C
	PSM operation start temperature (RTH2, edge section)	210 °C

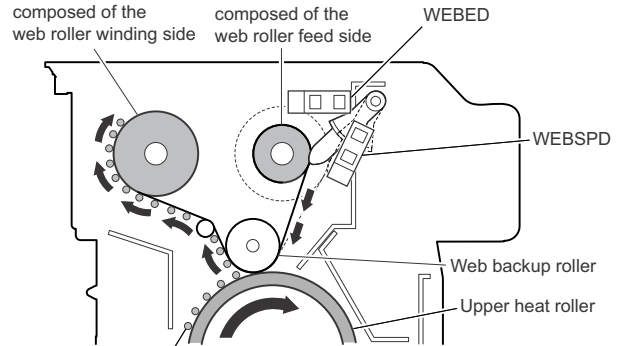
When paper is fed from the tray which is set as a heavy paper tray, the fusing temperature is changed to that for feeding heavy paper and CPM falls to about 75%. (The process speed is not changed.)

After completion of paper feed from the heavy paper tray (when the tray is set to a normal paper tray, or the job is completed and the machine enters the ready state, etc.), the fusing temperature is set to the normal setting.

Heavy paper: Heavy paper 1/2/3/4 and tab sheet.

(7) Cleaning operation

The heat roller is cleaned by the web unit.



The remaining toner or paper dust etc. on the upper heat roller.

The web diameter is 54mm, and the web sheet length is 50m.

After completion of a job, there is feed of 7mm (Max.) to 2mm. The difference of 7mm to 2mm depends on the job quantity and the pixel counter.

Also after completion of warming up, it is fed by 7mm. This is because the web sheet is pushed against the upper heat roller by the backup roller and dirt on the web sheet must be removed.

The feed quantity of the web sheet is 0.5mm/7 copies (variable with Sim. 43-32).

The web sheet remaining quantity is detected by two sensors (WEBEND1, WEBSPD) attached to the web unit.

In case of Web Near End, "Ready to scan for copy. (Maintenance required.Code: FK3)" is displayed.

In case of Web End, the code FK3 is displayed and the machine is stopped.

Replace the web unit, and clear the web feed counter with Sim. 24-4. (The display of FK3 is also deleted.)

When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)

(8) Fusing separation pawl operation

The separation pawl of the upper heat roller is of the oscillation type (oscillation width 3mm), and its operation is synchronized with the web sheet feed.

To clean the upper heat roller separation pawl, slow rising is performed when rotating the heat roller, and dirt on the pawl is attached to the upper heat roller and cleaned with the web sheet.

The separation pawl of the lower heat roller is of the separation type.

The separation pawl of the lower heat roller separates and makes contact when the heat roller is rotating and stopped, cleaning the separation pawl.

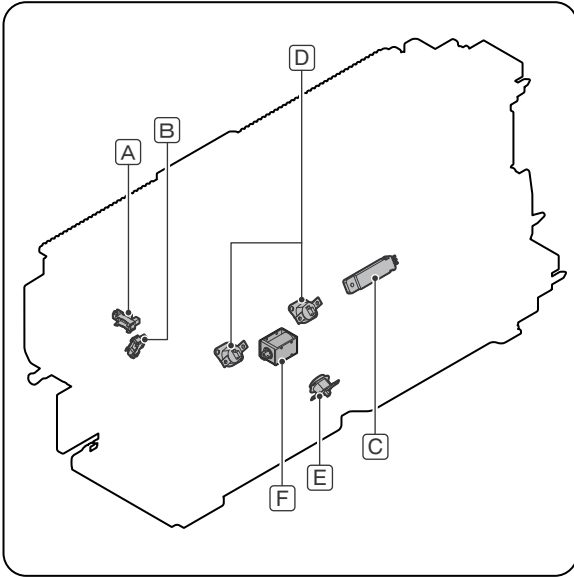
By the separation operation, dirt on the pawl is removed. The dirt of the pawl attached to the roller is collected through the upper heat roller and cleaned with the web sheet.

This separation operation is controlled by the FRS (lower pawl separation solenoid). When starting rotation, separation is executed for 1sec. When stopping, separation is executed for 1.5 sec.

3. Disassembly and assembly

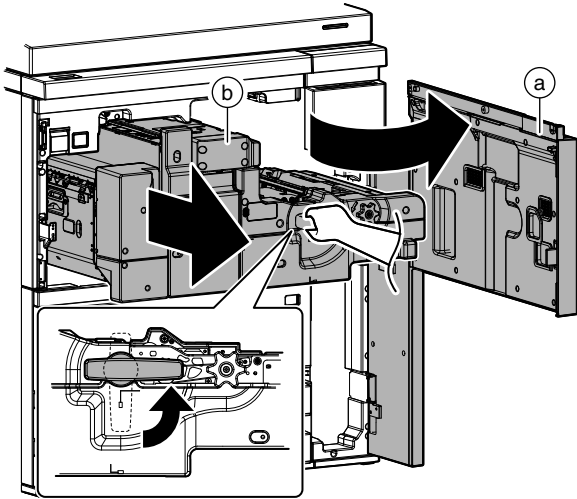
A. Fusing unit

Unit	Parts	Page
Fusing unit	A WEB end detection	N - 5/a
	B WEB near end detection	
	C Non-contact thermistor	N - 5/b
	D Thermostat	
	E Thermostat	N - 6/c
	F Lower pawl separation solenoid	N - 6/d

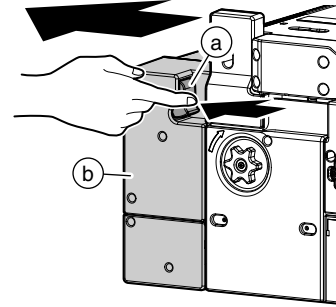


(1) Fusing unit

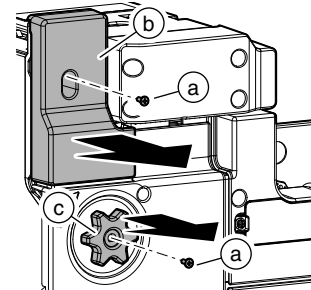
- 1) Open the front cover (a), and pull out the intermediate frame (b).



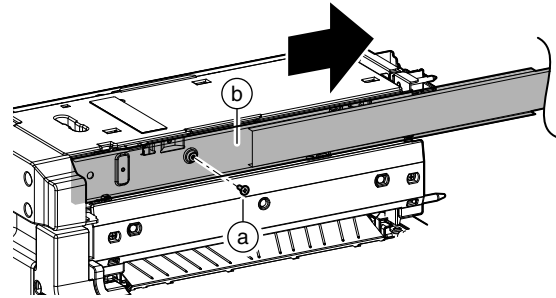
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



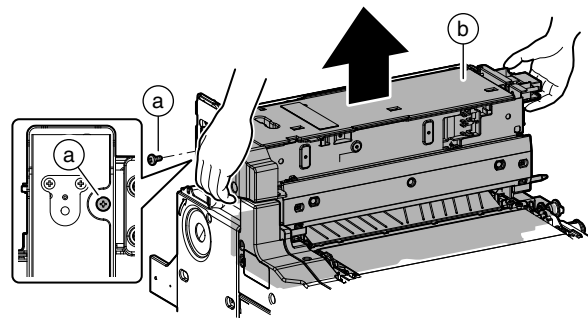
- 3) Remove the screw (a), and remove the cover (b) and the knob (c).



- 4) Remove the screw (a), and remove the rail (b).

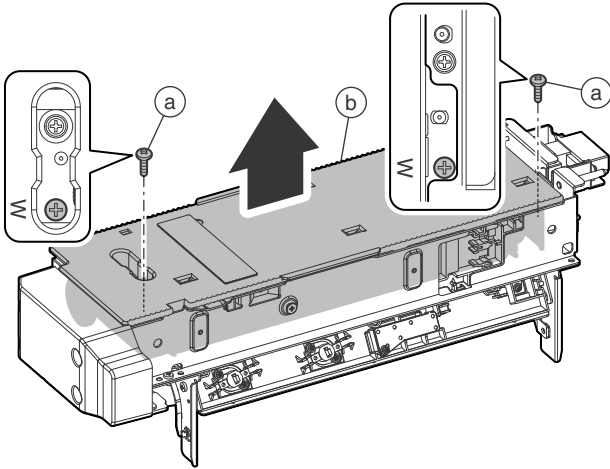


- 5) Remove the screw (a), and remove the fusing unit (b).
* Note that the fusing unit is heated to a high temperature. When removing it, be sure to hold the resin section as indicated below.

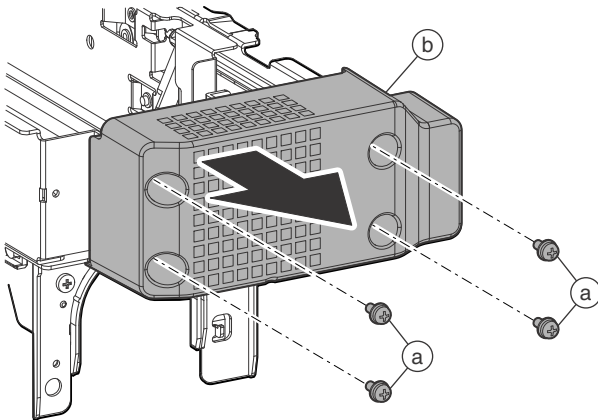


a. WEB end detection / WEB near end detection

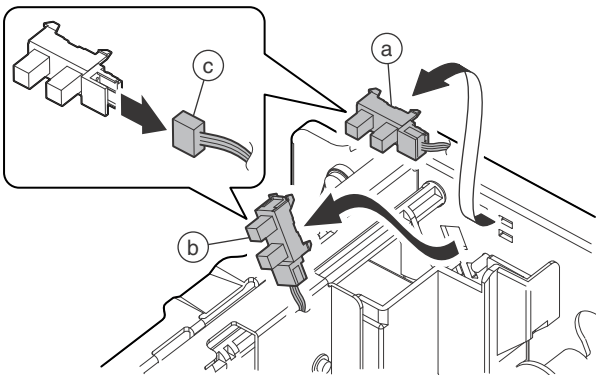
- 1) Remove the fusing unit.
- 2) Remove the screw (a) on the side of "W" mark, and remove the web unit (b).



- 3) Remove the screw (a), and remove the cover (b).

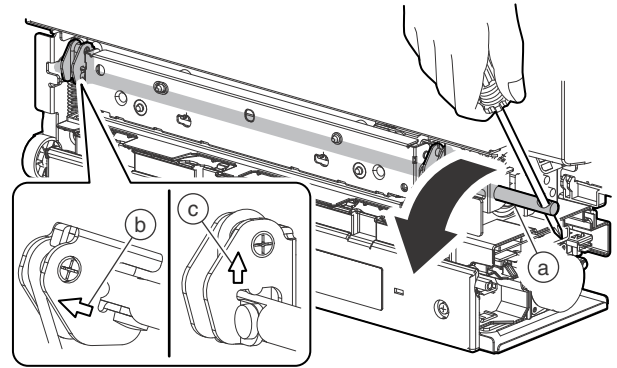


- 4) Remove the WEB end detection (a) and WEB near end detection (b). Disconnect the connector (c).



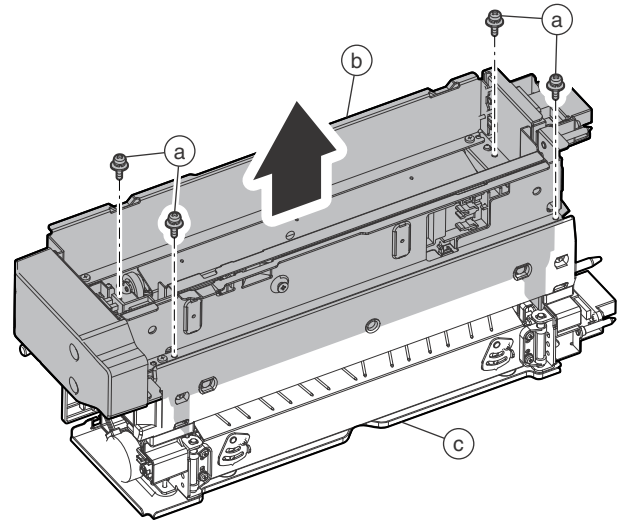
b. Non-contact thermistor / Thermostat

- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.
* When the pressure is released, the arrow mark on the pressure release shaft faces obliquely (b). When the pressure is applied, it faces upward (c).

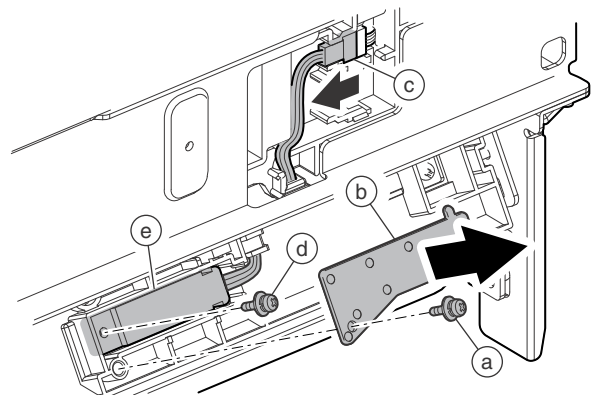


- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).

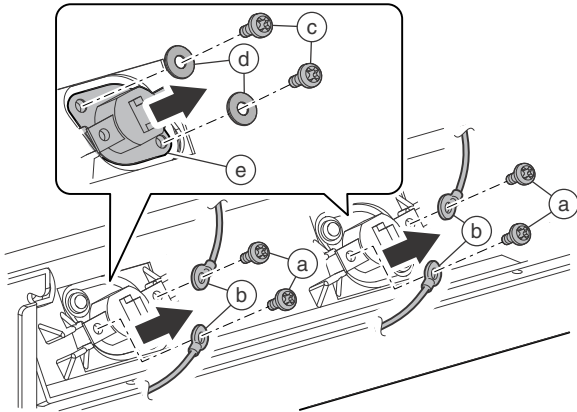
* Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.



- 4) Remove the screw (a), and remove the cover (b). Disconnect the connector (c), and remove the screw (d). Remove the Non-contact thermistor (e).

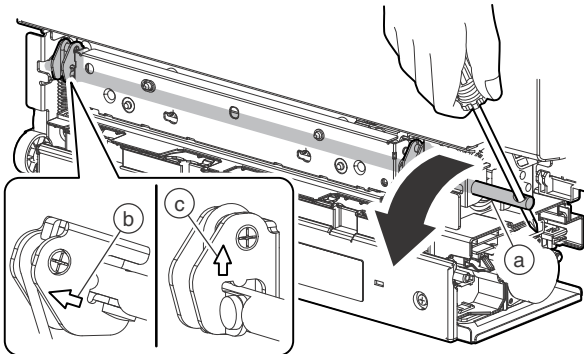


- 5) Remove the screw (a), and remove the terminal (b). Remove the screw (c) and the washer (d). Remove the thermostat (e).
 - * When tightening the screw (a), use a great care to tighten it securely.
 - * When the screw becomes loose, replace the screw (a) and the thermostat (e).

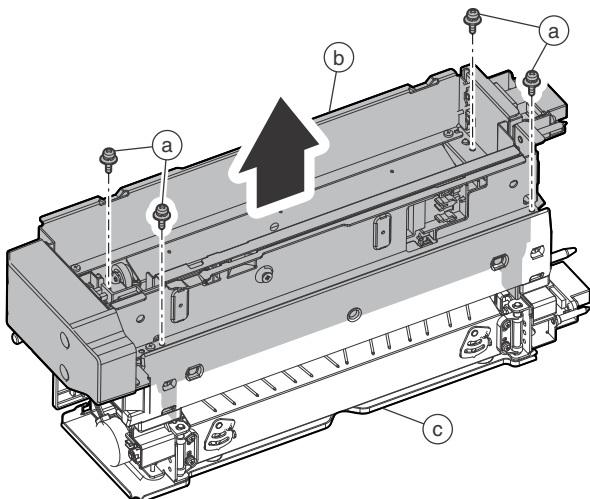


c. Thermostat

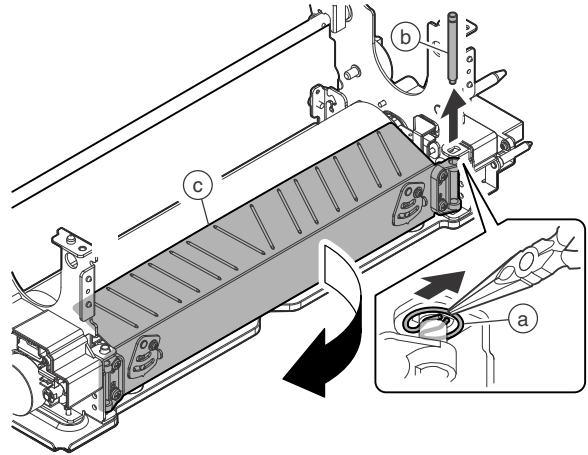
- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.
 - * When the pressure is released, the arrow mark on the pressure release shaft faces obliquely (b). When the pressure is applied, it faces upward (c).



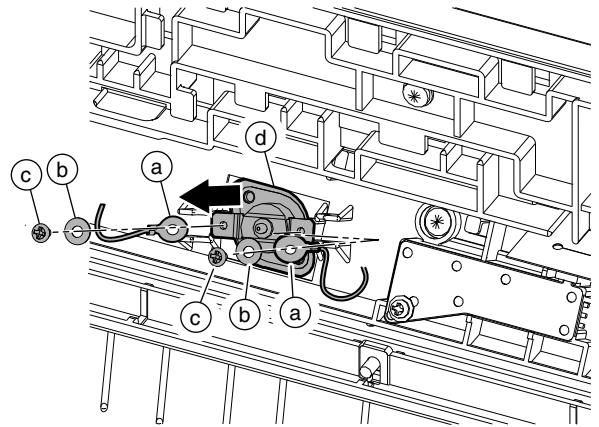
- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).
 - * Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.



- 4) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c).

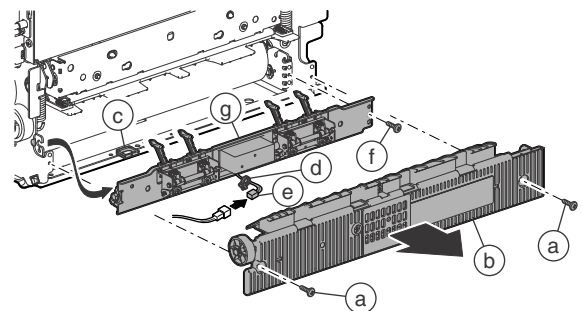


- 5) Remove the terminal (a). Remove the screw (b) and the washer (c). Remove the thermostat (d).
 - * Insert the terminal (a) fully to the bottom until it clicks. Check to confirm that it is securely connected.

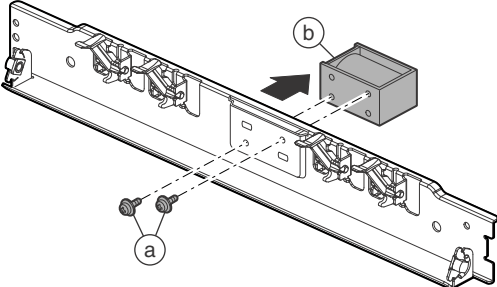


d. Lower pawl separation solenoid

- 1) Remove the fusing unit.
- 2) Remove the screw (a) and the cover (b). Remove the harness from the edge saddle (c). Remove the snap band (d) and disconnect the connector (e). Remove the screw (f), and remove the lower heat roller separation pawl unit (g).



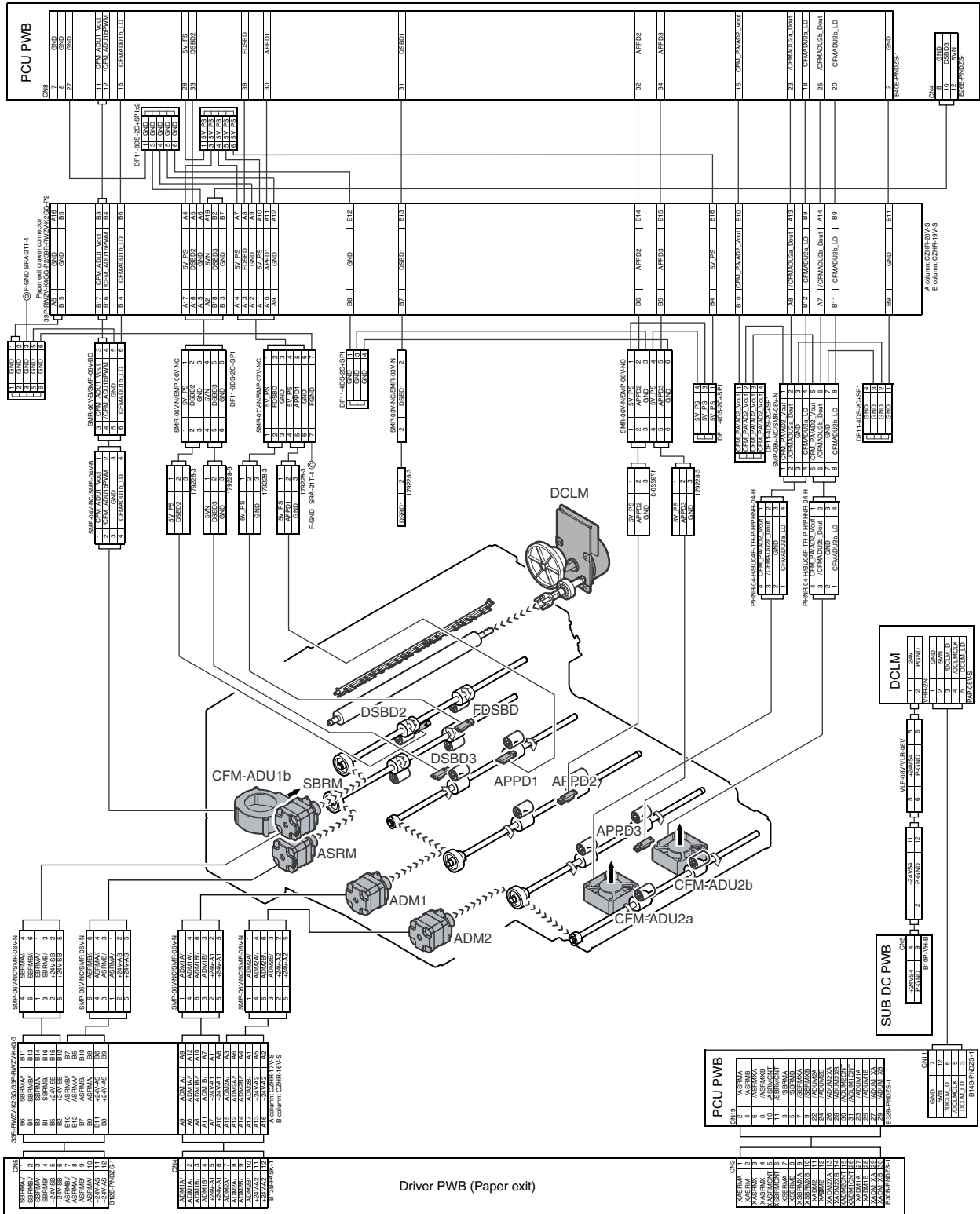
3) Remove the screw (a) and remove the lower pawl separation solenoid (b).



[O] ADU PAPER EXIT SECTION

1. Electrical and mechanism relation diagram

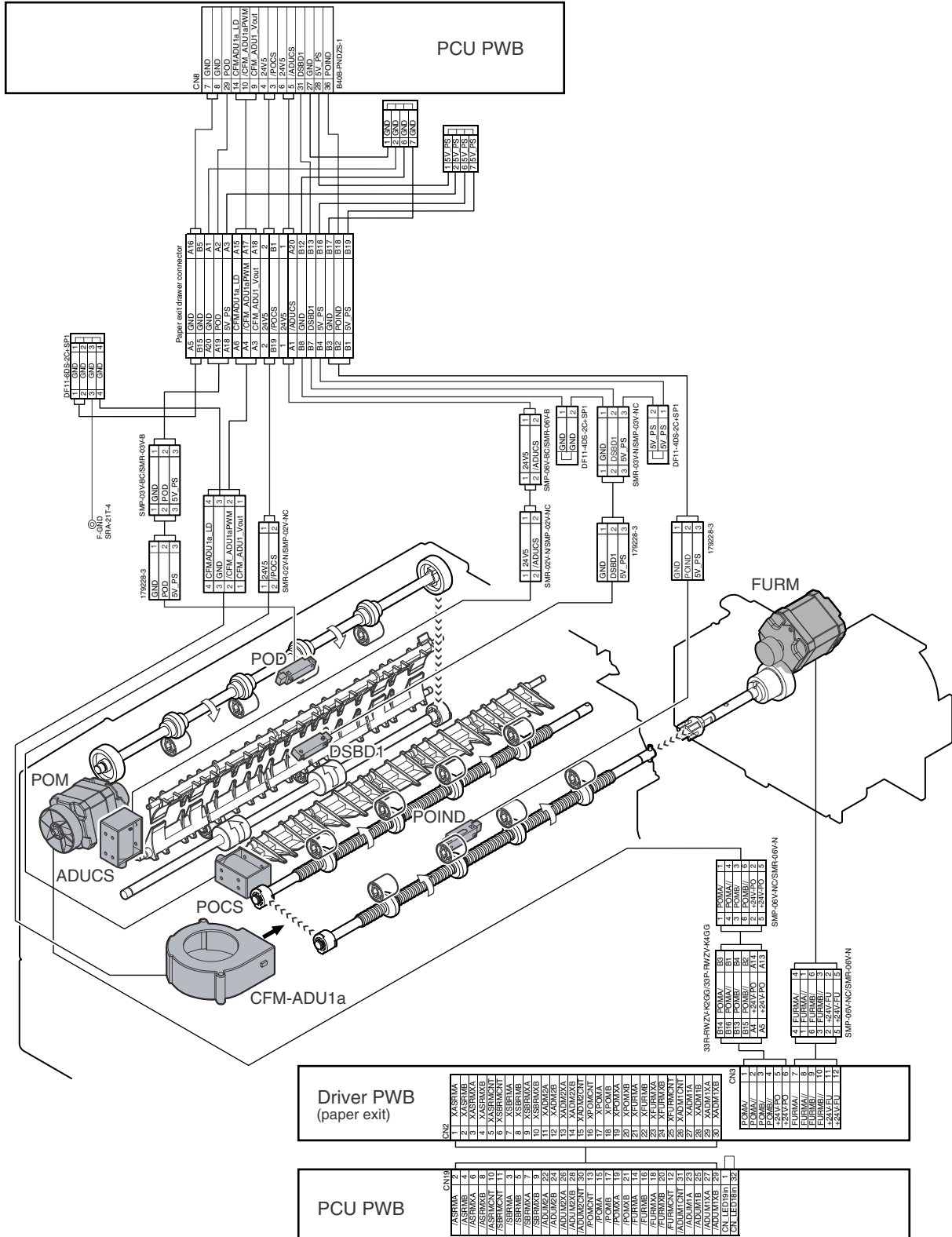
A. ADU section



Signal name	Name	Type	Function / Operation
ADM1	ADU transport motor 1	Stepping motor	Drives the ADU transport roller 1.
ADM2	ADU transport motor 2	Stepping motor	Drives the ADU transport roller 2.
APPD1	ADU transport detection 1	Reflection type	Detects the ADU paper transport.
APPD2	ADU transport detection 2	Reflection type	Detects the ADU paper transport.
APPD3	ADU transport detection 3	Reflection type	Detects the ADU paper transport.

Signal name	Name	Type	Function / Operation
ASRM	ADU reverse motor	Stepping motor	Drives the ADU reverse roller.
CFM-ADU1b	Reverse cooling fan	Sirocco fan	Cools the reverse section.
CFM-ADU2a	ADU section paper cooling fan 1	Axial-flow fan (60)	Cools paper in the ADU section.
CFM-ADU2b	ADU section paper cooling fan 2	Axial-flow fan (60)	Cools paper in the ADU section.
DSBD2	Duplex reverse detection 2	Reflection type	Detects the duplex reverse paper pass.
FDSBD	Face down reverse detection	Reflection type	Detects face down reverse paper pass.
SBRM	Paper exit reverse motor	Stepping motor	Drives the paper exit reverse roller.
DSBD3	Duplex reverse detection 3	Reflection type	Detects the duplex reverse paper remaining.
DCLM	Decurler motor DC	Brush-less motor	Drives the decurler motor.

B. Paper exit section



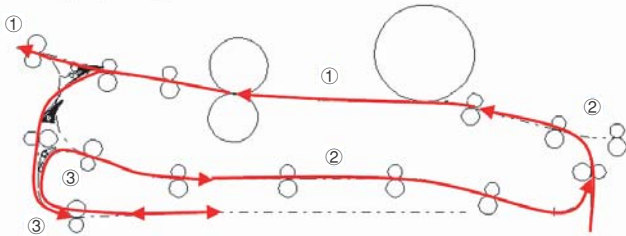
Signal name	Name	Type	Function / Operation
ADUCS	Duplex select gate solenoid	Electromagnetic clutch	Select gate solenoid for transport in the ADU section.
CFM-ADU1a	Reverse transport cooling fan	Sirocco fan	Cools paper in the reverse section.
DSBD1	Duplex reverse detection 1	Reflection type	Detects the duplex reverse paper pass.
FURM	Fusing rear motor	Stepping motor	Drives the fusing rear roller.
POCS	Face-up/face-down select gate solenoid	Electromagnetic clutch	Face-up/face-down select gate solenoid.
POD	Paper exit detection	Reflection type	Detects paper exit.
POIND	Paper exit paper entry detection	Reflection type	Detects the paper pass at the paper exit port.
POM	Paper exit motor	Stepping motor	Drives the paper exit roller.

2. Operational descriptions

A. Outline

When duplex print is selected, paper printed on the first side is switched back to feed to the duplex section to make duplex print.

Inverting / Duplexing Path



Paper transportation speed

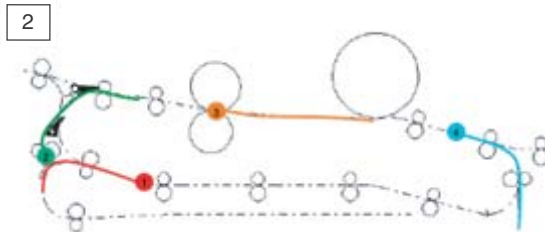
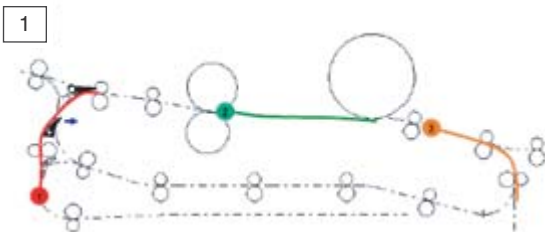
	Transport speed	Unit (mm/s)
①: Normal speed	540	(Process speed)
②: High speed I	600	(Paper feed and exit speed)
③: High speed II	1000	(Switchback speed)
④: High speed III	800	(Paper exit option receiving and sending speed : when paper exit option installed)

B. Paper transport operation in duplex print

When duplex print is selected, the paper is passed under the face-up / face-down select gate.

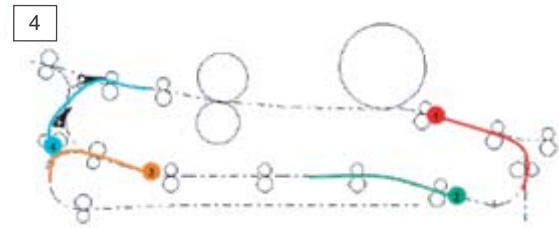
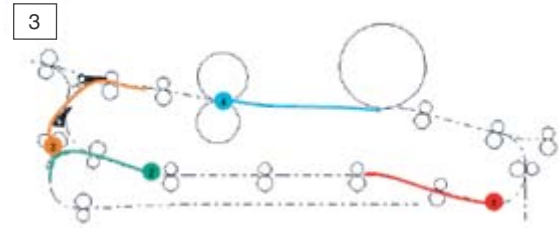
At the same time the duplex select gate is on, the paper is passed to ADU paper guide.

Paper is reversed by ADU reverse motor.



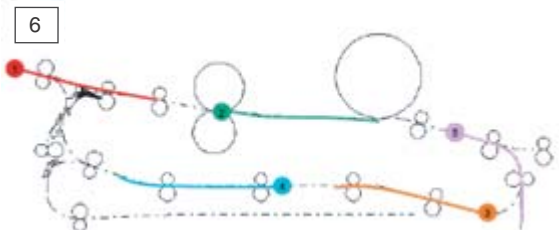
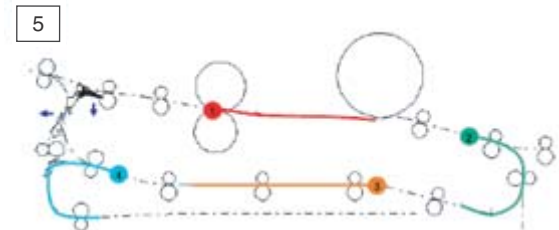
The second paper completes switchback and is passed to the reverse gate.

The first paper is reversed from the reverse gate and passed to copy operation of the back surface.



The fourth paper is transported to the ADU and then the face-up / face-down select gate is turned OFF to discharge the first paper.

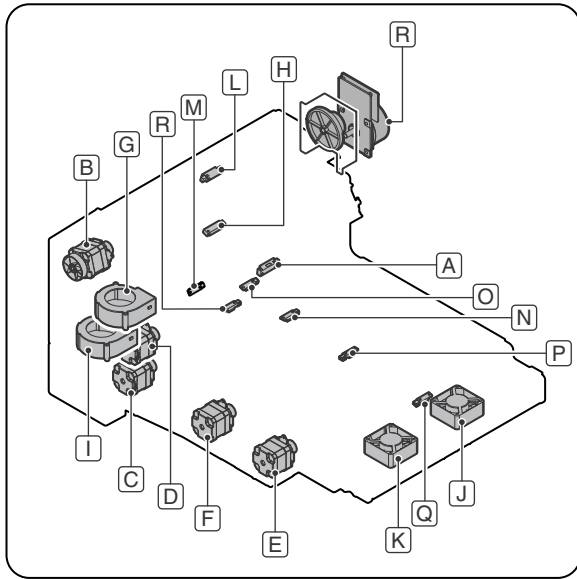
The front surface of the 5th sheets is copied on the first sheet. After that, back → front copy is made for each sheet.



3. Disassembly and assembly

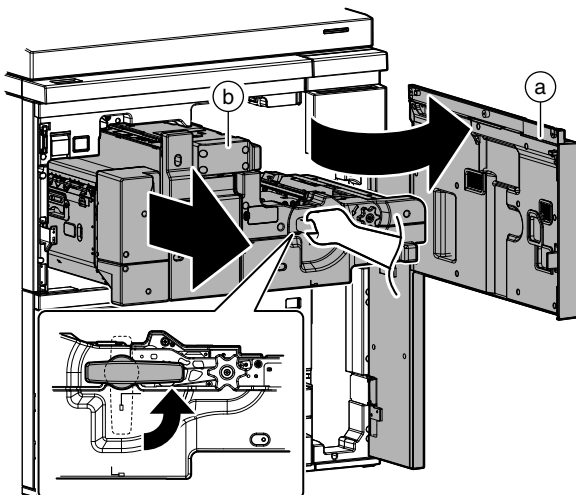
A. ADU paper exit unit

Unit	Parts	Page	
ADU paper exit unit	A	Paper exit paper entry detection	O-5/a
	B	Paper exit motor	O-5/b
	C	ADU reverse motor	O-6/c
	D	Paper exit reverse motor	
	E	ADU transport motor 2	O-7/d
	F	ADU transport motor 1	
	G	Reverse transport cooling fan	O-7/e
	H	Duplex reverse detection 1	
	I	Reverse cooling fan	O-9/f
	J	ADU section paper cooling fan 2	O-9/g
	K	ADU section paper cooling fan 1	
	L	Paper exit detection	O-10/h
	M	Duplex reverse detection 2 / Duplex reverse detection 3	O-10/i
	N	Face down reverse detection	
	O	ADU transport detection 1	O-11/j
	P	ADU transport detection 2	
	Q	ADU transport detection 3	O-11/k
R	Decurler drive unit	O-12/l	

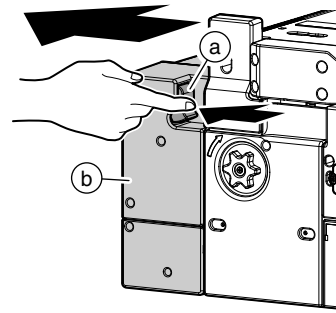


(1) ADU paper exit unit

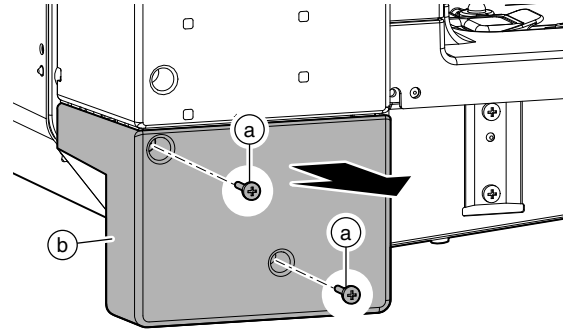
- 1) Open the front cover (a), and pull out the intermediate frame (b).



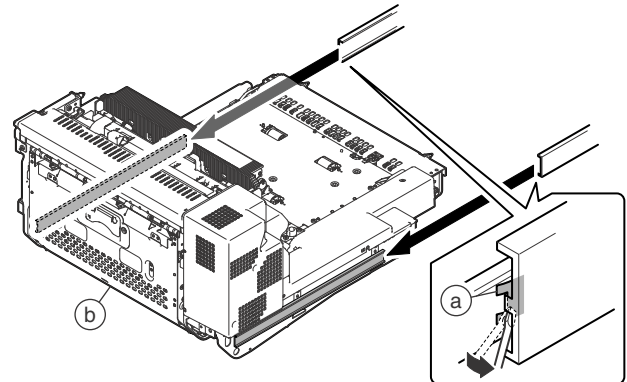
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



- 3) Remove the screw (a), and remove the cover (b).



- 4) Release the lock (a) of the rail at two positions. Pull out the ADU paper exit unit (b) furthermore to remove.

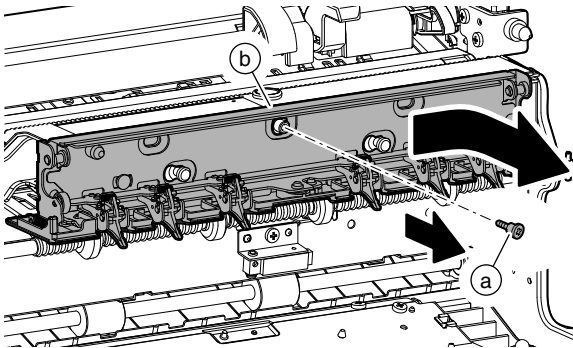


<Note for replacing the ADU unit>

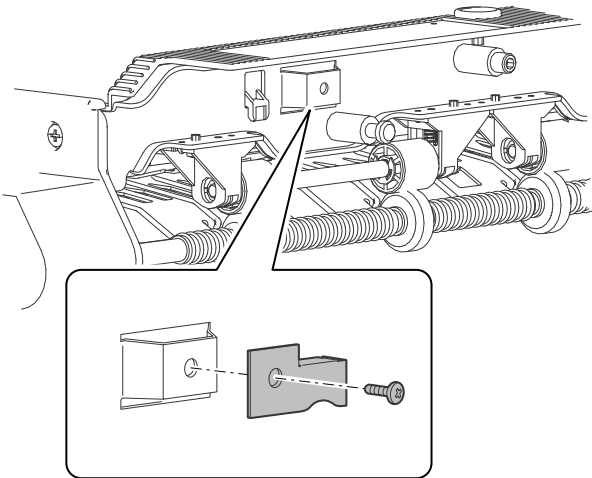
When replacing the ADU unit, the upper pawl protection plate and the fixing screw must be replaced. (If not, a jam or breakage of the fusing upper separation pawl may occur.)

* When obtaining an ADU unit as a service part and replacing the ADU unit.

- 1) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).

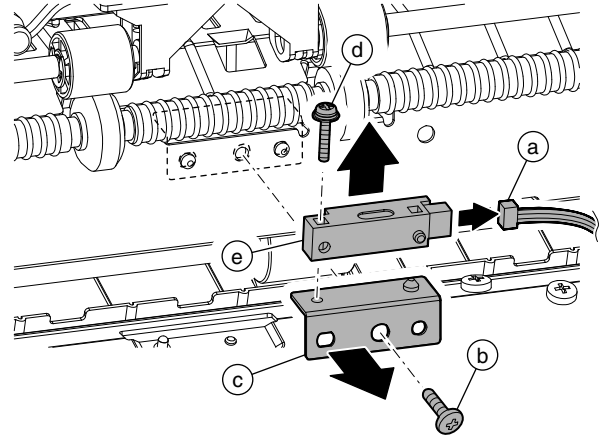


- 2) Remove the upper pawl protection plate and the fixing screw, and attach the new ADU unit.



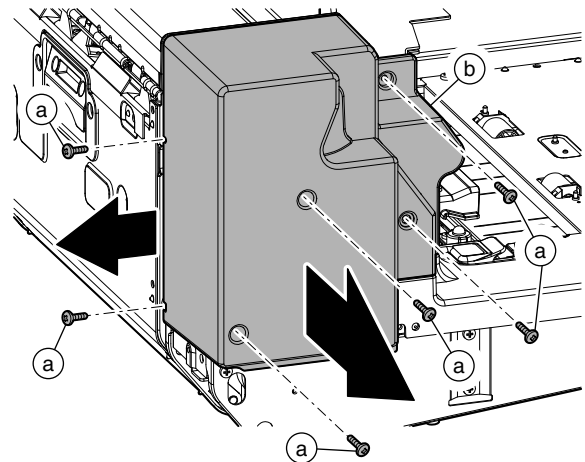
a. Paper exit paper entry detection

- 1) Remove the ADU paper exit unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the mounting plate (c). Remove the screw (d), and remove the paper exit paper entry detection (e).

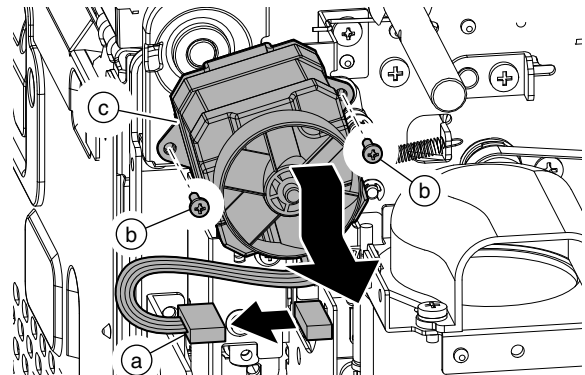


b. Paper exit motor

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).

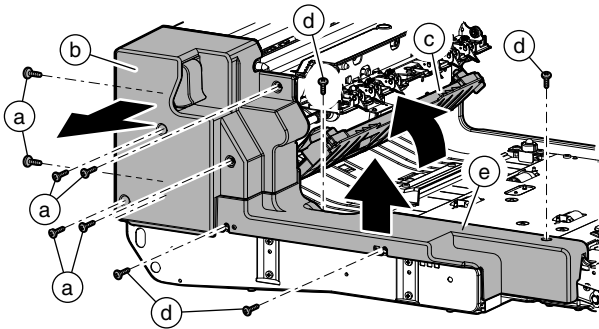


- 3) Disconnect the connector (a). Remove the screw (b), and remove the paper exit motor (c).

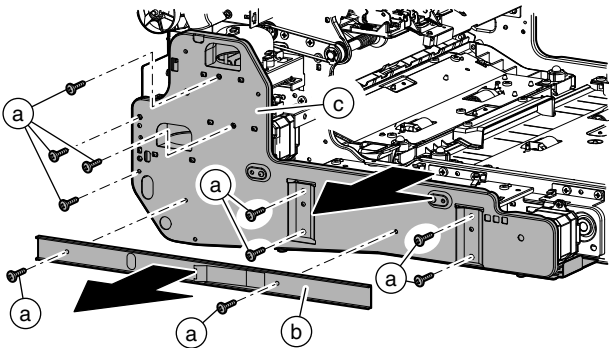


c. ADU reverse motor / Paper exit reverse motor

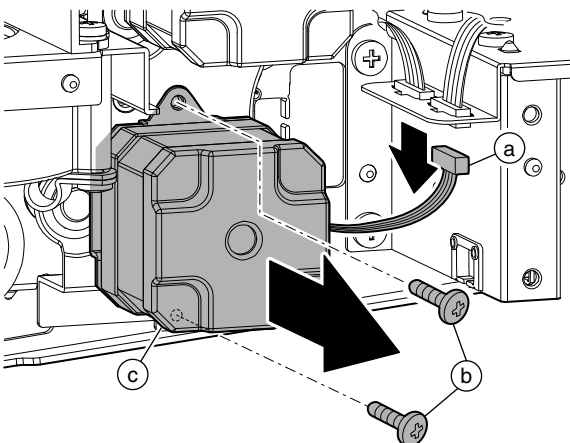
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



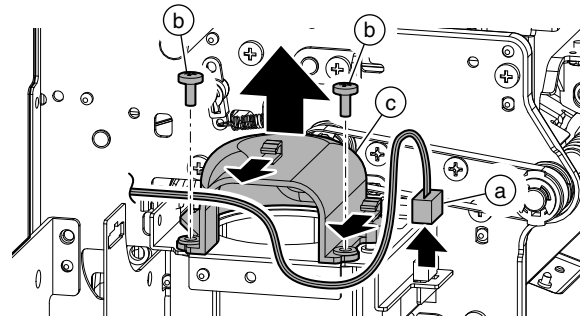
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



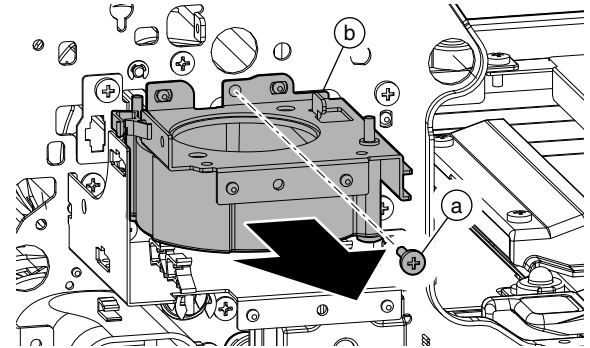
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU reverse motor (c).



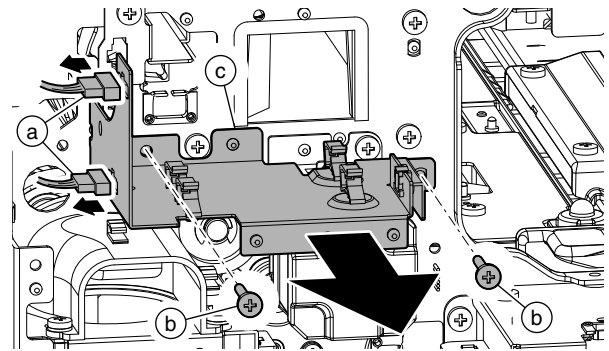
- 5) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



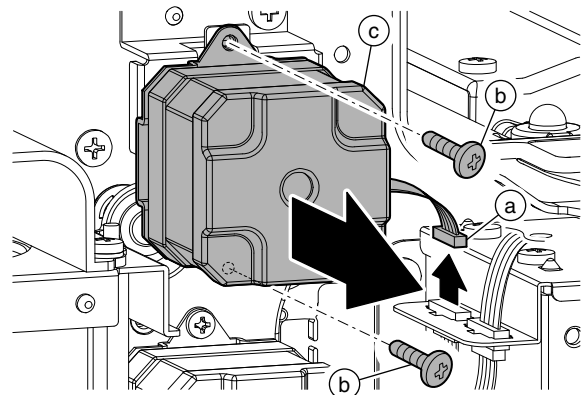
- 6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



- 7) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

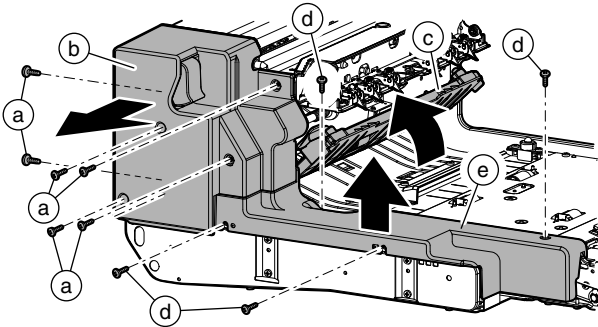


- 8) Disconnect the connector (a). Remove the screw (b), and remove the paper exit reverse motor (c).

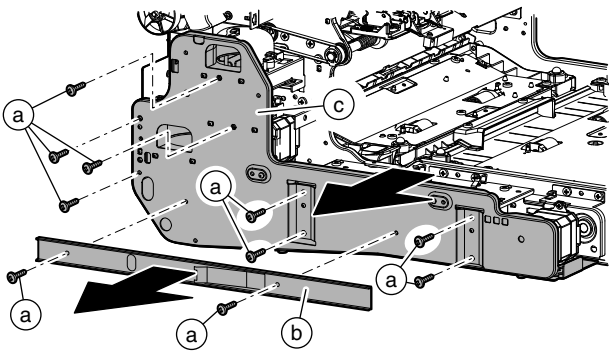


d. ADU transport motor 2 / ADU transport motor 1

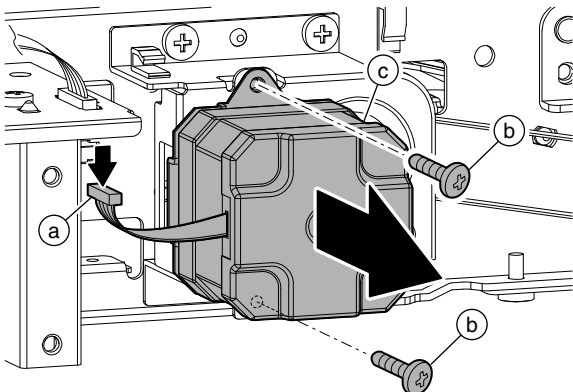
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



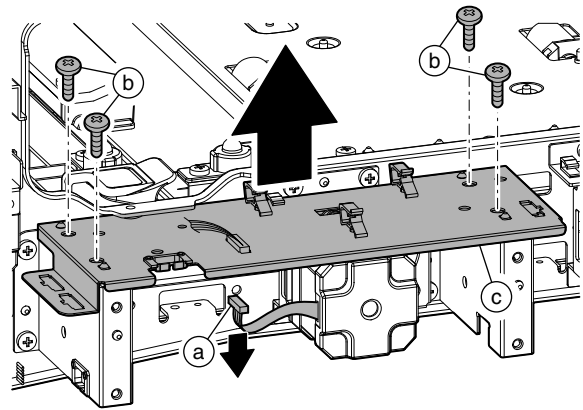
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



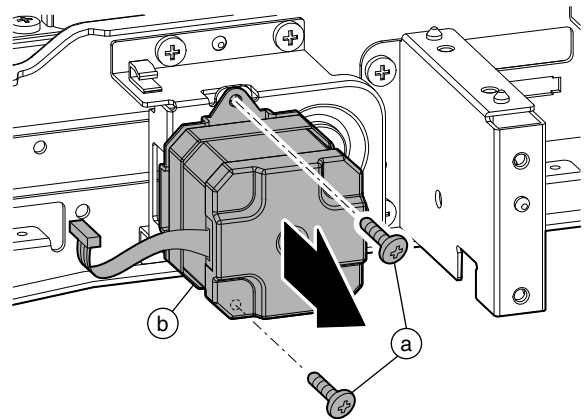
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU transport motor 2 (c).



- 5) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

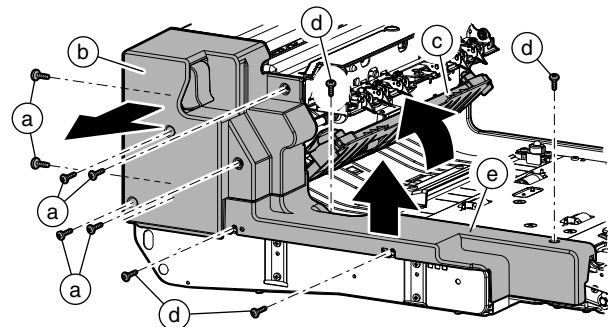


- 6) Remove the screw (a), and remove the ADU transport motor 1 (b).

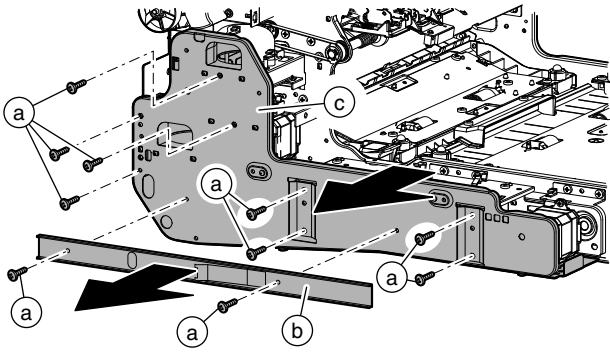


e. Reverse transport cooling fan / Duplex reverse detection 1

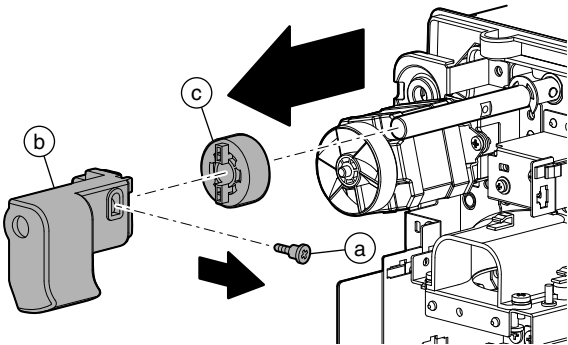
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



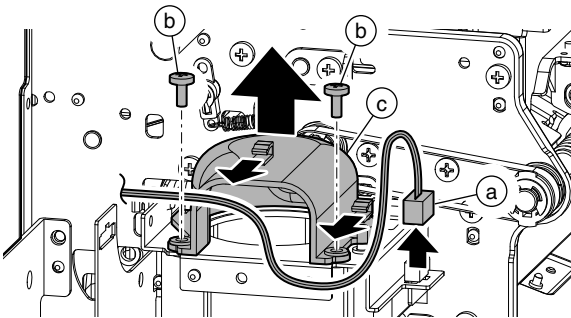
3) Remove the screw (a). Remove the rail (b), and the frame (c).



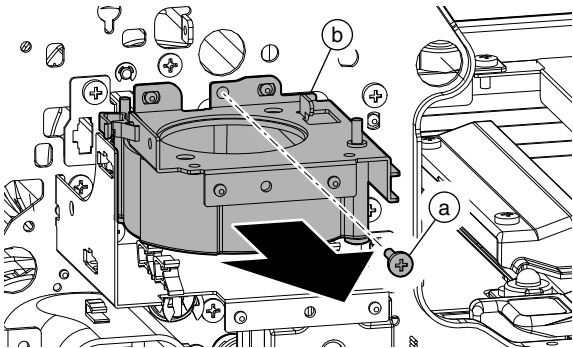
4) Remove the screw (a). Remove the lever (b) and the one-way clutch (c).



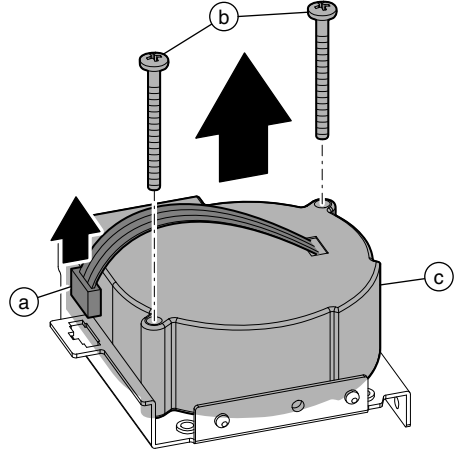
5) Remove the screw (a), and remove the duct (b).



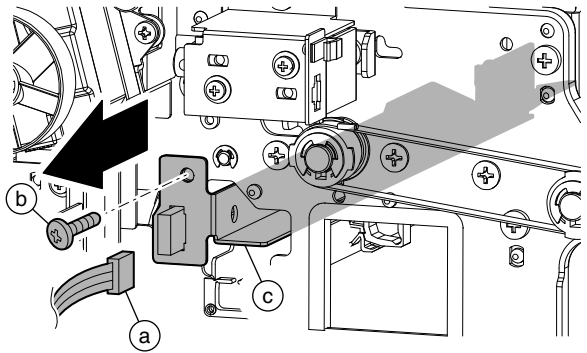
6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



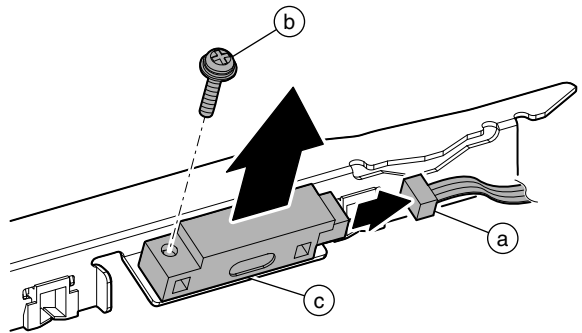
7) Disconnect the connector (a), and remove the screw (b). Remove the reverse transport cooling fan (c).



8) Disconnect the connector (a), and remove the screw (b). Pull out the stay (c).

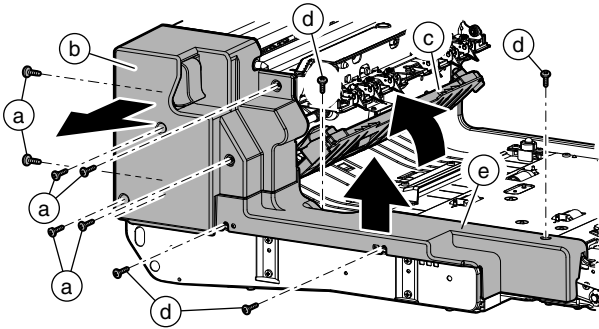


9) Disconnect the connector (a), and remove the screw (b). Remove the duplex reverse detection 1 (c).

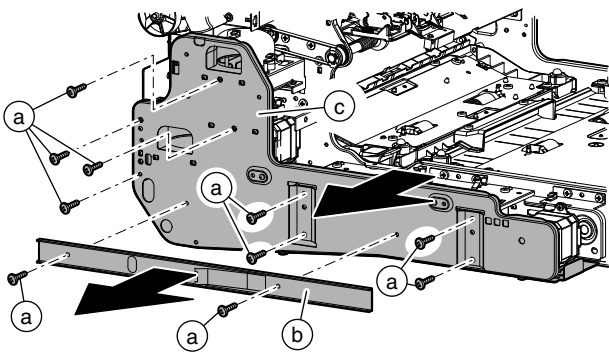


f. Reverse cooling fan

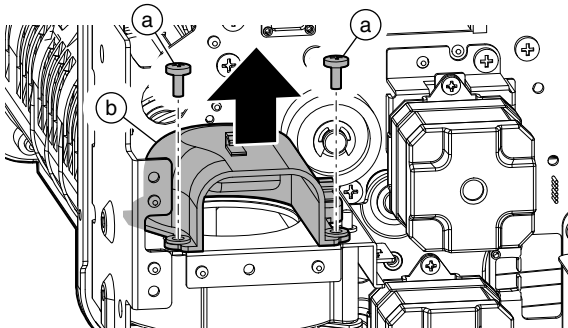
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



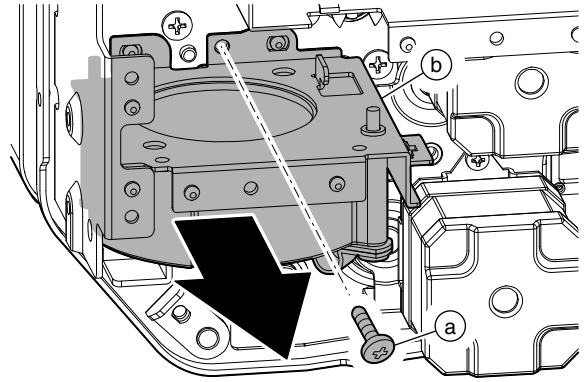
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



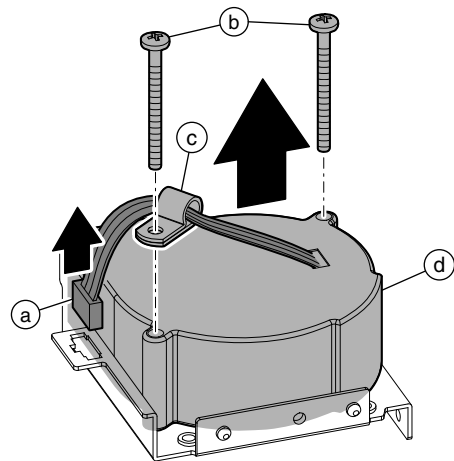
- 4) Remove the screw (a), and remove the duct (b).



- 5) Remove the screw (a), and remove the reverse cooling fan unit (b).

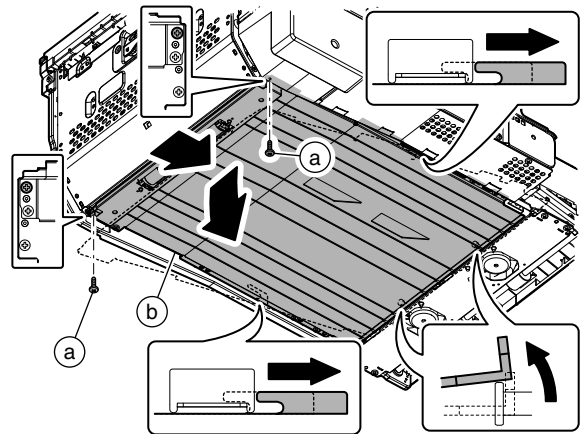


- 6) Disconnect the connector (a). Remove the screw (b) and clamp (c). Remove the reverse cooling fan (d).

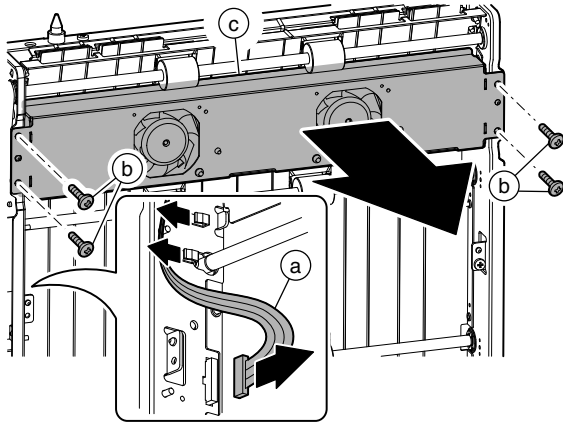


g. ADU section paper cooling fan 2 / ADU section paper cooling fan 1

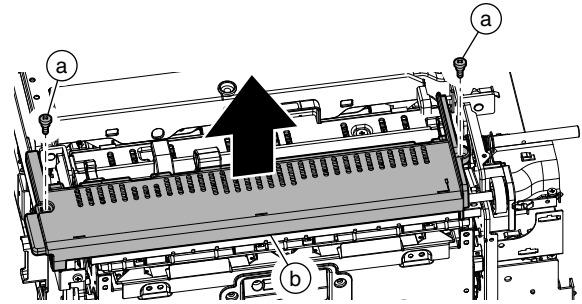
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.



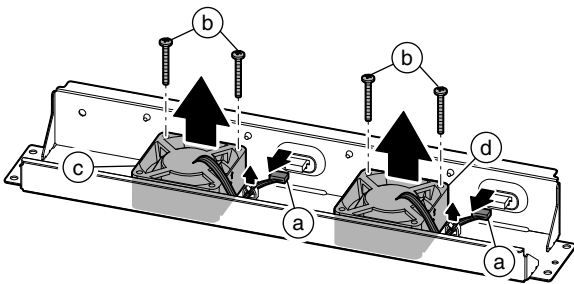
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fan unit (c).



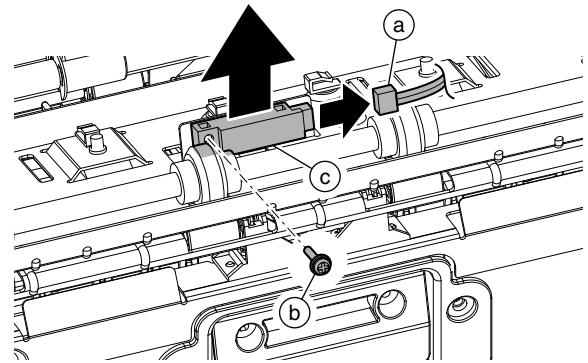
- 3) Remove the screw (a), and remove the cover (b).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the ADU section paper cooling fan 2 (c) and ADU section paper cooling fan 1 (d).

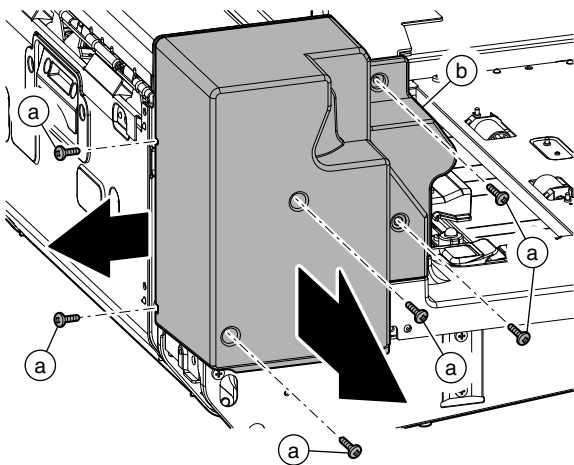


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper exit detection (c).



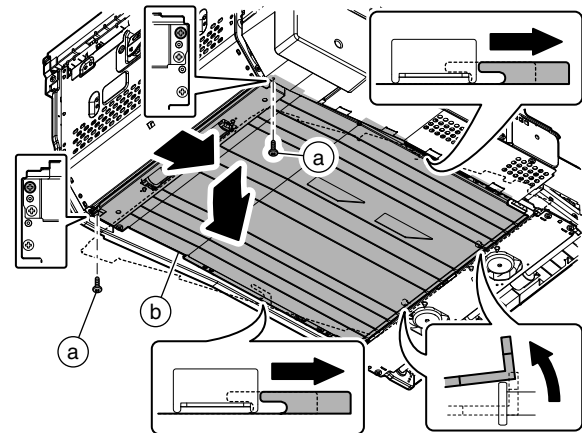
h. Paper exit detection

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).

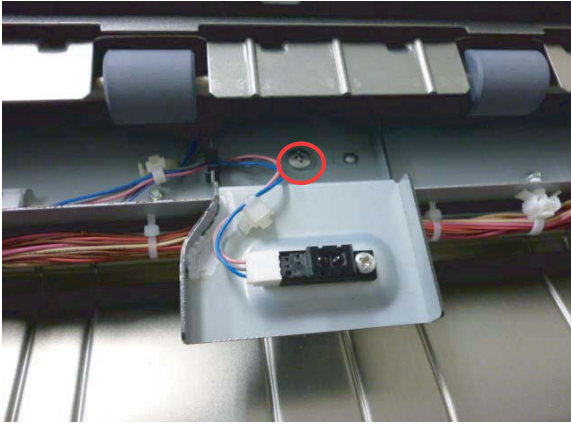


i. Duplex reverse detection 2 / Duplex reverse detection 3

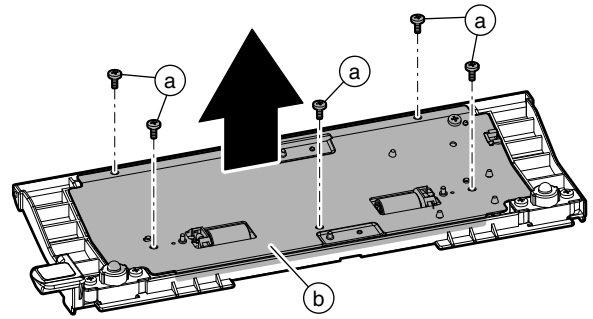
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.



- 3) Remove the screw, and remove the stay. Remove the duplex reverse detection 2/3.

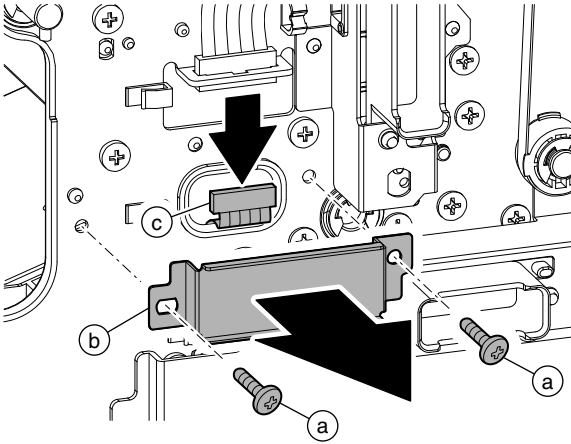


- 4) Remove the screw (a), and remove the plate (b).

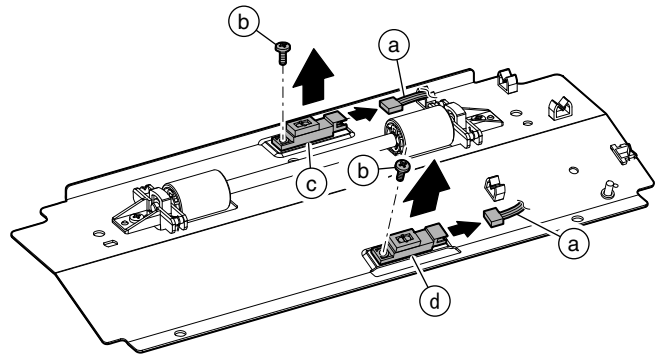


j. Face down reverse detection / ADU transport detection 1

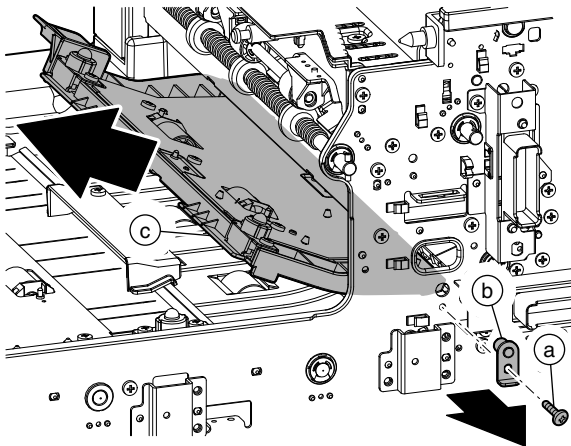
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



- 5) Disconnect all connectors (a), and remove the screw (b). Remove the face down reverse detection (c) and ADU transport detection 1 (d).

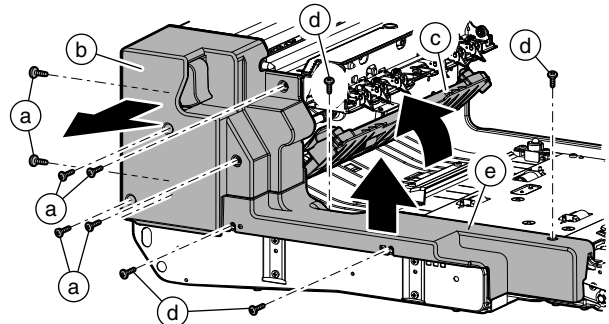


- 3) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).

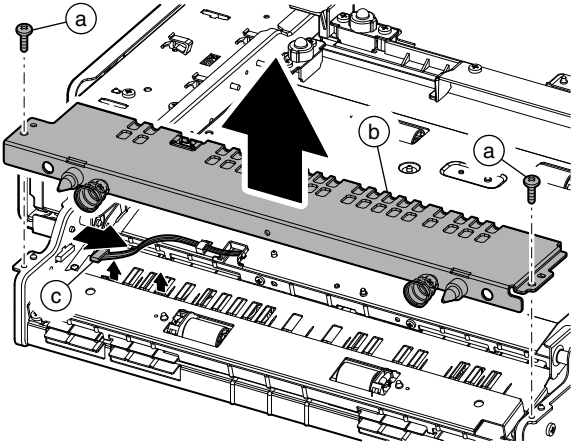


k. ADU transport detection 2 / ADU transport detection 3

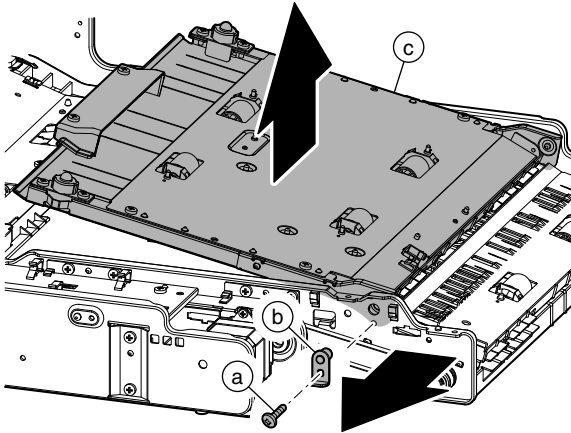
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



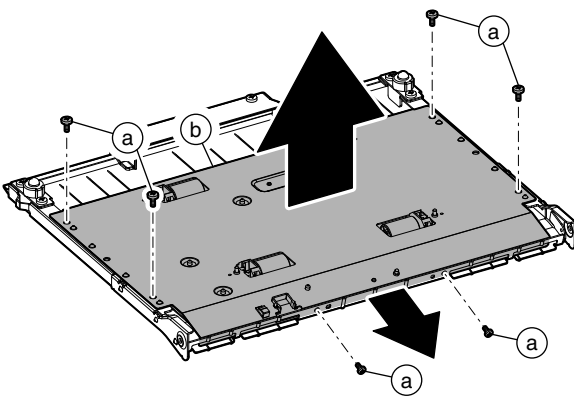
- 3) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



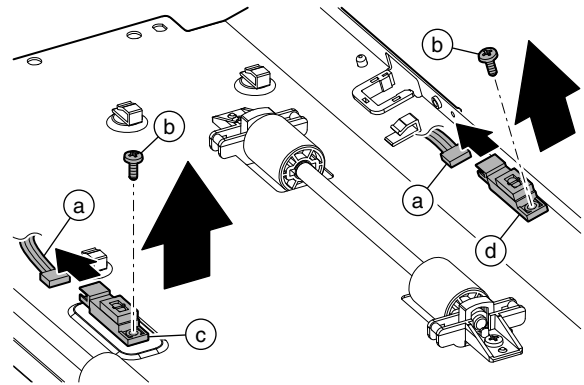
- 4) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).



- 5) Remove the screw (a), and remove the plate (b).

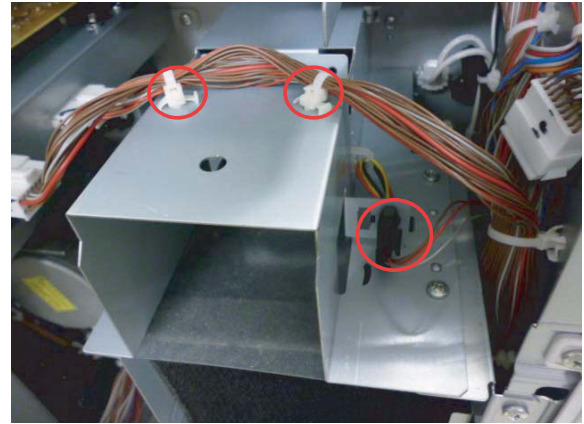


- 6) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport detection 2 (c) and ADU transport detection 3 (d).

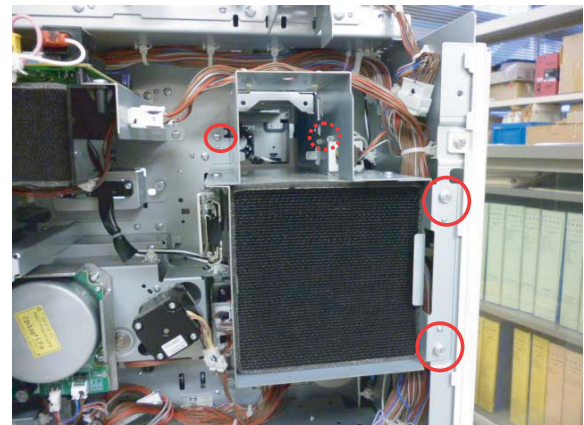


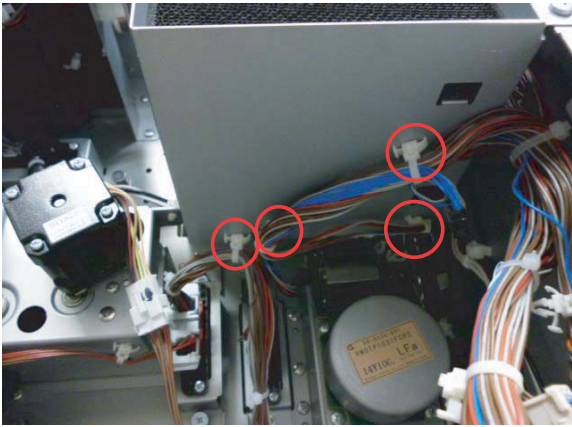
I. Decurler drive unit

- 1) Remove the rear cabinet.
- 2) Remove the PCU PWB.

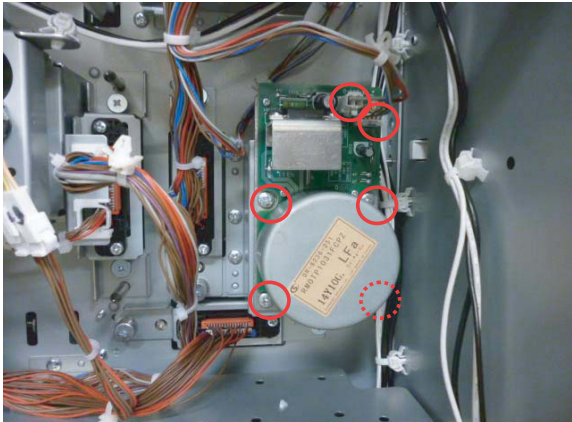


- 3) Disconnect the connector, and remove the snap band and the screw. Remove the exhaust duct.

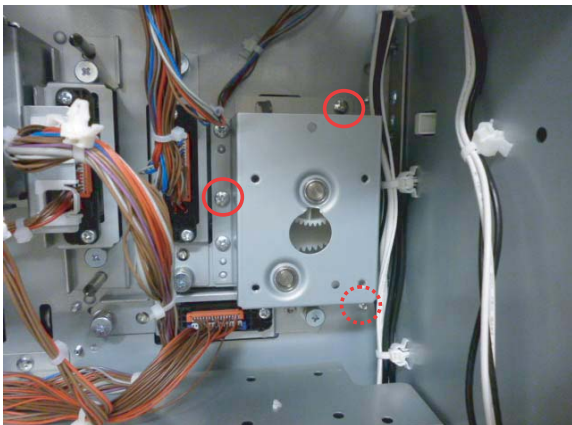




4) Disconnect the connector, and remove the screw. Remove the decurler motor.



5) Remove the screw, and remove the decurler drive unit.

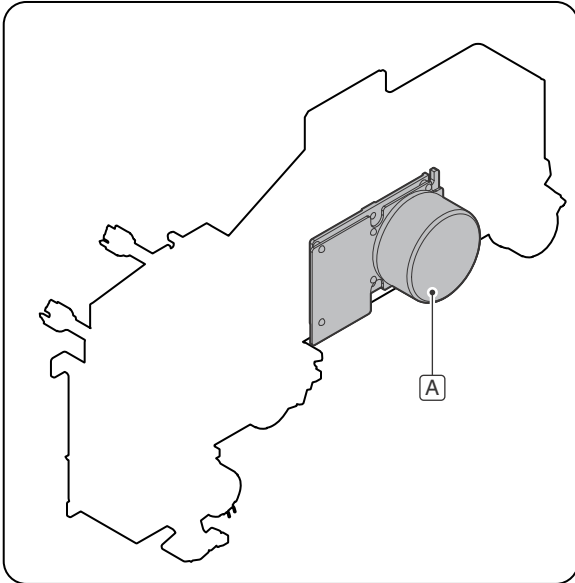


[P] DRIVE SECTION

1. Disassembly and assembly

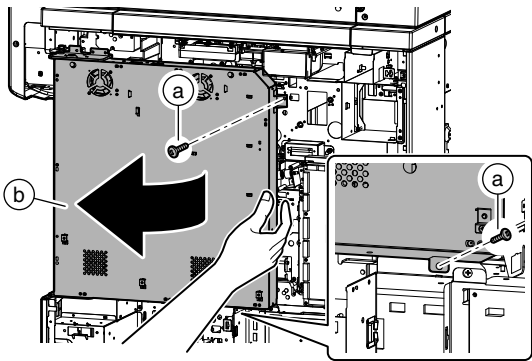
A. Tandem drive unit

Unit	Parts	Page
Tandem drive unit	A Paper feed motor 1	P-1/a

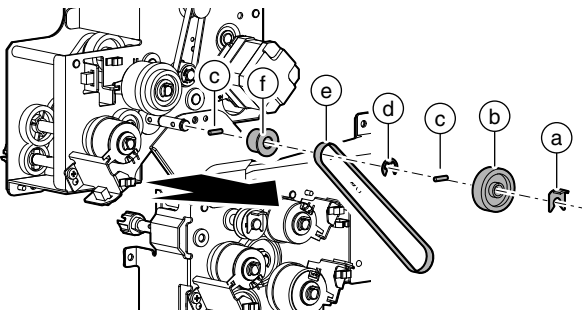


(1) Tandem drive unit

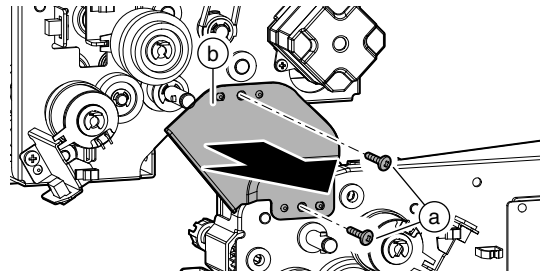
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



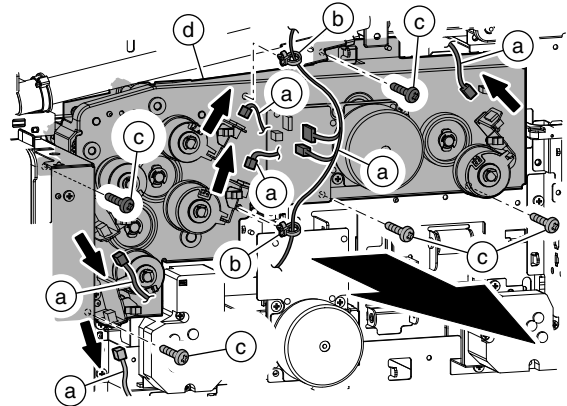
- 3) Remove the resin E-ring (a). Remove the gear (b) and the parallel pin (c). Remove the E-ring (d), the belt (e), the pulley (f), and the parallel pin (c).



- 4) Remove the screw (a), and remove the plate (b).

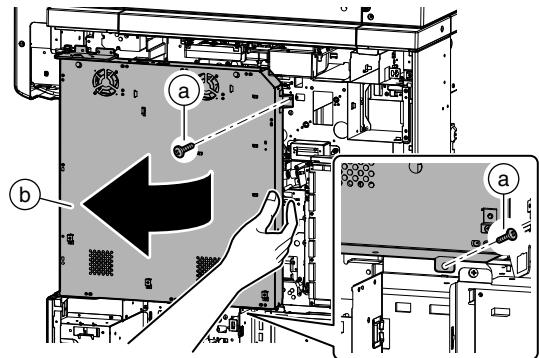


- 5) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the tandem drive unit (d).

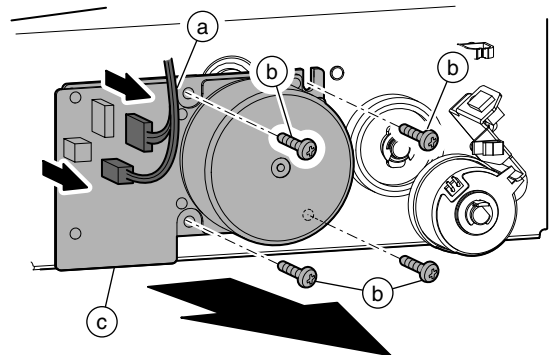


a. Paper feed motor 1

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

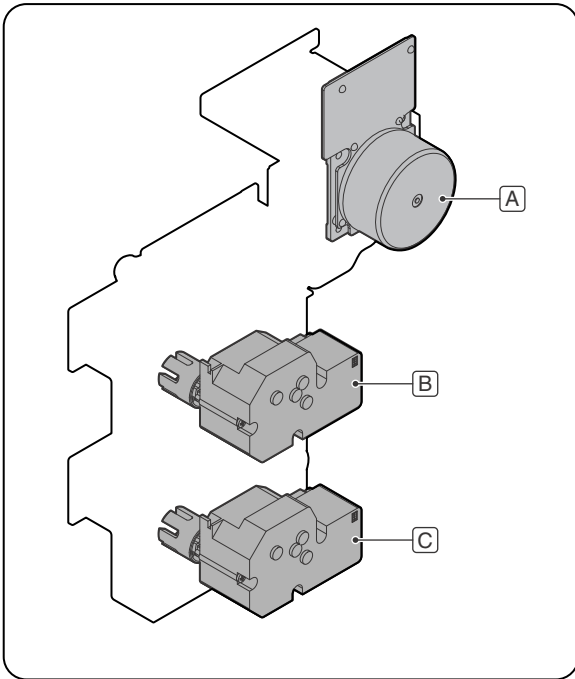


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).



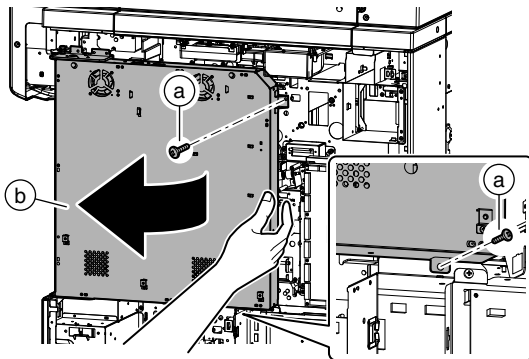
B. Multi-stage drive unit

Unit	Parts	Page
Multi-stage drive unit	A Paper feed motor 2	P-2/a
Multi-stage drive B unit	B Paper lift motor (Tray 3)	P-3/a
	C Paper lift motor (Tray 4)	

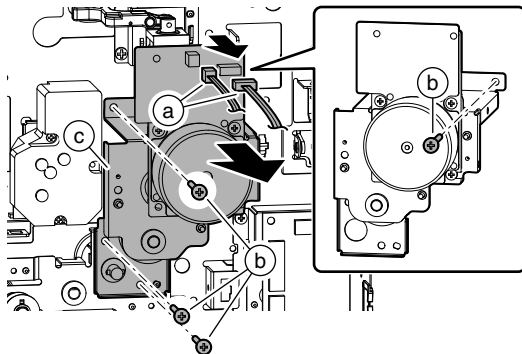


(1) Multi-stage drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

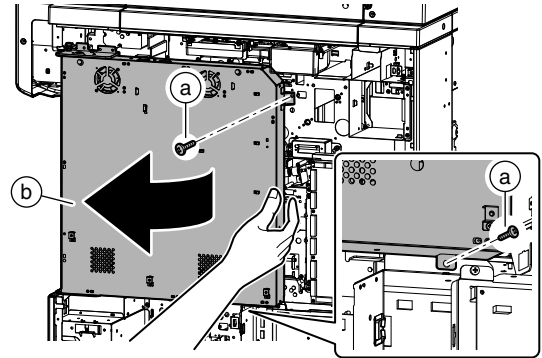


- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).

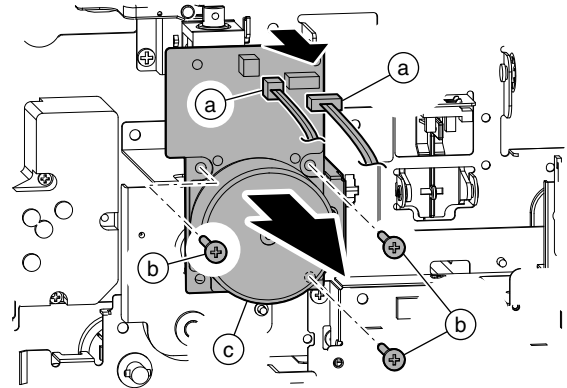


a. Paper feed motor 2

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

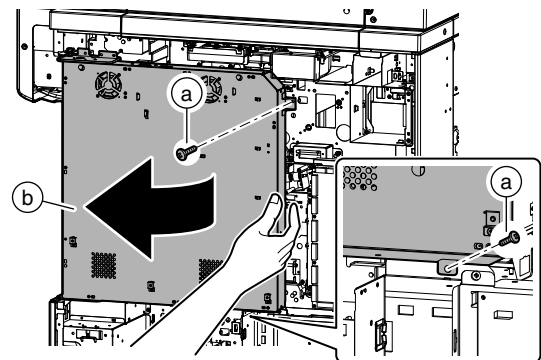


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 2 (c).

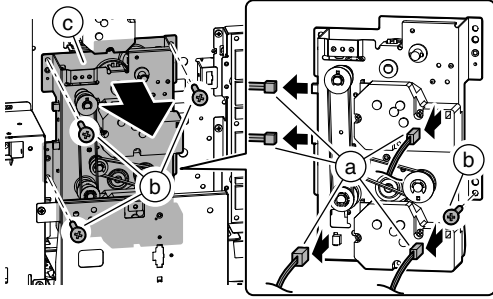


(2) Multi-stage drive B unit

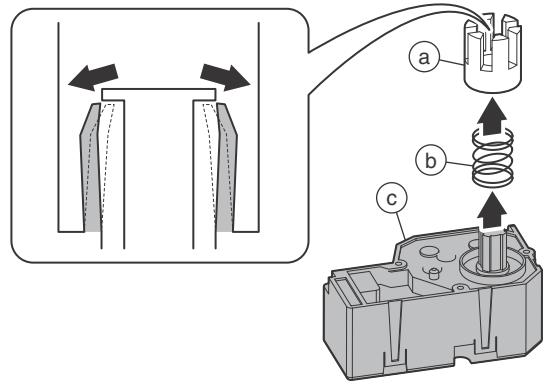
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive B unit (c).

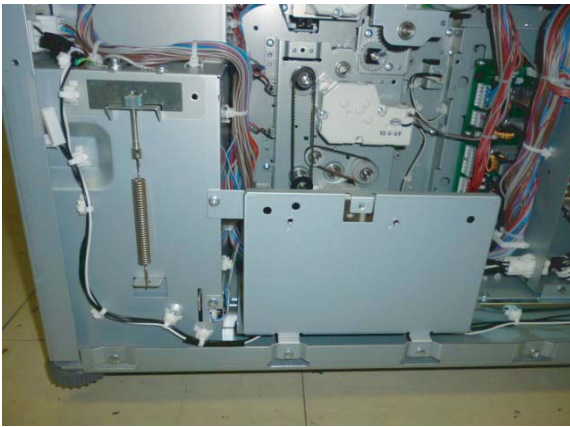


- 4) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

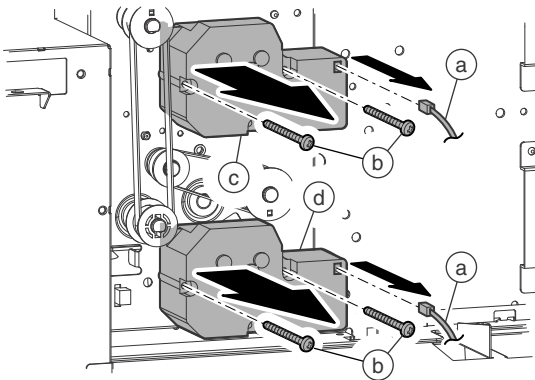


a. Paper lift motor (Tray 3) / Paper lift motor (Tray 4)

- 1) Remove the rear cabinet.
- 2) Remove the screw, and remove the plate.

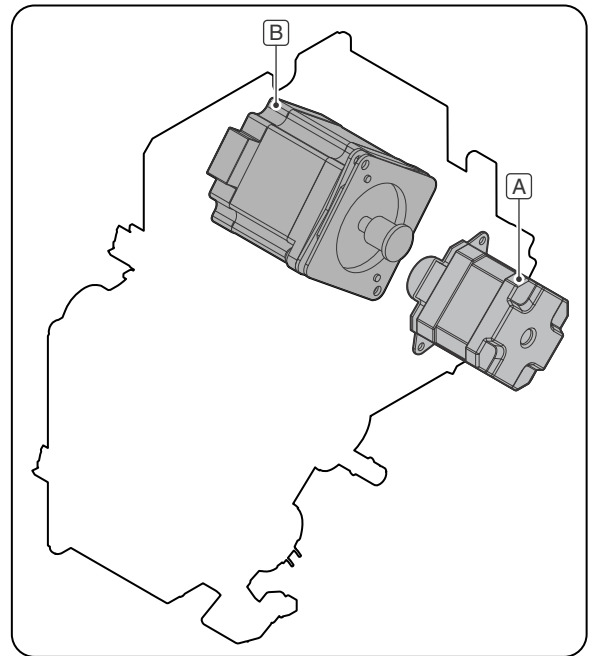


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (Tray 3)(c), and the paper lift motor (Tray 4)(d).



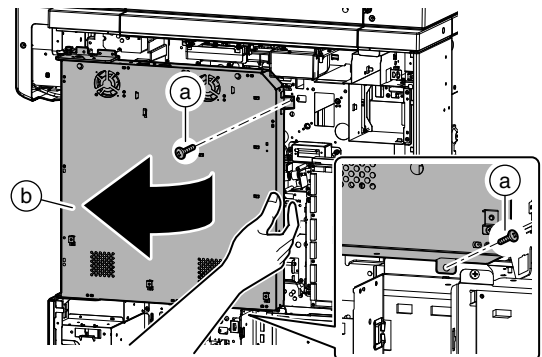
C. Transport drive unit

Unit	Parts	Page
Transport drive unit	A Transport motor	P-4/a
	B Vertical transport motor	P-4/b

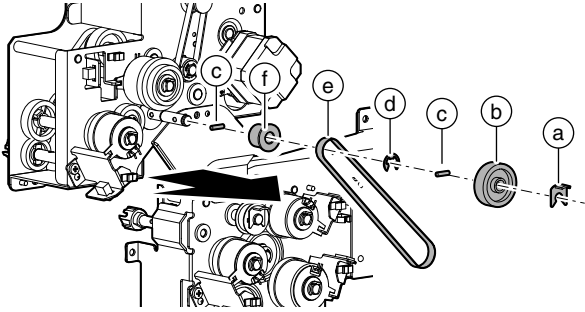


(1) Transport drive unit

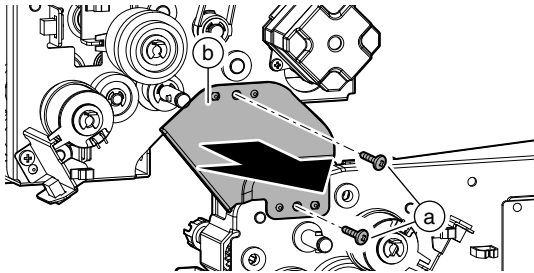
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



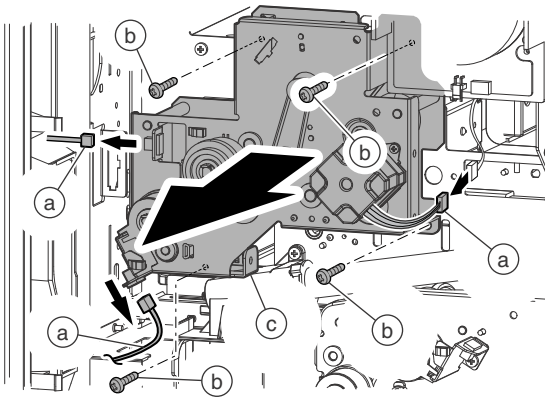
- 3) Remove the resin E-ring (a), the gear (b), and remove the parallel pin (e). Remove the E-ring (d), the belt (e), and the pulley (f).



- 4) Remove the screw (a), and remove the plate (b).

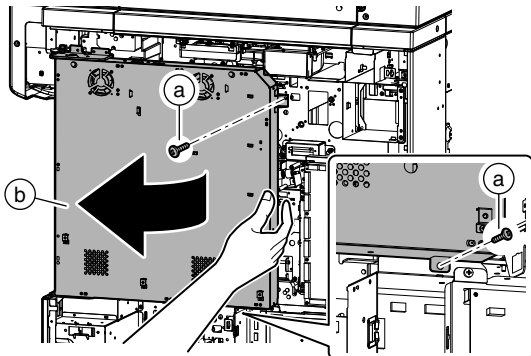


- 5) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).

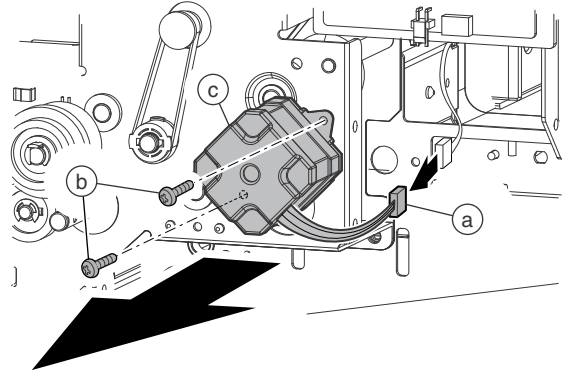


a. Transport motor

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

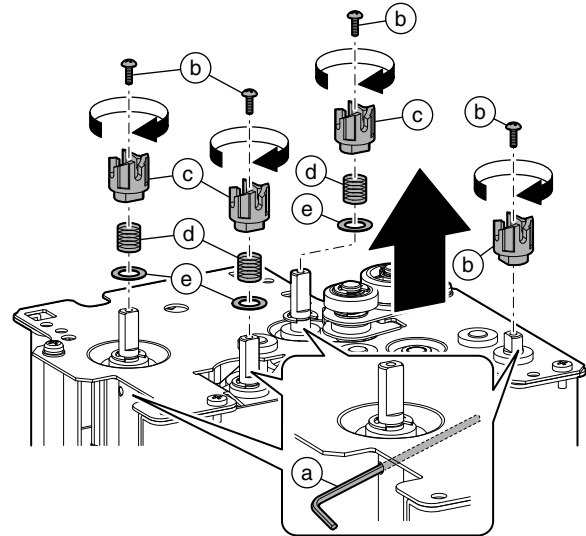


- 3) Disconnect the connector (a), and remove the screw (b). Remove the transport motor (c).

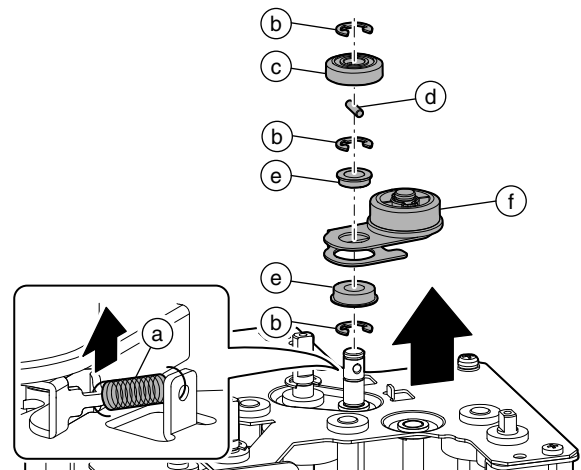


b. Vertical transport motor

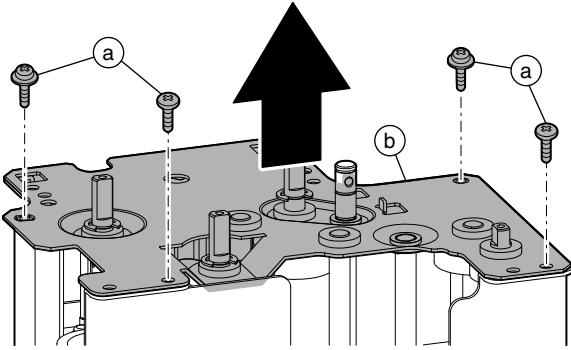
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the transport drive unit.
- 3) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



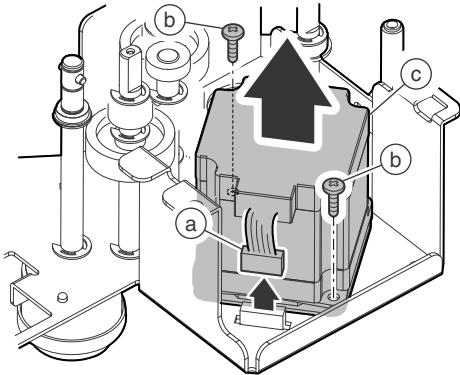
- 4) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



5) Remove the screw (a), and remove the plate (b).

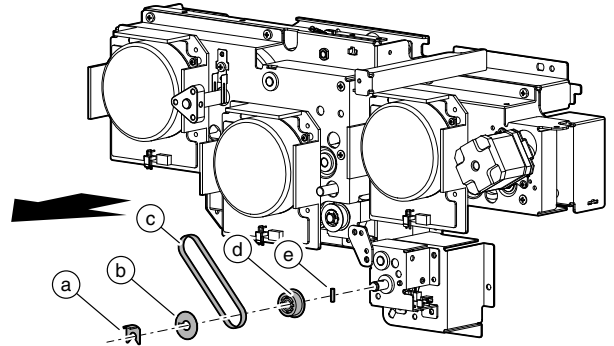


6) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport motor (c).

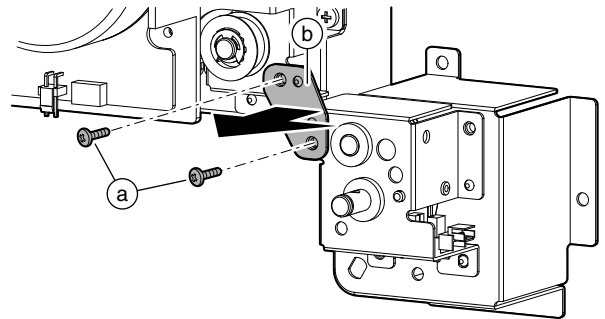


(1) Drum drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the developing motor and the drum motor.
- 3) Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).

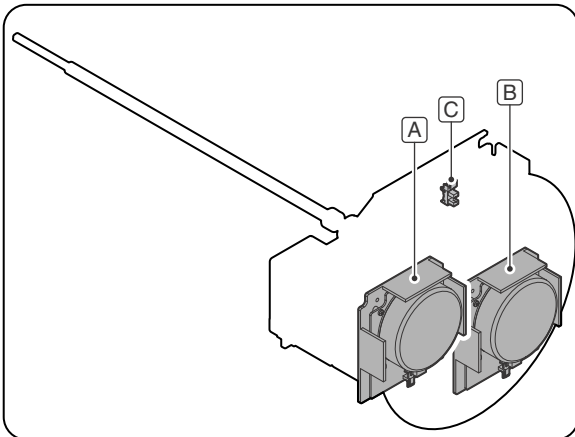


4) Remove the screw (a), and remove the plate (b).

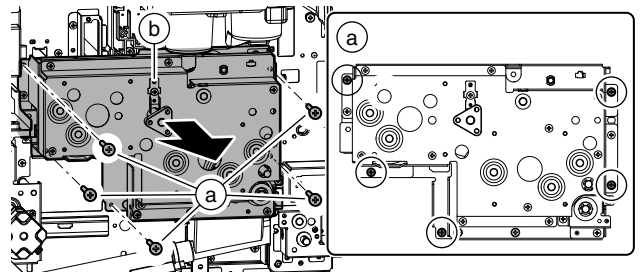


D. Drum drive unit

Unit	Parts	Page
Drum drive unit	A Developing motor	P - 6/a
	B Drum motor	
	C Waste toner lock detection	P - 6/b

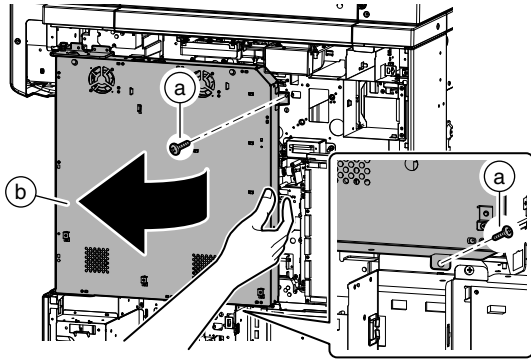


5) Remove the screw (a), and remove the drum drive unit (b).

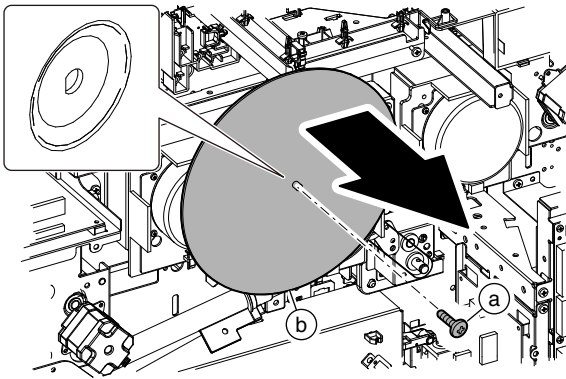


a. Developing motor / Drum motor

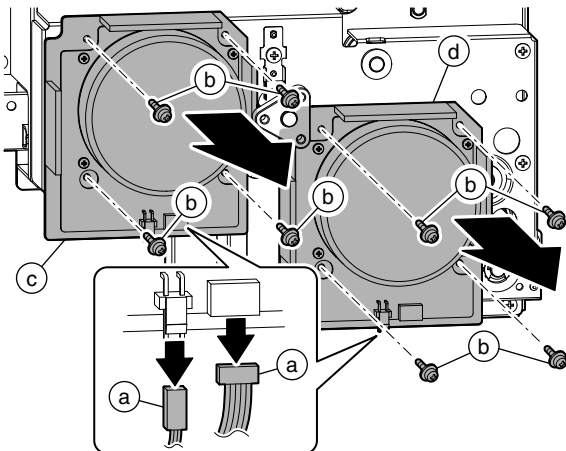
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Remove the screw (a), and remove the flywheel (b).

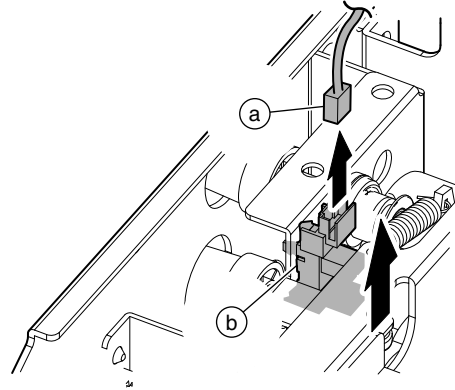


- 4) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



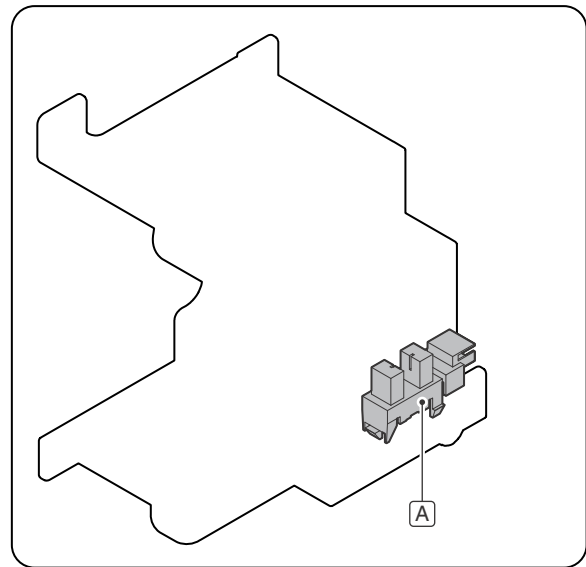
b. Waste toner lock detection

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the drum drive unit.
- 3) Disconnect the connector (a), and remove the waste toner lock detection (b).



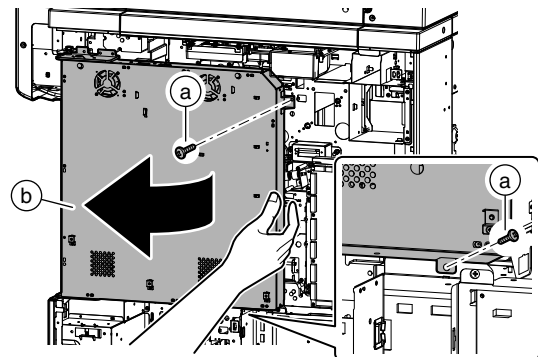
E. Waste toner transport drive unit

Unit	Parts	Page
Waste toner transport drive unit	A Waste toner lock detection 2	P - 7/a

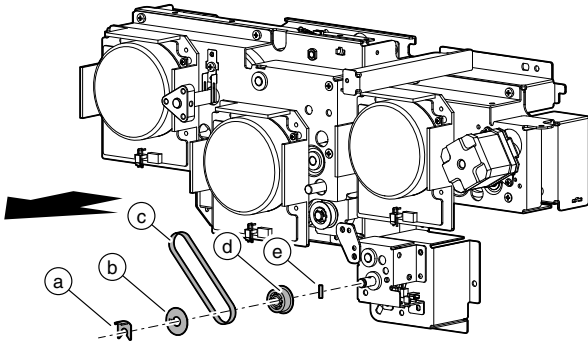


(1) Waste toner transport drive unit

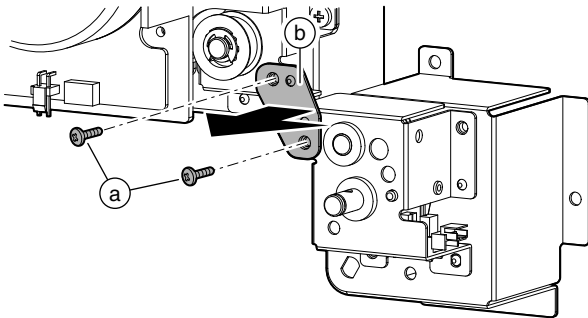
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



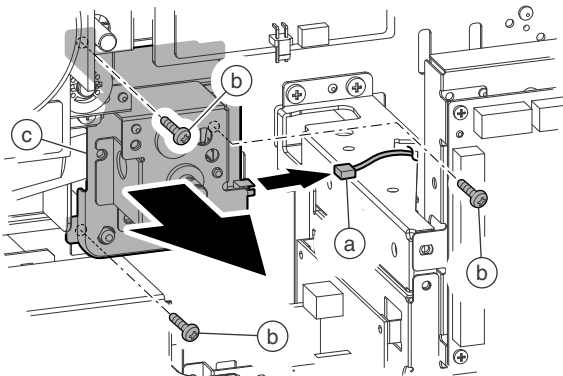
- Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).



- Remove the screw (a), and remove the plate (b).

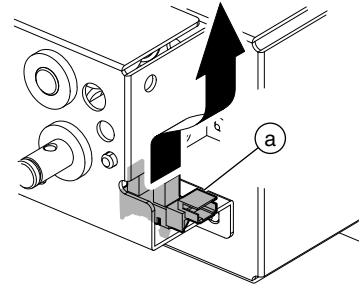


- Disconnect the connector (a), and remove the screw (b). Remove the waste toner transport drive unit (c).



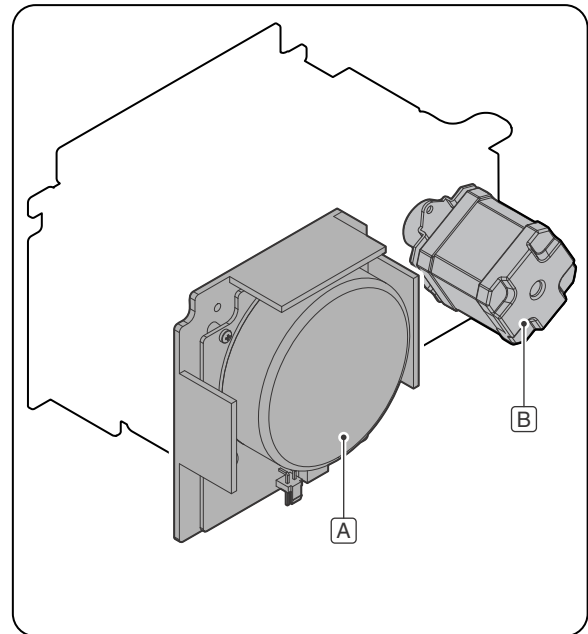
a. Waste toner lock detection 2

- Remove the rear cabinet and the right cabinet rear upper.
- Remove the waste toner transport drive unit.
- Remove the waste toner lock detection 2 (a).



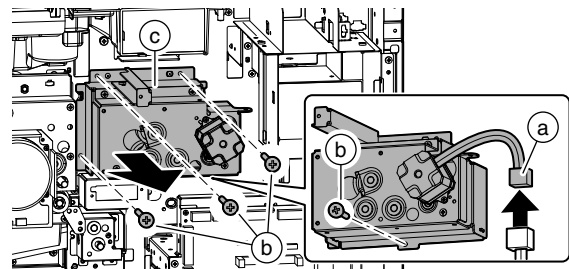
F. Fusing drive unit

Unit	Parts	Page
Fusing drive unit	A Fusing motor	P - 8/a
	B Fusing rear motor	



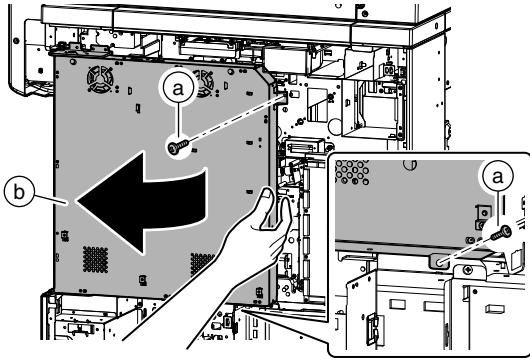
(1) Fusing drive unit

- Remove the rear cabinet and the right cabinet rear upper.
- Remove the fusing motor.
- Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).

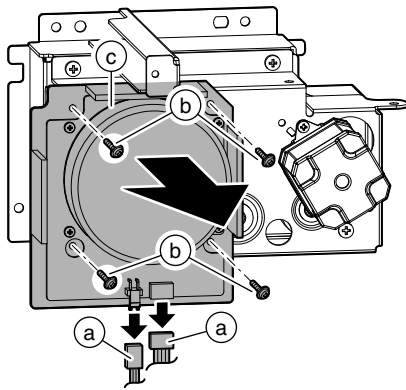


a. Fusing motor/ Fusing rear motor

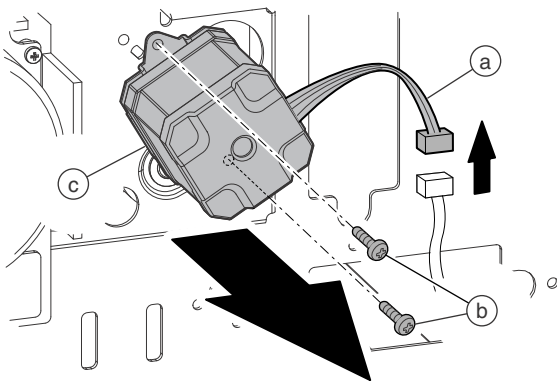
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing motor (c).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the fusing rear motor (c).



[Q] PWB SECTION

1. Disassembly and assembly

A. PWB

Parts		Page
A	MFPC PWB	Q - 1/(1)
B	HDD	
C	SOC memory PWB	
D	WH PWB	Q - 3/(2)
E	AC PWB	
F	OPTION power	Q - 3/(3)
G	MAIN power	
H	PCU-Flash PWB	Q - 5/(4)
I	PCU PWB	
J	HL PWB	Q - 6/(5)
K	SUB power	Q - 7/(6)
L	High voltage PWB	Q - 7/(7)
M	Driver PWB (Paper exit)	Q - 8/(8)
N	Driver PWB (Paper feed)	Q - 9/(9)
O	Size detection PWB	Q - 10/(10)
P	SCNcnt PWB	

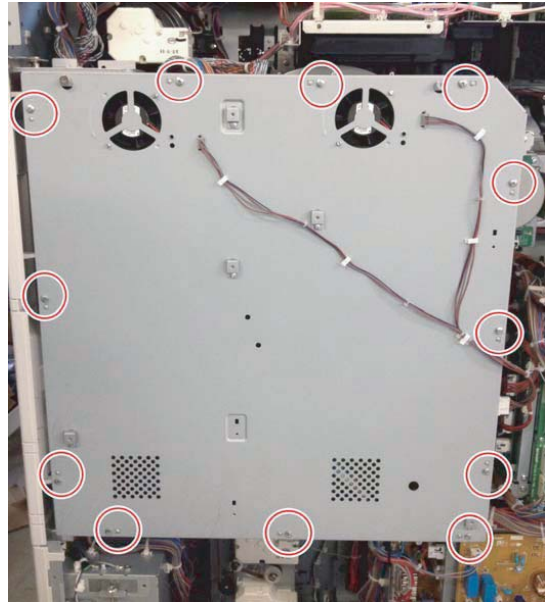
(1) MFPC PWB / HDD / SOC memory PWB

a. MFPC removal

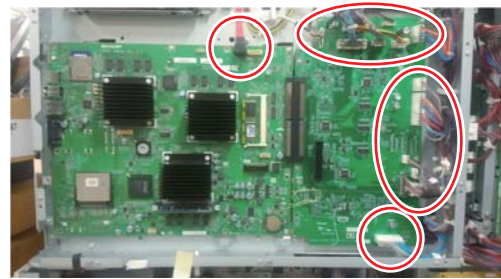
- 1) Disconnect the connector.



- 2) Remove the screw.



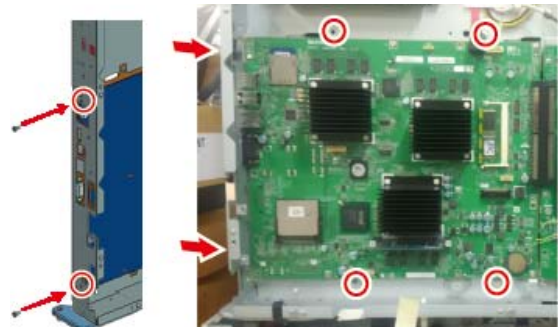
- 3) Disconnect the connector.



- 4) Remove the screw, and remove the Mother PWB.



- 5) Remove the screw, and remove the MFPC PWB UN.

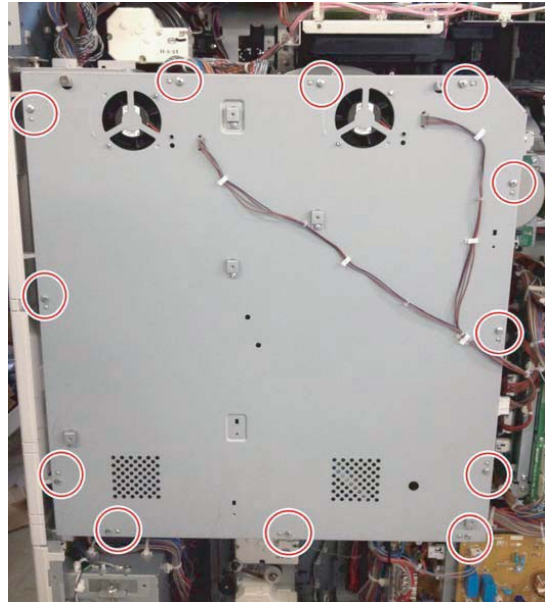


b. HDD removal

- 1) Disconnect the connector, and remove the screw. Remove the HDD.



- 2) Remove the screw.



- 3) Remove the SOC memory PWB.
NOTE: Remove carefully without damage.

c. SOC memory PWB removal

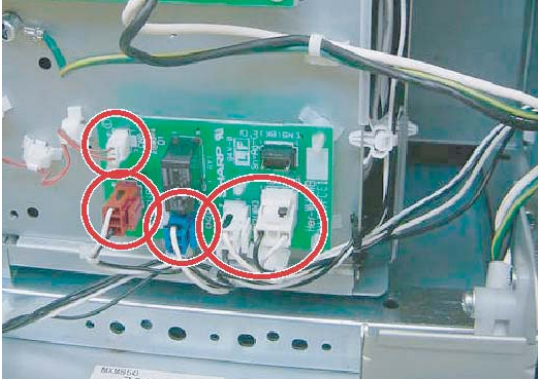
- 1) Disconnect the connector.



(2) WH PWB / AC PWB

a. WH PWB removal

- 1) Disconnect the connector, and remove the WH PWB.

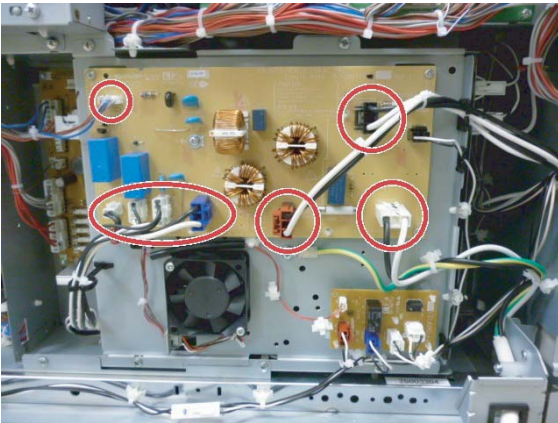


b. AC PWB removal

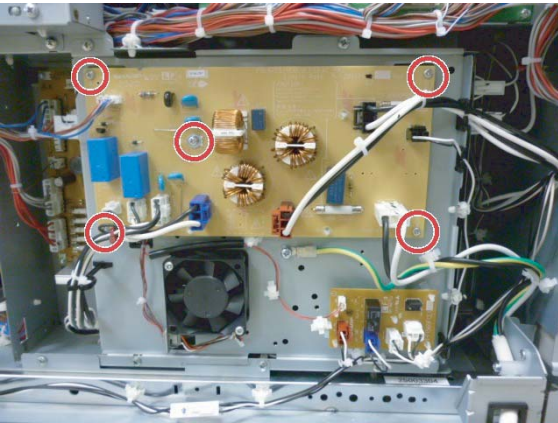
(The option WH PWB on the photo is different from the actual board.)

- 1) Disconnect the connector.

NOTE: When the dehumidifier heater is installed, disconnect the connector of the dehumidifier heater, too.



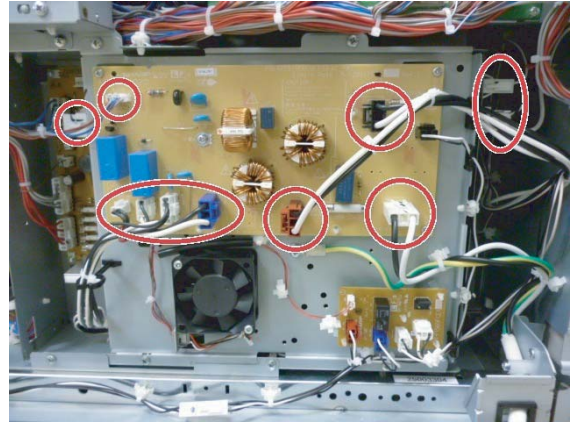
- 2) Remove the screw, and remove the AC PWB.



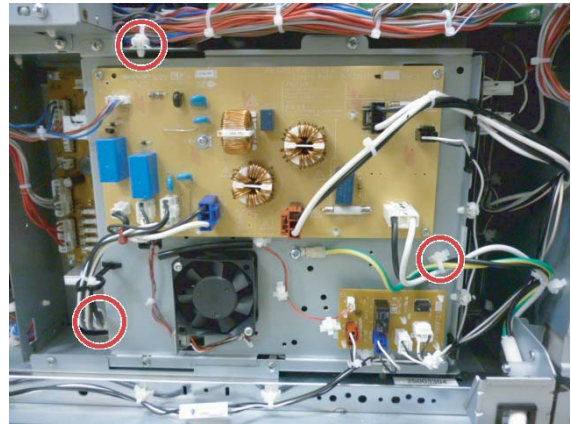
(3) OPTION power / MAIN power

a. OPTION power removal

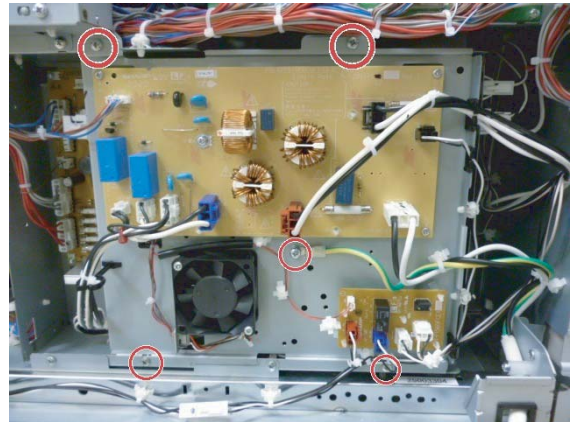
- 1) Disconnect the connector from the section where the AC PWB is installed.



- 2) Remove the snap band.



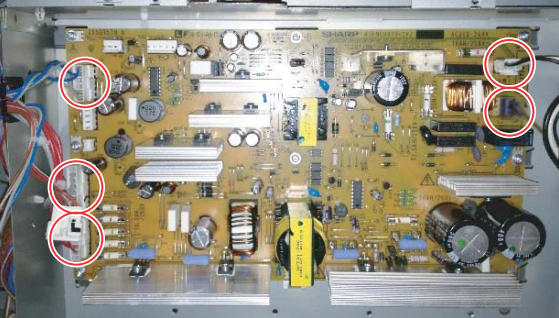
- 3) Remove the screw, and remove the plate.



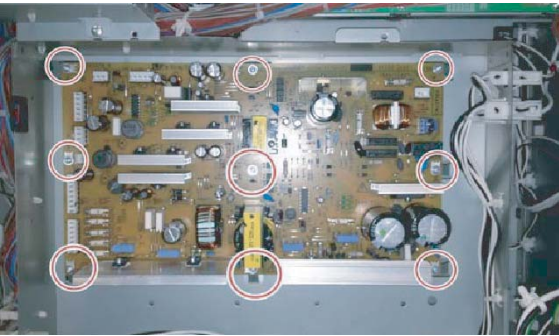
- 4) Disconnect the connector.
(North America)



(Except North America)



- 5) Remove the screw, and remove the OPTION power.

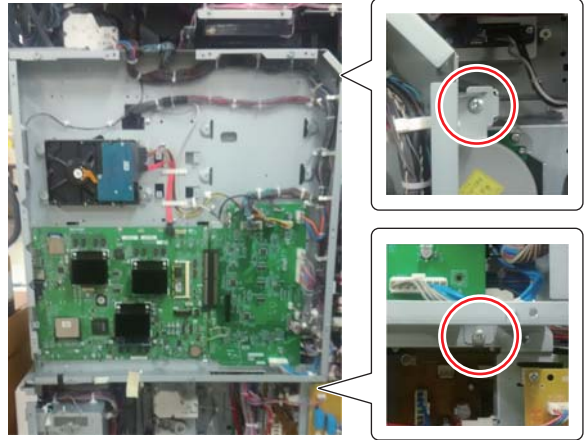


b. MAIN power removal

- 1) Remove the plate on which the AC PWB is mounted.
- 2) Remove the right rear upper cabinet.



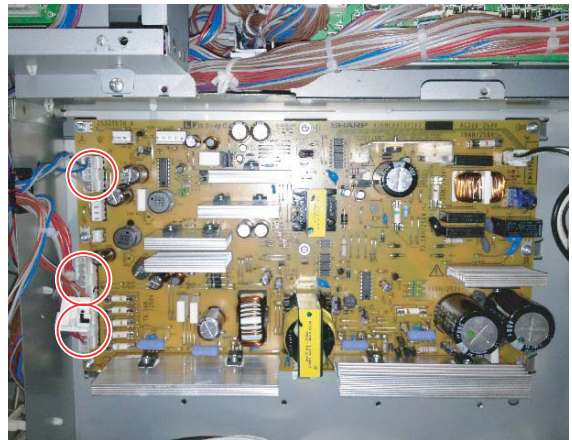
- 3) Remove the screw from the plate on which the MFPC PWB is mounted.



- 4) Open the plate on which the MFPC PWB is mounted.



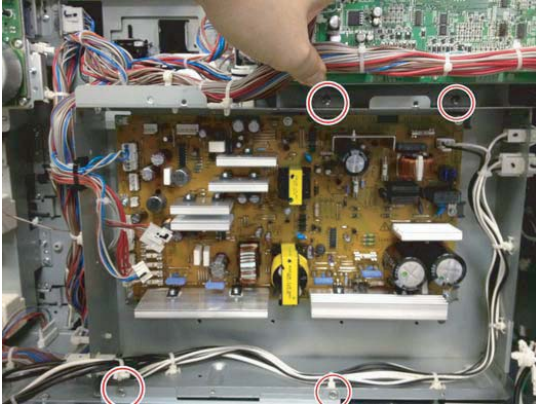
- 5) Disconnect the connector of the OPTION power.



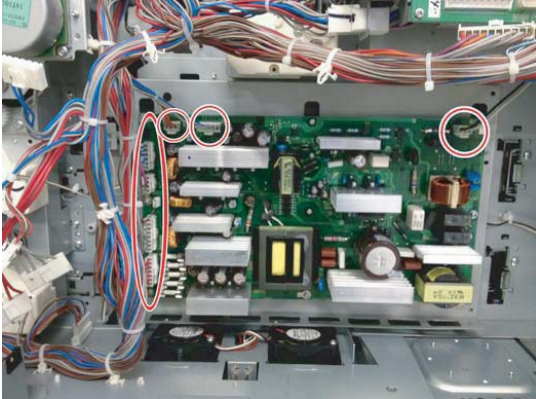
- 6) Disconnect the connector and remove the snap band from the plate on which the OPTION power is mounted.



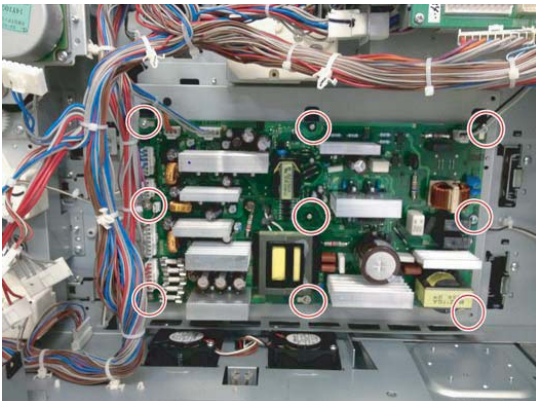
- 7) Remove the screw, and remove the plate.



- 8) Disconnect the connector.



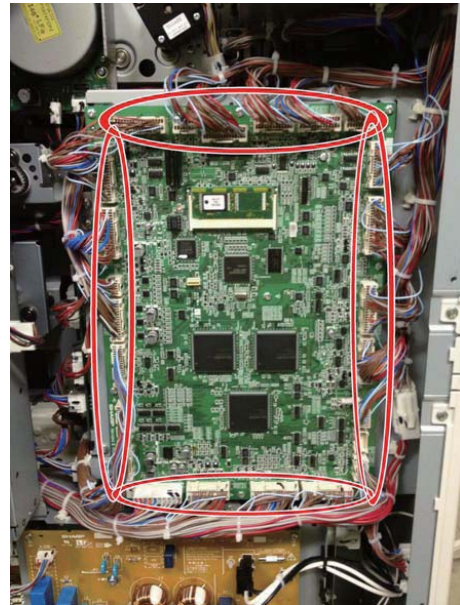
- 9) Remove the screw, and remove the MAIN power.



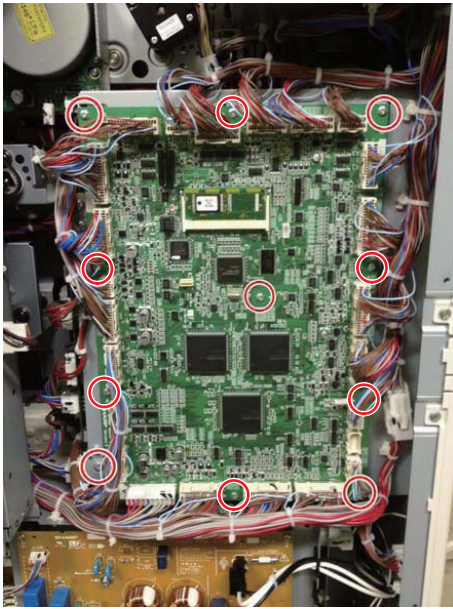
(4) PCU PWB

a. PCU PWB removal

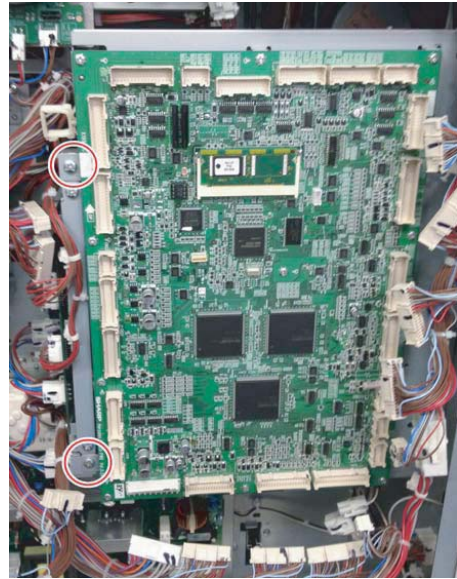
- 1) Disconnect the connector.



2) Remove the screw, and remove the PCU PWB.



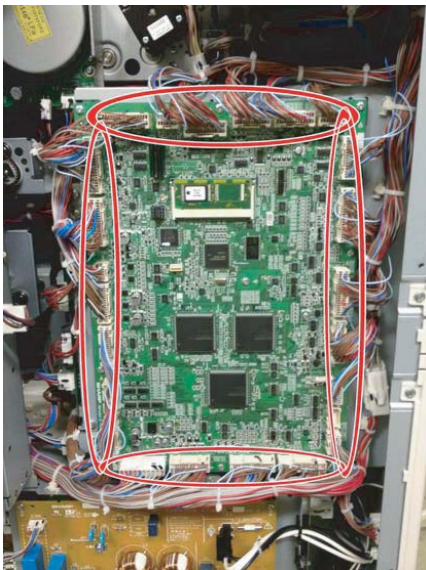
- 2) Remove the snap band, and disengage the clamp to release the HL PWB.
- 3) Remove the screw, and remove the plate.



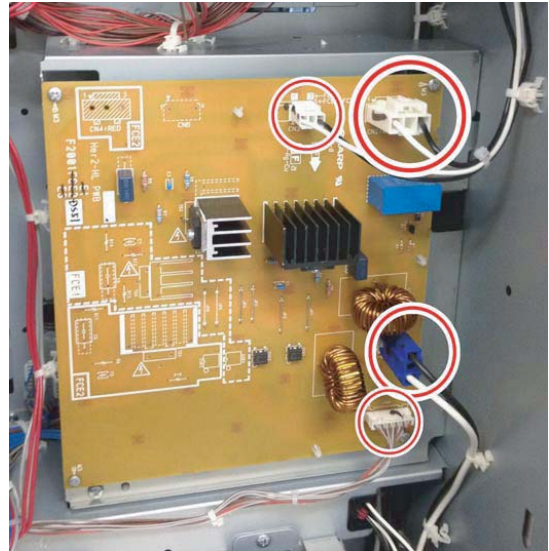
(5) HL PWB

a. HL PWB removal

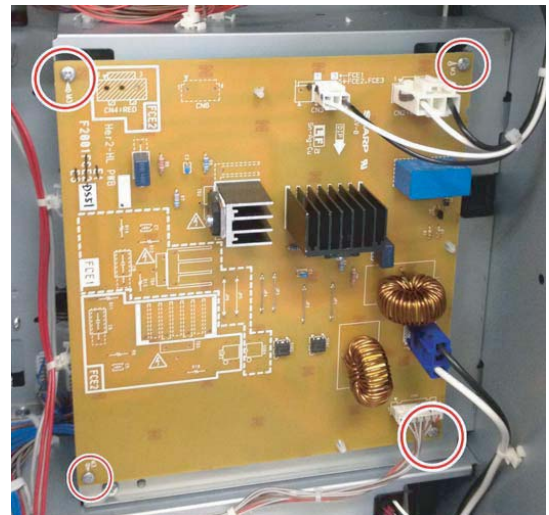
1) Disconnect the connector of the PCU PWB.



4) Disconnect the connector.



5) Remove the screw, and remove the HL PWB.



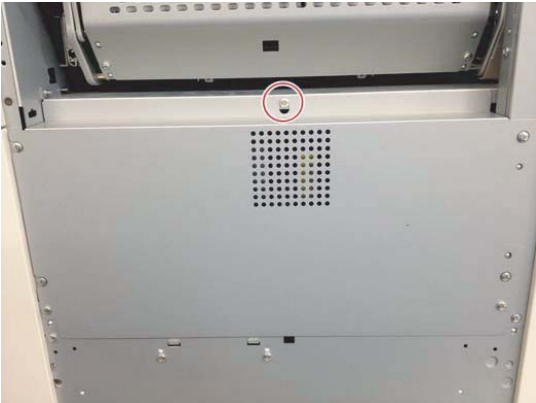
(6) SUB power

a. SUB PWB removal

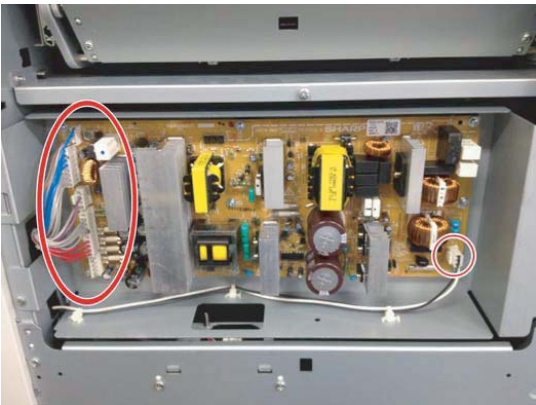
- 1) Remove the screw (main unit right side).



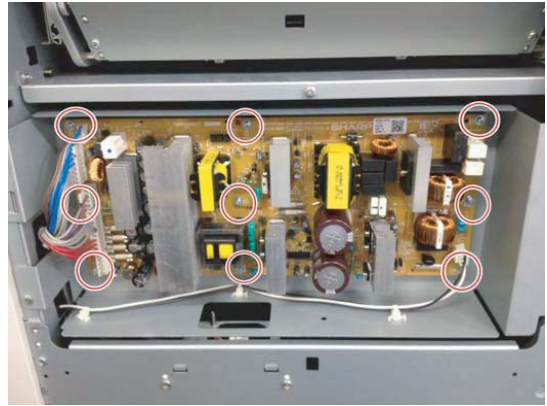
- 2) Loosen the screw, and remove the plate.



- 3) Disconnect the connector.



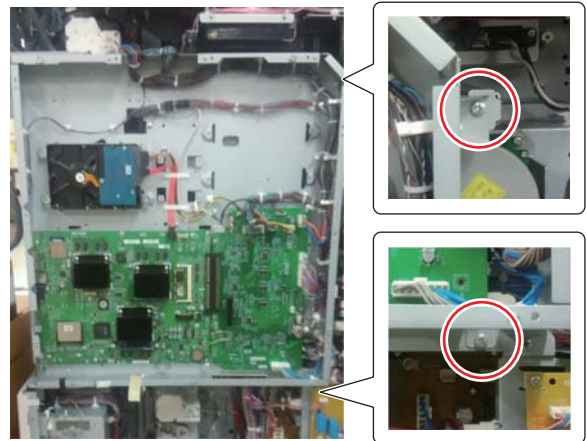
- 4) Remove the screw, and remove the SUB PWB.



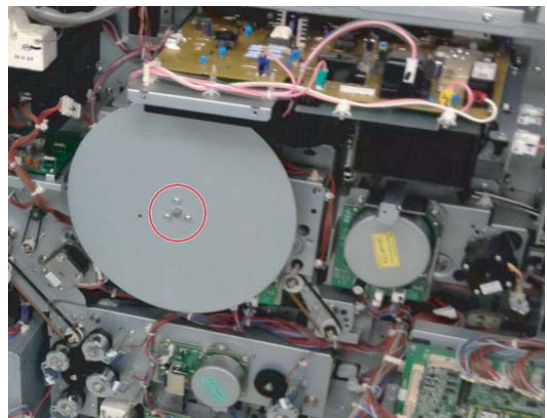
(7) High voltage PWB

a. High voltage PWB removal

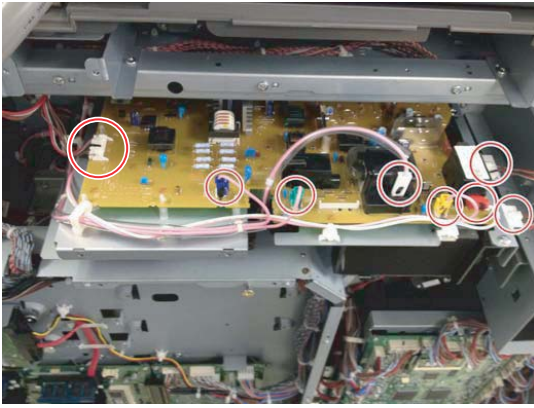
- 1) Remove the screw from the plate on which the MFPC PWB is mounted, and open it.



- 2) Remove the screw, and remove the flywheel.

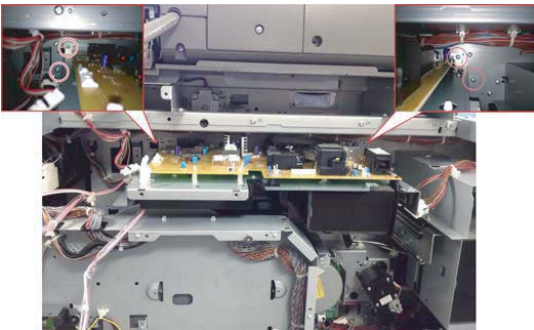


3) Disconnect the connector.



4) Remove the snap band, and disengage the clamp to release the harness.

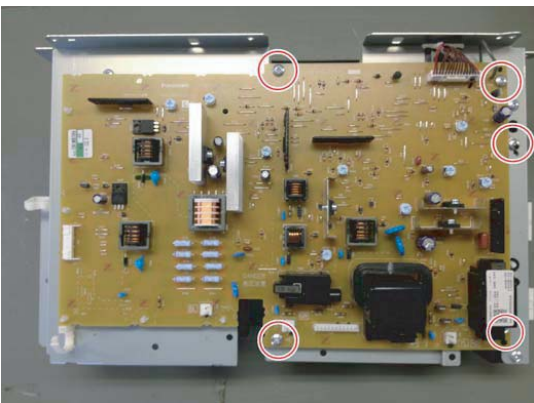
5) Remove the screw, and remove the plate on which the high voltage PWB is mounted.



6) Disconnect the connector.



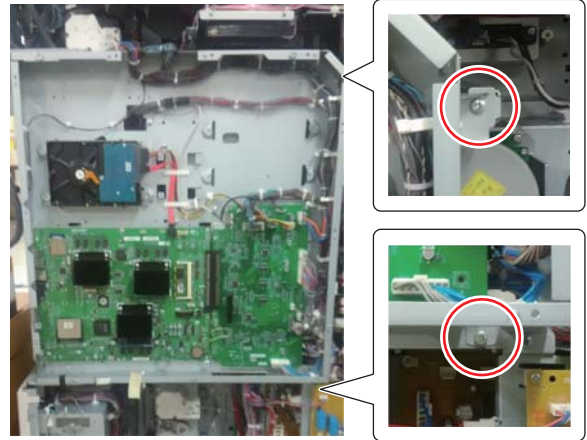
7) Remove the screw, and remove the high voltage PWB.



(8) Driver PWB (Paper exit)

a. Driver PWB (Paper exit) removal

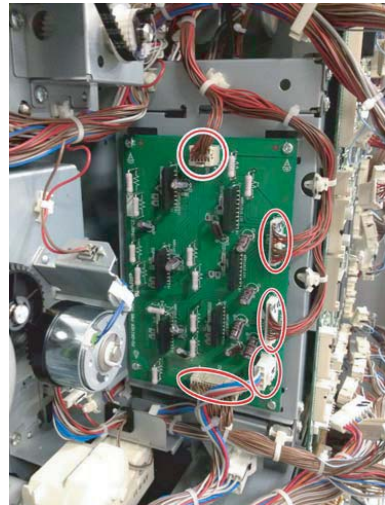
1) Remove the screw from the plate on which the MFPC PWB is mounted.



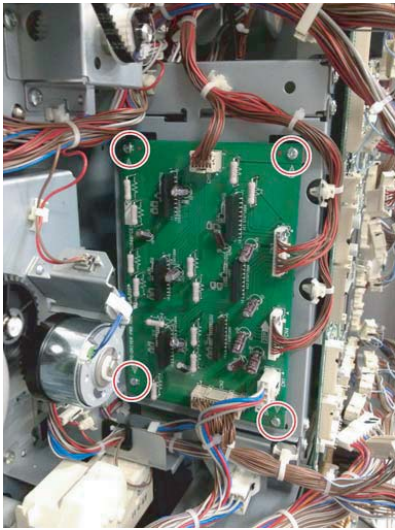
2) Open the plate on which the MFPC PWB is mounted.



3) Disconnect the connector.



4) Remove the screw, and remove the driver PWB (paper exit).



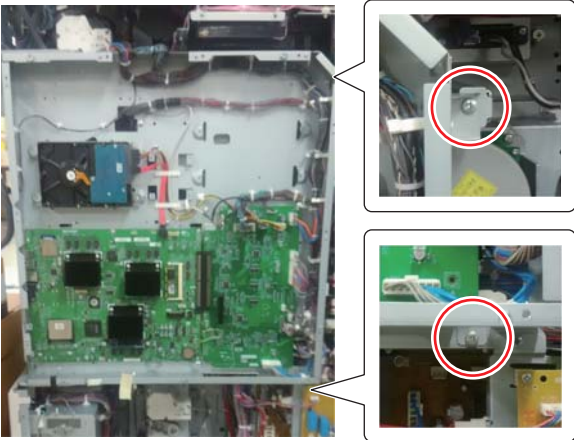
3) Remove the right side screw.



(9) Driver PWB (Paper feed)

a. Driver PWB (Paper feed) removal

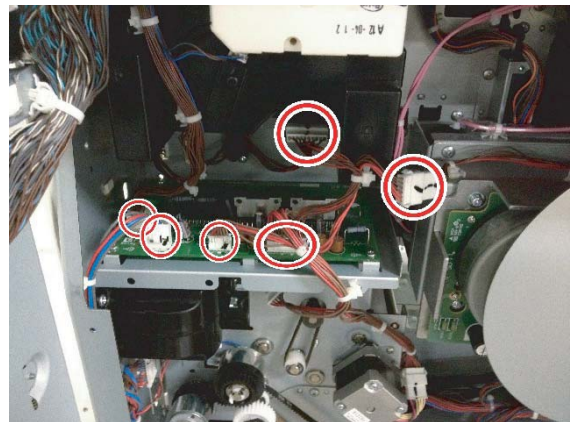
1) Remove the screw from the plate on which the MFPC PWB is mounted.



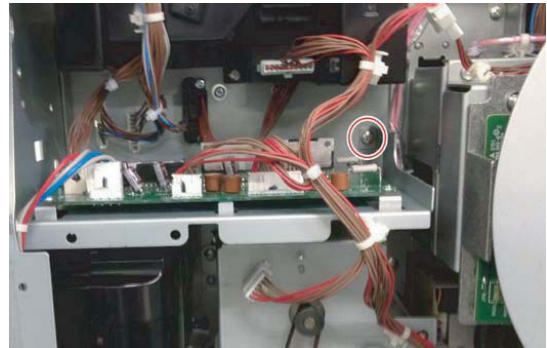
2) Remove the right cabinet.



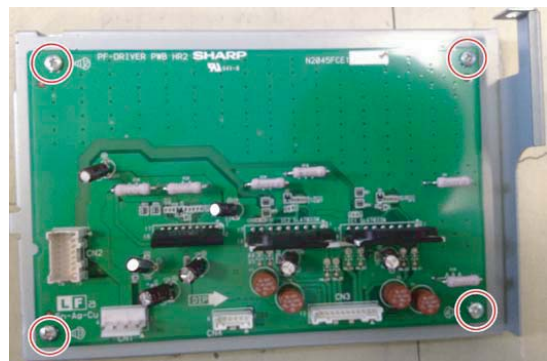
4) Disconnect the connector, and remove the snap band.



5) Remove the screw, and remove the whole plate.



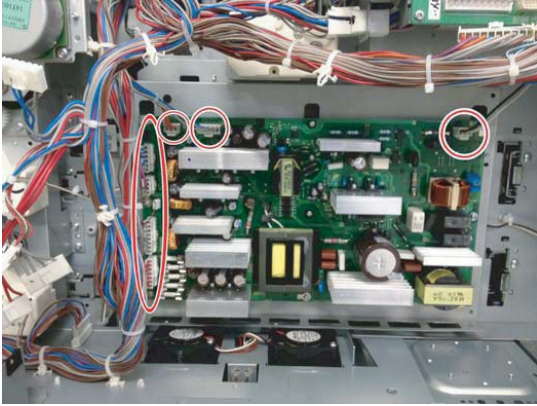
6) Remove the screw, and remove the driver PWB (paper feed).



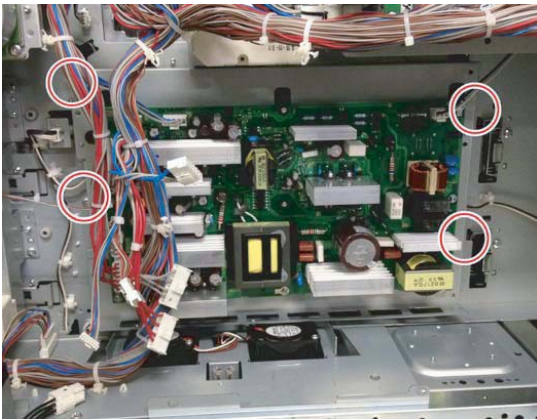
(10) Size detection PWB / SCNcnt PWB

a. Size detection PWB removal

- 1) Disconnect the connector.



- 2) Disconnect the connector, and remove the plate.



- 3) Remove the screw.



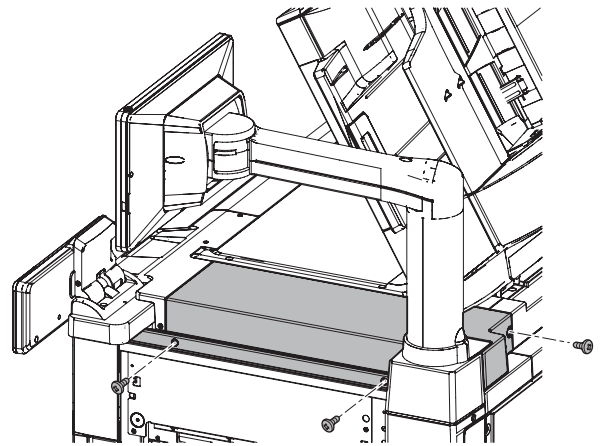
- 4) Remove the plate, and remove the screw to access the PWB.

NOTE: Be careful not to damage the harness.

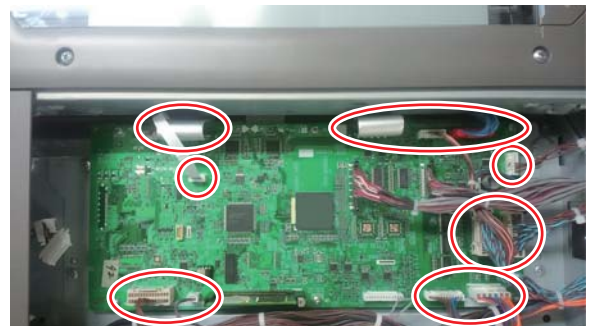


b. SCNcnt PWB removal

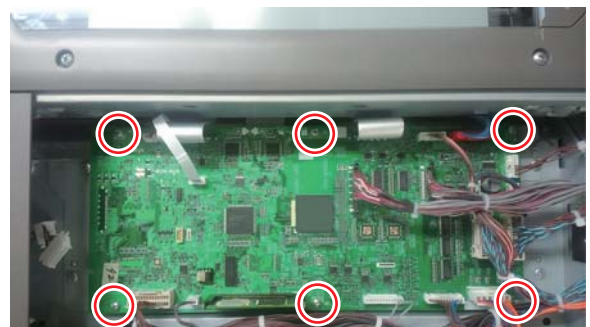
- 1) Remove the upper right rear cabinet.



- 2) Disconnect the connector.

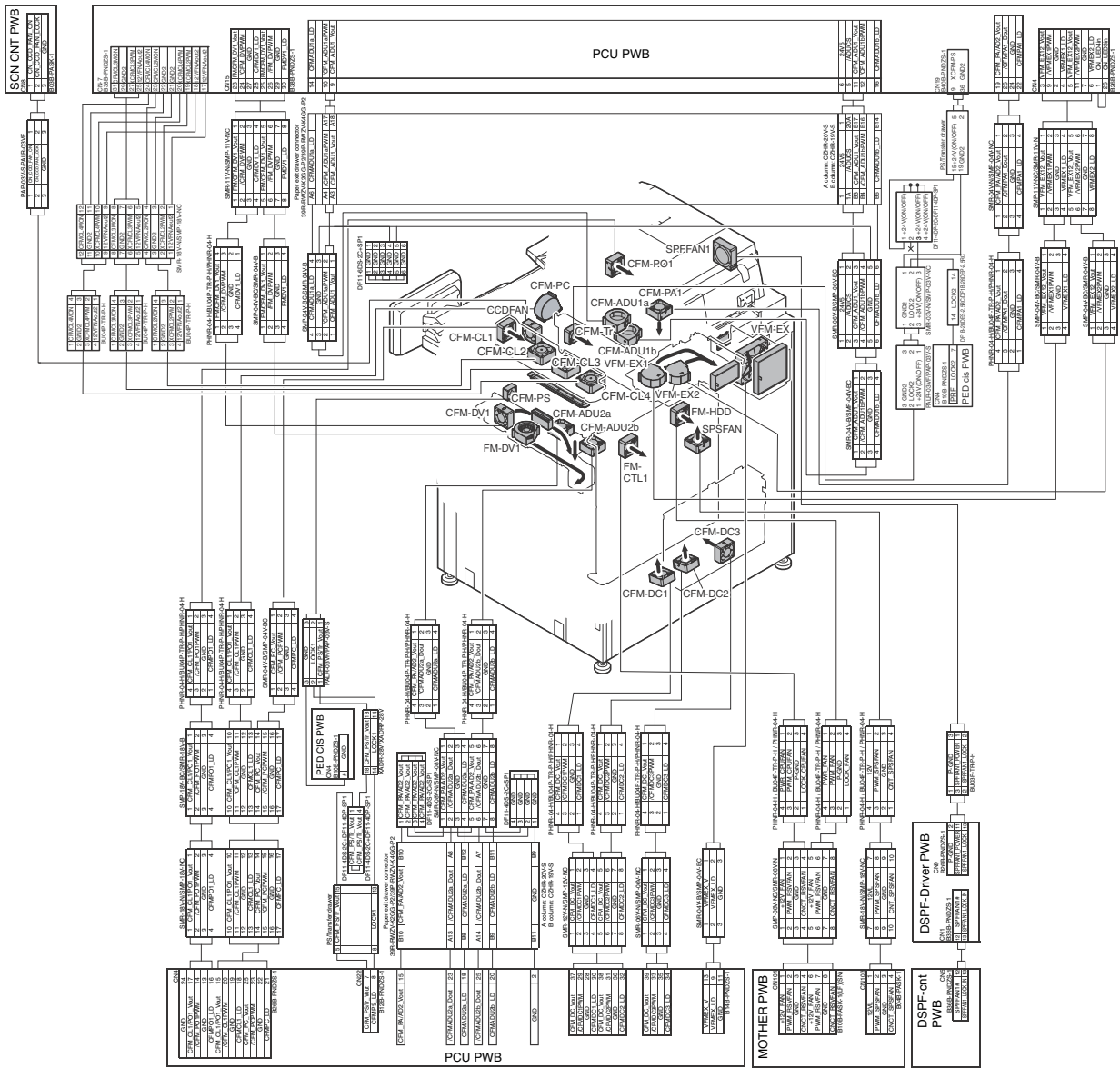


- 3) Remove the screw, and remove the SCNcnt PWB.



[R] FAN, FILTER SECTION

1. Electrical and mechanism relation diagram

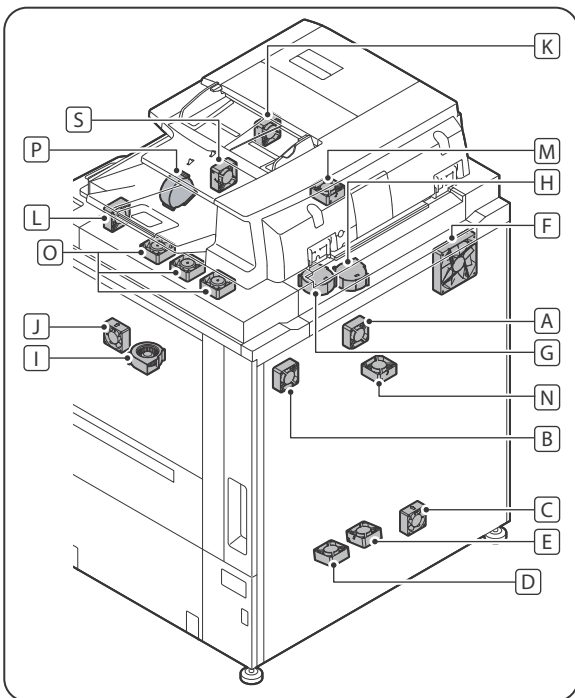


Signal name	Name	Type	Function / Operation
CFM-CL1	Process cooling fan 1	Axial-flow fan (□60)	Cools the process section.
CFM-CL2	Process cooling fan 2	Axial-flow fan (□60)	Cools the process section.
CFM-CL3	Process cooling fan 3	Axial-flow fan (□60)	Cools the process section.
CFM-CL4	Process cooling fan 4	Axial-flow fan (□60)	Cools the process section.
CFM-DC1	Power cooling fan 1	Axial-flow fan (□60)	Cools the power section.
CFM-DC2	Power cooling fan 2	Axial-flow fan (□60)	Cools the power section.
CFM-DC3	Power cooling fan 3	Axial-flow fan (□60)	Cools the power section.
CFM-DV1	Developing cooling fan 1	Axial-flow fan (□60)	Cools the developing section.
CFM-PA1	Paper cooling fan	Axial-flow fan (□60)	Cools paper in the paper exit section.
CFM-PC	Process section cooling fan	Sirocco fan	Cools the process section.
CFM-PS	PS cooling fan	Axial-flow fan (□40)	Cools the PS section.
CFM-PO1	Polygon cooling fan	Axial-flow fan (□60)	Cools the polygon section.
CFM-Tr	Process cooling fan	Axial-flow fan (□40)	Cools the process section.
FM-CTL1	CTL cooling fan	Axial-flow fan (□60)	Cools the controller section.
FM-DV1	Toner suction fan	Sirocco fan	Sucks toner.
FM-HDD	HDD cooling fan	Axial-flow fan (□60)	Cools the HDD.
SPSFM	Sub power cooling fan	Axial-flow fan (□60)	Cools the sub power.
VFM-EX	Machine exhaust fan 1	Axial-flow fan (□120)	Discharges heat from the fusing section.
VFM-EX1	Ozone exhaust fan 1	Sirocco fan	Discharges ozone.
VFM-EX2	Ozone exhaust fan 2	Sirocco fan	Discharges ozone.

2. Disassembly and assembly

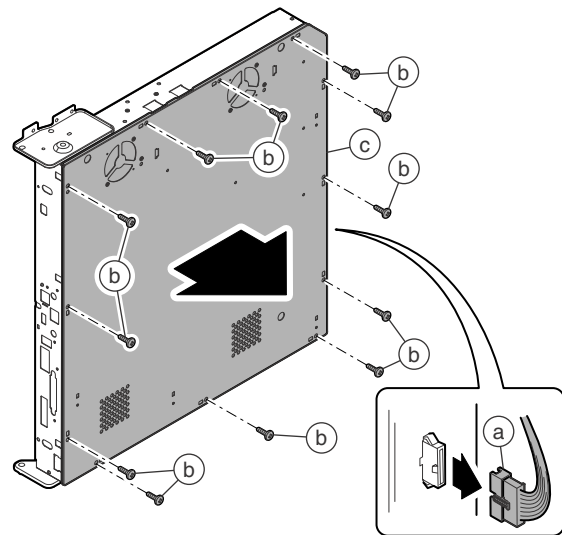
A. Fan

Parts		Page
A	HDD cooling fan	R-2/(1)
B	CTL cooling fan	
C	Power cooling fan 3	R-3/(2)
D	Power cooling fan 1	
E	Power cooling fan 2	R-3/(3)
F	Machine exhaust fan 1	R-4/(4)
G	Ozone exhaust fan 1	
H	Ozone exhaust fan 2	R-4/(5)
I	Toner suction fan	
J	Developing cooling fan 1	R-5/(6)
K	Polygon cooling fan	
L	Process cooling fan 1	R-5/(7)
M	Paper cooling fan	R-6/(8)
N	Sub power cooling fan	R-6/(9)
O	Process section cooling fan	R-7/(10)
P	Process cooling fan	R-8/(12)

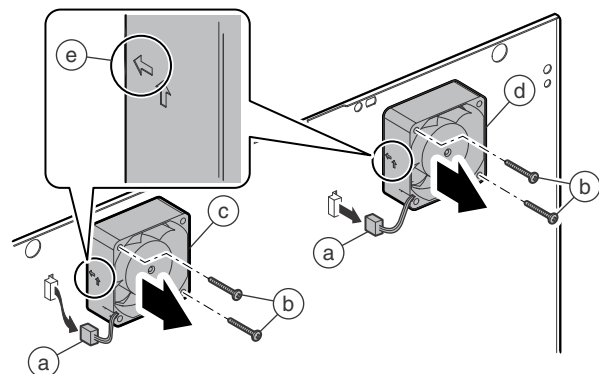


(1) HDD cooling fan / CTL cooling fan

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the cover (c).

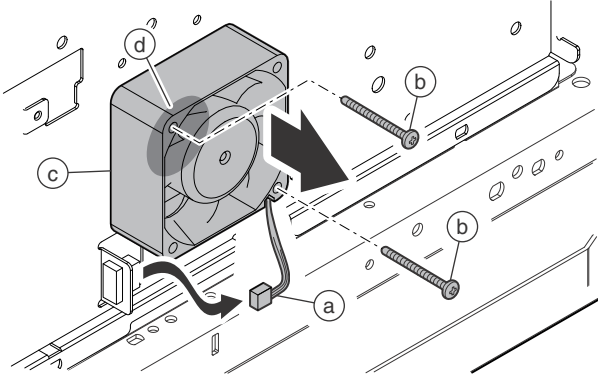


- 3) Disconnect the connector (a). Remove the screw (b), and remove the HDD cooling fan (c), and the CTL cooling fan (d).
- * When installing, be careful to the direction of the arrow mark (e).



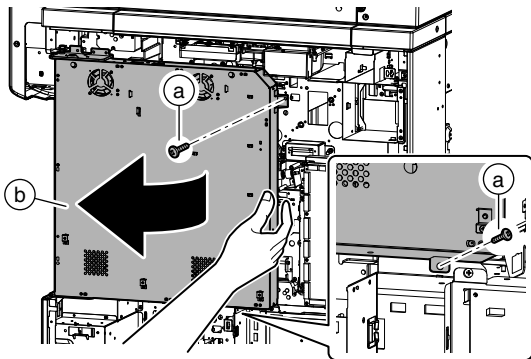
(2) Power cooling fan 3

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the power cooling fan 3 (c).
 - * When installing, be careful to the direction of the fan label (d).
 - * Check to confirm that the resin part is engaged with the notch of the fan.

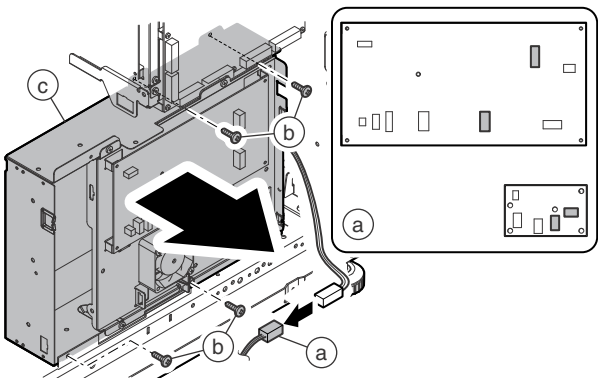


(3) Power cooling fan 1 / Power cooling fan 2

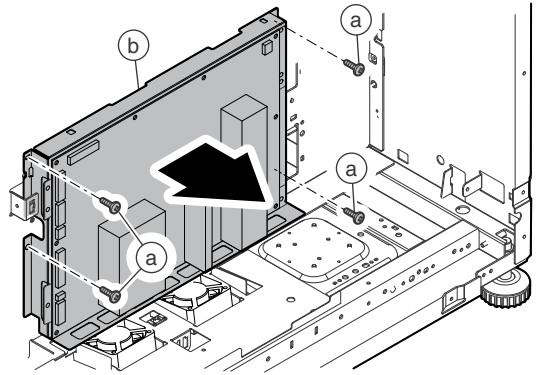
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



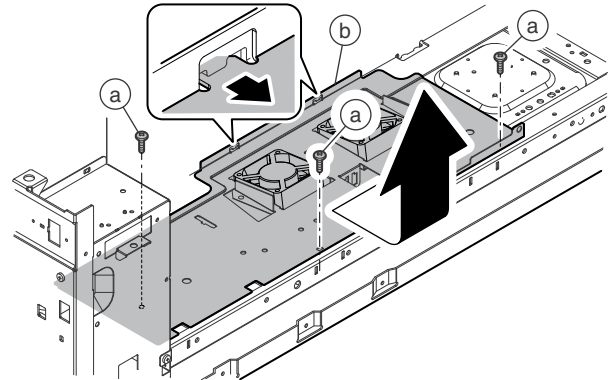
- 3) Disconnect the connector (a). Remove the screw (b), and remove the AC-OP power unit (c).



- 4) Remove the screw (a), and remove the main power unit (b).

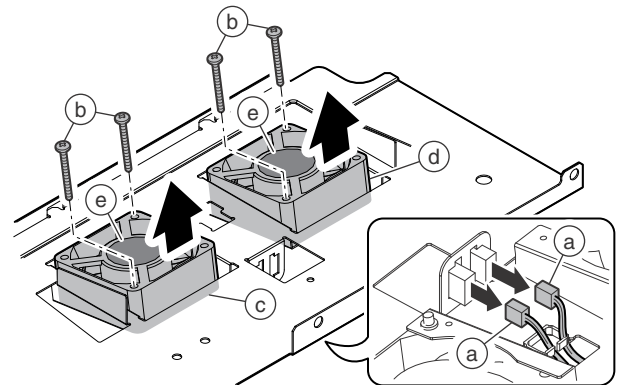


- 5) Remove the screw (a), and remove the fan unit (b).



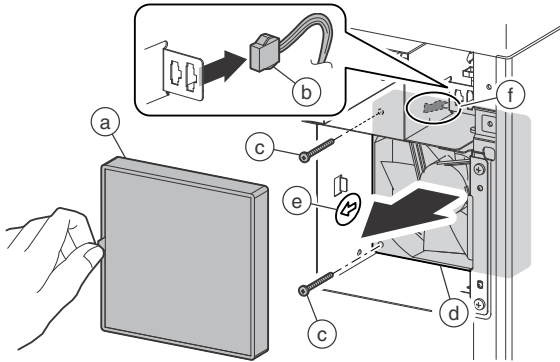
- 6) Disconnect the connector (a). Remove the screw (b), and remove the power cooling fan 1 (c), and the power cooling fan 2 (d).

- * When installing, be careful to the direction of the fan label (e).
- * Check to confirm that the projection of the plate is engaged with the notch of the fan.
- * The connector (a) may be connected to either side.



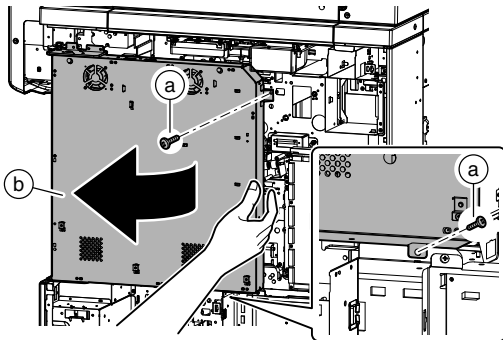
(4) Machine exhaust fan 1

- 1) Remove the rear cabinet.
- 2) Remove the exhaust filter (a). Disconnect the connector (b), and remove the screw (c). Remove the machine exhaust fan 1 (d).
 - * When installing, be careful to arrange so that the direction of the arrow mark (e) on the side of the duct and the arrow mark (f) on the side of the fan are same.
 - * Check to confirm that the bent section of the duct is engaged with the notch of the fan.

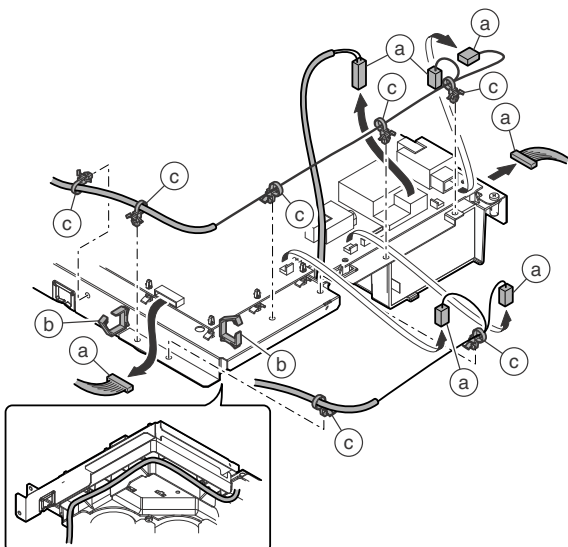


(5) Ozone exhaust fan 1 / Ozone exhaust fan 2

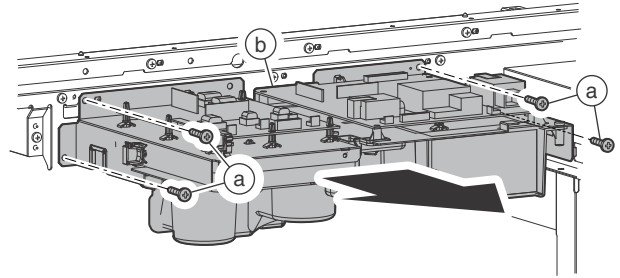
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



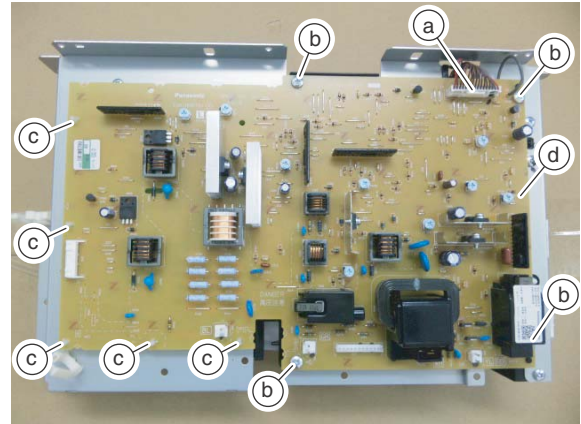
- 3) Disconnect the connector (a). Open the wire saddle (b), and remove the snap band (c).



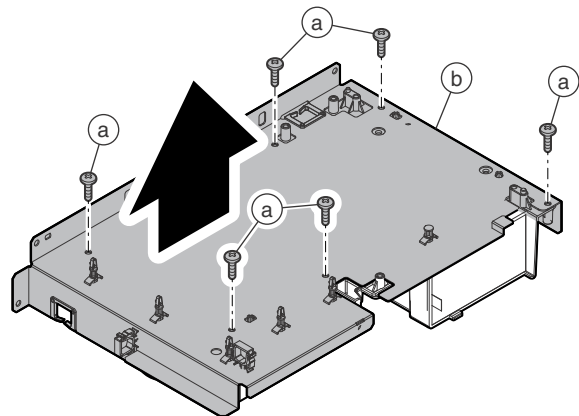
- 4) Remove the screw (a), and remove the ozone duct unit (b).



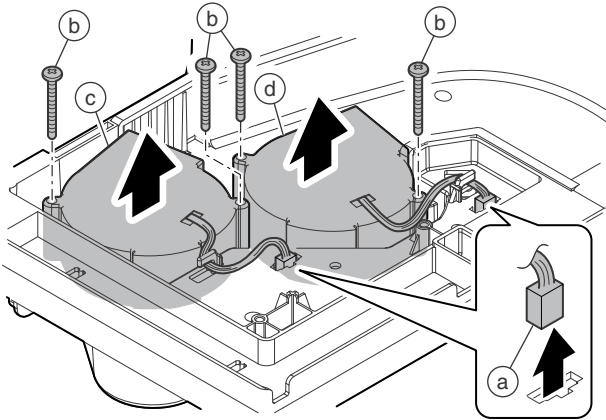
- 5) Disconnect the connector (a). Remove the screw (b) and the PWB support (c), and remove the high voltage PWB (d).



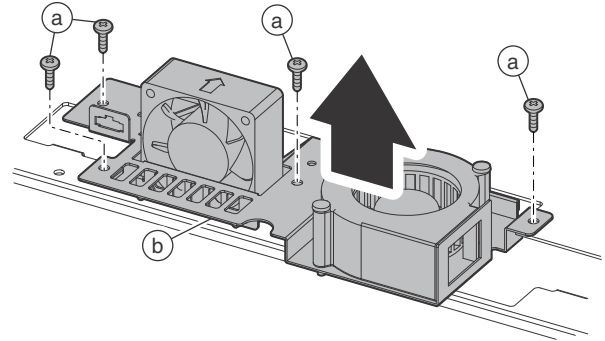
- 6) Remove the screw (a), and remove the cover (b).



- 7) Disconnect the connector (a), and remove the screw (b). Remove the ozone exhaust fan 1 (c) and the ozone exhaust fan 2 (d).



- 5) Remove the screw (a), and remove the fan unit (b).

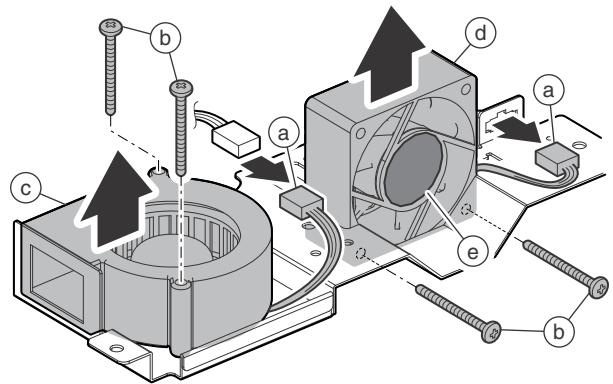
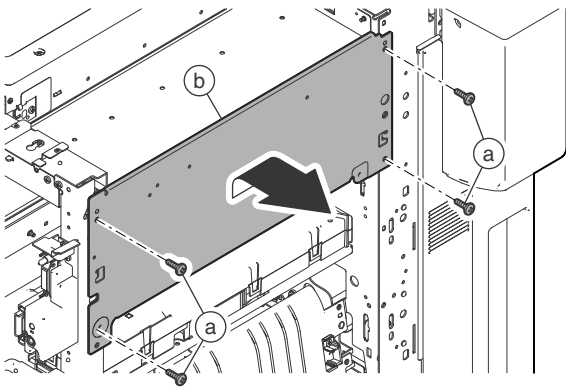


- 6) Disconnect the connector (a), and remove the screw (b). Remove the toner suction fan (c) and developing cooling fan (d).

* When installing the fan ensure that the label is installed as indicated (e). Proper air flow thru the fan is essential.

(6) Toner suction fan / Developing cooling fan 1

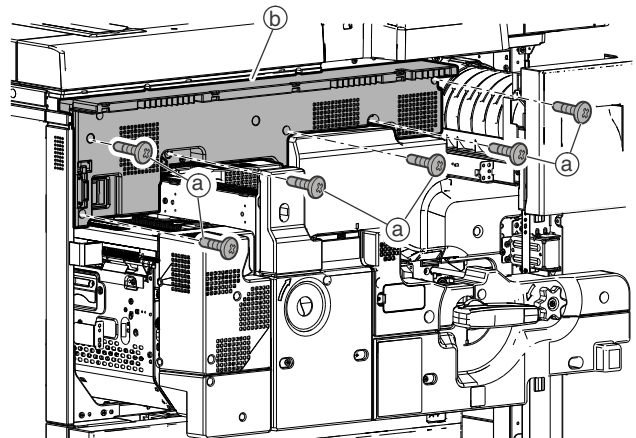
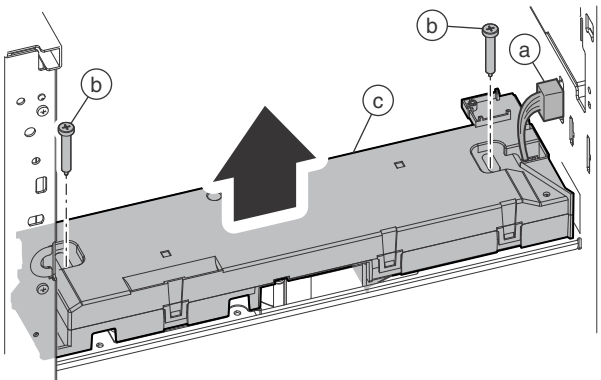
- 1) Remove the toner hopper unit.
- 2) Remove the upper cabinet right, the upper cabinet front cover right, the upper cabinet front cover left, and the upper cabinet front.
- 3) Remove the screw (a), and remove the cover (b).



(7) Polygon cooling fan / Process cooling fan 1

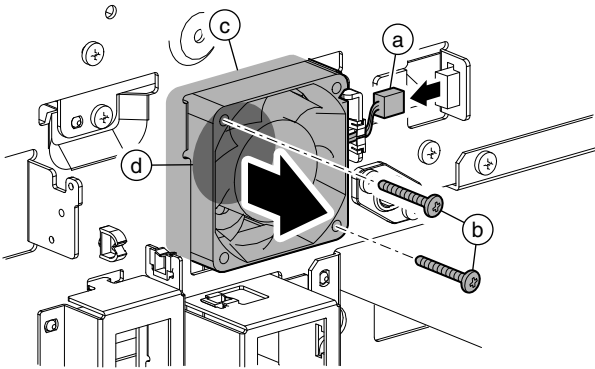
- 1) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 2) Pull out the intermediate frame.
- 3) Remove the screw (a), and remove the front cover lower panel (b).

- 4) Disconnect the connector (a), and remove the step screw (b), and remove the cover (c).



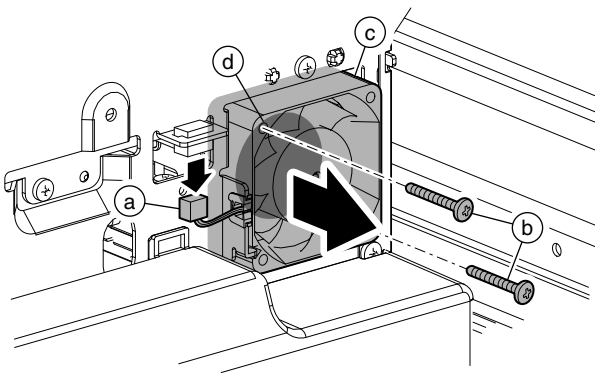
- 4) Disconnect the connector (a). Remove the screw (b), and remove the polygon cooling fan (c).

- * When installing, be careful to the direction of the fan label (d).
- * Check to confirm that the bent section of the plate is engaged with the notch of the fan.



- 5) Disconnect the connector (a). Remove the screw (b), and remove the process cooling fan 1 (c).

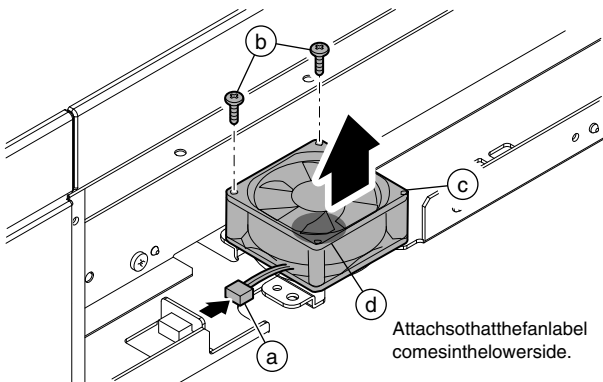
- * When installing, be careful to the direction of the fan label (d).
- * Check to confirm that the bent section of the plate is engaged with the notch of the fan.)



(8) Paper cooling fan

- 1) Remove the left upper cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the paper cooling fan (c).

- * When installing, face the fan label (d) downward.

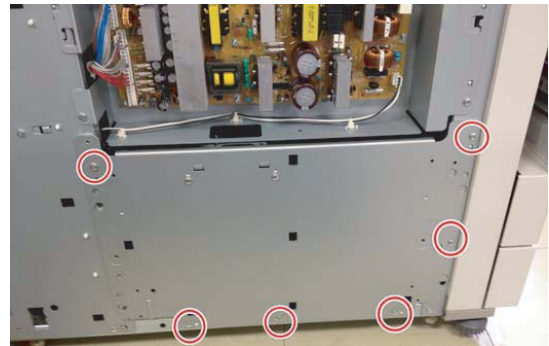


(9) Sub power cooling fan

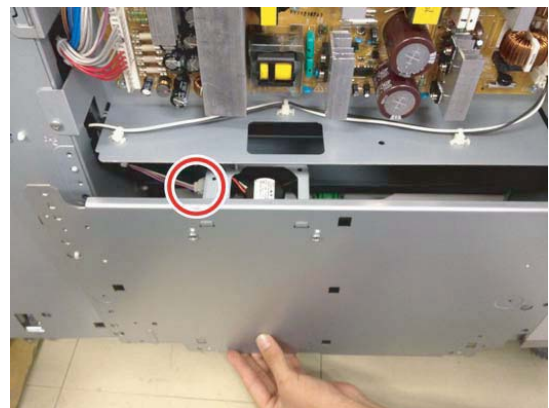
- 1) Remove the rear cabinet.
- 2) Remove the right rear cabinet.



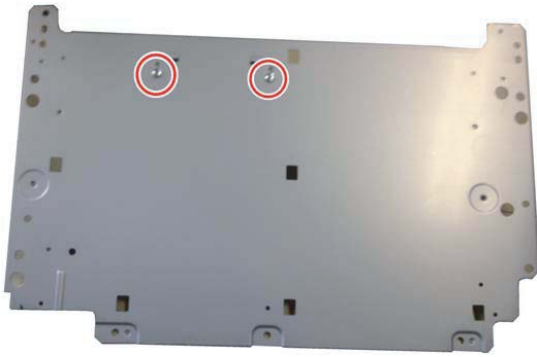
- 3) Remove the left side plate.



NOTE: Before removing the plate, disconnect the connector of the fan mounted inside.

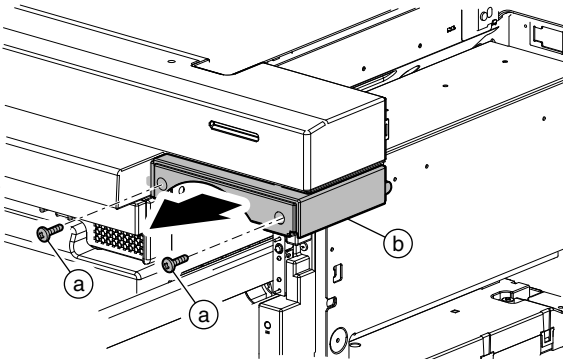


- Remove the screw, and remove the fan.

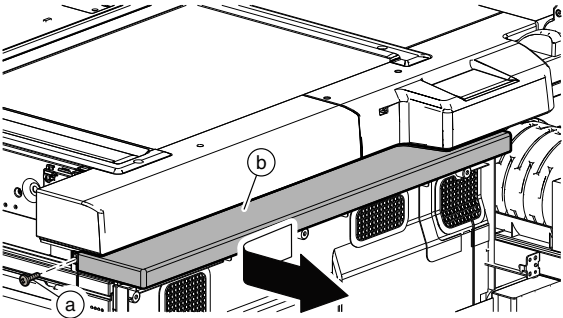


(10) Process section cooling fan

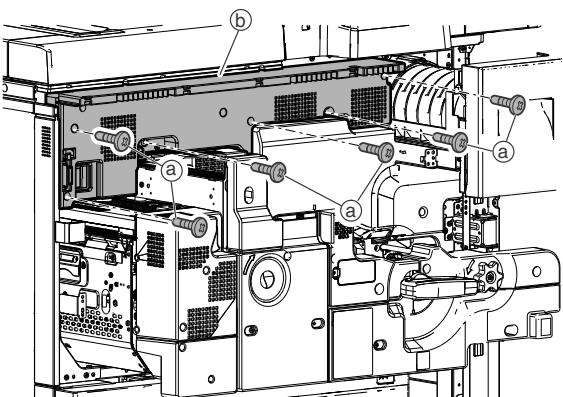
- Open the front cover, and pull out the intermediate frame.
- Remove the screw (a), and remove the upper cabinet front cover right (b).



- Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.

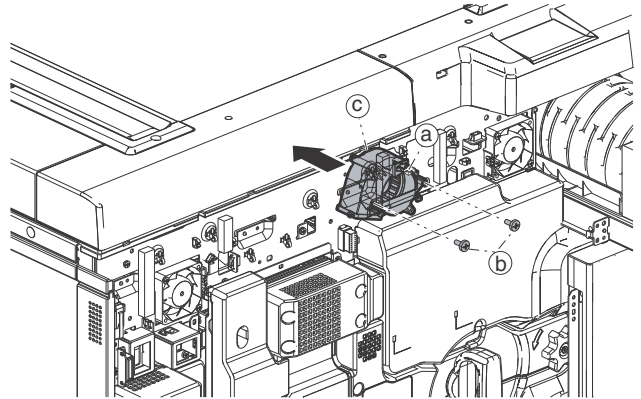


- Remove the screw (a), and remove the front cover lower panel (b).



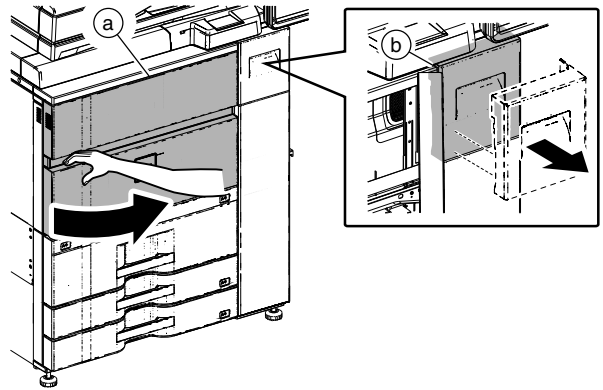
- Remove the LSU.
- Disconnect the connector (a) of the process section cooling fan. Remove the screw (b), and remove the process section cooling fan (c).

NOTE: When assembling, check to confirm that the screw hole matches with the screw and that the hook is securely engaged.

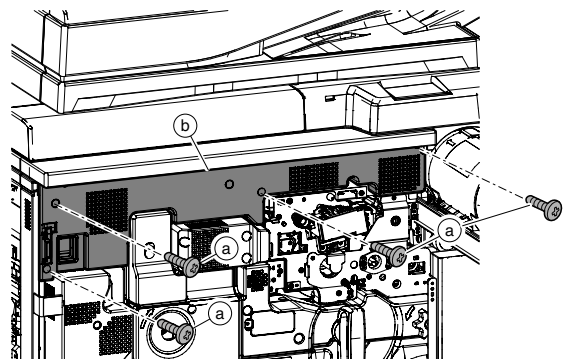


(11) Process cooling fan 2/ Process cooling fan 3/ Process cooling fan 4

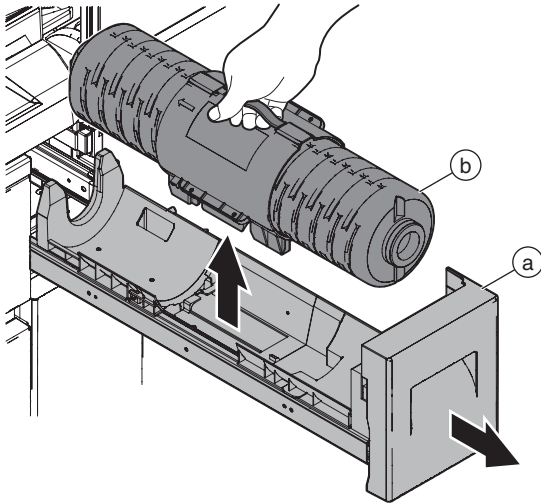
- Remove the rear cabinet.
- Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- Open the front cover (a), and pull out the toner tray (b) slightly.



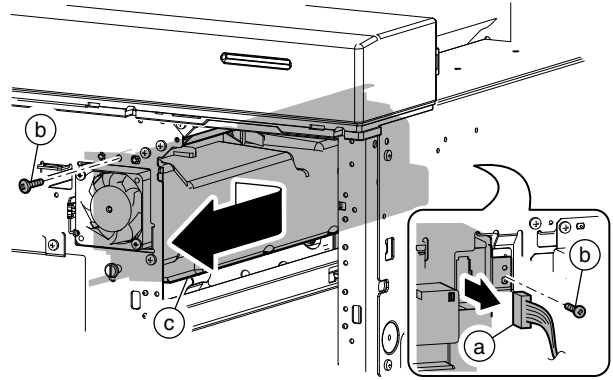
- Remove the screw (a), and remove the front cover (b).



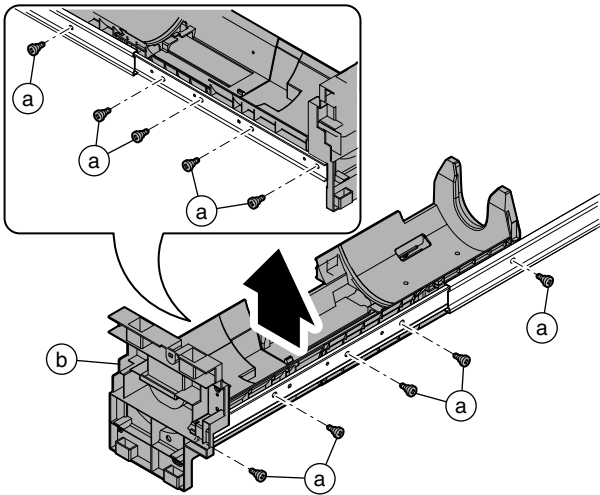
5) Pull out the toner tray (a), and remove the toner bottle (b).



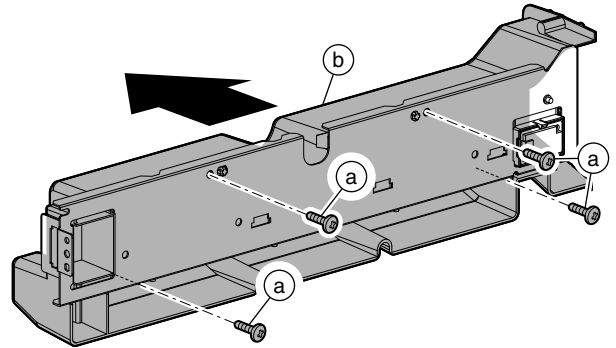
8) Disconnect the connector (a), and remove the screw (b). Remove the duct unit (c).



6) Remove the screw (a), and remove the toner tray (b).



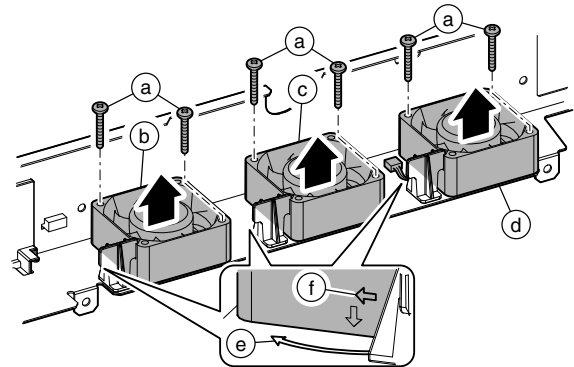
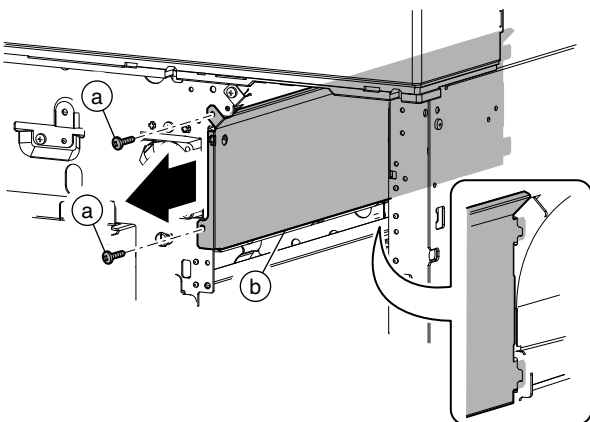
9) Remove the screw (a), and remove the duct (b).



10) Remove the screw (a). Remove the process cooling fan 2 (c), the process cooling fan 3 (d), and the process cooling fan 4 (e).

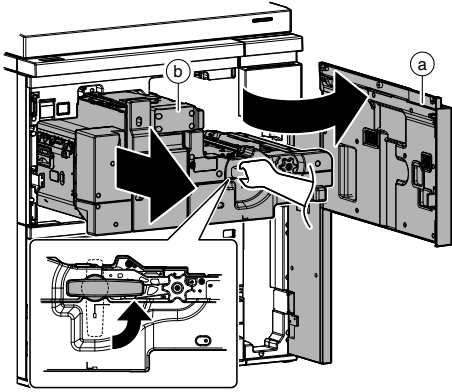
* When installing, be careful to arrange the fan so that the direction of the arrow mark (f) on the duct and the arrow mark (g) on the fan are same.

7) Remove the screw (a), and remove the cover (b).

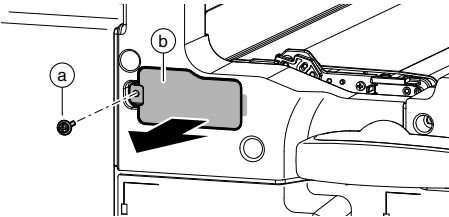


(12) Process cooling fan

- 1) Open the front cover (a), and pull out the intermediate frame (b).



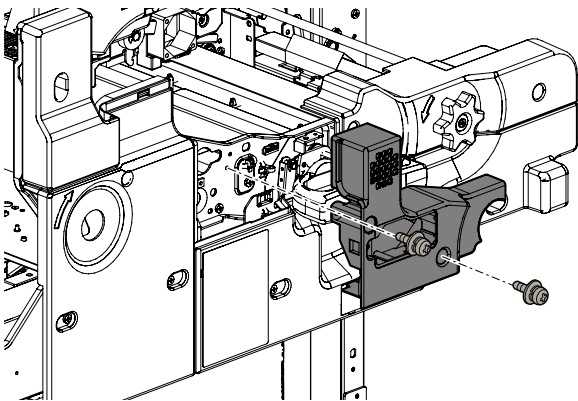
- 2) Remove the screw (a), and remove the cover (b).



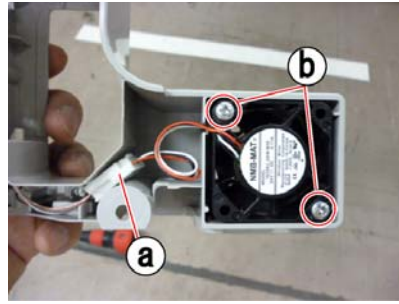
- 3) Disconnect the connector.



- 4) Remove the transfer cover.



- 5) Disconnect the connector (a), and remove the fan from the transfer cover.

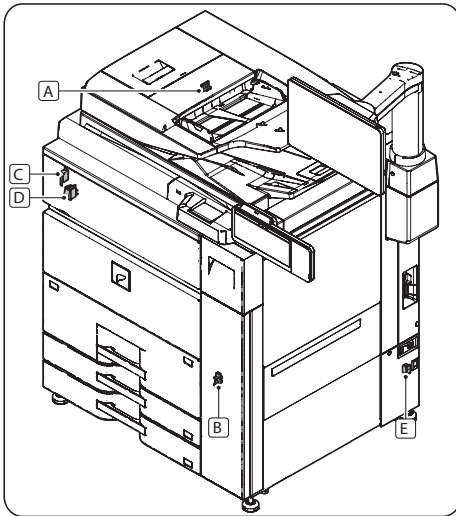


[S] SENSOR, SWITCH SECTION

1. Disassembly and assembly

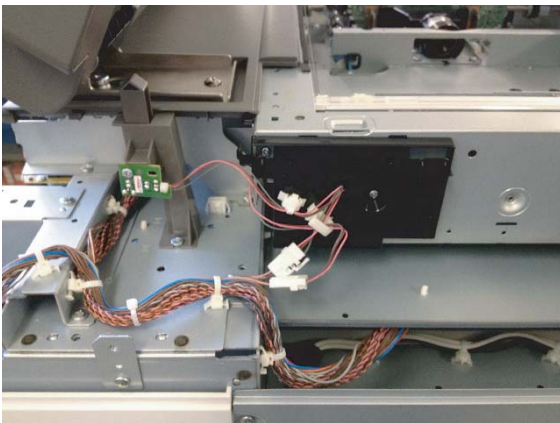
A. Sensor, switch

Parts		Page
A	Original cover SW	S-1/(1)
B	Cassette right door open/close detection	S-1/(2)
C	Front door switch	S-2/(3)
D	Main switch	
E	Dehumidifying heater switch	S-3/(4)
F	Temperature/humidity sensor 2	S-3/(5)



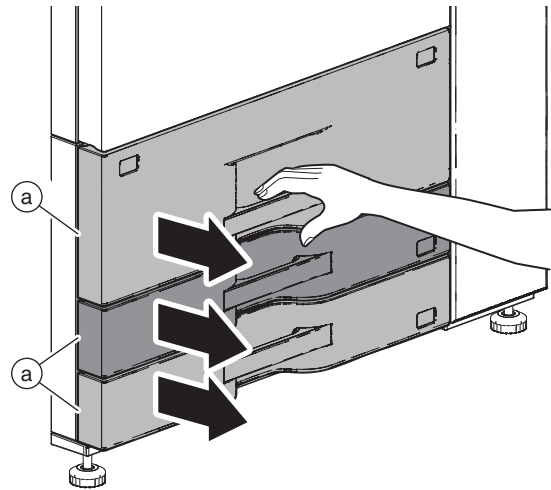
(1) Original cover SW

- 1) Remove the upper cabinet left.
- 2) Disconnect the connector and remove the snap band. Remove the screw, and remove the original cover SW.

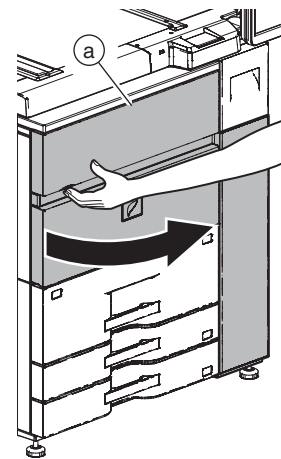


(2) Cassette right door open/close detection

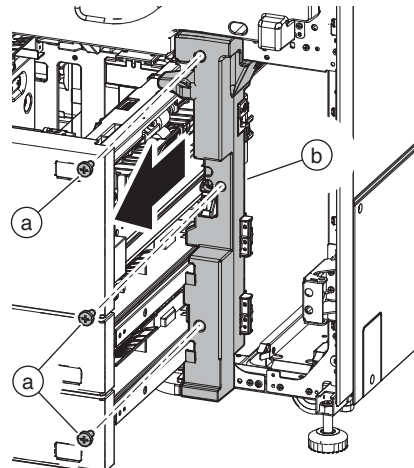
- 1) Pull out all tray (a).



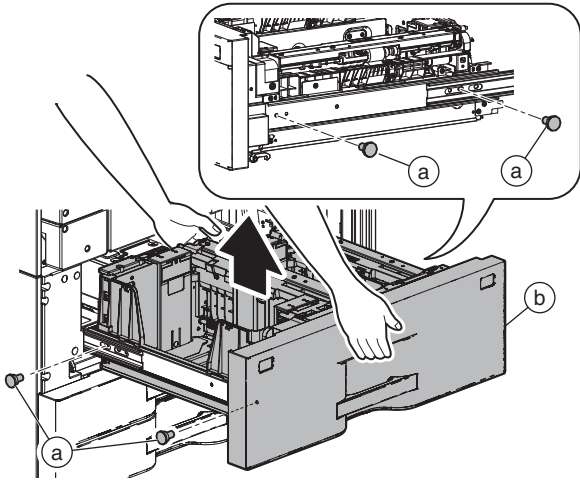
- 2) Open the front cover (a).



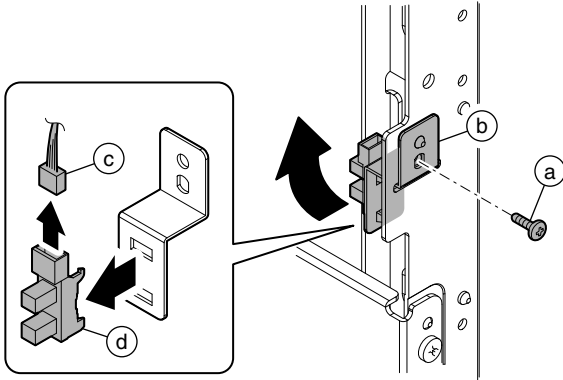
- 3) Remove the screw (a), and remove the cover (b).



- 4) Remove the screw (a), and remove the tray 1 and 2 (b).

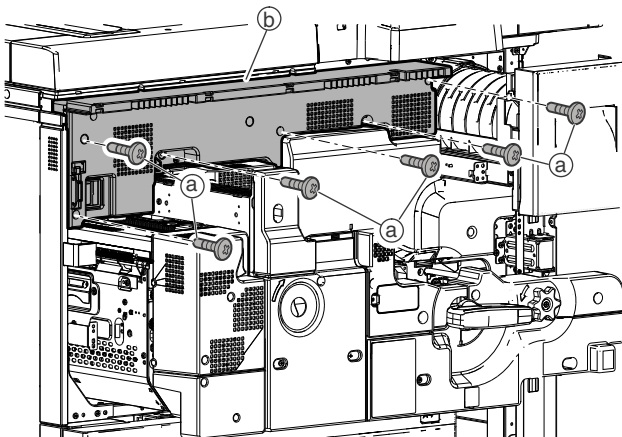


- 5) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c), and remove the cassette right door open/close detection (d).



(3) Front door switch / Main switch

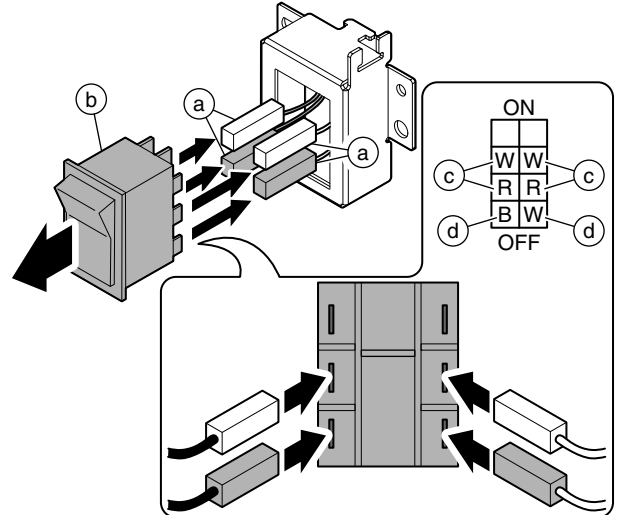
- 1) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 2) Pull out the intermediate frame.
- 3) Remove the screw (a), and remove the front cover lower panel (b).



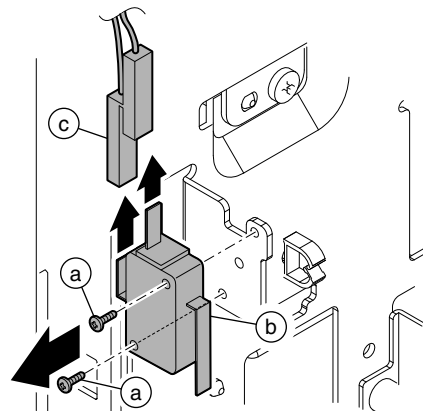
- 4) Remove the screw, and remove the main switch unit.



- 5) Disconnect the connector (a), and remove the main switch (b).
 * For the installing direction of the main switch and the connecting positions of the connectors, refer to the connector color (c) and the harness color (d) on the mark.
 * When inserting the connector (a), push it completely until it clicks.

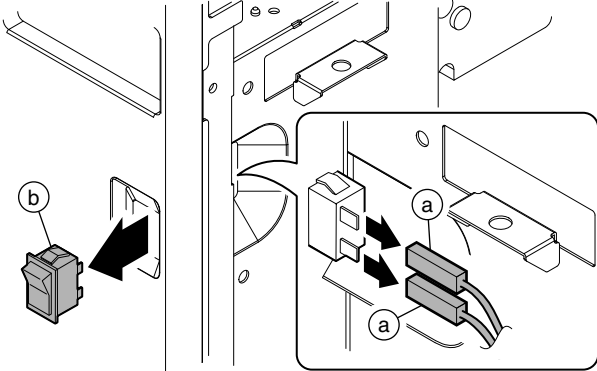


- 6) Remove the left cabinet front upper.
- 7) Remove the screw (a), and disconnect the connector (c) from the front door switch (b).
 * When inserting the connector (c), push it completely until it clicks.



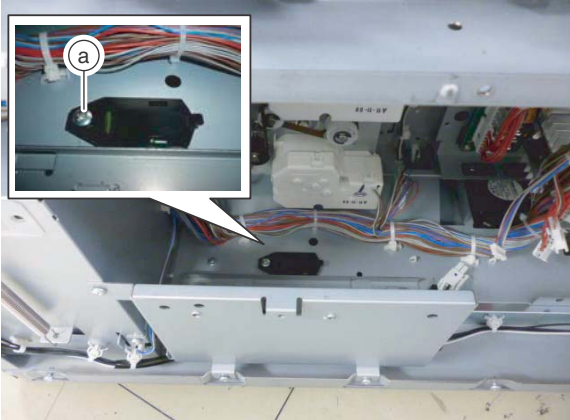
(4) Dehumidifying heater switch

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the dehumidifying heater switch (b).
 - * Be careful of the attaching direction of the dehumidifying heater switch.
 - * When inserting the connector (a), push it completely until it clicks.



(5) Temperature/humidity sensor 2

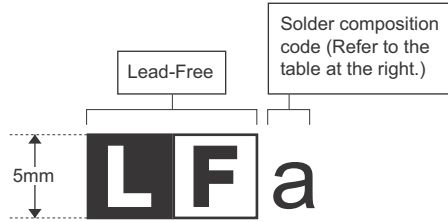
- 1) Remove the rear cabinet.
- 2) Remove the screw (a), and remove the temperature/humidity sensor 2.



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 inkorrekt
er 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 MANGANÈSE)
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.

