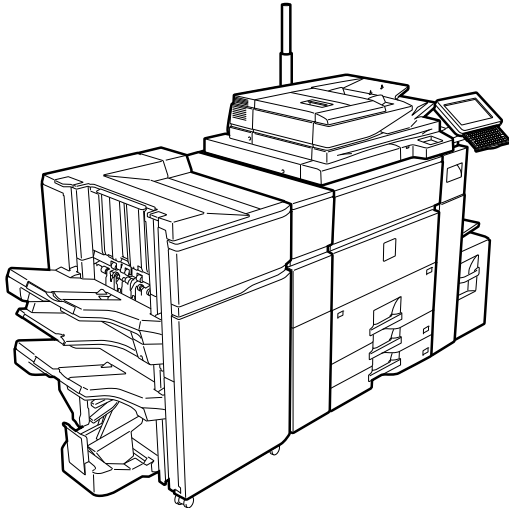


SHARP SERVICE MANUAL

CODE: 00ZMXM905/S2E



DIGITAL MULTIFUNCTIONAL SYSTEM

MODEL **MX-M905**

CONTENTS

NOTE FOR SERVICING

[1]	PRODUCT OUTLINE	1-1
[2]	SPECIFICATIONS	2-1
[3]	CONSUMABLE PARTS	3-1
[4]	EXTERNAL VIEW AND INTERNAL STRUCTURE	4-1
[5]	ADJUSTMENTS	5-1
[6]	SIMULATION	6-1
[7]	TROUBLESHOOTING	7-1
[8]	MAINTENANCE	8-1
[9]	ROM VERSION-UP	9-1
[10]	SERVICE WEB PAGE	10-1
[11]	ELECTRICAL SECTION	11-1
[12]	OTHERS	12-1

• DETAILS OF EACH SECTION

[A]	EXTERNAL OUTFIT	A-1
[B]	OPERATION PANEL	B-1
[C]	DSPF SECTION	C-1
[D]	SCANNER SECTION	D-1
[E]	TRAY PAPER FEED SECTION ..	E-1
[F]	PAPER TRANSPORT SECTION ..	F-1
[G]	LSU SECTION	G-1
[H]	IMAGE PROCESS SECTION ...	H-1
[I]	PHOTOCONDUCTOR SECTION ..	I-1
[J]	TONER SUPPLY SECTION	J-1
[K]	DEVELOPING SECTION	K-1
[L]	TRANSFER SECTION	L-1
[M]	WASTE TONER SECTION	M-1
[N]	FUSING SECTION	N-1
[O]	ADU PAPER EXIT SECTION	O-1
[P]	DRIVE SECTION	P-1
[Q]	PWB SECTION	Q-1
[R]	FAN, FILTER SECTION	R-1
[S]	SENSOR, SWITCH SECTION ...	S-1

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.

CONTENTS

NOTE FOR SERVICING

1. Precautions for servicing i
2. Warning for servicing i
3. Note for installing site. i

[1] PRODUCT OUTLINE

1. System diagram 1-1
2. Option list 1-2

[2] SPECIFICATIONS

1. Basic specifications 2-1
2. Copy functions 2-7
3. Printer function 2-7
4. Image send function 2-8
5. External dimension and weight 2-9
6. Ambient conditions 2-9

[3] CONSUMABLE PARTS

1. Supply system table 3-1
2. Maintenance parts list 3-2
3. Production number identification 3-3
4. The indication of remaining toner amount and the status of toner cartridge (Settable in Simulation 26-69) 3-4
5. Environmental conditions 3-4

[4] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. Identification of each section and functions 4-1

[5] ADJUSTMENTS

1. Outline 5-1
2. Adjustment item list 5-1
3. Details of adjustment 5-3

[6] SIMULATION

1. General and purpose 6-1
2. Function of each key 6-1
3. Starting the simulation 6-1
4. List of simulation codes 6-2
5. Details of simulation 6-11

[7] TROUBLESHOOTING

1. Error code and troubleshooting 7-1

[8] MAINTENANCE

1. Necessary execution items in maintenance and servicing 8-1
2. Life end definition 8-2
3. Other related items 8-2
4. Maintenance system table 8-3
5. Photoconductor section 8-7
6. Waste toner section 8-17
7. Transfer section 8-18
8. Developing section 8-23
9. Toner supply section 8-27
10. Fusing section 8-28
11. Filter section 8-35
12. Tray paper feed section 8-37
13. Paper transport section 8-44
14. ADU paper exit section 8-55
15. Drive section 8-64
16. Scanner section 8-73
17. DSPF section 8-76

[9] ROM VERSION-UP

1. General 9-1
2. Update procedure 9-2

[10] SERVICE WEB PAGE

1. General 10-1
2. Details and operation procedures 10-1

[11] ELECTRICAL SECTION

1. Block diagram 11-1
2. Power line diagram 11-7
3. Actual wiring chart 11-11

[12] OTHERS

1. Paper JAM code 12-1
2. Service parts harness 12-6
3. Drum flange removal 12-6
4. VARIOUS STORAGE DATA HANDLING 12-7
5. Necessary steps when replacing the PWB, HDD and the mSATA SSD 12-7

[A] EXTERNAL OUTFIT

1. Disassembly and assembly A-1

[B] OPERATION PANEL

1. Electrical and mechanism relation diagram B-1
2. Disassembly and assembly B-2

[C] DSPF SECTION

1. Electrical and mechanism relation diagram C-1
2. Operational descriptions C-5
3. Disassembly and assembly C-6

[D] SCANNER SECTION

1. Electrical and mechanism relation diagram D-1
2. Operational descriptions D-2
3. Disassembly and assembly D-2

[E] TRAY PAPER FEED SECTION

1. Electrical and mechanism relation diagram E-1
2. Operational descriptions E-5
3. Disassembly and assembly E-7

[F] PAPER TRANSPORT SECTION

1. Electrical and mechanism relation diagram F-1
2. Operational descriptions F-3
3. Disassembly and assembly F-4

[G] LSU SECTION

1. Electrical and mechanism relation diagram G-1
2. Disassembly and assembly G-2

[H] IMAGE PROCESS SECTION

1. Image process section operations H-1
2. Process control section H-6

[I] PHOTOCONDUCTOR SECTION

1. Charging section i-1
2. Exposure section i-3
3. Separation section i-4
4. OPC drum cleaning section i-6
5. Discharge section i-7
6. Disassembly and assembly i-8

[J] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram J-1
2. Operational descriptions J-3
3. Disassembly and assembly J-3

CONTENTS

[K] DEVELOPING SECTION

1. Electrical and mechanism relation diagramK-1
2. Operational descriptionsK-2
3. Disassembly and assemblyK-2

[L] TRANSFER SECTION

1. Electrical and mechanism relation diagramL-1
2. Operational descriptionsL-2
3. Disassembly and assemblyL-3

[M] WASTE TONER SECTION

1. Electrical and mechanism relation diagramM-1
2. Operational descriptionsM-2
3. Disassembly and assemblyM-2

[N] FUSING SECTION

1. Electrical and mechanism relation diagramN-1
2. Operational descriptionsN-2
3. Disassembly and assemblyN-4

[O] ADU PAPER EXIT SECTION

1. Electrical and mechanism relation diagramO-1
2. Operational descriptionsO-3
3. Disassembly and assemblyO-4

[P] DRIVE SECTION

1. Disassembly and assemblyP-1

[Q] PWB SECTION

1. Disassembly and assemblyQ-1

[R] FAN, FILTER SECTION

1. Electrical and mechanism relation diagramR-1
2. Disassembly and assemblyR-2

[S] SENSOR, SWITCH SECTION

1. Disassembly and assemblyS-1

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. 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 your hands by the chain, the belt, the gear, and other driving sections.
- 6) Do not leave the machine with the cabinet disassembled.
Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.
- 7) When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.
If toner, developer, or ink enters your eyes, wash it away with water immediately, and consult a doctor if necessary.
- 8) The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
- 9) Do not throw toner or a toner cartridge in a fire. Otherwise, toner may pop and burn you.
- 10) When replacing the lithium battery of the PWB, use a specified one only.
If a battery of different specification is used, it may be broken, causing breakdown or malfunction of the machine.
- 11) When carrying a unit with PWB or electronic parts installed to it, be sure to put it in an anti-static-electricity bag.
It may cause a breakdown or malfunctions.

CAUTION
DOUBLE POLE/NEUTRAL FUSING

2. Warning for servicing

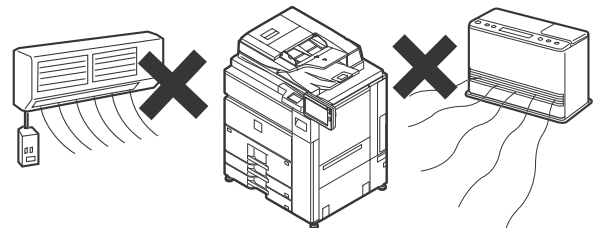
- 1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.
Avoid complex wiring, which may lead to a fire or an electric shock.
It may cause a fire or an electric shock.
- 2) If there is any abnormality such as a smoke or an abnormal smell,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

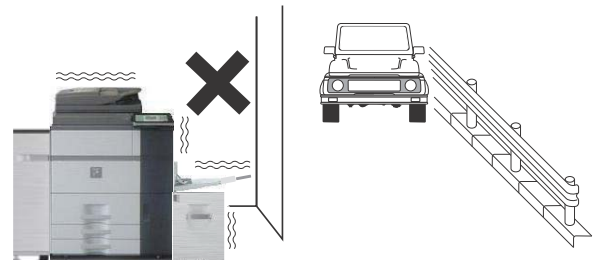
3. Note for installing site

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.

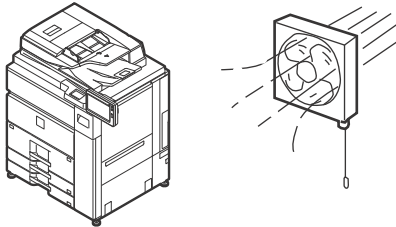


3) **Poorly ventilated place**

An electro-static type copier will produce ozone inside it.

The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce a smell of ozone. Install the machine in a well ventilated place, and ventilate occasionally.

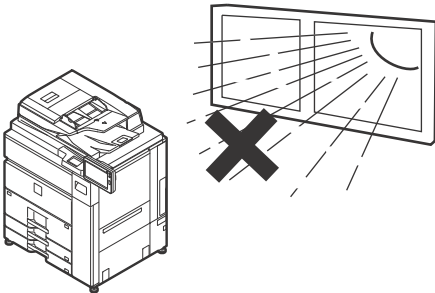
When using special paper such as glossy paper, unique smell or gas may be generated. Provide an additional duct to exhaust the smell and gas from the exhaust section of the machine as needed. (There is no setting for the exclusive-use duct.)



4) **Place of direct sunlight.**

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

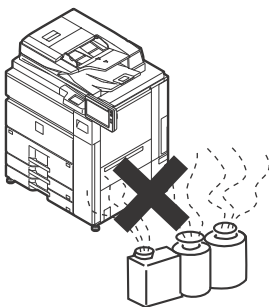
It may cause a breakdown or copy dirt.



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

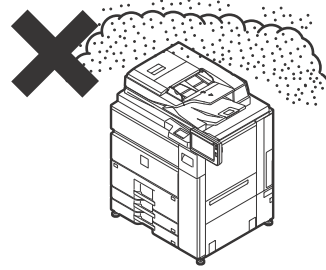
The organic photoconductor (OPC) drum used in the machine may undergo qualitative change due to organic gases such as ammonium.

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



6) **Place of much dust**

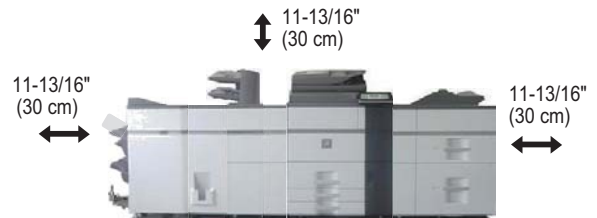
When dusts enter the machine, it may cause a breakdown or copy dirt.



7) **Place near a wall**

Some machine require intake and exhaust of air.

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

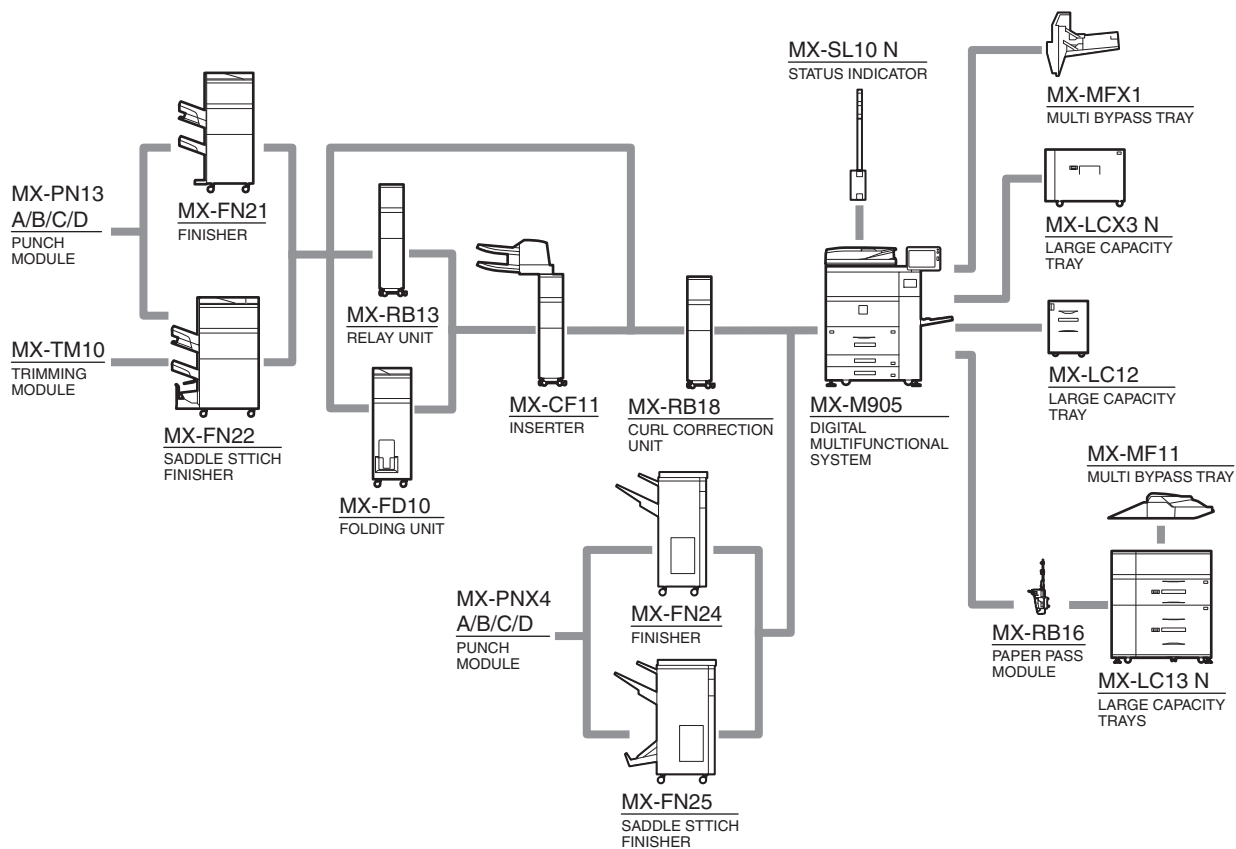


When installing the machine, make sure that the sides and back of the machine are at least 11-13/16" (30 cm) away from any walls.

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

[1] PRODUCT OUTLINE

1. System diagram



<div>MX-PF10</div> <div>BARCODE FONT KIT</div> <div></div>	<div>MX-FX15</div> <div>FACSIMILE EXPANSION KIT</div> <div></div>	<div>AR-SU1</div> <div>STAMP UNIT</div> <div></div>	<div>MX-FWX1</div> <div>INTERNET FAX EXPANSION KIT</div> <div></div>	<div>MX-EB11</div> <div>ENHANCED COMPRESSION KIT</div> <div></div>	<div>MX-FR54U</div> <div>DATA SECURITY KIT</div> <div></div>
<div>MX-USX1</div> <div>SHARPDESK 1 LICENSE KIT</div> <div></div>	<div>MX-USX5</div> <div>SHARPDESK 5 LICENSE KIT</div> <div></div>	<div>MX-US10</div> <div>SHARPDESK 10 LICENSE KIT</div> <div></div>	<div>MX-US50</div> <div>SHARPDESK 50 LICENSE KIT</div> <div></div>	<div>MX-USA0</div> <div>SHARPDESK 100 LICENSE KIT</div> <div></div>	<div>MX-AMX1</div> <div>APPLICATION INTEGRATION MODULE</div> <div></div>
<div>MX-AMX2</div> <div>APPLICATION COMMUNICATION MODULE</div> <div></div>	<div>MX-AMX3</div> <div>EXTERNAL ACCOUNT MODULE</div> <div></div>	<div>MX-KB13</div> <div>KEYBOARD</div> <div></div>	<div>AR-SCX3</div> <div>STAPLE CARTRIDGE</div> <div></div>	<div>AR-SC2</div> <div>STAPLE CARTRIDGE</div> <div></div>	<div>MX-SCX1</div> <div>STAPLE CARTRIDGE (For 50 sheets binding)</div> <div></div>
<div>MX-SCX2</div> <div>STAPLE CARTRIDGE (For 100 sheets binding)</div> <div></div>	<div>AR-SV1</div> <div>STAMP CARTRIDGE</div> <div></div>	<div>MX-EB18</div> <div>WIRELESS LAN ADAPTOR</div> <div></div>			

2. Option list

	Model name	Name	Remarks
Paper feed system	MX-MFX1	MULTI BYPASS TRAY	For Main unit
	MX-MF11	MULTI BYPASS TRAY	For large capacity trays
	MX-LC13 N	LARGE CAPACITY TRAYS	A3
	MX-RB16	PAPER PASS MODULE	For large capacity trays
	MX-LCX3 N	LARGE CAPACITY TRAYS	A3
	MX-LC12	LARGE CAPACITY TRAYS	A4
Paper exit system	MX-RB18	CURL CORRECTION UNIT	
	MX-RB13	RELAY UNIT	For 100 sheets binding
	MX-FN21	FINISHER	100 sheets binding
	MX-FN22	SADDLE STITCH FINISHER	100 sheets binding/saddle 25 sheets binding
	MX-TM10	TRIMMING MODULE	
	MX-CF11	INSERTER	
	MX-FD10	FOLDING UNIT	
	MX-PN13A	PUNCH MODULE	For 100 sheets binding
	MX-PN13B	PUNCH MODULE	For 100 sheets binding
	MX-PN13C	PUNCH MODULE	For 100 sheets binding
	MX-PN13D	PUNCH MODULE	For 100 sheets binding
	MX-FN24	FINISHER	50 sheets binding
	MX-FN25	SADDLE STITCH FINISHER	50 sheets binding/saddle 15 sheets binding
	MX-PNX4A	PUNCH MODULE	For 50 sheets binding
	MX-PNX4B	PUNCH MODULE	For 50 sheets binding
	MX-PNX4C	PUNCH MODULE	For 50 sheets binding
	MX-PNX4D	PUNCH MODULE	For 50 sheets binding
Printer expansion	MX-PF10	BARCODE FONT KIT	
Image send expansion	MX-FX15	FACSIMILE EXPANSION KIT	OPT*1
	AR-SU1	STAMP UNIT	
	MX-FWX1	INTERNET FAX EXPANSION KIT	
	MX-EB11	ENHANCED COMPRESSION KIT	
Authentication/Security	MX-FR54U	DATA SECURITY KIT	Non authentication version
Application/Solution	MX-USX1	SHARPEDESK 1 LICENSE KIT	
	MX-USX5	SHARPEDESK 5 LICENSE KIT	
	MX-US10	SHARPEDESK 10 LICENSE KIT	
	MX-US50	SHARPEDESK 50 LICENSE KIT	
	MX-USA0	SHARPEDESK 100 LICENSE KIT	
	MX-AMX1	APPLICATION INTEGRATION MODULE	
	MX-AMX2	APPLICATION COMMUNICATION MODULE	OPT*2
	MX-AMX3	EXTERNAL ACCOUNT MODULE	OPT*2
Other	MX-KB13	KEYBOARD	OPT*3
	MX-SL10 N	STATUS INDICATOR	
	MX-EB18	WIRELESS LAN ADAPTOR	OPT*4
Service	MX-SCX2	STAPLE CART	For staple (100 sheets saddle finisher / 100 sheets finisher)
	MX-SCX1	STAPLE CART	For saddle staple (100 sheets saddle finisher)
	AR-SC2	STAPLE CART	For staple (50 sheets saddle finisher / 50 sheets finisher)
	MX-SCX3	STAPLE CART	For saddle staple (15 sheets saddle finisher)
	AR-SV1	STAMP CARTRIDGE	

*1: Without support in some areas only.

*2: Only North American/Europe standard (Sharp OSA Utility CD-ROM No)

*3: Only North American standard.

*4: Only North America/Europe/Australia/New Zealand/Hong Kong standard.

[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	90cpm machine
469mm x 318mm, Extra	41
12" x 18" (A3W)	42
SRA3	43
440mm x 312mm	44
A3, 11" x 17", 8K	47
B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	50
A4R, B5R, 8.5" x 11"R, 7.25" x 10.5"R, 16KR	58
318mm x 234mm	69
9" x 12" (A4W)	70
SRA4	71
312mm x 220mm	72
A4, B5, 8.5" x 11", 16K	90
A5R, 5.5" x 8.5"R	90
Custom size (- 215.9mm)	90
Custom size (216mm - 225mm)	71
Custom size (225.1mm - 297mm)	58
Custom size (297.1mm -)	41
Heavy paper (A4, B5, 8.5" x 11", 16K)	65
Heavy paper (A5R, 5.5" x 8.5"R)	65
Heavy paper (318mm x 234mm)	65
Heavy paper (9" x 12" (A4W))	65
Heavy paper (SRA4)	65
Heavy paper (312mm x 220mm)	65
OHP (11" X 17", A4) (Face-up)	65
OHP (A4R, 11" X 17"R) (Face-up)	58
OHP (Other) (Face-up)	41
Heavy paper custom size (- 215.9mm)	65
Heavy paper custom size (216mm - 225mm)	65
Heavy paper custom size (225.1mm - 297mm)	58
Heavy paper custom size (297.1mm -)	41

<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	90cpm machine
469mm x 318mm, Extra	41
12" x 18" (A3W)	42
SRA3	43
440mm x 312mm	44
A3, 11" x 17", 8K	47
B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	50
A4R, B5R, 8.5" x 11"R, 7.25" x 10.5"R, 16KR	58
318mm x 234mm	69
9" x 12" (A4W)	70
SRA4	71
312mm x 220mm	72
A4, B5, 8.5" x 11", 16K	90
A5R, 5.5" x 8.5"R	90
Custom size (- 215.9mm)	90
Custom size (216mm - 225mm)	71
Custom size (225.1mm - 297mm)	58
Custom size (297.1mm -)	41
Heavy paper (A4, B5, 8.5" x 11", 16K)	65
Heavy paper (A5R, 5.5" x 8.5"R)	65
Heavy paper (318mm x 234mm)	65
Heavy paper (SRA4/A4W)	65
OHP (11" x 17", A4) (Face-up)	65
OHP (A4R, 11" x 17"R) (Face-up)	58
OHP (Other) (Face-up)	41
Heavy paper custom size (- 215.9mm)	65
Heavy paper custom size (216mm - 225mm)	65
Heavy paper custom size ((225.1mm - 297mm)	58
Heavy paper custom size (297.1mm -)	41

* 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
Loss width*1	Lead edge: 2 - 5mm, Rear edge: 2 - 5mm, Lead/rear total: 8mm or less, FR Total: 4 - 2mm

*1: Loss width (Void area) is defined as the area which cannot be printed or is not printed.

Top is design value, and Rear is design value and including tolerance of paper.

D. Engine resolution

Resolution	Copy		Writing	
	Print		Writing	
Gradation (256 levels *2)	Copy		600dpi x 600dpi (Default)	
			1200dpi x 1200dpi	
	Print		Writing	
			600 x 600dpi (Default)	
			1,200 x 1,200dpi	
			600dpi x 600dpi	
		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 (default) 600 x 400dpi 600 x 300dpi	—
	DSPF	600 x 600dpi 600 x 400dpi (default) 600 x 300dpi	—
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 sheets/min. (600 x 300dpi, 8bit) 90 sheets/min. (600 x 400dpi, 8bit) 60 sheets/min. (600 x 600dpi, 8bit) Duplex: 240 pages/min. (600 x 300dpi, 8bit) 180 pages/min. (600 x 400dpi, 8bit) 120 pages/min. (600 x 600dpi, 8bit)	N/A
FAX	Single: 120 sheets/min. (200 x 200dpi, 1bit) Double: 240 pages/min. (200 x 200dpi, 1bit)	N/A
Internet FAX	Single: 120 sheets/min. (200 x 200dpi, 1bit) Double: 240 pages/min. (200 x 200dpi, 1bit)	N/A
Scanner*	Single: 120 sheets/min. (200 x 200dpi/300 x 300dpi, 1bit) Double: 240 pages/min. (200 x 200dpi/300 x 300dpi, 1bit)	Single: 120 sheets/min. (200 x 200dpi/300 x 300dpi, 8bit) Double: 240 pages/min. (200 x 200dpi/300 x 300dpi, 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	Sheets-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 (35 - 49 g/m ²) Plain paper: 13 lb bond - 110 lb index (50 - 205 g/m ²) * Thin paper mode (70-sheets/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 , 20 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	

*: Default 200X200dpi

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			
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/Service man selection *1	User selection *2	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: A4/8.5" x 11" can be selected by the user.

(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

		Tray 1	Tray 2	Tray 3	Tray 4
Paper size	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	—	—	—	Yes

		Tray 1	Tray 2	Tray 3	Tray 4
Paper type	Thin paper	No	No	No	No
	Standard paper1: 60-89 g/m2	Yes	Yes	Yes	Yes
	Standard paper2: 90-105 g/m2	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 - 9 *5	Yes	Yes	Yes	Yes

Type: Weight

Thin paper: 52-59g/m² 13 - 16 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	7.25	18
	Y	100	305	4.0	12
LCT	X	182	470	7.25	18.5
	Y	182	320	7.25	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

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

		Duplex section/ machine decurler	Reverse section
Paper type	Thin paper	No	Yes
	Standard paper1: 60-89 g/m2 *4	Yes	Yes
	Standard paper2: 90-105 g/m2 *4	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
	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	10.1 inch
Type	Dot matrix LCD, touch panel
Display dot number	1,024 x 600 dots (WSVGA)
Color	Yes
LCD drive display area (W x D)	222.72mm x 125.28mm (10.1inch LCD)
LCD back-light	LED lamp back-light system
LCD brightness adjustment	Yes (Backlight light quantity adjustment)
Angle/position adjustment	Swing mechanism, with tilt mechanism, free stop

J. Controller board

CPU		ARM11 600MHz ARM9 400MHz (1W Power save mode: 75MHz)	
SOC		Intel Atom E3845 1.91GHz	
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)*1	External 2 port (Front/rear ports should be available simultaneously.)	ARM11	Not used.
		ATOM	Rear face port
			For USB wireless LAN adaptor (internal)
		USB HUB (4 port)	Front port
			For IC card reader (internal)
			For keyboard (internal)
			Vacant port
USB 2.0 (High speed) (Device)		1 port	
USB authentication		No	
ACRE expansion I/F		Yes	
Serial I/F (for coin vendor)		1port	
Memory		See the section "Memory/Hard disk".	
Memory slot		1 slot	

*1: The ability to switch the USB ports between being enabled and disabled is required of the SIM.

K. Wireless LAN Module Specification

item	Specification		
General specifications			
Complied standard	IEEE802.11 n/g/b		
Transmission Method	IEEE802.11n/g	OFDM method	
	IEEE802.11b	DS-SS method	
Host I/F	USB 2.0 TypeA → Connect to USB I/F embedded in MFP.		
Device I/F	IEEE802.11 n/g/b		
Antenna	Embedded type		
Access Method	Infrastructure mode, Soft AP mode		
Security	WEP, WPA/WPA2-mixed PSK, WPA/WPA2-mixed EAP*, WPA2 PSA, WPA2 EAP* *Not available at the access point mode.		
Radio configuration and general specifications			
Chip Set	AR9271 (Qualcomm Atheros)		
Center Frequency range/Channel* *JP:ch1~ch.14 *US:ch1~ch11 *EU:ch1~ch13	11b	2412~2484 MHz	Ch.1~Ch.14
	11g	2412~2472 MHz	Ch.1~Ch.13
	11ng HT20	2412~2472 MHz	
	11ng HT40	2422~2462 MHz	Ch.3~Ch.11
Channel Interval	11b/11g/11ng HT20/HT40		5 MHz
Communication Rate/Scheme Code	11b	1, 2, 5.5L, 5.5S, 11L, 11S Mbps	
	11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps	
	11ng 1Stream	MCS0, 1, 2, 3, 4, 5, 6, 7	

Supported application when wireless LAN is connected

Type	Application Name	Destination	MFP Wireless LAN Mode		Remarks
		Overseas	Infrastructure Mode*	Access Point Mode	
Main Unit Native Function*1	Print (LPD / Raw / IPP / IPP-SSL / FTP Push)	Yes	Yes	Yes	
	Scan (Scan to FTP/SMB)	Yes	Yes	Yes	
	Embedded Web browsing	Yes	Yes	Yes	
	Remote Operation Panel	Yes	Yes	Yes	
	SMB Server Function	Yes	Yes	Yes	
	mDNS Communication	Yes	Yes	Yes	
Application	SharpAccountant Pro	No	No	No	
	Sharp Print System	No	No	No	
	SharpAccountant Lite	No	No	No	Under discussion
	Sharp Remote Device Manager (SRDM)	Yes	No	No	<ul style="list-style-type: none"> It has been described in the service information that SRDM is not supported. Because the session is shut out when a processing with large volume communication data (F/W update, Device Cloning etc.) cannot complete processing within the period until the timeout of the main unit.
	Network Scan Tool (Including Lite)	Yes	Yes	No	
	OSA-NST	N/A	N/A	N/A	
	All OSA series application	Yes	Yes	No	The interface of OSA should be available from the infrastructure mode.
	Sharpdesk Mobile	Yes	Yes	Yes	
Cloud Service	Sharpdesk Online	No	Yes*	No	* But it requires a network connection which can connect to external internet.
	Cloud Portal (Old Name: Clouddesk)	Yes	Yes*	No	* But it requires a network connection which can connect to external internet.

*1: Communications which are supported by the other cable communication are also supported at the infrastructure mode.

L. Memory/Hard disk

Flash DIMM		mSATA SSD	Memory			HDD*1
ICU main (REUS1)	ICU sub (REUS2)	SOC	REUS1 On board	REUS2 On board	SOC On board	2.5"
16MB	2MB	16GB	1GB	1GB	4GB	1TB

*1: The capacities are varied depending on the procurement situation.

Memory area (SSD)	Boot/Program area
	FAX data storage area 1GB

M. 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.

2. Copy functions

A. First copy time

Platen/DSPF	90cpm machine
Platen	4.0 seconds or less
DSPF	6.3 seconds or less

B. Job Speed

Engine	90cpm machine
S to S	90cpm (100%)

C. Job Effectiveness

BLI Standard (DSPF)

Engine	90cpm machine
S to S	78 cpm (87%)
S to D	75 cpm (83%)
D to D	83 cpm (92%)

* S to S: 10 pages of A4 / 8.5" x 11" document and 5 copies

* S to D: 10 pages of A4 / 8.5" x 11" document and 5 copies

* D to D: 10 pages (20 sides) of A4 / 8.5" x 11" document and 5 copies

3. Printer function

A. Printer driver supported OS

OS *1		Custom PCL6	Custom PCL5e	Custom PS	PPD	PC-Fax	TWAIN
Windows	98 / Me	No	No	No	No	No	No
	NT 4.0 SP5 or later	No	No	No	No	No	No
	2000	No	No	No	No	No	No
	XP	No	No	No	No	No	No
	XP x64	No	No	No	No	No	No
	Server 2003 *2	No	No	No	No	No	No
	Server 2003 x64 *2	No	No	No	No	No	No
	Vista	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Vista x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2008	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2008 x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2008 R2	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 7	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 7 x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8	No	No	No	No	No	No
	Windows 8 x64	No	No	No	No	No	No
	Windows 8.1	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8.1 x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2012 x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2012 R2 x64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 10	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 10 x 64	CD-ROM	No	CD-ROM	CD-ROM	CD-ROM	CD-ROM
Mac	9.0	No	No	No	No	No	No
	X 10.2	No	No	No	No	No	No
	X 10.3	No	No	No	No	No	No
	X 10.4	No	No	No	No	No	No
	X 10.5	No	No	No	No	No	No
	X 10.6	No	No	CD-ROM	No	No	No
	X 10.7	No	No	CD-ROM	No	No	No
	X 10.8	No	No	CD-ROM	No	No	No
	X 10.9	No	No	CD-ROM	No	No	No
	X 10.10	No	No	CD-ROM	No	No	No
	X 10.11	No	No	CD-ROM	No	No	No
	X 10.12	No	No	CD-ROM	No	No	No

*1: New OSs will be supported according to the Office Solution Division's rules.

*2: Internally evaluated (but not officially announced)

B. PDL emulation/Font

PDL (Command)		Installed font	Option font
PCL5e / PCL6 compatibility	STD	European outline font = 80 styles Line printer font (BMP) = 1 style	Barcode font = 28 styles
Postscript 3	STD	European outline font = 139 styles	—
Scalable font for List Print	STD	Arphic Mobile Font	

4. Image send function

A. Mode

Mode	Sub mode	Support
Scanner	E-mail	Yes
	FTP server	Yes
	Shared folder (SMB)	Yes
	Desktop	Yes
	USB memory	Yes
	HDD	Yes
Internet Fax/ Direct SMTP	-	Yes
Fax	-	Yes
Data input (metadata)	E-mail	Yes
	FTP server	Yes
	Shared folder (SMB)	Yes
	Desktop	Yes
Remote PC scan	-	Yes

B. Support System

Mode	Scanner	Internet Fax/ Direct SMTP	Fax
Corresponding server / Protocol	SMTP/SMTP-SSL FTP (TCP/IP)/FTPS SMB HTTP/HTTPS (Supported protocol of Sharp OSA)	POP3 server SMTP server ESMTP server	N/A

C. Support Image

Mode	Format / Compression method	Item	Support
Scanner	File format Mono 2 gradation)	TIFF	Yes
		PDF	Yes
		PDF/A-1b	Yes
		PDF/A-1a	Yes
		Encrypted PDF	Yes
		XPS	Yes
		Searchable PDF	Yes
		Office file (pptx, xlsx, docx)	Yes
		Text file (TXT) (UTF-8)	Yes
		Rich text file (RTF)	Yes
		XPDF (Reflow type)	No
	File format (Color/ Grayscale)	Color TIFF	Yes
		JPEG	Yes
		PDF	Yes
		PDF/A-1b	Yes
		PDF/A-1a	Yes
		Encrypted PDF	Yes
		High compression PDF	Yes (Support as standard) (There is the option setting of ACRE board, too)
		XPS	Yes
		Searchable PDF	Yes
		Office file (pptx, xlsx, docx)	Yes
		Text file (TXT) (UTF-8)	Yes
		Rich text file (RTF)	Yes
		XPDF (Reflow type)	No
	Compression method (Mono 2 gradation)	Non-compression	Yes
		G3 (1- dimensional)= MH (Modified Huffman)	Yes
		G4= MMR (Modified MR)	Yes

Mode	Format / Compression method	Item	Support
Scanner	Compression method (Color/ Grayscale)	JPEG (High/ Middle/Low)	Yes
		High compression PDF	Yes (Support as standard), (There is the option setting of ACRE board, too)
		Black Letter Emphasis	Yes
		2-color PDF	No
Internet Fax Direct SMTP	File format (Monochrome)	TIFF-FX(TIFF-F / TIFF-S)	Yes
	File format (Color/ Grayscale)	TIFF-C	No
	Compression method (Monochrome)	Non-compression	N/A
		G3 (1- dimensional)= MH (Modified Huffman)	Yes
		G4 = MMR (Modified MR)	Yes
	Compression method (Color/ Grayscale)	TIFF-C (high/ middle/ low)	No
Fax	File format (Monochrome)	N/A	N/A
	Compression method (Monochrome)	MH/ MR/ MMR/ JBIG	Yes
File per page (Setting of the number of pages available)			Yes

•Apply the formats which have been set by each mode when broadcasting across modes of Image Send. (One scan multi format).

D. Image Processing

(1) Color Mode

	Scanner	Internet Fax/ Direct SMTP	Fax
B&W	Yes	Yes	Yes
Grayscale	Yes	N/A	N/A
Full color	Yes	N/A	N/A
Auto Color Selection (ACS)	Yes	N/A	N/A

(2) Resolution

Level	Scanner	Internet Fax/ Direct SMTP	Fax
1	100x100dpi	200x100 dpi (Half Tone: N/A.)	Standard: 203.2x97.8 dpi (Half Tone: N/A.)
2	150x150dpi	N/A	N/A
3	200x200dpi	200x200dpi	Fine (203.2x195.6 dpi)
4	300x300dpi	200x400dpi	Super Fine (203.2x391 dpi)
5	400x400dpi	400x400dpi	Ultra Fine (406.4x391 dpi)
6	600x600dpi	600x600dpi	N/A

(3) Exposure / Original Type

Mode		Scanner	Internet Fax/ Direct SMTP	Fax
Halftone reproduction		Equivalent to 256 gradations	<-	<-
Exposure Adjustment	Auto	Yes	<-	<-
	Manual	5 levels	<-	<-
Original document type (Selectable in manual mode)	Text	Yes	N/A	N/A
	Text / Photo	Yes	N/A	N/A
	Text / Printed photo	Yes	N/A	N/A
	Photo	Yes	N/A	N/A
	Printed photo	Yes	N/A	N/A
	Map	Yes	N/A	N/A
Magical scan (Area division + Suppress Background)		Yes	N/A	N/A
Selection of image quality		N/A	Halftone (B&W only) ON/OFF	Halftone (B&W only) ON/OFF

E. Number of available Image Sending and receiving.

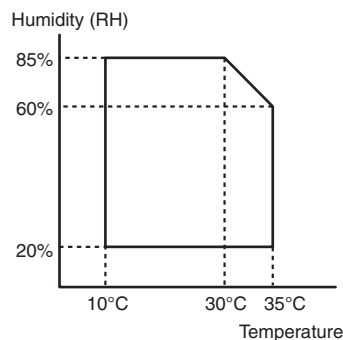
Number of Image send	100-messages (Internet-FAX measurement use ITU-T No.1 chart.)
Number of receive	400-messages (Internet-FAX measurement use ITU-T No.1 chart.)

5. External dimension and weight

Outer dimension (W x D x H) (Included operation panel)	1,086mm x 791mm x 1,237mm (Operation panel default position) 1,086mm x 879mm x 1,237mm (When the operation panel is put down.)
Dimension occupied by the machine (When the bypass tray is extended)	1,242mm x 791mm (When the bypass tray is extended/Max. value with the operation panel is tilted.)
Weight Main Unit (including photoreceptor / not including consumables)	302kg

6. Ambient conditions

1) Working environment



Standard environmental conditions	Temperature	21 - 25°C
	Humidity	40 - 60%RH
Usage environmental conditions	Temperature	10 - 35°C
	Humidity	20 - 85%RH
	Atmospheric pressure	590-1013hPa (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

A. USA/Canada/Latin America

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	MX-900NT	Life: A4 6% document
2	Developer	Developer x1	1000K	MX-900NV	
3	Drum	OPC drum x1	1000K	MX-850NR	

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

B. Europe/Australia/New Zealand/Korea

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	MX-900GT	Life: A4 6% document
2	Developer	Developer x1	1000K	MX-900GV	
3	Drum	OPC drum x1	1000K	MX-850GR	

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

C. Asia/Hong Kong

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	MX-900AT	Life: A4 6% document
2	Developer	Developer x1	1000K	MX-900AV	
3	Drum	OPC drum x1	1000K	MX-850AR	

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

D. Middle East/Africa /Taiwan/Philippines/Others (Agencies)

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	MX-900FT	Life: A4 6% document
2	Developer	Developer x1	1000K	MX-900FV	
3	Drum	OPC drum x1	1000K	MX-850AR	

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

E. China

No.	Item	Content	Life	Model name	Remarks
1	Toner cartridge	Toner cartridge x1	120K	MX-900CT	Life: A4 6% document
2	Developer	Developer x1	1000K	MX-900CV	
3	Drum	OPC drum x1	1000K	MX-850CR	

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

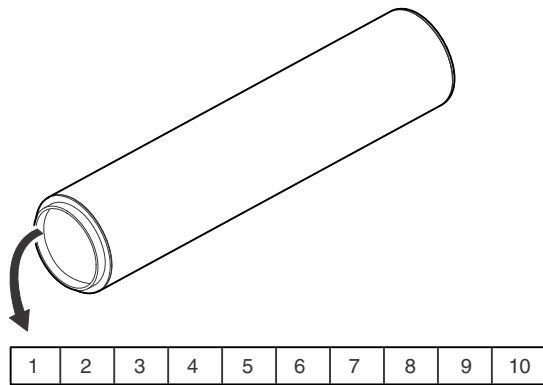
2. Maintenance parts list

No.	Item	Contents	Piece	Life	Model Name
1	Heat Roller Kit	Upper Heat Roller Unit	x1	1000K	MX-950HK
		Lower Heat Roller Unit	x1		
2	Fuser Maintenance Kit	Fusing Separation Pawl (Upper)	x6	500K	MX-950KC
		Fusing Separation pawl(Lower)	x4		
		Fusing Front Paper Guide (Upper)	x1		
3	Web Cleaning kit	Web Roller	x1	500K	MX-950WC
		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	MX-900MK
		Screen Grid	x1		
		Charger Cleaner	x1		
		Charger Cushion	x4		
		Cleaner Base Guide	x1		
5	Cleaning Blade Kit	Side Seal F	x1	500K	MX-900CB
		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	MX-900DK
		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	MX-900TT
		Transfer Roller	x1		
		Transfer Cleaning Blade	x1		
		Ball Bearing	x4		
8	Paper Dust Removing Unit	Paper Dust Removing Unit	x1	500K	MX-900PD
9	Toner collection container	Toner collection container (with cap)	x1	500K	MX-850HB
10	Filter Kit	Ozone filter	x1	500K /6 months	MX-900FL
		Exhaust Filter	x1		
11	Staple Cartridge	Staple Cartridge	x3	5,000x3	MX-SCX2
12	Staple Cartridge	Staple Cartridge	x3	5,000x3	MX-SCX1
13	Staple Cartridge	Staple Cartridge	x3	5,000x3	AR-SC2
14	Staple Cartridge	Staple Cartridge	x4	2,000x4	MX-SCX3
15	Stamp Cartridge	Stamp Cartridge	x2	---	AR-SV1
16	WEB Cleaning Unit	WEB Cleaning Unit	x1	---	MX-900WU
17	Fusing Unit (for all cpm model) North America	Fusing Unit(For servicing rotation: Heater lamp 240V)	x1	---	MX-900FU1
18	Fusing Unit (for 90-sheet model) * Except North America	Fusing Unit	x1	---	MX-900FU
19	Transfer unit	Transfer Unit(For servicing rotation)	x1	---	MX-900TU

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



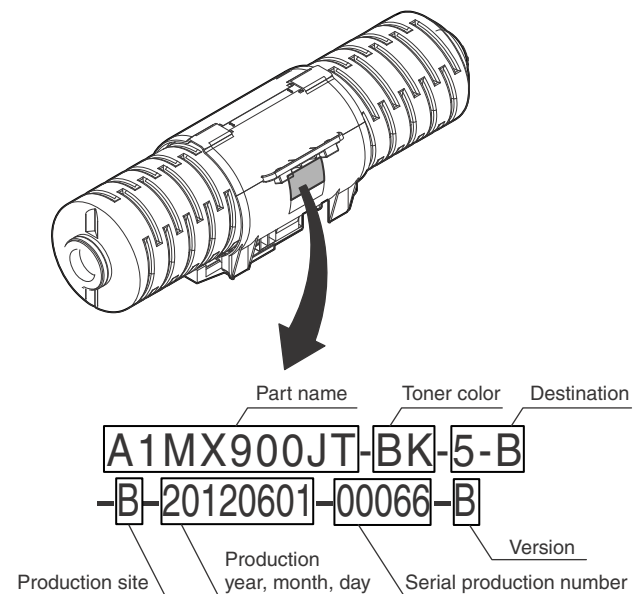
The lot number is in 8 digits, and each digit indicates the following content.

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.

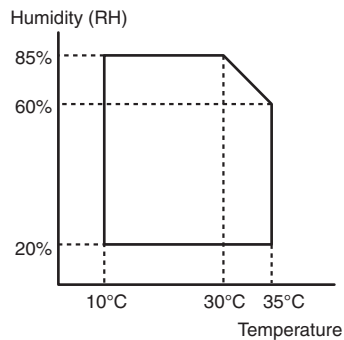
1 : '17/Apr.

4. The indication of remaining toner amount and the status of toner cartridge (Settable in Simulation 26-69)

Definition	Indication of remaining toner amount	UI (display message)
	100-75%	
	75-50%	
	50-10%	
Near End	0%	Ready to scan for copy. (Change the toner cartridge)
Toner End	0%	Change the toner cartridge.

1

5. Environmental conditions

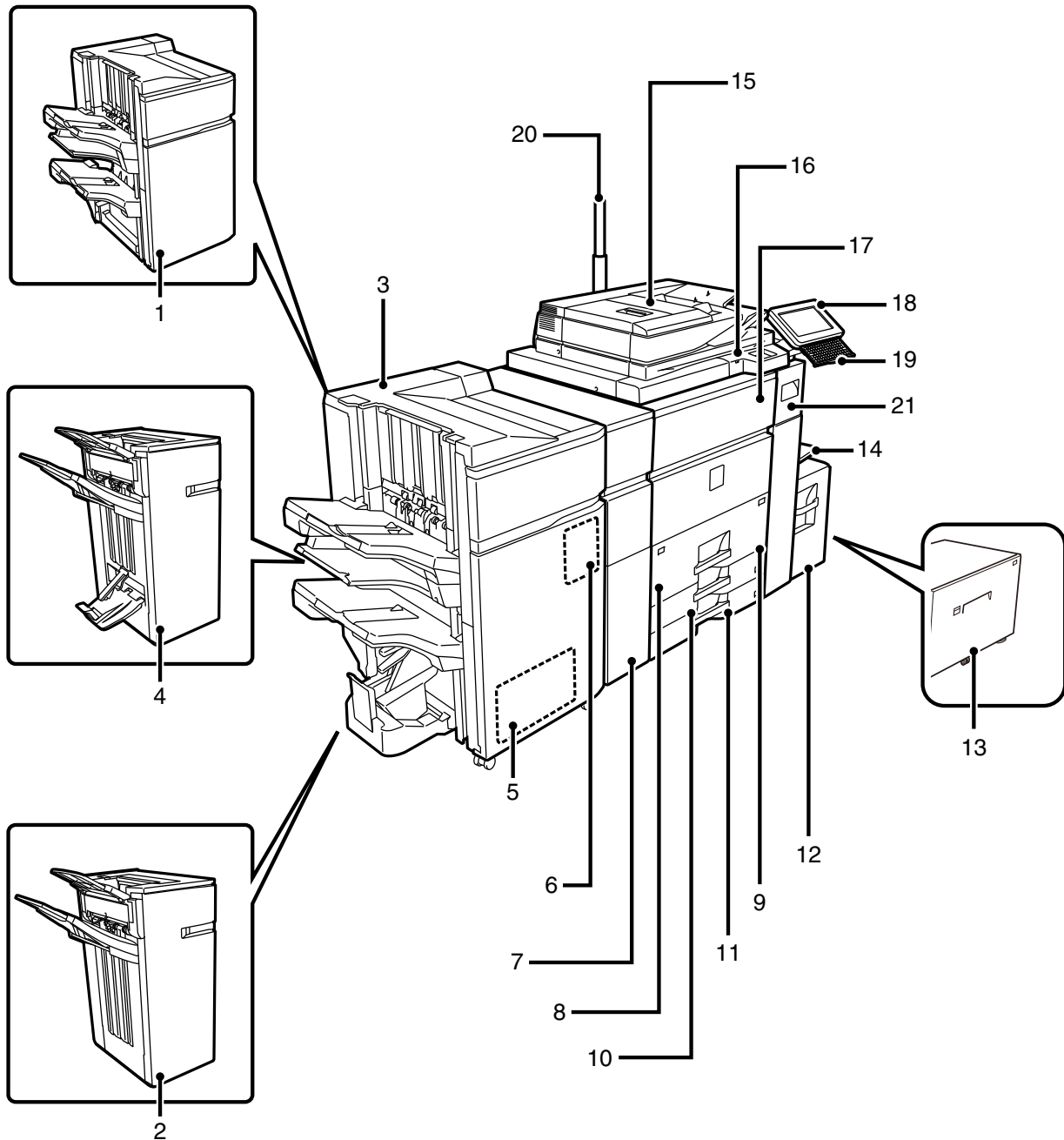


Standard environmental conditions	Temperature	23 ± 2 °C
	Humidity	50 ± 10% RH
Usage environmental conditions	Temperature	10 – 35 °C
	Humidity	20 – 85% RH
Storage period	Toner/Developer: 24 months from the manufactured month (Production lot) under unsealed state Drum: 36 months from the manufactured month under unsealed state	

[4] EXTERNAL VIEW AND INTERNAL STRUCTURE

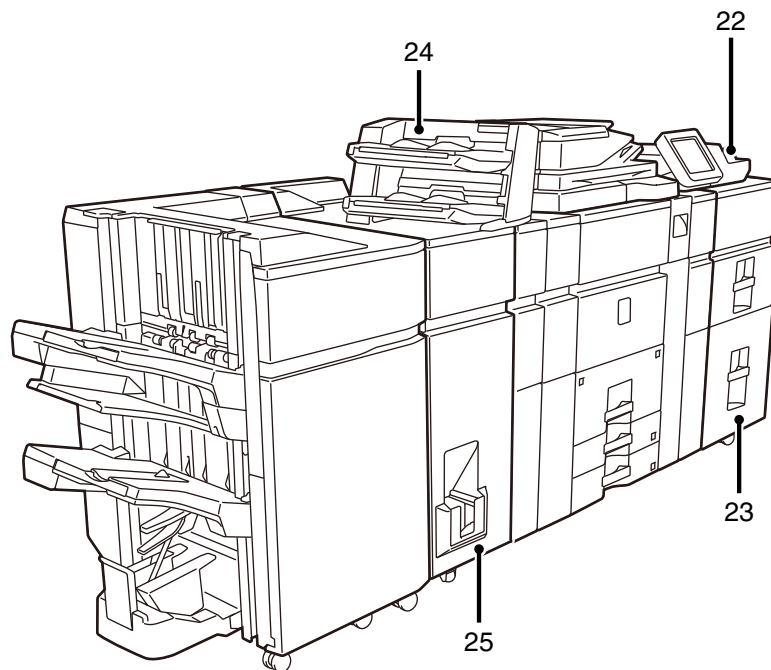
1. Identification of each section and functions

A. Exterior



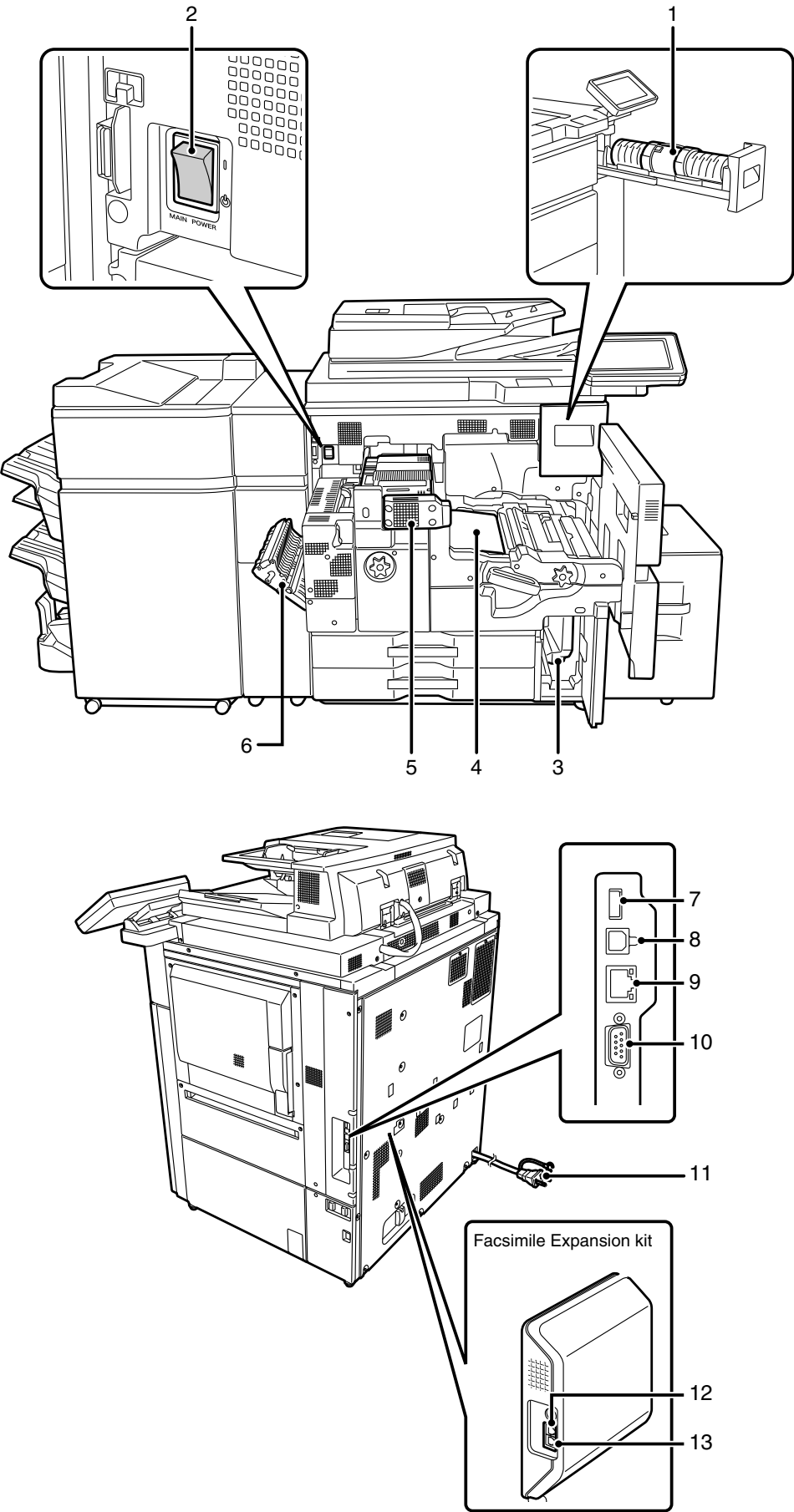
No.	Name	Function / Operation	Note
1	Finisher	This can be used to staple output. The optional punch module can be installed to punch holes in output. (100-sheet stapling)	* Peripheral device.
2	Finisher	This can be used to staple output. The optional punch module can be installed to punch holes in output. (50-sheet stapling)	* Peripheral device.
3	Saddle stitch finisher	The output is folded at the center. The saddle stitch function staples output at the centerline. (100-sheet stapling)	* Peripheral device.
4	Saddle stitch finisher	The output is folded at the center. The saddle stitch function staples output at the centerline. (50-sheet stapling)	* Peripheral device.
5	Trimming module	An extended section when performing center stapling can be cut out.	* Peripheral device.
6	Punch module	This is used to punch holes in output. Requires the finisher (large capacity) or the saddle stitch finisher (large capacity).	* Peripheral device.
7	Decurler unit	Corrects curl of printed paper properly.	* Peripheral device.
8	Tray 1 (left side)	This holds paper. Up to 1200 sheets of paper can be loaded. (80g/m ²)	
9	Tray 2 (right side)	This holds paper. Up to 800 sheets of paper can be loaded. (80g/m ²)	

No.	Name	Function / Operation	Note
10	Tray 3	This holds paper. Up to 500 sheets of paper can be loaded. (80g/m ²)	
11	Tray 4	This holds paper. Up to 500 sheets of paper can be loaded. (80g/m ²)	
12	A4 LCC	This holds paper. Up to 3500 sheets of paper can be loaded. (80g/m ²)	* Peripheral device.
13	A3 LCC	This holds paper. Up to 3000 sheets of paper can be loaded. (80g/m ²)	* Peripheral device.
14	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.	
15	Automatic document feeder	This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.	
16	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.	
17	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.	
18	Operation panel	This is used to select functions and enter the number of copies.	
19	Keyboard	This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.	* Peripheral device.
20	Status indicator	The machine status is indicated by the LED.	* Peripheral device.
21	Toner tray	Pull out this tray when replacing the toner cartridge.	



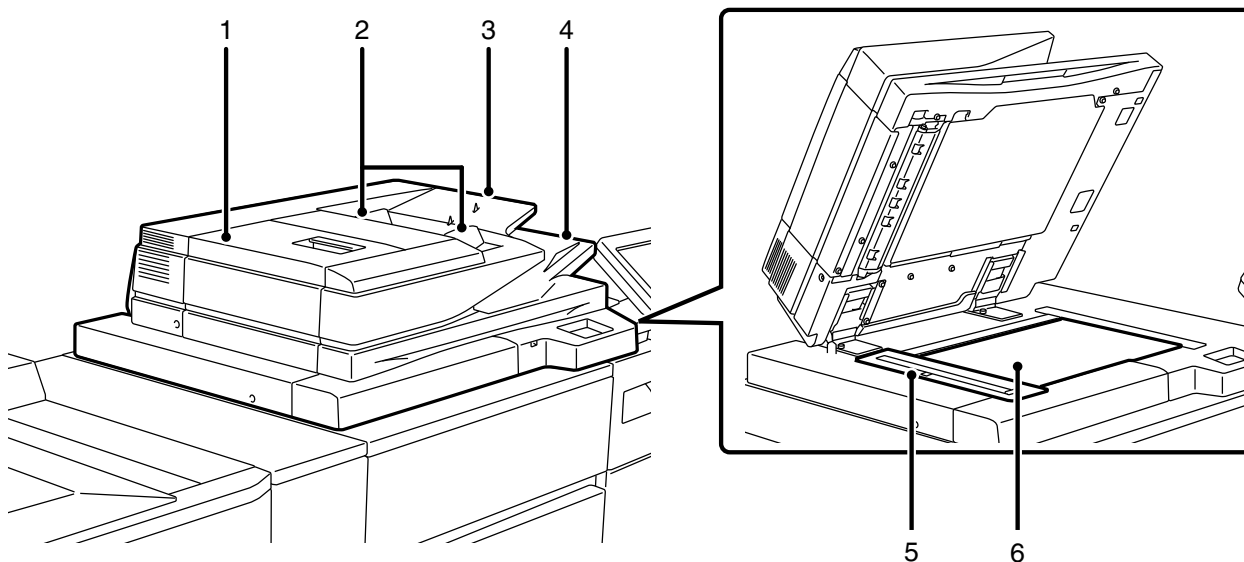
No.	Name	Function / Operation	Note
22	Bypass tray	Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension. This tray cannot be installed when the large-capacity 2-stage paper feed tray is installed.	* Peripheral device.
23	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.
24	Inserter	Paper loaded in the inserter can be inserted into output from the machine as covers and inserts.	* Peripheral device.
25	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



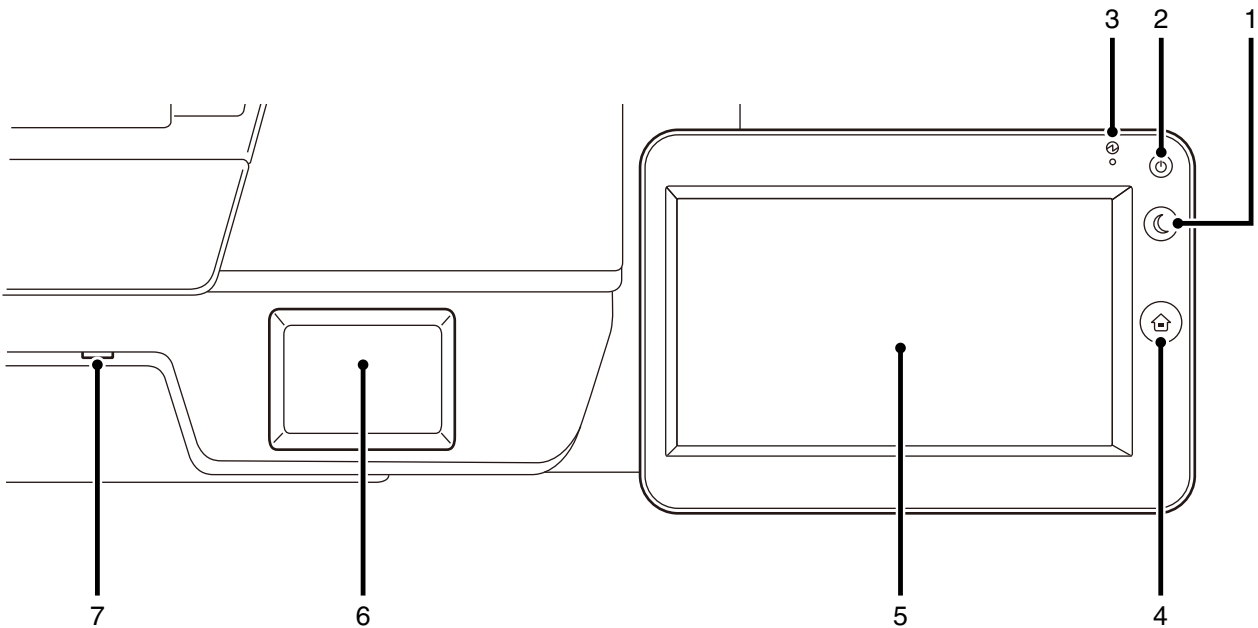
No.	Name	Function / Operation	Note
1	Toner cartridge	These contain toner for printing. When the toner runs out in the cartridge, replace the cartridge with a new cartridge.	
2	Main power switch	This is used to power on the machine. When using the fax or Internet fax functions, keep this switch in the "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 For FSS (Field Support System)	This connector is for use only by service technicians. Connecting a cable to this connector may cause the machine to malfunction.	Important note for service technicians: The cable connected to the service connector must be less than 118" (3 m) in length.
11	Power plug		
12	Extension phone socket	When the fax function of the machine is used, an extension phone can be connected to this socket.	* Peripheral device.
13	Telephone line socket	Telephone line socket	* Peripheral device.

C. Automatic document feeder and document glass



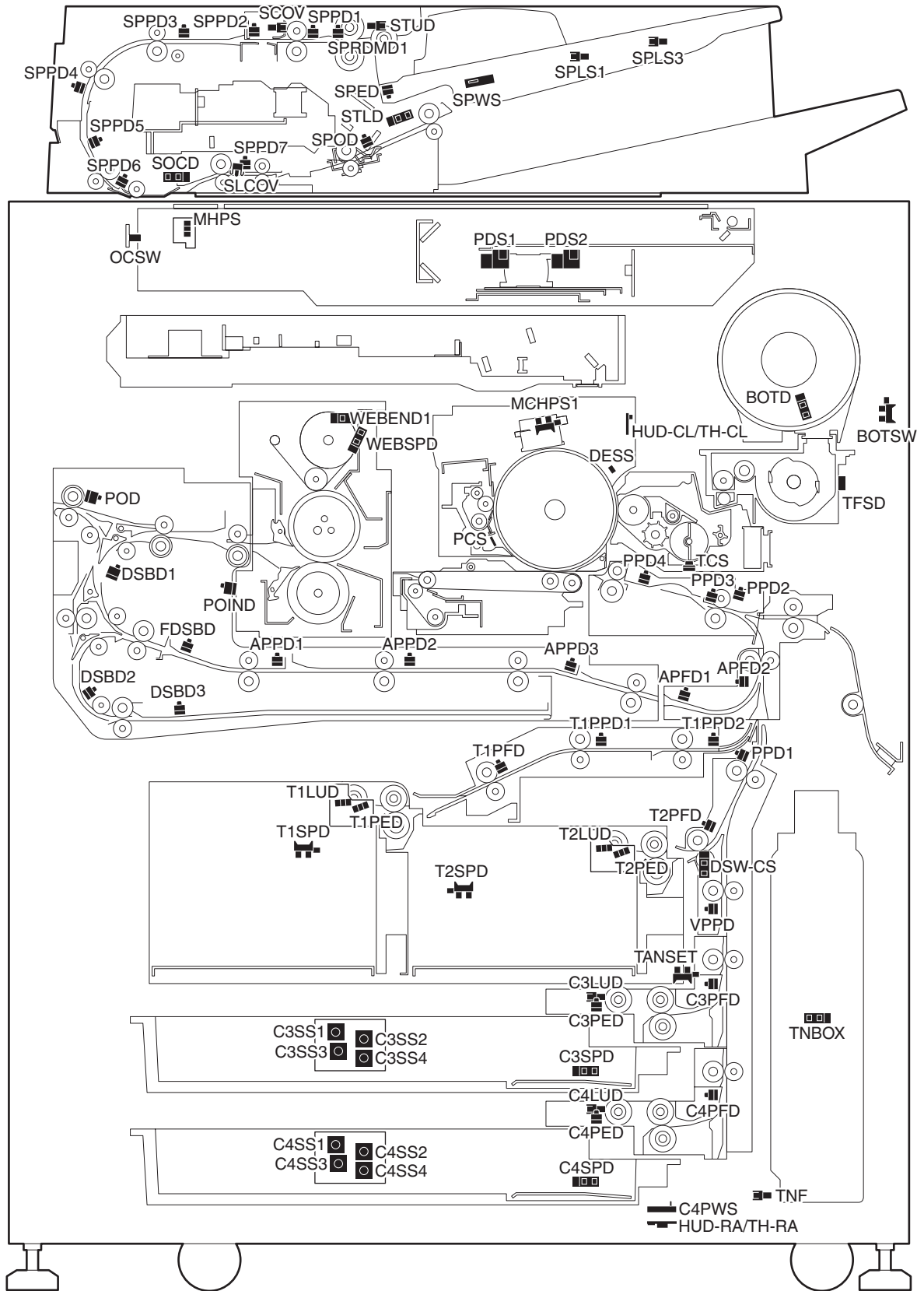
No.	Name	Function / Operation
1	Document feeding area cover	Open to remove a misfed original.
2	Original guides	These help ensure that the original is scanned correctly. Adjust the guides to the width of the original.
3	Document feeder tray	Place originals in this tray. 1-sided originals must be placed 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	[POWER SAVE] key / indicator	Use this key to put the machine into auto power shut-off mode to save energy. The [POWER SAVE] key blinks when the machine is in auto power shut-off mode.
2	[POWER] key	Use this key to turn the machine power on and off.
3	Main power indicator	This lights up when the machine's main power switch is in the "on" position.
4	[HOME] key / 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.
5	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.
6	IC card holder	When an IC card is set to this holder with the IC card reader/writer installed, the user authentication can be made.
7	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

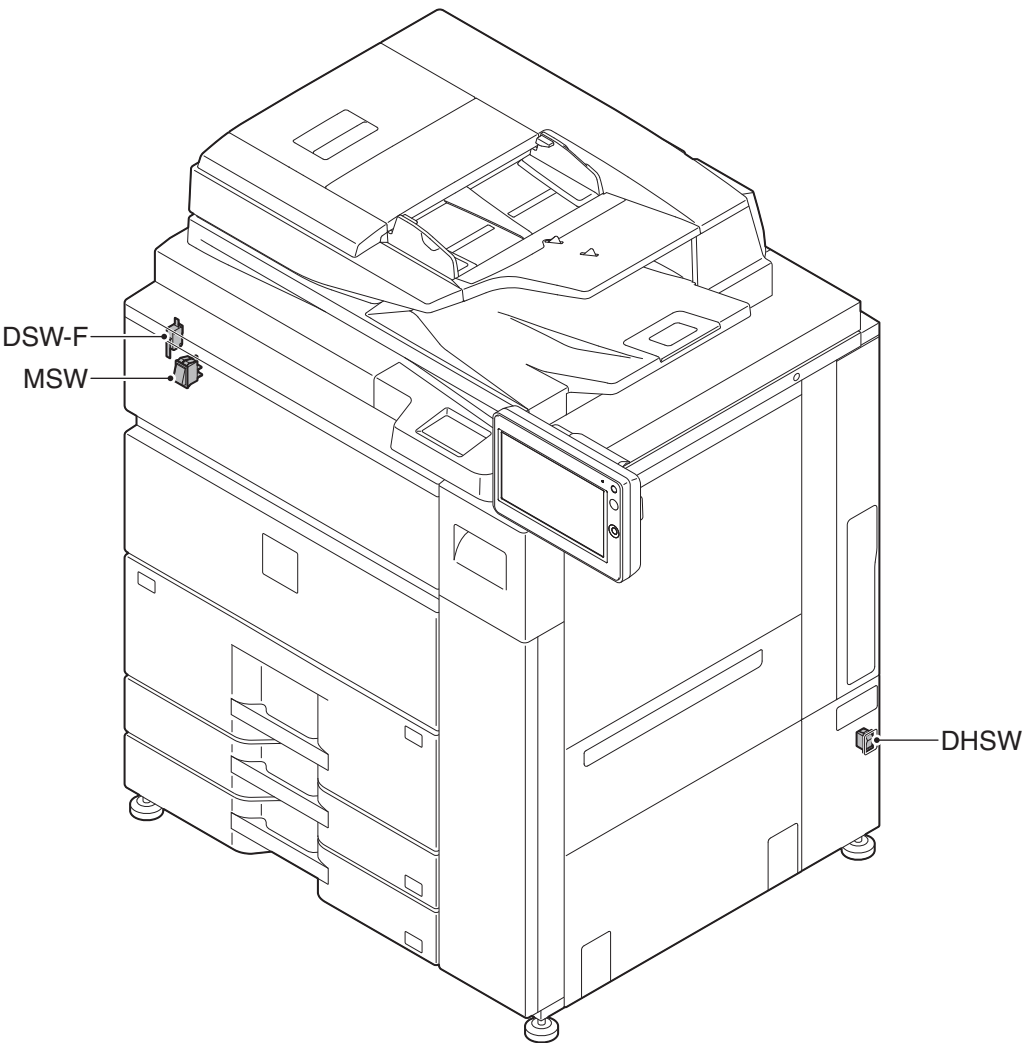


Signal name	Name	Type	Function / Operation	Active condition	Note
APFD1	ADU paper entry detection 1	Reflection type	Detects the ADU paper pass.		
APFD2	ADU paper entry detection 2	Reflection type	Detects the ADU paper pass.		
APPD1	ADU transport detection 1	Reflection type	Detects the ADU paper transport.		
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			
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.		
HUD-CL/TH-CL	Temperature humidity sensor 2	Temperature humidity sensor	Detects temperature and humidity in the machine.		
HUD-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	Transmission type	Scanner home position detection.		
OCSW	Original cover SW	Transmission type	Document size detection trigger.	L when the DSPF unit is open.	
PCS	Procon sensor	Reflection type	Detects the ID density.		
PDS1	Document detection (sub scanning direction 1)	Reflection type	Detects the sub scanning document size.		
PDS2	Document detection (sub scanning direction 2)	Reflection type	Detects the sub scanning document size.		
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.		
SCOV	DSPF upper door open/close sensor	Transmission type	Detects open/close of the upper door.	L when the upper door is open.	
SLCOV	DSPF lower door open/close sensor	Lever switch	Detects open/close of the lower door.	L when the lower door is open.	
S OCD	DSPF open/close sensor	Transmission type	Detects open/close of the DSPF unit.	H when the DSPF unit 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.	

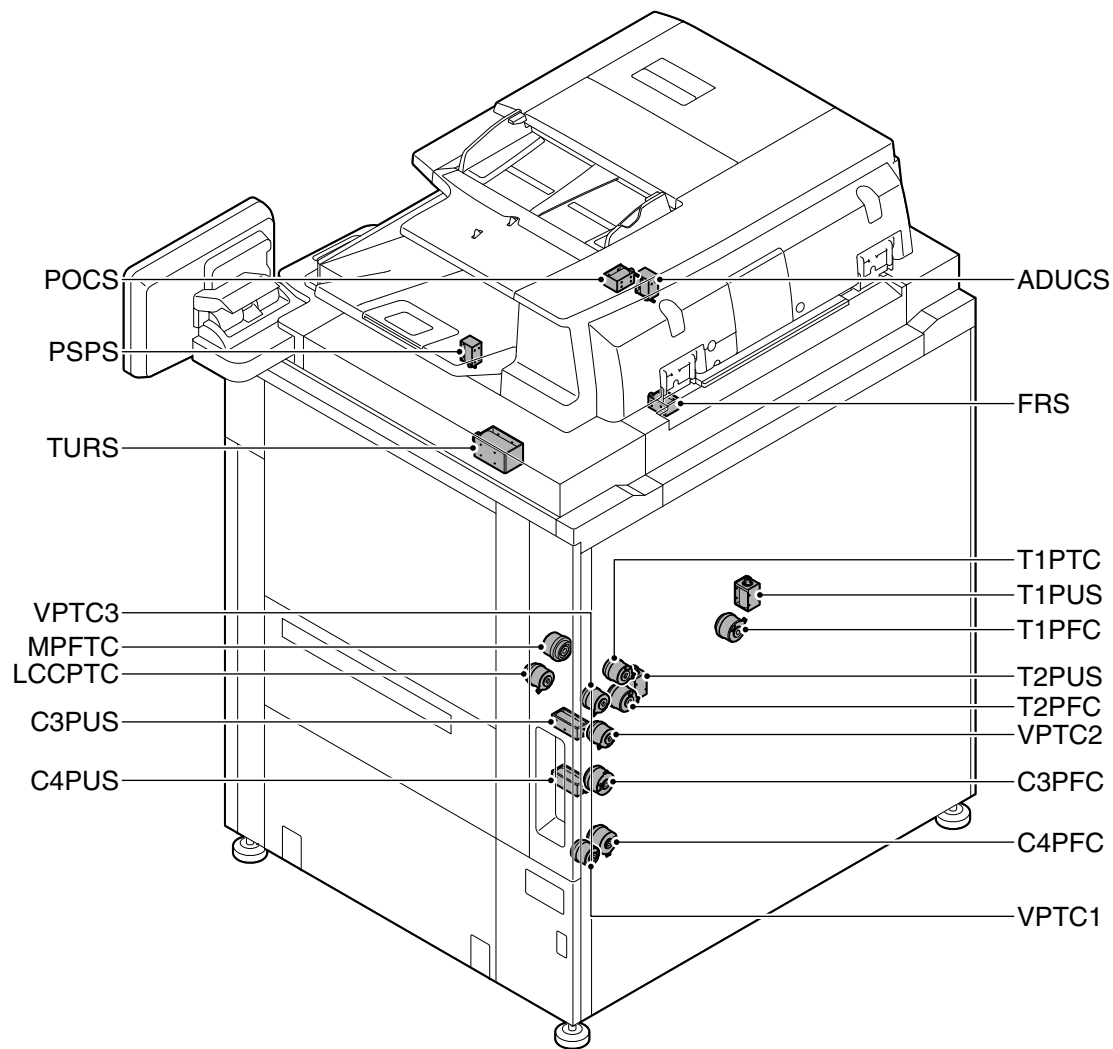
Signal name	Name	Type	Function / Operation	Active condition	Note
SPPD4	DSPF document pass sensor 4	Reflection type	Detects document pass.	L when paper is detected.	
SPPD5	DSPF document pass sensor 5	Reflection type	Detects document pass.	L when paper is detected.	
SPPD6	DSPF document pass sensor 6	Reflection 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.	
SPRDM1	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.		
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.	
T1LUD	Cassette 1 upper limit detection	Transmission type	Detects lift up of the cassette 1 and paper presence.		PWB unit
T1PED	Cassette 1 paper presence detection	Transmission type			
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	Transmission type	Detects lift up of the cassette 2 and paper presence.		PWB unit
T2PED	Cassette 2 paper presence detection	Transmission type			
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



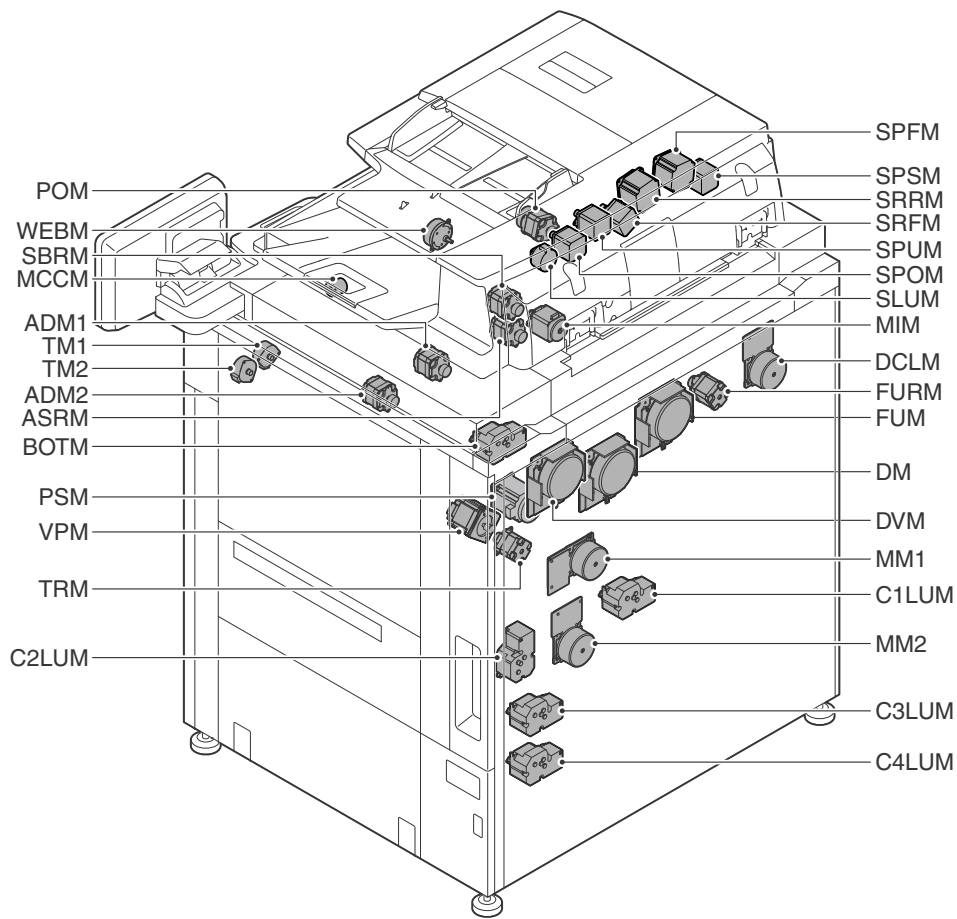
Signal name	Name	Type	Function / Operation
DHSW	Dehumidifying heater switch	Seesaw switch	Turns ON/OFF the power of the dehumidifying heater.
DSW-F	Front door switch	Micro switch	Detects open/close of the front door.
MSW	Main switch	Rocker switch	Turns ON/OFF the power of the machine.

G. Clutches and solenoids



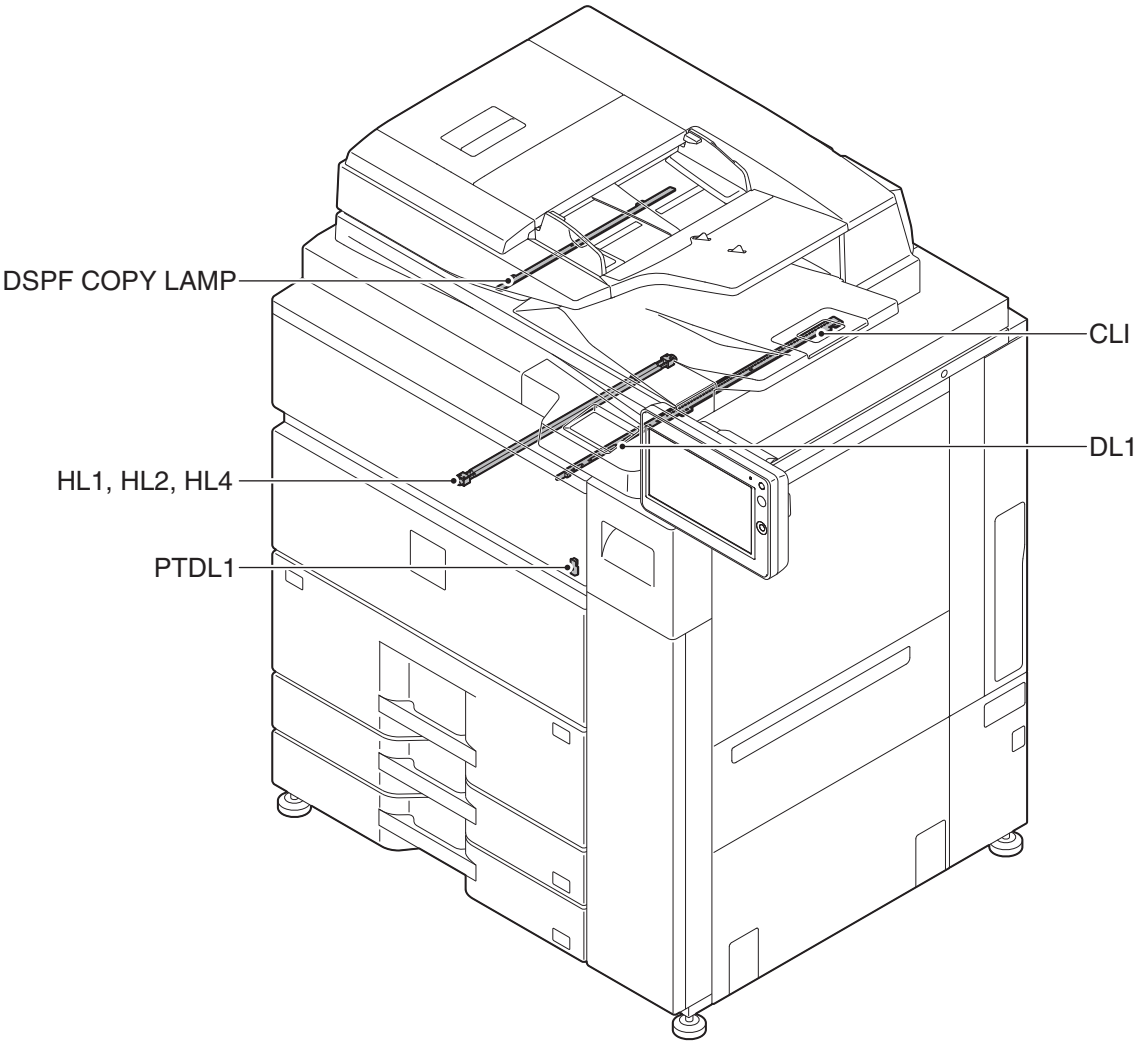
Signal name	Name	Type	Function / Operation
ADUCS	Duplex select gate solenoid	Electromagnetic solenoid	Select gate solenoid for transport in the ADU section
T1PFC	Cassette 1 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 1 paper feed section.
T1PTC	Horizontal transport clutch	Electromagnetic clutch	Controls ON/OFF of the transport roller.
T1PUS	Cassette 1 paper pickup solenoid	Electromagnetic solenoid	Paper pickup solenoid (Tray 1)
T2PFC	Cassette 2 paper transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller in the Tray 2 paper feed section.
T2PUS	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



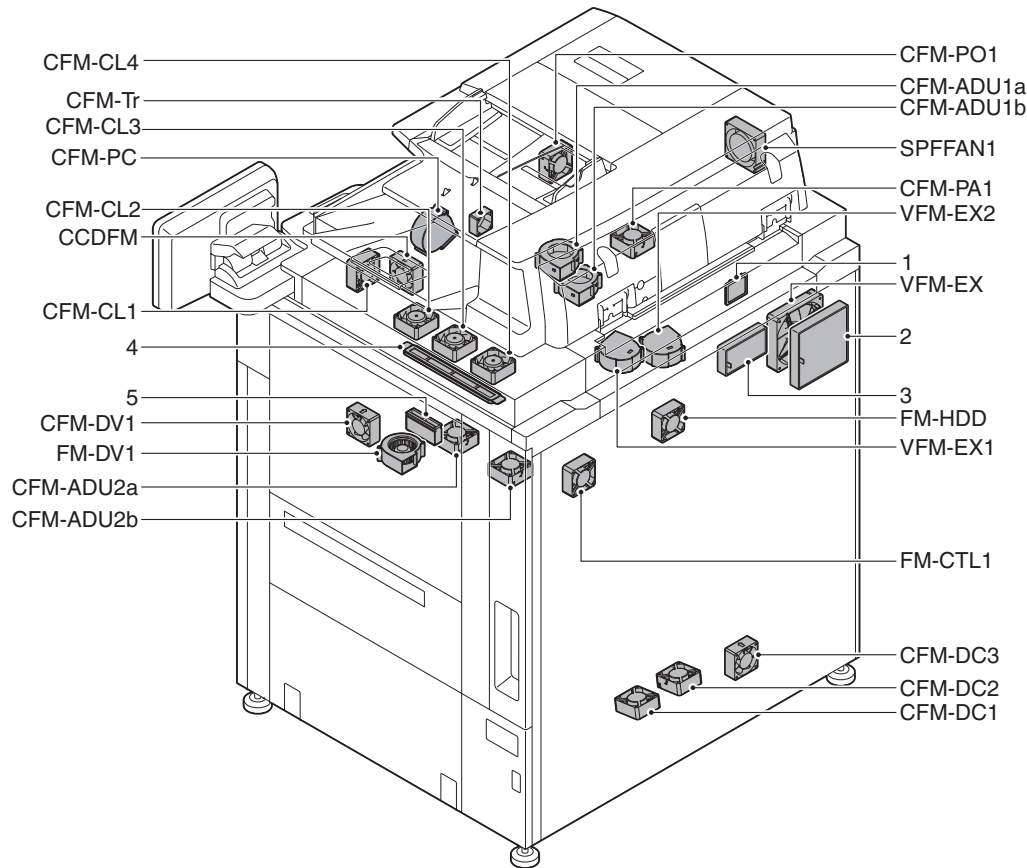
Signal name	Name	Type	Function / Operation
ADM1	ADU transport motor 1	Stepping motor	Drives the ADU transport roller 1.
ADM2	ADU transport motor 2	Stepping motor	Drives the ADU transport roller 2.
ASRM	ADU reverse motor	Stepping motor	Drives the ADU reverse roller.
BOTM	Toner cartridge motor	DC brush 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.
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.	

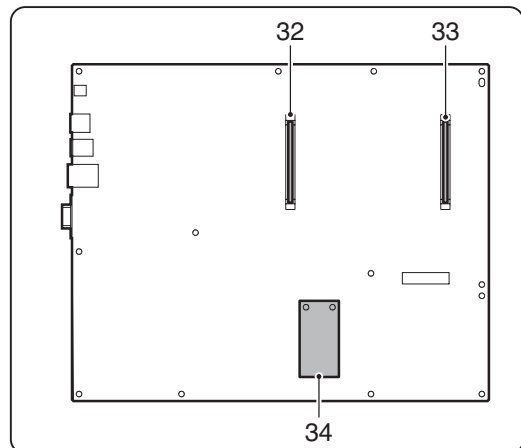
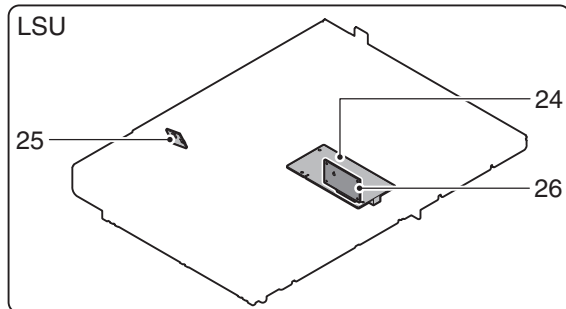
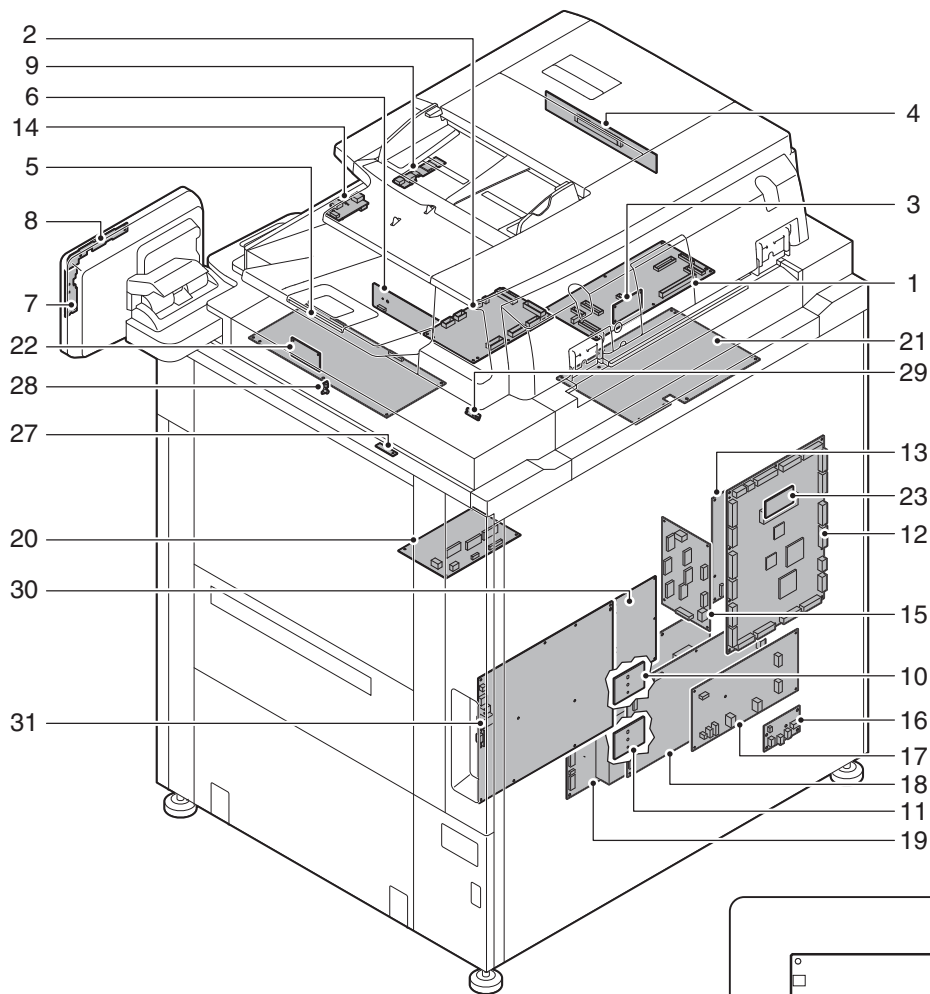
J. Fans and Filters



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-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
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.

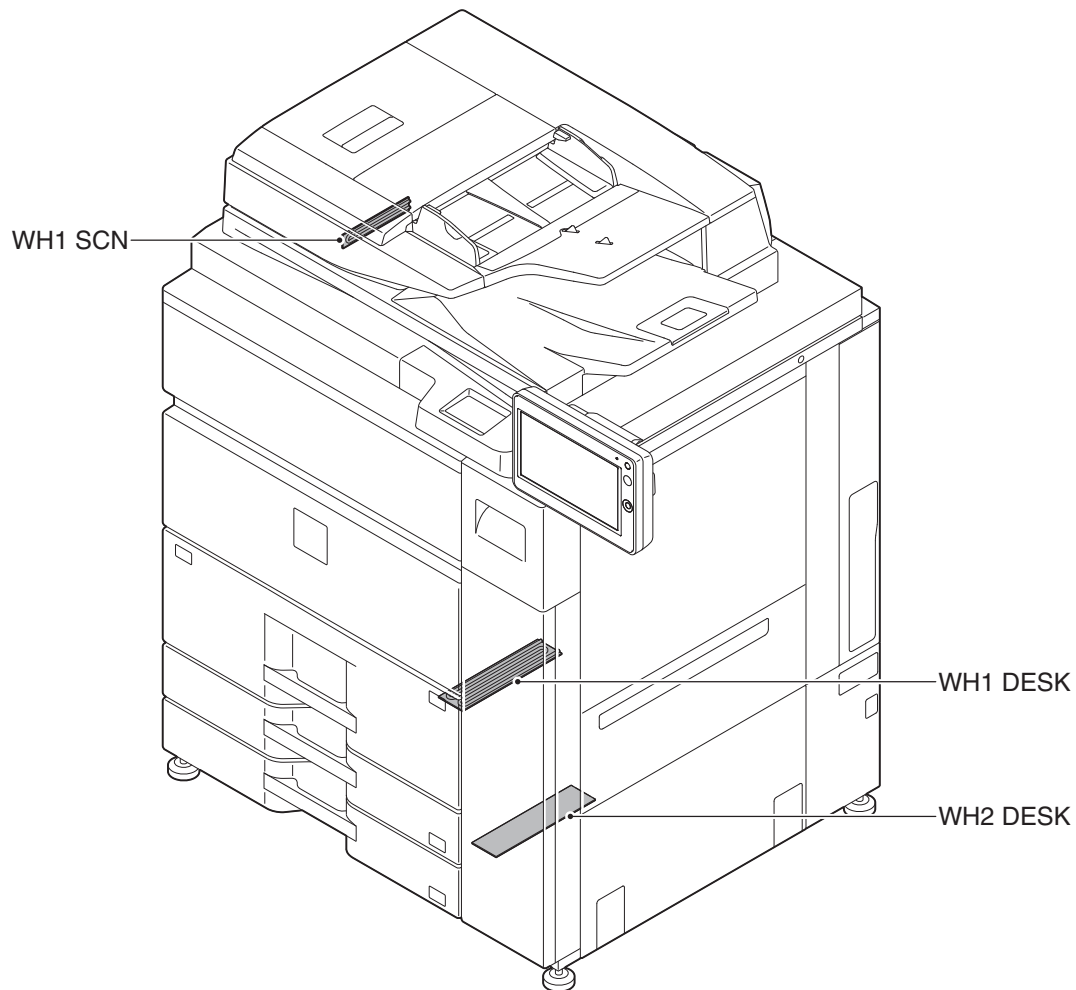
K. PWB



No.	Name	Function / Operation
1	DSPF cnt PWB	Controls the DSPF.
2	DSPF driver PWB	Drives the DSPF motor.
3	DSPF Flash PWB	Stores the DSPF program data.
4	DSPF CCD PWB	DSPF (back) scanning CCD.
5	SCNCNT PWB	Controls the scanner.
6	CCD PWB	Scanner (front) read CCD.
7	HOME KEY PWB	Outputs the return-home/power-saving key signals.
8	POWER SW PWB	Indicates power-on/off and outputs the power on/off key signal.
9	Wifi PWB	Wifi interface
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	USB PWB	USB interface
15	Driver PWB (paper exit)	Drives the paper exit system transport motor.
16	WH PWB (option)	Controls on/off of the dehumidifying heater.

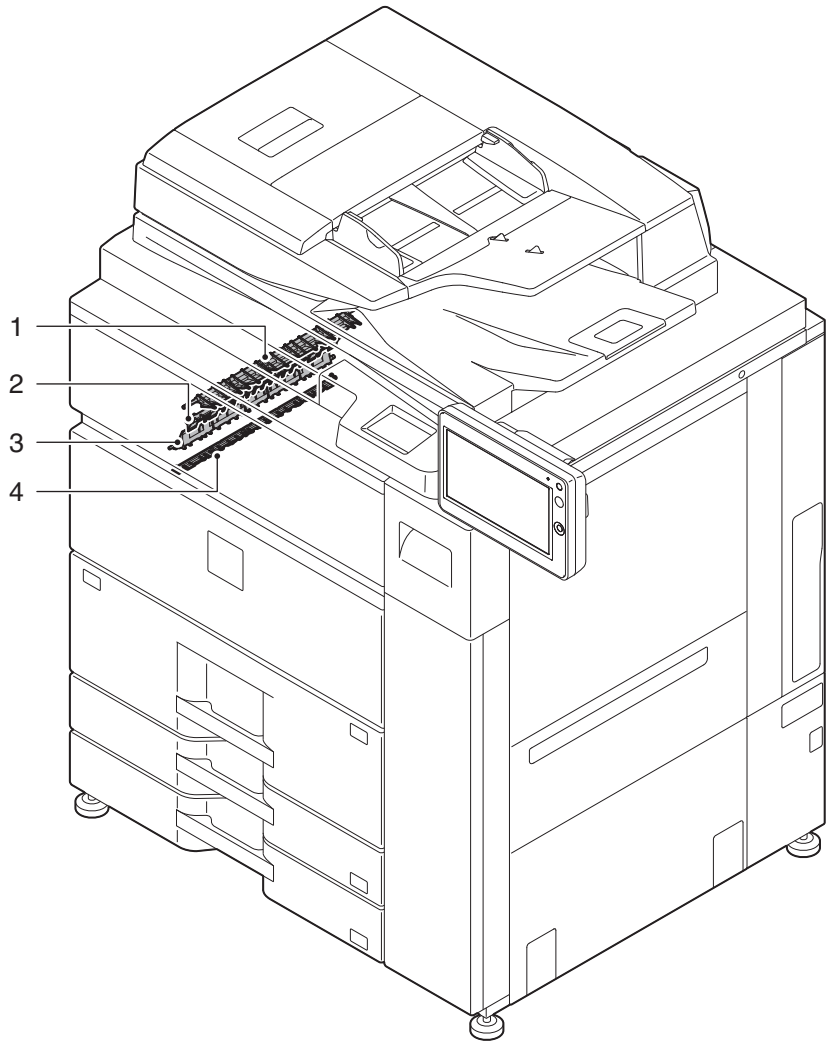
No.	Name	Function / Operation
17	AC PWB	Controls the power on the primary side.
18	SUB POWER	Supplies power for the option and brushless motors of the machine.
19	Main power	Supplies the power for the machine.
20	Driver PWB (Paper feed)	Drives the paper feed system transport motor.
21	High voltage PWB	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	SCN Flash PWB	Store the SCN program data.
23	PCU-Flash PWB	PCU program ROM PWB.
24	LSU PWB	Controls the LSU.
25	BD PWB	Detects the laser synchronous signal.
26	LD PWB	Controls lighting the laser. (4 beams)
27	High voltage PS PWB	Prevents against leakage of the transfer current.
28	PTDL PWB	Discharge the OPC drum surface before transfer.
29	Process control sensor PWB	Detects the toner density on the drum.
30	Mother PWB	Controls power energy saving and relays the MFPC connect signal.
31	MFPC PWB	Controls the image-related items and controls all over the machine.
32	Main Reus Flash memory	Stores the ASIC1 program data.
33	Sub Reus Flash memory	Stores the ASIC2 program data.
34	mSATA SSD card memory	Stores the SOC program data, snapshot, the e-manual data, the log data

L. Heater



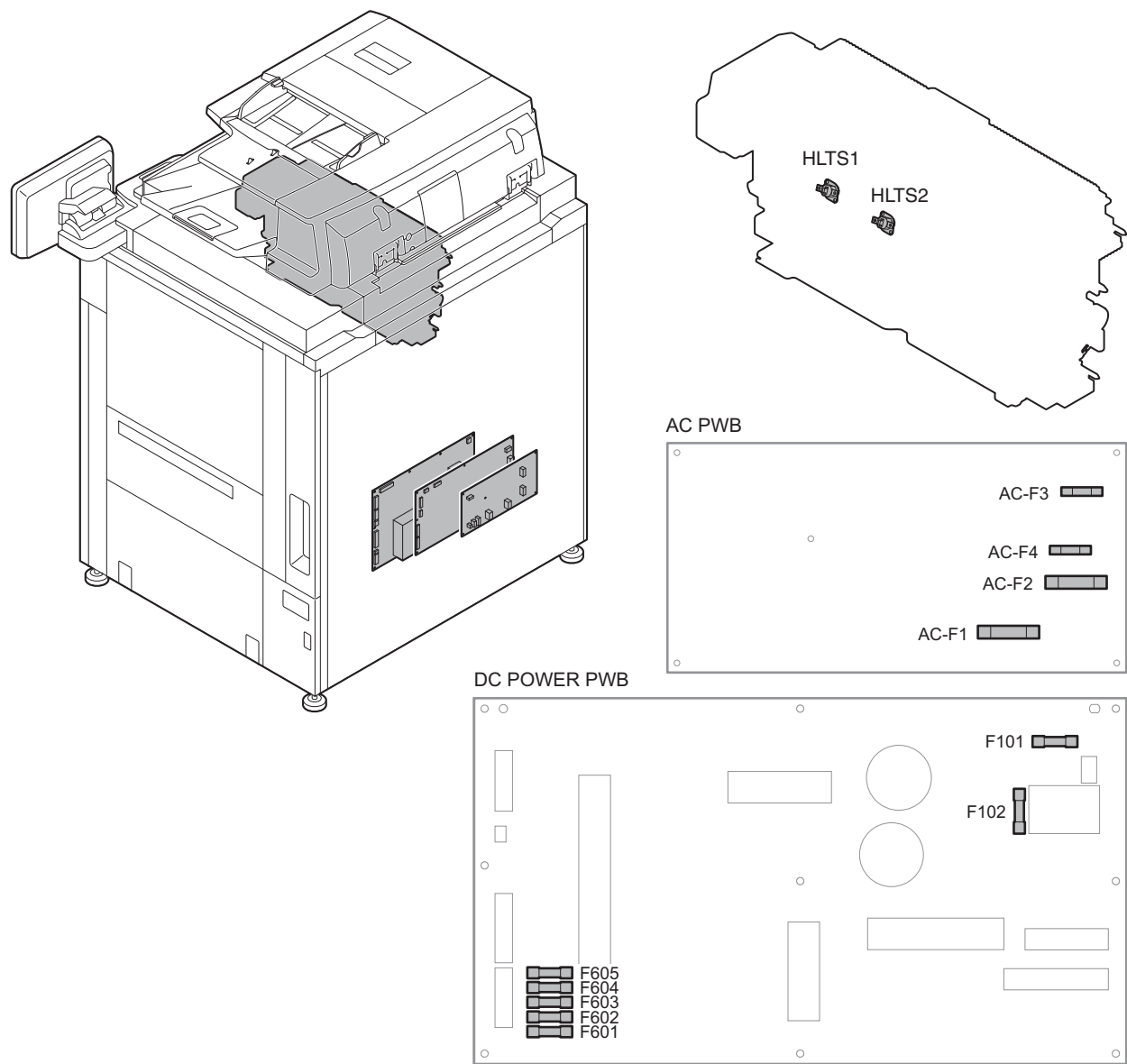
Signal name	Name	Function / Operation	Note
WH1 DESK	Dehumidifying heater (Paper feed tray 1, 2)	Dehumidifies paper. (Paper feed tray 1, 2)	Option.
WH1 SCN	Scanner dehumidifying heater	Dehumidifies the scanner unit.	Option.
WH2 DESK	Dehumidifying heater (Paper feed tray 3, 4)	Dehumidifies paper. (Paper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



Thermostats

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

Fuse

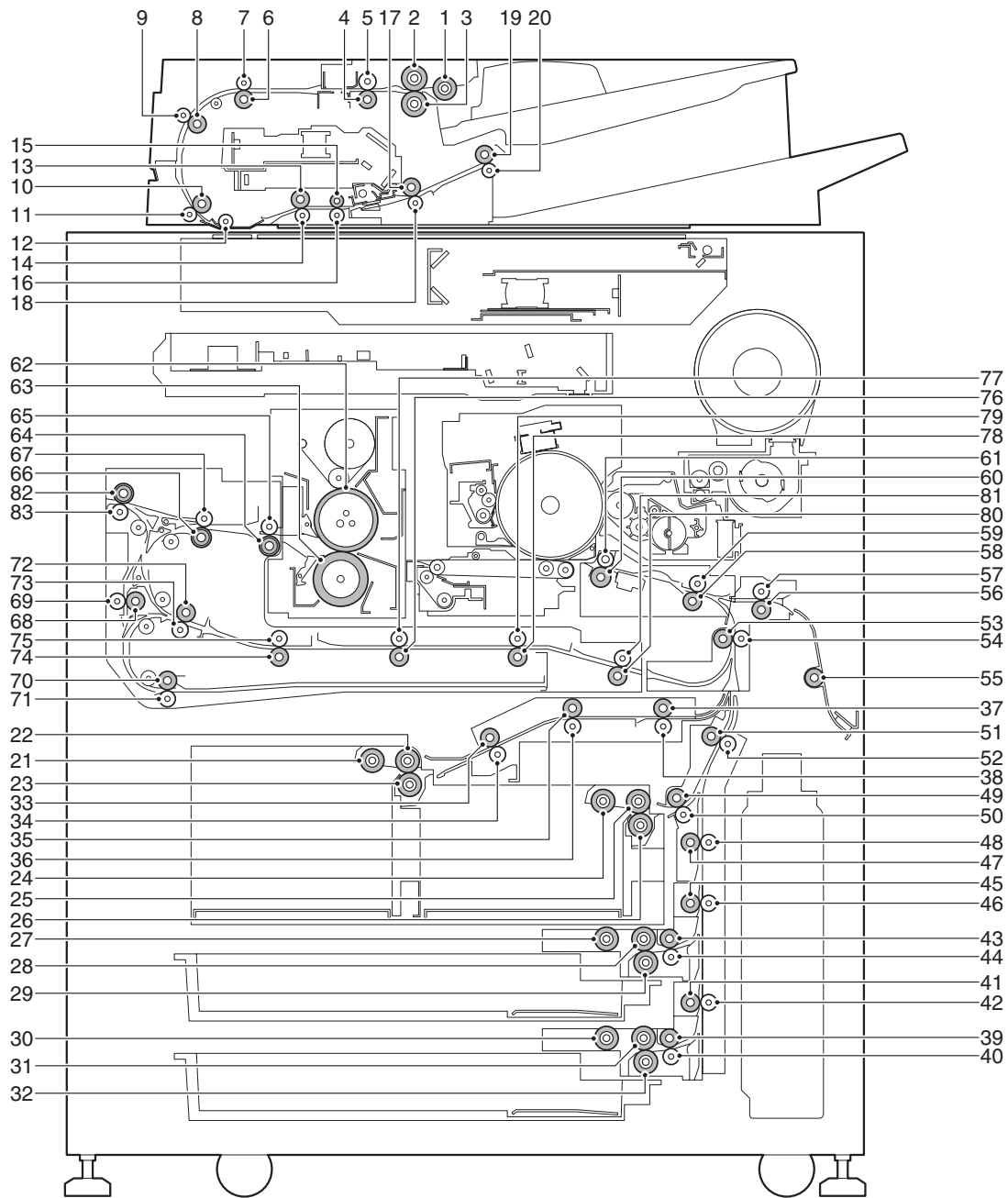
Signal name	Name	Type	Location
AC-F1*	Fuse	20A 250V	AC PWB
AC-F2*	Fuse	20A 250V	AC PWB (Except North America)
AC-F3*	Fuse	T2.0AH 250V	AC PWB
AC-F4*	Fuse	T2.0AH 250V	AC PWB (Except North America)
F101	Fuse	12A 250V	DC Power PWB
F102	Fuse	2A 250V	DC Power PWB
F601	Fuse	6.3A 250V	DC Power PWB
F602	Fuse	6.3A 250V	DC Power PWB
F603	Fuse	6.3A 250V	DC Power PWB
F604	Fuse	6.3A 250V	DC Power PWB
F605	Fuse	6.3A 250V	DC Power PWB

* For AC-F1 to AC-F4

CAUTION !

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)	Performs resist of document transport.
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.

No.	Name	Function / Operation
19	Paper exit roller (Drive)	Discharges document.
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)	Transport 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.

No.	Name	Function / Operation
74	Transport roller 18 (Drive)	Transports paper from the reverse roller 2 to the transport roller 19 when duplex printing.
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) (90cpm machine)	50-10
		ADJ 8C	Paper feed off-center manual adjustment (Manual paper feed unit) (MX-MF11) (Mechanical adjustment)	50-10
		ADJ 8D	Paper feed off-center manual adjustment (No.1 - 4 paper feed unit in main unit) (Mechanical adjustment)	50-10
		ADJ 8E	Paper feed off-center manual adjustment (LCC) (Mechanical adjustment)	50-10
		ADJ 8F	Scan image off-center manual adjustment (Document table mode)	50-12
		ADJ 8G	Scan image off-center manual adjustment (DSPF (Front surface) mode)	50-12
		ADJ 8H	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	Print image off-center automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A) Print image lead edge position automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)	50-28
		ADJ 9C	Scan image magnification ratio automatic adjustment (Sub scanning direction) (Document table mode) (Corresponding to ADJ7B) Scan image off-center automatic adjustment (Document table mode) (Corresponding to ADJ8A) Scan image lead edge reference position automatic adjustment (Document table mode) (Corresponding to SIM 50-1 RRCA)	50-28
		ADJ 9D	Scan image magnification ratio automatic adjustment (Sub scanning direction) (DSPF mode) (Corresponding to ADJ7E) Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8G/ADJ8H) Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9C)	50-28

Job No	Adjustment item list				Simulation	
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
		ADJ10E	FAX send mode image loss adjustment			50-27
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/FAX 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/FAX) 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/FAX) 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/FAX) 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/FAX) 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

Job No	Adjustment item list			Simulation
ADJ12	Image send, FAX send mode, 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
		ADJ12D	FAX send mode, image sharpness adjustment	46-39
ADJ13	FAX send mode image quality adjustment	ADJ13A	Image density and gradation adjustment in the FAX send mode (Collective adjustment of all the FAX modes)	46-40
		ADJ13B	Image density and gradation adjustment in the FAX send mode (Normal mode)	46-41
		ADJ13C	Image density and gradation adjustment in the FAX send mode (Fine mode)	46-42
		ADJ13D	Image density and gradation adjustment in the FAX send mode (Super fine mode)	46-43
		ADJ13E	Image density and gradation adjustment in the FAX send mode (Ultra fine mode)	46-44
		ADJ13F	Image density and gradation adjustment in the IFAX send mode (600dpi mode)	46-45
ADJ14	Setting of the auto exposure mode operating conditions in copy, scan, and FAX			46-19
ADJ15	Paper size detection adjustment	ADJ15A	Manual paper feed tray paper width sensor adjustment	40-2
		ADJ15B	Paper feed tray 4 paper width sensor adjustment	40-12
		ADJ15C	DSPF paper feed tray document width sensor adjustment	53-6
ADJ17	Touch panel coordinate adjustment			65-1
ADJ18	Waste toner full detection adjustment			30-1
ADJ19	Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position)			
ADJ20	Decurler roller adjustment			
ADJ21	DSPF CCD calibration	ADJ21A	DSPF shading adjustment	63-2
		ADJ21B	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 1000MΩ 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.

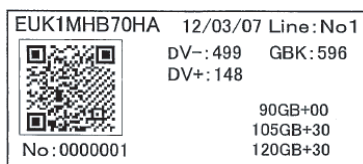
Item/Display	Content	Setting range	Default	Monitor connector		Actual output voltage
			90cpm machine	Connector	Pin No.	90cpm machine
A GB_K	Main charger grid voltage adjustment value	0-1000	575	CN3	7	-595 +/- 5 V

- 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.

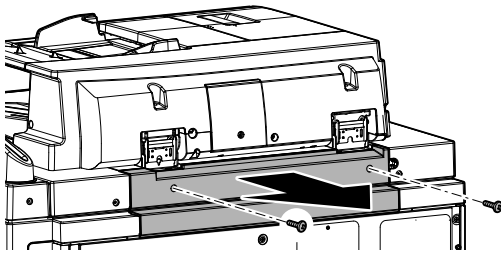
CAUTION: The default values specified for each model must be changed as follows:

90cpm machine: + 0

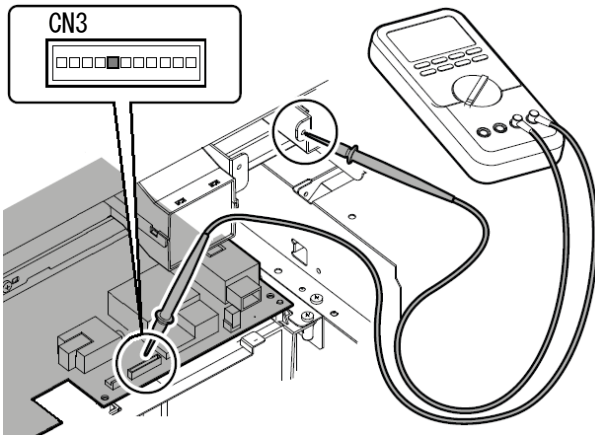
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

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.

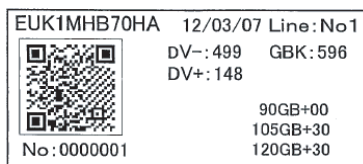
Item/Display	Content	Setting range	Default	Monitor connector		Actual output voltage
				Connector	Pin No.	
A DVB_K	Developing bias adjustment value	0-750	496	CN3	11	-500 +/- 5 V
B DVB_K_PLUS	Reverse developing bias voltage	0-250	164	CN3	11	+150 +/- 5 V

- 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.

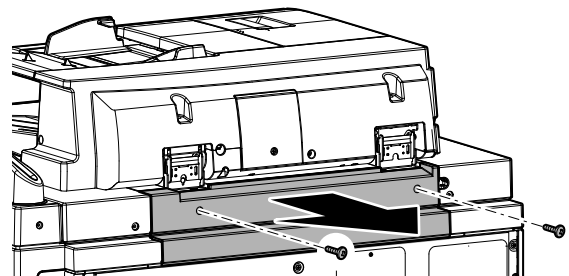
When [EXECUTE] key is pressed again, the output is stopped.

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

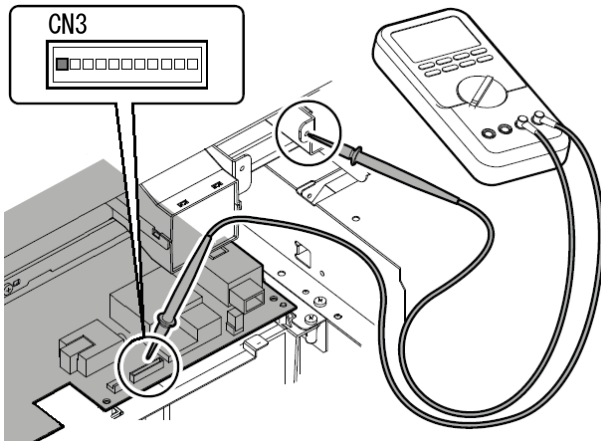
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

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
					90cpm machine	90cpm machine
A	THV+ (FACE)	THV (Transfer) output	Front surface mode	0-255	142	45 +/- 1μA
B	THV+ (BACK)		Back surface mode	0-800	112	35 +/- 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.

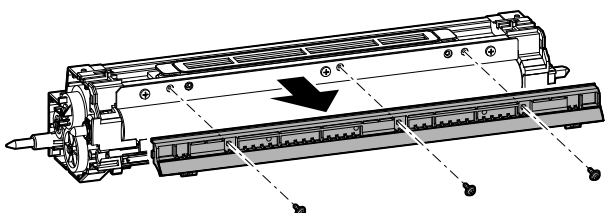
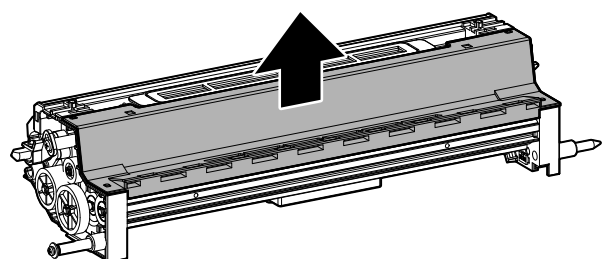
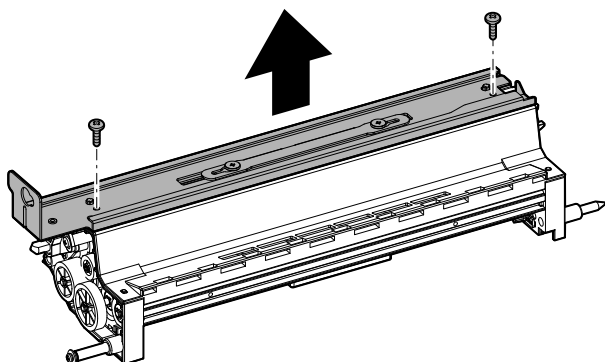
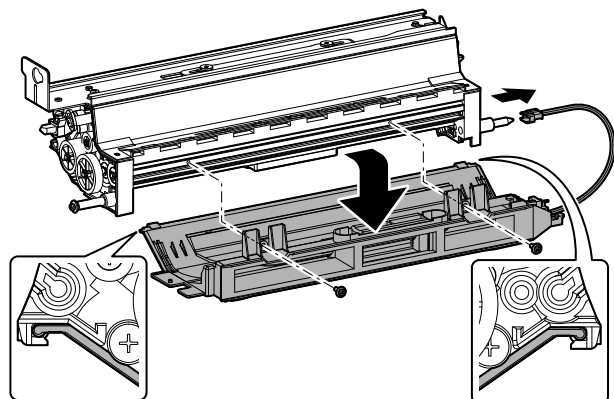
The main charger grid voltage is automatically corrected until the OPC drum dark potential becomes the specified value.

ADJ 2 Developing unit adjustment

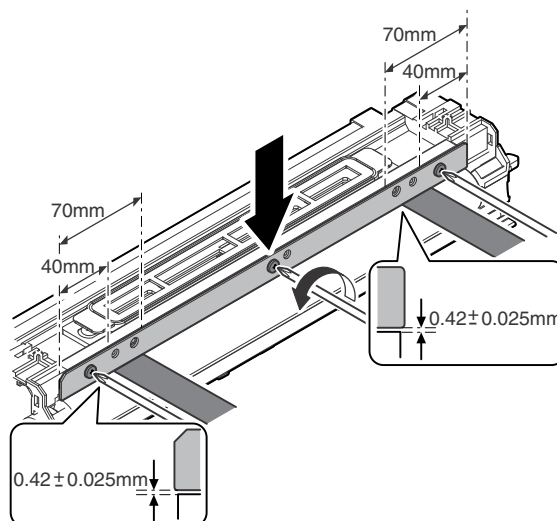
2-A Developing doctor gap adjustment

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.



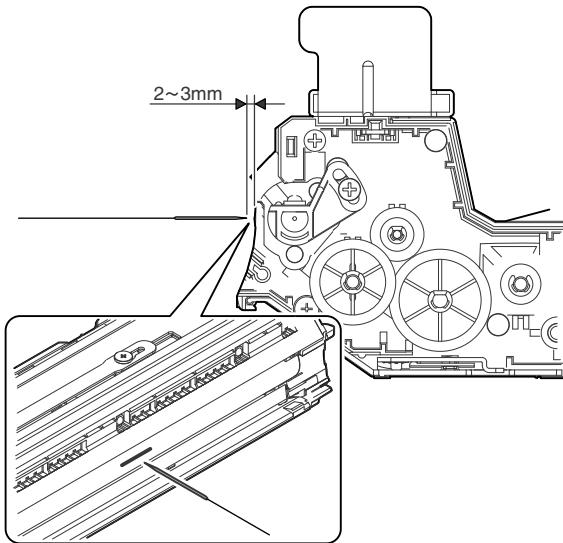
- 3) Insert a thickness gauge of 0.42mm into the gap of 40mm - 70mm from the edge of the developing doctor blade.
- 4) Push the developing doctor blade in the direction of the developing roller (arrow direction), and tighten the fixing screw of the developing doctor blade. (Perform the similar procedure 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

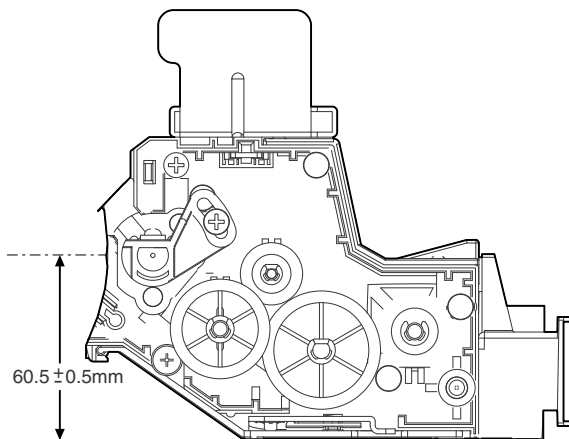
The check and the adjustment are required in the following cases:

- * 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.)

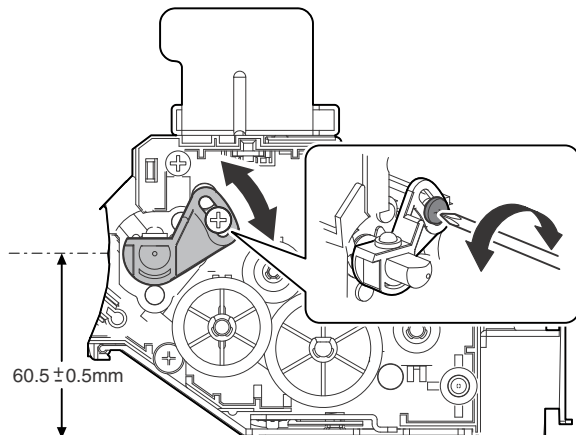
- 4) Hold the string, and put the needle closer to the developing roller.



- 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	

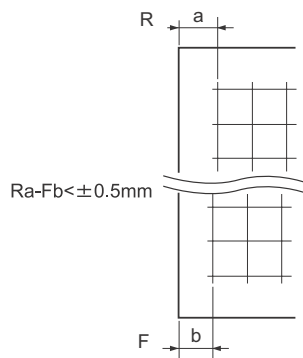
The paper feed tray with A3 (11 X 17) paper in it is selected.

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

[Check Method 1]

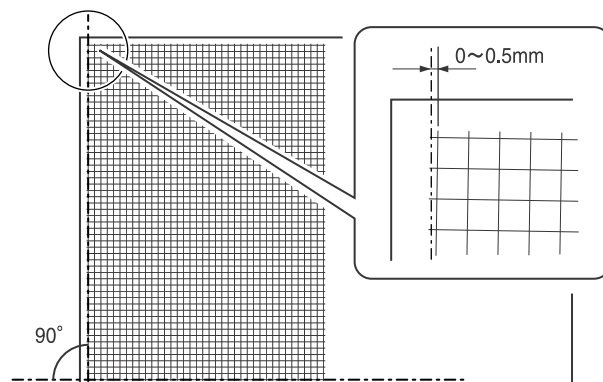
Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

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



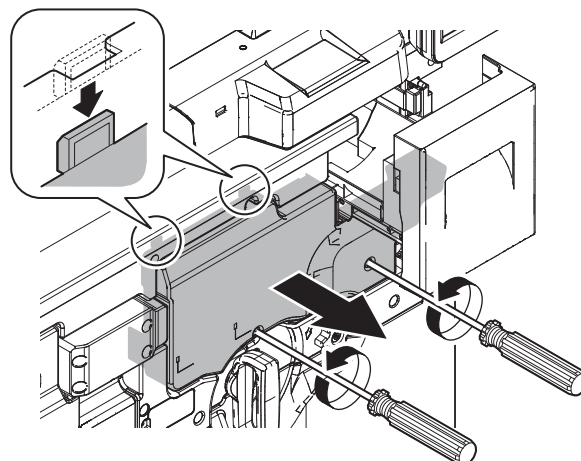
[Check Method 2]

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.

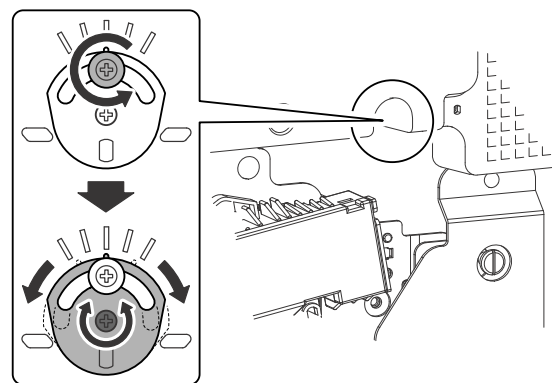


Carry out the following work if the situation is unsatisfactory.

- 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.

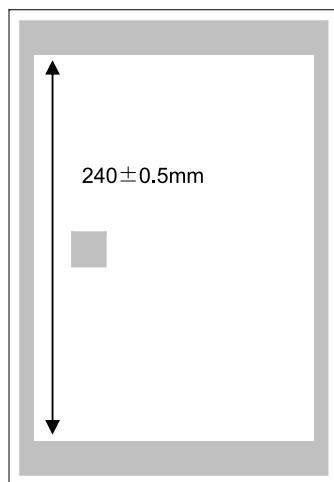
When the vertical line image is tilted to the right with the front frame side as the reference, turn the print image distortion adjustment cam counterclockwise to change the angle.

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:

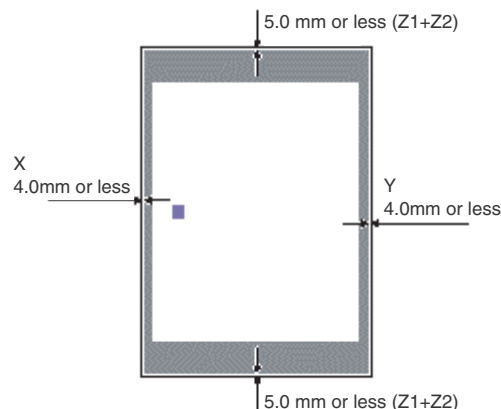
- * When the resist roller section is disassembled.
- * When the LSU is replaced or removed.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

- 1) Enter the Sim. 50-5 mode.
- 2) Press [EXECUTE] key.

The adjustment pattern is printed.

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

		Standard adjustment value
X	Lead edge void area	4.0mm or less
Y	Rear edge void area	4.0mm or less
Z1/Z2	FRONT / REAR void area	5.0 mm or less (Z1+Z2)



(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)

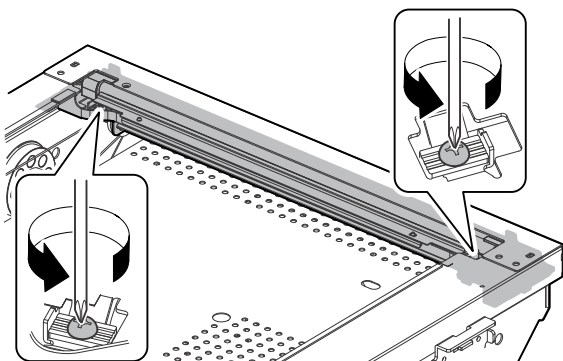
This adjustment is needed in the following situations:

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

4-A Scanner (reading) unit parallelism adjustment

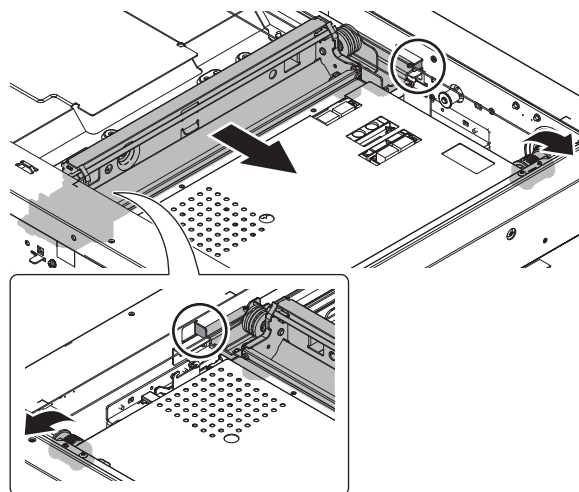
Before execution of this procedure, remove the document table glass.

- 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.



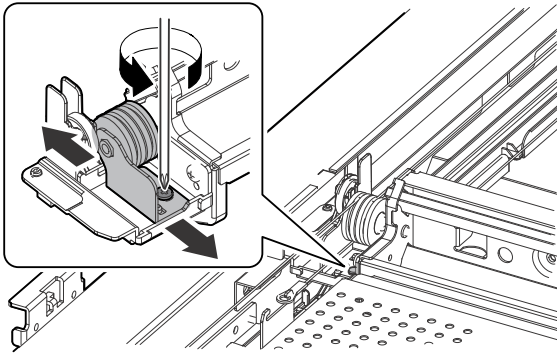
- 2) Manually turn the scanner drive pulley, to move the scanner unit B until it is in contact with the stopper.

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.

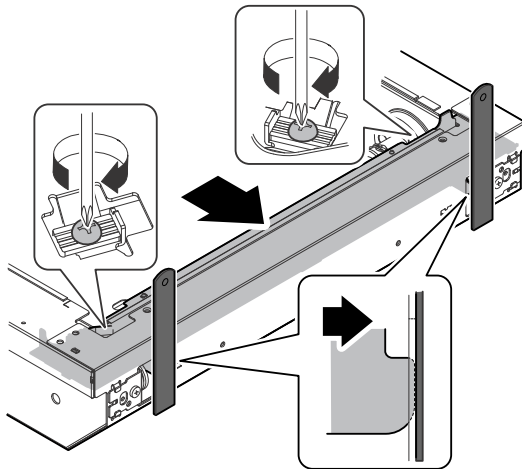


If this requirement is not met, do the following steps.

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

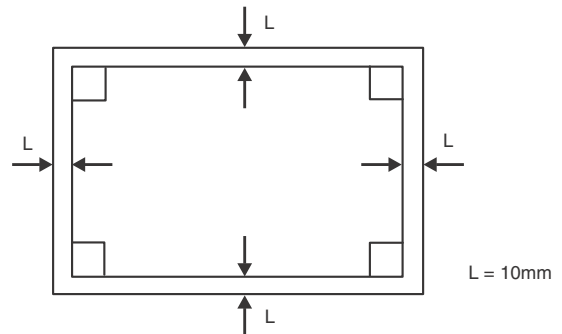


- 4) Adjust the pulley angle position on the front frame side of the scanner unit B so that the scanner unit B is in contact with the stoppers on the front and the rear frames of the scanner unit B simultaneously.
- 5) With the scanner unit B in contact with the stoppers simultaneously, fit the edge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

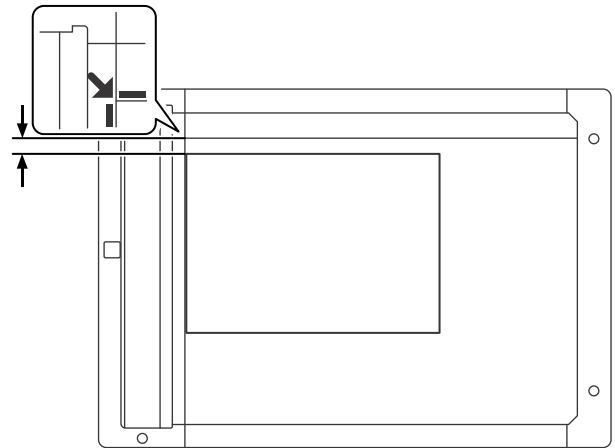


4-B Scan image sub scanning direction distortion adjustment

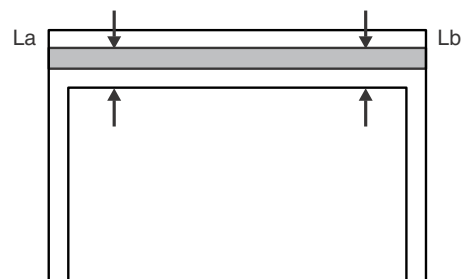
- 1) Make a test chart (a rectangular pattern with four right angles) on A3 (11 X 17) paper as shown below.



- 2) Set the test chart made in the procedure 1) on the document table so that the test charts 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) 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.)

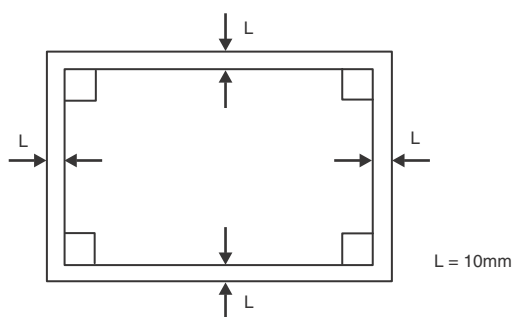
Tighten the fixing screw of the scanner unit drive pulley.

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

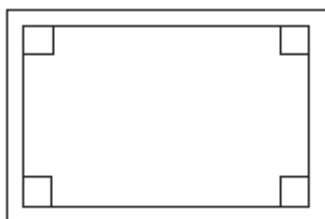
If a distortion in the sub scanning direction cannot be removed in the above procedures, perform "ADJ 4C Scan image overall distortion adjustment."

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.



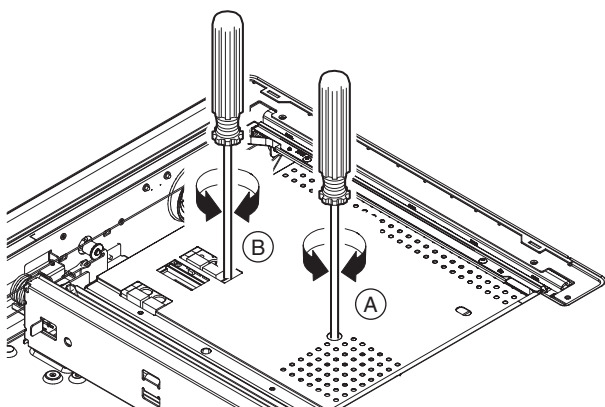
- 2) Set the test chart made in the procedure 1) on the document table, and make a copy on A3 (11" X 17") paper.
- 3) Check for any distortion in the main scanning direction.
If the four angles of the copy image (rectangle) is right angles, there is no distortion. (Work completed)



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

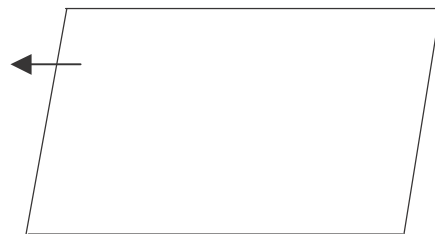
(Left side distortion adjustment)

- 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.)



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:

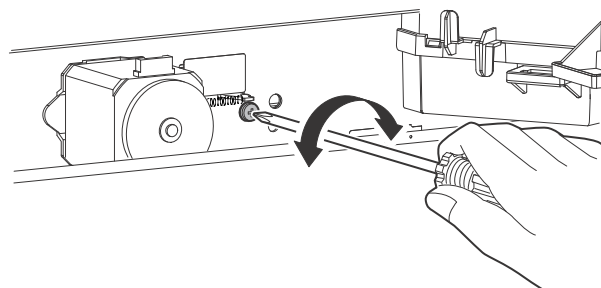
Turn the CCD unit horizontal adjustment screw (A) clockwise.
(When adjusting the adjustment screw (B) on the front frame side, turn the screw clockwise. When adjusting the adjustment screw on the rear frame side, turn the screw clockwise.)



- 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.



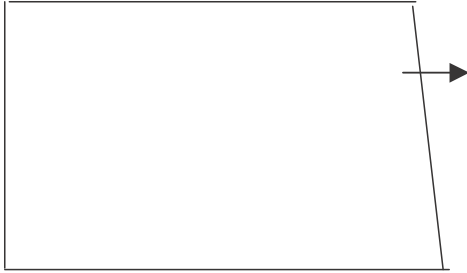
Remove the rear upper cabinet. Loosen the scanner rail fixing screw (red screw) on the left side when viewed from the front to change the height balance of the left and right sides of the scanner rail. There are two fixing screws (red screws) of the scanner rail.

(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.

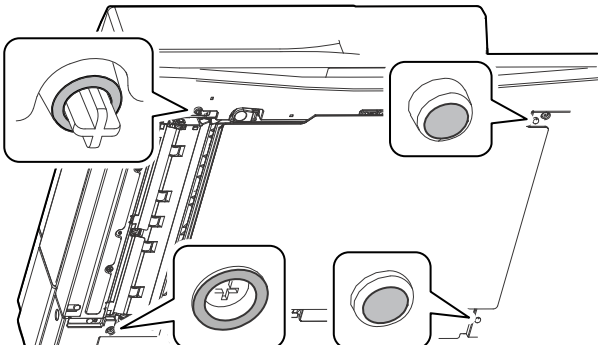
ADJ 5 Scan image distortion adjustment (DSPF mode)

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.



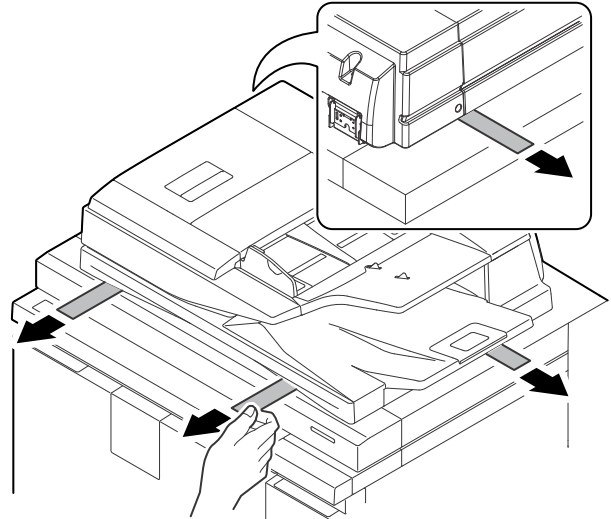
(Check procedure)

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

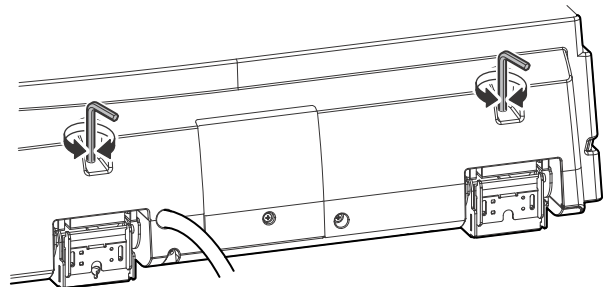
Rear frame side 0 - 1mm

- * 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.

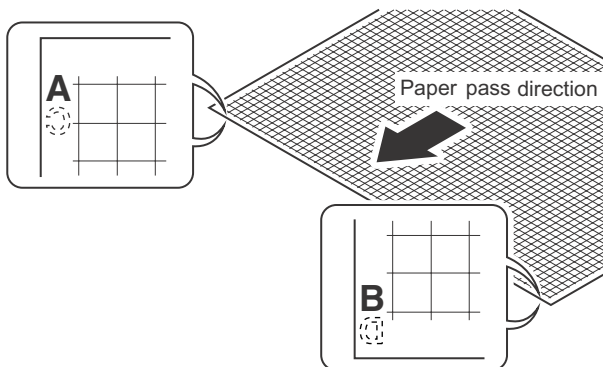
1) Enter the Sim. 64-2 mode.

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	
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
		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.

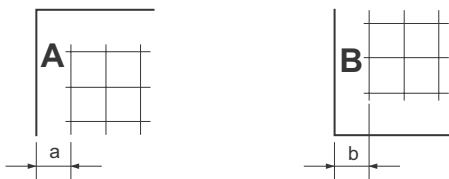


- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern so that the marked side is on the lead edge side.)
Check in one of the following methods:

[Check method 1]

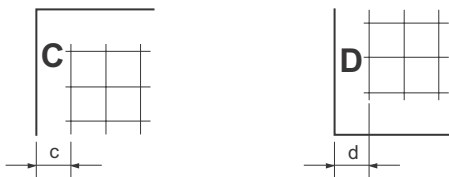
(Front side)

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



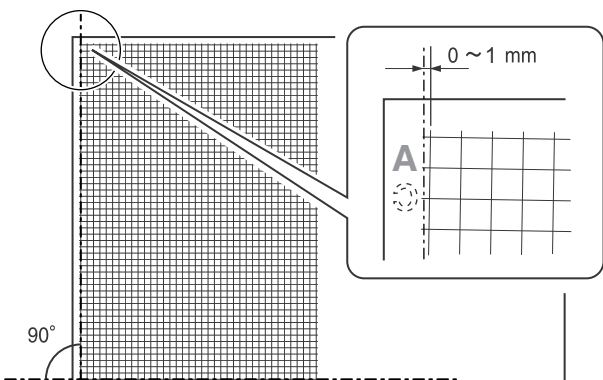
(Back side)

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.

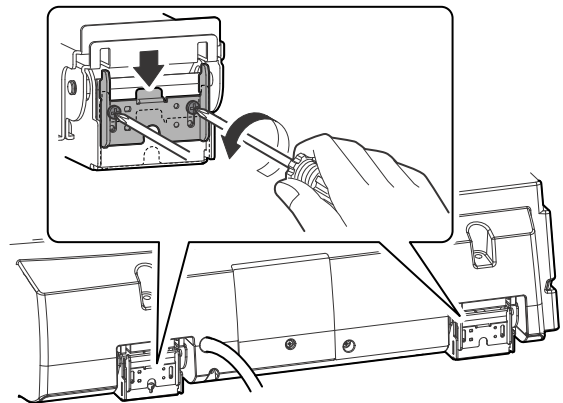


If the front surface copy image satisfies the above condition the back surface copy image does not, go to "ADJ 5C DSPF skew adjustment (Back surface mode)."

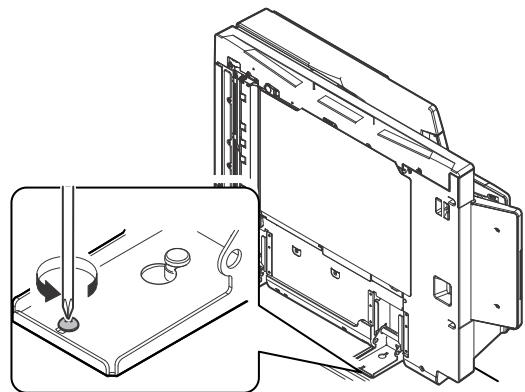
If the front surface copy image does not satisfy the above condition, perform the following procedure.

- 7) Loosen the hinge section screw, and lower two metal plates which lock the DSPF.

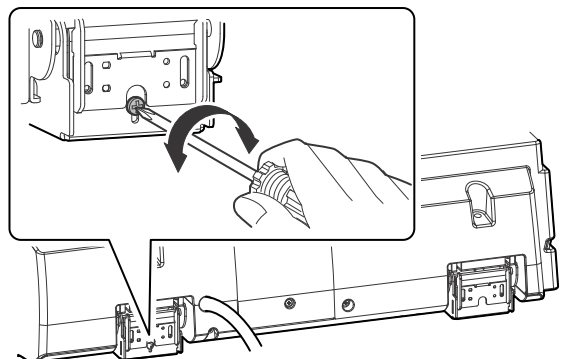
Then the DSPF unit can be opened at an angle of 90 degrees.



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



- 9) 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:

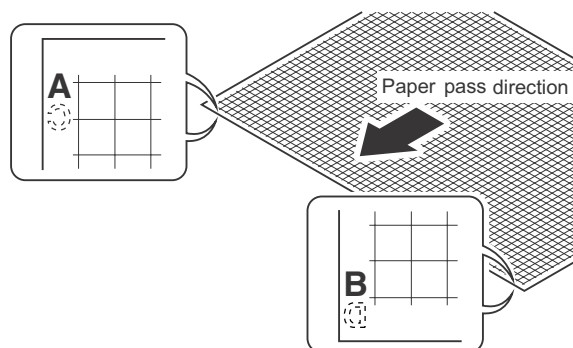
- * When the DSPF section is disassembled.
- * When the DSPF unit is replaced.
- * When there is a distortion (skew) on the back surface scan image of the DSPF unit.

- 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.



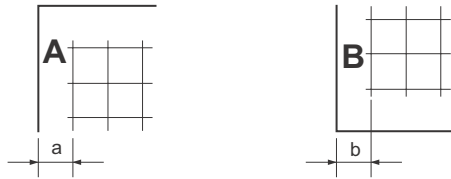
- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern on the DSPF paper feed tray so that the marked side is on the lead edge side.)

Check in one of the following methods:

[Check method 1]

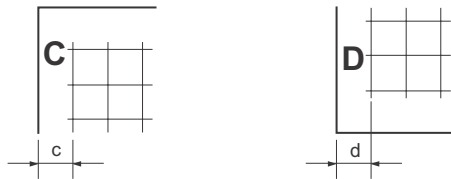
(Front side)

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



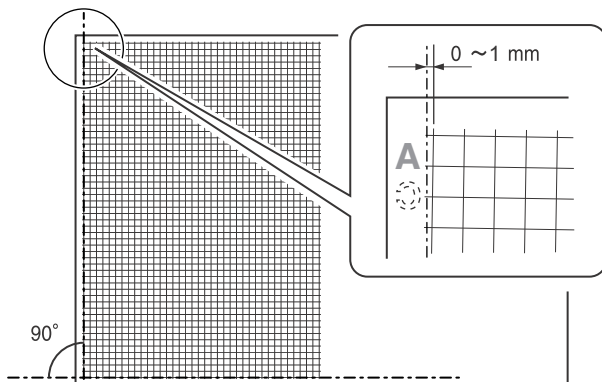
(Back side)

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



[Check method 2]

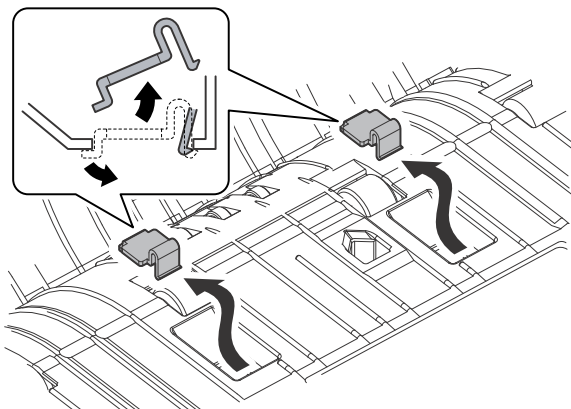
Check to confirm that the right angle degrees of the print lines in the main scanning direction are within 1.0mm with the paper longitudinal direction print line as the reference.



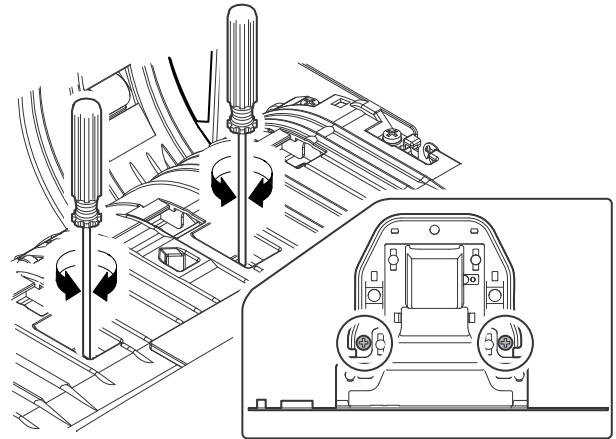
If the back surface copy image satisfies the above condition the front surface copy image does not, go to "ADJ 5B DSPF skew adjustment (Front surface mode)."

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)

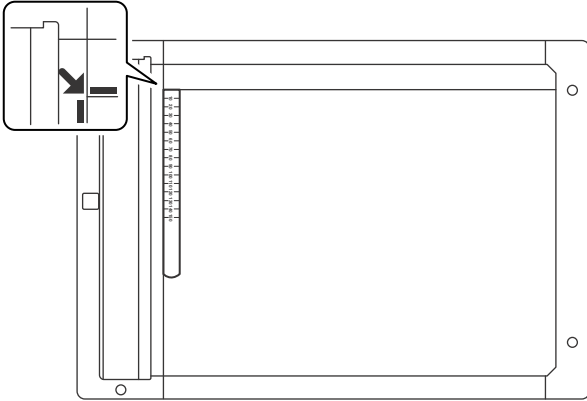
This adjustment is needed in the following situations:

- * 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.

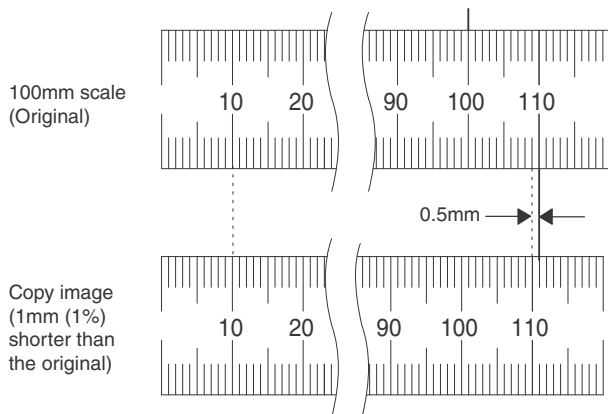
- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of CCD (MAIN) and SPF (MAIN) to 50 (default).

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.



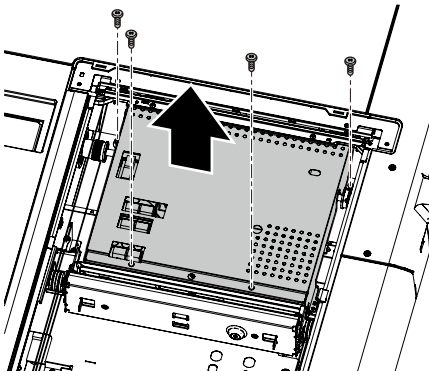
- 4) Make a normal copy on A4 paper.
Press [CLOSE] key to jump from the simulation mode to the copy mode, and make a copy.
- 5) Compare the scale image length on the copy paper and the actual scale length.
If the copy magnification ratio is within the specification ($100 \pm 0.5\%$) and the resolution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



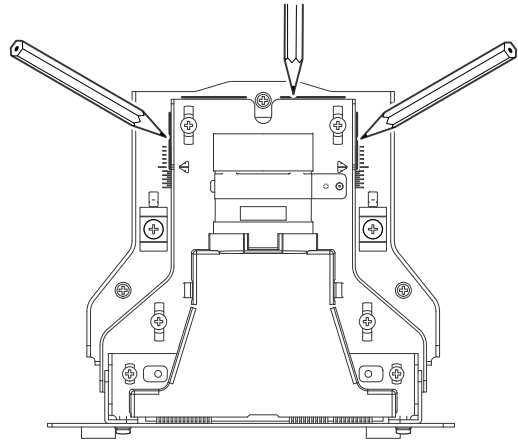
Example: Fit the scale of 10mm with that on the copy scale image, and compare them.

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.

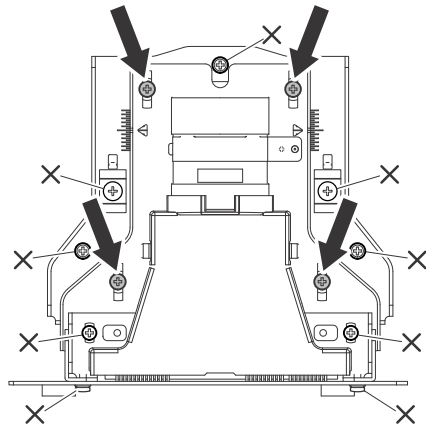


- 8) To prevent the optical axis shift of the CCD unit, mark on the CCD unit base as shown in the figure below.



Perform this procedure when replacing the CCD unit, too.

- 9) Loosen the CCD unit fixing screw.



Never loosen the screws marked with X.

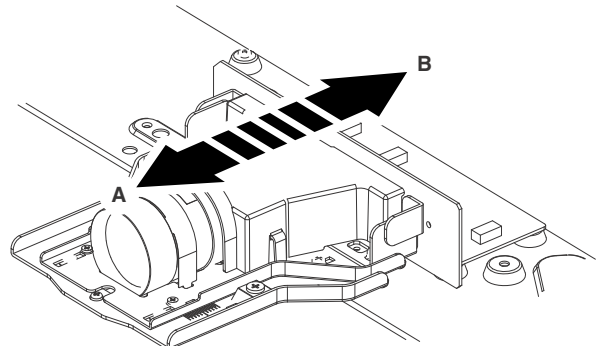
If one of these screws is loosened, the CCD unit base position and angle may be changed. In this case, the adjustment cannot be made in the field, and the whole scanner unit may have to be replaced.

- 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.

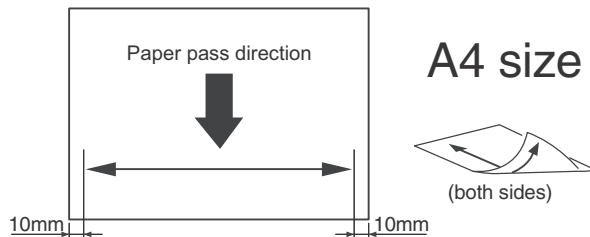
6-B Image focus adjustment (DSPF back surface mode)

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.

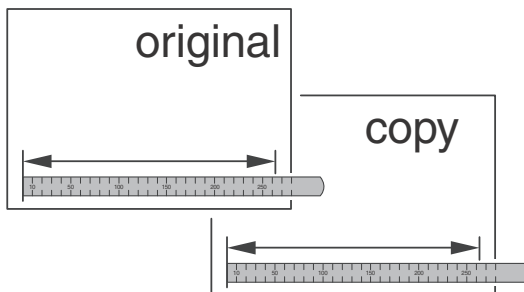
- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of SPFB (MAIN) to 50 (default).
Select the adjustment item with the scroll button, and enter the adjustment value with 10-key and press [OK] key.
- 3) Make an adjustment chart with A4 (11 X 8.5) paper as shown below.

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.

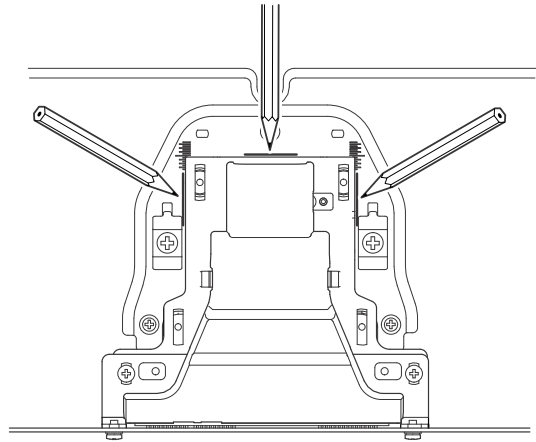
If the copy magnification ratio is within the specified range ($100 \pm 0.5\%$) and the resolution is satisfactory, the adjustment is not required.



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

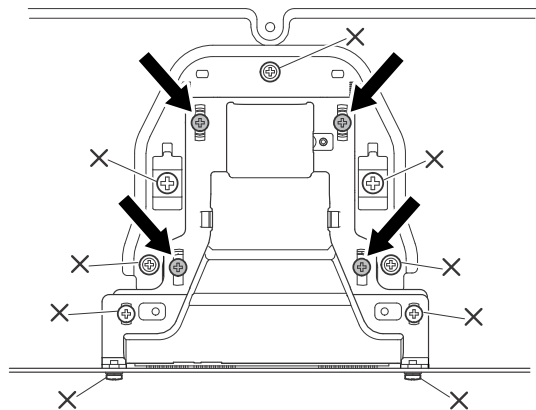
- 7) Remove the DSPF optical unit.
For disassembly, refer to "[C] DSPF" section.

- 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.

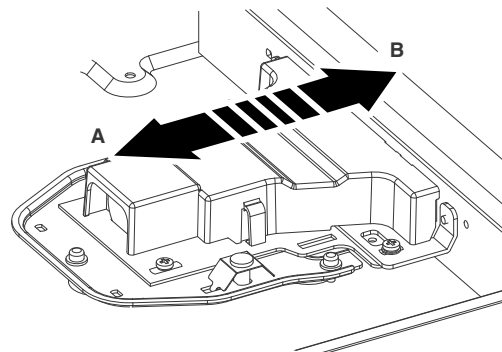
- 10) Slide the DSPF CCD unit in the arrow direction (CCD sub scanning direction) to change the mounting position.

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).



- 11) 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.

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:

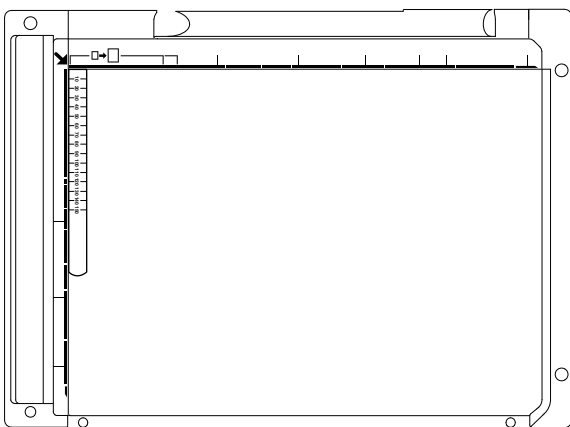
- * When the copy magnification ratio of a scan image in the main scanning direction in the document table mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM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

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



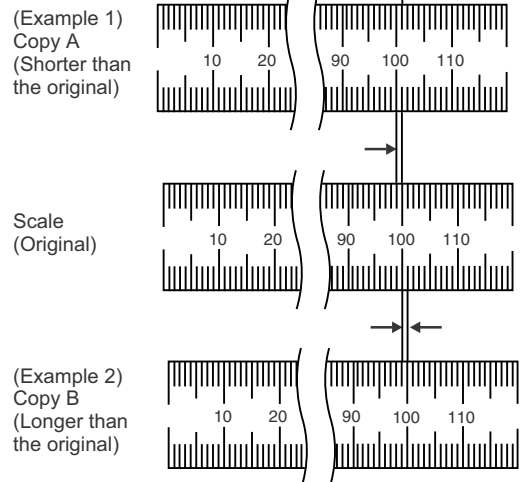
- 2) Enter the Sim. 48-1 mode.

- 3) Make a normal copy 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.

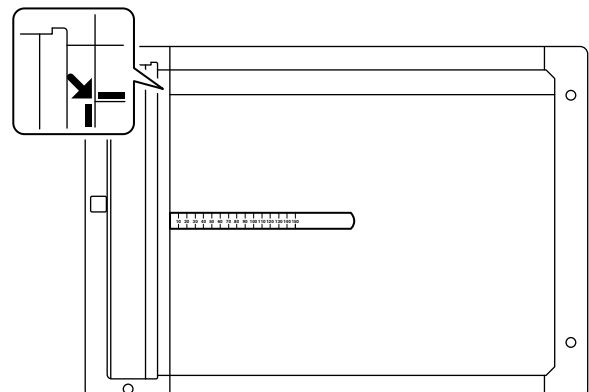
- 4) Change the CCD (MAIN) adjustment value of Sim. 48-1. When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased. A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%. Repeat the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

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.

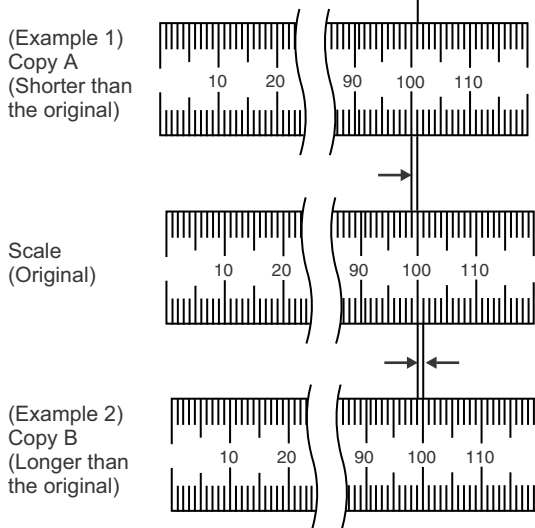
- 1) Place a scale on the document table as shown in the figure below.



- 2) Enter the Sim. 48-1 mode.
 - 3) Make a normal copy 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.

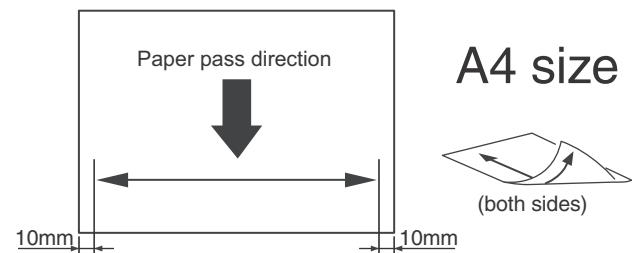
(Note)

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.

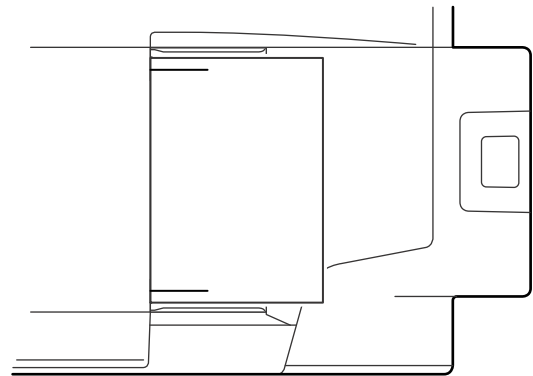
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 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.



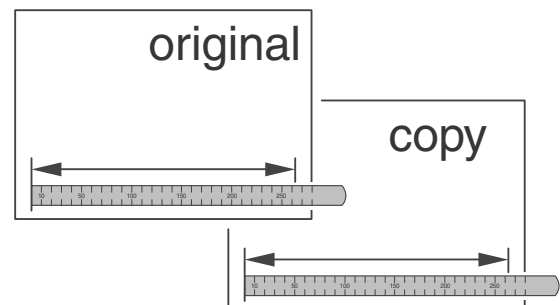
- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the upper side.



- 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.

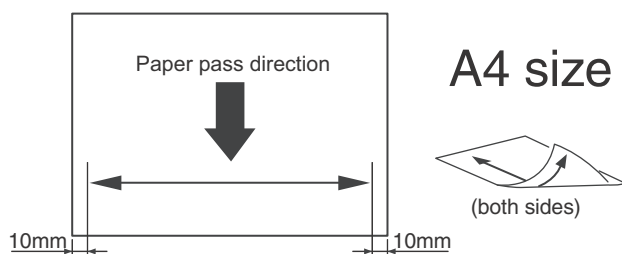
(Note)

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.

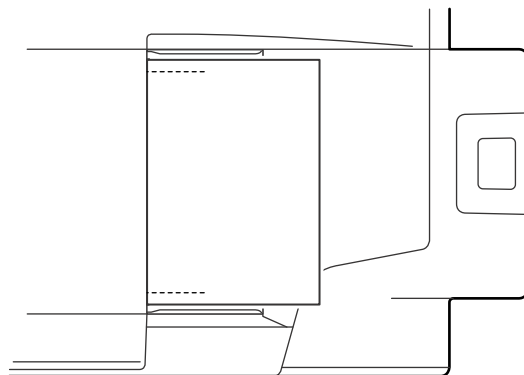
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 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.



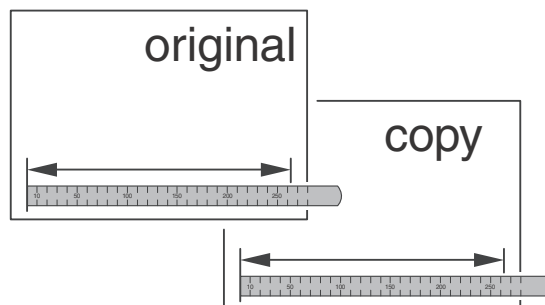
- 3) Enter the Sim. 48-1 mode.

- 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:

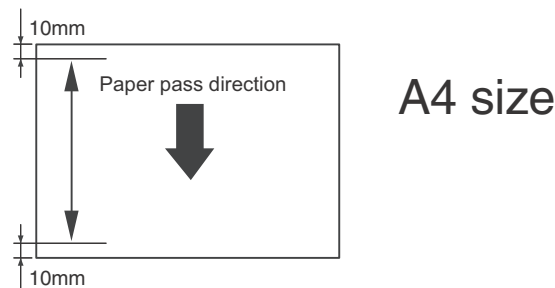
- * When the copy magnification ratio of the scan image in the sub scanning direction in the DSPF mode is improper.
- * When the CCD unit is replaced.
- * When the scanner motor unit is replaced.
- * When the U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the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

(Note)

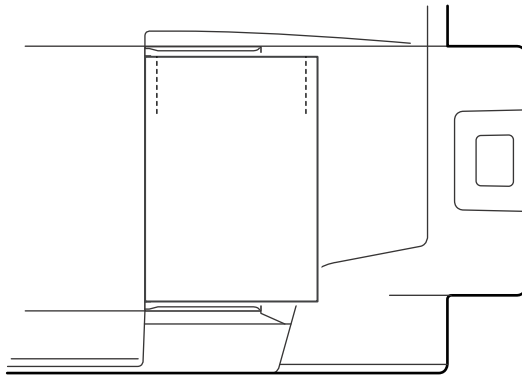
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 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.



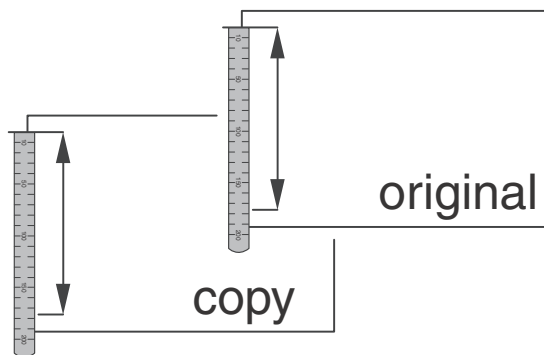
- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the lower side.



- 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 ($100 \pm 0.5\%$) 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.

- 5) 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)

- 1) Enter the Sim. 48-5 mode.
- 2) 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

- 3) 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.
 - 4) 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.

(Classification of off-center adjustments)

- 1) The software method with the simulation (Print image off-center)
- 2) The method by changing the forward/backward direction of the paper feed unit (Paper off-center)
- 3) 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
						90cpm 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 (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	45	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	45	U
		(Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value (Heavy paper B)	SUB-LC-HV-B	1	99	45	V
		(Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper A)	SUB-MFT-HV-A	1	99	45	W
		(Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper B)	SUB-MFT-HV-B	1	99	45	X
		(Lead edge adjustment registration motor ON timing) ADU adjustment value (Heavy paper A)	SUB-ADU-HV-A	1	99	45	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)	0(OFF)*	AF
		Print position correction_Correction control ON/OFF switch (Transport direction)	SWT2	0(OFF)	1(ON)	0(OFF)*	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

* Except 90cpm machine

8-A Print image off-center, lead edge position manual adjustment (Software adjustment) (90cpm 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.

(Note)

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

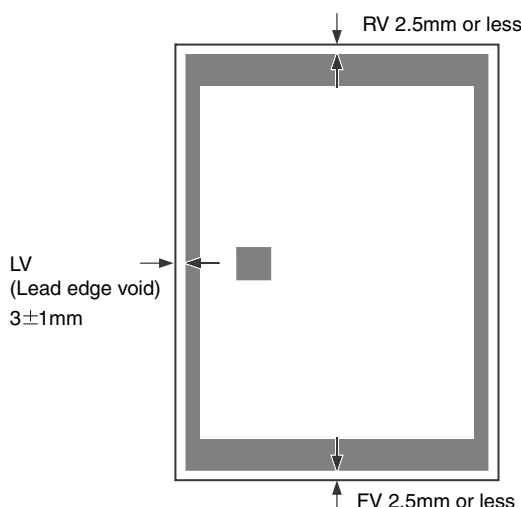
"ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)" has been properly adjusted.

- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source of the 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) Press [EXECUTE] key.

The adjustment pattern is printed.

- 5) Check the image position on the adjustment pattern.

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
 $RV + FV \leq 5.0\text{mm}$
 $RV = 2.5\text{mm or less}$
 $FV = 2.5\text{mm or less}$

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

- 6) Enter the adjustment value, and press [EXECUTE] button.
When [EXECUTE] button is pressed, 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.
Repeat the procedures 4 thru 6 until the conditions of the procedure 5) are satisfied.

8-C 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. (90cpm machine only)

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

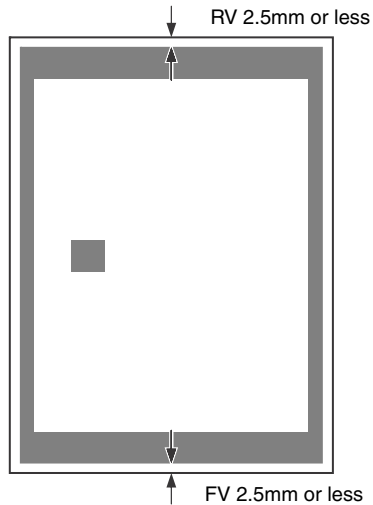
The adjustment pattern is printed.

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.

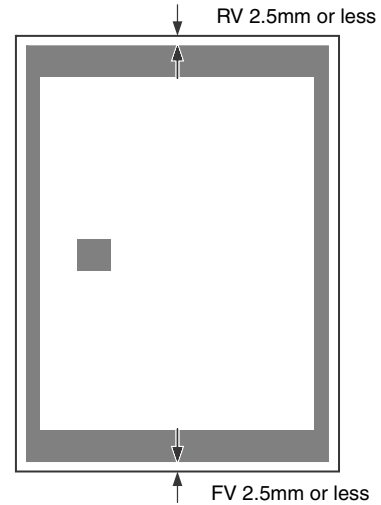
- 11) Check that the adjustment pattern image is printed in the correct position.

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.

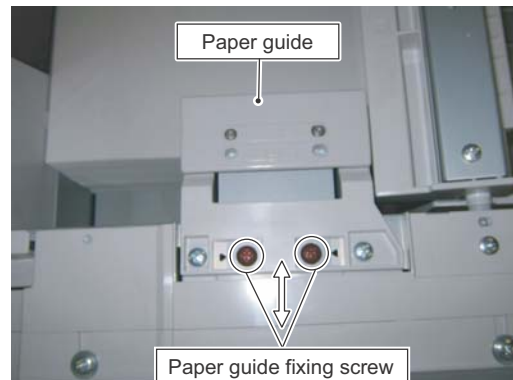


- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center. Adjust so that the adjustment pattern comes virtually to the center.

(No. 1 paper feed tray)

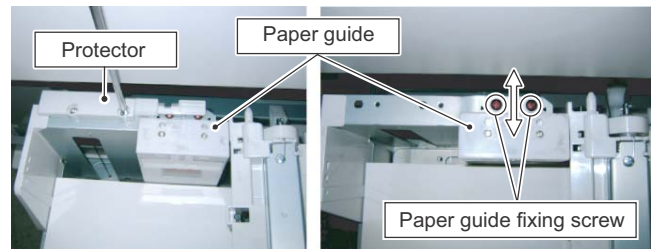
* Front frame side

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.



8-D 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.

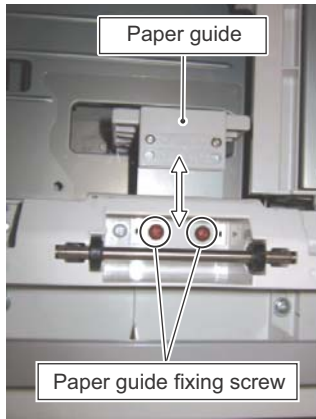
When the adjustment pattern is printed virtually at the center, go to the procedure 10).

If not, go to the procedure 7).

(No. 2 paper feed tray)

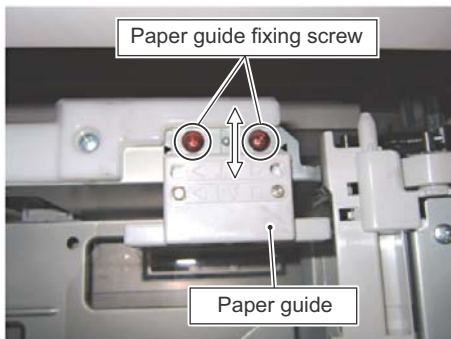
* Front frame side

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



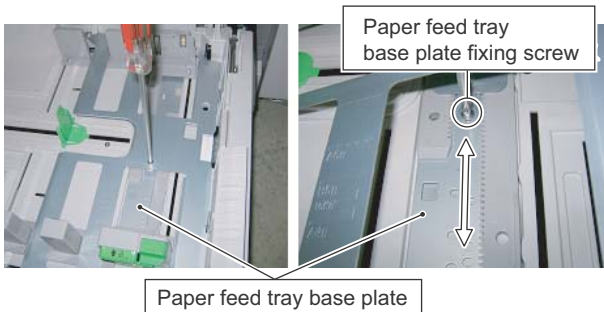
* Rear frame side

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. (90cpm machine only)

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

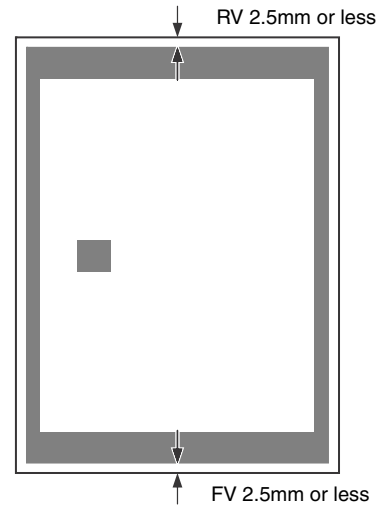
The adjustment pattern is printed.

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.

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

This adjustment is needed in the following situations:

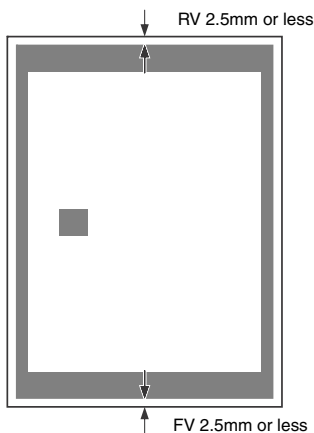
- * When the paper feed tray section is replaced.
- * When the paper feed tray section is disassembled.

- 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).



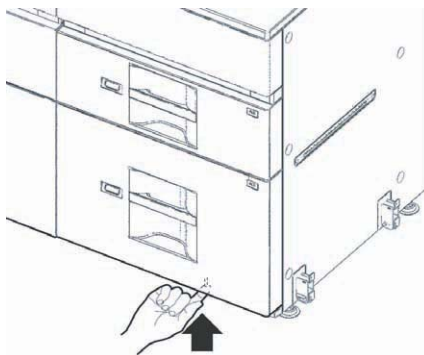
- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center. Adjust so that the adjustment pattern is virtually at the center.

a) In the case of MX-LC13

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.

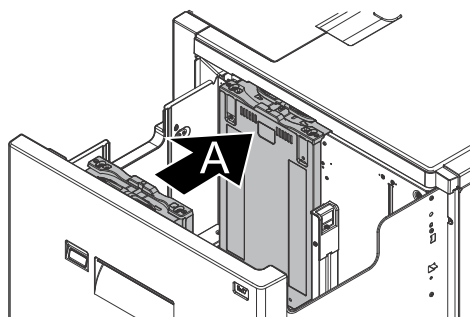


a. When shifted to the front side

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

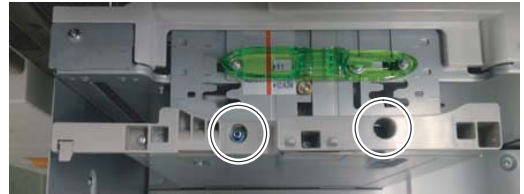
- 1) Loosen the blue off-center adjustment screws (each 2pcs.), and move the side plate by the dimension shifted in the direction A (R side), and tighten the blue screws.

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

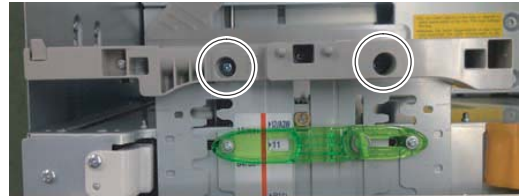


- 2) Set a sheet of paper on the paper feed base tray. Check that the front regulation plate is at the marked center, and push it in contact with the front regulation plate. Loosen the blue screw of the rear regulation plate.

[R side]

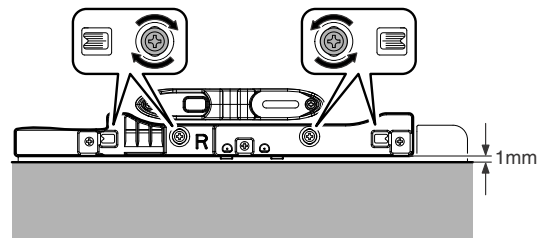


[F side]



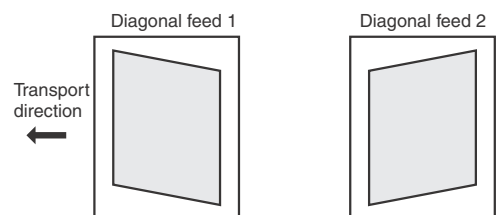
- 3) Use the mark of the rear regulation plate, and fix the blue screw at the position so that the clearance between paper and the rear regulation plate is evenly 1mm.

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



b. Diagonal feed adjustment

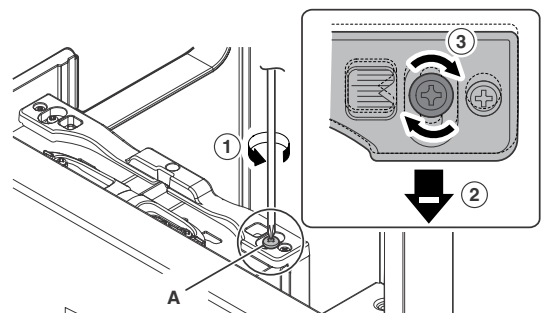
- 1) Press the lock button on the front cabinet and lower the paper feed base tray to the paper supply position. Pull out the tray.
- 2) Adjust the diagonal feed.



In the case of diagonal feed 1

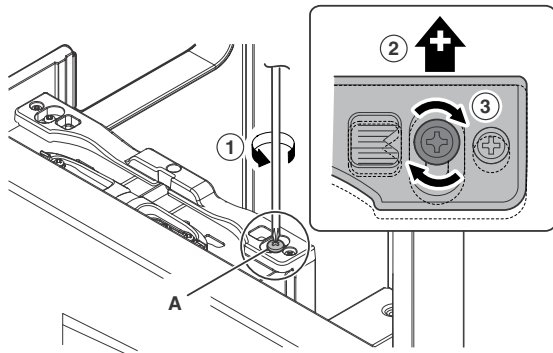
Loosen the blue screw (A) on the front regulation plate.

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.



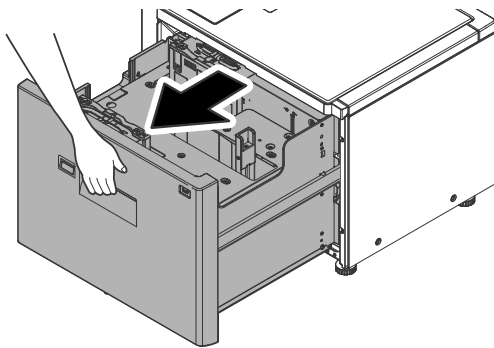
- 3) Set a sheet of paper on the paper feed base tray and adjust the regulation plate width.

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-LC13 Service Manual.

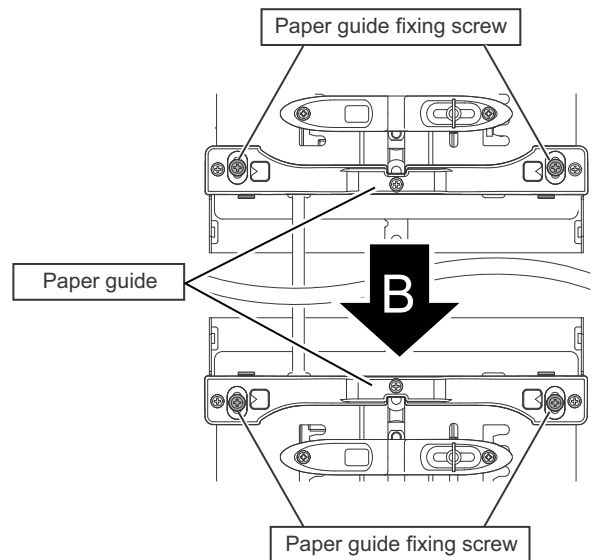
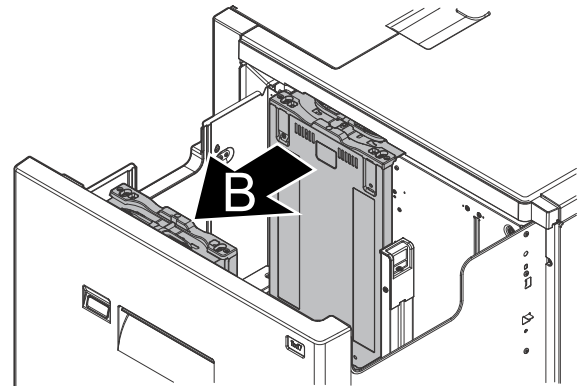
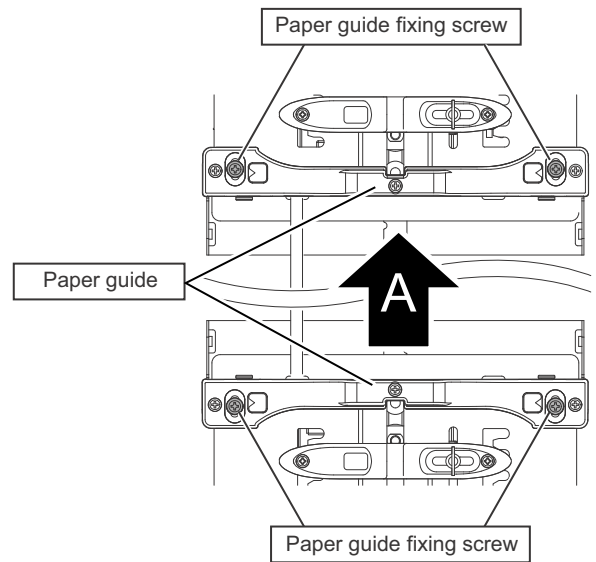
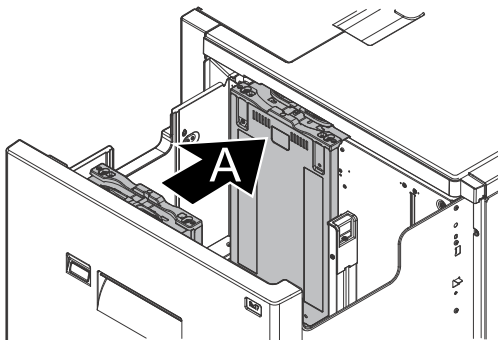
b) In the case of the MX-LCX3N

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



- b) Loosen the front/rear paper guide fixing screw, and change the paper size guide adjustment plate positions back and forth to match paper size.

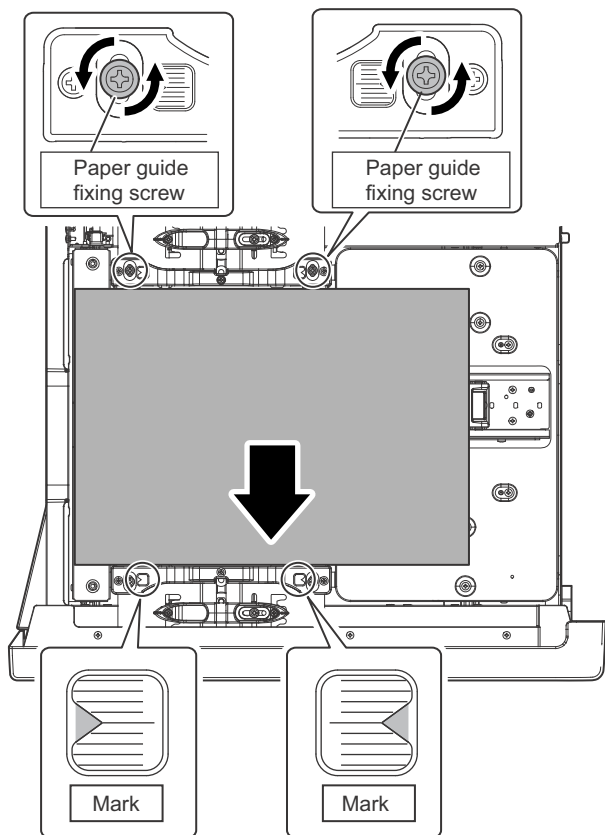
Adjust so that the paper guide fixing positions at the left and the right are aligned evenly (Check with the marks.)



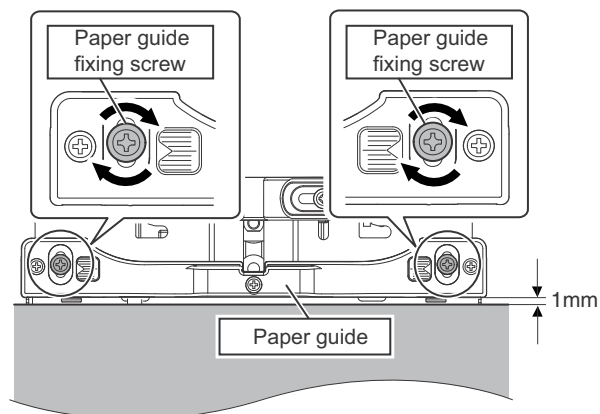
(Note)

When the paper guide position is changed, the following procedures (skew check and adjustment) must be performed.

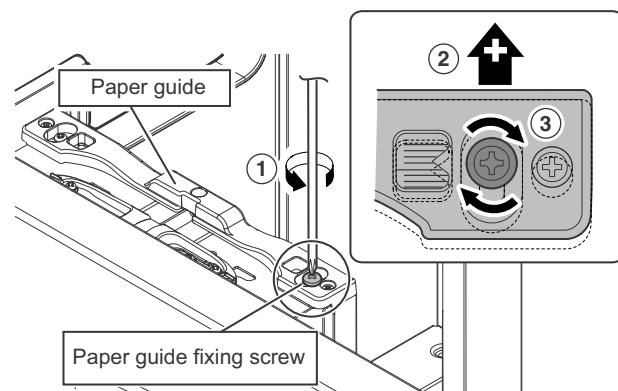
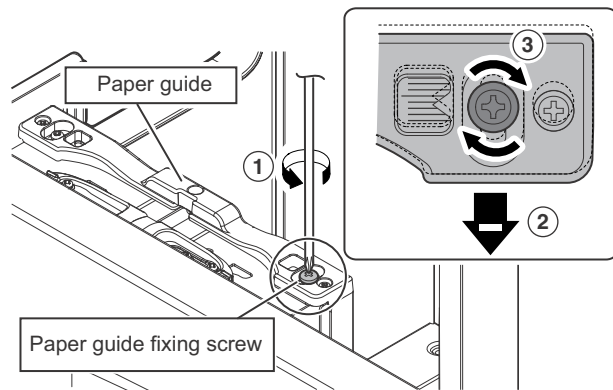
- c) Set a sheet of paper on the paper feed tray.



- d) Check to confirm that the front frame side paper guide fixing positions on the right and the left are set evenly by checking the marks, and align paper to the front frame side paper guide.
- e) Loosen the rear frame side paper guide fixing screw.
- f) Adjust so that the clearances between the right and left edges of paper and the paper guide are 1mm by using the paper guide marks on the rear frame side, and secure the rear frame side paper guide.

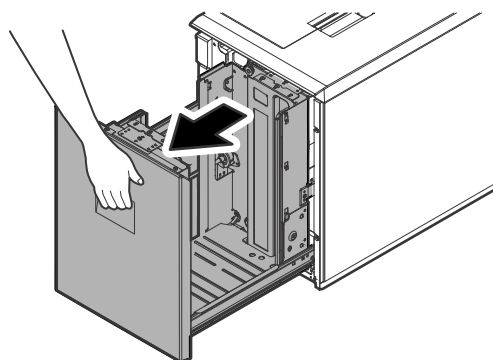


If paper skew is generated though the procedures c thru f have been executed, shift the front frame side paper guide fixing position back and forth to adjust for skew.

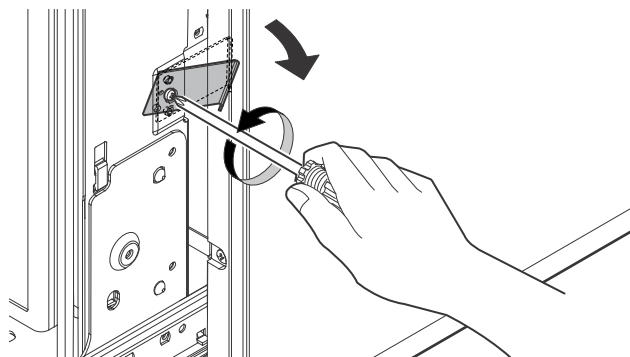


c) **In the case of MX-LC12**

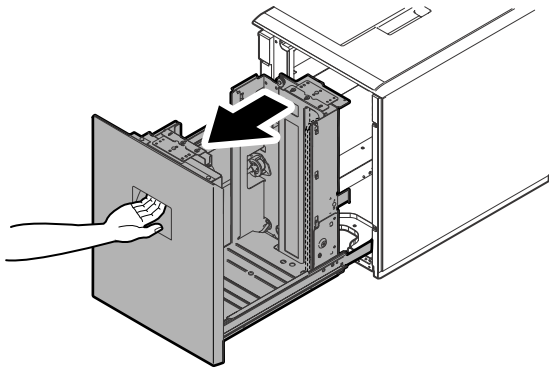
- a) Pull out the paper feed tray until it stops.



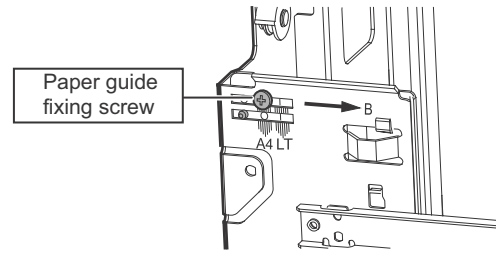
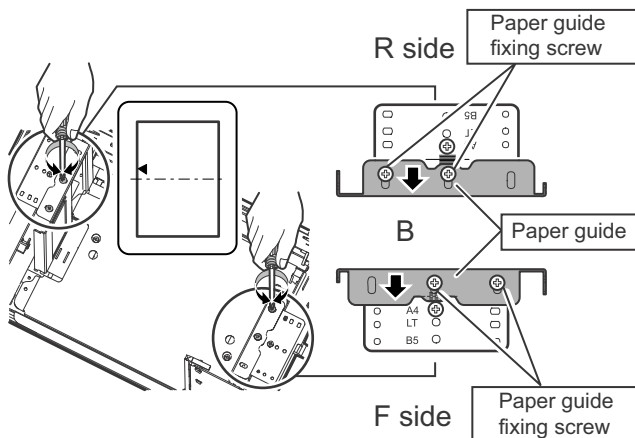
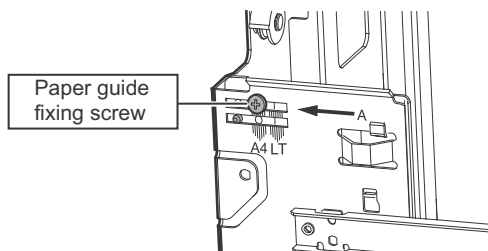
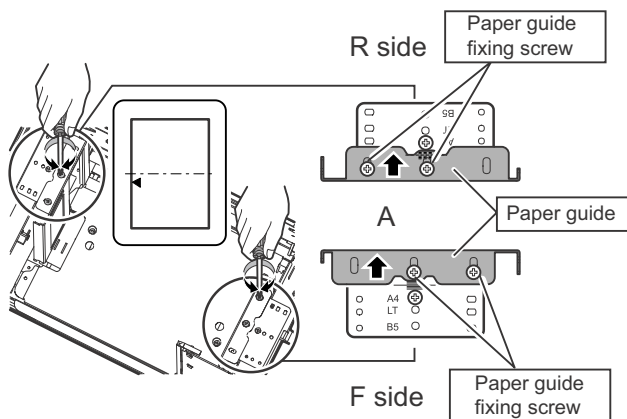
- b) Loosen the stopper fixing screw on the lower right side of the paper feed tray to disable the stopper function.



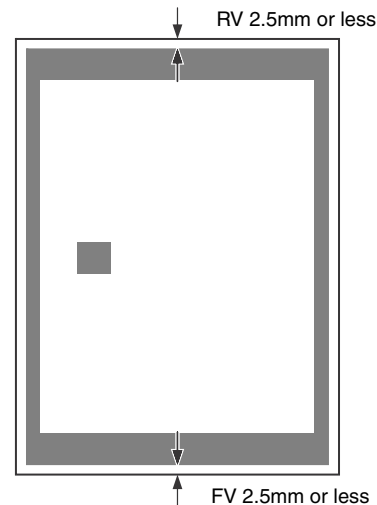
- c) Then pull out the paper feed tray again until it stops.



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



- 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.
(90cpm machine only)
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 = 2.5mm or less
FV = 2.5mm or less

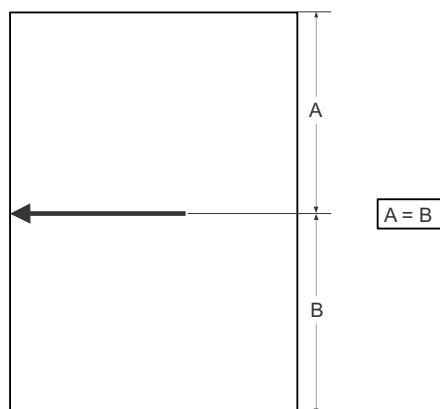
Perform the procedures 10 and 11 until the above conditions are satisfied.

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.

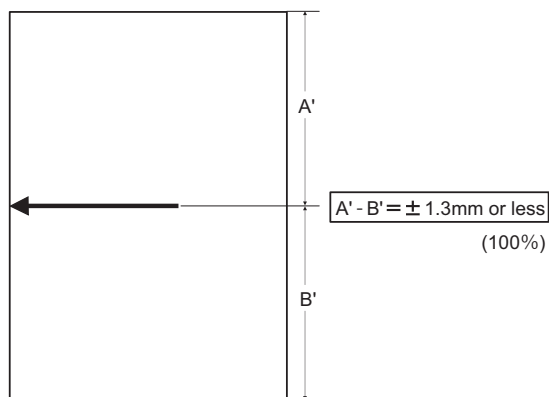
- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 2) Set the adjustment chart on the document table, and make a copy.

- 3) Check the copy image center position.

If $A - B = \pm 1.3\text{mm}$ 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.

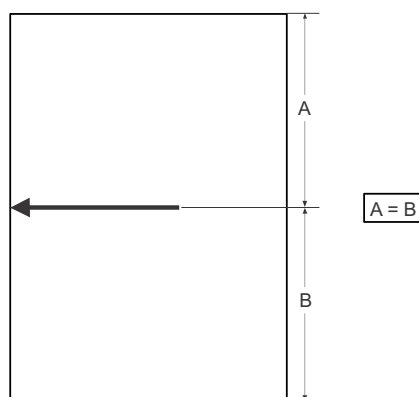
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

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.

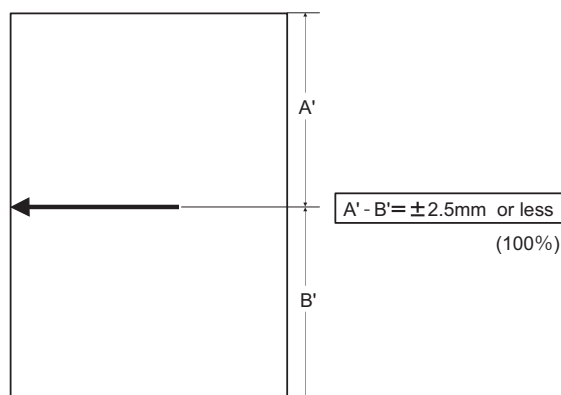
- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 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 $A - B = \pm 2.5\text{mm}$ 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.

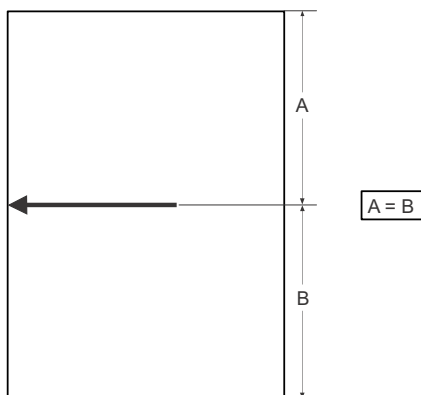
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

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

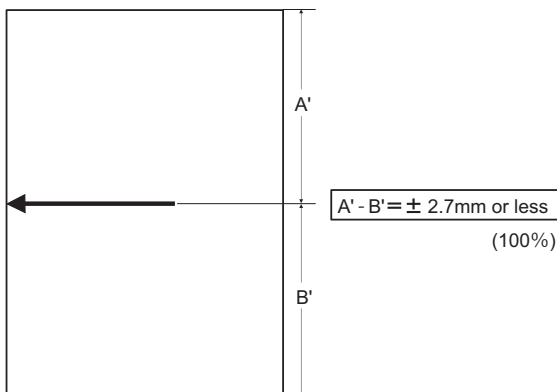
This adjustment is required in the following cases:

- * 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 $A-B = \pm 2.7\text{mm}$ 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)
- * ADJ8F Scan image off-center manual adjustment (Document table mode)
- * ADJ8G Scan image off-center manual adjustment (DSPF (Front surface) mode)
- * ADJ8H Scan image off-center manual adjustment (DSPF (Back surface) mode)
- * ADJ 9C 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 ADJ8F) (Corresponding to ADJ7B) (Corresponding to Sim.50-1 RRCA)
BK-MAG ADJ	(Corresponding to ADJ3B)
SPF ADJ	(Corresponding to ADJ9C) (Corresponding to ADJ8G) (Corresponding to ADJ8H) (Corresponding to ADJ7E)
SETUP/PRINT ADJ	(Corresponding to ADJ3C) (Corresponding to ADJ8A)

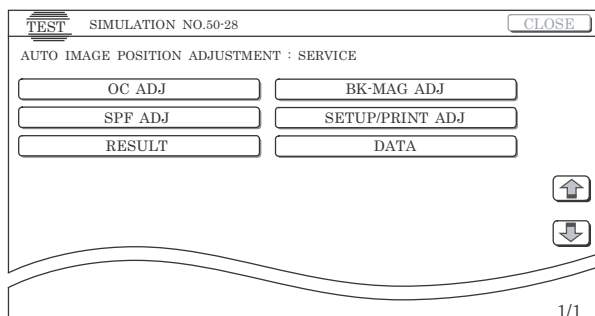
(Sim. 50-28 mode menu)

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)	SPF ADJ (DSPF)
		Scan image lead edge reference position adjustment	
		Scan image off-center adjustment	
	SIDE2 (Back surface)	Sub scanning direction scan image magnification ratio adjustment	
		Scan image lead edge reference position adjustment	
		Scan image off-center adjustment	
		Sub scanning direction scan image magnification ratio adjustment	

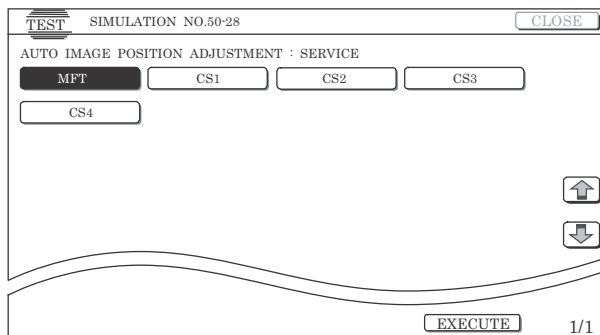
Section		Adjustment item	Adjustment menu
Engine	—	Main scanning direction print image magnification ratio adjustment	BK-MAG ADJ
	CS (Common to paper feed trays)	Print image lead edge position adjustment	SETUP/PRINT ADJ
	CS1	Print image off-center adjustment	
	CS2	Print image off-center adjustment	
	CS3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



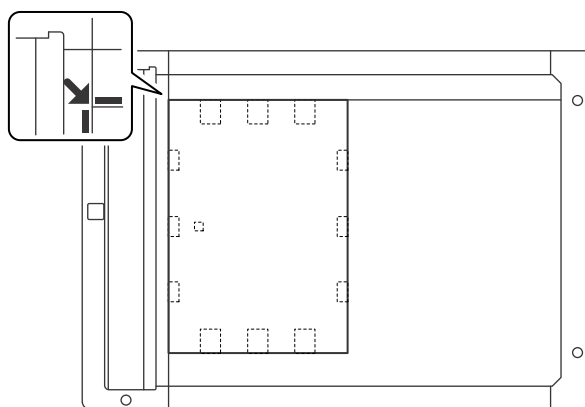
- 2) Press [BK-MAG ADJ] button to select [BK-MAG ADJ] mode.
- 3) Select the paper feed tray with A4/11 X 8.5 paper init with the paper feed tray button. (A4/11 X 8.5)



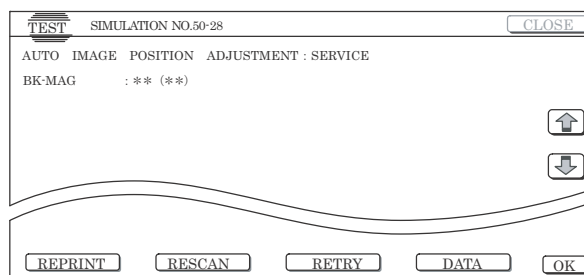
- 4) Press [EXECUTE] key.
The adjustment pattern is printed.

- 5) 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.



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

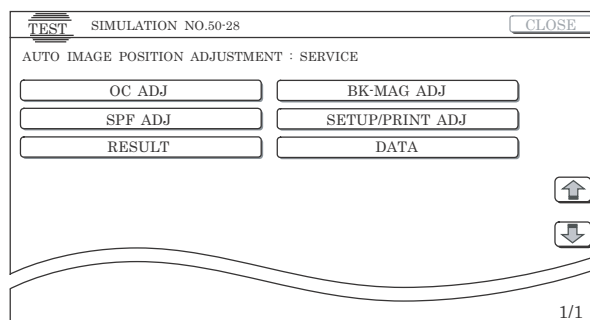


- 7) Press [OK] key.
The adjustment result becomes valid.

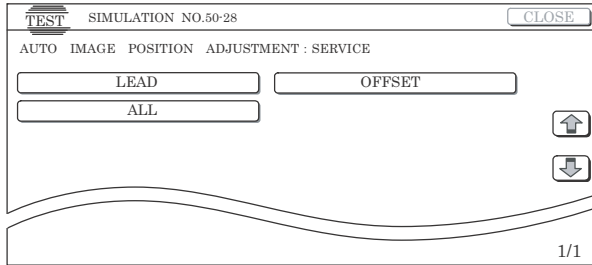
9-B Print image off-center automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)

Print image lead edge position automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)

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



- 2) Press [SETUP/PRINT ADJ] button to select [SETUP/PRINT ADJ] mode.
- 3) Press [ALL] button to select [ALL] mode.



Note:

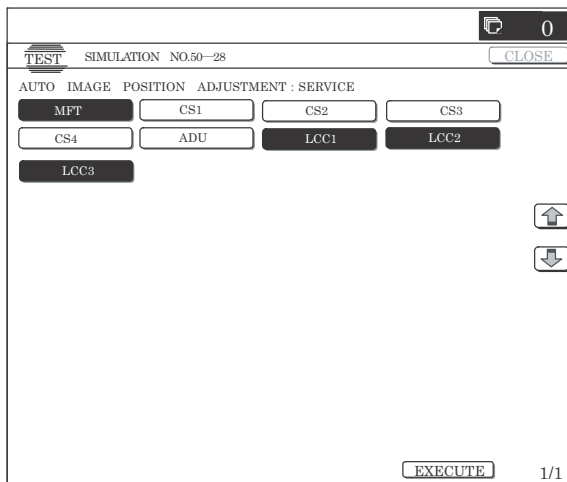
The adjustment can be performed individually in the [LEAD] mode or in the [OFFSET] mode.

LEAD: Print image lead edge image position adjustment

OFFSET: Print image off-center adjustment

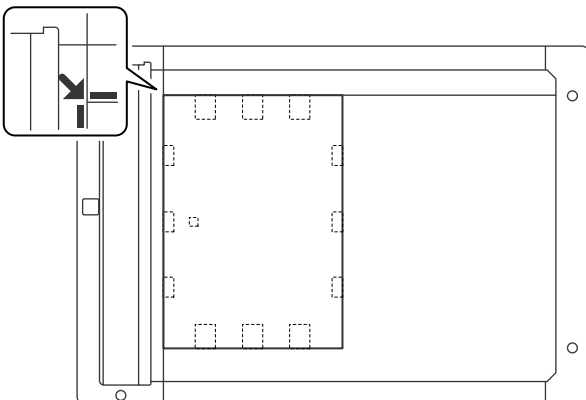
When [ALL] is selected, the above two adjustments are performed simultaneously.

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

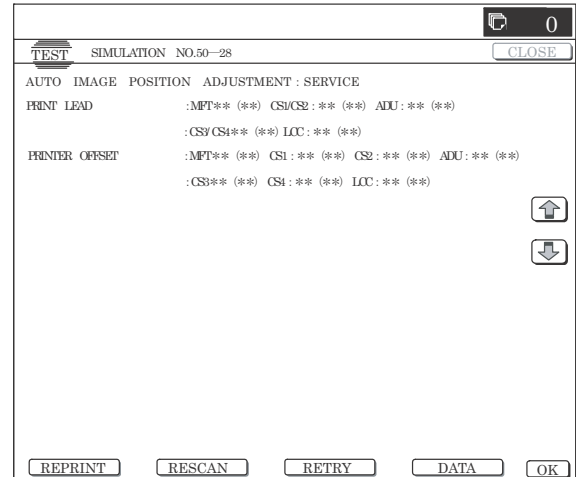


- 5) Press [EXECUTE] key.
- 6) Set the adjustment pattern on the document table. (No need to take care of the setting direction.)

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



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



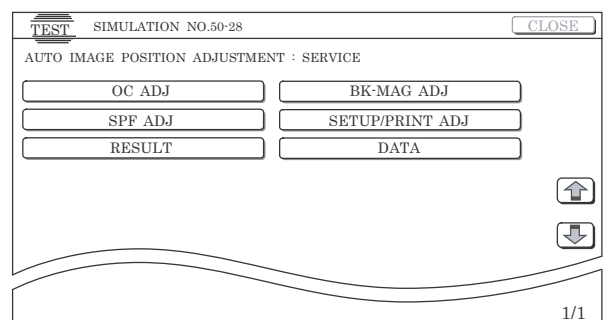
- 8) Press [OK] button.
- The adjustment result becomes valid.
Perform the procedures 4 thru 7 for each paper feed tray.

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

Scan image off-center automatic adjustment (Document table mode) (Corresponding to ADJ8A)

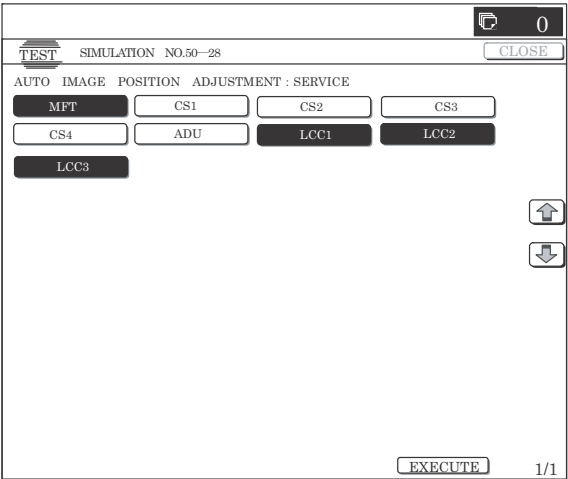
Scan image lead edge reference position automatic adjustment (Document table mode) (Corresponding to SIM 50-1 RRCA)

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

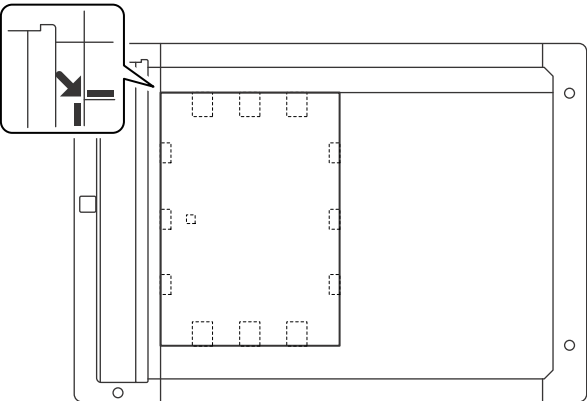


- 2) Press [OC ADJ] button to select [OC ADJ] mode.

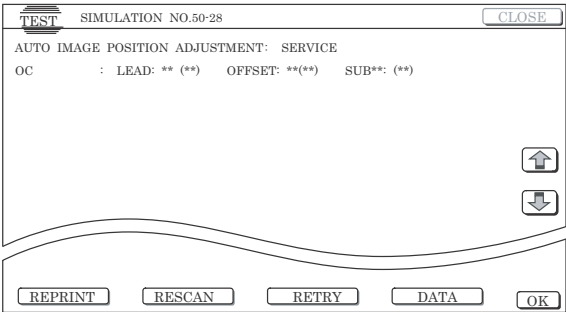
- 3) Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)



- 4) Press [EXECUTE] key.
The adjustment pattern is printed.
- 5) 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.



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



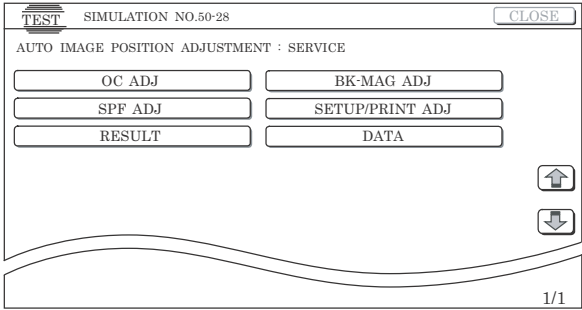
- 7) Press [OK] button.
The adjustment result becomes valid.

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

Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8G/ADJ8H)

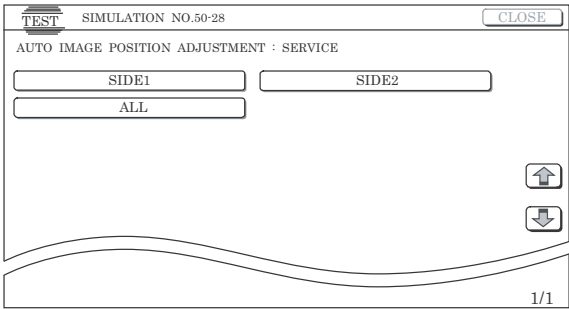
Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9C)

- 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

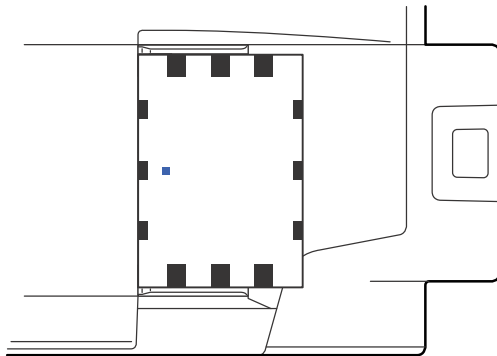


- 4) Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)

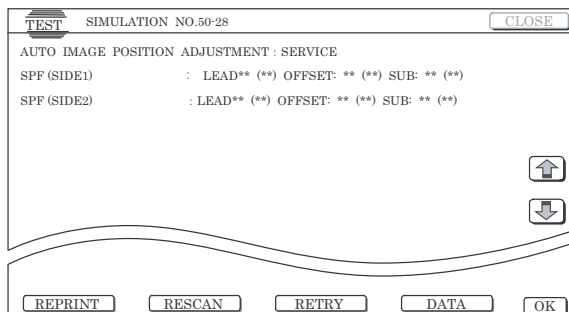


- 5) Press [EXECUTE] key.
The adjustment pattern is printed.
- 6) Set the adjustment pattern on the DSPF tray in either direction.
(Placing the adjustment pattern)
Placing manner of the adjustment pattern differs depending on the adjustment mode. Refer to the description below and set the adjustment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

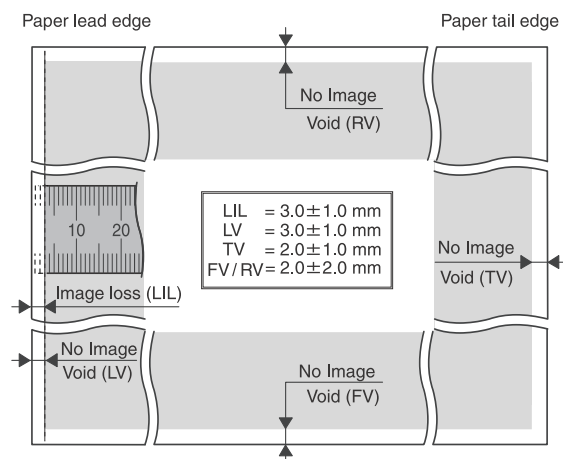
NOTE:

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

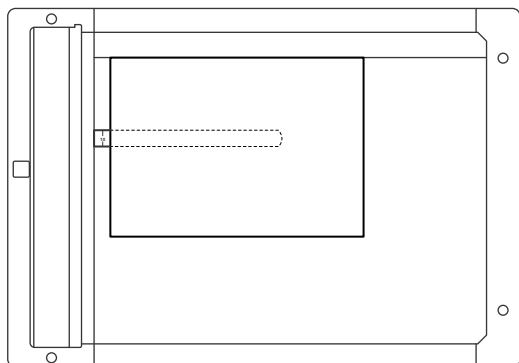
- * ADJ3A Print engine image distortion adjustment (LSU parallelism adjustment)
- * ADJ3B Print engine image magnification adjustment (Main scanning direction)
- * ADJ3C Print engine image off-center adjustment
- * ADJ3D Printer mode lead edge void area adjustment, print engine front/rear void area adjustment,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

Standard image loss, void area

LV :	Lead edge void area	$3.0 \pm 1.0\text{mm}$
TV :	Rear edge void area	$2.0 \pm 1.0\text{mm}$
FV/RV :	FRONT/REAR void area	$2.0 \pm 2.0\text{mm}$
FV+RV:	4.0mm or less	
LIL :	Lead edge image loss	$3.0 \pm 1.0\text{mm}$



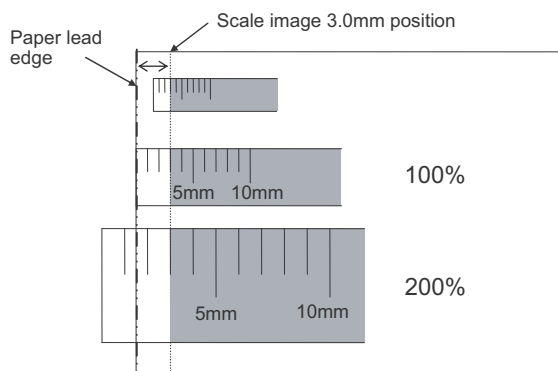
- 1) Place a scale on the document table as shown below.
Set the scale so that it is in parallel with the scanning direction and the scale tip is in close contact with the document guide plate.
Place white paper on the document table so that the scale tip can be seen.



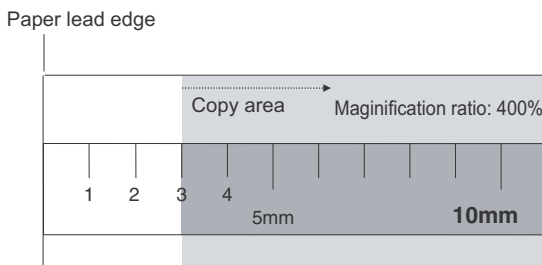
- 2) Enter the Sim. 50-1 mode.
- 3) Set the items RRCA, LEAD, and SIDE to the default values.

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)		ADU	1 - 99	50
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 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.

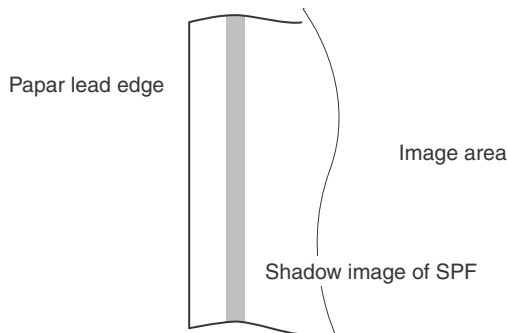
This adjustment is used to adjust the scanner reading position when scanning the front surface in the DSPF mode.

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 "ADJ9C 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)

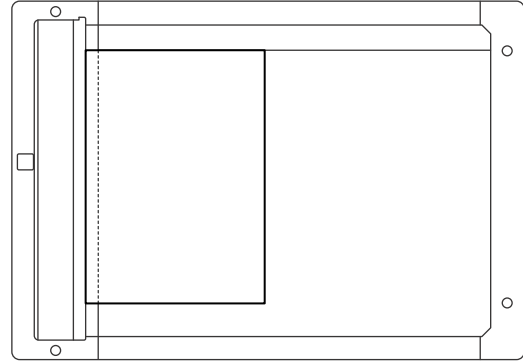
- 1) Enter the Sim. 53-8 mode.
- 2) Press the manual button to select the manual mode.
- 3) Enter the adjustment value with 10-key, and press [OK] button.
When the adjustment value is increased, the scanner reading position when scanning the front surface in the DSPF mode is shifted further from the 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.



- 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.

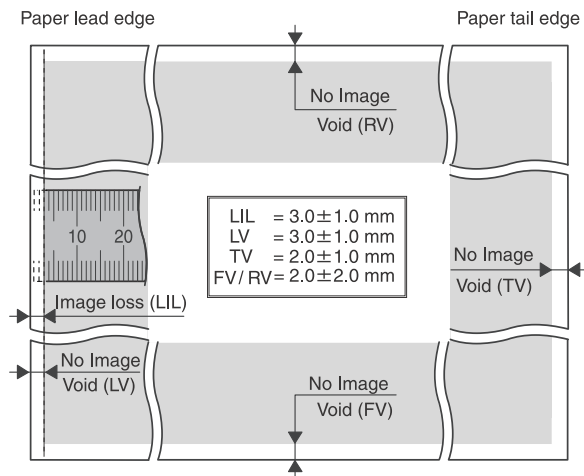
NOTE:

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)

Standard image loss, void area

LV:	Lead edge void area	$3.0 \pm 1.0\text{mm}$
TV:	Rear edge void area	$2.0 \pm 1.0\text{mm}$
FV/RV:	FRONT/REAR void area	$2.0 \pm 2.0\text{mm}$
FV+RV:	4.0mm or less	
LIL:	Lead edge image loss	$3.0 \pm 1.0\text{mm}$



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

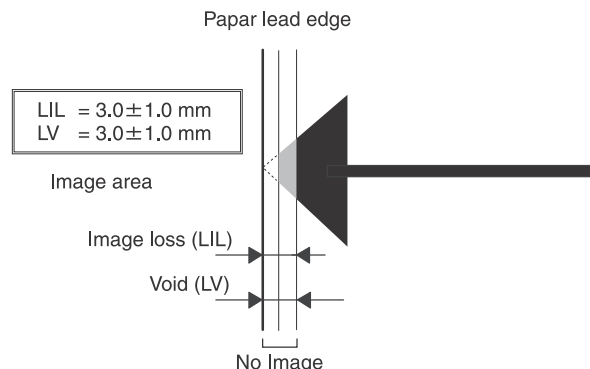
Display/Item		Content	Default
A	SIDE1	Front surface document scanning start position (CCD)	50
B	SIDE2	Back surface document scanning start position (CCD)	50
C	Image loss quantity setting SIDE1	LEAD_EDGE (SIDE1)	20
D		FRONT_REAR (SIDE1)	20
E		TRAIL_EDGE (SIDE1)	30
F	Image loss quantity setting SIDE2	LEAD_EDGE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

- 2) Use the DSPF to make a duplex copy at 100%. Check to confirm that the lead edge image loss is $3.0 \pm 1.0\text{mm}$ 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.

- 3) 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

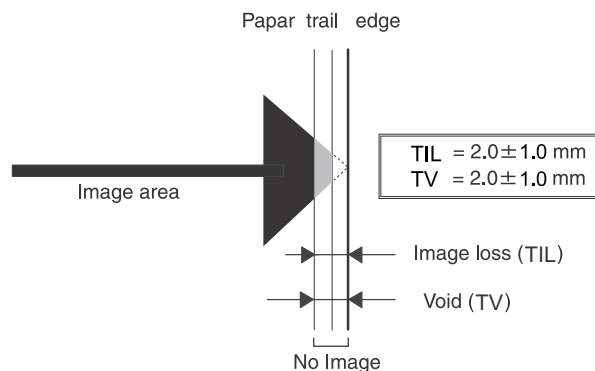
(Change rate for change in the adjustment value: 0.1mm/step)

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

(Rear edge image loss adjustment)

- 1) Use the DSPF at the magnification ratio of 100%, and make a duplex copy. Check to confirm that the rear edge image loss is $2.0 \pm 1.0\text{mm}$ 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.

- 2) 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)

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

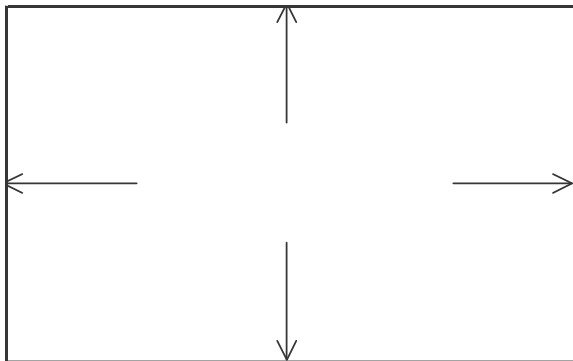
(Enter 20 for the adjustment values of FRONT_REAR (SIDE1) and FRONT_REAR (SIDE2), and press [OK] key.)

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.

- 1) 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.

- 2) 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)
- 3) 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.
- 4) Enter the Sim. 50-27 mode.
- 5) 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 FAX, copy mode)	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)
	E		FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0-100	0 (0mm)
	F		TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity setting	0-100	0 (0mm)
	G	Image loss quantity setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss quantity setting	0-100	0 (0mm)
	H		FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0-100	0 (0mm)
	I		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.

10-E FAX send mode image loss adjustment

This adjustment is needed in the following situations:

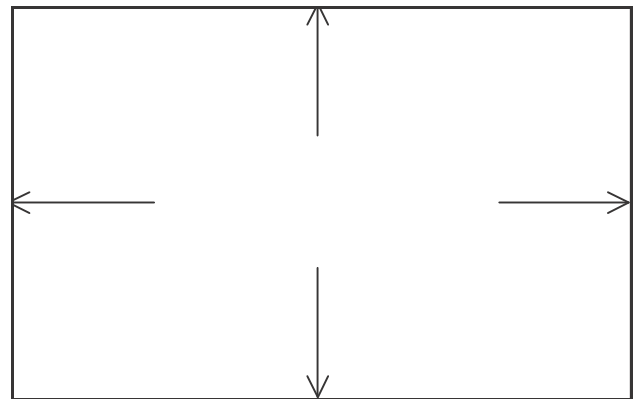
- * When a shade is copied on the scanned image in the FAX send mode.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * When the scanner (reading) 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:

Normally the adjustment values are default values and there is no need to adjust them. When, however, an image defect or a shade is generated on the received FAX, this adjustment must be performed.

However, check the printable reproduction area on the receiving FAX side and the setting conditions before performing this adjustment.

1) Use A3 (11 X 17) paper to make a chart as shown below:



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

- 2) Send FAX of the chart image made in the procedure 1) in the following modes.
 - * Original table mode
 - * DSPF mode (Duplex mode)
- 3) Check the received FAX image to confirm that the image loss is "0" at every edge of the arrow marks.
(If there is no edge defect on the arrow marks, it is judged that the image loss is "0.")
If the above conditions are not satisfied, perform the following procedure.
- 4) Press FAX button to select the FAX send mode and the image loss adjustment mode.

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

	Display/Item			Content	Setting range	Default
FAX send mode image loss adjustment	A	Image loss	LEAD_EDGE (OC)	OC lead edge image loss quantity setting	0-100	30 (3mm)
	B	quantity setting	FRONT_REAR (OC)	OC side image loss quantity setting	0-100	20 (2mm)
	C	OC	TRAIL_EDGE (OC)	OC rear edge image loss quantity setting	0-100	20 (2mm)
	D	Image loss	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss quantity setting	0-100	20 (2mm)
	E	quantity setting	FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0-100	20 (2mm)
	F	SPF SIDE1	TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity setting	0-100	30 (3mm)
	G	Image loss	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss quantity setting	0-100	30 (3mm)
	H	quantity setting	FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0-100	20 (2mm)
	I	SPF SIDE2	TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0-100	20 (2mm)

6) 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 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 (UKOG-0162FCZZ), and check that they are proper.

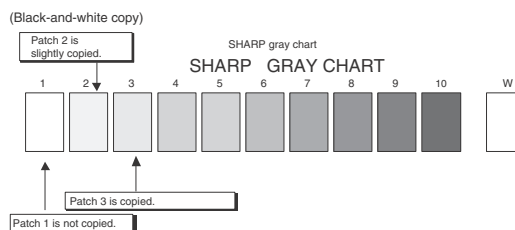
Note for checking the density

To check the density, use the gray test chart (UKOG-0162FCZZ) and the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11). 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).

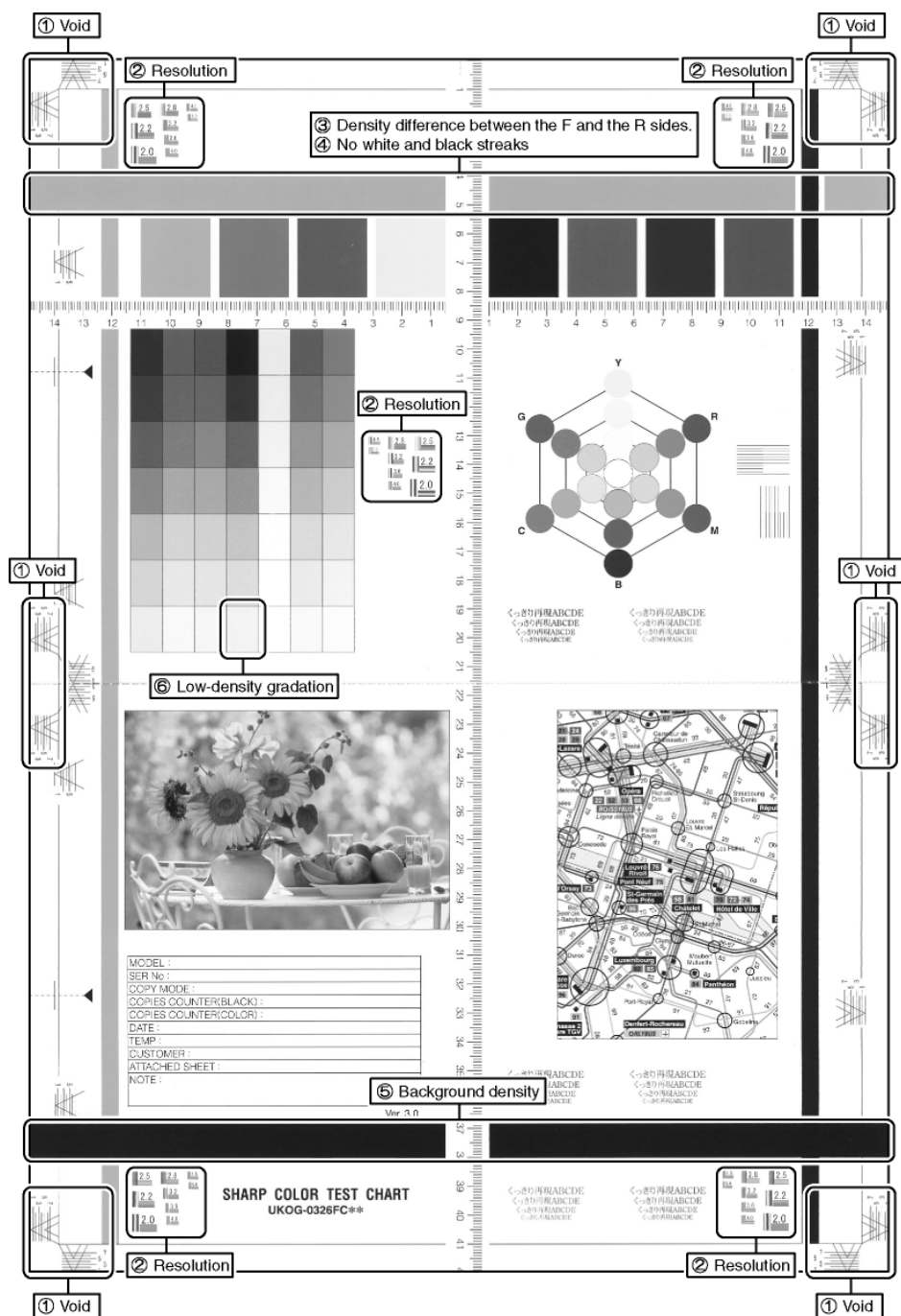
Check with the gray test chart (UKOG-0162FCZZ)

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 th 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

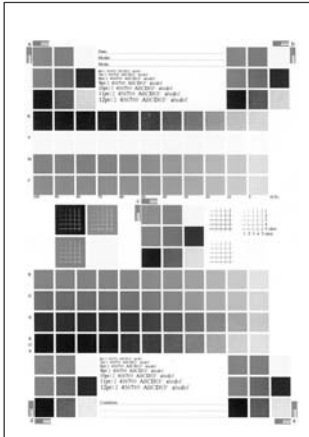
NOTE: Before checking the copy gray balance and the density, be sure to execute the following procedures in advance.

- * 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

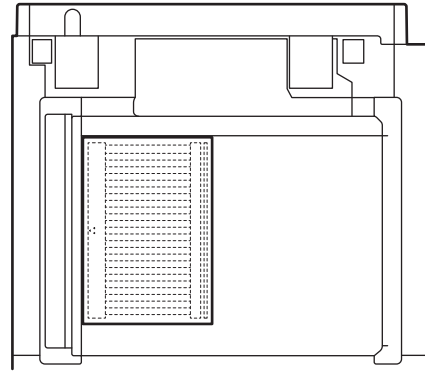
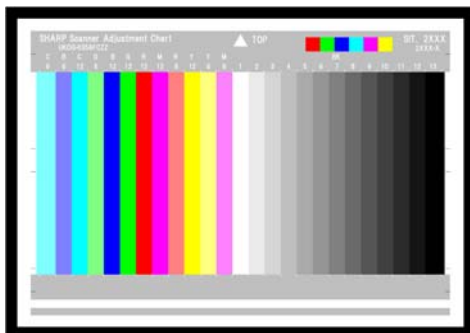
- Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.
(If there is some dust and dirt, wipe and clean with alcohol.)
- Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0356FCZZ) are free from dirt and scratches.

If they are dirty, clean them.

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

(2) Adjustment procedures

- 1) Set the SIT chart (UKOG-0356FCZZ) to the reference position on the left rear frame side of the document table.
Set the chart so that the lighter density side of the patch is on the left side.



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

NOTE: Check to insure that the SIT chart (UKOG-0356FCZZ) 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 (UKOG-0356FCZZ) 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.

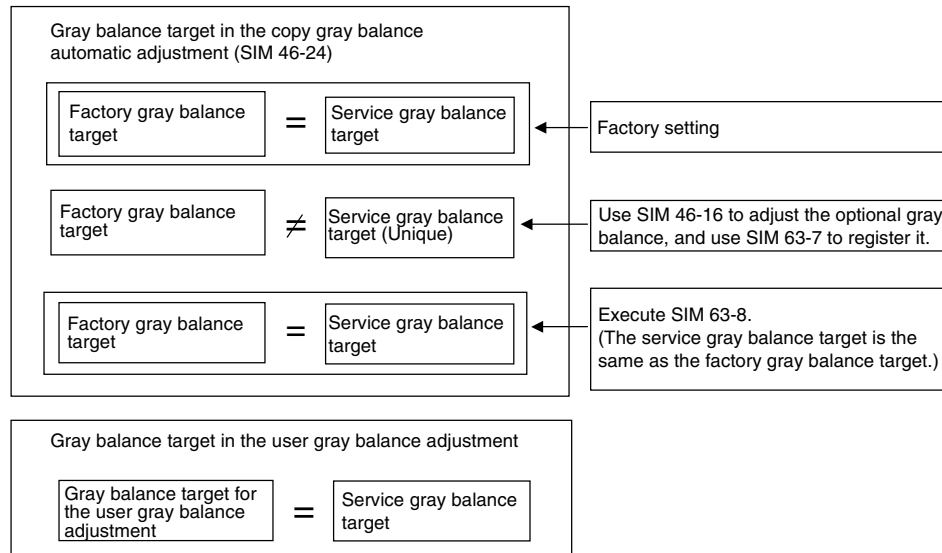
- * When the gray balance and density adjustments are executed manually (SIM46-16) (SIM67-25)
- * U2 trouble has occurred.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been 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).

If the gray balance could not be adjusted satisfactorily with SIM 46-16 (Gray balance adjustment (Manual)), do not execute SIM 63-7 to register the service gray balance target data.

- 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.

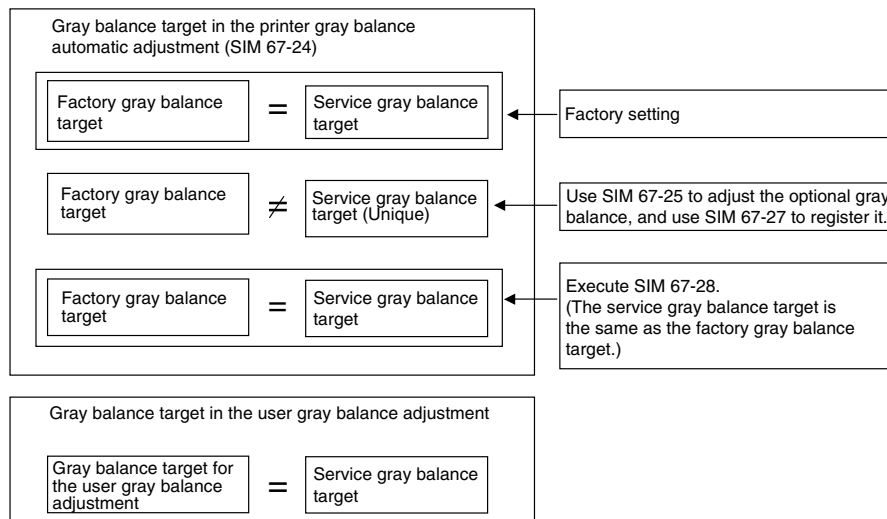
The service gray balance target and the gray balance target for the user gray balance adjustment are set to the same gray balance as the factory gray balance target.

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.

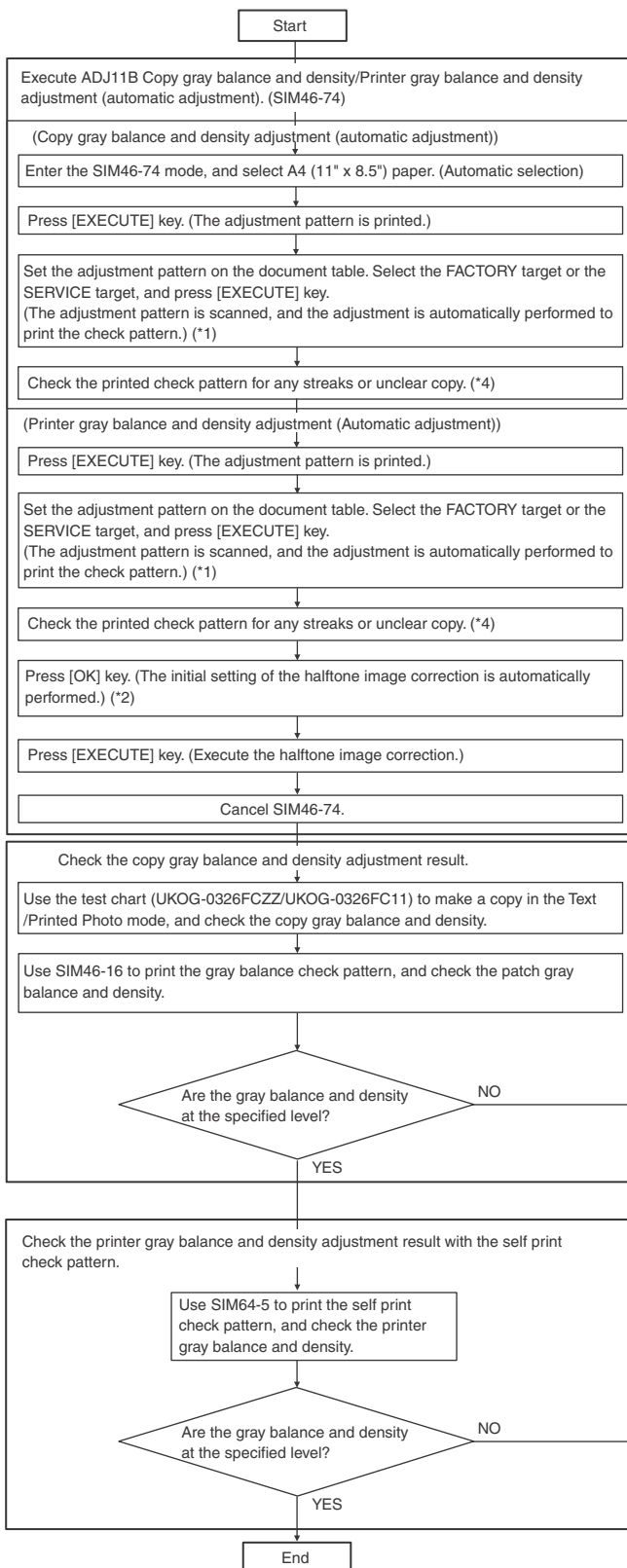
The gray balance adjustment (automatic adjustment) is used to adjust the density automatically.

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)

Copy/printer gray balance and density adjustment (Automatic adjustment)
(SIM46-74) procedure flowchart



*1:
When the gray balance and density are customized and registered as the SERVICE target, select the SERVICE target.

*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.

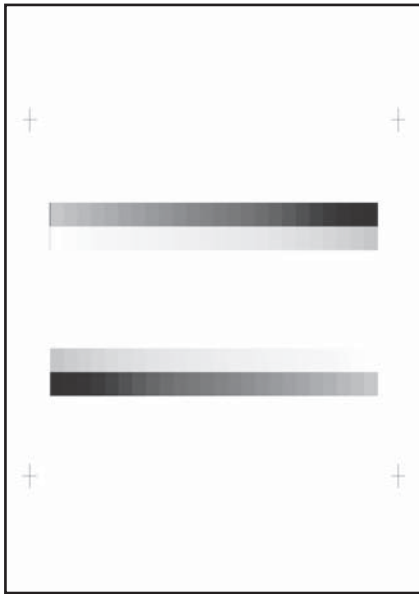
*3:
If satisfactory gray balance and density are not obtained with ADJ11C(2) (Copy gray balance and density adjustment) (Manual adjustment) (SIM46-16/44-21), check the print engine for any problems.

*4:
If there is any streak or unclear copy on the printed check pattern, check the print engine for any problems.

1) Enter the SIM46-74 mode.

2) Press [EXECUTE] key.

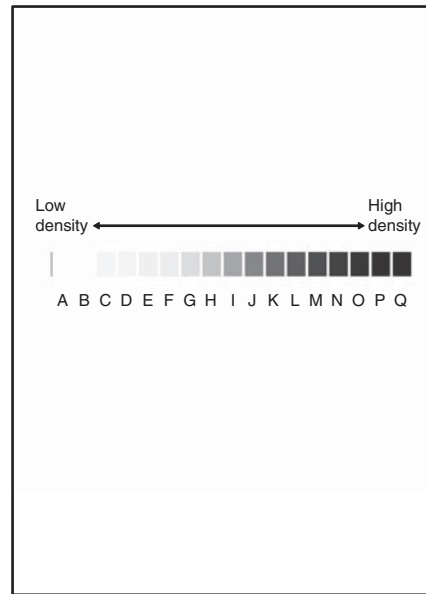
The high density process control is performed, and the copy gray patch image (adjustment pattern) is printed out.
(A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



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

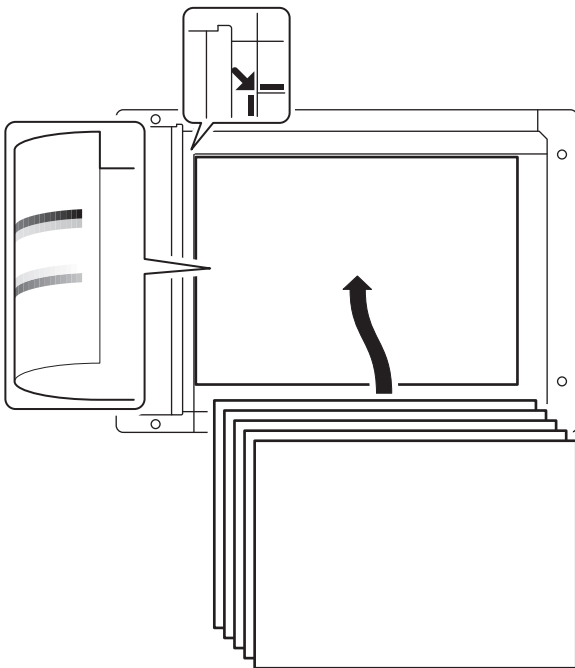
The copy gray balance adjustment is automatically executed and prints the gray balance check patch image.

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



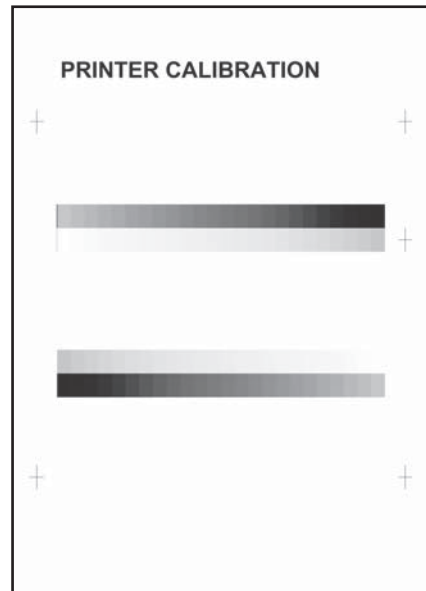
3) Set the gray patch image (adjustment pattern) paper printed in procedure 2) on the document table.

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).



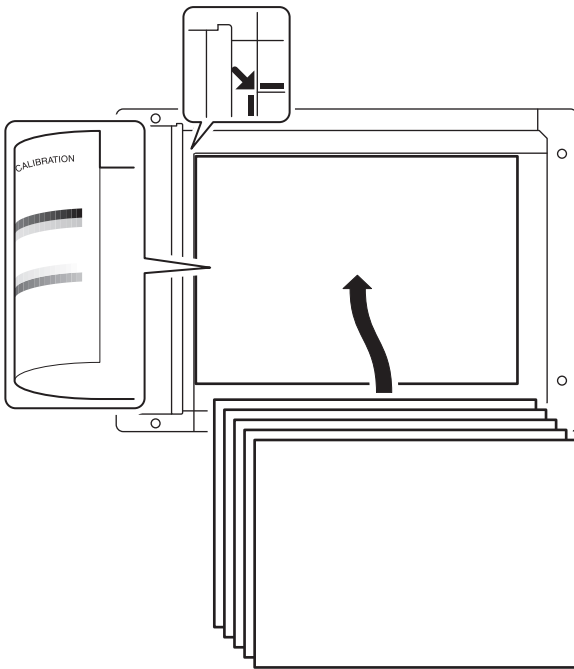
5) Press [EXECUTE] key.

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).

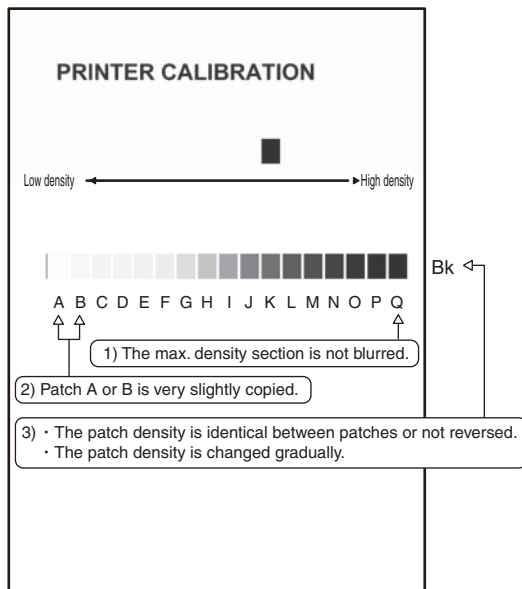


- 7) Select [FACTORY] target, and press [EXECUTE] key.

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 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 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.

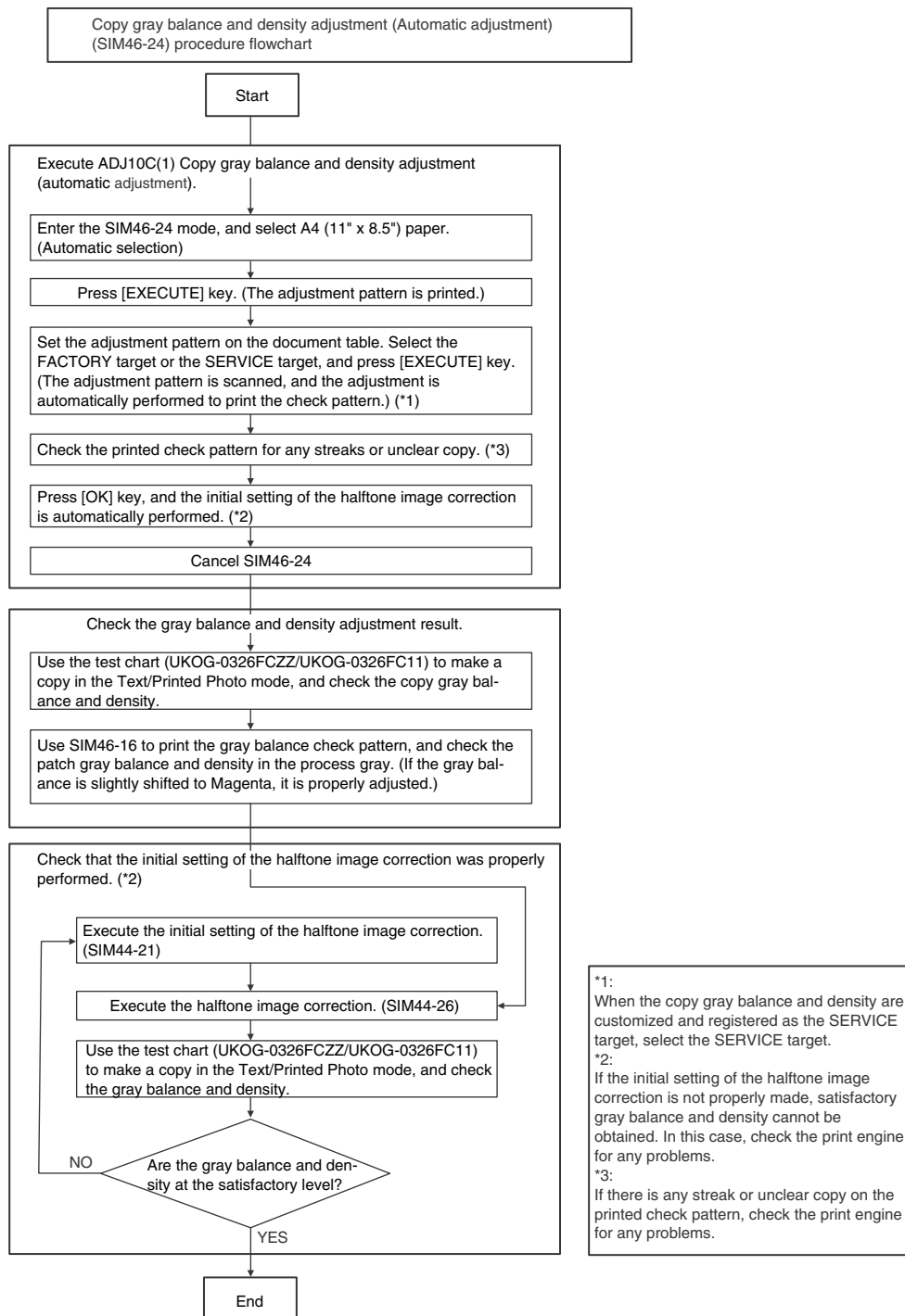
When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

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.

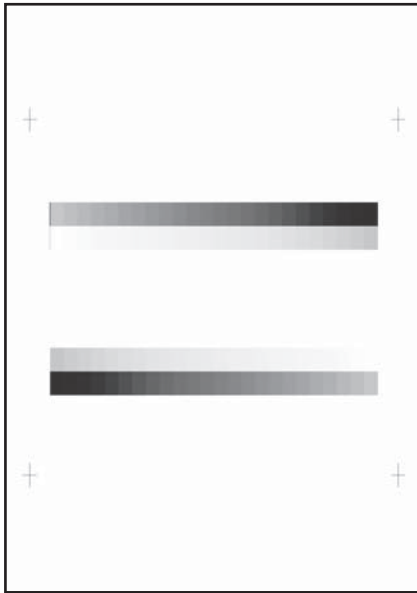
To perform the adjustment, the above difference must be fully understood.

b. Adjustment procedure

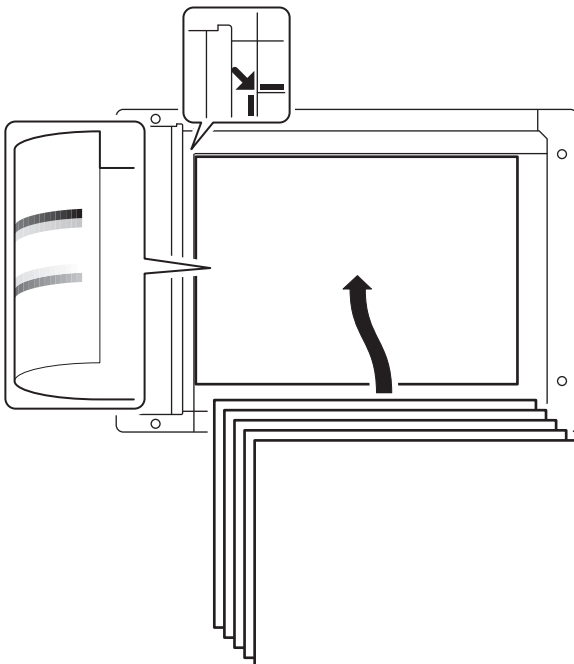
(Auto gray balance adjustment by the serviceman)



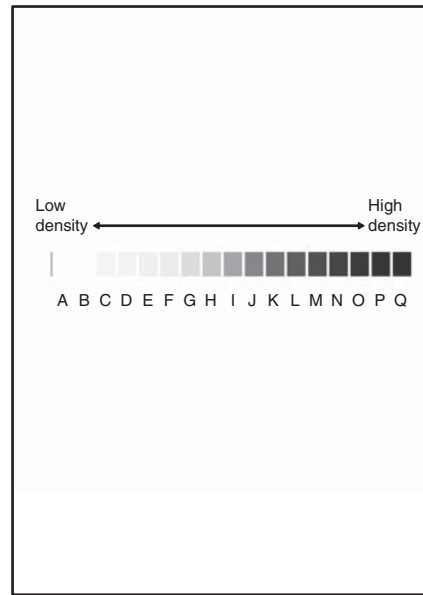
- 1) Enter the SIM 46-24 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
The patch image (adjustment pattern) is printed out.



- 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 (UKOG-0326FCZZ/UKOG-0326FC11) 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 (UKOG-0317FCZZ/UKOG-0317FC11) 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

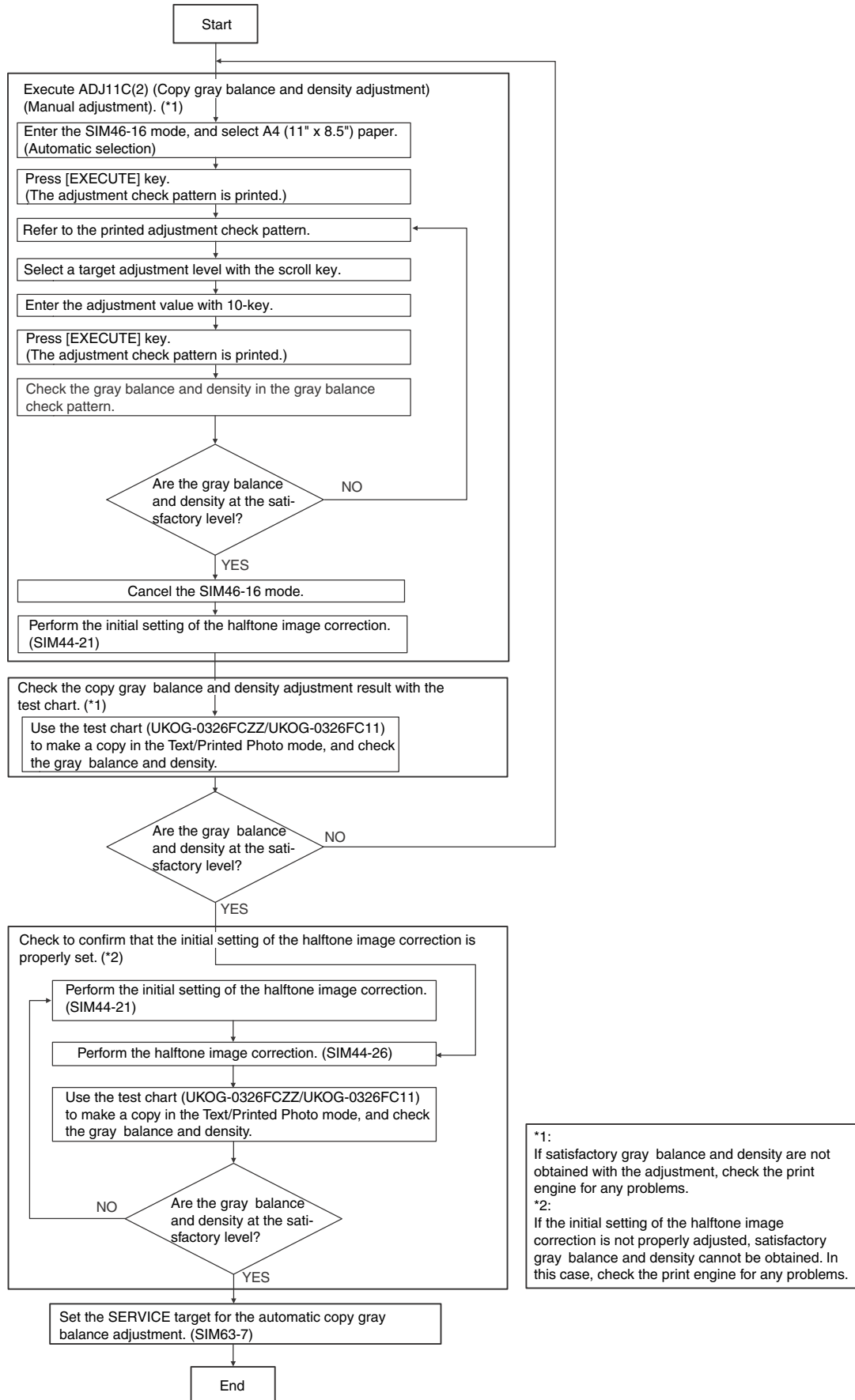
The gray balance adjustment (Manual adjustment) is used to adjust the copy density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing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

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

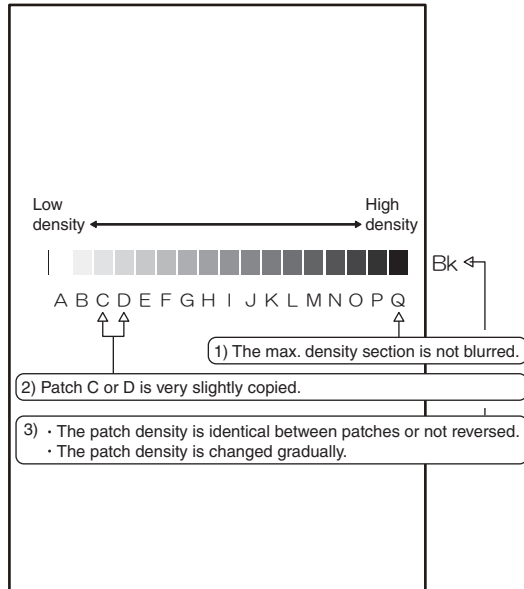
If the gray balance is improper, execute the automatic gray balance adjustment in advance, and execute this adjustment for better efficiency.

b. Adjustment procedure

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



- 1) 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 (UKOG-0326FCZZ/UKOG-0326FC11) 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 (UKOG-0317FCZZ/UKOG-0317FC11) 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 / FAX 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 and the FAX mode as well as the copy mode.

This must be well understood for execution of the adjustment.

		Copy MODE		IMAGE SEND(SCAN) MODE					
		Monochrome mode		Color mode		Monochrome mode			
		Auto	Manual	Auto	Manual	Auto	Manual	FAX	Printer
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/FAX) 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/FAX) 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/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section)	○	-	-	-	○	-	○	-
46-37	Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)	○	○	-	-	○	○	○	○
46-39	FAX send image sharpness adjustment	-	-	-	-	-	-	○	-
46-40	FAX send image density adjustment (Collective adjustment of all the modes)	-	-	-	-	-	-	○	-
46-41	FAX send image density adjustment (Normal text mode)	-	-	-	-	-	-	○	-
46-42	FAX send image density adjustment (Fine text mode)	-	-	-	-	-	-	○	-
46-43	FAX send image density adjustment (Super fine mode)	-	-	-	-	-	-	○	-
46-44	FAX send image density adjustment (Ultra fine mode)	-	-	-	-	-	-	○	-
46-45	FAX send image density adjustment (600dpi mode)	-	-	-	-	-	-	○	-
46-46	FAX send image density adjustment (RGB_RIP)	-	-	-	-	-	-	○	-
46-47	Copy image, image send image, FAX 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	AUTO3	Auto 3	LOW 1 - 99 50
		HIGH 1 - 99 50	
D	TEXT	Text	LOW 1 - 99 50
		HIGH 1 - 99 50	
E	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW 1 - 99 50
		HIGH 1 - 99 50	
F	TEXT/PHOTO	Text/Photograph	LOW 1 - 99 50
		HIGH 1 - 99 50	
G	PRINTED PHOTO	Printed Photo	LOW 1 - 99 50
		HIGH 1 - 99 50	
H	PHOTOGRAPH	Photograph	LOW 1 - 99 50
		HIGH 1 - 99 50	
I	MAP	Map	LOW 1 - 99 50
		HIGH 1 - 99 50	
J	AUTO1 (COPY TO COPY)	Auto1 (Copy document)	LOW 1 - 99 50
		HIGH 1 - 99 50	
K	AUTO2 (COPY TO COPY)	Auto2 (copy to copy)	LOW 1 - 99 50
		HIGH 1 - 99 50	
L	AUTO3 (COPY TO COPY)	Auto3 (Copy document)	LOW 1 - 99 50
		HIGH 1 - 99 50	
M	TEXT (COPY TO COPY)	Text (Copy document)	LOW 1 - 99 50
		HIGH 1 - 99 50	
N	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW 1 - 99 50
		HIGH 1 - 99 50	
O	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW 1 - 99 50
		HIGH 1 - 99 50	
P	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/FAX) 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, MODE3	MODE2
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/ STOP/PRESCAN	PRESCAN
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME/ STOP/PRESCAN	STOP
AE_FILTER	Auto exposure filter setting	SOFT	NORMAL
		NORMAL	
		SHARP	
AE_WIDTH	AE exposure width	FULL	FULL
		PART	

NOTE:

MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

MODE3: Normal gamma (Improve the back copying)

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:

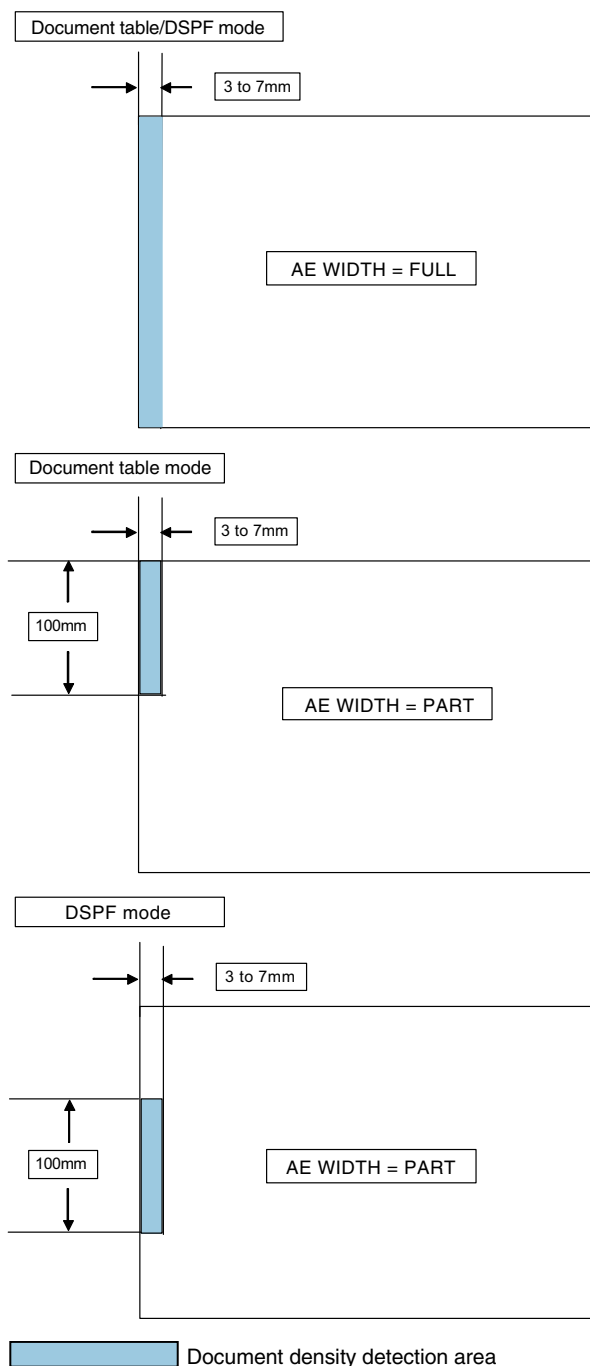
Document density reading area in monochrome auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

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/FAX) 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
G	FAX: OC	FAX mode (for OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (for DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX mode (for DSPF back surface)	1 - 250	196

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/FAX) 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	153
B G-Ratio	Gray making setting (G)	0 - 1000	742
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	COPY AUTO FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode (Text, Text/ Printed Photo/ Text, Text/Printed Photo image)	SOFT	1 - 3	1	2	
		CENTER		CENTER				2
		HIGH		HIGH				3
B	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 (CEN-TER)	
		CENTER		CENTER				2
		HIGH		HIGH				3
C	B/W COPY	OFF	Filter mixture, Register select pattern, Monochrome copy	OFF	0 - 1	0	1(ON)	
		ON		ON		1		
D	COLOR PUSH: RGB	OFF	Filter mixture, Register select pattern, Color push	OFF	0 - 1	0	1(ON)	
		ON		ON		1		
E	B/W PUSH	OFF	Filter mixture, Register select pattern, Monochrome push	OFF	0 - 1	0	1(ON)	
		ON		ON		1		
F	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
C	RATIO LOW	Mix ratio of High density correction (LOW)(1/100)	0 - 100	33
D	RATIO HIGH	Mix ratio of High density correction (HIGH)(1/100)	0 - 100	0
E	DITHER THRESHOLD	Dither threshold (LOW)	0 - 255	250
F	SLOPE THRESHOLD	Slope threshold (HIGH) (1/100)	100 - 500	400

* 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/FAX) 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:HIG)".

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

Copy gamma, gray balance adjustment for each dither (Automatic adjustment)

a. General

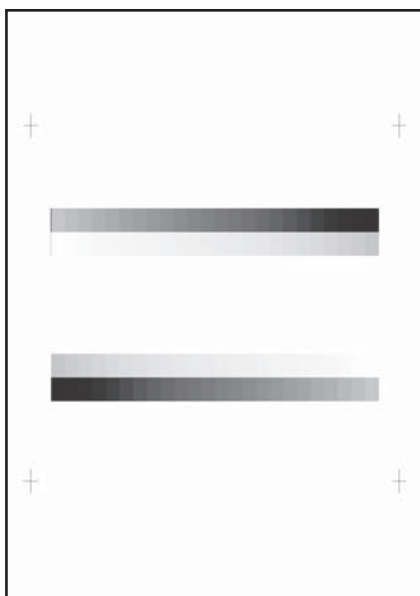
This simulation is used to improve the image quality in a certain mode. (Refer to the list in procedure 6.)

b. Adjustment procedures

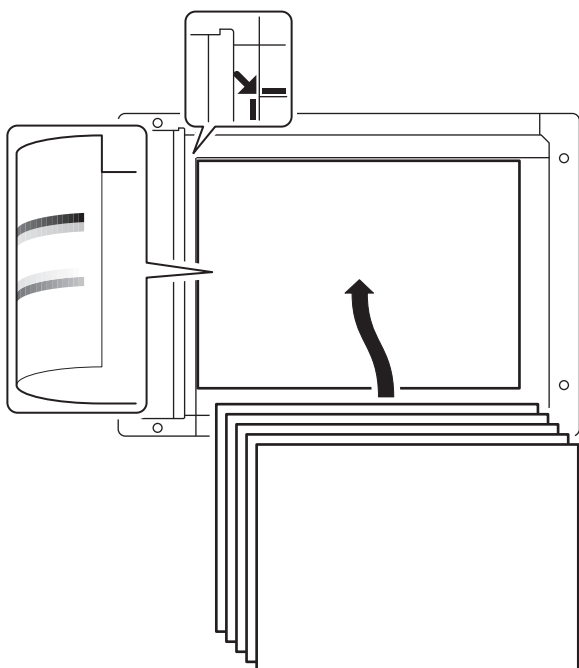
1) Enter the SIM46-54 mode.

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).

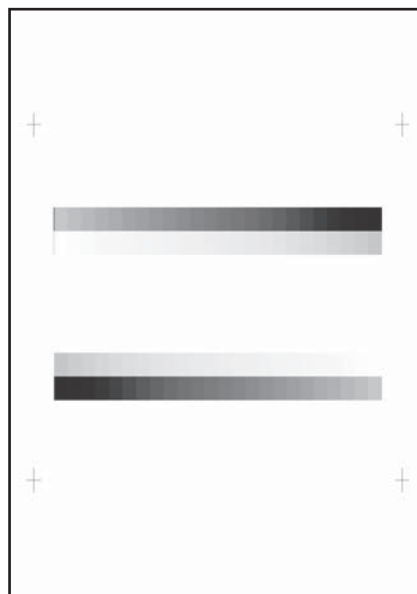
Select item (Mode/Image)	Content
Heavy Paper *1	Adjustment item to improve the gray balance in the heavy paper mode
B/W Ed	Adjustment item to improve the density and gradation in the monochrome auto mode, text mode, map mode and light original mode
B/W 1200	Adjustment item to improve the density and gradation in the monochrome Printed Photo mode and Photo mode.
B/W 600 LOW	Adjustment item to improve the density and gradation in the monochrome auto mode (Printed Photo mode and Photo 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.

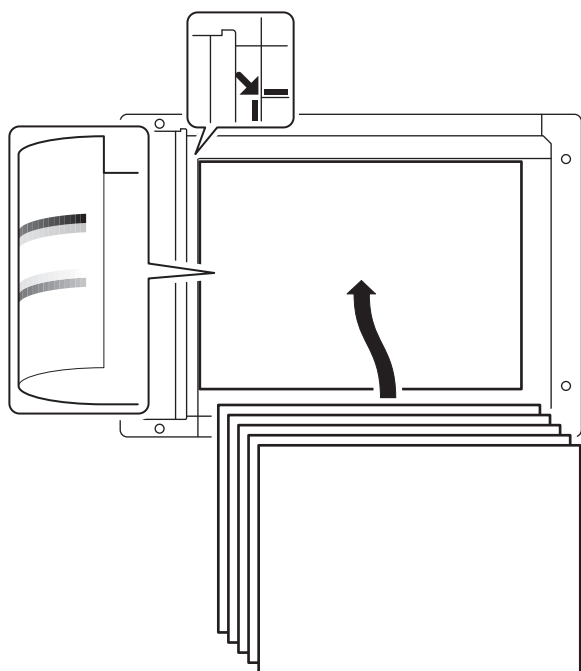
7) Press [EXECUTE] key.

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 (12) 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:

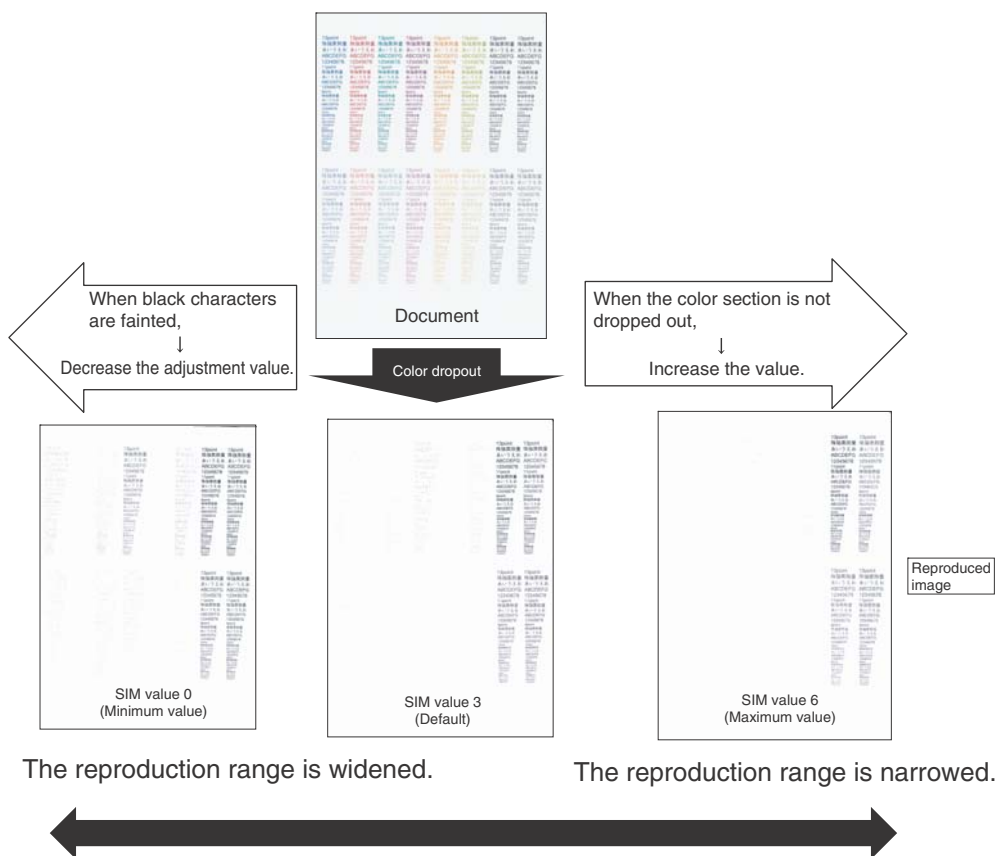
* When there is request from the user.

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 (13)**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 (POS)	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	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				
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.

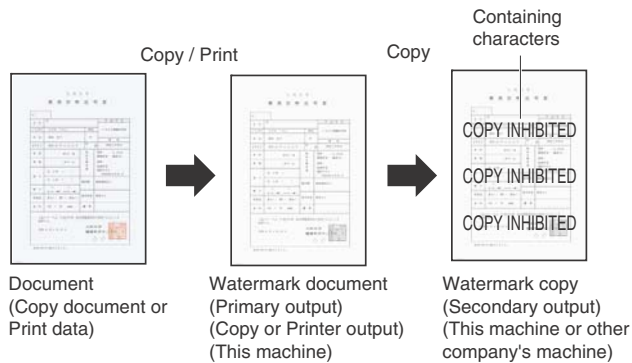
*3: When the adjustment value is varied by ± 1 , the left and the right margins are varied by 0.1mm.

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

Watermarks have the following characteristics:

- 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.
 - * 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.

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.

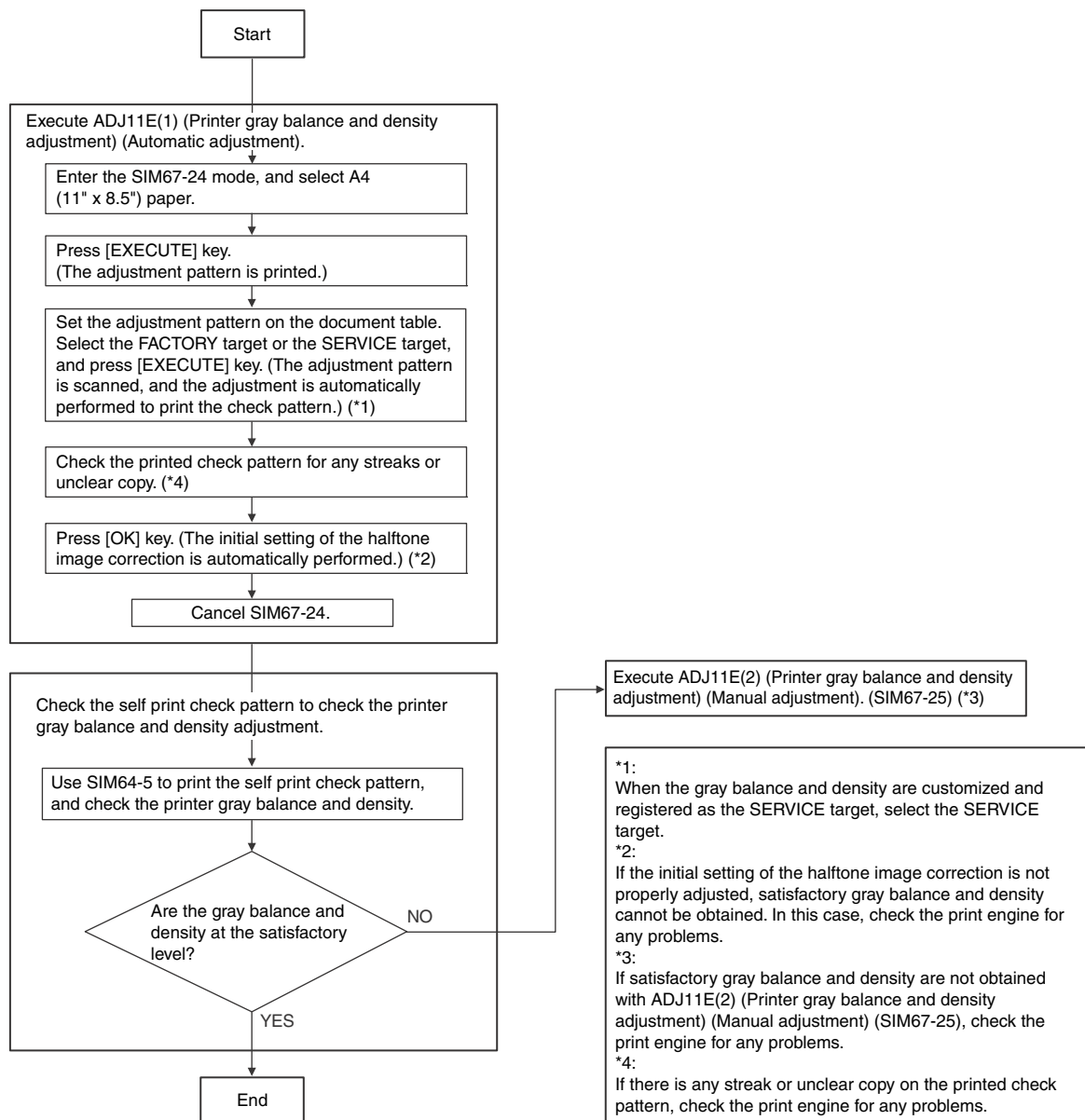
On the other hand, the auto gray balance adjustment by the serviceman functions to recover the normal gray balance though the machine condition is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal gray balance.

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

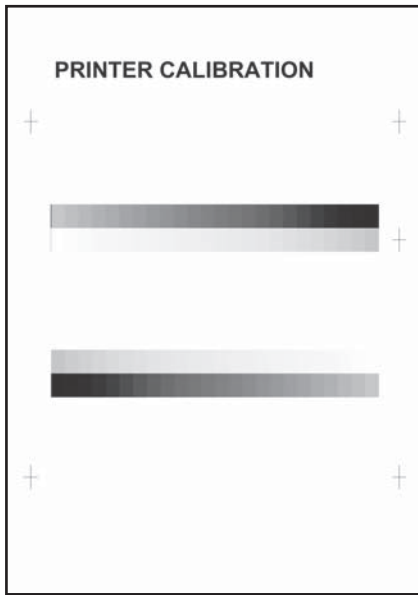
b. Adjustment procedure

(Auto gray balance adjustment by the serviceman)

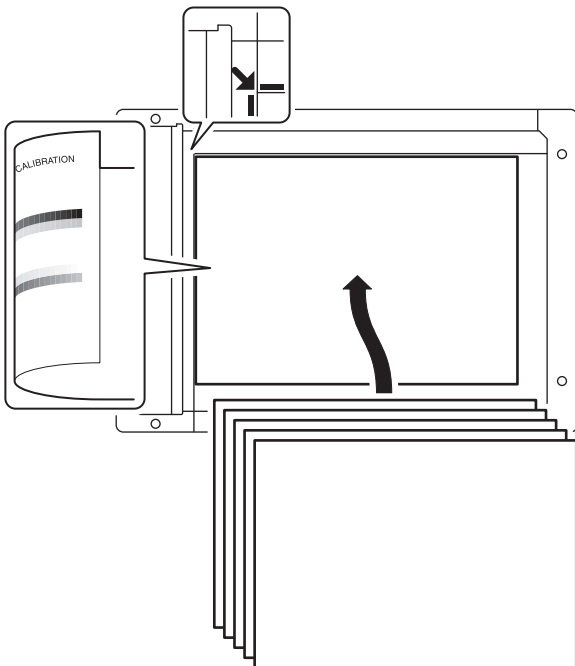
Printer gray balance and density adjustment (Automatic adjustment) procedure flowchart (SIM67-24)



- 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.

Printer gray balance adjustment (Manual adjustment)

a. General

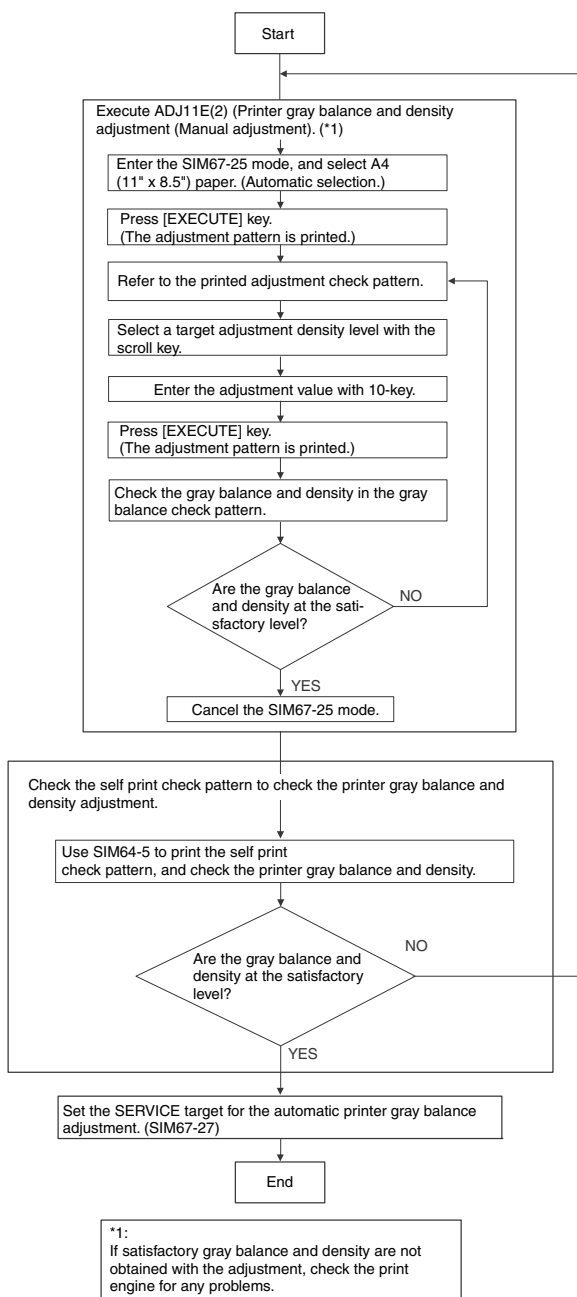
The gray balance adjustment (Manual adjustment) is used to adjust the printer density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for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

In this manual adjustment, adjust only the gray patch which could not adjusted properly in the automatic adjustment.

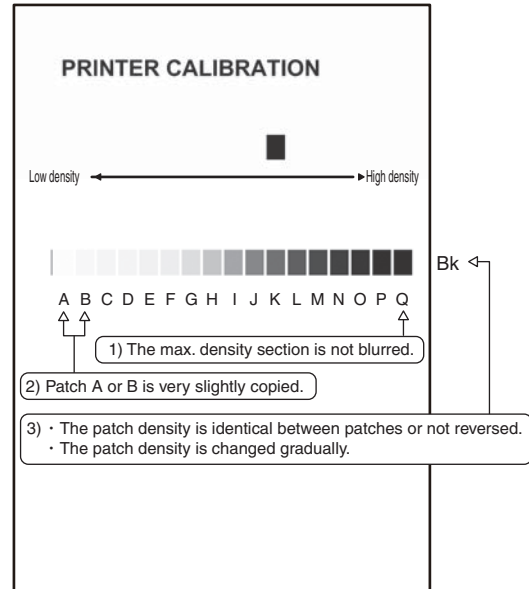
If the gray balance is improper, execute the automatic gray balance adjustment in advance, and execute this adjustment for better efficiency.

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 A or B is very slightly 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.

Item/Display	Content	Setting range	Default value
A	K(0:ENABLE 1:DISABLE)	0 K engine highest density correction mode: Enable	1
		1 K engine highest density correction mode: Disable	
B	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction	500
C	RATIO LOW	High density correction blend ratio (LOW)(1/100)	33
D	RATIO HIGH	High density correction blend ratio (HIGH)(1/100)	0
E	DITHER THRESHOLD	Dither threshold (LOW)	250
F	SLOPE THRESHOLD	Slope threshold (HIGH)(1/100)	400

* 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)

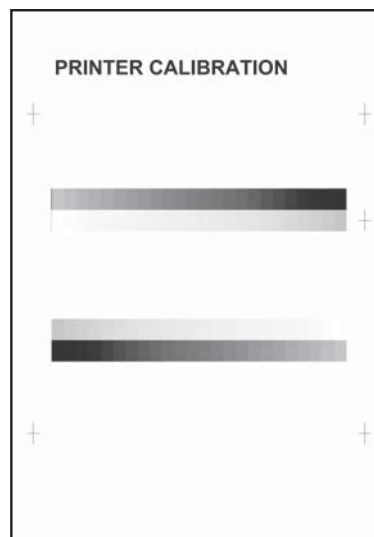
a. General

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.

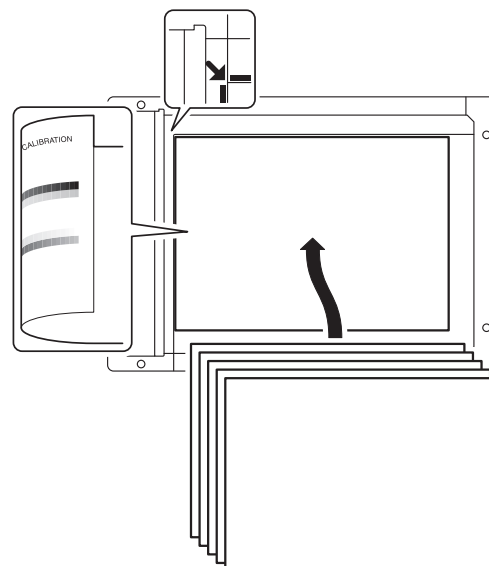
This simulation is used to improve image quality in these modes and images.

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.



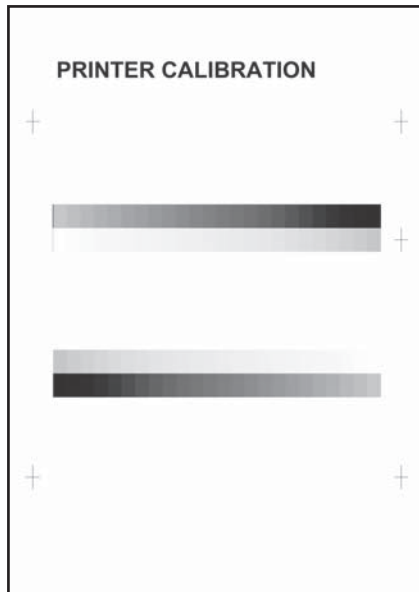
- 3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



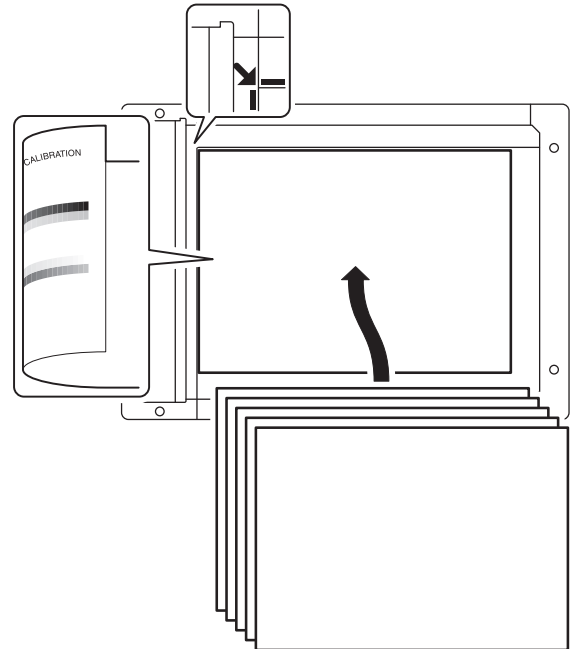
- 4) Press [EXECUTE] key.
The gray balance adjustment is automatically performed.
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

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.

ADJ 12 Image send, FAX send mode 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 rage	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 rage	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
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.

12-D FAX send mode, image sharpness 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 sharpness in the FAX send mode is too low.

Note:

Normally this adjustment value may be set to the default and there is no need to perform the adjustment. When, however, the sharpness of a printed image on the receiving FAX side is too low, perform this adjustment.

When performing this adjustment, be sure to check that the receiving side FAX is normal.

- 1) Enter the Sim. 46-39 mode.
- 2) Select a mode to be adjusted with the scroll button.

	Display/Item	Content	Setting range	Default
A	200 X 100 [DPI] OFF	200 X 100 [DPI] Half-tone OFF mode	0 - 2	1
B	200 X 200 [DPI] OFF	200 X 200 [DPI] Half-tone OFF mode	0 - 2	1
C	200 X 200 [DPI] ON	200 X 200 [DPI] Half-tone ON mode	0 - 2	1
D	200 X 400 [DPI] OFF	200 X 400 [DPI] Half-tone OFF mode	0 - 2	1
E	200 X 400 [DPI] ON	200 X 400 [DPI] Half-tone ON mode	0 - 2	1
F	400 X 400 [DPI] OFF	400 X 400 [DPI] Half-tone OFF mode	0 - 2	1
G	400 X 400 [DPI] ON	400 X 400 [DPI] Half-tone ON mode	0 - 2	1
H	600 X 600 [DPI] OFF	600 X 600 [DPI] Half-tone OFF mode	0 - 2	1
I	600 X 600 [DPI] ON	600 X 600 [DPI] Half-tone ON mode	0 - 2	1

- 3) Enter the adjustment value with 10-key, and press [OK] button.
To increase the sharpness, increase the adjustment value. To decrease the sharpness, decrease the adjustment value.
- 4) Send a FAX message.
- 5) Check the sharpness of the received FAX image.
Repeat the above procedures until a satisfactory result is obtained.

ADJ 13 FAX send mode image quality adjustment

Normally this adjustment is not required. However, perform this adjustment in the following cases:

- * When the user request for performing this adjustment.
- * When the FAX send image density is low or high.

NOTE:

Normally, the adjustment value may be set to the default value and there is no need to make this adjustment. When, however, the image density on the receiving FAX side is unsatisfactory, perform this adjustment.

Before execution of this adjustment, however, be sure to confirm that the receiving FAX operates normally.

13-A Image density and gradation adjustment in the FAX send mode (Collective adjustment of all the FAX modes)

- 1) Enter the Sim. 46-40 mode, and select the I-FAX or FAX.
- 2) Press [EXECUTE] button.
The adjustment pattern is printed.
- 3) Check the print density in the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 4) 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.
Repeat the procedures 2 thru 4 until a satisfactory result is obtained.

13-B Image density and gradation adjustment in the FAX send mode (Normal mode)

- 1) Enter the Sim. 46-41 mode, and select the I-FAX or FAX.
- 2) Select a mode to be adjusted with the scroll button.

	Display/Item	Content	Setting range	Default
A	AUTO	FAX auto exposure mode send image density (Normal mode)	1 - 99	50
B	EXPOSURE1	FAX exposure level 1 send image density (Normal mode)	1 - 99	50
C	EXPOSURE2	FAX exposure level 2 send image density (Normal mode)	1 - 99	50
D	EXPOSURE3	FAX exposure level 3 send image density (Normal mode)	1 - 99	50
E	EXPOSURE4	FAX exposure level 4 send image density (Normal mode)	1 - 99	50
F	EXPOSURE5	FAX exposure level 5 send image density (Normal mode)	1 - 99	50
G	EXECUTE MODE	AUTO	1	1 (AUTO)
		EXP1	2	
		EXP2	3	
		EXP3	4	
		EXP4	5	
		EXP5	6	

- 3) Press [EXECUTE] button.
The adjustment pattern is printed.
- 4) Check the print density of the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 5) 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.
Repeat the procedures 3 thru 5 until a satisfactory result is obtained.
To select the exposure mode actually used in the FAX send mode, select item G and enter the set value corresponding to the exposure mode with 10-key and press [EXECUTE] button.

13-C Image density and gradation adjustment in the FAX send mode (Fine mode)

- 1) Enter the Sim. 46-42 mode, and select the I-FAX or FAX.
- 2) Select a mode to be adjusted with the scroll button.

Display/Item	Content	Setting range	Default
A AUTO	FAX auto exposure mode send image density (Fine mode)	1 - 99	50
B EXPOSURE1	FAX exposure level 1 send image density (Fine mode)	1 - 99	50
C EXPOSURE2	FAX exposure level 2 send image density (Fine mode)	1 - 99	50
D EXPOSURE3	FAX exposure level 3 send image density (Fine mode)	1 - 99	50
E EXPOSURE4	FAX exposure level 4 send image density (Fine mode)	1 - 99	50
F EXPOSURE5	FAX exposure level 5 send image density (Fine mode)	1 - 99	50
G AUTO H_TONE	FAX auto exposure mode send image density (Half-tone/Fine mode)	1 - 99	50
H EXPOSURE1 H_TONE	FAX exposure level 1 send image density (Half-tone/Fine mode)	1 - 99	50
I EXPOSURE2 H_TONE	FAX exposure level 2 send image density (Half-tone/Fine mode)	1 - 99	50
J EXPOSURE3 H_TONE	FAX exposure level 3 send image density (Half-tone/Fine mode)	1 - 99	50
K EXPOSURE4 H_TONE	FAX exposure level 4 send image density (Half-tone/Fine mode)	1 - 99	50
L EXPOSURE5 H_TONE	FAX exposure level 5 send image density (Half-tone/Fine mode)	1 - 99	50
M EXECUTE MODE	AUTO	1	1 (AUTO)
	EXP1	2	
	EXP2	3	
	EXP3	4	
	EXP4	5	
	EXP5	6	
	AUTO H_TONE	7	
	EXP1 H_TONE	8	
	EXP2 H_TONE	9	
	EXP3 H_TONE	10	
	EXP4 H_TONE	11	
	EXP5 H_TONE	12	

- 3) Press [EXECUTE] button.
The adjustment pattern is printed.
- 4) Check the print density of the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 5) 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.
Repeat the procedures 3 thru 5 until a satisfactory result is obtained.
To select the exposure mode actually used in the FAX send mode, select item M and enter the set value corresponding to the exposure mode with 10-key and press [EXECUTE] button

13-D Image density and gradation adjustment in the FAX send mode (Super fine mode)

- 1) Enter the Sim. 46-43 mode.
- 2) Select a mode to be adjusted with the scroll button.

Display/Item	Content	Setting range	Default
A AUTO	FAX auto mode send image density (Super fine mode)	1 - 99	50
B EXPOSURE1	FAX exposure level 1 send image density (Super fine mode)	1 - 99	50
C EXPOSURE2	FAX exposure level 2 send image density (Super fine mode)	1 - 99	50
D EXPOSURE3	FAX exposure level 3 send image density (Super fine mode)	1 - 99	50
E EXPOSURE4	FAX exposure level 4 send image density (Super fine mode)	1 - 99	50
F EXPOSURE5	FAX exposure level 5 send image density (Super fine mode)	1 - 99	50
G AUTO H_TONE	FAX auto exposure mode send image density (Half-tone/Super fine mode)	1 - 99	50
H EXPOSURE1 H_TONE	FAX exposure level 1 send image density (Half-tone/Super fine mode)	1 - 99	50
I EXPOSURE2 H_TONE	FAX exposure level 2 send image density (Half-tone/Super fine mode)	1 - 99	50
J EXPOSURE3 H_TONE	FAX exposure level 3 send image density (Half-tone/Super fine mode)	1 - 99	50
K EXPOSURE4 H_TONE	FAX exposure level 4 send image density (Half-tone/Super fine mode)	1 - 99	50
L EXPOSURE5 H_TONE	FAX exposure level 5 send image density (Half-tone/Super fine mode)	1 - 99	50
M EXECUTE MODE	AUTO	1	1 (AUTO)
	EXP1	2	
	EXP2	3	
	EXP3	4	
	EXP4	5	
	EXP5	6	
	AUTO H_TONE	7	
	EXP1 H_TONE	8	
	EXP2 H_TONE	9	
	EXP3 H_TONE	10	
	EXP4 H_TONE	11	
	EXP5 H_TONE	12	

- 3) Press [EXECUTE] button.
The adjustment pattern is printed.
- 4) Check the print density of the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 5) 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.
Repeat the procedures 3 thru 5 until a satisfactory result is obtained.
To select the exposure mode actually used in the FAX send mode, select item M and enter the set value corresponding to the exposure mode with 10-key and press [EXECUTE] button.

13-E Image density and gradation adjustment in the FAX send mode (Ultra fine mode)

- 1) Enter the Sim. 46-44 mode.
- 2) Select a mode to be adjusted with the scroll button.

Display/Item	Content	Setting range	Default
A AUTO	FAX auto exposure mode send image density (Ultra fine mode)	1 - 99	50
B EXPOSURE1	FAX exposure level 1 send image density (Ultra fine mode)	1 - 99	50
C EXPOSURE2	FAX exposure level 2 send image density (Ultra fine mode)	1 - 99	50
D EXPOSURE3	FAX exposure level 3 send image density (Ultra fine mode)	1 - 99	50
E EXPOSURE4	FAX exposure level 4 send image density (Ultra fine mode)	1 - 99	50
F EXPOSURE5	FAX exposure level 5 send image density (Ultra fine mode)	1 - 99	50
G AUTO H_TONE	FAX auto exposure mode send image density (Half-tone/Ultra fine mode)	1 - 99	50
H EXPOSURE1 H_TONE	FAX exposure level 1 send image density (Half-tone/Ultra fine mode)	1 - 99	50
I EXPOSURE2 H_TONE	FAX exposure level 2 send image density (Half-tone/Ultra fine mode)	1 - 99	50
J EXPOSURE3 H_TONE	FAX exposure level 3 send image density (Half-tone/Ultra fine mode)	1 - 99	50
K EXPOSURE4 H_TONE	FAX exposure level 4 send image density (Half-tone/Ultra fine mode)	1 - 99	50
L EXPOSURE5 H_TONE	FAX exposure level 5 send image density (Half-tone/Ultra fine mode)	1 - 99	50
M EXECUTE MODE	AUTO	1	1 (AUTO)
	EXP1	2	
	EXP2	3	
	EXP3	4	
	EXP4	5	
	EXP5	6	
	AUTO H_TONE	7	
	EXP1 H_TONE	8	
	EXP2 H_TONE	9	
	EXP3 H_TONE	10	
	EXP4 H_TONE	11	
	EXP5 H_TONE	12	

- 3) Press [EXECUTE] button.
The adjustment pattern is printed.
- 4) Check the print density of the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 5) 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.
Repeat the procedures 3 thru 5 until a satisfactory result is obtained.
To select the exposure mode actually used in the FAX send mode, select item M and enter the set value corresponding to the exposure mode with 10-key and press [EXECUTE] button.
Enter the adjustment value with 10-key, and press [EXECUTE] button.

13-F Image density and gradation adjustment in the IFAX send mode (600dpi mode)

- 1) Enter the Sim. 46-45 mode.
- 2) Select a mode to be adjusted with the scroll button.

Display/Item	Content	Setting range	Default
A AUTO	IFAX 600dpi mode/ Auto exposure mode send image density	1 - 99	50
B EXPOSURE1	IFAX 600dpi mode/Exposure level 1 send image density	1 - 99	50
C EXPOSURE2	IFAX 600dpi mode/Exposure level 2 send image density	1 - 99	50
D EXPOSURE3	IFAX 600dpi mode/Exposure level 3 send image density	1 - 99	50
E EXPOSURE4	IFAX 600dpi mode/Exposure level 4 send image density	1 - 99	50
F EXPOSURE5	IFAX 600dpi mode/Exposure level 5 send image density	1 - 99	50
G AUTO H_TONE	IFAX 600dpi half-tone mode/ Auto exposure mode send image density	1 - 99	50
H EXPOSURE1 H_TONE	IFAX 600dpi half-tone mode/ Exposure level 1 send image density	1 - 99	50
I EXPOSURE2 H_TONE	IFAX 600dpi half-tone mode/ Exposure level 2 send image density	1 - 99	50
J EXPOSURE3 H_TONE	IFAX 600dpi half-tone mode/ Exposure level 3 send image density	1 - 99	50
K EXPOSURE4 H_TONE	IFAX 600dpi half-tone mode/ Exposure level 4 send image density	1 - 99	50
L EXPOSURE5 H_TONE	IFAX 600dpi half-tone mode/ Exposure level 5 send image density	1 - 99	50
M EXECUTE MODE	AUTO	1	1 (AUTO)
	EXP1	2	
	EXP2	3	
	EXP3	4	
	EXP4	5	
	EXP5	6	
	AUTO H_TONE	7	
	EXP1 H_TONE	8	
	EXP2 H_TONE	9	
	EXP3 H_TONE	10	
	EXP4 H_TONE	11	
	EXP5 H_TONE	12	

- 3) Press [EXECUTE] button.
The adjustment pattern is printed.
- 4) Check the print density of the adjustment pattern.
If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
- 5) 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.
Repeat the procedures 3 thru 5 until a satisfactory result is obtained.
To select the exposure mode actually used in the FAX send mode, select item M and enter the set value corresponding to the exposure mode with 10-key and press [EXECUTE] button.

ADJ 14 Setting of the auto exposure mode operating conditions in copy, scan, and FAX

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.

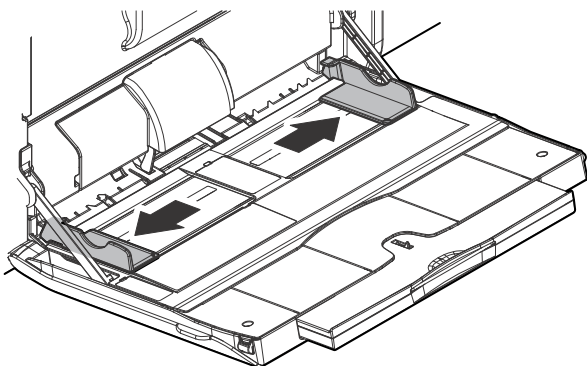
Item/Display	Content	Set value	Default
AE_MODE	Auto exposure mode	MODE1	MODE2
		MODE2	
		MODE3	
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME	PRESCAN
		STOP	
		PRESCAN	
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON	ON
		OFF	
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME	STOP
		STOP	
		PRESCAN	
AE_FILTER	Auto exposure filter setting	SOFT	NORMAL
		NORMAL	
		SHARP	
AE_WIDTH	AE exposure width	FULL	FULL
		PART	

ADJ 15 Paper size detection adjustment

15-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.

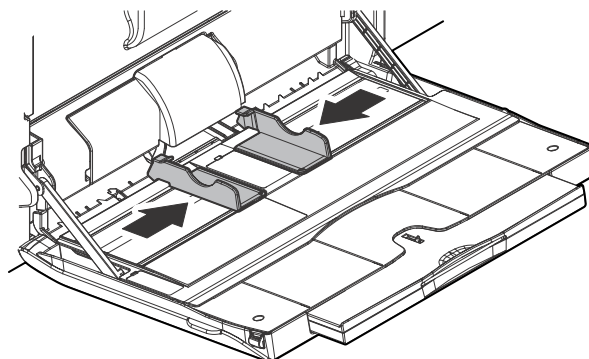


[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

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.

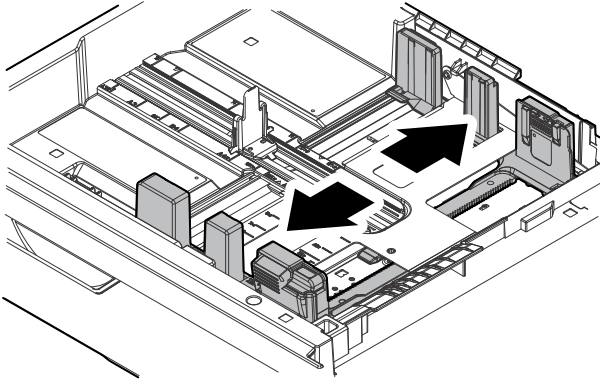


After completion of the adjustment, "COMPLETE" is displayed.

15-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.



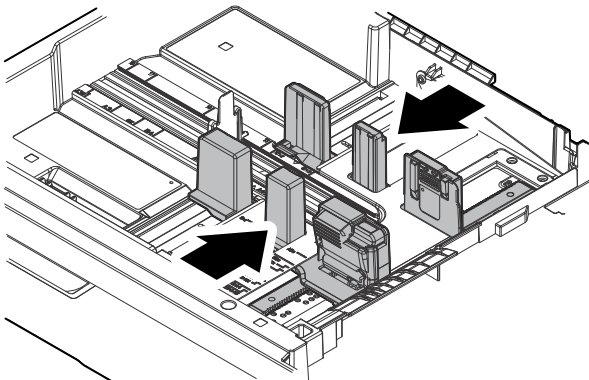
[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

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.

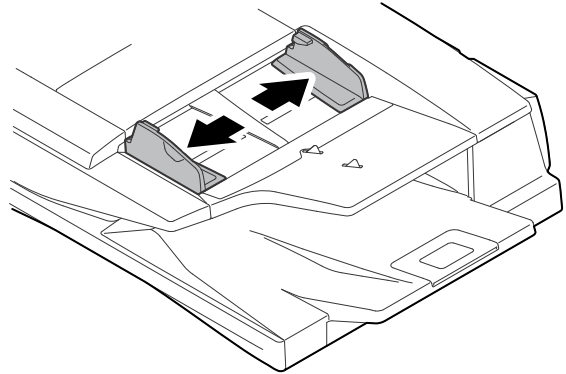


After completion of the adjustment, "COMPLETE" is displayed.

15-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.

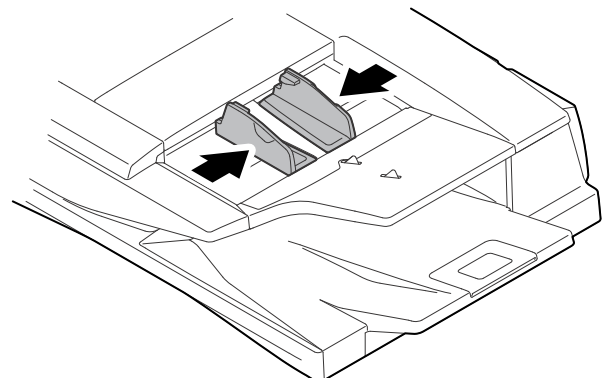
[EXECUTE] key is highlighted. When the A4R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 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.



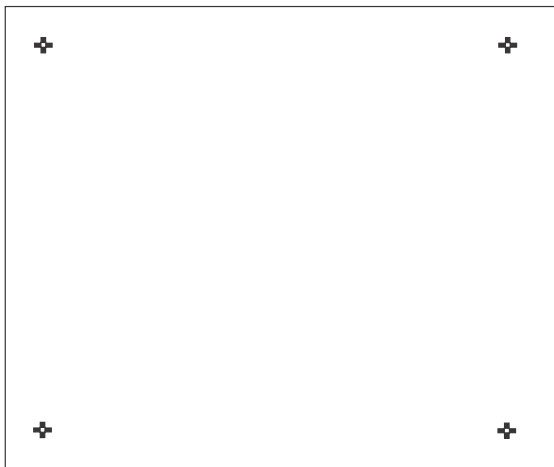
After completion of the adjustment, "COMPLETE" is displayed.

ADJ 17 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:

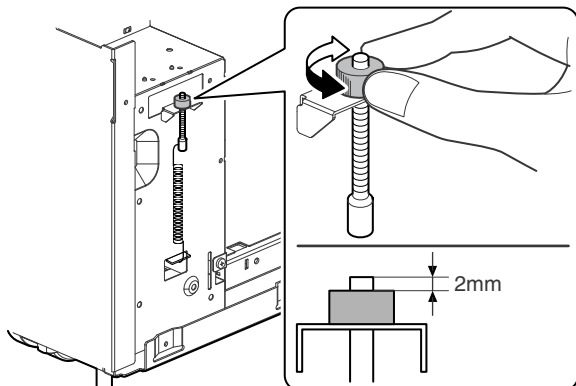
When touching the cross marks, never use a sharp tip (such as a needle and a pin).

ADJ 18 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.

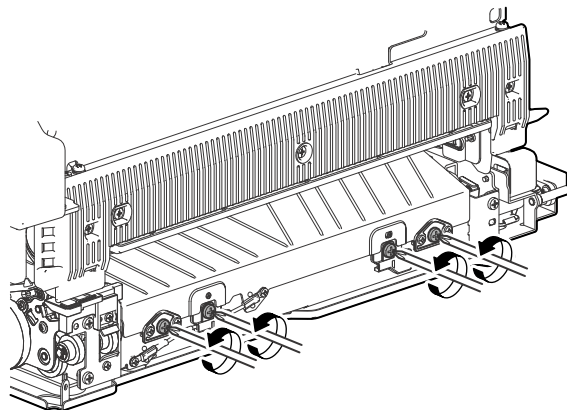


ADJ 19 Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position)

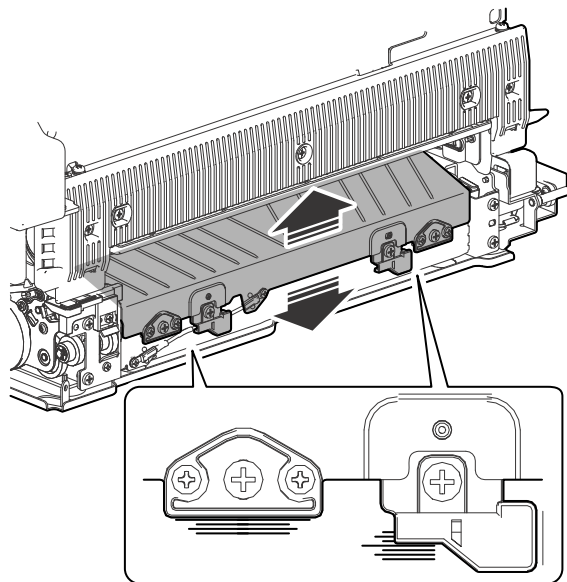
This adjustment is required in the following cases:

- * 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.

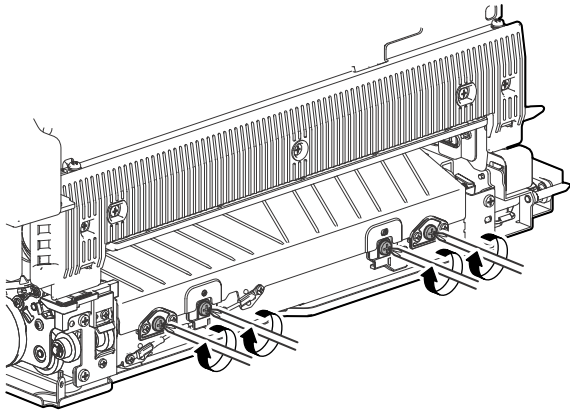
- 1) Remove the fusing unit.
- 2) Loosen the screw.



- 3) Slide the fusing paper guide up or down to adjust the position.
 - * 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 20 Decurler roller adjustment

This adjustment must be performed in the following cases:

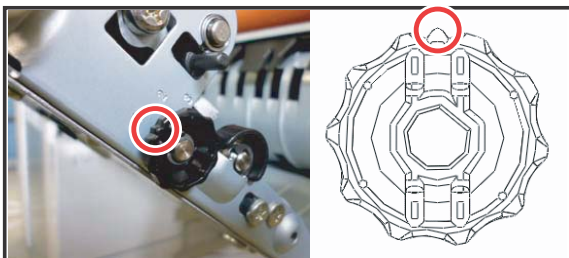
- * If there occurred a paper jam (POIND_N) with winding around the Drum when duplex copying.

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 21 DSPF CCD calibration

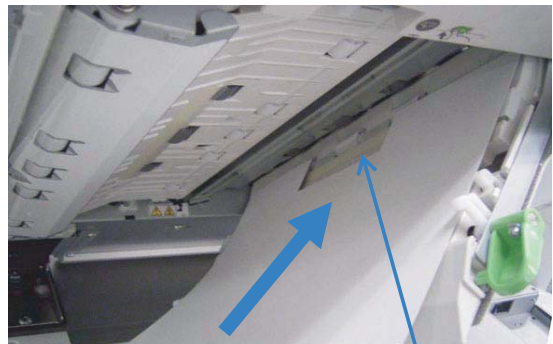
21-A DSPF shading adjustment

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.

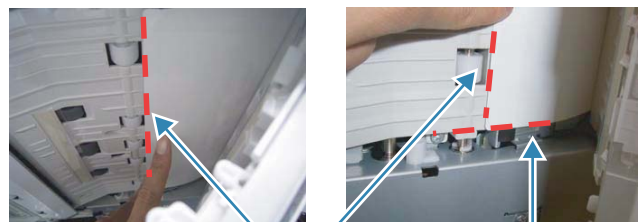
(1) Note before adjustment

- 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 (PSHEP5859FCZZ). 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

21-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 (UKOG-0356) are free from dirt and scratches. If they are dirty, clean them.
If they are scratched or streaked, replace with new one.

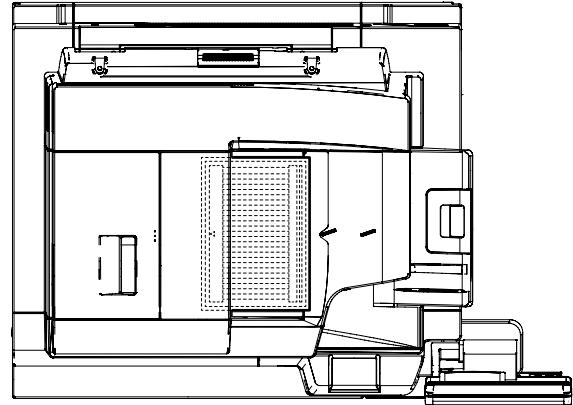
NOTE:

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



(2) Adjustment procedures

- 1) Set the SIT chart (UKOG-0356) 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 [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.
 - If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
- 4) When [DSPF] key is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.
- 5) Press [EXECUTE] key and it is highlighted and the color auto adjustment is executed.
 - * When [EXECUTE] key is pressed during the automatic adjustment, the automatic adjustment is interrupted.
- 6) After normal completion, the result of calculation is displayed in the initial screen.
 - * When an error occurs in execution, the following screen is displayed.
 - * When an error occurs in the automatic adjustment, all the error patch numbers are displayed.
When [RESULT] key is pressed, the display returns to the initial screen. (The previous value is displayed)
 - * When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] key is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)

[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.

There are two simulation modes.

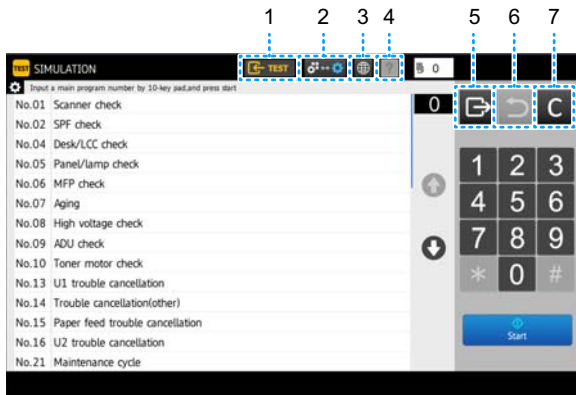
*** Easy mode:**

Displays commonly used simulations for each category, allowing easy access for technicians to change settings, perform maintenance and adjustments.

*** Classic mode:**

All simulations are listed and can be accessed by entering the main code, then sub code as per previous model series.

2. Function of each key

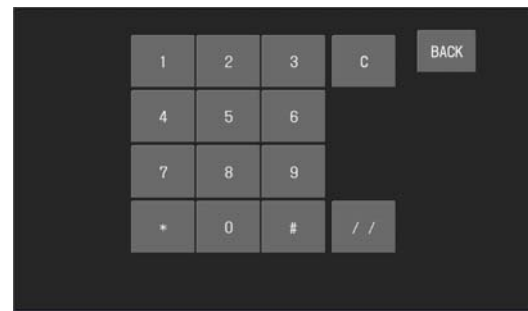
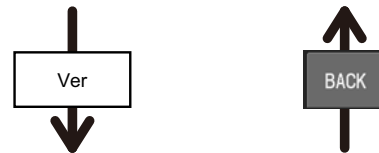


No.	Name	Function
1	TEST key	Change test mode
2	Mode setting key	Change Easy mode, Classic mode
3	Language setting key	Change language in simulation mode
4	INFO key	Display operation of current display
5	EXIT key	Exit from simulation mode
6	BACK key	Back to the previous display
7	Clear key	Clear input value

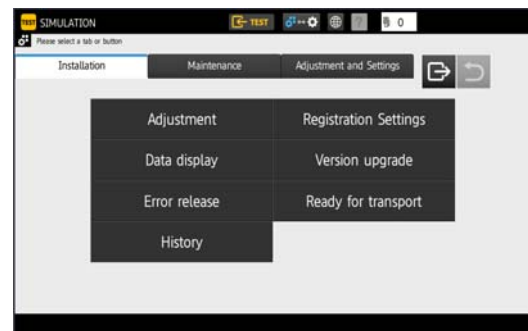
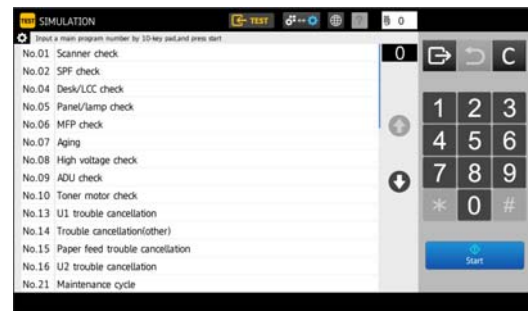
3. Starting the simulation

Entering the simulation mode.

- 1) Double-click the HOME key
- 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. List of simulation codes

A. List of classic mode

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/DSPF (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
	4	Use to check the toner cartridge motor rotation sensor.		
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	-	Use to cancel the trouble (F3-12,22/U6-09,29,39,63,69)	LCC	Cancel (trouble, etc.)
16	-	Used to cancel the self diag U2 trouble.	MFPcnt PWB/PCU PWB/SCU PWB	Cancel (trouble, etc.)

Main	Sub	Function (Purpose)	Section	Purpose
21	1	Used to set the maintenance cycle.		Setting
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
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed.)	FAX	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
	41	Purpose JAM code contents display.		Used to display the JAM code list and the contents.
	42	Used to check the JAM/trouble data		Adjustment/Setting/ Operation data check
	43	JAM data details display		Adjustment/Setting/ Operation data check
	90	Used to output the various setting data.		Adjustment/Setting/ Operation data check
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	Used to export paper feed time list.		
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
	12	Used to clear the document filing counter.		Data clear
	15	Clearing counters related to the network scanner		Data clear
	35	Used to clear the toner cartridge use status data.		
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
	10	Developer/drum serial number setting.		
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

Main	Sub	Function (Purpose)	Section	Purpose
26	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
	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
	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
	74	Used to set the OSA trial mode.		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
27	2	Used to set the FSS function (user registration number, Host server telephone number).		Setting
	4	Used to set the FSS function (initializing, call, toner order auto send).		Setting
	5	Used to set the machine tag No. (This simulation allows to check the machine tag No. from the host computer side.)	Communication (RIC/MODEM)	Setting
	6	Used to set of the manual service call. (FSS function)		Setting
	7	Used to set the FSS function (enable, Alert calling)		Setting
	9	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)		Setting
	10	Used to clear the trouble prediction history information. (FSS function)		Data clear
	11	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)		Others
	12	Used to check the error history of high density, half-tone potential, and dark potential.		Other
	13	Used to check the history of paper transport time between sensors.		Other
	14	Used to set the FSS function connection test mode.		Setting
	15	Used to display the FSS connection status.		Operation test/check
	16	Used to set the FSS alert send.		Setting
	17	Used to set the FSS paper order alert.		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
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.	Scanner	Operation test/check
	4	Use to set the document size sensor.	Scanner	Adjustment/Setting
	5	Use to check the document size sensor.	Scanner	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
	32	Used to set the forcible operation of the fusing web cleaning when job end.		Adjustment/Setting
	35	Fusing nip operation check.		
44	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

Main	Sub	Function (Purpose)	Section	Purpose
44	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.		
	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
	39	Used to adjust the image send sharpness.		Adjustment/Setting
	40	Used to collectively adjust all the FAX exposure modes.		Adjustment/Setting
	41	Used to adjust the FAX exposure (normal text).		Adjustment/Setting
	42	Used to adjust the FAX exposure (small text).		Adjustment/Setting
	43	Used to adjust the FAX exposure (fine).		Adjustment/Setting
	44	Used to adjust the FAX exposure (super fine).		Adjustment/Setting
	45	Used to adjust the FAX exposure (600 dpi)		Adjustment/Setting
	46	Used to adjust the FAX send image density. (RGB RIP)		Adjustment/Setup
	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
	68	Used to adjust the automatic resolution judgement.		
	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).	Scanner/DSPF	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/DSPF	Adjustment

Main	Sub	Function (Purpose)	Section	Purpose
48	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.		
	6	Used to perform the OCR 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
	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
	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.)	Scanner/DSPF	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.	DSPF	Adjustment
	7	Used to set the DSPF width adjustment value. (Sim. 53-6 manual input)	DSPF	Adjustment/Setting
	8	Used to adjust the DSPF document scan start position.	DSPF	Adjustment
	9	DSPF dirt detection setting	DSPF	Adjustment
	10	DSPF dirt detection execution.	DSPF	Adjustment/Setup
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 for Taiwan.		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 export system 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
	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
	14	Used to set the laser power correction.		
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.	Scanner/DSPF	Adjustment/Setting/ Operation data check
	2	Used to execute shading forcibly.	Scanner/DSPF	Adjustment/Setting

Main	Sub	Function (Purpose)	Section	Purpose
63	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/DSPF	Adjustment/Setting
	4	The average value of the patch scan values for the RGB image data inputted from the CCD are calculated and displayed.	Scanner/DSPF	Adjustment/Setting
	5	Used to reset the color balance of the scanner to the default.	Scanner/DSPF	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
	11	Used to set the target color balance of the copy mode auto color balance adjustment.		Adjustment/Setup
64	2	Self print (B/W mode)		Operation test /check
	3	Self print (B/W mode: high speed process)		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
65	1	Used to adjust the detection position of the touch panel (LCD display section).	Operation panel section	Adjustment
	2	Used to check the result of the touch panel (LCD display section) detection position adjustment.	Operation panel section	Operation check/Test
	5	Used to check the key input of the operation panel.	Operation panel section	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
	3	Used to check the operation (read/write) of the FAX PWB memory.	FAX	Operation test, check
	4	Used to check the output operation of data signal in each data output mode of FAX (MODEM operation). Send level: MAX	FAX	Operation test, check
	5	Used to check the output operation of data signal in each data output mode of FAX(MODEM operation). Send level: Soft switch setting	FAX	Operation test, check
	6	Used to print the confidential pass code.	FAX	User data output, check
	7	Used to output the image memory data (memory send and receive).* The confidential receive contents are also outputted.	FAX	User data output, check
	8	Used to check the output operation of various audio signals of FAX (audio output IC operation). Send level: MAX	FAX	Operation test, check
	9	Used to check the output operation of various audio signals of FAX (audio output IC operation). Send level: Soft switch setting	FAX	Operation test, check
	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
	11	Used to check the output operation in the FAX G3 mode 300bps (MODEM operation). Send level: MAX	FAX	Operation test, check
	12	Used to check the output operation in the FAX G3 mode 300bps (MODEM operation). Send level: Set with the soft switch.	FAX	Operation test, check
	13	Used to set the number for the FAX dial signal output test. (In the dial signal output test with Sim. 66-14 - 16, the dial number set with this simulation is outputted.)	FAX	Setting
	14	Used to set the make time in the FAX pulse dial mode (10PPS) and to execute the dial signal output test. (The signal of the dial number set with Sim. 66-13 is outputted.)	FAX	Setting/Operation test, check
	15	Used to set the make time in the FAX pulse dial mode (20PPS) and to execute the dial signal output test. (The signal of the dial number set with Sim. 66-13 is outputted.)	FAX	Setting/Operation test, check
	16	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. (The signal of the dial number set with Sim. 66-13 is outputted.) The send level can be set to an optional level.	FAX	Setting/Operation test, check
	17	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. Send level: MAX	FAX	Operation test, check
	18	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. Send level: Set with the soft switch.	FAX	Operation test, check
	21	Used to print information about FAX (system errors, protocols).	FAX	Adjustment, setting, operation data check
	22	Used to adjust the handset sound volume		Adjustment/Setting
	29	Used to clear the data related to the address book (one-touch registration, FTP/Desktop extension, group extension, program registration, interface memory box, meta data, Inbound Routing, Document Admin table).		Data clear
	30	Used to check a change in the TEL/LIU status.	FAX	Operation test, check
	31	Used to set the TEL/LIU output port.	FAX	Operation check
	32	Used to check the received data (fixed data) from the line.	FAX	Operation test, check
	33	Used to detect the line signals (BUSY TONE/CNG/CED/FNET/DTMF).	FAX	Operation test, check
	36	Used to perform the interface check between the MFP controller and the MDMC. (Data line or command line check)	FAX	Operation test, check
	39	Used to set the destination.	FAX	Setting
	42	Used to rewrite the power control program again to the FAX BOX.	FAX	Setting
	43	Used to write the adjustment value of the power control program to the FAX BOX.	FAX	Setting
	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
	62	Used to import the FAX receive data into a USB flash drive in PDF file type.	FAX	Backup
67	17	Printer reset	Printer	Reset
	24	Used to set for auto calibration.		Adjustment/Setting

Main	Sub	Function (Purpose)	Section	Purpose
67	25	Used to set the printer engine color balance manual correction.		Adjustment/Setting
	26	Used to set the target color balance of the printer mode auto color balance adjustment.	Printer	Adjustment/Setup
	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
	33	Used to perform the gamma correction of printer screens.		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 highlight section.	Printer	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

B. List of easy mode

(1) List of menu (Installation)

The first menu		The second menu	SIM number	SIM Title
1	Adjustment	1 Process	46-74	Copy/printer gradation auto adjustment
		2 Positioning	50-10	Manual image position adjustment
		3 Copy	46-16	Monochrome copy gradation manual adjustment
		4 Printer	67-25	Printer gradation manual adjustment
			64-5	Printer self print (PCL)
		5 Image Quality Adjustment	63-2	Shading execution
			63-3	Scanner color balance auto adjustment
			44-6	High density / engine halftone process control compulsory execution
			44-26	Half tone density correct execution
			46-74	Copy/printer gradation auto adjustment
2	Registration Settings	1 Function/ Option settings	26-1	Paper output system setup
			26-2	Size setup
			26-3	Auditor setup
			26-50	Function setting
			26-65	Finisher alarm mode setup (staple limit)
			26-78	ROPE password setting
		2 Counter mode	26-5	A3(11x17) countup
			26-8	Banner size countup
			26-52	A blank paper count mode setup
		3 FAX/Image send settings	66-1	Image send software SW. setting
		4 Toner setting	26-18	Toner save mode setup
			26-69	Toner near end setting
		5 FSS setting	27-2	FSS function setup (input)
			27-4	FSS function setup
			27-7	FSS function setup (function)
			27-9	FSS function adjustment
			27-14	FSS test mode setup
			27-15	FSS connect status
			27-16	FSS alert setting
			27-17	FSS paper order alert setting
3	Data display	1 Counter display	22-1	Counter display
			22-9	Paper feed counter display
			22-13	Process cartridge display
		2 System/ Version	22-5	ROM version data display
			22-10	Machine system display
		3 List printing	22-6	Data print mode
			23-2	JAM/trouble data print mode
		4 USB storage	56-99	Export all log data
4	Version upgrade		49-1	Firmware update
			49-3	E-manual update
			49-5	Water mark update
			49-6	OCR data update
			49-10	ACU update
5	Error release		13	U1 trouble cancellation
			14	Trouble cancellation (other)
			15	Paper feed trouble cancellation
			16	U2 trouble cancellation

The first menu		The second menu	SIM number	SIM Title
6	Ready for transport		6-90	Load move for shipment
10	History	1 Date list	Use SIM	

(2) List of menu (Maintenance)

The first menu		The second menu	SIM number	SIM Title
1	Data display	1 Counter display	22-1	Counter display
			22-8	Org./staple counter display
			22-9	Paper feed counter display
			22-13	Process cartridge display
		2 JAM history data display	22-3	JAM history data display
			22-12	SPF JAM history data display
		3 System/ Version	22-5	ROM version data display
			22-10	Machine system display
		4 List printing	22-6	Data print mode
			23-2	JAM/trouble data print mode
		5 USB storage	56-99	Export all log data
2	Adjustment	1 Positioning	50-10	Manual image position adjustment
		2 Process	25-2	Automatic developer adjustment
			44-2	Process control gain adjustment
			46-74	Copy/printer gradation auto adjustment
		3 Image Quality Adjustment	44-2	Process control gain adjustment
			44-6	High density / engine halftone process control compulsory execution
			44-26	Half tone density correct execution
			61-13	Laser power correction data clear
			61-11	Laser power auto correction
			63-3	Scanner color balance auto adjustment
			63-5	Standard scanner gamma setup
			46-74	Copy/printer gradation auto adjustment
		4 Cleaning	6-4	Charger cleaner check
			43-31	Fuser web cleaning check
		5 Replacing developer	25-2	Automatic developer adjustment
3	Counter clear		24-1	JAM/trouble counter data clear
			24-2	Paper feed counter clear
			24-3	Org./output counter data clear
			24-4	Maintenance counter clear
4	Registration Settings		21-1	Maintenance cycle setup
5	Version upgrade		49-1	Firmware update
			49-3	E-manual update
			49-5	Water mark update
			49-6	OCR data update
			49-10	ACU update
6	Error release		13	U1 trouble cancellation
			14	Trouble cancellation (other)
			15	Paper feed trouble cancellation
			16	U2 trouble cancellation

The first menu		The second menu	SIM number	SIM Title
10	History	1 Date list	Use SIM	

(3) List of menu (Adjustment and Settings)

The first menu		The second menu	SIM number	SIM Title
1	Adjustment	1 Positioning	50-1	Copy edge adjustment
			50-5	Print edge adjustment
			50-6	SPF edge adjustment
			50-10	Manual image position adjustment
			50-12	Original center offset setup
			48-1	Ratio adjustment
			48-5	Motor speed adjustment
		2 Image Quality Automatic Adjustment	61-11	Laser power auto correction
			46-74	Copy/printer gradation auto adjustment
		3 Image Quality Adjustment	61-14	Laser power setting collective input
			61-11	Laser power auto correction
			61-13	Laser power correction data clear
			46-74	Copy/printer gradation auto adjustment
			46-54	Copy gradation auto adjustment (at dither)
			46-52	Copy gradation data clear (at dither)
			67-54	Printer gradation auto adjustment (at dither)
			67-52	Printer gradation data clear (at dither)
2	Process		25-2	Automatic developer adjustment
			44-2	Process control gain adjustment
			46-74	Copy/printer gradation auto adjustment
3	Scanner/ SPF		41-5	Document size sensor check
			46-9	Exposure adjustment (SFP)
			63-2	Shading execution
			53-6	SPF tray adjustment
			53-8	SPF scanning position adjustment
			63-3	Scanner color balance auto adjustment
4	Paper feeding, Transport and paper ejection		63-5	Standard scanner gamma setup
			3-10	Finisher adjustment
			40-2	Bypass tray adjustment
			40-12	Tray adjustment

The first menu		The second menu	SIM number	SIM Title
5	Copy		46-16	Monochrome copy gradation manual adjustment
			46-21	Color copy gradation manual adjustment
			44-21	Half tone process control standard value register setup
			46-24	Copy gradation auto adjustment
			46-54	Copy gradation auto adjustment (at dither)
			63-7	Copy gradation auto adjustment target setup: service
			63-8	Copy gradation auto adjustment target clear: service
			63-11	Copy gradation auto adjustment target select
6	Printer		67-24	Printer gradation auto adjustment
			67-25	Printer gradation manual adjustment
			67-26	Printer gradation auto adjustment target select
			67-27	Printer gradation auto adjustment target setup: service
			67-28	Printer gradation auto adjustment target clear: service
7	Touch panel		65-1	Touch panel adjustment
8	Function/ Option settings		64-2	Self print (B/W) : service
9	Data display	1 Counter display	22-1	Counter display
			22-9	Paper feed counter display
			22-13	Process cartridge display
		2 System/ Version	22-5	ROM version data display
			22-10	Machine system display
		3 List printing	22-6	Data print mode
			23-2	JAM/trouble data print mode
		4 USB storage	56-99	Export all log data
10	History	1 Date list	Use SIM	

5. 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 (600mm/S)	300DPI (600mm/S)
	400DPI	400DPI (450mm/S)	
	600DPI	600DPI (300mm/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
SOC	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
SPRDM1	DSPF random document feed size detection 1
SPRDM2	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
SPFFAN	DSPF motor cooling fan
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	YOHF 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	FNFOLD_CON	Folding unit connection detection
66	FNGBC_CON	GBC punch connection detection
67	FNFLD-ETR-ST-ACK	Folding unit EntryStartAck signal
68	FNFLD-EJCT-ST	Folding unit EjectStart signal
69	PIS150	Transfer unit bus sensor
70	PISW200	Transfer unit front cover switch
71	PIUNITMOT_ALM	Transfer unit transport motor lock detection signal
72	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	FLENTY	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

*1: 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 high-lighted.
- 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 high-lighted.
- 3) When [SYSTEM SETTINGS] key is pressed, the screen returns to the SUB code entry menu.

Sensor name (Display)	Content
FLENTY	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

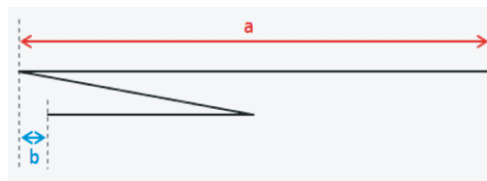
Purpose	Adjustment
Function (Purpose)	Paper folding unit adjustment
Section	Paper folding unit

Operation/Procedure

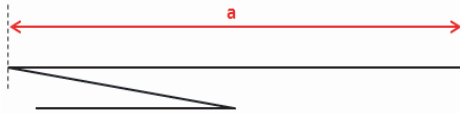
- 1) Select an adjustment item with the touch panel scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

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

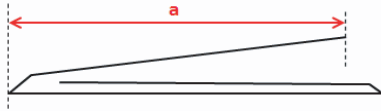
Item	Display	Content	Setting range	Default value
N	FOLD IN T2 A4R	A4R internal 3-fold second folding position adjustment	50 - 150	100
O	FOLD IN T1 LTRR	LTRR internal 3-fold first folding position adjustment	50 - 150	100
P	FOLD IN T2 LTRR	LTRR internal 3-fold second folding position adjustment	50 - 150	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



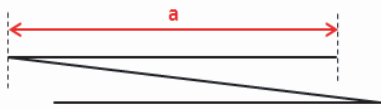
Item	Content	Variation value
A	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.1mm
B	When the adjustment value is increased, the length of b is increased. When the adjustment value is decreased, the length of 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



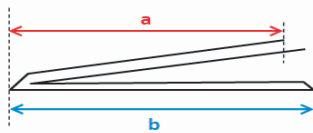
Item	Content	Variation value
AC	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



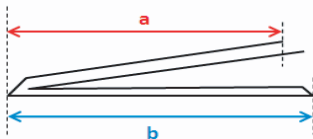
Item	Content	Variation value
AD	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



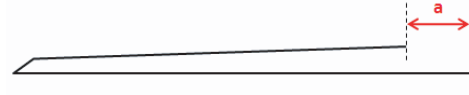
Item	Content	Variation value
AE	When the adjustment value is increased, the length of a is increased. When the adjustment value is decreased, the length of a is decreased.	0.5mm



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



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

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
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
L2CHK101	Wind pressure measuring operation 3cs

<LCT cassette tray 4 load item>

Display	Content
L2MT201	Lift motor 4cs
L2MT202	Inlet fan motor 4cs

Display	Content
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 1: Disable	0 - 1 1
H WARM AIR CONTROL DISABLE (HEAVY1,2)	Warm air heater temperature setting control disable: Heavy paper 1, 2	0: Enable 1: Disable	0 - 1 0
I WARM AIR CONTROL DISABLE (HEAVY3,4)	Warm air heater temperature setting control disable: Heavy paper 3, 4	0: Enable 1: Disable	0 - 1 0
J WARM AIR CONTROL DISABLE (THIN)	Warm air heater temperature setting control disable: Thin paper	0: Enable 1: Disable	0 - 1 1
K WARM AIR CONTROL DISABLE (GLOSSY)	Warm air heater temperature setting control disable: Glossy paper	0: Enable 1: Disable	0 - 1 0
L WARM AIR CONTROL DISABLE (OTHER)	Warm air heater temperature setting control disable: Other	0: Enable 1: Disable	0 - 1 1

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

4-14	
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

5-1	
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/DSPF

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

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	

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-Tr	Process cooling fan / PS cooling fan (It's indicated, but it doesn't function.)
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

6-3	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the primary transfer separation.
Section	Process (transfer)

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)

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

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	

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	

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

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 △ 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
A	DVB_K	K developing bias set value	0 - 750	505
B	DVB_K PLUS	K developing bias plus set value	0 - 250	165

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 △ 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	Monitor connector		Actual output voltage
				90cpm machine	Connector	Pin No.	90cpm machine
A	GB_K	Main charger grid voltage adjustment value (Copy mode)	0-1000	575	CN2	3	595 ± 5V

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	
A	TC PLAIN BW SPX	Transfer bias adjustment value	Standard paper 1	Front surface	0 - 255	142	
B	TC PLAIN BW DPX			Back surface	0 - 255	112	
C	TC PLAIN2 BW SPX		Standard paper 2	Front surface	0 - 255	142	
D	TC PLAIN2 BW DPX			Back surface	0 - 255	112	
E	TC HEAVY1 BW SPX		Heavy paper 1	Front surface	0 - 255	142	
F	TC HEAVY1 BW DPX			Back surface	0 - 255	128	
G	TC HEAVY2 BW SPX		Heavy paper 2	Front surface	0 - 255	142	
H	TC HEAVY2 BW DPX			Back surface	0 - 255	128	
I	TC HEAVY3 BW		Heavy paper 3			0 - 255	142
J	TC HEAVY4 BW		Heavy paper 4			0 - 255	142
K	TC OHP BW		OHP			0 - 255	96
L	TC THIN BW		Thin paper			0 - 255	112
M	TC GLOSSY PAPER BW		Gross paper			0 - 255	128
N	TC LABEL BW		Label			0 - 255	142
O	TC FRONT EDGE	Transfer front edge bias adjustment value			0 - 255	32	
P	TC ADSORPTION	Transfer adsorption bias adjustment value			0 - 255	96	
Q	TC INTERVAL	Transfer bais adjustment value between the paper			0 - 255	48	
R	TC CLEANING AC	Transfer cleaning AC bias			0 - 255	191	
S	TC CLEANING DC	Transfer cleaning DC bias			0 - 255	135	
T	TC CLEANING BRUSH +	Transfer CL brush cleaning bias(+)			0 - 128	109	
U	TC CLEANING BRUSH -	Transfer CL brush cleaning bias(-)			128 - 255	169	
V	PTDL SPX	PTDL bias		Front surface	0 - 255	15	
W	PTDL DPX			Back surface	0 - 255	15	

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
DSW_ADU	ADU open/close detection
APPD1	ADU paper pass detection 1
APPD2	ADU paper pass detection 2

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

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

10-4	
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)	Use to cancel the trouble (F3-12,22/U6-09,29,39,63,69)
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.

Cancel trouble code

NO.	Target trouble code	Description
1	F3-12	Paper feed tray 1 lift operation trouble
2	F3-22	Paper feed tray 2 lift operation trouble
3	U6-09	LCC lift motor trouble
4	U6-29	LCT1 lift trouble
5	U6-39	LCT2 lift trouble
6	U6-63	Manual feed tray descending trouble
7	U6-69	Manual feed tray lift 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.

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 1-500:1K-500K 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	Content	Display	Content
S/N	Serial No. (The codes for November and December are "X" and "Y" respectively.)	WATER MARK	Water mark data
BUNDLE	Bundle version	E-MANUAL	Users manual data
ICU-MAIN	ICUM (MAIN section)	OCR-DIC	OCR dictionary data
ICU-BIOS	ICUM (BIOS section)	SCU	SCU
ASIC-MAIN	ASIC (MAIN section)	DSPF	DSPF
ASIC-SUB	ASIC(SUB section)	PCU	PCU
ASIC2	ASIC2	LCT LCC LCT(A3LCC) LCT(A3LCT)	LCC A4LCC A3LCC A3LCT

Display	Content	Display	Content
LANGUAGE	Language support data version	FINISHER FINISHER (1KFIN) FINISHER (FIN100)	Finisher 1K finisher FIN100 finisher
LANGUAGE (LIST)	Language data for list printing	SADDLE SADDLE (FIN100)	Saddle FIN 100 saddle
EOSA	embeddedOSA	TRIMMER	Trimmer
UICONTENTS	Contents data for display	INSERTER	Inserter
SIM-TEXT	Language data for simulation	FOLDING UNIT	Folding unit
PCL (PROFILE)	Color profile data	DECURLER	Decurler
POWER-CON	Power controller program	FAX	FAX
FONT BARCODE	Font data for bar code	FAX OPT1	FAX 1-Line (Option section)
FONT PS	PS font data	FAX OPT2	FAX 2-Line (Option section)
FONT PCL	PCL font data	ACU	Hight compression PDF unit
FONT SPDL	Simple PDL font data	FONT UNICODE	Font data for Unicode
FONT OFFICE	Office Direct font data		

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 PATTERN	NO.1	List print
	NO.2	List print (Sim50-24)
	NO.3	List print (Process control-related)
2SIDED PRINT	1-SIDED	Simplex surface print (Default)
	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	Insertion counter (Tray 1)	8 digits	0
INSERTER2	Insertion counter (Tray 2)	8 digits	0
INSERTER OFFLINE	Insertion offline counter	8 digits	0
DECURLER	Decurler counter	8 digits	0
GBC PUNCH*1	GBC punch 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.

*: Displayed only when DSPF is installed.

*1: Local purchase option

22-9	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the use quantity (print quantity) of each paper feed section.

Section

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

Display item	Content	Number of digits of display	Default value
LCT1	Upper stage LCT paper feed counter (*1)	8 digits	0
LCT2	Lower stage LCT paper feed counter (*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
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
LCT_MFT_TTL	Accumulated LCT manual paper feed counter (*1)	8 digits	0
TRAY1_RETRY	Tray 1 paper feed retry counter	8 digits	0
TRAY2_RETRY	Tray 2 paper feed retry counter	8 digits	0
TRAY3_RETRY	Tray 3 paper feed retry counter	8 digits	0
TRAY4_RETRY	Tray 4 paper feed retry counter	8 digits	0
MFT_RETRY	Manual paper feed retry counter (*1)	8 digits	0
LCC_RETRY	Side LCC paper feed retry counter (A4LCC or A3LCC) (*1)	8 digits	0
LCT1_RETRY	Upper LCT paper feed retry counter (*1)	8 digits	0
LCT2_RETRY	Lower LCT paper feed retry counter (*1)	8 digits	0
LCT_MFT_RETRY	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.

Item display name	Display content	Content
MACHINE	MX-M905	Main unit
SPF	STANDARD	Duplex single pass feeder
STAMP	AR-SU1	Finish stamp
LCC1	MX-LC13	A3 large capacity 2 trays
	MX-LCX3N (MXLCX3J)	A3 large capacity tray
	MX-LC12	A4 large capacity tray (Roller feed)
	MX-LC14	A4 large capacity tray (Air feed)
PUNCHER	MX-PN13A	Punch module
	MX-PN13B	
	MX-PN13C	
	MX-PN13D	
	MX-PNX4A	
	MX-PNX4B	
	MX-PNX4C	
FINISHER	MX-PNX4D	
	MX-FN21	
	MX-FN22	
	MX-FN24	
	MX-FN25	Saddle stitch finisher (50-sheet stapling)
INSERTER	MX-CF11	Insertter
FAX1	MX-FX15	Facsimile expansion kit
PS	STANDARD	PS expansion kit
XPS	MX-PUX1	XPS expansion kit
SECURITY	MX-FR54U	Data security kit (commercial version)
AIM	MX-AMX1	Application integration module
ICU_PWB (REUS1)	*****MB	ICU REUS capacity
ICU_PWB (SOC)	*****MB	ICU SOC capacity
HDD	*****GB	Hard disk capacity
SSD	*****GB	SSD capacity
NIC	STANDARD	NIC
BARCODE	MX-PF10	Barcode font kit
INTERNET-FAX	MX-FWX1	Internet Fax expansion kit
ACM(*)	MX-AMX2	Application communication module

Item display name	Display content	Content
EAM(*)	MX-AMX3	External account module
HC-PDF	MX-EB11	Enhanced compression kit (ACRE)
CURL	MX-RB18	Curl correction unit
TRIMMING	MX-TM10	Inner trimmer
FOLDING UNIT	MX-FD10	Folding unit

* Options without installation detection are not displayed.

(*):Displayed only in the OSA model.

22-11	
Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed.)

Section

Operation/Procedure

- 1) The FAX send and receive 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.

Display	Content	Default value
FAX OUTPUT	FAX print quantity counter (for line 1)	0
FAX SEND	FAX send counter	0
FAX RECEIVED	FAX receive counter	0
SEND IMAGES	FAX send quantity counter (for line 1)	0
SEND TIME	FAX send time	0
RECEIVED TIME	FAX receive time	0

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

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 - 510	0 - 510	0 - 510	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
Function (Purpose)	Used to check the various scanner counters related to the network scanner.
Section	

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
Function (Purpose)	Used to display the error code list and the contents.
Section	

Operation/Procedure

- 1) Select the main error code.
- The sub error code and the contents are displayed.

22-41	
Purpose	JAM code contents display
Function (Purpose)	Used to display the JAM code list and the contents.
Section	

Operation/Procedure

- 1) Select the JAM code.
- Display can be changed by [ENGINE] and [SPF] keys.

22-42

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the JAM/trouble data
Section	

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)			50	When 50 is exceeded, the oldest one is not displayed sequentially.
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.

22-43

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	JAM data details display
Section	

Operation/Procedure

- 1) 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.
- 2) 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_RA	External air temperature sensor temperature/AD value
HUD_RA	External air humidity sensor humidity/AD value

Item	Content
TH_UM	Fusing upper main thermistor temperature/AD value
TH_UM_CS	Fusing upper main thermistor (compensation) temperature/AD value
TH_UM_D	Fusing upper main thermistor (detection) AD value
TH_US	Fusing upper sub thermistor 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)

Display	Content	
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
B2R		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

Display	Content	
0AB	Domestic special (Envelope)	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
0D1		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	Extra (Special large size)
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	
US8	User type 8	
US9	User type 9	

Display	Content
USA	User type 10
USB	User type 11
HV2	Heavy paper 2
PL2	Plain paper 2 (not used)
HV3	Heavy paper 3
HV4	Heavy paper 4
GLS	Glossy paper
EMB	Emboss paper
ECO	Eco-Crystal 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.

Category	Item	Content
Machine status list*	MACHINE STATUS LIST	Machine status list
Printer test page	PCL SYMBOL SET LIST	SPDL symbol set list
	PCL INTERNAL FONT LIST	SPDL internal font list
	PCL EXTENDED FONT LIST	SPDL extended font list
	PS FONT LIST	PS internal font list
	KANJI FONT LIST	PS KANJI font list
	PS EXTENDED FONT LIST	PS extended font list
	NIC PAGE	NIC page
Address registration list	INDIVIDUAL LIST	Address registration list
	GROUP LIST	Group list
	MEMORY BOX LIST	Memory box list
Document filing list	DOCUMENT FILING FOLDER LIST	Document filing folder list
Common	PAPER SETTING LIST	Paper setting list
	MACHINE IDENTIFICATION SETTINGS LIST	Machine identification settings list
	OPERATION SETTINGS LIST	Operation settings list
	KEYBOARD SETTINGS LIST	Keyboard settings list
	DEVICE CONTROL LIST	Device control list
Home screen	HOME SCREEN LIST	Home screen list

Category	Item	Content
Copy setting	COPY SETTINGS LIST	Copy settings list
Printer setting	PRINTER SETTINGS LIST	Printer settings list
FAX/Image send	METADATA SET LIST	Meta data set list
	SCAN SETTINGS LIST	Scan settings list
	FAX SETTINGS LIST	Fax settings list
	I-FAX SETTINGS LIST	Internet fax settings list
Document filing list	DOCUMENT FILING SETTINGS LIST	Document filing settings list
SHARP OSA setting	SHARP OSA SETTINGS LIST	SHARP OSA settings list
Network setting	NETWORK SETTINGS LIST	Network settings list
Security setting	SECURITY SETTINGS LIST	Security settings list
Energy save setting	ENERGY SAVE LIST	Energy save settings list
Image quality adjustment	IMAGE QUALITY ADJUSTMENT LIST	Image quality adjustment list
Image sending activity report	IMAGE SENDING ACTIVITY REPORT (FAX)	Image sending activity report (FAX)
	IMAGE SENDING ACTIVITY REPORT (SCAN)	Image sending activity report (scanner)
	IMAGE SENDING ACTIVITY REPORT (INTERNET FAX)	Image sending activity report (Internet FAX)
Transfer table list	ANTI JUNK FAX NUMBER LIST	Receive rejection number table
	ALLOW/REJECT MAIL & DOMAIN NAME LIST	Receive rejection/allow address
	INBOUND ROUTING LIST	Transfer table list
	DOCUMENT ADMIN LIST	To administrator transfer list

* When the data list print of system setting is inhibition in DSK model, this setting is invalid.

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.

Item	Button display	Content
DATA PATTERN	NO.1	Print the JAM/Trouble history
	NO.2	Print the paper feed counter, JAM detailed history, temperature and humidity history.

23-80

Purpose	Operation test/check
Function (Purpose)	Used to print out list of the paper transport time when the paper JAM is occurred.
Section	Paper feed, Paper transport

Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key. When [EXECUTE] key is pressed, 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
SECTION	Measurement interval of transport time
STANDARD	Theoretical value of transport time
JAM-1	Measurement time of the paper right before the JAM paper
JAM	Measurement time of the JAM paper
POS/STATUS	MIOP (Sensor/Load) data of JAM occurrence

23-81

Purpose	Operation test/check
Function (Purpose)	Used to output the trouble history list of SIM23-80.
Section	Paper feed, Paper transport

Operation/Procedure

- 1) Connect the USB flash drive to the main unit.
- 2) Press [EXECUTE] key.
- 3) Press [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)
LCT_MFT	LCT manual paper feed counter (*1)
ADU	ADU paper feed counter

(*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
GBC PUNCH*1	GBC punch counter
OC LAMP TIME	OC section lamp total lighting time
DSPF LAMP TIME(*)	DSPF section lamp total lighting time

(*) Displayed only when DSPF is installed.

*1: Local purchase option

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)
		Drum unit K (Accumulated number of rotations)
Main charger	MAIN CHARGER K	Main charger K (Counter)
		Main charger K (Number of use days)
		Main charger K (Accumulated number of rotations)
		Main charger K (Accumulated number of rotations)
Drum blade	DRUM BLADE K	MC cleaner K (RPM)
		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.

Display	Content
DV_K	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 SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time

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 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

24-35

Purpose	Data clear
Function (Purpose)	Used to clear the toner cartridge use status data.
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The toner cartridge use status data (SIM22-14) are cleared.

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

Display item name	Descriptions of items	Display range	Default value
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

25-10

Purpose	Setting
Function (Purpose)	Developer/drum serial no. setting (Not used in the market)
Section	
Operation/Procedure	

26

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	8.5×11
	1	A4
	2	B5
A4 LCC	0	8.5×11
	1	A4
	2	B5
G/LBS SET	0	GRAM
	1	LBS

Destination	Setting		
	TRAY4 (TANDEM)	LCC	G/LBS SET
U.S.A	8.5×11	8.5×11	LBS
CANADA	8.5×11	8.5×11	LBS
INCH	8.5×11	8.5×11	LBS
JAPAN	B5	A4	GRAM
TAIWAN	A4	A4	GRAM
EUROPE	A4	A4	GRAM
U.K.	A4	A4	GRAM
AUS.	A4	A4	GRAM
AB	A4	A4	GRAM

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

Item	Button display	Content	Default value
OUTSIDE AUDITOR (External auditor) *2	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 cuing 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 cuing 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 *1	Vendor I/F for EQUITRACK.	
	VENDOR-EX (MULTI) *1	VENDOR-EX + Multi job cueing Enable mode	
DOC ADJ	S_VENDOR	Serial vendor	OFF
	ON	Document filing function available	
PF ADJ	OFF	Document filing function not available	OFF
	ON	Continuous feeding is performed.	
VENDOR MODE (*)	OFF	Continuous feeding is not performed.	MODE3
	MODE1	Vendor mode 1	
	MODE2	Vendor mode 2	
COUNTUP TIMING	MODE3	Vendor mode 3	EXIT_OUT
	FUSER_IN	When the paper lead edge passes the sensor after fusing, counting is made.	
	FUSER_OUT	When the paper rear edge passes the sensor after fusing, counting is made.	
IMS CONTROL	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.	OFF
	ON	Image send mode is limited.	
	OFF	Image send mode is not limited.	
PRINTER CONTROL	MODE1	All the items in OUTSIDE AUDITOR and VENDOR MODE are allowed to select.	MODE 1
	MODE2	OUTSIDE AUDITOR is always set to P VENDOR1 and VENDOR MODE is always set to MODE3.	
	MODE3	OUTSIDE AUDITOR is always set to P OTHER and VENDOR MODE is always set to MODE3.	

*1: Displayed only when EQUITRAC.

(*) VENDOR MODE detail

	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.

Details of the printer control

MODE1	I) Selectable all VENDOR MODE
MODE2	I) Printing of the copy job (not including the reprint in copy mode) and print job (including the reprint in printer mode/self-print in printer mode) are exclusively controlled using READY signal from the vender. II) If READY signal from the vender gets ready during printing, the print job in progress will be completed and other print jobs will be held on the job queue, and then the copy job becomes executable. III) If READY signal becomes NotReady, the copy job in progress will be canceled after the print stops, and then the print of the printer job will resume.
MODE3	I) If READY signal from the auditor becomes NotReady during printing the copy job/print job (including Self-print)/all kinds of reprint jobs, all of copy/print/any kinds of reprint jobs on the job queue will be canceled right after the print of the job in progress stops.

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

- Enter the set value with 10-key.
1=1 count-up, 2=2 count-up
- Press [OK] key.

Item	Display	Content	Setting range	Default value
A	TOTAL (B/W)	Total counter (B/W)	1 - 2	2
B	MAINT (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	
1) Select a target of setting with the touch panel.	
2) Press [EXECUTE] key.	
The selected set item is saved.	

Display	Content
U.S.A.	United States of America
CANADA	Canada
INCH	Inch series, other destinations
JAPAN	Japan
TAIWAN	Taiwan
EUROPE	Europe
U.K.	United Kingdom
AUS.	Australia
AB	AB series, other destinations
CHINA	China
KOREA	Korea
BRAZIL	Brazil

26-7	
Purpose	Setting
Function (Purpose)	Used to set the machine ID.
Section	
Operation/Procedure	
1) 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.	

2) 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 : Trial mode setting
(0: YES 1: NO)	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	
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	Content	Setting range	Default value
A COPY (0: OFF 1: SV1 2: SV2 3: SV3)	0 Copy toner save mode not available	0 - 3	0
	1 Copy toner save mode 1		
	2 Copy toner save mode 2		
	3 Copy toner save mode 3		
B PRINTER (0: OFF 1: SV1 2: SV2 3: SV3)	0 Printer toner save mode not available	0 - 3	0
	1 Printer toner save mode 1		
	2 Printer toner save mode 2		
	3 Printer toner save mode 3		
C COPY TS DISPLAY (0: YES 1: NO)	0 Setting of copy toner save is displayed.	0 - 1	Default/Setting value by destination
	1 Setting of copy toner save is not displayed.		
D PRINTER TS DISPLAY (0: YES 1: NO)	0 Setting of printer toner save is displayed.	0 - 1	Default/Setting value by destination
	1 Setting of printer toner save is not displayed.		

<Default/Setting value by destination>

Destination	Default value C	Default value D
U.S.A.	0	0
CANADA	0	0
INCH	0	0
JAPAN	1	1
TAIWAN	0	0
EUROPE	0	0
U.K.	1	1
AUS.	0	0
AB	0	0
CHINA	0	0
KOREA	0	0
BRAZIL	0	0

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

- 1) Enter the set value with 10-key.
0: Control enable 1: Control disable
- 2) Press [OK] key.
The set value of step 1 is saved.

Display	Content	Setting range	Default value
(0 : YES 1 : NO)	0 : CE mark control Enable 1 : CE mark control disable	0 - 1	Default/Setting value by destination

<Default/Setting value by destination>

Destination	Setting value
U.S.A.	1 (CE support not available)
CANADA	1 (CE support not available)
INCH	1 (CE support not available)
JAPAN	1 (CE support not available)
TAIWAN	1 (CE support not available)
EUROPE	0 (CE support available)
U.K.	0 (CE support available)
AUS.	0 (CE support available)
AB	0 (CE support available)
CHINA	0 (CE support available)
KOREA	0 (CE support available)
BRAZIL	0 (CE support available)

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)
		User fusing cleaning function is Disable.	

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 1 Print disable setting (print stop) when maintenance life is over	0 - 1 0
B	FUSER WEB END (0: CONTINUE 1: STOP)	0 Print enable setting (print continue) when fusing web is end 1 Print disable setting (print stop) when fusing web is end	0 - 1 1

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.

U. S. A	0 (Cancel)	U. K.	1 (Setting)
CANADA	0 (Cancel)	AUS.	0 (Cancel)
INCH	0 (Cancel)	AB	0 (Cancel)
JAPAN	0 (Cancel)	CHINA	0 (Cancel)
TAIWAN	0 (Cancel)	KOREA	0 (Cancel)
EUROPE	1 (Setting)	BRAZIL	0 (Cancel)

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	

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	Refer to "Default value A" in "Default setting by destinations"
		NO	B/W reverse inhibited		0	
B	FINISHER FUNCTION	YES	Finisher special paper discharge quantity limit setting (Limit enable)	0 - 1	0	0(YES)
		NO	Finisher special paper discharge quantity limit setting (Limit disable)		1	
C	FEED TRAY COLOR	YES	Tray coloring ON during paper feed	0 - 1	0	0(YES)
		NO	Tray coloring OFF during paper feed		1	
D	MACHINE ADJ	YES	The machine adjustment button is displayed.	0 - 1	1	0(NO)
		NO	The machine adjustment button is not displayed.		0	
E	MACHINE ADJ HIDDEN ITEM	YES	The machine adjustment blind item is displayed.	0 - 1	1	0(NO)
		NO	The machine adjustment blind item is not displayed.		0	
F	STATUS LIGHT SETTING	YES	The status display light setting is displayed.	0 - 1	1	0(NO)
		NO	The status display light setting is not displayed.		0	
G	GBC PUNCH SET	INCH	Switch the destination setting of GBC PUNCH unit.	0 - 1	0	*Refer to "Default value G" in "Default setting by destinations"
		AB			1	
H	WIRELESS SET	YES	Wireless LAN enable setting	0 - 1	1	0(NO)
		NO	Wireless LAN disable setting		0	
I	POWER SHUT-OFF SET	YES	Automatic power shut off is displayed.	0 - 1	1	Refer to "Default value I" in "Default setting by destinations"
		No	Automatic power shut off is not displayed.		0	

<Default setting by destinations>

Destination	Default value A	Default value G	Default value I
U.S.A.	1(Display Enable)	0(Inch)	1(Display Enable)
CANADA	1(Display Enable)	0(Inch)	1(Display Enable)
INCH	1(Display Enable)	0(Inch)	1(Display Enable)
JAPAN	1(Display Enable)	1(AB)	1(Display Enable)
TAIWAN	1(Display Enable)	1(AB)	1(Display Enable)
EUROPE	1(Display Enable)	1(AB)	0(Display Disable)
U.K.	0(Display Disable)	1(AB)	0(Display Disable)
AUS.	1(Display Enable)	1(AB)	1(Display Enable)
AB	1(Display Enable)	1(AB)	1(Display Enable)
CHINA	1(Display Enable)	1(AB)	1(Display Enable)
KOREA	1(Display Enable)	1(AB)	1(Display Enable)
BRAZIL	1(Display Enable)	1(AB)	1(Display Enable)

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.

(0 : ONCE 1 : ANY) Refer to "Default setting by destinations"

<Default setting by destinations>

Destination	Default value	Destination	Default value
U.S.A	0 (Counted)	U.K.	0 (Counted)
CANADA	0 (Counted)	AUS.	1 (Not counted)
INCH	0 (Counted)	AB	0 (Counted)
JAPAN	1 (Not counted)	CHINA	0 (Counted)
TAIWAN	0 (Counted)	KOREA	0 (Counted)
EUROPE	0 (Counted)	BRAZIL	0 (Counted)

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		

It is effective when the 100 sheet Finisher or 100 sheet saddle finisher is installed.

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	The toner preparation message is displayed.	0 - 1	1
		1	The toner preparation message is not displayed.		
B	REMAINING TONER LEVEL	5 %	0 Toner preparation at remaining toner level of 5%	0 - 9	1
		10 %	1 Toner preparation at remaining toner level of 10%		
		15 %	2 Toner preparation at remaining toner level of 15%		
		20 %	3 Toner preparation at remaining toner level of 20%		
		25 %	4 Toner preparation at remaining toner level of 25%		
		30 %	5 Toner preparation at remaining toner level of 30%		
		35 %	6 Toner preparation at remaining toner level of 35%		
		40 %	7 Toner preparation at remaining toner level of 40%		
		45 %	8 Toner preparation at remaining toner level of 45%		
		50 %	9 Toner preparation at remaining toner level of 50%		
C	TONER NEAR END(0:YES 1:NO)	0	The toner near end message is displayed.	0 - 1	0
		1	The toner near end message is not displayed.		
D	TONER END	1	Operation 1	1 - 3	2
		2	Operation 2		
		3	Operation 3		
E	TONER END JUDGMENT	1	Remaining toner counter (accumulated rotation time of the toner hopper)	1 - 2	1
		2	Toner end judgment by TCS (Exhaust use in the intermediate hopper)		
F	TONER E-MAIL ALERT	0	E-mail alert Toner Low status send timing near near toner end	0 - 1	0
		1	E-mail alert Toner Low status send timing near toner end		
G	TONER MIB UNIT	0	Receive the remaining toner level MIB in 1% increment.	0 - 2	0
		1	Receive the remaining toner level MIB in 5% increment.		
		2	Receive the remaining toner level MIB in 25% increment.		

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)

26-74

Purpose	Setting
Function (Purpose)	Used to set the OSA trial mode.
Section	

Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

Item/Display		Content		Setting range	Default value
A	OSA TRIAL MODE (0: YES 1: NO)	0	Used to set the OSA trial mode.	0 - 1	1
		1	OSA trial mode is canceled.		

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	Delete result supported the security pop-up display ON	YES	1	0
		Delete result supported the security display OFF	NO	0	
B	SIM PASSWORD DISP	Simulation start password input display ON	YES	1	0
		Simulation start password input display OFF	NO	0	

27

27-2

Purpose	Setting
Function (Purpose)	Used to set the FSS function (user registration number, Host server telephone number).
Section	

Operation/Procedure

- 1) Select a target of setting with the touch panel.
[USER FAX NO][SERVA TEL NO]
- 2) Enter the set value with 10-key.
- 3) Press [SET] key.
The set value of step 2 is saved.

USER FAX_NO.	User registration number (Max. 16 digits)
SERVA TEL_NO.	Host server TEL number (Max. 16 digits)

Purpose	Setting
Function (Purpose)	Used to set the FSS function (initializing, call, toner order auto send).
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		Content		Setting range		Default value	Remarks
A	FSS MODE	NEB1	FSS mode setting	Exclusive for send in NE-B mode	0 - 3	0	1	
		NEB2		Send/Receive in NE-B mode		1		
		NFB1		Exclusive for send in NE-F mode		2		
		NFB2		Send/Receive in NE-F mode		3		
B	RETRY_BUSY		Resend number setting when busy		0 - 15		2	* 0: No retry
C	TIMER(MINUTE)_BUSY		Resend timer setting (minute) when busy		1 - 15		3	
D	RETRY_ERROR		Resend number setting when error		0 - 15		1	* 0: No retry
E	TIMER(MINUTE)_ERROR		Resend timer setting (minute) when error		1 - 15		1	
F	FAX RETRY		Resend number setting when FAX initial connection		0 - 15		2	Unit: Number of times
G	TONER ORDER TIMING(K)	EMPTY	Toner order auto send timing setting (K)	Empty	0 - 11	0	1	
		NEAR_END		Near end		1		
		5%		5%		2		
		10%		10%		3		
		15%		15%		4		
		20%		20%		5		
		25%		25%		6		
		30%		30%		7		
		35%		35%		8		
		40%		40%		9		
		45%		45%		10		
		50%		50%		11		
H	TEMP HISTORY CYCLE		Frequency of acquiring the temperature and humidity history		1 - 1440		60	Unit: min.
I	LOG OUTPUT CAPACITY(PCU)		Log output capacity		0 - 50		30 *	Unit: [KB]
J	TONER ORDER TIMING CONTROL		Toner order timing control	Toner order alert send at the fixed toner remaining quantity	0 - 1	0	1	
				Toner order alert send when presuming the toner consumption		1		
K	REMOTE FIRMWARE UPDATE (PULL)		Pull type firmware update is inhibited or not allowed.		0 - 1	0	1	0 : Allowed 1 : Inhibited
L	FIRMWARE VER. SEARCH INTERVAL		Firmware search interval setting			1		

*: When the set value of item I is "0," the log is not outputted.

27-5

Purpose	Setting
Function (Purpose)	Used to set the machine tag No. (This simulation allows to check the machine tag No. from the host computer side.)
Section	Communication (RIC/MODEM)

Operation/Procedure

- 1) Enter the set value (max. 8 digits) with 10-key.
The set value is displayed on NEW.
- 2) Press [SET] key.
The set value of step 1 is saved.

27-6

Purpose	Setting
Function (Purpose)	Used to set of the manual service call. (FSS function)
Section	

Operation/Procedure

- 1) Enter the set value with 10-key.

Item/Display	Content	Setting range	Default value
A (0: YES 1: NO)	0 Manual service call Enable	0 - 1	0
	1 Manual service call Disable		

- 2) Press [OK] key.
The set value in step 1) is saved.

27-7

Purpose	Setting
Function (Purpose)	Used to set the FSS function (enable, Alert calling)
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	Content	Setting range	Default value
A FUNCTION (0: YES 1: NO)	0 FSS function enable	0 - 1	1(NO)
	1 FSS function disable		
B ALERT (0: YES 1: NO)	0 Alert call enable	0 - 1	0(YES)
	1 Alert call disable		
C CONNECTION (0: FAX 1: No Use 2: HTTP)	0 FAX connection enable	0 - 2	0(FAX)
	1 No Use		
	2 HTTP connection enable		

<Alert Item>

No cause of calling	Initial state/Trouble/Continuous JAM alert
Maintenance	When the maintenance timing is reached
Service call	When Service Call is pressed.
Toner send request	When the toner order auto send setting is reached.
Toner collect request	Revision of the toner installation date. Only for a new part.
Alert resend	

27-9

Purpose	Setting
Function (Purpose)	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)
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 FEED TIME2	Threshold value of paper transport time between sensors (SPF)	0 - 100	50(%)
B GAIN ADJUSTMENT RETRY	Threshold value of the gain adjustment retry number	0 - 20	11 (TIMES)
C JAM ALERT	Continuous JAM alert judgment threshold value (Alert judgment threshold value for continuous JAM's) (Setting of the number of JAM's continuously made at which it is judged as an alert.)	1 - 20	10 (TIMES)
D JAM ALERT PERIOD	Continuous JAM alert period setting	0 - 99	30 (DAYS)

* Items A: 0%, standard passing time between sheets of paper; 100%, time for judgment as a jam between sheets of paper.

* Item B: Because of a trouble in shading operation, the number of retry is actually not registered.

27-10

Purpose	Data clear
Function (Purpose)	Used to clear the trouble prediction history information. (FSS function)
Section	

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The history information of trouble prediction is cleared.

Target history	Serial communication retry history
	High density process control error history
	Halftone process control error history
	Dark potential process control error history
	Halftone potential precess control error history
	Scanner gain adjustment retry history
	DSPF gain adjustment retry history
	Paper transport time between sensors

27-11

Purpose	Others
Function (Purpose)	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)
Section	

Operation/Procedure

The serial communication retry number history and the scanner gain adjustment retry number history are displayed.

Display item			Content
Item name	Occurrence date (Display)	Retry number	
LSU1	99/99/99 99:99:99	8 digits	Serial communication retry number history display
LSU2	99/99/99 99:99:99	8 digits	
DESK1	99/99/99 99:99:99	8 digits	
DESK2	99/99/99 99:99:99	8 digits	
FINISHER1	99/99/99 99:99:99	8 digits	
FINISHER2	99/99/99 99:99:99	8 digits	
DSPF1	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
DSPF2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ5	99/99/99 99:99:99	8 digits	DSPF gain adjustment retry history display
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ2	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ3	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ4	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ5	99/99/99 99:99:99	8 digits	
TONER ORDER(K)	99/99/99 99:99:99	Not displayed	The black toner order alert send date and time

27-12

Purpose	Other
Function (Purpose)	Used to check the error history of high density, half-tone potential, and dark potential.
Section	

Operation/Procedure

The error histories of high density, half-tone process control, and auto registration adjustment error are displayed.

Display item	Content	Occurrence date (Display)	Error code (digits)
HV_ERR1	High density error history 1	99/99/99 99:99:99	Max. 4 digits
HV_ERR2	High density error history 2	99/99/99 99:99:99	Max. 4 digits
HV_ERR3	High density error history 3	99/99/99 99:99:99	Max. 4 digits
HV_ERR4	High density error history 4	99/99/99 99:99:99	Max. 4 digits
HV_ERR5	High density error history 5	99/99/99 99:99:99	Max. 4 digits
H_TONE_ERR1	Halftone error history 1	99/99/99 99:99:99	Max. 4 digits
H_TONE_ERR2	Halftone error history 2	99/99/99 99:99:99	Max. 4 digits
H_TONE_ERR3	Halftone error history 3	99/99/99 99:99:99	Max. 4 digits
H_TONE_ERR4	Halftone error history 4	99/99/99 99:99:99	Max. 4 digits
H_TONE_ERR5	Halftone error history 5	99/99/99 99:99:99	Max. 4 digits
DRK_ERR1	Dark potential error history 1	99/99/99 99:99:99	Max. 4 digits
DRK_ERR2	Dark potential error history 2	99/99/99 99:99:99	Max. 4 digits
DRK_ERR3	Dark potential error history 3	99/99/99 99:99:99	Max. 4 digits
DRK_ERR4	Dark potential error history 4	99/99/99 99:99:99	Max. 4 digits
DRK_ERR5	Dark potential error history 5	99/99/99 99:99:99	Max. 4 digits
HTLD_ERR1	Intermediate potential error history 1	99/99/99 99:99:99	Max. 4 digits
HTLD_ERR2	Intermediate potential error history 2	99/99/99 99:99:99	Max. 4 digits
HTLD_ERR3	Intermediate potential error history 3	99/99/99 99:99:99	Max. 4 digits
HTLD_ERR4	Intermediate potential error history 4	99/99/99 99:99:99	Max. 4 digits
HTLD_ERR5	Intermediate potential error history 5	99/99/99 99:99:99	Max. 4 digits

27-13

Purpose Other**Function (Purpose)** Used to check the history of paper transport time between sensors.**Section****Operation/Procedure**

Select a display with [↑] [↓] keys.

	Item/Display	Content	Occurrence date	Code between sensors	Passing time	Reference passing time
DSPF	FEED TIME1 (SPF)	History of paper transport time between SPF sensors 1	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2 (SPF)	History of paper transport time between SPF sensors 2	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3 (SPF)	History of paper transport time between SPF sensors 3	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4 (SPF)	History of paper transport time between SPF sensors 4	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5 (SPF)	History of paper transport time between SPF sensors 5	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6 (SPF)	History of paper transport time between SPF sensors 6	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7 (SPF)	History of paper transport time between SPF sensors 7	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8 (SPF)	History of paper transport time between SPF sensors 8	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9 (SPF)	History of paper transport time between SPF sensors 9	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10 (SPF)	History of paper transport time between SPF sensors 10	Year/month/day hour: min.: sec.	5 digits	5 digits (ms)	5 digits (ms)

27-14

Purpose Setting**Function (Purpose)** Used to set the FSS function connection test mode.**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.

Item/Display		Content		Setting range	Default value
A	CONNECTION TEST MODE (1: ON 0: OFF)	1	The FSS connection test mode is enable.	0 - 1	0 (OFF)
		0	The FSS connection test mode is disable. (*1)		

*1: The FSS connection test mode can be changed only from Disable to Enable, and cannot be changed from Enable to Disable.

- 2) Press [OK] key.
The set value in step 1) is saved.

27-15

Purpose Operation test/check**Function (Purpose)** Used to display the FSS connection status.**Section****Operation/Procedure**

The FSS operating status is displayed.

Item/Display		Content		Setting range	Default value
FSS CONNECTION	Used to display the FSS connection status.	0	Not operated	1	0
		1	Operated		

27-16

Purpose Setting**Function (Purpose)** Used to set the FSS alert send.**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.
The value for the FSS alert operation specification is set.
- 2) Press [OK] key.

Item/Display		Content		Setting range	Default value
A	MAINTENANCE ALERT (0: YES 1: NO)	Maintenance alert send Enable	Alert send Enable	0	0
		Enable setting	Alert send Disable	1	
B	TONER ORDER ALERT (0: YES 1: NO)	Toner order alert send Enable	Alert send Enable	0	0
		Enable setting	Alert send Disable	1	
C	TONER CTRG ALERT (0: YES 1: NO)	Toner cartridge replacement alert send Enable	Alert send Enable	0	0
		Enable setting	Alert send Disable	1	
D	JAM ALERT (0: YES 1: NO)	Continuous JAM alert send Enable	Alert send Enable	0	0
		Enable setting	Alert send Disable	1	
E	TROUBLE ALERT (0: YES 1: NO)	Trouble alert send Enable	Alert send Enable	0	0
		Enable setting	Alert send Disable	1	
F	PAPER ORDER ALERT (0: YES 1: NO)	Paper order alert send Enable	Alert send Enable	0	1
		Enable setting	Alert send Disable	1	

27-17

Purpose	Setting
Function (Purpose)	Used to set the FSS paper order alert.
Section	

Operation/Procedure

- 1) Select an item to be set.
- 2) Enter the set value with 10-key.
The value for the FSS paper order alert operation specification is set.
- 3) Press [SET] key.

Item/Display	Content	Setting range	Default value	NOTE
PAPER TYPE SET	Setting of paper kind for paper order alert	0 - 2	0	0: Standard paper and recycled paper 1: Standard paper only 2: Recycled paper only
A3	Paper order number setting [Number of sheets] (A3)	500 - 5000	1250	Unit: No. of sheets for a box
A4	Paper order number setting [Number of sheets] (A4)	500 - 5000	2500	Unit: No. of sheets for a box
B4	Paper order number setting [Number of sheets] (B4)	500 - 5000	2500	Unit: No. of sheets for a box
B5	Paper order number setting [Number of sheets] (B5)	500 - 5000	2500	Unit: No. of sheets for a box
A3: FIRST	Paper order alert number setting (A3) (Number of used sheets)	500 - 10000	1000	Unit: No. of alert sheets for the first time
A4: FIRST	Paper order alert number setting (A4) (Number of used sheets)	500 - 10000	1000	Unit: No. of alert sheets for the first time
B4: FIRST	Paper order alert number setting (B4) (Number of used sheets)	500 - 10000	1000	Unit: No. of alert sheets for the first time
B5: FIRST	Paper order alert number setting (B5) (Number of used sheets)	500 - 10000	1000	Unit: No. of alert sheets for the first time

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

No.	Display	Sensor name
5	DSW_MPF	Manual feed door detection
6	FDSBD	FD reverse sensor
7	DSBD1	Reverse vertical transport sensor 1
8	DSBD2	Reverse vertical transport sensor 2
9	DSBD3	Reverse vertical transport sensor 3
10	POD	Paper exit detection
11	POFD	Paper exit full detection
12	POIND	Paper exit section paper entry sensor
13	LPFD1	LCC paper feed detection 1
14	DSW-F	Front door detection
15	DSW_CS	Vertical transport door open/close detection
16	BOTSW	Toner tray switch
17	MCHPS1	MC cleaner position sensor 1
18	PTD	Paper lead edge detection
19	WEB_SPD	Web near end detection
20	TNF	Waste toner full detection
21	TFSD	Hopper toner remaining quantity detection
22	TNBOX	Toner collection container installation detection
23	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
MPFD	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

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
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
PDS1	Document detection (sub scanning direction 1)
PDS2	Document detection (sub scanning direction 2)

41-4

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the detection mode of the document size and the detection timing.
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
A	DETECTION MODE SETTING	Used to set the document size display mode.	0 - 2	0
B	RESPONSE TIME SETTING	Used to set the document size detection timing.	1 - 5	2

<Item A setting content>

item	MODE	Explanation
0	MODE 1	Paper size is indicated in the state which opened ADF. The document size is indicated by measure of sub scan sensor. And if the document size can't be detected, it indicate "A4/LT".
1	MODE 2	It indicated "Auto". When the ADF is closed, it indicate the document size.
2	MODE 3	Paper size is indicated in the state which opened ADF. The document size is indicated by measure of sub scan sensor. And if the document size can't be detected, it indicate "Auto".

<Item B setting content>

item	time
1	50ms
2	100ms
3	150ms
4	200ms
5	250ms

41-5	
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the document size sensor and OC cover switch.
Section	
Operation/Procedure	

Display	Content	Reference
OCSW	Original cover Switch	In case of the highlighted, the cover closure state.
PDS1	Document detection (sub scanning direction 1)	In case of the highlighted, the sensor on state.
PDS2	Document detection (sub scanning direction 2)	
PDM1	Document detection (main scanning direction 1)	
PDM2	Document detection (main scanning direction 2)	
PDM3	Document detection (main scanning direction 3)	
PDM4	Document detection (main scanning direction 4) *1	
PDM5	Document detection (main scanning direction 5) *1	
INCH	Inch series setting *2	
AB	AB series setting *2	

*1 PDM4,PDM5 isn't detected in case of INCH series (INCH 1-3) setting of the document detection.

*2 One of them is turned on according to the setting of the present document detection.

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
PLAIN PAP&WUP&RDY GR	Used to change the fusing temperature setting of plain paper, WUP, and Ready series.	-20	0
		-15	
		-10	
		-5	
		0	
		5	
		10	
		15	
PLAIN PAPER 2	Used to change the fusing temperature setting of plain paper 2.	20	0
		-20	
		-15	
		-10	
		-5	
		0	
		5	
		10	
		15	
		20	

Display	Content	Setting range (Button display)	Default
HEAVY PAPER GR	Used to change the fusing temperature setting of heavy paper.	-20	0
		-15	
		-10	
		-5	
		0	
		5	
		10	
		15	
		20	
		-20	
		-15	
		-10	
		-5	
		0	
		5	
		10	
THIN PAPER GR	Used to change the fusing temperature setting of thin paper.	15	0
		20	
		-20	
		-15	
		-10	
		-5	
		0	
		5	
RECYCLED PAPER GR	Used to change the fusing temperature setting of recycled paper.	10	0
		15	
		20	
		-20	
		-15	
		-10	
		-5	
		0	
GLOSSY PAPER GR	Used to change the fusing temperature setting of gloss paper.	5	0
		10	
		15	
		20	
		-20	
		-15	
		-10	
		-5	
OHP PAPER	Used to change the fusing temperature setting of OHP.	0	0
		5	
		10	
		15	
		20	
		-20	
		-15	
		-10	
WUP&RDY GR ADJ LL	WUP/Ready LL environment fine adjustment	-5	0
		-3	
		0	
		3	
		5	
		7	
		10	
		--10	
PLAIN PAP ADJ LL	Normal paper LL environment fine adjustment	-7	0
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	

Display	Content	Setting range (Button display)	Default
HEAVY PAPER GR ADJ LL	Heavy paper LL environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	
SPECIAL PAPER ADJ LL	Special paper LL environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	
WUP&RDY GR ADJ HH	WUP/Ready HH environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	
PLAIN PAP ADJ HH	Normal paper HH environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	
HEAVY PAPER GR ADJ HH	Heavy paper HH environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	
SPECIAL PAPER ADJ HH	Special paper HH environment fine adjustment	--10	0
		-7	
		-5	
		-3	
		0	
		3	
		5	
		7	
		10	

*: The values indicate the temperature. (5 = 5°C)

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	Conjunction with destination (O, X)
A	WARMUP_FUMON_TH_UM_T	Fusing motor previous rotation start TH_UM 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	*	O
D	HI_WU_FM_ON_TMP	FM preliminary rotation start TH_UM when warm-up at alpha °C or above	30 - 200	*	O
E	HI_WU_END_TIME	Warm-up completion time when Warm-Up at alpha alpha °C or above	0 - 255	*	O
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	JOB_END_FUMON_TIME	After-rotation time after completion of a job	0 - 255	*	×
J	TH_UM_E-STAR	TH_UM set value when preheating	30 - 200	*	O
K	TH_US_E-STAR	TH_US set value when preheating	30 - 200	*	O
L	TH_UM_PRE-JOB	TH_UM set value when recovery from warm-up	30 - 200	*	O

* For the default values, refer to <List of the initial values and set values for each destination>.

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)

<List of destination groups>

Group	Destination							
Group A	—	—	—	—	—	—	—	—
Group B	U.S.A	CANADA	INCH	—	—	—	—	—
Group C	TAIWAN	EUROPE	U.K	AUS.	AB	CHINA	KOREA	BRAZIL

<List of Default values and set values for each destination>

Item	Default value (90cpm machine)			
	SW_A		SW_B	
	Group B	Group C	Group B	Group C
A	140	140	140	140
B	30	30	30	30
C	205	205	205	205
D	140	140	140	140
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	170	170	170	170
K	170	170	170	170
L	180	180	180	180

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_TH_UM_T_LL	Correction value for fusing motor pre-rotation start TH_US set value under LL environment	1 - 99	40
B	WARMUP FUMOFF LL	Fusing motor prior rotation completion time under LL environment	1 - 99	50
C	WARMUP END TIME LL	Correction value for warm-up complete time under LL environment	1 - 99	80
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	40
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	50
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	50
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	50
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	50
I	JOBEND_FUMON_TIME_LL	Correction value for the after rotation time when completing a job under LL environment	1 - 99	50
J	TH_UM_E-STAR_LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	55
K	TH_US_E-STAR_LL	Correction value for preheating TH_US set value under LL environment	1 - 99	55
L	TH_UM_PRE-JOB_LL	Correction value for the set value of TH_UM when restoring from preheating under LL environment	1 - 99	55

* WARMUP END TIME LL: 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)
TH_US	Fusing thermistor sub (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_TH_UM_T_HH	Fusing motor previous rotation start TH_UM set value	1 - 99	50
B	WARMUP_FUMOFF_HH	Fusing motor previous rotation complete time	1 - 99	50
C	WARMUP_END_TIME_HH	Warm-up complete time	1 - 99	50
D	HI_WU_FM_ON_TMP_HH	FM preliminary rotation start TH_UM when warm-up at alpha °C or above	1 - 99	50
E	HI_WU_END_TIME_HH	Warm-up completion time when warm-up at alpha °C or above	1 - 99	50
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	50
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	50
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	50
I	JOBEND_FUMON_TIME_HH	After-rotation time after completion of a job	1 - 99	50
J	TH_UM_E-STAR_HH	TH_UM set value when preheating	1 - 99	50
K	TH_US_E-STAR_HH	TH_US set value when preheating	1 - 99	50
L	TH_UM_PRE-JOB_HH	TH_UM set value when recovery from warm-up	1 - 99	50

* 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)
TH_US	Fusing thermistor sub (Front surface of paper)

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	1 - 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 the initial values and set values for each destination>.

* On the adjustment values

Each cool-down time: 1 count for 1 sec change

<List of destination groups>

Group	Destination							
Group A	—	—	—	—	—	—	—	—
Group B	U.S.A	CANADA	INCH	—	—	—	—	—
Group C	TAIWAN	EUROPE	U.K	AUS.	AB	CHINA	KOREA	BRAZIL

<Descriptions of abbreviations in the above list>

TH_UM	Fusing thermistor main (Front surface of paper)
TH_US	Fusing thermistor sub (Front surface of paper)

<List of Default values and set values for each destination>

Item	Default value (90cpm machine)	
	Group B	Group C
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	Remark
Fusing web unit not installed	No operation	* During the operation, the fusing web cleaning feed counter is counted up.
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	Fusing web motor forcible operation condition when job end	Enable	0 - 1	0
		NO		Disable		
B	JOB END COMP ACT INTERVAL		Interval of the print quantity of compulsory action of the fusing web motor at job end		1 - 200	110
C	JOB END COMP ACT CNT		Number of forcible operations of the fusing web motor when job end		1 - 5	5

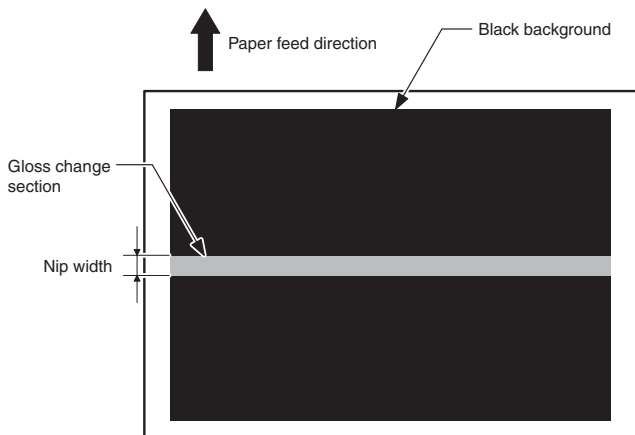
43-35

Purpose	Adjustment and setting
Function (Purpose)	Fusing nip operation check
Section	Fusing

Operation/Procedure

- 1) Prepare a black-background image, and put it on the cassette with the black background facing upward.
 - 2) Enter the set value with 10-key. (The cassette is specified.)
 - 3) Press [EXECUTE] key.
 - 4) [EXECUTE] key is highlighted and printing is started.
When printing is executed, a jam is always generated. (As shown in the photo below.)
 - 5) Leave the jam paper for about 30sec, then remove the jam paper.
 - 6) Measure the width of the gloss change section (nip) of the jam paper, and check to confirm that it is in the range of about 10.5mm - 12mm.
- * If the difference between F and R is considerably great, the fusing pressure may be insufficient.

Item/Display item			Content	Setting range	Default value
A	PAPER	MFT	Cassette selection	1 - 5	1
		CS1			
		CS2			
		CS3			
		CS4			



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	Remarks
HV	Enable/Disable setting of the high density process control in normal operation	Black text on white background (Inhibit: 0=NO) White text on black background (Allow: 1=YES)	Allow	
HT	Enable/Disable setting of the medium density process control in normal operation		Allow	
DRK	Enable/Disable setting of the dark potential process control in normal operation		Allow	
HTLD	Enable/Disable setting of the half-tone potential correction during normal operation		Allow	
TN_FB	Enable/Disable setting of the toner density process control feedback correction		Allow	When set to Disable, toner supply is not made by the process control feedback.
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_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	
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_ABS	Enable/Disable setting of toner unconditional supply		Allow	
TN_P_RET	Enable/Disable setting of the toner difference return correction		Inhibit	
TN_VREF	Enable/Disable setting of the Δ Verf correction		Allow	
TN_DISCHARGE	Enable/Disable setting of the background discharge		Allow	
PRT_HT	Enable/Disable setting of printer correction feedback of half-tone process control		Allow	(*)
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 LD EV	Enable/Disable setting of environmental area and the membrane decrease count laser power voltage correction		Allow	
MULTI V0	Enable/Disable setting of the multi grid voltage correction between paper sheets		Allow	
PTDL	Enable/Disable setting of the PTDL correction		Allow	Enable: Correction ON
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.

(*): It is not displayed when the FIERY printer option is installed.

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

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	-255 - 255	YES	0
E VG_DRK2	Life dark potential process control correction amount	-255 - 255	YES	0
F VG_MULT1	Multi VO correction amount	-255 - 255	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
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	Grid 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.
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	0 - 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 - 255	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	1/3	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 - 15	4
				TC TMP DATA	Transfer display temperature AD value	0 - 1023	0
			RIGHT	TC HUD AREA	Transfer display humidity area	1 - 11	4
				TC HUD DATA	Transfer display humidity AD value	0 - 1023	0
				MD HUD AREA	Membrane decrease display humidity area	1 - 9	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
		2/3	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	
OTHER	3/3	CNT	LEFT	PROCON COUNT DRK	Number of times of the dark potential process control executions	0 - 99999999	0
				PROCON COUNT HV	High density process control execution number	0 - 99999999	0
				PROCON COUNT HLD	Number of times of the half tone potential process control executions	0 - 99999999	0
				PROCON COUNT HT	Halftone process control execution umber	0 - 99999999	0

*1: The left of the correction value is the execution result, and the right the reference value.

44-12

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 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 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

* Note for PATCH items: When the number of times of patch acquisition is less than 10 and it is converged to the target range, "0" is displayed for the rest of display items.

* On the screen shifted by pressing PATCH button, the pages are sorted as follows:

PATCH1-5: n=1 - 4 First page, n=5 Second page

PATCH6-10: n=6 - 9 First page, n=10 Second page

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	Description	Display	Def ault	Remark
TH_UM_CS	Fusing upper main thermistor (compensation)	0.0 - 255.0	-	Temperature (°C)
		0 - 1023	-	AD value
TH_UM_D	Fusing upper main thermistor (detection)	0 - 1023	-	AD value
TH_US	Fusing upper sub thermistor	0.0 - 255.0	-	Temperature (°C)
		0 - 1023	-	AD value

Display	Description	Display	Def ault	Remark
TH_RA	Room temperature sensor	0.0 - 150.0	-	Temperature (°C)
		0 - 1023	-	AD value
HUD_RA	Room humidity sensor	0.0 - 100.0	-	Humidity (%)
		0 - 1023	-	AD value
TH_CL	Process temperature sensor	0.0 - 150.0	-	Temperature (°C)
		0 - 1023	-	AD value
HUD_CL	Process humidity sensor	0.0 - 100.0	-	Humidity (%)
		0 - 1023	-	AD value
TH_UM	Fusing upper main thermistor (differential)	0.0 - 255.0	-	Temperature (°C)
		0 - 1023	-	AD value

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

The execution YES/NO of the OPC drum idle rotation is determined by the AND condition of TIME, AREA1, and AREA 2.

To execute the OPC drum idle rotation, set item B (AREA 1) to "0," and item C (AREA2) to "15."

However, idle rotation is performed in a certain interval while in shut off. This must be fully explained to the user.

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

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
	[CONNECT1]	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
	[CONNECT2]	Coefficient value of the approximation formula when a half-tone density is connected with a high 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
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

* When the display item is not executed yet, "--" is displayed. When in an error, "ERR" is displayed.

* For the reference value and the correction value, the error display is not made but the previous value is displayed.

(*): It is not displayed when the FIERY printer option is installed.

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	3
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	0
H HIGH FIELD LOWER LIMIT	0 - 255	Lower limit value of the high density approximation formula data	15
I HIGH FIELD UPPER LIMIT	0 - 255	Upper limit value of the high density approximation formula data	1

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.

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 execution condition 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		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	1
					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

Item	Category	Display	Content	Setting range	Default value
U	Process control	REV1_RATIO	[REV1_BK] BK position OPC drum traveling distance value magnification ratio setting (%)	1 - 255	20
V	execution condition setting	HT_DIF	Used to judge the execution of HT process control. Bias variation difference value	1 - 255	40
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 0: No execution 1: HV only 2: HV → HT	2
B PRINTER	During print job		2
C FAX	During FAX print job		2
D SELF PRINT	During self print		2
E CPY TO PRT TABLE	Half-tone process control copier - printer conversion table select	0 - 1 0: CALCULATED (Gray balance calculation value (Revised every time when SIM46-74 is executed.)) 1: DEFAULT (Default (Fixed value))	0
F HT_RETRY_SET	Half-tone process control retry setting	0 - 1 0: Allow 1: Inhibit	0
G HT_RETRY_DIF	Retry condition of the half-tone process control	1 - 255	20

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**

Used to display the half-tone potential adjustment result.

Item	Display item	Descriptions of items		Display range	Default value
TARGET (1 page)	ADK_SL(HT)	Half tone potential gradient coefficient		-9.99 - 9.99	0
	ADK_INT(HT)	Half tone potential intercept coefficient		-999.9 - 999.9	0
	TARGET(HT)	Target VH potential target		0 - 600	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 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 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

* Note for PATCH items: When the number of times of patch acquisition is less than 10 and it is converged to the target range, "0" is displayed for the rest of display items.

* On the screen shifted by pressing PATCH button, the pages are sorted as follows:

PATCH1-5: n=1 - 4 First page, n=5 Second page PATCH6-10: n=6 - 9 First page, n=10 Second page

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

<Use example>

Make multi copy of 10 sheets. If the density of 10th sheet is greater than that of the first sheet, decrease the set value.

Make multi copy of 10 sheets. If the density of 10th sheet is smaller than that of the first sheet, increase the set value.

When the set value is 0 (Default), the correction level does not work.

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 $\triangle \nabla$ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

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	AUTO3	Auto 3	LOW	1 - 99	50
			HIGH	1 - 99	50
D	TEXT	Text	LOW	1 - 99	50
			HIGH	1 - 99	50
E	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
F	TEXT/PHOTO	Text/Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
G	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
H	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
I	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
J	AUTO1 (COPY TO COPY)	Auto1 (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	AUTO2 (COPY TO COPY)	Auto2 (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	AUTO3 (COPY TO COPY)	Auto3 (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
M	TEXT (COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
N	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
O	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
P	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 $\triangle \nabla$ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

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 $\triangle \nabla$ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

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

Mode	Item/Display		Content	Setting range	Default value
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 DSPF

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		FAX SIDEA: LOW	DSPF FAX mode exposure adjustment (low density side)	1 - 99	47
D		COPY SIDEA: HIGH	DSPF copy mode exposure adjustment (high density side)	1 - 99	52
E	OC	SCAN SIDEA: HIGH	DSPF scanner mode exposure adjustment (high density side)	1 - 99	52
F		FAX SIDEA: HIGH	DSPF FAX mode exposure adjustment (high density 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		FAX SIDEB: LOW	DSPF FAX mode exposure adjustment (low density side)	1 - 99	47
D		COPY SIDEB: HIGH	DSPF copy mode exposure adjustment (high density side)	1 - 99	50
E		SCAN SIDEB: HIGH	DSPF scanner mode exposure adjustment (high density side)	1 - 99	50
F		FAX SIDEB: HIGH	DSPF FAX mode exposure adjustment (high density side)	1 - 99	50
G		BALANCE SIDEB: R	DSPF color balance R	1 - 99	50
H		BALANCE SIDEB: G	DSPF color balance G	1 - 99	50
I		BALANCE SIDEB: B	DSPF color balance B	1 - 99	50

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/Auto (AE) 3
TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
TEXT/PHOTO	Text/Photograph
PRINTED PHOTO	Printed photo
PHOTO	Photograph

Item	Content
MAP	Map
LIGHT	Light document
COPY ORG	Copy 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 [↑] [↓] keys on the touch panel.
- 2) 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.
- 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, MODE3	MODE2
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/ STOP/ PRESCAN	PRESCAN
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME/ STOP/ PRESCAN	STOP
AE_FILTER	Auto exposure filter setting	SOFT NORMAL SHARP	NORMAL
AE_WIDTH	AE exposure width	FULL PART	FULL

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	BLACK MAX TARGET	Scanner target value for BLACK max. density correction	0 - 999	500
C	RATIO LOW	Mix ratio of High density correction (LOW)(1/100)	0 - 100	33
D	RATIO HIGH	Mix ratio of High density correction (HIGH)(1/100)	0 - 100	0
E	DITHER THRESHOLD	Dither threshold (LOW)	0 - 255	250
F	SLOPE THRESHOLD	Slope threshold (HIGH)(1/100)	100 - 500	400

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
G	FAX: OC	FAX mode (OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX 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	153
B G-Ratio	Gray making setting (G)	0 - 1000	742
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)

46-39	
Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the image send sharpness.
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	Item Content	Setting range	Default value
A	200 x 100 [DPI] OFF	200 × 100 [DPI] half-tone OFF	0 - 2	1
B	200 x 200 [DPI] OFF	200 × 200 [DPI] half-tone OFF	0 - 2	1
C	200 x 200 [DPI] ON	200 × 200 [DPI] half-tone ON	0 - 2	1
D	200 x 400 [DPI] OFF	200 × 400 [DPI] half-tone OFF	0 - 2	1
E	200 x 400 [DPI] ON	200 × 400 [DPI] half-tone ON	0 - 2	1
F	400 x 400 [DPI] OFF	400 × 400 [DPI] half-tone OFF	0 - 2	1
G	400 x 400 [DPI] ON	400 × 400 [DPI] half-tone ON	0 - 2	1
H	600 x 600 [DPI] OFF	600 × 600 [DPI] half-tone OFF	0 - 2	1
I	600 x 600 [DPI] ON	600 × 600 [DPI] half-tone ON	0 - 2	1

46-40	
Purpose	Adjustment/Setting
Function (Purpose)	Used to collectively adjust all the FAX exposure modes.
Section	

Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [EXECUTE] key.
The set value is saved and the adjustment print is made.

Item	Display item & detail display	Content	Setting range	Default value
A	EXPOSURE LEVEL (ALL)	Exposure data (all)	1 - 99	50

46-41

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the FAX exposure (normal text).
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 [EXECUTE] key.
- The set value is saved and the adjustment print is made.

Item	Display item & detail display		Content		Setting range		Default value	Write
A	AUTO		Auto		1 - 99		50	YES
B	EXPOSURE1		Exposure 1		1 - 99		50	YES
C	EXPOSURE2		Exposure 2		1 - 99		50	YES
D	EXPOSURE3		Exposure 3		1 - 99		50	YES
E	EXPOSURE4		Exposure 4		1 - 99		50	YES
F	EXPOSURE5		Exposure 5		1 - 99		50	YES
G	EXECUTE MODE	AUTO	Print mode	Auto	1 - 6	1	1 (AUTO)	NO
		EXP1		Exposure 1		2		
		EXP2		Exposure 2		3		
		EXP3		Exposure 3		4		
		EXP4		Exposure 4		5		
		EXP5		Exposure 5		6		

46-42

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the FAX exposure (small text).
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 [EXECUTE] key. The set value is saved and the adjustment print is made.

Item	Display item/Details of display		Content		Setting range		Default value	Write
A	AUTO		Fine/Auto		1 - 99		50	YES
B	EXPOSURE1		Fine/Exposure 1		1 - 99		50	YES
C	EXPOSURE2		Fine/Exposure 2		1 - 99		50	YES
D	EXPOSURE3		Fine/Exposure 3		1 - 99		50	YES
E	EXPOSURE4		Fine/Exposure 4		1 - 99		50	YES
F	EXPOSURE5		Fine/Exposure 5		1 - 99		50	YES
G	AUTO H_TONE		Fine/Auto/Halftone		1 - 99		50	YES
H	EXPOSURE1 H_TONE		Fine/Exposure 1/Halftone		1 - 99		50	YES
I	EXPOSURE2 H_TONE		Fine/Exposure 2/Halftone		1 - 99		50	YES
J	EXPOSURE3 H_TONE		Fine/Exposure 3/Halftone		1 - 99		50	YES
K	EXPOSURE4 H_TONE		Fine/Exposure 4/Halftone		1 - 99		50	YES
L	EXPOSURE5 H_TONE		Fine/Exposure 5/Halftone		1 - 99		50	YES
M	EXECUTE MODE	AUTO	Print mode	Fine/Auto	1 - 12	1	1 (AUTO)	NO
		EXP1		Fine/Exposure 1		2		
		EXP2		Fine/Exposure 2		3		
		EXP3		Fine/Exposure 3		4		
		EXP4		Fine/Exposure 4		5		
		EXP5		Fine/Exposure 5		6		
		AUTO H_TONE		Fine/Auto/Halftone		7		
		EXP1 H_TONE		Fine/Exposure 1/Halftone		8		
		EXP2 H_TONE		Fine/Exposure 2/Halftone		9		
		EXP3 H_TONE		Fine/Exposure 3/Halftone		10		
		EXP4 H_TONE		Fine/Exposure 4/Halftone		11		
		EXP5 H_TONE		Fine/Exposure 5/Halftone		12		

46-43

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the FAX exposure (fine).
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 [EXECUTE] key.
- The set value is saved and the adjustment print is made.

Item	Display item & detail display		Content		Setting range		Default value	Write
A	AUTO		Fine/Auto		1 - 99		50	YES
B	EXPOSURE1		Fine/Exposure 1		1 - 99		50	YES
C	EXPOSURE2		Fine/Exposure 2		1 - 99		50	YES
D	EXPOSURE3		Fine/Exposure 3		1 - 99		50	YES
E	EXPOSURE4		Fine/Exposure 4		1 - 99		50	YES
F	EXPOSURE5		Fine/Exposure 5		1 - 99		50	YES
G	AUTO H_TONE		Fine/Auto/half-tone		1 - 99		50	YES
H	EXPOSURE1 H_TONE		Fine/Exposure 1/half-tone		1 - 99		50	YES
I	EXPOSURE2 H_TONE		Fine/Exposure 2/half-tone		1 - 99		50	YES
J	EXPOSURE3 H_TONE		Fine/Exposure 3/half-tone		1 - 99		50	YES
K	EXPOSURE4 H_TONE		Fine/Exposure 4/half-tone		1 - 99		50	YES
L	EXPOSURE5 H_TONE		Fine/Exposure 5/half-tone		1 - 99		50	YES
M	EXECUTE MODE	AUTO	Print mode	Fine/Auto	1 - 12	1	1 (AUTO)	NO
		EXP1		Fine/Exposure 1		2		
		EXP2		Fine/Exposure 2		3		
		EXP3		Fine/Exposure 3		4		
		EXP4		Fine/Exposure 4		5		
		EXP5		Fine/Exposure 5		6		
		AUTO H_TONE		Fine/Auto/half-tone		7		
		EXP1 H_TONE		Fine/Exposure 1/half-tone		8		
		EXP2 H_TONE		Fine/Exposure 2/half-tone		9		
		EXP3 H_TONE		Fine/Exposure 3/half-tone		10		
		EXP4 H_TONE		Fine/Exposure 4/half-tone		11		
		EXP5 H_TONE		Fine/Exposure 5/half-tone		12		

46-44

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the FAX exposure (super fine).
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 [EXECUTE] key.
- The set value is saved and the adjustment print is made.

Item	Display item & detail display		Content		Setting range		Default value	Write
A	AUTO		Super fine/Auto		1 - 99		50	YES
B	EXPOSURE1		Super fine/Exposure 1		1 - 99		50	YES
C	EXPOSURE2		Super fine/Exposure 2		1 - 99		50	YES
D	EXPOSURE3		Super fine/Exposure 3		1 - 99		50	YES
E	EXPOSURE4		Super fine/Exposure 4		1 - 99		50	YES
F	EXPOSURE5		Super fine/Exposure 5		1 - 99		50	YES
G	AUTO H_TONE		Super fine/Auto/half-tone		1 - 99		50	YES
H	EXPOSURE1 H_TONE		Super fine/Exposure 1/half-tone		1 - 99		50	YES
I	EXPOSURE2 H_TONE		Super fine/Exposure 2/half-tone		1 - 99		50	YES
J	EXPOSURE3 H_TONE		Super fine/Exposure 3/half-tone		1 - 99		50	YES
K	EXPOSURE4 H_TONE		Super fine/Exposure 4/half-tone		1 - 99		50	YES
L	EXPOSURE5 H_TONE		Super fine/Exposure 5/half-tone		1 - 99		50	YES

Item	Display item & detail display		Content		Setting range		Default value	Write
M	EXECUTE MODE	AUTO	Print mode	Super fine/Auto	1 - 12	1	1 (AUTO)	NO
		EXP1		Super fine/Exposure 1		2		
		EXP2		Super fine/Exposure 2		3		
		EXP3		Super fine/Exposure 3		4		
		EXP4		Super fine/Exposure 4		5		
		EXP5		Super fine/Exposure 5		6		
		AUTO H_TONE		Super fine/Auto/half-tone		7		
		EXP1 H_TONE		Super fine/Exposure 1/half-tone		8		
		EXP2 H_TONE		Super fine/Exposure 2/half-tone		9		
		EXP3 H_TONE		Super fine/Exposure 3/half-tone		10		
		EXP4 H_TONE		Super fine/Exposure 4/half-tone		11		
		EXP5 H_TONE		Super fine/Exposure 5/half-tone		12		

46-45

Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the FAX exposure (600 dpi)
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 [EXECUTE] key.
The set value is saved and the adjustment print is made.

Item	Display item & detail display		Content		Setting range		Default value	Write
A	AUTO		600dpi/Auto		1 - 99		50	YES
B	EXPOSURE1		600dpi/Exposure 1		1 - 99		50	YES
C	EXPOSURE2		600dpi/Exposure 2		1 - 99		50	YES
D	EXPOSURE3		600dpi/Exposure 3		1 - 99		50	YES
E	EXPOSURE4		600dpi/Exposure 4		1 - 99		50	YES
F	EXPOSURE5		600dpi/Exposure 5		1 - 99		50	YES
G	AUTO H_TONE		600dpi/Auto/half-tone		1 - 99		50	YES
H	EXPOSURE1 H_TONE		600dpi/Exposure 1/half-tone		1 - 99		50	YES
I	EXPOSURE2 H_TONE		600dpi/Exposure 2/half-tone		1 - 99		50	YES
J	EXPOSURE3 H_TONE		600dpi/Exposure 3/half-tone		1 - 99		50	YES
K	EXPOSURE4 H_TONE		600dpi/Exposure 4/half-tone		1 - 99		50	YES
L	EXPOSURE5 H_TONE		600dpi/Exposure 5/half-tone		1 - 99		50	YES
M	EXECUTE MODE	AUTO	Print mode	600dpi/Auto	1 - 12	1	1 (AUTO)	NO
		EXP1		600dpi/Exposure 1		2		
		EXP2		600dpi/Exposure 2		3		
		EXP3		600dpi/Exposure 3		4		
		EXP4		600dpi/Exposure 4		5		
		EXP5		600dpi/Exposure 5		6		
		AUTO H_TONE		600dpi/Auto/half-tone		7		
		EXP1 H_TONE		600dpi/Exposure 1/half-tone		8		
		EXP2 H_TONE		600dpi/Exposure 2/half-tone		9		
		EXP3 H_TONE		600dpi/Exposure 3/half-tone		10		
		EXP4 H_TONE		600dpi/Exposure 4/half-tone		11		
		EXP5 H_TONE		600dpi/Exposure 5/half-tone		12		

46-46

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the FAX send image density. (RGB RIP)
Section	

Operation/Procedure

- 1) Select a target mode for adjustment.
- 2) Set the document on the document table.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

When the set value is increased, the density becomes higher.

When the set value is decreased, the density becomes lower.

Item	Display	Content	Setting range	Default value
A	STANDARD RIP	For Normal/Halftone OFF mode	1 - 99	50
B	FINE RIP	For Fine/Halftone OFF mode	1 - 99	50
C	FINE RIP H_TONE	For Fine/Halftone ON mode	1 - 99	50
D	SUPER FINE RIP	For Super Fine/Halftone OFF mode	1 - 99	50
E	SUPER FINE RIP H_TONE	For Super Fine/Halftone ON mode	1 - 99	50
F	ULTRA FINE RIP	For Ultra fine/Halftone OFF mode	1 - 99	50
G	ULTRA FINE RIP H_TONE	For Ultra fine/Halftone ON mode	1 - 99	50
H	600DPI RIP	For 600dpi/Halftone OFF mode	1 - 99	50
I	600DPI RIP H_TONE	For 600dpi/Halftone ON mode	1 - 99	50

46-47

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
AUTO	600DPI ED	Auto	600DPI DT
	600DPI DT		
TEXT/PRT PHOTO	600DPI ED	Text/Printed Photo	600DPI DT
	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 out-putted.

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
DITH4	Monochrome error diffusion	K
DITH7	Monochrome dither (1200dpi)	K
DITH9	Monochrome dither (600dpi LOW)	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

Item/Display	Item	Setting range	Default value
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

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
	B/W 600 LOW Monochrome dither 600dpi LOW
	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

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.

Display	Content
Dither	HEAVYPAPER Copier/Heavy paper gamma
	B/W ED Monochrome error diffusion
	B/W 1200 Monochrome dither 1200dpi
	B/W 600 LOW Monochrome dither 600dpi LOW
	WOVEN1 Watermark 1
	WOVEN2 Watermark 2
	WOVEN3 Watermark 3
	WOVEN4 Watermark 4

- 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 AUTO FILTER LEVEL	SOFT	1 - 3	2(CENTER)
		CENTER		
		HIGH		
B	CPY PUSH AUTO FILTER LEVEL	SOFT	1 - 3	2(CENTER)
		CENTER		
		HIGH		
C	B/W COPY	OFF	0 - 1	1(ON)
		ON		
D	COLOR PUSH:RGB	OFF	0 - 1	1(ON)
		ON		
E	B/W PUSH	OFF	0 - 1	1(ON)
		ON		
F	B/W PRINT	OFF	0 - 1	1(ON)
		ON		

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 [THIN LINE]	Detection level adjustment: Thin line	1 - 99	50
J	SEGMENT: ADJUST [TXT ON SCR 1]	Detection level adjustment: Text 1 on dots	1 - 99	50
K	SEGMENT: ADJUST [TXT ON SCR 2]	Detection level adjustment: Text 2 on dots	1 - 99	50
L	SEGMENT: ADJUST [TXT ON SCR AREA 1]	Detection level adjustment: Detection area 2 of text on dots	1 - 15	8
M	SEGMENT: ADJUST [TXT ON SCR AREA 2]	Detection level adjustment: area 2 of text on dots	1 - 99	50
N	SEGMENT: ADJUST [HIGH LPI]	Detection level adjustment: High line number judgment	1 - 49	25
O	SEGMENT: ADJUST [BK]	Detection level adjustment: No chrome judgment	1 - 99	50
P	SEGMENT: ADJUST [CL]	Detection level adjustment: Chrome judgment	1 - 99	50

Item/Display		Content	Setting range	Default value
Q	SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 99	50
R	SEGMENT: ADJUST [SCR 1 HIGH]	Detection level adjustment: High density dots	1 - 49	25
S	SEGMENT: ADJUST [SCR 1 MIDDLE]	Detection level adjustment: Medium density dots	1 - 49	25
T	SEGMENT: ADJUST [SCR 1 LOW]	Detection level adjustment: Low density dots	1 - 49	25
U	SEGMENT: ADJUST [SCR 2]	Detection level adjustment: Dot 2	1 - 15	8
V	SEGMENT: ADJUST [SCR 3]	Detection level adjustment: Dot 3	1 - 15	8
W	SEGMENT: ADJUST [LINE HALFTONE]	Detection level adjustment: line screen	1 - 49	25
X	SEGMENT: ADJUST [SMALL SCR 1]	Detection level adjustment: Small Dot Area 1	1 - 49	25
Y	SEGMENT: ADJUST [SMALL SCR 2]	Detection level adjustment: Small Dot Area 2	1 - 99	50
Z	SEGMENT: SWITCH [LOCK]	Image Quality Priority ON/OFF : Image Quality Priority lock	0 - 1	0

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

Item/Display			Content		Setting range		Default value
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
M	AE_ONOFF_CC	ON	AE mode ON/ OFF switch : For color copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
N	AE_ONOFF_MC	ON	AE mode ON/ OFF switch : For mono-chrome copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
O	AE_ONOFF_CS	ON	AE mode ON/ OFF switch : For color scan	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
P	AE_ONOFF_MS	ON	AE mode ON/ OFF switch : For mono-chrome copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
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 (POS)	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	

Category	Item	Display	Content		Setting range	Default value	NOTE
COPY MODE	A	TEXT/PRINTED PHOTO	Text/Printed Photo mode select Enable/Disable	OFF ON	0 - 1	1	Normally set to the default. ON 1 No need to change in the market.
	B	TEXT	Text mode select Enable/Disable	OFF ON	0 - 1	1	
	C	PRINTED PHOTO	Printed Photo mode select Enable/Disable	OFF ON	0 - 1	1	
	D	PHOTOGRAPH	Photograph mode select Enable/Disable	OFF ON	0 - 1	1	
	E	TEXT/PHOTO	Text/Photograph mode select Enable/Disable	OFF ON	0 - 1	1	
	F	MAP	Map mode select Enable/Disable	OFF ON	0 - 1	1	
	G	LIGHT	Light density document mode select Enable/Disable	OFF ON	0 - 1	1	
	H	TEXT/PRINTED PHOTO (CPY TO CPY)	Copy document: Enable/Disable of selection of the text print mode	OFF ON	0 - 1	1	
	I	TEXT (CPY TO CPY)	Copy document: Enable/Disable of selection of the text mode	OFF ON	0 - 1	1	
	J	PRINTED PHOTO (CPY TO CPY)	Copy document: Enable/Disable of selection of the printed photo mode	OFF ON	0 - 1	1	
	K	AUTO	Automatic mode select Enable/Disable	OFF ON	0 - 1	1	
	L	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							
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P) (*1)		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) (*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.

46-68	
Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the automatic resolution judgement.

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.

	Item/Display	Content	Setting range	Default value
A	RESULT HIGH RESOLUTION	Judgement result : High resolution	0 - 3	3
B	RESULT MID RESOLUTION1	Judgement result : Slight high resolution	0 - 3	3
C	RESULT MID RESOLUTION2	Judgement result : Slight low resolution	0 - 3	3
D	RESULT LOW RESOLUTION1	Judgement result : Low resolution	0 - 3	3
E	RESULT UNKNOWN RESOLUTION	Judgement result : Cannot judge	0 - 3	3
F	LANGUAGE SEL	Language setting	0 - 1	0
G	AUTO RESOLUTION MODE	Automatic resolution judgement mode	0 - 2	1

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
SOFT CIC	A	SKEW CORRECTION	Skew correction switch	0 - 1	0
	B	FILTER	Filter switch	0 - 1	0
	C	CIC MODE	High compression mode switch	0 - 1	0
	D	OUTPUT RESOLUTION	Resolution setting	0 - 3	0

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.

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 Scanner/DSPF**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
F	COPY CORRECTION (SUB)	Copy magnification correction (sub scan)	1 - 7	4

When COLOR key or MONO key is pressed, the adjustment value is set and a copy is made simultaneously.

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.

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/DSPF**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
A	FUSER SETTING	Fusing speed select timing		HEAVY	1 - 99	70

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.

Item/Display	Content	Error display
UPSIDE BUNDLE	Bundle version (Upper)	UPBDL
BOTTOM BUNDLE	Bundle version (Lower)	BTMBDL
ICU-MAIN	ICUM main program	ICUM
ICU-BIOS	ICUM sub program	ICUB
ASIC-MAIN	ASIC main program	ASICM
ASIC-SUB	ASIC sub program	ASICS
ASIC2	ASIC2 program	ASIC2
LANGUAGE	Language support data program	LANG
LANGUAGE(LIST)	List print language data	LANGL
EOSA	Embedded OSA program	EOSA
UICONTENTS	UI display program	UICON
SIM-TEXT	Simulation language data	SIMT
PCL (PROFILE)	PCL color profile	PCLP
SCU	SCU program	SCU
DSPF	DSPF program	DSPF
PCU	PCU program	PCU
LCC	A4LCC program	LCC
LCT(A3LCC)	A3LCC program	A3LCC
LCT(A3LCT)	A3LCT program	A3LCT
FINISHER(1KFIN)	1K Finisher program	FIN1
FINISHER(FIN100)	100-sheet stapling Finisher program	FIN100
SADDLE(FIN100)	100-sheet stapling Finisher saddle program	SDL100
TRIMMER	Trimmer program	TRIM
INSERTER	Insert program	INS
FOLDING UNIT	Folding unit program	FOLD
DECURLER	Decurler program	DEC
FAX	Standard FAX program	FAX
FAX OPT1	Optional FAX 1st line program	FXOT1
FAX OPT2	Optional FAX 2nd line program	FXOT2
ACU	High compression PDF unit program	ACU

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.
* When the USB is not inserted, "INSERT A STORAGE EMANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
- 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.

49-6

Purpose**Function (Purpose)**

Used to perform the OCR update.

Section**Operation/Procedure**

- 1) Insert the USB flash drive into the main unit.
- 2) Select the button of the folder to perform the OCR update.
- 3) The current version and the update version are displayed.
- 4) Press [EXECUTE] key.
- 5) Press [YES] key.
The selected OCR is updated.

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 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
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

A.(RRC-A)

The timing of detection of the image lead edge after starting the document scan is adjusted. (0.1mm/step)

* When the value is decreased, the timing is advanced. When the value is increased, the timing is delayed.

B.(LEAD)

The lead edge image loss amount is specified. Difference between the document lead edge scan start position and the document lead edge (0.1mm/step)

* When the value is increased, the image loss is increased.

C.(SIDE)

The side image loss amount is specified. (Document width - Document edge scan range)/2 (0.1mm/step)

(Rear edge image loss amount is fixed to 0. (No adjustment))

* When the value is increased, the image loss is increased.

D.(DEN-A)

The void amount made at the paper lead edge is specified. (0.1mm/step)

* When the value is increased, the void is increased.

E.(DEN-B)

The void amount made at the paper rear edge is specified. (0.1mm/step)

* When the value is increased, the void is increased.

F.(FRONT/REAR)

The void amount made at the right and the left edges of paper is adjusted. (0.1mm/step)

* When the value is increased, the void is increased.

50-5	
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 = $3.0 \pm 2.0\text{mm}$ DEN-B = $3.0 \pm 2.0\text{mm}$
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	

Item	Display item/Details of display		Descriptions of items		Setting range		Default value	Remarks
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.
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		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

Item	Display item		Descriptions	Setting range	Default value
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1		DSPF front surface 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,I,J: 1step=0.1mm

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.

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 [\uparrow] [\downarrow] 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		97
B	MAIN-MFT		Print off center adjustment value (Manual feed)		1 - 99		70
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99		45
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		60
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99		60
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-LCT-MFT		Print off center adjustment value (LCT_manual feed)		1 - 99		50
K	MAIN-ADU		Print off center adjustment value (ADU)		1 - 99		50
L	SUB -CS12		Registration motor ON timing adjustment	Standard tray	1 - 99		50
M	SUB -CS34				1 - 99		45
N	SUB -LC			LCC /LCT/LCT manual feed	1 - 99		50
O	SUB -MFT			Manual feed (Main machine)	1 - 99		50
P	SUB -ADU			ADU	1 - 99		50
Q	SUB-CS-HV-A			Main unit tray adjustment value (Heavy paper A)	1 - 99		45
R	SUB-HV-OHP			Main unit tray adjustment value (OHP)	1 - 99		50
S	SUB-LC-HV-A			LCC/LCT adjustment value (Heavy paper A)	1 - 99		45
T	SUB-LC-HV-B			LCC/LCT adjustment value (Heavy paper B)	1 - 99		45
U	SUB-MFT-HV-A			Manual feed tray adjustment value (Heavy paper A)	1 - 99		45
V	SUB-MFT-HV-B			Manual feed tray adjustment value (Heavy paper B)	1 - 99		45
W	SUB-ADU-HV-A			ADU adjustment value (Heavy paper A)	1 - 99		45
X	MULTI COUNT		Number of print		1 - 999		1
Y	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 1 series, first stage *2		6	
		LCT1_2		LCT 1 series, second stage *2		7	
Z	DUPLEX	YES	Duplex print selection	Select	0 - 1	0	1 (NO)
		NO		Not select		1	
AA	MAIN-STD		Print position correction_Reference correction amount (Off-center direction)		1 - 99		35
AB	SUB-STD		Print position correction_Reference correction amount (Transport direction)		1 - 99		70
AC	SFT		Print position correction_Back surface shift correction amount (Transport direction)		0 - 3		1
AD	SWT1	OFF	Print position correction_Correction control ON/OFF switch (Off-center direction)	OFF	0 - 1	0	1 (ON)
		ON		ON		1	
AE	SWT2	OFF	Print position correction_Correction control ON/OFF switch (Transport direction)	OFF	0 - 1	0	1 (ON)
		ON		ON		1	
AF	SWT3	OFF	Print position correction_Correction control mode select switch	OFF	0 - 1	0	0 (OFF)
		ON		ON		1	
AG	SWT4	OFF	Print position correction_Correction control mode select switch (Off-center direction)	OFF	0 - 1	0	0 (OFF)
		ON		ON		1	
AH	SWT5	STANDARD	Print position correction_POS adjustment mode select switch	STANDARD	0 - 1	0	0 (STANDARD)
		POS		POS		1	

* On the adjustment position of item A

The main scanning direction paper size is greater than 216mm.

→The reference is the point which is $\pm 120\text{mm}$ in the main scanning direction away from the print front image center in the main scanning direction (the point which is 160mm away from the BD sensor in the LSU unit).

The main scanning direction paper size is 216mm or less.

→The reference is the point which is $\pm 60\text{mm}$ in the main scanning direction away from the print front image center in the main scanning direction (the point which is 160mm away from the BD sensor in the LSU unit).

- Adjustment direction

+ direction: The magnification ratio is increased.

- direction: The magnification ratio is decreased.

* When the adjustment value of items B - K is decreased by 1, the main scanning print position is shifted to the front side by 0.1mm.

* When the adjustment value of items B - K is increased by 1, the main scanning print position is shifted to the rear side by 0.1mm.

* Items Y, Z 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.

50-12

Purpose	Adjustment
Function (Purpose)	Used to adjust the scan image off-center position. (The adjustment is made for each scan mode.)
Section	Scanner/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	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

* A - C: When the adjustment value is increased, the center position is shifted to the rear side.
1step=0.1mm

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
	B		FRONT_REAR (OC)	OC side image loss quantity setting	0 - 100
	C		TRAIL_EDGE (OC)	OC rear edge image loss quantity setting	0 - 100
	D	Image loss quantity setting SPF SIDE1	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss quantity setting	0 - 100
	E		FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0 - 100
	F		TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss quantity	0 - 100
	G	Image loss quantity setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity	0 - 100
	H		FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0 - 100
	I		TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0 - 100

Category	Item	Display Item		Description	Setting range	Default value
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)
	E		FRONT_REAR (SPF_SIDE1)	Front surface side image loss quantity setting	0 - 100	0 (0mm)
	F		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)
	H		FRONT_REAR (SPF_SIDE2)	Back surface side image loss quantity setting	0 - 100	0 (0mm)
	I		TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss quantity setting	0 - 100	0 (0mm)

* A - I: When the adjustment value is increased, the image loss is increased.
1step=0.1mm

50-28	
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 from 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
A TC ON TIMING	Transfer current (THV+) ON timing setting	1 - 99	48
B TC OFF TIMING	Transfer current (THV+) OFF timing setting	1 - 99	50

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
E		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	1 - 99	36
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 A PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
F		MANUAL HEAVY A PAPER(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		MANUAL LABEL	Manual feed tray/deflection adjustment value (Label)	—	1 - 99	26
K		ADU PLAIN PAPER(S)	ADU/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	26
L		ADU PLAIN PAPER(L)	ADU/deflection adjustment value (Plain paper/Large size)	Longer size than the above	1 - 99	36
M		ADU HEAVY A PAPER(S)	ADU/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26

Item	Button	Display item	Descriptions of items (Mode, document, paper feed speed)	Transport direction	Setting range	Default value
N	ENGINE	ADU HEAVY A PAPER(L)	ADU/deflection adjustment value (Heavy paper A/Large size)	Longer size than the above	1 - 99	26
O		TRAY3/4(S)	Tray 3, 4/deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
P		TRAY3/4 HEAVY A PAPER(S)	Tray 3, 4/deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
Q		TRAY3/4(L)	Tray 3, 4/deflection adjustment value (Plain paper/Large size)	LT size or above	1 - 99	36
R		TRAY3/4 HEAVY A PAPER(L)	Tray 3, 4/deflection adjustment value (Heavy paper A/Large size)	LT size or above	1 - 99	26
S		TRAY4 OHP	Tray 4/deflection adjustment value (OHP)	—	1 - 99	26
T		TRAY4 LABEL	Tray 4/deflection adjustment value (LABEL)	—	1 - 99	26
U		LCC/LCT(S)	LCC/LCT, deflection adjustment value (Plain paper/Small size)	LT size or less	1 - 99	36
V		LCC/LCT HEAVY A PAPER(S)	LCC/LCT, deflection adjustment value (Heavy paper A/Small size)	LT size or less	1 - 99	26
W		LCC/LCT HEAVY B PAPER(S)	LCC/LCT, deflection adjustment value (Heavy paper B/Small size)	LT size or less	1 - 99	26
X		LCC/LCT(L)	LCC/LCT, deflection adjustment value (Plain paper/Large size)	LT size or above	1 - 99	36
Y		LCC/LCT HEAVY A PAPER(L)	LCC/LCT, deflection adjustment value (Heavy paper A/Large size)	LT size or above	1 - 99	26
Z		LCC/LCT HEAVY B PAPER(L)	LCC/LCT, deflection adjustment value (Heavy paper B/Large size)	LT size or above	1 - 99	26
AA		LCC/LCT LABEL	LCC/LCT, deflection adjustment value (Label)	—	1 - 99	26
AB		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).

* The adjustment unit is a distance of 0.1mm unit.

* The smaller the set value of the warp amount for each of the specified items is, the smaller the warp is. The greater the set value is, the greater the warp is.

* DSPF REG1 is the registration amount adjustment in the paper feed side. DSPF REG12 is the registration amount adjustment at just before scanning.

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

53-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the DSPF width detection level.
Section	DSPF

Operation/Procedure

- Set the DSPF paper feed guide to the max. width.
- Press [EXECUTE] key.
The max. width detection level is recognized.
- Set the DSPF paper feed guide to the A4R width.
- Press [EXECUTE] key.
The A4R width detection level is recognized.
- Set the DSPF paper feed guide to the A5R width.
- Press [EXECUTE] key.
The A5R width detection level is recognized.
- Open the DSPF paper feed guide to the min. width.
- 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	DSPF

Operation/Procedure

- Select a target item of the check with [↑] [↓] keys on the touch panel.
- Enter the set value with 10-key.
- 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	DSPF

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

- When the set value is increased by 1, the distance between the home position and the SPF scan position is increased.
- When the set value is increased by 1, the position is shifted by 0.1mm.

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)	0 - 1	0
		ON			(OFF)
B	SIDEA_SCAN_POSITION_SET_JOB	OFF	DSPF front surface optimum scan position detection setting (After a job)	0 - 1	1
		ON			(ON)
C	SIDEA_SCAN_POSITION_LV	WEAK	DSPF front surface optimum scan position detection level setting	0 - 2	1
		MIDDLE			(MIDDLE)
		STRONG			
D	OC_DIRT_LV	WEAK	OC dirt level setting	0 - 2	1
		MIDDLE			(MIDDLE)
		STRONG			
E	SIDEA_DIRT_ALARM_LV	WEAK	DSPF front surface dirt alarm level setting	0 - 2	1
		MIDDLE			(MIDDLE)
		STRONG			
F	SIDEB_DIRT_ALARM_LV	WEAK	DSPF back surface dirt alarm level setting	0 - 2	1
		MIDDLE			(MIDDLE)
		STRONG			
G	SIDEA_DIRT_SHADING_SET	OFF	DSPF front surface streak delete shading setting	0 - 1	1
		ON			(ON)
H	SIDEB_DIRT_SHADING_SET	OFF	DSPF back surface streak delete shading setting	0 - 1	1
		ON			(ON)
I	SIDEB_EXT_SHADING_SET		SPF back side expansion shading setting	0 - 4	0
					(Default)

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.

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	De-fault value
A	1ST DIGIT		First digit (Left edge)		1 - 90	1
B	2ND DIGIT		Second digit		32	
C	3RD DIGIT		Third digit		[Empty:20H]	
D	4TH DIGIT		Fourth digit		65 - 90	
E	5TH DIGIT		Fifth digit		[Alphabet: 41H ("A") - 5AH ("Z")]	
F	6TH DIGIT		Sixth digit		48 - 57 [Numeric figure: 30H ("0") - 39H ("9")]	
G	COL OR	K	Color specification input		0	0
		C			1	
		M			2	
		Y			3	
		R			4	
		G			5	
		B			6	
H	TYPE	PATTERN 1	Print com- posing method	Edging type	0	1
		PATTERN 2		OR process type	1	
		PATTERN 3		No-delete- compo- sition type	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

56-1

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. 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, HDD
<EXPORT>
From EEPROM, HDD To USB MEMORY
 - 3) Press [EXECUTE] key, and press [YES] key.
Data transfer selected in the procedure 2) is performed
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.
- (Machine with the DSK installed)
- 1) Insert the USB memory into the main unit.
 - 2) Select a target transfer item with the touch panel.
<IMPORT>
From USB MEMORY DEVICE to EEPROM, HDD
<EXPORT>
From EEPROM, HDD to USB MEMORY DEVICE
 - 3) Enter the password with 10-key.
 - 4) Press [SET] key.
 - 5) Press [EXECUTE] key, and press [YES] key.
Data transfer selected in the procedure 2) is performed.
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

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.

56-15

Purpose	Backup
Function (Purpose)	Used to import the EEPROM data supported automatically to EEPROM.

Section**Operation/Procedure**

- 1) Press [EXECUTE] key and press [YES] key.
When the operation is completed normally, [COMPLETE] is displayed.
In case of an abnormal end, Error code is displayed.

<List of error>

Display error	Content
Verification Result: NG	CRC 不一致エラー
DISABLE	The upper limit of restore etc.
Error	Other error

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.
SIM56-02S	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
ICU1 SLOT1	ICU1 standard	DIMM1
ICU2 SLOT1	ICU2 standard	DIMM3
ACRE SLOT	ACRE	ACRE

* If the memory target board is not installed, no display is made.

61

61-1

Purpose	Operation test/check
Function (Purpose)	Used to check the LSU polygon motor rotation and laser detection.

Section

LSU

Operation/Procedure

- 1) Press [EXECUTE] key.
When the operation is completed normally, [OK] is displayed.
In case of an abnormal end, [NG] is displayed.

Display	Content
LSU TESTRESULT NG: PG	Polygon mirror rotation abnormality
LSU TESTRESULT NG: K	Laser abnormality (K)

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
COPY 600	A	LASER POWER (K1)	Laser power setting/K1	64 - 255	81
	B	LASER POWER (K2)	Laser power setting/K2	64 - 255	81
	C	LASER POWER (K3)	Laser power setting/K3	64 - 255	81
	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	0
COPY 1200	A	LASER POWER (K1)	Laser power setting/K1	64 - 255	81
	B	LASER POWER (K2)	Laser power setting/K2	64 - 255	81
	C	LASER POWER (K3)	Laser power setting/K3	64 - 255	81
	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	0
PR600/FAX	A	LASER POWER (K1)	Laser power setting/K1	64 - 255	81
	B	LASER POWER (K2)	Laser power setting/K2	64 - 255	81
	C	LASER POWER (K3)	Laser power setting/K3	64 - 255	81
	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	0
	F	LASER DUTY (K 1BIT)	Laser DUTY select/K 1BIT	0 - 255	0

Category	Item/Display		Content	Setting range	Default value
					90cpm machine
PR1200	A	LASER POWER (K1)	Laser power setting/K1	64 - 255	81
	B	LASER POWER (K2)	Laser power setting/K2	64 - 255	81
	C	LASER POWER (K3)	Laser power setting/K3	64 - 255	81
	D	LASER POWER (K4)	Laser power setting/K4	64 - 255	81
	E	LASER DUTY (K)	Laser DUTY select/K	0 - 255	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.

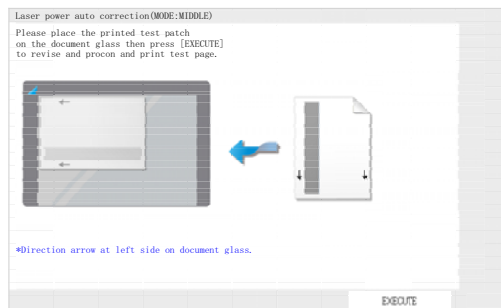
The print image skew adjustment pattern is printed.

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 - 6	1
			CS1		2	2 (CS1)
			CS2		3	
			CS3		4	
			CS4		5	
			LCC		6	

61-11	
Purpose	Adjustment
Function (Purpose)	Used to correct the laser power automatically.
Section	

Operation/Procedure

- 1) Select a target item on the touch panel.
- 2) Press [AUTO CORRECTION] key.
- 3) Select a density to be corrected.
- 4) Press [EXECUTE] key.
- 5) Check pattern is printed.
- 6) Place the printed pattern for scanning on the OC in the A4R(LTR) direction.



- 7) Press [EXECUTE] key.
- 8) Press [RETRY] key if correction is still required.

61-12	
Purpose	Adjustment
Function (Purpose)	Laser power manual correction
Section	LSU

Operation/Procedure

Press an item button to be adjusted.

Item / Display	Content	Outline
MEASURING INSTRUMENT	Density meter adjustment	Adjustment with density meter
VISUAL INSPETION	Visual check adjustment	Adjustment by visual check
DATA	Data display screen	Data display during execution of the manual correction

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 of 5points 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) Press [RETRY] key if adjustment is still required.

Item/Display		Contents	Setting range	Default
A	POSITION(4)	Point 4	0 - 300	0
B	POSITION(10)	Point 10	0 - 300	0
C	POSITION(16)	Point 16	0 - 300	0
D	POSITION(22)	Point 22	0 - 300	0
E	POSITION(29)	Point 29	0 - 300	0

When [VISUAL INSPECTION] is pressed:

- 1) Select the adjustment density pattern.
 - 2) Press [EXECUTE] key.
 - 3) The adjustment pattern is printed out.
 - 4) Press [5POINT CORRECTION] or [32POINT CORRECTION].
 - 5) Enter an adjustment value of 5 points.
 - 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) Press [RETRY] key if adjustment is still required.
 - 8) Press [DATA] key, display manual adjustment result.

Adjustment mode	Item	Display	Content	Setting range	Default
5 point adjustment	A	POSITION(4)	Point 4	25 - 75	50
	B	POSITION(10)	Point 10	25 - 75	50
	C	POSITION(16)	Point 16	25 - 75	50
	D	POSITION(22)	Point 22	25 - 75	50
	E	POSITION(29)	Point 29	25 - 75	50
32 point adjustment	A	POSITION(1)	Point 1	25 - 75	50
	B	POSITION(2)	Point 2	25 - 75	50
	C	POSITION(3)	Point 3	25 - 75	50
	D	POSITION(4)	Point 4	25 - 75	50
	E	POSITION(5)	Point 5	25 - 75	50
	F	POSITION(6)	Point 6	25 - 75	50
	G	POSITION(7)	Point 7	25 - 75	50
	H	POSITION(8)	Point 8	25 - 75	50
	I	POSITION(9)	Point 9	25 - 75	50
	J	POSITION(10)	Point 10	25 - 75	50
	K	POSITION(11)	Point 11	25 - 75	50
	L	POSITION(12)	Point 12	25 - 75	50
	M	POSITION(13)	Point 13	25 - 75	50
	N	POSITION(14)	Point 14	25 - 75	50
	O	POSITION(15)	Point 15	25 - 75	50

Adjustment mode	Item	Display	Content	Setting range	Default
32 point adjustment	P	POSITION(16)	Point 16	25 - 75	50
	Q	POSITION(17)	Point 17	25 - 75	50
	R	POSITION(18)	Point 18	25 - 75	50
	S	POSITION(19)	Point 19	25 - 75	50
	T	POSITION(20)	Point 20	25 - 75	50
	U	POSITION(21)	Point 21	25 - 75	50
	V	POSITION(22)	Point 22	25 - 75	50
	W	POSITION(23)	Point 23	25 - 75	50
	X	POSITION(24)	Point 24	25 - 75	50
	Y	POSITION(25)	Point 25	25 - 75	50
	Z	POSITION(26)	Point 26	25 - 75	50
	AA	POSITION(27)	Point 27	25 - 75	50
	AB	POSITION(28)	Point 28	25 - 75	50
	AC	POSITION(29)	Point 29	25 - 75	50
	AD	POSITION(30)	Point 30	25 - 75	50
	AE	POSITION(31)	Point 31	25 - 75	50
	AF	POSITION(32)	Point 32	25 - 75	50

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)

61-14	
Purpose	Adjustment
Function (Purpose)	Used to set the laser power at once.
Section	

Operation/Procedure

This Sim mode allows change of laser power settings easily, and all at once.

- 1) Press a target item.

Item	Setting range		Default
K/BW	-2	Fine	0
	-1	Slight fine	
	0	Normal	
	1	Slight thick	
	2	Thick	

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	Set ting 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.

NOTE:

This simulation may not function with some firmware versions.
In such a case, the firmware must be upgraded to the latest version.

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

63-1

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the result of the shading correction.
Section	Scanner/DSPF

Operation/Procedure

Select a target color of display with [R] [G] [B] keys on the touch panel.

Button	Display item	Descriptions	Remarks
OC	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/DSPF

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/DSPF

Operation/Procedure

- 1) Place the scanner adjustment chart (UKOG-0356FCZZ) on the reference position of the left rear frame side of the document table.
- 2) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 3) Select a target mode with [OC] [DSPF] keys.
- 4) 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/DSPF

Operation/Procedure

- 1) Place the scanner adjustment chart (UKOG-0356FCZZ) on the reference position of the left rear frame side of the document table.
- 2) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 3) Select a target mode with [OC] [DSPF] keys.
- 4) 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	Scanner/DSPF

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

63-7	
------	--

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the auto density of the engine auto adjustment scanner target value. (Service)

Section

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

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The engine auto adjustment scanner target value is reset to the default value.

63-11	
-------	--

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the target gray balance of the copy mode auto balance adjustment.

Section

Operation/Procedure

- 1) Select the target gray balance with the touch panel.
Default DEF 1.

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, 33 - 35)		Print pattern specification (* For details, refer to the description below.)		1 - 68 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22, 29, 33 - 35)		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)	NONE	Exposure mode specification	No process (through)	1-8 (Pattern 17-19:2-8 Pattern 33-35:2,3,5,6,8 Except above:1-8)	1	8 (STANDARD DITHER)
		TEXT/PRINTED PHOTO		Text/Printed Photo		2	
		TEX/PHOTO		Text/Photograph		3	
		TEXT		Text		4	
		PHOTO		Printed photo		5	
		PRINTED PHOTO		Photograph		6	
		MAP		Map		7	
		STANDARD DITHER		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual feed	1 - 7	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 1 series, first stage *2		6	
		LCT1_2		LCT 1 series, second stage *2		7	
H	DUPLEX	YES	Duplex print selection	Select	0 - 1	0	1 (NO)
		NO		Not select		1	
I	PAPER TYPE	PLAIN1	Paper type	Standard paper1	1 - 8	1	1 (PLAIN)
		PLAIN2		Standard paper2		2	
		HEAVY		Heavy paper		3	
		OHP		OHP		4	
		HEAVY2		Heavy paper 2		5	
		GLOSSY		Glossy paper		6	
		HEAVY3		Heavy paper 3		7	
		HEAVY4		Heavy paper 4		8	

* Paper feed condition: PLAIN: Cassette/Manual feed/LCC, HEAVY: Cassette/Manual feed, The others: Manual feed only

* Items E, G, H, I 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.

<Item A print pattern>

No.	Content	Pattern generating section
1	Grid pattern	LSU-ASIC
2	Dot print	
9	Each color 10% area (A4/4R) density print	
10	8-color belt print	
11	4-color dot print (sub scan)	
17	All background (halftone)	Halftone (IMG-ASIC after- process)
18	256 gradations pattern (Other dither)	
19	256 gradations pattern (Dither for text)	

No.	Content	Pattern generating section
21	4-point dot print (main scan)	LSU-ASIC
22	Slant line	LSU-ASIC
29	Dot print 1200dpi	LSU-ASIC
33	All background (halftone) 1200dpi	Halftone (IMG-ASIC after process)
34	256 gradation pattern 1200dpi	
35	256 gradation pattern (Dither for text) 1200dpi	

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 - 8	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 1 series, first stage *2		7	
		LCT1_2		LCT 1 series, second stage *2		8	
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	PLAIN1	Paper type	Standard paper 1	0 - 6	0	00 (PLAIN1)
		PLAIN2		Standard paper 2		1	
		HEAVY		Heavy paper		2	
		HEAVY2		Heavy paper 2		3	
		GLOSSY		Glossy paper		4	
		HEAVY3		Heavy paper 3		5	
		HEAVY4		Heavy paper 4		6	

* When Print pattern 2 is selected, selection of items G is disabled.
(Input of the value is enable, but it is not reflected to the setting.)

* When paper which does not satisfy the paper feed condition is selected, printing is disabled.

* Paper feed condition: PLAIN: Cassette/Manual feed, The others: Manual feed only

* Items D - H 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.

<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 - 8	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		
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	PLAIN1	Paper type	Standard paper 1	0 - 6	0 (PLAIN)
		PLAIN2		Standard paper 2		
		HEAVY		Heavy paper		
		HEAVY2		Heavy paper 2		
		GLOSSY		Glossy paper		
		HEAVY3		Heavy paper 3		
		HEAVY4		Heavy paper 4		
I	TONER SAVE	OFF	Toner save mode	not set.	0 - 1	0 (OFF)
		ON		set.		

* Items D - I are "Item name : Details display."

Example: PAPER:CS1

* Selection of item B (DENSITY) is disabled. ((Input of the value is enable, but it is not reflected to the setting.)

* Item F (QUALITY) is defined by combination between the resolution and the bit number.

*1: Displayed only when A4/A3 LCC is connected.

*2: Displayed only when 2-stage LCT is installed.

<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.

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	1 - 8	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		
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	PLAIN1	Paper type	Standard paper 1	0 - 6	0 (PLAIN)
		PLAIN2		Standard paper 2		
		HEAVY		Heavy paper		
		HEAVY2		Heavy paper 2		
		GLOSSY		Glossy paper		
		HEAVY3		Heavy paper 3		
		HEAVY4		Heavy paper 4		
I	TONER SAVE	OFF	Toner save mode	not set.	0 - 1	0 (OFF)
		ON		set.		

* Items D - I are "Item name : Details display."

Example: PAPER:CS1

* Selection of item B (DENSITY) is disabled. ((Input of the value is enable, but it is not reflected to the setting.))

* Item F (QUALITY) is defined by combination between the resolution and the bit number.

*1: Displayed only when A4/A3 LCC is connected.

*2: Displayed only when 2-stage LCT is installed.

<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.

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.

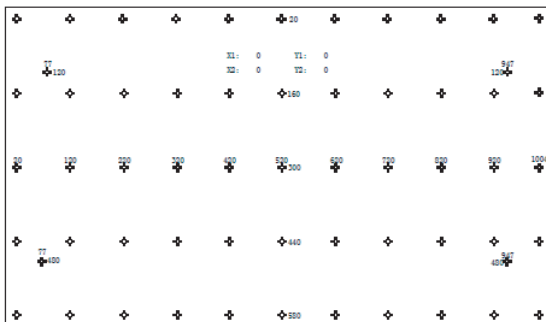


65-2	
Purpose	Operation check/test
Function (Purpose)	Used to display the touch panel (LCD display section) detection coordinates.
Section	

Operation/Procedure

Touch the touch panel.

The coordinates X (horizontal direction) and Y (vertical direction) of the touched position is displayed in real time.



65-5	
Purpose	Operation check/Test
Function (Purpose)	Used to check the key input of the operation panel.
Section	Operation panel section

Operation/Procedure

Press the keys displayed on the screen sequentially.

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	Setting
Function (Purpose)	Used to enter a country code and set the default value for the country code.
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-02, the following screen is displayed.
* When [DEST CODE] button is pressed, the display is shifted to the country code list screen.
* The currently set country code is displayed in the column of "PRESENT:".
- 2) Enter the country code (8 digits) with 10-key([0]/[1]). The entered country code is displayed in the column of "NEW:" and [SET] key becomes active.
* When [CLEAR] key is pressed, the column of "NEW:" is cleared.
- 3) When [SET] button is pressed after entering the country code, [EXECUTE] button becomes active. The country code is displayed in the column of "PRESENT:", and the column of "NEW:" is cleared.
- 4) When [EXECUTE] button is pressed, it is highlighted and [YES] and [NO] buttons become active. The country name is displayed on the tile line.
- 5) When [YES] button is pressed, it is highlighted and the soft SW corresponding to the country code is initialized.
- 6) After completion of initialization of the soft SW, [EXECUTE], [YES], and [NO] buttons become inactive.

Operation/Procedure (Shifting to the country page)

- * When [DEST CODE] button is pressed on the initial screen, the display is shifted to the country code list screen.
Use scroll keys to select the country select page.

<Country code list>

JAPAN	00000000
U.S.A.	10110101
AUSTRALIA	00001001
U.K.	10110100
FRANCE	00111101
GERMANY	00000100
SWEDEN	10100101
NEWZEALAND	01111110
CHINA	00100110
SINGAPORE	10011100

TW	11111110
MIDDLE EAST	11111101
SLOVAKIA	11111100
OTHER3	11111011
FINLAND	00111100
NORWAY	10000010
DENMARK	00110001
NETHERLANDS	01111011
ITALY	01011001
SWITZERLAND	10100110
AUSTRIA	00001010
INDONESIA	01010100
THAILAND	10101001
MALAYSIA	01101100
INDIA	01010011
PHILIPPINES	10001001
HONGKONG	01010000
RUSSIA	10111000
SOUTHAFRICA	10011111
SPAIN	10100000
PORTUGUESE	10001011
LUXEMBURG	01101001
BELGIUM	00001111
CZECH	00101110
HUNGARY	01010001
GREECE	01000110
POLAND	10001010
BRAZIL	00010110
KOREA	01100001
VIETNAM	10111100

66-3	
Purpose	Operation test, check
Function (Purpose)	Used to check the operation (read/write) of the FAX PWB memory.
Section	FAX

Operation/Procedure

- 1) Select a target item of the memory operation check with the touch panel.
- 2) Press [EXECUTE] key.
The operation check of the selected memory is executed.
If "once" is selected, when check is completed normally, "OK" is displayed. When there occurs an error, "NG" is displayed.
If "repeat" is selected, check is repeated until the result is found "NG" or until [EXECUTE] key is pressed.

1	All Memory Device Check (once)	Check all the items once.
2	MODEM EEPROM<1>(once)	Check only once.
3	MODEM EEPROM<1>(repeat)	Repeat checking.
4	MODEM SDRAM<1>(once)	Check only once.
5	MODEM SDRAM<1>(repeat)	Repeat checking.

66-4	
Purpose	Operation test, check
Function (Purpose)	Used to check the output operation (MODEM operation) of data signal in each data output mode of FAX. Send level: MAX
Section	FAX

Operation/Procedure

- 1) Select the display screen with [↑] and [↓] keys.
- 2) Select an output target mode with the touch panel key.
- 3) Press [EXECUTE] key.
A signal is outputted at the maximum send level.
When [EXECUTE] key is pressed, the signal output can be stopped.

NOSIGNAL	33.6 V34	31.2 V34	28.8 V34
26.4 V34	24.0 V34	21.6 V34	19.2 V34
16.8 V34	14.4 V34	12.0 V34	9.6 V34
7.2 V34	4.8 V34	2.4 V34	14.4 V33
12.0 V33	14.4 V17	12.0 V17	9.6 V17
7.2 V17	9.6 V29	7.2 V29	4.8 V27t
2.4 V27t	0.3 FLG	CED 2100	CNG 1100
0.3 V21	ANSam	RINGER	No RBT
DP MAKE	DP BRK	No MSG	Volt/mA

66-5	
Purpose	Operation test, check
Function (Purpose)	Used to check the output operation of data signal in each data output mode of FAX(MODEM operation). Send level: Soft switch setting

Section	FAX
----------------	-----

Operation/Procedure

- 1) Select the display screen with [↑] and [↓] keys.
- 2) Select an output target mode with the touch panel key.
- 3) Press [EXECUTE] key.
A signal is outputted at the send level set with the soft switch.
When [EXECUTE] key is pressed, the signal output can be stopped.

NOSIGNAL	33.6 V34	31.2 V34	28.8 V34
26.4 V34	24.0 V34	21.6 V34	19.2 V34
16.8 V34	14.4 V34	12.0 V34	9.6 V34
7.2 V34	4.8 V34	2.4 V34	14.4 V33
12.0 V33	14.4 V17	12.0 V17	9.6 V17
7.2 V17	9.6 V29	7.2 V29	4.8 V27t
2.4 V27t	0.3 FLG	CED 2100	CNG 1100
0.3 V21	ANSam	RINGER	No RBT
DP MAKE	DP BRK	No MSG	Volt/mA

66-6	
Purpose	User data output, check
Function (Purpose)	Used to print the confidential pass code.
Section	FAX

Operation/Procedure

Press [EXECUTE] key to execute printing.

* If there is no confidential registration, no print is made.

66-7	
Purpose	User data output, check
Function (Purpose)	Used to output the image memory data (memory send and receive). * The confidential receive contents are also outputted.

Section	FAX
----------------	-----

Operation/Procedure

- Press [EXECUTE] key to execute printing.
- * If there is no image memory, no output is made.

66-8

Purpose	Operation test, check
Function (Purpose)	Used to check the output operation (audio output IC operation check) of the various audio signals of FAX. Send level: MAX
Section	FAX

Operation/Procedure

- 1) Select an output target model with the touch panel key.
- 2) Press [EXECUTE] key.
A signal is outputted at the maximum send level.
When [EXECUTE] key is pressed, the signal output can be stopped.

NONE	Mute
PAUSE	Pause melody
MESSAGE1	Message 1
MESSAGE2	Message 2
MESSAGE3	Message 3
MESSAGE4	Message 4
MESSAGE5	Message 5
MESSAGE6	Message 6
ALARM	Alarm
RINGER	Ringer (Speaker)
EXT.TEL.RINGER	External telephone ringer

66-9

Purpose	Operation test, check
Function (Purpose)	Used to check the output operation of various audio signals of FAX (audio output IC operation). Send level: Soft switch setting
Section	FAX

Operation/Procedure

- 1) Select an output target mode with the touch panel key.
- 2) Press [EXECUTE] key.
A signal is outputted at the send level set with the soft switch.
When [EXECUTE] key is pressed, the signal output can be stopped.

NONE	Mute
PAUSE	Pause melody
MESSAGE1	Message 1
MESSAGE2	Message 2
MESSAGE3	Message 3
MESSAGE4	Message 4
MESSAGE5	Message 5
MESSAGE6	Message 6
ALARM	Alarm
RINGER	Ringer (Speaker)
EXT.TEL.RINGER	External telephone ringer

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.

66-11

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Max.)
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-11, the item selection screen is displayed.
- 2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
- 3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
- 4) To end signal send:
When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

<300bps send signal table>

NO SIGNAL	11111	11110	00000
010101	00001		

66-12

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Soft SW setting) * For the kings of send signals at 300bps, refer to SIM66-11, 300bps send signal table.
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-12, the item selection screen is displayed.
- 2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
- 3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
- 4) To end signal send:
When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

66-13

Purpose	Setting
Function (Purpose)	Used to set the number for the FAX dial signal output test. (In the dial signal output test with Sim. 66-14 - 16, the dial number set with this simulation is outputted.)
Section	FAX

Operation/Procedure

- 1) Enter the set value with 10-key.
Enter with 10-key (0 - 9), [*] key, and [#] key. One previous character is deleted by [C] key. The upper limit is 20 digits.
- 2) Press [SET] key.
Setting is saved.

66-14	
Purpose	Setting/Operation test, check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (10PPS) and to execute the dial signal output test. (The signal of the dial number set with Sim. 66-13 is outputted.)
Section	FAX

Operation/Procedure

- 1) Enter the set value of make time with 10-key. (0 - 15)
- 2) Press [EXECUTE] key.
The dial signal is outputted at the make time set with the above procedure.
When [EXECUTE] key is pressed, the signal output can be stopped.

66-15	
Purpose	Setting/Operation test, check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (20PPS) and to execute the dial signal output test. (The signal of the dial number set with Sim. 66-13 is outputted.)
Section	FAX

Operation/Procedure

- 1) Enter the set value of the make time with 10-key. (0 - 15)
- 2) Press [EXECUTE] key.
The dial signal is outputted at the make time set in the above procedure.
When [EXECUTE] key is pressed, the signal output can be stopped.

66-16	
Purpose	Setting/Operation test, check
Function (Purpose)	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. (The signal of the dial number set with Sim. 66-13 is outputted.) The send level can be set to an optional level.
Section	FAX

Operation/Procedure

- 1) Select a target item to be set with [↑] [↓] keys.
- 2) Enter the set value of the send level with 10-key. (0 - 15)
- 3) Press [EXECUTE] key.
The dial signal is outputted at the send level set in the above procedure.
When [EXECUTE] key is pressed, the signal output can be stopped.

66-17	
Purpose	Operation test, check
Function (Purpose)	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. Send level: MAX
Section	FAX

Operation/Procedure

- 1) Select an output target mode with the touch panel.
- 2) Press [EXECUTE] key.
A signal is outputted at the maximum send level.
When [EXECUTE] key is pressed, the signal output can be stopped.

66-18	
Purpose	Operation test, check
Function (Purpose)	Used to perform the dial signal (DTMF) output test in the FAX tone dial mode. Send level: Set with the soft switch.
Section	FAX

Operation/Procedure

- 1) Select an output target mode with the touch panel.
- 2) Press [EXECUTE] key.
A signal is outputted at the send level set with the soft switch.
When [EXECUTE] key is pressed, the signal output can be stopped.

66-21	
Purpose	Adjustment, setting, operation data check
Function (Purpose)	Used to print information about FAX (system errors, protocols).
Section	FAX

Operation/Procedure

- 1) Select a print target item with the touch panel key.
- 2) Press [EXECUTE] key.
Printing is started.

<FAX information print content table>

SYSTEM ERROR LINE 1	PROTOCOL LINE 1
SYSTEM ERROR LINE 2	PROTOCOL LINE 2
SYSTEM ERROR LINE 3	PROTOCOL LINE 3

66-22	
Purpose	Adjustment/Setting
Function (Purpose)	Used to adjust the handset sound volume
Section	

Operation/Procedure

- 1) Adjust the handset sound volume with 10-key.
- 2) Press [OK] key.
The set value is saved.
When [EXECUTE] key is pressed, the selected delivery sound is sent.

0	MIN
1	MIDDLE
2	MAX

66-29	
Purpose	Data clear
Function (Purpose)	Used to clear the data related to the address book (one-touch registration, FTP/Desktop extension, group extension, program registration, interface memory box, meta data, Inbound Routing, Document Admin table).

Section

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The data related to the address book are cleared.

66-30	
Purpose	Operation test/Check
Function (Purpose)	Used to display the TEL/LIU status change, The display is highlighted by status change.
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-30, the item selection screen is displayed.
- 2) RGDT, RHS, EXHS and SiDAA are highlighted when the signal is detected, and displayed normally when the signal is not detected.

<TEL/LIU status change item description>

RGDT	Telephone line voltage
RHS	Handset hook SW
EXHS	External telephone hook SW
SiDAA	Polarity inversion signal

66-31	
Purpose	Setting
Function (Purpose)	Used to set ON/OFF the port for output to TEL/LIU.
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-31, the item selection screen is displayed.
- 2) Change the port setting.
When a port is set to ON, the port display is highlighted.
- 3) When [EXECUTE] button is pressed, the changed setting is reflected to the port which outputs to TEL/LIU.
- 4) To terminate the process, press [EXECUTE] button again. [EXECUTE] button returns to the normal display.

<Port which outputs to TEL/LIU>

CION	S.	150Von
------	----	--------

66-32	
Purpose	Operation test, check
Function (Purpose)	Used to check the received data (fixed data) from the line.
Section	FAX

Operation/Procedure

- 1) Press [EXECUTE] key.
The fixed data received from the line are checked.
- 2) When the check is completed normally, "OK" is displayed. When an error occurs, "NG" is displayed.
When [EXECUTE] key is pressed, the operation can be stopped.

66-33	
Purpose	Operation test/Check
Function (Purpose)	Used to execute detection of various signals with the line connected and to display the detection result. When a signal is detected, the display is highlighted.
Section	FAX

Operation/Procedure

- 1) When the machine enters Simulation 66-33, the item selection screen is displayed.
- 2) The signal to be checked can be selected from the two options: "FNET" and "BT/CNG/CED/DTMF."
- 3) When a signal is detected, "FNET" and "BUSY TONE CNG CED DTMF" are highlighted. When a signal is not detected, they are normally displayed.

<Signal used for signal detection check>

(When "FNET" is selected)

FNET

(When "BT/CNG/CED/DTMF" is selected)

BUSY TONE	CNG	CED	DTMF
-----------	-----	-----	------

66-36	
Purpose	Operation test, check
Function (Purpose)	Used to perform the interface check between the MFP controller and the MDMC. (Data line or command line check)
Section	FAX

Operation/Procedure

- 1) Select a target item for the operation check with the touch panel key.
- 2) Press [EXECUTE] key.
If "(once)" is selected, when check is completed normally, "OK" is displayed. When there occurs an error, "NG" is displayed.
If "(repeat)" is selected, check is repeated until the result is found "NG" or until [EXECUTE] key is pressed.

MFP ← MDMC (DATA once)	Data line once only
MFP → MDMC (DATA once)	Data line once only
MFP ← MDMC (DATA repeat)	Data line repeat
MFP → MDMC (DATA repeat)	Data line repeat
MFP ← MDMC (CMD once)	Command line once only
MFP → MDMC (CMD once)	Command line once only
MFP ← MDMC (CMD repeat)	Command line repeat
MFP → MDMC (CMD repeat)	Command line repeat

66-39	
Purpose	Setting
Function (Purpose)	Used to set the destination.
Section	FAX

Operation/Procedure

Select a destination with the touch panel key.

66-42	
Purpose	Setting
Function (Purpose)	Used to rewrite the power control program again to the FAX BOX.
Section	FAX

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

When writing the program is completed normally, "OK" is displayed. When writing is failed, "NG" is displayed.

66-43	
Purpose	Setting
Function (Purpose)	Used to write the adjustment value of the power control program to the FAX BOX.
Section	FAX

Operation/Procedure

- 1) Select a target item to be set with [↑] [↓] keys.
- 2) Enter a set value with 10-key.
- 3) Press [EXECUTE] key.

When writing the adjustment value is completed normally, "OK" is displayed. When it fails, "NG" is displayed.

	Item	Set range	Default
A	CI_LEVEL_JUDGE	2 - 15	6
B	CI_CYCLE_MIN	1 - 254	10
C	CI_CYCLE_MAX	2 - 255	142
D	CI_COUNT	2 - 15	3
E	POFF_LEVEL_JUDGE	2 - 15	15
F	EXHS_LEVEL_JUDGE	2 - 255	240
G	RHS_LEVEL_JUDGE	2 - 15	2
H	SON_TIMEOUT	1 - 127	20

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] button.
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] button is pressed, it is highlighted and the setting is saved.

66-62	
Purpose	Backup
Function (Purpose)	Used to import the FAX receive data into a USB flash drive in PDF file type.
Section	FAX

Operation/Procedure

- 1) Insert the USB flash drive into the main unit.
- 2) Select data to be imported.
- 3) Press [EXECUTE] key.

Execute import of data selected in procedure 2).

When the operation is completed normally, [COMPLETE] is displayed. In case of an abnormal end, [ERROR] is displayed.

Error display	Content
ERROR: NO USB MEMORY DEVICE	No USB flash drive installed
ERROR: NO IMAGE DATA	No image data
ERROR	Other errors

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 color calibration. For FIERY option support, Sim is not displayed.
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 color balance manual correction. For FIERY option support, the Sim is not displayed.

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

67-26	
Purpose	Adjustment/Setup
Function (Purpose)	Used to set the target color balance of the printer mode auto color balance adjustment.

Section

Operation/Procedure

- 1) Select the target color balance with the touch panel.

Item/Display	Default value
Target value table select	DEF1,DEF2,DEF3
	DEF 1

67-27	
Purpose	Adjustment/Setting
Function (Purpose)	Used to register the scanner target value of the printer engine auto density adjustment. For FIERY option support, this Sim is not displayed.

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

Item	Display Content
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
P	Point P 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. For FIERY option support, the Sim is not displayed.

Section

Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.
The printer calibration value is cleared.

67-33	
Purpose	Adjustment/Setting
Function (Purpose)	Used to perform the gamma correction of printer screens (for PCL). For FIERY option support, the Sim is not displayed.

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

Item	Display	Description	Setting range	Default value
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
SCREEN7	B/W 600 dpi 1bit Photo
SCREEN8	B/W 600 dpi 4bit Photo
SCREEN9	B/W 1200 dpi 1bit Photo
SCREEN11	B/W 600 dpi 1bit Graphics
SCREEN12	B/W 600 dpi 4bit Graphics
SCREEN13	B/W 1200dpi 1bit Graphics
SCREEN19	B/W 600 dpi 4bit SHIGH
SCREEN20	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	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 maximum density correction	0 - 999	500
C	RATIO LOW	High density correction blend ratio (LOW)(1/100)	0 - 100	33
D	RATIO HIGH	High density correction blend ratio (HIGH) (1/100)	0 - 100	0
E	DITHER THRESHOLD	Dither threshold (LOW)	0 - 255	250
F	SLOPE THRESHOLD	Slope threshold (HIGH) (1/100)	100 - 500	400

67-36

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the density in the highlight section.

Section

Operation/Procedure

- 1) Select a set value with the scroll key.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

Item/Display	Content	Setting range	Default value
A A PATCH INPUT K	A patch input value K	0 - 13	1

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.

Item/Display	Content
Screen	HEAVYPAPER Heavy paper screen Printer heavy paper automatic density correction amount
	600DPI_1BIT SCREEN1 (600dpi 1bit Photo) SCREEN2 (600dpi 1bit Graphics)
	4BIT_HIGH SCREEN4 (600dpi 4bit Graphics)
	4BIT_SHIGH SCREEN5 (600dpi 4bit SHIGH)
	1200DPI_LOW SCREEN6 (1200dpi 1bit Photo)
	1200DPI_HIGH SCREEN7 (1200dpi 1bit Graphics)
	1200DPI_SHIGH SCREEN8 (1200dpi 1bit SHIGH)

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 patch image (adjustment pattern) is printed out.
- 2) Set the 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 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).
- 6) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)
The patch image (adjustment pattern) is printed out.
- 7) Set the patch image (adjustment pattern) printed in the procedure 6) 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).
- 8) Press [EXECUTE] key.
The 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.

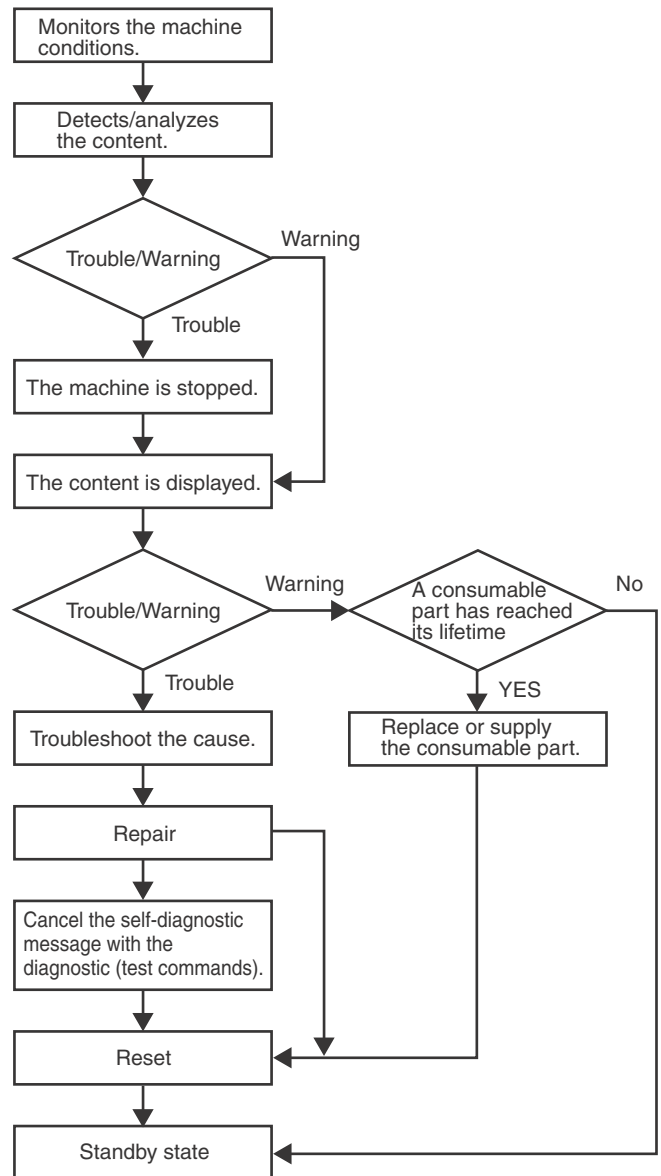
A warning message is displayed when a consumable part life is nearly expired or is expired.

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	FAX Send	FAX print
Security abnormality trouble	Security module abnormality		E7 (C0,C1)	×	×	×	×	×	×	×	×
FAX board trouble	FAX board breakdown	MFP	F6 (00, 01, 02, 04, 21, 30, 97, 98)	○	○	○	○	○	○	△1	△1
HDD trouble	SSD breakdown		E7 (A7)	×	×	×	×	×	×	×	×
	HDD breakdown		E7 (03)	×	×	×	×	×	×	×	×
	HDD-ASIC breakdown		E7 (04)	×	×	×	×	×	×	×	×
Operation communication trouble	Operation communication error		U9 (01)	×	×	×	×	○	○	×	○
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)	×	×	×	×	×	×	×	×
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	Memory error (included not installed the expansion RAM)		U2 (00, 11, 41, 42)	×	×	×	×	×	×	×	×
	Serial number discrepancy		U2 (30)	×	×	×	×	×	×	×	×
	HDD registration data check sum error		U2 (50)	×	×	×	×	×	×	×	×
	External communication disable (RIC)		U7 (50, 51)	×	×	×	×	×	×	×	×
	Memory error (included not installed the expansion RAM)		U2(40)								
	Connection trouble (MFP detection)		A0(10,15,17,18,19,20) E7(60,61,62)	×	×	×	×	×	×	×	×
	Memory check error when booting		E7 (96)	×	×	×	×	×	×	×	×
Operation disable trouble 3	Image memory trouble, decode error		E7 (01, 49, 91, 92, 93, 94)	×	×	×	×	×	×	×	×
	Image memory trouble, decode error (related to ACRE, 1)		E7 (42, 46, 47, 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		U2 (60,70)	○	○	○	○	○	○	○	○
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)	×	×	×	×	×	×	×	×

Trouble content		Judgment block	Trouble code	Operatable mode							
				Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
Engine trouble 2	PCU troubles (motor, fusing, etc.)	PCU	C1 (01, 10, 40) 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) L4 (01, 02, 03, 04, 14, 17, 27, 31, 32, 34, 36, 38, 39, 40, 41, 43, 46, 47, 48, 49, 50, 54, 58) L8 (01, 02) U2 (90, 91)	×	×	×	×	×	×	×	×
Paper feed tray 0 trouble	Paper feed tray 0 breakdown		U6 (63, 68, 69)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray 1 trouble	Paper feed tray 1 breakdown		F3 (12)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray 2 trouble	Paper feed tray 2 breakdown		F3 (22)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray 3 trouble	Paper feed tray 3 breakdown		F3 (32)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray 4 trouble	Paper feed tray 4 breakdown		F3 (42)	△3	○	○	○	△3	△3 *10	○	△3
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	○	△3
Paper feed tray 5 trouble	Paper feed tray 5 breakdown		U6 (23, 24, 29) UE (10, 11, 12, 13, 14, 15, 16, 17)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray 6 trouble	Paper feed tray 6 breakdown		U6 (33, 34, 39) UE (20, 21, 22, 23, 24, 25, 26, 27)	△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray other troubles	Paper feed tray other breakdown		U6 (20, 21, 22, 51, 54, 80, 81, 82, 83, 84)	△11	○	○	○	△11	△11 *10	○	△11
Staple trouble	Staple breakdown		F1 (01, 08, 09, 10)	△4	△4	△4	△4	△4	△4 *10	△4	△4
Saddle stitch section trouble	Saddle stitch section breakdown		F1 (31, 44, 45, 46 47)	△4	△4	△4	△4	△4	△4 *10	△4	△4
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, 70, 71, 72, 73, 74, 75, 76, 77, 80, 81, 82, 83, 84, 86) F1 (00, 11, 13, 15, 23, 33, 34, 35, 55, 60, 86, 89, 90, 96, 97, 98, 99)	△4	△4	△4	△4	△4	△4 *10	△4	△4
Insertor trouble	Insertor breakdown (except for communication trouble)		F1 (64, 65, 66, 67)	△3	○	○	○	△3	△3 *10	○	△3
Other troubles	Other troubles		EE (EC, EL, EU)	○	○	○	○	○	○	○	○
Process control trouble	Process control breakdown (PCU detection)		F2 (33, 39, 47, 58, 59, 78)	○ *12	○	○	○	○	○	○	○

Trouble content		Judgment block	Trouble code	Operatable mode							
				Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
Operation disable trouble	Connection trouble (SCU detection)	SCU	A0 (22)	×	×	×	×	×	×	×	×
Color system trouble (SCU detection)	SCU color system breakdown (SCU detection)		UC (02)	△9	△9	△9	△9	○	○	△9	○
Color system trouble (DSPF detection)	SCU color system breakdown (DSPF detection)		UC (12)	△8	△8	△8	△8	○	○	△8	○
Anti-copy trouble	Anti-copy system		UC (20)	×	×	×	×	○	○	×	○
Anti-copy trouble (DSPF detection)	Anti-copy system (DSPF detection)		UC (30)	△7	△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)	×	×	×	×	○	○	×	○
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	○	○	△6	○
SPF back surface trouble	General troubles in the SPF back surface scanning section		E6 (10, 11, 14)	△7	△7	△7	△7	○	○	△7	○

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	FAX Send	FAX print
Error history		PCU	L4 (75, 76, 77, 78, 79)	○	○	○	○	○	○	○	○
		MFP	U2 (05)	○	○	○	○	○	○	○	○

○: Operation enabled ×: Operation disabled

△1: The operation is enabled in a line other than the trouble line.

△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.

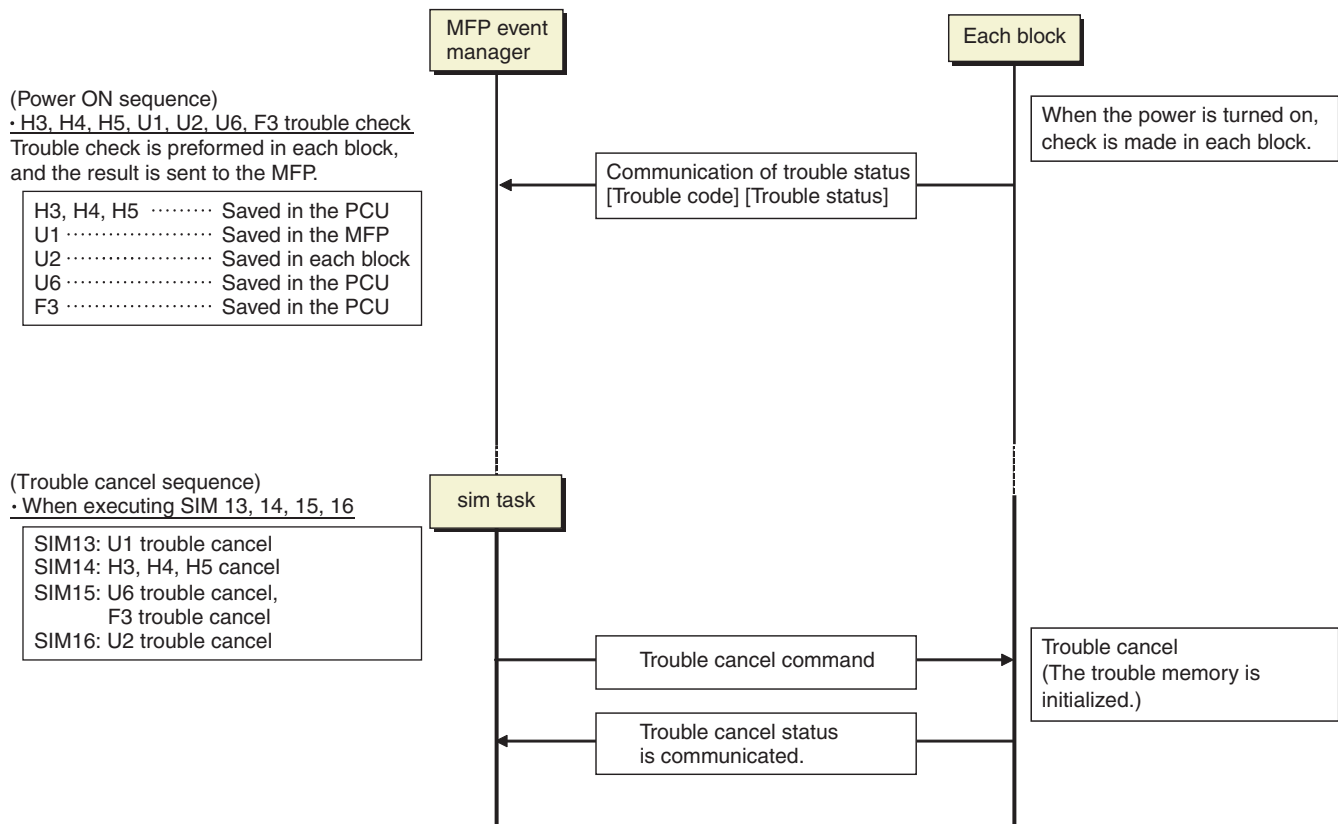
*12: Trouble display message is displayed in 2 lines. (Example: Ready to copy. F2 trouble)

△15: When in U2-22, trouble notification cannot be made. When in U2-23, if either of the FAX soft SW or the FAST data cannot be restored, the data are initialized, disabling trouble notification.

△17: Job execution enable only in a format other than high compression PDF.

△19: When the color mode is set to disable in the "Color mode disable setting" of the system setting, the operation is enabled in the black and white mode.

(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	50	HDD user authentication data check sum error
		30	MFPC PWB and PCU PWB manufacturing No. data inconsistency
	A0	15	Incompatible DSK BOOT and program firmware
		20	Conflict firmware and EEPROM data version (MFP)
Last (High priority)	U2	11	MFPC PWB EEPROM counter check sum error
		00	MFP EEPROM read/write error
	E7	48	Scanner expansion PWB (ACRE) ASIC memory error
		47	Combination error between MFP and ACRE firmware (ACRE ASIC)
		42	Image data trouble (Scanner expansion PWB (ACRE) ASIC)
	A0	04	Scanner expansion PWB (ACU) (ACRE) ROM error
	U1	01	Battery trouble
	E7	60	Combination error between PWB and firmware (MFPC PWB detection)

F. Error code list

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	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			○		
	10	MFPC PWB ROM error	MFP			○		
	15	Stored DSK data conflict	MFP			○		
	17	Inconsistency between the UI data and the CPU firmware version	MFP			○		
	18	Firmware mismatch error (ASIC-MAIN)	MFP			○		
	19	MFPC starting (synchronization) error	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			○		
	40	High Voltage PWB Trouble	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			○		
	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			○		
	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection error	PCU			○		
	21	LSU laser deterioration trouble	PCU			○		
	24	LSU LD driver trouble	PCU			○		
	28	LSU - PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			○		
	42	Image data decode error (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			○		
	80	MFP - SCU PWB communication error	MFP			○		
	90	MFP - PCU PWB communication error	MFP			○		
	91	FAX reception image data 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			○		
	96	MFPC PWB DIMM memory check error	MFP			○		
	A0	LSU EEPROM/LD driver read/write error (K)	PCU			○		
	A7	SSD trouble	ICU			○		
	C0	TPM PWB data access error	ICU			○		
	C1	Security check error	ICU			○		
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			○		

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
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		○			
	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		○			

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F1	00	Finisher - PCU PWB communication error	PCU		○			
	01	Jogger motor trouble	PCU		○			
	08	Stapler shift trouble (FSM)	PCU		○			
	09	Staple diagonal motor trouble	PCU		○			
	10	Staple operation trouble (FFSM)	PCU		○			
	11	Finisher bundle exit motor trouble	PCU		○			
	13	Paper exit guide plate open/close motor trouble	PCU		○			
	15	Finisher paper exit tray lift operation trouble (FTLM)	PCU		○			
	23	Bundle branch open/close motor trouble	PCU		○			
	31	Folding plate motor trouble	PCU		○			
	33	Punch unit shift operation trouble (FPSM)	PCU		○			
	34	Punch operation trouble (FPNM)	PCU		○			
	35	Horizontal registration detection motor trouble	PCU		○			
	44	Staple motor 3 (center binding rear) trouble	PCU		○			
	45	Staple motor 2 (center binding front) trouble	PCU		○			
	46	Rear edge fence motor trouble	PCU		○			
	47	Drive collar oscillation motor trouble	PCU		○			
	50	Main unit - Finisher combination error	PCU		○			
	55	After-process unit ROM error	PCU		○			
	60	Communication trouble between peripheral devices (Inserter detection)	PCU		○			
	64	Inserter Unit No. 1 pickup motor trouble (PIKUP1_M)	PCU		○			
	65	Inserter Unit No. 2 pickup motor trouble (PIKUP2_M)	PCU		○			
	66	Inserter Unit No. 1 lift motor trouble (TRYLFT1M)	PCU		○			
	67	Inserter Unit No. 2 lift motor trouble (TRYLFT2M)	PCU		○			
	86	Return collar oscillation motor trouble	PCU		○			
	89	Shift 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/humidity sensor 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	Paper feed tray 3 lift operation trouble	PCU			○		
	42	Paper feed tray 4 lift operation trouble	PCU			○		
F6	00	MFPC PWB - FAX communication trouble	MFP				○	
	01	FAX control PWB EEPROM read/write error	FAX				○	
	02	FAX power supply trouble	FAX				○	
	04	FAX MODEM operation trouble	FAX				○	
	21	Improper combination of TEL/LIU PWB and FAX soft switch	FAX				○	
	30	FAX 1-chip microprocessor access error (FAX detection)	FAX				○	
	97	Incompatibility between FAX control PWB and the main machine	MFP				○	
	98	Incompatibility between the FAX control PWB destination and the main machine destination	MFP				○	
H2	00	Thermistor open trouble (TH_UM_AD2)	PCU	○				
	02	Non-contact thermistor upper sub detection thermistor open	PCU			○		
	03	Non-contact thermistor upper main compensation thermistor open	PCU			○		
H3	00	Fuser Unit Upper main thermistor high temperature trouble	PCU	○				
	02	Fuser unit Upper sub thermistor high temperature trouble	PCU	○				
H4	00	Fuser Unit Upper main thermistor low temperature trouble	PCU	○				
	02	Fuser Unit Upper sub thermistor low temperature trouble	PCU	○				
	30	Fuser Unit Thermistor circuit trouble (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	○				

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
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	Developing motor trouble	PCU			○		
	14	Toner cartridge motor lock trouble	PCU			○		
	17	Drum motor lock trouble (K)	PCU			○		
	27	Decurler motor lock trouble	PCU			○		
	30	Controller fan motor trouble	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 exhaust fan motor 1 trouble	PCU			○		
	41	Ozone exhaust 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 section paper cooling fan 1 trouble	PCU			○		
	49	ADU section 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			○		
	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/SCN 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			○		
	70	OCR dictionary 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			○		
	30	Document feed unit tray lift up trouble	SCU			○		
	31	Document feed unit tray lift down trouble	SCU			○		

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
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	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		○			
	51	LCC - Main unit combination trouble	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		○			
	80	Intermediate unit transport motor trouble	PCU		○			
	81	LCT power unit cooling fan motor trouble	PCU		○			
	82	LCT EEPROM trouble	PCU		○			
	83	LCT room temperature thermistor breakdown	PCU		○			
	84	LCT room humidity thermistor breakdown	PCU		○			
U7	50	MFPC PWB - Vendor machine communication error	MFP			○		
	51	Vendor machine error	MFP			○		
U9	01	Touch panel trouble	MFP			○		
UC	02	SCAN ASIC (IPD function) trouble	SCU			○		
	12	SCAN ASIC (IPD function) trouble [DSPF detection]	SCU			○		
	20	SCAN ASIC (DOCC function) trouble	SCU			○		
	30	SCAN 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		○			
	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		○			

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.

A0-10 MFPC PWB ROM error

Trouble content	
Section	MFP
Cause	CTL and the image ROM firmware combination error.
Check & Remedy	Check the firmware combination of CTL and the image ROM.

A0-15 Incompatible DSK BOOT and program firmware

Trouble content	
Details	Stored DSK data conflict ASIC-MAIN version combination error Error due to the conflict of internal management status in DSK (caused by TPM) Error due to the conflict of internal management status in DSK (caused by EEPROM) Error due to the conflict of internal management status in DSK Error of unsaved encryption key
Cause	ASIC-MAIN version combination error Abnormal management status of DSK in TPM Abnormal management status of DSK in EEPROM Conflict of management status of DSK in EEPROM and TPM PWB Encryption key is unsaved.
Check & Remedy	Check the combination of ASIC-MAIN version. Check whether TPM PWB is installed properly. Check whether EEPROM device is installed properly.

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.

A0-19 MFPC starting (synchronization) error

Trouble content	
Details	MFPC starting (synchronization) error
Cause	Starting error caused by defective MFPC PWB Defect of FLASH ROM, ASIC, memory and PCIe
Check & Remedy	<ul style="list-style-type: none">Insert / extract mSATA SSDInsert / extract ASIC1FLASH ROM (ASIC-PG1)Insert / extract ASIC2FLASH ROM (ASIC-PG2)Check and exchange the following parts individually. (If not improving, replace parts will be returned to old one each time)Replace mSATA SSDReplace ASIC1FLASH ROM (ASIC-PG1)Replace ASIC2FLASH ROM (ASIC-PG2)Replace MFPC PWBReplace all mSATA SSD, FLASH ROM (ASIC1), FLASH ROM (ASIC2), MFPC PWB.

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.

C1-40 High Voltage PWB Trouble

Trouble content	
Section	PCU
Cause	1) Input harness disconnection in the high voltage PWB. 2) Harness (MHV-T,THV-T) pin disconnection (high Voltage PWB input connector CN1-6pin,CN2-3pin) 3) 24V fuse meltdown in the high voltage PWB. 4) High voltage error circuit (MHV-T,THV-T) breakage in the high voltage PWB.
Check & Remedy	1) Check the harness and the connector (high voltage PWB Input connector CN1,CN2) 2) Check or replace the harness. (High voltage PWB input connector CN1-6pin,CN2-3pin) 3)4) Replace the High voltage 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.

E7-03 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.

E7-10 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 error

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.

E7-42 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 of firmware error between the SCN-MFP and the ACRE ASIC

Trouble detection	SCN-MFP
Cause	Written ACRE board of the firmware that a model did not support MFP was connected.
Check & Remedy	Check the kind and the version of the firmware. Use SIM49-1 or SIM49-10 to execute firmware version-up

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.

E7-80 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 mSATA SSD trouble 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 mSATA SSD. 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.

E7-96 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-A7 mSATA SSD trouble

Trouble detection	PCU
Cause	mSATA SSD trouble. Improper connection of mSATA SSD. SCN-MFP PWB trouble. Data error of the file system management part.
Check & Remedy	Remove and insert the mSATA SSD. Replace the mSATA SSD. Replace the SCN-MFP PWB.

E7-C0 TPM PWB access error

Trouble content	TPM access error
Section	MFP
Cause	The wear protection function of the TPM substrate. TPM PWB trouble. connection trouble, no connection. TPM PWB used in other MFP was loaded.
Check & Remedy	Turn OFF/ON the power. Check the condition of TPM PWB connection.

E7-C1 Security check error

Trouble content	Abnormality is detected by own security function test when starting.
Section	MFP
Cause	TPM PWB trouble. Random number generation program error. Security function and Setting error.
Check & Remedy	Turn OFF/ON the power. Check the condition of TPM PWB connection.

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.

F1-01 Jogger motor trouble

Trouble content	Jogger shift motor abnormality in the finisher staple compiler
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-3 to check the operation of the jogger motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-08 Stapler shift trouble (FSM)

Trouble content	
Section	PCU
Cause	Stapler shift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the stapler shift motor. Use SIM3-2 to check the operation of the home position sensor. Replace the stapler shift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

F1-09 Staple diagonal motor trouble

Trouble content	Finisher stapler unit diagonal shift motor abnormality
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble
Check & Remedy	Use Sim. 3-3 to check the operation of the stapler diagonal motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-10 Staple operation trouble (FFSM)

Trouble content	
Section	PCU
Cause	Staple motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. Use SIM3-2 to check the operation of the home position sensor. Replace the staple motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

F1-11 Finisher bundle exit motor trouble

Trouble content	Abnormality of the discharge motor for staple bundle discharge of the finisher
Section	PCU
Cause	Motor lock, motor harness short/open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble
Check & Remedy	Use Sim. 3-3 to check the operation of the discharge motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-13 Paper exit guide plate open/close motor trouble

Trouble content	Abnormality of the paper exit port open / close motor in the shift tray paper exit section of the finisher
Section	PCU
Cause	Motor lock, motor harness short / open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-3 to check the operation of the paper exit port open/close motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-15 Finisher paper exit tray lift operation trouble (FTLM)

Trouble content	Lift motor trouble.
Section	PCU
Cause	Paper exit tray lift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit tray lift motor. Use SIM3-2 to check the operation of the home position sensor. Replace the finisher control PWB. Replace the paper exit tray lift motor. Replace the home position sensor.

F1-23 Bundle branch open/close motor trouble

Trouble content	
Section	PCU
Cause	Motor lock trouble. Control PWB trouble. Home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the bundle paper exit motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB.

F1-31 Finisher saddle motor trouble (Saddle stitch finisher) (FSFOM)

Trouble content	
Section	PCU
Cause	Saddle paper folding motor trouble. Saddle paper folding mechanism trouble. Finisher control PWB trouble. Folding plate home position sensor trouble. Saddle paper folding motor rotation sensor trouble. Harness/connector connection trouble. PCU PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle motor. Check the saddle paper folding mechanism. Check the finisher control PWB, and replace if necessary. Check the folding plate home position sensor, and replace if necessary. Check the saddle paper folding motor rotation sensor, and replace if necessary. Check connection of the harness/connector, and replace if necessary. Check the PCU PWB, and replace if necessary.

F1-33 Punch unit shift operation trouble (FPSM)

Trouble content	
Section	PCU
Cause	Punch shift motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the punch shifting. Use SIM3-2 to check the operation of the home position sensor. Replace the punch shift motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

F1-34 Punch operation trouble (FPNM)

Trouble content	
Section	PCU
Cause	Punch motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-2 to check the operation of the home position sensor. Use SIM3-3 to check the operation of the punch. Replace the punch motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

F1-35 Horizontal registration detection motor trouble

Trouble content	
Section	PCU
Cause	Abnormality of the paper sensor shift motor for punch positioning of the punch unit in the finisher
Check & Remedy	Motor lock, motor harness short / open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble. Use Sim. 3-3 to check the operation of the horizontal resist detection motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-44 Staple motor 3 (center binding rear) trouble

Trouble content	
Section	PCU
Cause	Saddle staple motor R trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor R. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

F1-45 Staple motor 2 (center binding front) trouble

Trouble content	
Section	PCU
Cause	Abnormality of the staple unit drive motor in the saddle section. Saddle staple motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

F1-46 Rear edge fence motor trouble

Trouble content	
Section	PCU
Cause	Saddle motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

F1-47 Drive collar oscillation motor trouble

Trouble content	Drive collar oscillation motor abnormality in the finisher staple compiler.
Section	PCU
Cause	Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-3 and Sim. 3-2 to check the operation of the jogger motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-50 Main unit - Finisher combination error

Trouble content	
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 Inserter Unit No. 1 pickup motor trouble (PIKUP1_M)

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 Inserter Unit No. 2 pickup motor trouble (PIKUP2_M)

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 Inserter Unit No. 1 lift motor trouble (TRYLFT1M)

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 Inserter Unit No. 2 lift motor trouble (TRYLFT2M)

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.

F1-86 Return collar oscillation motor trouble

Trouble content	Abnormality of the return driving motor in the compiler of the finisher.
Section	PCU
Cause	Motor lock, motor harness short/open trouble, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-3 to check the operation of the return collar oscillation motor. Check connection from the control PWB to the motor. Replace the control PWB and the sensor part.

F1-89 Shift motor trouble

Trouble content	Abnormality of the shift unit driving motor
Section	PCU
Cause	Motor lock, motor harness short/open trouble, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.
Check & Remedy	Use Sim. 3-3 to check the operation of the shift 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/humidity sensor 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 Paper feed tray 3 lift operation 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 Paper feed tray 4 lift operation 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.

F6-02 FAX power supply trouble

Trouble detection	PCU
Cause	DC power supply trouble at the main machine. SCN-MFP PWB trouble (Fuse break trouble). 24 volt detection circuit Trouble at FAX PWB. Harness trouble between the FAN PWB and SCN-MFP PWB.
Check & Remedy	Check the 24 volt supply circuit between the machine and the FAX PWB. Replace the DC power supply unit at the machine. Replace the SCN-MFP PWB. Replace the FAX PWB. REplace the harness between the machine and the FAX PWB.

F6-04 FAX MODEM operation trouble

Trouble content	FAX control PWB MODEM chip operation trouble	
Section	FAX	
Case 1	Cause	FAX MODEM chip operation trouble.
	Check and remedy	Replace the FAX control PWB.
Case 2	Cause	The FAX MODEM chip cannot be accessed.
	Check and Remedy	Replace the FAX control PWB.

F6-21 Improper combination of TEL/LIU PWB and FAX soft switch

Trouble content	Incompatibility between the TEL/LIU PWB and the FAX control PWB information (soft switch)	
Section	FAX	
Case 1	Cause	The destination of the TEL/LIU PWB installed is improper.
	Check and Remedy	Check the destination of the TEL/LIU PWB.
Case 2	Cause	TEL/LIU PWB trouble.
	Check and Remedy	Replace the TEL/LIU PWB.

F6-30 FAX 1-chip microprocessor access error (FAX detection)

Trouble content		FAX 1-chip microprocessor access error (Read and write)
Section		FAX
Case 1	Cause	Program writing trouble to the 1-chip microprocessor, or no program data written.
	Check and Remedy	Use SIM66-42 to rewrite the 1-chip microprocessor program.
Case 2	Cause	FAX 1-chip microprocessor circuit trouble.
	Check and Remedy	Replace the FAX control PWB.

F6-97 Incompatibility between FAX control PWB and the main machine

Trouble content		Incompatibility between FAX control PWB and the main machine
Section		MFP
Case 1	Cause	The FAX control PWB installed is improper. FAX control PWB trouble.
	Check and Remedy	Install a proper FAX control PWB. Replace the FAX control PWB.

F6-98 Incompatibility between the FAX control PWB destination and the main machine destination

Trouble content		Incompatibility between the FAX control PWB destination and the main machine destination
Section		MFP
Case 1	Cause	Incompatibility between the destination information written into the FAX control PWB EEPROM and that in the main machine (set with SIM26-6)
	Check and Remedy	1) Check the destination of the FAX control PWB. 2) Check the destination of the machine. (SIM26-6)

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 Non-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 Unit Upper main thermistor high temperature trouble

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 unit Upper sub thermistor high temperature trouble

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 Unit Upper main thermistor low temperature trouble

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 Unit Upper sub thermistor low temperature trouble

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 Fusing Unit Thermistor circuit trouble (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 Developing motor trouble

Trouble content	The motor lock signal is detected during rotation of the developing motor
Section	PCU
Cause	Developing motor trouble. Harness connection trouble between the PCU PWB and the developing motor. Control circuit trouble.
Check & Remedy	Check the developing motor operation with Sim. 25-1. Check connection of the connector and the harness between the PCU PWB and the 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.

L4-30 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 exhaust 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 exhaust 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 section 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 section 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.

L4-55 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/SCN mother board

Trouble content	
Section	MFP
Cause	SCN mother board PWB - MFPC PWB connection trouble. MFPC PWB trouble. SCN mother board trouble.
Check & Remedy	Check connection between the SCN mother board PWB and the MFPC PWB. Check the ground of the main unit. Replace the MFPC PWB. Replace the SCN 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 mSATA SSD system storage data area error

Trouble content	
Section	MFP
Cause	A file error occurs in the mSATA SSD system storage data partition. mSATA SSD trouble MFPC PWB trouble
Check & Remedy	Turn OFF/ON the power, and the backup data in the HDD are written into the mSATA SSD and the machine is automatically booted. Check the MFPC PWB, and replace if necessary. Check the mSATA SSD, 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 mSATA SSD. 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 mSATA SSD and the HDD cannot be found or is broken. Both of the mSATA SSD set data and the HDD system saved data area are broken. HDD trouble MFPC PWB trouble mSATA SSD trouble
Check & Remedy	Check the HDD, and replace if necessary. Check the MFPC PWB, and replace if necessary. Check the mSATA SSD, and replace if necessary. When replacing the HDD, the MFPC PWB, and the mSATA SSD, refer to the chapter of "Necessary works and procedures of HDD, MFPC PWB, and mSATA SSD 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.)

U2-70 OCR dictionary check error

Trouble detection	SCN-MFP
Cause	OCR dictionary error
Check & Remedy	Use Sim49-6 to install the OCR dictionary data

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)

U6-51 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.

U6-54 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.

U6-80 Intermediate unit transport motor trouble

Trouble content	Intermediate unit 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 Intermediate unit transport motor. Replace the motor Replace the LCC / A3 2-stage LCT control PWB.

U6-81 LCT power unit cooling fan motor trouble

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 LCT EEPROM trouble

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 LCT Room temperature thermistor breakdown

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 LCT room humidity thermistor breakdown

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 detection	MFPC
Cause	MFPC PWB trouble
Check & Remedy	Check the signal between the MFPC PWB and the touch panel IC. Replace the MFPC PWB.

UC-02 SCAN ASIC (IPD function) trouble

Trouble content	SCAN ASIC (IPD function) abnormality
Section	SCU
Cause	SCU PWB trouble. (SCAN ASIC trouble)
Check & Remedy	Replace the SCU PWB.

UC-12 SCAN ASIC (IPD function) trouble [DSPF detection]

Trouble content	SCAN ASIC (IPD function) abnormality
Section	SCU
Cause	DSPF PWB trouble (SCAN ASIC trouble).
Check & Remedy	Replace the DSPF PWB.

UC-20 SCAN ASIC (DOCC function) trouble

Trouble content	SCAN ASIC (DOCC function) abnormality
Section	SCU
Cause	SCU PWB trouble. (SCAN ASIC trouble)
Check & Remedy	Replace the SCU PWB.

UC-30 SCAN ASIC (DOCC function) trouble [DSPF detection]

Trouble content	SCAN ASIC (DOCC function) abnormality
Section	SCU
Cause	DSPF PWB trouble (SCAN 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-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.

(1) Descriptions on E7-91 - 94 errors

Two-digit numbers with double parentheses are added to E7-91 - 94 error codes recorded in SIM22-6 indicate the detailed contents of the errors.

The number in each digit has its own meaning.

(Example) E7-91(**)

The upper digit of the added code indicates the job kind at the occurrence of the error.

Error code	The upper digit of the added code	Image type	Job kind at the occurrence of the error
E7-91	0*	Other	<ul style="list-style-type: none"> FAX (Internet FAX) reception print (Other than long size images)
	1*	JPEG	
	2*	JBIG	
	3*	Mxx1ch	
	4*	Mxx4ch	
	5*	Other	<ul style="list-style-type: none"> FAX (Internet FAX) reception print (Long size images)
	6*	JPEG	
	7*	JBIG	
	8*	Mxx1ch	
	9*	Mxx4ch	
	A* - F*	Not Used	
E7-92	0*	Other	<ul style="list-style-type: none"> OC copy (in Non ERDH)
	1*	JPEG	
	2*	JBIG	
	3*	Mxx1ch	
	4*	Mxx4ch	
	5* - F*	Not Used	
E7-93	0*	Other	<ul style="list-style-type: none"> Copy print (in ERDH) Copy composing system function (Custom Stamp, Water mark)
	1*	JPEG	
	2*	JBIG	
	3*	Mxx1ch	
	4*	Mxx4ch	
	5*	Other	<ul style="list-style-type: none"> Image send Document filing Preview display
	6*	JPEG	
	7*	JBIG	
	8*	Mxx1ch	
	9*	Mxx4ch	
	A*	Other	<ul style="list-style-type: none"> GDI/PCL printer print Copy composing system function (Custom Stamp, Water mark)
	B*	JPEG	
	C*	JBIG	
	D*	Mxx1ch	
	E*	Mxx4ch	
	F*	Not Used	
E7-94	0*	Other	<ul style="list-style-type: none"> Backup restore (Filing data import)
	1*	JPEG	
	2*	JBIG	
	3*	Mxx1ch	
	4*	Mxx4ch	
	5* - F*	Not Used	

The lower digit of the added code indicates the kind and the content of the abnormality or the result of the automatic memory check executed when the abnormality is detected.

			Lower digit of the added code → Kind/Content of the error							
			*1	*9	*A	*B	*C	*D	*E	*F
			Memory verify NG	—	Huffman code error	Restart marker error	Improper marker error	Head decoding error detection (ASIC detection)	Head decoding error detection (CPU detection)	Other abnormal termination
The upper digit of the added code ↓ Error detection circuit	1*, 6*, B*	JPEG	●	—	○	○	○	○	—	○
	2*, 7*, C*	JBIG	●	—	—	—	○	○	—	○
	3*, 8*, D*	Mxx1ch	●	—	—	—	—	—	—	○
	4*, 9*, E*	Mxx4ch	●	—	—	—	—	—	—	○

●: Added code indicating that the memory and its peripheral must be focused for check in case of an error.

○: Added code indicating that doubtful sections are in a wider range such as the memory, PWB's, HDD, etc.

—: Added code without generating

(2) Countermeasures in case of E7-91 - 94

In case of E7-9x (11), E7-9x (21), E7-9x (31), E7-9x (41)

Cause	In case of E7-91 - 94, the DIMM memory (DRAM) is automatically read/written to perform a simplified check. If an abnormality is detected in that case, the added code becomes (*1). Therefore, there is a strong possibility that an abnormality lies around the memory.
Check and remedy	<ul style="list-style-type: none">• Check the installing state of the DIMM memory and the MFPC PWB to insure that there is no abnormality. (Disconnect and connect the DIMM memory and the MFPC PWB to check to insure that there is no error occurring again.)• Use SIM60-01 (Memory read/write check) to check to insure that no error occurs.• Replace the DIMM memory.• Replace the MFPC PWB.

NOTE: Since the automatic memory check executed when E7-91 - 94 occurs is a simplified check, it cannot detect an abnormality with absolute certainty.

If the added code is (*1), there may be a memory abnormality. Even if it is not (*1), however, it cannot be said that there is no abnormality around the memory.

Other added codes

Cause	Mostly because the data inputted to the ASIC for decoding are broken for some reasons. There is an abnormality in the process of read/write of the process data in the memory or the hard disk. A great noise unexpectedly generated may be the cause. For the cases of FAX or Internet FAX reception data, when broken data are saved, printing is performed every time when the machine is booted, generating an error repeatedly. (E7-91) (To clear the received data, execute SIM66-10.)
Check and remedy	<ul style="list-style-type: none">• Check the DIMM memory, the MFPC PWB, and the HDD to insure that there is no abnormality.• When the job at occurrence of an error is FAX (E7-91), check the installing state of the FAX control PWB and the SC CARD PWB.• Perform SIM60-01 (Memory read/write check) to insure that there is no NG.• Perform SIM62-02 and SIM62-03 (HDD read/write check) to insure that there is no NG. (It is not required, however, when the job at occurrence of an error is FAX.)• Check the installing state of the DIMM memory and the MFPC PWB to insure that there is no abnormality. (Disconnect and connect the DIMM memory and the MFPC PWB to check to insure that there is no error occurring again.)• Replace the HDD.• Replace the FAX control PWB.• Replace the DIMM memory.• Replace the MFPC PWB.• Replace the mSATA SSD.

NOTE: When there is an abnormality around the HDD, E7-03 may occur.

If error E7-91 - 94 as well as E7-03 occurs, there is a high possibility that the error can be removed by replacing the HDD and the MFPC PWB.

(3) Countermeasures against the case where nothing is displayed when the machine is booted

[Trouble content]

If nothing is displayed when the machine is booted, the error code cannot be checked and the cause is hard to identify.

One of the causes may be an abnormality in the boot program of the mSATA SSD. To check that, the following method is used.

[Check method]

Check to confirm that the LED (red) (1) under the CPU heat sink on the MFPC PWB shown in the figure below is lighted when the power is supplied.

If the LED is lighted, it is judged as an abnormality of the mSATA SSD.

[Countermeasures]

- 1) Replace the mSATA SSD with a new one. (Be sure to use a service part.)
- 2) Upgrade the firmware to the latest version.
- 3) Use SIIM66-62 to backup the FAX reception data from the HDD to a USB memory device. (If there is no FAX reception data, this procedure is not required.) (The FAX reception data are backed up in the PDF format. Supply the date to the user.)
- 4) Use SIM66-10 to clear the FAX and image send memory. (Ensure consistency between the HDD data and the image related memory.)

[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	13
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:

$$550 \text{ (K rotations)} / 1000 \text{ (K rotations)} \times 100 = 55\%$$

	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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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. (UKOG-0235FCZZ)
	2	Upper heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (UKOG-0235FCZZ)
	3	Upper heat roller insulation bush		×	▲	×	▲	×	▲	Apply grease when replacing. (UKOG-0235FCZZ)
	4	Upper heat roller gear	×	×	▲	×	▲	×	▲	Check / Apply grease when replacing. (UKOG-0235FCZZ)
	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. (UKOG-0235FCZZ)
	10	Lower heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (UKOG-0235FCZZ)
	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. (UKOG-0235FCZZ)
	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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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	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)	×	×	×	×	×	×	×	(UKOG-0307FCZZ)
	2	Gears (Grease)	×	×	×	×	×	×	×	(UKOG-0299FCZZ)
	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	100 0K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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)		☆	☆	☆	☆	☆	☆	
	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	Transport roller 1	○	○	○	○	○	○	
		7	Transport roller 2	○	○	○	○	○	○	
		8	Second resist roller	○	○	○	○	○	○	
		9	Platen roller	○	○	○	○	○	○	
		10	Transport roller 3	○	○	○	○	○	○	
		11	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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
DSPF section (8 - 77)	Scanning section	12	Lens	×	○	○	○	○	○	○	
		13	CCD	×	○	○	○	○	○	○	
		14	Mirror	×	○	○	○	○	○	○	
		15	Reflector	×	○	○	○	○	○	○	
		16	Scanner lamp	×	○	○	○	○	○	○	Air cleaning
	Paper exit section	17	Back surface scanning section glass Upper, Lower	○	○	○	○	○	○	○	
		18	Transport roller 5	○	○	○	○	○	○	○	
	Drive section	19	Paper exit roller	○	○	○	○	○	○	○	
		20	Gears (Grease)	×	×	×	×	×	×	×	(UKOG-0299FCZZ)
	Others	21	Belts		×	×	×	×	×	×	
		22	Document mat	○	○	○	○	○	○	○	
		23	Scanning section paper guide (White Mylar)	○	○	○	○	○	○	○	
		24	Discharge brush	×	×	×	×	×	×	×	
		25	Optical reflection type sensors	○	○	○	○	○	○	○	(Note 3)
		26	Optical reflection type sensors	○	○	○	○	○	○	○	
		27	Paper guides	×	○	○	○	○	○	○	

(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	PCLC-0355FCZZ	PCLC-0354FCZZ	PCLC-0355FCZZ	PCLC-0356FCZZ		PCLC-0355FCZZ	PCLC-0354FCZZ	PCLC-0354FCZZ		PCLC-0357FCZZ
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

(Note 3) Optical reflection sensor cleaning

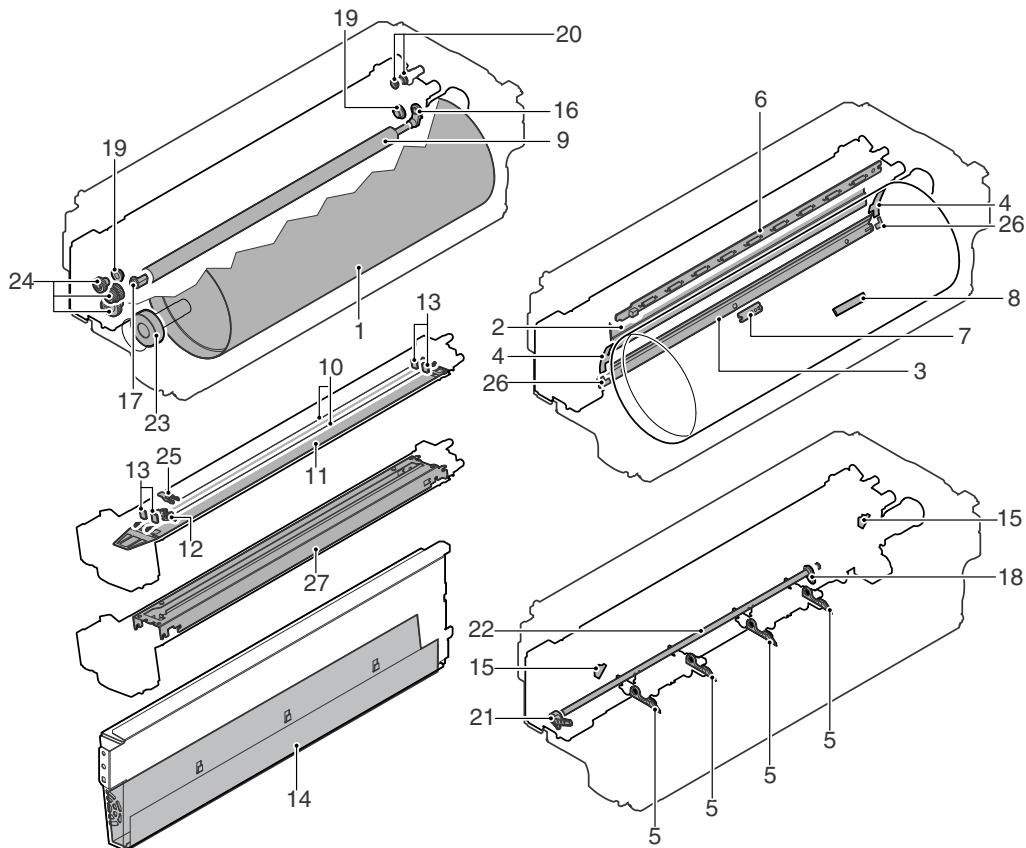
- * Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

5. Photoconductor section

A. Maintenance table

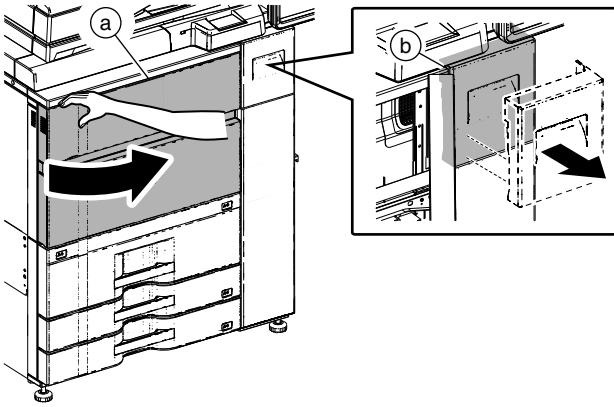
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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.

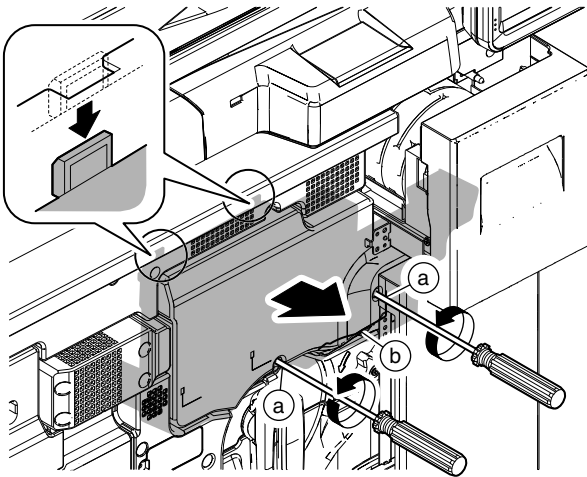


B. Details

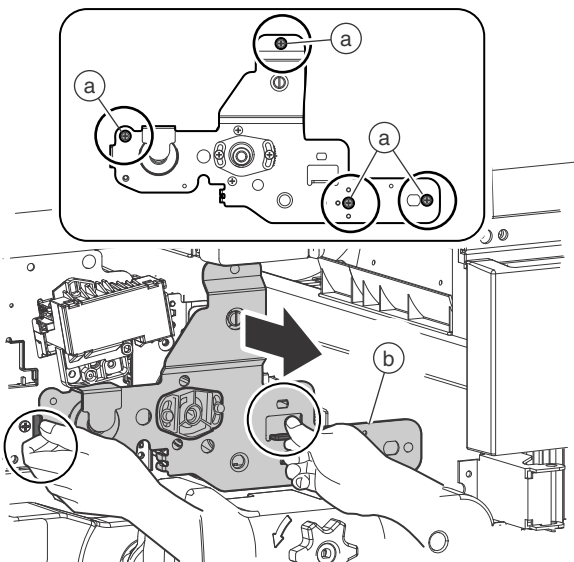
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



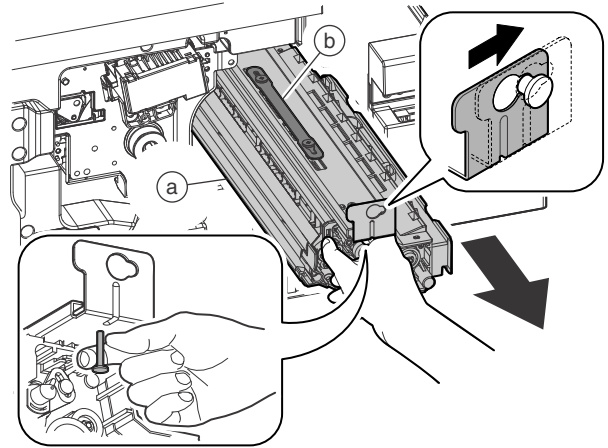
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

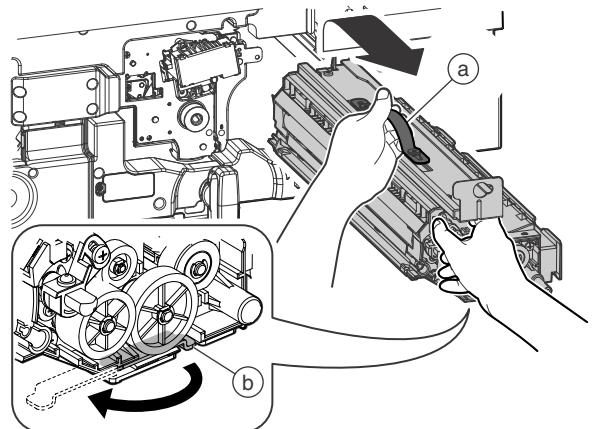


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

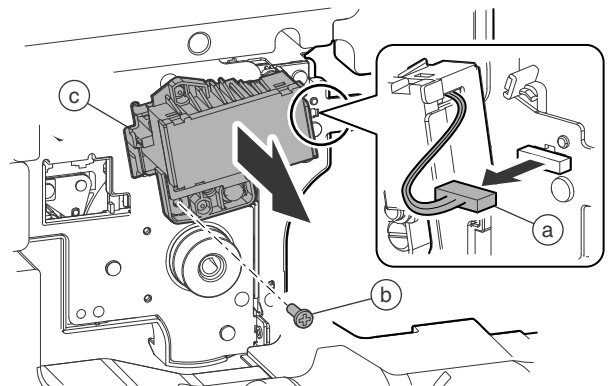


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

* When placing the developing unit, use the stand (b) and place the unit on it.

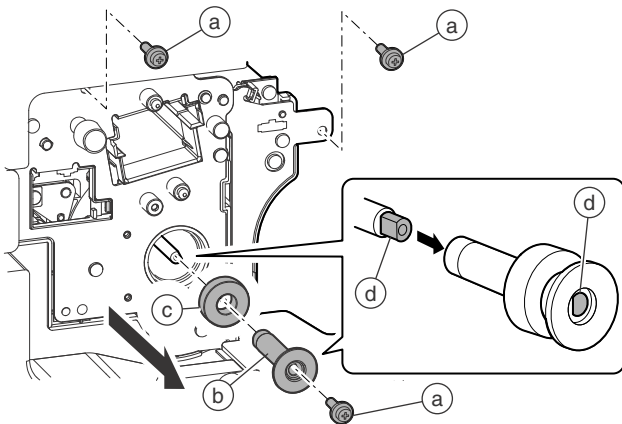


- 6) Disconnect the connector (a) and the blue screw (b), and pull out the Main charger unit (c).

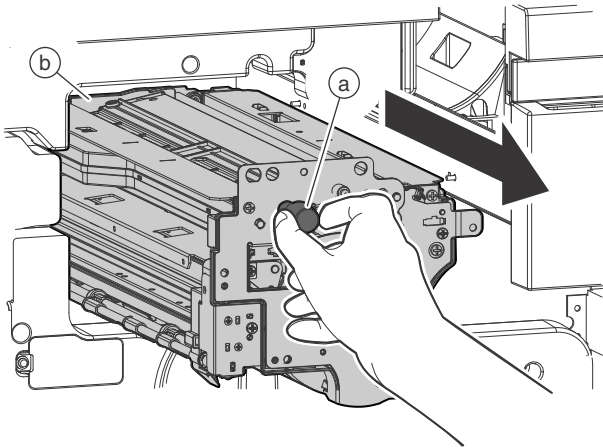


- 7) Remove the blue screw (a), and remove the bearing (b) and bearing (c).

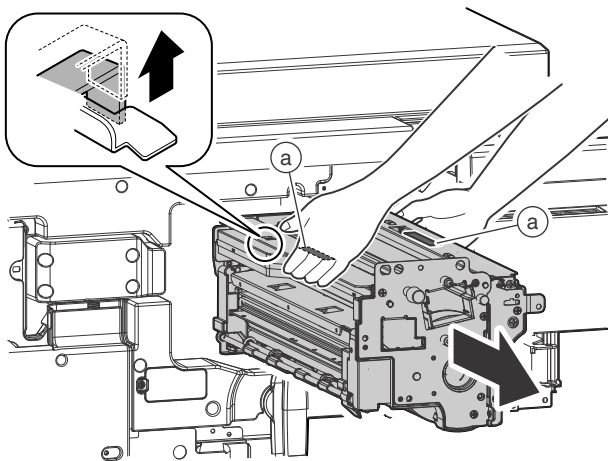
* When installing the bearing, fit the D-cut direction and engage it properly.



- 8) Hold the handle (a), and pull out the process unit (b) until it stops.

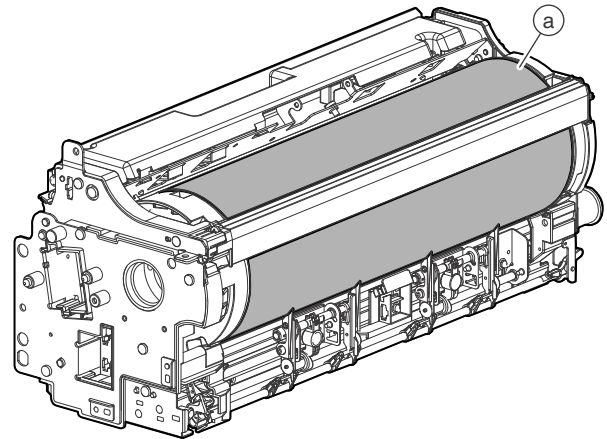


- 9) Hold the green label section (a) of the process unit frame, and lift it up and remove it completely.

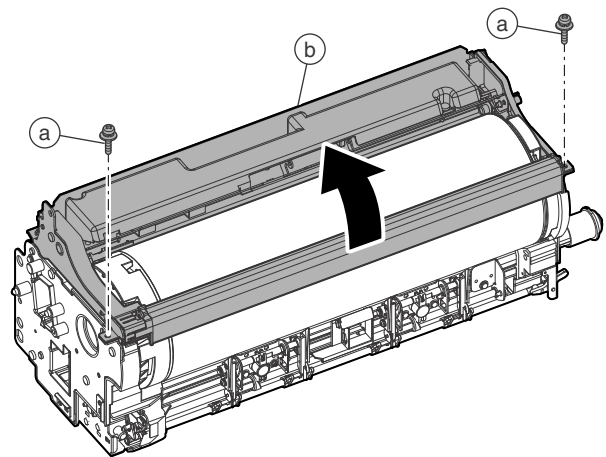


- 10) Check the OPC drum (a) at every 500K.

* Place the cleaner unit on the lower side.

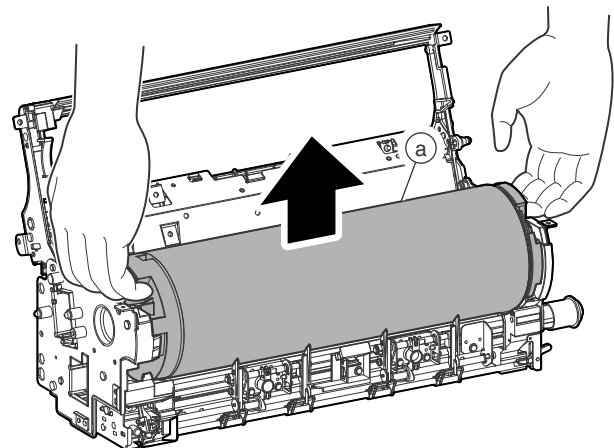


- 11) Remove the blue screw (a), and open the frame (b).

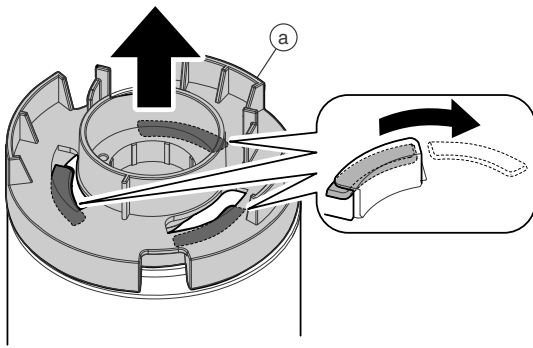


- 12) Remove the OPC drum unit (a).

* Use a great care not to damage the OPC drum.



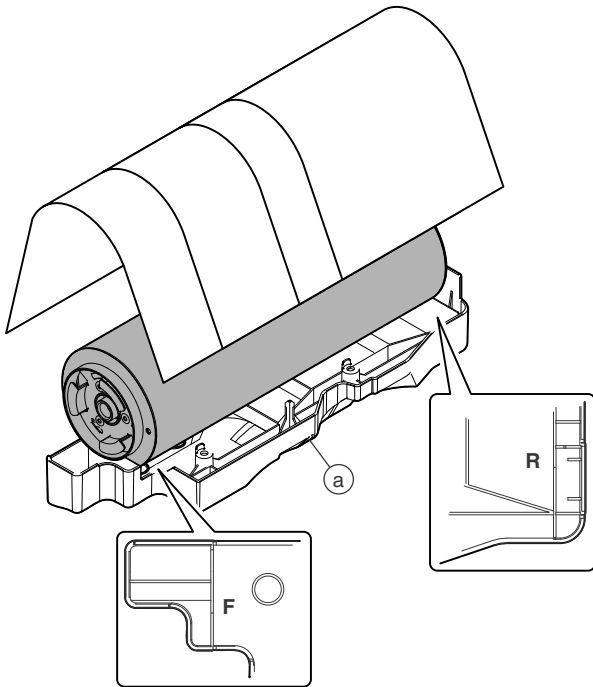
13) Rotate the bearing (a) and remove it.



* 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).

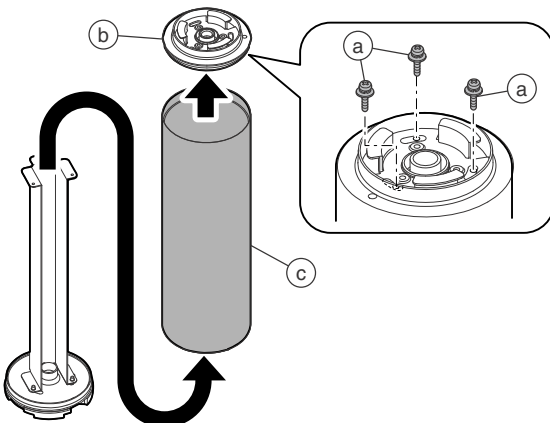
Cover the OPC drum unit with paper to prevent exposure.



14) Remove the blue screw (a), and remove the flange (b).

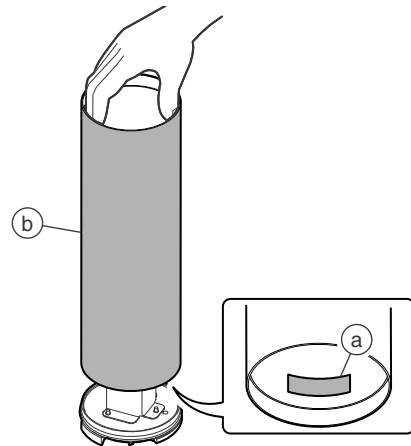
Replace the OPC drum (c) at every 1000K.

* 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.



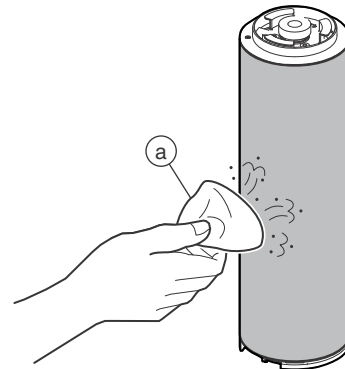
* After replacement, apply yellow toner (CKOG-0345DS51) (a) to the whole surface of the OPC drum

* After installing the OPC drum to the unit, rotate it one revolution in the normal direction.

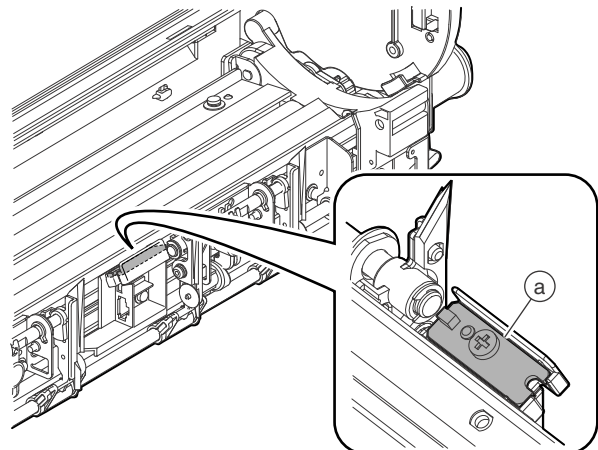
* Never apply powder other than yellow toner.

* 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.

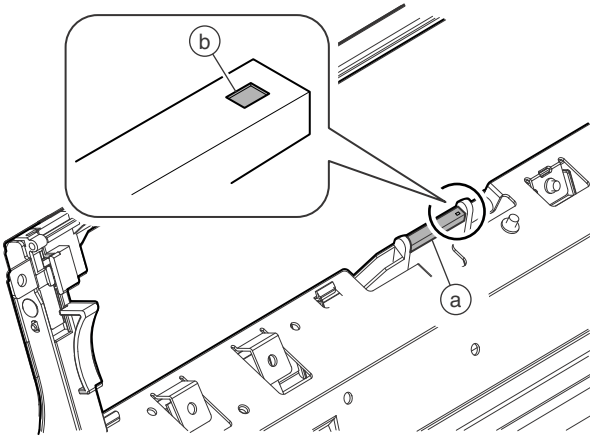


15) Clean the procon sensor (a) every 500K.



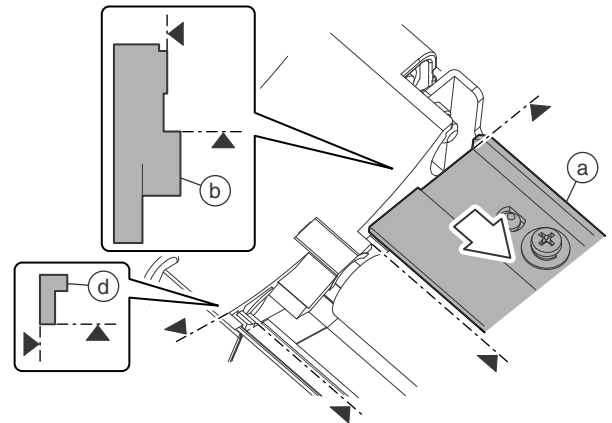
16) Clean the front surface potential sensor (a) at every 500K.

- * When cleaning, be careful not to drop a foreign material into the small window (b) of the surface potential sensor.



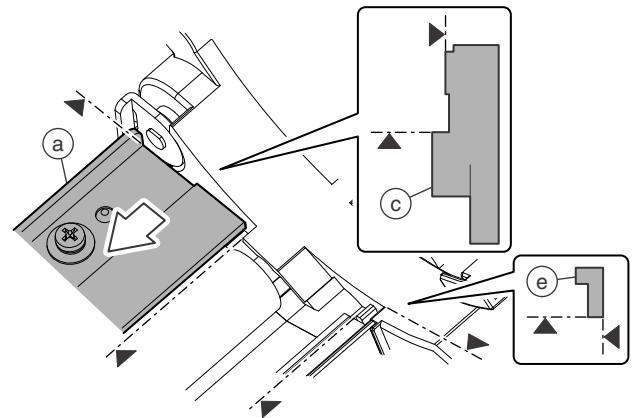
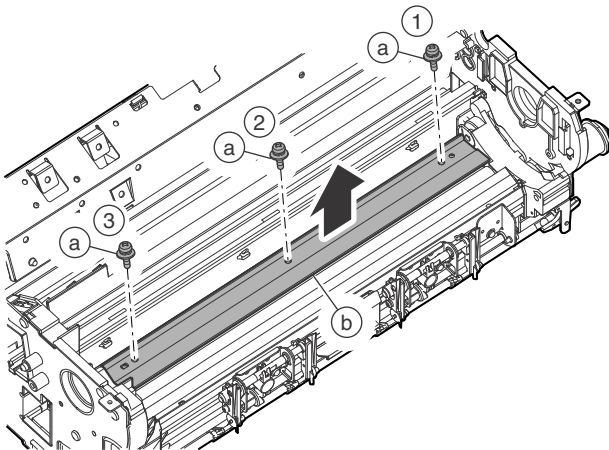
- * Slide the cleaning blade (a) in the arrow direction, and attach the side seal F (b), the side seal R (c), the sub blade seal F (d), and the sub blade seal R (e) according to the references.

- * When attaching the seal, check to confirm that the side seal is not covered with the cleaning blade.



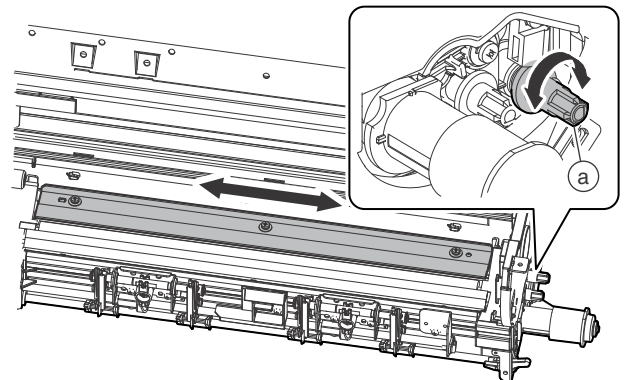
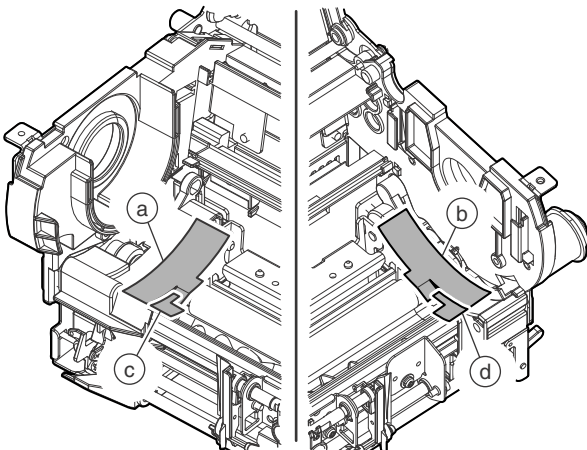
17) Remove the blue screw (a), and replace the cleaning blade (b).

- * Do not touch the urethane edge of the cleaning blade.
- * Tighten the blue screw (a) in the sequence of (1), (2), and (3).

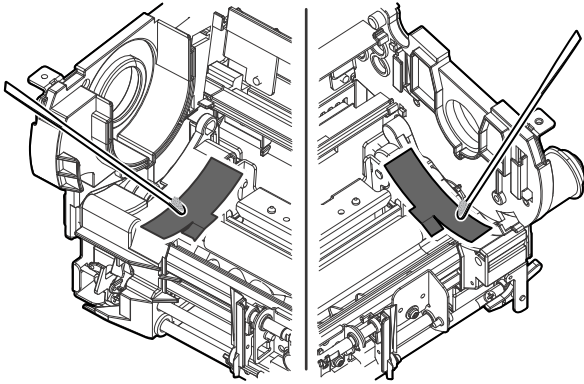


- * The cleaning blade can be shifted to the front side or the rear side by turning the knob (a) on the front side clockwise or counterclockwise.

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).

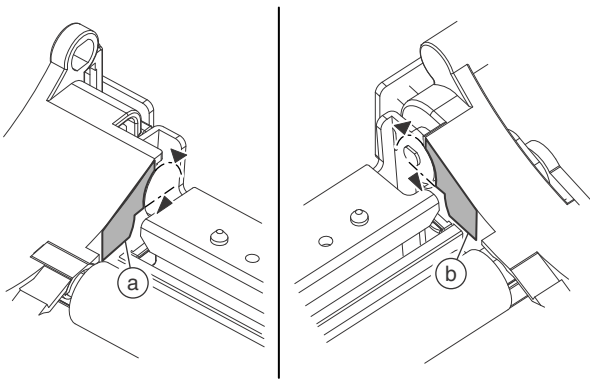


- * After attachment, apply side seal powder (UKOG-0309FC ZZ) to the whole surfaces of the side seal F and side seal R evenly by using Patel (UKOG-0311FCZZ) .



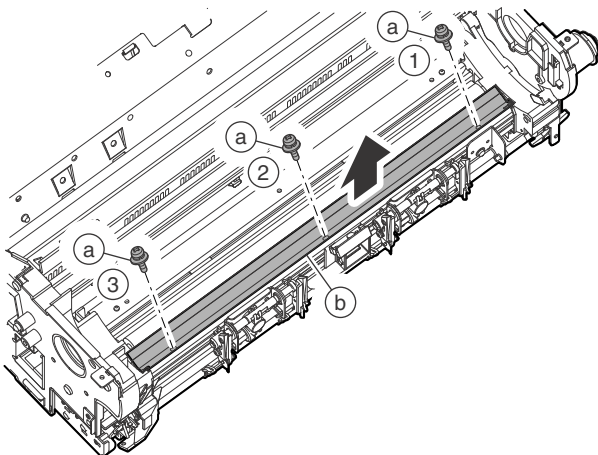
- 19) Check the blade side seal F (a) and the blade side seal R (b) at every 500K, and replace them at every 300K.

- * When attaching them, attach according to the reference.

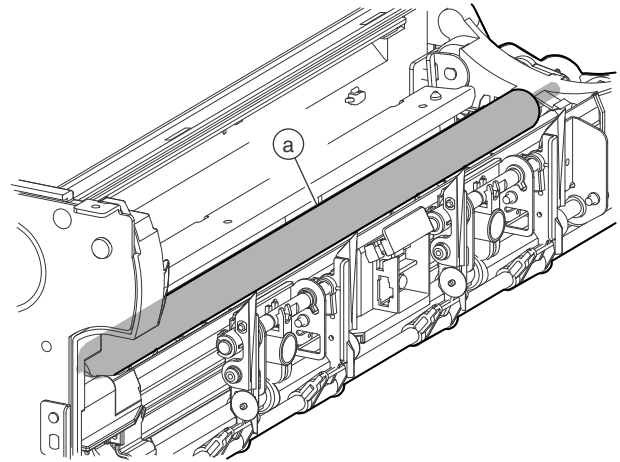


- 20) Remove the blue screw (a), and replace the sub blade (b).

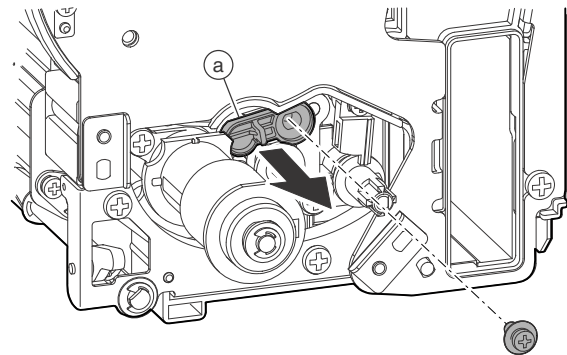
- * Tighten the blue screw (a) in the sequence of (1), (2), and (3).



- 21) Clean the cleaning brush roller (a) at every 500K.

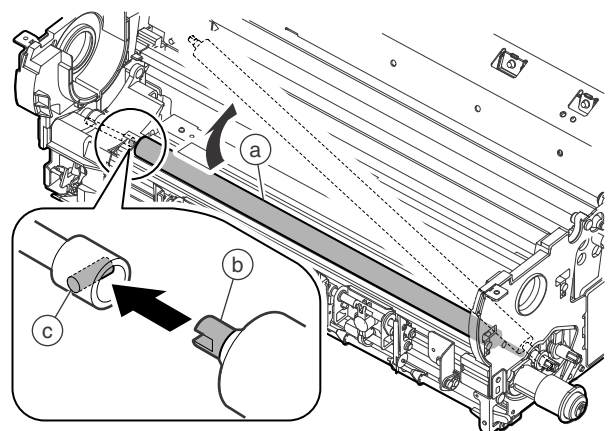


- 22) Remove the screw (a). Remove the brush bearing (b), and check at every 3000K.

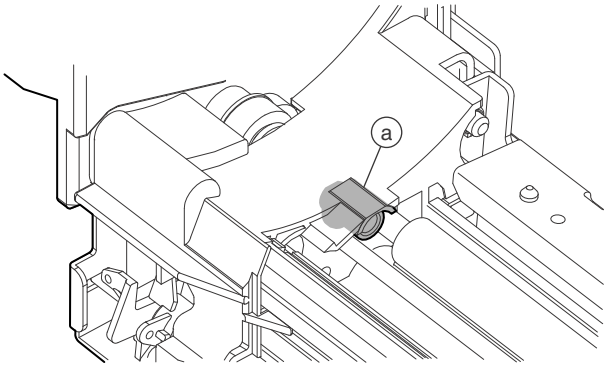


- 23) Replace the cleaning brush roller (a).

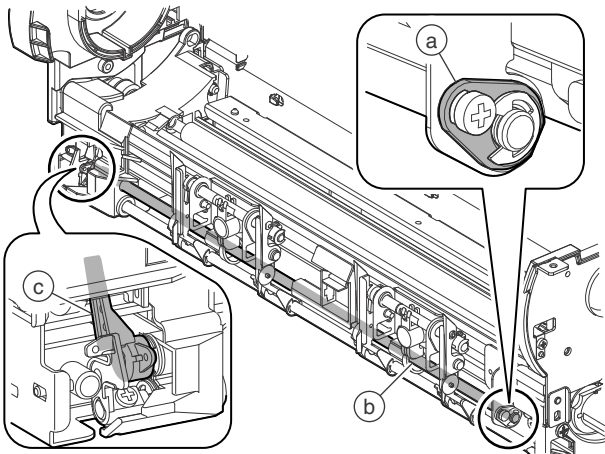
- * When attaching, the cleaning brush roller, engage the slit (b) at the lead edge with the pin (c) in the shaft.



24) Check the brush drive bearing (a) at every 3000K.

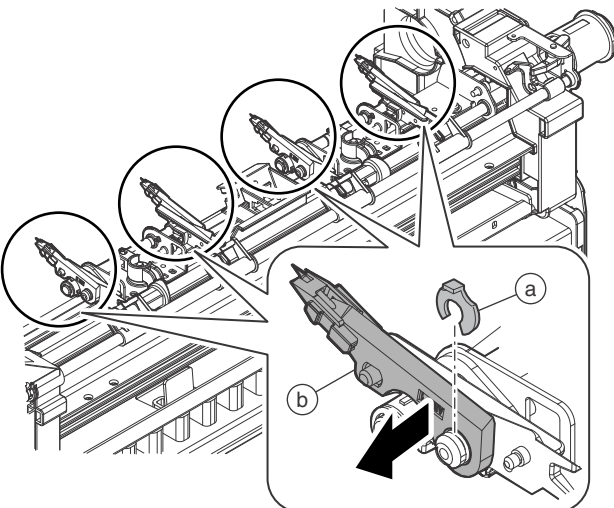


25) Check the separation pawl oscillation bearing (a), the separation pawl oscillation shaft and the separation pawl oscillation arm (c) at every 3000K.

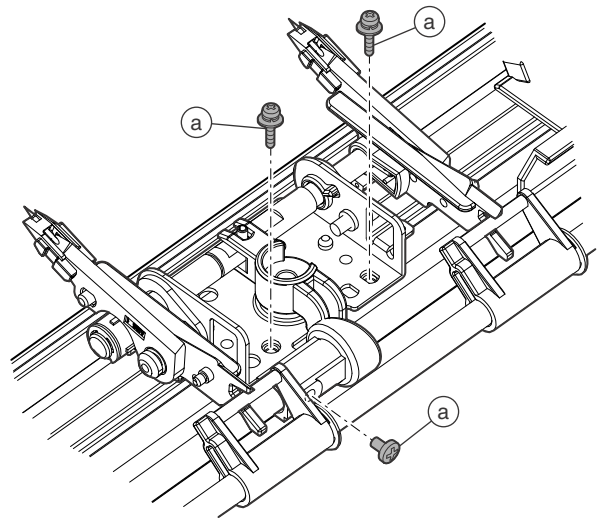


26) Remove the E-ring (a), and replace the drum separation pawl (b).

* Be careful not to touch the lead edge of the drum separation pawl and the paper pass section.

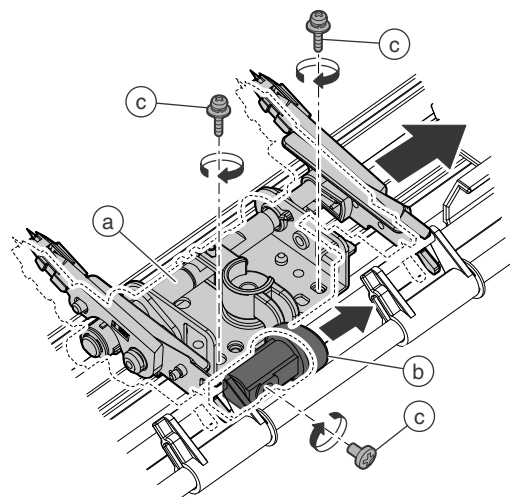


27) Remove the blue screw (a).

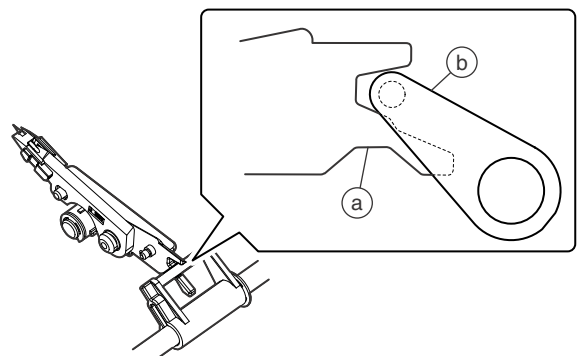


28) After replacing the drum separation pawl, shift the drum separation pawl unit (a) position. At the same time, shift the cam (b) position and fix it with the blue screw (c).

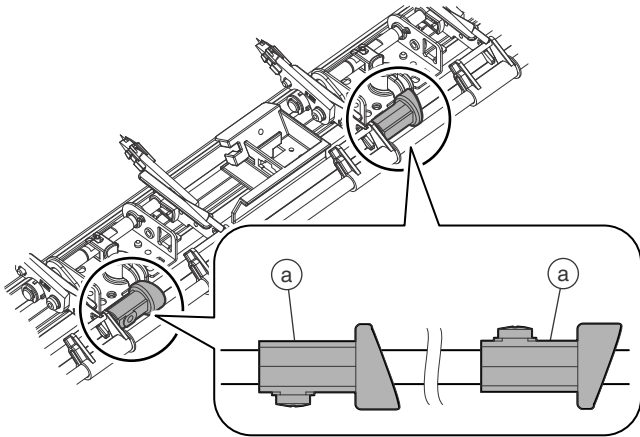
* When shifting the position of the drum separation pawl unit, shift and adjust both the front unit and the rear unit.



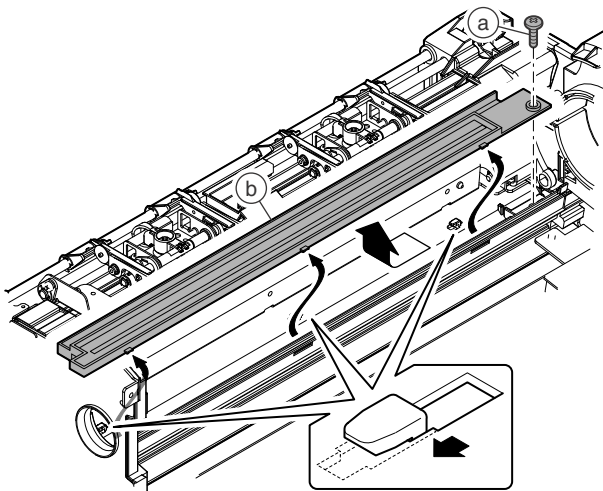
* Be careful to engage all of V-groove section (4 position) of the separation pawl holder with the separation pawl separation arm.



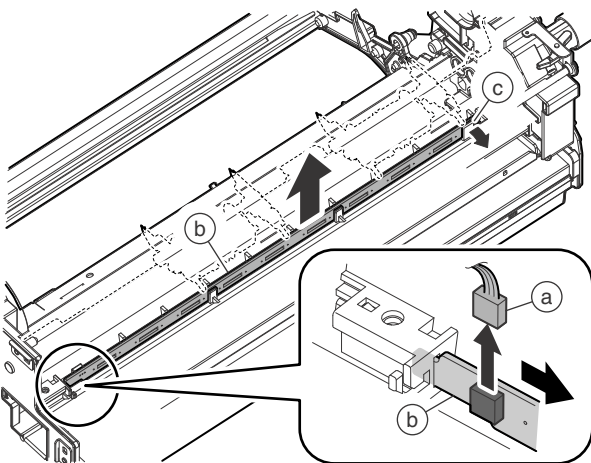
* When shifting the position, fix the cam (a) in the reversed direction.



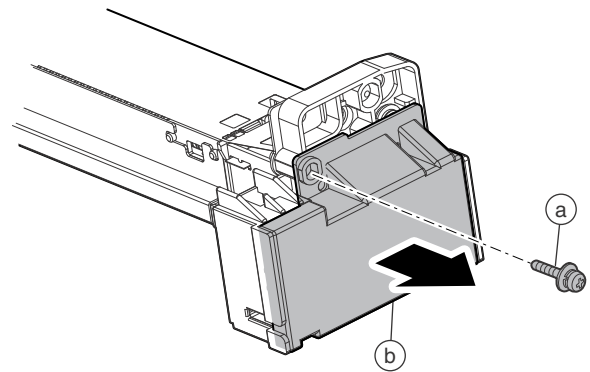
29) Remove the blue screw (a), and slide the cover (b) to remove.



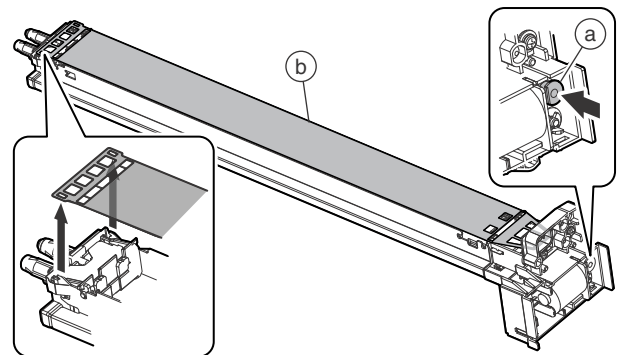
30) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp.
Clean the discharge lamp (b) at every 500K.
* Be careful not to break the pawl. (c).



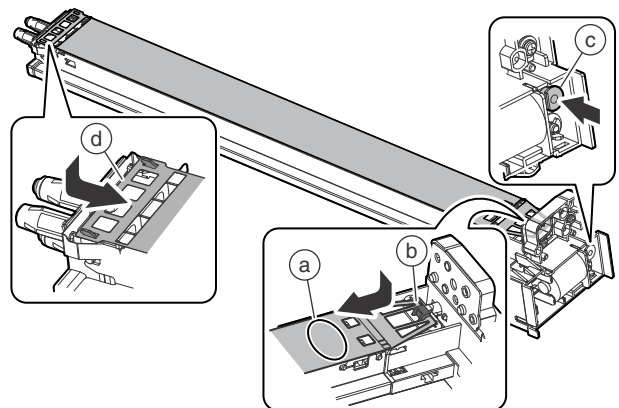
31) Remove the blue screw (a), and remove the cover (b).



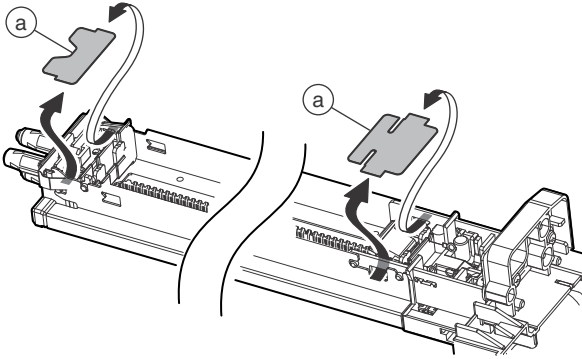
32) While pushing the push button (a), remove the screen grid (b) from the rear side and replace it.



* 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).

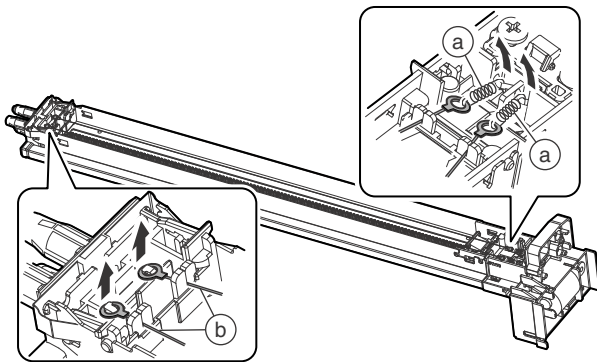


33) Remove the sheet (a).

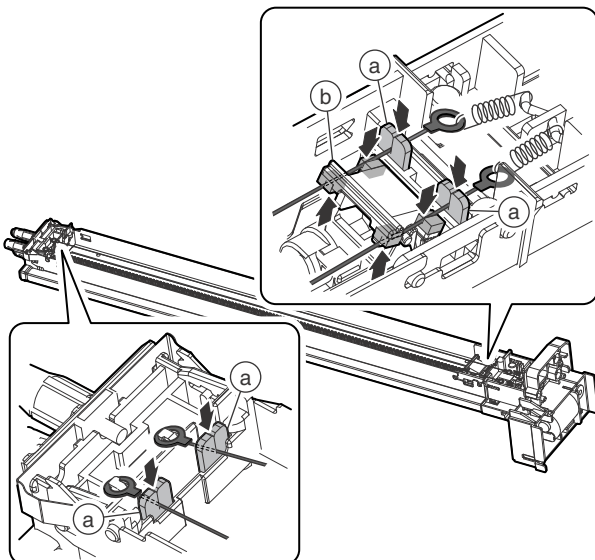


34) Remove the spring (a) in the front side, and remove the rear side (b) of the charger wire, and replace it.

- * 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.



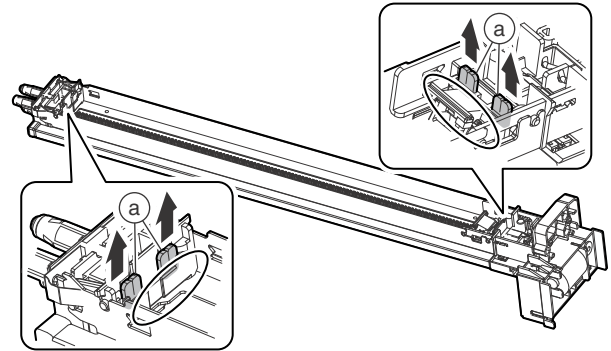
- * When installing the charger wire, insert the charger wire into the slit of the charger cushion (a) and the slit of the charger cleaner (b).



35) Clean the main charger case at every 500K.

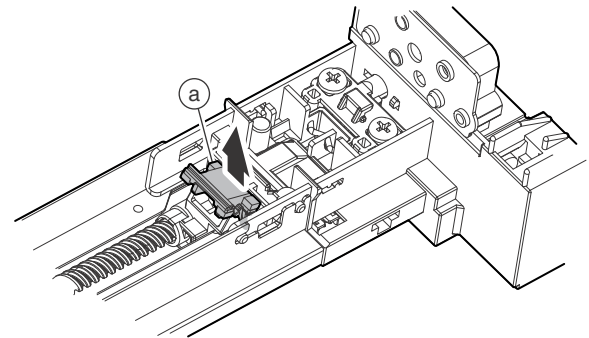
Clean the MC holder F/R and the MC case shown in a rounded sign part so that there is no dirt by toner etc.

36) Replace the charger cushion (a).



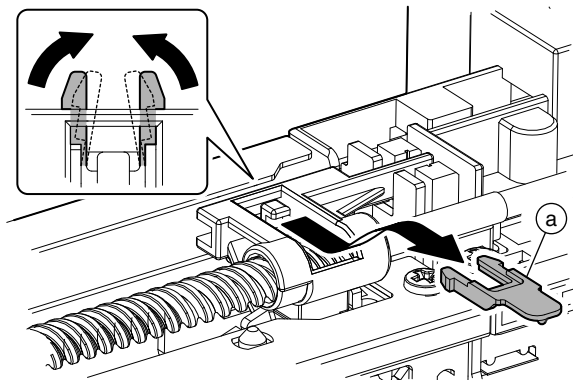
37) Replace the charger cleaner (a).

- * When attaching, be careful of the direction.
- * After attaching, check to confirm that it moves smoothly



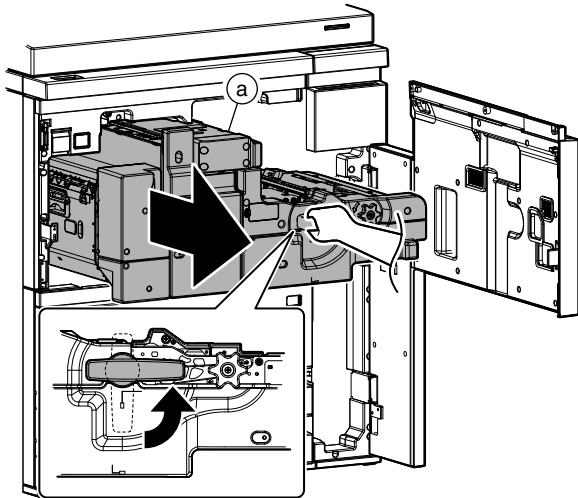
38) Replace the cleaner base guide (a).

- * When attaching, be careful of the direction. Be sure to engage the pawl securely.

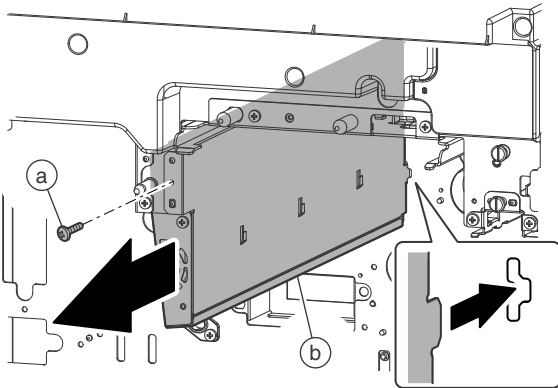


39) Replace the main charger case at every 3000K.

40) Pull out the intermediate frame (a).

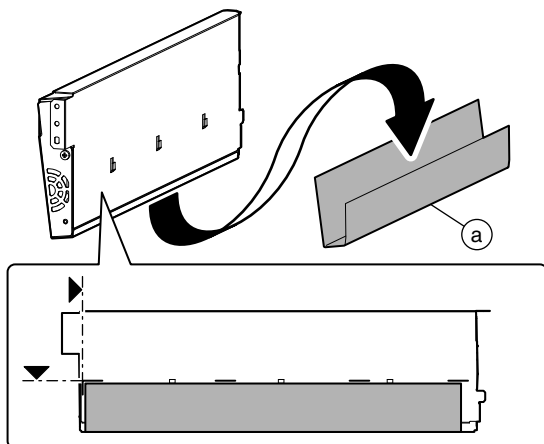


41) Remove the screw (a), and remove the duct (b).



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.

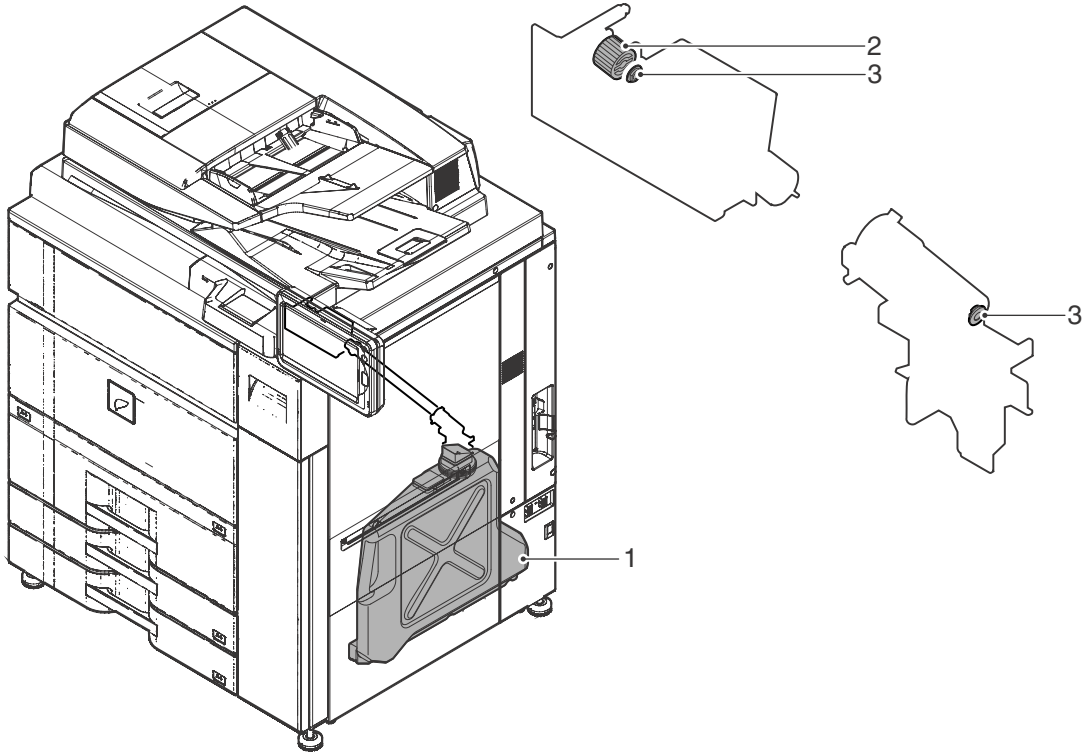


6. Waste toner section

A. Maintenance table

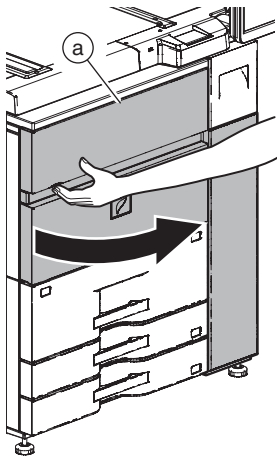
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Toner collection container (with cap)	×	▲	▲	▲	▲	▲	▲	
2	Gears							×	
3	Bearing (Waste toner resin bearing)							×	



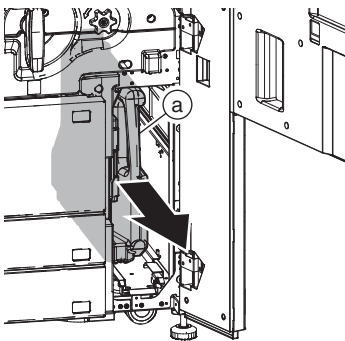
B. Details

1) Open the front cover (a).



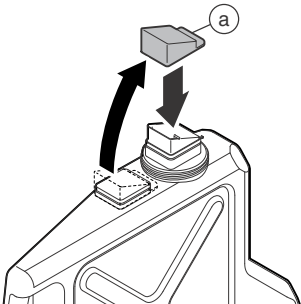
2) Replace the toner collection container (a).

* 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.

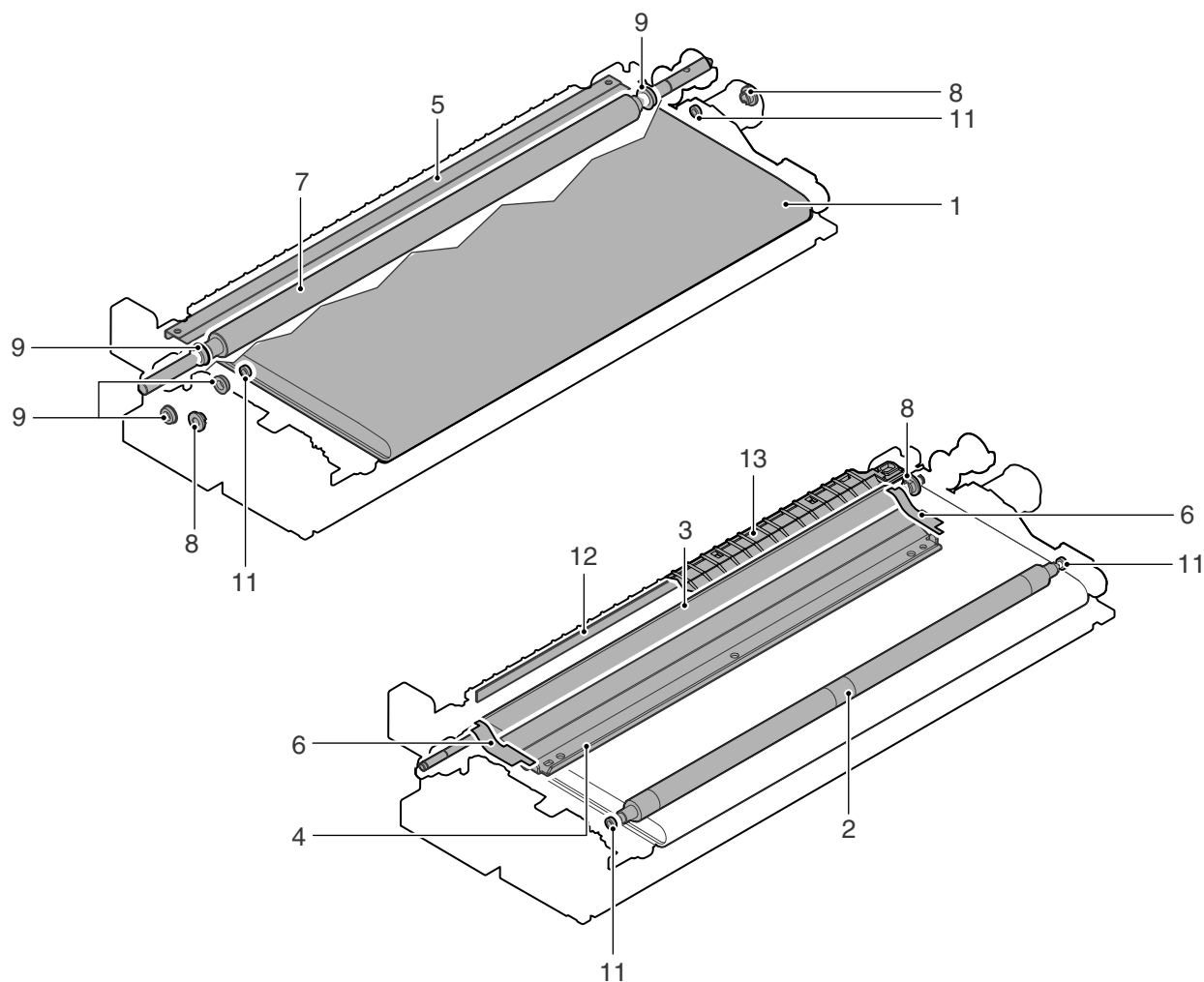


7. Transfer section

A. Maintenance table

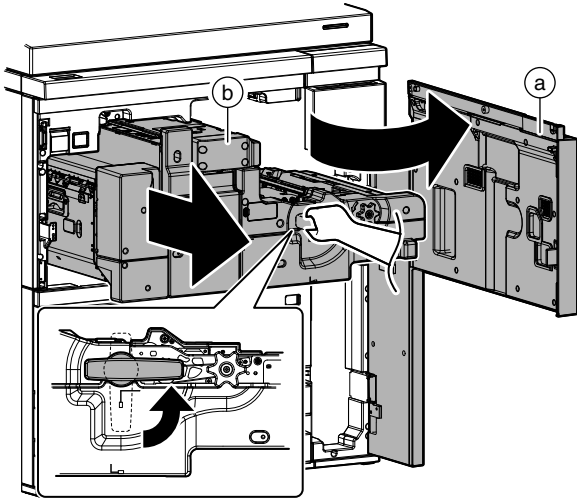
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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	○	○	○	○	○	○	○	

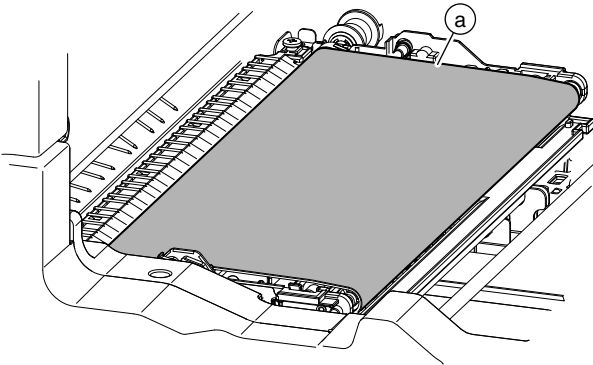


B. Details

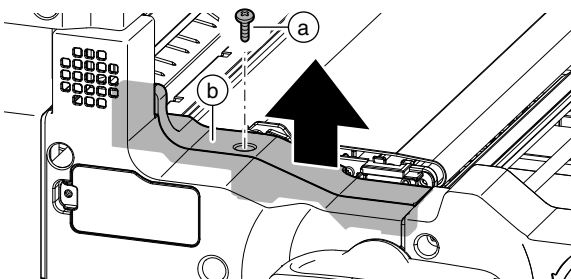
- 1) Open the front cover (a), and pull out the intermediate frame (b).



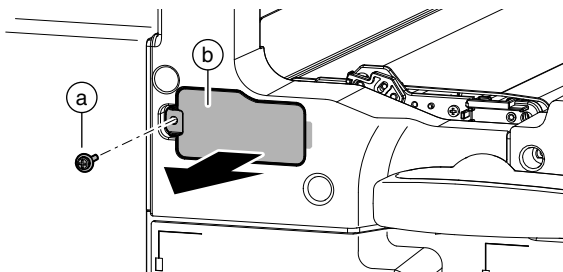
- 2) Check the transfer belt (a) at every 500K.



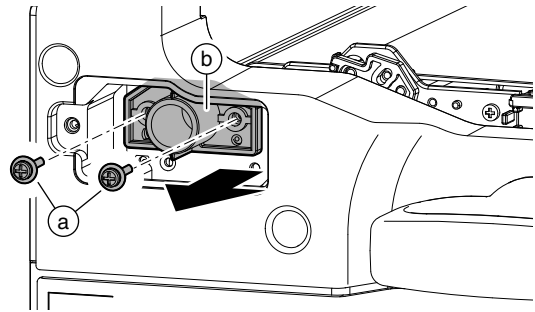
- 3) Remove the screw (a), and remove the cover (b).



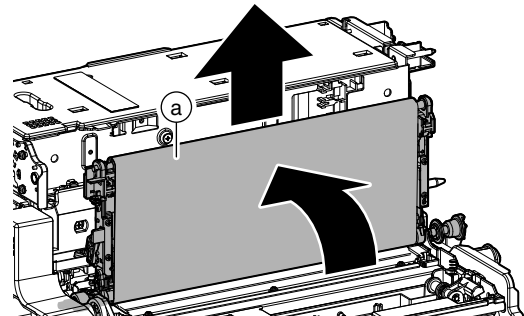
- 4) Remove the screw (a), and remove the cover (b).



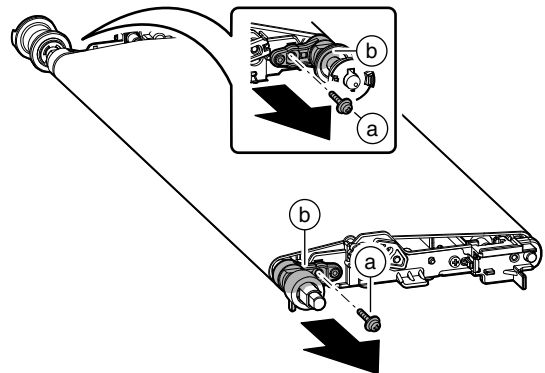
- 5) Remove the screw (a), and remove the holder (b).



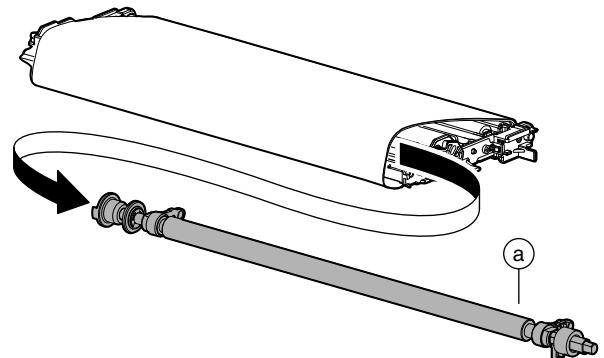
- 6) Remove the transfer belt unit (a).



- 7) Remove the screw (a), and remove the bearing (b).

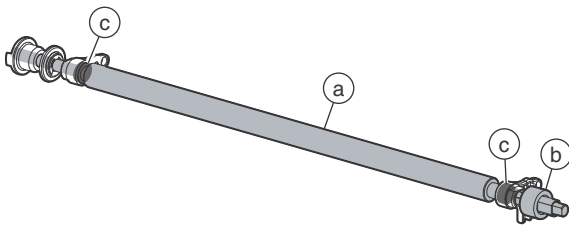


- 8) Remove the transfer drive roller unit (a).



- 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.

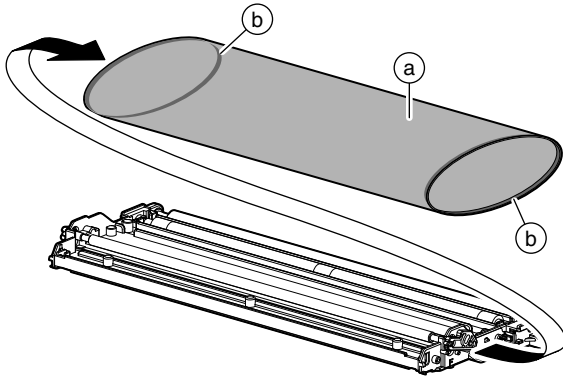


- 10) Replace the transfer belt (a) at every 1000K.

* After replacement of the transfer belt, apply stearic acid (UKOG-0312FCZZ) to all the circumference of the belt. After assembling the unit, rotate it one revolution in the normal direction.

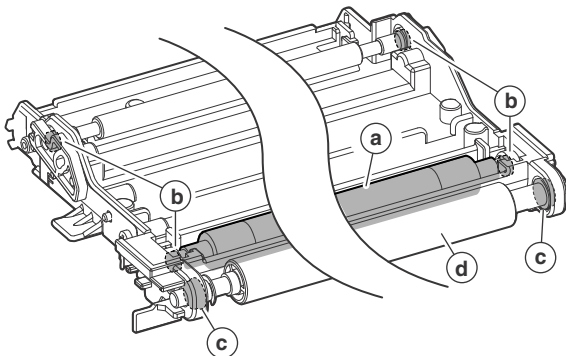
* Use care so that the beats (b) on the both edges of the back of the transfer belt are not on the drive roller and the follower roller.

* Never apply powder other than stearic acid.

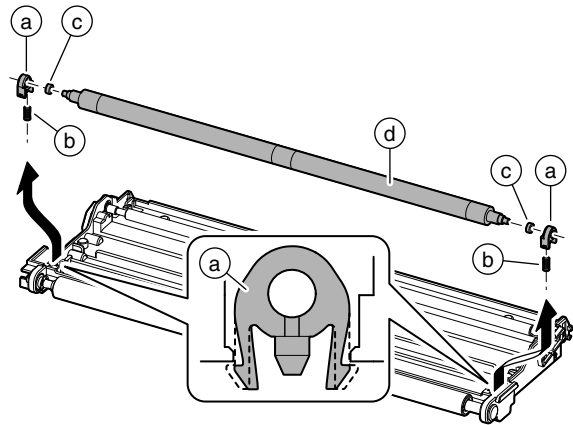


- 11) Check the transfer roller (a) and the ball bearing (b) for the transfer roller at every 500K, and check each ball bearing (c) at every 3000K.

* In maintenance, clean the section (d) with alcohol.

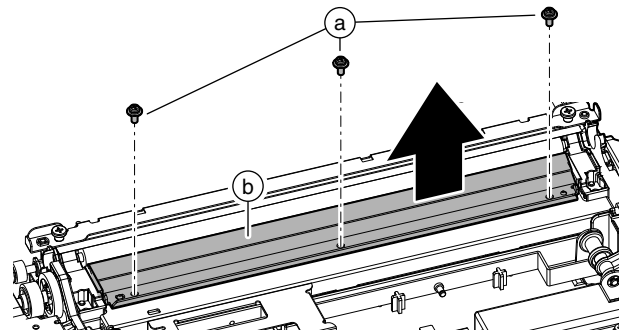


- 12) Remove the bearing (a) and the spring (b), and replace the ball bearing (c) for the transfer roller and the transfer roller (d) at every 1000K.

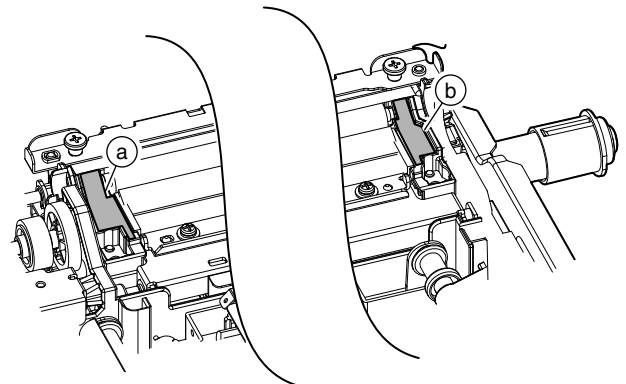


- 13) Check the screw (a), and replace the transfer cleaning blade (b) at every 500K, and replace it at every 1000K.

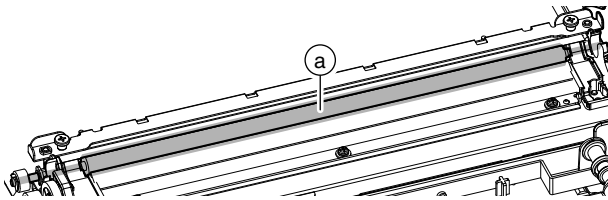
* Be careful not to touch the urethane edge of the transfer cleaning blade.



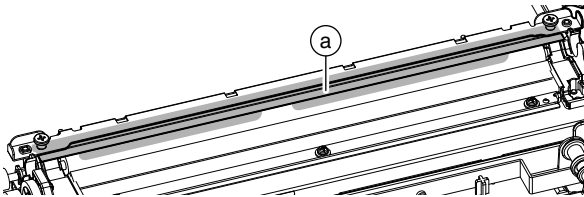
- 14) Check the side seal F (a) and the side seal R (b) at every 500K.



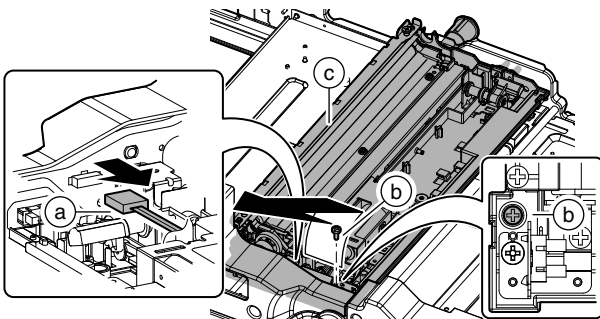
- 15) Check the transfer cleaning brush (a) at every 500K, and cleaning them at every 300K.



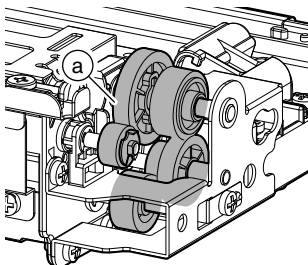
- 16) Check the transfer sub blade (a) at every 500K.



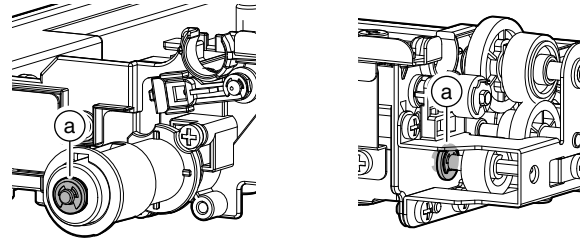
- 17) Disconnect the connector (a), and remove the screw (b). Remove the transfer frame (c).



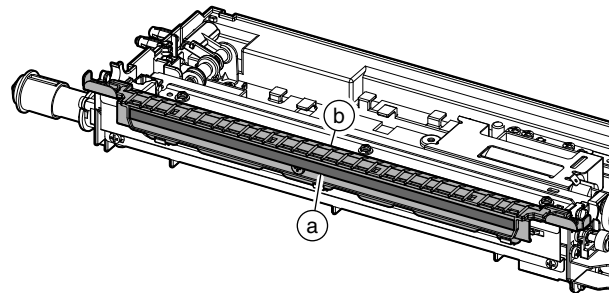
- 18) Check each gear (a) at every 3000K.



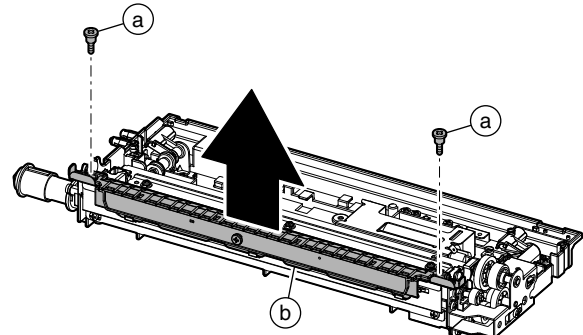
- 19) Check the bearing (a) at every 3000K.



- 20) Clean the discharge plate (a), and the discharge plate holder (b) at every 500K.

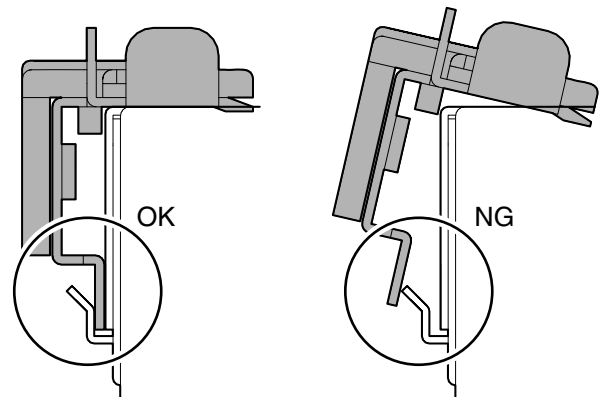


- 21) Remove the screw (a) and remove the holder unit (b).

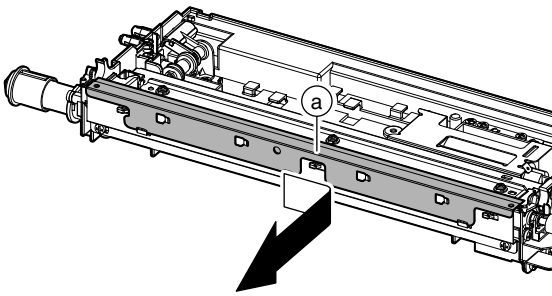


<<Note for installation>>

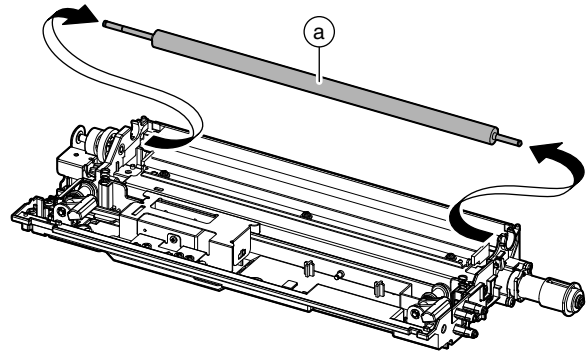
When installing the discharge plate holder, check to confirm that it is securely installed.



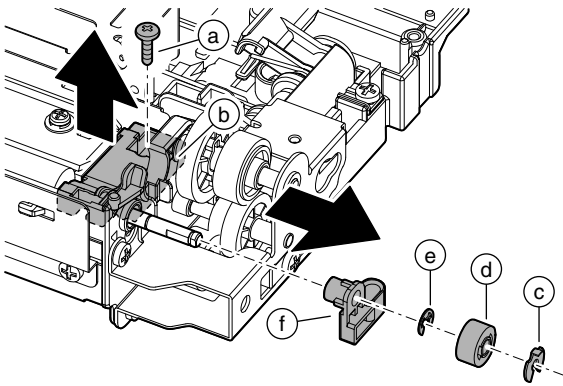
22) Slide remove the transfer sub blade (a), and replace it.



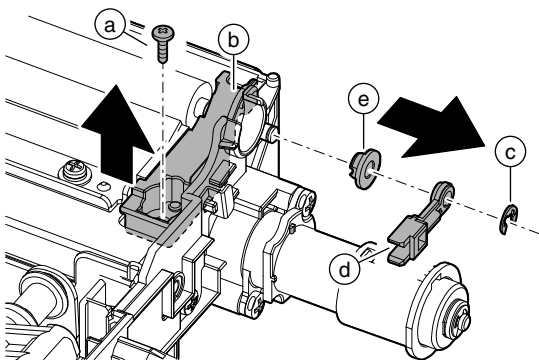
25) Replace the transfer cleaning brush (a).



23) 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).



24) Remove the screw (a), and remove the mounting plate (b). Remove the E-ring (c), the bearing (d), and the bearing (e).

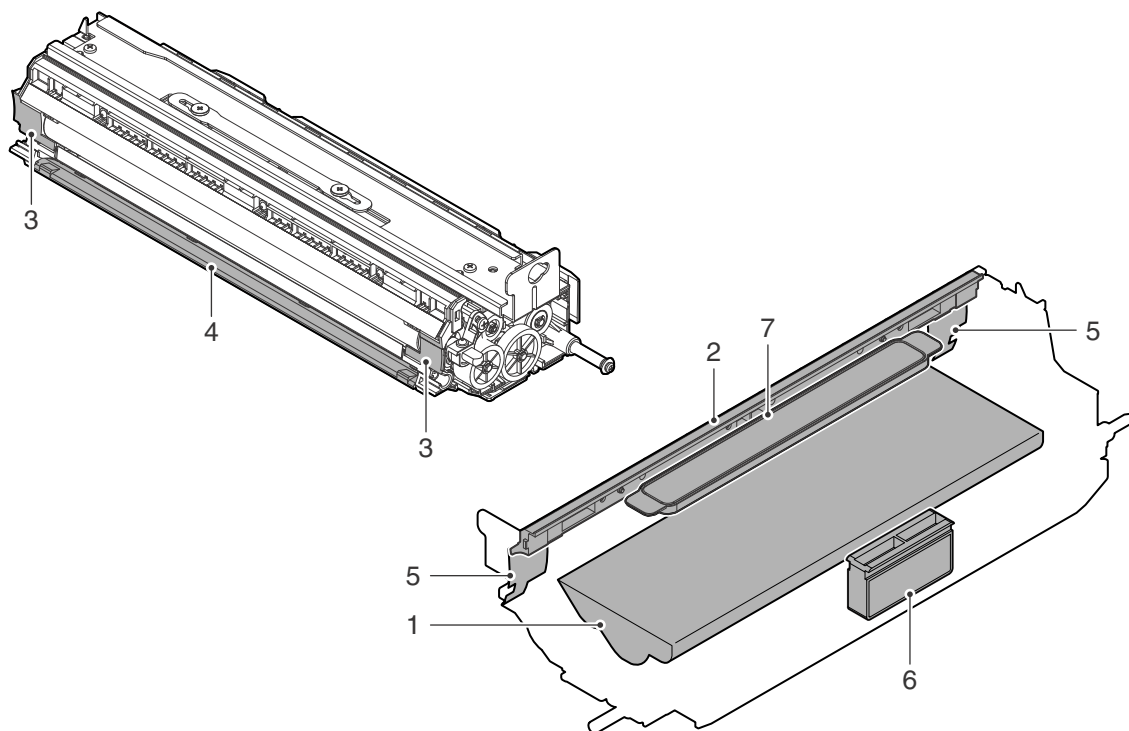


8. Developing section

A. Maintenance table

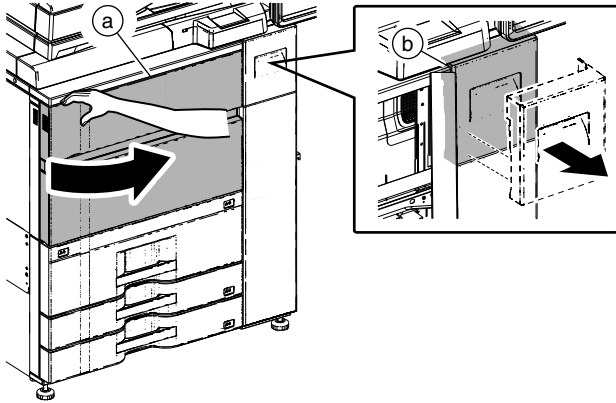
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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	×	×	▲	×	▲	×	▲	

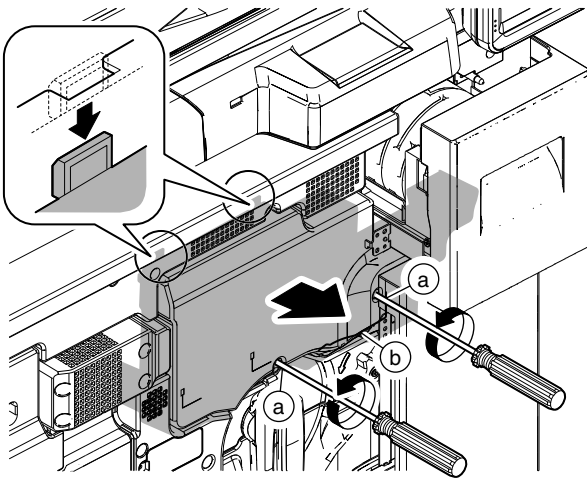


B. Details

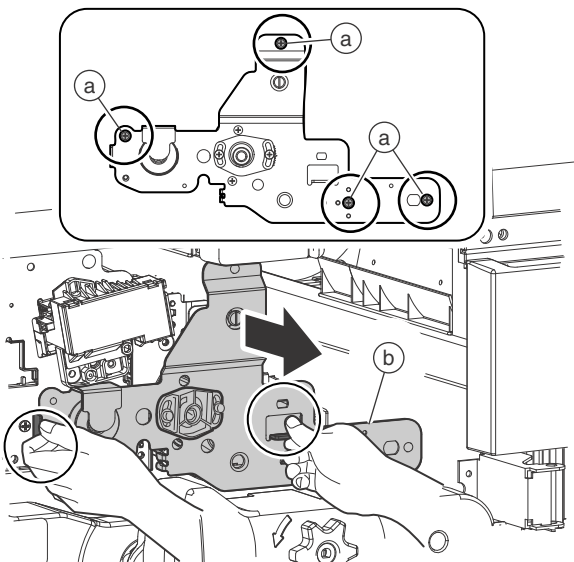
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



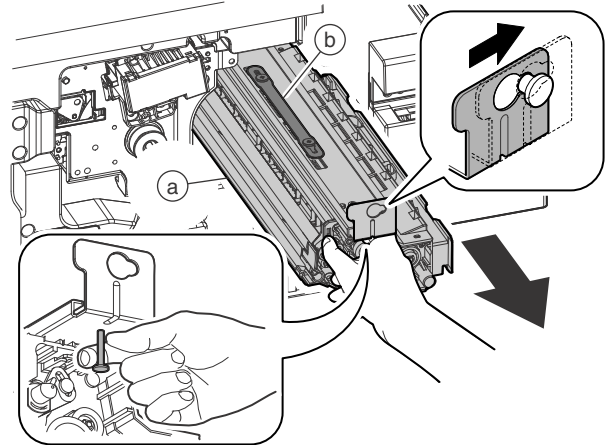
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

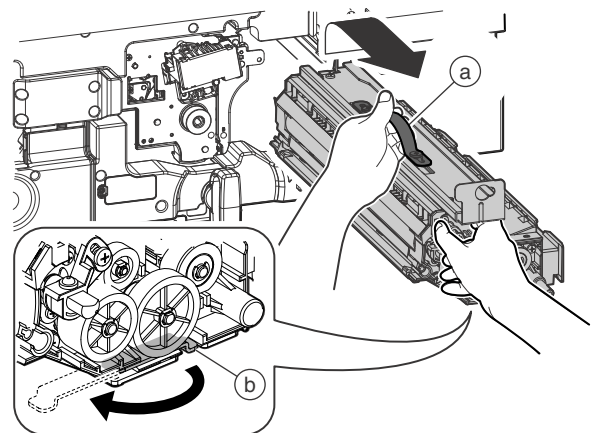


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

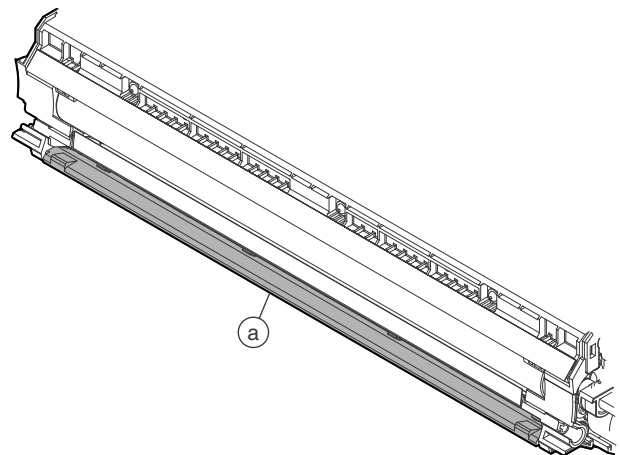


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

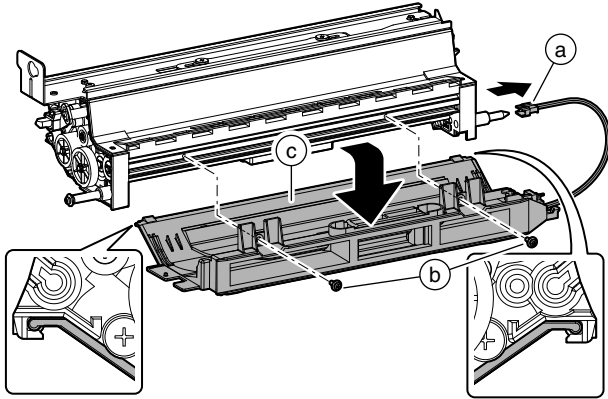
* When placing the developing unit, use the stand (b) and place the unit on it.



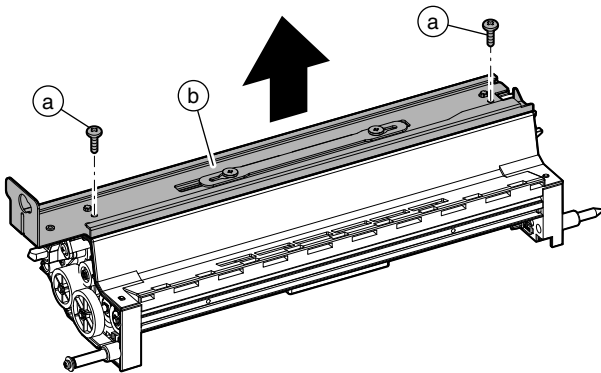
- 6) Clean the lower section (a) of the MG roller of the DV duct cover at every 500K.



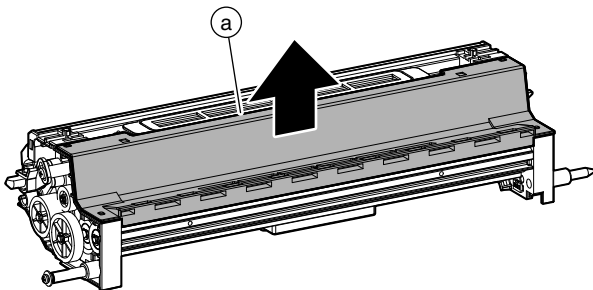
- 7) Disconnect the connector (a), and remove the screw (b).
Remove the DV duct cover (c).
* Use extra care not to foul the connector terminal section.



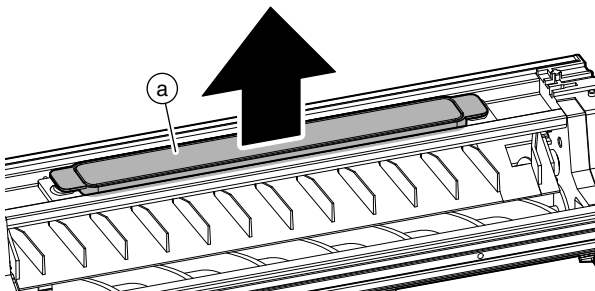
- 8) Remove the screw (a), and remove the guide (b).



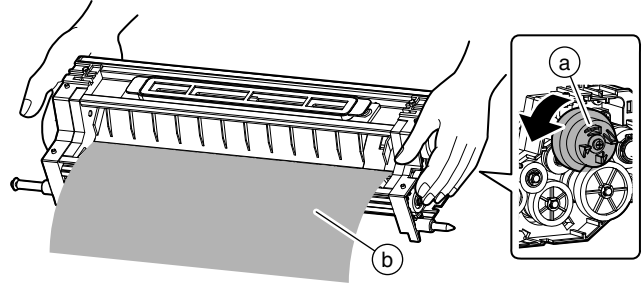
- 9) Remove the cover (a).



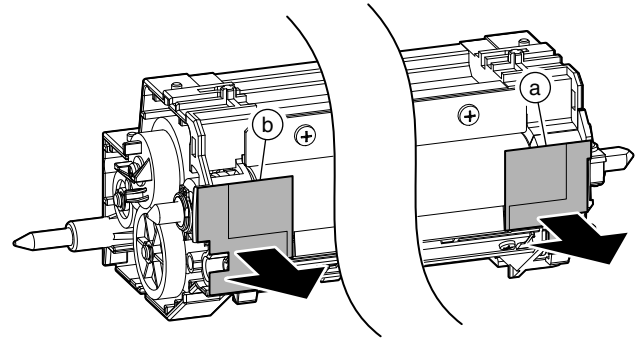
- 10) Remove the DV filter unit (a).



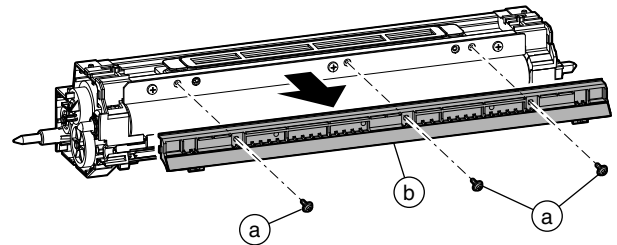
- 11) While rotating the coupling (a), discharge old developer (b).
* Rotate the MG roller clockwise and counterclockwise to remove developer from the MG roller.



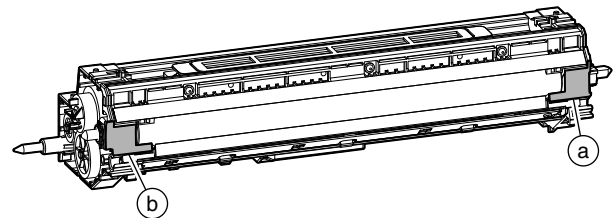
- 12) Remove the DV side seal F (a) and the DV side seal R (b).



- 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.

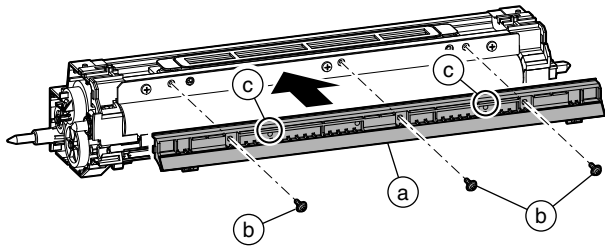


- 14) Clean the DV side seal attaching section of the DV side plate F (a) and the DV side plate R (b) with dry cloth. Do not use alcohol.



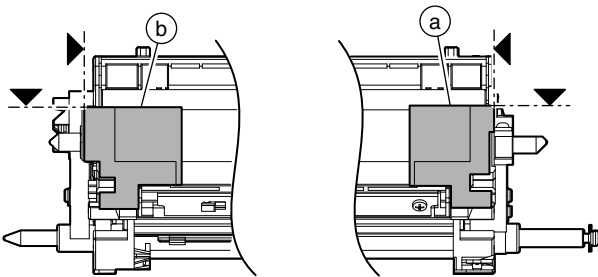
- 15) Replace the doctor cover unit (a) with new one, and install and fix with the screw (b).

- * When installing, check to confirm that the positioning boss (c) is securely engaged.
- * After installing, check to confirm that the cover is not deformed.

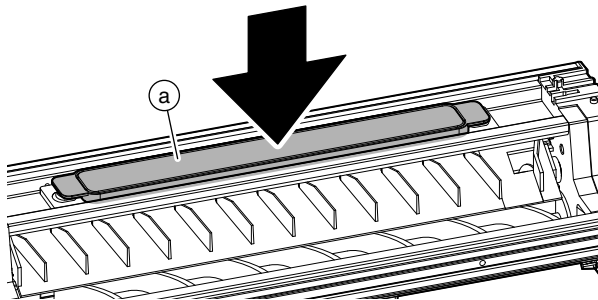


- 16) Replace the DV side seal F (a) and the DV side seal R (b) with new ones and attach them according to the reference.

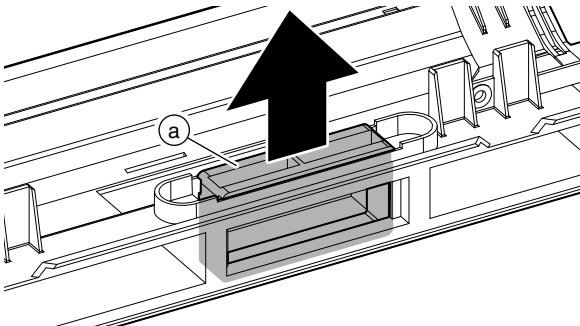
- * When attaching, be careful not to deform the seals.



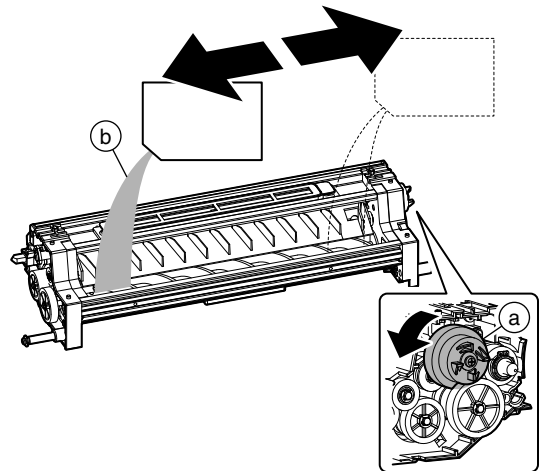
- 17) Attach the DV filter unit (a).



- 18) Replace the DV BOX filter (a).



- 19) While rotating the coupling (a), supply new developer (b).

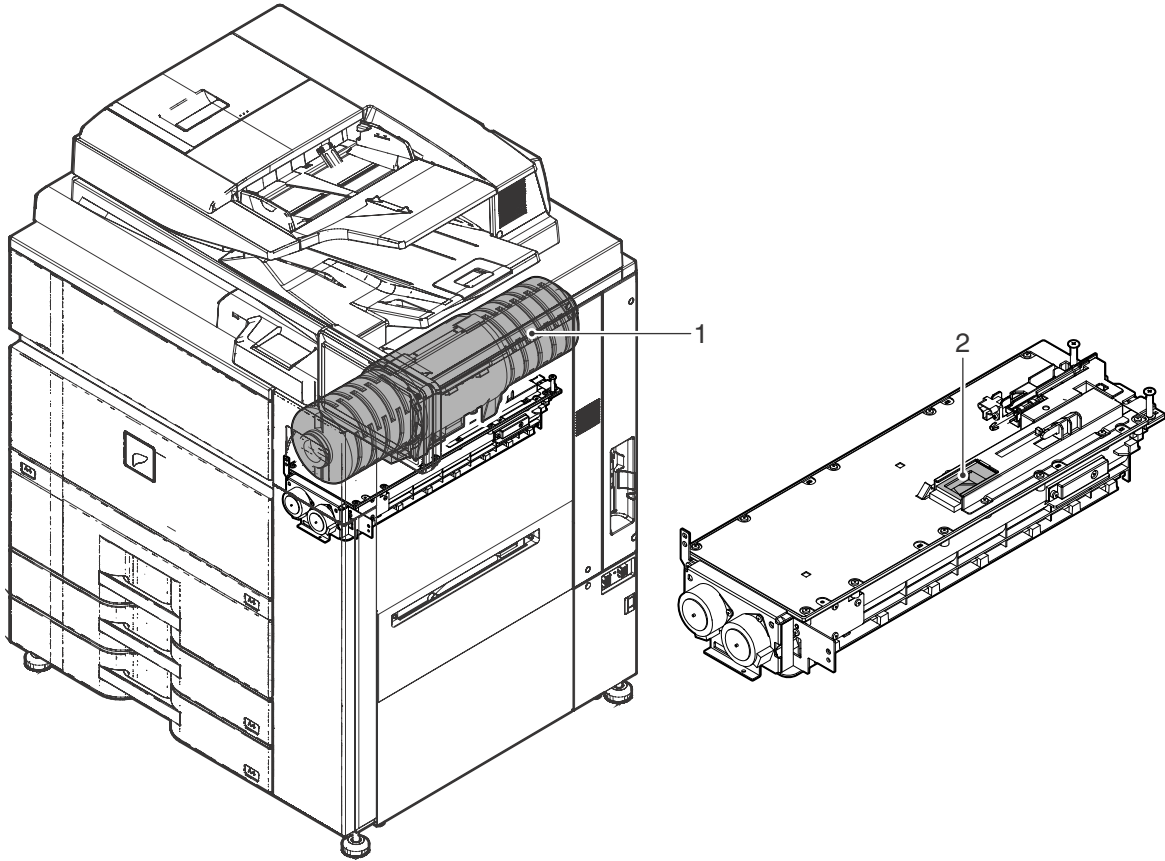


9. Toner supply section

A. Maintenance table

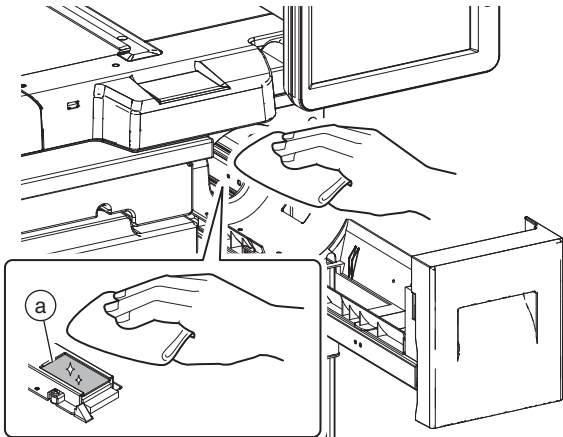
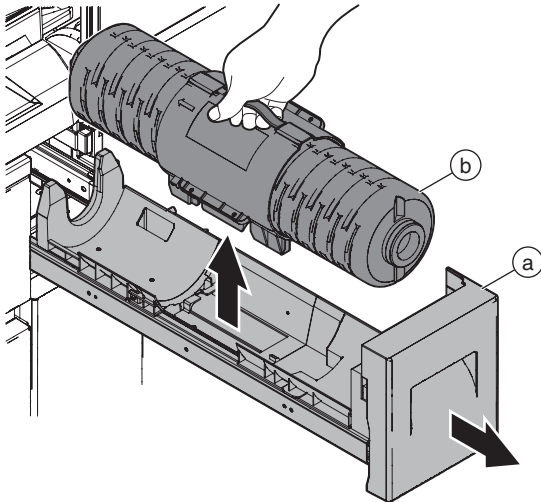
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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.

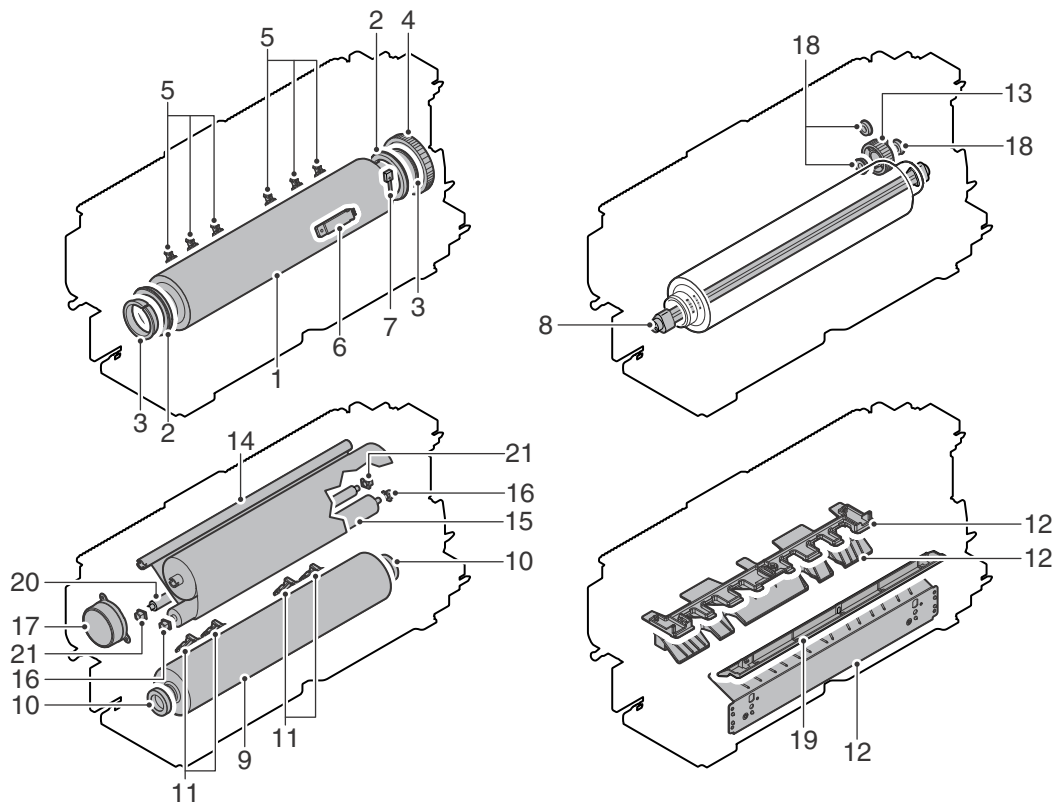


10. Fusing section

A. Maintenance table

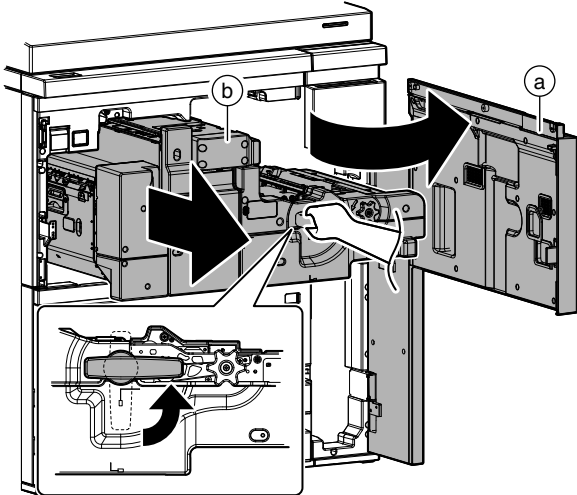
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Upper heat roller	×	×	▲	×	▲	×	▲	Apply grease to the bearing section when replacing. (UKOG-0235FCZZ)
2	Upper heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (UKOG-0235FCZZ)
3	Upper heat roller insulation bush		×	▲	×	▲	×	▲	Apply grease when replacing. (UKOG-0235FCZZ)
4	Upper heat roller gear	×	×	▲	×	▲	×	▲	Check/Apply grease when replacing. (UKOG-0235FCZZ)
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. (UKOG-0235FCZZ)
10	Lower heat roller ball bearing	×	×	▲	×	▲	×	▲	Must be free from abnormal noises when rotating. Apply grease when replacing. (UKOG-0235FCZZ)
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. (UKOG-0235FCZZ)
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	×	▲	▲	▲	▲	▲	▲	

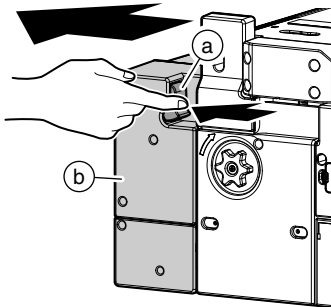


B. Details

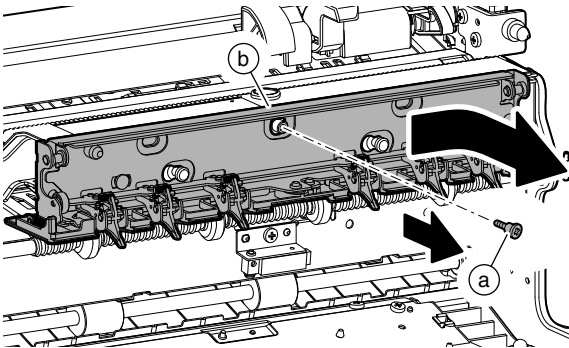
- 1) Open the front cover (a), and pull out the intermediate frame (b).



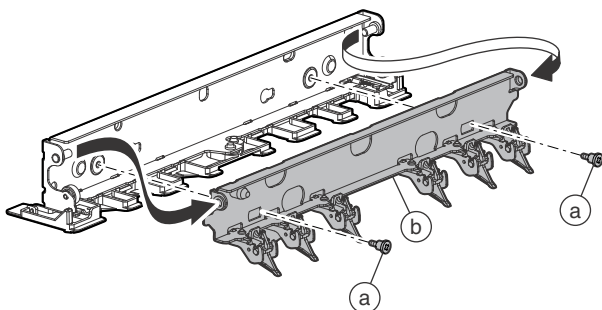
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



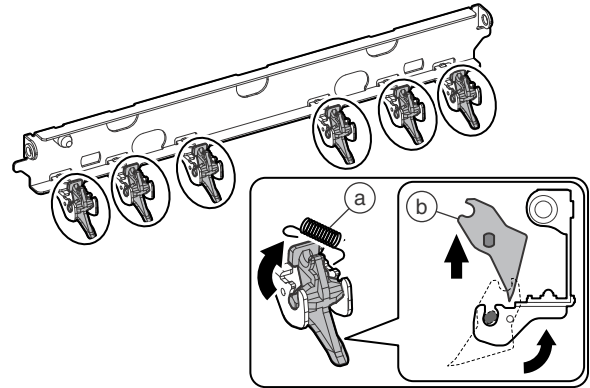
- 3) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



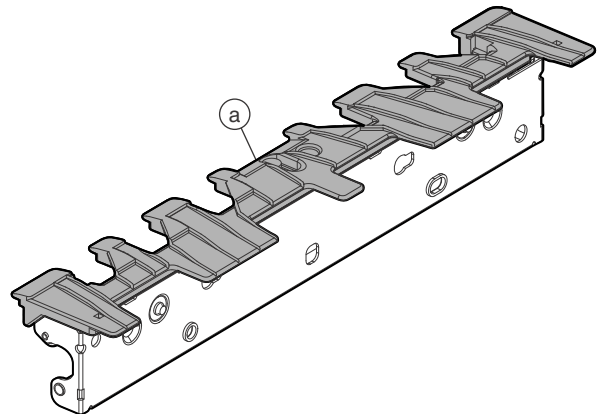
- 4) Remove the screw (a), and remove the upper heat roller separation pawl unit 2 (b).



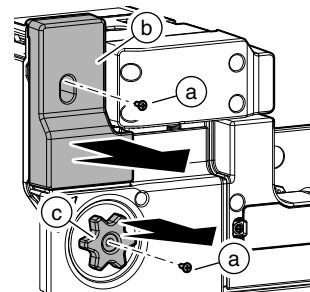
- 5) Remove the spring (a), and replace the upper heat roller separation pawl (b).



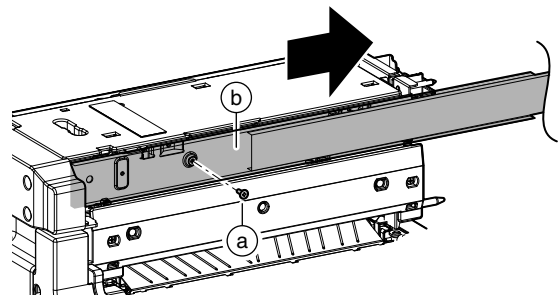
- 6) Clean the paper guide (a) at every 500K.



- 7) Remove the screw (a), and remove the cover (b) and the knob (c).

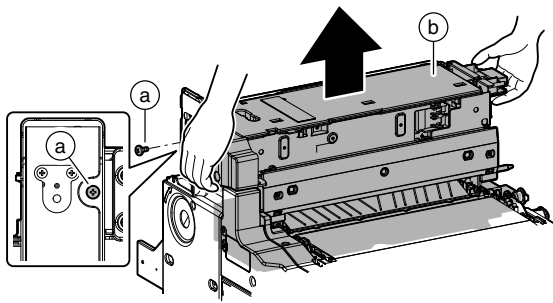


- 8) Remove the screw (a), and remove the rail (b).



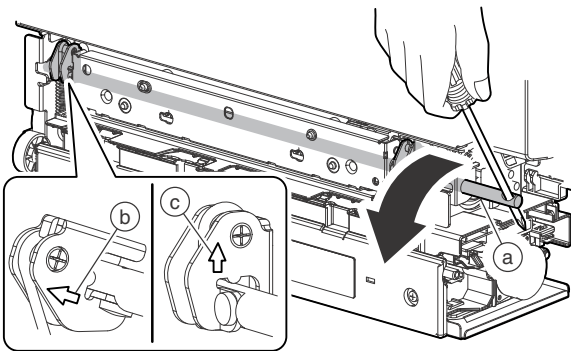
- 9) Remove the screw (a), and remove the fusing unit (b).

* 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.

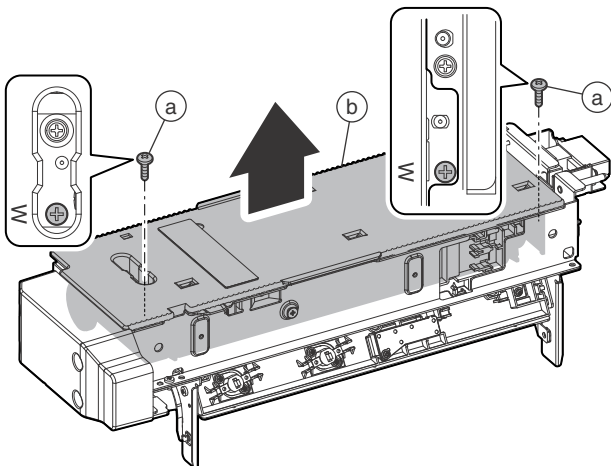


- 10) Insert a screwdriver into the pressure release shaft (a) to release the pressure.

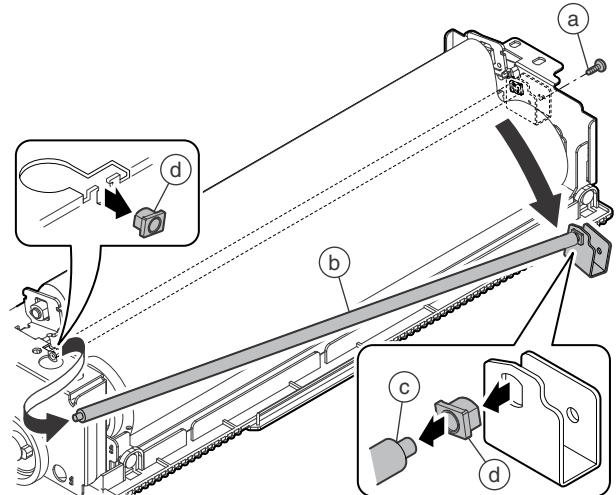
* When the pressure is released, the arrow on the pressure release shaft faces diagonally (b). When the pressure is applied, the arrow faces upward (c).



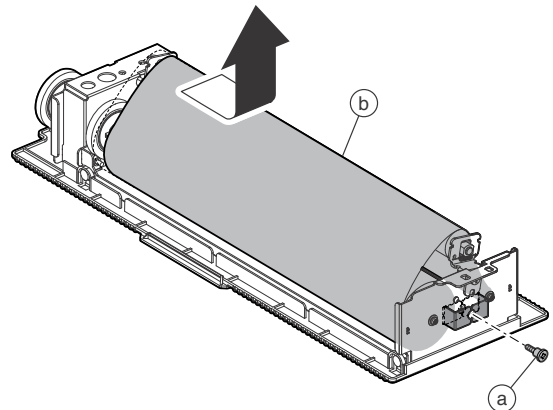
- 11) Remove the screw (a) on the side of "W" mark from the fusing upper unit, and remove the web unit (b).



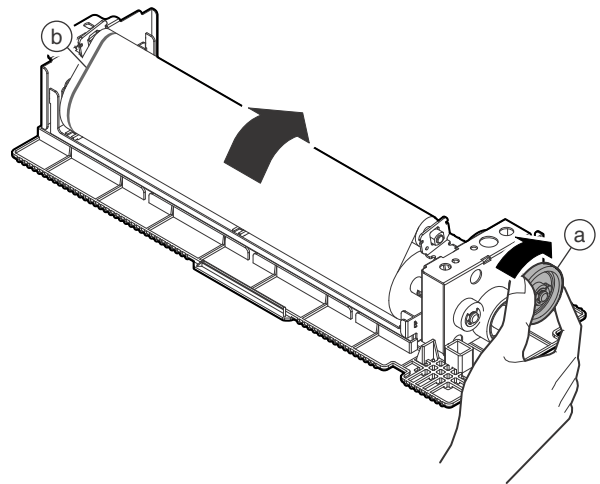
- 12) Remove the screw (a), and remove the web guide shaft unit (b). Replace the web guide shaft (c) and the web guide bearing (d).



- 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.

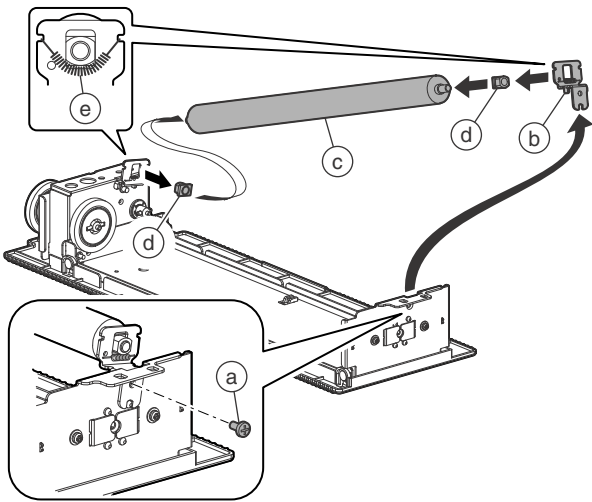


* After completion of maintenance, execute SIM. 24-4 (Fusing web cleaning feed counter clear).

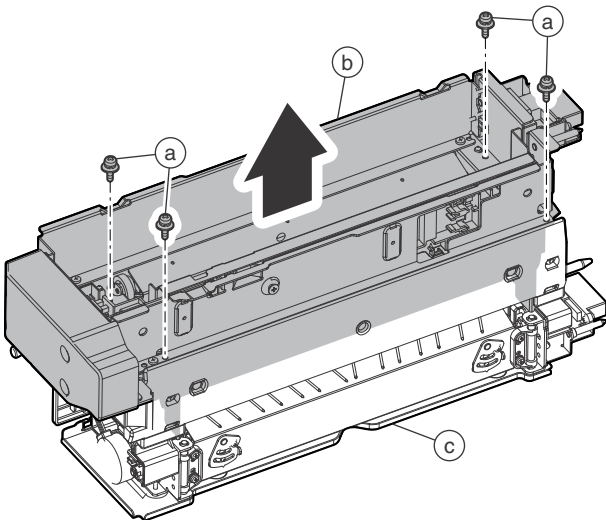
* When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)

- 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 hang the spring (e) properly.

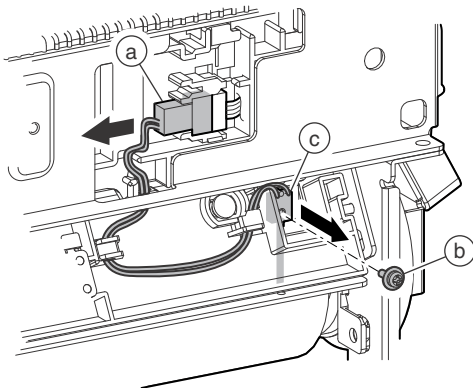


- 15) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).

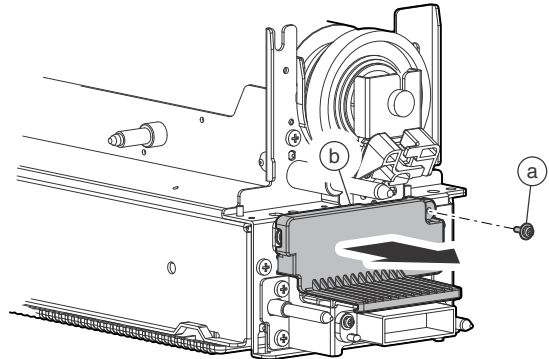


- 16) Disconnect the connector (a), and remove the screw (b), and remove the sub thermistor (c). Check or the sub thermistor (c) at every 500K, or replace it at every 3000K.

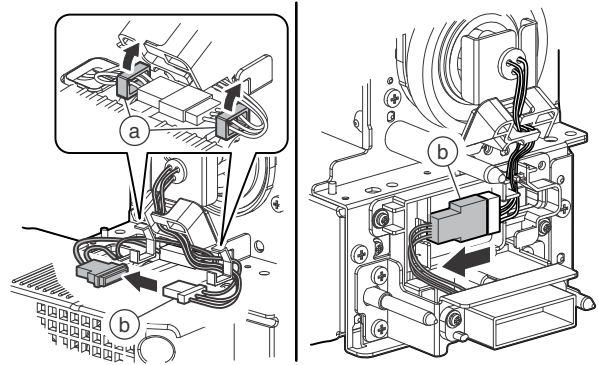
* When handling the thermistor, be careful not to deform it.



- 17) Turn the fusing upper unit upside down. Remove the screw (a), and remove the cover (b).



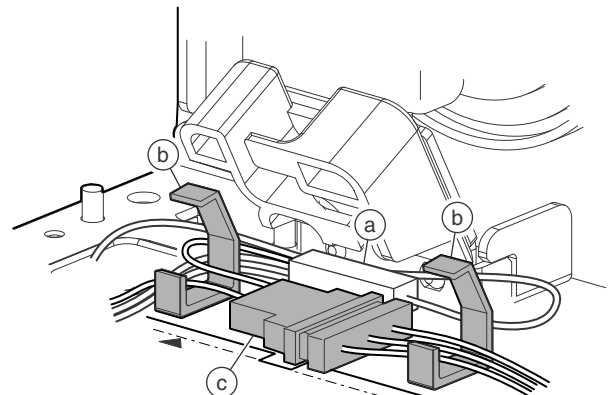
- 18) Open the clamp (a). Disconnect the connector (b) of the upper heater lamp.



* When assembling, store the white clamp (a) at the bottom of the clamp (b), and store the black connector (c) to the clamp (b).

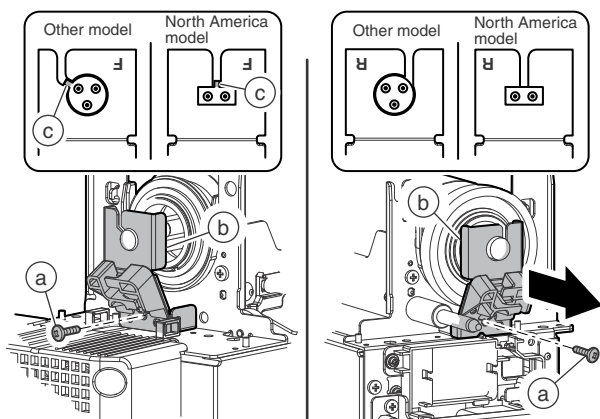
* Check to confirm that the black connector (c) does not extend from the reference line.

* When storing each connector, be careful not to pinch it.

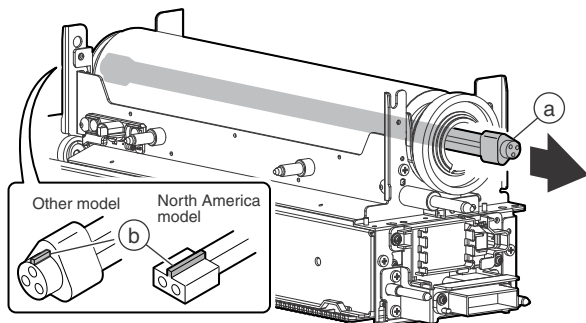


1 : '17/Apr.

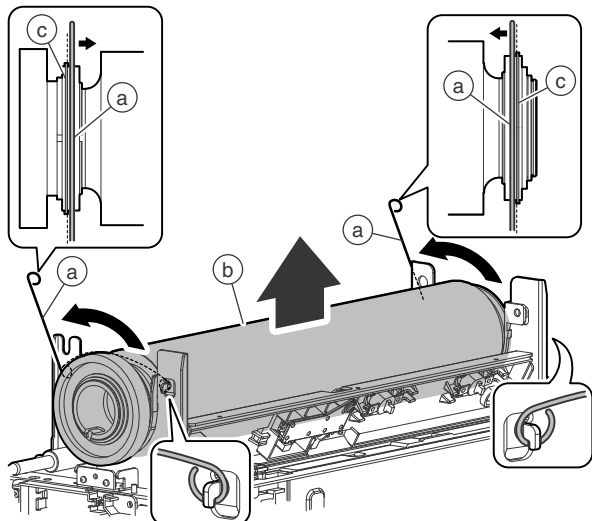
- 19) Remove the screw (a), and remove the lamp holder (b).
 * When installing, engage the positioning (c) of the upper heater lamp with the notch of the lamp holder.



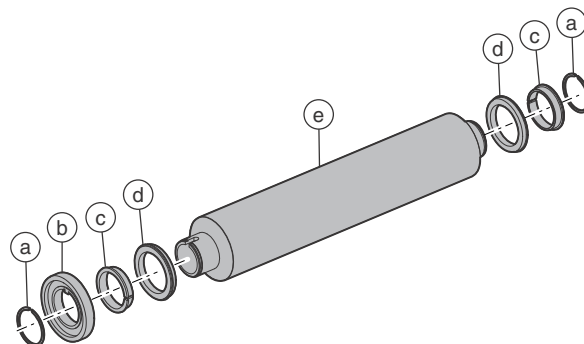
- 20) Remove the upper heater lamp (a), and check it at every 500K, or replace it at every 3000K.
 * Insert the positioning (b) into the upper heater lamp so that the positioning (b) is on the front side.



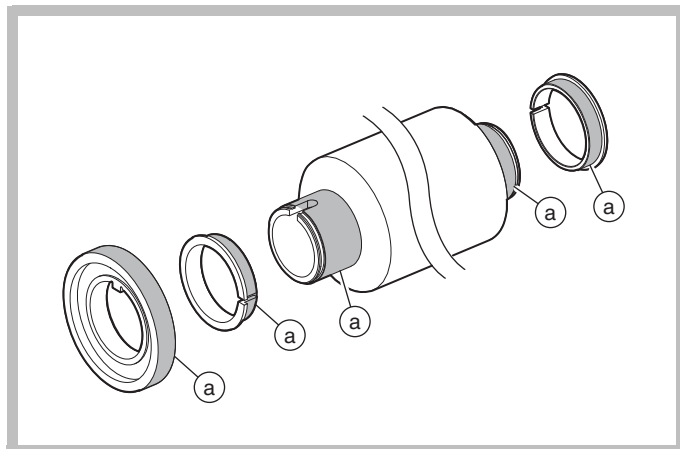
- 21) Remove the fixing fin (a), and remove the upper heat roller unit (b).
 * When installing, assemble the fixing fin (a) inside the bearing flange (c).



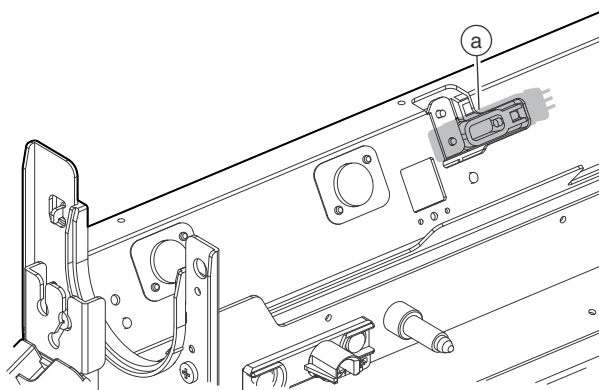
- 22) Remove the C-ring (a), and remove the upper heat roller gear (b), the upper heat roller insulation bush (c), and the upper heat roller ball bearing (d) from the upper heat roller (e).
 Check the upper heat roller gear (b), the upper heat roller insulation bush (c), the upper heat roller ball bearing (d), and the upper heat roller (e) at every 500K, or replace them at every 1000K.
 *When replacing the upper heat roller gear (b), apply grease (UKOG-0235FCZZ) to the gear tooth surface.



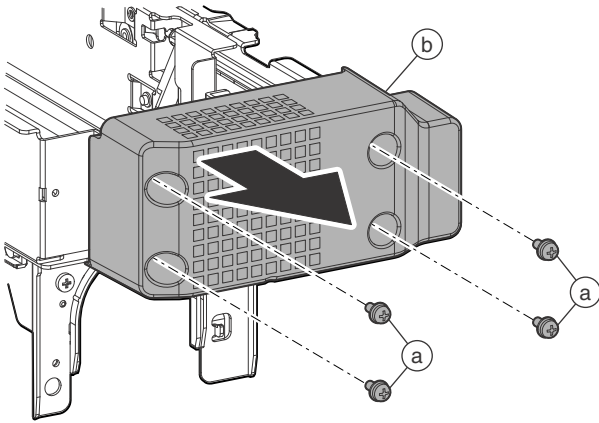
- * When replacing, apply grease (UKOG-0235FCZZ) to the upper heat roller insulation bush and the upper heat roller section and the upper heat roller gear (a).



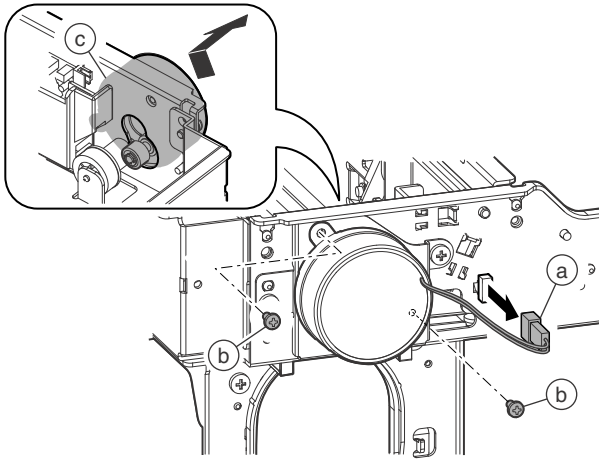
- 23) Check the non-contact thermistor (a) at every 500K.



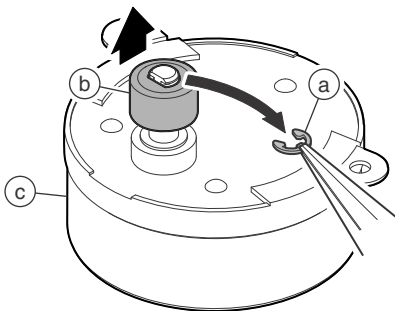
24) Remove the screw (a), and remove the cover (b).



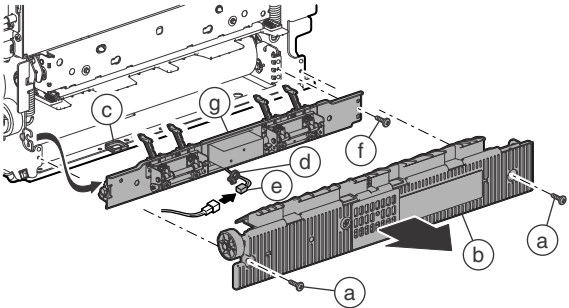
25) Disconnect the connector (a), and remove the screw (b). Remove the WEB motor unit (c).



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.

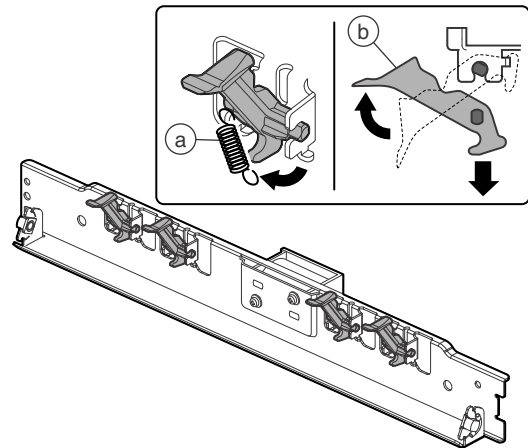


27) Remove the screw (a), and remove the cover (b). Remove the harness from the edge saddle (c). Remove the snap band (d) and disconnect the connector (e). Remove the screw (f), and remove the lower heat roller separation pawl unit (g).

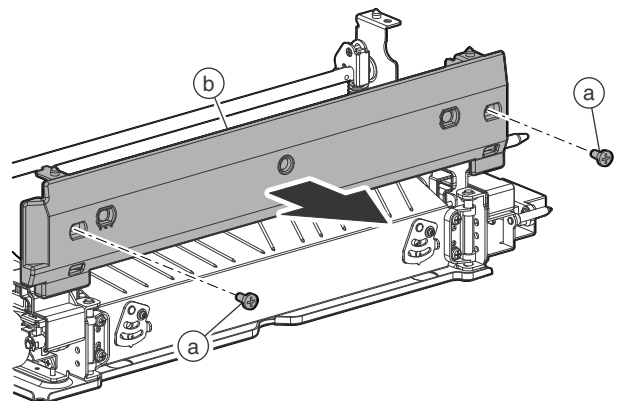


* When disconnecting the connector (e), do not pull the harness but hold the connector section and pull it out.

28) Remove the spring (a), and replace the lower heat roller separation pawl (b).

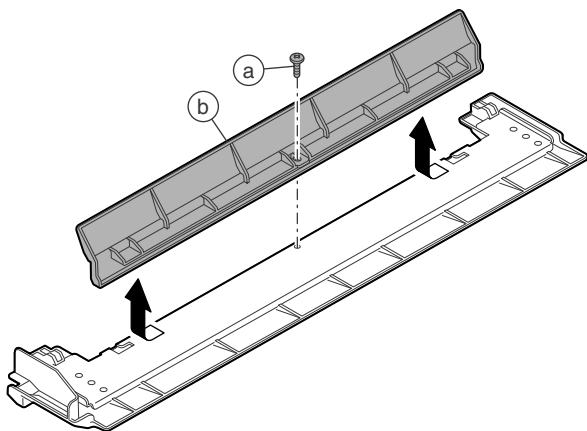


29) Remove the screw (a), and remove the cover (b).

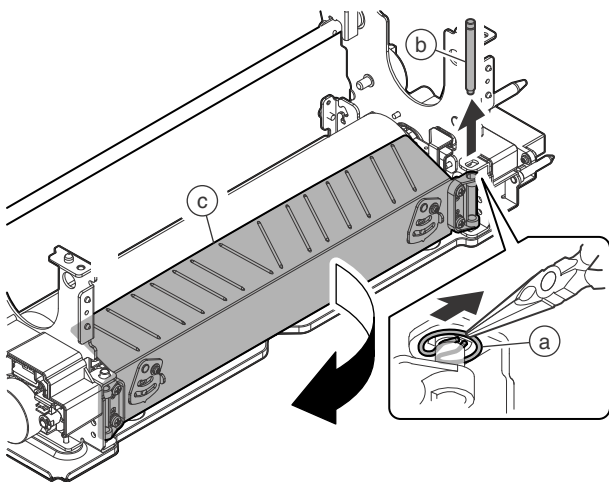


1 : '17/Apr.

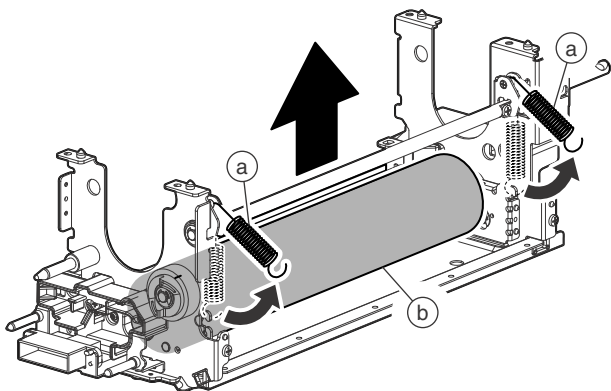
- 30) Remove the screw (a). Slide the front upper paper guide (b), and remove and replace it.



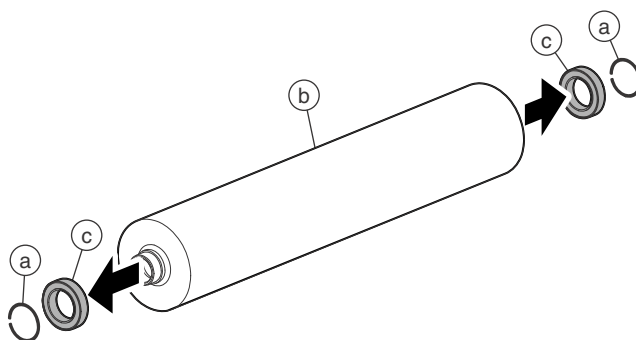
- 31) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c), and clean it at every 500K.



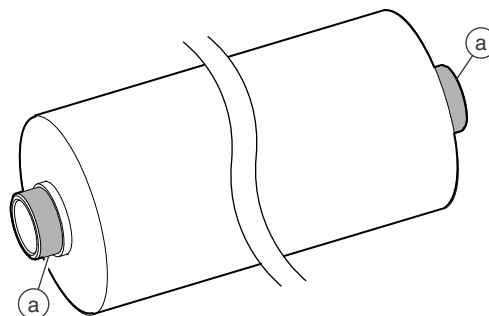
- 32) Remove the spring (a), and remove the lower heat roller unit (b).



- 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.



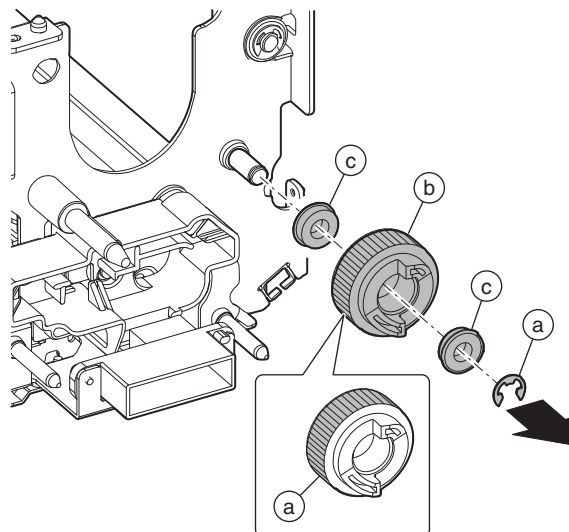
- * When replacing, apply grease (UKOG-0235FCZZ) to each section (a) of the lower heat roller.



- 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 (UKOG-0235FCZZ) to the upper heat roller drive gear section (a).

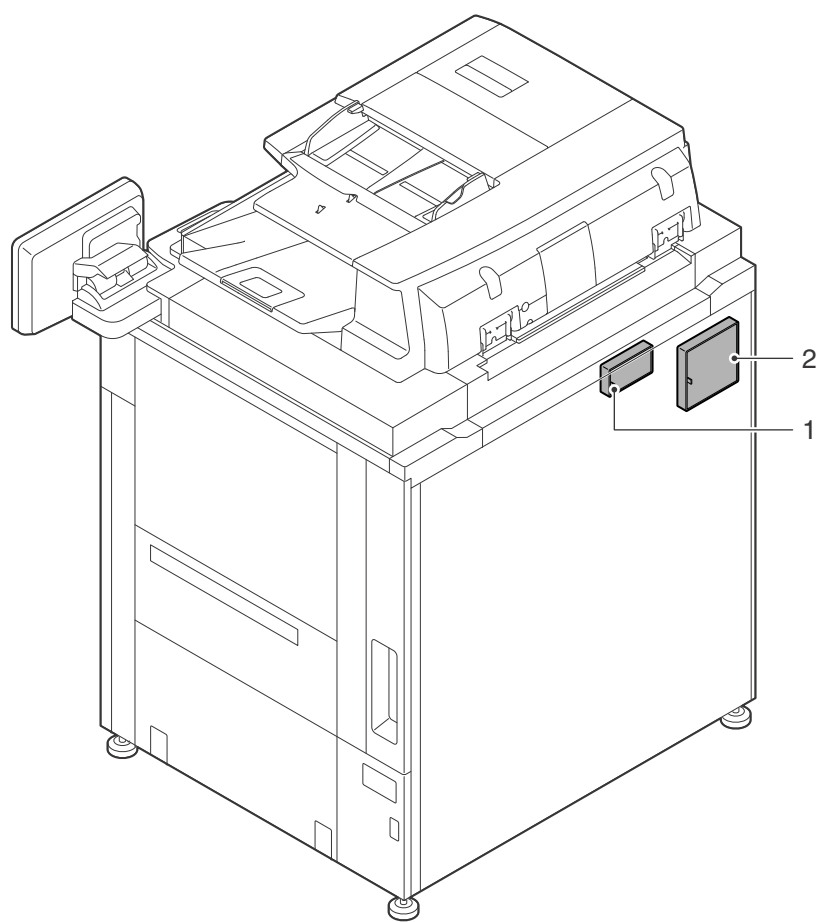


11. Filter section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

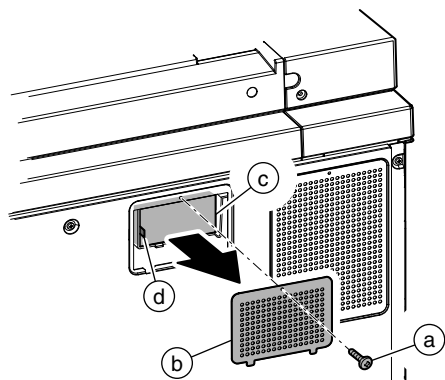
No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Ozone filter		▲	▲	▲	▲	▲	▲	Or 6 months
2	Exhaust filter		▲	▲	▲	▲	▲	▲	Or 6 months



B. Details

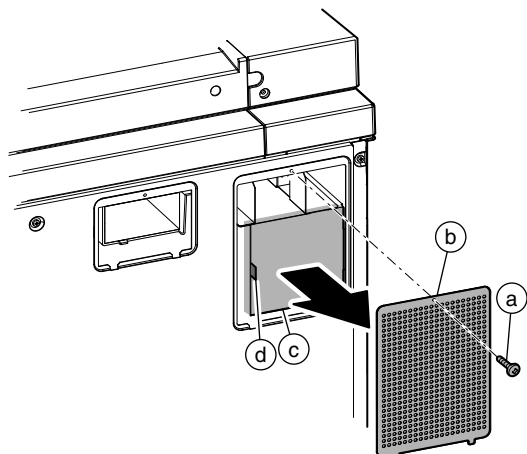
- 1) Remove the screw (a) on the back side of the machine, and remove the cover (b). Replace the ozone filter (c).

* 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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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.

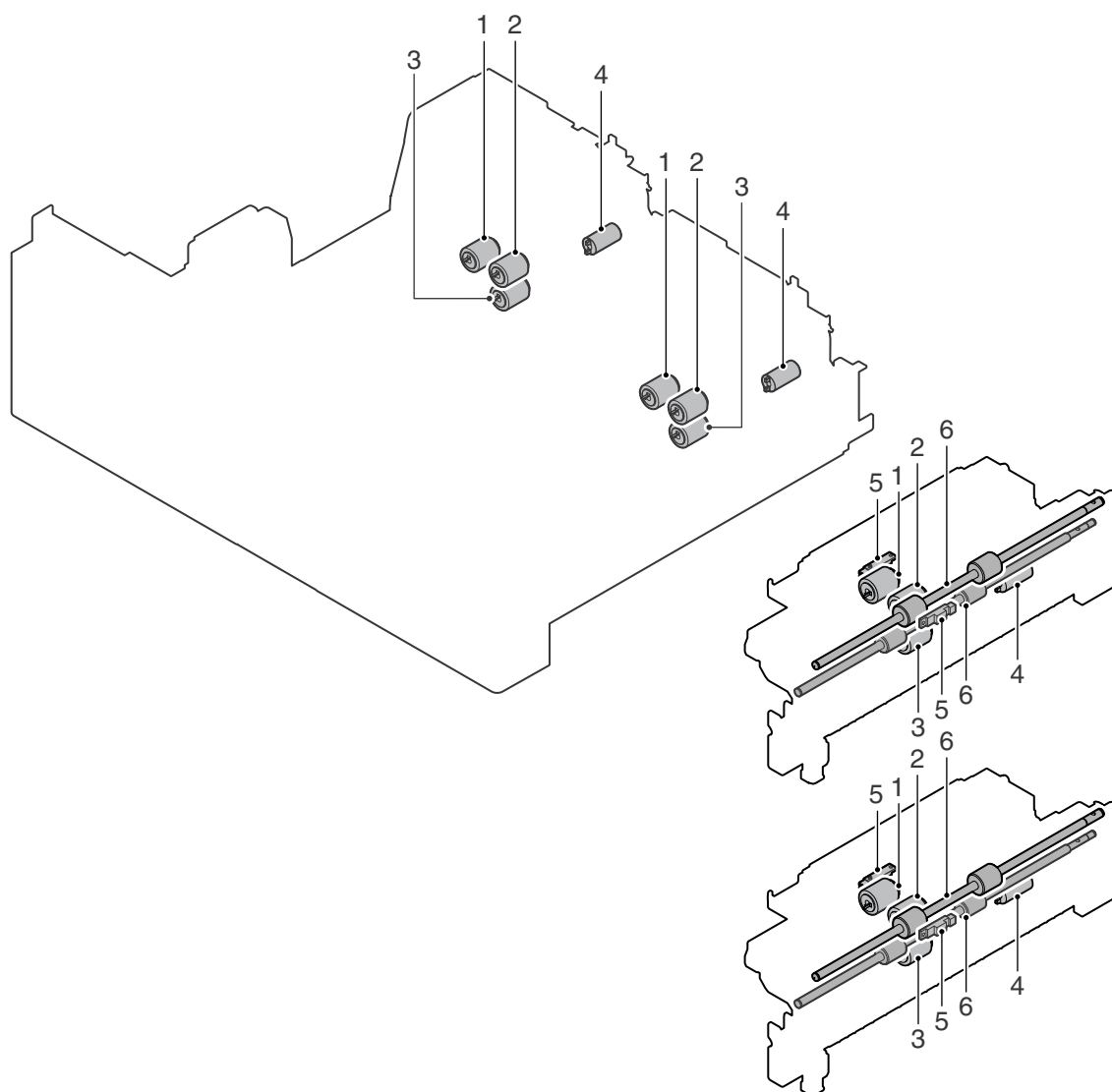
Since, however, sheets of different sizes are used with different paper feed trays actually, it is quite rare that the roller replacement is required before the maintenance cycle.

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.

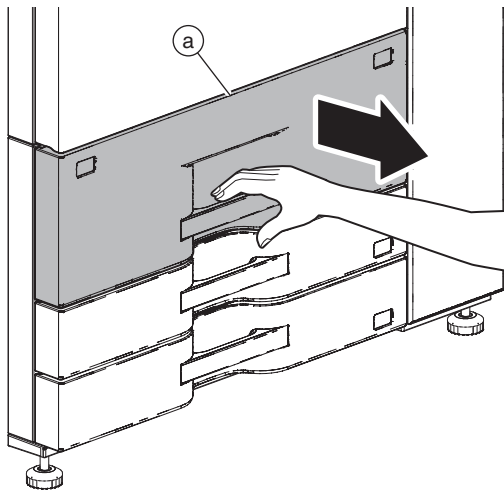
When cleaning the roller, it is recommendable to use wet cloth.

The wear level is greater in the sequence of the separation roller, the paper feed roller, and the paper pickup roller.

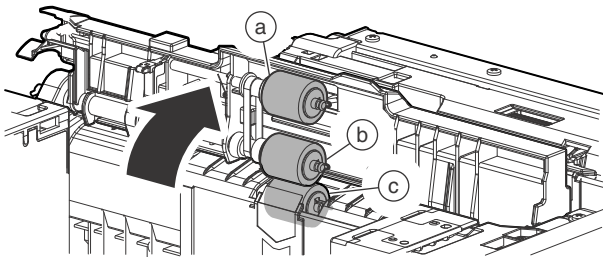


B. Details

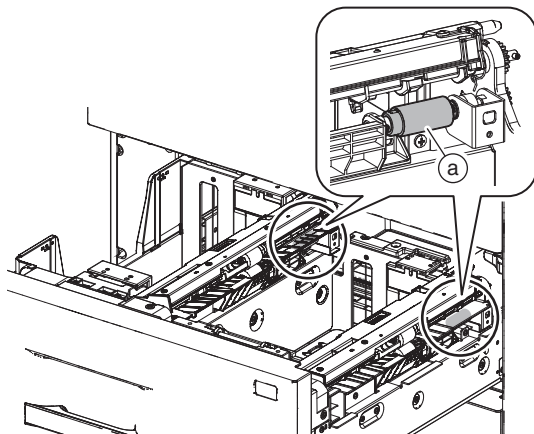
- 1) Pull out the tray 1/2 (a).



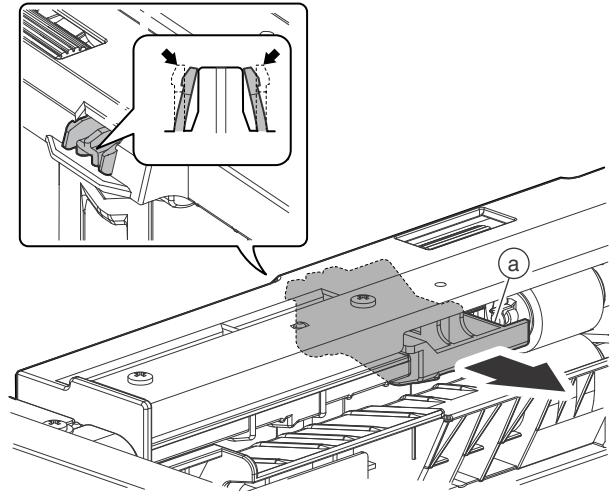
- 2) Check the paper pickup roller (a), the paper feed roller (b), and the separation roller (c) at every calling.



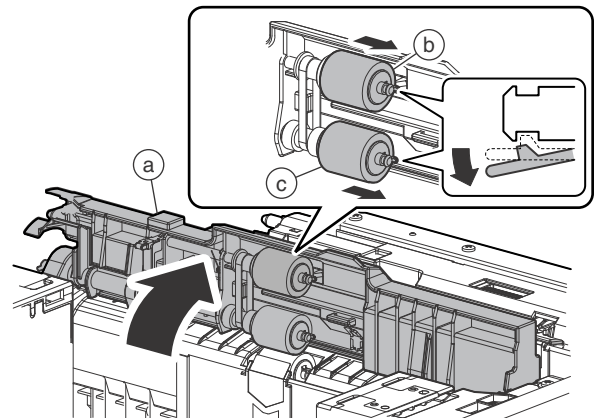
- 3) Check the torque limiter (a) at every 500K.



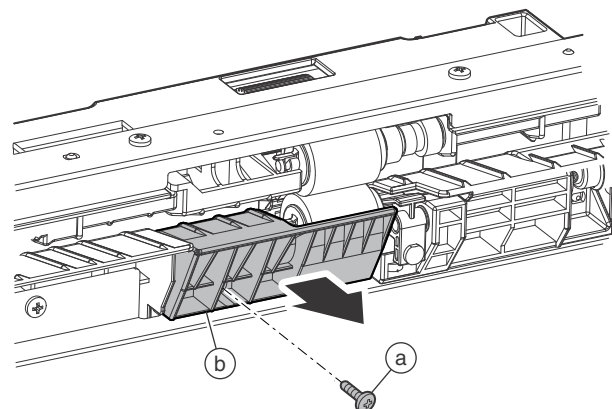
- 4) Remove the paper guide (a).



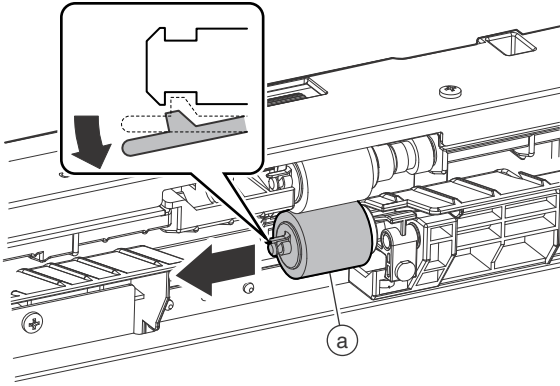
- 5) Open the paper feed unit (a), and replace the paper pickup roller (b) and the paper feed roller (c) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



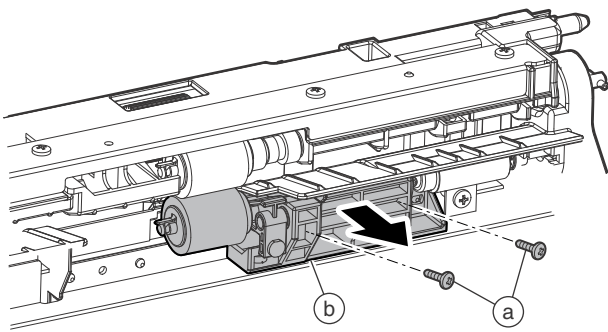
- 6) Remove the screw (a), and remove the paper guide (b).



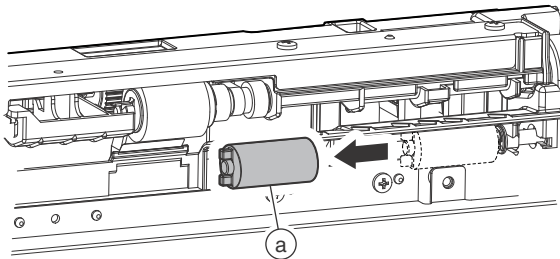
- 7) Replace the separation roller (a) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



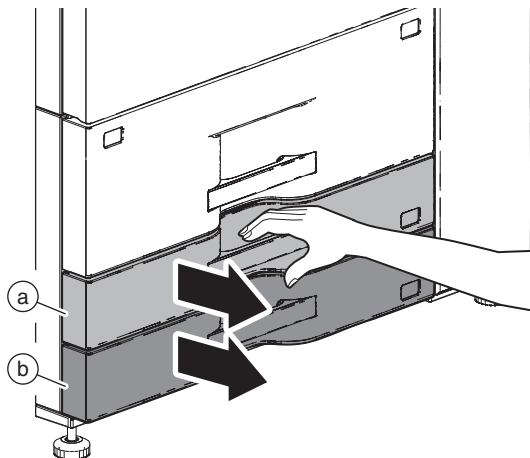
- 8) Remove the screw (a), and remove the separation roller unit (b).



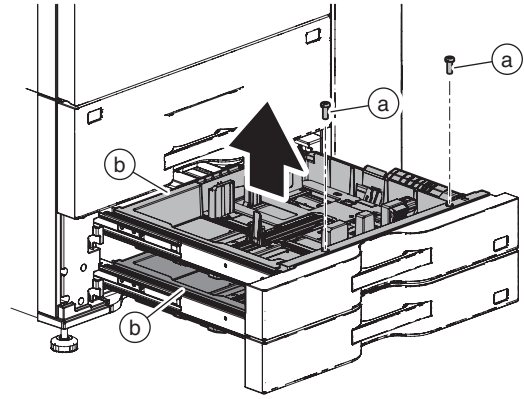
- 9) Replace the torque limiter (a) (when each paper feed counter value reaches 800K from the beginning of use).



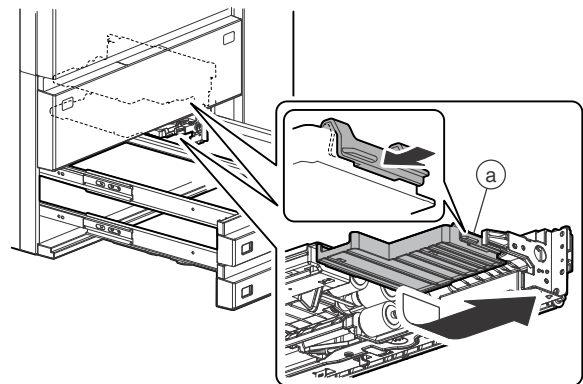
- 10) Pull out the tray 3 (a) and the tray 4 (b).



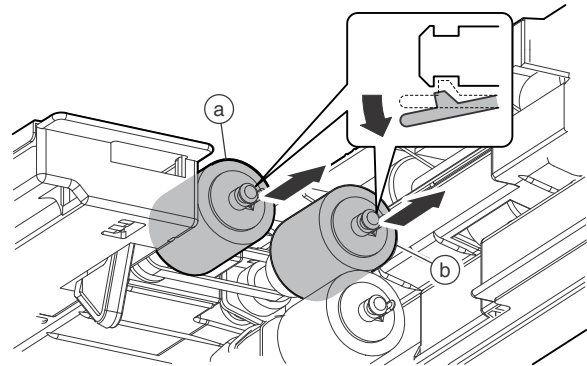
- 11) Remove the screw (a), and remove the trays 3 and 4 (b).



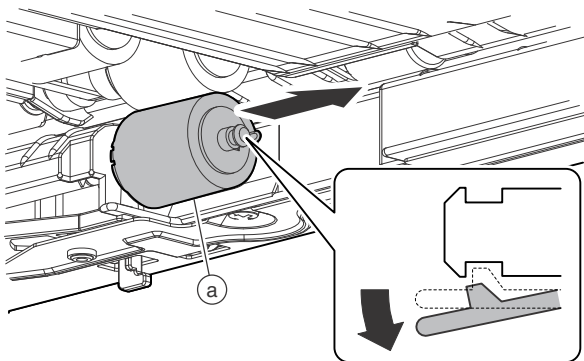
- 12) Remove the paper guide (a) of the tray 3 and 4 paper feed unit.



- 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).

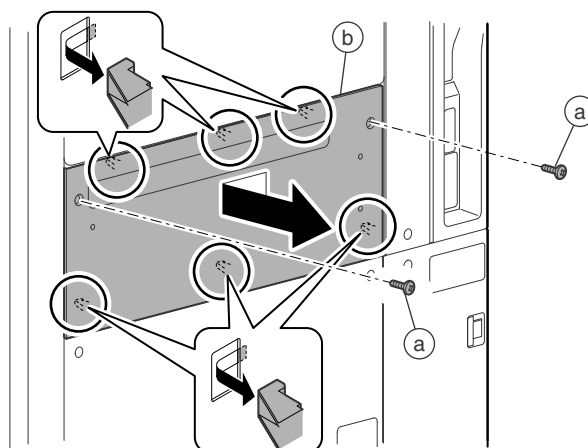


- 14) Remove the separation roller (a). Check at every calling, or replace (when each paper feed counter value reaches 200K from beginning of the use or 1 year.)

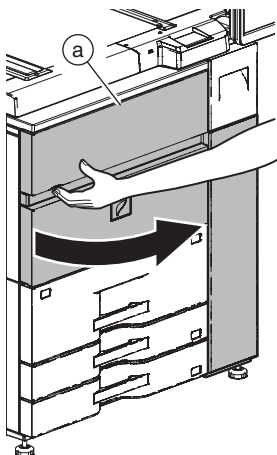


- 17) Remove the screw (a), and remove the cabinet (b).

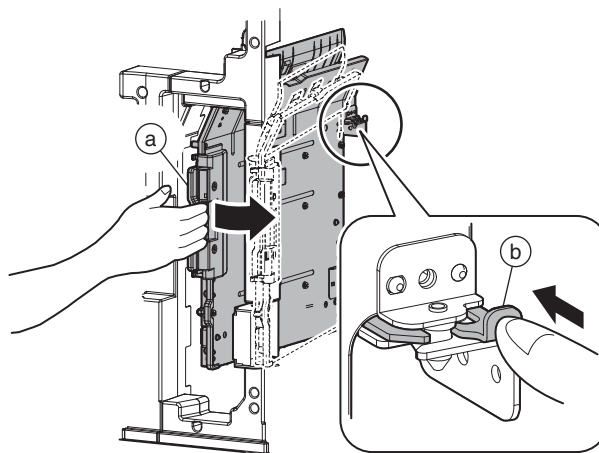
* The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



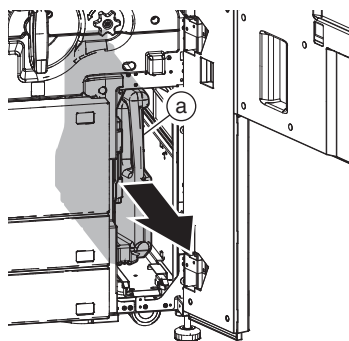
- 15) Open the front cover (a).



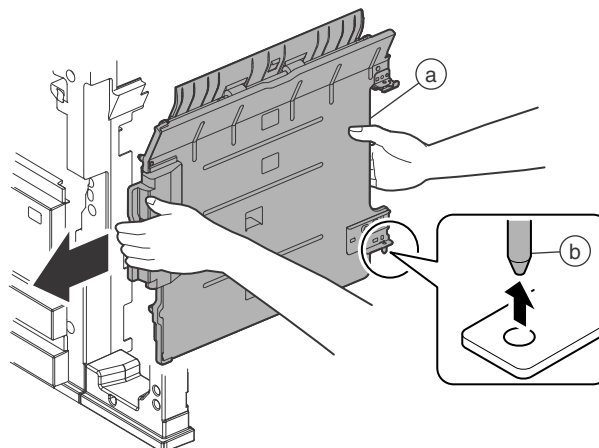
- 18) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



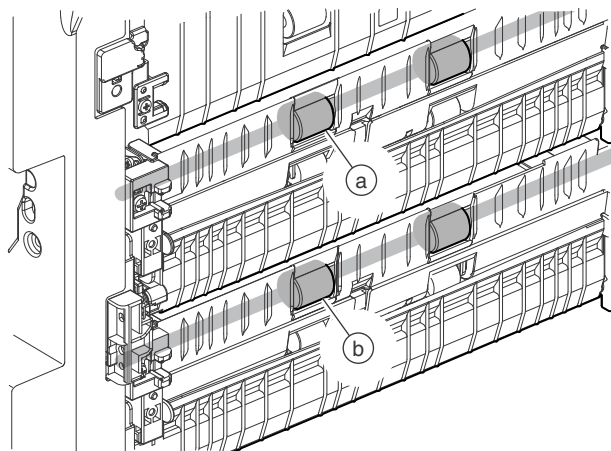
- 16) Remove the toner collection container (a).



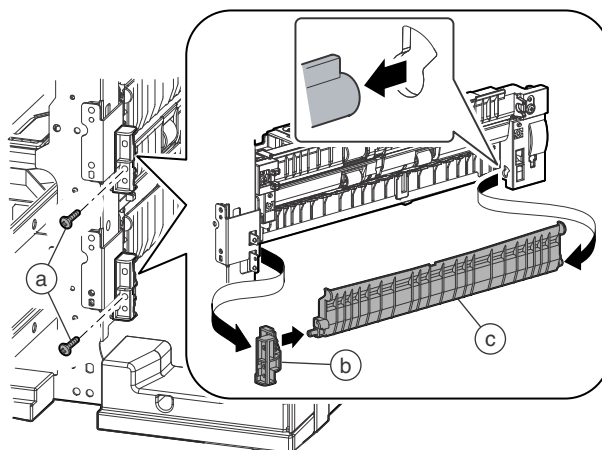
- 19) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



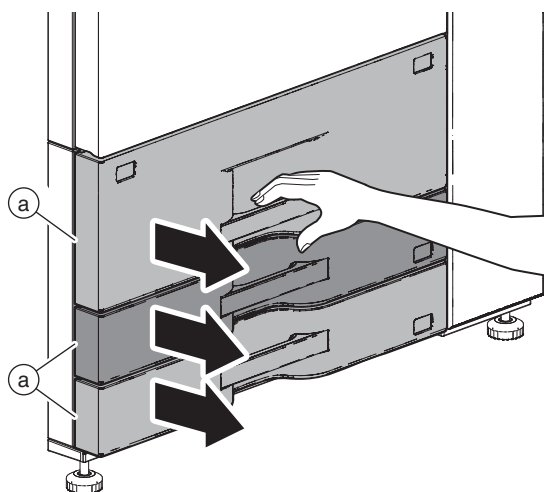
20) Clean the transport roller 4 (a) and the transport roller 2 (b) at every 500K.



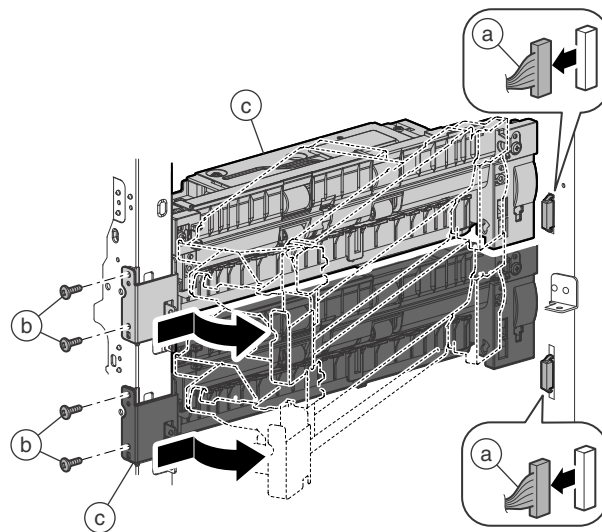
23) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).



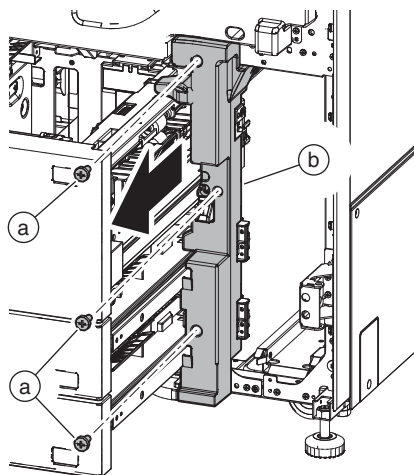
21) Pull out all tray (a).



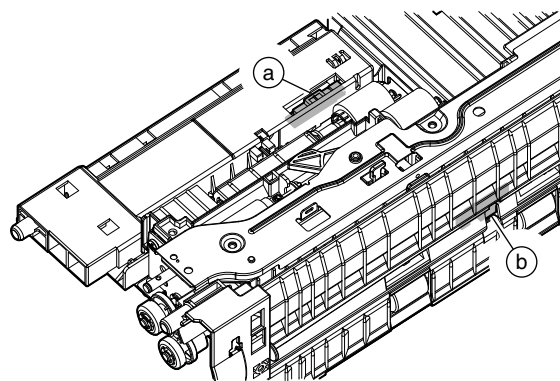
24) Disconnect the connector (a). Remove the screw (b), and remove the tray 3 and 4 paper feed unit (c).



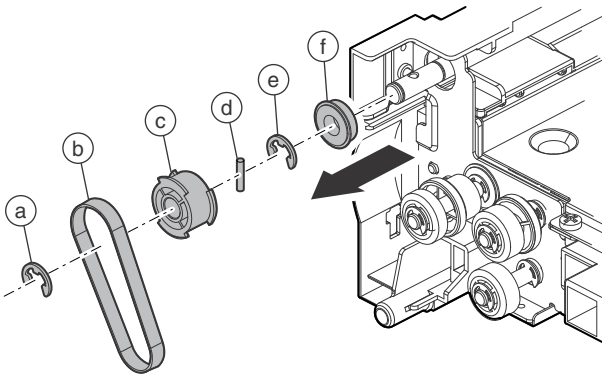
22) Remove the screw (a), and remove the cover (b).



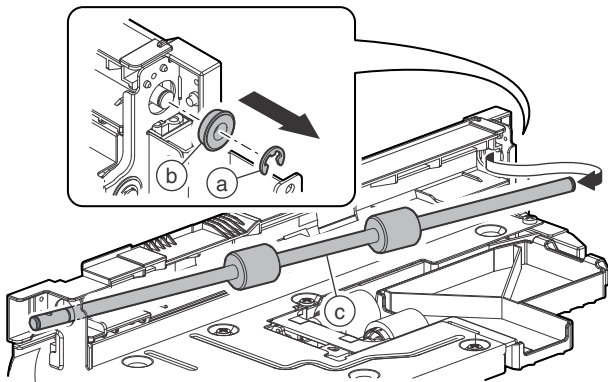
25) Clean the cassette 3 and 4 paper presence detection (a) and the cassette 3 and 4 paper entry detection (b) at every 500K.



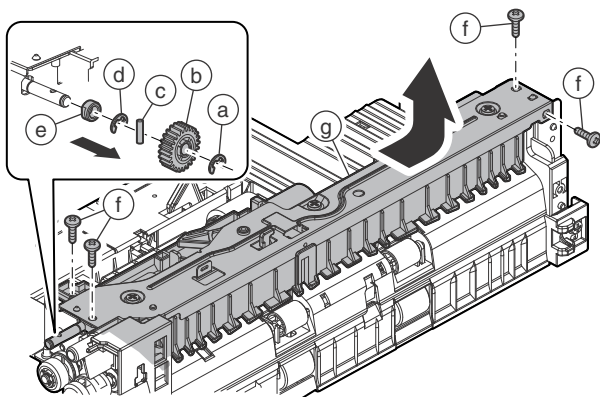
26) Remove the E-ring (a), and remove the belt (b), the pulley (c), and the parallel pin (d). Remove the E-ring (e) and the bearing (f).



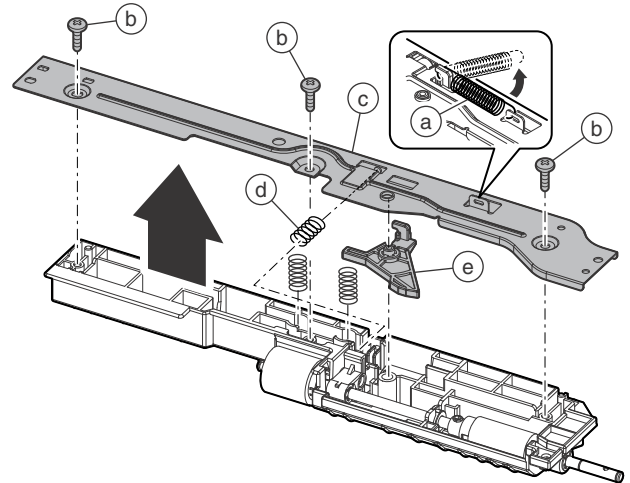
27) Remove the E-ring (a), the bearing (b), and replace the transport roller 2 and 4 (c).



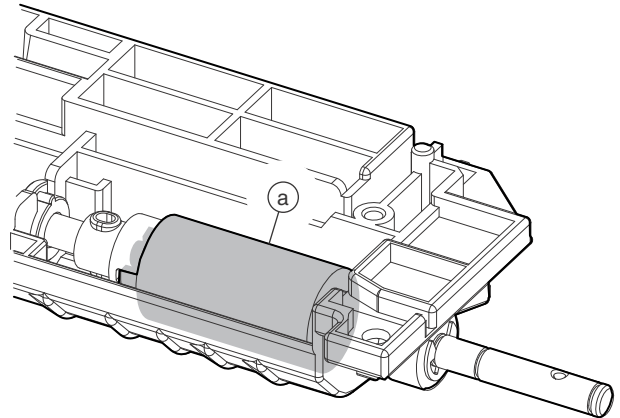
28) Remove the E-ring (a), the gear (b), the parallel pin (c), the E-ring (d), and the bearing (e). Remove the screw (f), and remove the paper guide unit (g).



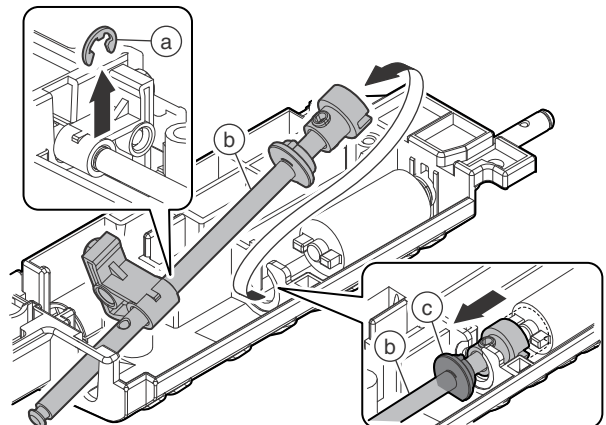
29) Remove the spring (a). Remove the screw (b) and the stay (c). Remove the spring (d) and the separation pressure release plate (e).



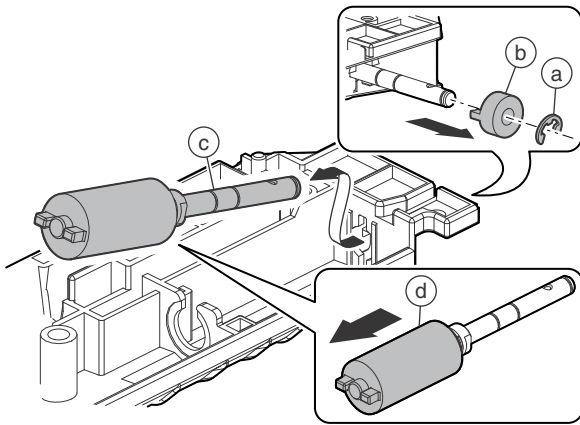
30) Check the torque limiter (a) at every 500K.



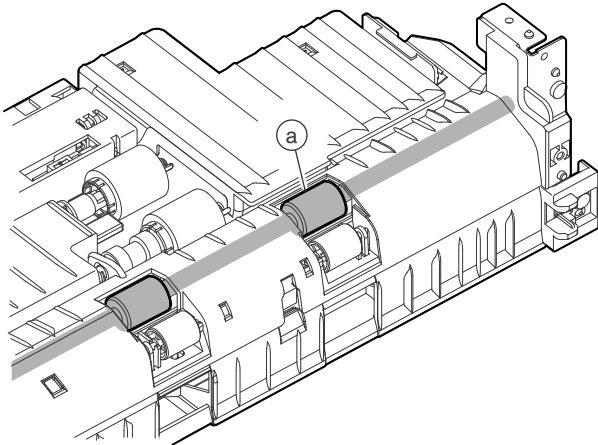
31) Remove the E-ring (a). Slide the shaft (b) and remove the bearing (c). Remove the shaft (b).



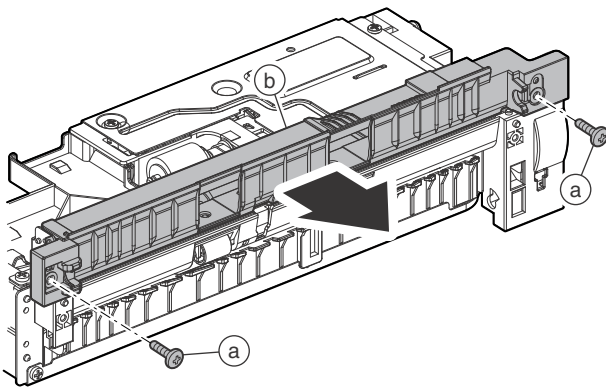
- 32) Remove the E-ring (a), and remove the coupling (b). Remove the shaft (c), and replace the torque limiter (d) (when each paper feed counter value reaches 800K from the beginning of use).



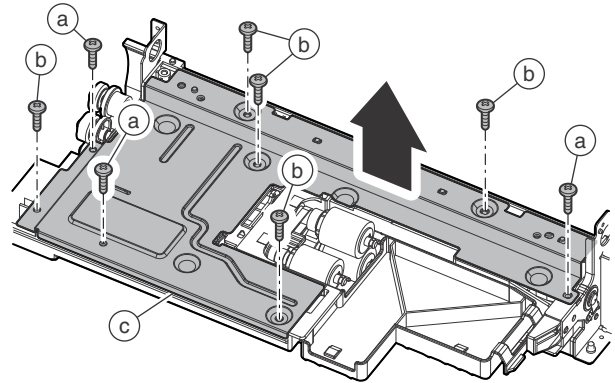
- 33) Clean the transport roller 1 and 3 (a) at every 500K.



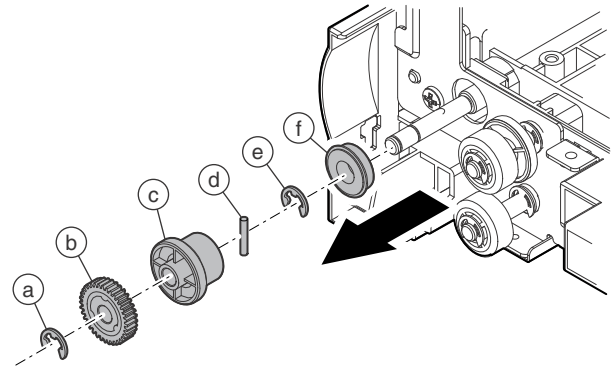
- 34) Remove the screw (a), and remove the paper guide (b).



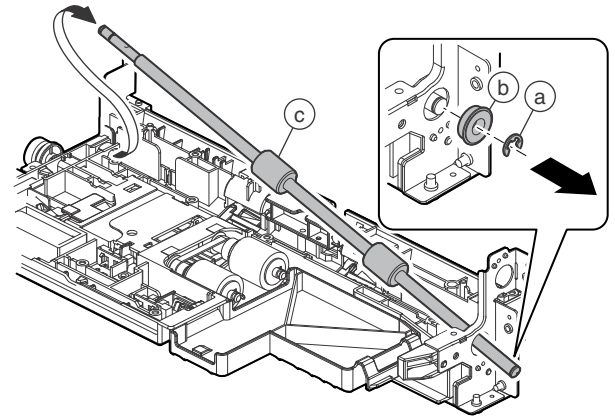
- 35) Remove the screw (a), the screw (b), and the cover (c).



- 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).



- 37) Remove the E-ring (a), the bearing (b), and replace the transport roller 1 and 3 (c).

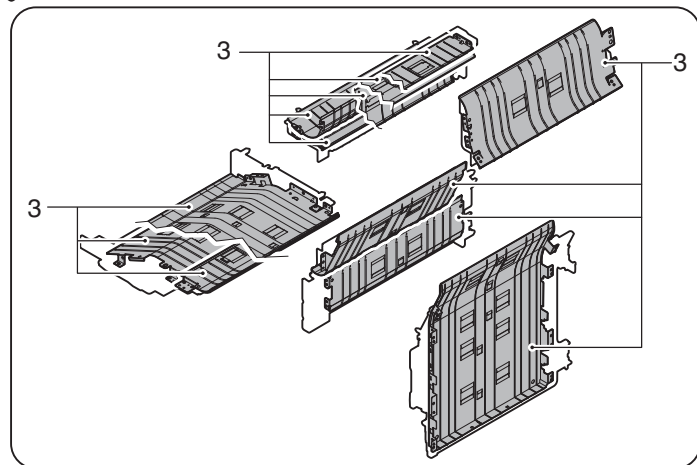
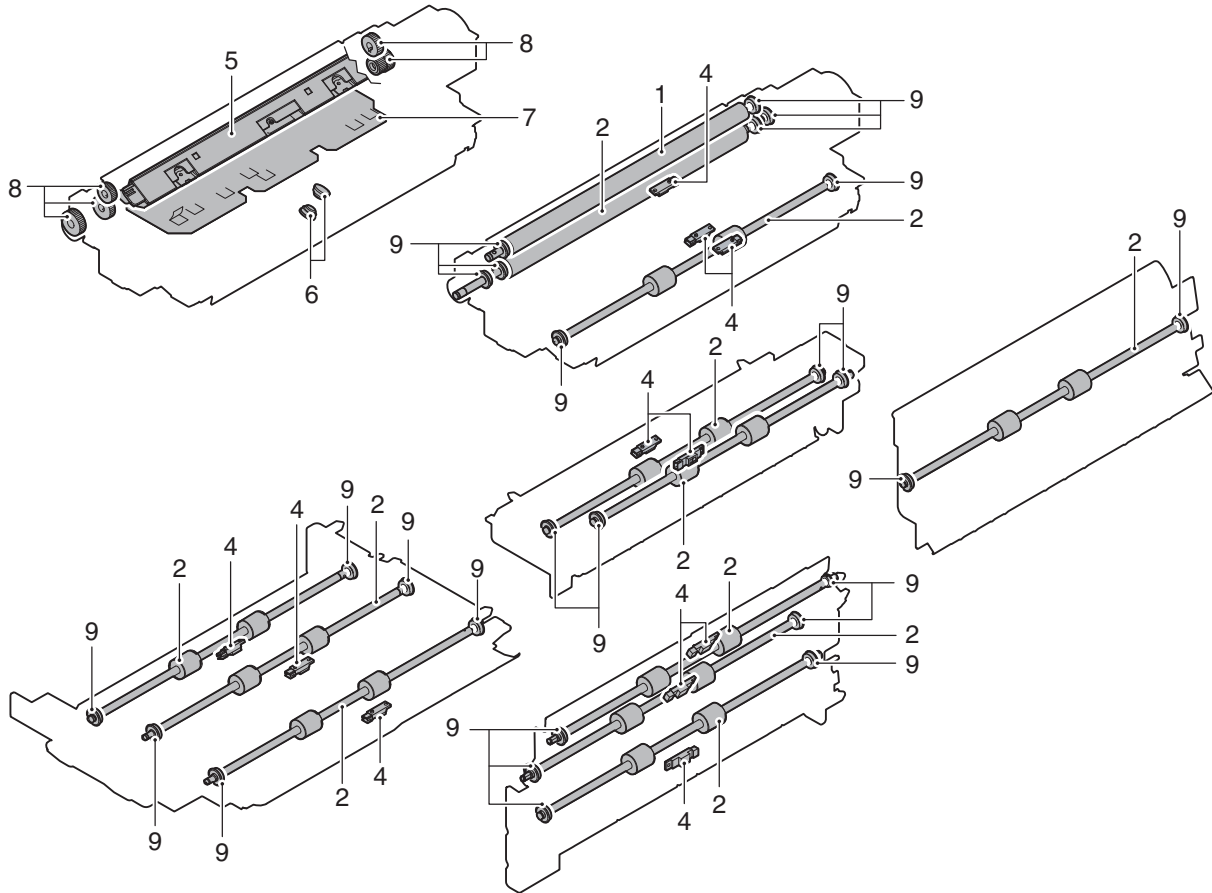


13. Paper transport section

A. Maintenance table

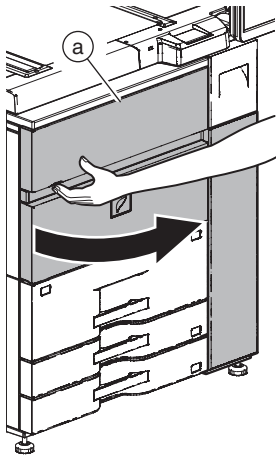
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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	Bearings							×	

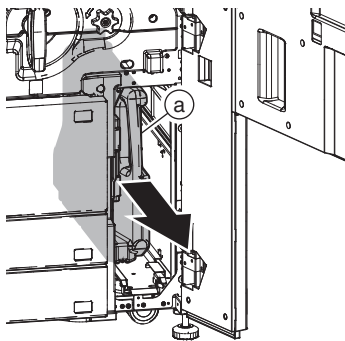


B. Details

- 1) Open the front cover (a).

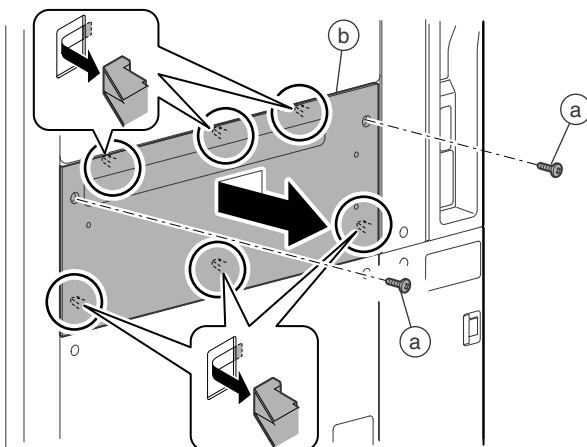


- 2) Remove the toner collection container (a).

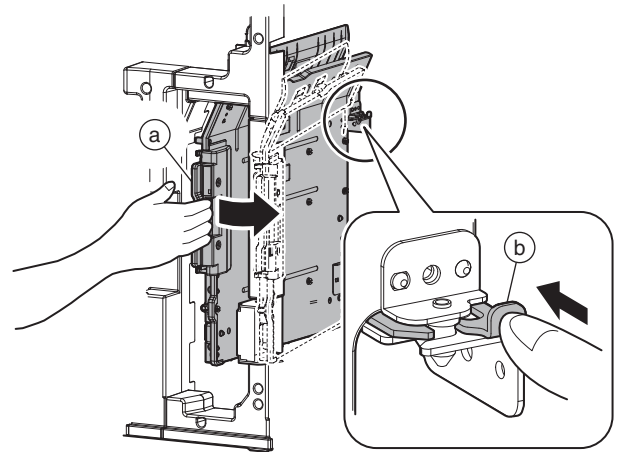


- 3) Remove the screw (a), and remove the cabinet (b).

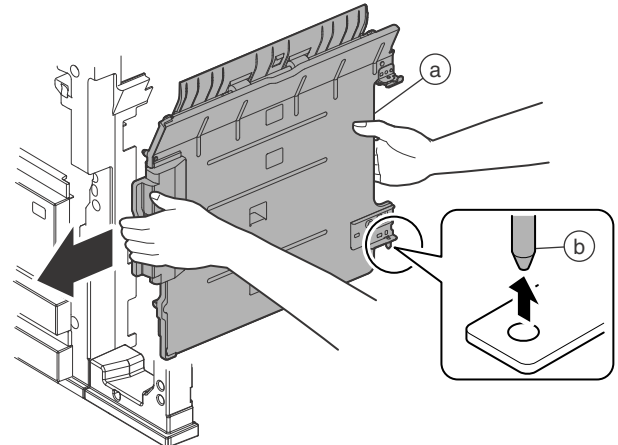
* The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



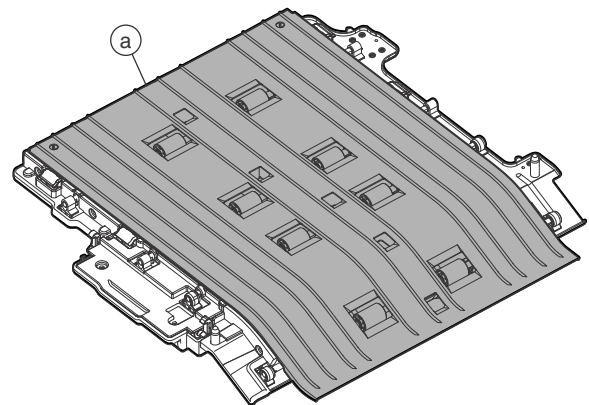
- 4) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



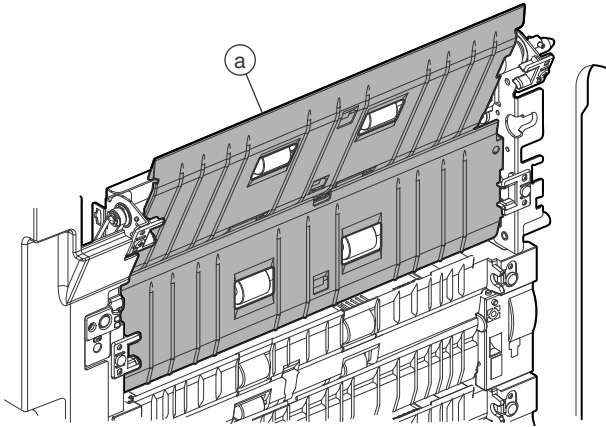
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



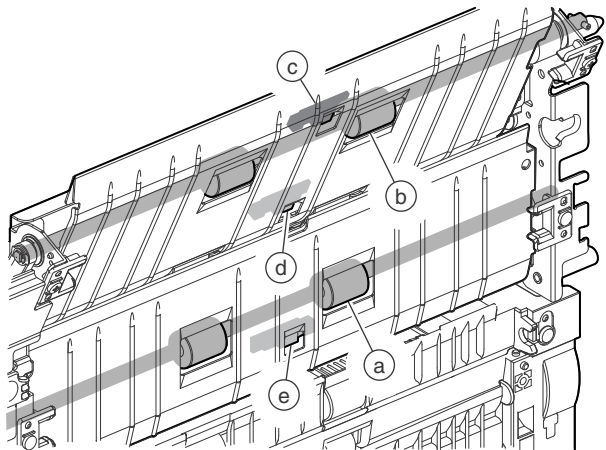
- 6) Clean the paper guide (a) of the vertical transport door unit at every 500K.



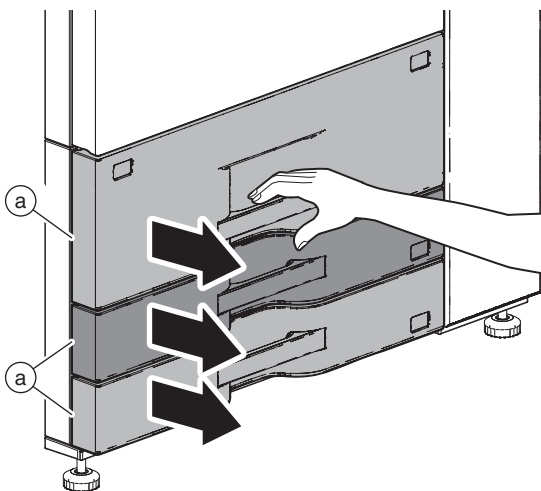
- 7) Clean the paper guide (a) of the vertical transport unit at every 500K.



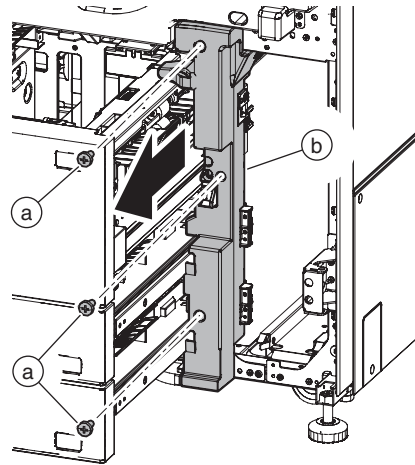
- 8) Clean the transport roller 5 (a), the transport roller 7 (b), the transport detection (c), the cassette 2 paper entry detection (d), and the vertical transport detection (e) at every 500K.



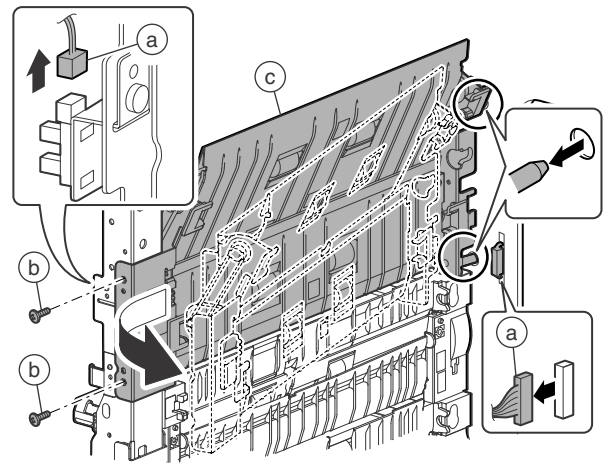
- 9) Pull out all tray (a).



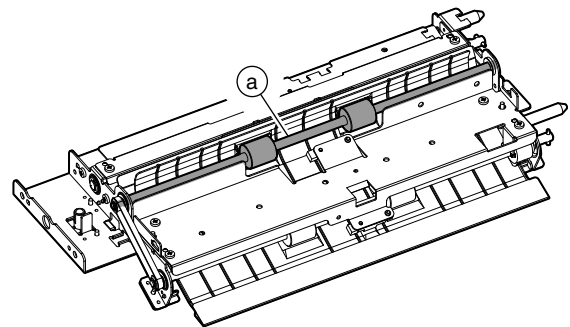
- 10) Remove the screw (a), and remove the cover (b).



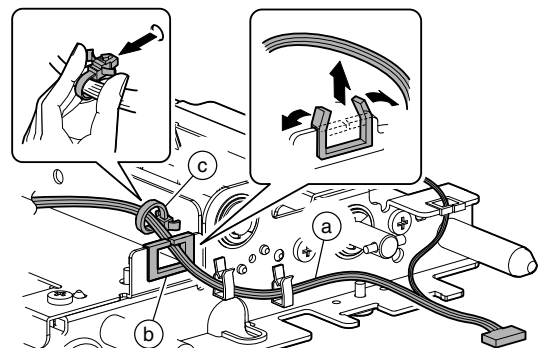
- 11) Disconnect the connector (a) and remove the screw (b). Remove the vertical transport unit (c).



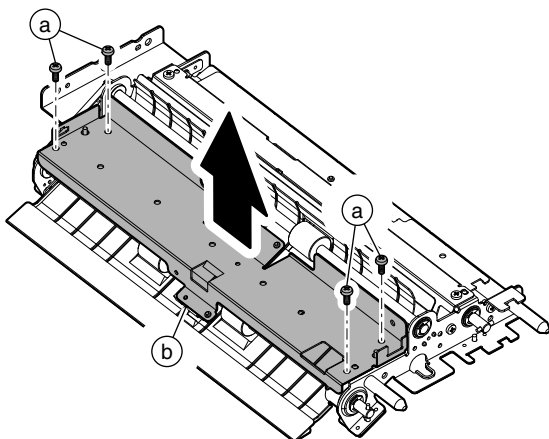
- 12) Clean the transport roller 6 (a) at every 500K.



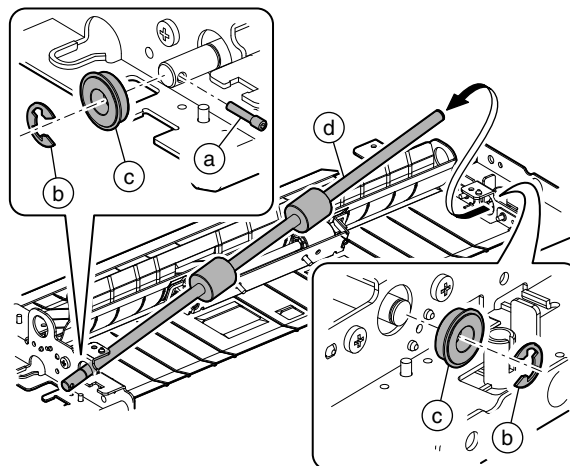
- 13) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



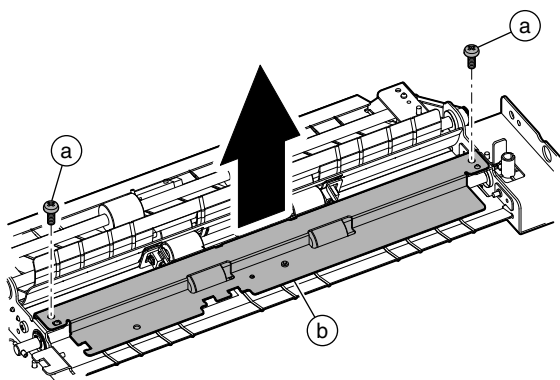
14) Remove the screw (a), and remove the frame (b).



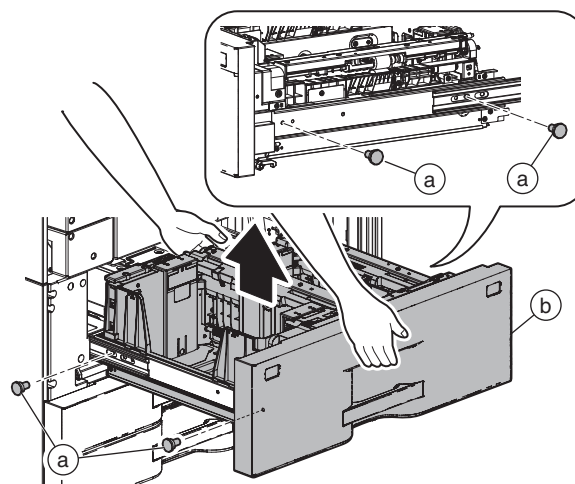
17) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 5 (d).



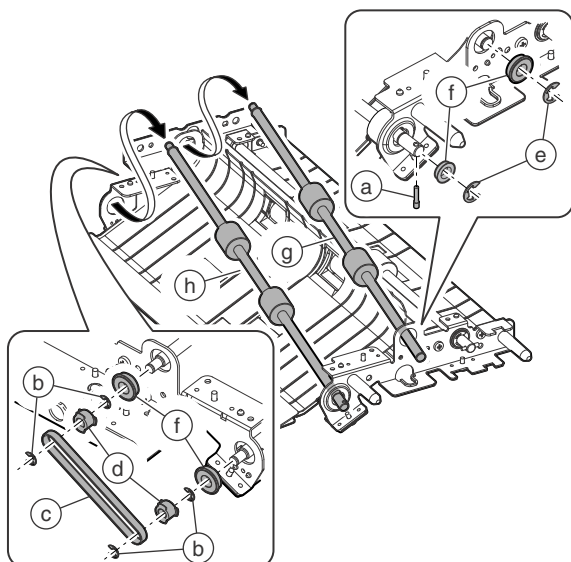
15) Remove the screw (a), and remove the frame (b).



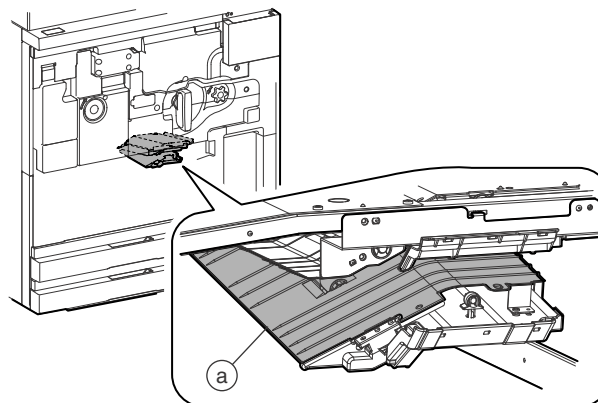
18) Remove the screw (a), and remove the tray 1/2 (b).



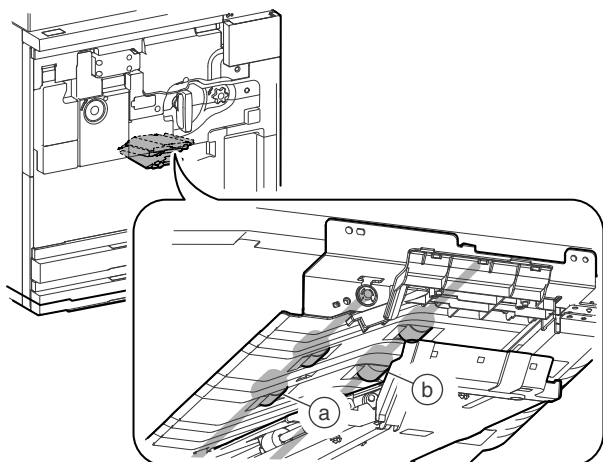
16) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 6 (g) and the transport roller 7 (h).



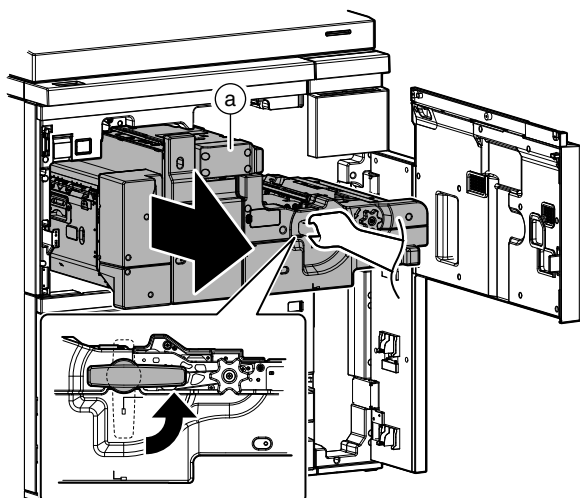
19) Clean the paper guide (a) of the interface pass unit at every 500K.



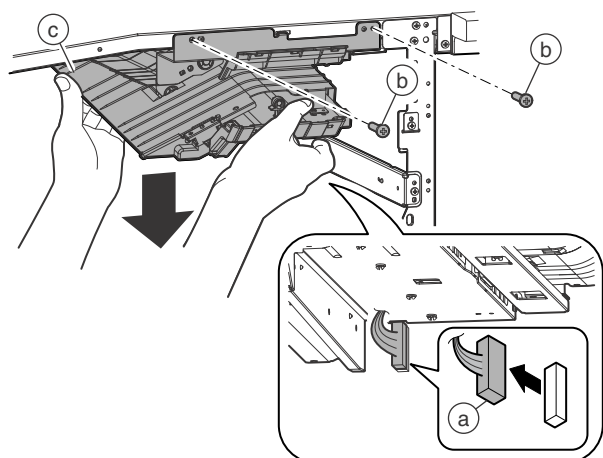
20) Clean the transport roller 8 (a) and the transport roller 9 (b) at every 500K.



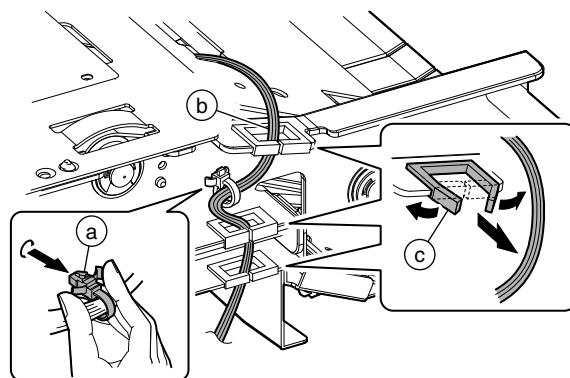
21) Pull out the intermediate frame (a).



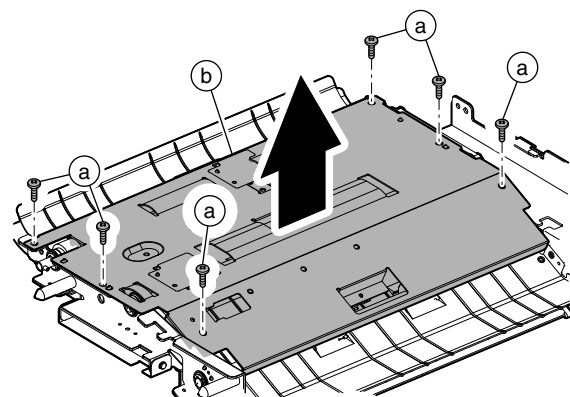
22) Disconnect the connector (a), and remove the screw (b). Remove the interface pass unit (c).



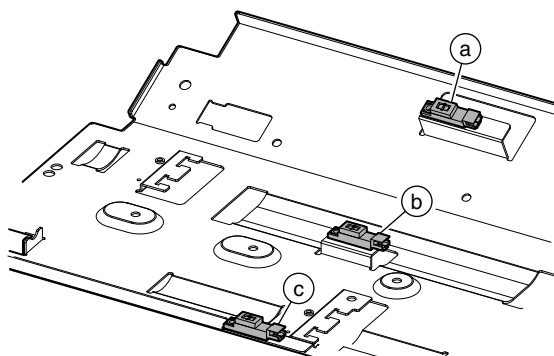
23) Remove the snap band (a), and remove the harness (b) from the harness holder (c).



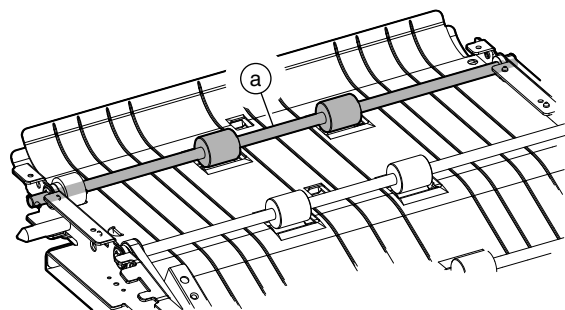
24) Remove the screw (a), and remove the frame (b).



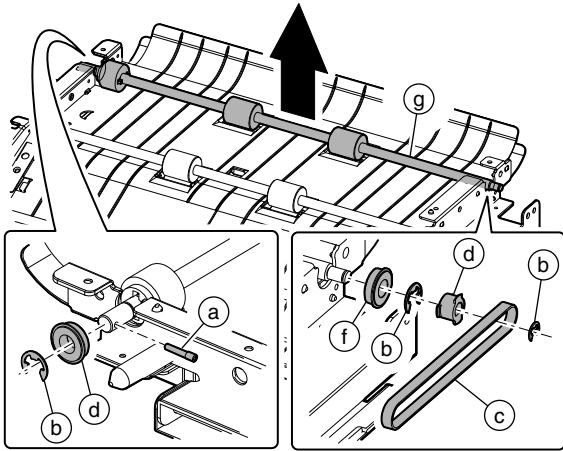
25) Clean the cassette 1 paper entry detection (a), the cassette 1 transport detection 1 (b), and the cassette 1 transport detection 2 (c) at every 500K.



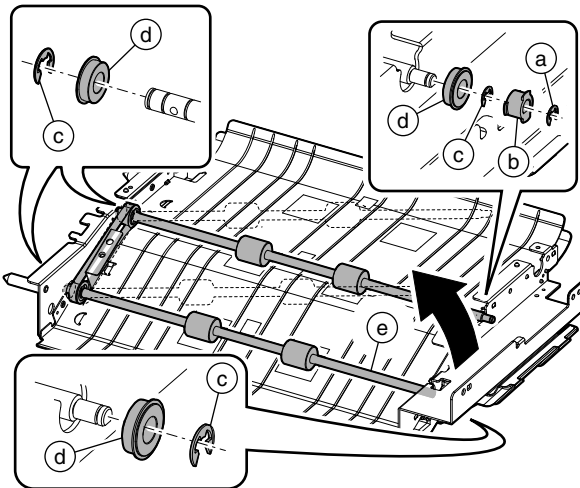
26) Clean the transport roller 10 (a) at every 500K.



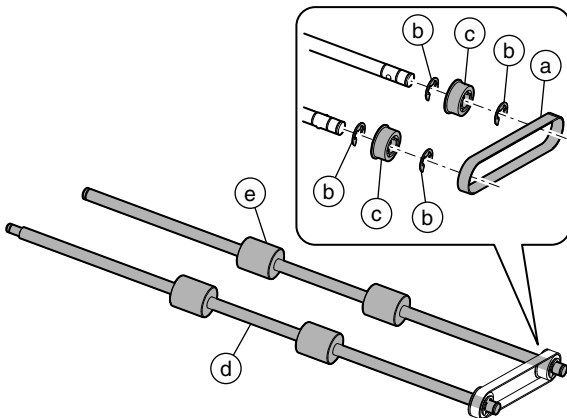
- 27) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 10 (g).



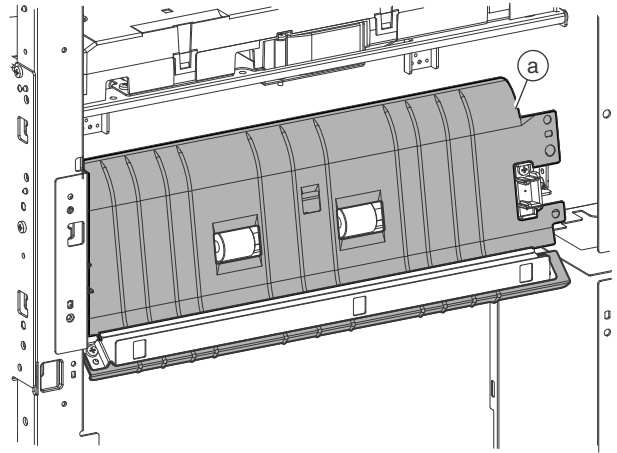
- 28) Remove the E-ring (a) and the pulley (b). Remove the E-ring (c) and the bearing (d). Remove the transport roller 8 and 9 unit (e).



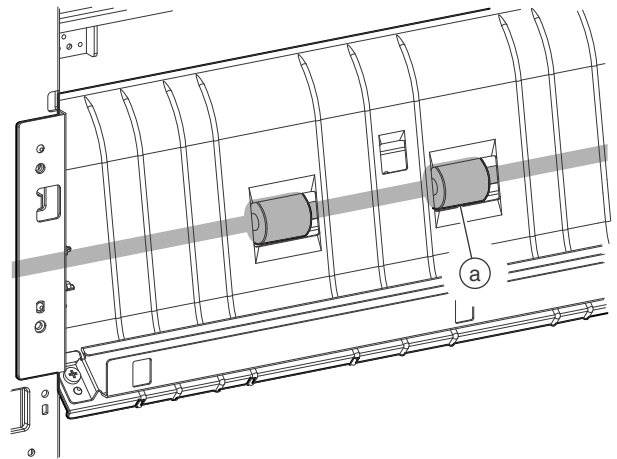
- 29) Remove the belt (a), the E-ring (b), and the pulley (c). Replace the transport roller 8 (d) and the transport roller 9 (e).



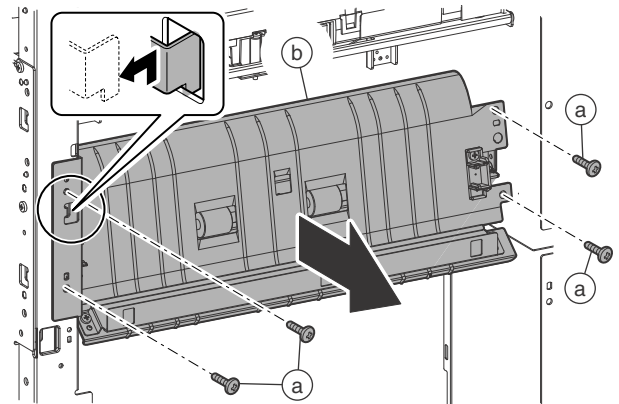
- 30) Clean the paper guide (a) of the LCC interface transport unit at every 500K.



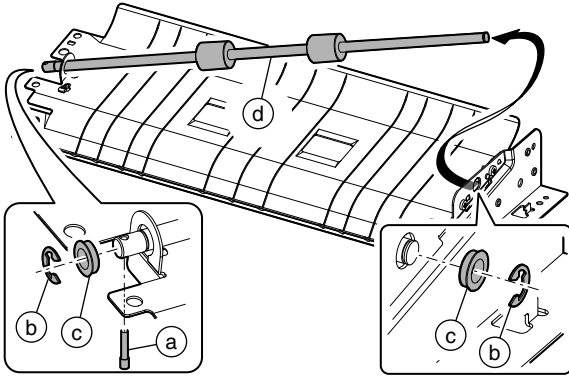
- 31) Clean the transport roller 12 (a) at every 500K.



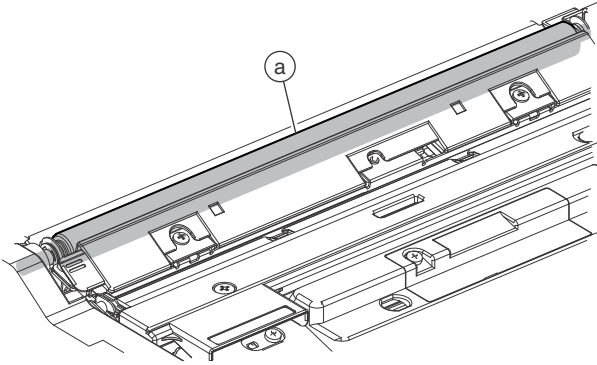
- 32) Remove the screw (a), and remove the LCC interface transport unit (b).



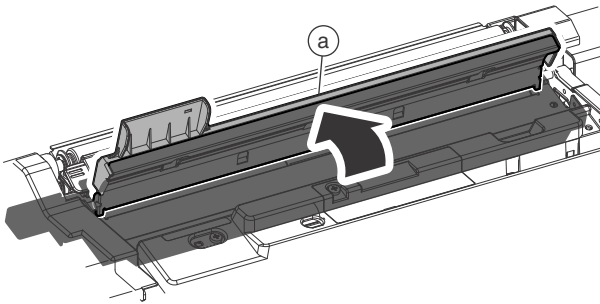
- 33) Remove the set screw (a), the E-ring (b), and the bearing (c).
Replace the transport roller 12 (d).



- 34) Clean the resist roller (idle) (a) at every 500K.

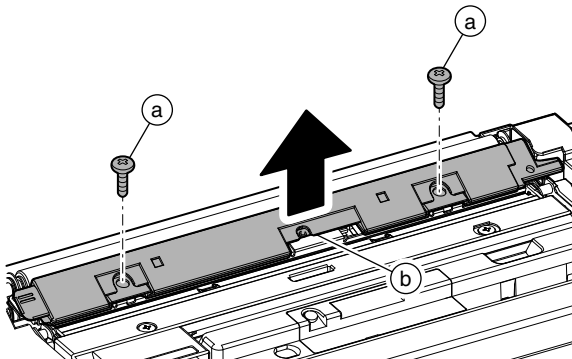


- 35) Open the paper guide (a) of the resist roller unit, and clean it at every 500K.

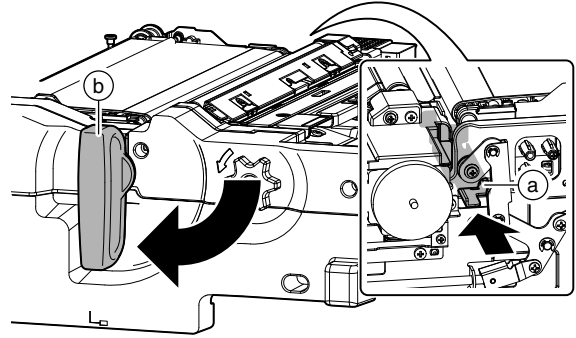


- 36) Clean the blue screw (a), and replace the paper dust cleaner (b).

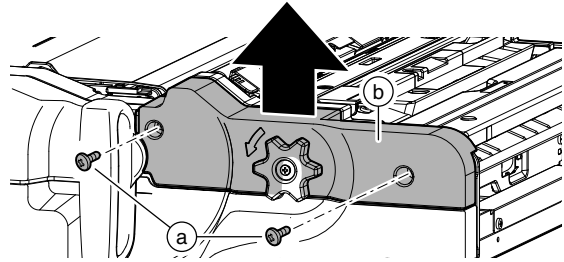
* When the paper dust cleaner is removed for another purpose than replacement, it must be cleaned.



- 37) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.

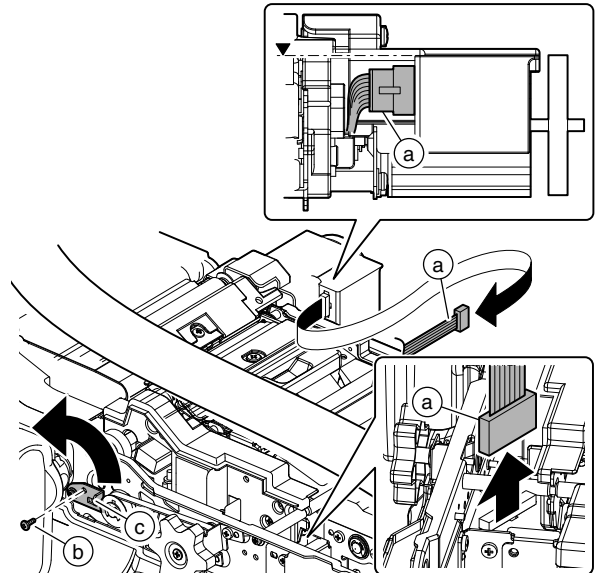


- 38) Remove the screw (a), and remove the cover (b).

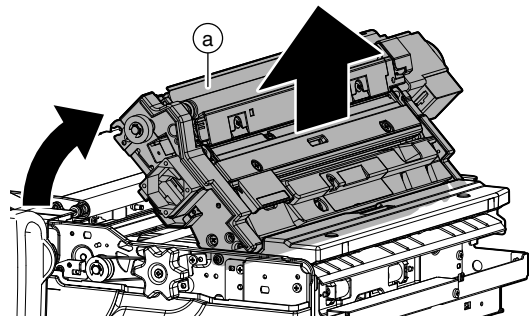


- 39) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c) to put it straight.

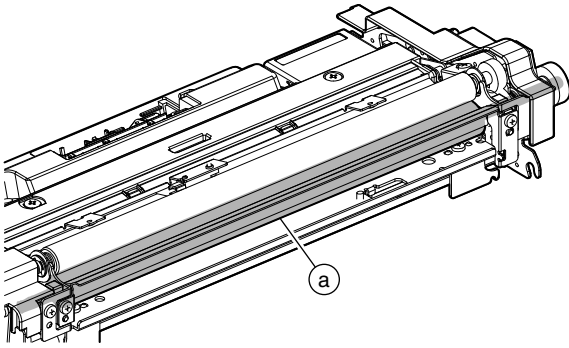
* When connecting, arrange so that the connector (a) does not extend over the PS roller unit.



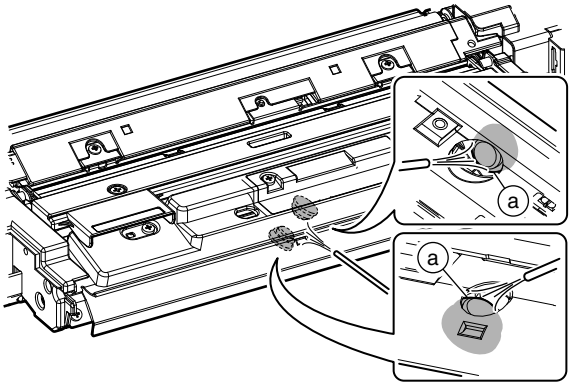
- 40) Remove the resist roller unit (a).



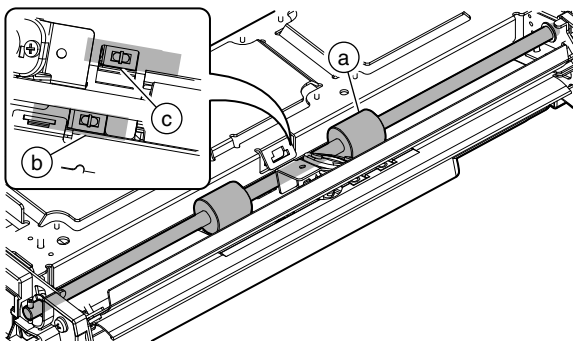
41) Clean the resist roller (drive) (a) at every 500K.



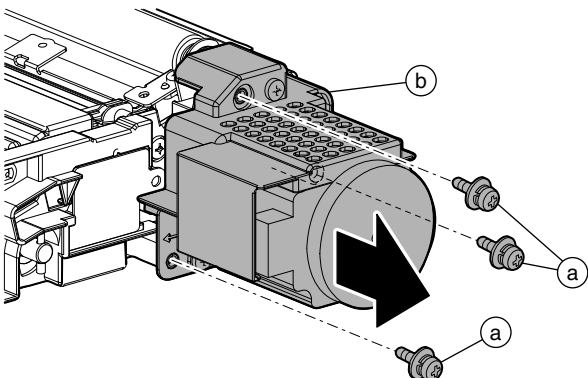
42) Blow air to the top of the double feed detection sensor (a) to clean at every 3000K.



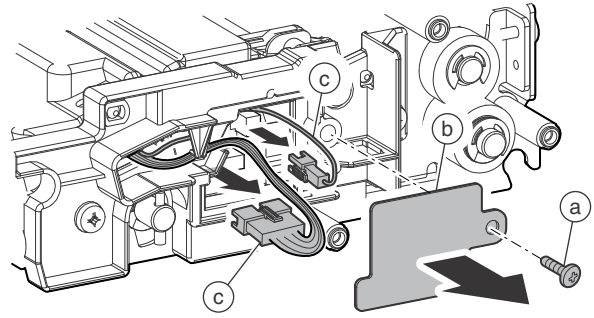
43) Clean the transport roller 14 (a), the transport detection 2 (b), and the transport detection 3 (c) at every 500K.



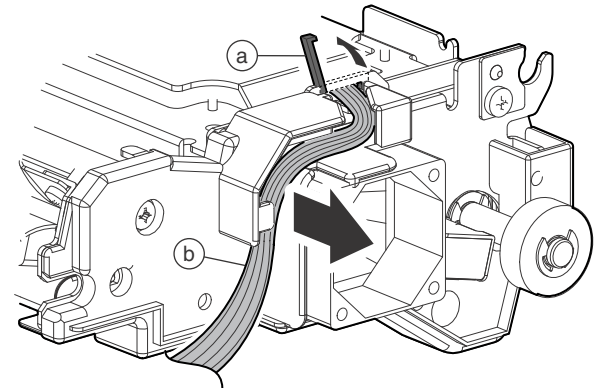
44) Remove the screw (a), and remove the PS motor unit (b).



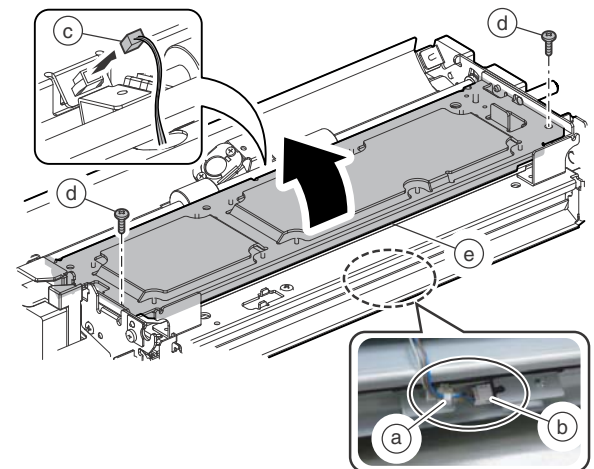
45) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



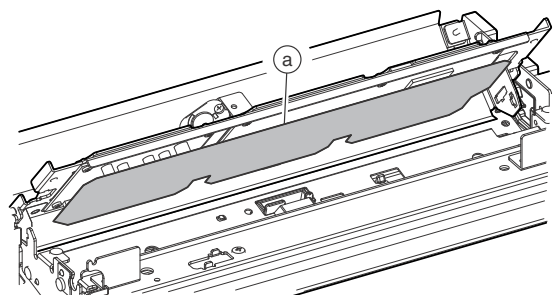
46) Open the harness holder (a), and remove the harness (b)



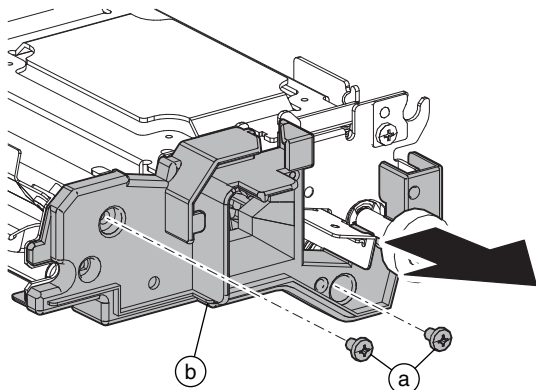
47) Remove the reuse band (a), and disconnect the connector (b). Disconnect the connector (c), and remove the screw (d). Open the frame (e).



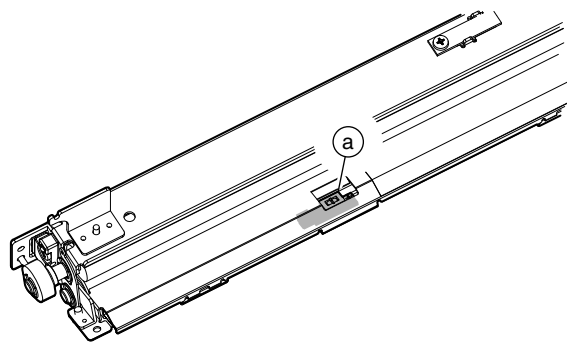
48) Clean the PS section PWB protection sheet (a) at every 3000K.



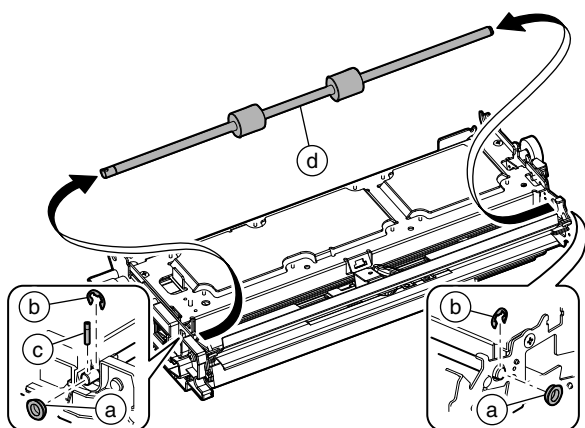
49) Remove the screw (a), and remove the cover (b).



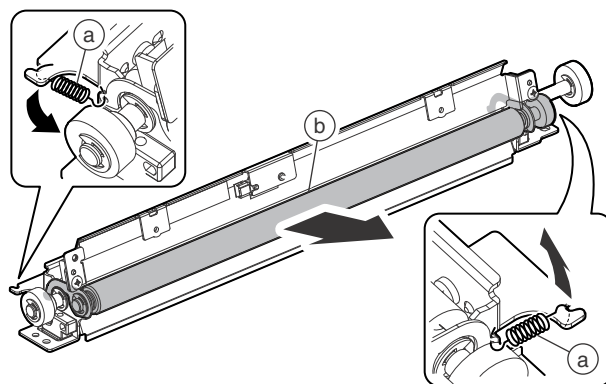
52) Clean the transport detection 4 (a) at every 500K.



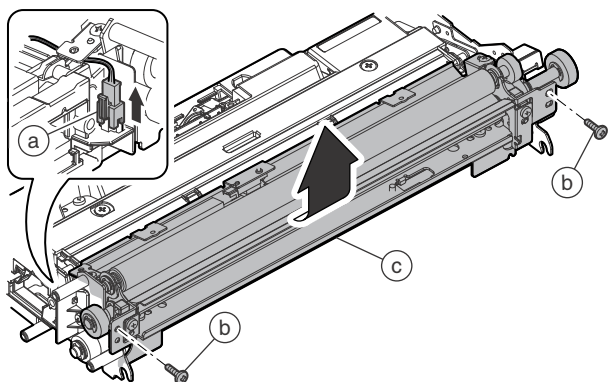
50) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 14 (d).



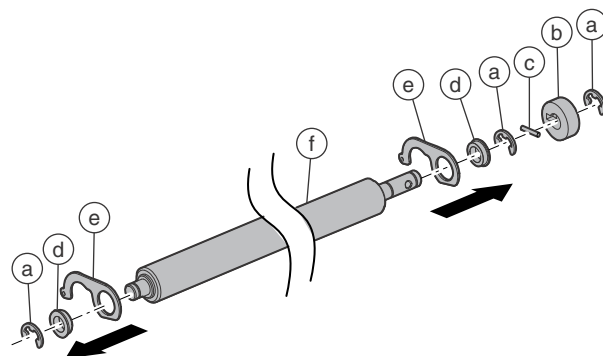
53) Remove the spring (a), and remove the resist roller (idle) unit (b).



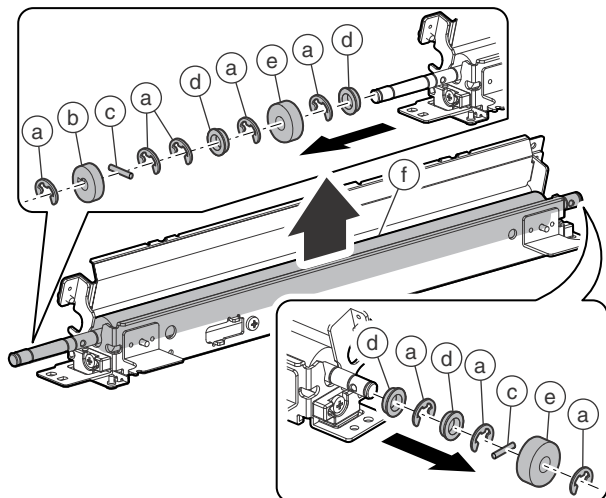
51) Disconnect the connector (a), and remove the screw (b). Remove the roller unit (c).



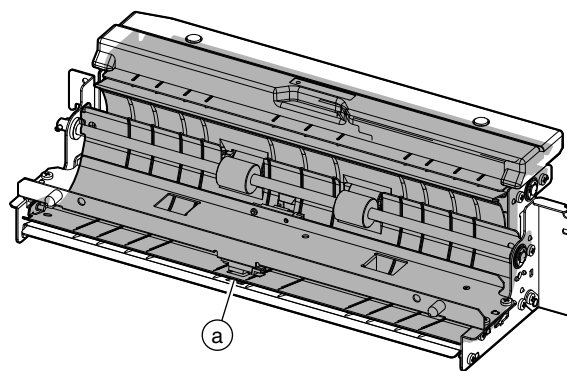
54) Remove the E-ring (a), the PS gear (b), the parallel pin (c), the bearing (d), and the plate (e). Replace the PS gear (b), and the resist roller (idle) (f).



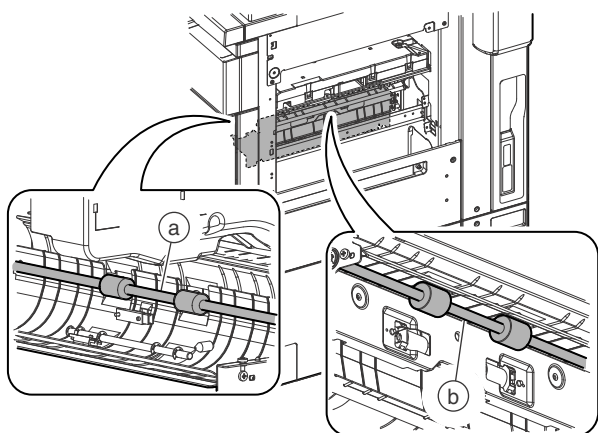
55) Remove the E-ring (a), the gear (b), the parallel pin (c), the bearing (d), and the PS gear (e). Replace the PS gear (e), and the resist roller (drive) (f).



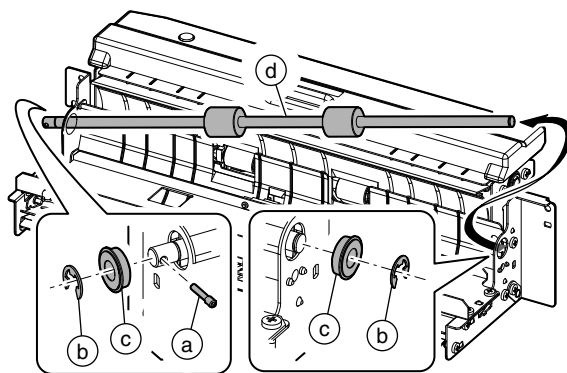
58) Clean the paper guide (a) of the upper transport unit at every 500K.



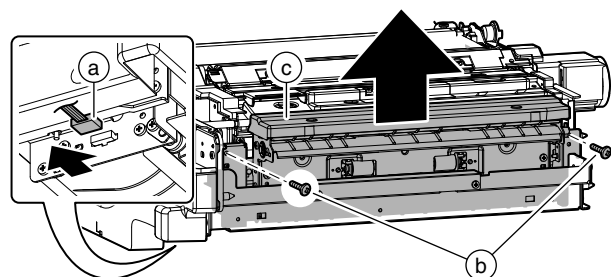
56) Clean the transport roller 11 (a) and the transport roller 13 (b) at every 500K.



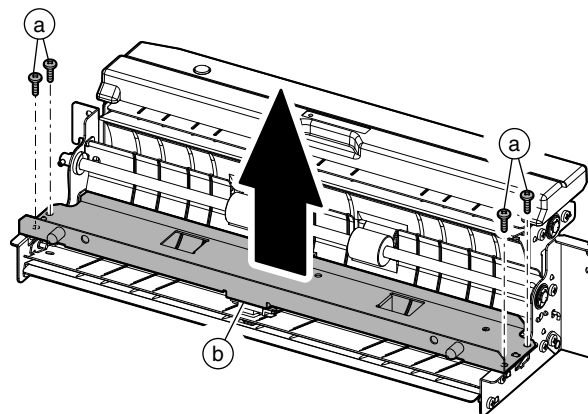
59) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 11 (d).



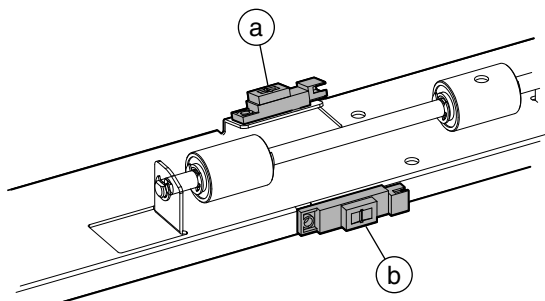
57) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



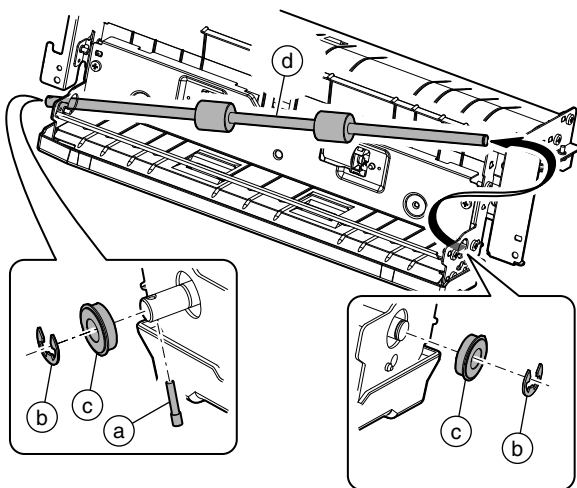
60) Remove the screw (a), and remove the frame (b).



- 61) Clean the ADU paper entry detection 1 (a) and the ADU paper entry detection 2 (b) at every 500K.



- 62) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 13 (d).



14. ADU paper exit section

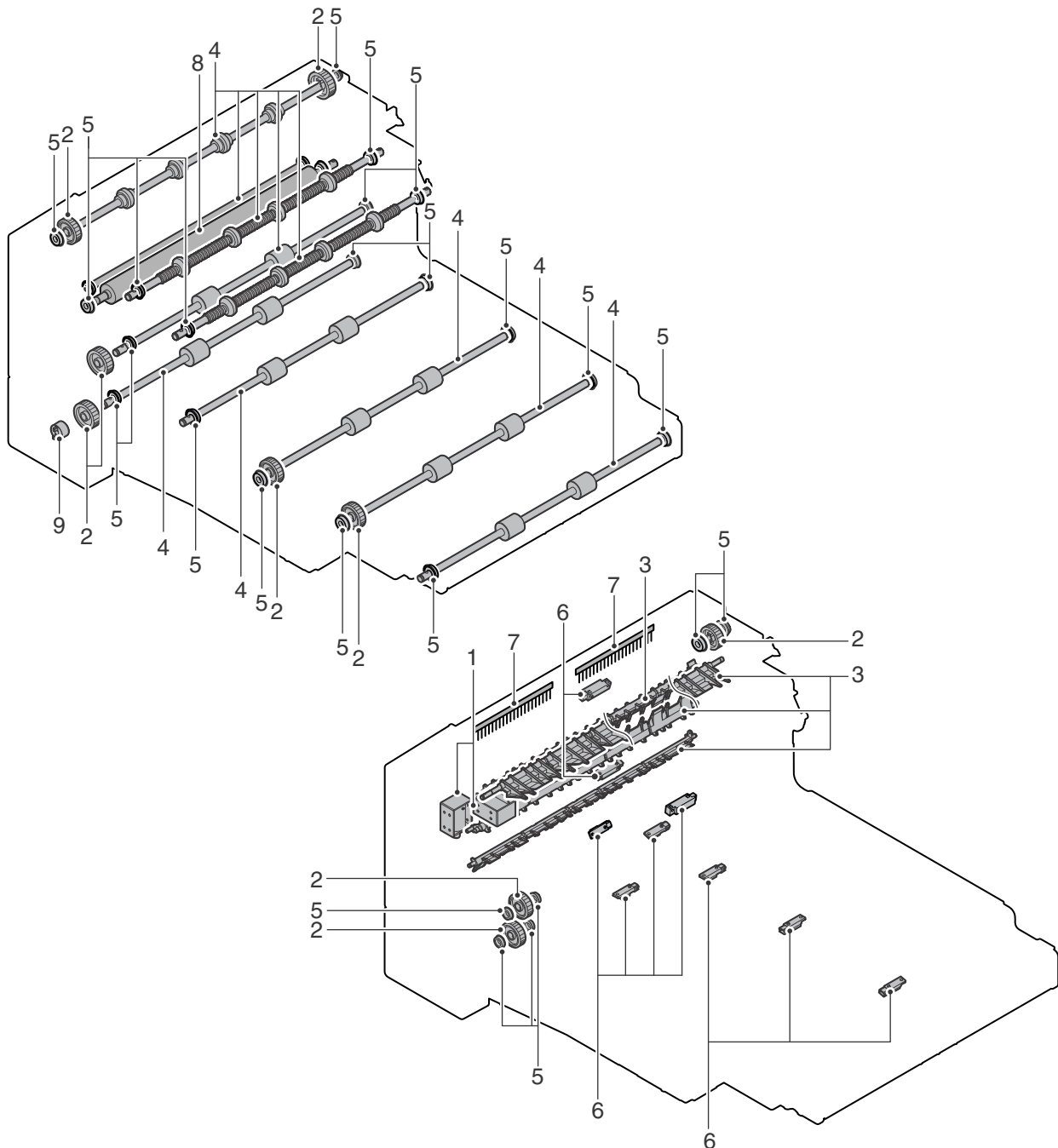
A. Maintenance table

×: 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 [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
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)

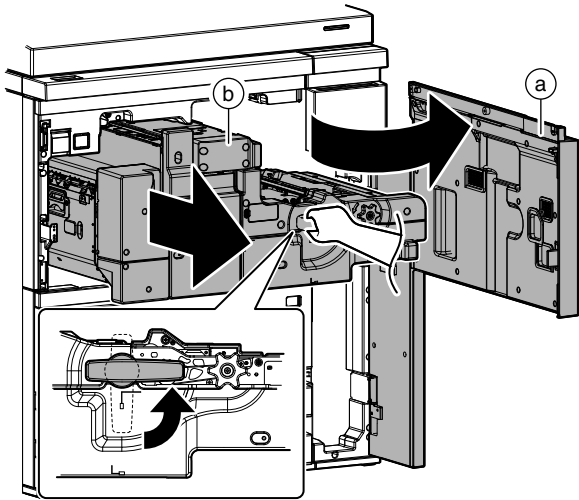
(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

- Torque limiter: 800K

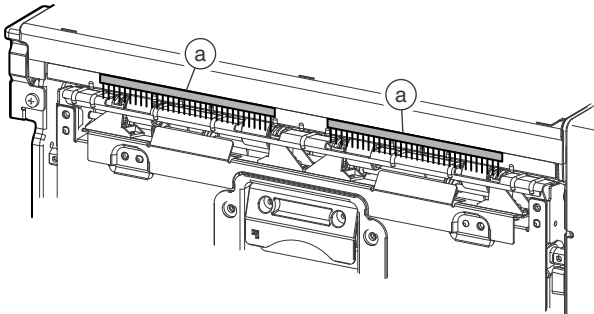


B. Details

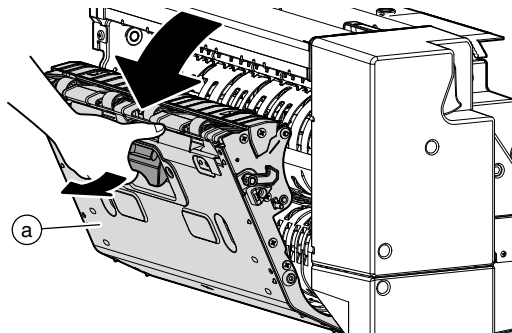
- 1) Open the front cover (a), and pull out the intermediate frame (b).



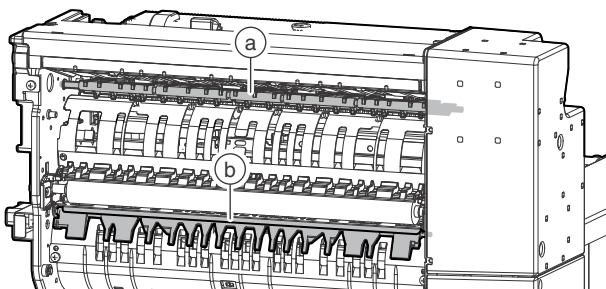
- 2) Check the discharge brush (a) at every 500K.



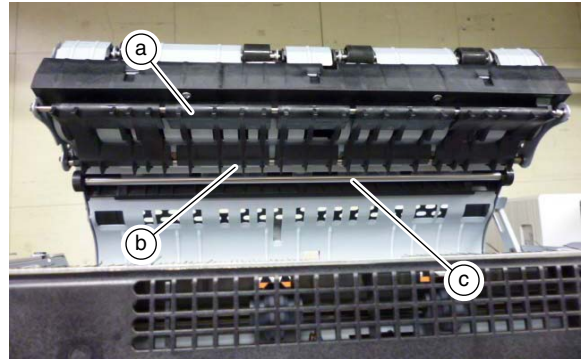
- 3) Open the left door (a).



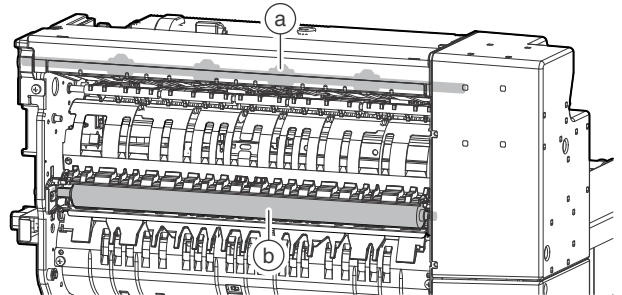
- 4) Check the face-up/face-down select gate solenoid (a), and the solenoid (b) at every 500K.



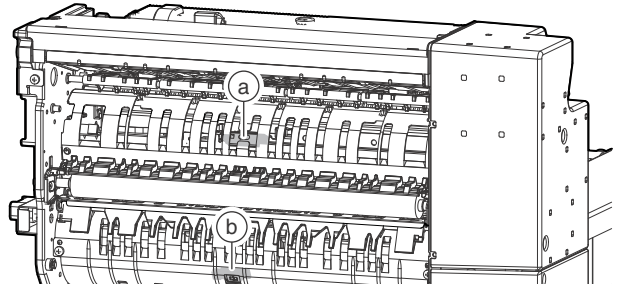
- 5) Check the paper exit/reverse select gate (a) and the reverse ADU gate (b) and the decurler follower roller (c) at every 500K.



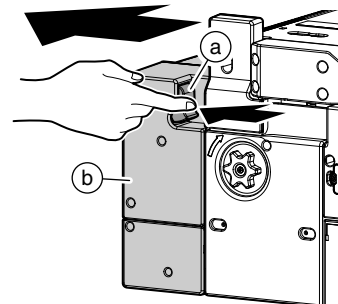
- 6) Clean the paper exit roller (a) and the decurler roller (b) at every 500K.



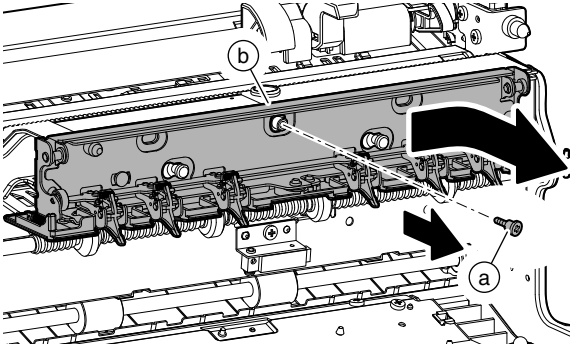
- 7) Clean the duplex reverse detection 1 (a) and the duplex reverse detection 2 (b) at every 500K.



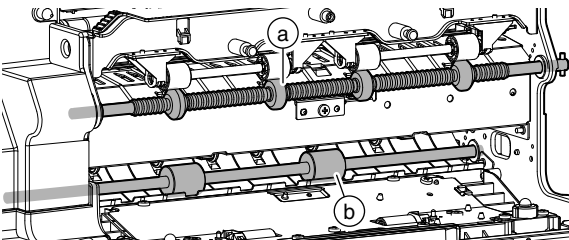
- 8) While pushing the lever (a), slide the ADU paper exit unit (b).



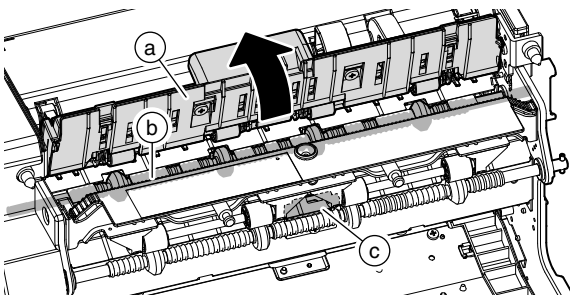
- 9) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



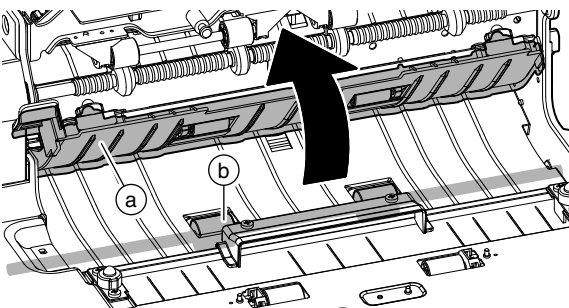
- 10) Clean the transport roller 15 (a) and the reverse roller 2 (b) at every 500K.



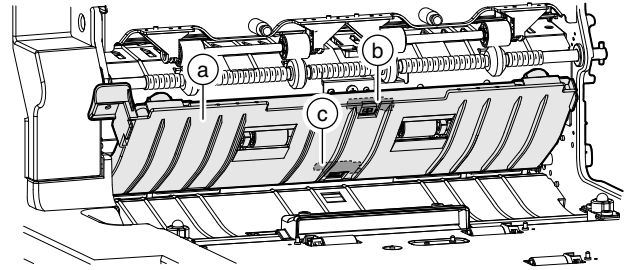
- 11) Open the paper guide (a), and clean the transport roller 16 (b) at every 500K. Clean the paper exit entry detection (c) at every 500K.



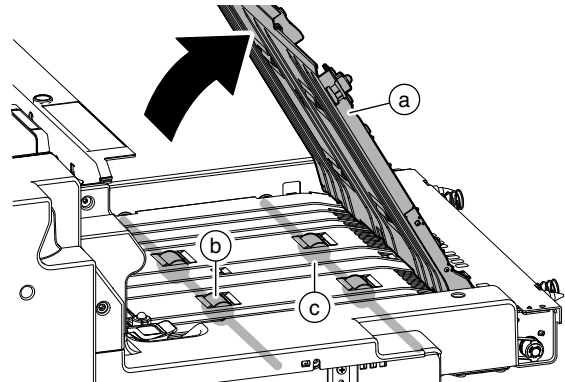
- 12) Open the paper guide (a), and clean the transport roller 18 (b) at every 500K.



- 13) Open the paper guide (a), and clean the face-down reverse detection (b) and the ADU transport detection 1 (c) at every 500K.



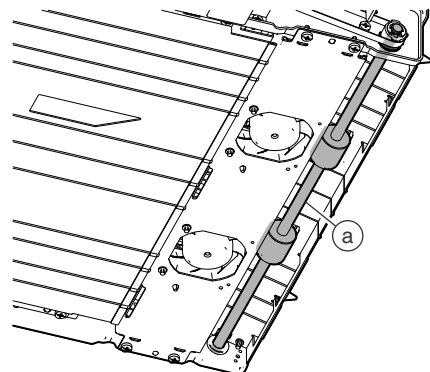
- 14) Open the paper guide (a), and clean the transport roller 19 (b) and the transport roller 20 (c) at every 500K.



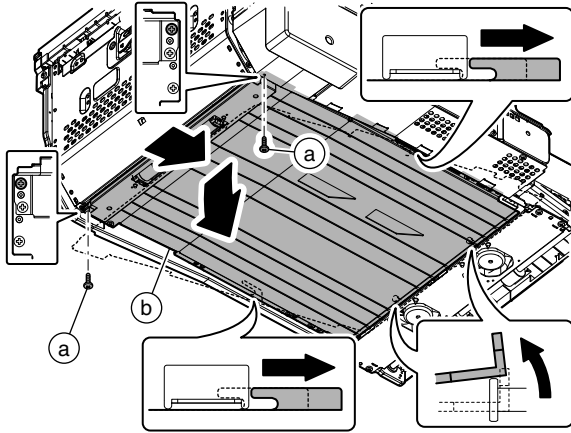
- 15) Open the paper guide (a), and clean the ADU transport detection 2 (b) and the ADU transport detection 3 (c) at every 500K.



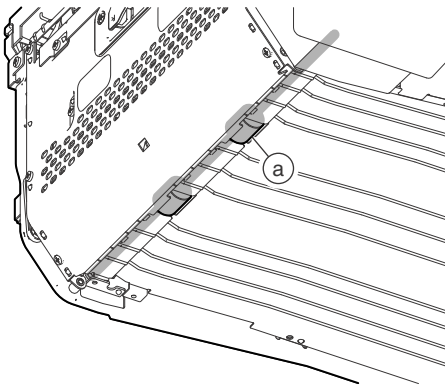
- 16) Clean the transport roller 21 (a) from the bottom side of the ADU paper exit unit at every 500K.



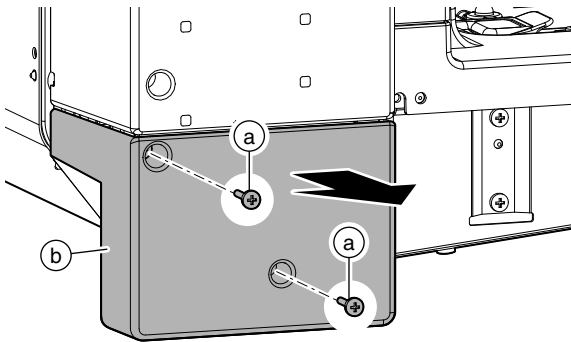
- 17) Remove the screw (a) from the bottom side, push into the paper guide (b) once, then remove it.



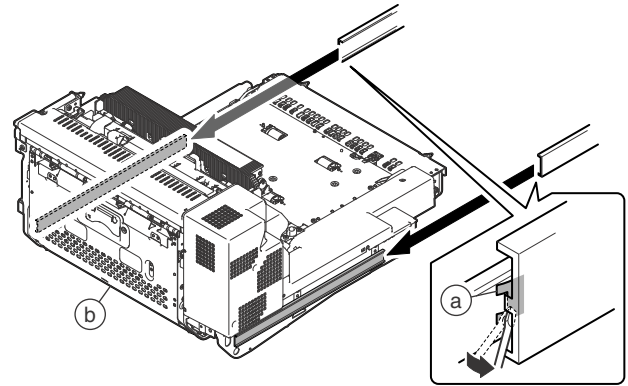
- 18) Clean the reverse roller 1 (a) at every 500K.



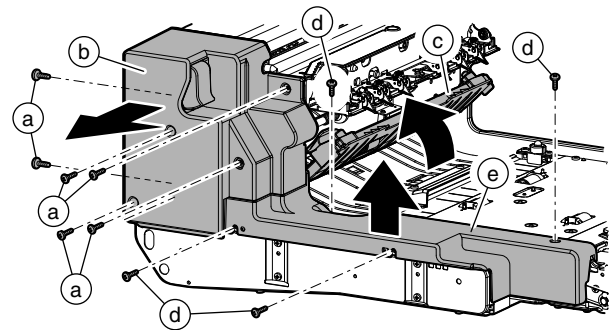
- 19) Remove the screw (a), and remove the cover (b).



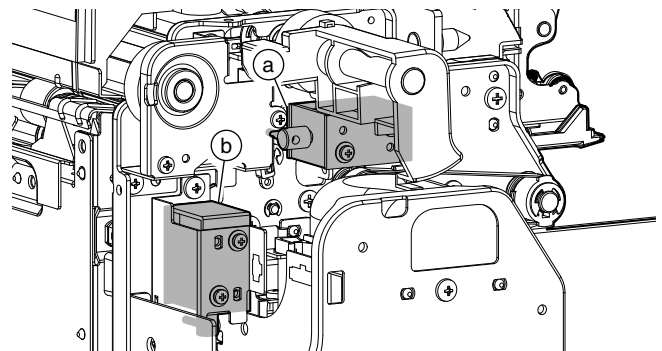
- 20) Release the lock (a) of the rail at two positions. Pull out the ADU paper exit unit (b) further to remove.



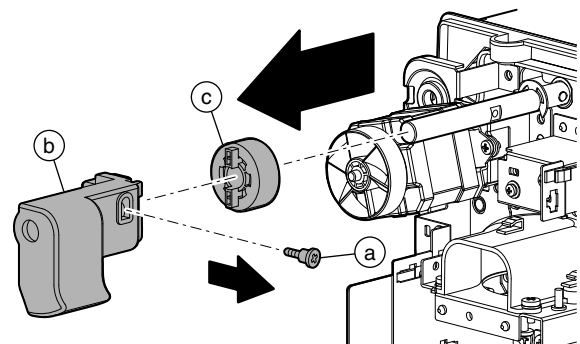
- 21) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



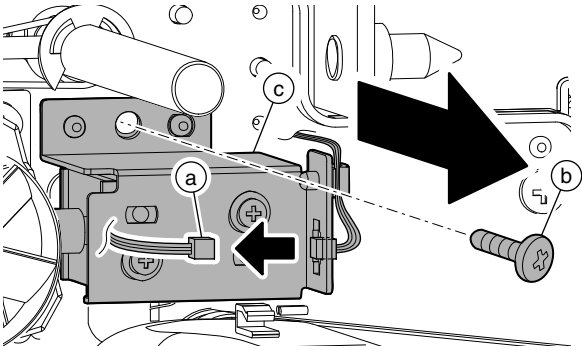
- 22) Check the face-up/face-down select gate solenoid (a), and the duplex select gate solenoid (b) at every 500K.



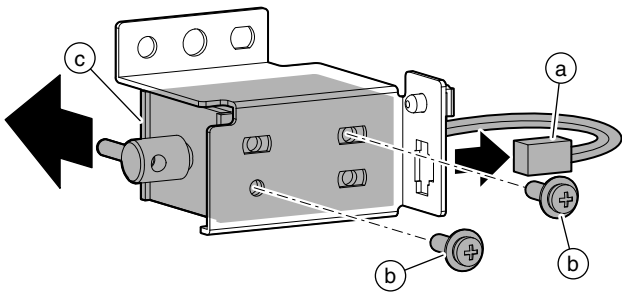
- 23) Remove the screw (a), and remove the lever (b) and the one-way clutch (c).



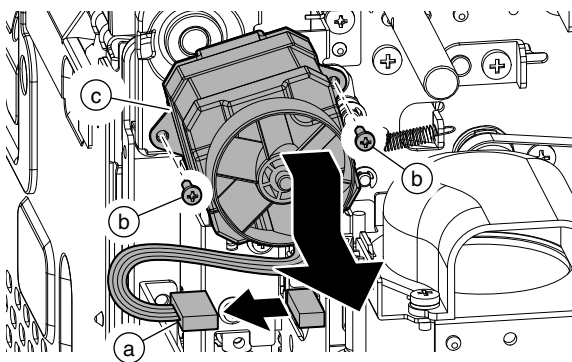
- 24) Disconnect the connector (a), and remove the screw (b).
Remove the face-up/face-down select gate solenoid unit (c).



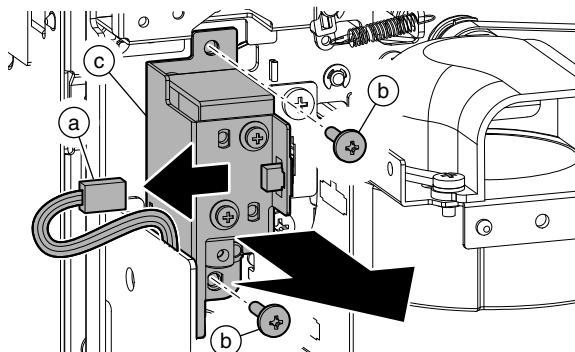
- 25) Disconnect the connector (a), and remove the screw (b).
Replace the face-up/face-down select gate solenoid (c).



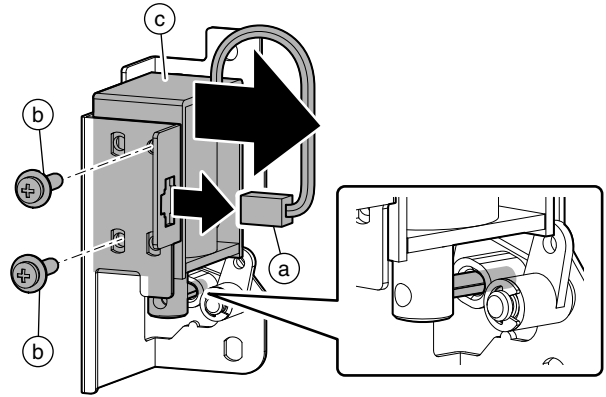
- 26) Disconnect the connector (a), and remove the screw (b).
Remove the paper exit motor (c).



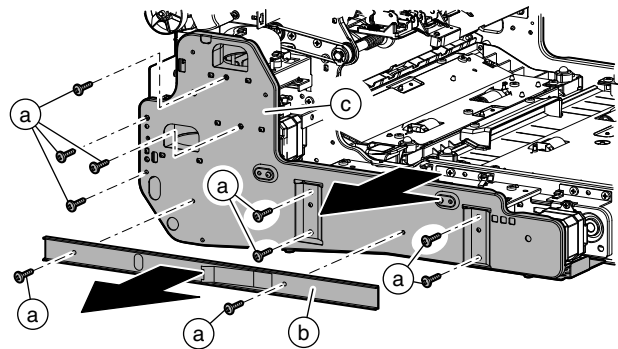
- 27) Disconnect the connector (a), and remove the screw (b).
Remove the duplex select gate solenoid unit (c).



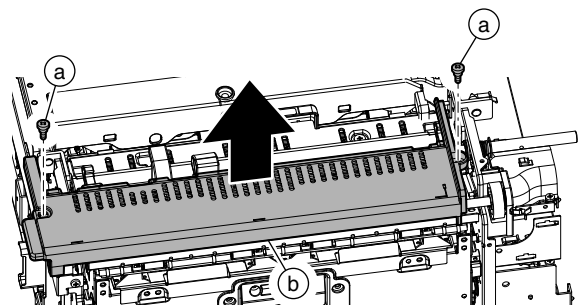
- 28) Disconnect the connector (a), and remove the screw (b).
Replace the Duplex select gate solenoid (c).



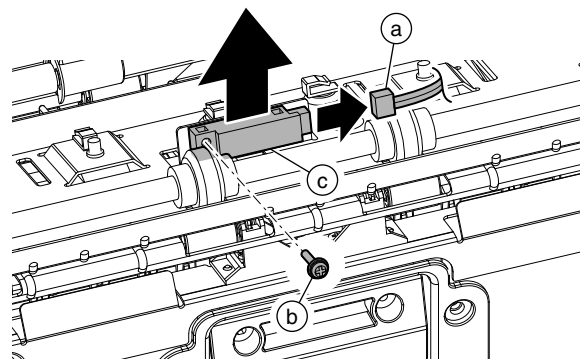
- 29) Remove the screw (a), and remove the rail (b) and the frame (c).



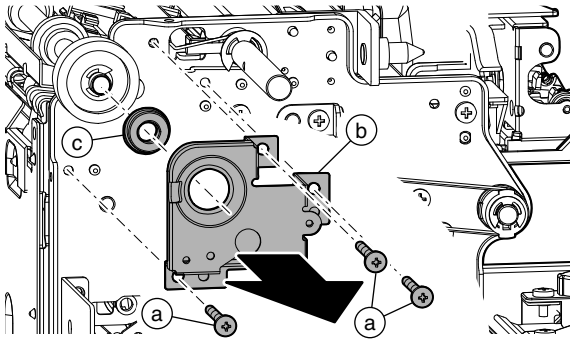
- 30) Remove the screw (a), and remove the cover (b).



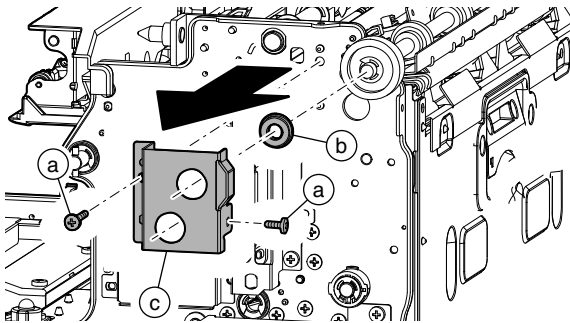
- 31) Disconnect the connector (a), and remove the screw (b).
Remove the paper exit detection (c). Clean it at every 500K.



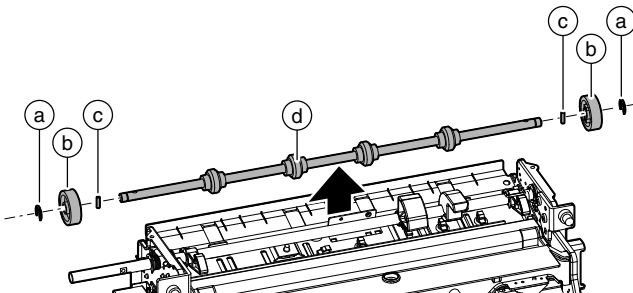
- 32) Remove the screw (a), and remove the mounting plate (b) and the bearing (c).



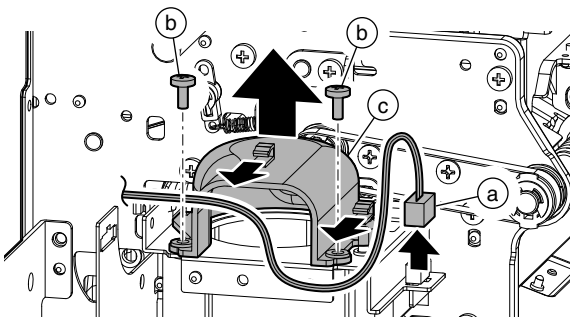
- 33) Remove the screw (a), the bearing (b), and the plate (c).



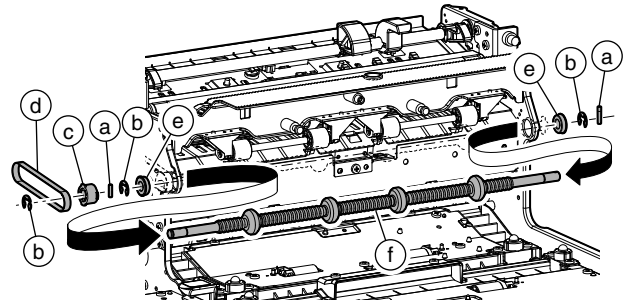
- 34) Remove the E-ring (a), the gear (b), and the parallel pin (c). Replace the paper exit roller (d).



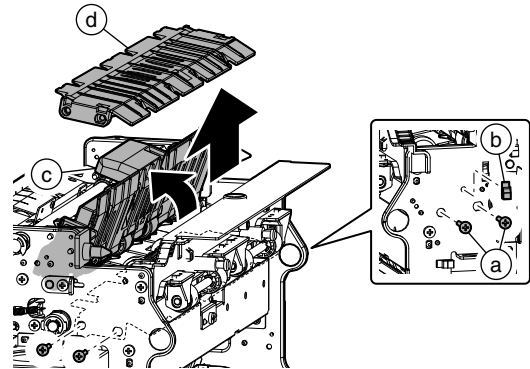
- 35) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



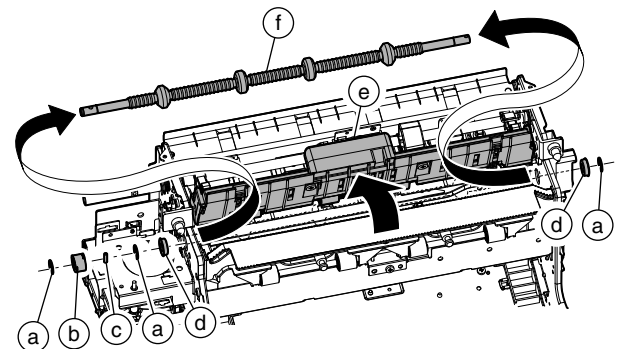
- 36) Remove the parallel pin (a), the E-ring (b), the pulley (c), the belt (d), and the bearing (e). Replace the transport roller 15 (f).



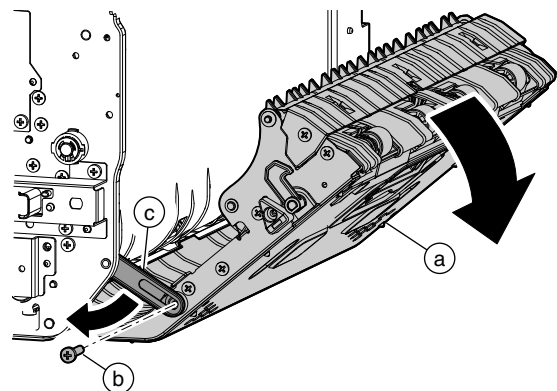
- 37) Remove the screw (a) and the snap band (b). Open the paper guide (c), and remove the paper guide (d).



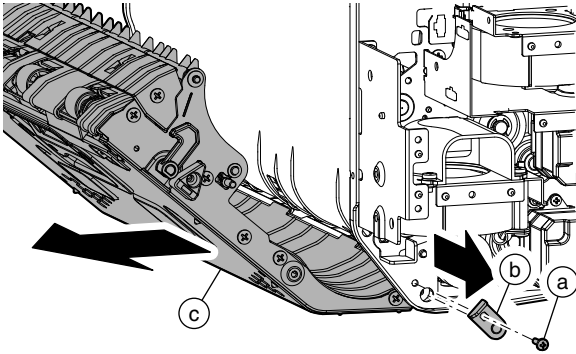
- 38) Remove the E-ring (a), the pulley (b), the parallel pin (c), and the bearing (d). Open the paper guide (e) and replace the transport roller 16 (f).



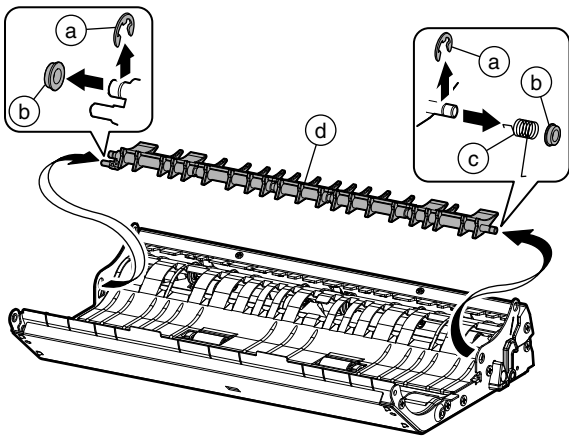
- 39) Open the left door (a). Remove the screw (b), and remove the stopper (c).



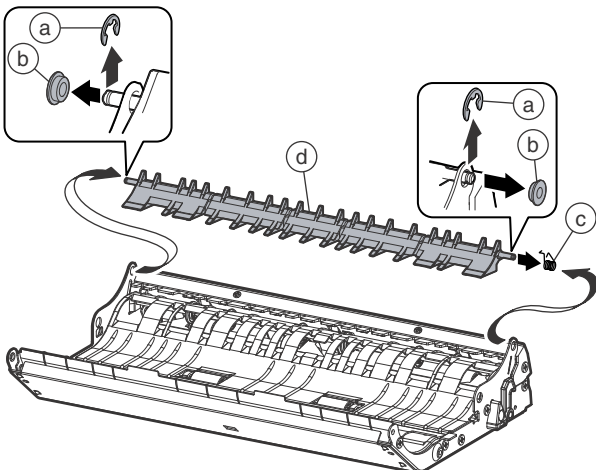
- 40) Remove the screw (a) and the fulcrum plate (b). Remove the left door (c).



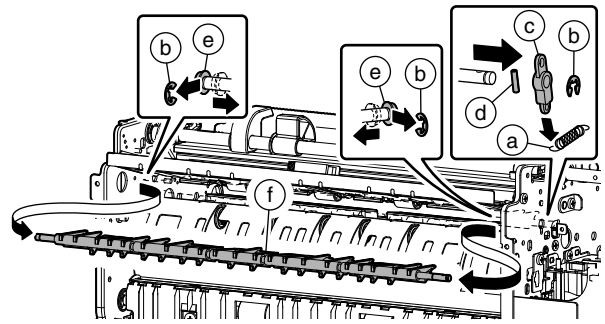
- 41) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the reverse ADU select gate (d).



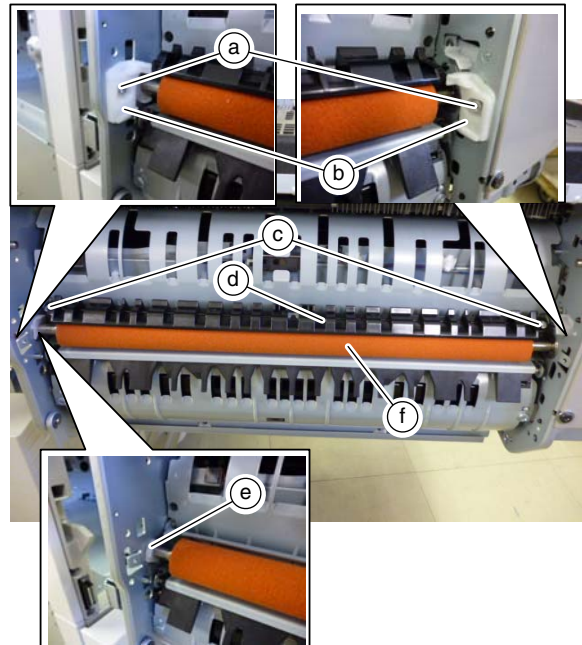
- 42) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the paper exit/reverse select gate (d).



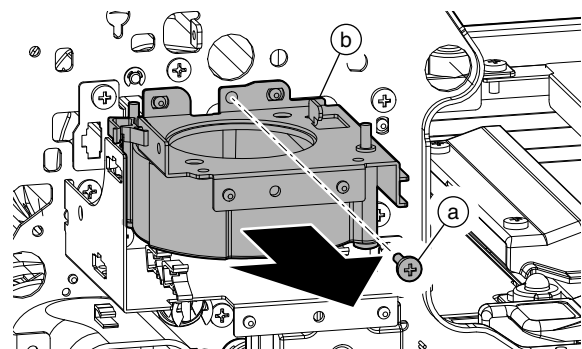
- 43) Remove the spring (a), the E-ring (b), the lever (c), the parallel pin (d), and the bearing (e). Replace the face-up/face-down select gate (f).



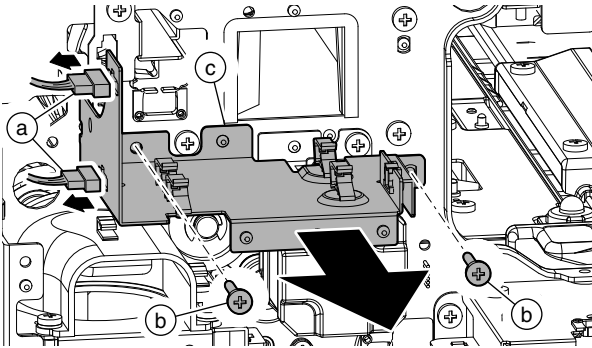
- 44) Remove the screw (a), and remove the alignment holder (b). Remove the screw (c), and remove the paper entry upper paper guide (d). Remove the resin E-ring. Slide the decurler roller (f) to the rear side once, and remove the bearing. Slide the roller to the front side to remove.



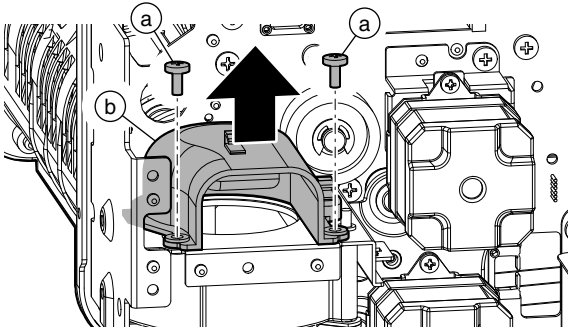
- 45) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



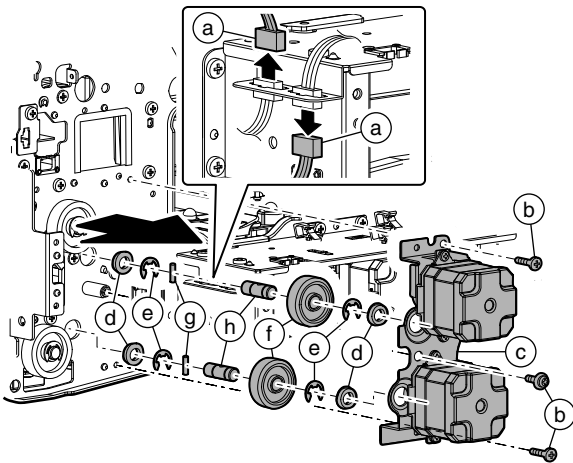
- 46) Disconnect the connector (a), and remove the screw (b), and the plate (c).



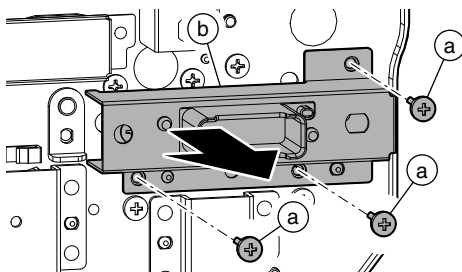
- 47) Remove the screw (a), and remove the duct (b).



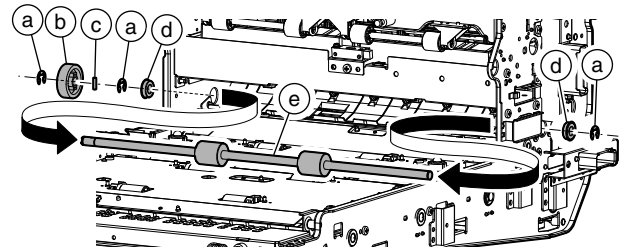
- 48) Disconnect the connector (a), and remove the screw (b). Remove the motor unit (c). Remove the bearing (d), the E-ring (e), the gear (f), the parallel pin (g), and the shaft (h).



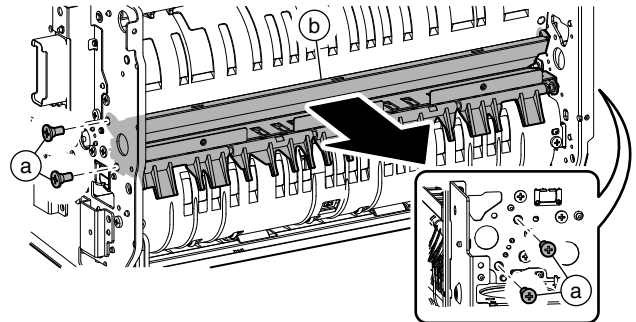
- 49) Remove the screw (a) on the rear side, and remove the drawer unit (b).



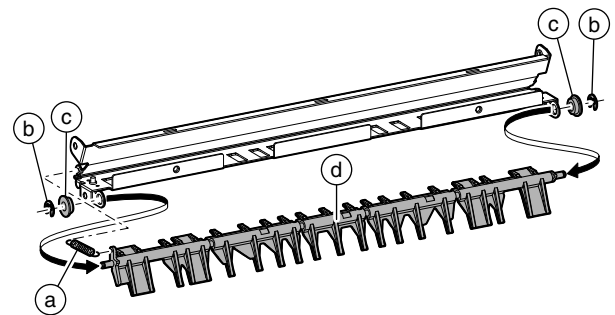
- 50) Remove the E-ring (a), the gear (b), the parallel pin (c), and the bearing (d). Replace the reverse roller 2 (e).



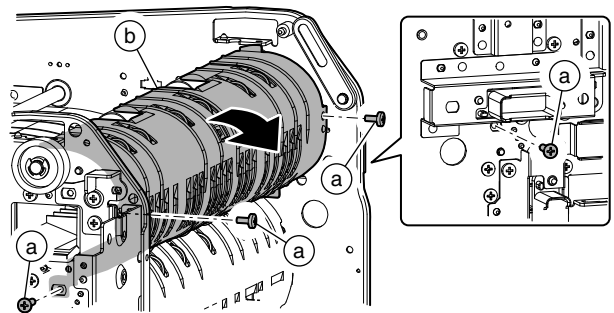
- 51) Remove the screw (a), and remove the paper guide (b).



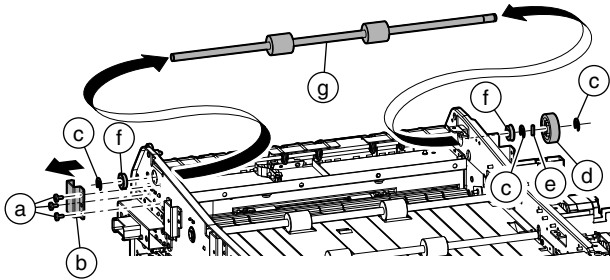
- 52) Remove the spring (a), the E-ring (b), and the bearing (c). Replace the ADU reverse select gate (d).



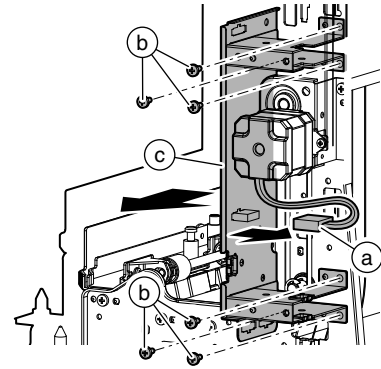
- 53) Remove the screw (a), and slide the paper guide (b).



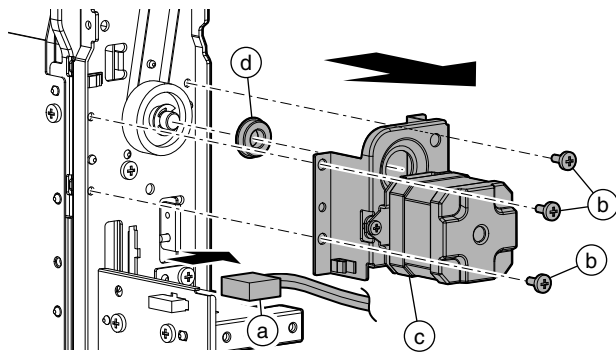
- 54) Remove the screw (a), and remove the plate (b). Remove the E-ring (c), the gear (d), the parallel pin (e), and the bearing (f). Replace the reverse roller 1 (g).



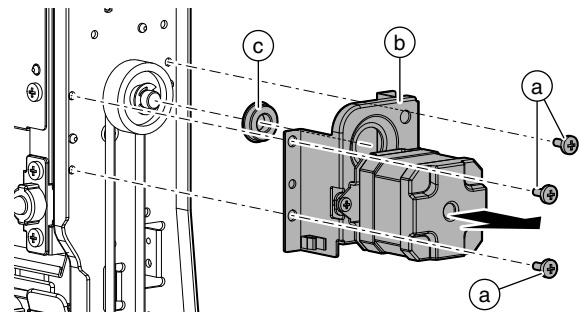
- 58) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).



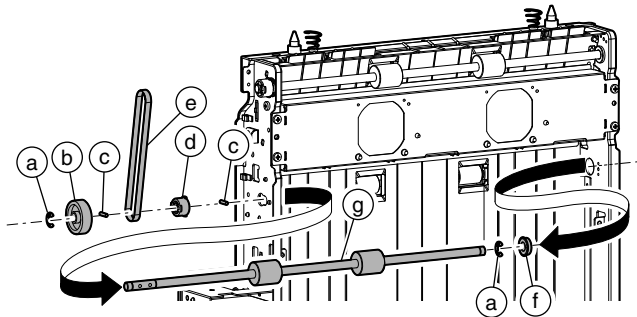
- 55) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport motor 2 unit (c) and the bearing (d).



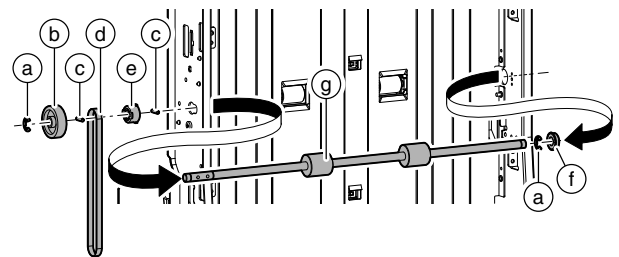
- 59) Remove the screw (a), and remove the ADU transport motor 1 unit (b) and the bearing (c).



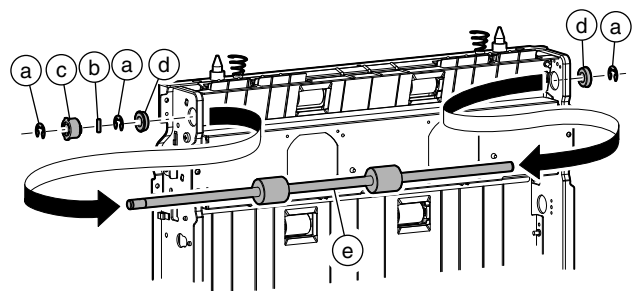
- 56) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 20 (g).



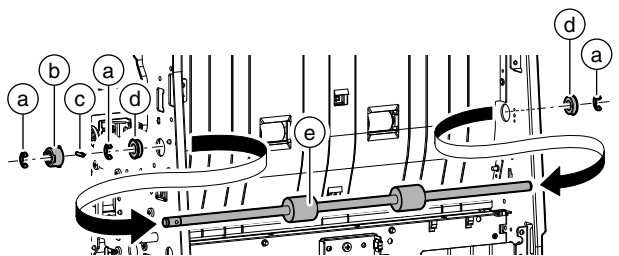
- 60) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 19 (g).



- 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

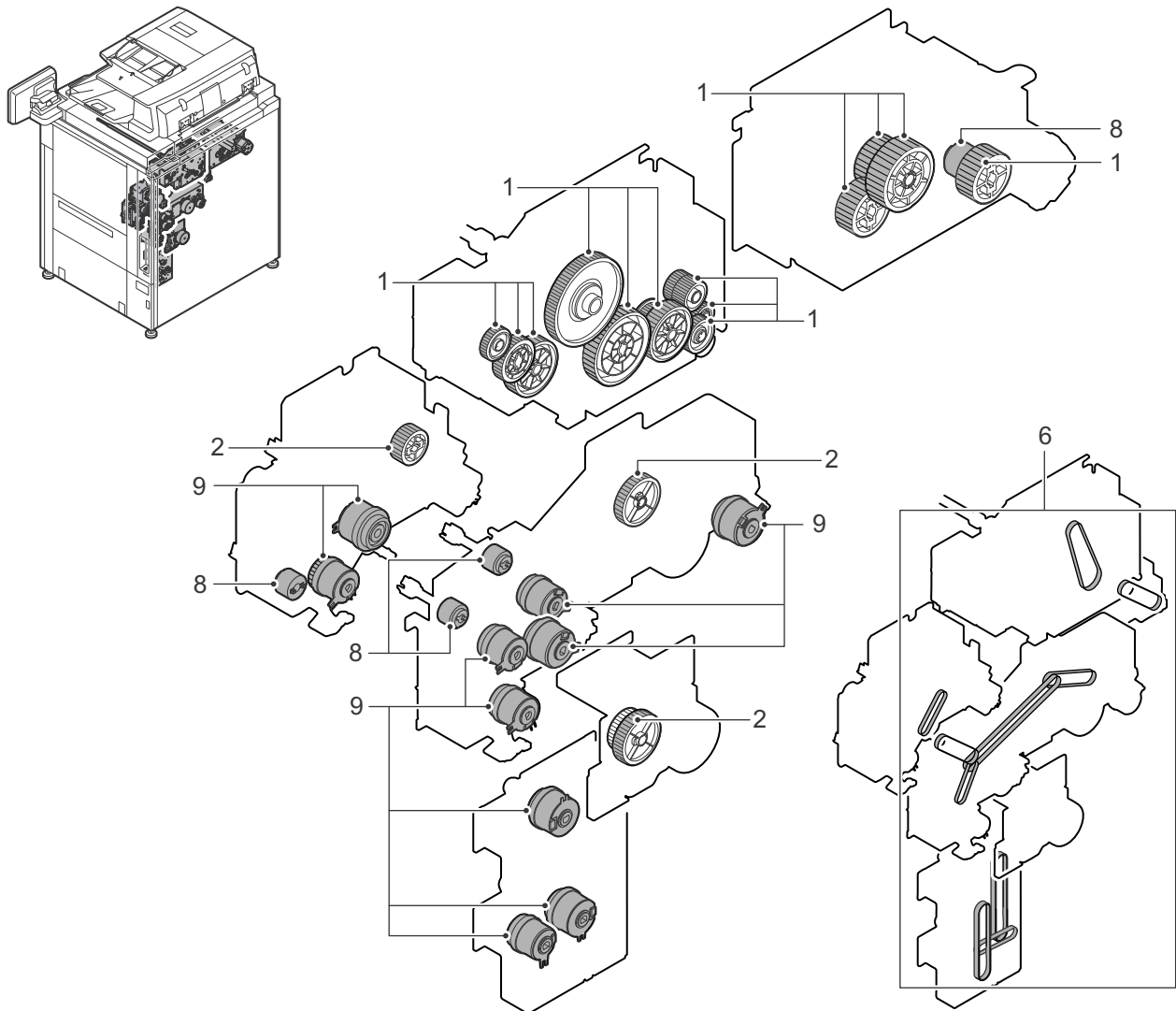
No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Gears (Grease)	×	×	×	×	×	×	×	(UKOG-0307FCZZ)
2	Gears (Grease)	×	×	×	×	×	×	×	(UKOG-0299FCZZ)
3	Belts		×	×	×	×	×	×	
4	Gears							×	
5	Torque limiter	×	×	×	×	×	×	×	(Note 1)
6	Clutches	×	×	×	×	×	×	×	(Note 2)

(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

- Torque limiter: 800K

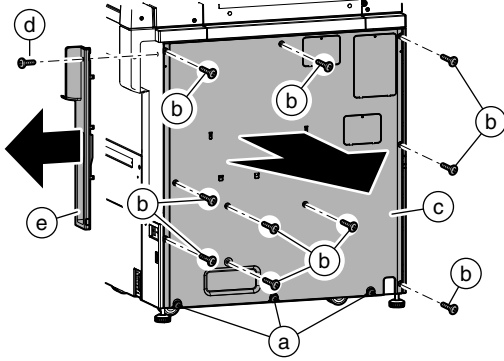
(Note 2) The conditions of the clutches differ depending on the paper pass conditions from the paper tray. Refer to the table below for replacement of the clutches.

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	PCLC-0355FCZZ	PCLC-0354FCZZ	PCLC-0355FCZZ	PCLC-0356FCZZ		PCLC-0355FCZZ	PCLC-0354FCZZ	PCLC-0354FCZZ		PCLC-0357FCZZ
No. 1 tray	3000K	3000K								
No. 2 tray			3000K							
No. 3 tray				3000K				Total 3000K	Total 3000K	Total 1500K
No. 4 tray					3000K					
Manual paper feed						3000K				
LCC paper feed							3000K			

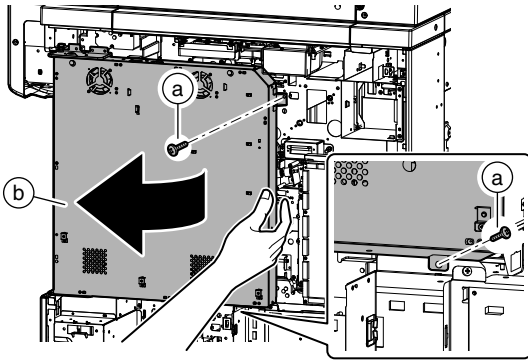


B. Details

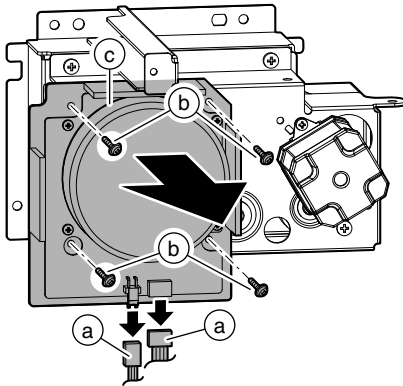
- 1) Loosen the screw (a). Remove the screw (b), and remove the rear cabinet (c). Remove the screw (d) and the cover (e).



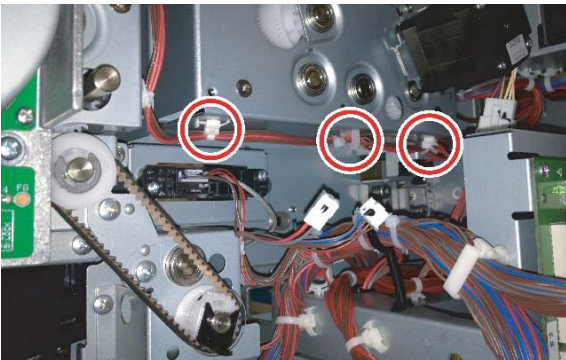
- 2) Remove the screw (a), and open the control box (b).



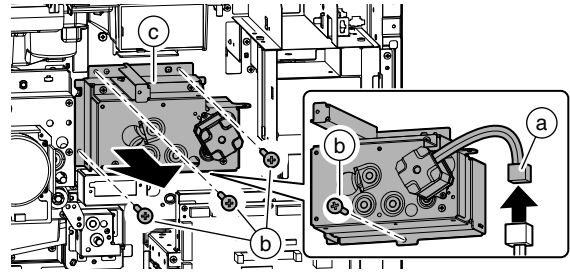
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing motor (c).



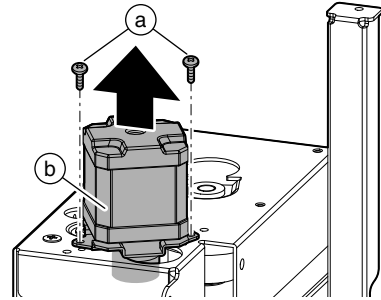
- 4) Remove the snap band, and remove the clamp to set it free.



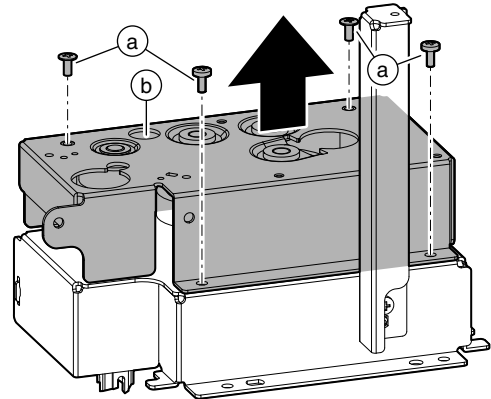
- 5) Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).



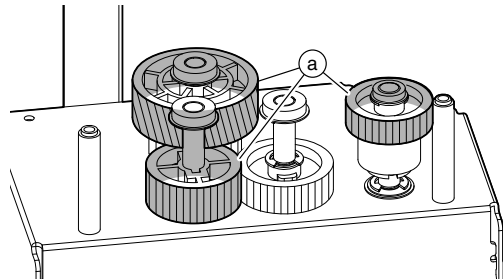
- 6) Remove the screw (a), and remove the fusing rear motor (b).



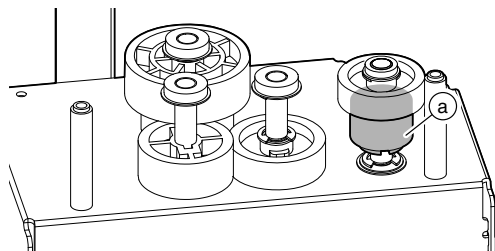
- 7) Remove the screw (a), and remove the plate (b).



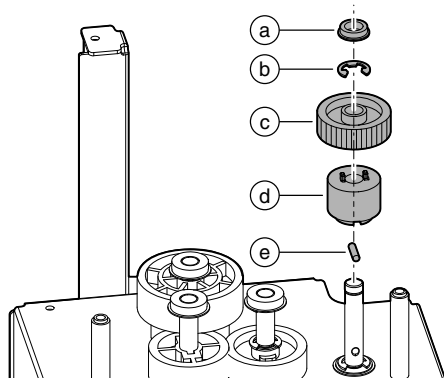
- 8) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



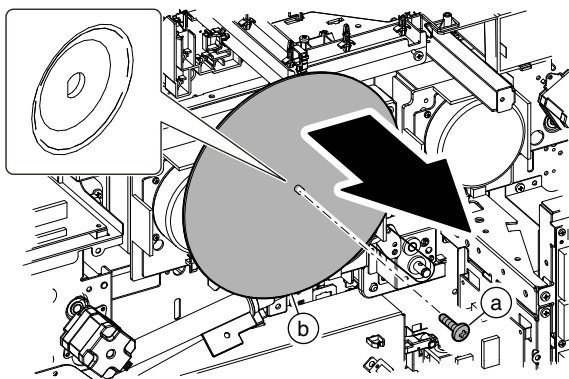
- 9) Check the torque limiter (a) at every 500K.



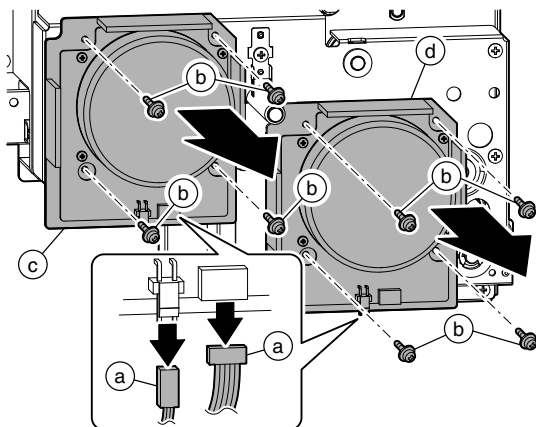
- 10) Remove the bearing (a) and the E-ring (b), and remove the gear (c), the torque limiter (d) and the parallel pin (e).



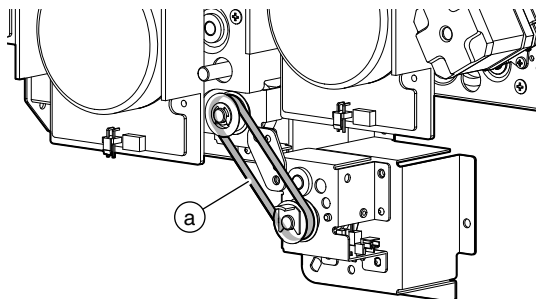
- 11) Remove the screw (a), and remove the flywheel (b).



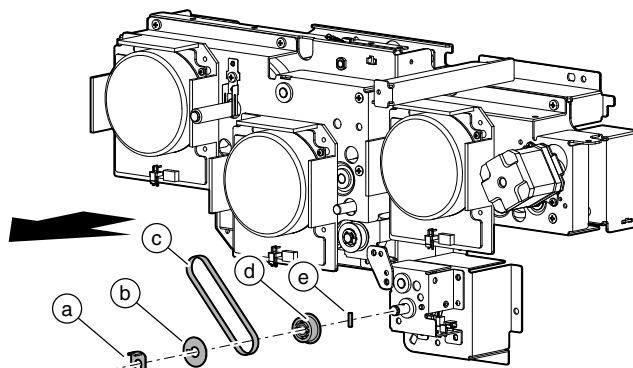
- 12) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



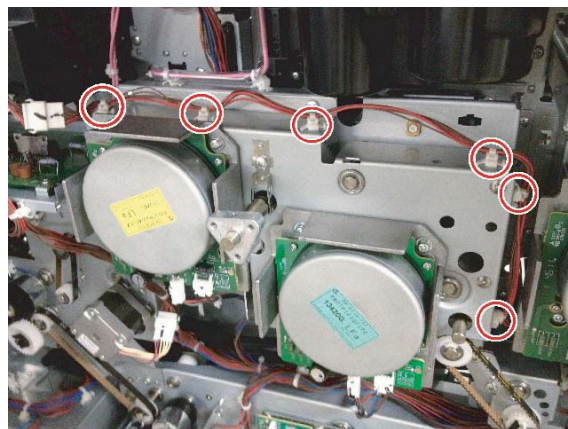
- 13) Check the belt (a) at every 500K.



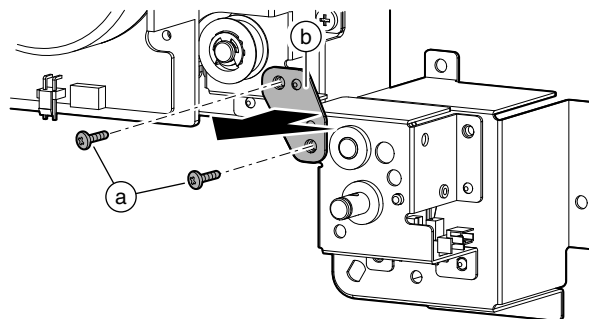
- 14) Remove the resin E-ring (a), and remove the sheet (b), the belt (c), the pulley (d), and the parallel pin (e).



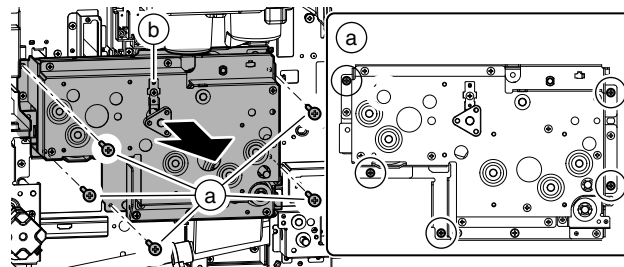
- 15) Remove the snap band, and set the harness free.



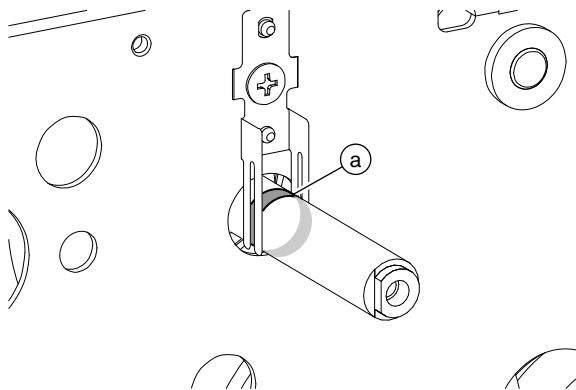
- 16) Remove the screw (a), and remove the plate (b).



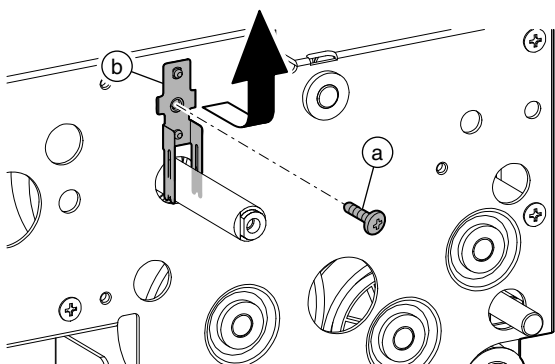
- 17) Remove the screw (a), and remove the drum drive unit (b).



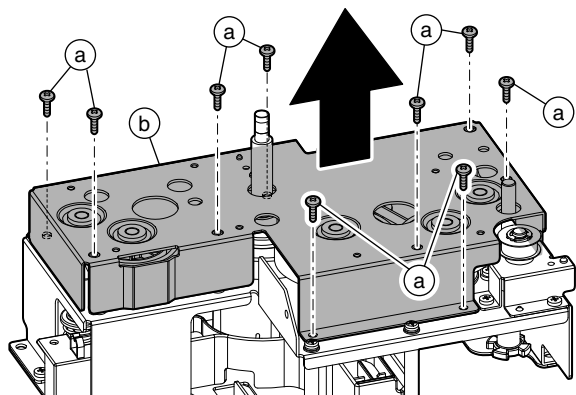
- 18) Check the conduction grease applying section (a) at every 500K. In necessary, apply conduction grease.



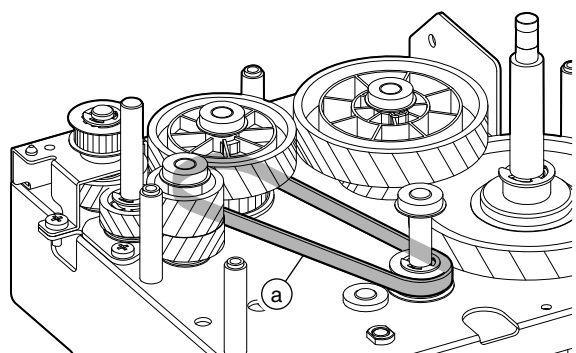
- 19) Remove the screw (a) and the earth plate (b).



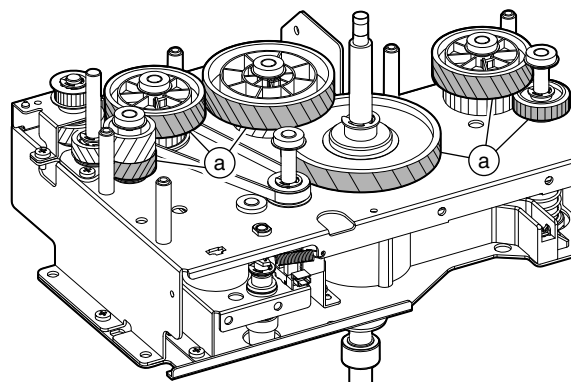
- 20) Remove the screw (a), and remove the plate (b).



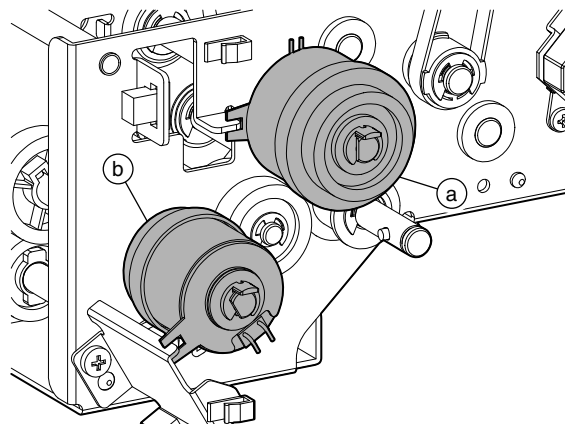
- 21) Check the belt (a) at every 500K.



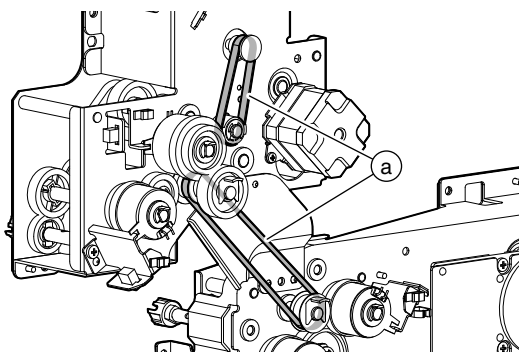
- 22) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



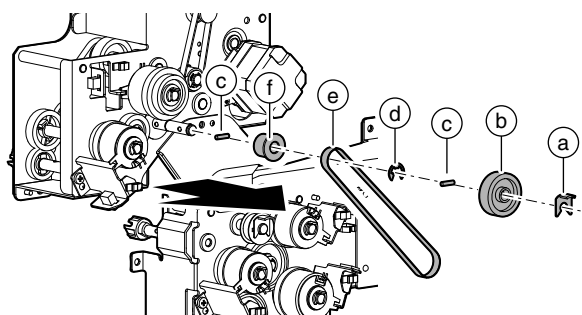
- 23) Check the manual feed clutch (a) and the LCC transport clutch (b) of the transport drive unit at every 500K.



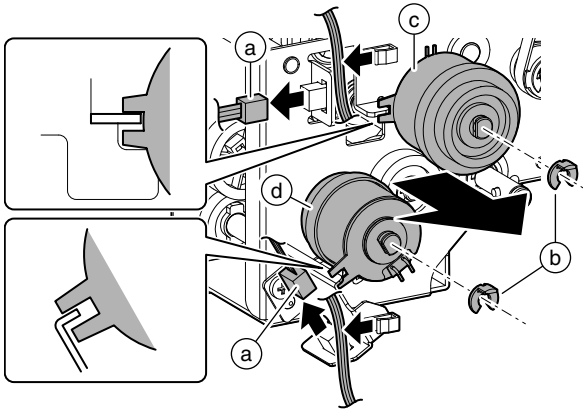
- 24) Check the belt (a) at every 500K.



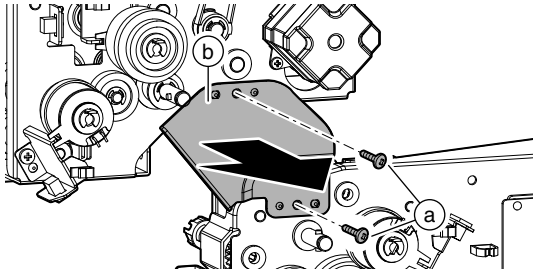
- 25) Remove the resin E-ring (a), remove the gear (b) and the parallel pin (c). Remove the e-ring (d), the belt (e), and the pulley (f).



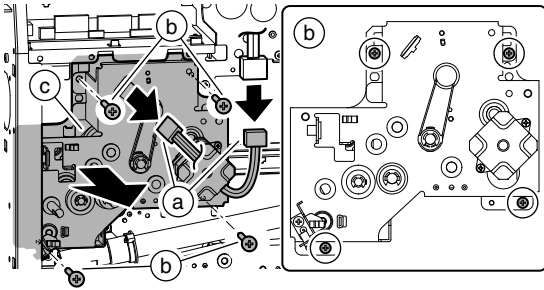
- 26) Disconnect the connector (a), and remove the resin E-ring (b), and replace the manual feed transport clutch (c) and the LCC transport clutch (d).



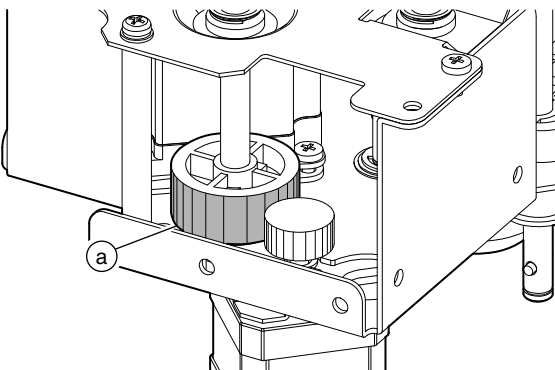
27) Remove the screw (a), and remove the plate (b).



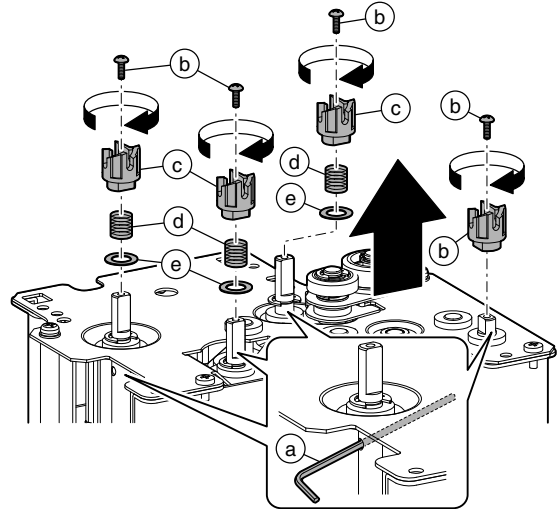
28) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).



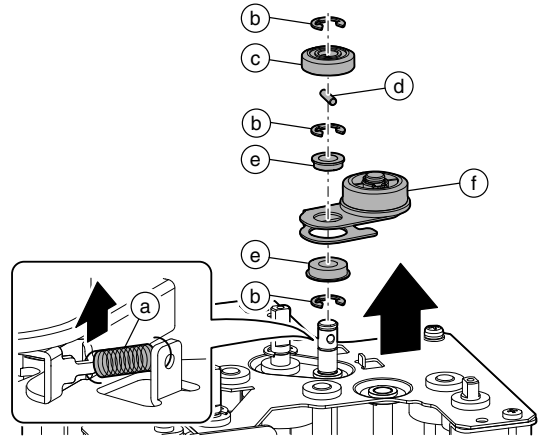
29) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



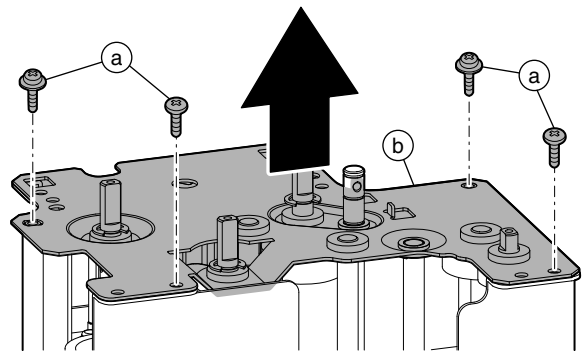
30) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



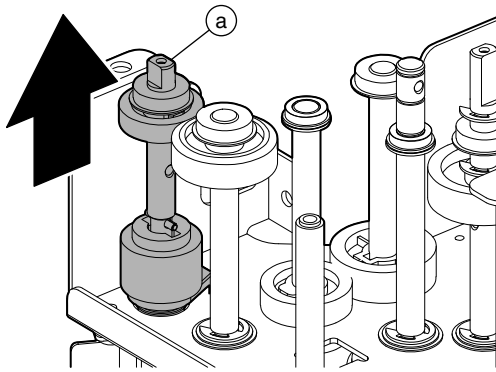
31) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



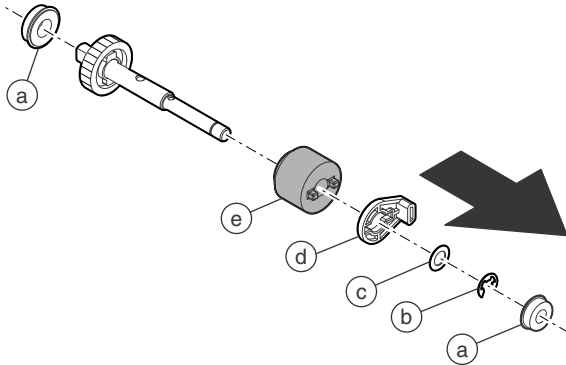
32) Remove the screw (a), and remove the plate (b).



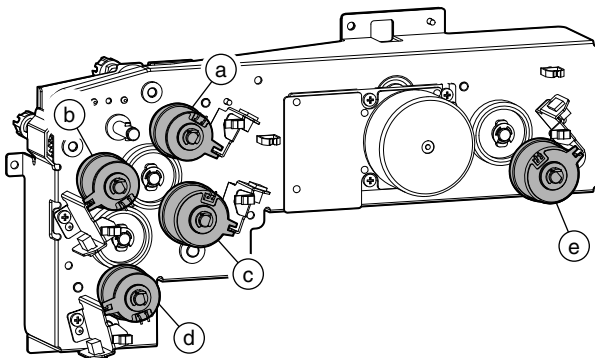
33) Remove the torque limiter unit (a).



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).

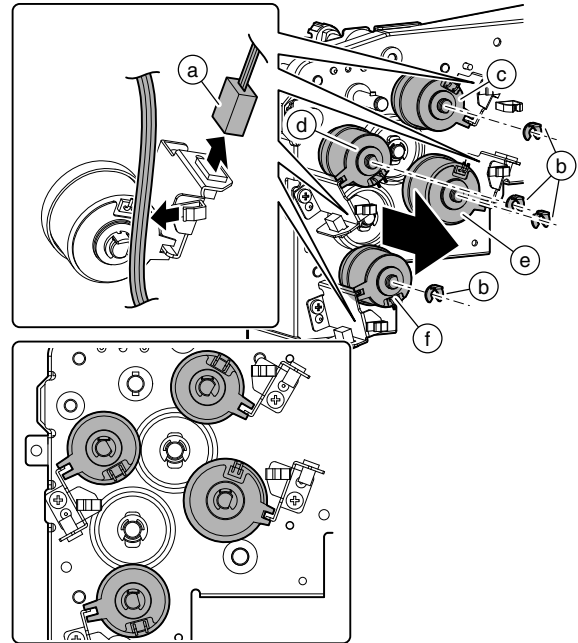


35) Check the horizontal transport clutch (a) of the tandem drive, the vertical transport clutch (Upper) (b), the cassette 2 paper transport clutch (c), the vertical transport clutch (Middle) (d), and the cassette 1 paper transport clutch (e) at every 500K.



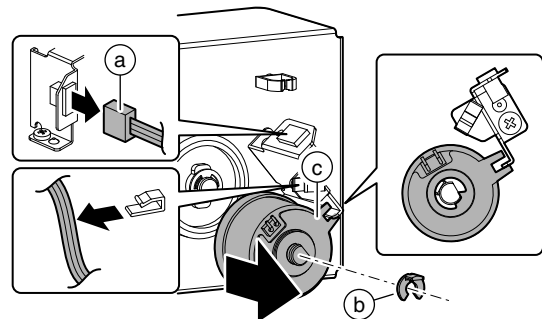
36) Disconnect the connector (a), and remove the resin ring (b), and replace the horizontal transport clutch (c), the vertical transport clutch (Upper) (d), the cassette 2 paper transport clutch (e), the Vertical transport clutch (Intermediate) (f).

* Set the clutch so that the bent section of the plate is engaged with the notch of the clutch.

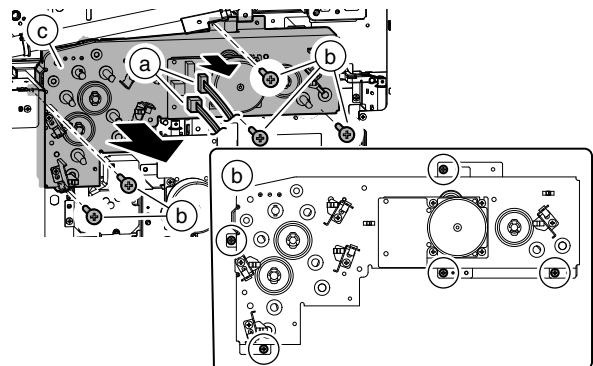


37) Disconnect the connector (a), and remove the resin ring (b), and replace the cassette 1 paper transport clutch (c).

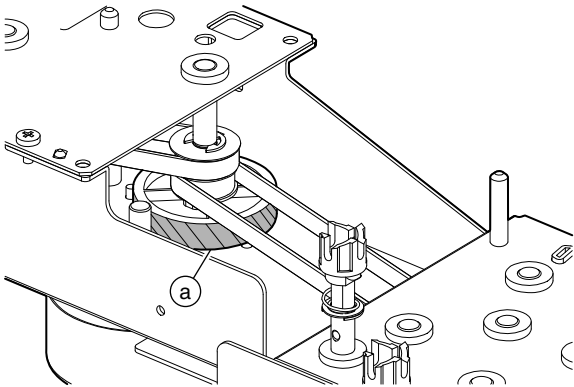
* Set the clutch so that the bent section of the plate is engaged with the notch of the clutch.



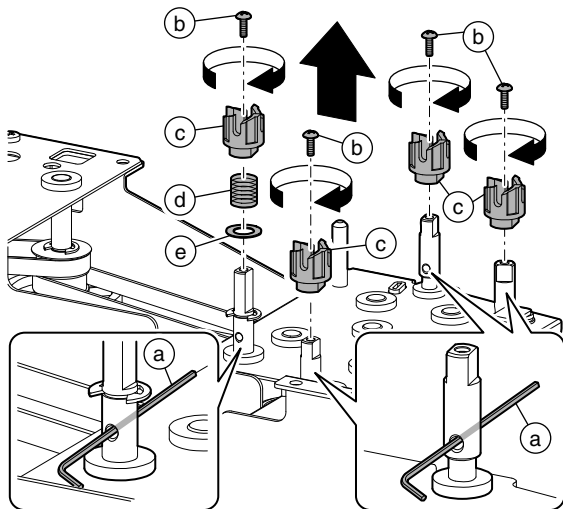
38) Disconnect the connector (a), and remove the screw (b). Remove the tandem drive unit (c).



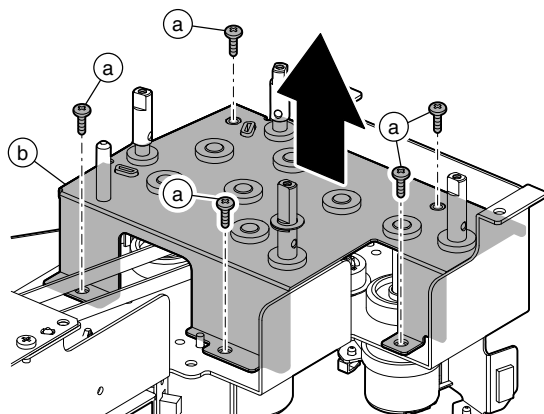
39) Check the grease applying section (a) at every 500K. If necessary, apply grease (HANARL) to the section.



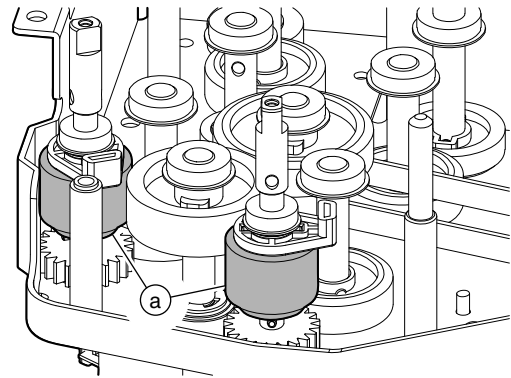
40) Insert the stopper (a) into the shaft, rotate the screw (b) **clockwise** to remove it, and remove the coupling (c), the spring (d), and the washer (e).



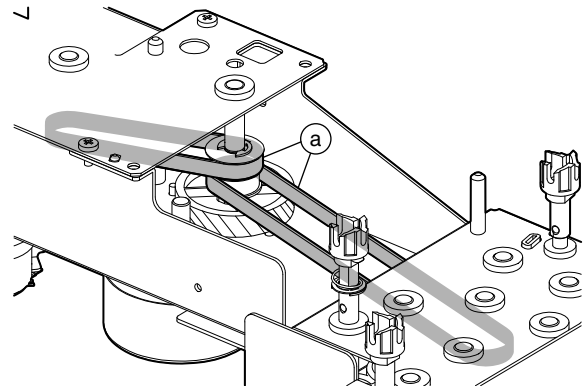
41) Remove the screw (a), and remove the plate (b).



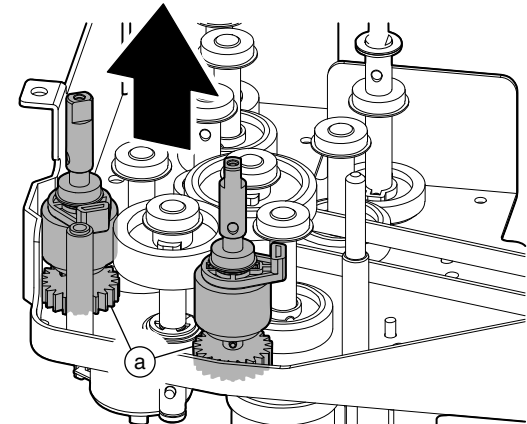
42) Check the torque limiter (a) at every 500K.



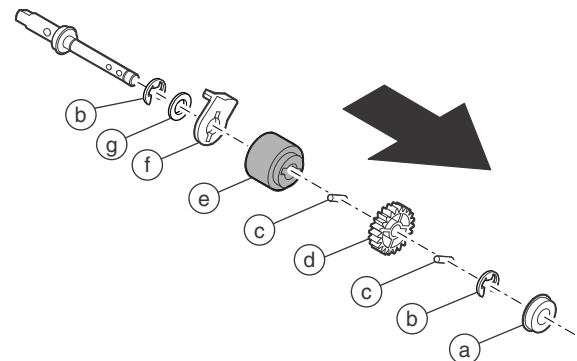
43) Check the belt (a) at every 500K.



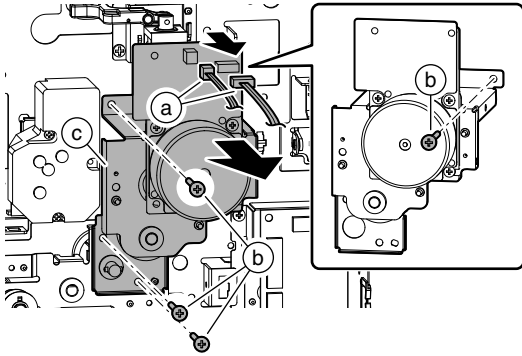
44) Remove the torque limiter unit (a).



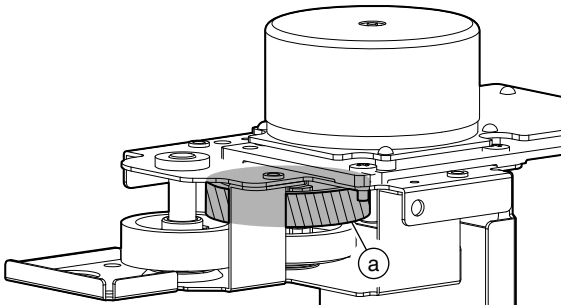
45) Remove the bearing (a), the E-ring (b), the parallel pin (c), and the gear (d). Remove the torque limiter (e), the resin part (f), and the washer (g). Replace the torque limiter (e).



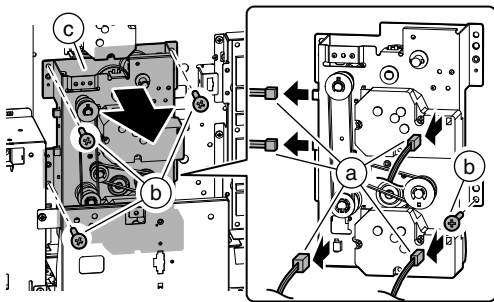
- 46) Disconnect the connector (a), and remove the screw (b).
Remove the multi-stage drive unit (c).



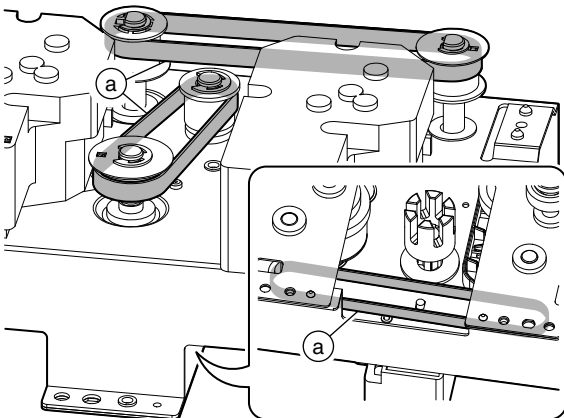
- 47) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



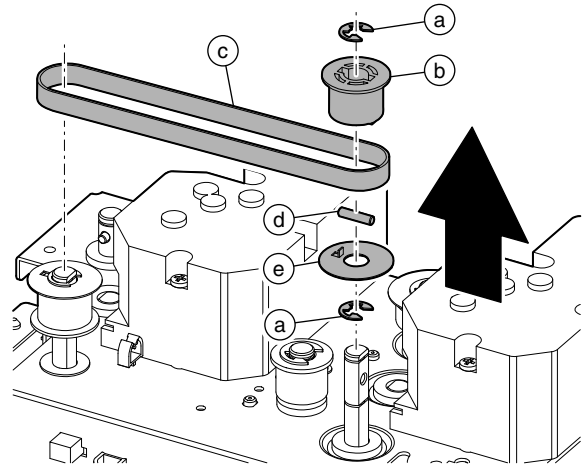
- 48) Disconnect the connector (a), and remove the screw (b).
Remove the multi-stage drive B unit (c).



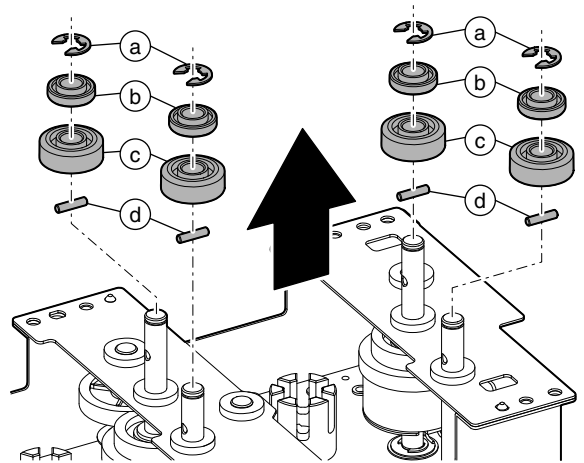
- 49) Check the belt (a) at every 500K.



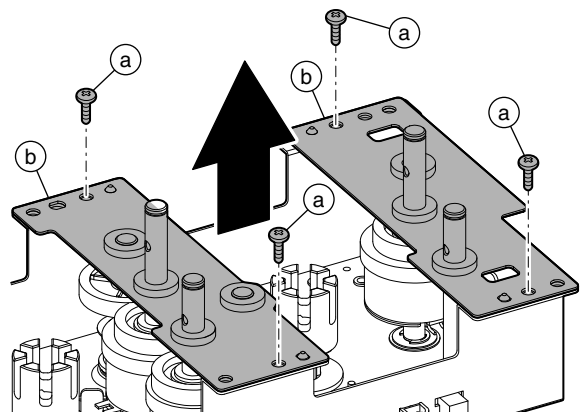
- 50) Remove the E-ring (a), the pulley (b), the belt (c), the parallel pin (d), and the seat (e).



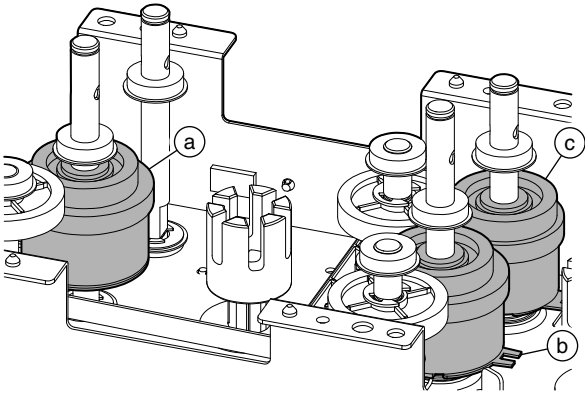
- 51) Remove the E-ring (a), the roller (b), the gear (c), and the parallel pin (d).



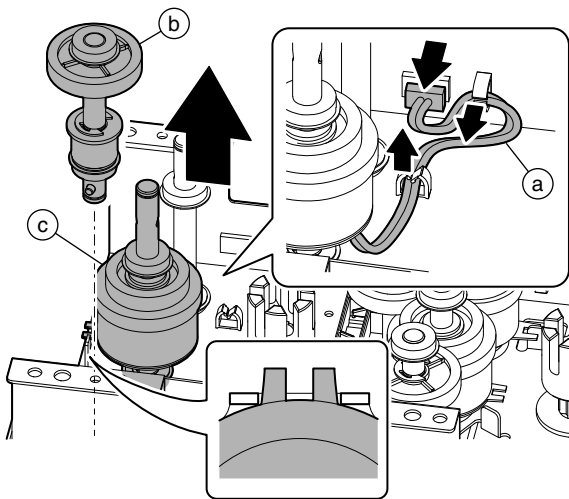
- 52) Remove the screw (a), and remove the plate (b).



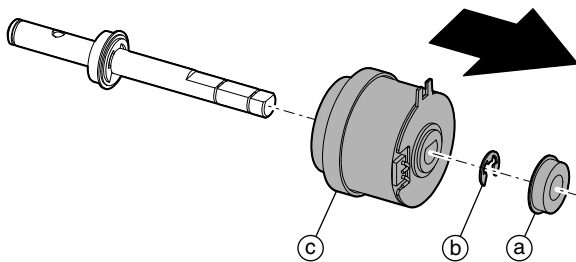
53) Check the cassette 3 paper transport clutch (a), the cassette 4 paper transport clutch (b), and the Vertical transport clutch (Lower) (c) at every 500K.



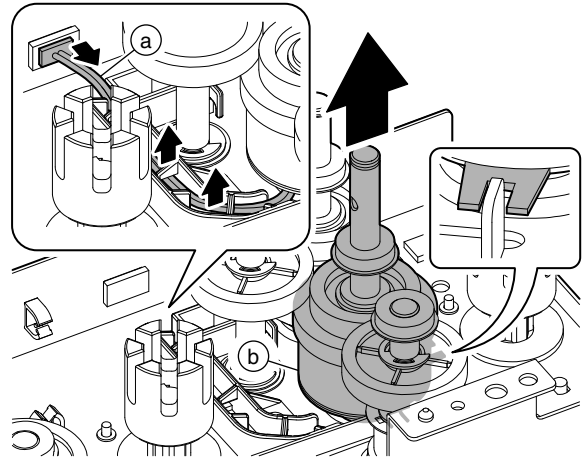
54) Disconnect the connector (a). Remove the gear unit (b), and remove the cassette 3 paper transport clutch unit (c).



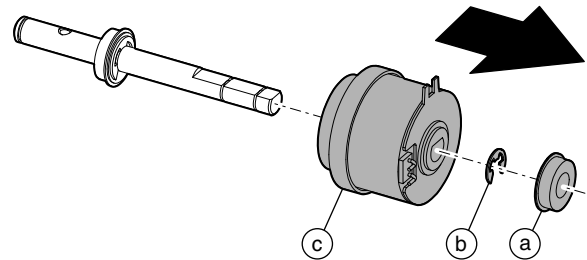
55) Remove the bearing (a), the E-ring (b). Replace the cassette 3 paper transport clutch (c).



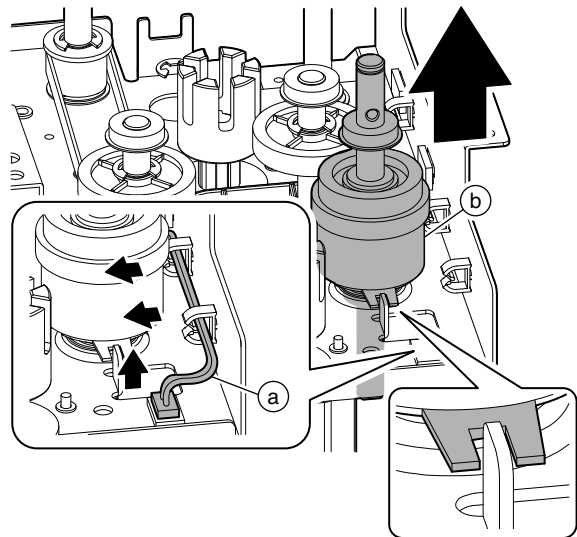
56) Disconnect the connector (a), and remove the cassette 4 paper transport clutch unit (b).



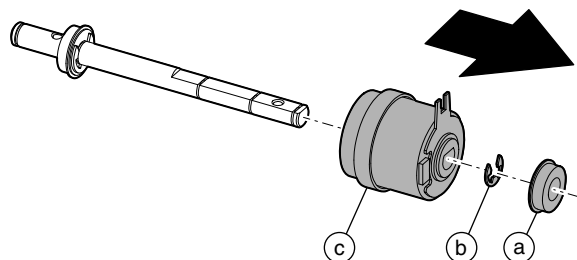
57) Remove the bearing (a), the E-ring (b), and replace the cassette 4 paper transport clutch (c).



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).

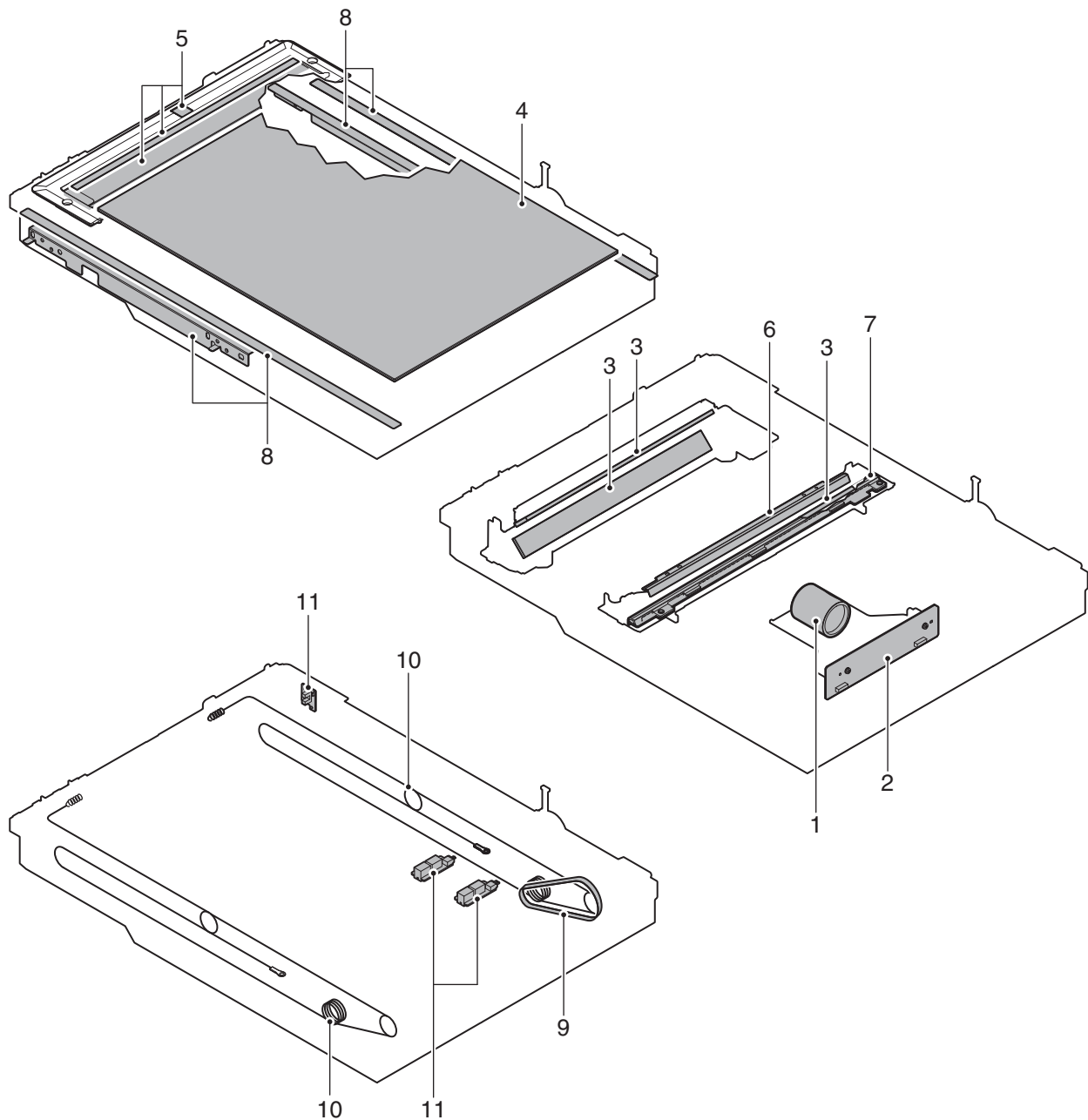


16. Scanner section

A. Maintenance table

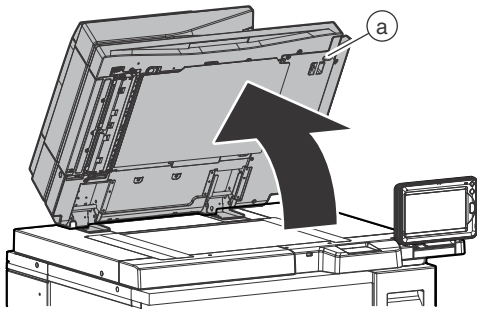
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

No.	Part name	When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Lens		○	○	○	○	○	○	
2	CCD		○	○	○	○	○	○	
3	Mirror		○	○	○	○	○	○	
4	Table glass	○	○	○	○	○	○	○	
5	SPF glass	○	○	○	○	○	○	○	
6	Reflector		○	○	○	○	○	○	
7	Scanner lamp		○	○	○	○	○	○	Air cleaning
8	Rail (Grease)		☆	☆	☆	☆	☆	☆	
9	Drive belt		×	×	×	×	×	×	
10	Drive wire		×	×	×	×	×	×	
11	Sensor		×	×	×	×	×	×	

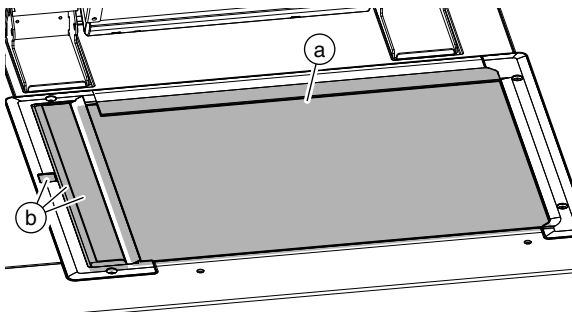


B. Details

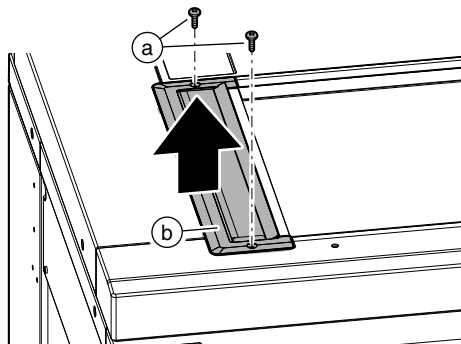
- 1) Open the DSPF unit (a).



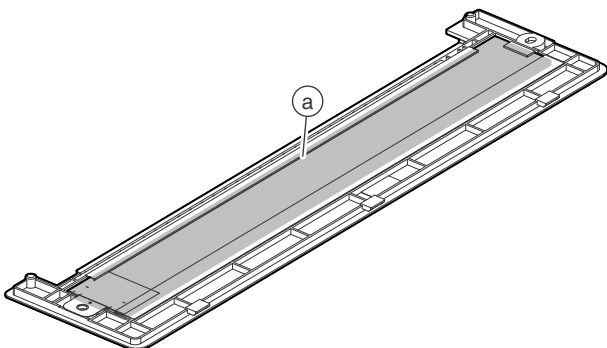
- 2) Clean the table glass (a) and the SPF glass (b) at every 500K.
(Cleaning must be performed when calling, too.)



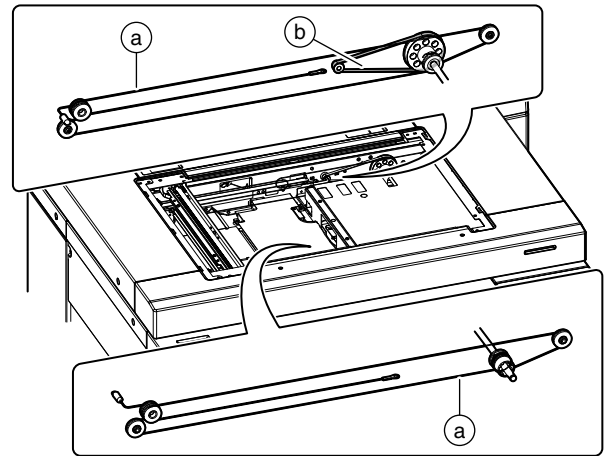
- 3) Remove the screw (a), and remove the SPF glass (b).



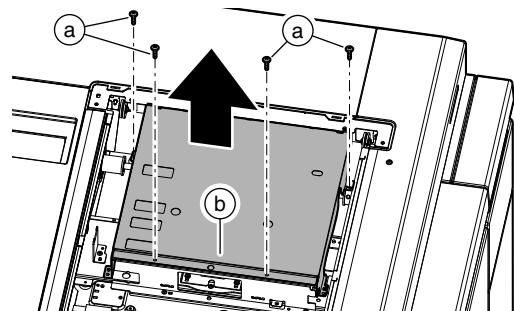
- 4) Clean the back surface of the SPF glass (a).



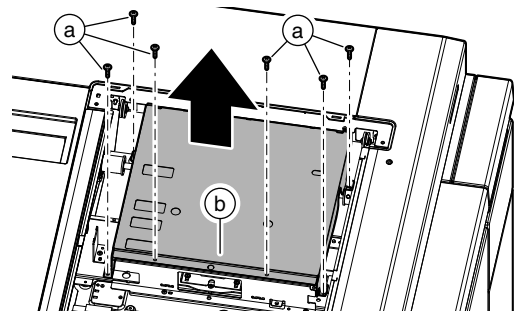
- 5) Check the drive wire (a) and the drive belt (b) at every 500K.



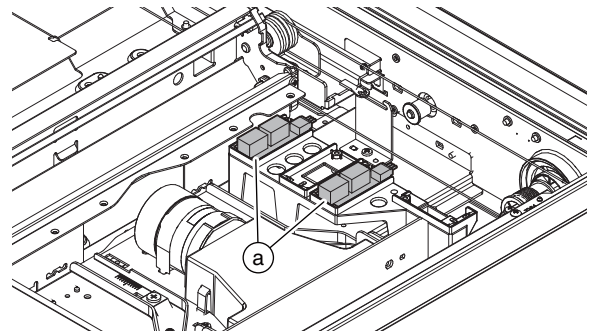
- 6) Check the main scanning document size sensor (a) at every 500K.



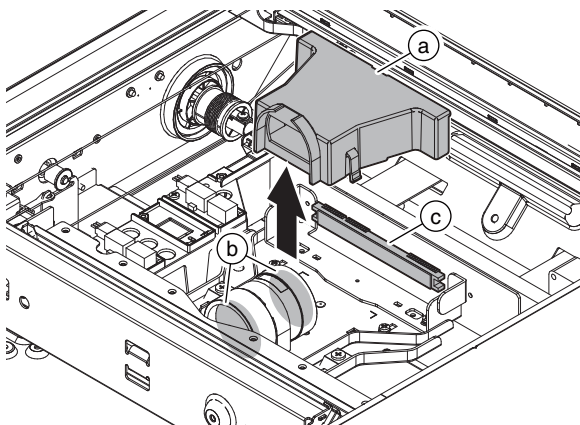
- 7) Remove the screw (a), and remove the dark box (b).



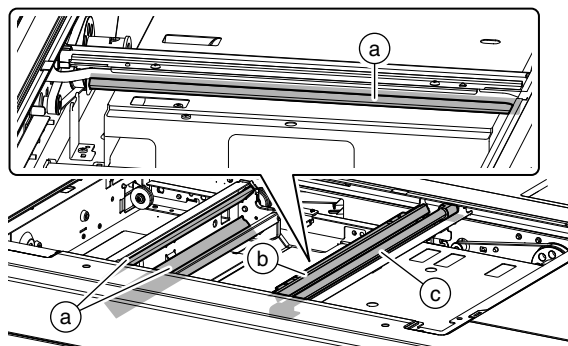
- 8) Check the sub scanning document size sensor (a) at every 500K.



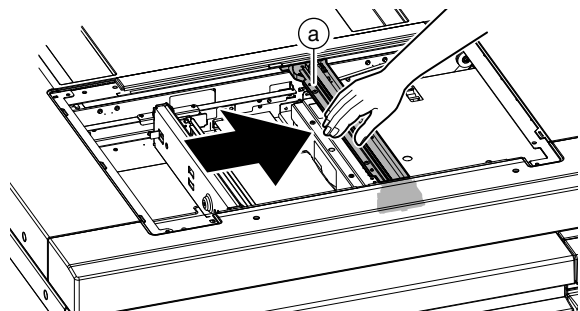
- 9) Remove the cover (a). Clean the lens (b), and the CCD (c) at every 500K.



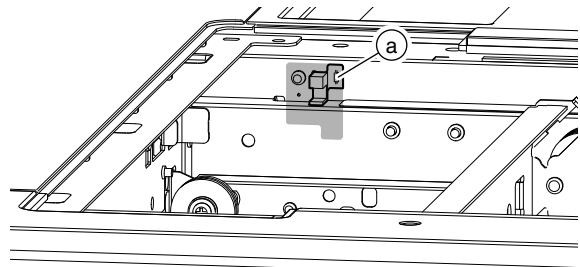
- 13) Clean the mirror (a), the reflector (b), and the scanner lamp (c) at every 500K.



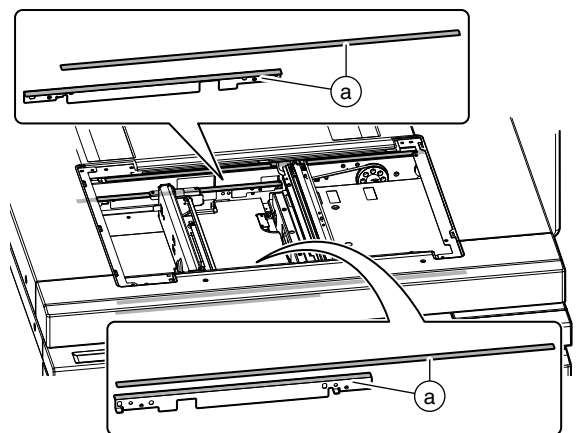
- 10) Shift the lamp unit (a).



- 11) Check the scanner home position sensor (a) at every 500K.



- 12) Apply grease to each rail (a) at every 500K.



17. DSPF section

A. Maintenance table

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

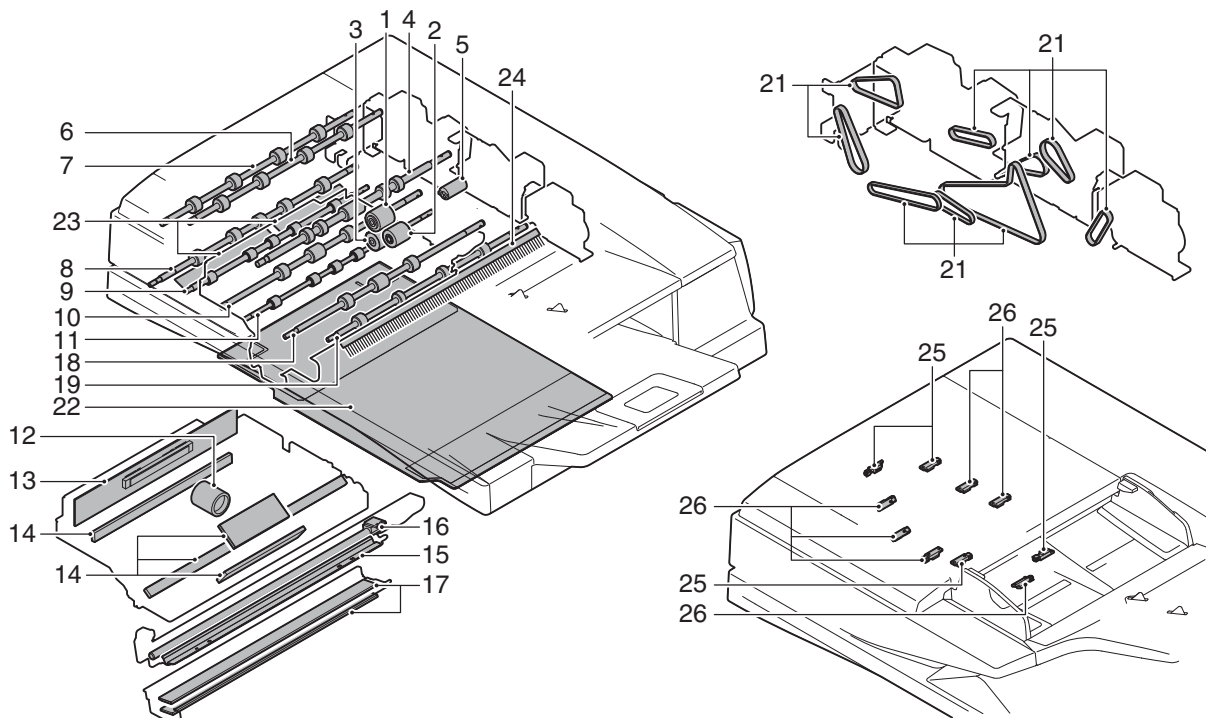
No.	Part name		When calling	500 K	1000 K	1500 K	2000 K	2500 K	3000 K	Remark [Refer to the Parts Guide. Block/Item No.] (Only the replacement parts are described.)
1	Paper feed, transport section	Paper feed roller	○	○	○	○	○	○	○	(Note 1)
2		Paper pickup roller	○	○	○	○	○	○	○	(Note 1)
3		Separation roller	○	○	○	○	○	○	○	(Note 1)
4		No. 1 resist roller	○	○	○	○	○	○	○	
5		Torque limiter		×	×	×	×	×	×	(Note 1)
6		Transport roller 1	○	○	○	○	○	○	○	
7		Transport roller 2	○	○	○	○	○	○	○	
8		Second resist roller	○	○	○	○	○	○	○	
9		Platen roller	○	○	○	○	○	○	○	
10		Transport roller 3	○	○	○	○	○	○	○	
11		Transport roller 4	○	○	○	○	○	○	○	
12	Scanning section	Lens	×	○	○	○	○	○	○	
13		CCD	×	○	○	○	○	○	○	
14		Mirror	×	○	○	○	○	○	○	
15		Reflector	×	○	○	○	○	○	○	
16		Scanner lamp	×	○	○	○	○	○	○	Air cleaning
17		Back surface scanning section glass Upper, Lower	○	○	○	○	○	○	○	
18	Paper exit section	Transport roller 5	○	○	○	○	○	○	○	
19		Paper exit roller	○	○	○	○	○	○	○	
20	Drive section	Gears (Grease)	×	×	×	×	×	×	×	(UKOG-0299FCZZ)
21		Belts		×	×	×	×	×	×	
22	Others	Document mat	○	○	○	○	○	○	○	
23		Scanning section paper guide (White Mylar)	○	○	○	○	○	○	○	
24		Discharge brush	×	×	×	×	×	×	×	
25		Optical reflection type sensors	○	○	○	○	○	○	○	
26		Optical reflection type sensors	○	○	○	○	○	○	○	
27		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

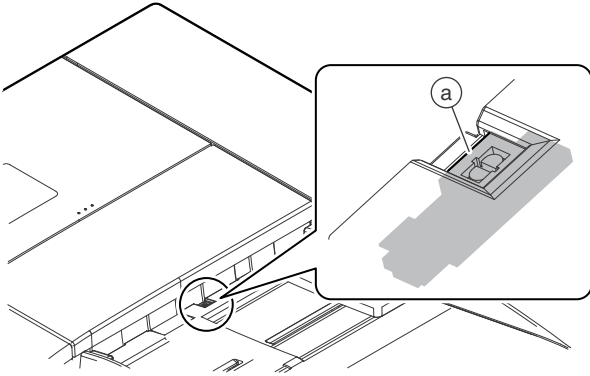
(Note2) Optical reflection sensor cleaning

- Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

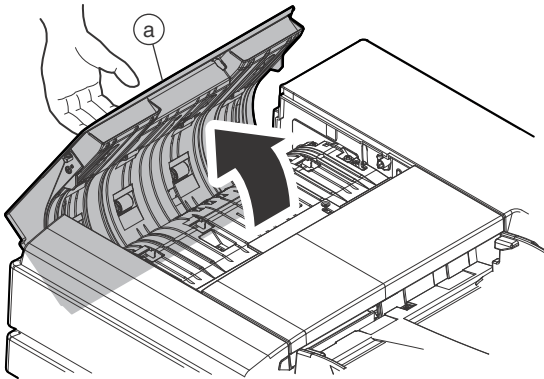


B. Details

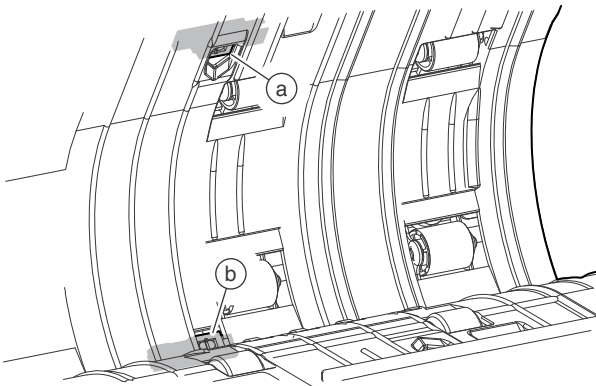
- 1) Clean the DSPF document empty sensor (a) of the document tray at every 200K.



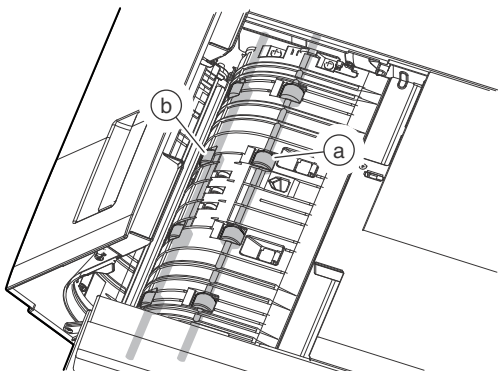
- 2) Open the upper door (a).



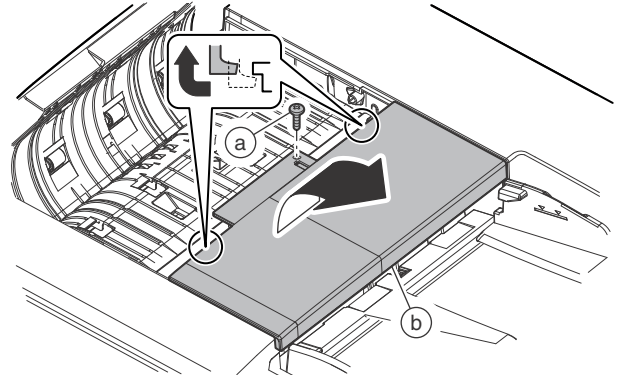
- 3) Clean the DSPF paper pass sensor 3 (a) and the DSPF paper pass sensor 4 (b) at every 200K.



- 4) Clean the transport roller 1 (a) and the transport roller 2 (b) at every 500K.

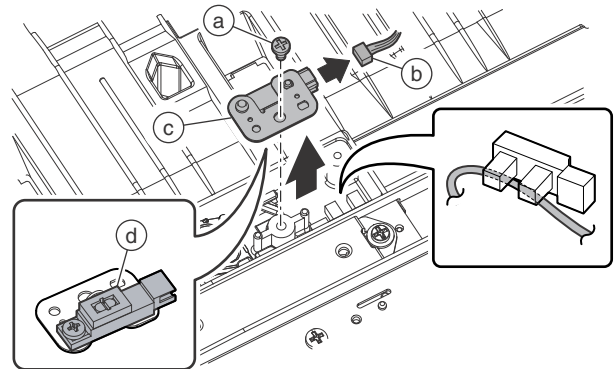


- 5) Remove the screw (a), and remove the cover (b).

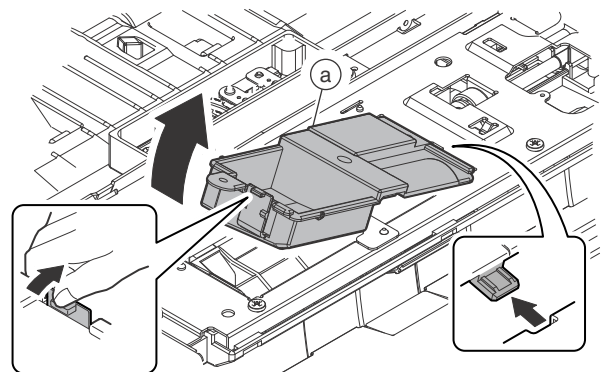


- 6) Remove the screw (a), and disconnect the connector. Remove the mounting plate (c). Clean the DSPF pass sensor 2 (d) at every 500K.

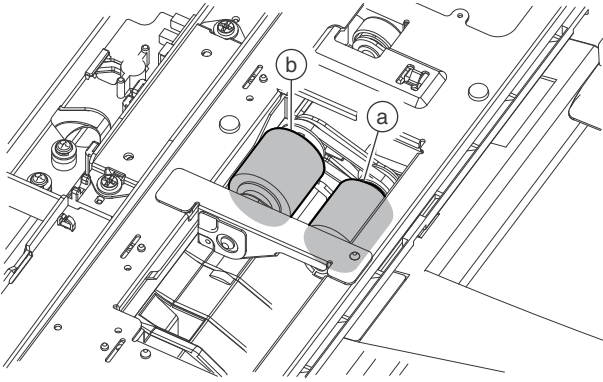
* When connecting, arrange the harness of the connector (b) under the sensor.



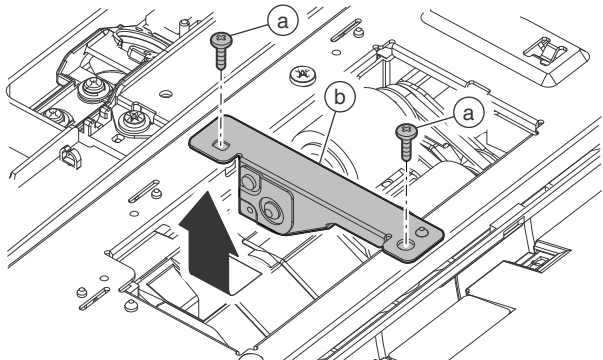
- 7) Remove the cover (a).



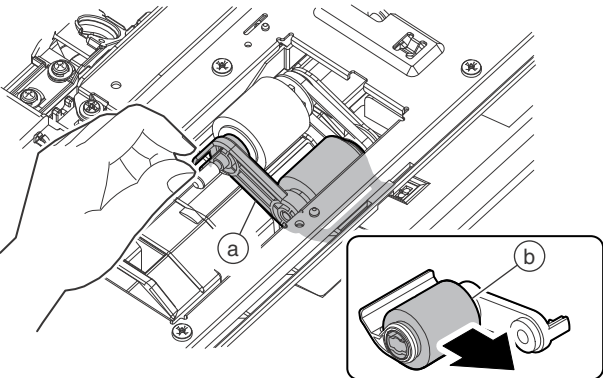
- 8) Check the paper pickup roller (a) and the paper feed roller (b) at every calling.



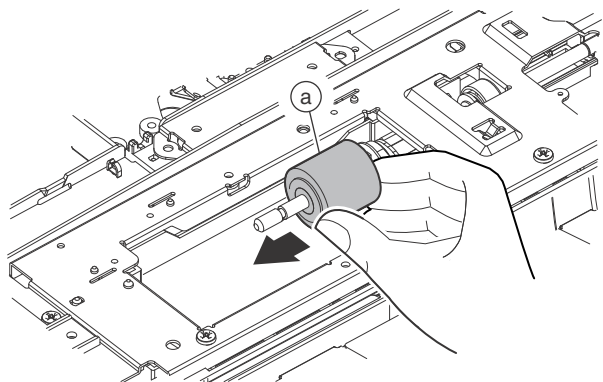
- 9) Remove the screw (a), and remove the stay (b).



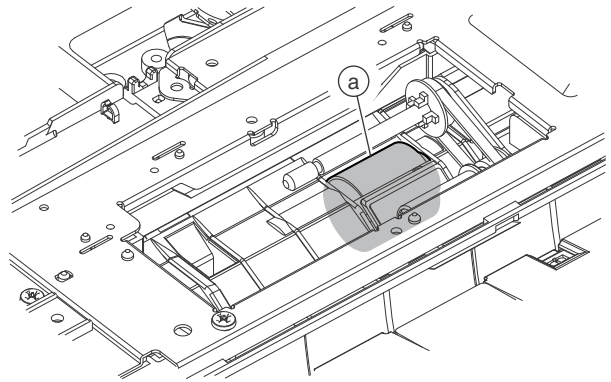
- 10) Remove the holder (a). Replace the paper pickup roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



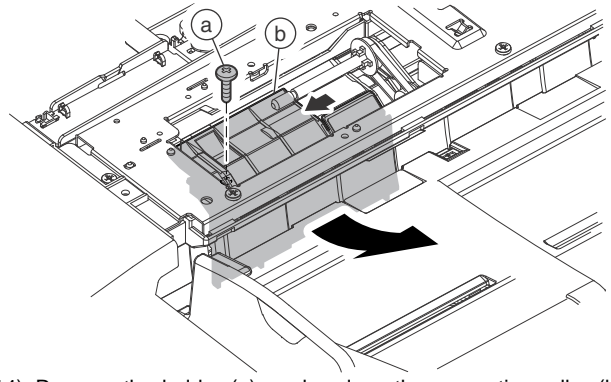
- 11) Replace the paper feed roller (a) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



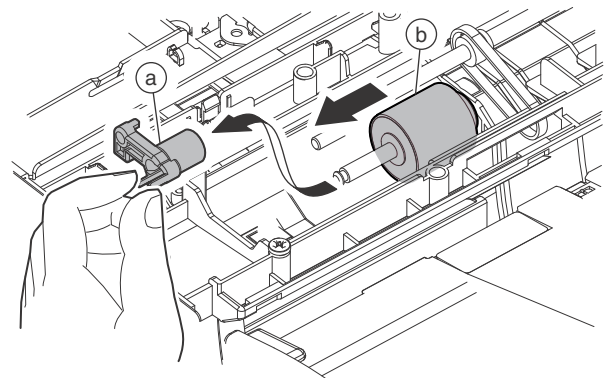
- 12) Check the separation roller (a) at every calling.



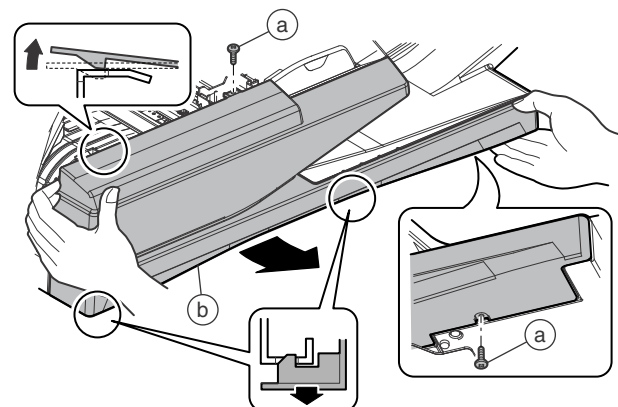
- 13) Remove the screw (a), and remove the cover (b).



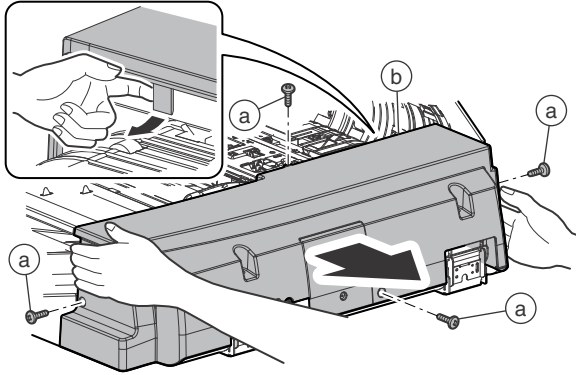
- 14) Remove the holder (a), and replace the separation roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



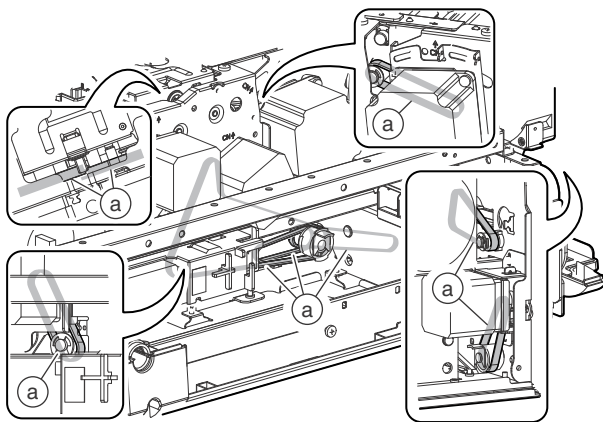
- 15) Remove the screw (a), and remove the front cabinet (b).



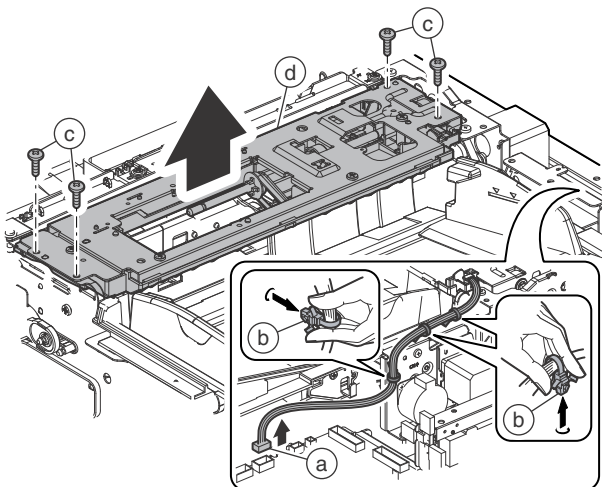
- 16) Remove the screw (a), and remove the rear cabinet (b).



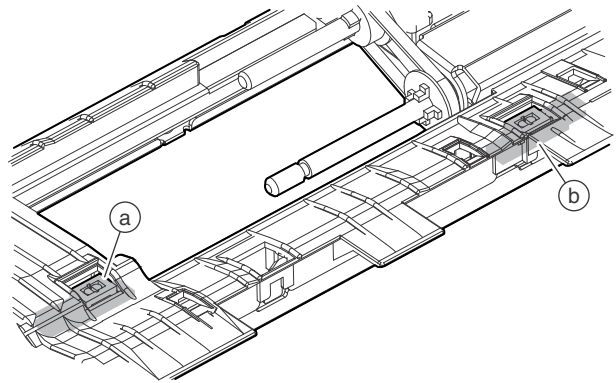
- 17) Check each belt (a) at every 500K.



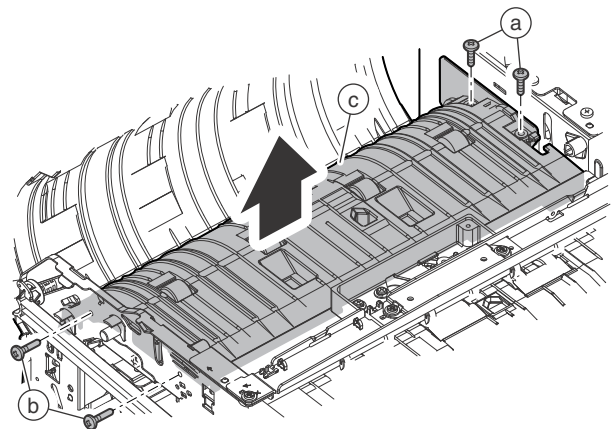
- 18) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the paper feed unit (d).



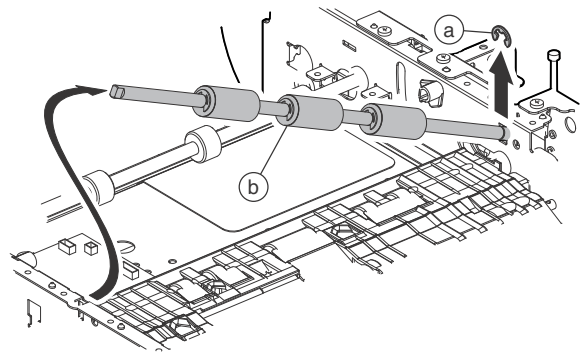
- 19) Turn back the paper feed unit, and clean the DSPF random sensor (a) and the DSPF paper pass sensor 1 (b) at every 500K. Clean the paper guide at every 500K.



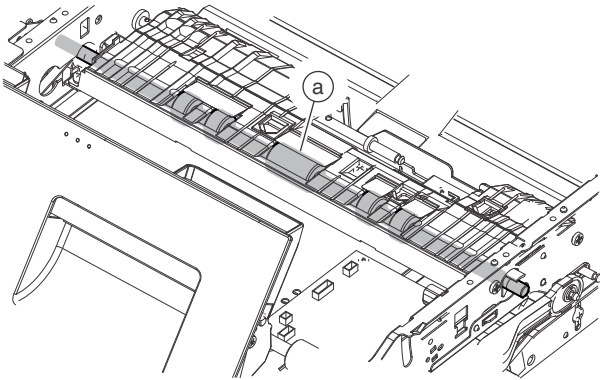
- 20) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



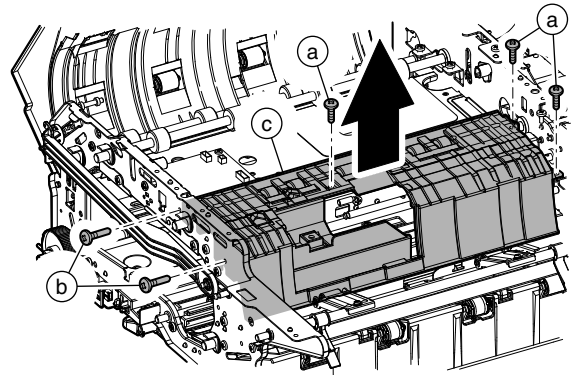
- 21) Remove the E-ring (a), and remove the No. 1 resist roller (Idle) (b).



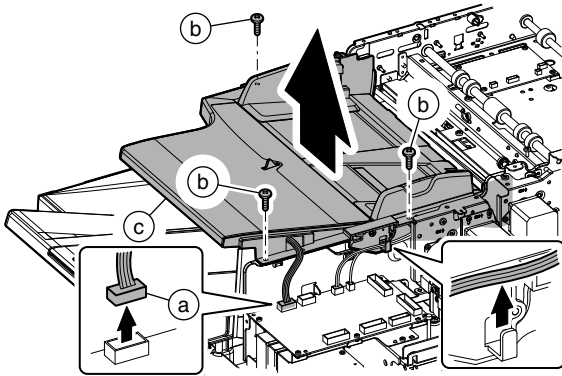
22) Clean the No. 1 resist roller (a) at every 500K.



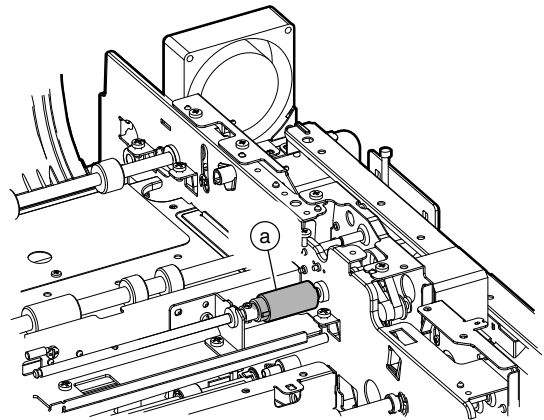
25) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



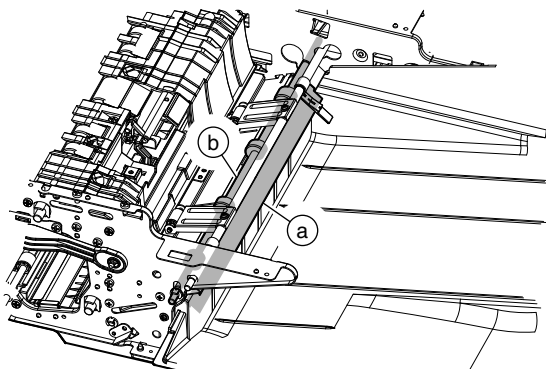
23) Disconnect the connector (a). Remove the screw (b), and remove the document tray unit (c). Clean the transport section of the document tray unit (c) at every 500K.



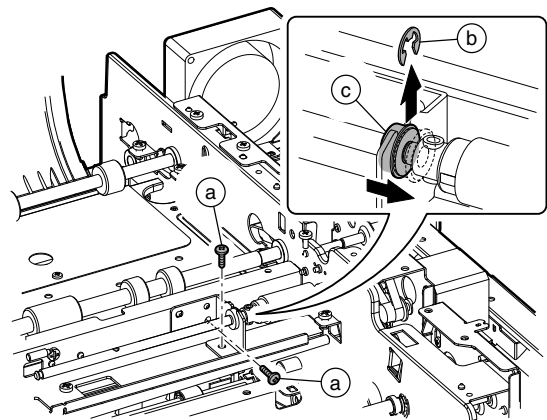
26) Check the torque limiter (a) at every 500K.



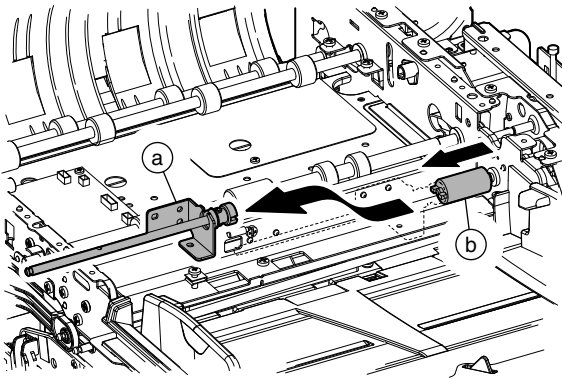
24) Check the discharge brush (a) at every 500K. Clean the paper exit roller (b) at every 500K.



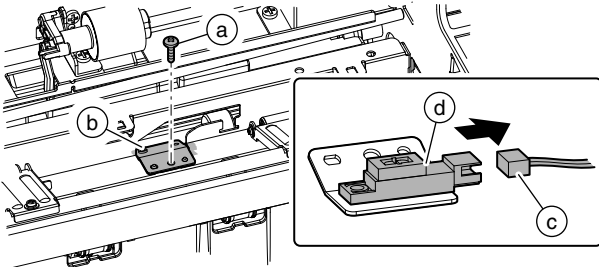
27) Remove the screw (a). Remove the E-ring (b), and slide the bearing (c).



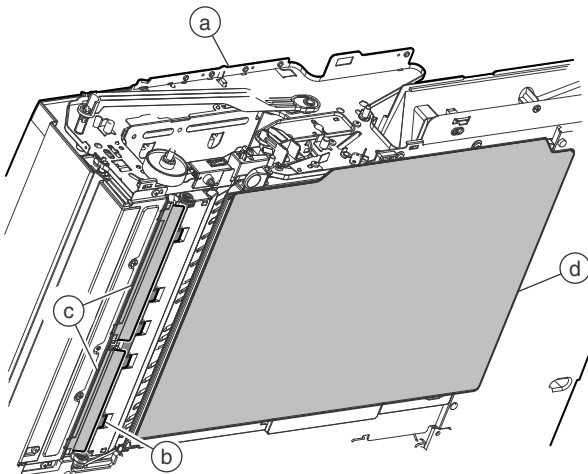
- 28) Remove the shaft (a), and replace the torque limiter (b) (when DSPF counter value reaches 800K from the beginning of use).



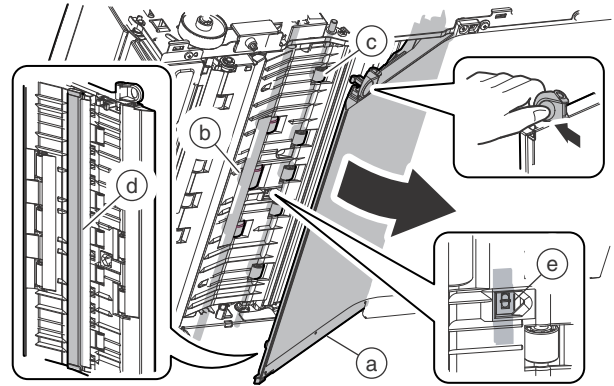
- 29) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c). Clean the DSPF paper exit sensor (d) at every 500K.



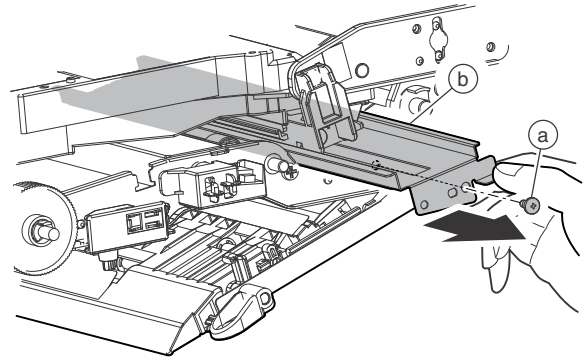
- 30) Open the DSPF unit (a), and clean the platen roller (b), the scanning section paper guide (c), and the document mat (d) at every 500K.



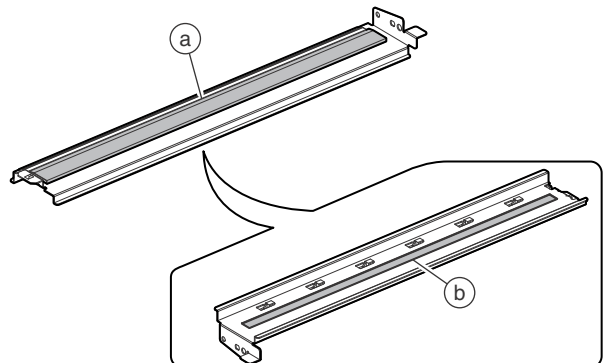
- 31) Open the lower door (a), and clean the transport roller 3 (b), the transport roller 4 (c), and the back surface scanning glass lower (d) at every 500K, and check the DSPF paper pass sensor 7 (e) at every 200K. Clean the paper guides at every 500K.



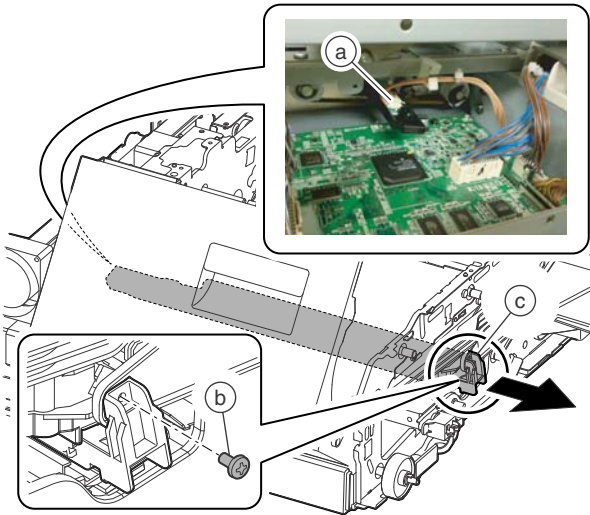
- 32) Remove the screw (a). Remove the back surface scanning section glass upper unit (b).



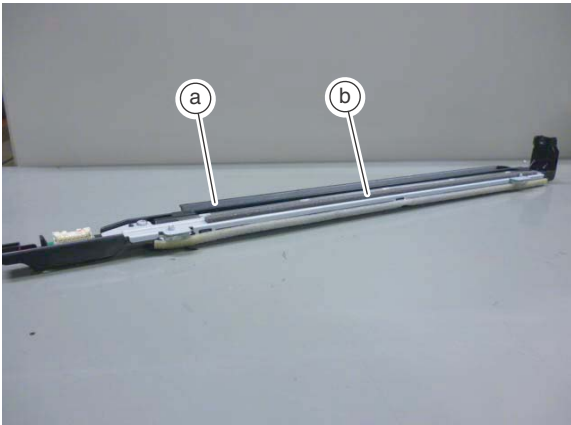
- 33) Clean the front surface (a) and the back surface (b) of the back surface scanning glass upper at every 500K.



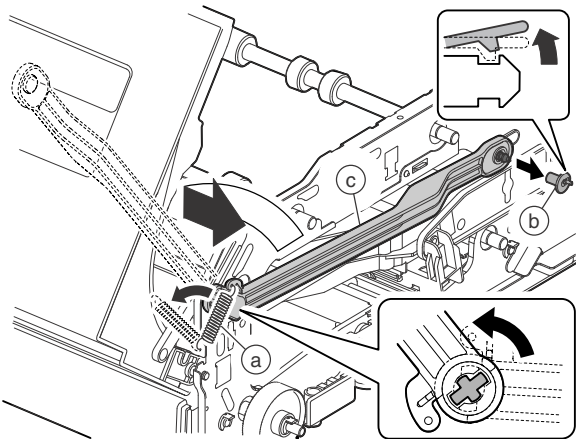
- 34) Disconnect the connector (a). Remove the screw (b), and remove the LED unit (c).



- 35) Clean the reflector (a) and the scanner lamp (b) at every 500K.

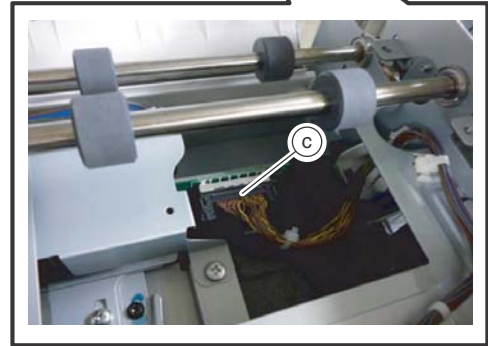
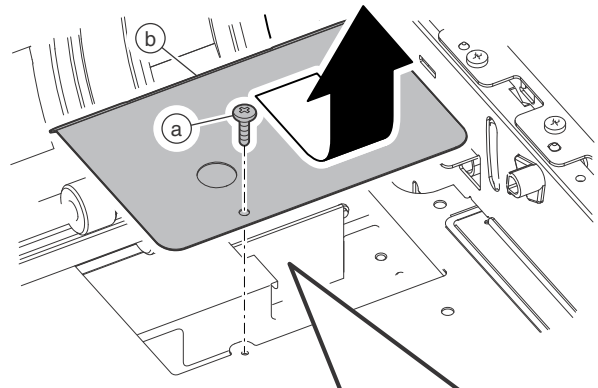


- 36) Remove the spring (a). Remove the holder (b) and the arm (c).

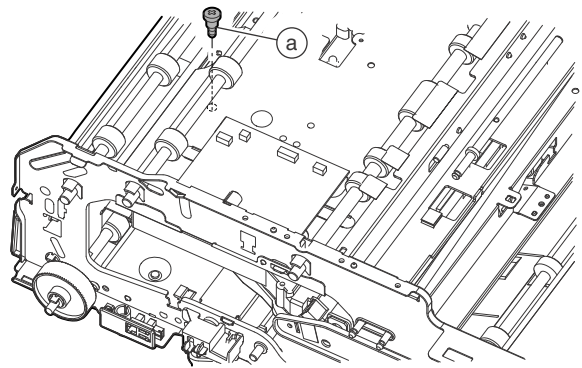


- 37) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).

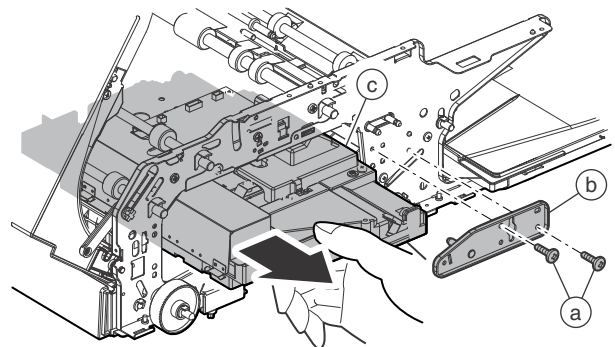
* When disconnecting the connector (c), release the lock and carefully disconnect the connector. Be careful not to use an excessive force when disconnecting the connector.



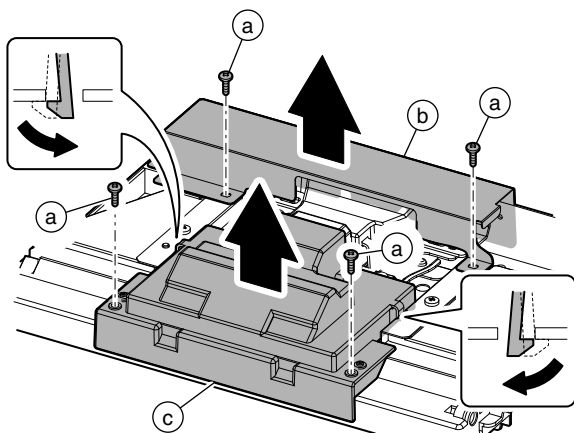
- 38) Remove the step screw (a).



- 39) Remove the screw (a), and remove the fulcrum plate (b). Remove the scanner unit (c).

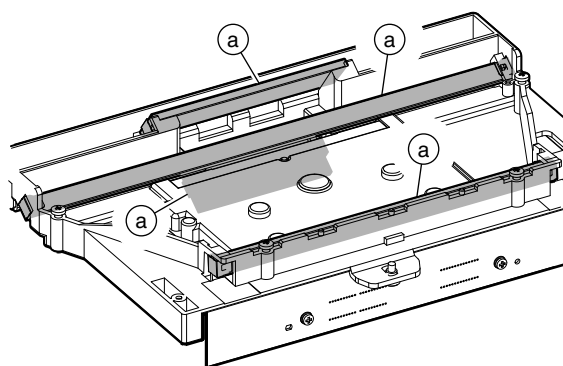


- 40) Clean the whole surface the scanner unit at every 500K.
Remove the screw (a), and remove the dark box (b) and the cover (c).



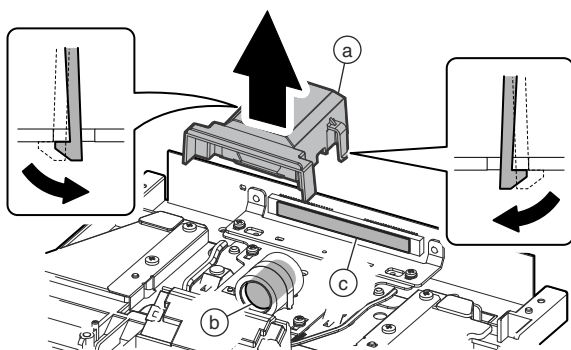
- 43) Clean the mirror (a) at every 500K.

* After completion of cleaning, visually check for any dust.

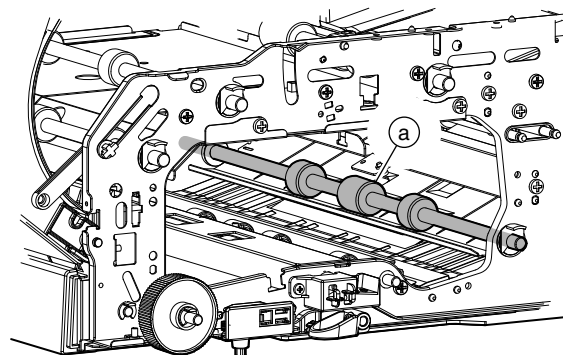


- 41) Remove the cover (a). Clean the lens (b) and the CCD (c) at every 500K.

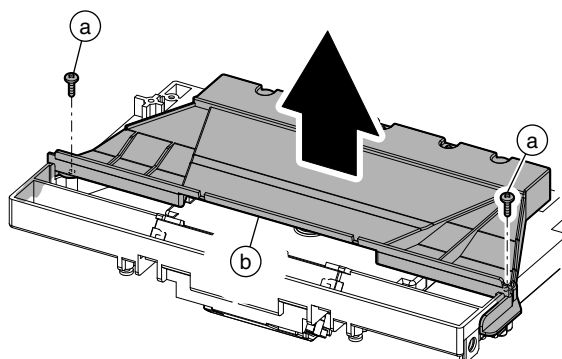
* After completion of cleaning, visually check for any dust.



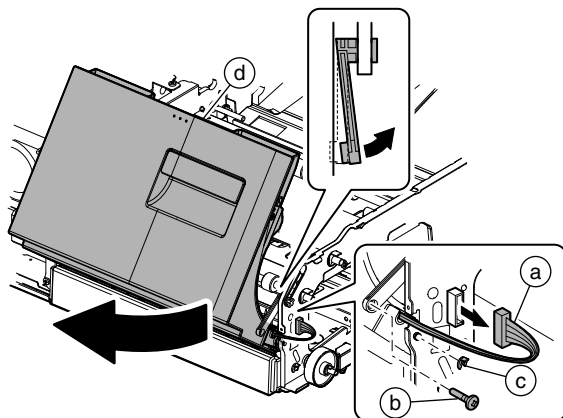
- 44) Clean the transport roller 5 (a) at every 500K.



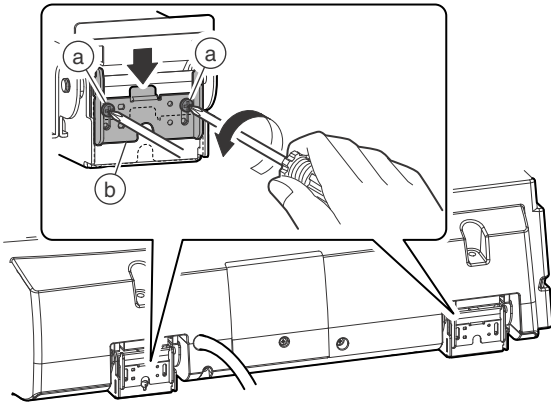
- 42) Remove the screw (a), and remove the cover (b).



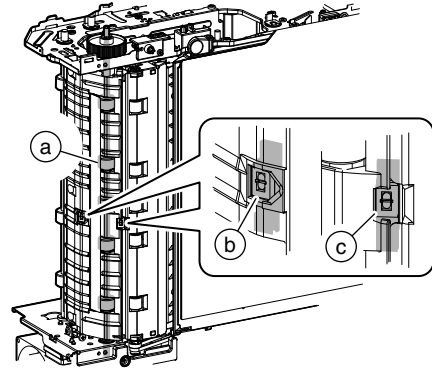
- 45) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d). Clean the paper guide of the upper door (d) at every 500K.



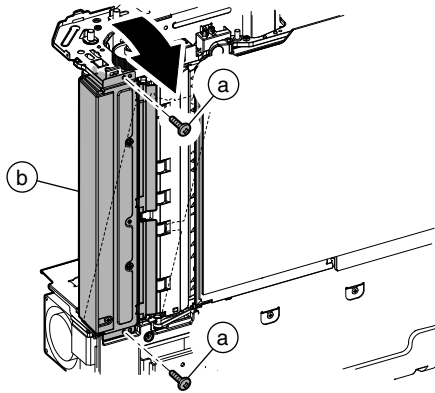
46) Loosen the screw (a), and move down the fixing plate (b).



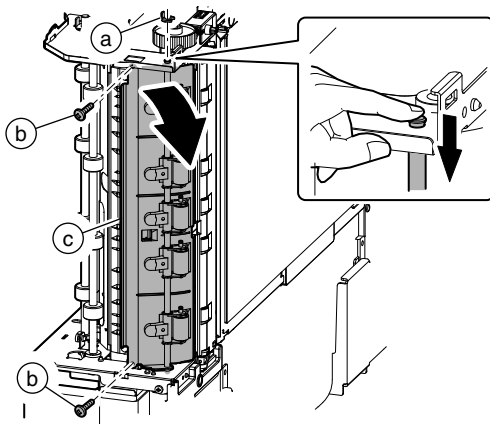
49) Clean the No. 2 resist roller (a), the DSPF paper pass sensor 5 (b) at every 500K, and the DSPF paper pass sensor 6 (c) at every 200K. Clean the paper guides at every 500K.



47) Remove the screw (a), and remove the stay (b). Clean the paper guide of the stay (b) at every 500K.



48) 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.



[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

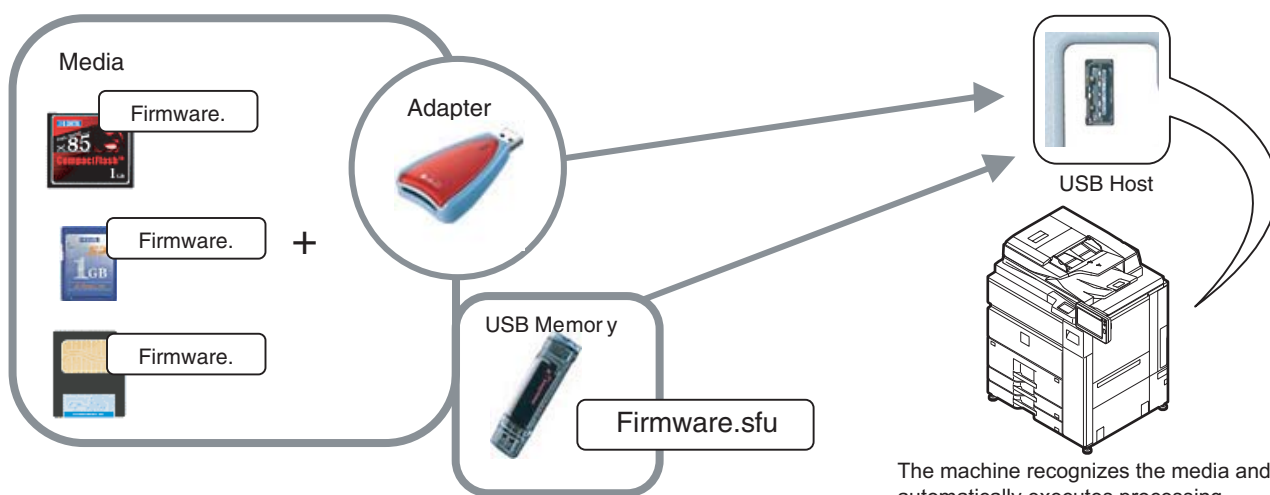
Display Item	Description of item content
ICUM(MAIN)	ICUM Main
ICUM(SUB)	ICUM Sub
ICUM(OS)	ICUM OS
ICUM(CN)	ICUM CN
ICUM(BOOT)	ICUM BOOT
ICUM(BIOS)	ICUM BIOS
ICU1(MAIN)	ICU1 Main section former half
ICU1(BOOTM)	ICU1 Boot section main
ICU1(SUB)	ICU1 Sub section (ARM9)
ICU2	ICU2 program
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
UICONTENTS	Content data for display
EOSA	embedded OSA

Display Item	Description of item content
PCU(BOOT)	PCU Boot section
PCU(MAIN)	PCU Main section
A4LCC(BOOT)	Side LCC (A4) Boot section
A4LCC(MAIN)	Side LCC (A4) Main section
A3LCC(BOOT)	Side LCC (A3) Boot section
A3LCC(MAIN)	Side LCC (A3) Main section
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)	Insertor Boot section
INSERTER(MAIN)	Insertor 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
STACKER1(BOOT)	Stacker 1 series Boot section ROM
STACKER1(MAIN)	Stacker 1 series Main section ROM
STACKER2(BOOT)	Stacker 2 series Boot section ROM
STACKER2(MAIN)	Stacker 2 series Main section ROM
SCU(BOOT)	SCU Boot section
SCU(MAIN)	SCU Main section
DSPF(BOOT)	DSPF Boot section
DSPF(MAIN)	DSPF Main section
FAXOPT1(BOOT)	FAX1 Boot section
FAXOPT1(MAIN)	FAX1 Main section
ANIMATION	Animation data
ACRE(BOOT)	ACRE Boot section
ACRE(MAIN)	ACRE Main section
ACRE_DATA	ACRE table

2. Update procedure

A. Update method using SIM 49-1

For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.

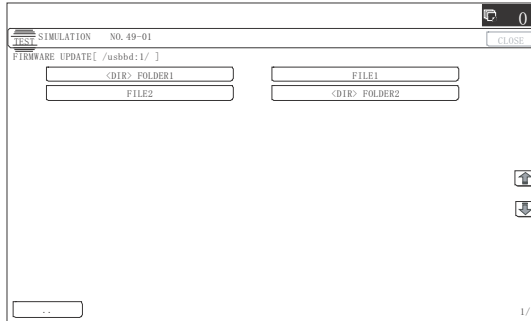


- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have an enough capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

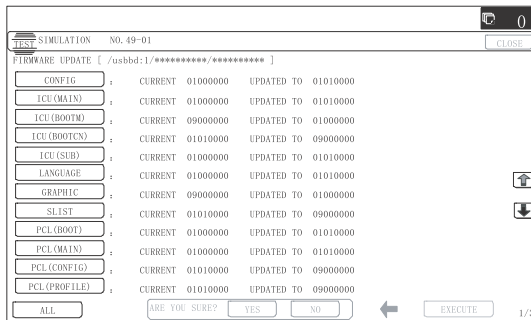
Execution of the firmware by SIM49-01

- 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.

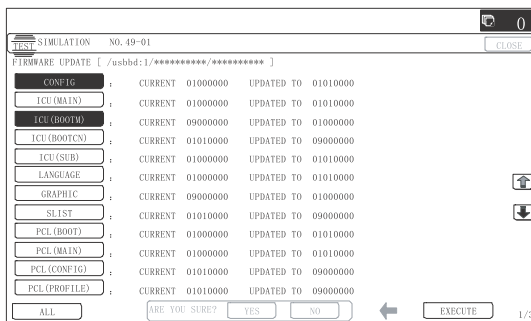
Press the key of the file to be updated. The screen transfers to the update screen.



- * 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.

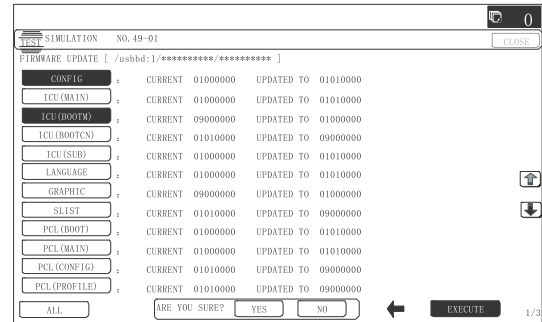


- 4) Press [ALL] key.
All the firmware programs are selected.

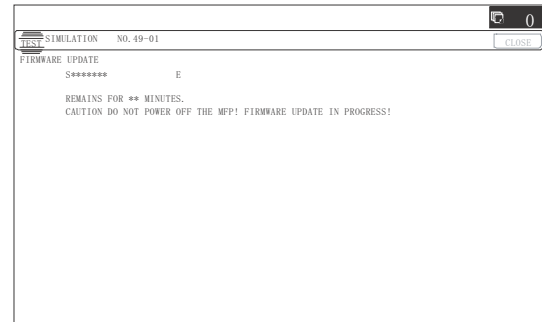


- * Normally select all the firmwares and execute updating.
- * In this case, firmwares which do not exist on the machine side are ignored.
To update a certain firmware only, select the firmware with the firmware display key.
- * If firmware's key is not selected, [EXECUTE] key is gray out and cannot 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.)

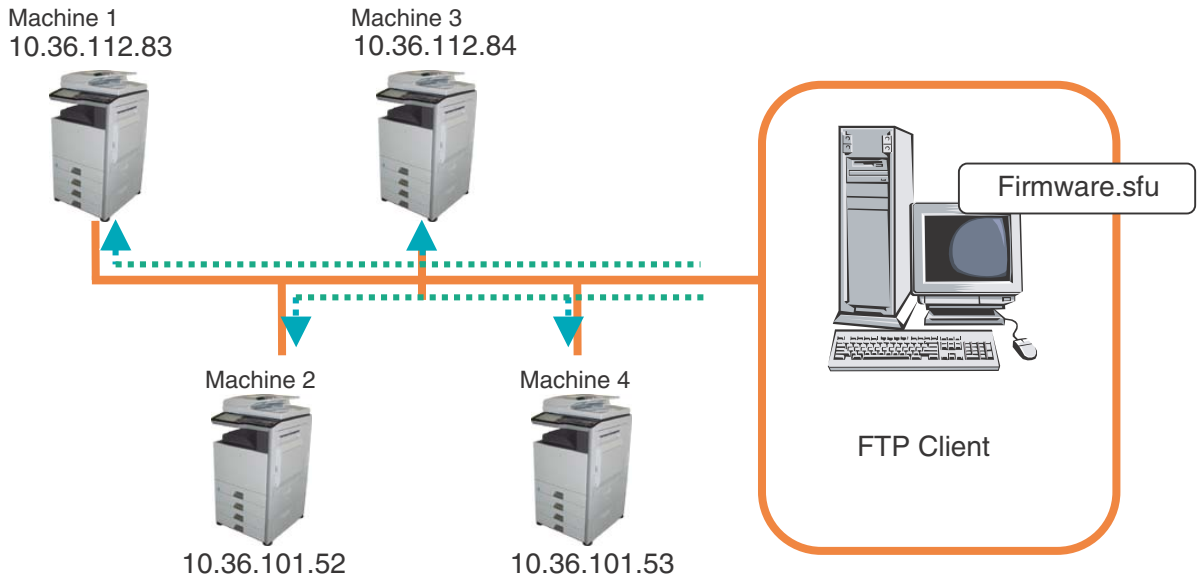
Go to SIM22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.



B. Firmware update using FTP

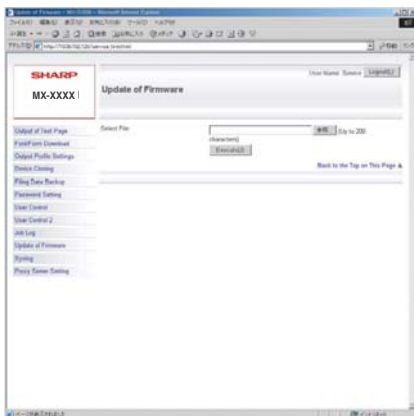
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



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 mSATA SSD 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 mSATA SSD and CompactFlash must be replaced with a new one having the normal boot program.

c. DIP-SW used in the CN update mode

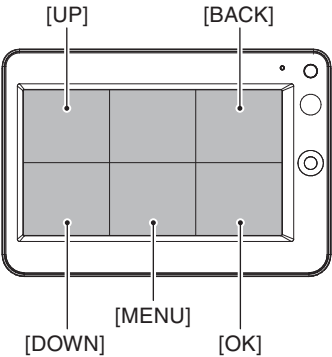
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

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 mSATA SSD 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 (mSATA SSD or CompactFlash).

a-1. Necessary items

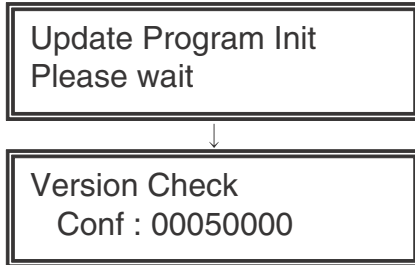
- Insert the mSATA SSD and CompactFlash to the MFP PWB of the machine.
- USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

a-2. Procedures

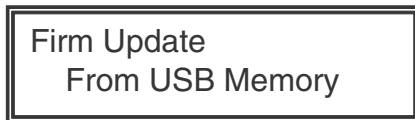
- 1) Turn OFF the power, and remove the cabinet and the MFP PWB cover.
- 2) Turn ON the DIP SW of the MFP PWB UP DATE.
- 3) Install the USB memory into the USB port.
- 4) Turn ON the power.
- 5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)

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

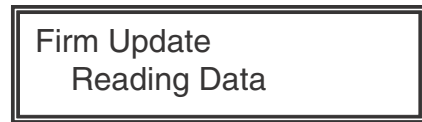


- 8) Select the firmware file (SFU).
Select the target firmware file (SFU) with [UP] key and [DOWN] key.
When [OK] key is pressed with a directory name (the head: "> D") displayed, the menu goes to the one-stage lower directory.
When [BACK] key is pressed in the lower-stage directory, the menu returns 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



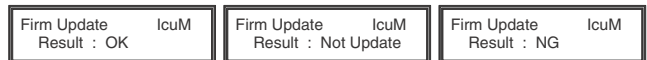
* The abbreviated name of the firmware which is under update process is indicated on the right upper corner of the display.

* 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.

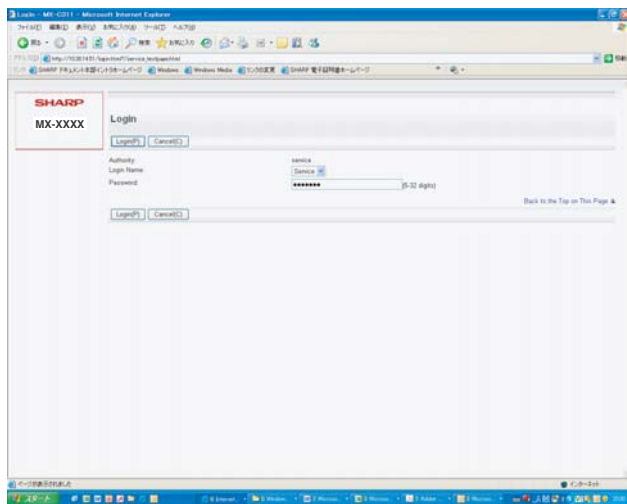
Menu/Item		Function and content
Password Setting		Used to set the password to enter the Hidden Web Page exclusively used for the serviceman.
Output of Test Page		Used to print out the test page (system setting contents).
Font/Form Download		Used to download Font/Form. Font/Form of PCL and PostScript, 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* ¹	Administration Settings	Used to set the Log Type. (Set to the default.)
	Storage/Send Settings	Keep all the items selected.
	Save/ Delete Syslog	Used to save or delete the log data.
	View Syslog	Used to display the log data.

*1: This may be useful for troubleshooting when a trouble occurs. When submission of the log data file is requested in order to troubleshoot, use the log file save mode to export the log data file to the client PC.

2. Details and operation procedures

A. Procedures to enter the Hidden Web page exclusively used for the serviceman

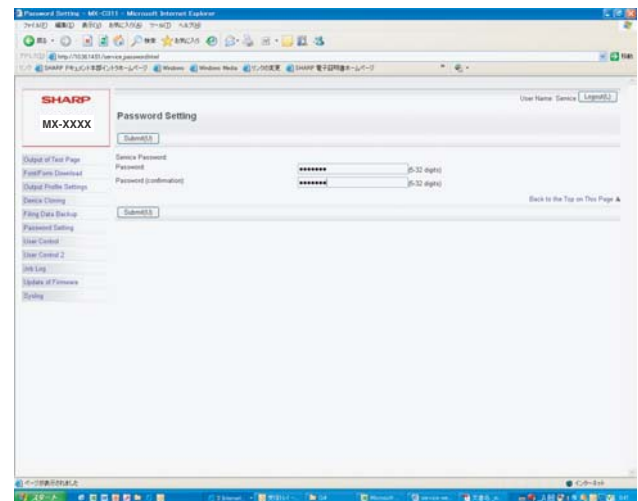
- 1) Boot a browser program.
- 2) Enter the specified URL (http://xxx.xxx.xxx.xxx/service_login.html) and enter the servicing page menu.
Default password: "service"



NOTE: The password can be optionally changed in the Password Setting menu.

If the password is changed and forgotten, use SIM24-31 to reset the password to the default.

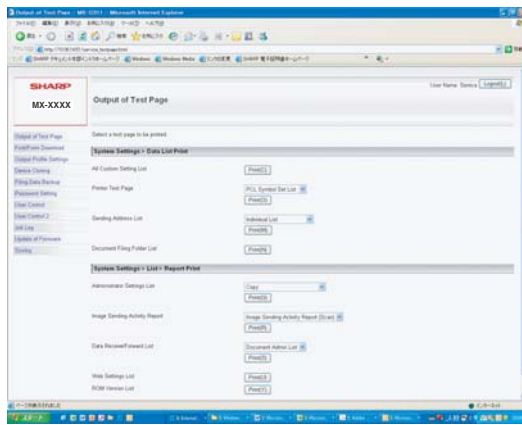
B. Password Setting



* The password can be optionally changed in the following procedures.

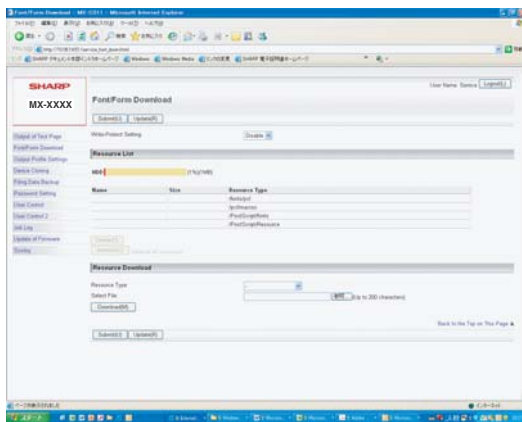
- 1) Enter a new password.
- 2) Enter the new password again to make confirmation.
- 3) Click "Submit" (registration) button.

C. Output of Test Page



- 1) Click "Print" button of an item or report to be printed.
When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.
The list is printed out.

D. Font/Form Download



(1) Download of Font, Form, and Macro

- 1) Select "Resource Type" from the pull-down menu list.
(Example: PCL/PostScript Font/Form or Macro)
- 2) Click "Refer" button to select a target file.
- 3) Click "Download" button.
- 4) Click "Submit" (registration) button.
The file is downloaded to the HDD.
The list of the downloaded files and the use percentage of the HDD are displayed.

(2) Delete of downloaded font (Procedures to delete a file separately)

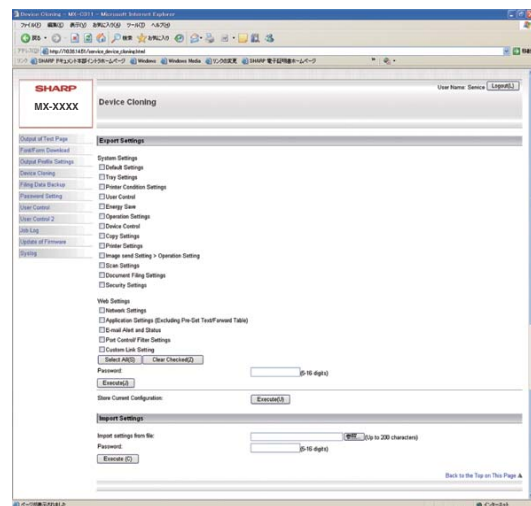
- 1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
- 2) Check that the confirmation message is displayed, and press Yes key.
- 3) Click "Submit" (registration) button.
The file in the HDD is deleted.

(3) Procedures to 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.

E. Device Cloning



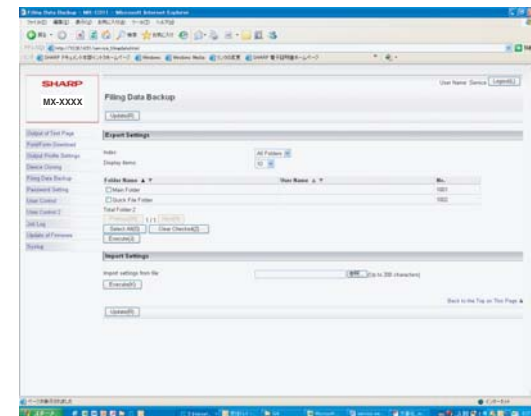
(1) Export

- 1) Select an item to be backed up.
- 2) Click "Execute" button.
Specify the save position of the file, and save the file.
(File name: ****.bin)
When the password is set, the set password must be entered when importing.

(2) Import

- 1) Import from a file: Click "Refer" button to select the back-up file. (File name: ****.bin)
- 2) Click "Execute" button to execute import.
If the password is set when exporting, the password must be entered.
- 3) Reboot the machine.

F. Filing Data Backup



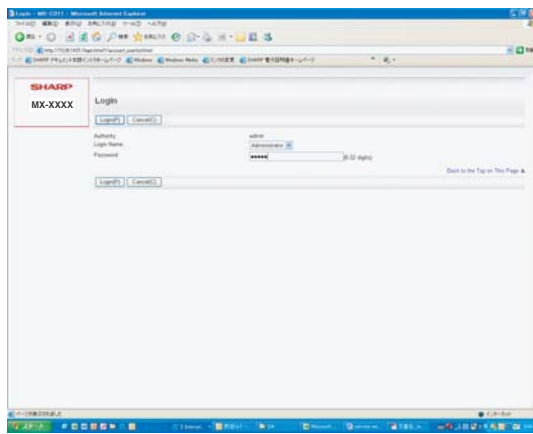
(1) Export

- 1) Select the folder to be backed up.
The list display conditions can be specified by changing the index and the number of display items on the pull-down menu.
- 2) Click "Execute" button.
Specify the save position of the file, and save the file. (File name: ****.bin)
- 3) Click "Update" button.

(2) Import

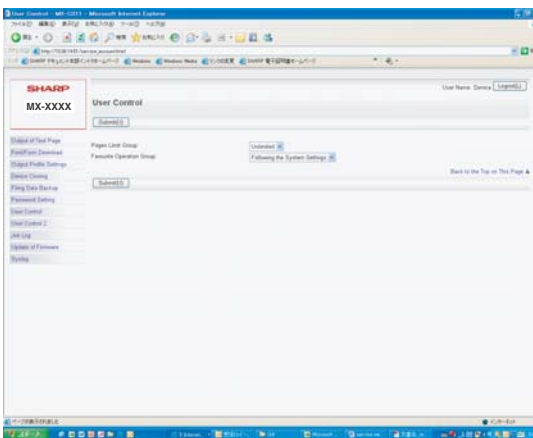
- 1) Click "Refer" button to select a target file. (File name: ****.bin)
- 2) Click "Execute" button.
The target file is imported.
- 3) Click "Update" button.

G. User Control 1



- 1) Enter the password to log in.
Default Password: admin
The screen is shifted to the setting menu of user management.

H. User Control 2



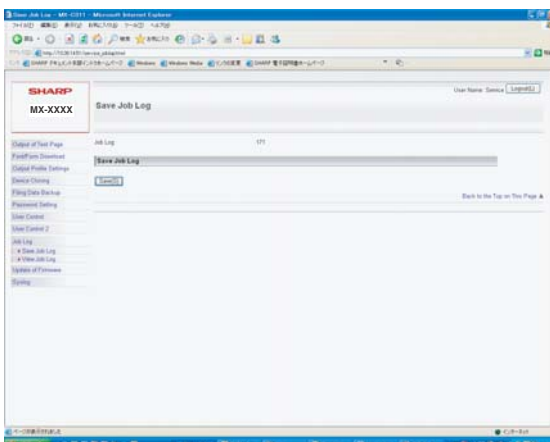
- 1) Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(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.

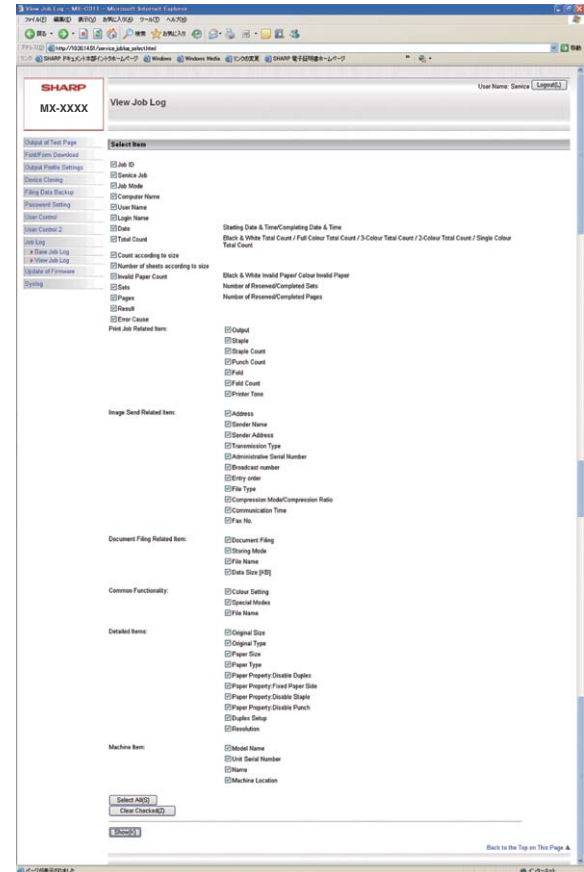
I. Job Log

(1) Save Job Log



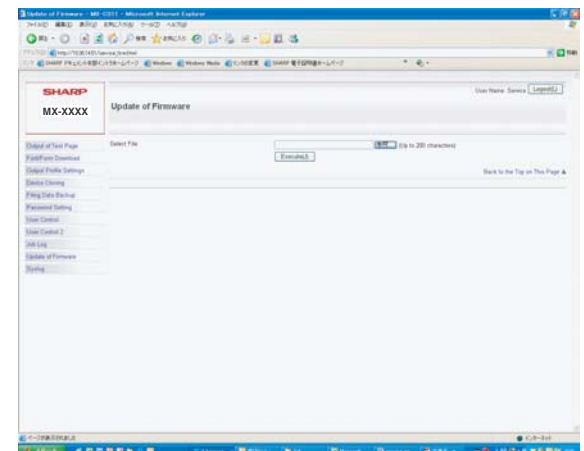
- 1) Click "Save" button, and specify the save position of the Job Log to save it.

(2) View Job Log



- 1) Select a Jog Log item to be displayed. (In the default setting, all the items are selected. Remove check marks of the items which are not to be displayed.)
- 2) Click "Show" (display) button.
The Jog Log is displayed.

J. Update of Firmware



- 1) Click "Refer" button to select a firmware file.
- 2) After selecting a firmware file, click "Execute" button.
The firmware data are sent to the machine, and update of the firmware is processed.

During the process, the message of "Firmware Update, now processing..." is displayed.

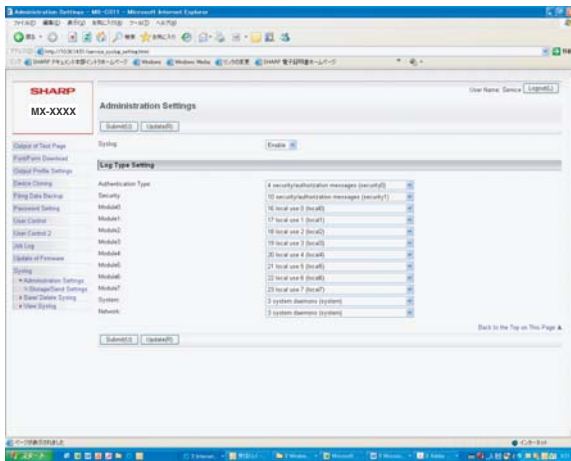
K. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

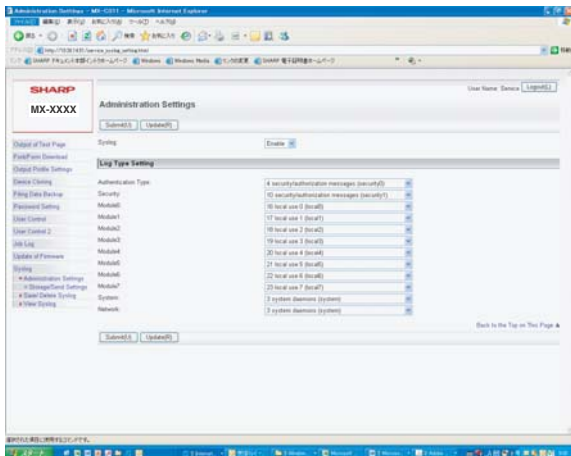
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

Syslog	Administration Settings	Log Type Setting (Set to the default.)
	Storage/Send Settings	Set all the items selected.
	Save/ Delete Syslog	Log data save, delete
	View Syslog	Log data display



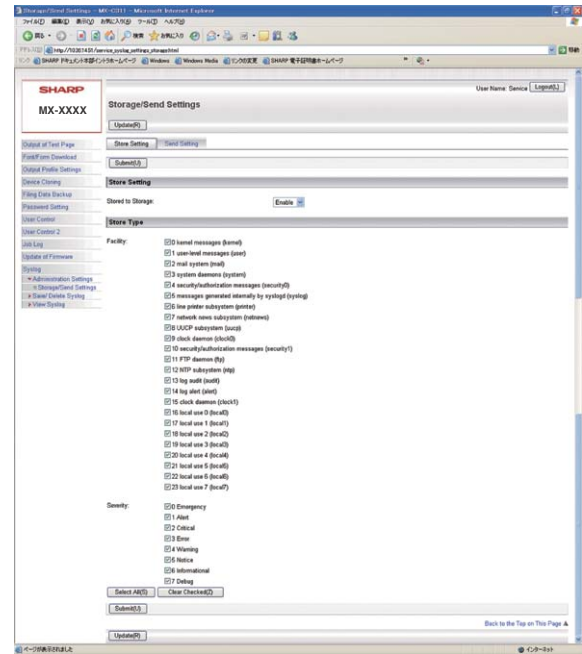
(1) Administration Settings/ Log Type Setting

Set to the default.

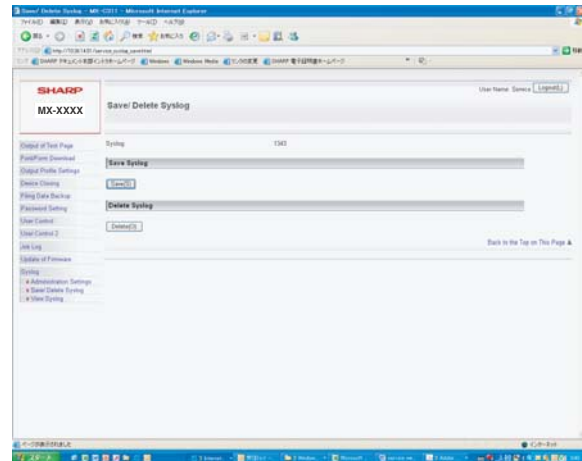


(2) Storage/Send Settings

Keep all the items selected.



(3) Save/ Delete Syslog

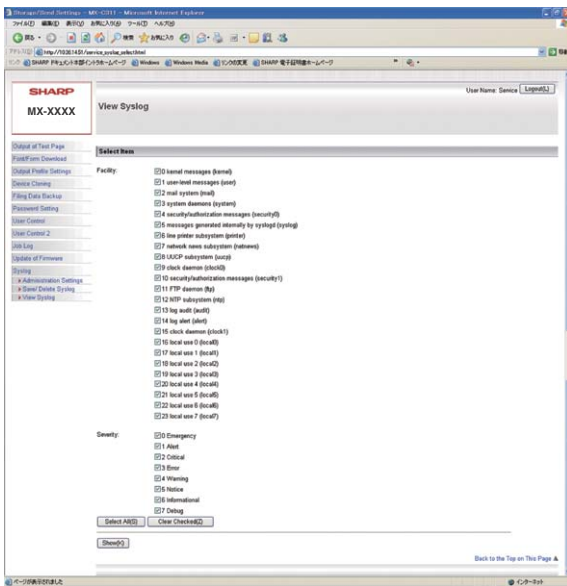


When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

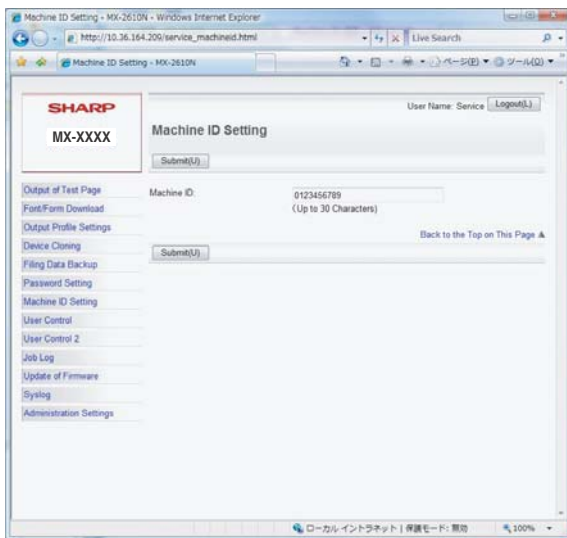
Check to confirm that the confirmation message is displayed, and press OK key.

(4) View Syslog



- 1) Select a Syslog item to be displayed.
- 2) Click "Show" button.
The Syslog is displayed.

L. Machine ID Setting



- 1) Enter the machine ID.
Max. 30 digits of numeral figures and characters can be entered.
- 2) Press the registration button.

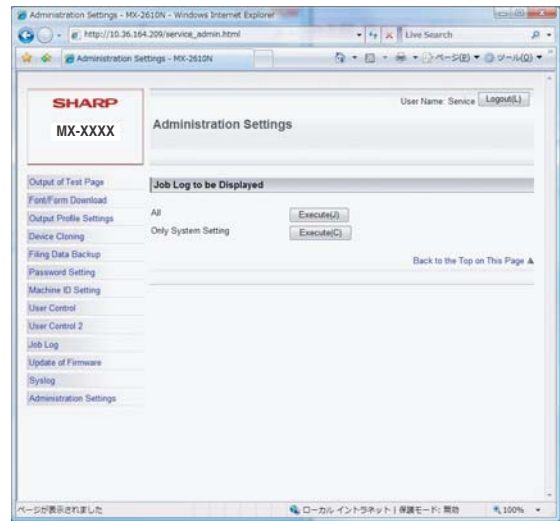
NOTE: The machine ID can be set with SIM26-7 as well as this function.

M. 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.

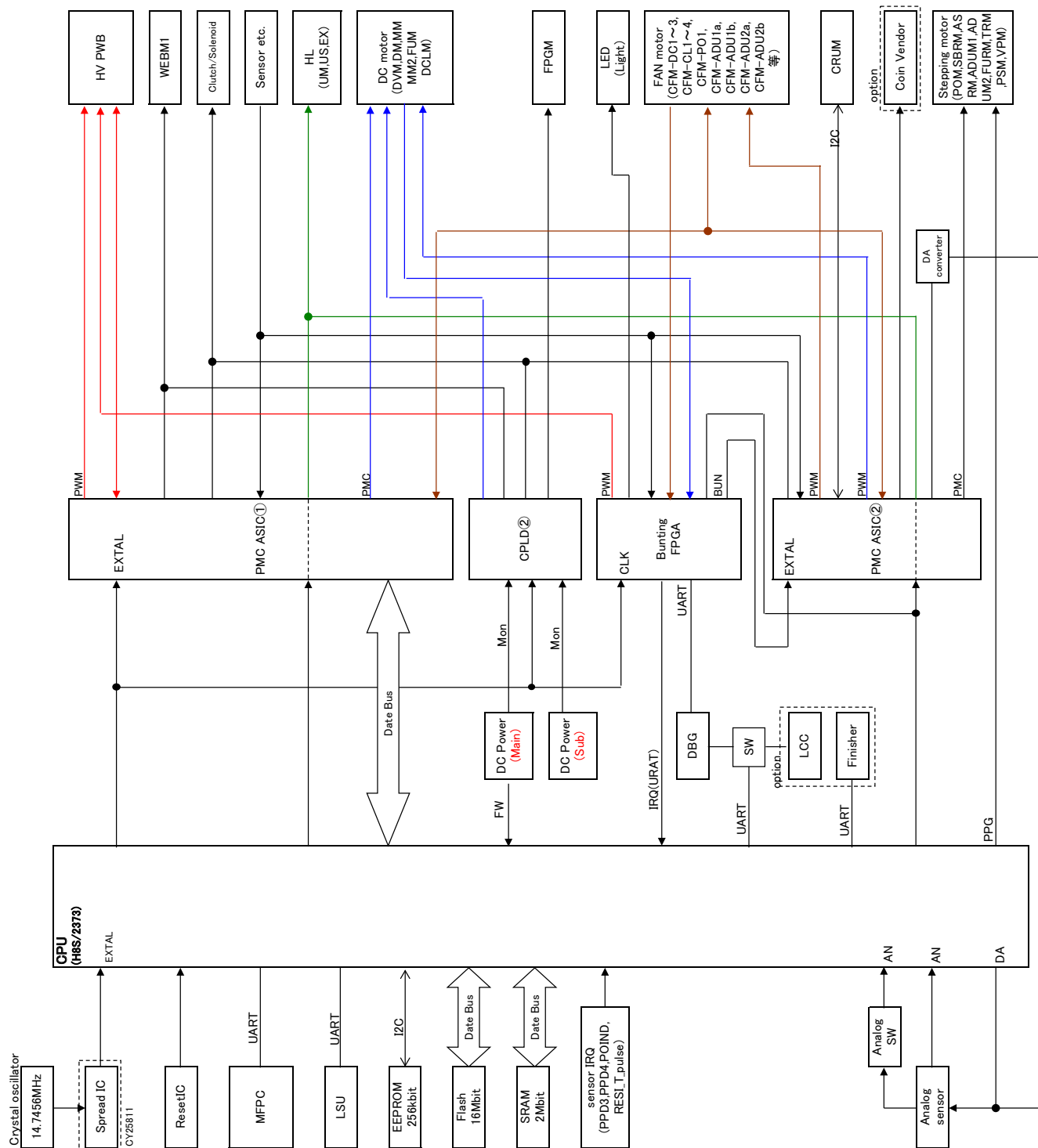
- 1) Press the setting execution button corresponding to the display mode.



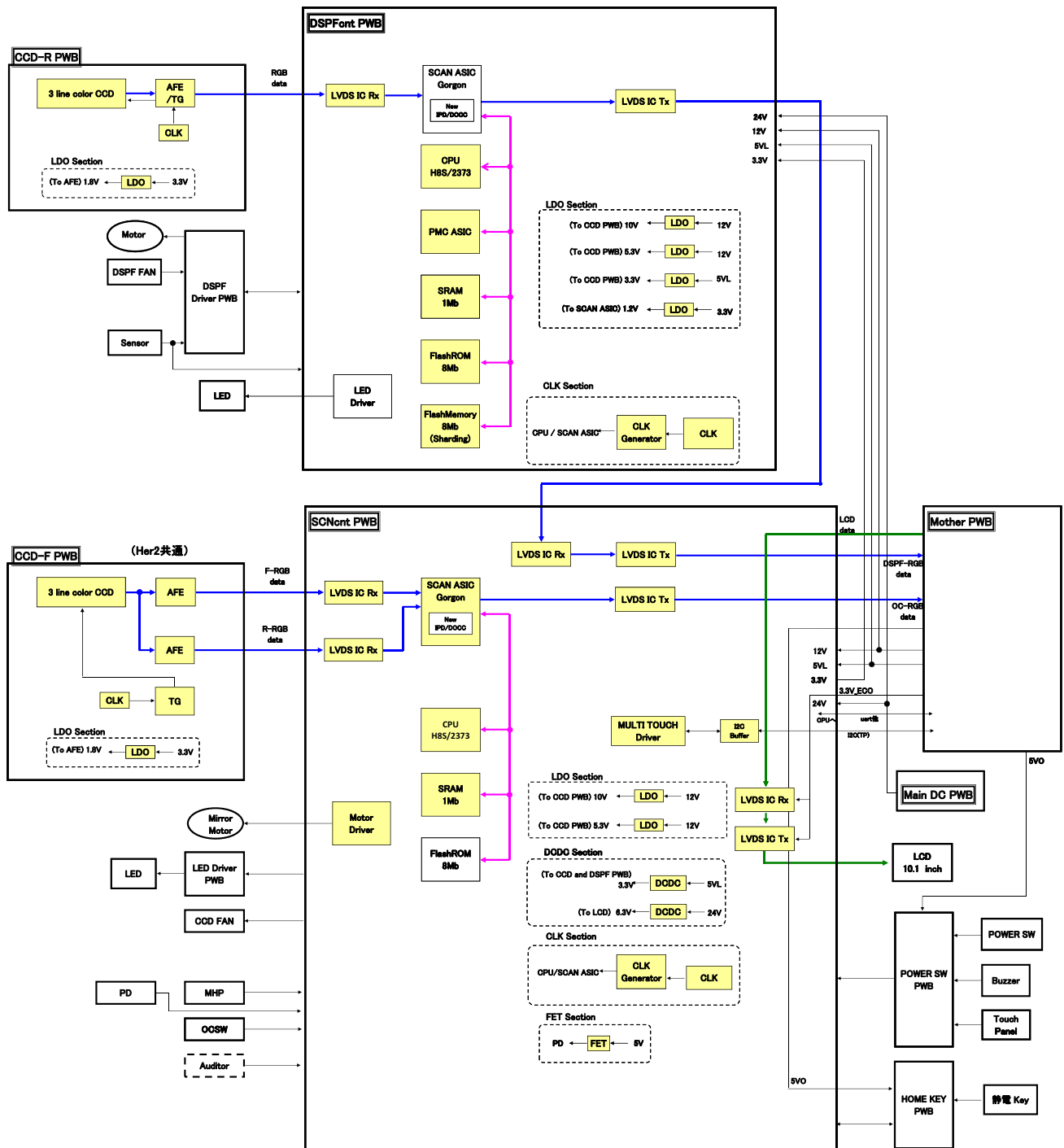
A. System block diagram



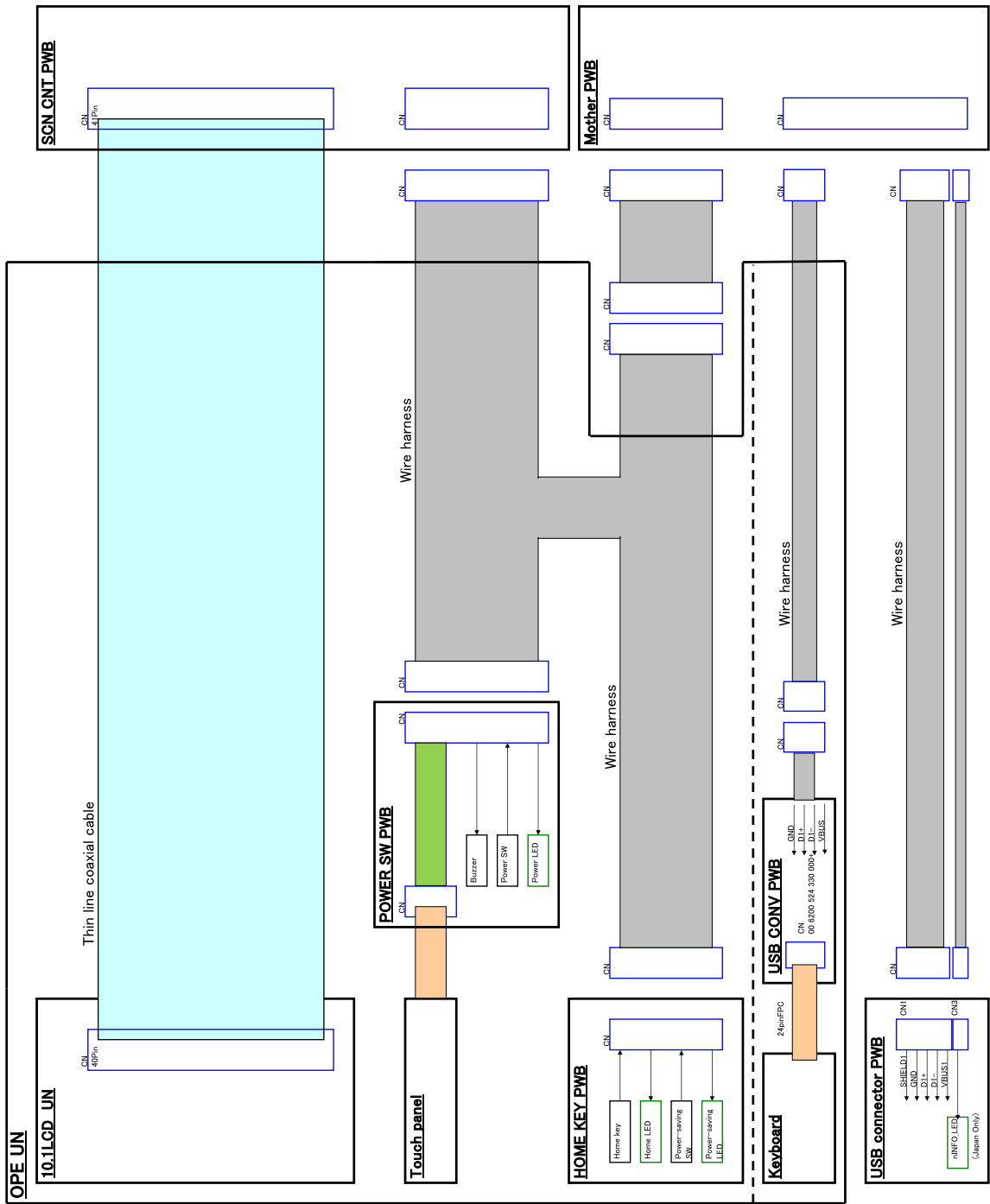
B. PCU PWB



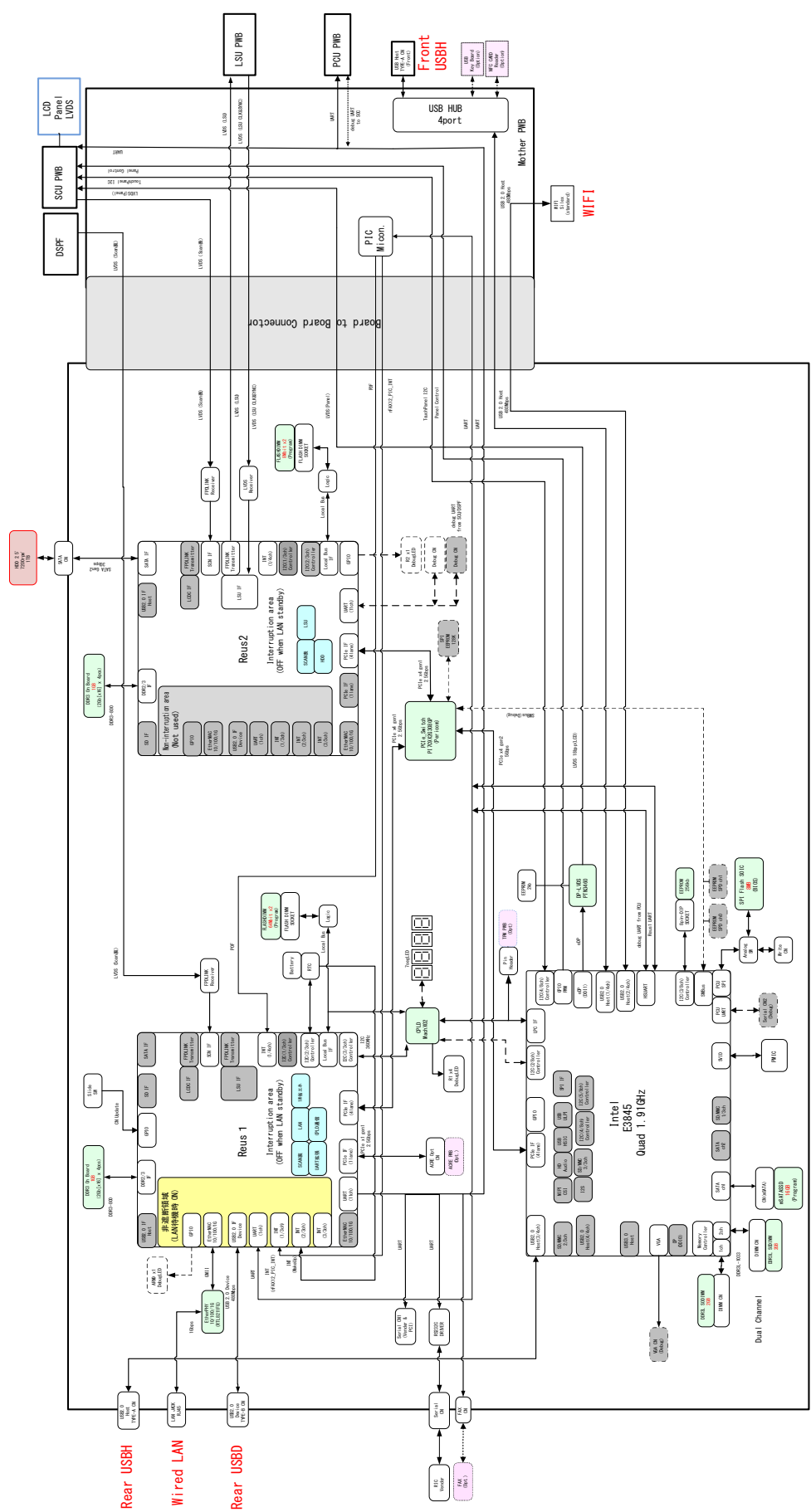
C. Scanner control PWB



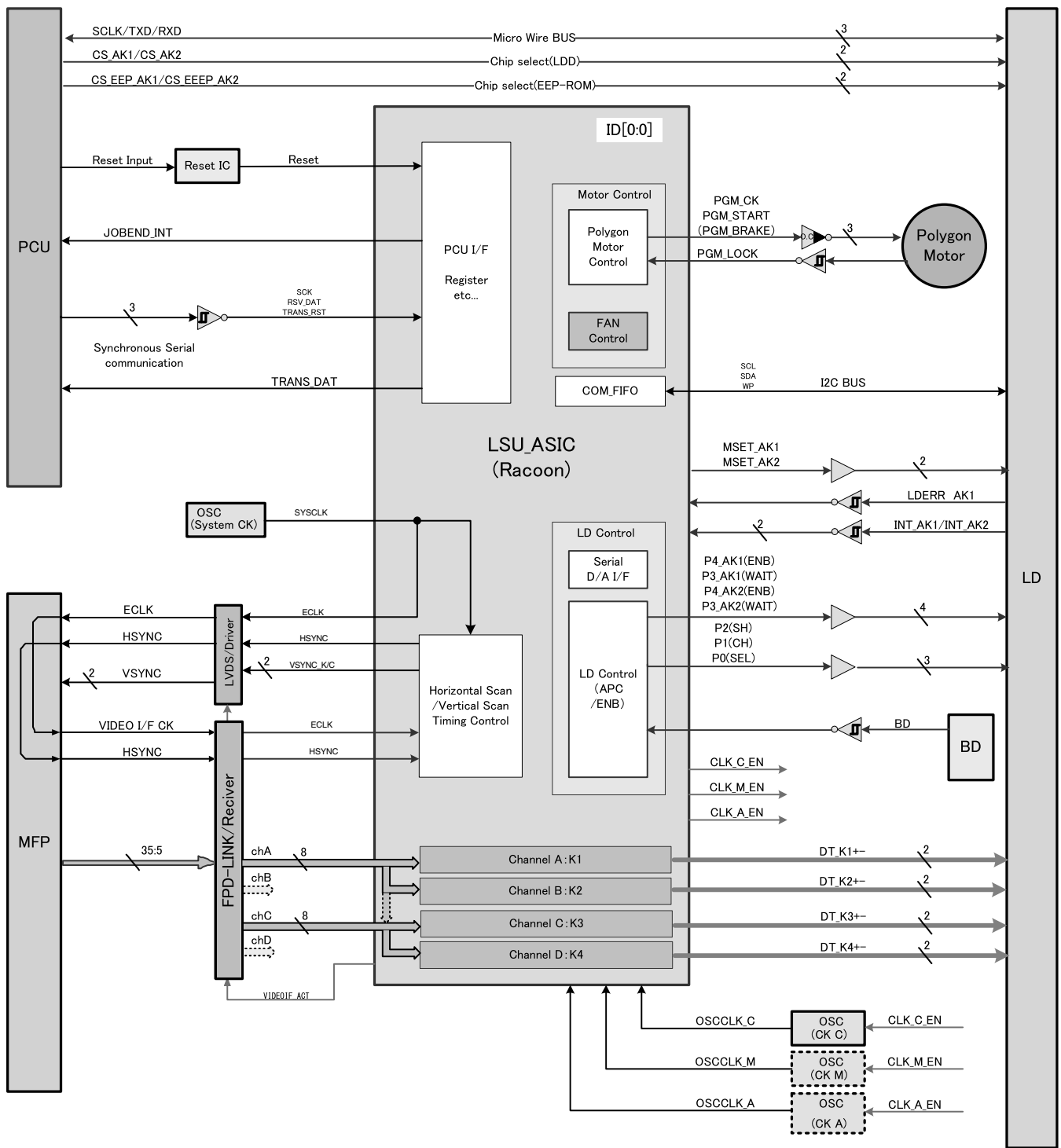
D. Operation unit



E. MFP control PWB



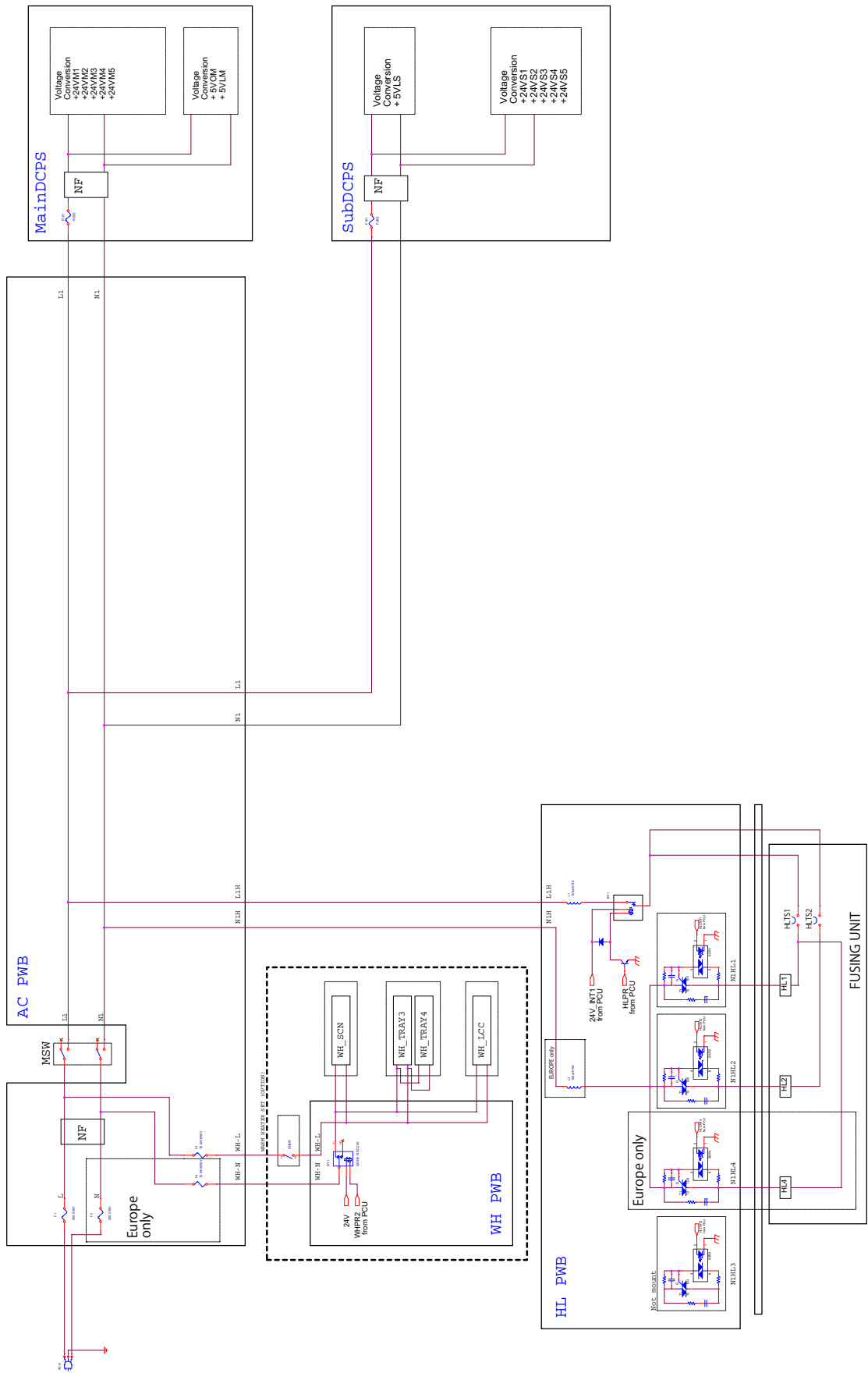
F. LSU CNT PWB



2. Power line diagram

A. AC power line diagram

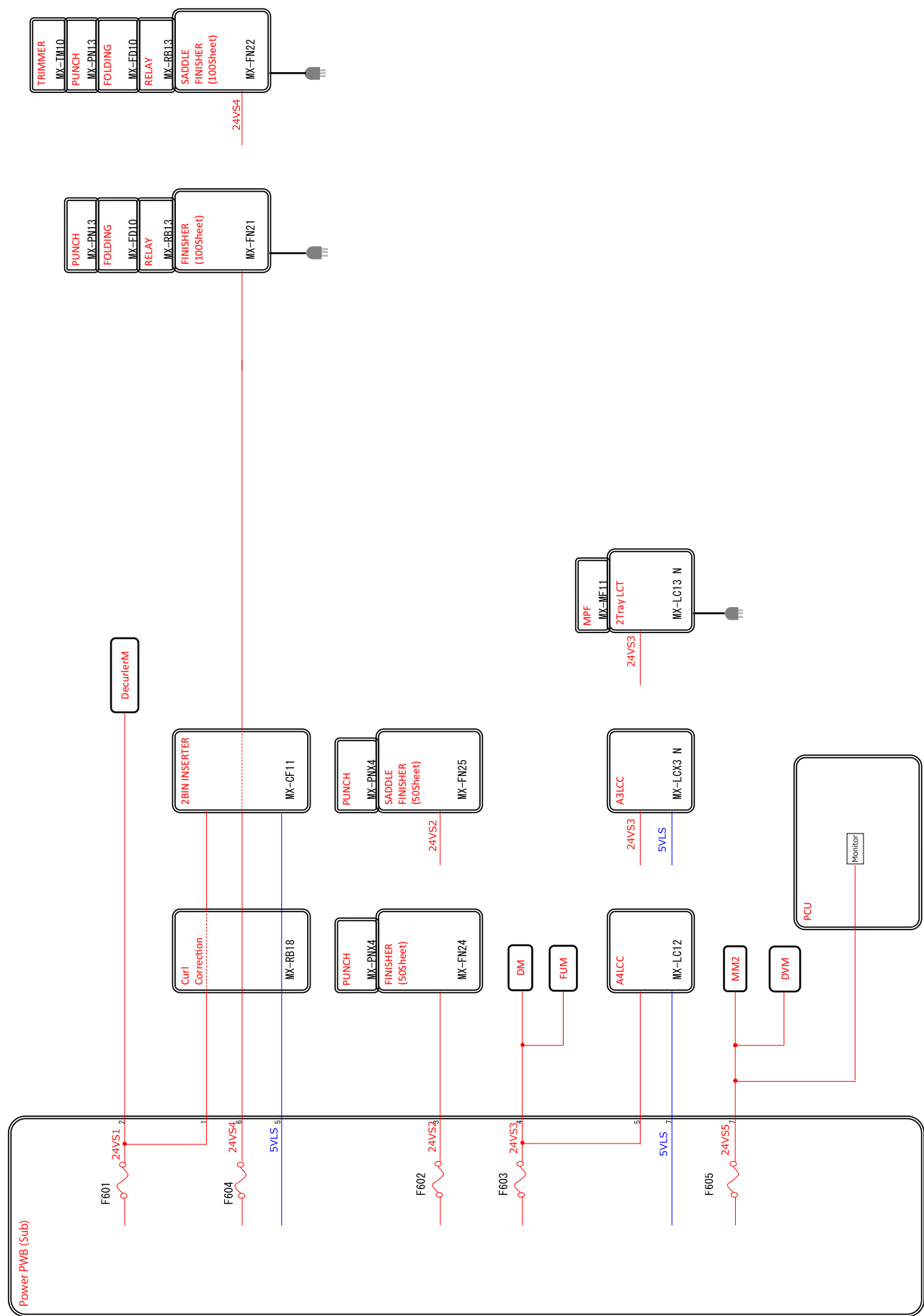
(1) AC power line diagram (Europe 90cpm machine)



(1) DC power line diagram (MAIN 24V)



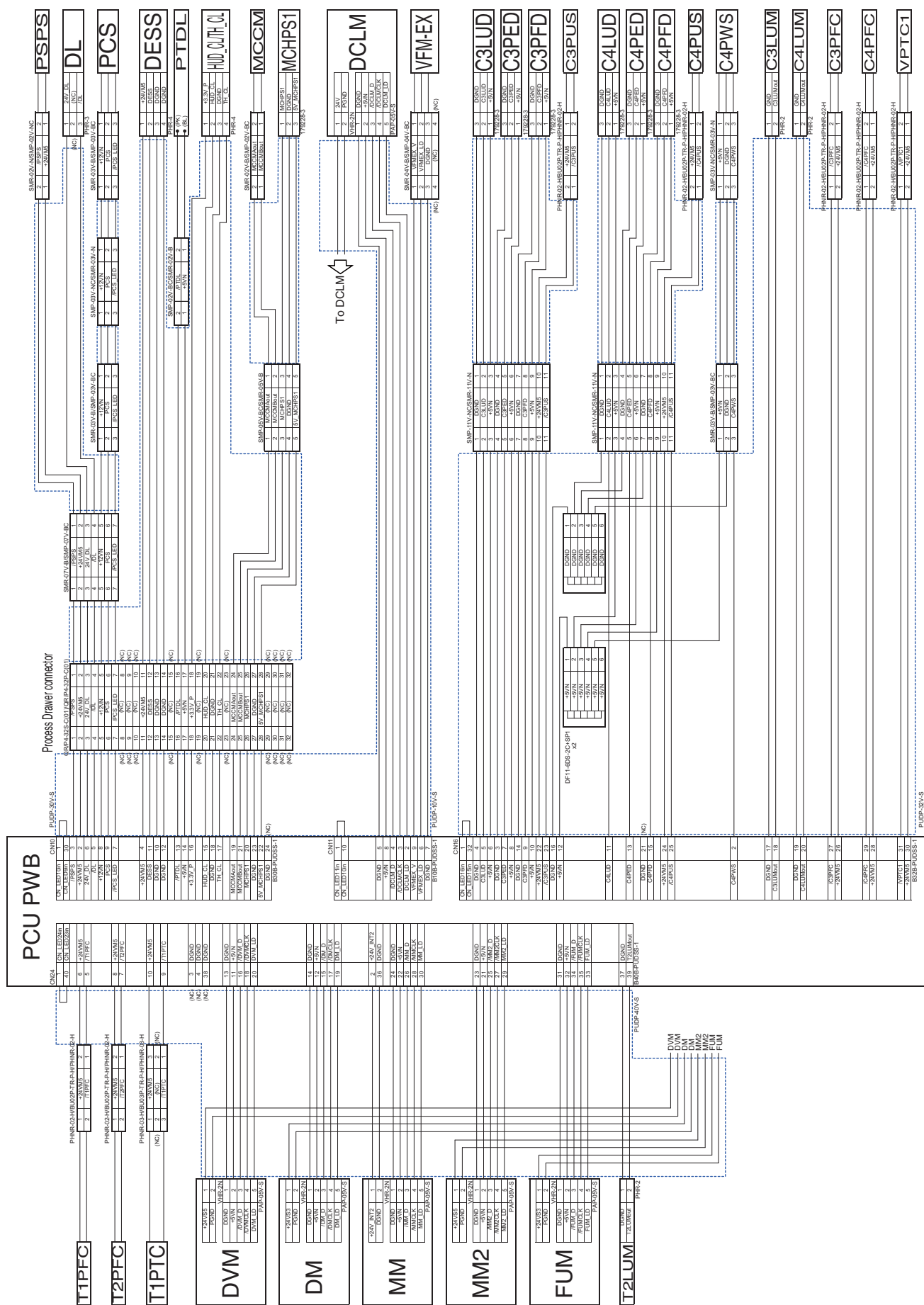
(3) DC power line diagram (SUB 24V)



A. Tandem/Multi-purpose/Interface path/Vertical transport/Finisher/LCC/DC fan



B. Process/MC/CS3/CS4/Drive motor



C. Paper exit

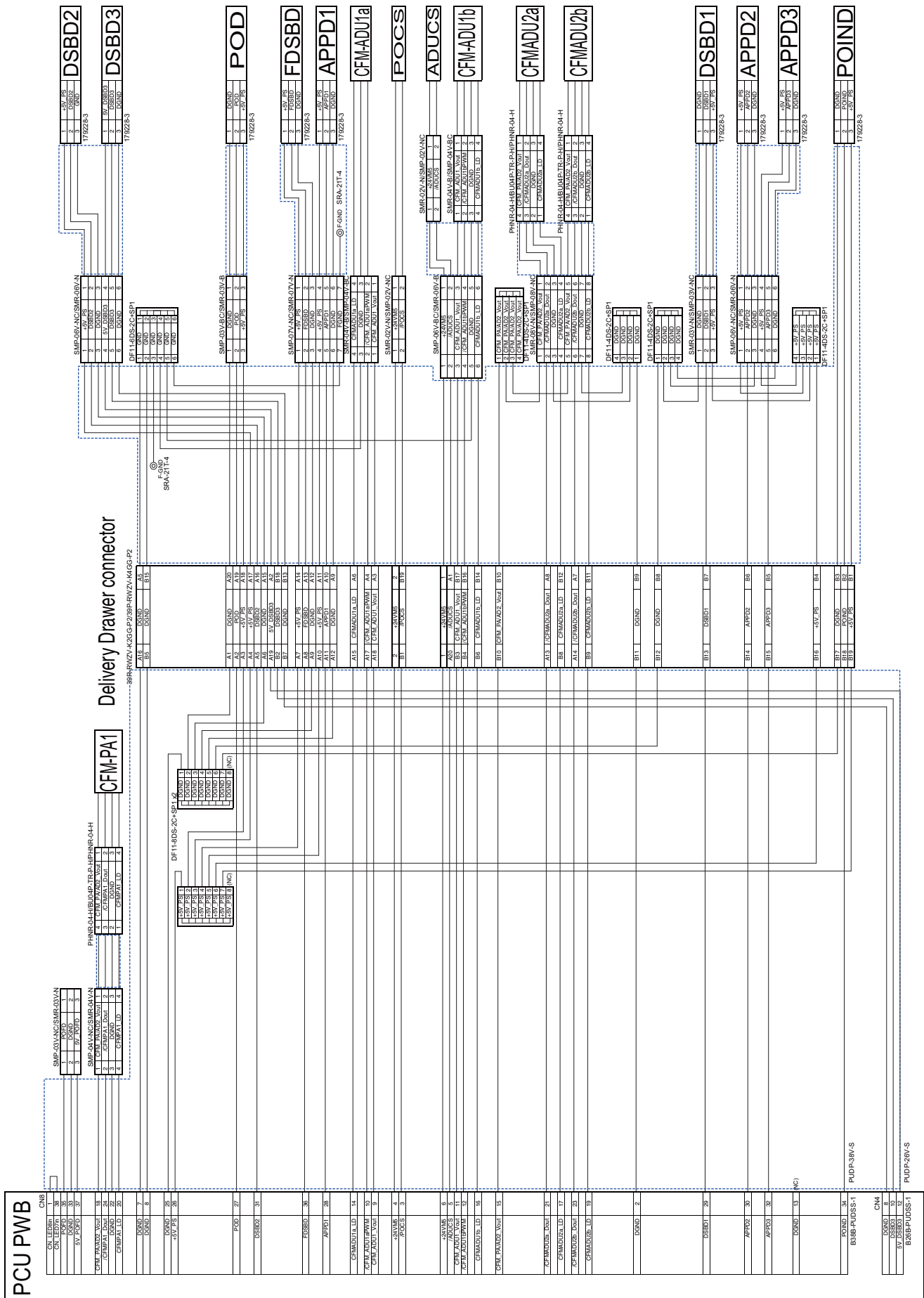


Figure 1: Motor selection chart for the 1000W 24VDC motor.

The chart displays the relationship between motor power (W), current (A), and speed (RPM) for different motor types (FURM, POM Motor, ADM1 Motor, ADM2 Motor, SBRM Motor, ASRM Motor).

Legend:

- W: Power (W)
- A: Current (A)
- RPM: Speed (RPM)

Motor Selection Chart:

Motor Type	Power (W)	Current (A)	Speed (RPM)
FURM	1000	4	2200
POM Motor	1000	4	2200
ADM1 Motor	1000	4	2200
ADM2 Motor	1000	4	2200
SBRM Motor	1000	4	2200
ASRM Motor	1000	4	2200



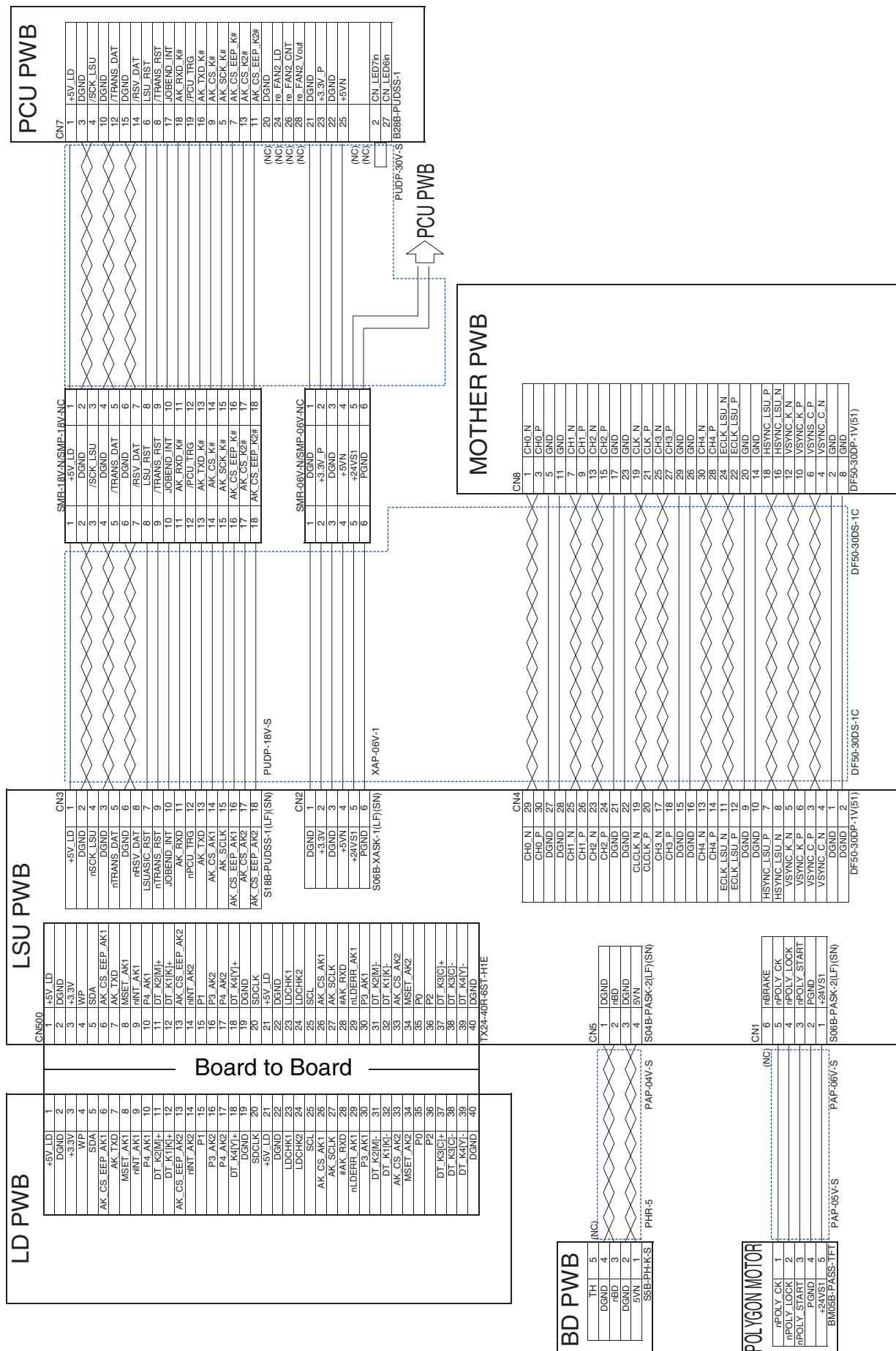
HL PWB

CMS	HL CNT1
1	DGND
2	HL CNT2
3	DGND
4	HL CNT4
5	DGND
6	HL CNT3
7	DGND
8	DGND
9	HL P4
10	DGND
11	DGND
12	HL CNT1

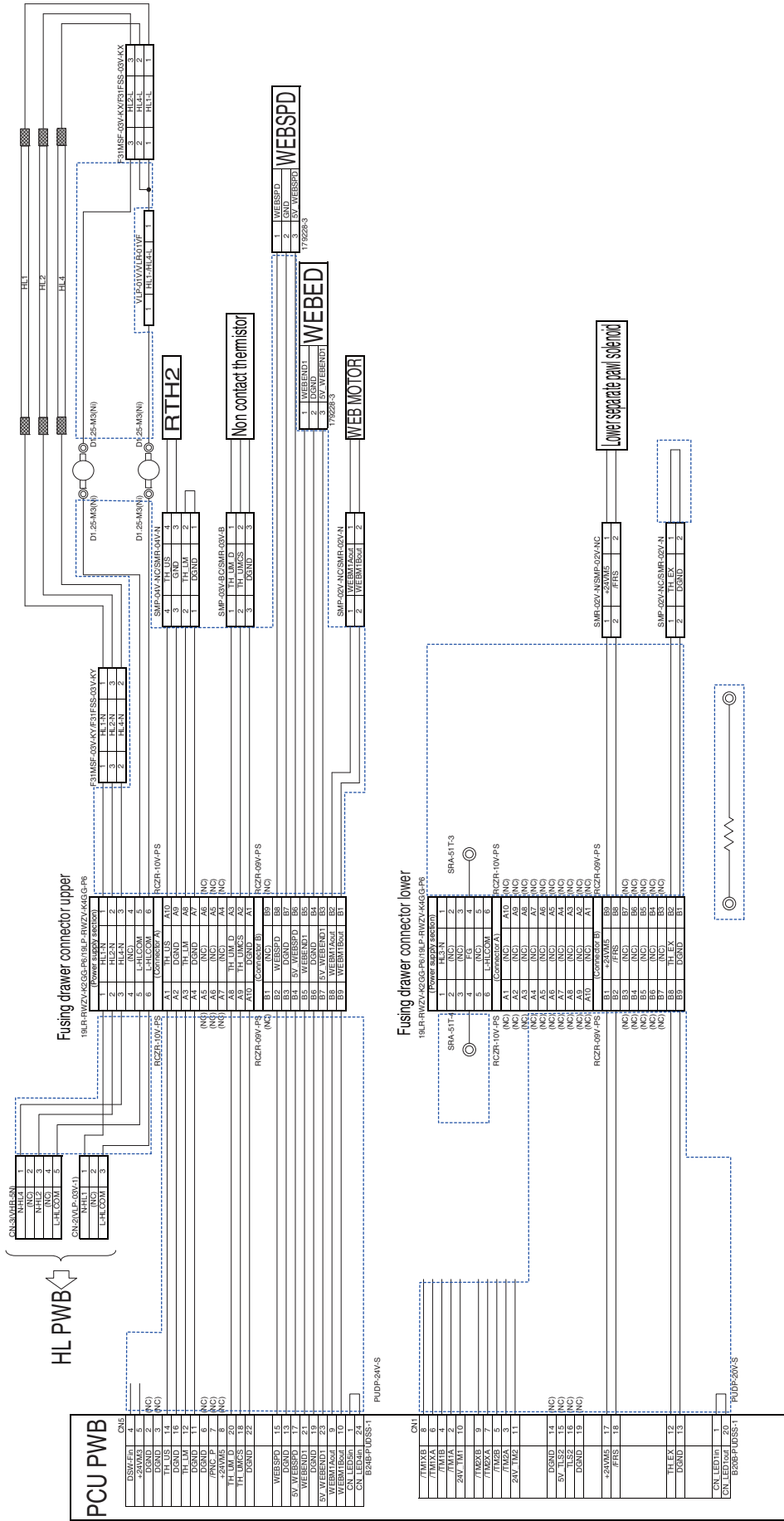
BT18P-ASX-1 (L / SN)



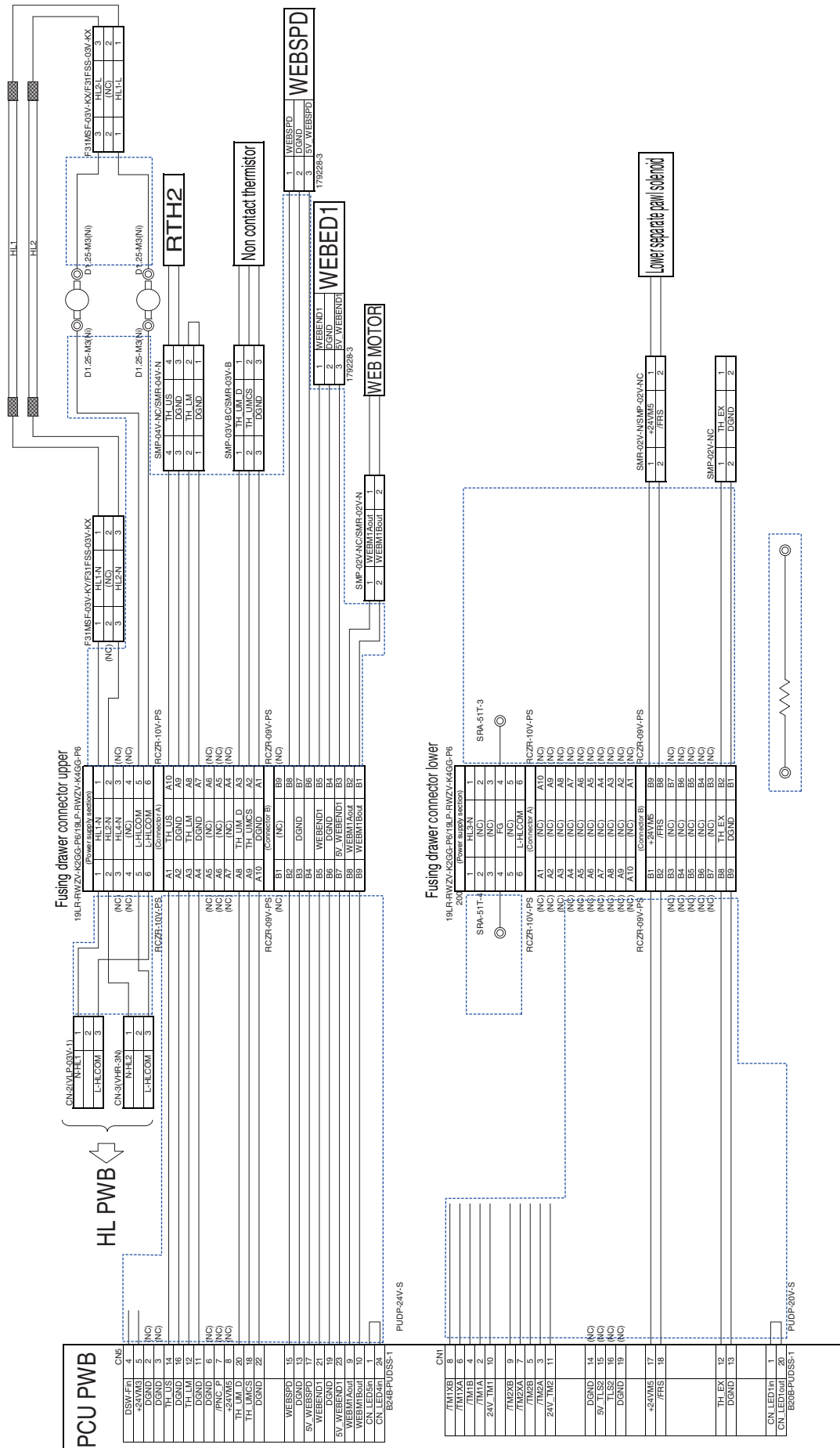
F. LSU



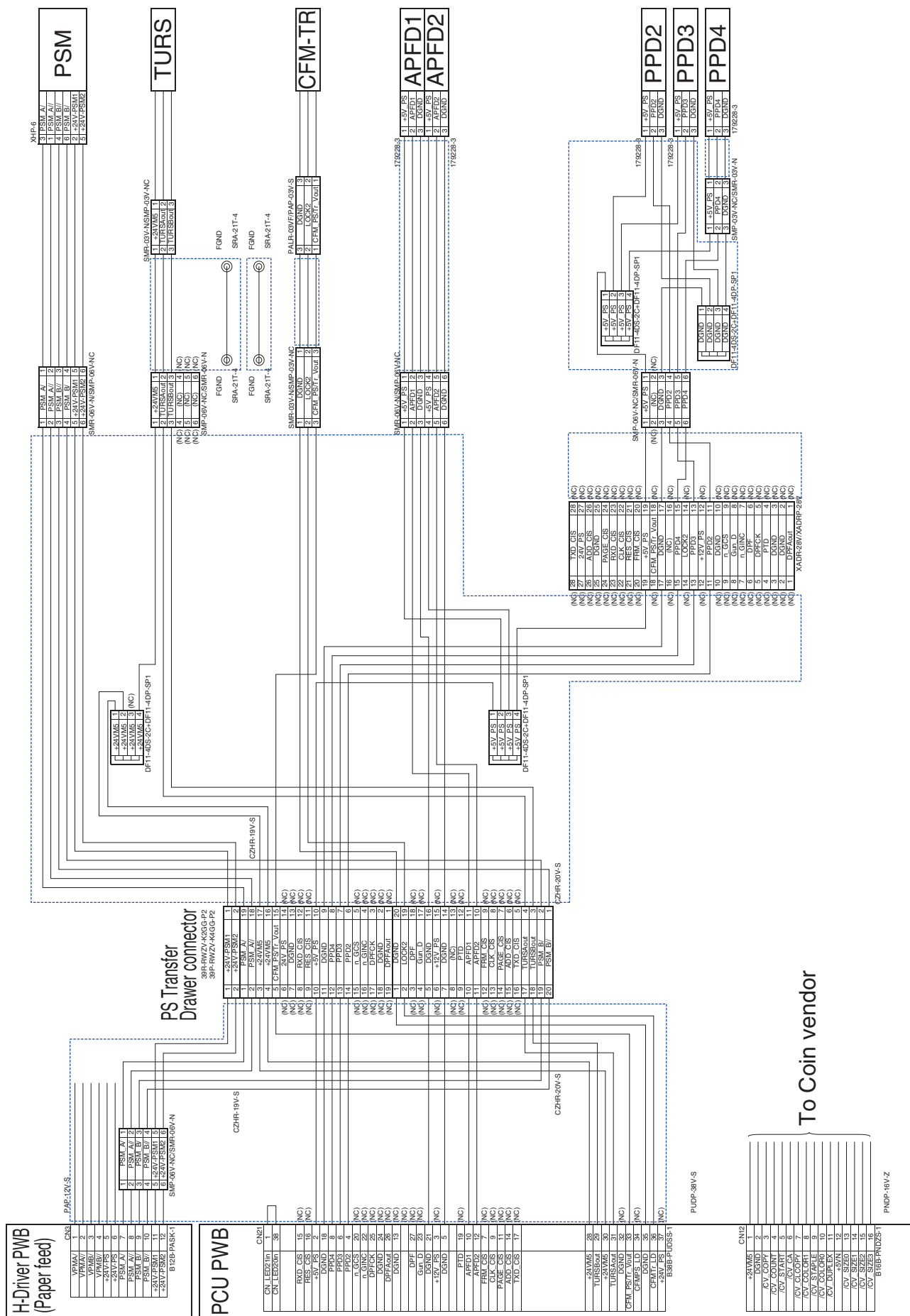
G. Fusing (Europe, Other destinations)



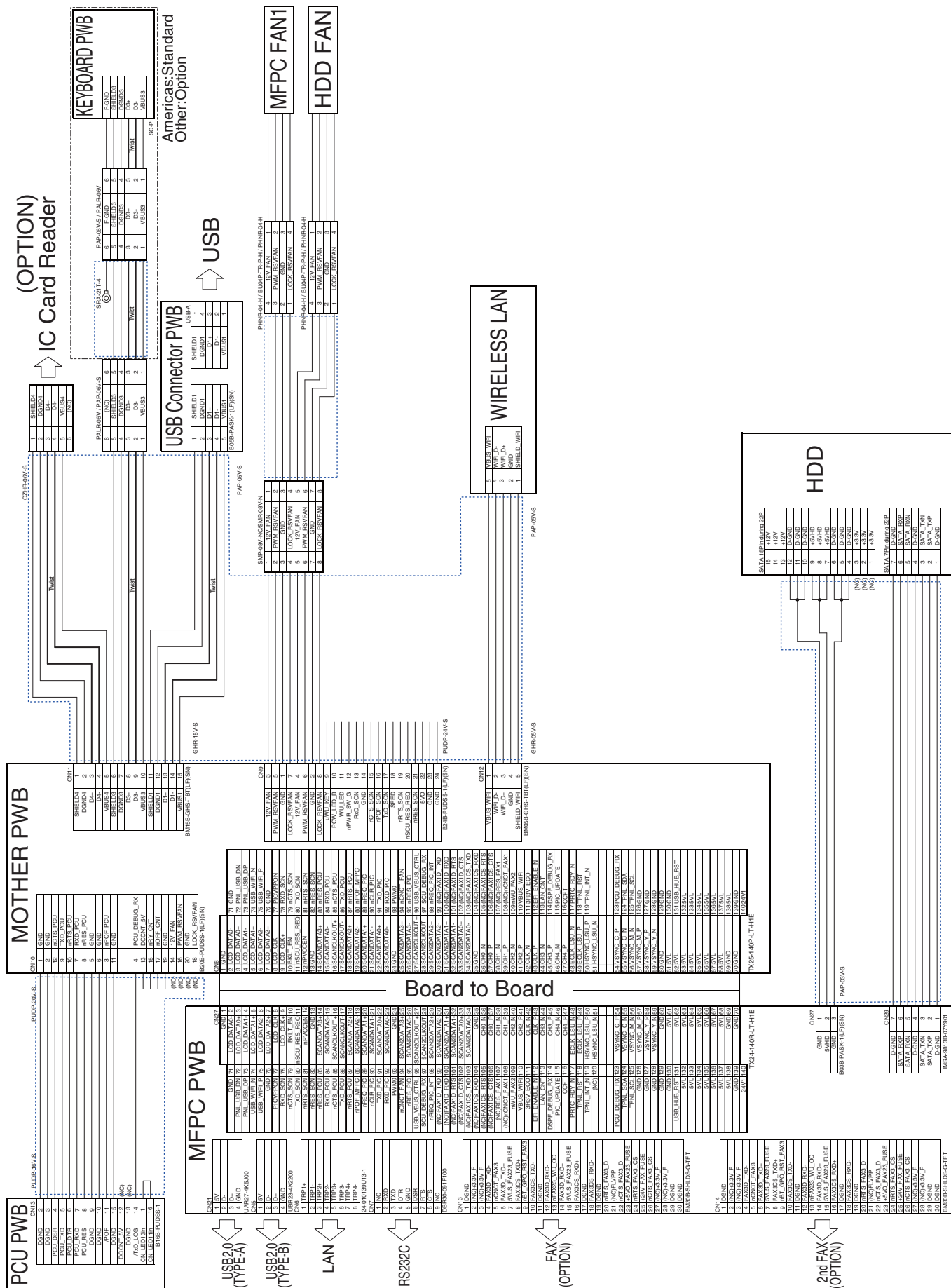
H. Fusing (North America)



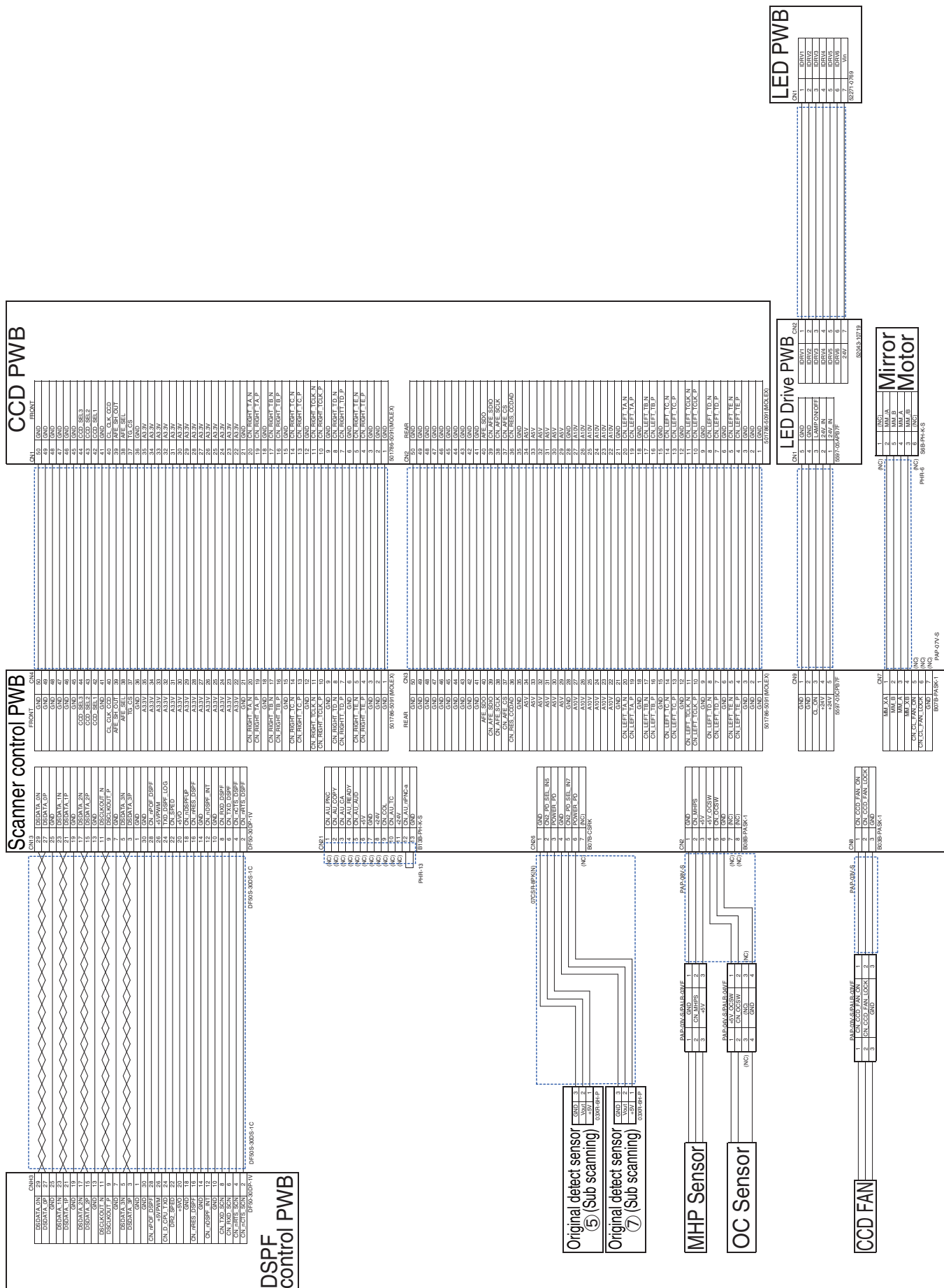
I. PS/Transfer



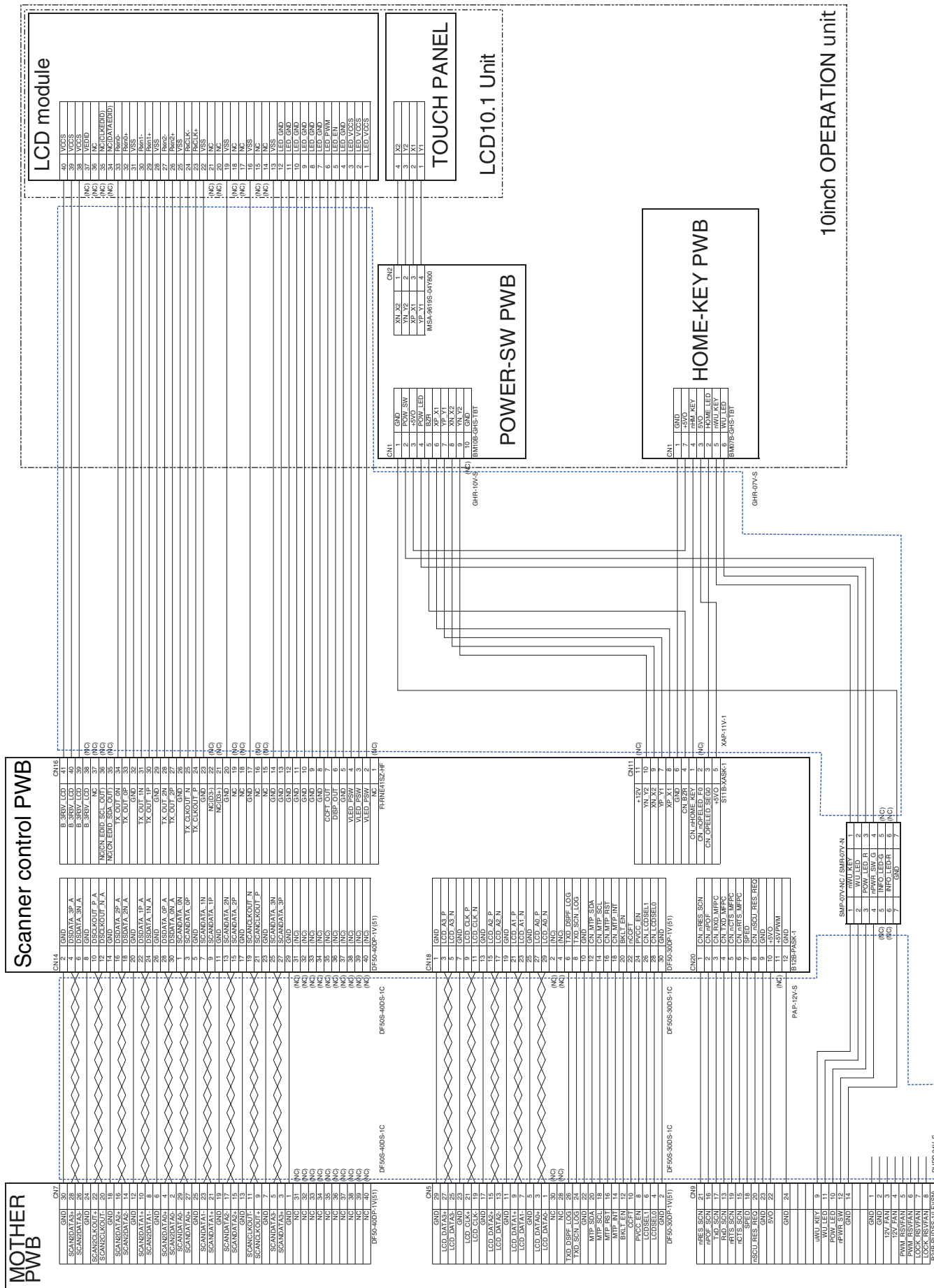
J. FAX/USB/HDD/Keyboard



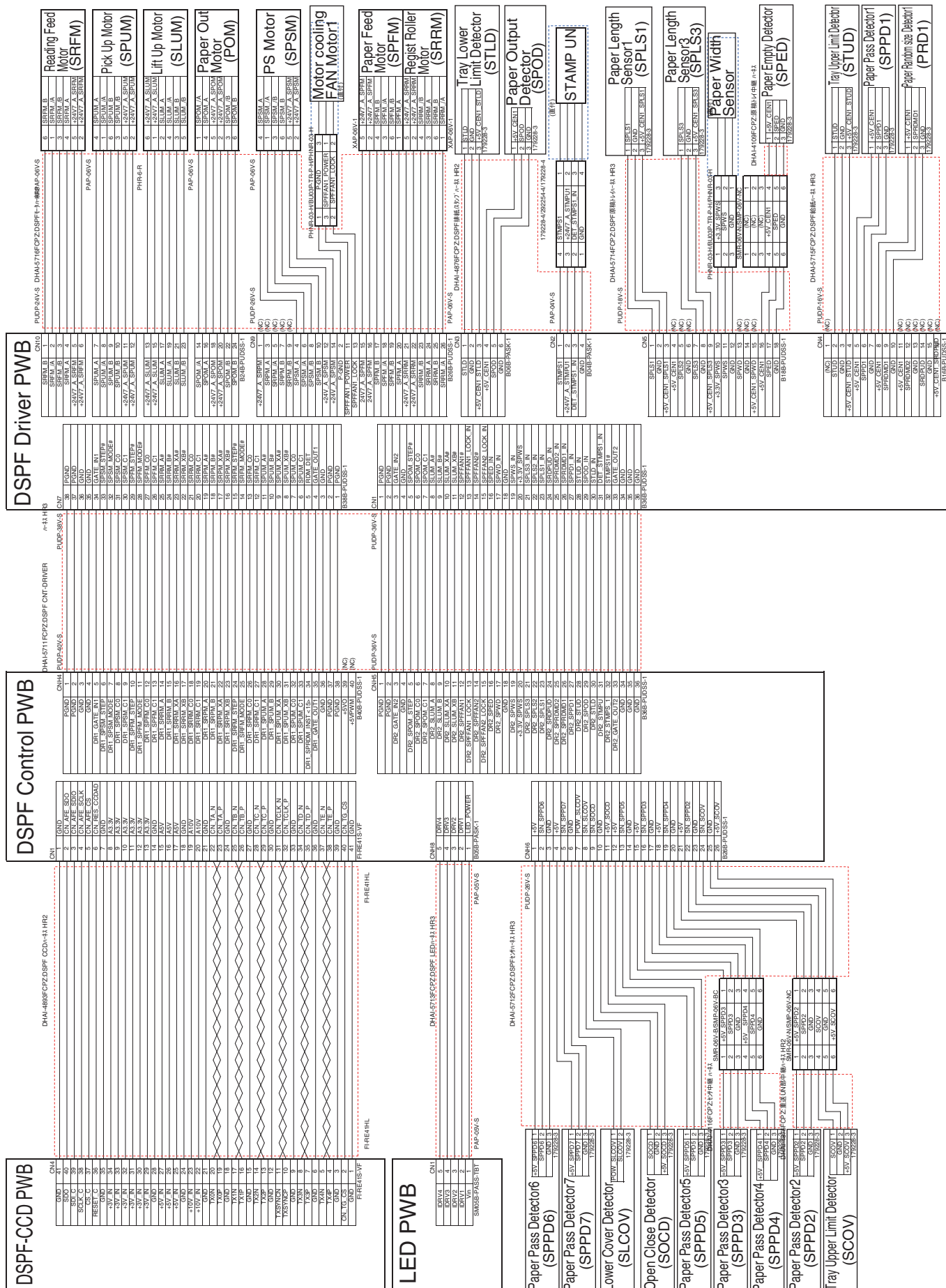
K. Scanner



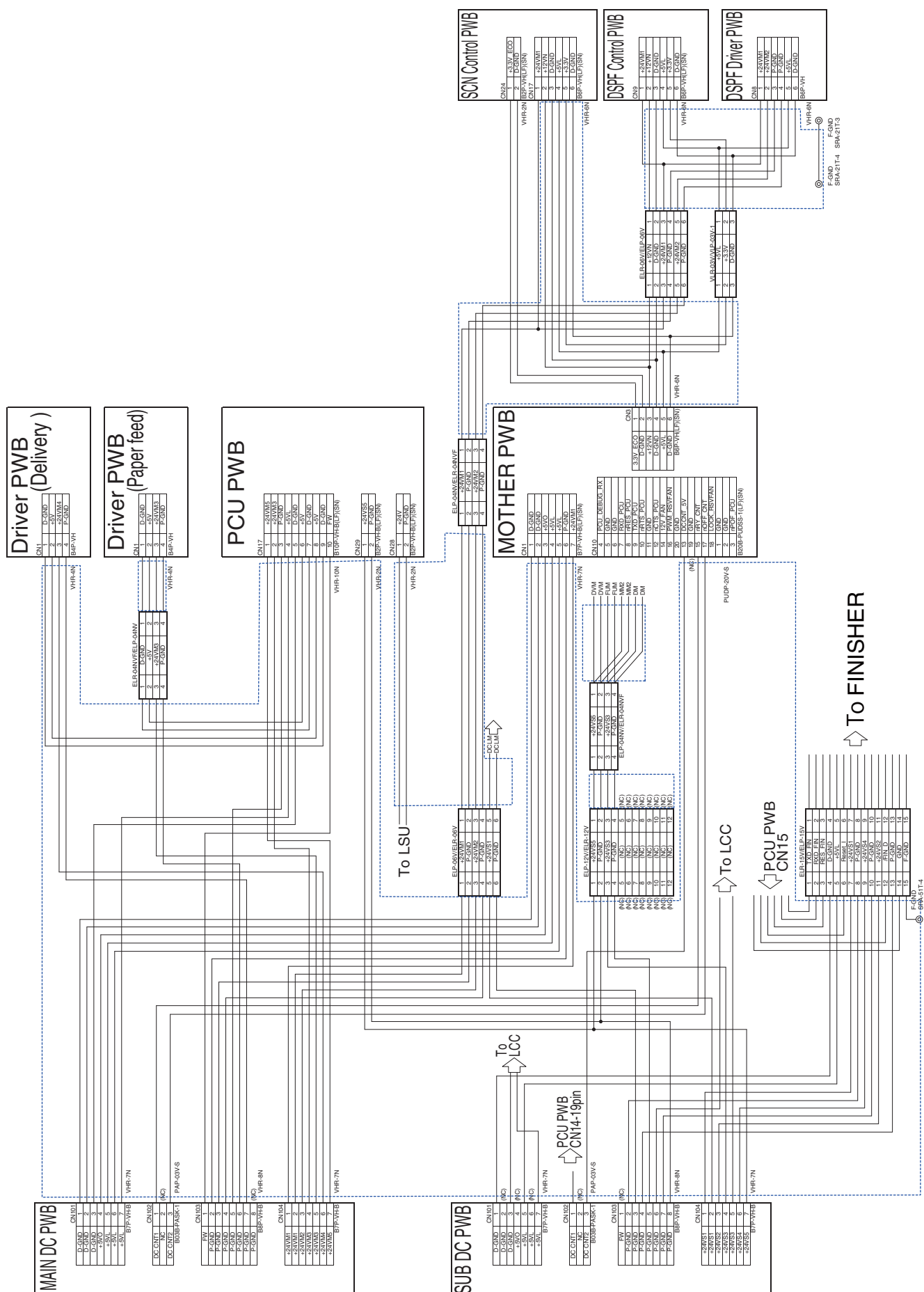
L. Operation unit



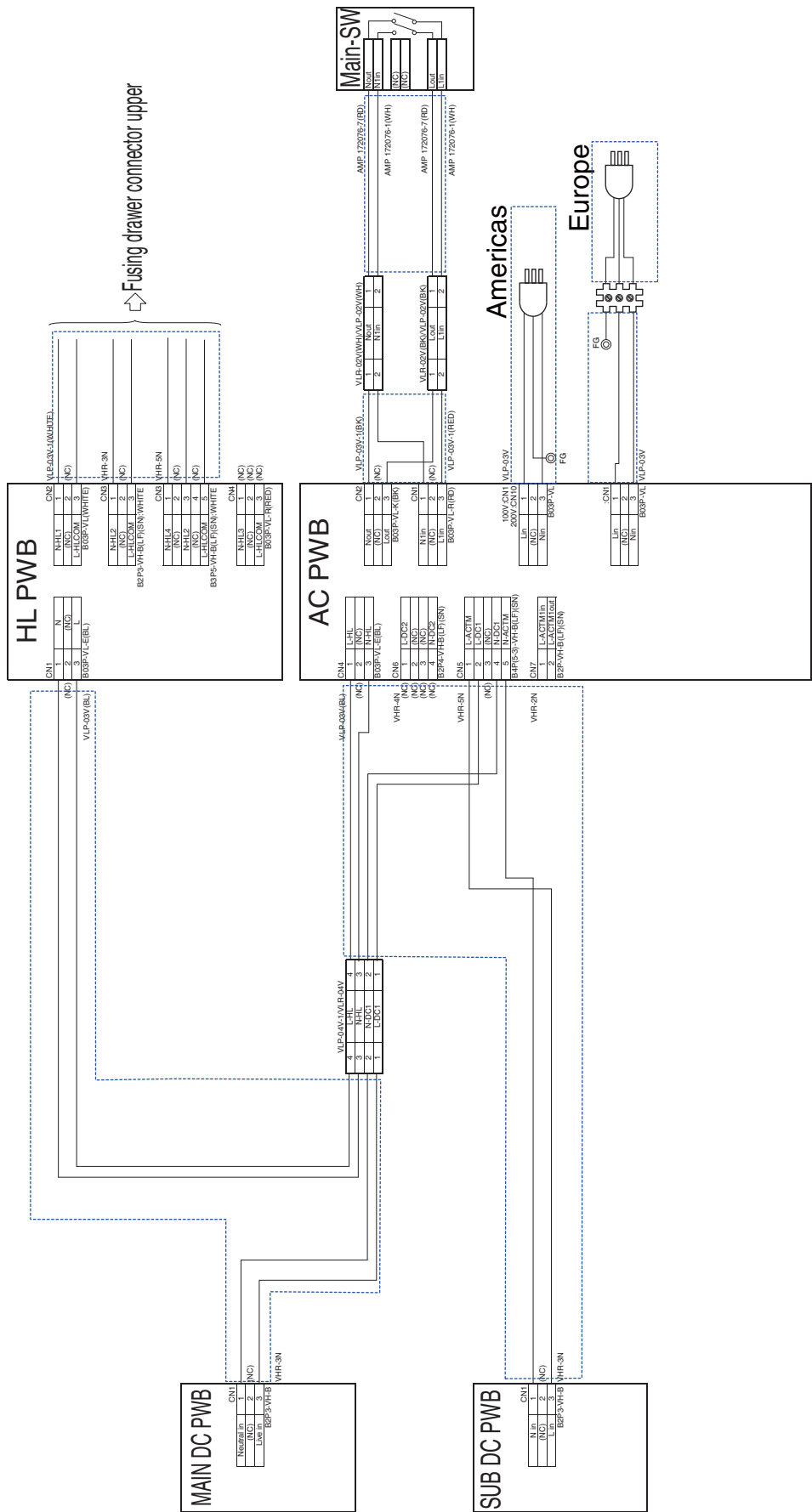
M. DSPF



N. DC power supply



O. AC power supply



[12] OTHERS

1. Paper JAM code

A. JAM cause code list

(1) Main unit

JAM code	JAM content
MFT_LE	Manual feed tray paper feed JAM (100K for the paper feed counter)*1
TRAY1_LE	Tray 1 paper feed JAM (200K for the paper feed counter)*1
TRAY2_LE	Tray 2 paper feed JAM (200K for the paper feed counter)*1
TRAY3_LE	Tray 3 paper feed JAM (200K for the paper feed counter)*1
TRAY4_LE	Tray 4 paper feed JAM (200K 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_NLM	LPPD not-reached JAM (large capacity paper feed tray manual paper feed paper)

JAM code	JAM content
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)
LPPD1_SL2	LPPD remaining JAM (large capacity paper feed tray 2 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_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_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

JAM code	JAM content
PPD2_N1_D	PPD2 not-reached JAM (tandem tray 1 paper feed paper) (Delay of paper just before the jam from PS) *2
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_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_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_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_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_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)

1

(2) MX-RB18

(3) MX-RB13

(4) GBC punch

(5) MX-FN21/22

MX-M905 OTHERS 12-3

(6) 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

(7) 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

(8) MX-CF11

JAM code	JAM content
INSTR1_LE	Interter tray 1 paper feed JAM (60K for the paper feed counter)*1
INSTR2_LE	Interter tray 2 paper feed JAM (60K for the paper feed counter)*1
INSTR1_RT	Interter tray 1 paper feed JAM (Check the paper)
INSTR2_RT	Interter tray 2 paper feed JAM (Check the paper)
INSTR1_1ST	Interter tray 1 paper feed JAM (Check the paper set condition)
INSTR2_1ST	Interter tray 2 paper feed JAM (Check the paper set condition)
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

JAM code	JAM content
INSPICM2J	No. 2 pickup motor JAM

(9) MX-FN24/25

JAM code	JAM content
FENT_N	Inlet port section transport Not-reached
FENT_S	Inlet port section transport Remaining
FPRFEX_N	Proof paper exit section transport Not-reached
FPRFEX_S	Proof paper exit section transport Remaining
FSFTEX_N	Shift paper exit section transport Not-reached
FSFTEX_S	Shift paper exit section transport Remaining
FSTPEX_N	Staple paper exit section transport Not-reached
FSTPEX_S	Staple paper exit section transport Remaining
FFPS_N	Center folding section not-reached JAM
FSHS_N	Center folding paper exit not-reached JAM
FSHS_S	Center folding paper exit remaining JAM
FBLTJAM	Discharge JAM
FSFTMJ	Shift motor JAM
EXGPLTMJ	Paper exit open / close guide plate motor JAM
FLFTMJ	Tray motor JAM
FSTRLVMJ	Return roller oscillation motor JAM
FJOGMJ	Jogger motor JAM
FBLTMJ	Discharge motor JAM
FSTMVMJ	Staple shift motor JAM
FSTROTMJ	Staple diagonal motor JAM
FSTMOVMJ	Staple motor JAM 1 (edge binding) JAM
FSDSTFMJ	Staple motor JAM 2 (center binding front) JAM
FSDSTRMJ	Staple motor JAM 3 (center binding rear) JAM
FBJCTGMJ	Bundle branch open / close motor JAM
FDRRLVMJ	Drive roller oscillation motor JAM
FTFNCMJ	Rear edge fence motor JAM
FFLPLTMJ	Folding plate motor JAM
FPNCHMJ	Punch motor JAM
FPCHMVMJ	Punch shift motor JAM
FSTSMVMJ	Horizontal resist detection motor JAM

(10) 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_LE	Multi-stage LCT manual feed tray paper feed JAM (200K for the paper feed counter)*1
MFT2_RT	Multi-stage LCT manual feed tray paper feed JAM (Check the paper)
MFT2_1ST	Multi-stage LCT manual feed tray paper feed JAM (Check the paper set condition)

(11) MX-LC13N

JAM code	JAM content
LCT1_1_RT	Multi-stage LCT tray 1 paper feed JAM (Check the paper)
LCT1_2_RT	Multi-stage LCT tray 2 paper feed JAM (Check the paper)
LCT1_1_1ST	Multi-stage LCT tray 1 paper feed JAM (Check the paper set condition)
LCT1_2_1ST	Multi-stage LCT tray 2 paper feed JAM (Check the paper set condition)
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)

1

(12) MX-LCX3N/LC12

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
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.

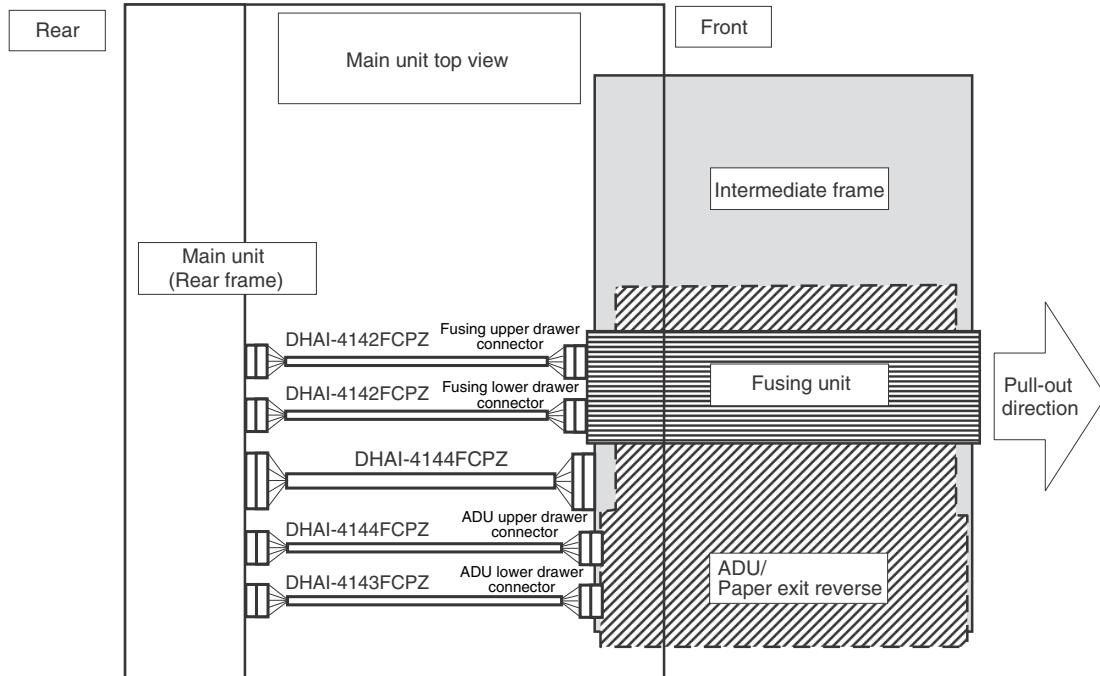
(Note)

Never close the draws with the connection cable connected. as damage will occur.

* Parts code: DHAI-4142FCPZ (Drawer 19 pin connection harness)

* Parts code: DHAI-4143FCPZ (Drawer 33 pin connection harness)

* Parts code: DHAI-4144FCPZ (Drawer 39 pin connection harness)



3. Drum flange removal

When replacing the OPC drum, the drum flange may not be removed easily.

In this case, use the following procedures to remove it easily.

1) Remove three blue screws.



2) Tighten the three blue screws which were removed in step 1) from the outside holes into the inside holes as shown below.



- 3) Since the tightened blue screws push the connection stay to move up the flange, it can be easily removed.



4. VARIOUS STORAGE DATA HANDLING

A. HDD / mSATA SSD memory contents

(1) HDD data contents

No.	File system	Stored data
L-1	Not available	ICU firmware
I-1	Image data	Image data (ERDH + document filing)
I-2	Image data	Image data (temporary storage)
I-3	Image data	Image data (user watermark / stamp)
I-4	Image data	FAX / internet FAX receive images
L-2	Not available	System storage data
S-1	Universal	System storage data (for backup)
S-2	Universal	Download font User profile User macro Key operation storage data Database system file
S-3	Universal	System log
S-4	Universal	Document filing (database) Job log (database) Job log completion list
S-5	Universal	Address book (database) Account management information (database) Paper property information (database) Billing account information (database) Individual setting information for direct web browsing Cookie file for OSA application
S-6	Universal	Database file
S-7	Universal	Spool area for printer

No.	File system	Stored data
S-8	Universal	Print share stored data Print share file management information (database)
S-9	Universal	Work area for OCR
S-10	Universal	Work area for application (user file used in USB direct print)
S-11	Universal	eOSA application file
S-12	Universal	User file saved in the SMB server
S-13	Universal	Address book, account information User data of set value etc which must not be erased when installing the DSK

(2) mSATA SSD data contents

No.	File system	Stored data
L-101	Universal	ICU firmware Log data Snapshot
S-101	Universal	Font Web help Spdl Option font ROM
S-102	Universal	e-manual data Watermark data OCR dictionary data
S-103	Universal	Backup data
S-104	Universal	System storage data
L-101	Image data	FAX / internet FAX receive images (backup)
L-102	Not available	swap area

5. Necessary steps when replacing the PWB, HDD and the mSATA SSD

A. SCN MFP PWB replacement procedure (work flow)

Important

Registered user information will not be recovered if the SCN MFP PWB is affected by U2-05 trouble. (*1)

- 1) Attach the EEPROM, mSATA SSD etc. of the SCN MFP PWB on the service parts SCN MFP PWB and install it to the main unit.

Important

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).

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

(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	Address book	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service or User
2	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 or User
3	User authentication Account management	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2	Service
4	Japanese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
5	Chinese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
6	JOB LOG	Not available	Available	Enable	Perform with WEB PAGE.	Disable		—
7	JOB completion list	Not available	Available	Disable	Not available	Disable		—
8	New N/A (FSS) information	Not available	Available	Disable	Not available	Disable		—
9	User font (Added)	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service or User
10	User macro	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	
11	Document filing	Not available	Available	Enable	Perform with WEB PAGE.	Enable	Perform with WEB PAGE.	
12	Some of system setting data	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service or User
13	User color profile	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service or User
14	Cookie file for OSA application	Not available	Available	Disable		Disable		Service
15	eOSA application file	Not available	Installation of application	Disable		Enable	Reinstallation of application	Service
16	User file saved in the SMB server (NAS)	Not available	Available	Disable		Disable		Service
17	paper property information	Not available	Available	Enable	Sim56-2 / Device cloning	Enable	Sim56-2 / Device cloning	Service or User
18	Billing account information	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service or User
19	Print share stored data	Not available	Available	Disable	Not available	Disable	—	—

(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. 1, 2, 3 (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. 6, 11 (JOB LOG data, Document filing data))	
Step 3	When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the mSATA SSD 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 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. 1, 2, 3 (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 mSATA SSD 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.)	

With the above procedures, the HDD is reset to the state of factory shipping.

C. Procedures necessary for mSATA SSD replacement

(1) mSATA SSD data and backup

Some mSATA SSD storage data can be backed up, and some other cannot. Some mSATA SSD storage data can be reinstalled, and some other cannot.

If the mSATA SSD operates normally before replacement and data can be backed up, back up the data before replacement of the mSATA SSD referring to the storage data list. Then reinstall the data after replacement of the mSATA SSD.

(2) mSATA SSD 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	ICU firmware/ Snapshot	Available	Available	Disable	---	Enable	SIM49-01	Service
2	font web help spdl	Available	Available	Disable	---	Enable	SIM49-01	Service
3	Option FontROM	Available	Available	Disable	---	Enable	SIM49-01	Service
4	e-Manual	Available	Available	Disable	---	Enable	SIM49-03	Service
5	Watermark	Available	Available	Disable	---	Enable	SIM49-05	Service
6	OCR dictionary data	Available	Available	Disable	---	Enable	SIM49-06	Service
7	Backup data	Not available	Available	Disable	---	Disable	---	---
8	System setting value data file	Available	Available	Enable	SIM56-02/ Device cloning / Storage backup	Enable	SIM56-02/ Device cloning / Storage backup	Service or User
9	FAX/I-FAX reception image data (backup)	Not available	Available	Enable	SIM66-62	Disable	---	---

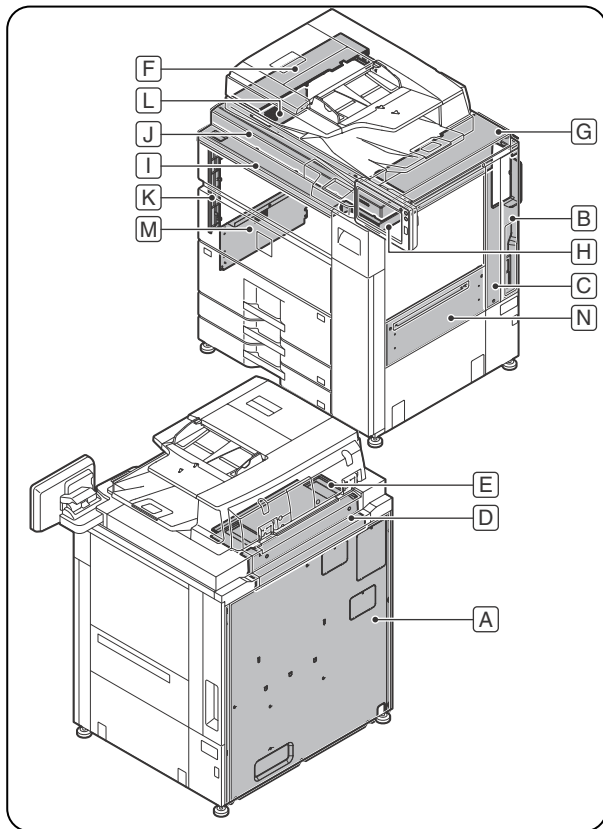
Procedures	
Step1	Use SIM56-2 to back up the mSATA SSD data to the USB flash drive.
Step2	Back up the mSATA SSD data by the device cloning function when the operation panel screen is customized.
Step3	Replace the mSATA SSD with a new one.
Step4	Upgrade the firmware to the latest version.
Step5	Use SIM56-02 to restore the data backed up in procedure 1).
Step6	Restore the data backed up in procedure 2) by using the device cloning function.

[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	A - 3/(5)
K	Left cabinet front upper	
L	Left upper cabinet	A - 3/(6)
M	Left center cabinet	A - 3/(7)
N	Right cabinet center	A - 4/(8)

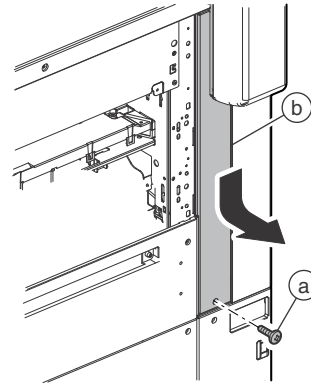


(1) Rear cabinet / Right cabinet rear upper

- 1) Remove the rear cabinet.

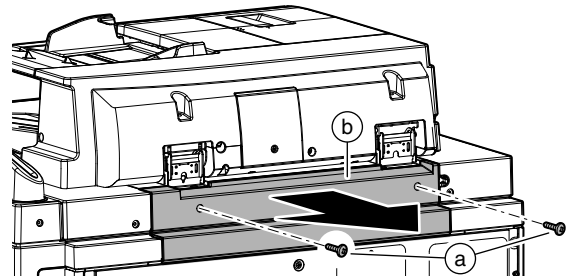
(2) Right cabinet rear center

- 1) Remove the screw (a), and remove the right cabinet rear center (b).

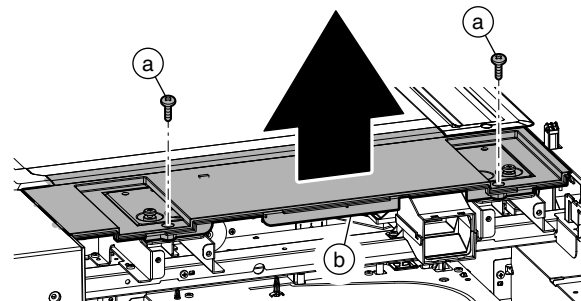


(3) Upper cabinet rear cover / Upper cabinet rear

- 1) Remove the screw (a), and remove the upper cabinet rear cover (b).

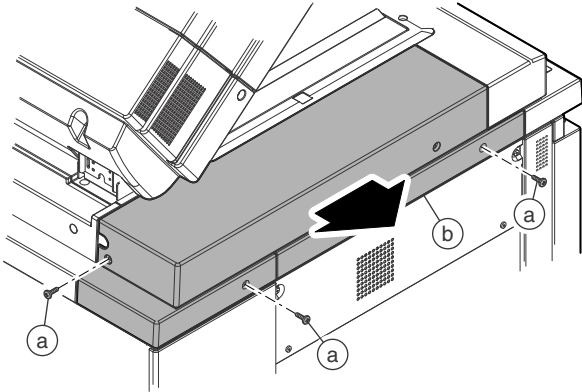


- 2) Remove the DSPF unit.
- 3) Remove the screw (a), and remove the upper cabinet rear (b).

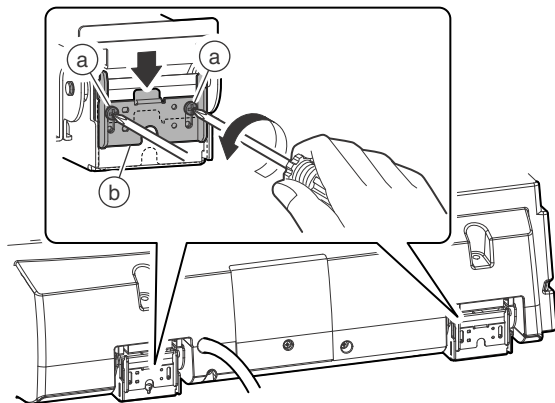


(4) Upper cabinet left / Upper cabinet right / Upper cabinet front cover right / Upper cabinet front cover left / Upper cabinet front / Upper cabinet front right

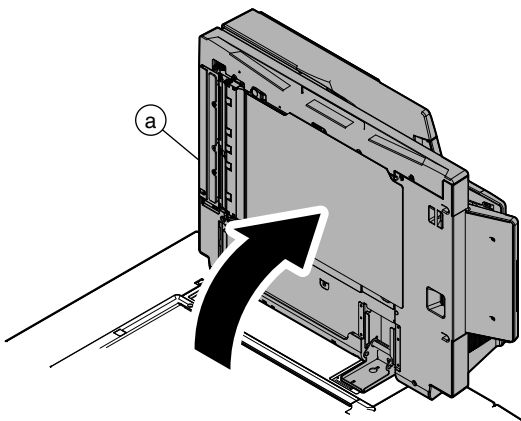
- 1) Remove the screw (a), and remove the upper cabinet left (b).



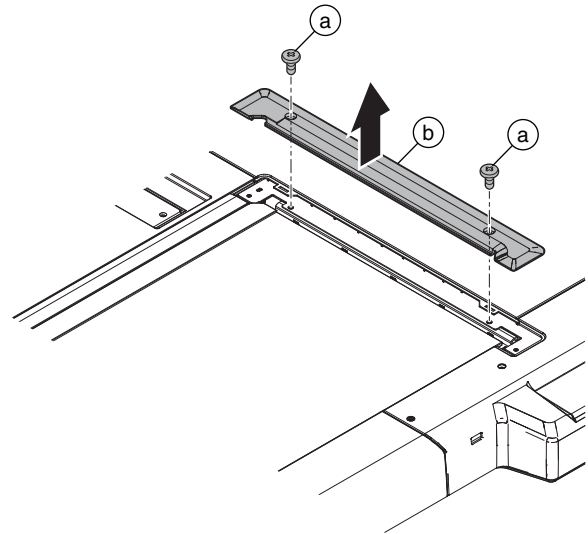
- 2) Loosen the screw (a), and lower the fixing plate (b).



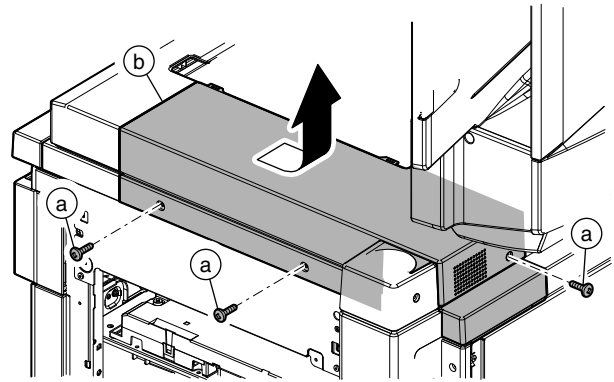
- 3) Open the DSPF unit (a) perpendicularly.



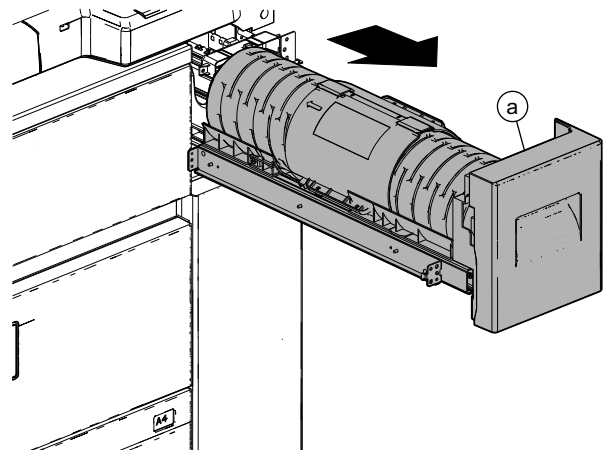
- 4) Remove the screw (a), and remove the table glass holder (b).



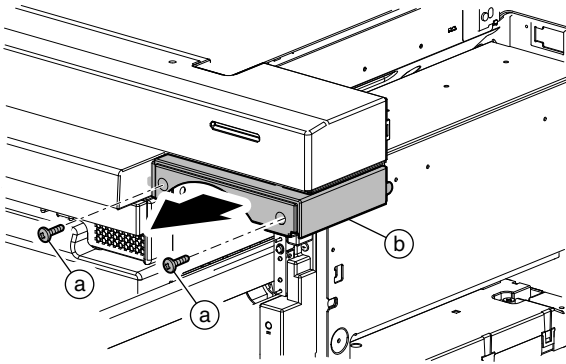
- 5) Remove the screw (a), and remove the upper cabinet right (b).



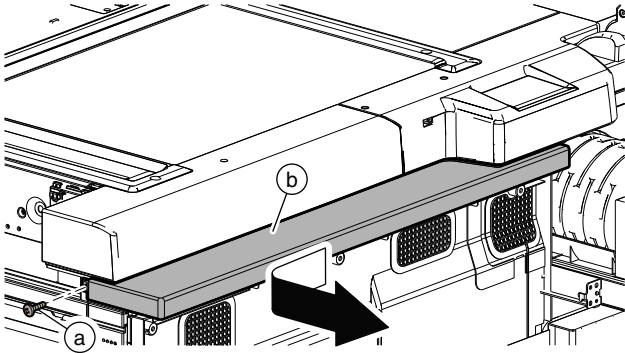
- 6) Pull out the toner tray (a).



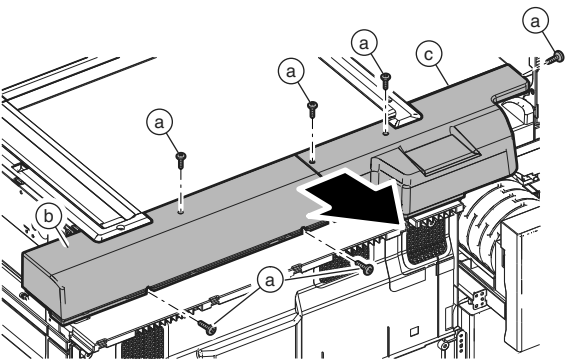
- 7) Remove the screw (a), and remove the upper cabinet front cover right (b).



- 8) Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.

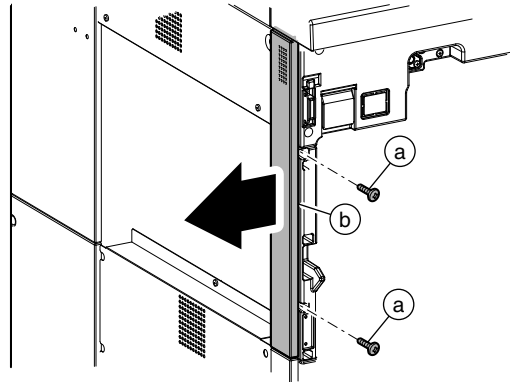


- 9) Remove the screw (a), and remove the upper cabinet front (b) and the upper cabinet front right (c).



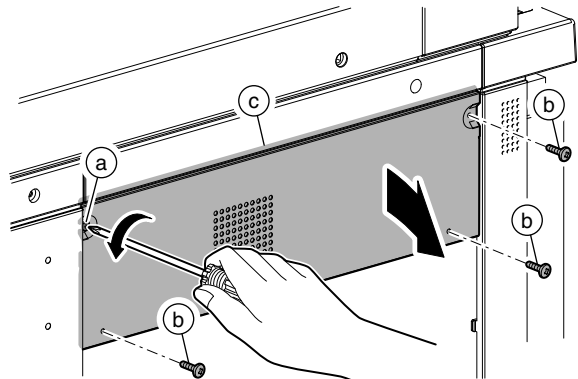
(5) Left cabinet front upper

- 1) Remove the screw (a), and remove the left cabinet front upper (b).



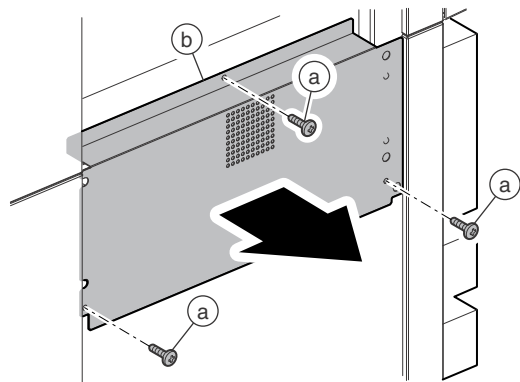
(6) Left upper cabinet

- 1) Loosen the screw (a), and remove the screw (b). Remove the left upper cabinet (c).



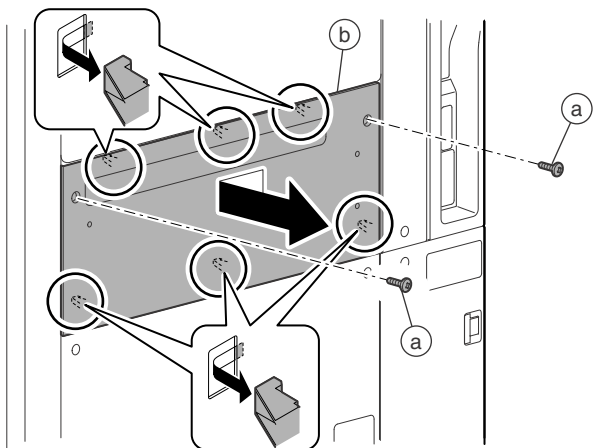
(7) Left center cabinet

- 1) Remove the screw (a), and remove the left center cabinet (b).



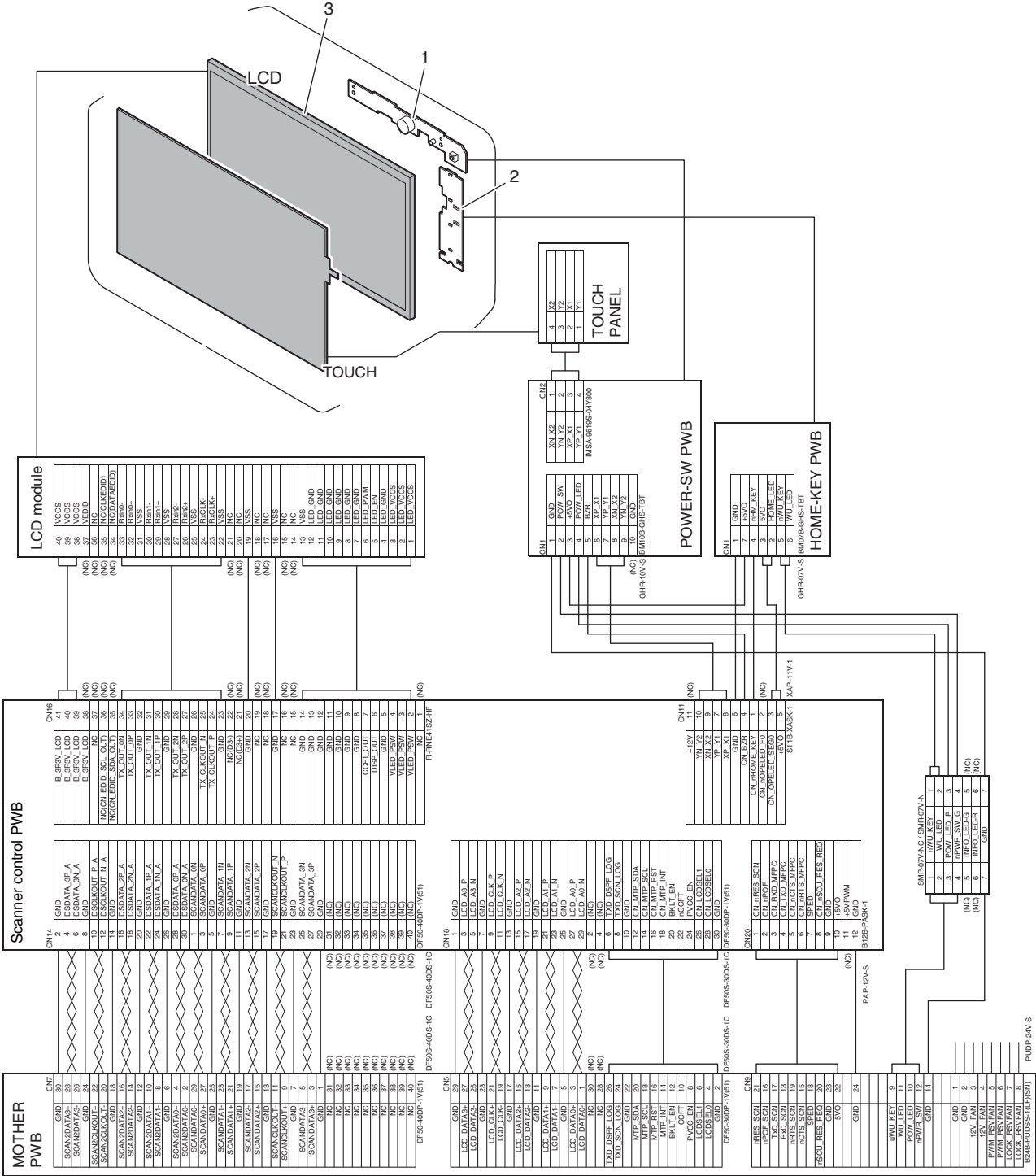
(8) Right cabinet center

- 1) Remove the screw (a), and remove the right cabinet center (b).



[B] OPERATION PANEL

1. Electrical and mechanism relation diagram



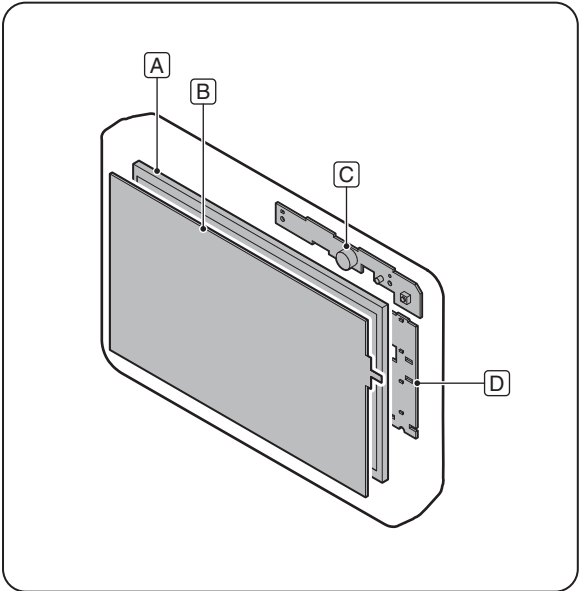
Code	Name	Function / Operation
LCD	LCD unit	Displays various menu information.
TOUCH	Touch panel	Used to make various adjustments and setting operations.

No.	Name	Function / Operation
1	POWER SW PWB	Indicates power-on/off and outputs the power on/off key signal.
2	HOME KEY PWB	Outputs the return-home/power-saving key signals.
3	LCD	Displays various menu information.

2. Disassembly and assembly

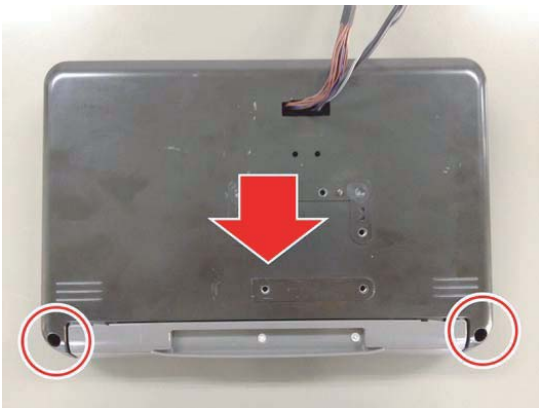
A. Oparetion panel unit

Unit	Parts	
Oparetion panel unit	A	LCD
	B	Touch panel
	C	POWER SW PWB
	D	HOME KEY PWB

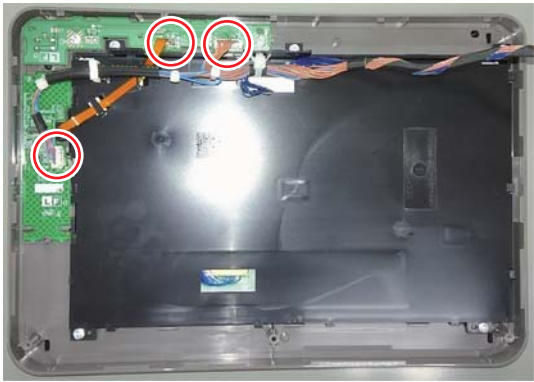


(1) Oparetion panel unit

- 1) Remove the panel unit.
- 2) Remove the rear cover.



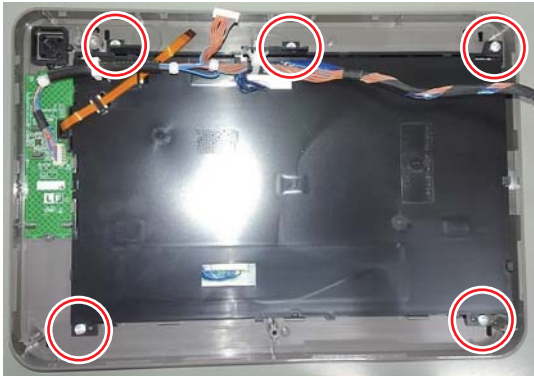
- 3) Disconnect the connector, and remove the snap band.



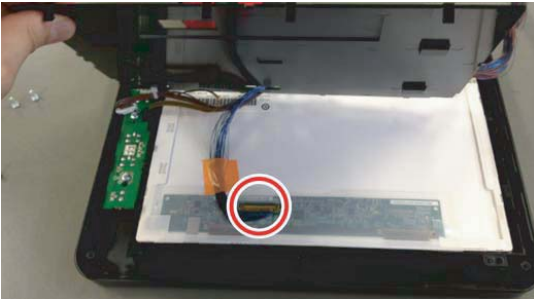
- 4) Remove the PWB.



- 5) Remove the screw, and remove the touch panel cover.

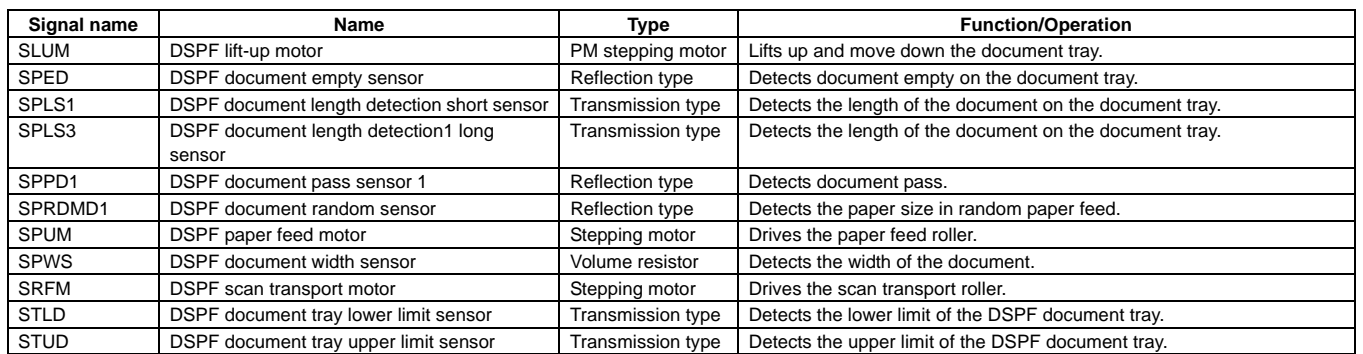


- 6) Disconnect the connector.

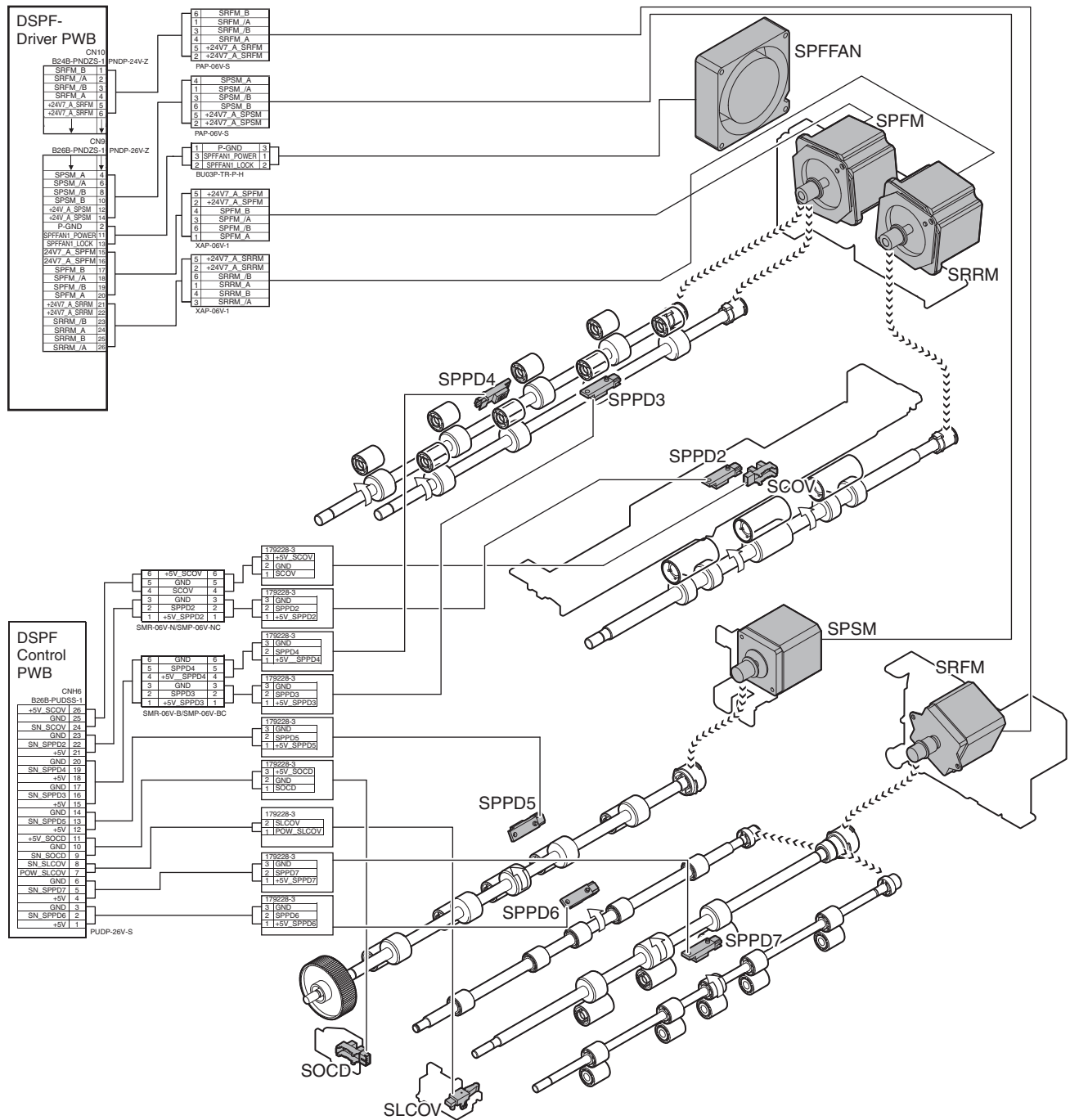


- 7) Remove the touch panel.

A. Paper feed section

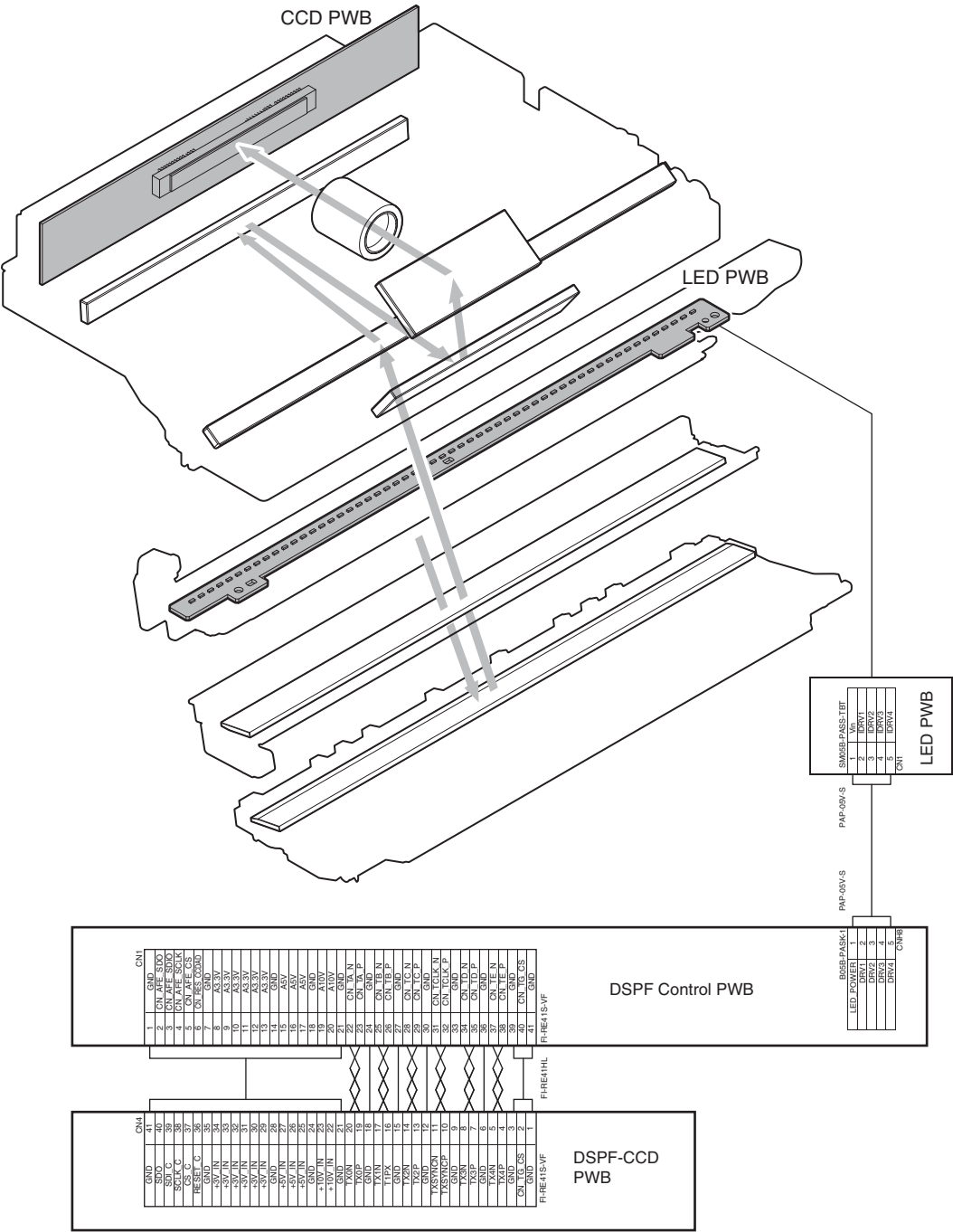


B. Transport section



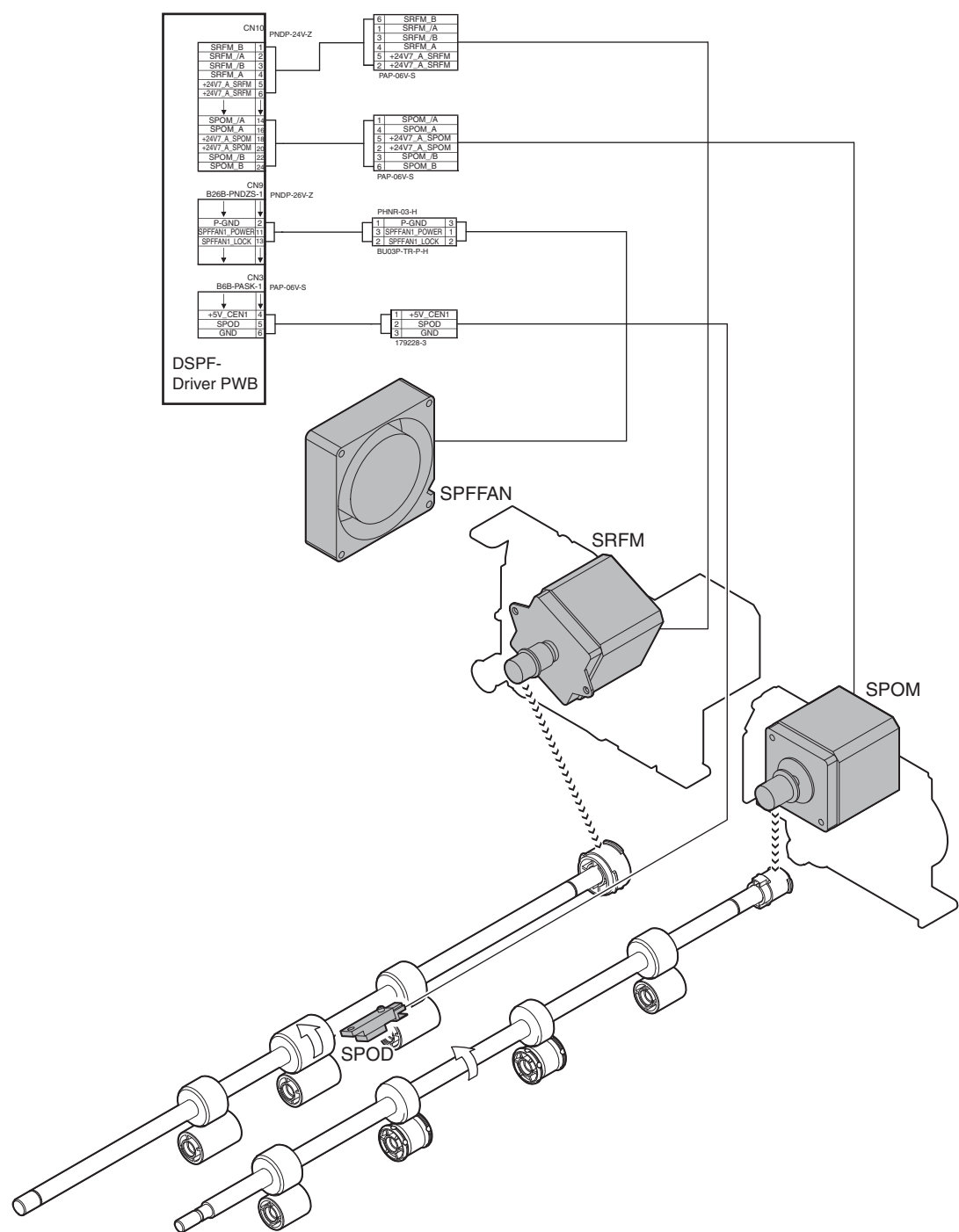
Signal name	Name	Type	Function/Operation
SCOV	DSPF upper door open/close sensor	Transmission type	Detects open/close of the upper door.
SLCOV	DSPF lower door open/close sensor	Lever switch	Detects open/close of the lower door.
SOCD	DSPF open/close sensor	Transmission type	Detects open/close of the DSPF 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.
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

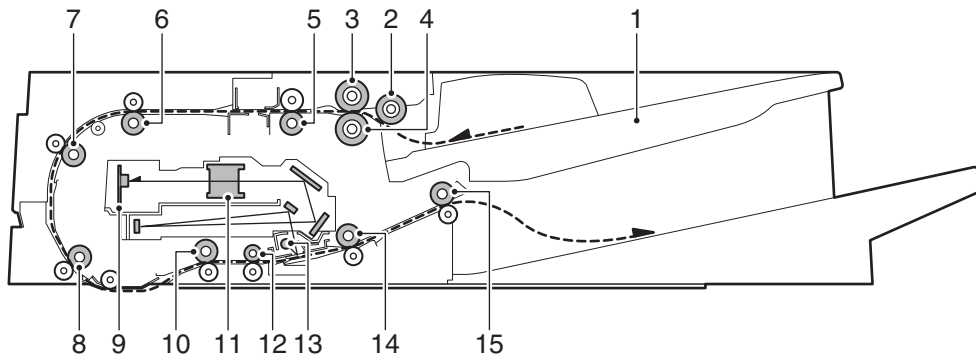


Signal name	Name	Type	Function/Operation
SPFFAN	DSPF motoer cooling fan	Fan motor	Cools the DSPF motor.
SPOD	DSPF paper exit sensor	Reflection type	Detects document pass.
SPOM	DSPF paper exit motor	Stepping motor	Drives the paper exit roller.
SRFM	DSPF scan transport motor	Stepping motor	Drives the scan 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	Transport roller 1 (Drive)	Transports paper from No. 1 resist roller to No.2 resist roller.
7	Transport roller 2 (Drive)	Transports paper from the transport roller 1 to No.2 resist roller.
8	No. 2 resist roller (Drive)	Synchronizes the document lead edge and the scan start position.
9	CCD PWB	DSPF (back) scanning CCD.
10	Transport roller 3 (Drive)	Transports paper from the platen roller to the transport roller 4.
11	Lens	Reduces the document images (optical) and radiates them onto the CCD PWB.
12	Transport roller 4 (Drive)	Transport paper from the transport roller 3 to the transport roller 5.
13	DSPF copy lamp	Radiates lights onto a document for the CCD to scan the document image.
14	Transport roller 5 (Drive)	Transport paper from the transport roller 4 to the paper exit roller.
15	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.

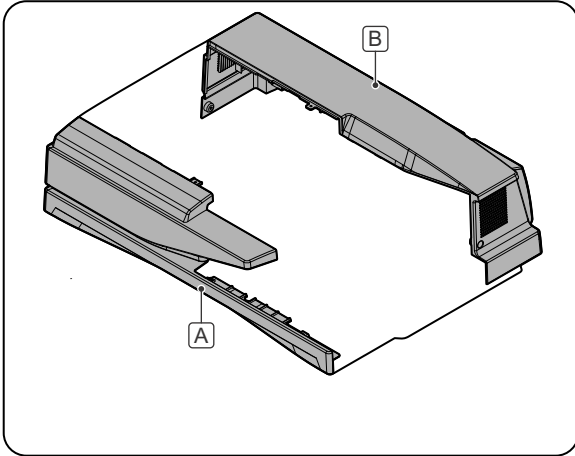
When scanning document images in the DSPF mode, the front surface of the document is scanned by the CCD of the machine, and the back surface by the CCD in the DSPF.

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.

3. Disassembly and assembly

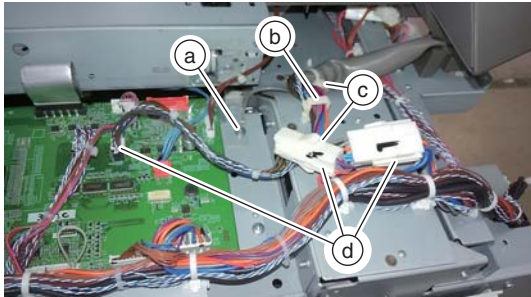
A. Exterior section

Unit	Parts		Page
DSPF unit	A	Front cabinet	C - 6/a
	B	Rear cabinet	

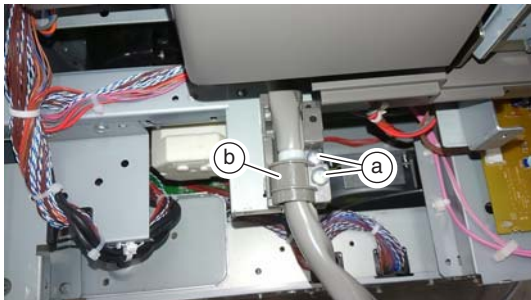


(1) DSPF unit

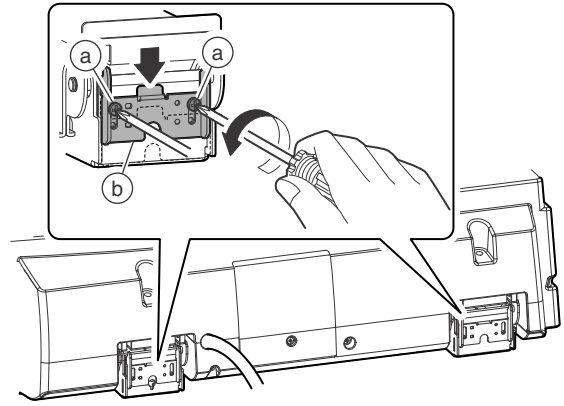
- 1) Remove the upper cabinet left of the machine.
- 2) Remove the earth wire (a), the edge saddle (b), the snap band (c), the connector (d).



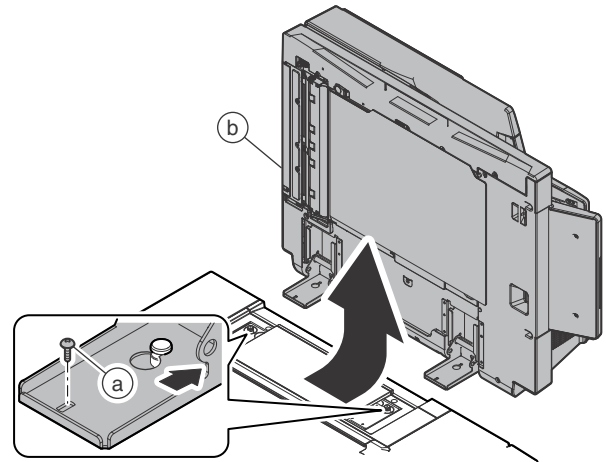
- 3) Remove the screw (a), and remove the cover (b).



- 4) Loosen the screw (a), and lower the fixing plate (b).

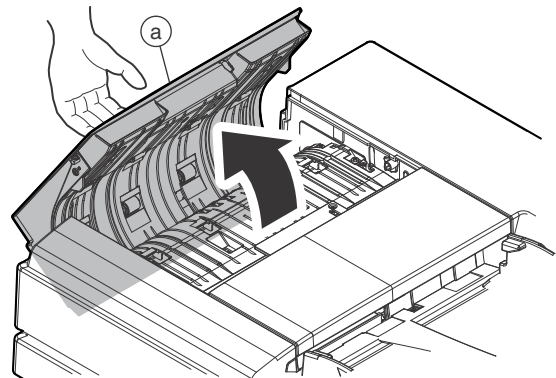


- 5) Remove the screw (a) and slide the DSPF unit (b) to the rear side to remove.

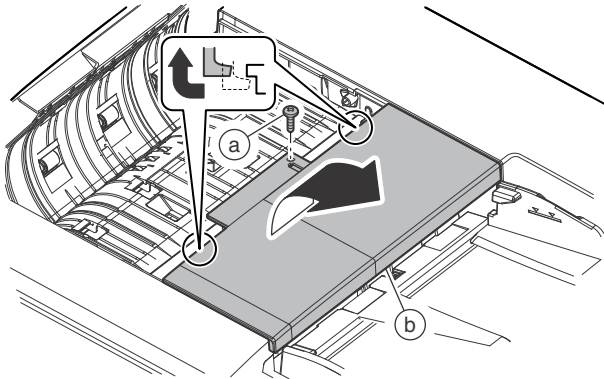


a. Front cabinet / Rear cabinet.

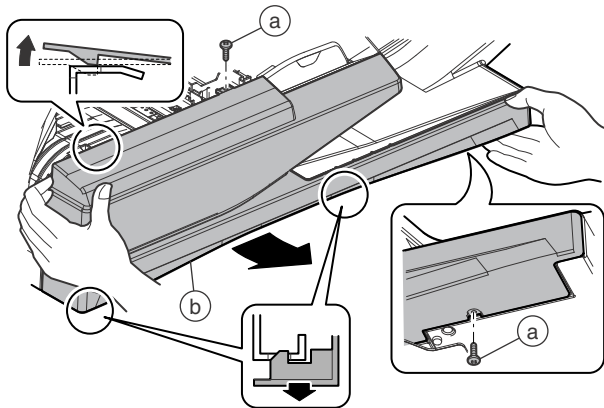
- 1) Open the upper door (a).



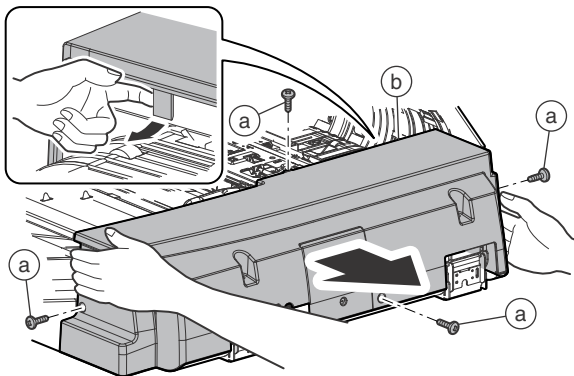
- 2) Remove the screw (a), and remove the cover (b).



- 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.

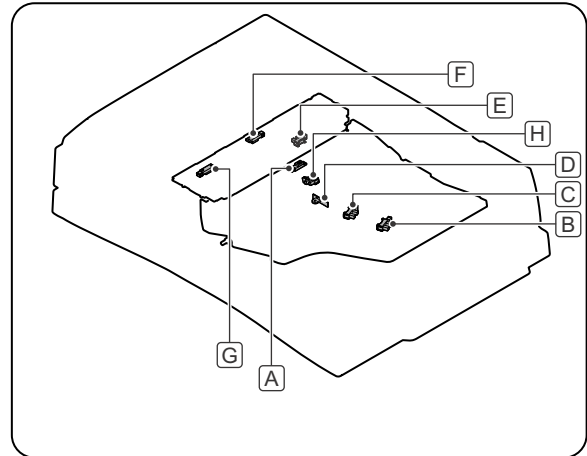


- 4) Remove the screw (a), and remove the rear cabinet (b).



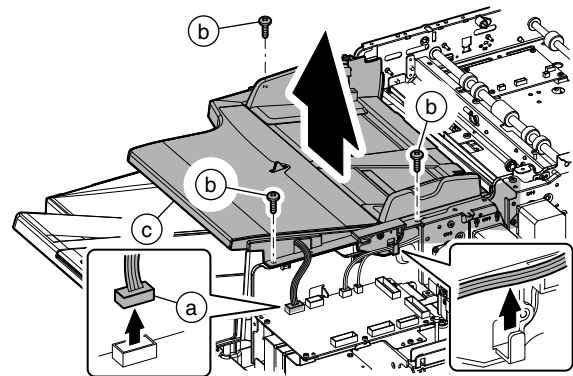
B. Paper feed section

Unit	Parts	Page
Document tray unit	A DSPF document empty sensor	C-8/a
	B DSPF document length long sensor	
	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)



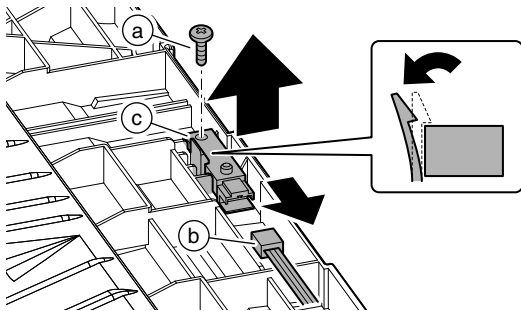
(1) Document tray unit

- 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).



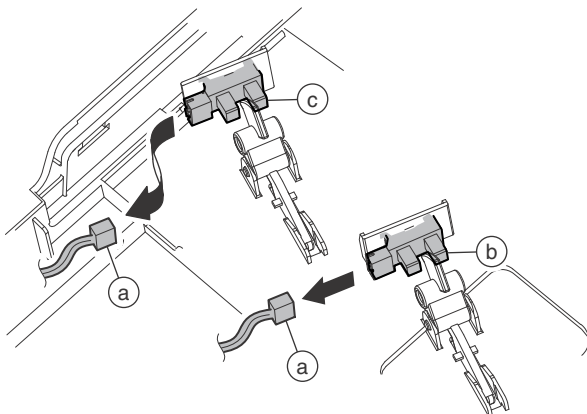
a. DSPF document empty sensor

- 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).

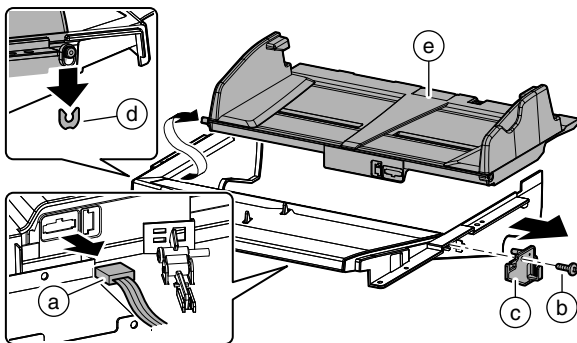


b. DSPF document length long sensor / DSPF document length short sensor / DSPF document width sensor

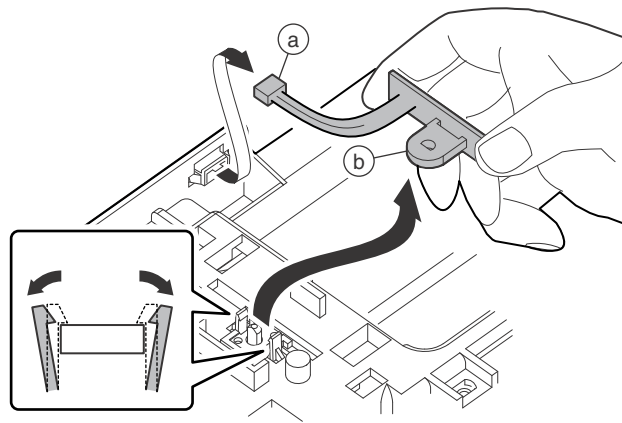
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Disconnect the connector (a), and remove the DSPF document length long sensor (b) and the DSPF document length short sensor (c).



- 4) Disconnect the connector (a). Remove the screw (b) and the shaft (c). Remove the E-ring (d) and the rotation tray (e).

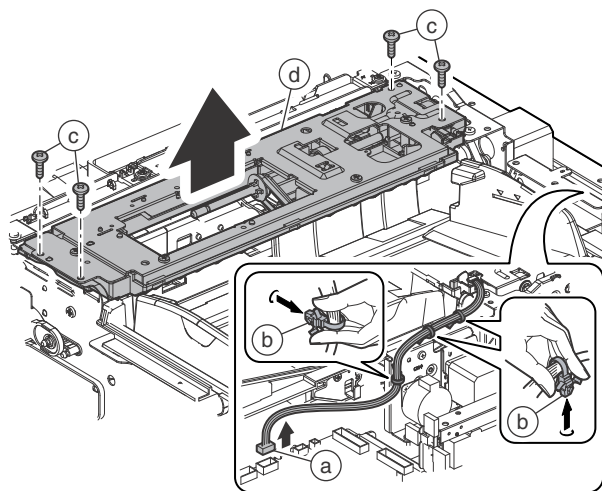


- 5) Disconnect the connector (a), and remove the DSPF document width sensor (b).



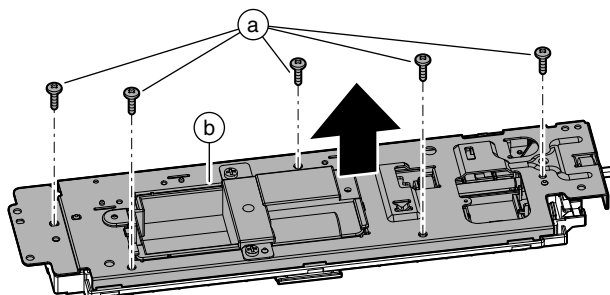
(2) Paper feed unit

- 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).

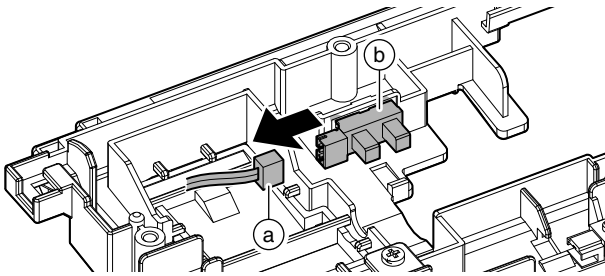


a. DSPF document tray upper limit sensor / DSPF document pass sensor 1 / DSPF random sensor

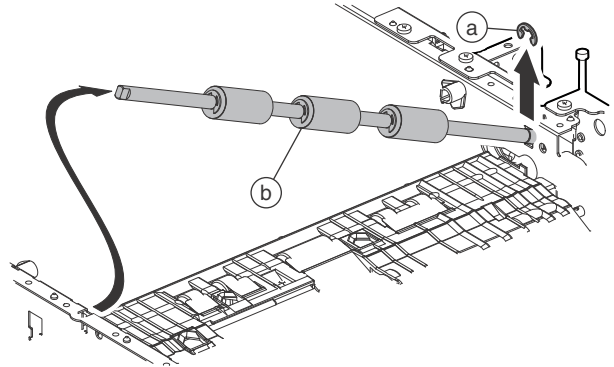
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the paper feed unit.
- 3) Remove the screw (a), and remove the cover (b).



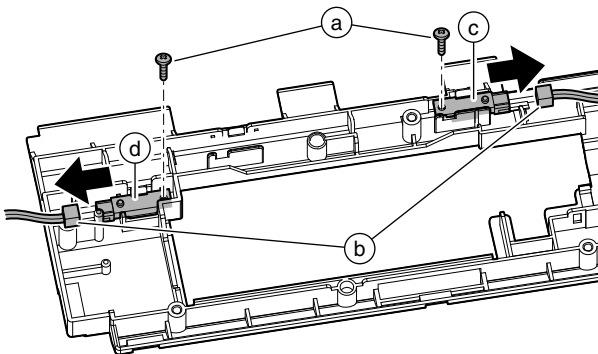
- 4) Disconnect the connector (a), and remove the DSPF document tray upper limit sensor (b).



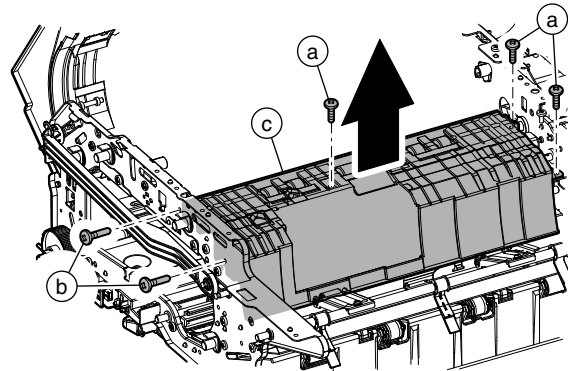
- 5) Remove the E-ring (a), and remove the No.1 resist roller (idle) (b).



- 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).



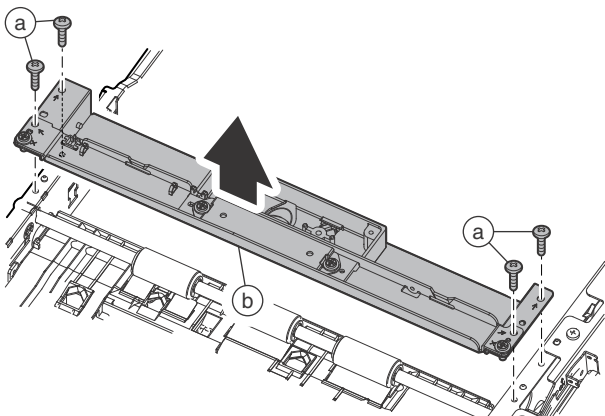
- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



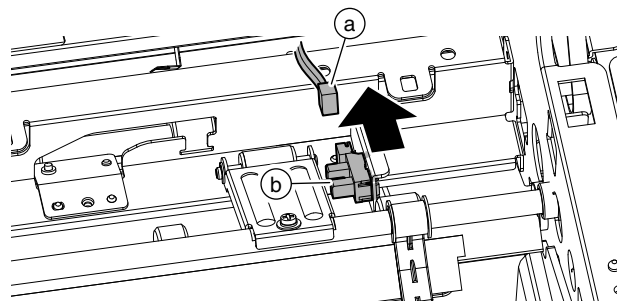
(3) DSPF document tray lower limit sensor

- 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.

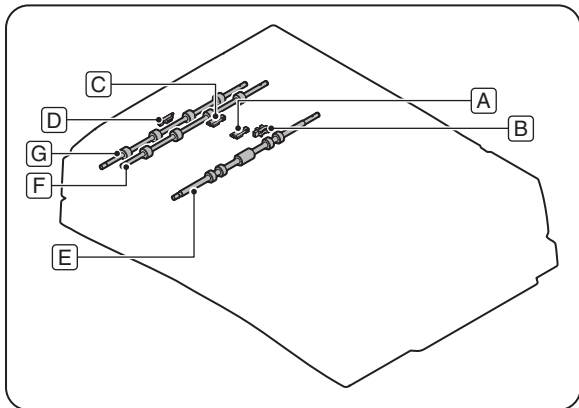


- 7) Disconnect the connector (a), and remove the DSPF document tray lower limit sensor (b).



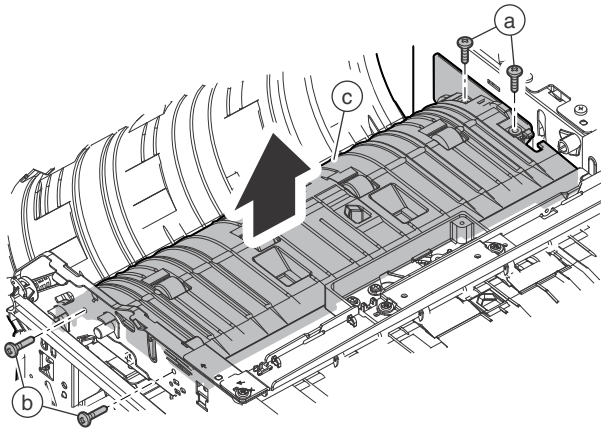
C. Upper transport section

Parts		Page
A	DSPF document pass sensor 2	C - 10/ (1)
B	DSPF upper door open/close sensor	
C	DSPF document pass sensor 3	C - 11/ (2)
D	DSPF document pass sensor 4	
E	No. 1 resist roller	C - 11/ (3)
F	Transport roller 1	C - 12/ (4)
G	Transport roller 2	

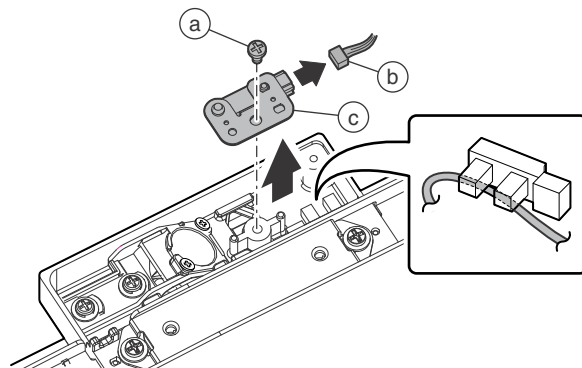


(1) DSPF document pass sensor 2 / DSPF upper door open/close sensor

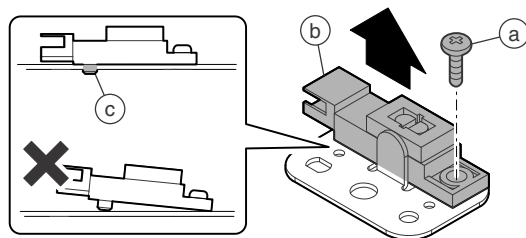
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



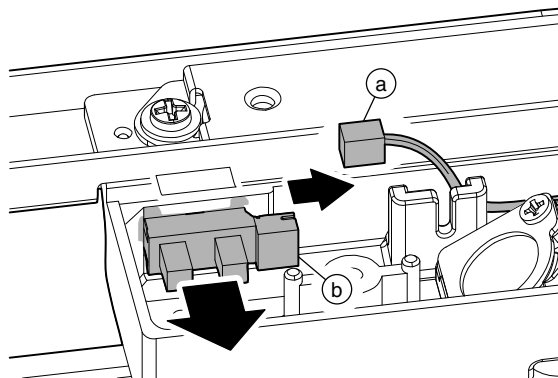
- 3) Remove the screw (a), and disconnect the connector (b). Remove the mounting plate (c).
- * When connecting, arrange the harness of the connector (b) under the sensor.



- 4) 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.

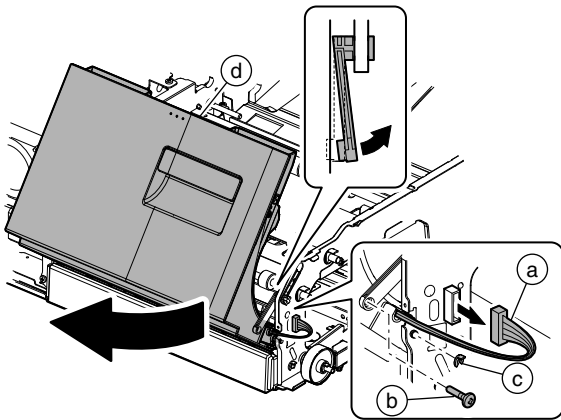


- 5) Disconnect the connector (a), and remove the DSPF upper door open/close sensor (b).

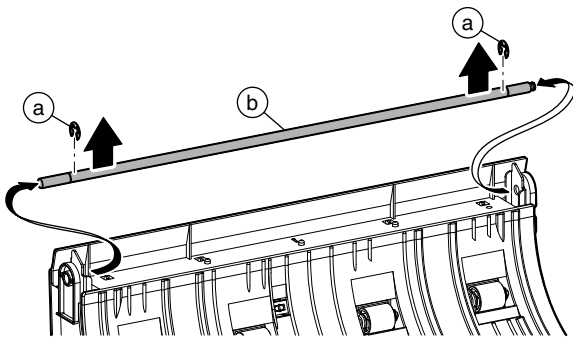


(2) DSPF document pass sensor 3 / DSPF document pass sensor 4

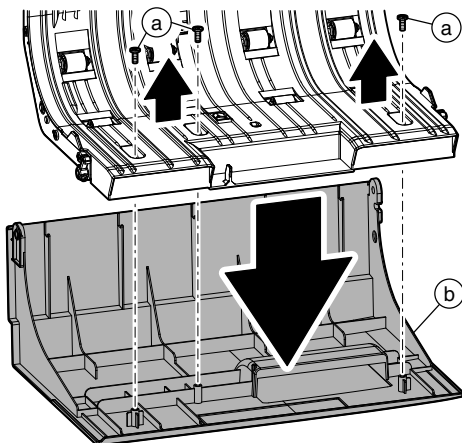
- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



- 3) Remove the E-ring (a), and remove the shaft (b).

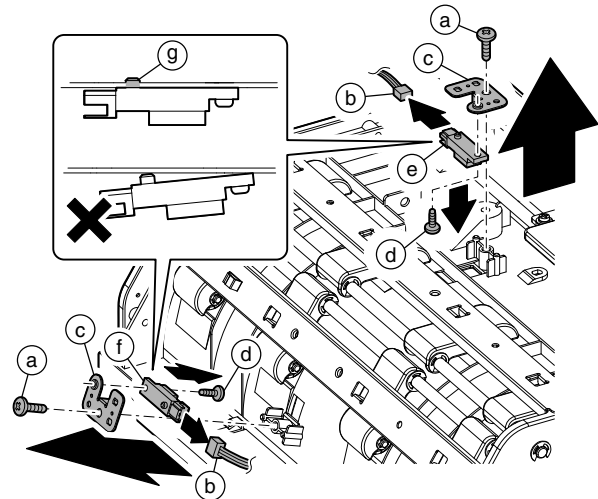


- 4) Remove the screw (a), and remove the cover (b).



- 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).

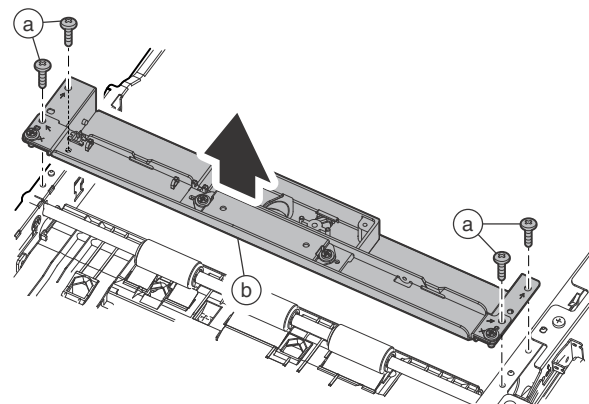
* When installing the sensor, check to confirm that the sensor boss (g) is securely engaged and fix it with the screw.



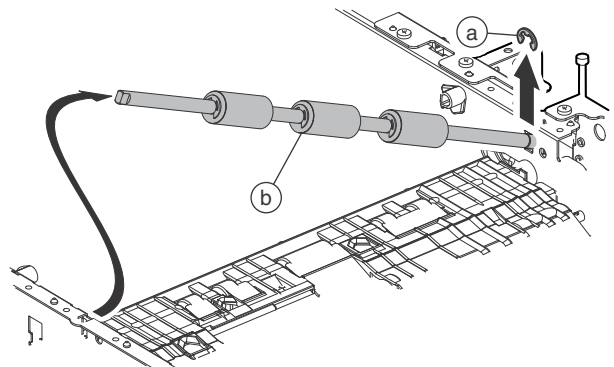
(3) No. 1 resist roller

- 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).

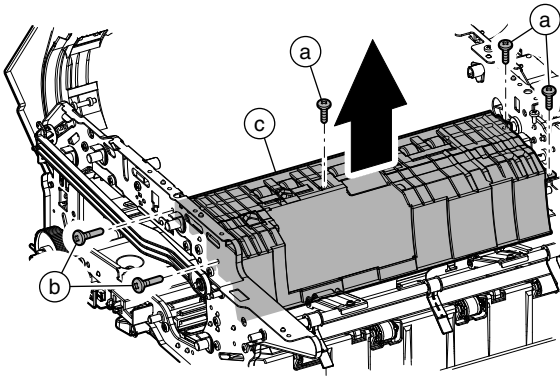
* Since the harness is kept connected, be careful not to disconnect it.



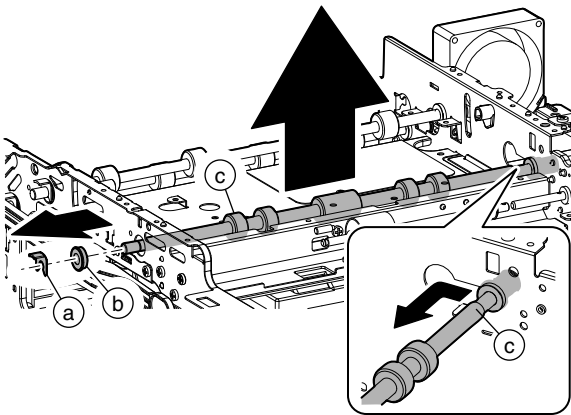
- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).



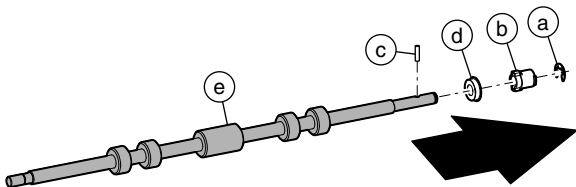
- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



- 7) Remove the E-ring (a) and the bearing (b). Remove the No.1 resist roller unit (c).

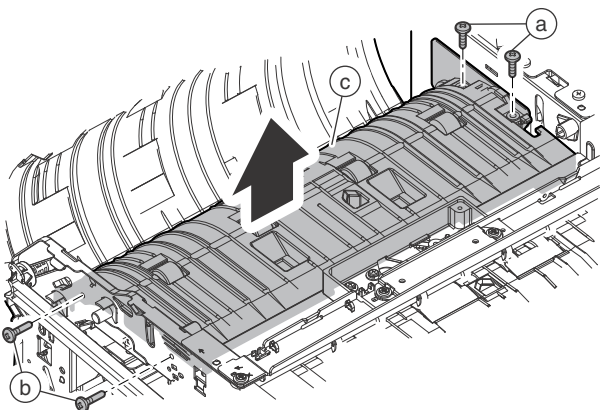


- 8) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the No. 1 resist roller (e).



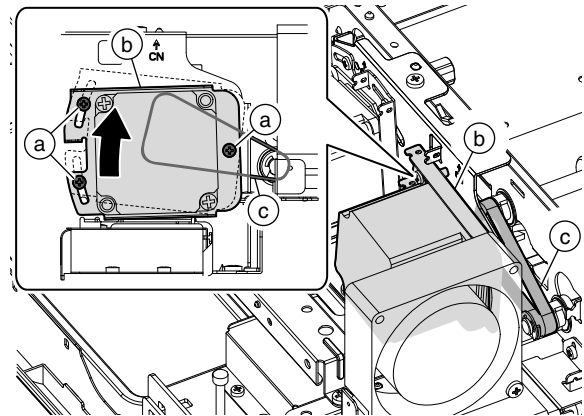
(4) Transport roller 1 / Transport roller 2

- 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).

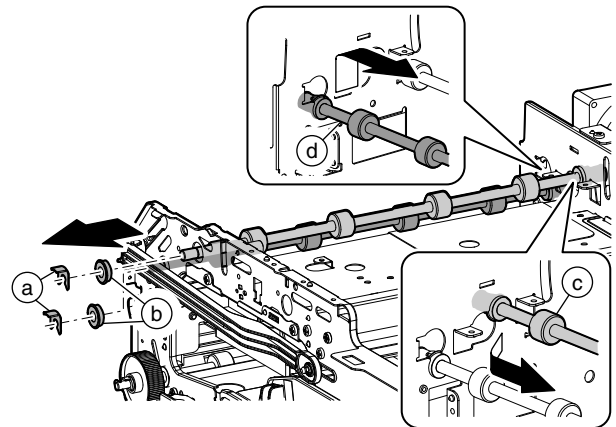


- 3) Loosen the screw (a). Slide the DSPF transport motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

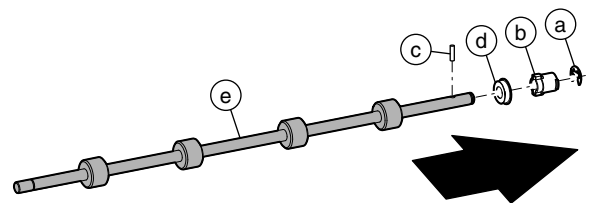
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 4) Remove the E-ring (a) and the bearing (b). Remove the transport roller 1 unit (c) and the transport roller 2 unit (d).

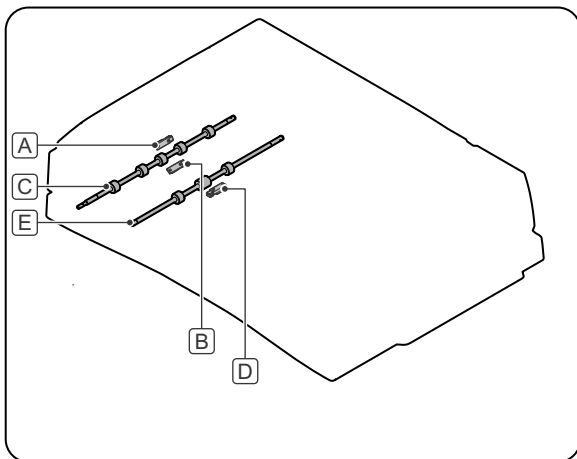


- 5) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 1 / transport roller 2 (e).



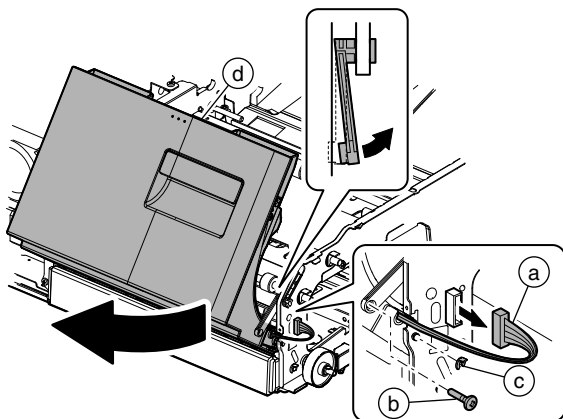
D. Lower transport section

Parts		Page
A	DSPF document pass sensor 5	C - 13/(1)
B	DSPF document pass sensor 6	
C	No. 2 resist roller	
D	DSPF document pass sensor 7	C - 14/(2)
E	Transport roller 3	

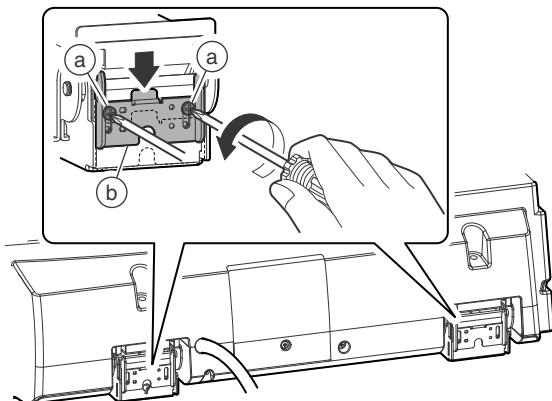


(1) DSPF document pass sensor 5 / DSPF document pass sensor 6 / No. 2 resist roller

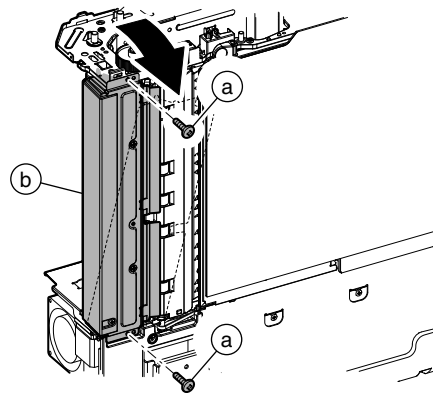
- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



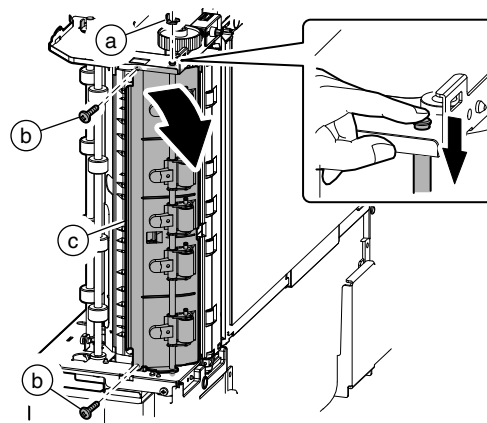
- 3) Loosen the screw (a), and lower the fixing plate (b).



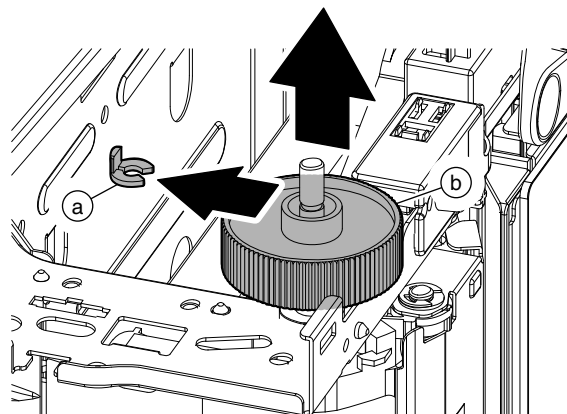
- 4) Remove the screw (a), and remove the stay (b).



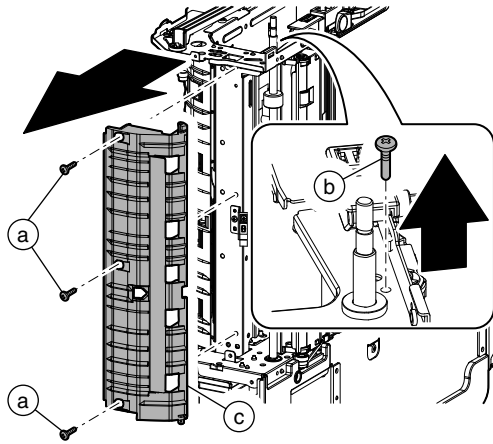
- 5) Remove the E-ring (a). Remove the screw (b), and remove the roller unit (c).



- 6) Remove the E-ring (a), and remove the knob (b).

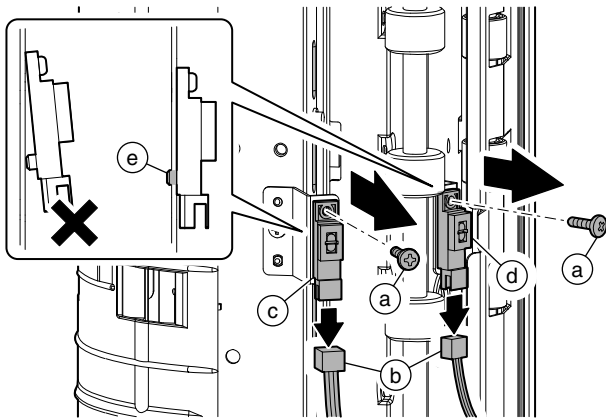


- 7) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



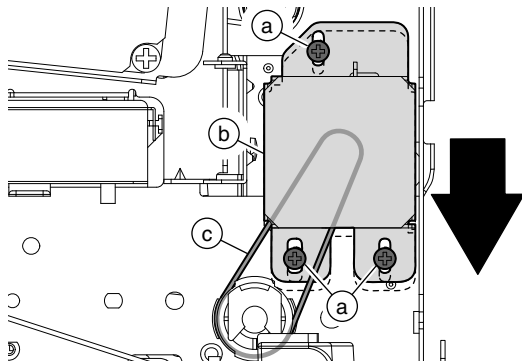
- 8) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 5 (c) and the DSPF document pass sensor 6 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.

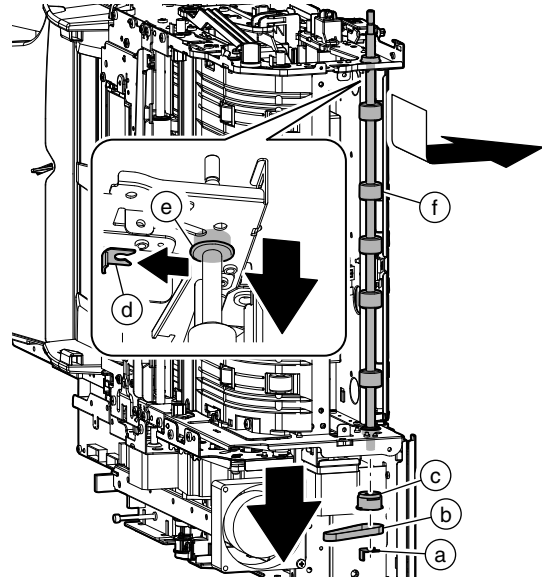


- 9) Loosen the screw (a). Slide the PS drive unit (b) to reduce the tension of the belt (c). Tighten the screw (a).

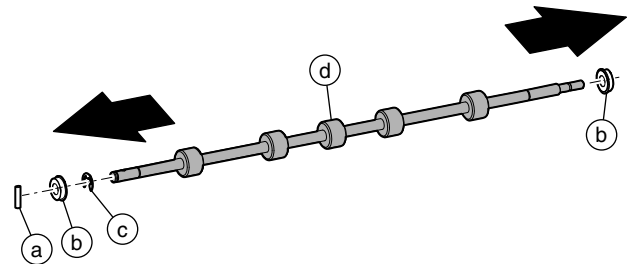
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 10) 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).

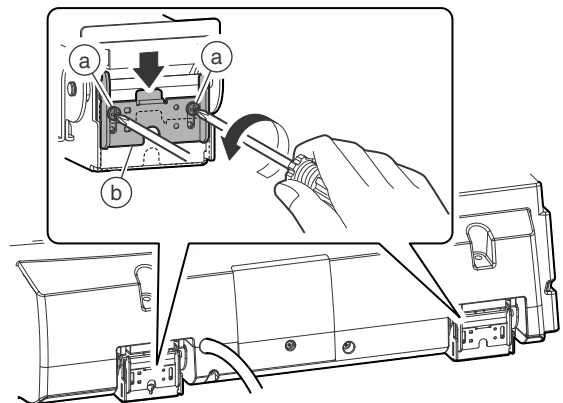


- 11) Remove the pin (a), bearing (b) and the E-ring (c) from the No. 2 resist roller (d).

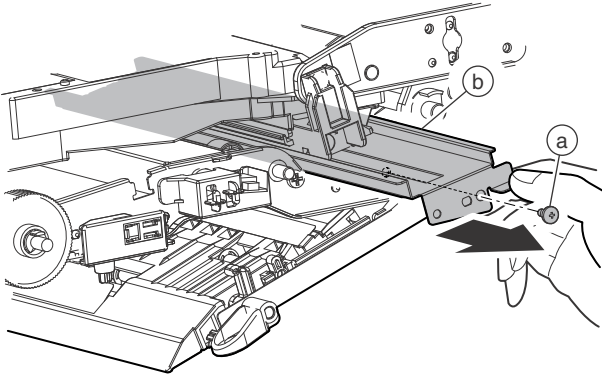


(2) DSPF document pass sensor 7 / Transport roller 3

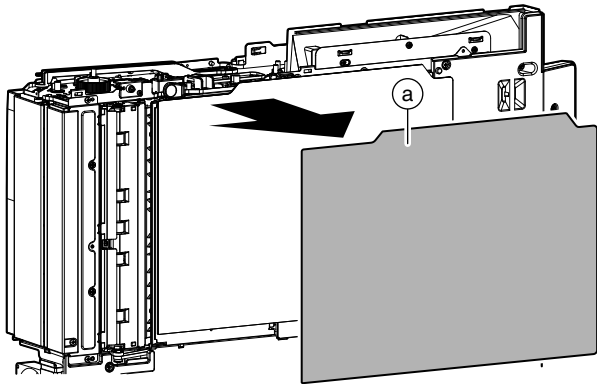
- 1) Remove the front cabinet and the rear cabinet.
- 2) Loosen the screw (a), and lower the fixing plate (b).



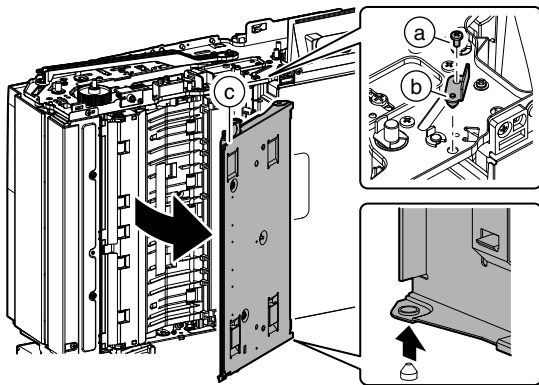
- 3) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



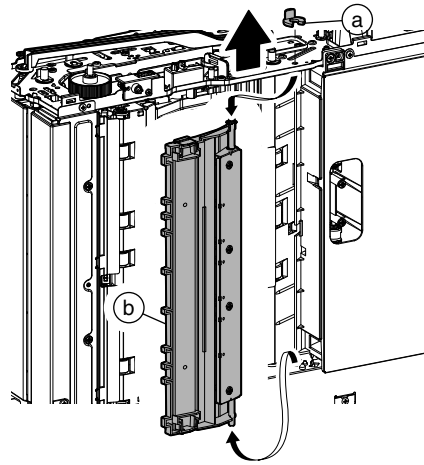
- 4) Remove the document mat (a).



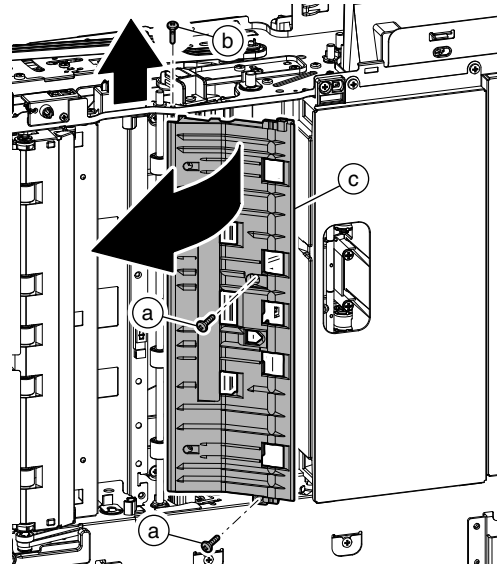
- 5) Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).



- 6) Remove the E-ring (a), and remove the paper guide (b).

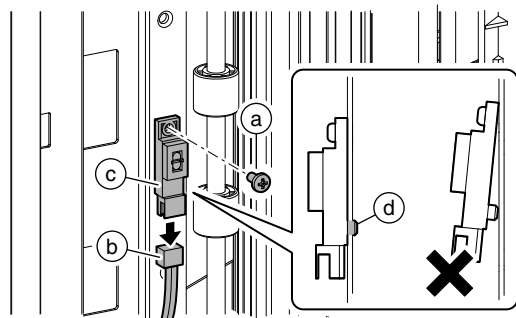


- 7) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

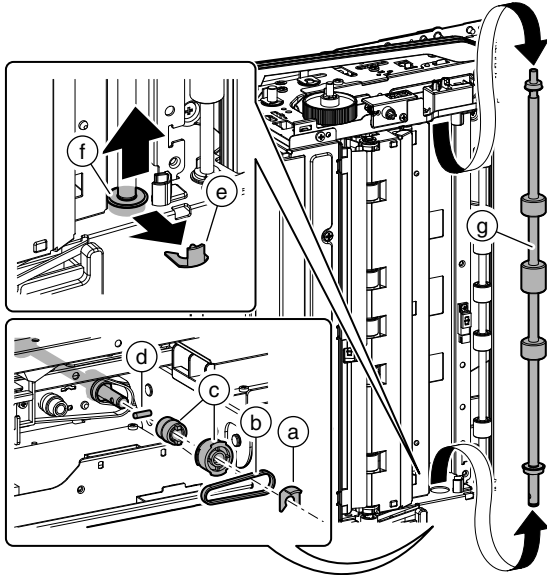


- 8) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 7 (c).

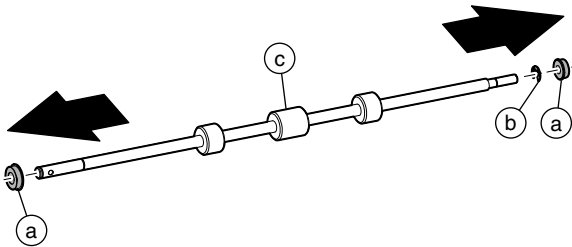
* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



- 9) 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).

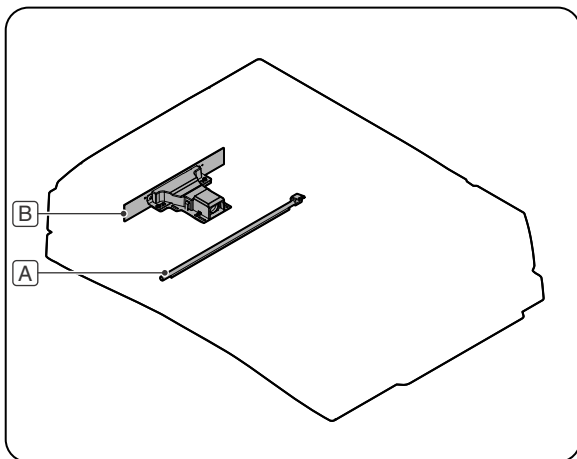


- 10) Remove the bearing (a) and the E-ring (b) from the transport roller 3 (c).



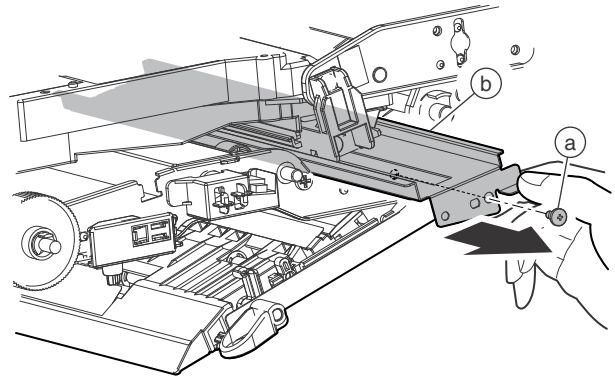
E. Scanner section

Parts		Page
A	Scanner lamp	C - 16 / (1)
B	CCD unit	

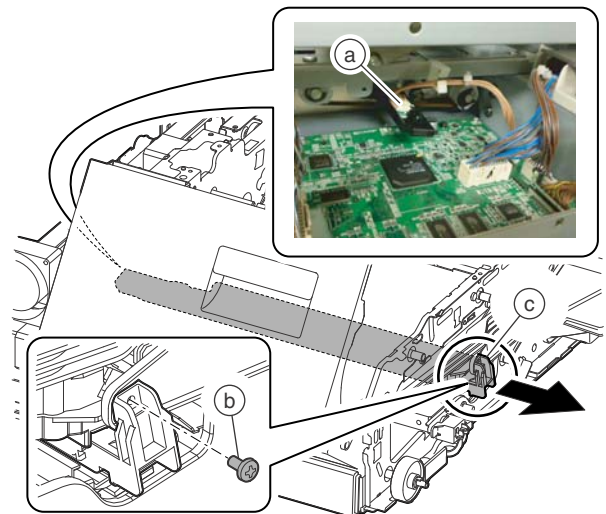


(1) Scanner lamp / CCD unit

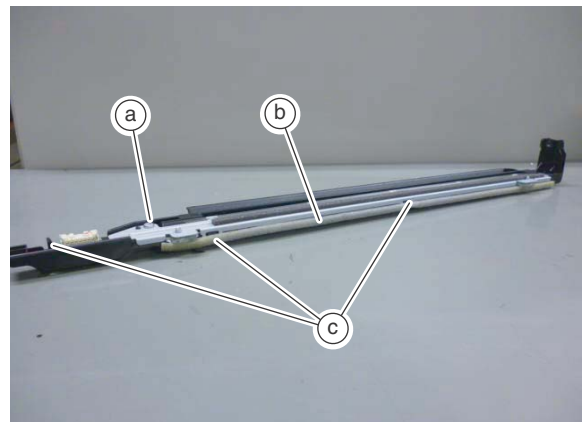
- 1) Remove the paper feed section cabinet and the front cabinet and the rear cabinet.
- 2) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



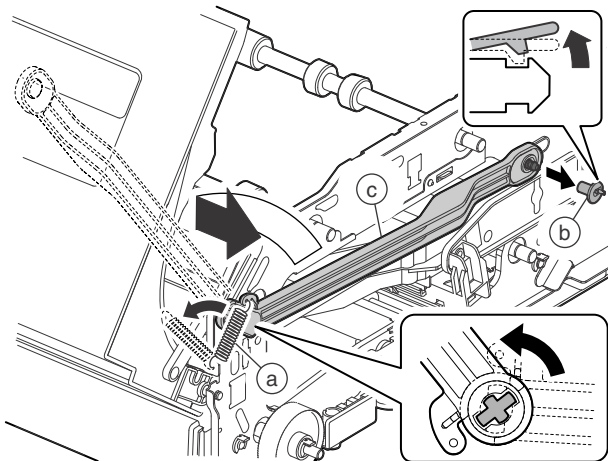
- 3) Disconnect the R side connector (a). Remove the screw (b), and remove the lamp unit (c).



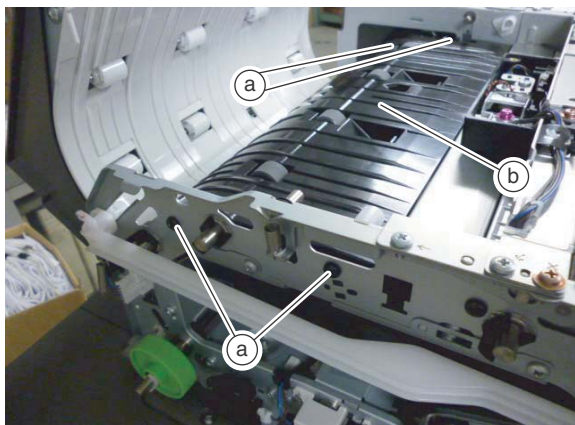
- 4) Remove the screw (a), and remove the sponge (b) and the hook (c) and the LED unit.



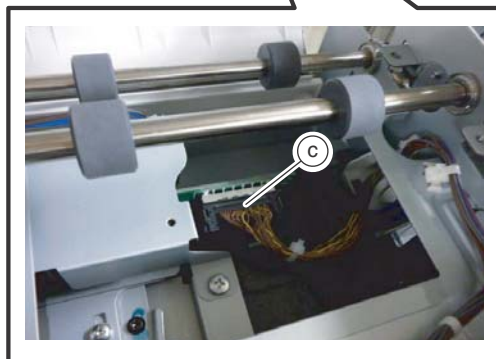
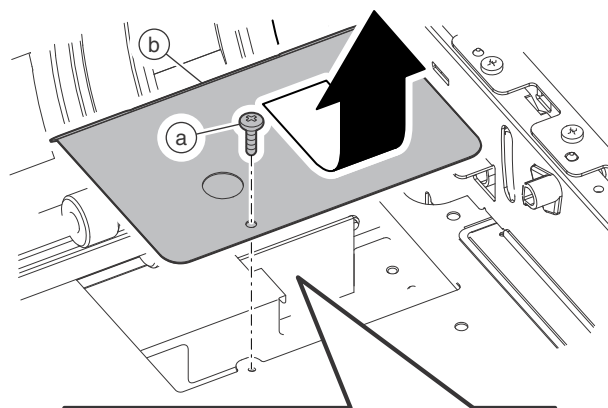
- 5) Remove the spring (a). Remove the holder (b), and remove the arm (c).



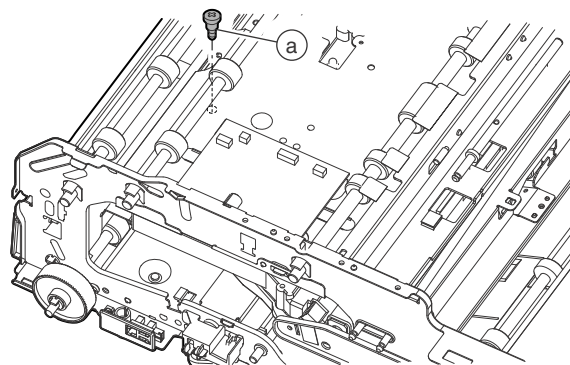
- 6) Remove the screw (a), and remove the paper guide (b).



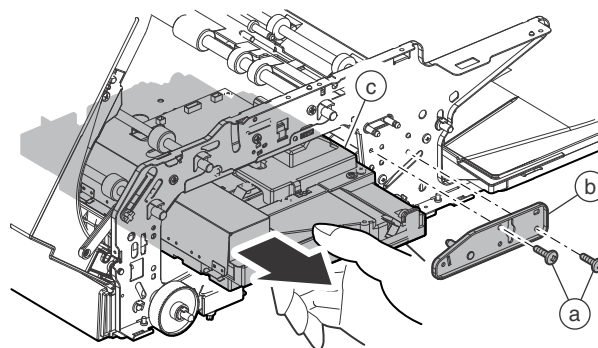
- 7) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



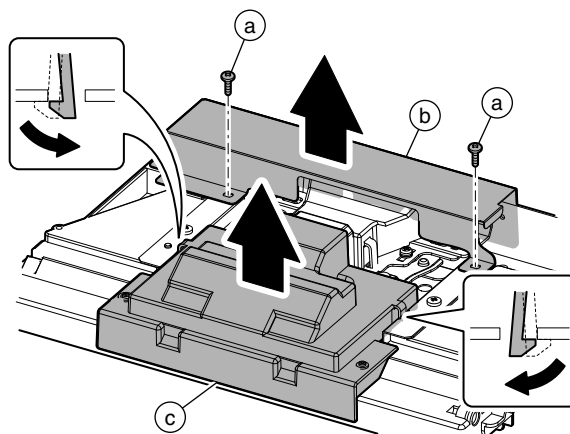
- 8) Remove the step screw (a).



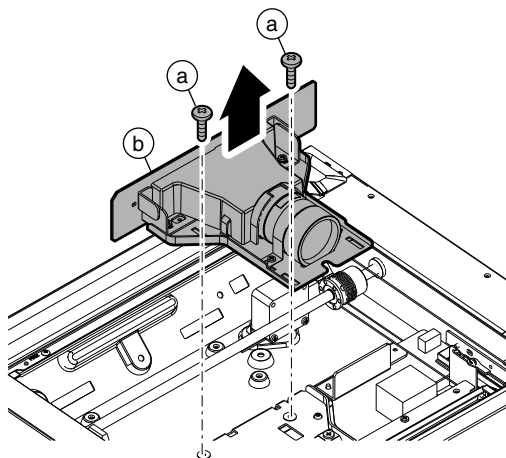
- 9) Remove the screw (a), and remove the fulcrum plate (b). Remove the scanner unit (c).



- 10) Remove the screw (a). Remove the dark box (b) and the cover (c).

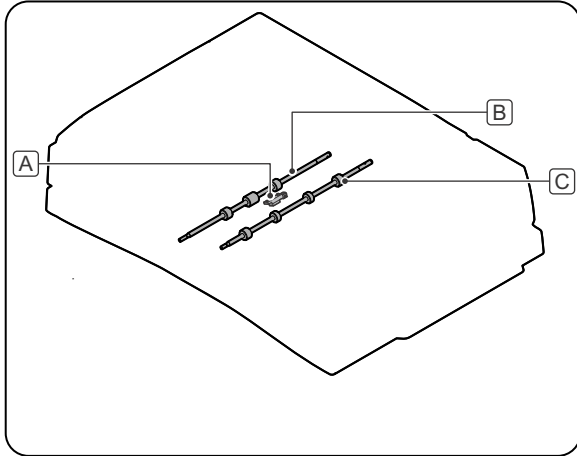


- 11) Remove the screw (a), and remove the CCD unit (b).



F. Paper exit section

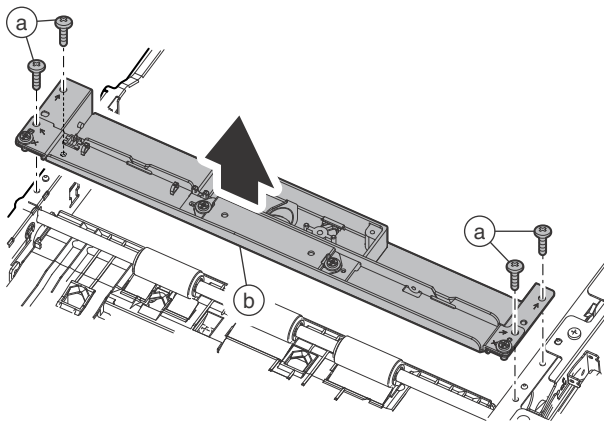
Parts		Page
A	DSPF paper exit detection sensor	C-18/(1)
B	Transport roller 5	C-19/(2)
C	Paper exit roller	



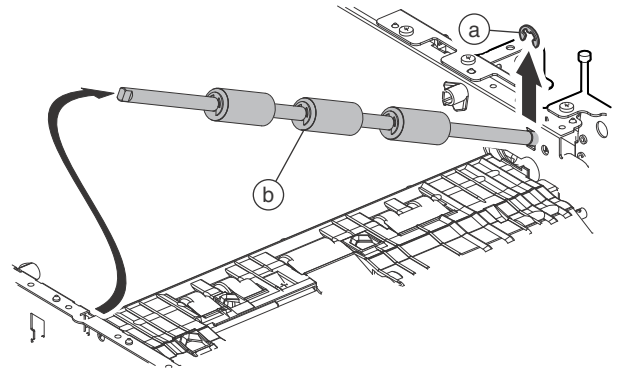
(1) DSPF paper exit detection sensor

- 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).

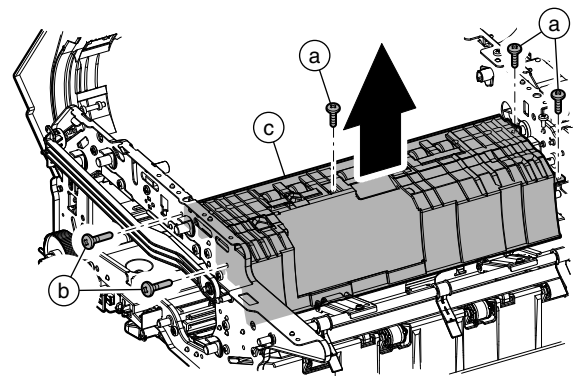
* The harness is connected, be careful not to disconnect it.



- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).

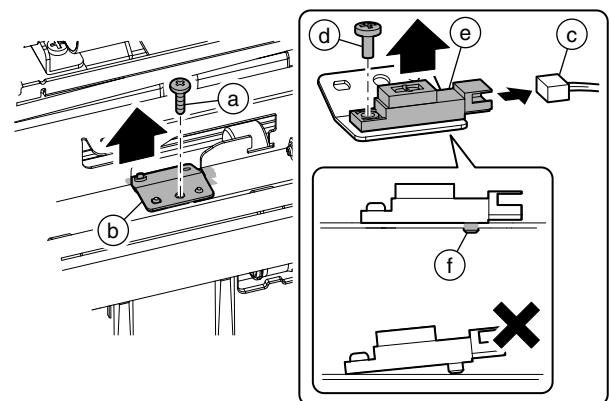


- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



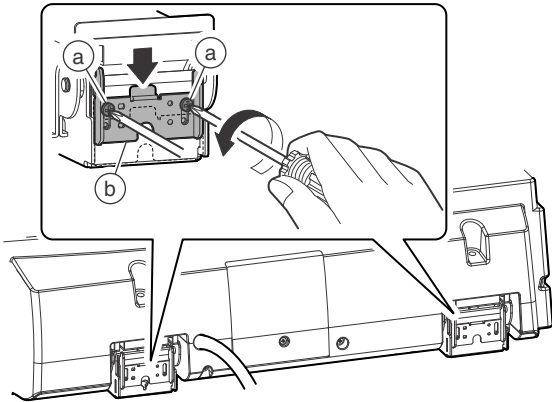
- 7) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector, and remove the screw (d). Remove the DSPF paper exit sensor (e).

* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.

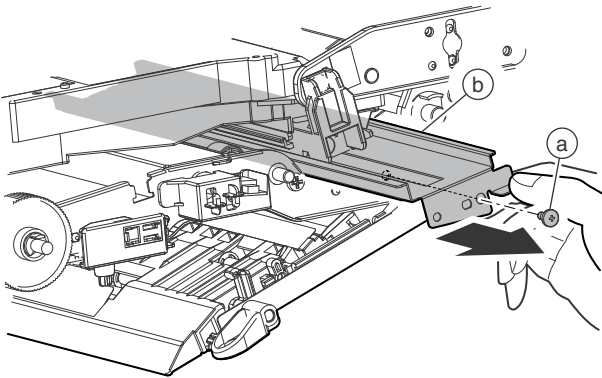


(2) Transport roller 5 / Paper exit roller

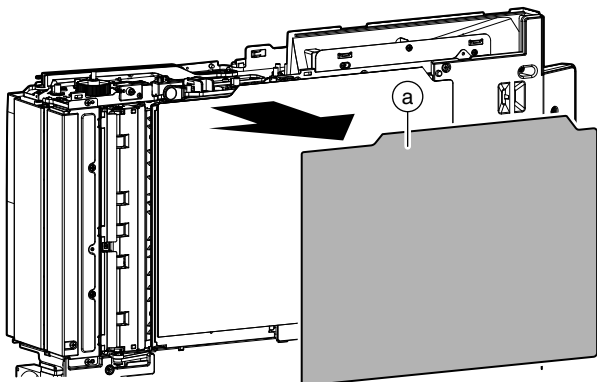
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Loosen the screw (a), and lower the fixing plate (b).



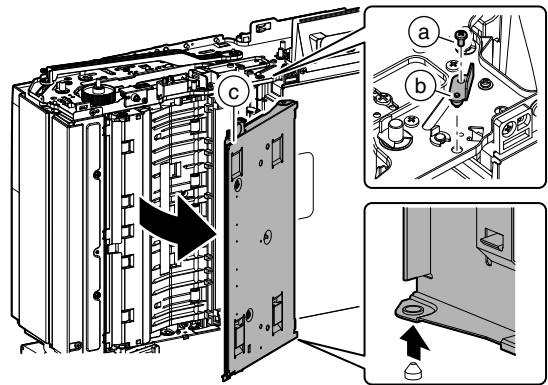
- 4) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



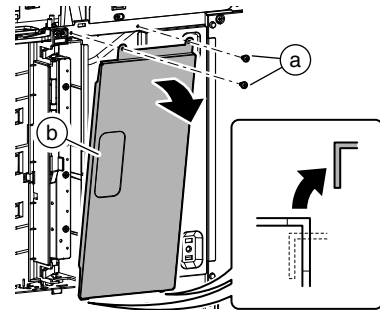
- 5) Remove the document mat (a).



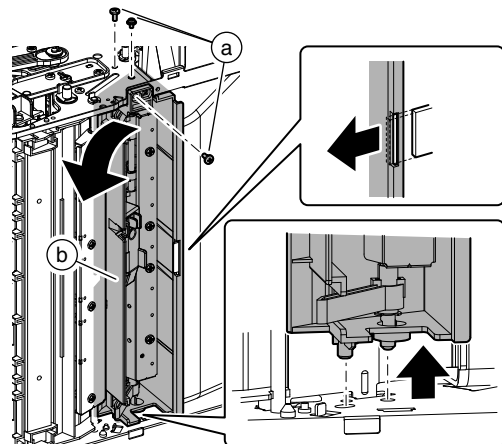
- 6) Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).



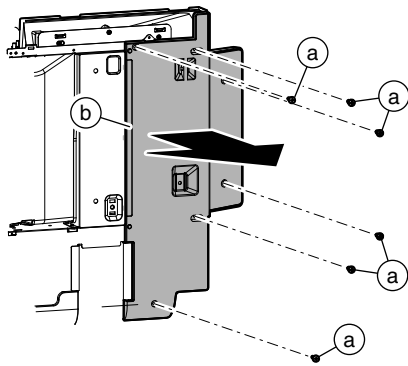
- 7) Remove the screw (a), and remove the cover (b).



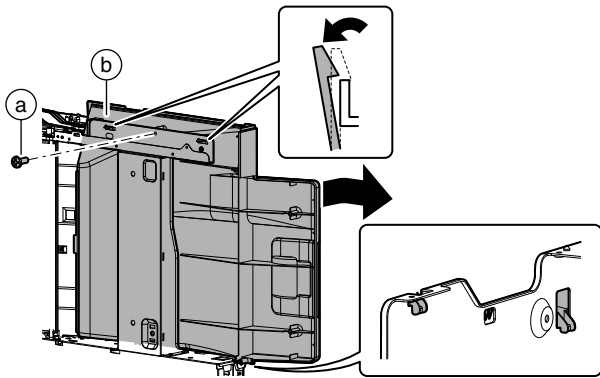
- 8) Remove the screw (a), and remove the follower roller unit (b).



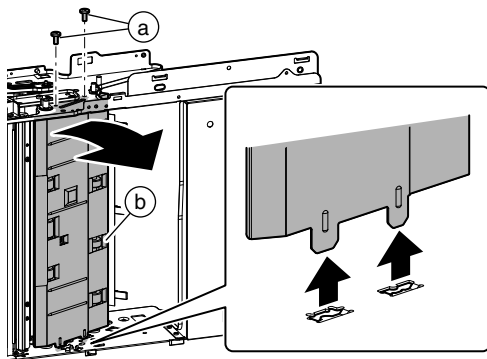
9) Remove the screw (a), and remove the cabinet (b).



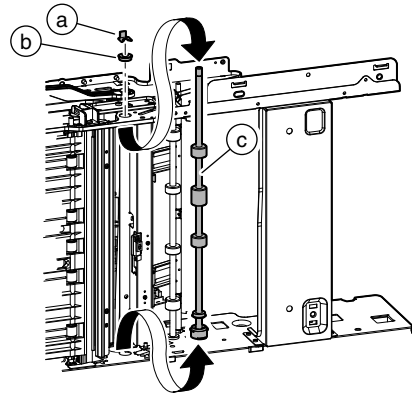
10) Remove the screw (a), and the paper exit tray (b).



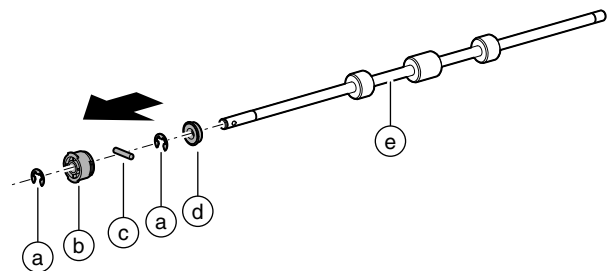
11) Remove the screw (a), and remove the paper guide (b).



12) Remove the E-ring (a), and remove the bearing (b). Remove the transport roller 5 unit (c).

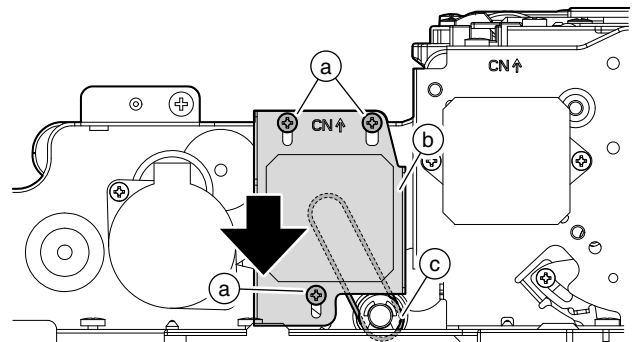


13) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 5 (e).

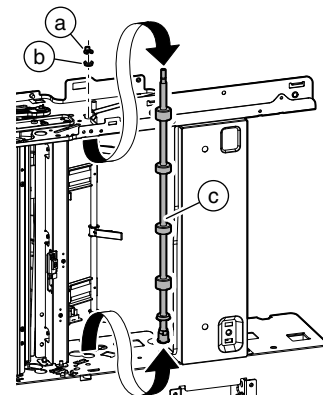


14) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

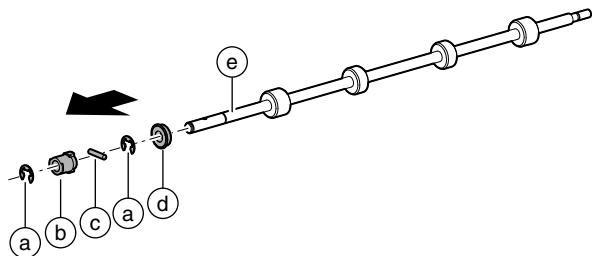
* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



15) Remove the E-ring (a), and remove the bearing (b). Remove the paper exit roller unit (c).

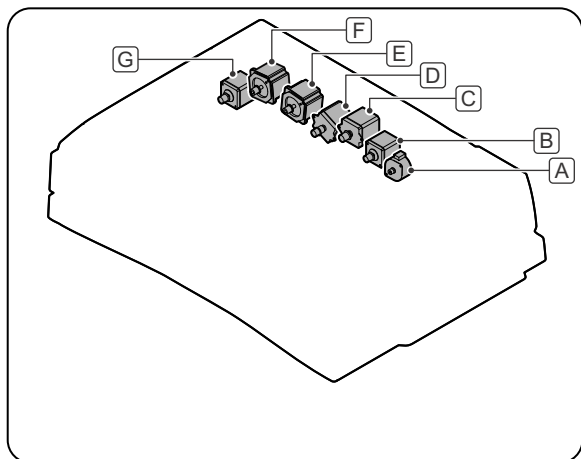


- 16) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the paper exit roller (e).



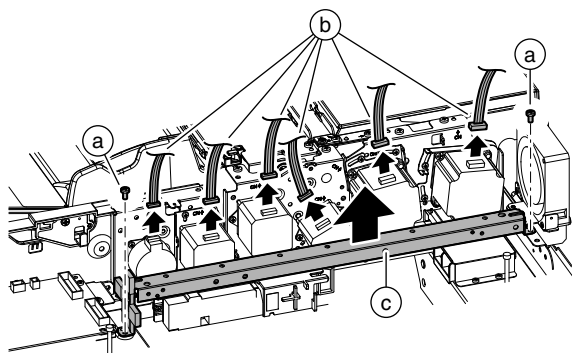
G. Drive section

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)

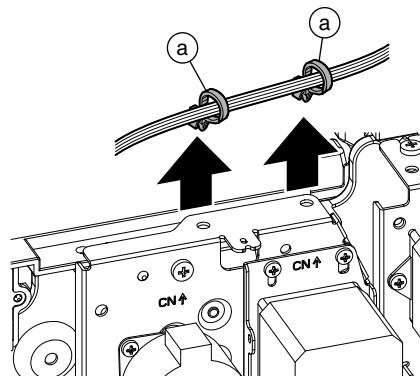


(1) DSPF lift-up motor / DSPF paper exit motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the stay (c).

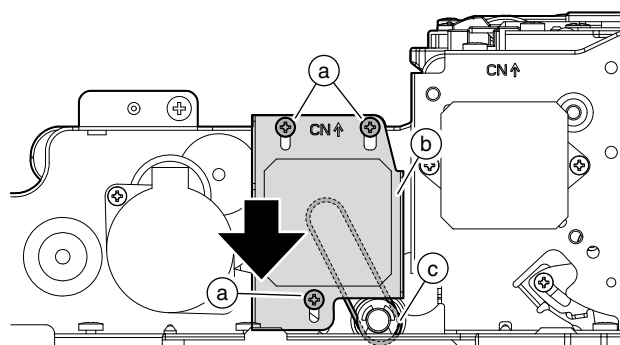


- 3) Remove the snap band (a).

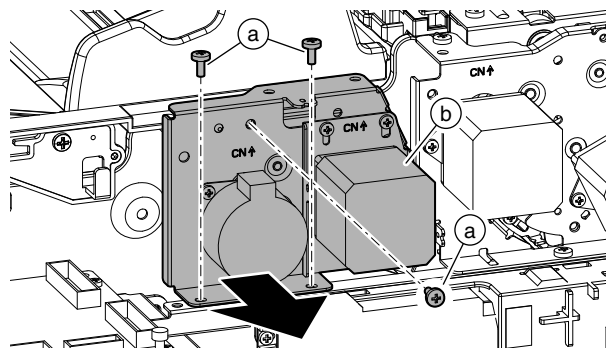


- 4) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

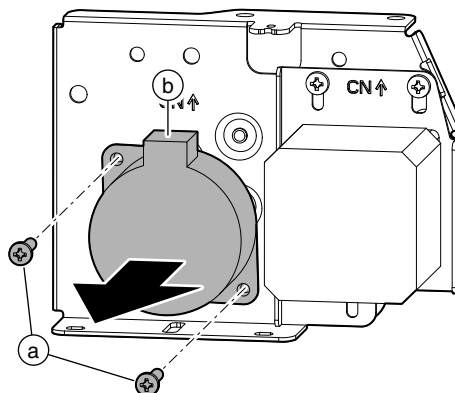
* Before installing the lift-up paper exit drive unit, perform this procedure. After installing the paper feed scan transport drive unit, set the spring in the compressed state by the same procedure to apply a tension to the belt.



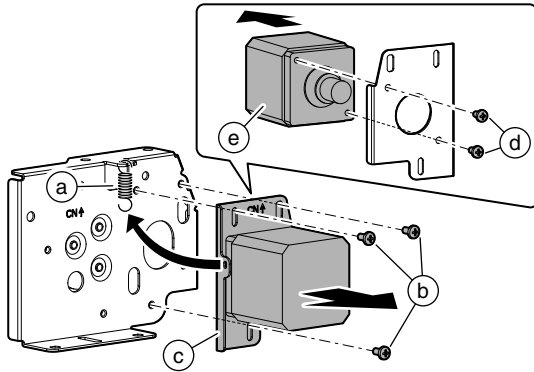
- 5) Remove the screw (a), and remove the lift-up paper exit drive unit (b).



- 6) Remove the screw (a), and remove the DSPF lift-up motor (b).

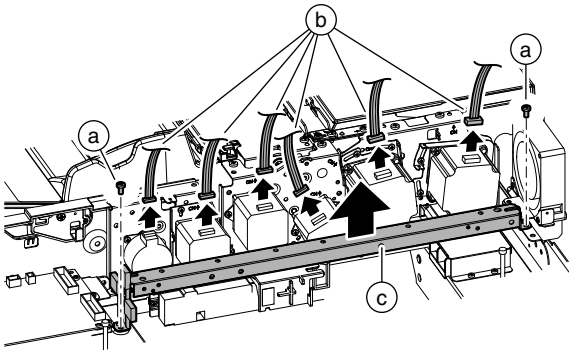


- 7) Remove the spring (a) and the screw (b). Remove the DSPF paper exit motor unit (c). Remove the screw (d), and remove the DSPF paper exit motor (e).

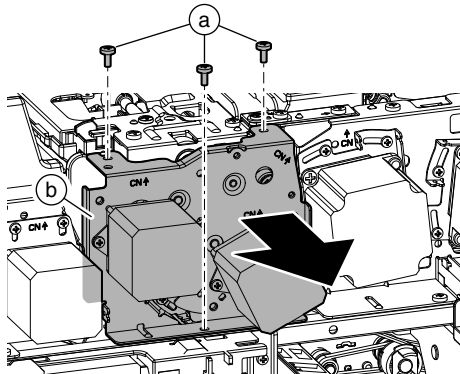


(2) DSPF document feed motor / DSPF scan transport motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the stay (c).

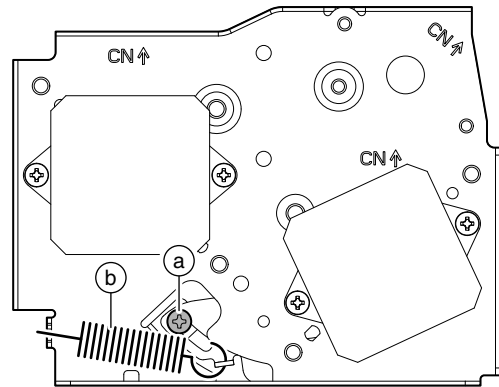


- 3) Remove the screw (a), and remove the paper feed scan transport drive unit (b).

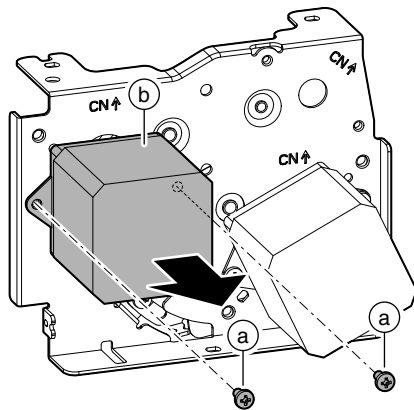


- 4) Loosen the screw (a), and stretch the spring (b). Tighten the screw (a).

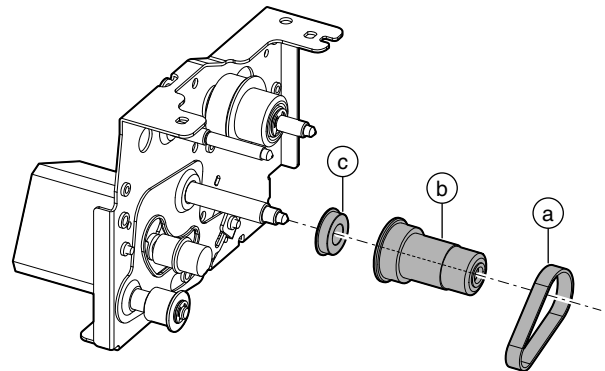
* Before installing the paper feed scan transport drive unit, perform this procedure. After installing the paper feed scan transport drive unit, perform the same procedure to compress the spring, applying a tension to the belt.



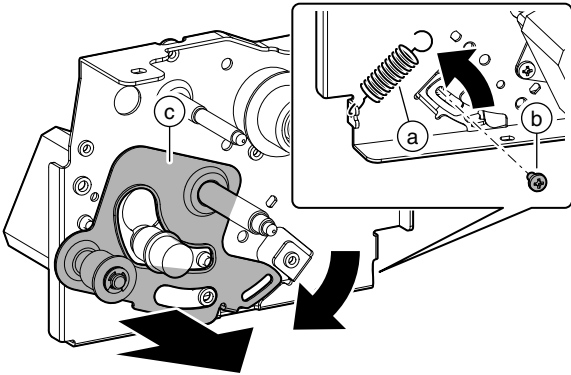
- 5) Remove the screw (a), and remove the DSPF document feed motor (b).



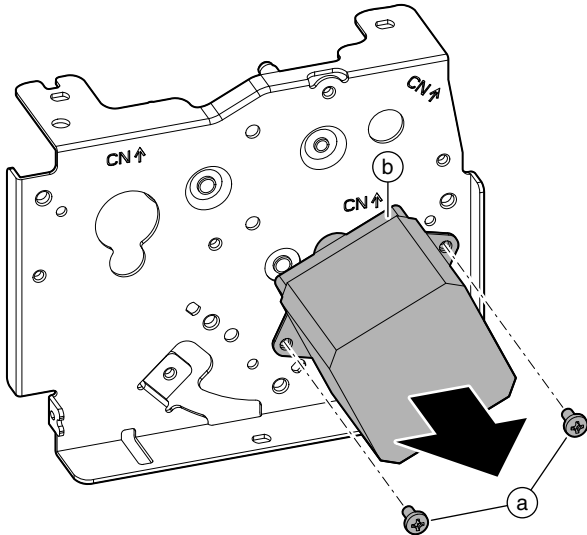
- 6) Remove the belt (a), the pulley (b), and the bearing (c).



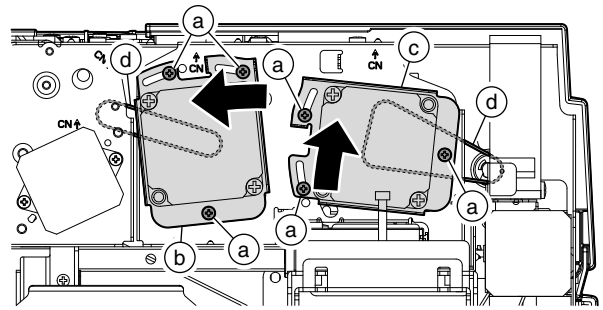
- 7) Remove the spring (a) and the screw (b), and remove the plate (c).



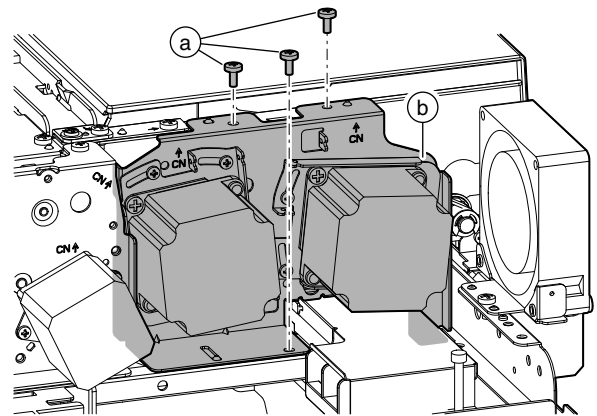
- 8) Remove the screw (a), and remove the DSPF scan transport motor (b).



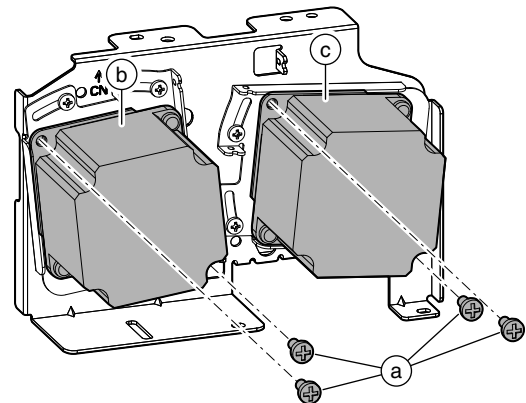
- 3) Loosen the screw (a). Slide the DSPF resist motor (b) and the DSPF transport motor (c) to reduce the tension of the belt (d). Tighten the screw (a).



- 1) Remove the screw (a), and remove the resist transport drive unit (b).

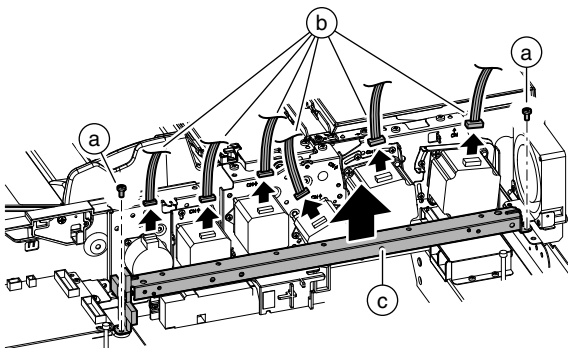


- 2) Remove the screw (a), and remove the DSPF resist motor (b) and the DSPF transport motor (c).



(3) DSPF resist motor / DSPF transport motor

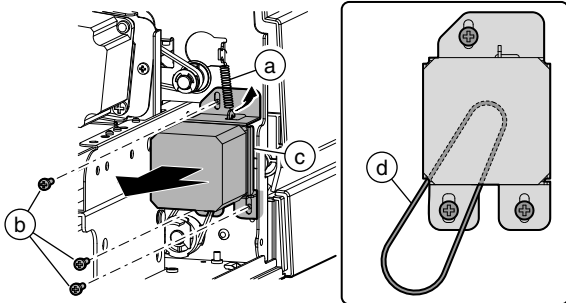
- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a) and the screw (b), and remove the stay (c).



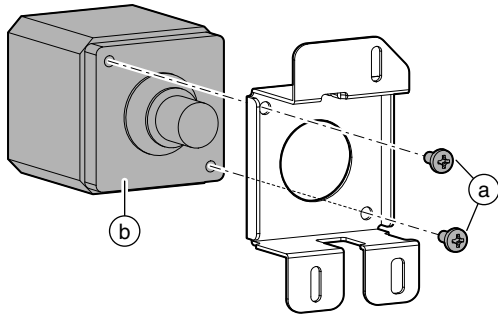
(4) DSPF PS motor

- 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.

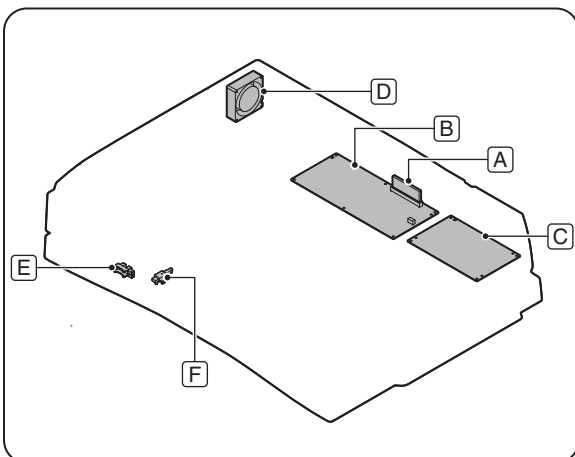


- 3) Remove the screw (a), and remove the DSPF PS motor (b).



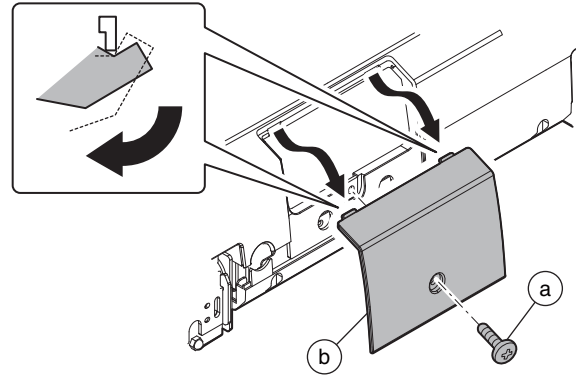
H. Others

Parts		Page
A	DSPF Flash PWB	C-24/(1)
B	DSPF Control PWB	
C	DSPF driver PWB	C-24/(1)
D	DSPF motor cooling fan 1	
E	DSPF open/close sensor	
F	DSPF lower door open/close sensor	C-25/(2)

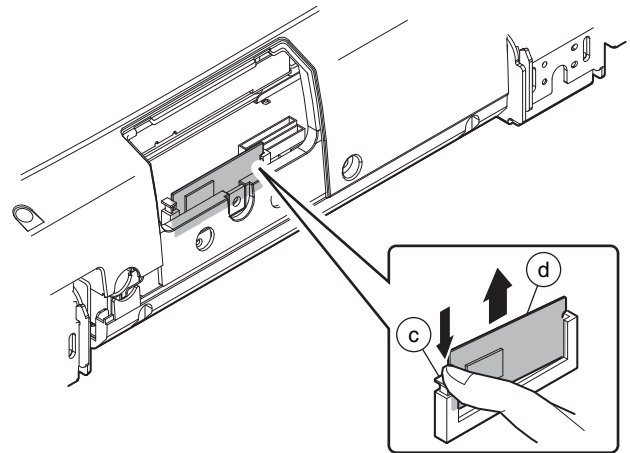


(1) DSPF flash PWB

- 1) Remove the screw (a), and remove the ROM cover (b).

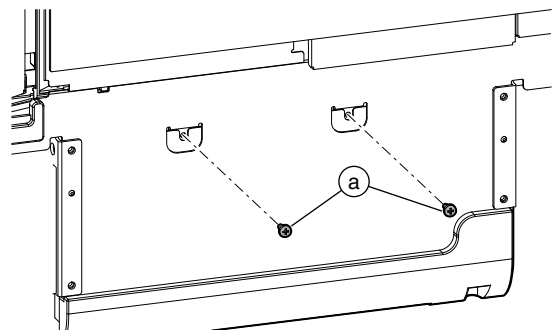


- 2) Release the lock (c), and remove the DSPF flash PWB (d).

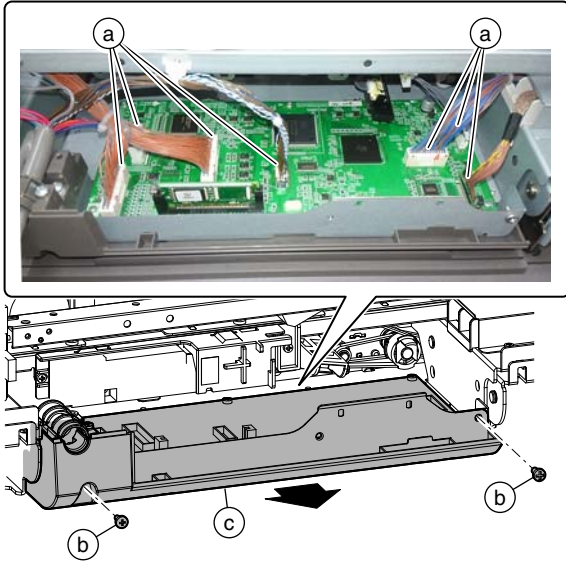


(2) DSPF cnt PWB / DSPF driver PWB / DSPF motor cooling fan 1

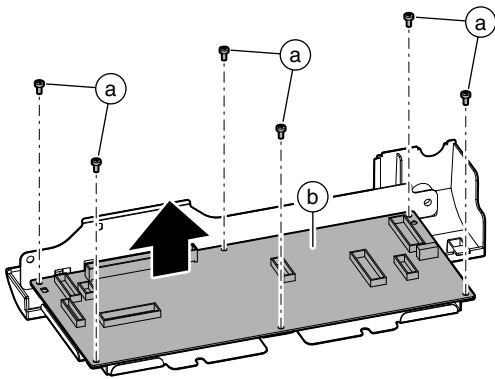
- 1) Remove the rear cabinet.
- 2) Remove the screw (a) at the bottom of the DSPF unit.



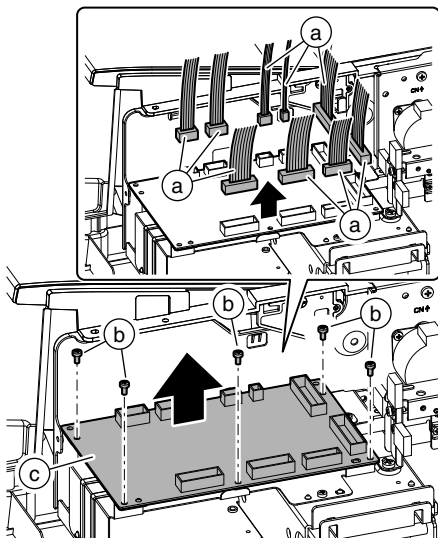
- 3) Disconnect the connector (a), and remove the screw (b). Pull out the DSPF cnt PWB unit (c).



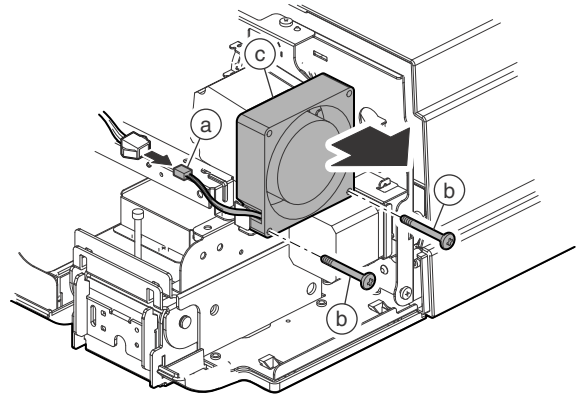
- 4) Remove the screw (a), and remove the DSPF cnt PWB (b).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the DSPF driver PWB (c).

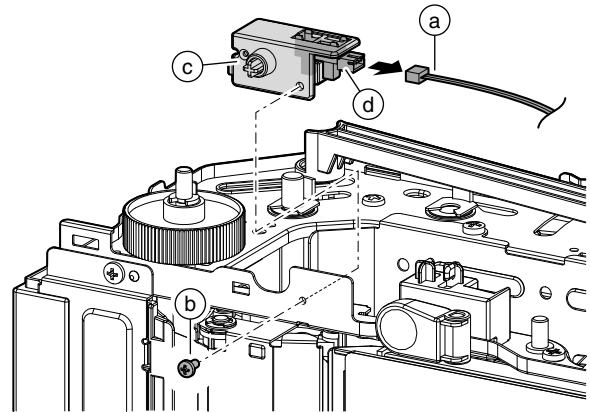


- 6) Disconnect the connector (a), and remove the screw (b). Remove the DSPF motor cooling fan 1 (c).

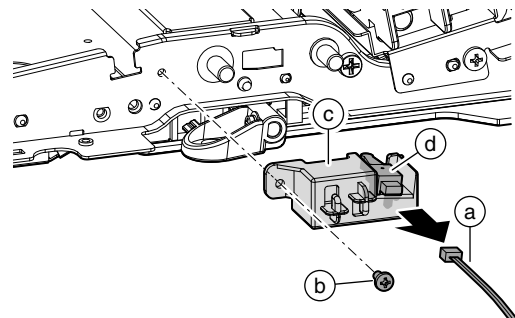


(3) DSPF open/close sensor / DSPF lower door open/close sensor

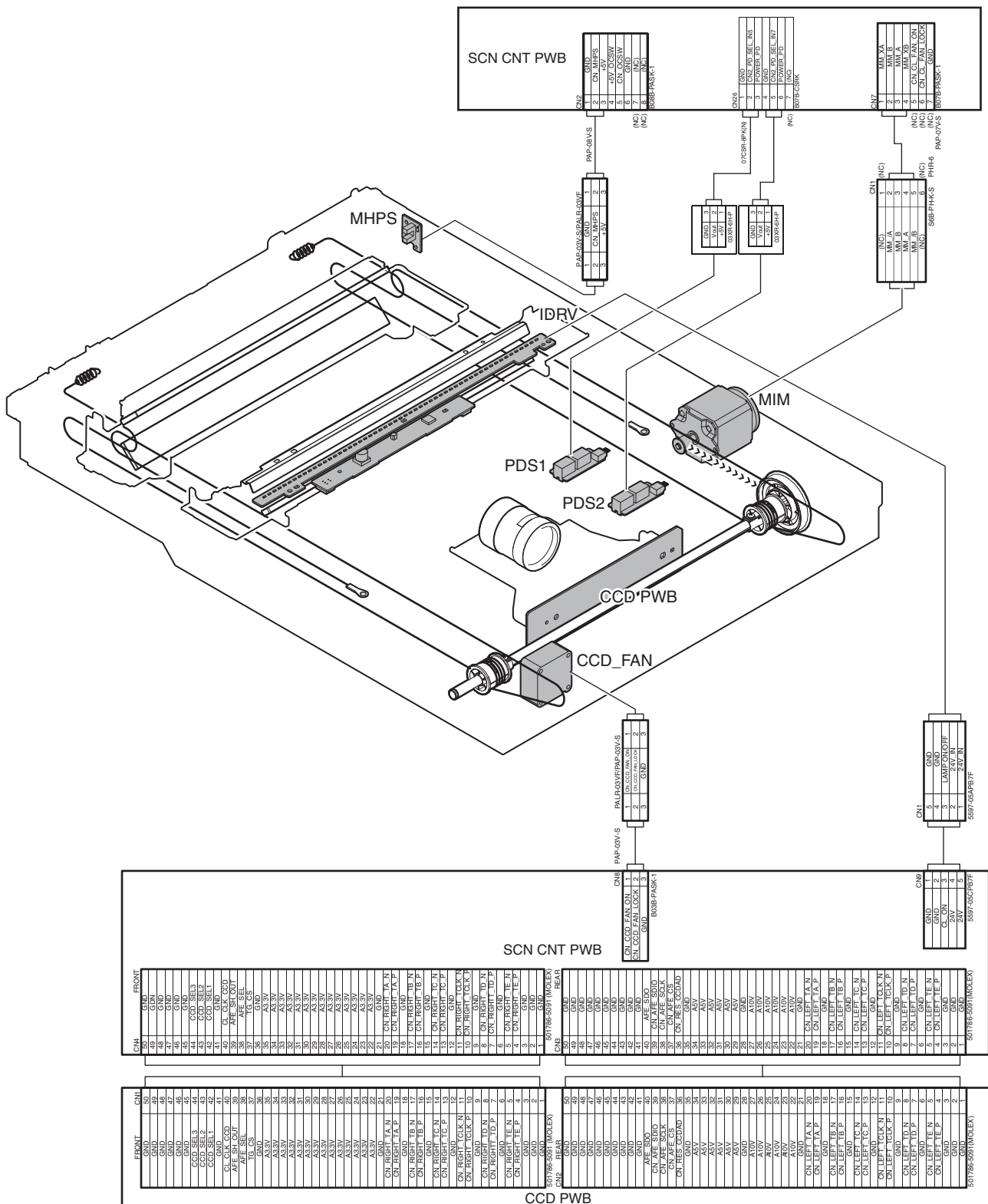
- 1) Remove the front cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the holder (c). Remove the DSPF open/close sensor (d).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the holder (c). Remove the DSPF lower door open/close sensor (d).



1. Electrical and mechanism relation diagram



Signal name	Name	Type	Function / Operation
MIM	Scanner (reading) motor	Stepping motor	Drives the copy lamp unit.
MHPD	Scanner home position sensor	Photo interrupter	Scanner home position detection.
CLI	Scanner lamp	LED lamp	Radiates lights onto the document.
PDS1	Document detection (sub scanning direction 1)	Reflectin type	Detects the sub scanning document size.
PDS2	Document detection (sub scanning direction 2)	Reflectin type	Detects the sub scanning document size.

Signal name	Name	Type	Function / Operation
CCDFM	CCD coolong 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..

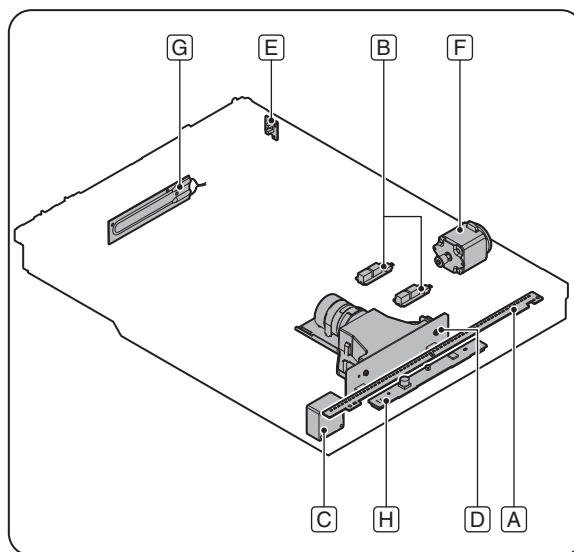
The image data is converted into video signal and sent to the PCU then to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signal is converted into laser beams, which are radiated onto the drum.

3. Disassembly and assembly

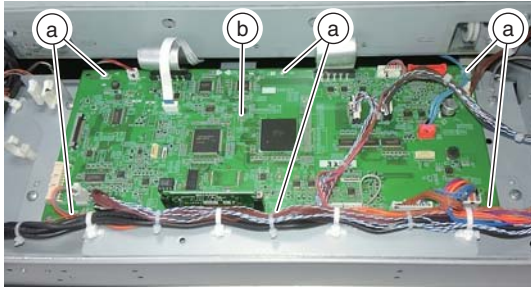
A. Scanner unit

Unit	Parts	Page
Scanner unit	A LED PWB	D - 3/a
	B Sub scanning document size sensor	D - 5/c
	C CCD cooling fan	D - 6/d
	D CCD unit	
	E Scanner home position sensor	D - 6/e
	F Scanner motor	D - 6/f
	G Scanner dehumidifying heater	D - 7/g
	H DRV PWB	D - 4/b

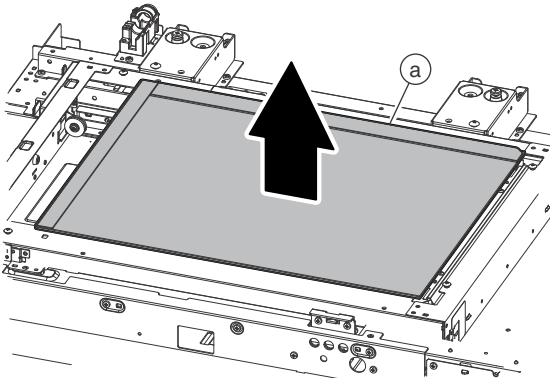


(1) Scanner unit

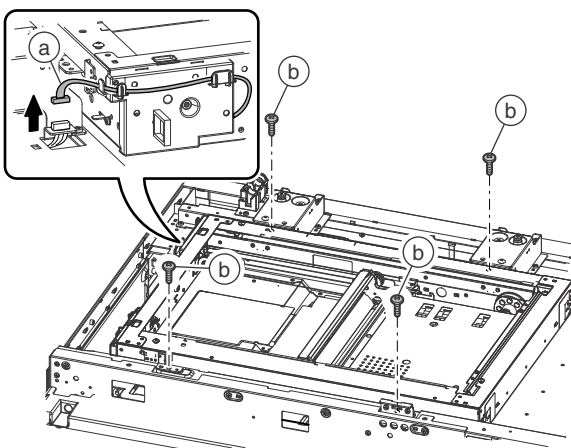
- 1) Remove the DSPF unit.
- 2) Remove the upper cabinet rear cover and the upper cabinet rear.
- 3) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, the upper cabinet front cover left and the upper cabinet front.
- 4) Disconnect the all connectors. Remove the screw (a), and pull out the SCNCNT PWB (b).



- 5) Remove the table glass (a).

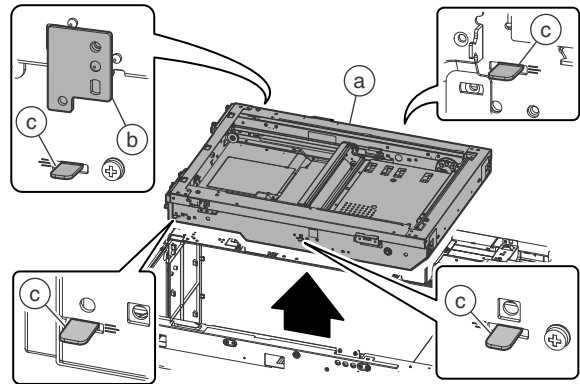


- 6) Disconnect the connector (a), and remove the screw (b).



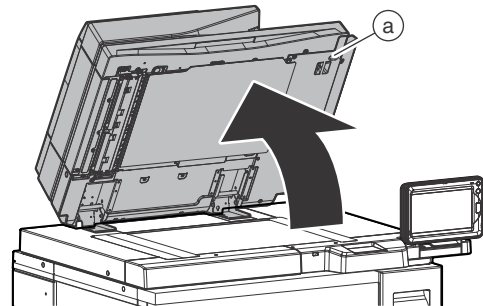
- 7) Remove the scanner unit (a).

* 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.

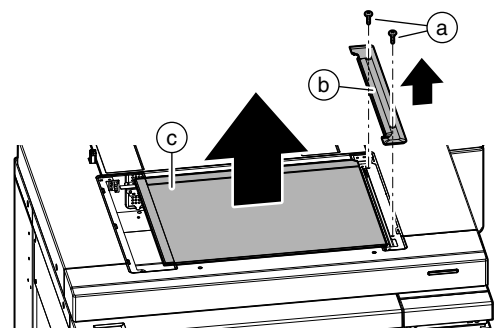


a. LED PWB

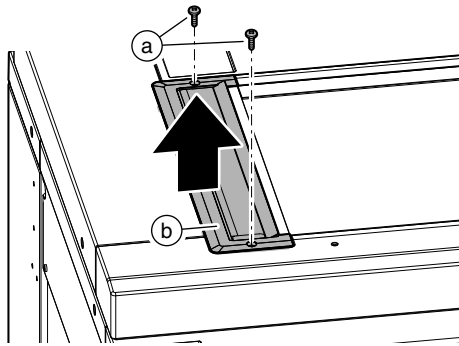
- 1) Open the DSPF unit (a).



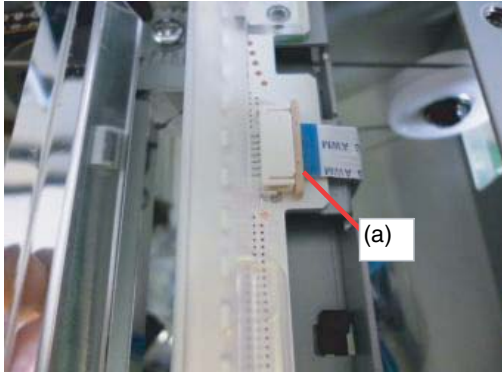
- 2) Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



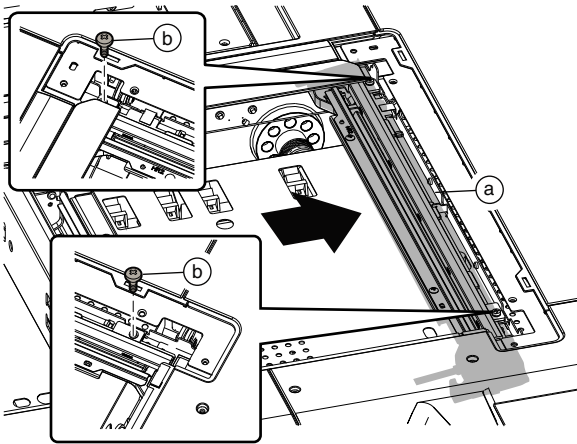
- 3) Remove the screw (a), and remove the SPF glass (b).



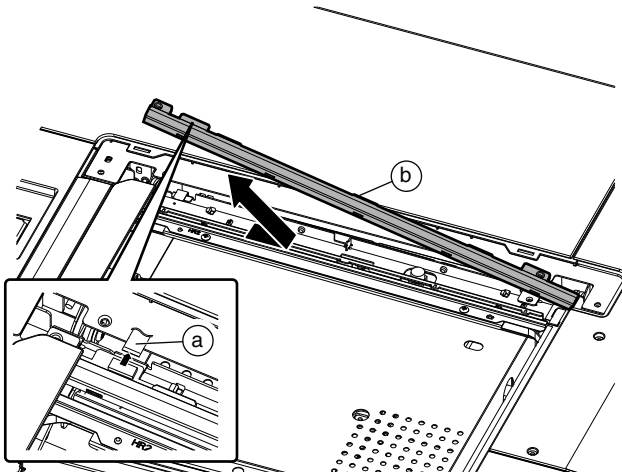
- 4) Disconnect the connector (a).



- 5) Shift the lamp unit (a) to the right, and remove the screw (b).

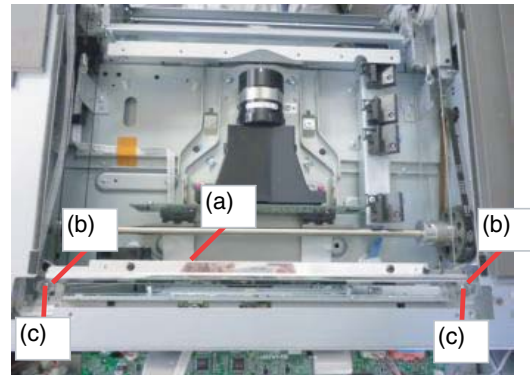


- 6) Remove the light guide plate (a) and the scanner lamp (b).

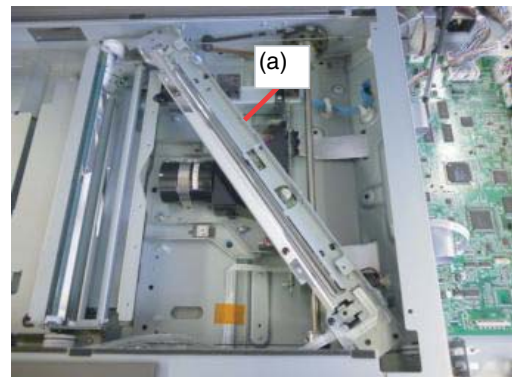


b. DRV PWB

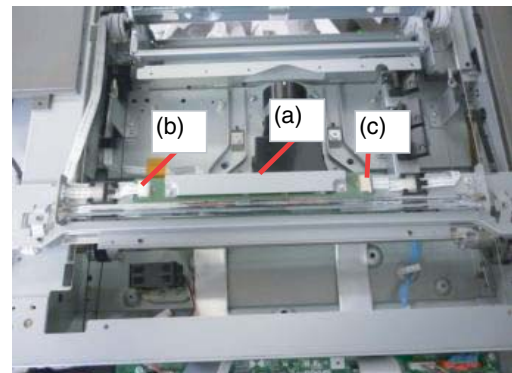
- 1) Remove the fixing screw (c) which is fixing the plate (b) which is holding the lamp unit (a) and the wire.



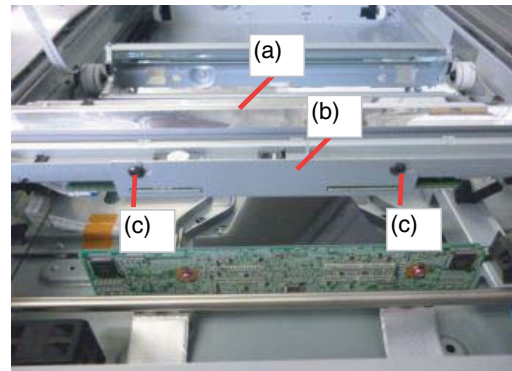
- 2) Remove the lamp unit (a).



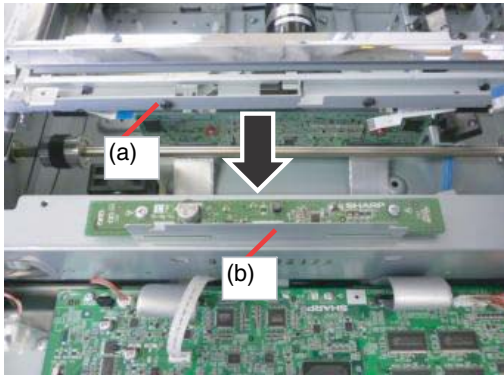
- 3) Disconnect the connector (b) and (c) of the lamp unit (a).



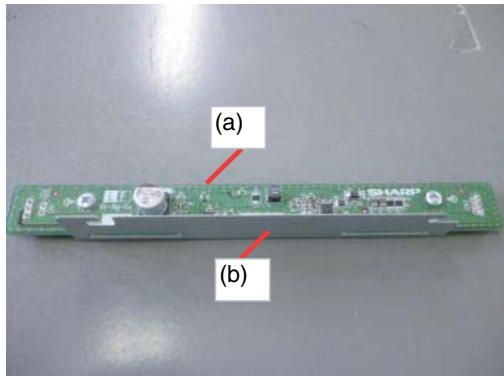
- 4) Loosen the screw (c) of the plate (b) which is fixing the lamp unit (a) and the DRV PWB.



- 5) Remove the plate (b) which is fixing the DRV PWB from the lamp unit (a).

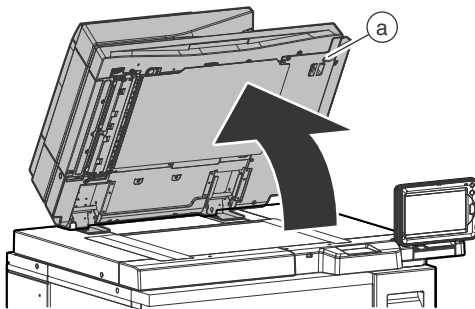


- 6) Remove the DRV PWB (a) from the plate (b).

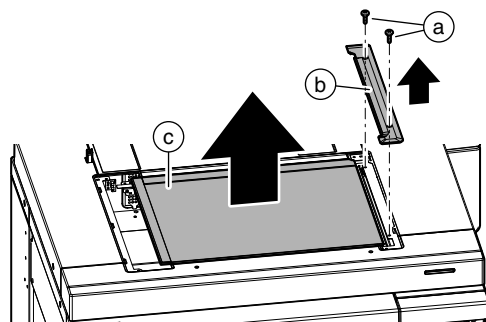


c. Sub scanning document size sensor

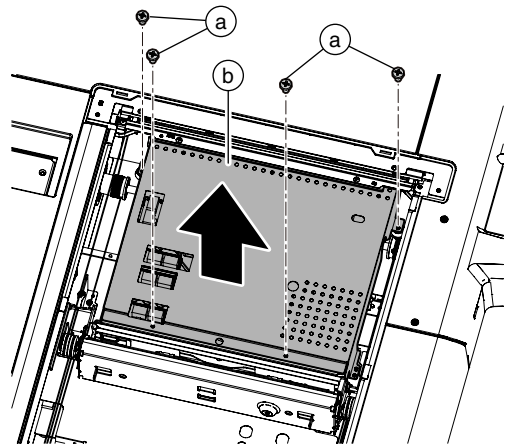
- 1) Open the DSPF unit (a).



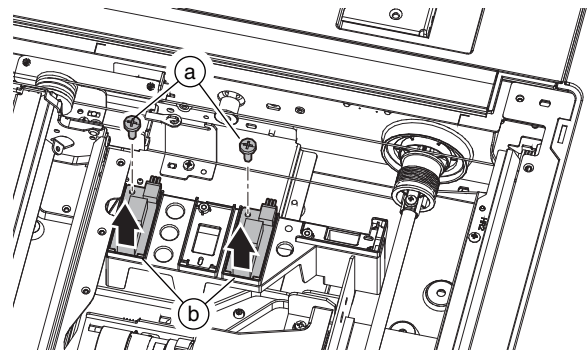
- 2) Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



- 3) Remove the screw (a), and remove the dark box cover (b).

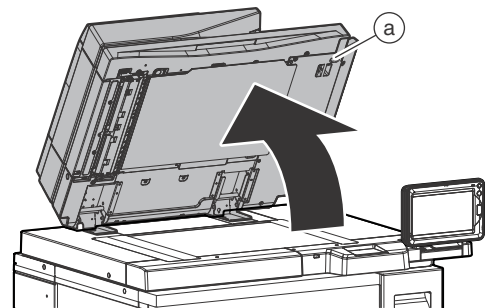


- 4) Remove the screw (a), and remove the sub scanning document size sensor (b).



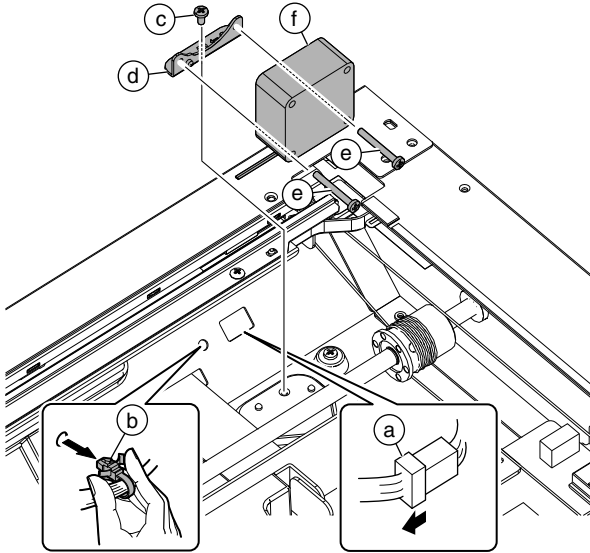
d. CCD cooling fan / CCD unit

- 1) Open the DSPF unit (a).

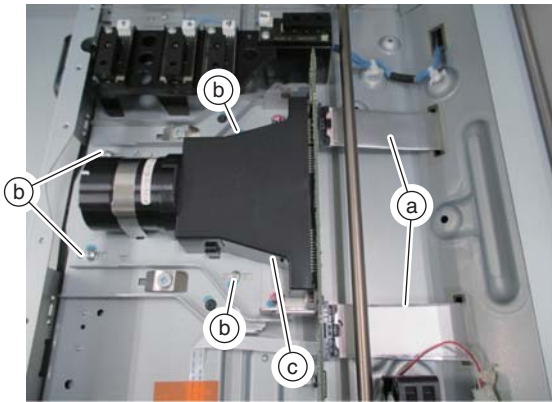


- 2) Remove the table glass holder and the table glass.

- 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).

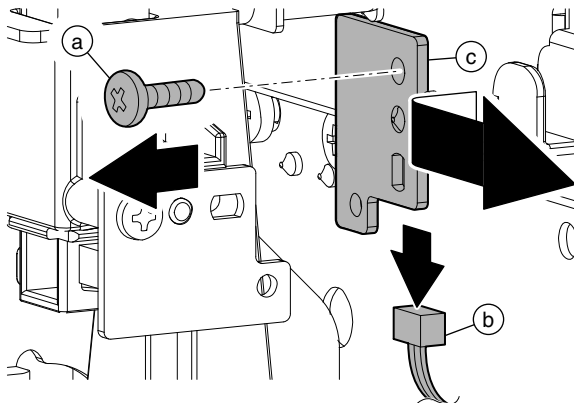


- 4) Remove the flat cable (a), and the screw (b). Remove the CCD unit (c).



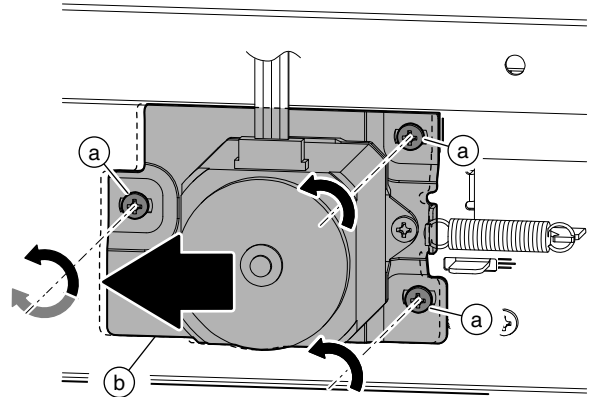
e. Scanner home position sensor

- 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).

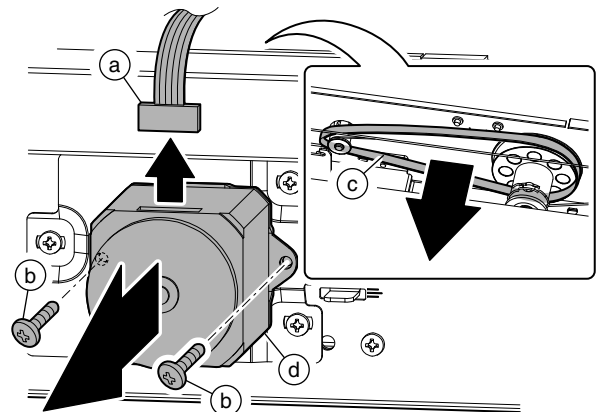


f. Scanner motor

- 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.

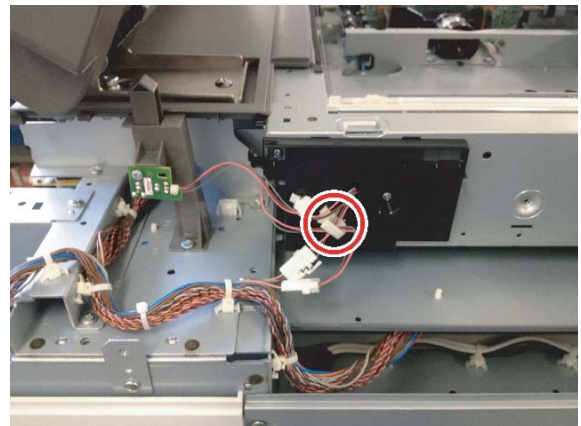


- 5) Disconnect the connector (a), and remove the screw (b). Remove the belt (c) and scanner motor (d).

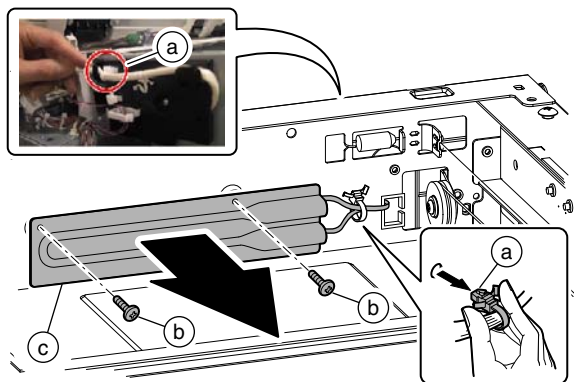


g. Scanner dehumidifying heater

- 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).



- Paper feed tray (Left): 1200 sheets
- Paper feed tray 2 (Right): 800 sheets
- Paper feed tray 3, 4: 500 sheets

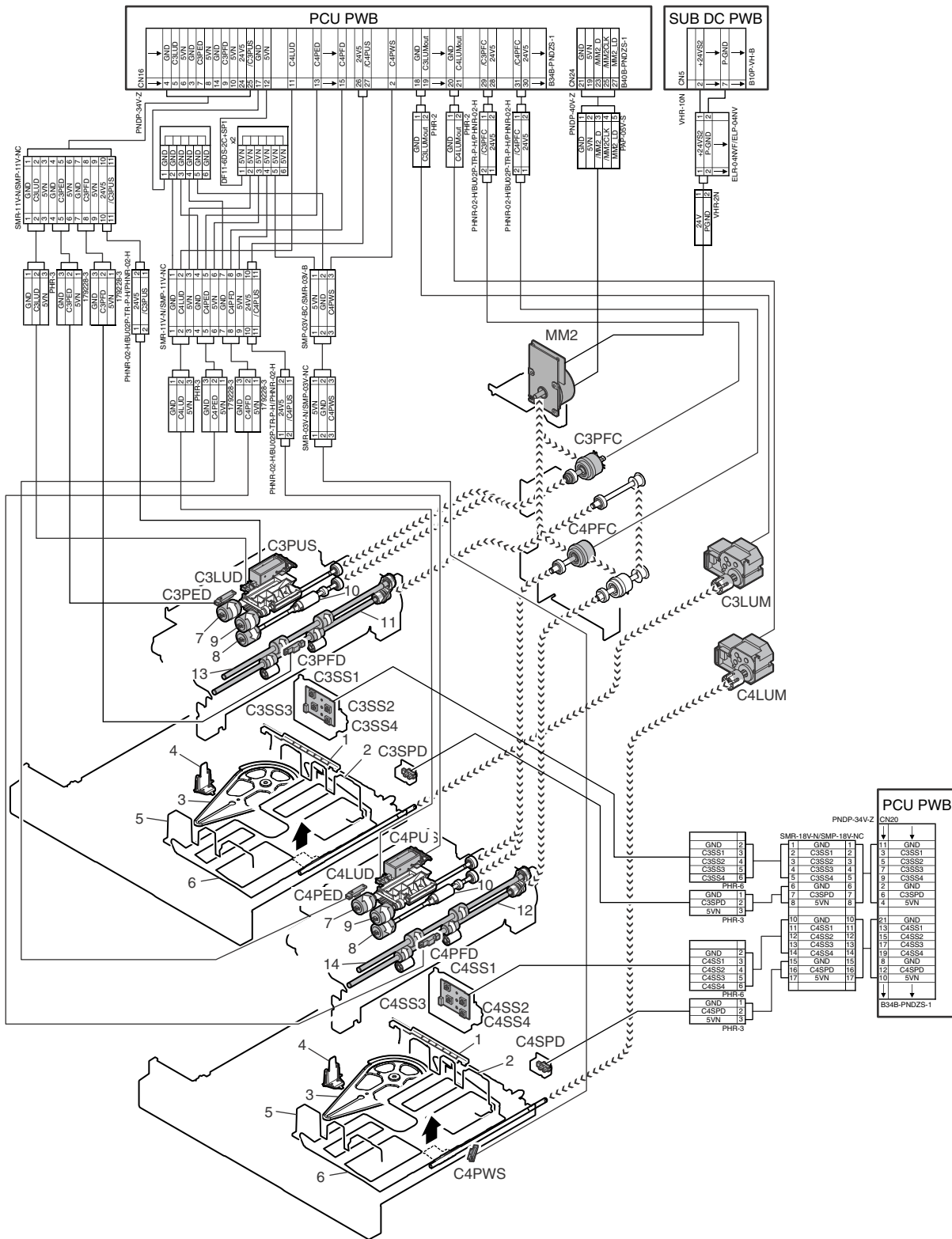
A. Paper feed tray 1 and 2 section



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).

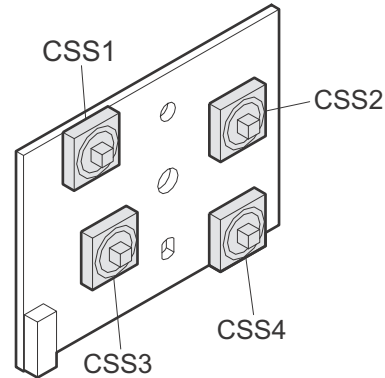
Width size detection pattern	Paper size	Standard value [mm]	Range [mm]
A	A3/A4	297.0	303.0 to 291.0
B	WLT/LT	279.4	285.4 to 273.4
C	B4/B5	257.0	263.0 to 251.0
D	LG/LTR/Foolscap	215.9	221.9 to 209.9
E	A4R	210.0	216.0 to 204.0
F	Exective-R	184.1	190.1 to 178.1
G	B5R	182.0	188.0 to 176.0

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

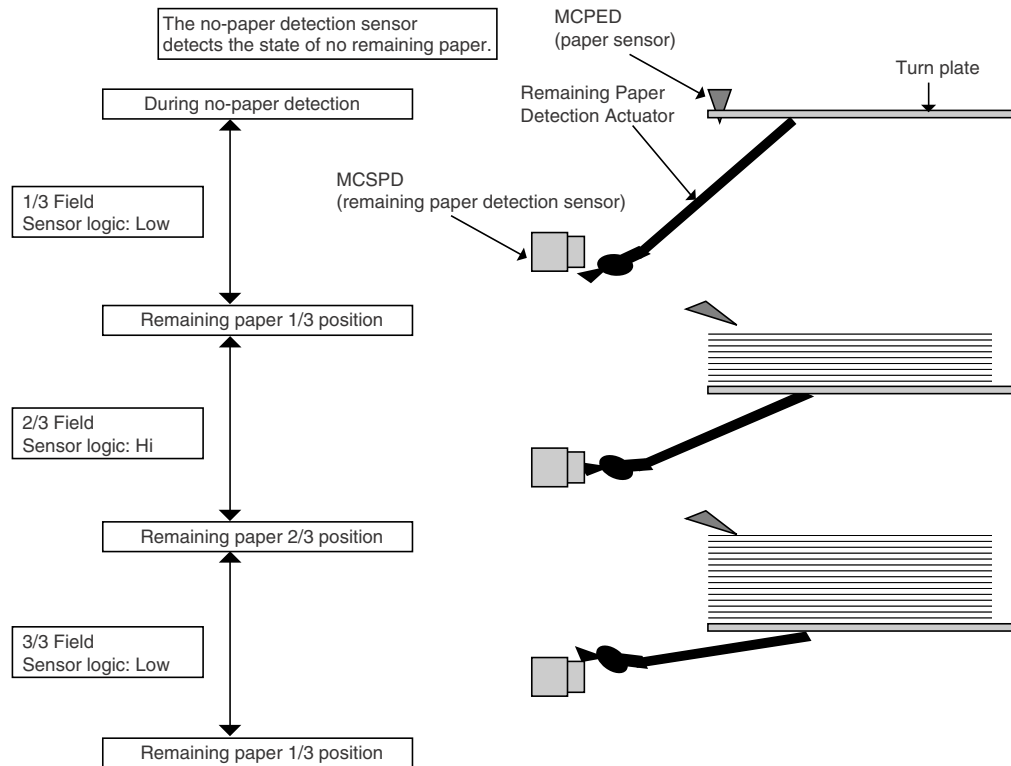
(1) Remaining paper detection

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.

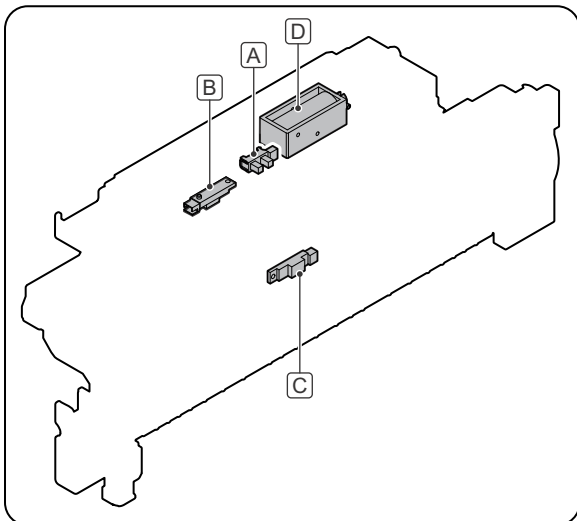
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



3. Disassembly and assembly

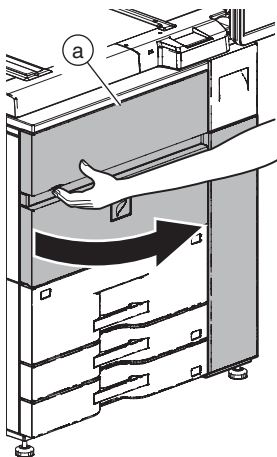
A. Tray 3, 4 paper feed unit

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	

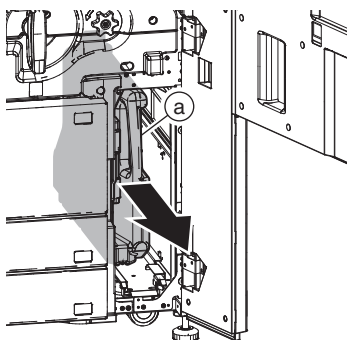


(1) Tray 3, 4 paper feed unit

- 1) Open the front cover (a).



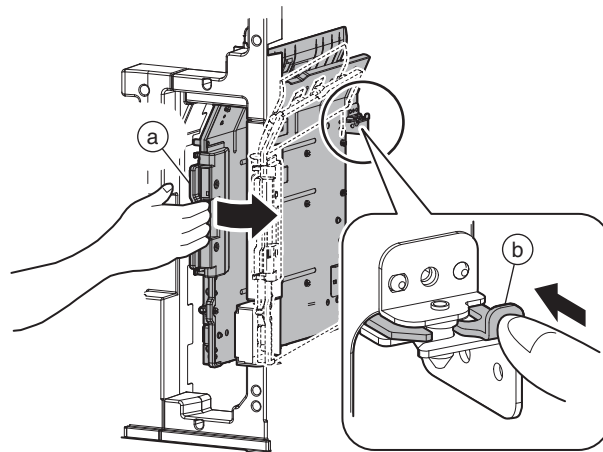
- 2) Remove the toner collection container (a).



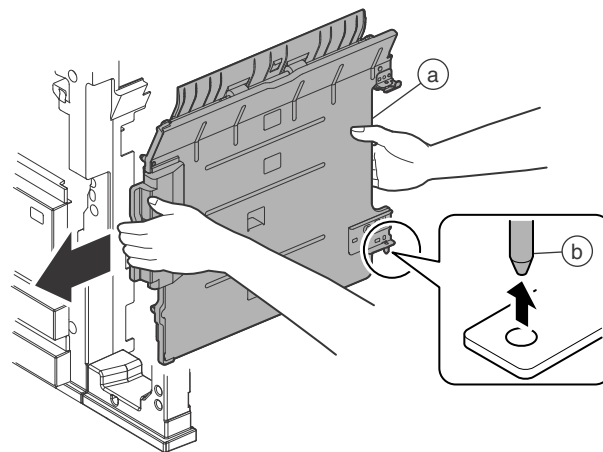
- 3) Remove the right cabinet center.

* The following procedure can be performed without removing the right cabinet center. However, the procedure is easier when the right lower cabinet is removed.

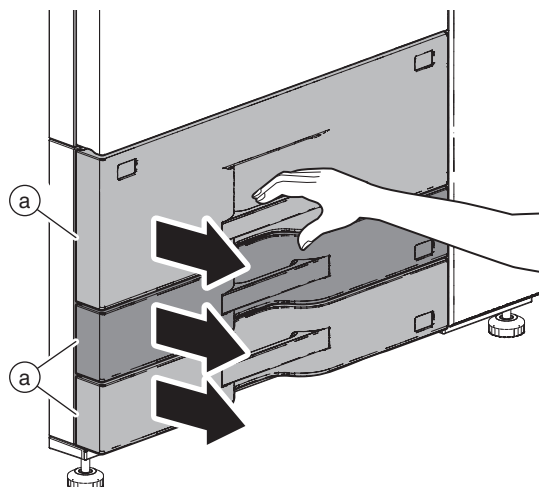
- 4) Open the vertical transport door unit (a). Push the lever (b) to release the lock of the vertical transport door unit (a).



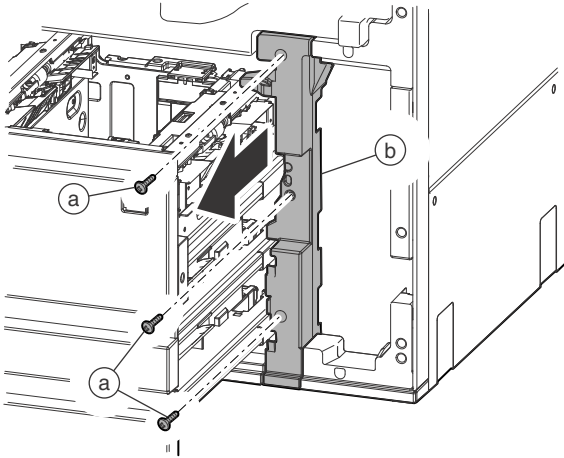
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



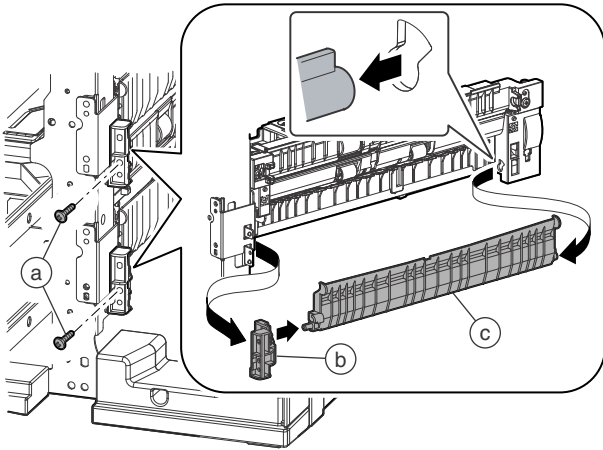
- 6) Pull out all paper feed tray (a).



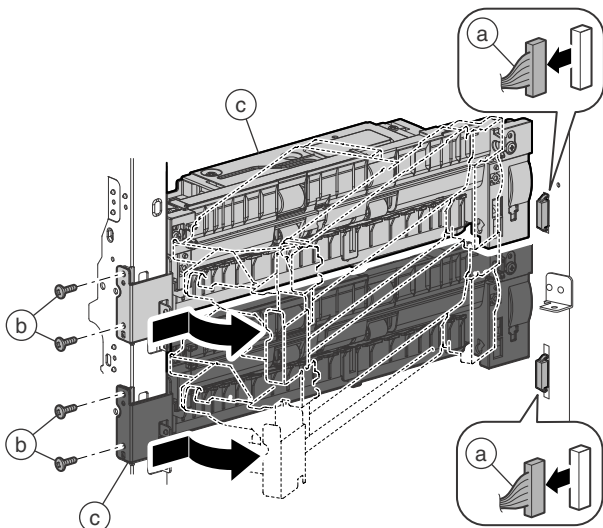
- 7) Remove the screw (a), and remove the cover (b).



- 8) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).

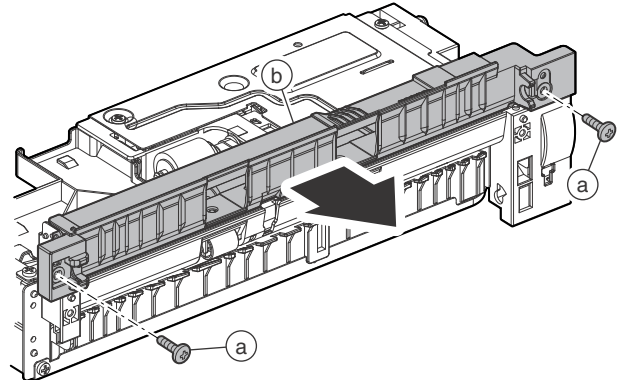


- 9) Disconnect the connector (a). Remove the screw (b), and remove the tray 3, 4 paper feed unit (c).

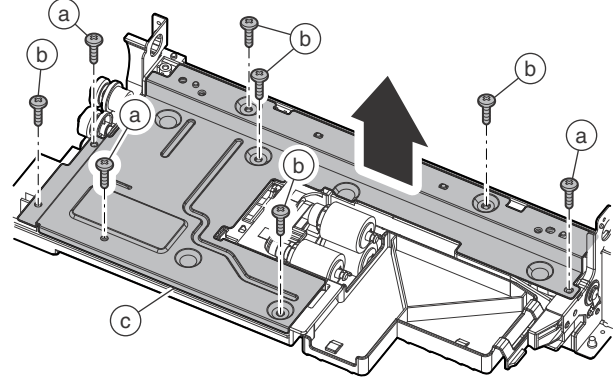


- a. Cassette 3, 4 upper limit detection / Cassette 3, 4 paper empty detection / Cassette 3, 4 paper entry detection / Cassette 3, 4 paper pickup solenoid

- 1) Remove the tray 3, 4 paper feed unit.
- 2) Remove the screw (a), and remove the paper guide (b).

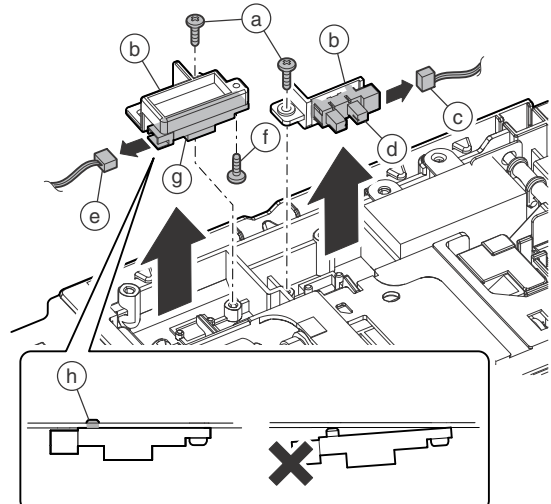


- 3) Remove the screw (a) and the screw (b). Remove the cover (c).



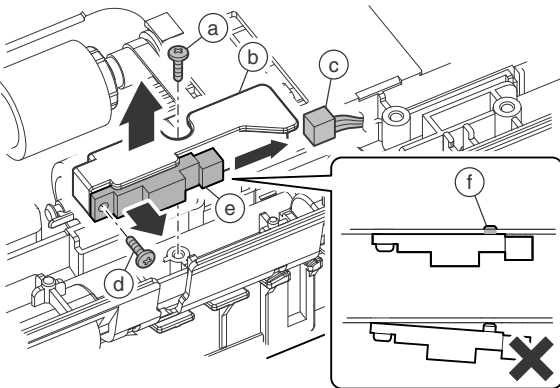
- 4) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the cassette 3, 4 upper limit detection (d). Disconnect the connector (e), and remove the screw (f). Remove the cassette 3, 4 paper empty detection (g).

* When installing the sensor, check that the boss (h) of the sensor is securely engaged, and then fix it with the screw.



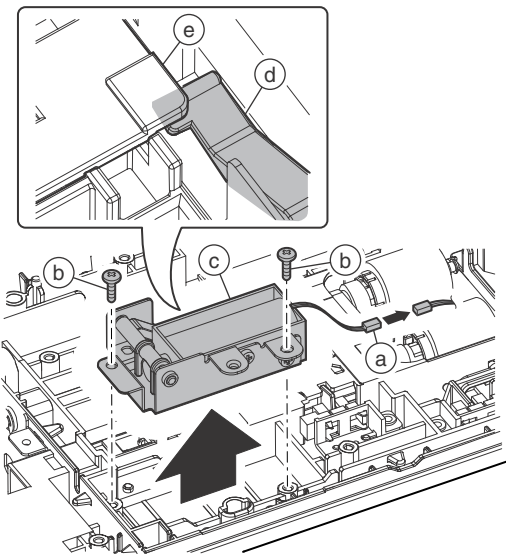
- 5) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the screw (d). Remove the cassette 3, 4 paper entry detection (e).

* When installing the sensor, check that the boss (f) of the sensor is securely engaged, and then fix it with the screw.



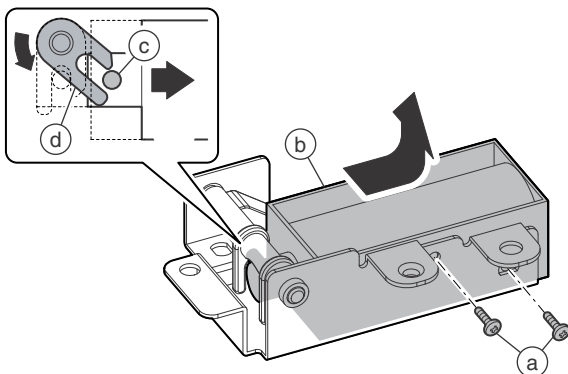
- 6) Disconnect the connector (a), and remove the screw (b). Remove the cassette 3, 4 paper pickup solenoid unit (c).

* When installing, arrange so that the arm (d) comes under the holder (e).



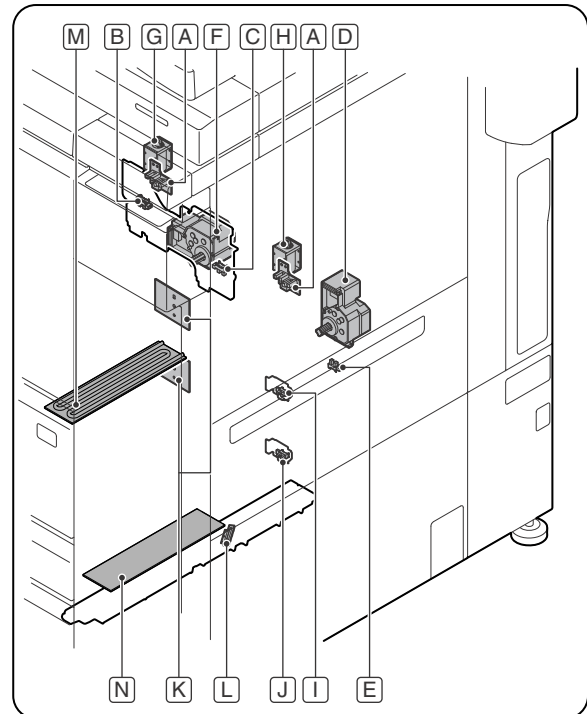
- 7) Remove the screw (a), and remove the tray 3, 4 paper pickup solenoid (b).

* When installing, check that the pin (c) of the solenoid is securely engaged in the arm (d).



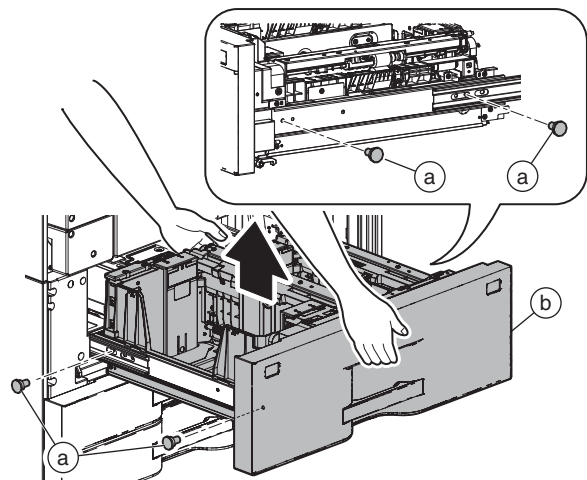
B. Others

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	E - 12/(4)
H	Cassette 2 paper pickup solenoid	
I	Cassette 3 remaining quantity detection	E - 13/(5)
J	Cassette 4 remaining quantity detection	
K	Size detection PWB	E - 13/(6)
L	Cassette 4 width detection	
M	Dehumidifying heater (Paper feed tray 1, 2)	E - 14/(7)
N	Dehumidifying heater (Paper feed tray 3, 4)	

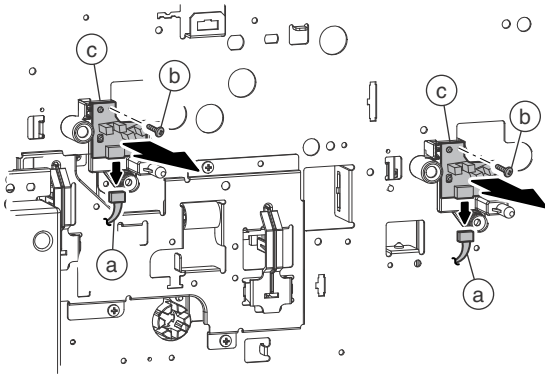


- (1) Tandem sensor PWB / Cassette 1 remaining quantity detection / Cassette 2 remaining quantity detection

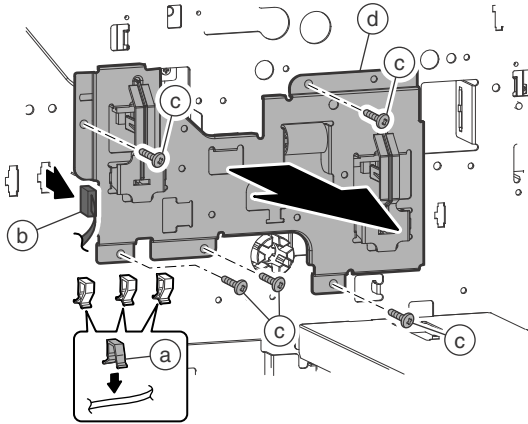
- 1) Remove the screw (a), and remove the tray 1, 2 (b).



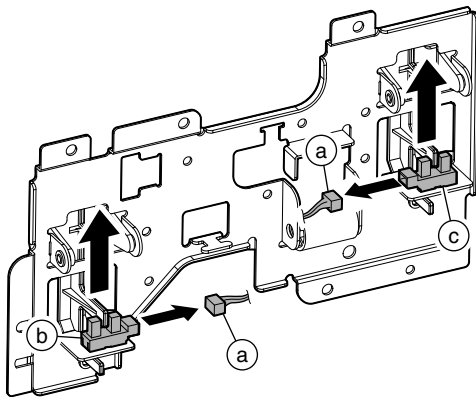
- 2) Disconnect the connector (a), and remove the screw (b). Remove the tandem sensor PWB (c).



- 3) Open the wire saddle (a), and disconnect the connector (b). Remove the screw (c), and remove the lock arm unit (d).

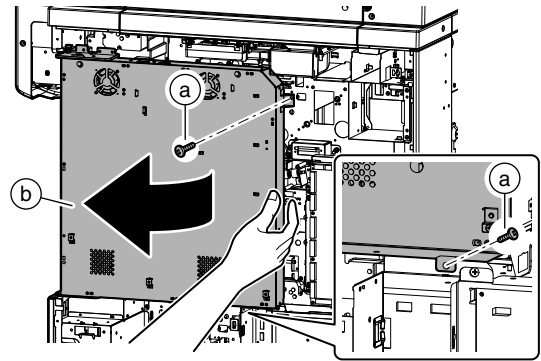


- 4) Disconnect the connector (a), and remove the cassette 1 remaining quantity detection (b) and the cassette 2 remaining quantity detection (c).

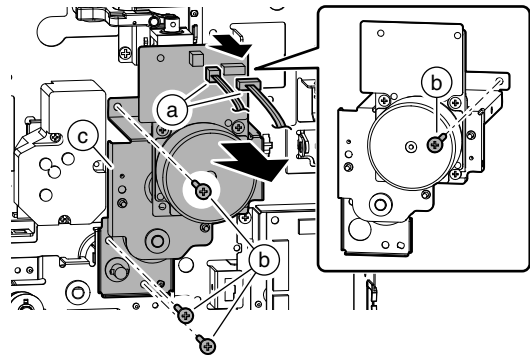


(2) Paper lift motor (Tray 2) / Tandem presence detection

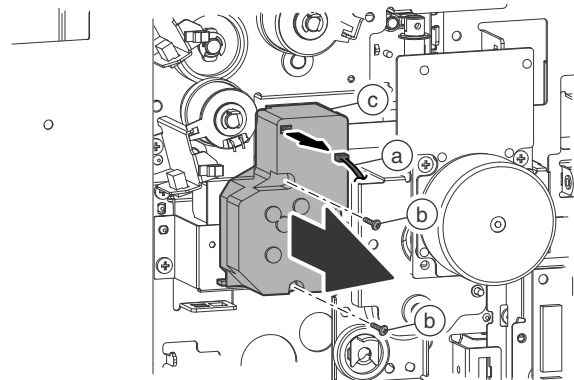
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



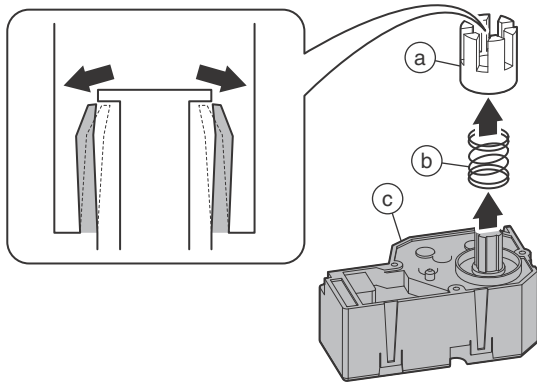
- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).



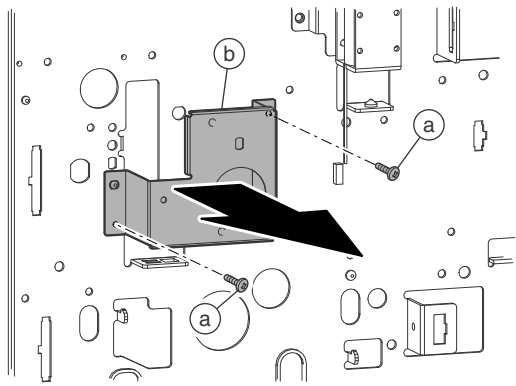
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 2) (c).



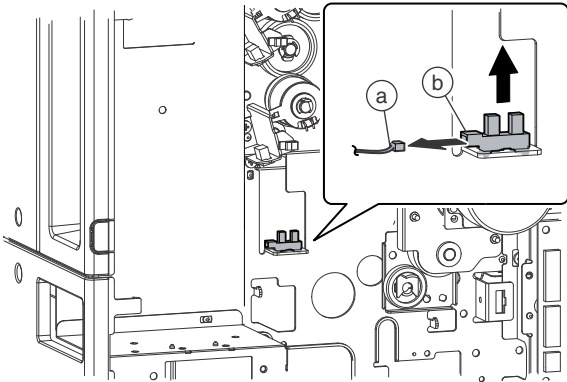
- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).



- 6) Remove the screw (a), and remove the mounting plate (b).

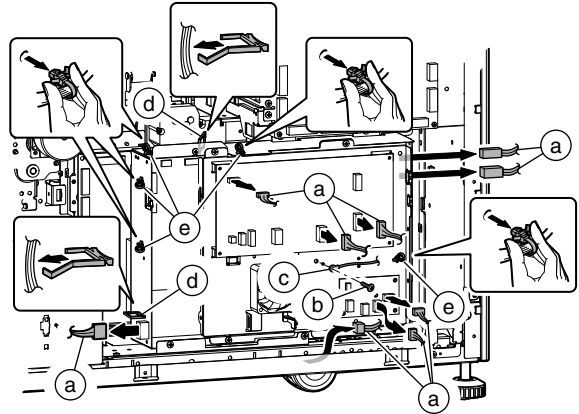


- 7) Disconnect the connector (a), and remove the tandem presence detection (b).

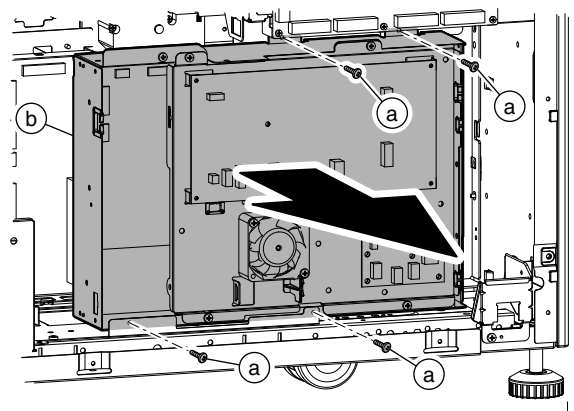


(3) Paper lift motor (Tray 1)

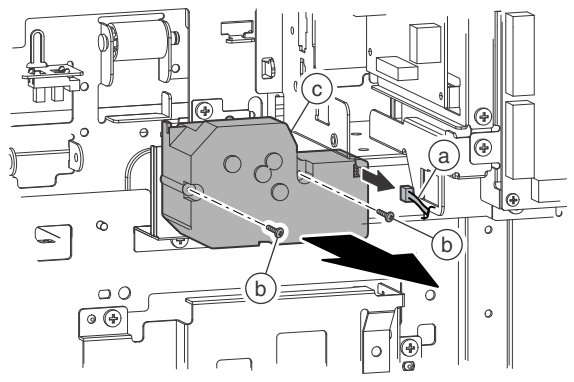
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Disconnect the connector (a), and remove the screw (b), and the earth wire (c). Open the edge saddle (d), and remove the snap band (e).



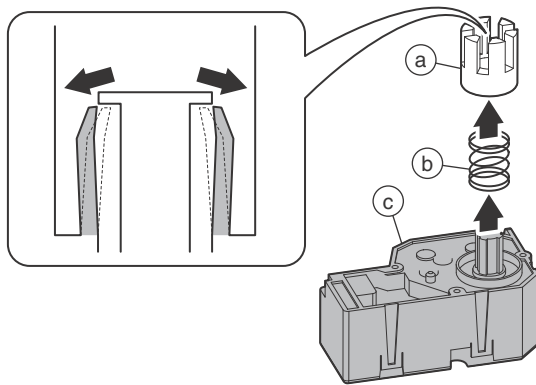
- 3) Remove the screw (a), and remove the AC-OP power unit (b).



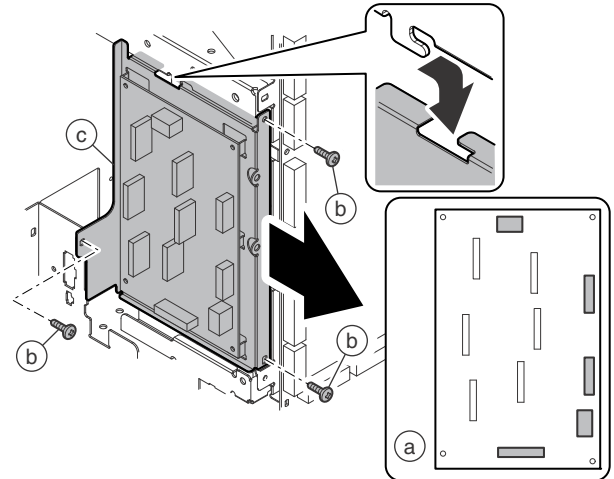
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 1) (c).



- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

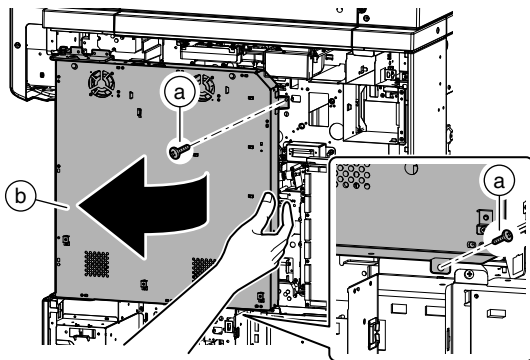


- 4) Disconnect the connector (a). Remove the screw (b), and remove the driver PWB (paper exit) unit (c).

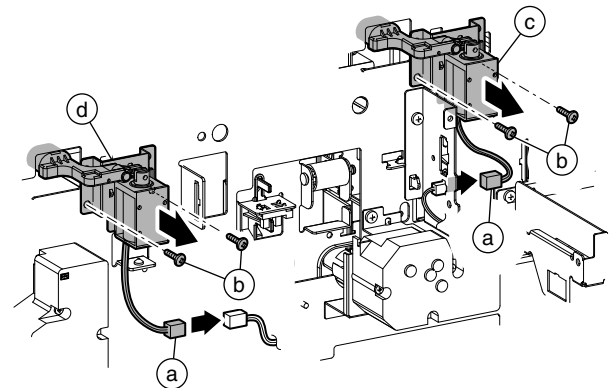


(4) Cassette 1 paper pickup solenoid / Cassette 2 paper pickup solenoid

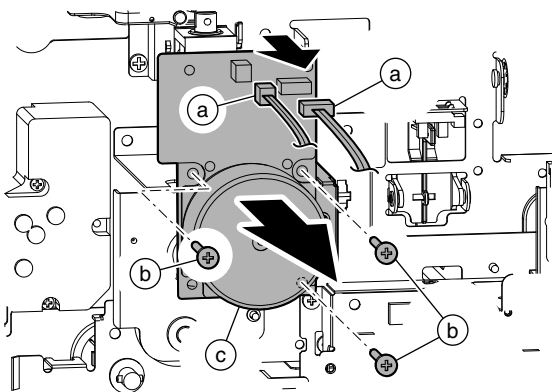
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



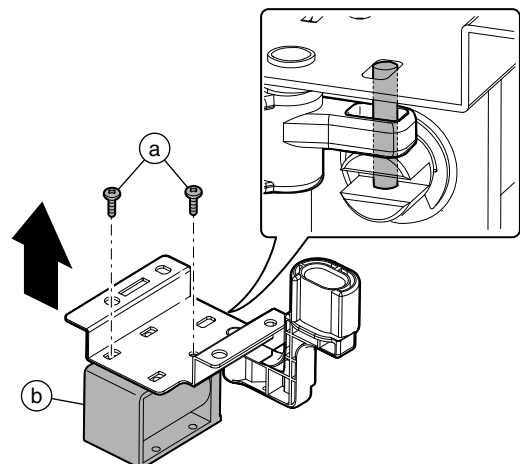
- 5) Disconnect the connector (a), and remove the screw (b). Remove the cassette 1 paper pickup solenoid unit (c) and the cassette 2 paper pickup solenoid unit (d).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).

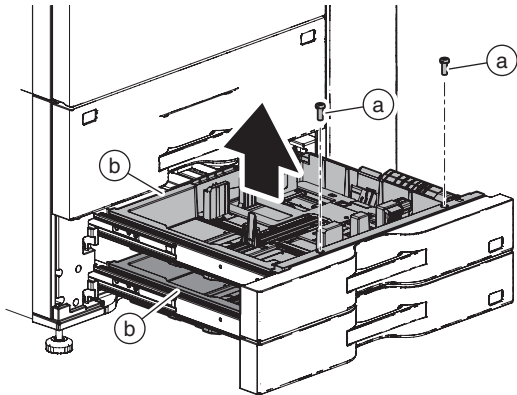


- 6) Remove the screw (a), and remove the cassette 1 and 2 paper pickup solenoid (b).

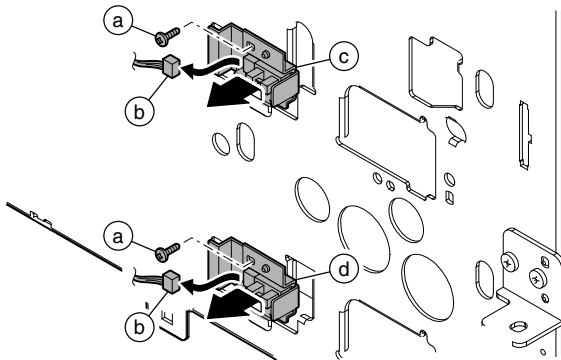


**(5) Cassette 3 remaining quantity detection /
Cassette 4 remaining quantity detection /
Size detection PWB**

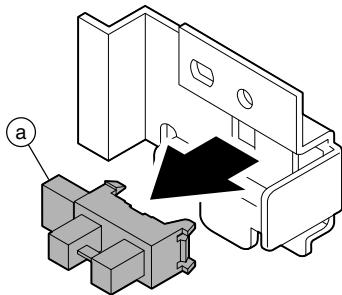
- 1) Remove the screw (a), and remove the trays 3 and 4 (b).



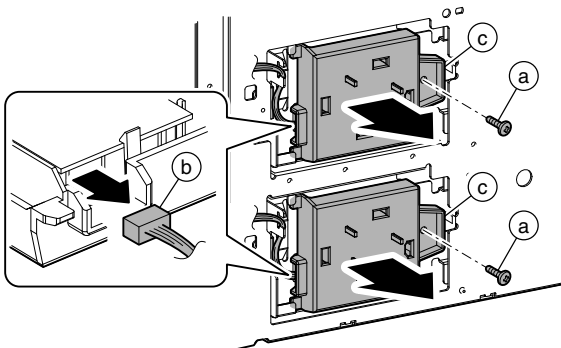
- 2) Remove the screw (a), and disconnect the connector (b).
Remove the cassette 3 remaining quantity detection unit (c)
and the cassette 4 remaining quantity detection unit (d).



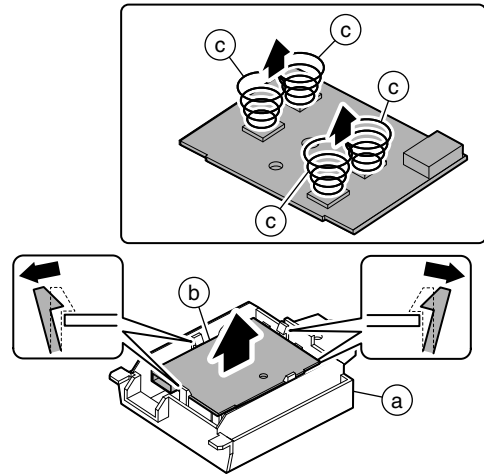
- 3) Remove the cassette 3 and 4 remaining quantity detection (a).



- 4) Remove the screw (a), and disconnect the connector (b).
Remove the size detection PWB unit (c).

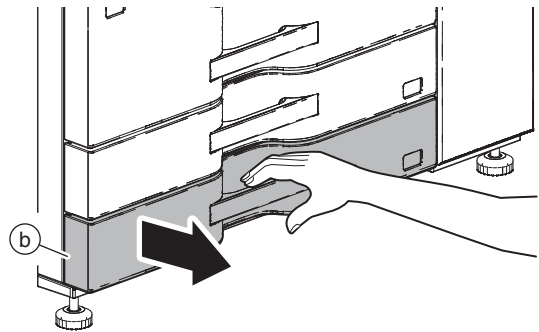


- 5) Remove the size detection PWB (b) from the holder (a).
Remove the spring (c).

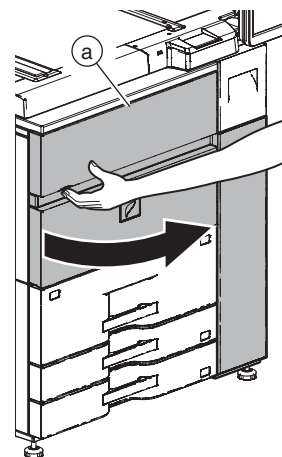


(6) Cassette 4 width detection

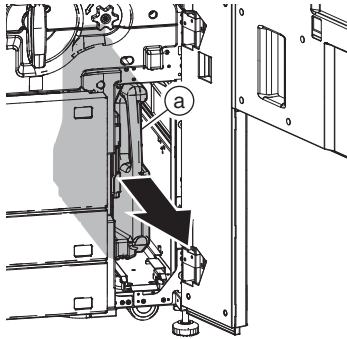
- 1) Remove the right cabinet center.
2) Pull out the tray 4 (a).



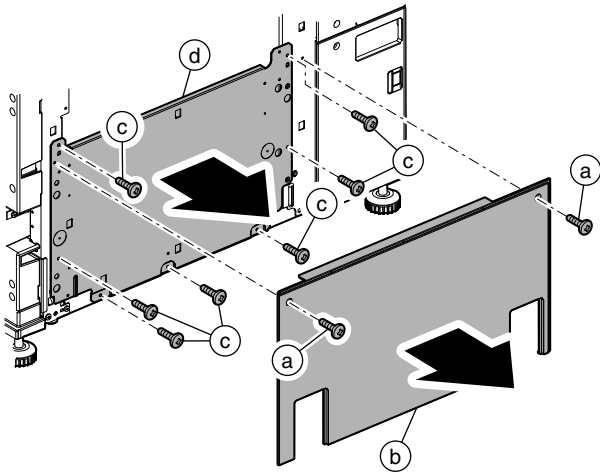
- 3) Open the front cover (a).



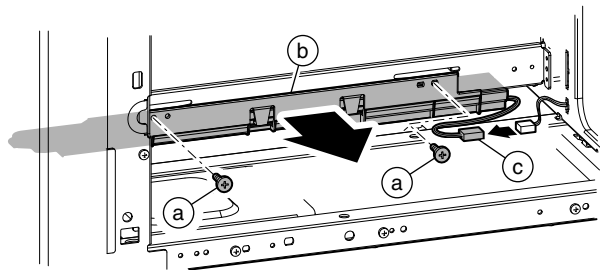
4) Remove the toner collection container (a).



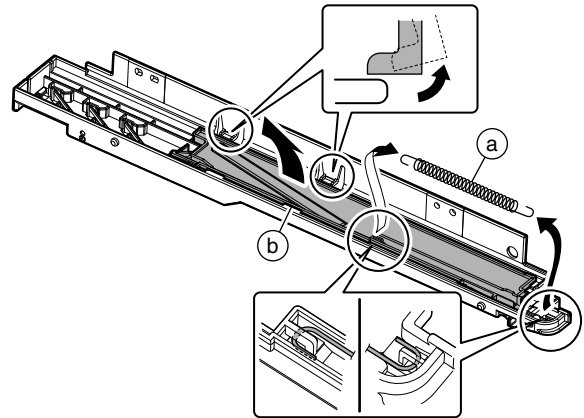
5) Remove the screw (a), and remove the cabinet (b). Remove the screw (c), and remove the plate (d).



6) Remove the screw (a), and remove the holder (b). Disconnect the connector (c).

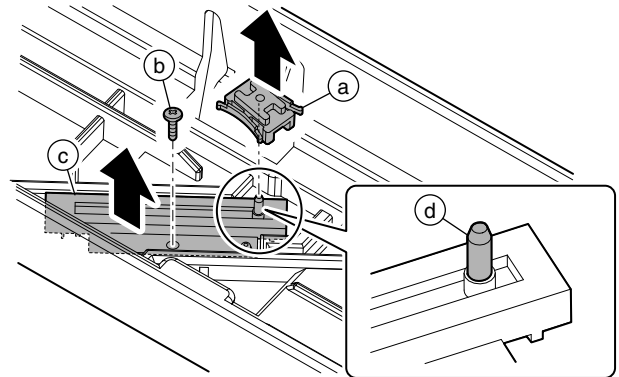


7) Remove the spring (a). Remove the mounting plate (b).



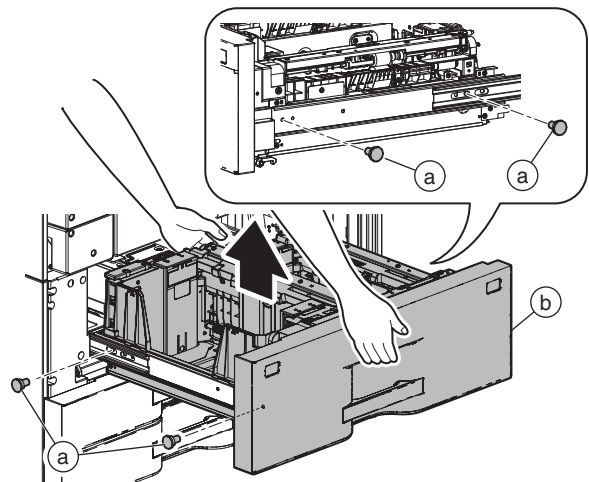
8) Remove the arm (a). Remove the screw (b), and remove the cassette 4 width detection (c).

* When installing, insert the projection (d) of the cassette 4 width detection into the arm.

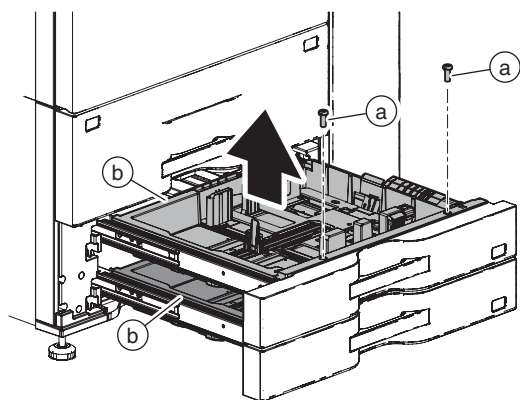


(7) Dehumidifying heater (Paper feed tray 1, 2) / Dehumidifying heater (Paper feed tray 3, 4)

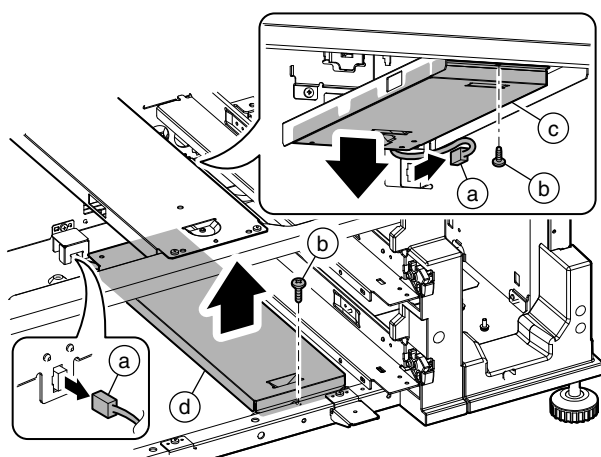
1) Remove the screw (a), and remove the tray 1, 2 (b).



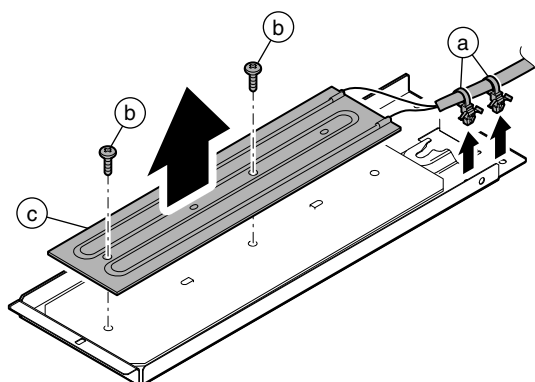
- 2) Remove the screw (a), and remove the trays 3 and 4 (b).



- 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).



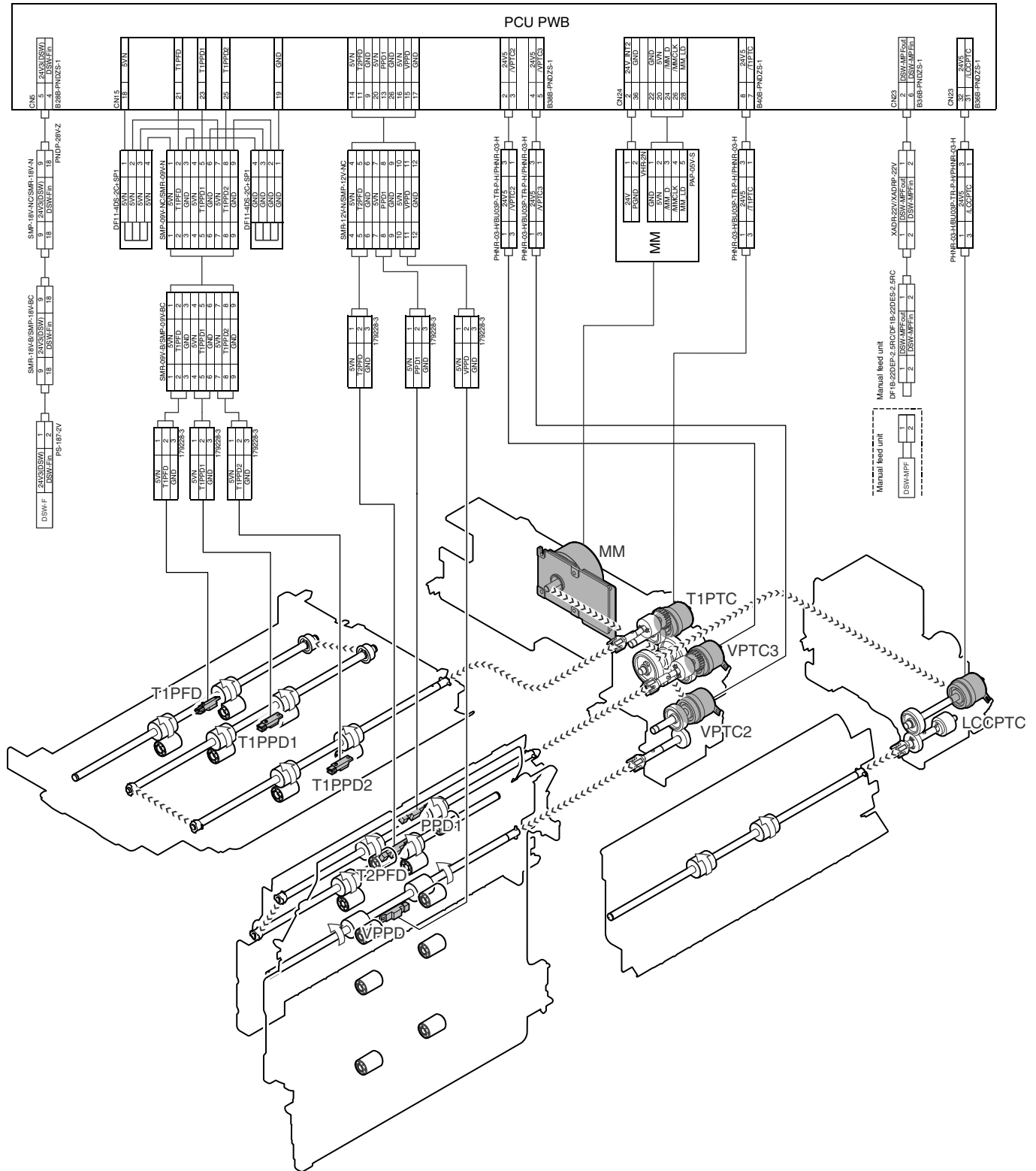
- 4) Remove the snap band (a). Remove the screw (b), and remove the dehumidifying heater (c).



[F] PAPER TRANSPORT SECTION

1. Electrical and mechanism relation diagram

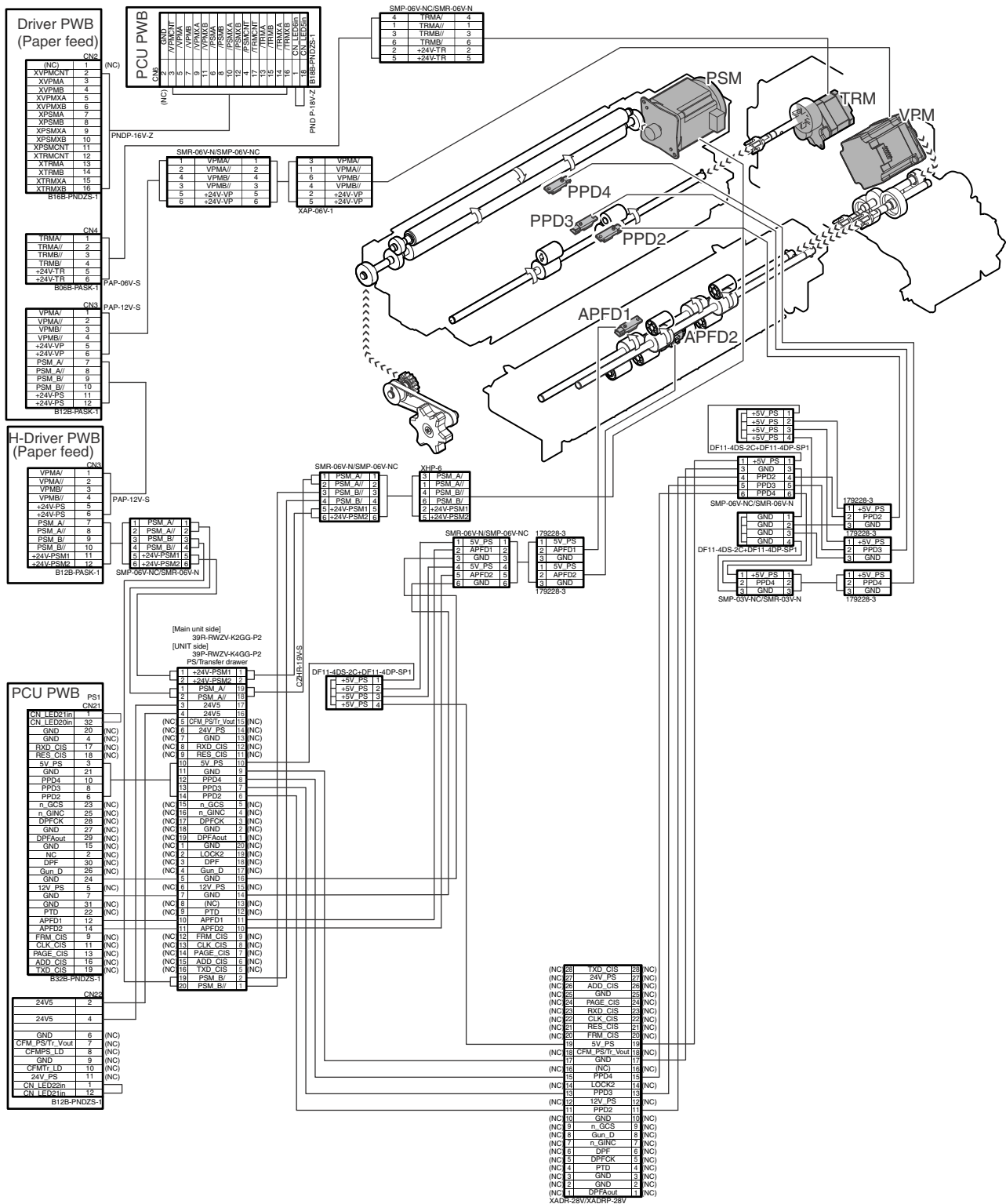
A. Paper pass / Vertical transport / LCC interface transport section



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



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.
PPD2	Transport detection 2	Reflection type	Detects paper transport in the transport path.

Signal name	Name	Type	Function/Operation
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.
TRM	Transport motor	Stepping motor	Drives the transport roller.
VPM	Vertical transport motor	Stepping motor	Drives the vertical transport roller.

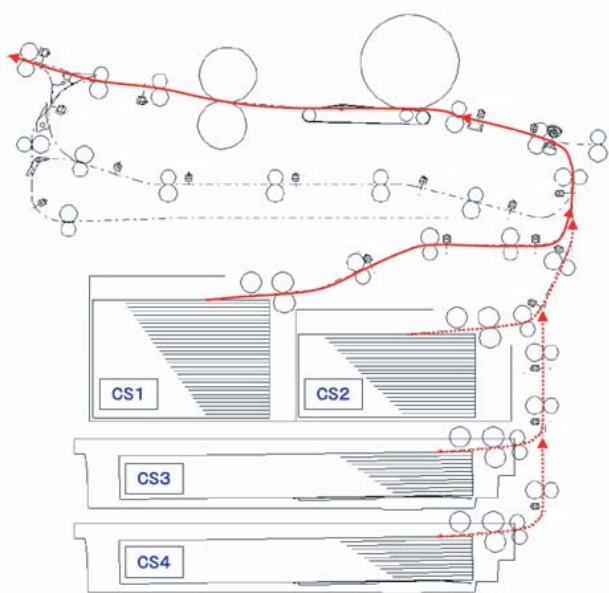
2. Operational descriptions

A. Outline

The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

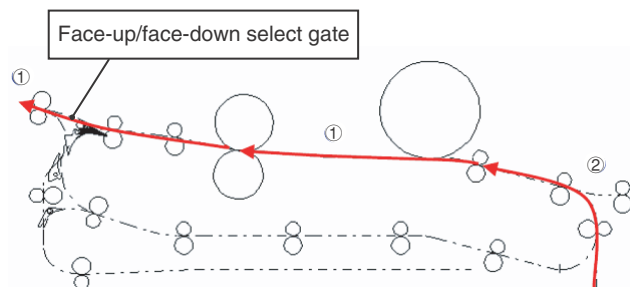
Paper from paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

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.



B. Paper transport operation

Straight-Through Path (No Inversion, No Duplexing)



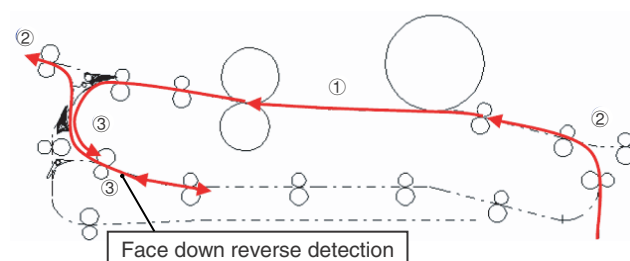
The paper transported from the each tray section is sent to the paper exit roller (which is driven by the paper exit motor (POM)) with the transport roller.

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

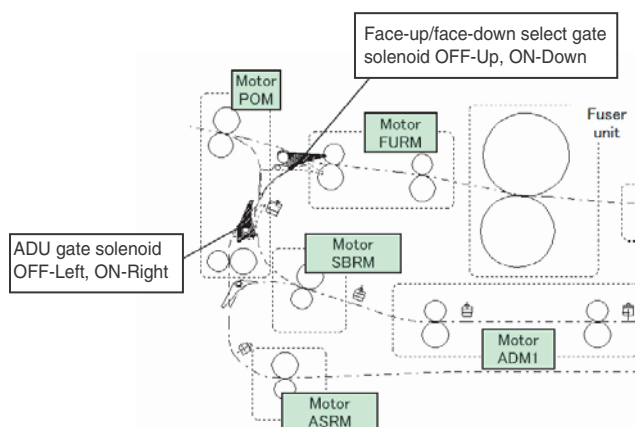
Inversion Path (Face-down Output, No Duplexing)



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.

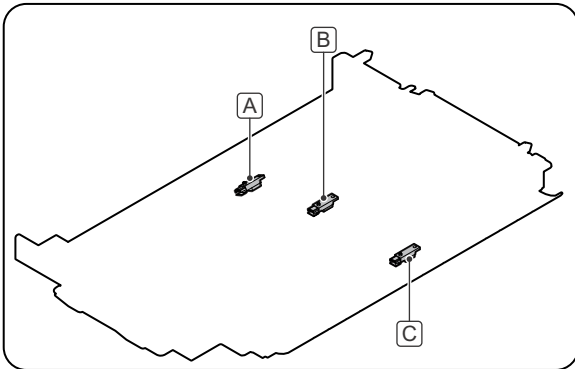
When the specified time has passed from detection of the paper lead edge by Face down reverse detection, Paper exit reverse motor (SBRM) rotates reverse direction in the specified time. (The rotation time differs depending on the paper size.)



3. Disassembly and assembly

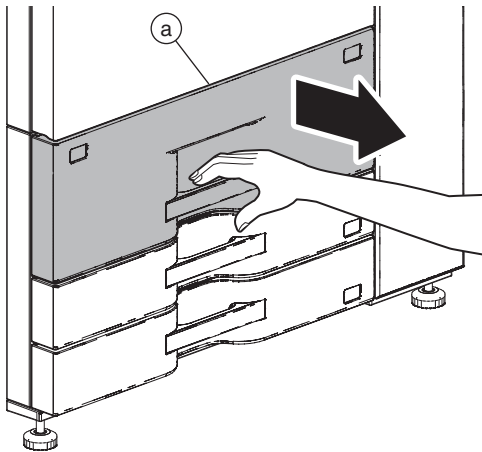
A. Paper pass unit

Unit	Parts	Page
Paper pass unit	A Cassette 1 paper entry detection	F - 4/a
	B Cassette 1 transport detection 1	
	C Cassette 1 transport detection 2	

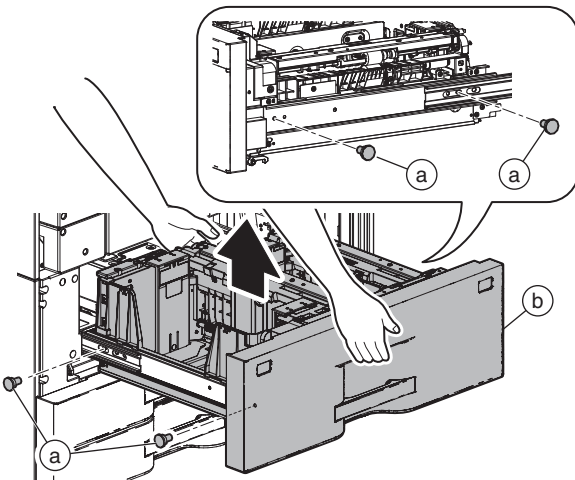


(1) Paper pass unit

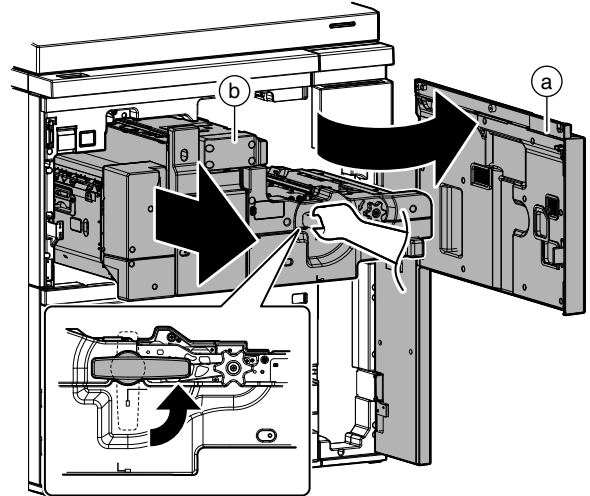
- 1) Pull out the tray 1, 2 (a).



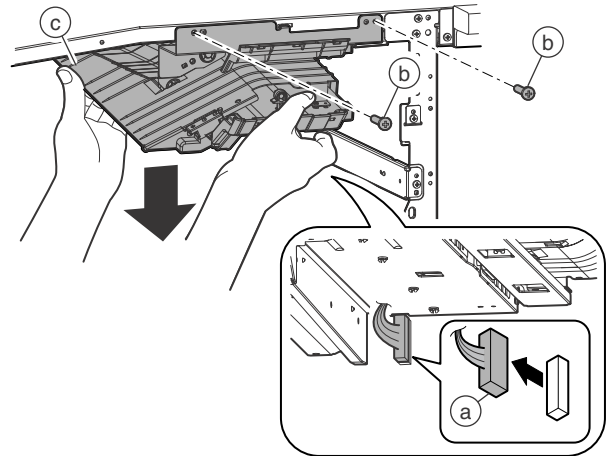
- 2) Remove the screw (a), and remove the tray 1, 2 (b).



- 3) Open the front cover (a), and pull out the intermediate frame (b).

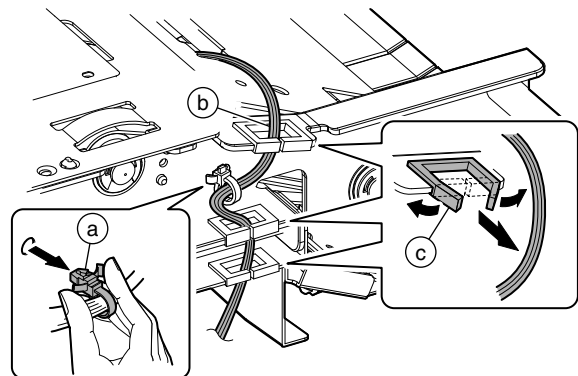


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper pass unit (c).

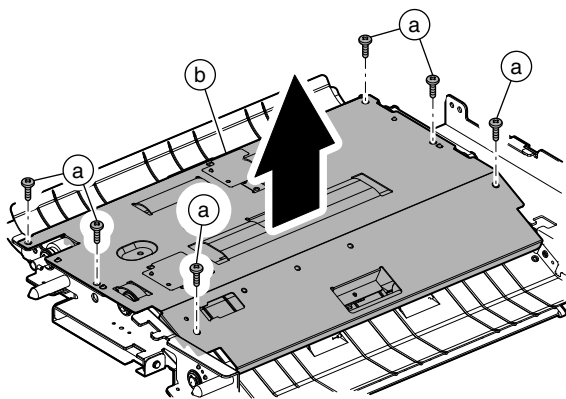


a. Cassette 1 paper entry detection / Cassette 1 transport detection 1 / Cassette 1 transport detection 2

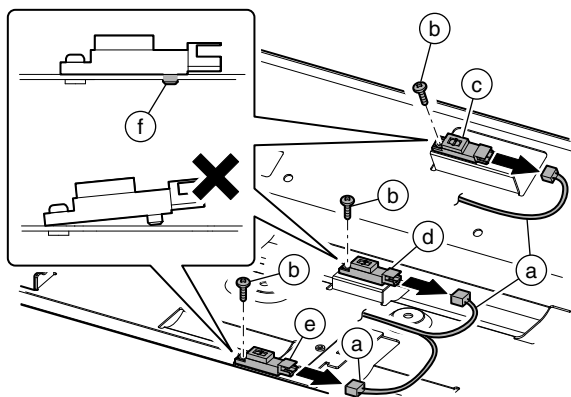
- 1) Remove the paper pass unit.
- 2) Remove the snap band (a). Remove the harness (b) from the harness holder (c).



3) Remove the screw (a), and remove the frame (b).

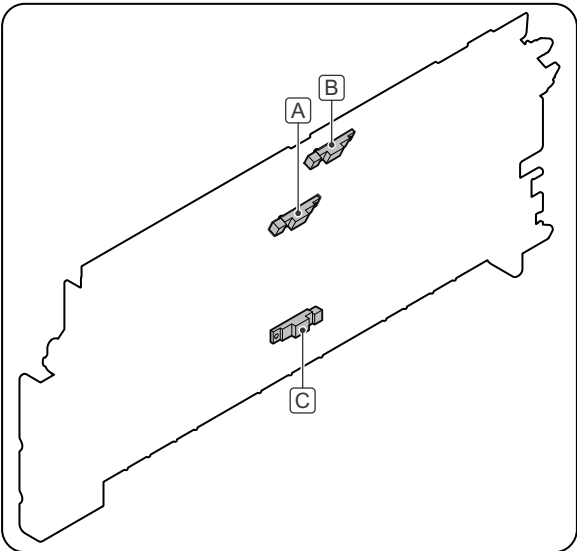


4) Disconnect the connector (a), and screw (b). Remove the cassette 1 paper entry detection (c), the cassette 1 transport detection 1 (d) and the cassette 1 transport detection 2 (e).
* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.



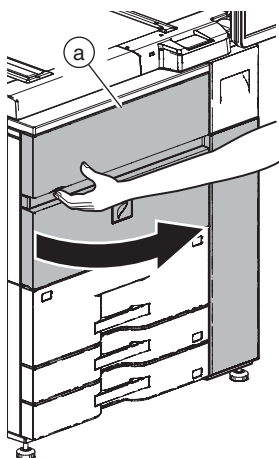
B. Vertical transport unit

Unit	Parts	Page
Vertical transport unit	A Cassette 2 paper entry detection	F - 6 / a
	B Transport detection 1	
	C Vertical transport detection	F - 7 / b

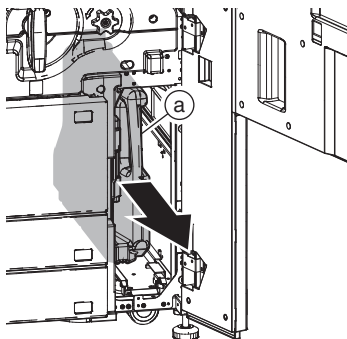


(1) Vertical transport unit

1) Open the front cover (a).



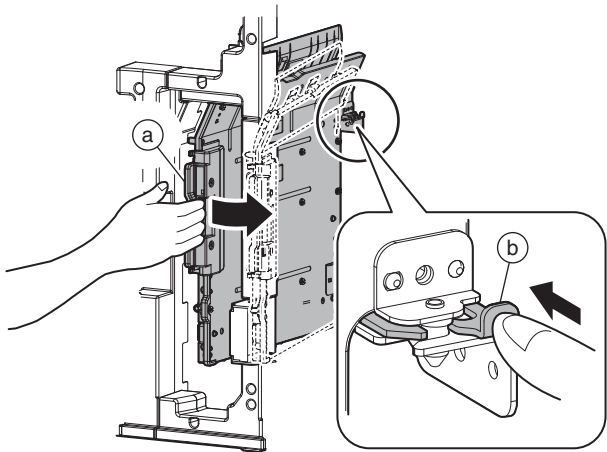
2) Remove the toner collection container (a).



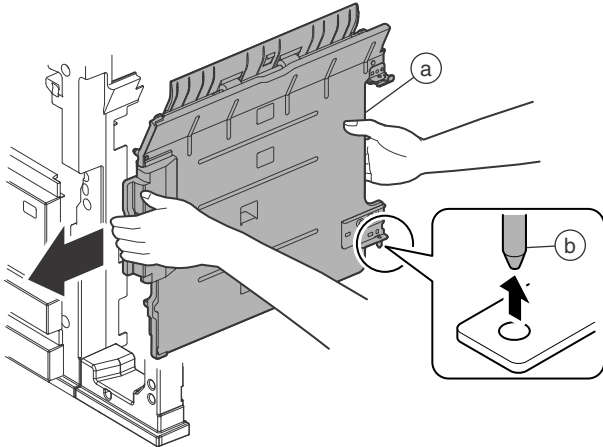
3) Remove the right cabinet middle.

* The following procedures can be performed without removing the right cabinet middle. However, it is advisable to remove it for easier work.

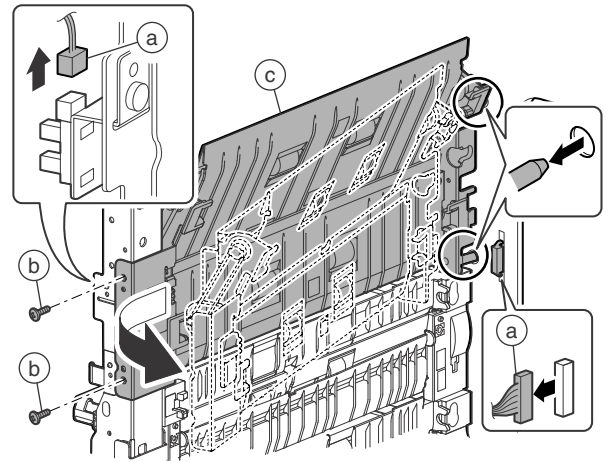
4) Open the vertical transport door unit (a). Release the lock of the vertical transport door unit (a) by pushing the lever (b).



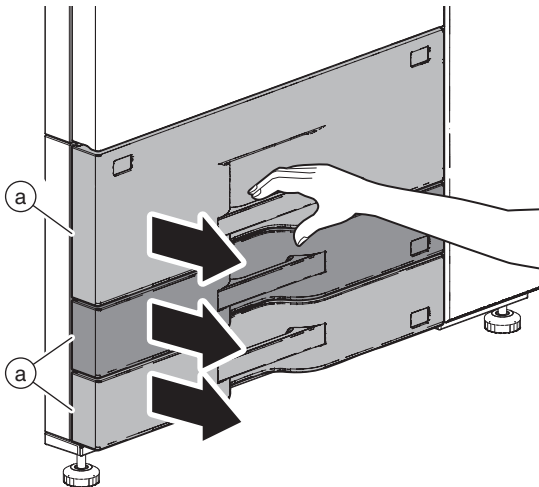
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



- 8) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport unit (c).

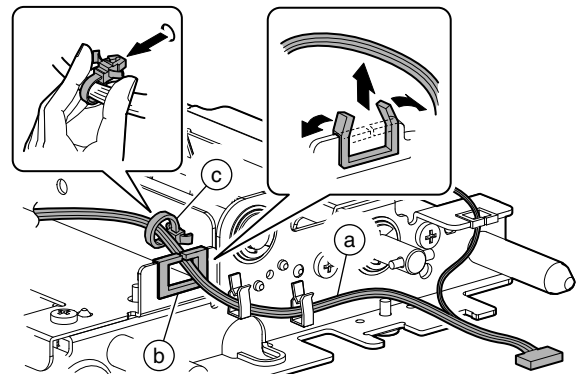


- 6) Pull out all paper feed tray (a).

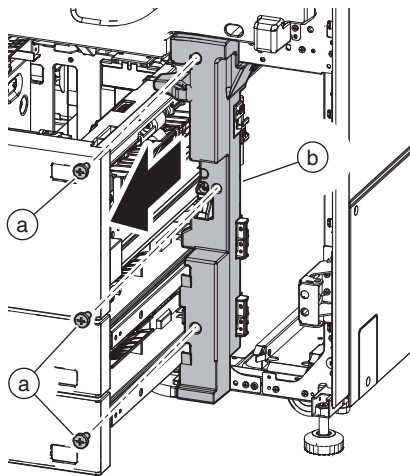


a. Cassette 2 paper entry detection / Transport detection 1

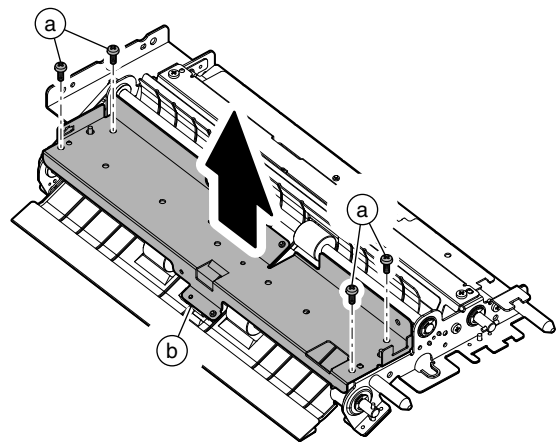
- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



- 7) Remove the screw (a), and remove the cover (b).

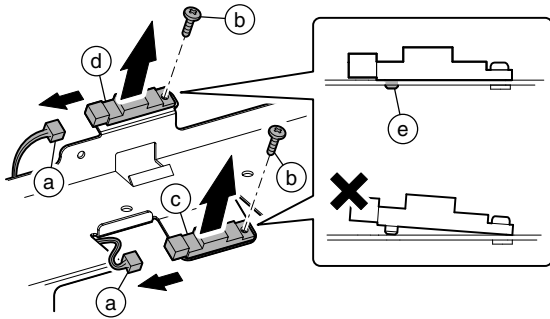


- 3) Remove the screw (a), and remove the frame (b).



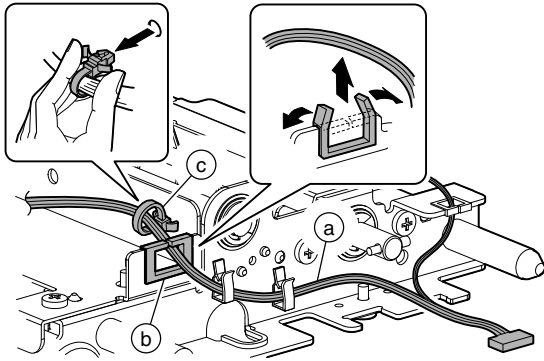
- 4) Disconnect the connector (a), and remove the screw (b). Remove the cassette 2 paper entry detection (c) and the transport detection 1 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.

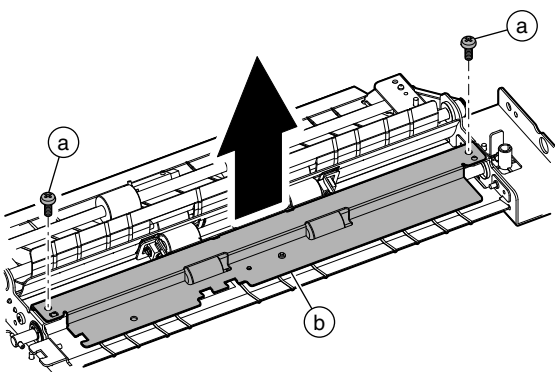


b. Vertical transport detection

- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).

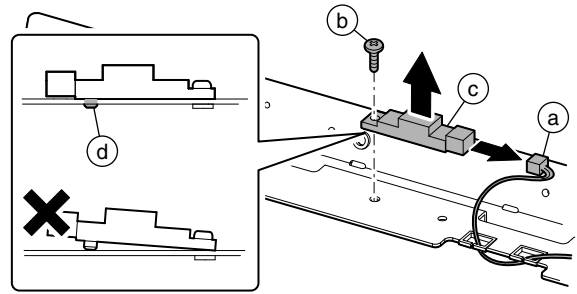


- 3) Remove the screw (a), and remove the frame (b).



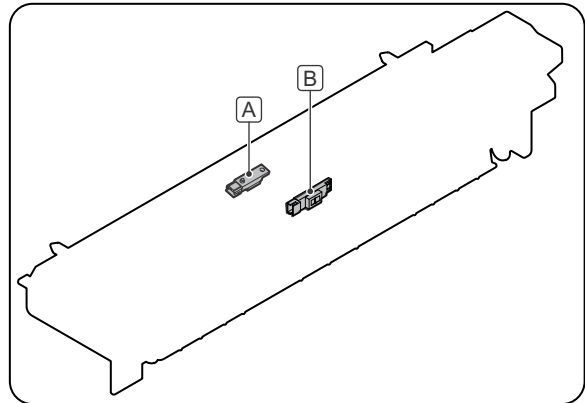
- 4) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport detection 1 (c).

* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



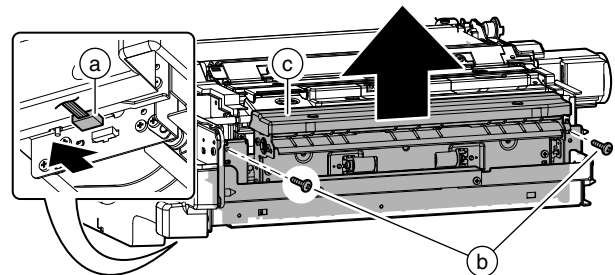
C. Upper transport unit

Unit	Parts		Page
Upper transport unit	A	ADU paper entry detection 1	F - 8 / a
	B	ADU paper entry detection 2	



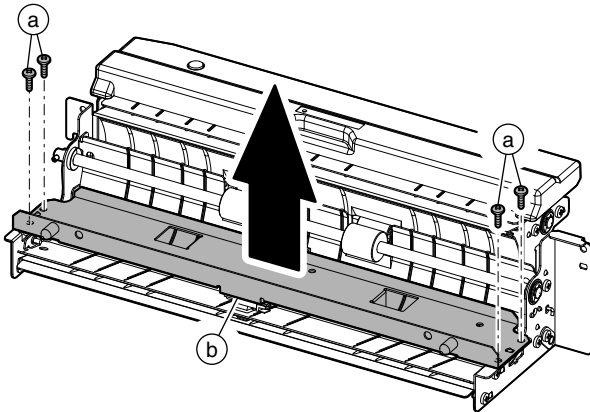
(1) Upper transport unit

- 1) Remove the PS roller unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



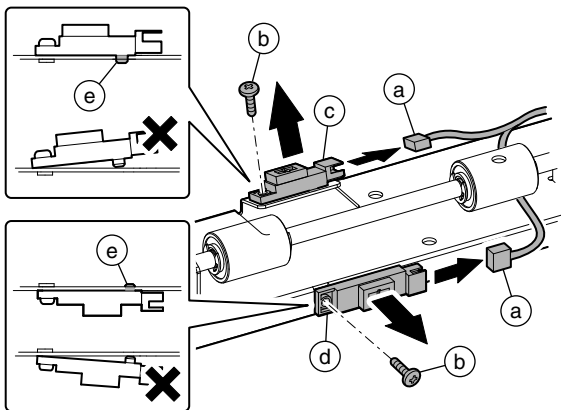
a. ADU paper entry detection 1 / ADU paper entry detection 2

- 1) Remove the PS roller unit.
- 2) Remove the upper transport unit.
- 3) Remove the screw (a), and remove the frame (b).



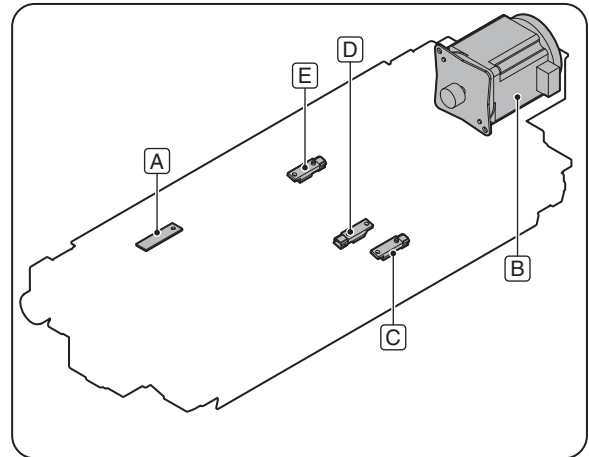
- 4) Disconnect the connector (a), and remove the screw (b). Remove the ADU paper entry detection 1 (c) and the ADU paper entry detection 2 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



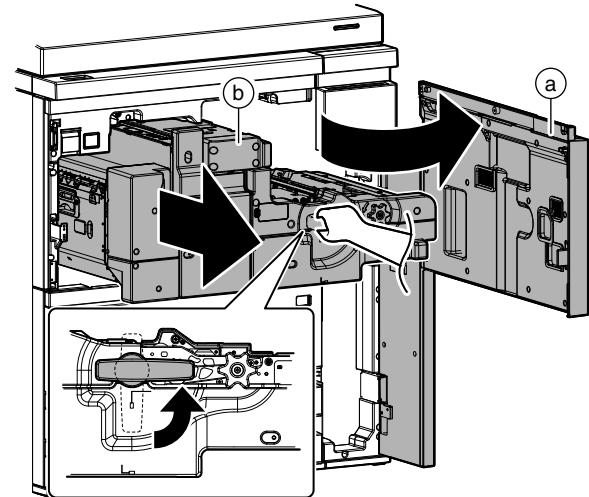
D. PS roller unit

Unit	Parts	Page
PS roller Unit	A High voltage resistor PWB	F-9/a
	B PS motor	F-9/b
	C Transport detection 2	F-11/c
	D Transport detection 3	
	E Transport detection 4	F-11/d

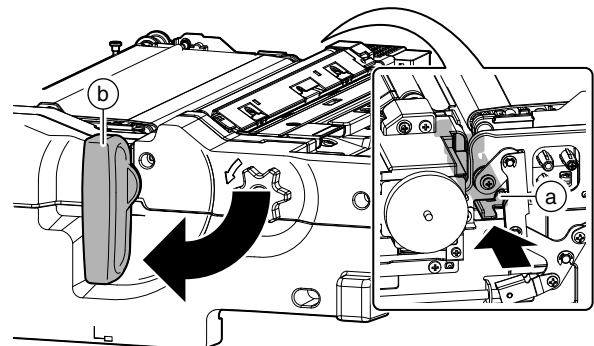


(1) PS roller unit

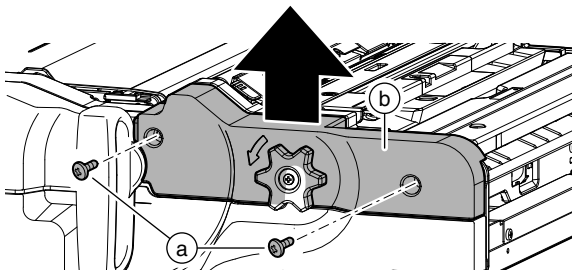
- 1) Open the front cover (a), and pull out the intermediate frame (b).



- 2) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.

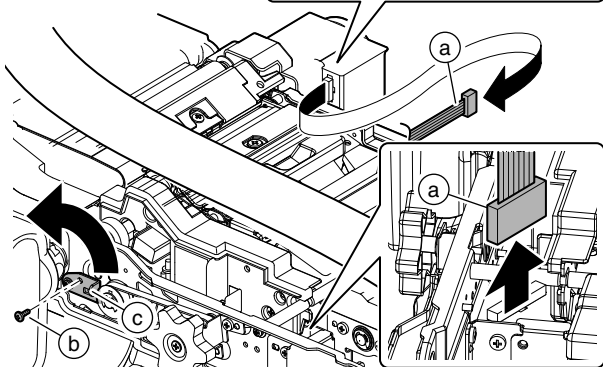
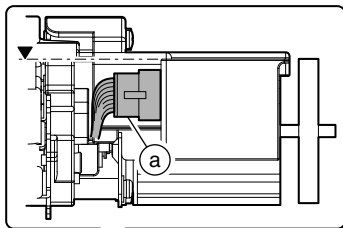


- 3) Remove the screw (a), and remove the cover (b).

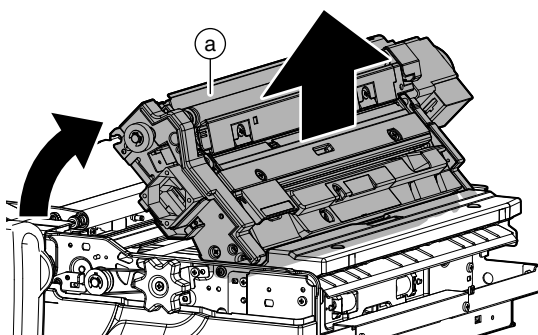


- 4) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c).

* When connecting, arrange so that the connector (a) does not extend over the PS roller unit.

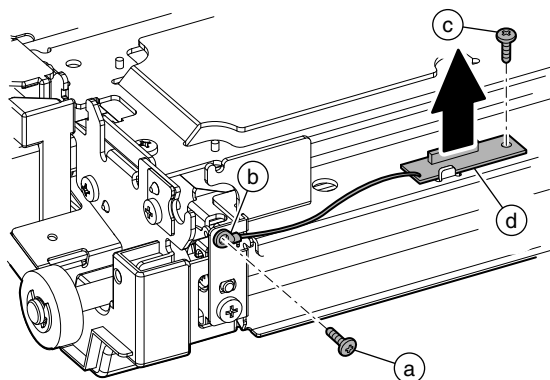


- 5) Remove the PS roller unit (a).



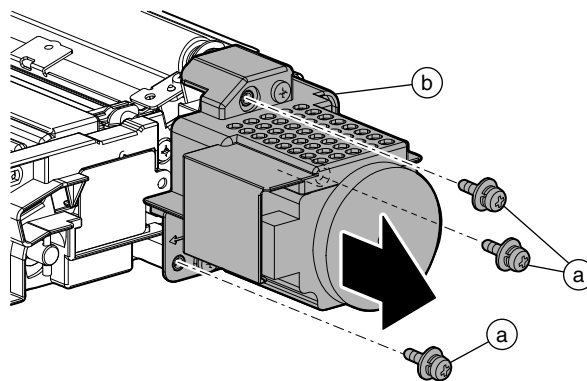
a. High voltage resistor PWB

- 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).

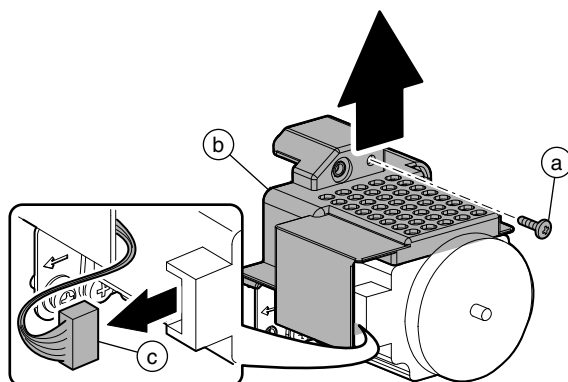


b. PS motor

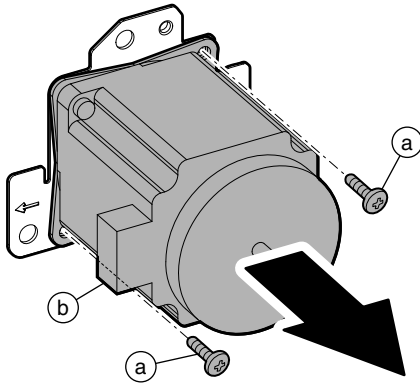
- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the PS motor unit (b).



- 3) Remove the screw (a), and remove the cover (b). Remove the connector (c).

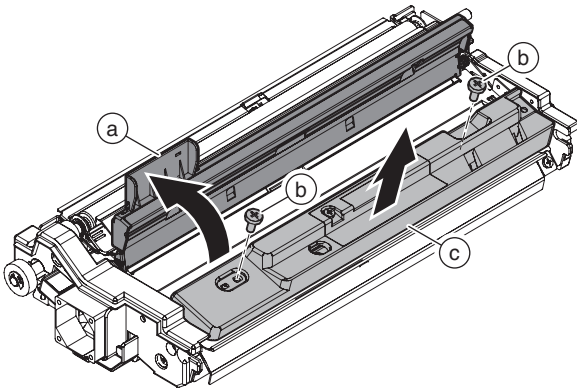


- 4) Remove the screw (a), and remove the PS motor (b).



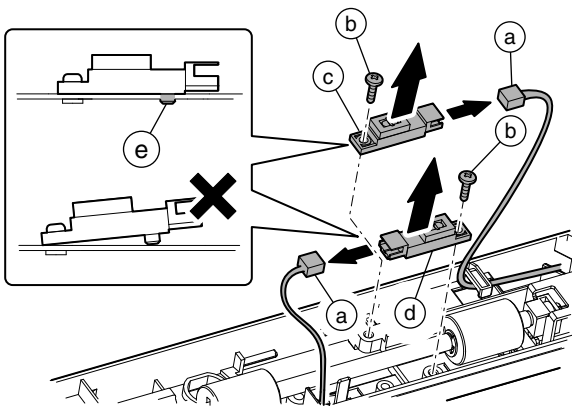
c. Transport detection 2 / Transport detection 3

- 1) Remove the PS roller unit.
- 2) Open the cover (a). Remove the screw (b), and remove the cover (c).



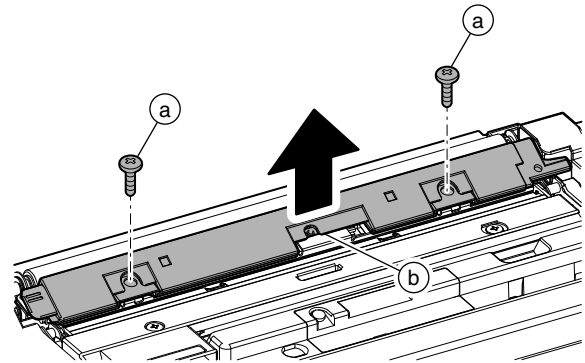
- 3) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 2 (c) and the transport detection 3 (d).

* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.

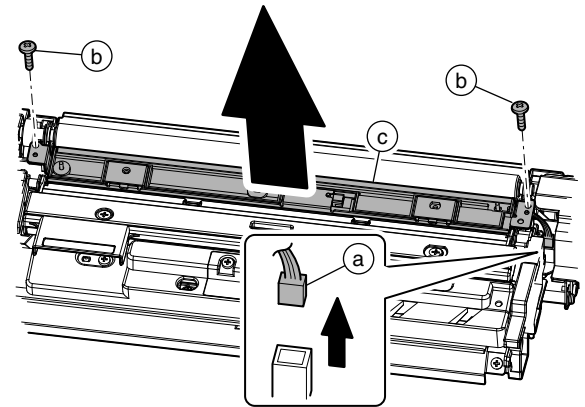


d. Transport detection 4

- 1) Remove the PS roller unit.
- 2) Remove the blue screw (a), and remove the paper dust cleaner (b).

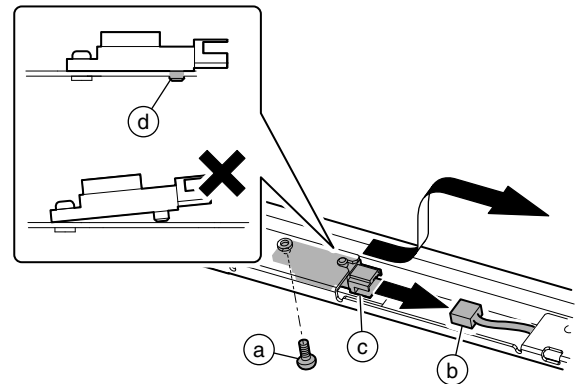


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper guide (c).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 4 (c).

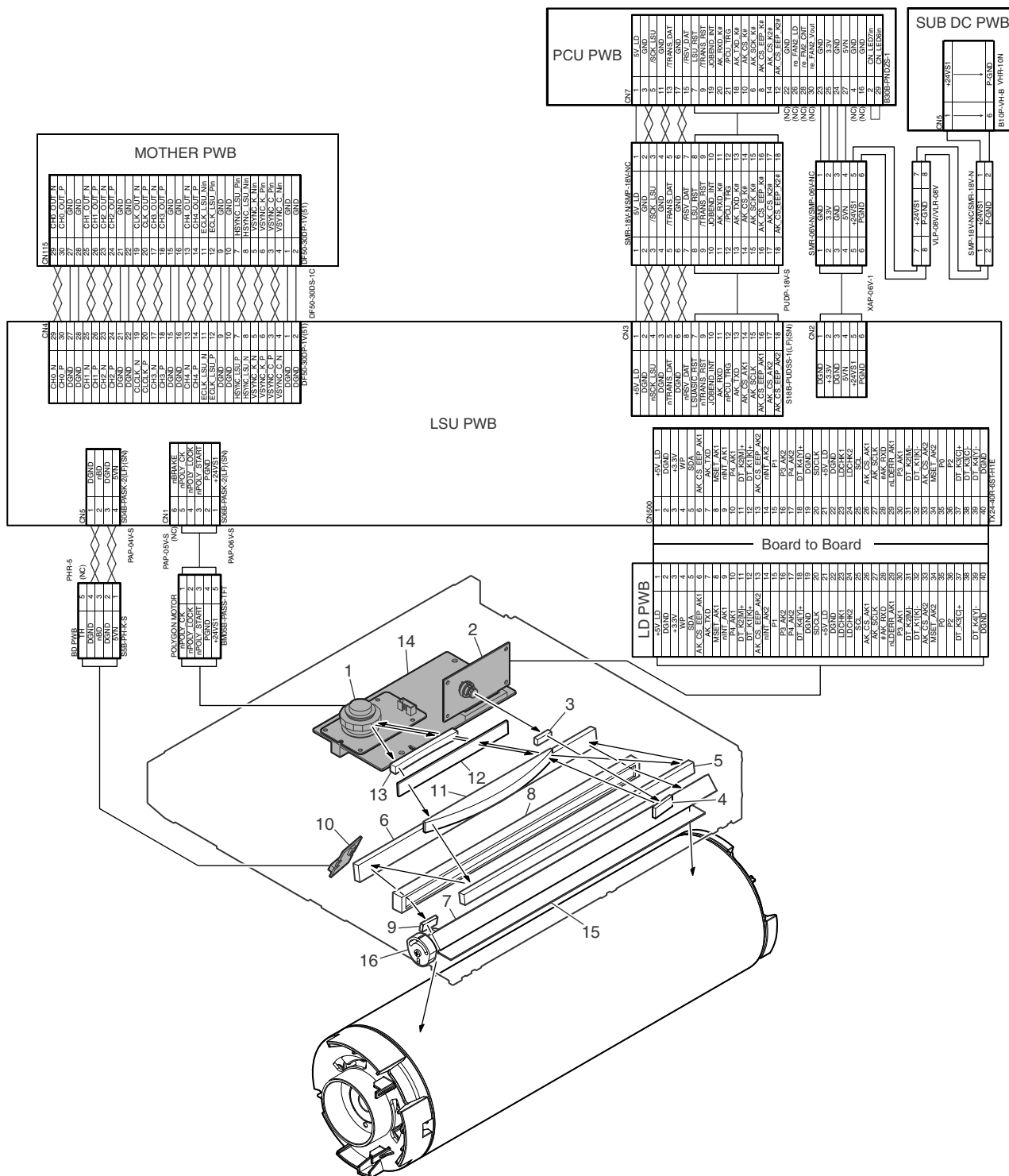
* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



[G] LSU SECTION

In this section, the image data from W-ICU PWB (image process circuit) is converted to video data by LSU control PWB. Next, it is converted by the laser diode to from a beam, and exposes to the OPC drum surface. As a result, latent electrostatic images are formed on the OPC drum surface.

1. Electrical and mechanism relation diagram

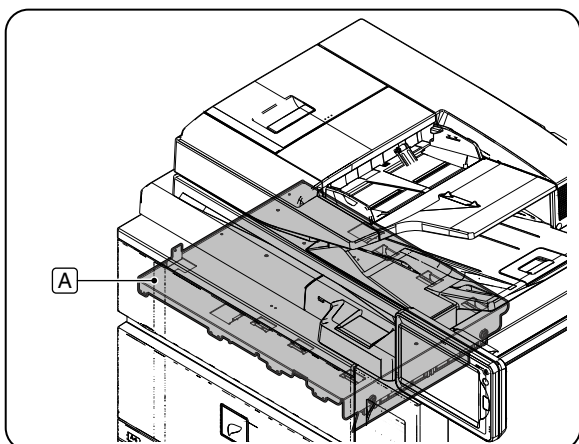


No	Name	Function
1	Scanning mirror (Polygon mirror motor)	Reflects the laser beam to expose the drum surface. Writes in the main scan direction.
2	Laser unit	Emits the laser beam.
3	No.1 cylindrical lens	Gathers the laser beams from the laser unit.
4	Incident mirror	Reflects the laser beams from the 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	fθ 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	fθ 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

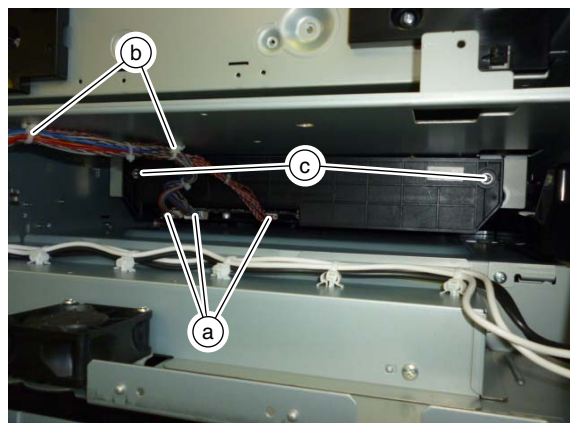
Parts		Page
A	LSU	G-2/(1)



(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

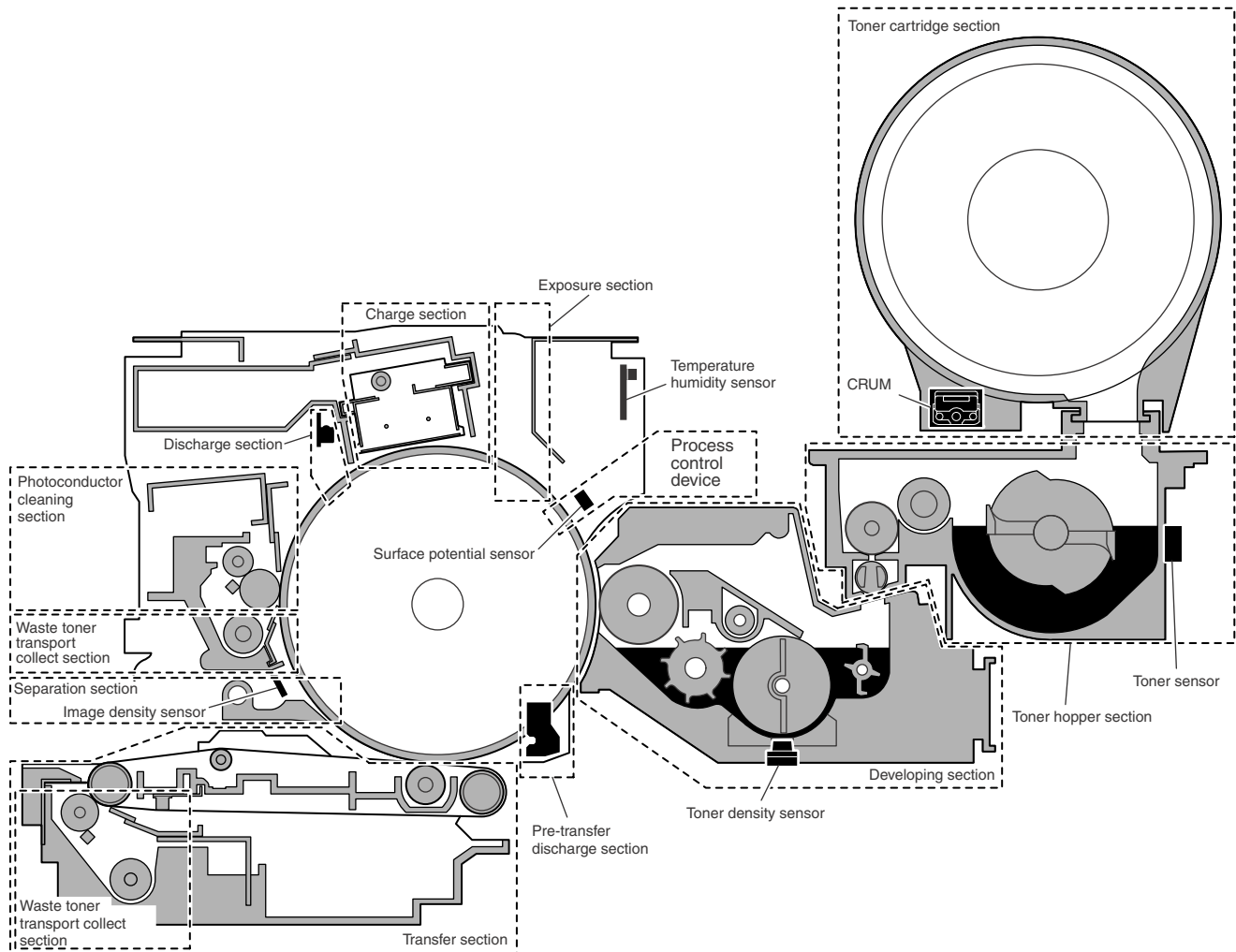
The optical dot image outputted from the LSU is converted into a visible toner image and transferred onto paper.

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
90cpm machine	420mm/sec

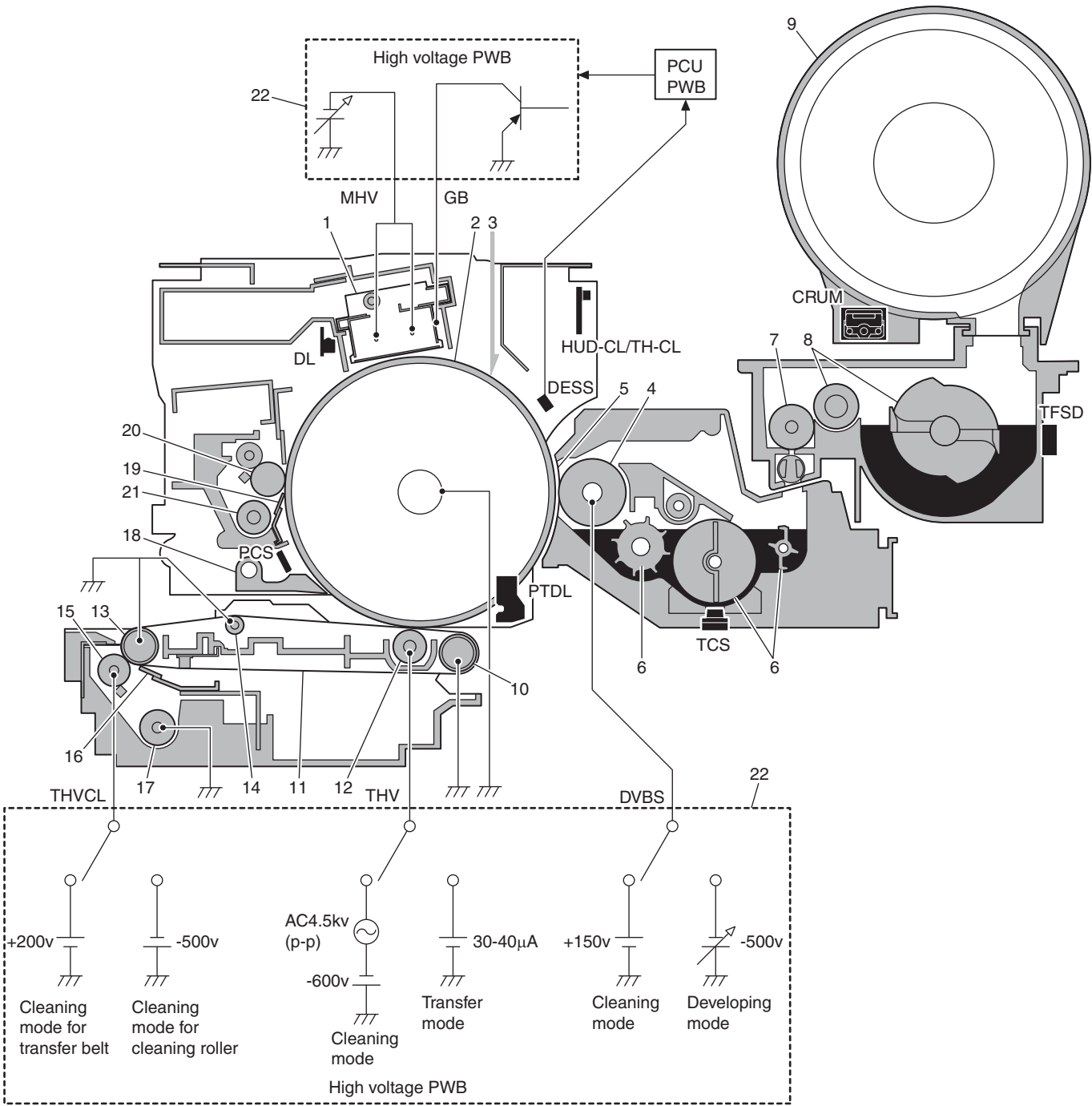
B. Process section composition



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.

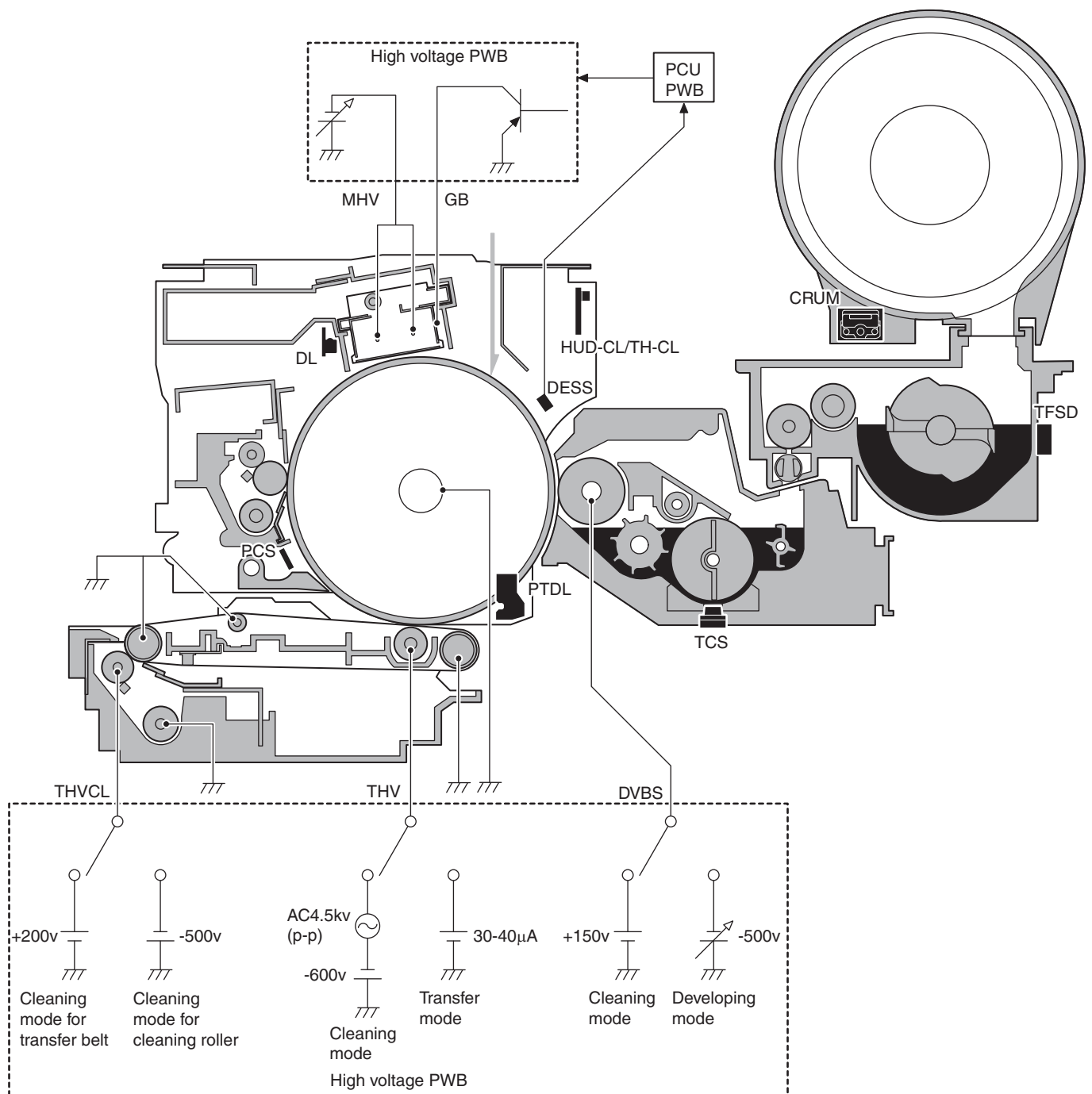
C. Image process section major parts



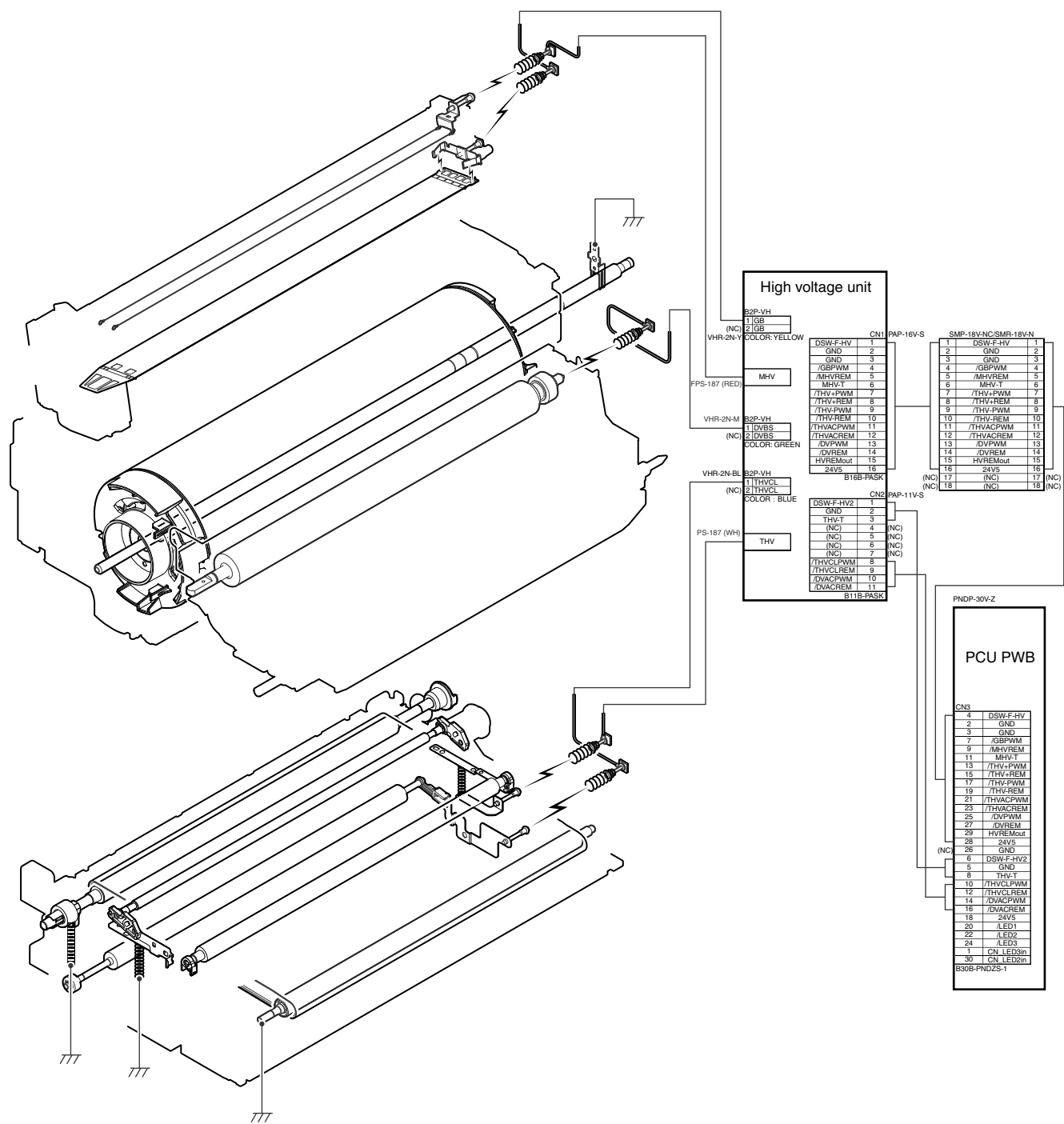
No.	Name	Function / Operation
1	Main charger unit	Charges the OPC drum surface evenly and negatively by negative discharge.
2	OPC drum	Forms electrostatic latent images by laser beams, and converts them into toner images through the development operation.
3	Laser beam	Forms electrostatic latent images on the OPC drum. Radiated from the LSU.
4	Developer roller	Composes a magnetic brush with developer, and forms toner images on the OPC drum.
5	Developing doctor	Controls the thickness and the quantity of developer and toner on the MG roller to the proper levels.
6	Toner mixing roller (Developing section)	Mixes and circulates developer (carrier) and toner to uniformize the toner density and to charge toner negatively.
7	Toner supply roller	Supplies toner from the toner hopper to the developing unit.
8	Toner mixing roller (Toner hopper section)	Mixes toner in the toner hopper.
9	Toner cartridge	The toner cartridge itself rotates to supply toner to the toner hopper unit.
10	Transfer idle roller	Applies a tension to the transfer belt.
11	Transfer belt	Transfers toner images from the OPC drum to paper.
12	Transfer roller	Applies a voltage to transfer toner from the OPC drum to paper.
13	Transfer drive roller	Drives the transfer belt.
14	Transfer tension roller	Applies a proper tension to the transfer belt.
15	Transfer cleaning brush	Remove and clean unnecessary residual toner from the transfer belt after transfer.
16	Transfer cleaning blade	Remove and clean unnecessary residual toner from the transfer belt after transfer.
17	Waste toner transport screw (Transfer section)	Transports waste toner in the transfer unit to the waste toner collection section.
18	OPC drum separation pawl	Separates paper from the OPC drum.
19	Photoconductor cleaning blade	Remove and clean unnecessary residual toner from the OPC drum.
20	Photoconductor cleaning brush roller	Remove and clean unnecessary residual toner from the OPC drum.
21	Waste toner transport screw (Photoconductor cleaning section)	Transports waste toner in the transfer unit to the waste toner collection section.
22	Main high voltage PWB	Outputs the developing bias voltage, the main charger voltage, the transfer voltage, and the transfer cleaning voltage.

Code	Name	Function / Operation	Type
DESS	Surface potential sensor	Detects the drum surface potential after exposure or after non-exposure.	Feed-back type surface potential sensor
TCS	Toner density sensor	Detects the toner density in the developing unit. The transmission-type magnetic sensor is employed.	Magnetic sensor
HUD-CL/ TH-C	Temperature humidity sensor	Detects the temperature and the humidity in the image process section. The detection result is reflected on the process control.	Humidity sensor / Thermistor
TFSD	Hopper toner remaining quantity sensor	Detects the toner remaining quantity in the toner hopper. The signal will be used in process control.	Piezoelectric sensor
PTDL	Transfer front discharge lamp	Reduces the OPC drum potential before transfer to improve the transfer efficiency.	LED
DL	Discharge lamp	Discharges the residual potential on the OPC drum by the lamp light.	LED
PCS	Image density sensor	Detects the toner patch density on the OPC drum for the process control operation.	Reflection type sensor
CRUM	CRUM chip	Saves various information of the toner cartridge.	Memory IC

D. Image process section electric circuit diagram



E. Image process section actual wiring diagram



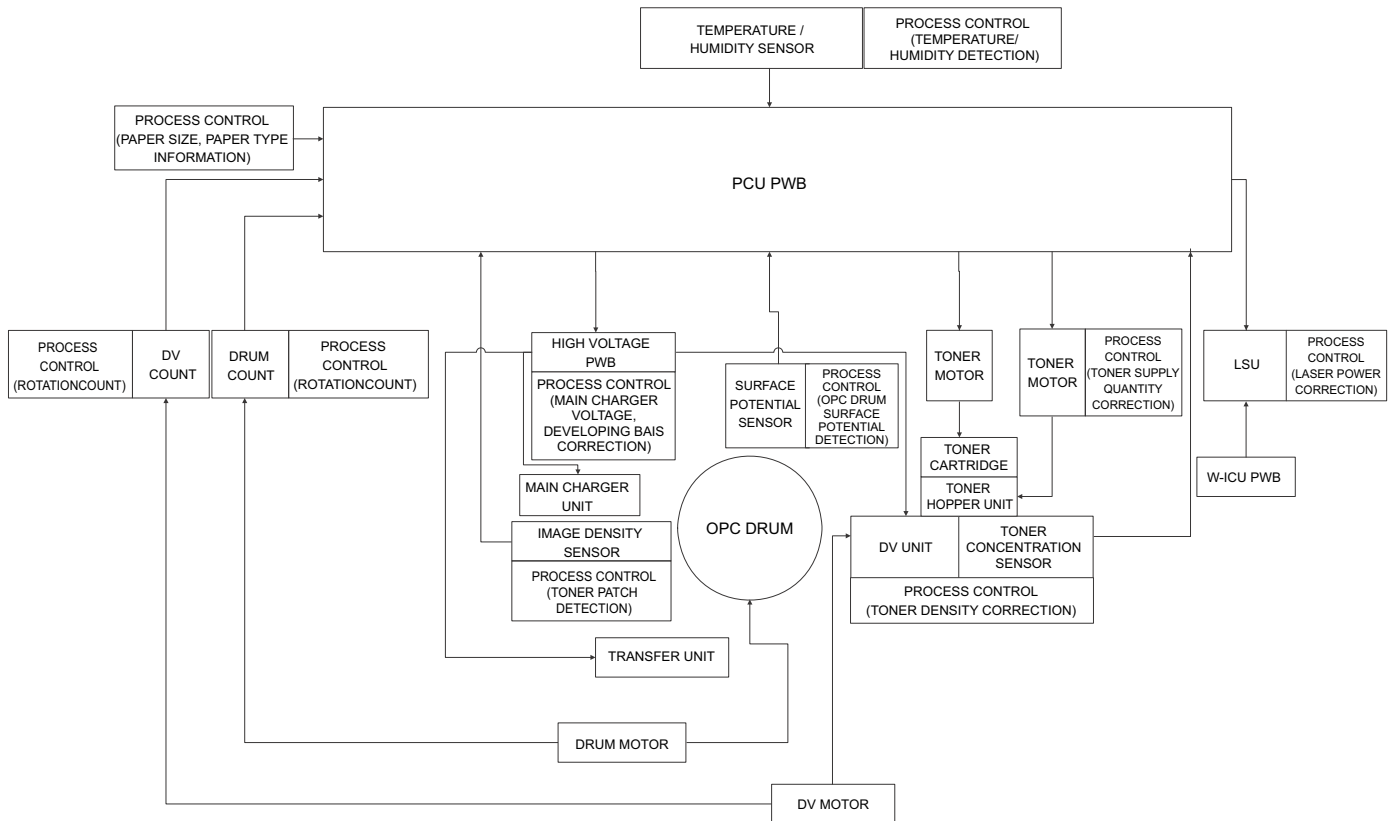
2. Process control section

A. General

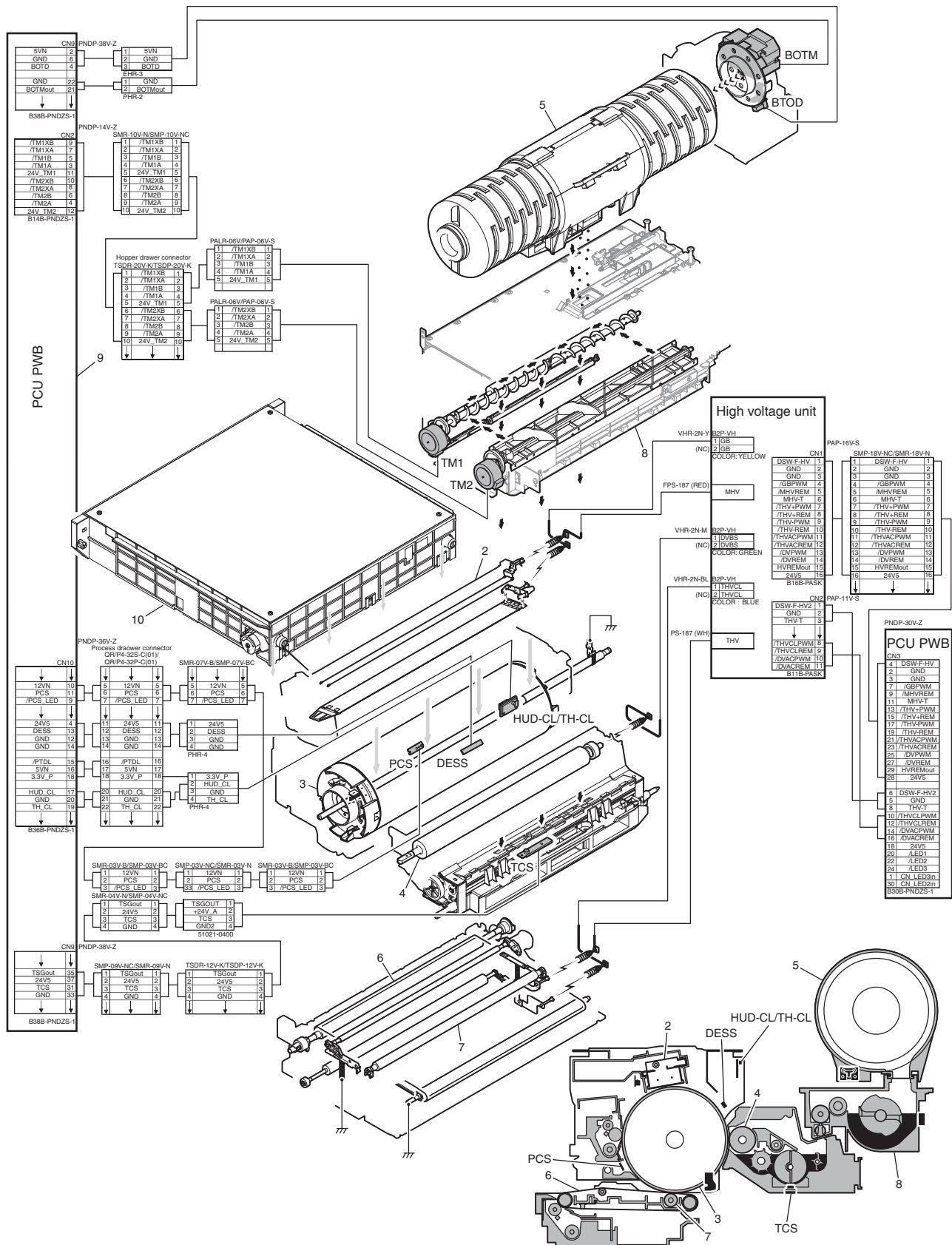
Information of the surface potential sensor, the image density sensor, the temperature / humidity sensor, and the consumable parts counter is inputted to the PCU PWB.

According to this information, the PCU PWB outputs each control signal to control the voltage, the current, the toner density control level, and the laser power to the proper levels, maintaining a high quality printed images.

B. Block diagram



C. Electrical and mechanism relation diagram



No	Name	Function / Operation
1	Main high voltage PWB	Outputs the developing bias voltage, the main charger voltage, the transfer voltage, and the transfer cleaning voltage based on the control signal from the PCU PWB.
2	Main charger unit	Charges the OPC drum surface negatively and uniformly by negative discharge.
3	OPC drum	Forms electrostatic latent images with laser beams, and forms toner images on the electrostatic latent image section.
4	Developer roller	Composes a magnetic brush with developer, and forms toner images on the OPC drum.
5	Toner cartridge	Supplies toner to the toner hopper unit by rotating the toner cartridge itself.
6	Transfer belt	Transfers toner images on the OPC drum to paper.
7	Transfer roller	Applies a voltage for transfer of toner on the OPC drum to paper.
8	Toner hopper section	Supplies toner to the developing section.
9	PCU PWB	Controls the whole process section based on the information of the sensors and the counters.
10	LSU	Controls the laser power.

D. Process control items

Process control correction operation.

No.	Item	Purpose	Variable element	Control item
1	Image density sensor sensitivity adjustment	The sensor sensitivity is effected by a dirty sensor or temperature changes.	Sensor dirt, temperature change	Image density sensor LED current
2	OPC drum dark potential correction	The dark potential is maintained to the proper level, Deterioration, temperature, humidity, and generations of overlapping quality effect the dark potential level.	Usage of the OPC drum, temperature/humidity change	MC grid voltage
3	OPC drum photo sensitivity correction/ OPC drum charging correction	The charging potential and the photo sensitivity are always maintained to the proper levels for deterioration of the OPC drum and changes in the temperature and humidity as well as to prevent against multi generation of overlap copying.	Usage of the OPC drum, temperature/humidity change	Laser power/ MC grid voltage
4	High density image correction (High density process control)	The high image density is maintained to the proper level and corrects for deterioration of consumable parts, changes in temperature and humidity.	Usage of the OPC drum and developer, humidity/ temperature change, other changes in the process section environment conditions	DV bias voltage
5	Half-tone potential correction (Half-tone process control)	The print density of medium density section images is always maintained to the proper level for deterioration of consumable parts in the process section and changes in the temperature and the humidity.	Usage of the OPC drum and developer, humidity/ temperature change, other changes in the process section environment conditions	Laser power
6	Toner density correction	The toner density is always maintained to the normal level, enabling printing at the normal density.	Usage of developer, temperature / humidity change Change in the developing bias voltage after the high density image correction. Image area. (Pixel count)	Toner density control level (Toner density sensor gain)
7	Transfer current correction	The transfer performance is always maintained to the proper level for various changes in conditions.	Temperature and humidity, paper type, paper width, usage of the transfer belt.	Transfer current

E. Process control Disable/Enable setting

The operations of process control can be disabled or enabled with Sim. 44-1.

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	

Item	Content	Setting range	Default value	Remarks
MD EV LD	Enable/Disable setting of the environment laser power voltage correction	Black text on white background (Inhibit: 0=NO) White text on black background (Allow: 1=YES)	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	
TN_FB	Enable/Disable setting of the toner density process control feedback correction		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 Δ Verf correction		Allow	
TN_DISCHARGE	Enable/Disable setting of the background discharge		Allow	

F. Process control execution conditions and timing

The process control is executed under the following conditions at the following timing.

No.	Item	Forcible execution by the simulation	Execution conditions, timing
1	Image density sensor sensitivity adjustment	TC44-2	Before execution of the high density image correction (High density process control)
2	OPC drum dark potential correction	TC44-3	Before execution of the high density image correction (High density process control)
3	OPC drum photo sensitivity correction/OPC drum charging correction		Before execution of the high density image correction (High density process control)
4	High density image correction (High density process control)	TC44-6 (TC44-2/44-3)	Depends on the set conditions of SIM 44-28. (*1)
5	Half-tone potential correction (half-tone potential process control)		After execution of the high density image correction (High density process control)
6	Toner density correction		When there is a change in the temperature/humidity. When the developer counter reaches the specified value. When the developing bias voltage changes more than the specified level after execution of the high density image correction (high density process control).
7	Transfer current correction		When the paper type or the paper size is changed. When there is a change in the temperature/humidity.

(*1) : Setting of the process control execution conditions and timing with SIM 44-28.

The execution conditions and timing of each process control can be set with SIM 44-28.

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		

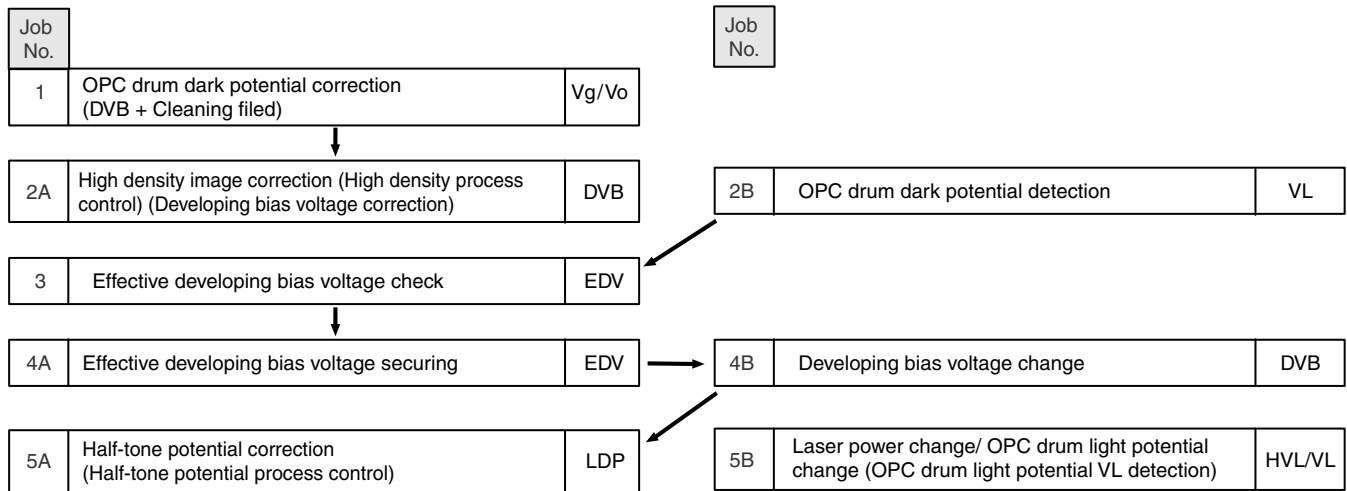
Item	Category	Display		Content		Setting range		Default value
E	Process control Enable/Disable setting	HUM		The temperature and humidity inside the machine are monitored only in a job. When a change in the temperature and humidity compared from the previous process control execution is greater than the specified level (when item 10 is greater than the set value).	Process control Disable BK process control Enable	1 - 2	1 2	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 1 - 999: 1 - 999 days passing	0 - 999	0	1
							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 High print judgment disable Judgment at the 30th paper (continuous).	0 - 2	0	0
							1	
							2	
K		LO-COV		Low print document continuous printing process control execution judgment	Enable Disable	0 - 1	0	1
							1	
L		TonerCA-END		When the toner cartridge remaining quantity reached 25% or below, the process control interval is changed.	Enable Disable	0 - 1	0	1
							1	
M		JOB STOP		Enable/Disable setting of Job interruption process control execution	Enable Disable	0 - 1	0	0
							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 Corresponds to 1 step/10 pages.	1 - 10	1	5
							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 Corresponds to 1 step/10 pages.	1 - 10	1	10
							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	0 - 200		10

G. Process control operation flow

The process control is executed in the following flow.

Along with execution of the OPC drum dark potential correction, the high density image correction (high density process control), and the half-tone potential correction (half-tone potential process control), the developing bias voltage, the main charger grid voltage, and the laser power are corrected and changed in the following flow.

The developing bias voltage, the main charger grid voltage, and the laser power are finally determined with Job No. 5B.



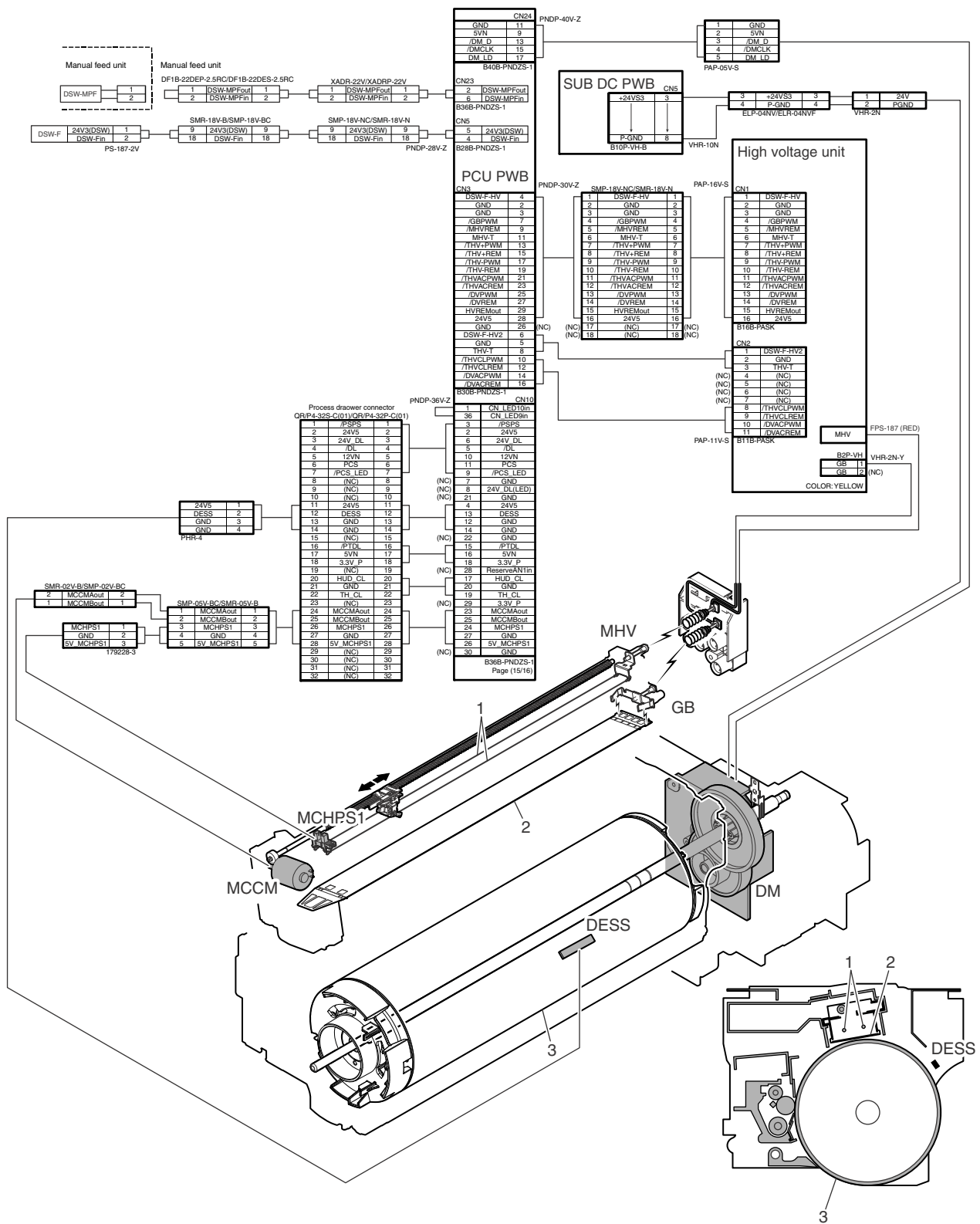
Vg : Main charger grid voltage
Vo : OPC drum dark potential
DVB : Developing bias voltage
EDV : Effective developing bias voltage (DVB - VL)
Cleaning filed : Vo - DVB
HVL : Half-tone potential
VL : Light potential
LDP : Laser power

[i] PHOTOCONDUCTOR SECTION

1. Charging section

This section charges the OPC drum with a negative charge.

A. Electrical and mechanism relation diagram



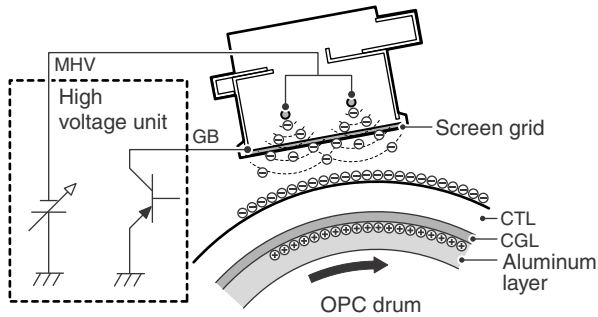
No.	Name	Function / Operation
1	Charger wire	Charges the OPC drum.
2	Screen grid	Charges the OPC drum evenly.
3	OPC drum	Forms electrostatic latent images by laser beams. Forms toner images from the electrostatic latent images through the developing process.
4	Main high voltage PWB	Outputs the main charger 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

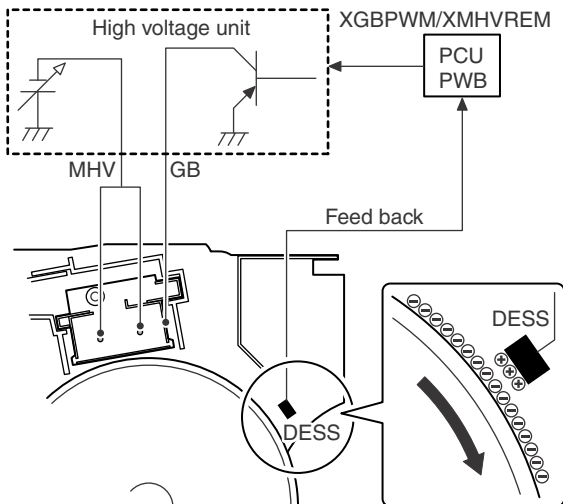
Operation mode	Output voltage
	90cpm machine
COPY	- 595v

(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).

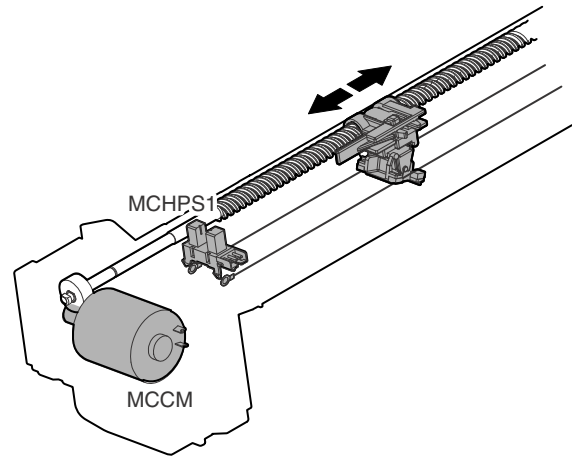


(3) Charger wire cleaning operation

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

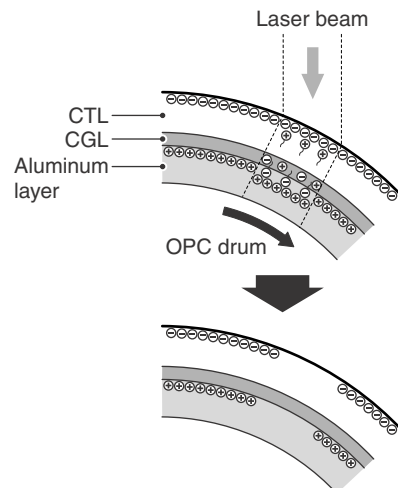
In this section, laser beams are exposed onto the negatively charged OPC drum surface to form electrostatic latent images.

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.

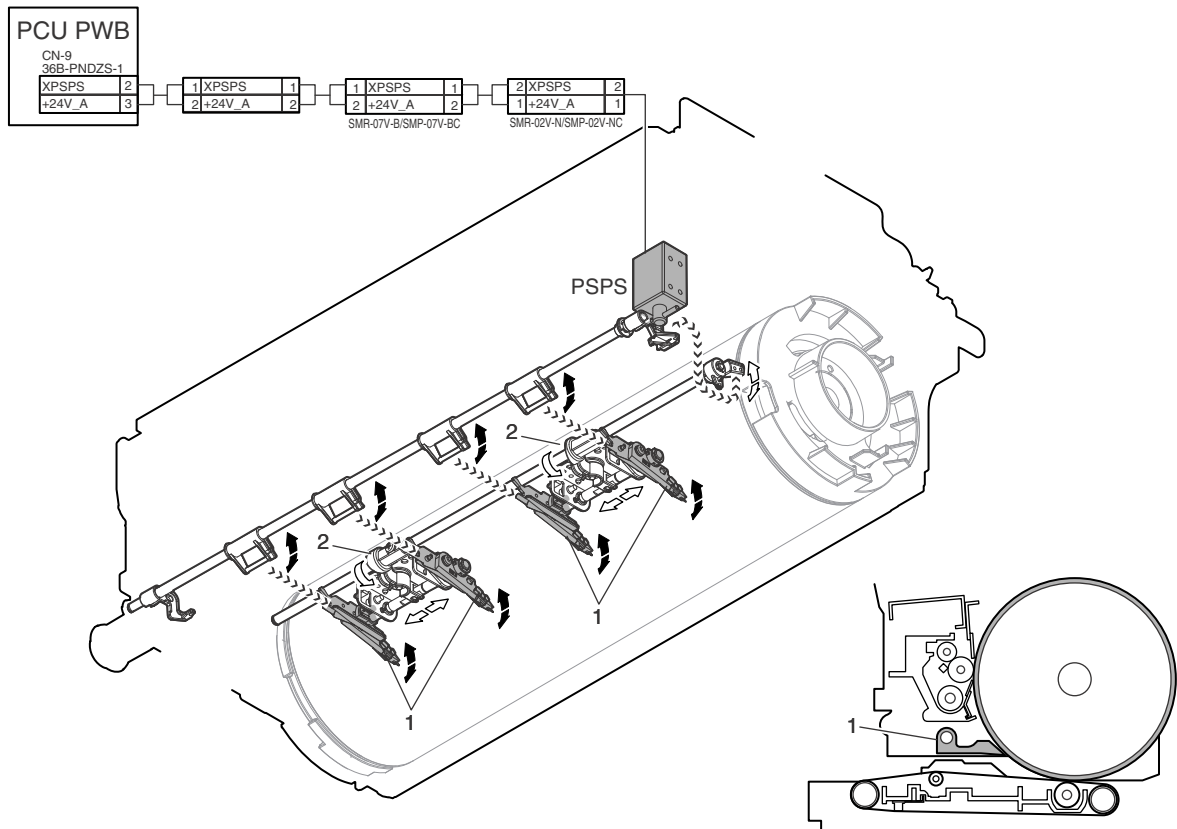
Through this operation, electrostatic latent images are formed on the OPC drum surface.



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

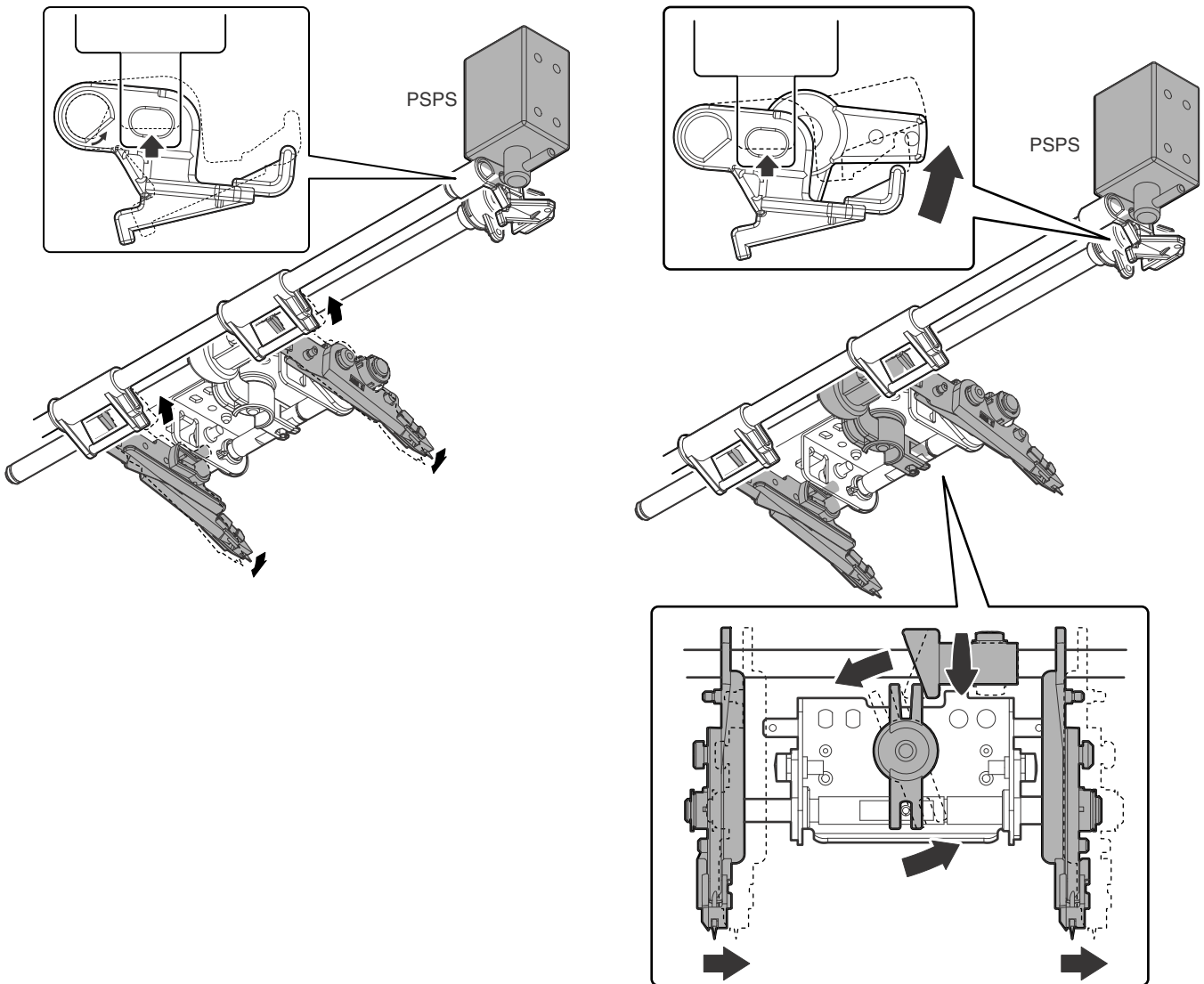
B. Operational descriptions

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 (XSPS), and is in contact with the OPC drum when paper passes through the transfer section.

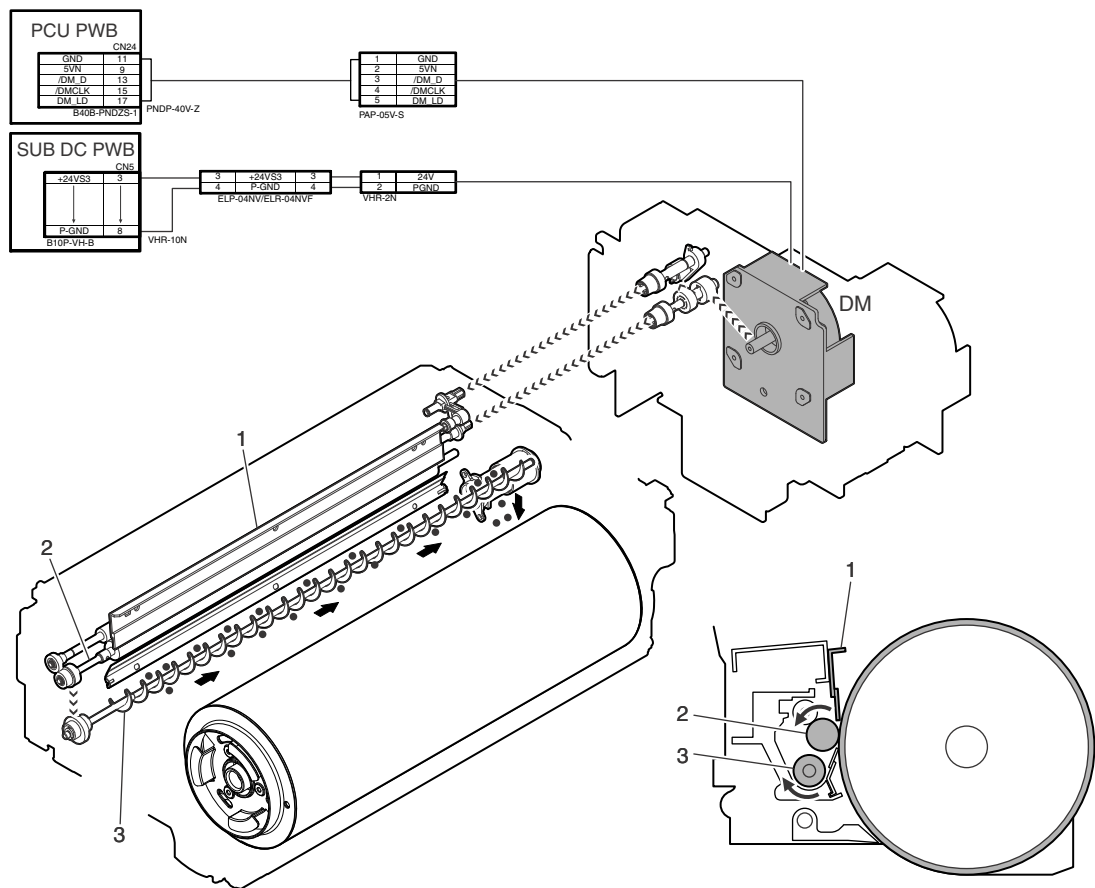
In the other cases, the separation pawl is separated from the OPC drum.

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.

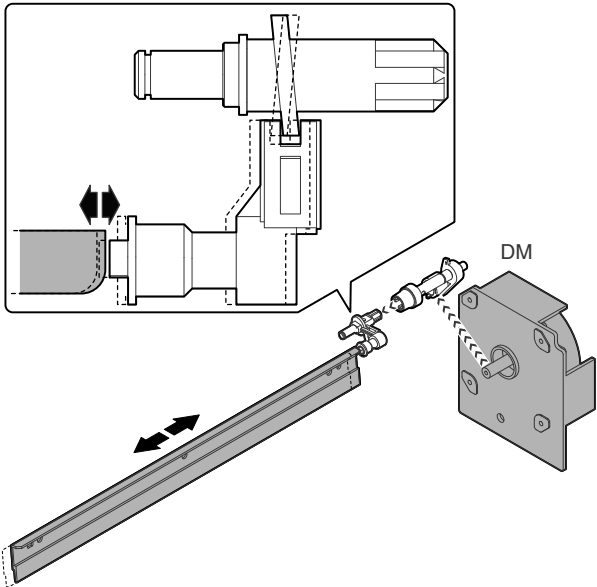
Code	Name	Function / Operation	Type
DM	OPC drum motor	Drives the OPC drum cleaner section.	DC brush-less motor

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.

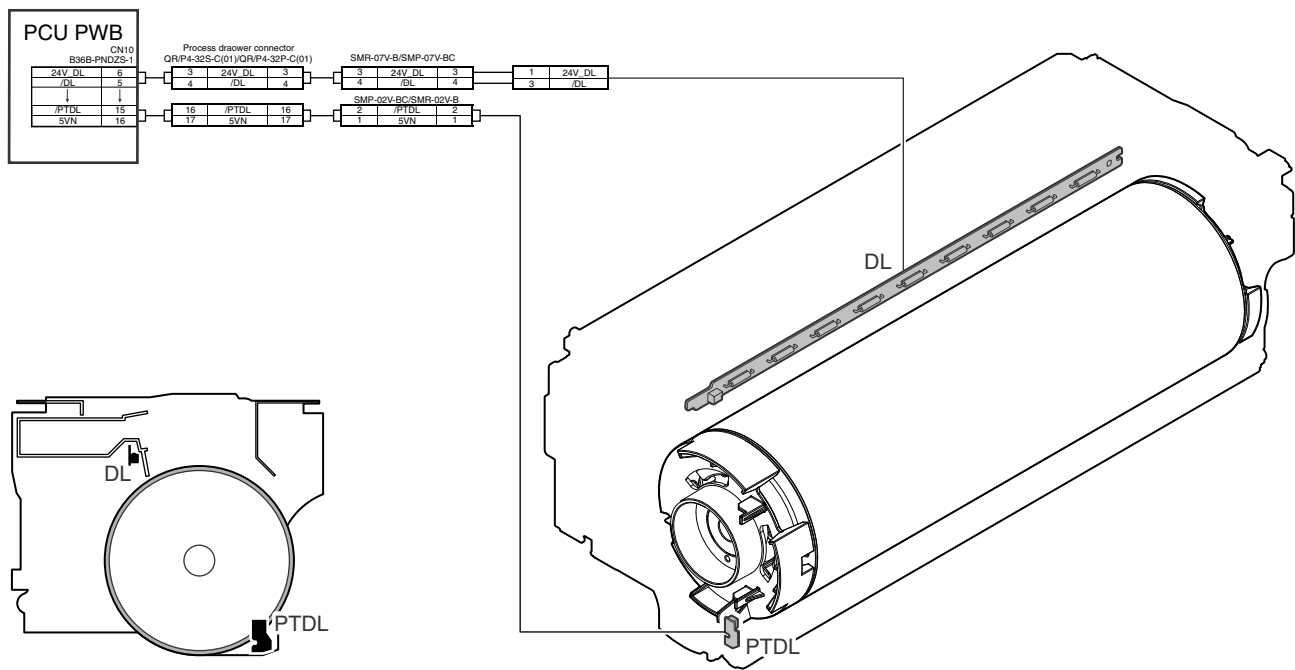
The cleaning blade oscillates back and forth in synchronization with the drum drive motor. By this movement, the cleaning performance is improved.



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

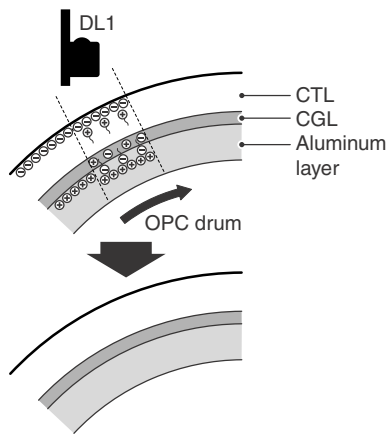
B. Operational descriptions

When the discharge lamp light is expose 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.

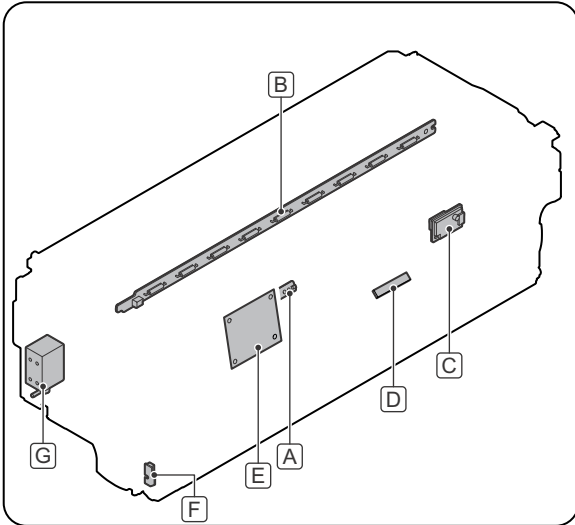
As a result, the surface potential of the OPC drum is reset to the initial level.



6. Disassembly and assembly

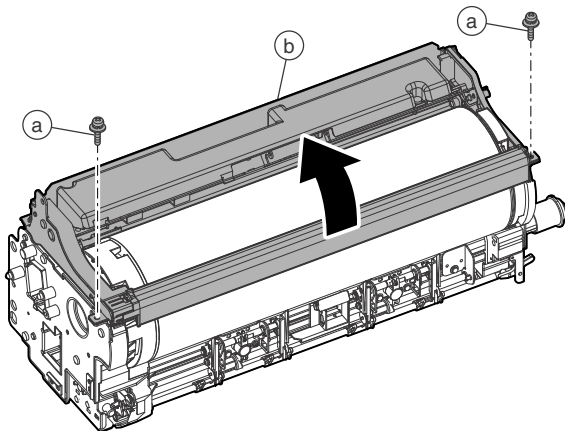
A. Process unit

Unit	Parts	Page
Process unit	A Process control sensor	i -10/a
	B Discharge lamp	
	C Temperature humidity sensor 1	
	D Surface potential sensor	i -10/b
	E Process control sensor PWB	
	F PTDL unit	i -11/c
	G Separation solenoid	i -12/d

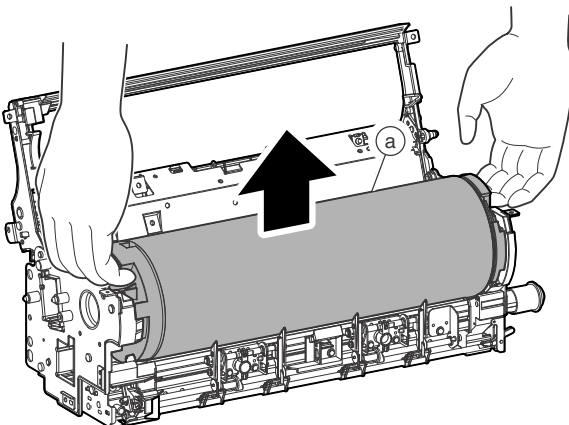


* When disassembling or assembling the process unit, remove the OPC drum unit by the following and keep it for a while.

- 1) Remove the blue screw (a), and open the frame (b).



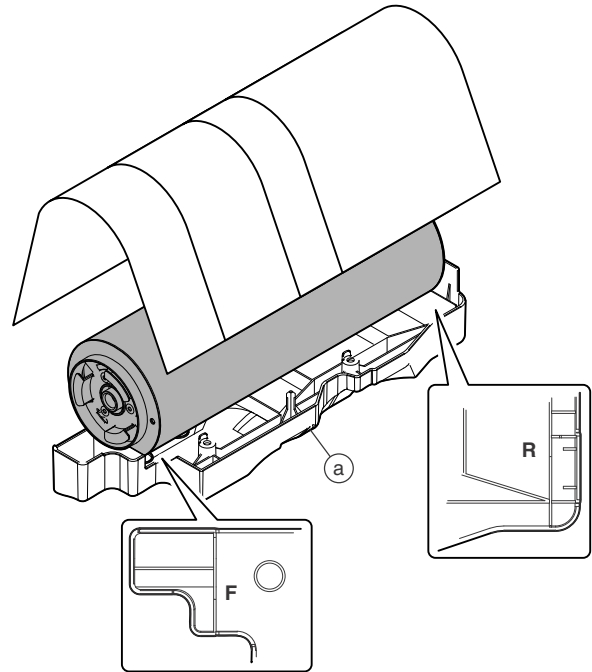
- 2) Remove the OPC drum unit.



- 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.

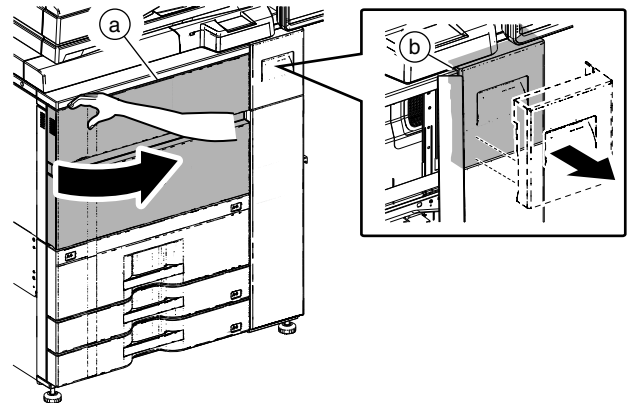
When putting the OPC drum unit on the cover, in advance remove the bearing, place it according to "F" and "R" marked on the cover (a).

Cover the OPC drum unit with paper to prevent exposure.

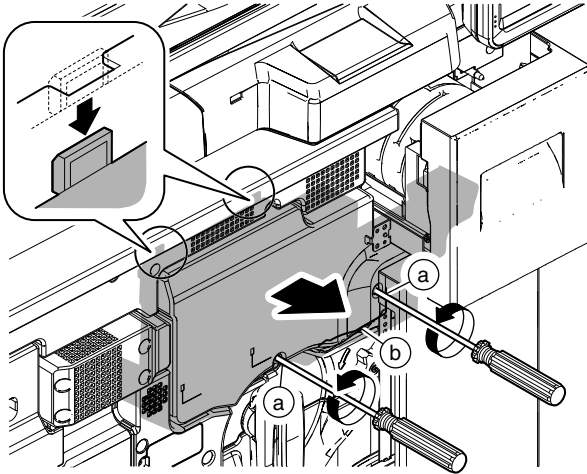


(1) Process unit

- 1) Open the front cover (a), and pull out the toner tray (b) slightly.

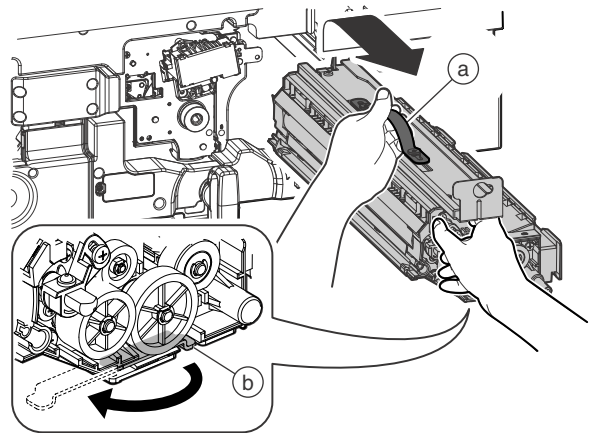


- 2) Remove the screw (a), and remove the cover (b).

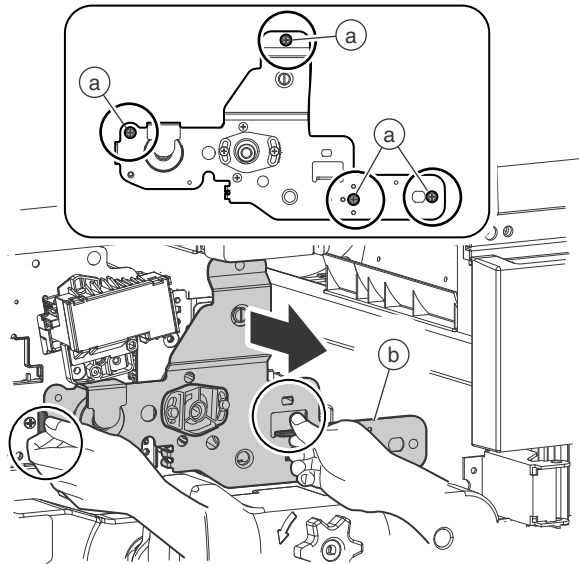


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

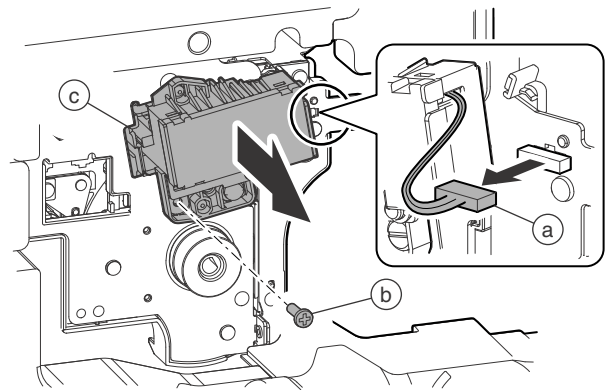
* When placing the developing unit on a floor, use the stand (b) and put the unit on it.



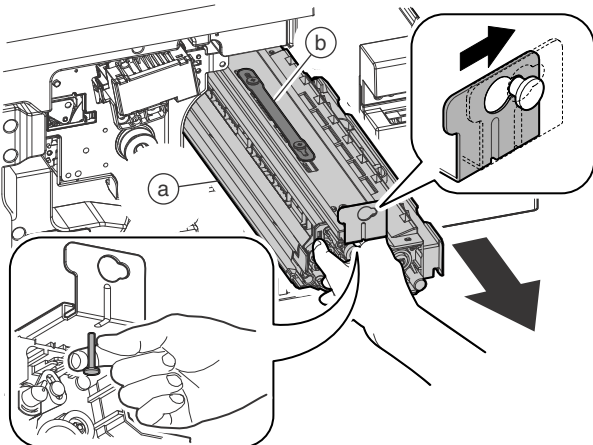
- 3) Remove the blue screw (a), and remove the plate (b).



- 6) Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).

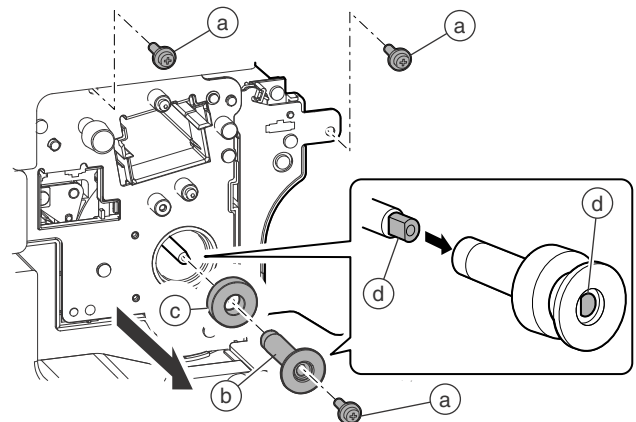


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

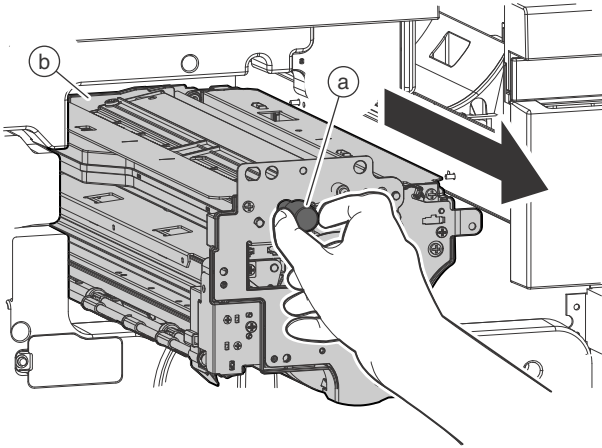


- 7) Remove the blue screw (a). Remove the bearing (b) and the bearing (c).

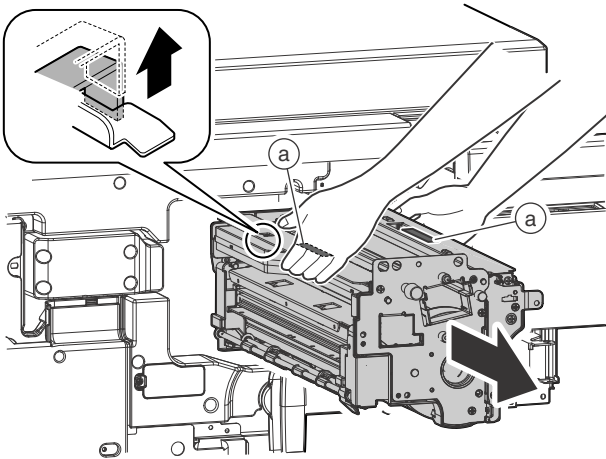
* When installing the bearing, fit the D-cut direction and engage it properly.



- 8) Hold the handle (a), and pull out the process unit (b) until it stops.

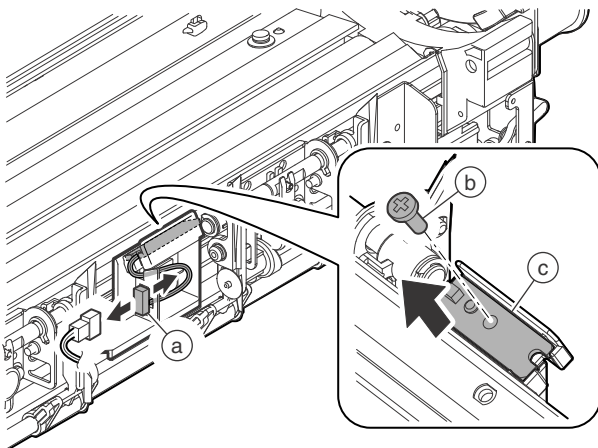


- 9) Hold the green label section (a) on the process unit frame, and lift it up to remove completely.

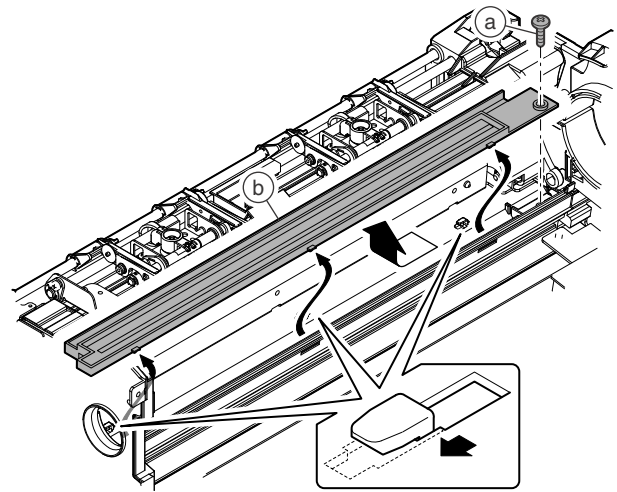


a. Process control sensor / Discharge lamp

- 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).

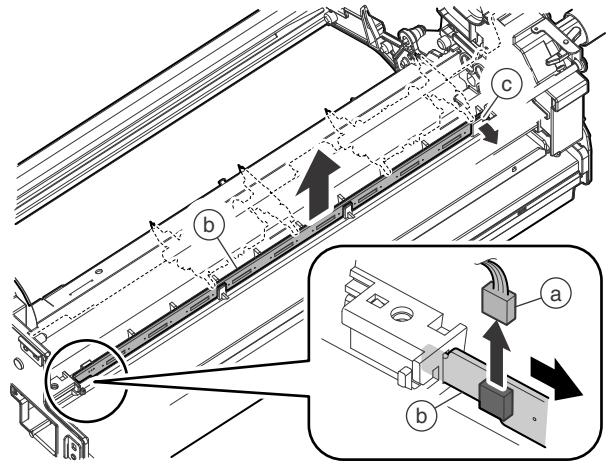


- 4) Remove the blue screw (a), and remove the cover (b).



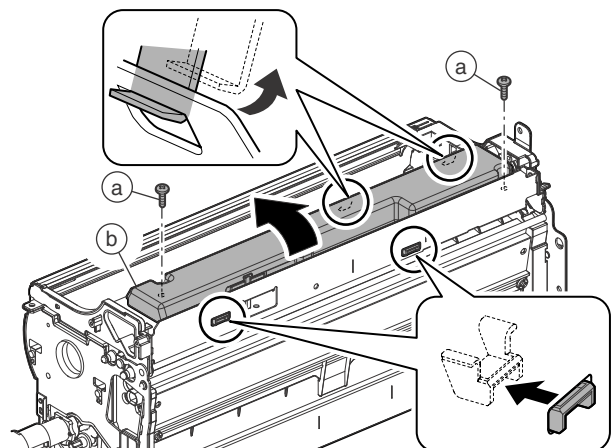
- 5) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp (b).

* Be careful not to break the pawl. (c).

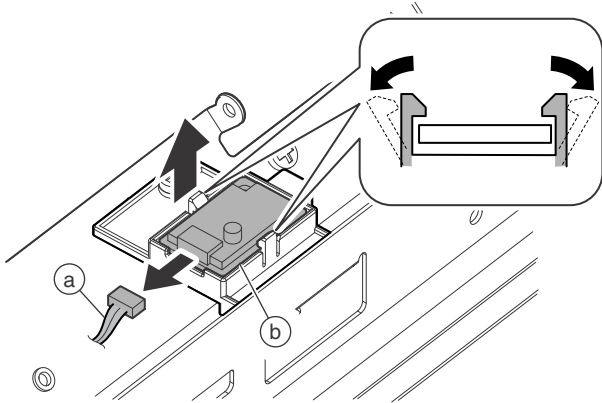


b. Temperature humidity sensor 1 / Surface potential sensor / Process control sensor PWB

- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the cover (b).

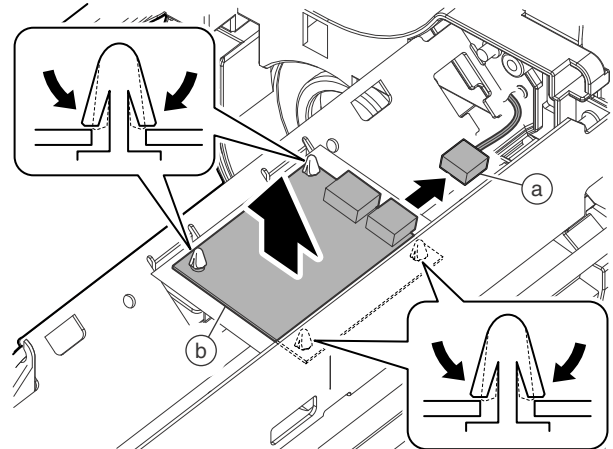


- 4) Disconnect the connector (a), and remove the temperature humidity sensor 1 (b).

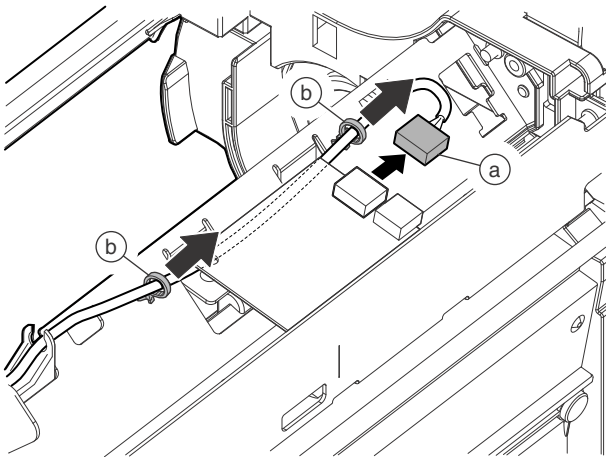


- 7) Disconnect the connector (a), and remove the process control sensor PWB (b).

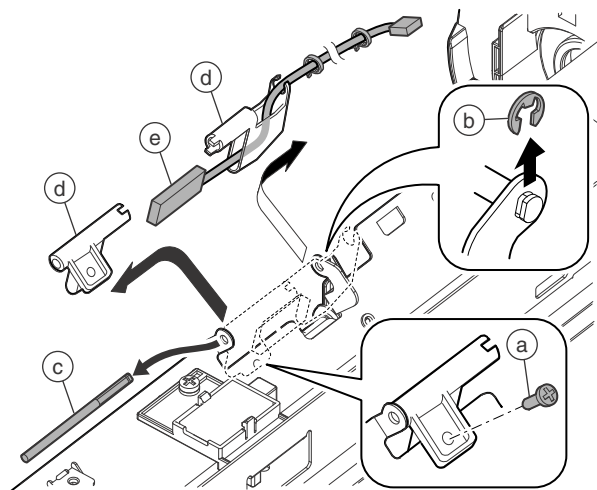
* When replacing the process control sensor PWB, replace it together with the surface potential sensor.



- 5) Disconnect the connector (a), and remove the snap band (b).

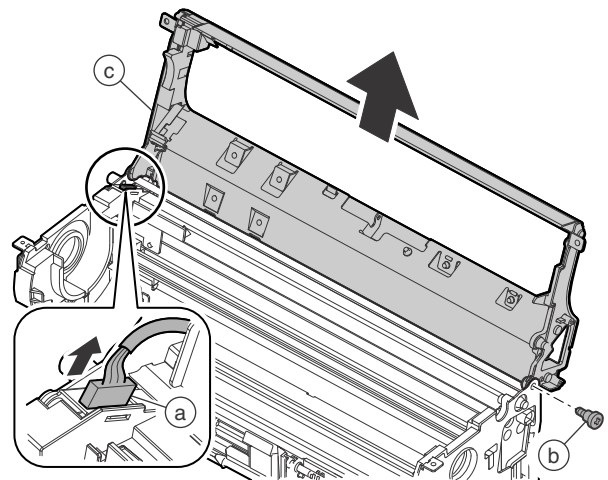


- 6) Remove the screw (a) and the E-ring (b). Remove the shaft (c). Remove the holder (d) from the surface potential sensor (e).

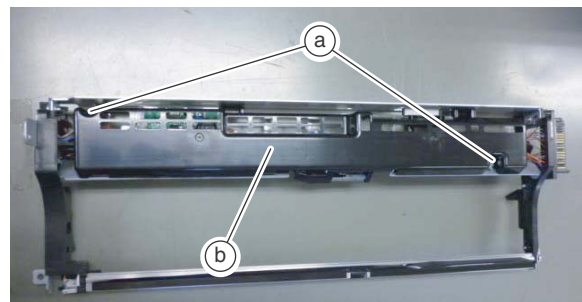


c. PTDL unit

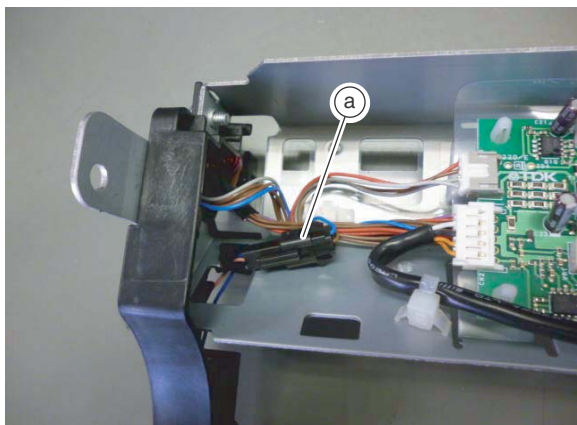
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Disconnect the connector (a), and remove the step screw (b). Remove the frame (c).



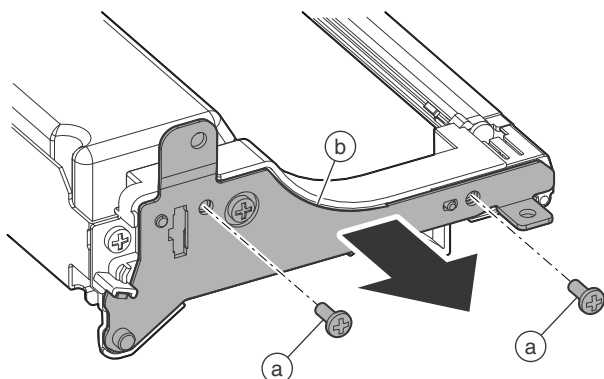
- 4) Remove the screw (a), and remove the cover (b).



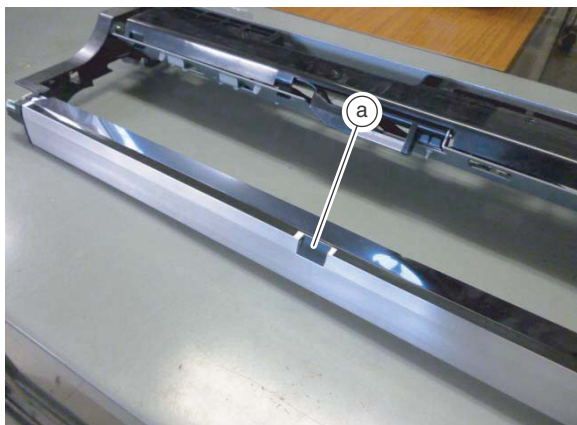
- 5) Disconnect the connector (a).



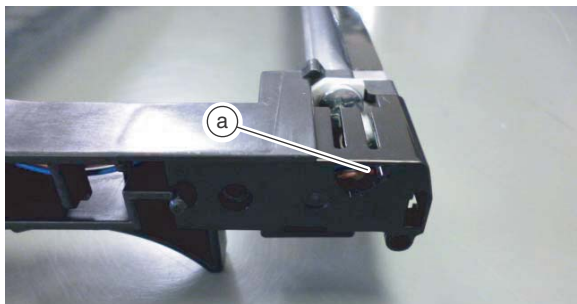
- 6) Remove the screw (a), and remove the plate (b).



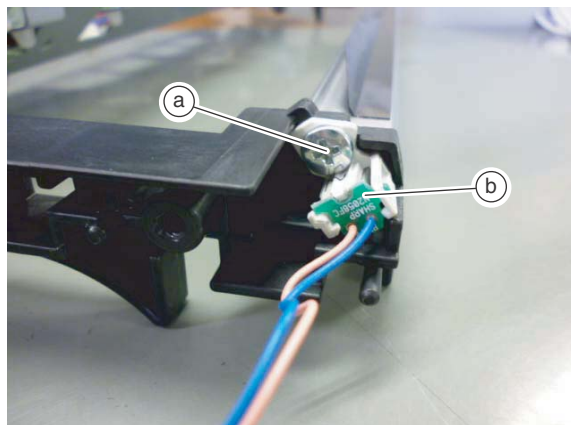
- 7) Remove the black mylar (a).



- 8) Remove the cover (a).

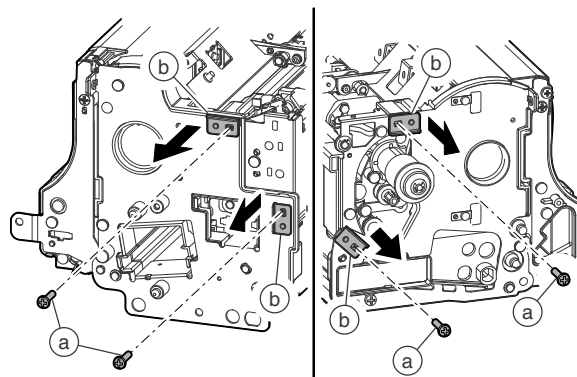


- 9) Remove the screw (a), and remove the PTDL unit.

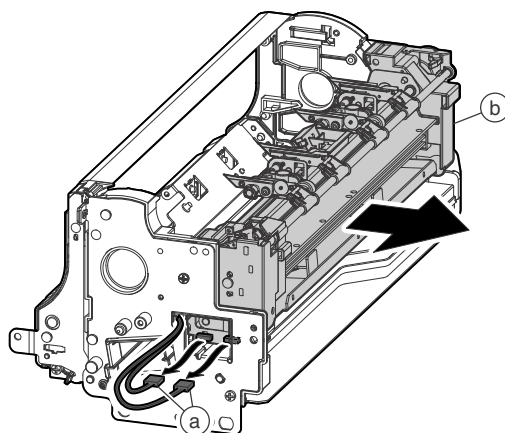


d. Separation solenoid

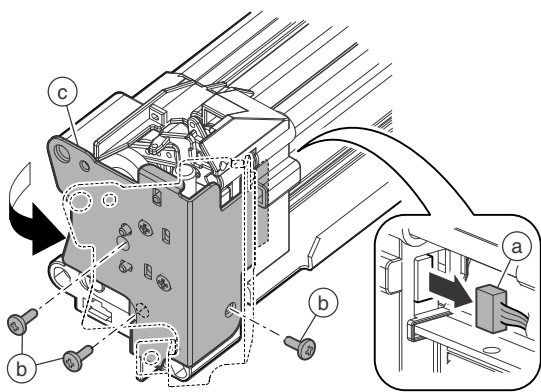
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the plate (b).



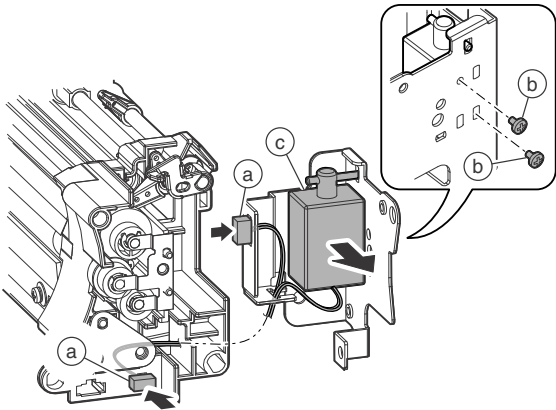
- 4) Disconnect the connector (a), and remove the frame (b).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the separation solenoid unit (c).

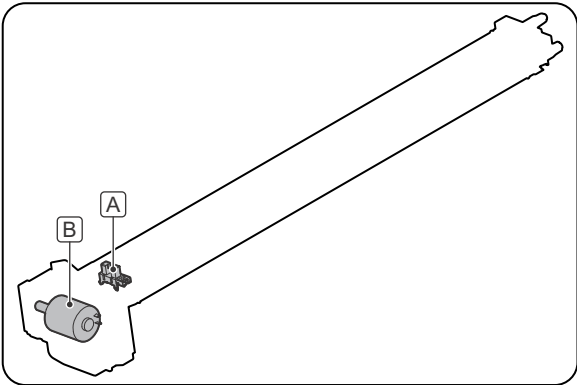


- 6) Disconnect the connector (a), and remove the screw (b). Remove the separation solenoid (c).



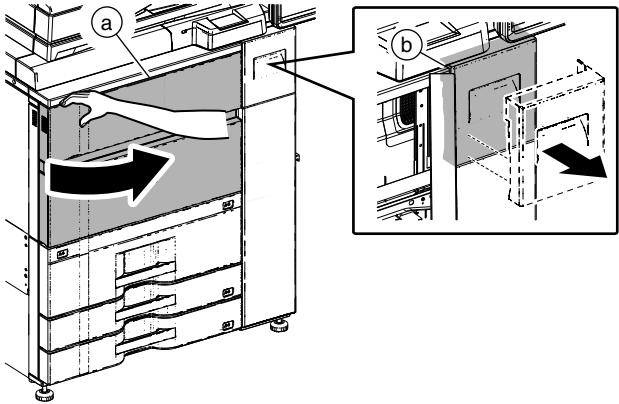
B. Main charger unit

Unit	Parts	Page
Main charger unit	A MC cleaner home position detection	i-14/a
	B Main charger cleaning motor	i-14/b

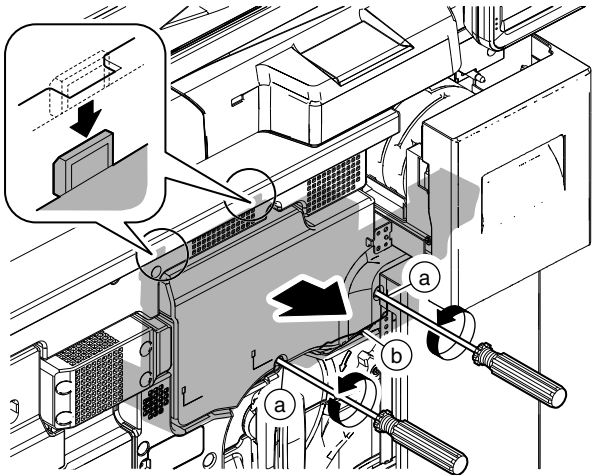


(1) Main charger unit

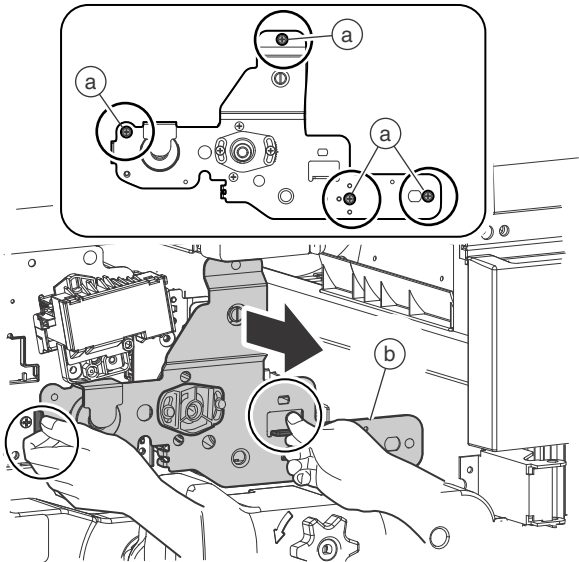
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



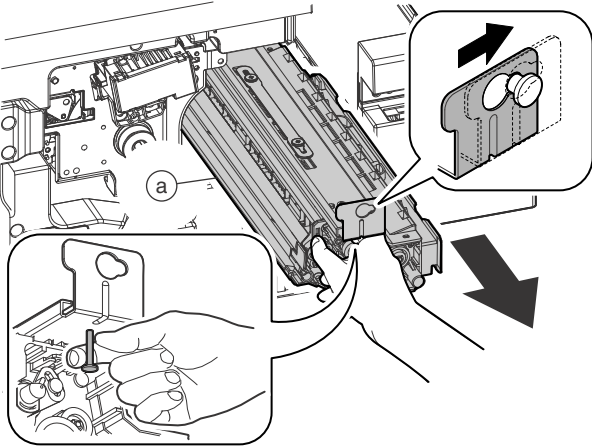
- 2) Remove the screw (a), and remove the cover (b).



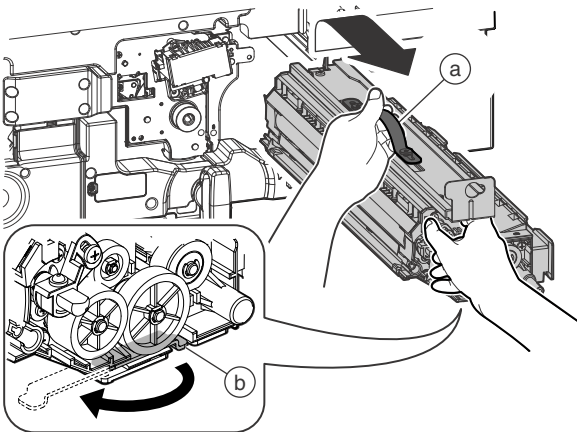
- 3) Remove the blue screw (a), and remove the plate (b).



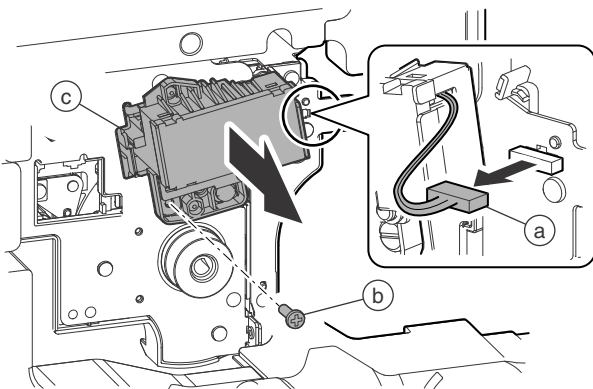
- 4) Slide the developing unit (a) to the right, and pull it out until it stops.



- 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.

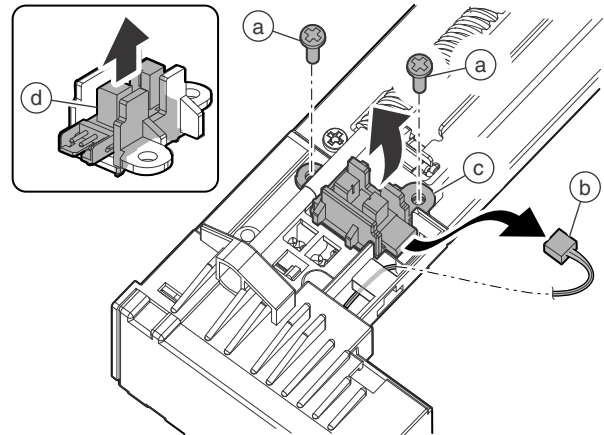


- 6) Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).



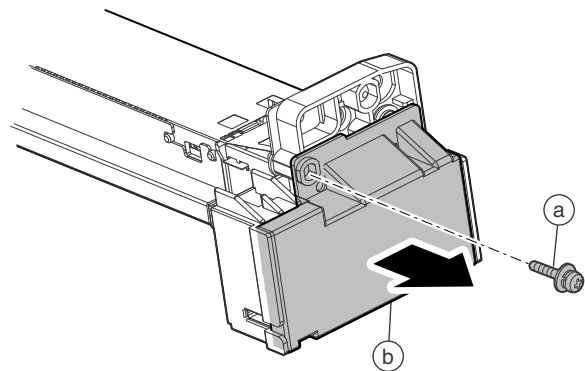
a. MC cleaner home position detection

- 1) Remove the main charger unit.
- 2) Remove the screw (a), and disconnect the connector (b). Remove the holder (c), and remove the MC cleaner home position detection (d).

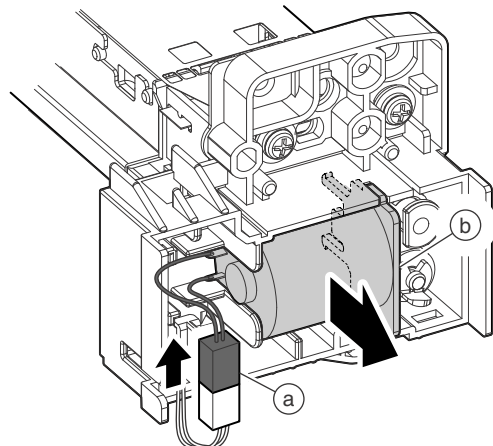


b. Main charger cleaning motor

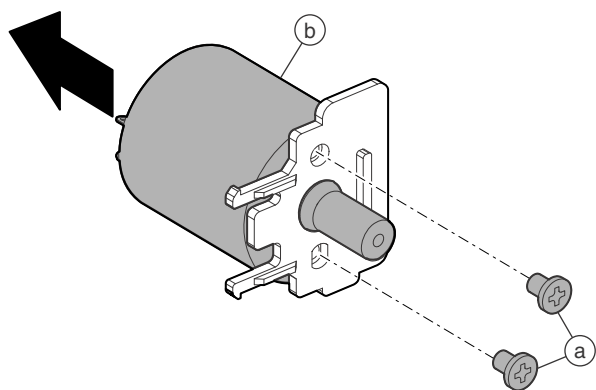
- 1) Remove the main charger unit.
- 2) Remove the blue screw (a), and remove the cover (b).



- 3) 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).

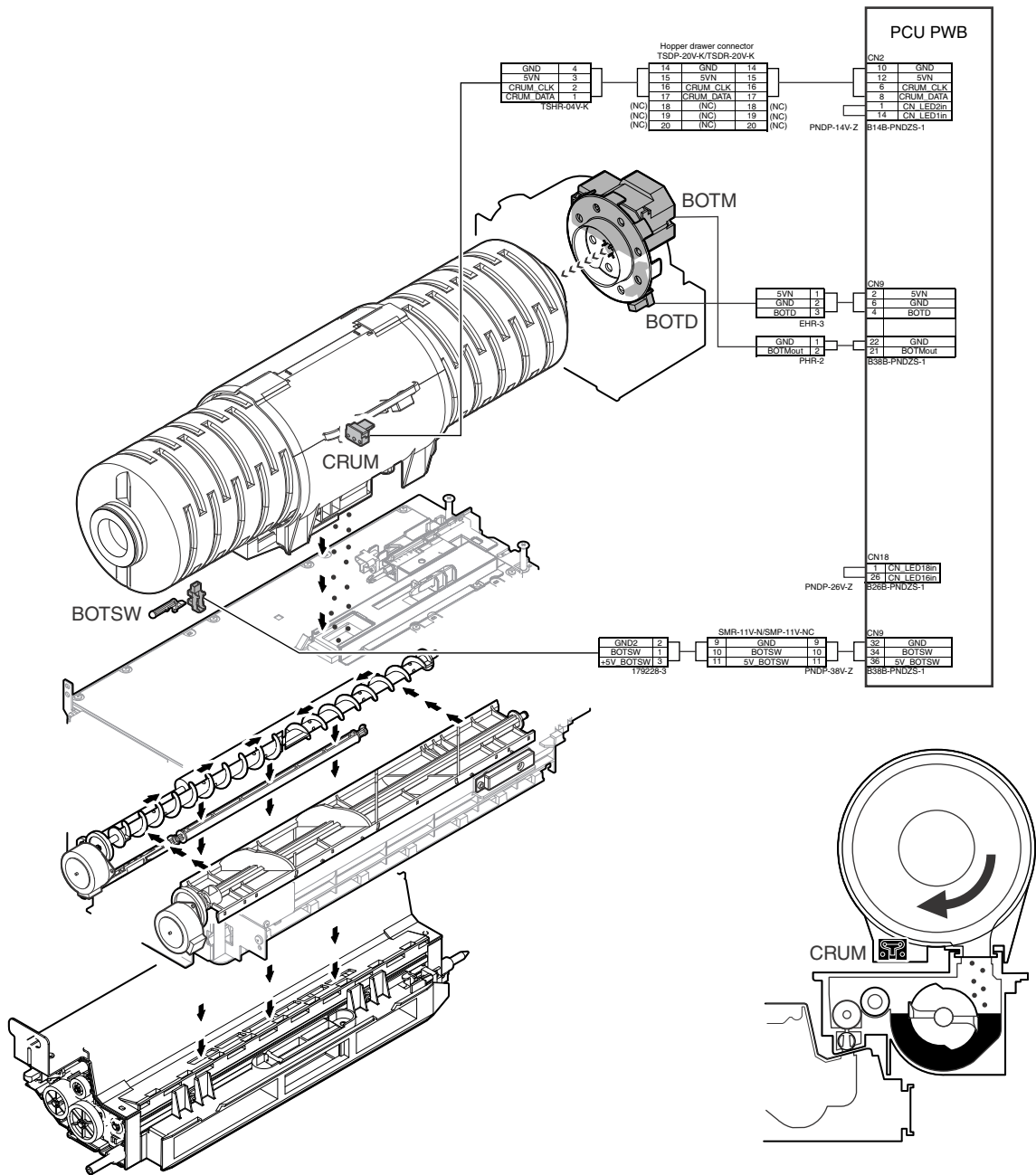


[J] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram

A. Toner cartridge section

This section supplied toner in the toner cartridge to the toner hopper.

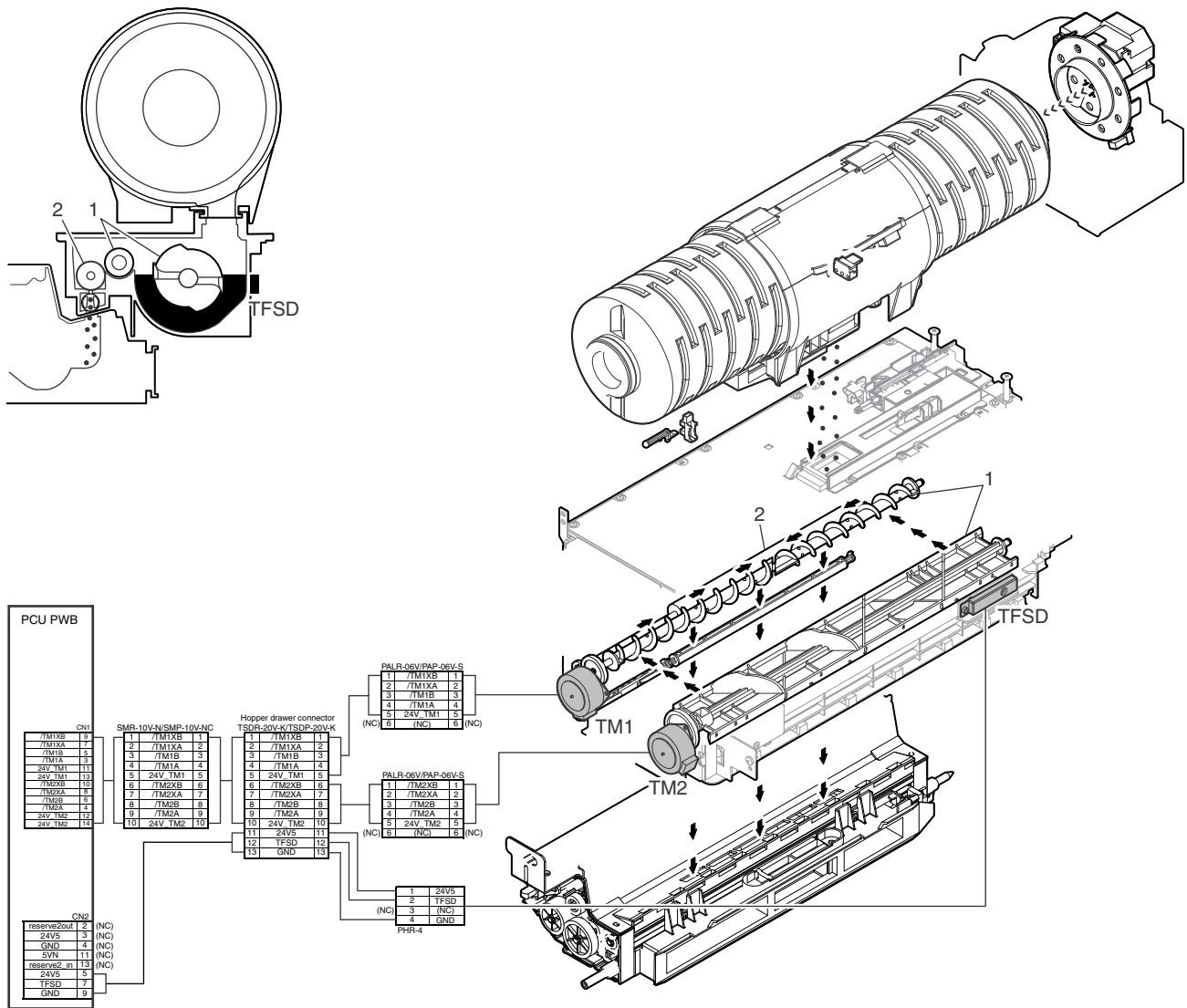


Code	Name	Function / Operation	Type
BOTM	Toner cartridge motor	Rotates the toner cartridge to supply toner in the toner cartridge to the toner hopper unit.	DC brush motor
BOTD	Toner cartridge rotation sensor	Detects rotation of the toner cartridge.	Transmission type photo sensor
CRUM	CRUM chip	Saves various information of the toner cartridge.	Memory IC
BOTSW	Toner cartridge sensor	Detects open/close of the toner tray.	Transmission type photo sensor

The toner cartridge contains of toner.

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

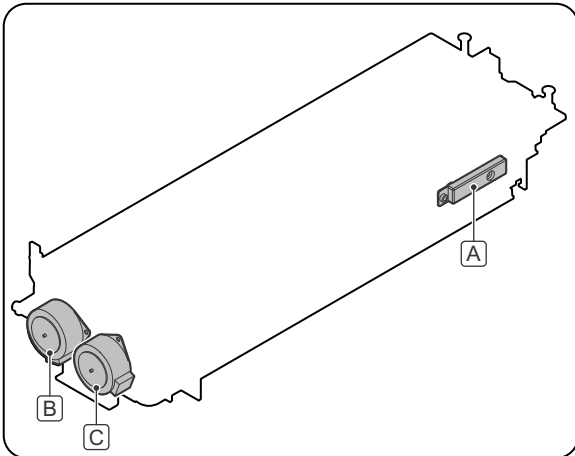
When the power is turned ON under toner empty with no toner cartridge installed, the message to urge installation of the toner cartridge is displayed and no print job can be executed.

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

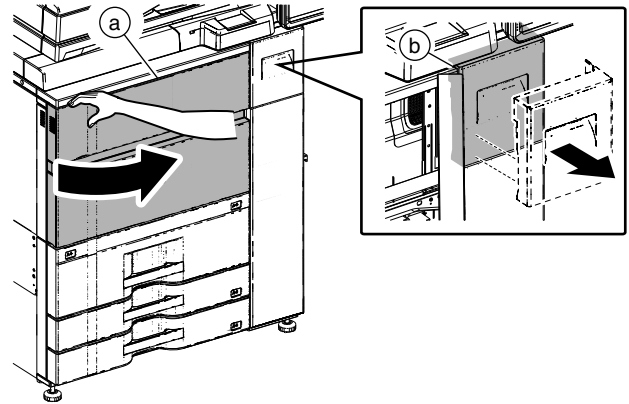
A. Toner hopper unit

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	

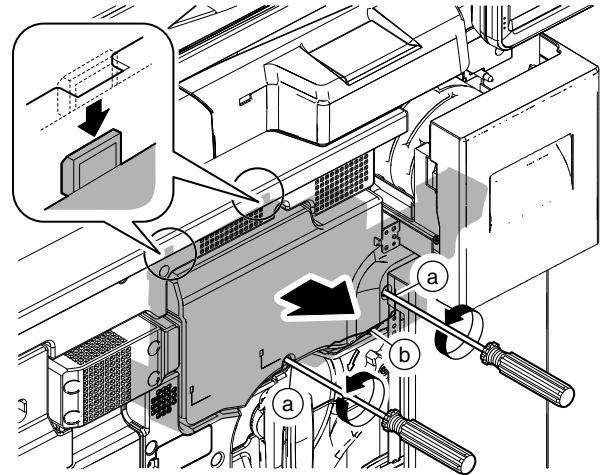


(1) Toner hopper unit

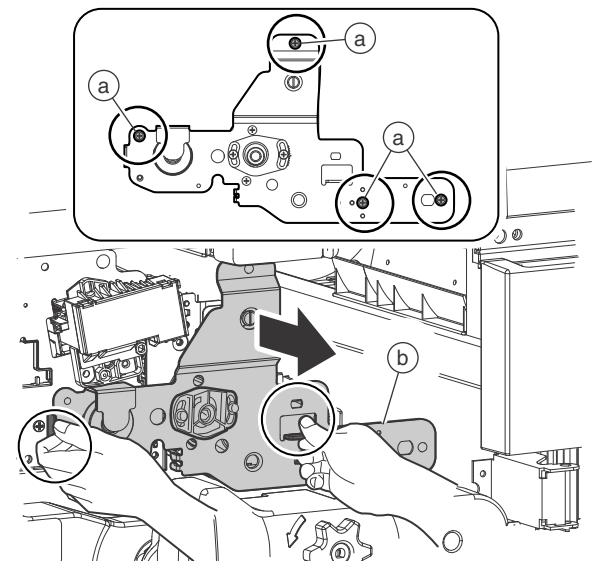
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



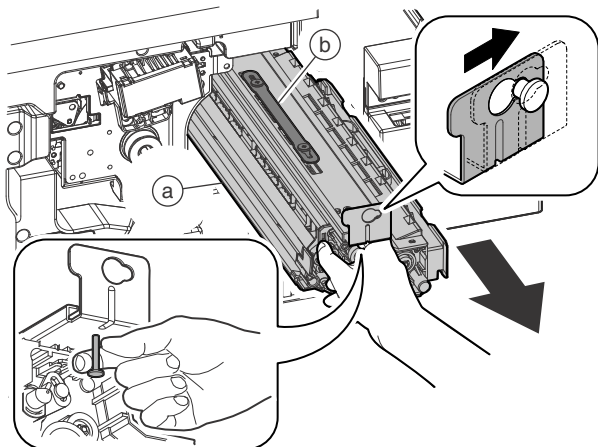
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

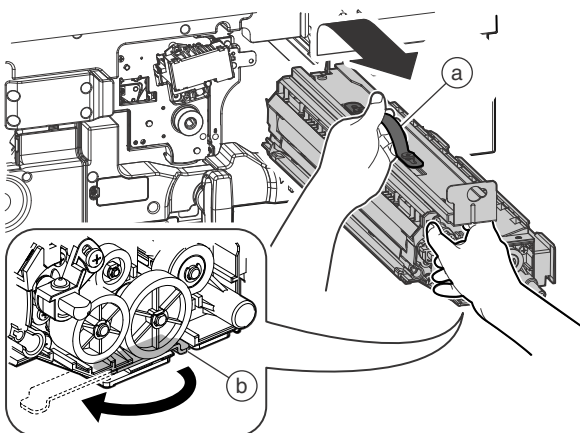


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

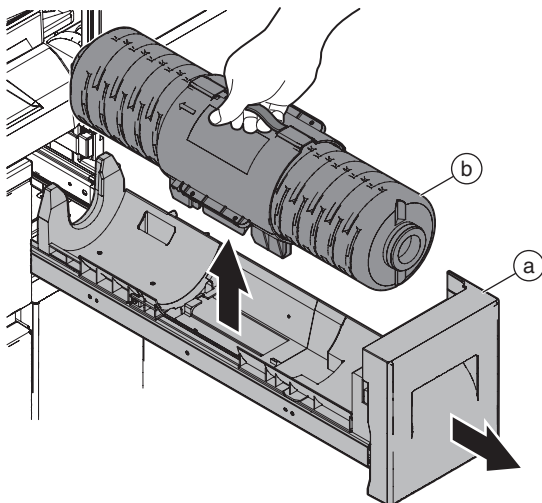


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

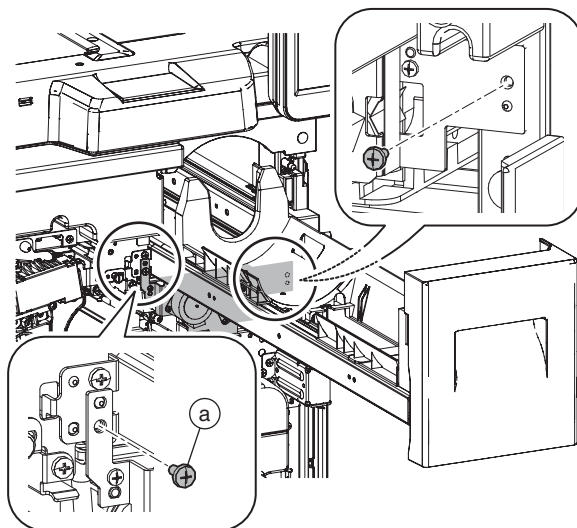
* When placing the developing unit, use the stand (b) and place the unit on it.



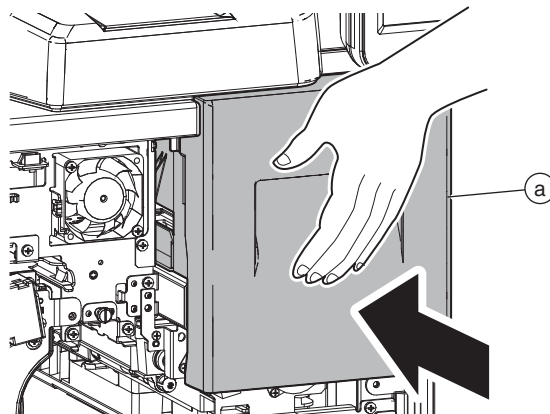
- 6) Pull out the toner tray (a), and remove the toner cartridge (b).



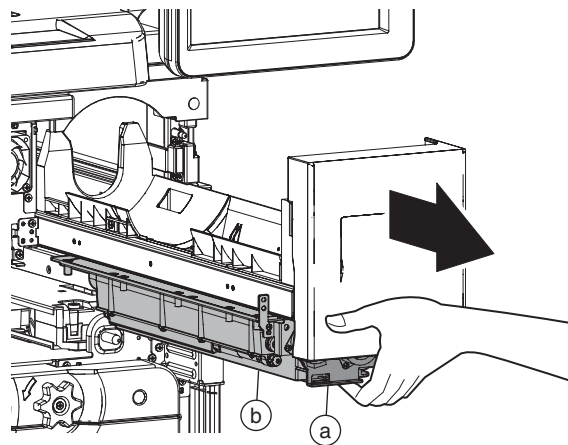
- 7) Remove the screw (a).



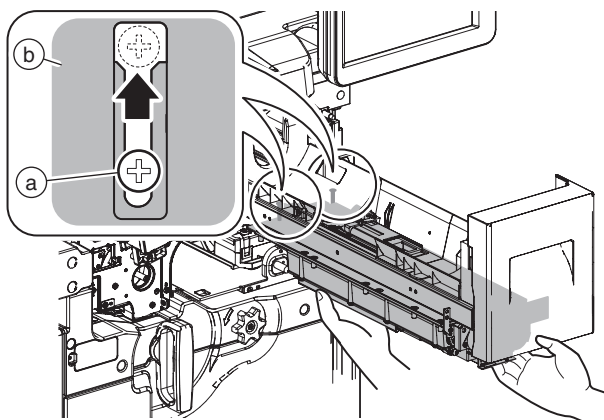
- 8) Install the toner tray (a).



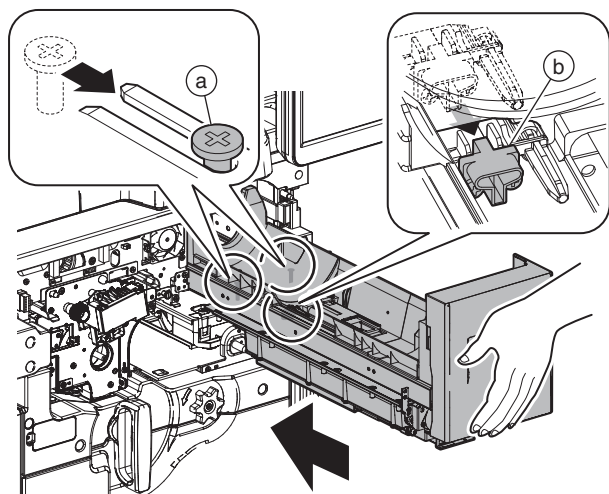
- 9) Hold the motor section (a), and pull out the toner hopper unit (b) together with the toner tray.



- 10) Remove the step screw (a) in the rear section of the toner hopper unit from the toner tray (b).

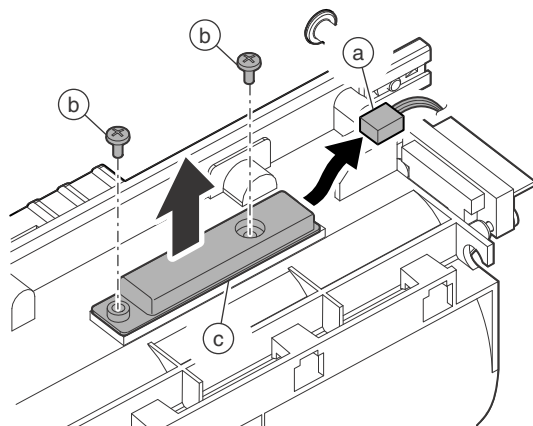


* When installing the toner hopper unit, pull out the toner tray and engage the step screw (a) and the connector (b), and store the toner hopper unit together with the toner tray.



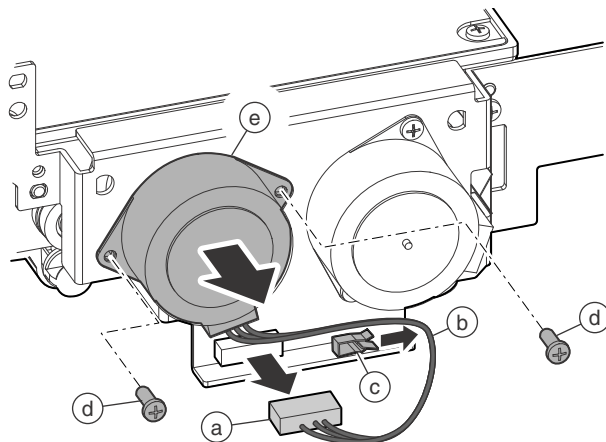
a. Toner remaining quantity sensor

- 1) Remove the toner hopper unit.
 - 2) 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.

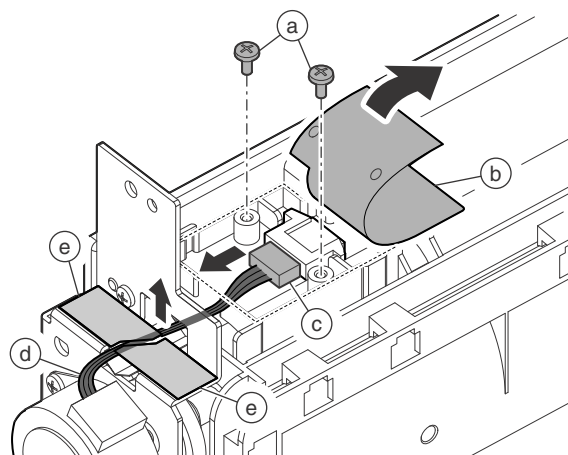


b. Toner motor 1 / Toner motor 2

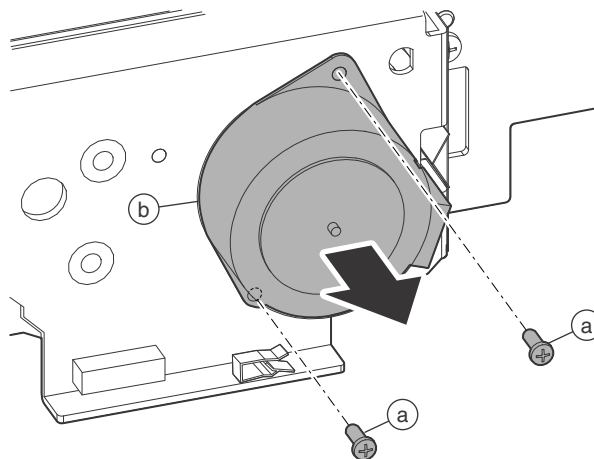
- 1) Remove the toner hopper unit.
- 2) Disconnect the connector (a), and remove the harness (b) from the harness holder (c). Remove the screw (d), and remove the toner motor 1 (e).



- 3) Remove the screw (a). Pull up the sheet (b) and disconnect the connector (c). Remove the harness (d) from the sheet (e).

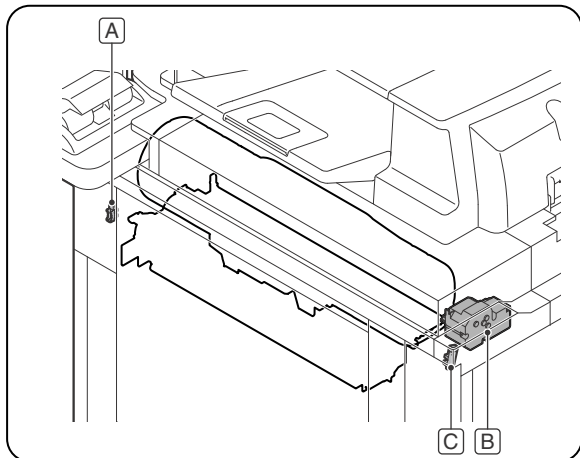


- 4) Remove the screw (a), and remove the toner motor 2 (b).



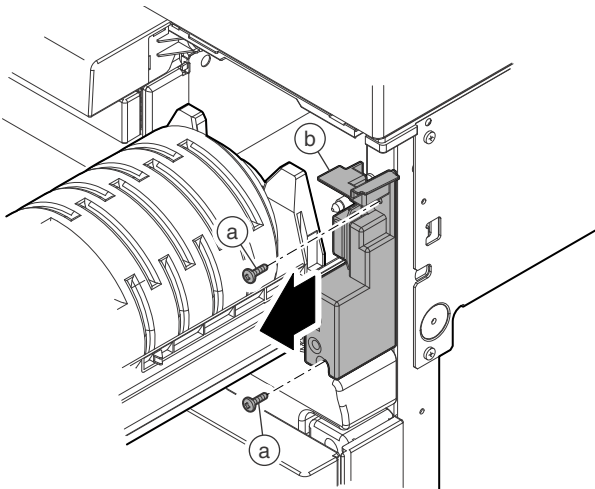
B. Others

	Parts	Page
A	Toner tray detection	J-6/(1)
B	Toner cartridge motor	J-6/(2)
C	Toner cartridge rotation detection	

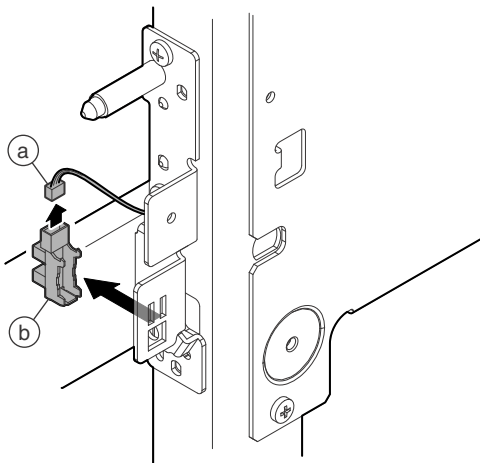


(1) Toner tray detection

- 1) Remove the upper cabinet right and the upper cabinet front cover right.
- 2) Remove the screw (a), and remove the cover (b).

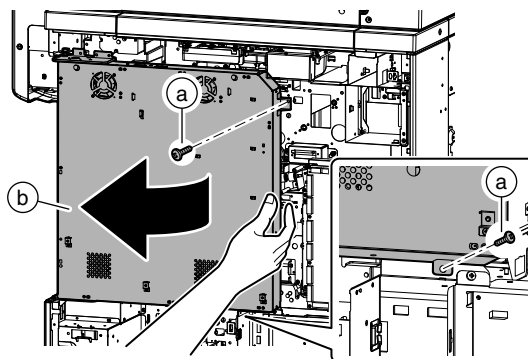


- 3) Disconnect the connector (a), and remove the toner tray detection (b).

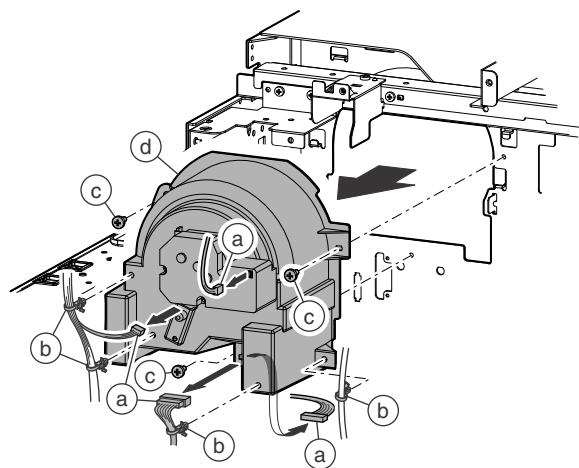


(2) Toner cartridge motor/Toner cartridge rotation detection

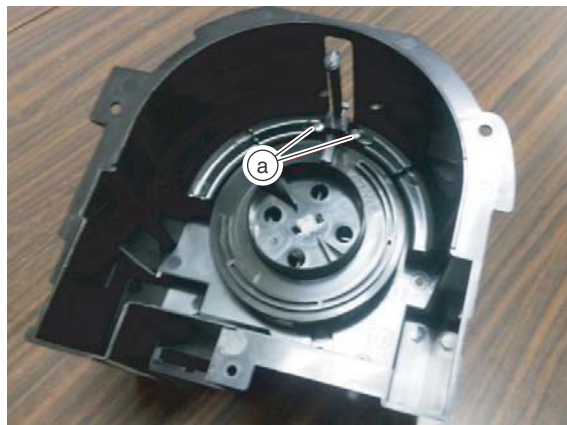
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the upper cabinet rear cover.
- 3) Remove the upper cabinet right.
- 4) Remove the screw (a), and open the control box (b).



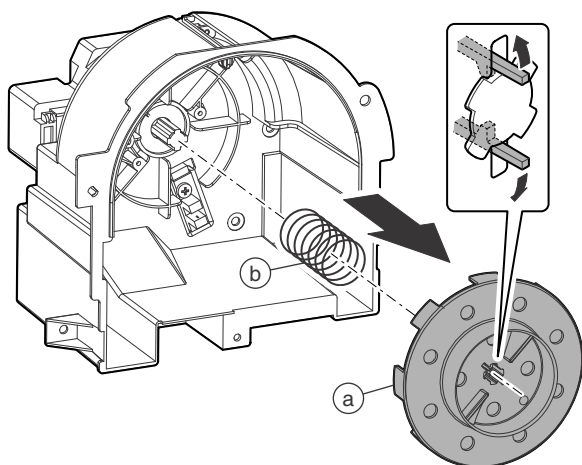
- 5) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the cover (d).



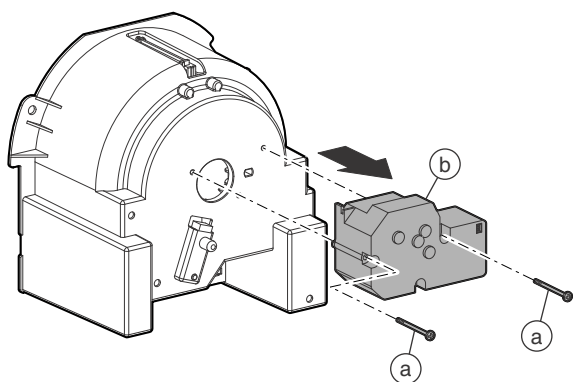
- 6) Remove the screw (a), and remove the bottle lever.



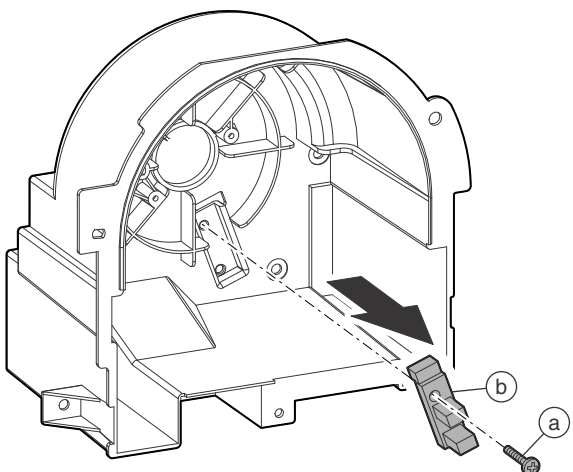
- 7) Remove the coupling (a) and remove the spring (b).



- 8) Remove the screw (a), and remove the toner cartridge motor (b).



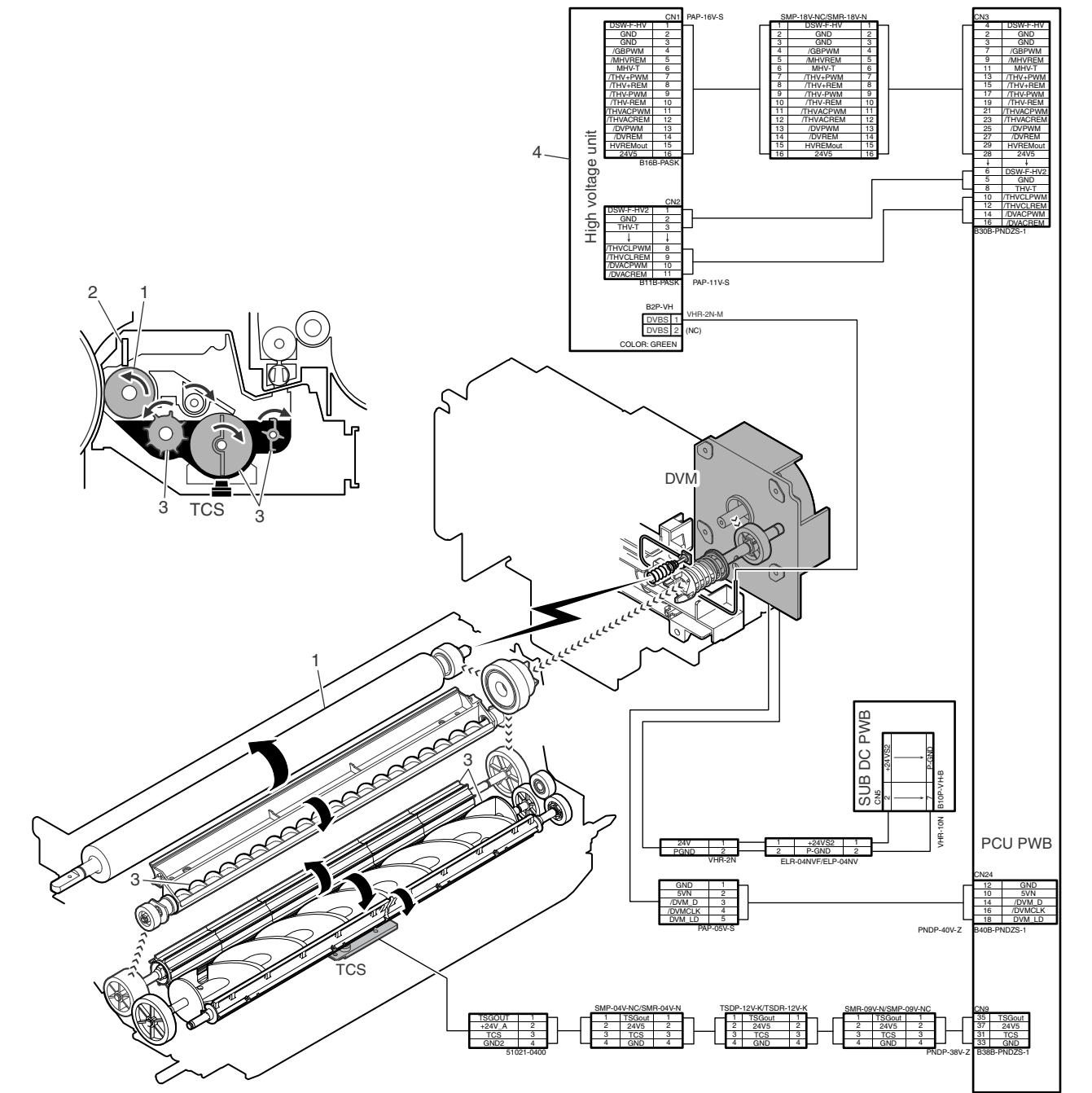
- 9) Remove the screw (a), and remove the toner cartridge rotation detection (b).



[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

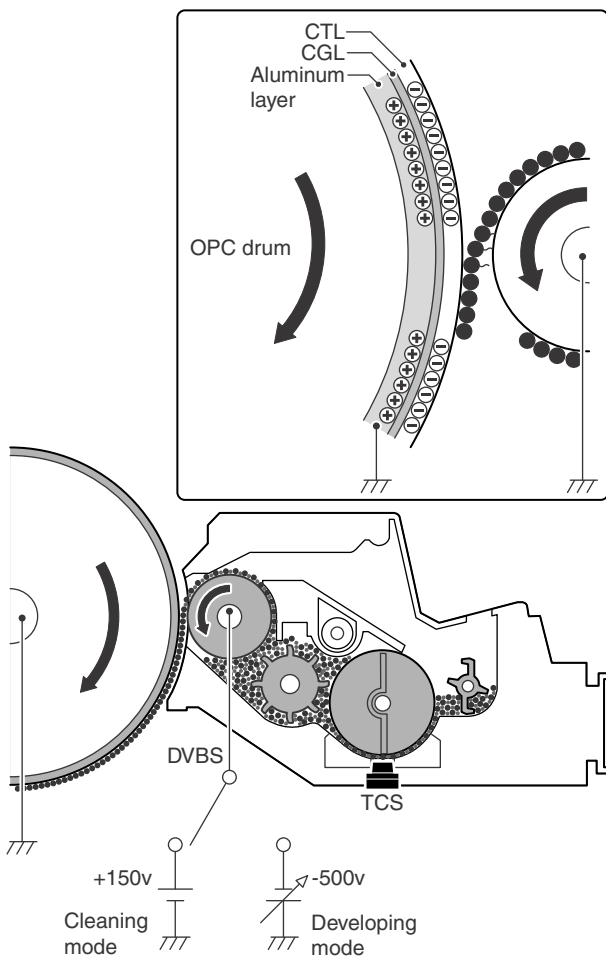
Toner and carrier in the developing unit are mixed and transported. At that time, toner is charged negatively by mechanical contact with carrier.

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 XDREM.

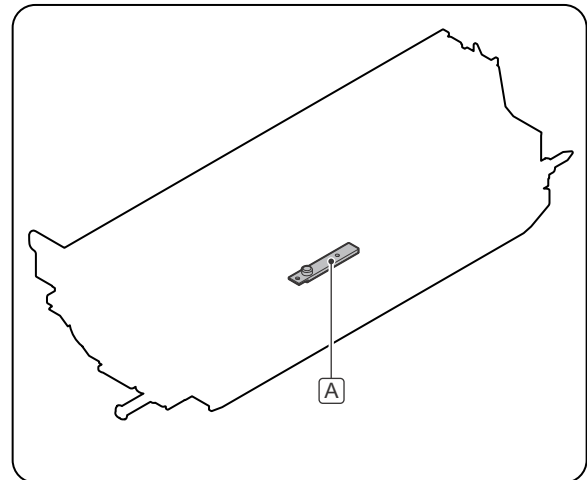
The toner density sensor (TCS) is provided in the lower section of the developing section to always detect the toner density.

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

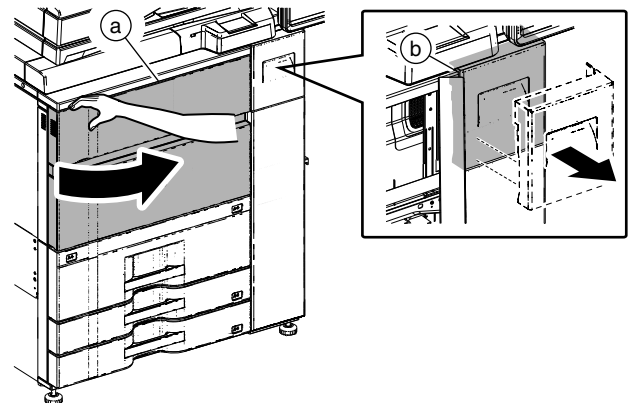
A. Development unit

Unit	Parts	Page
Development unit	A TCS sensor	K - 3/a

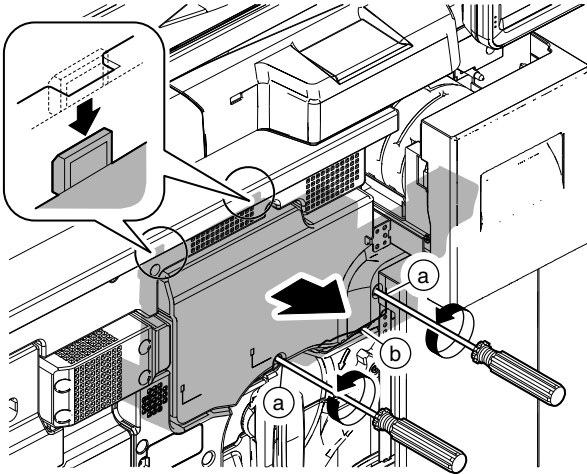


(1) Development unit

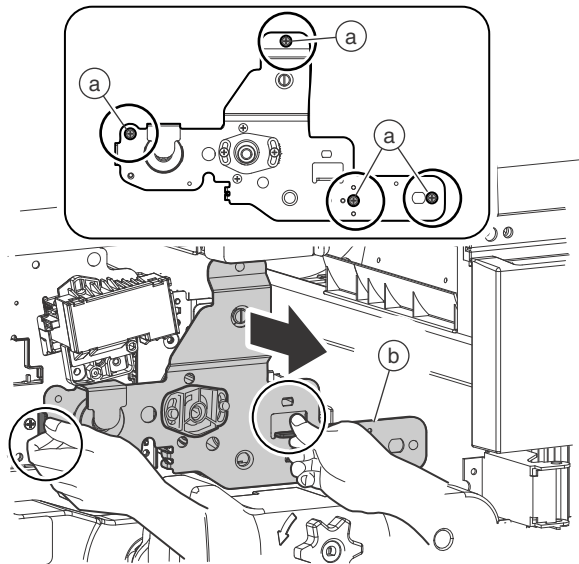
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



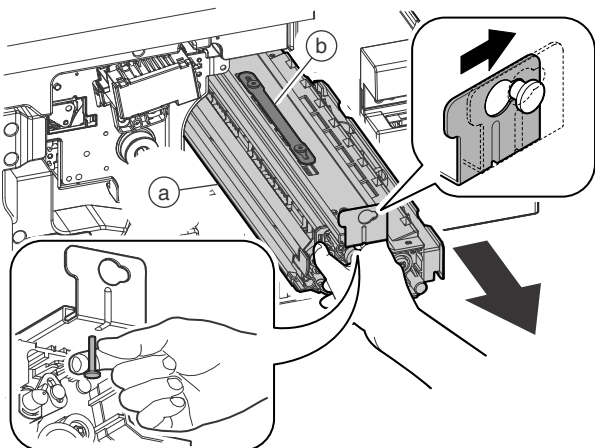
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

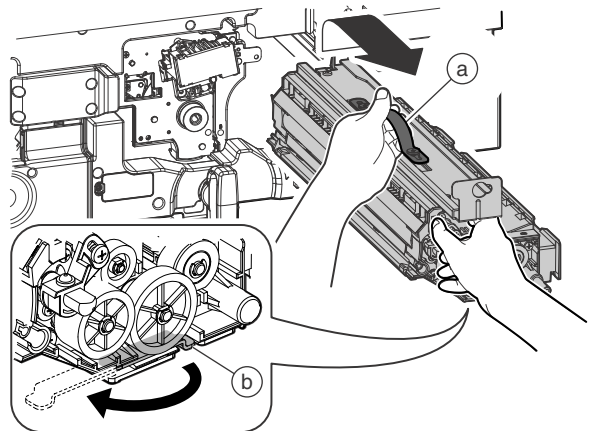


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.



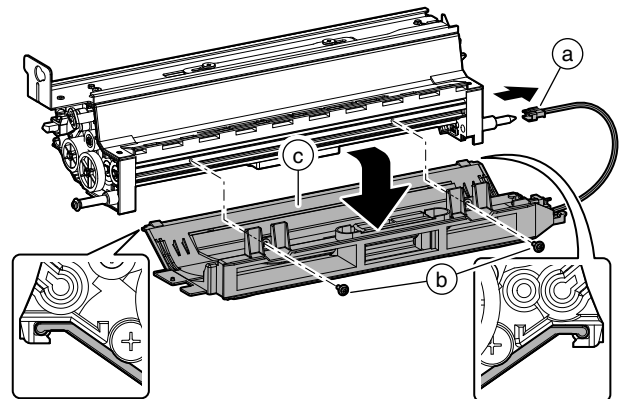
- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

* When placing the developing unit, use the stand (b) and place the unit on it.

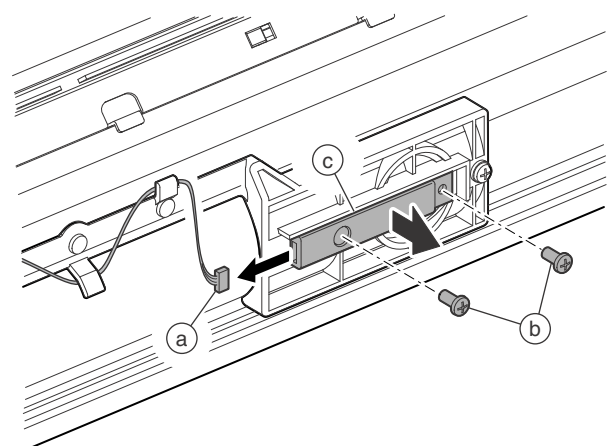


a. TCS sensor

- 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.



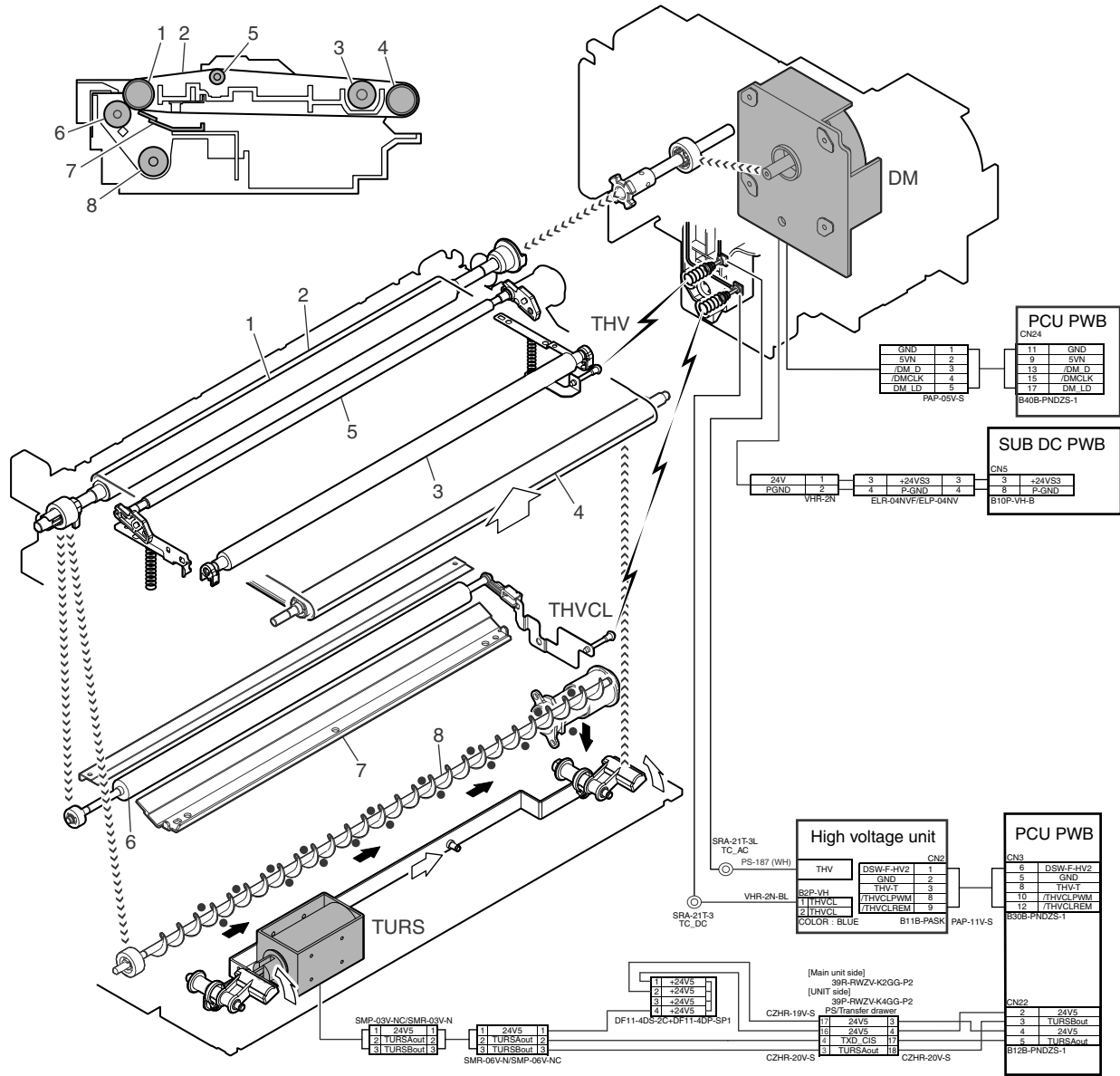
- 3) Disconnect the connector (a), and remove the screw (b). Remove the TCS sensor (c).
- * Use extra care not to foul the connector (a) terminal section.



[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.



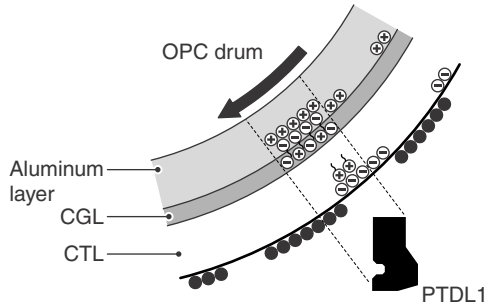
No.	Name	Function / Operation
1	Transfer drive roller	Drives the transfer belt.
2	Transfer belt	Transfers toner images from the OPC drum to paper.
3	Transfer roller	Applies a voltage for transfer of toner from the OPC drum to paper.
4	Transfer idle roller	Applies a pressure required for cleaning the 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

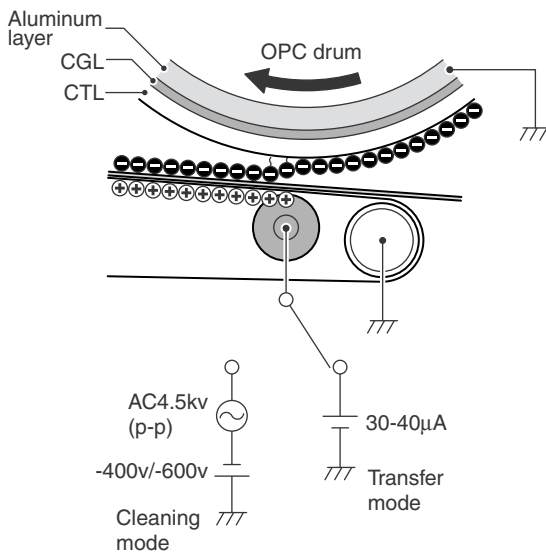
A. Pre-transfer discharge operation

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

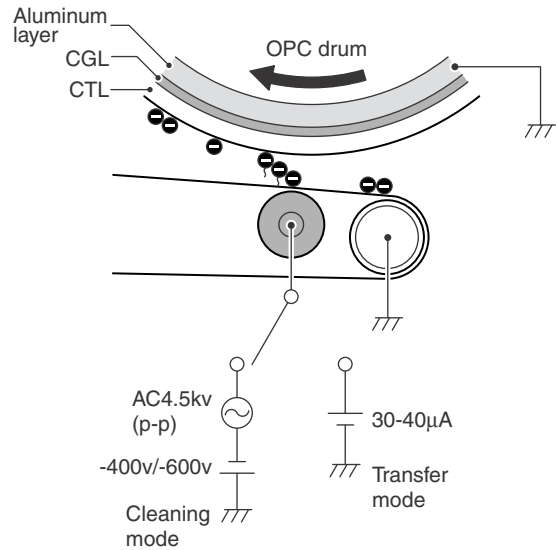
The transfer current control signal (XTHV+PWM) duty is changed to control the output current.

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.



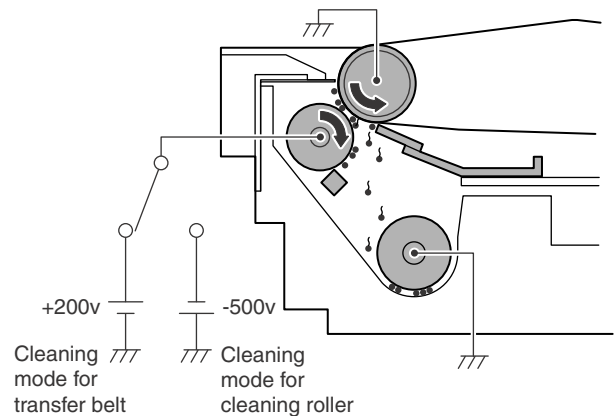
The transfer belt cleaning control signal (XTHV-PWM) duty is changed to control the output voltage.

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.



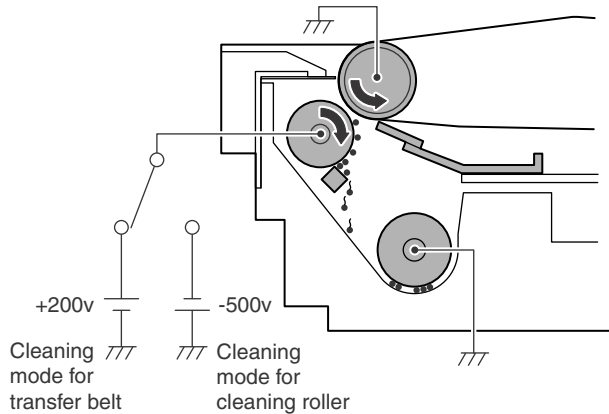
In addition, the cleaning brush is provided in the transfer section, where the transfer belt is cleaned, too.

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.

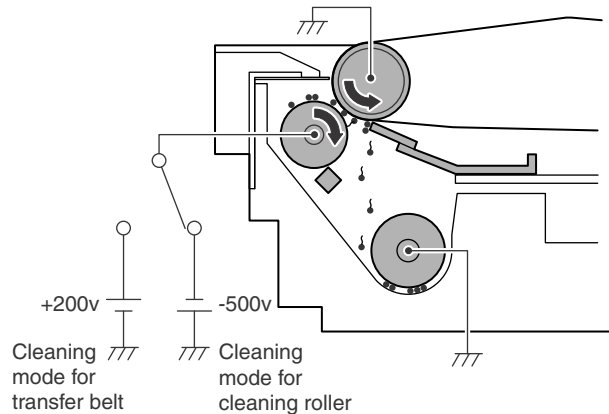
The transfer cleaning ON/OFF is controlled by the signal (XTHVCL-REM).



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).

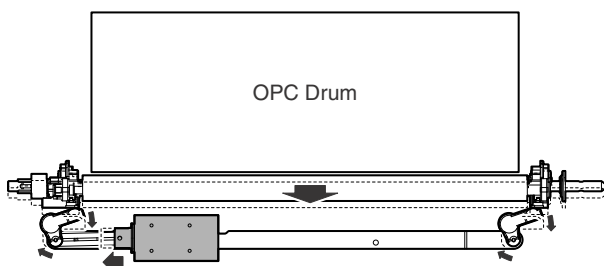


D. Transfer belt separation operation

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.

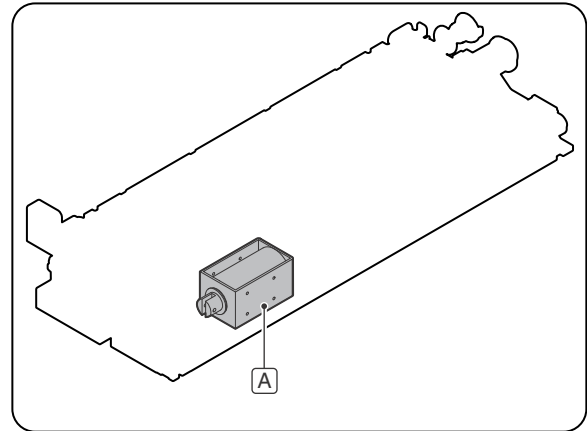
- * When the process control is executed.
- * When a jam occurs.
- * When the power is turned OFF.



3. Disassembly and assembly

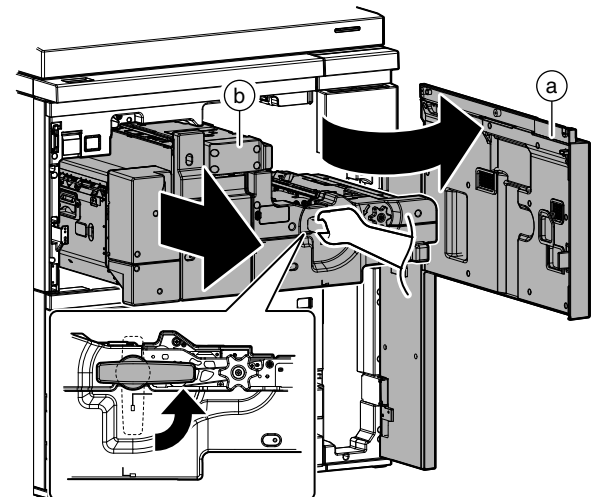
A. Transfer unit

Unit	Parts	Page
Transfer unit	A Transfer separation solenoid	L-4/a

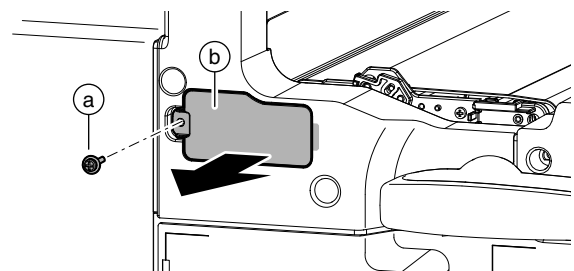


(1) Transfer unit

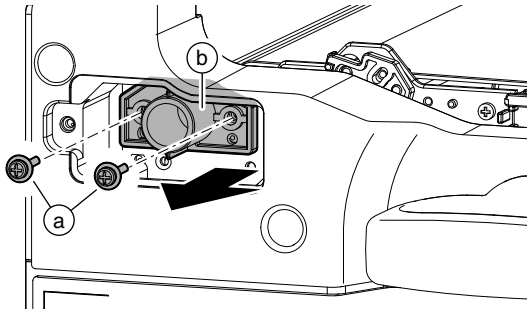
- 1) Open the front cover (a), and pull out the intermediate frame (b).



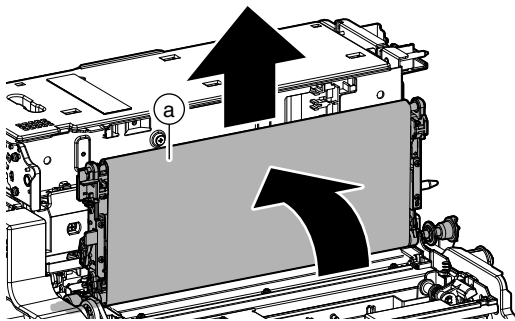
- 2) Remove the screw (a), and remove the cover (b).



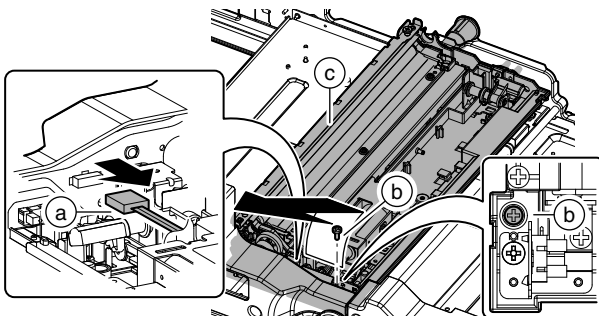
- 3) Remove the screw (a), and remove the holder (b).



- 4) Remove the transfer belt unit (a).

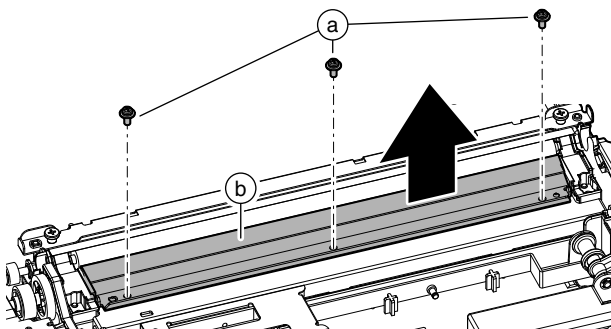


- 5) Disconnect the connector (a), and remove the screw (b). Remove the transfer belt frame unit (c).

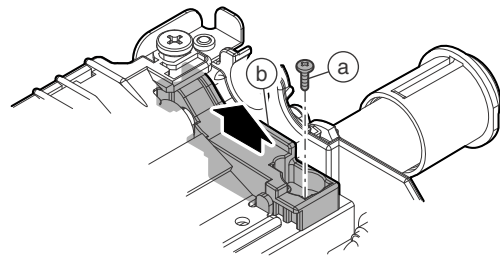


a. Transfer separation solenoid

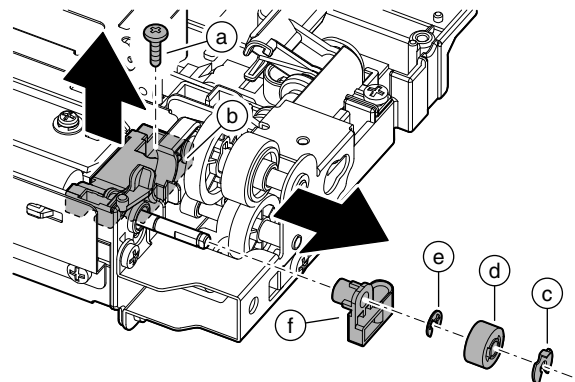
- 1) Remove the transfer unit.
- 2) Remove the screw (a), and remove the transfer cleaning blade (b).



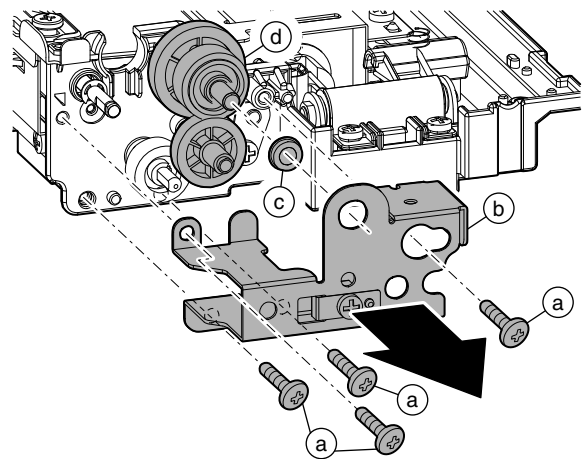
- 3) Remove the screw (a), and remove the mounting plate (b).



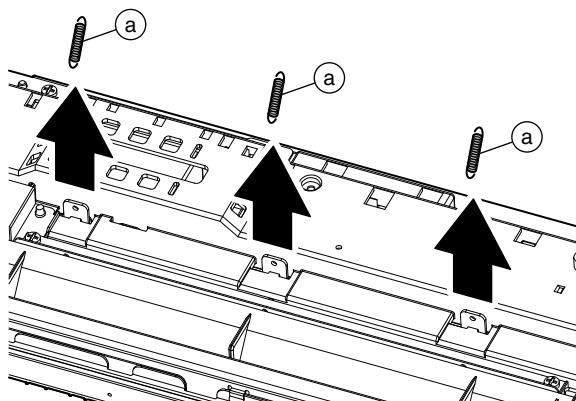
- 4) Remove the screw (a), and remove the mounting plate (b). Remove the stopper (c), the gear (d), the E-ring (e), and the bearing (f).



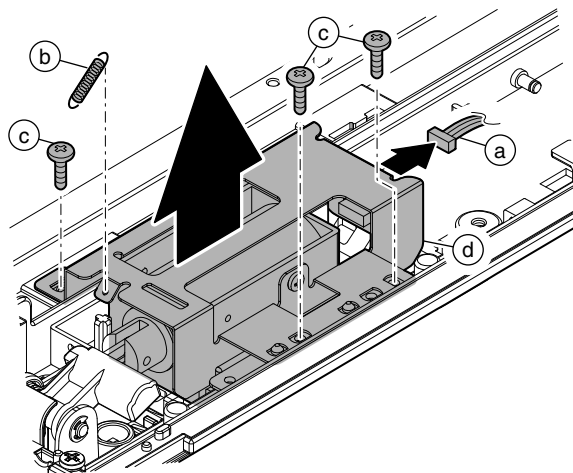
- 5) Remove the screw (a), and remove the plate (b). Remove the bearing (c) and the gear unit (d).



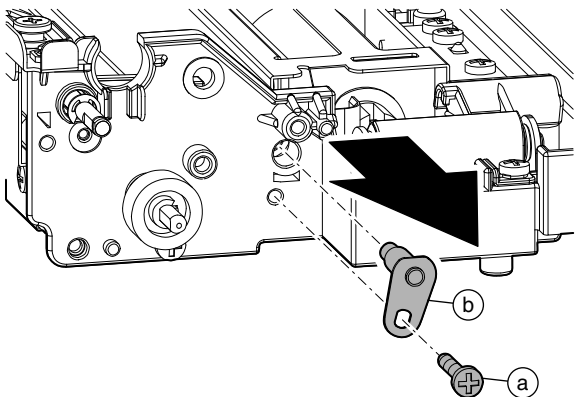
6) Remove the spring (a) from bottom side.



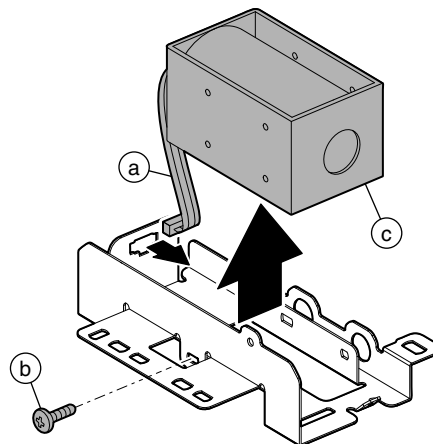
9) Disconnect the connector (a) and remove the spring (b). Remove the screw (c), and remove the transfer separation solenoid unit (d).



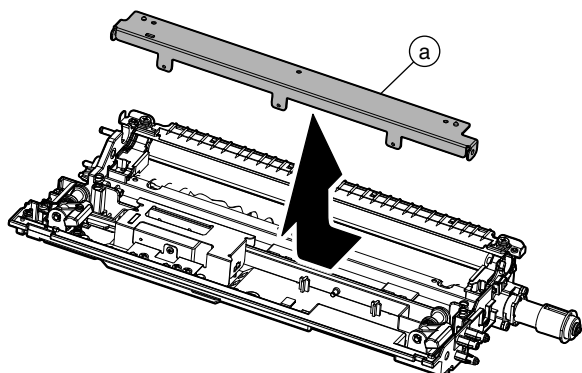
7) Remove the screw (a), and remove the positioning plate (b).



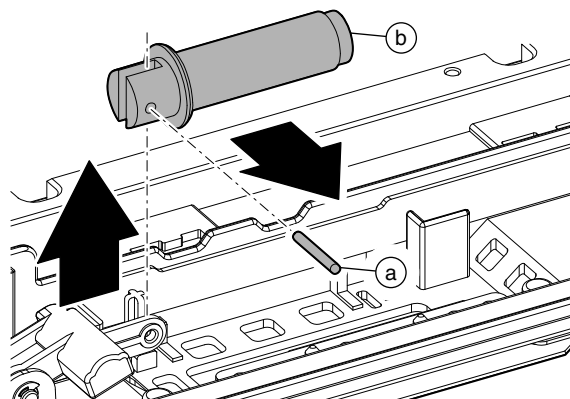
10) Disconnect the connector (a), and remove the screw (b). Remove the transfer separation solenoid (c).



8) Remove the stay (a).



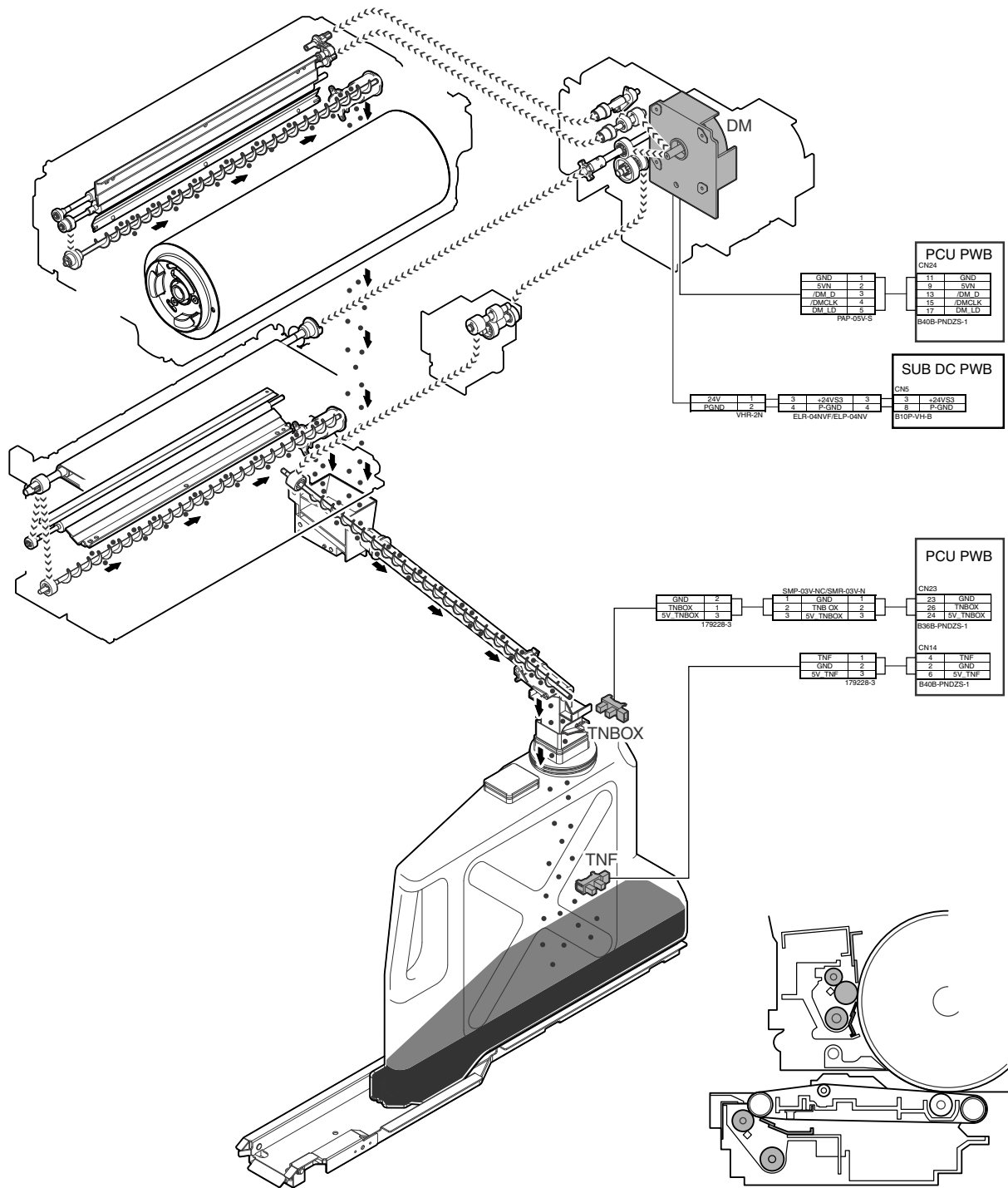
11) Remove the pin (a), and remove the solenoid plunger (b).



[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.

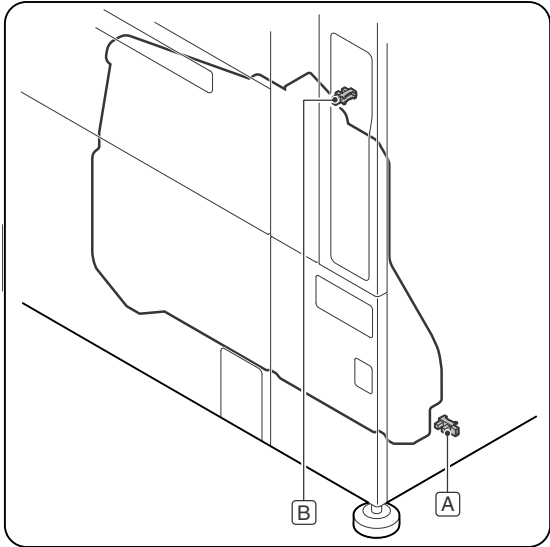
After 10K prints from the previous timing, the waste toner full is detected to urge replacement of the toner collection container. Unless it is replaced, printing cannot be performed further.

When the unit satisfied conditions of the waste toner full space while printing, the printing job is terminated.

3. Disassembly and assembly

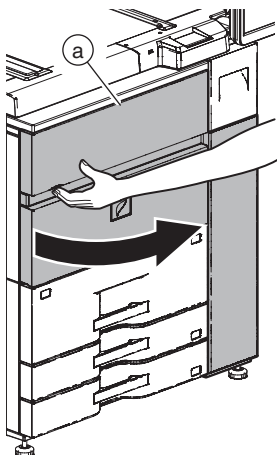
A. Waste toner section

Parts		Page
A	Toner collection container full detection	M - 3/(1)
B	Toner collection container presence detection	

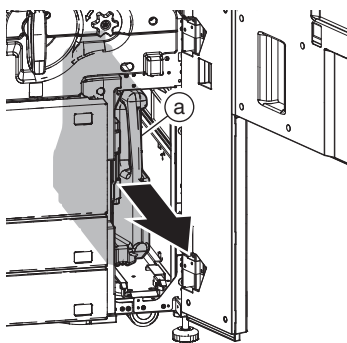


**(1) Toner collection container full detection /
Toner collection container presence detection**

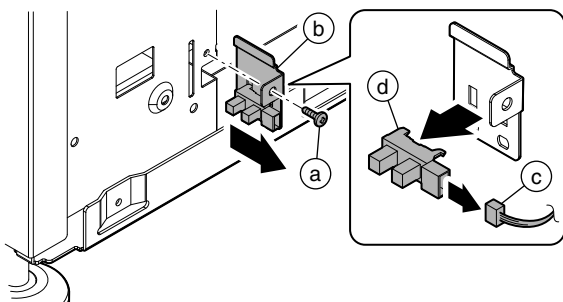
- 1) Remove the rear cabinet.
- 2) Open the front cover (a).



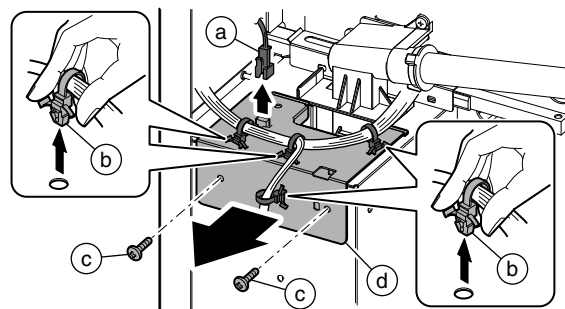
- 3) Remove the toner collection container (a).



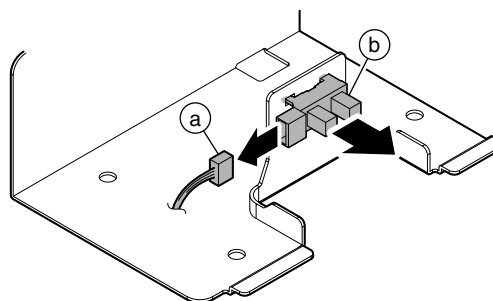
- 4) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c), and remove the toner collection container full detection (d).



- 5) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the mounting plate (d).

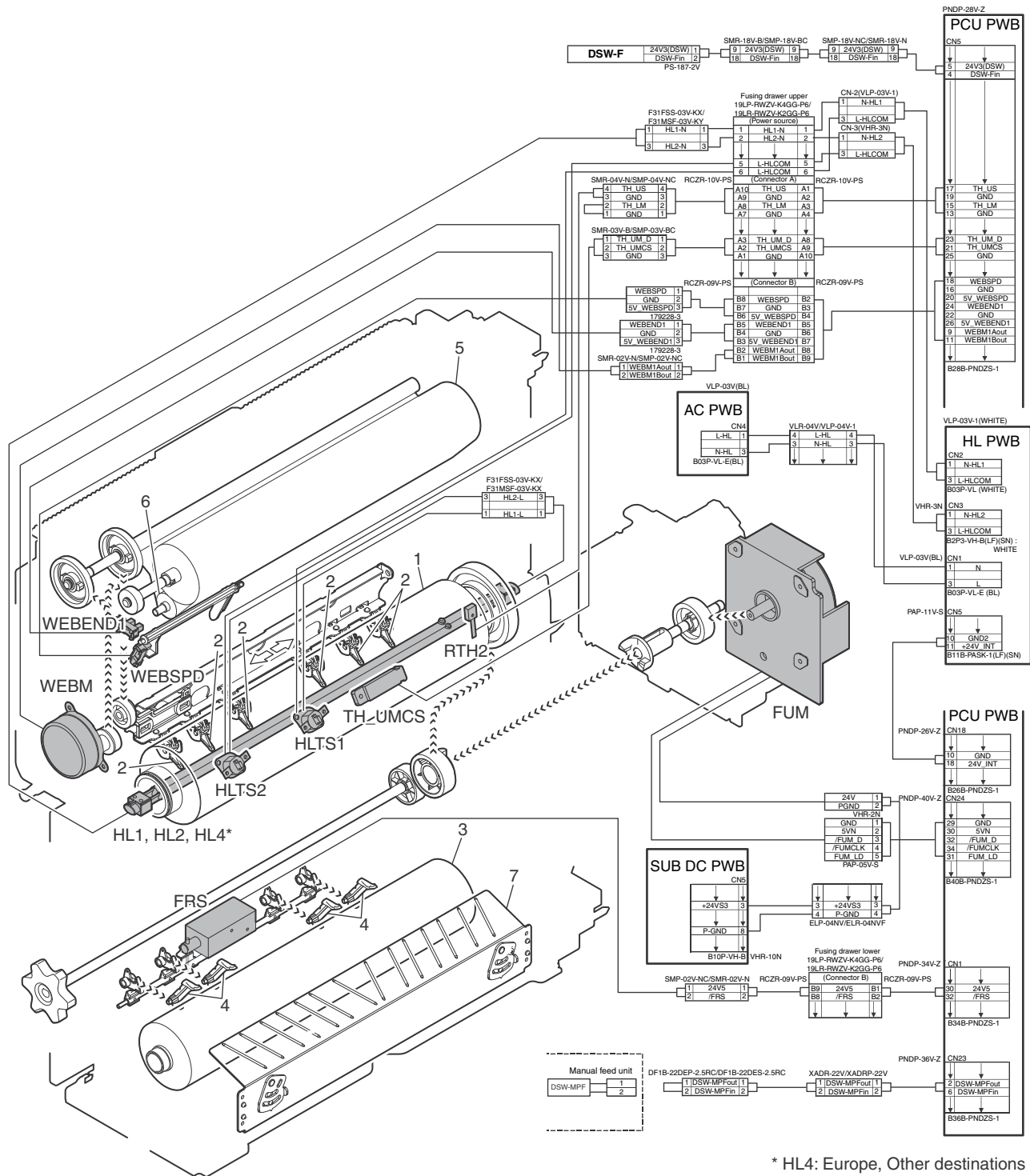


- 6) Disconnect the connector (a), and remove the toner collection container presence detection (b).



[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.
HL4	Upper heat roller heater lamp 4		Upper heat roller heater lamp control. (Europe, Other destinations)
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)

Code	Name	Type	Function / Operation
RTH2	Upper heat roller thermistor 2	Thermistor	Detects the temperature of the upper heat roller (Both edges)
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.

- 1) 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

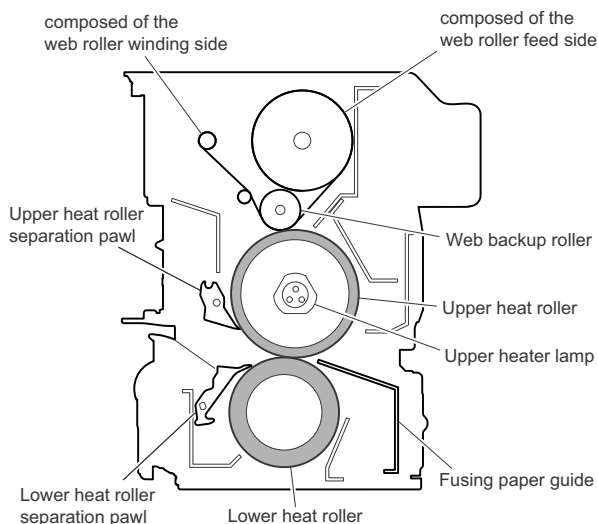
Lower heat roller 60 mm

- **Heater lamp:**

HL1, HL2, HL4 (Europe, Other destinations)

- 2) 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.



- 3) 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)

- 4) 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.

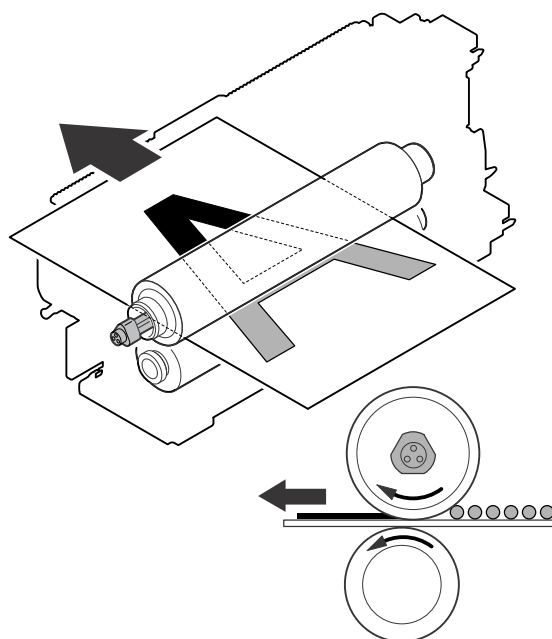
(3) Heater lamp drive

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:

- 1) 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).
- 2) 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 90cpm machine
Upper heat roller	Ready standby	180 °C
	Preheat standby	170 °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 90cpm machine
Upper heat roller	Fusing control temperature	200 °C
	PSM operation start temperature (RTH1, center section)	200 °C
	PSM operation start temperature (RTH2, edge section)	200 °C

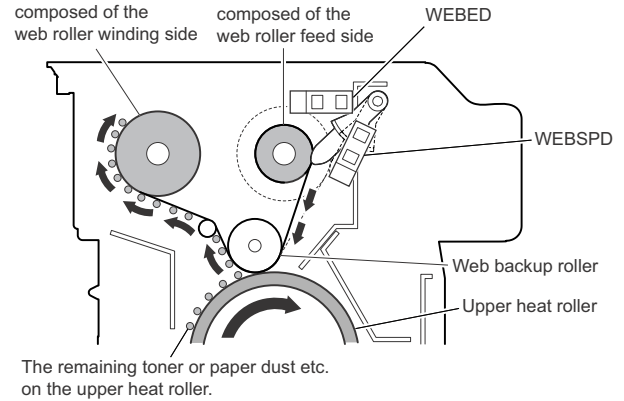
When paper is fed from the tray which is set as a heavy paper tray, the fusing temperature is changed to that for feeding heavy paper and CPM falls to about 75%. (The process speed is not changed.)

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 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.

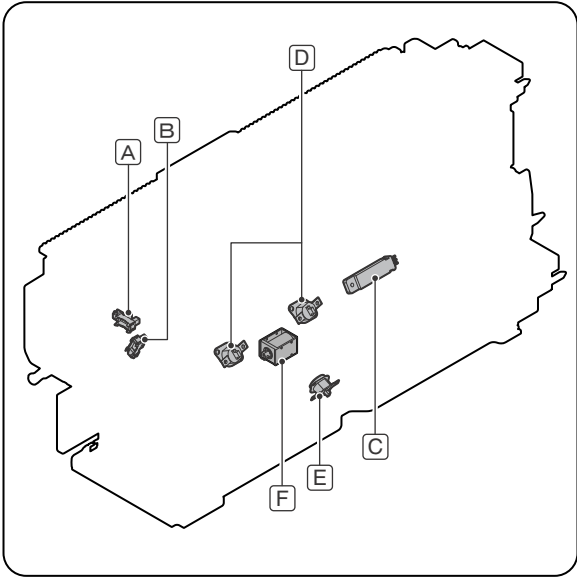
By the separation operation, dirt on the pawl is removed. The dirt of the pawl attached to the roller is collected through the upper heat roller and cleaned with the web sheet.

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

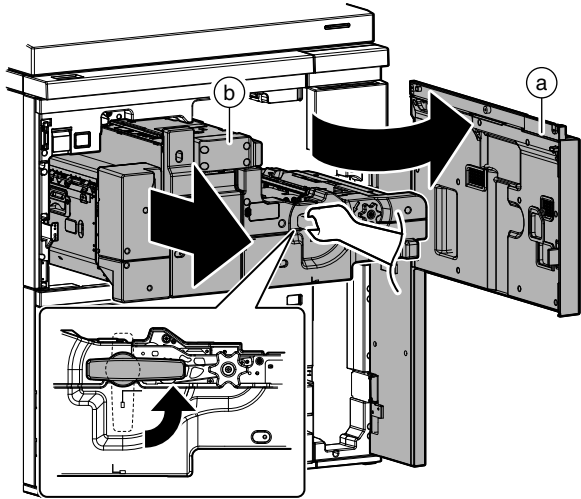
A. Fusing unit

Unit	Parts	Page
Fusing unit	A WEB end detection	N - 5/a
	B WEB near end detection	
	C Non-contact thermistor	
	D Thermostat	N - 5/b
	E Thermostat	N - 6/c
	F Lower pawl separation solenoid	N - 6/d

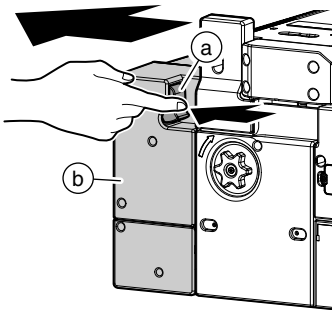


(1) Fusing unit

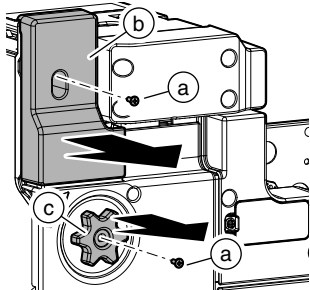
- 1) Open the front cover (a), and pull out the intermediate frame (b).



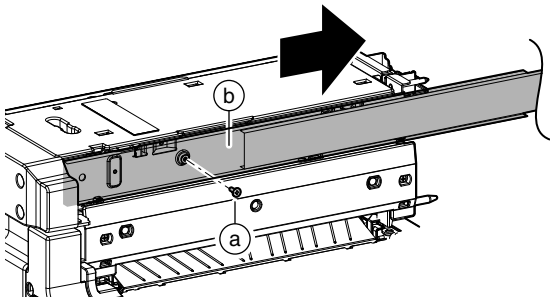
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



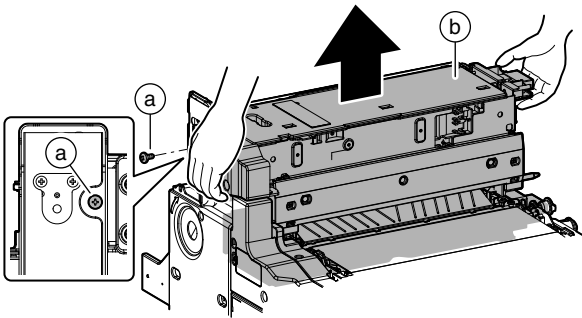
- 3) Remove the screw (a), and remove the cover (b) and the knob (c).



- 4) Remove the screw (a), and remove the rail (b).

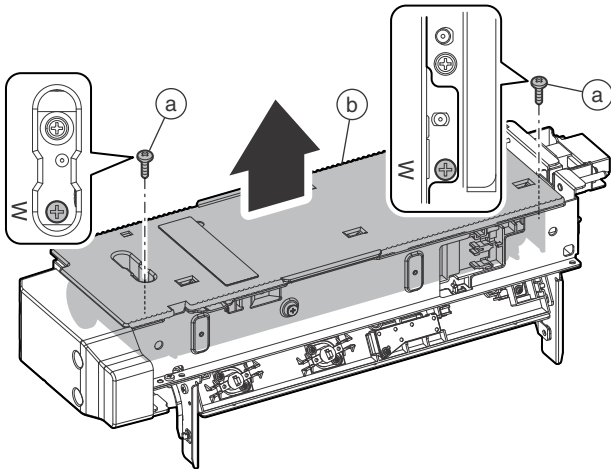


- 5) Remove the screw (a), and remove the fusing unit (b).
* Note that the fusing unit is heated to a high temperature. When removing it, be sure to hold the resin section as indicated below.

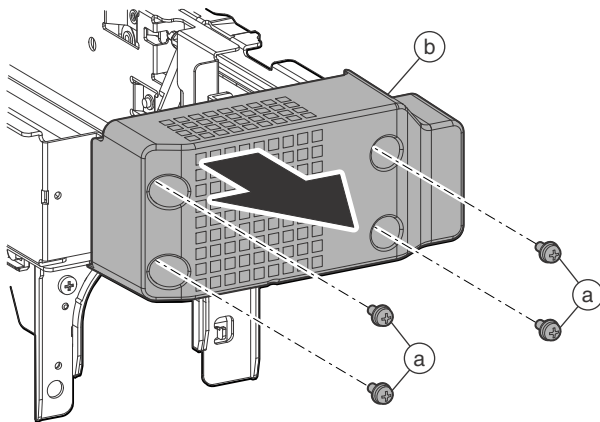


a. WEB end detection / WEB near end detection

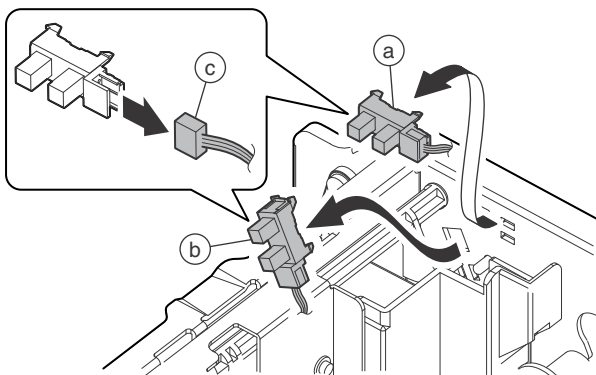
- 1) Remove the fusing unit.
- 2) Remove the screw (a) on the side of "W" mark, and remove the web unit (b).



- 3) Remove the screw (a), and remove the cover (b).



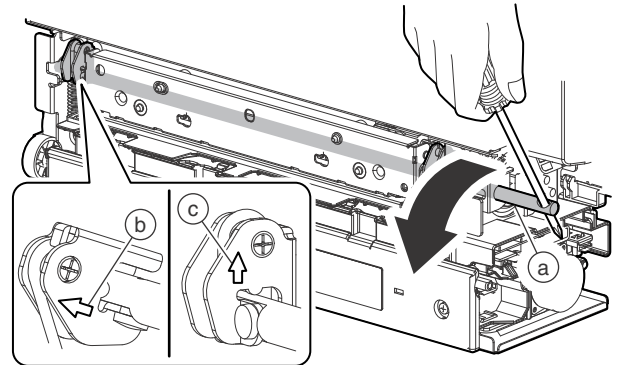
- 4) Remove the WEB end detection (a) and WEB near end detection (b). Disconnect the connector (c).



b. Non-contact thermistor / Thermostat

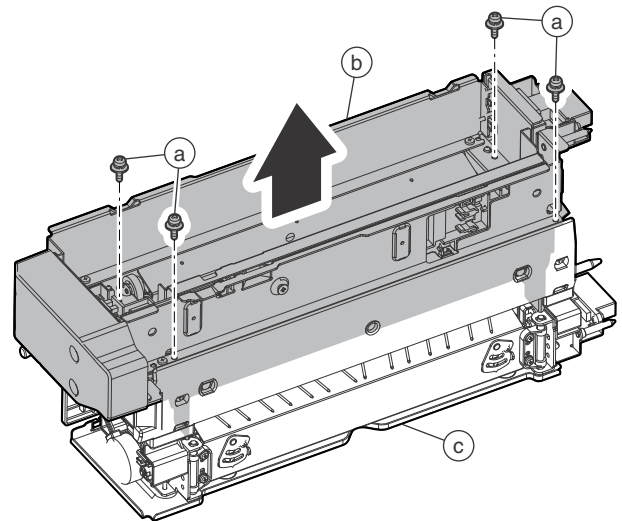
- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.

* 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).

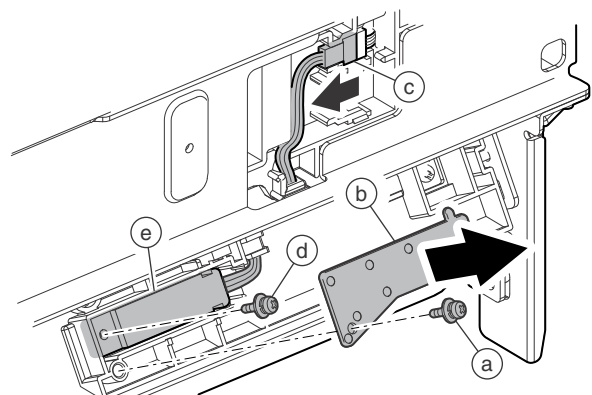


- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).

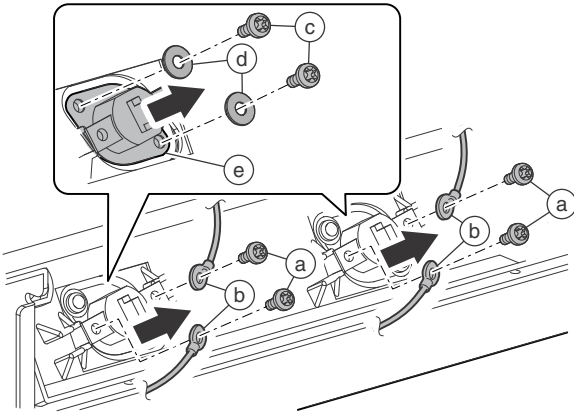
* Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.



- 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).

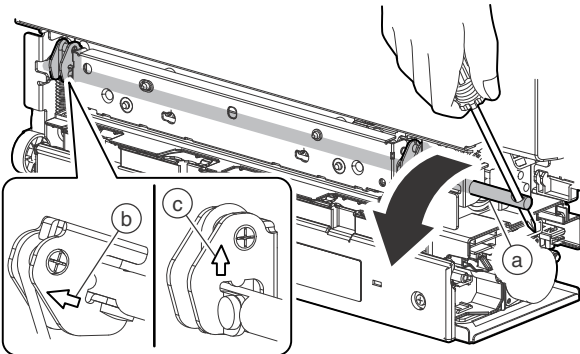


- 5) Remove the screw (a), and remove the terminal (b). Remove the screw (c) and the washer (d). Remove the thermostat (e).
 - * When tightening the screw (a), use a great care to tighten it securely.
 - * When the screw becomes loose, replace the screw (a) and the thermostat (e).

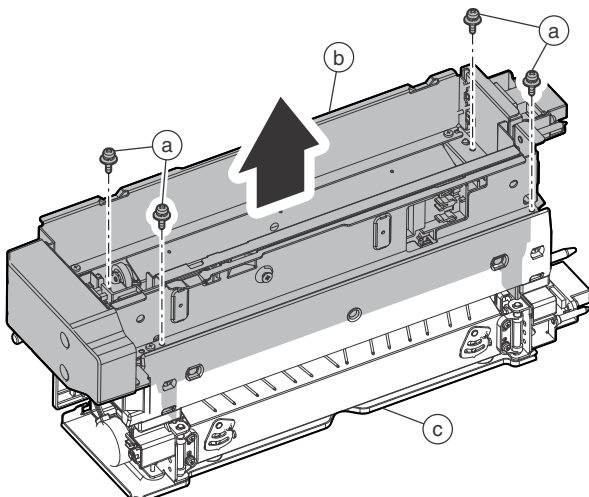


c. Thermostat

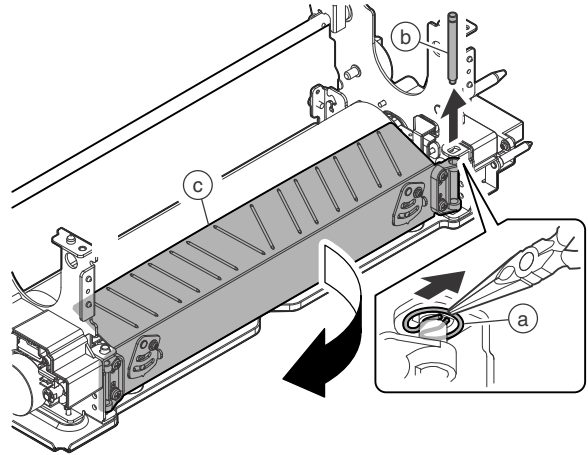
- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.
 - * When the pressure is released, the arrow mark on the pressure release shaft faces obliquely (b). When the pressure is applied, it faces upward (c).



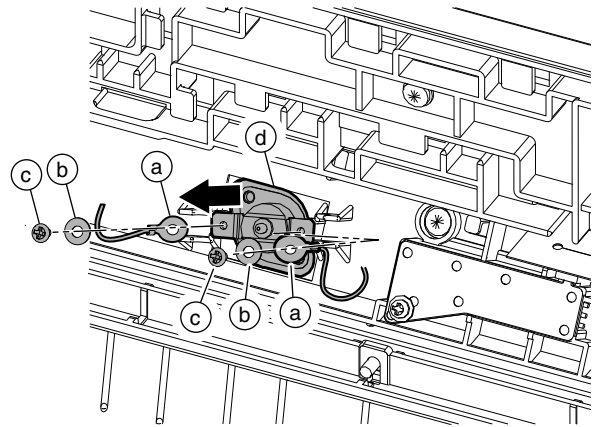
- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).
 - * Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.



- 4) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c).

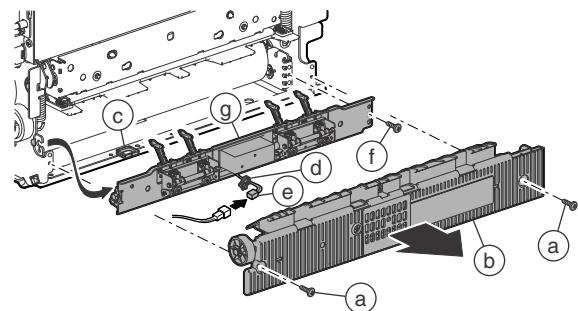


- 5) Remove the terminal (a). Remove the screw (b) and the washer (c). Remove the thermostat (d).
 - * Insert the terminal (a) fully to the bottom until it clicks. Check to confirm that it is securely connected.

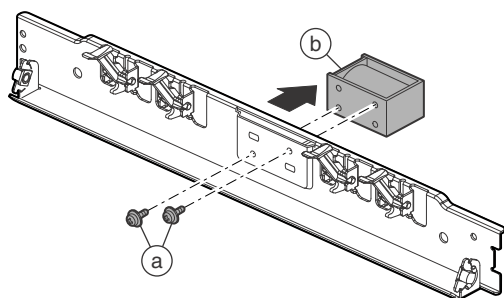


d. Lower pawl separation solenoid

- 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).



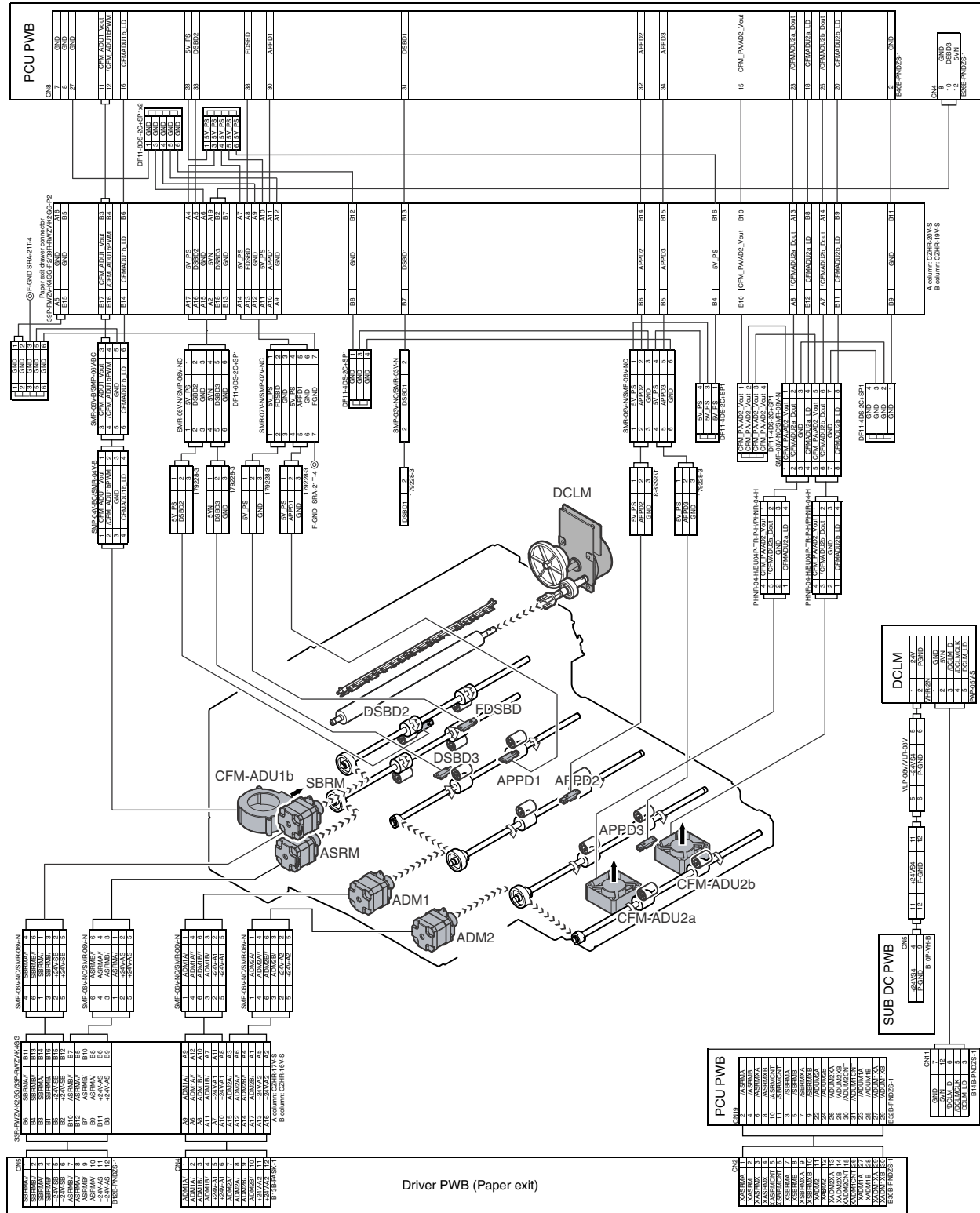
- 3) Remove the screw (a) and remove the lower pawl separation solenoid (b).



[O] ADU PAPER EXIT SECTION

1. Electrical and mechanism relation diagram

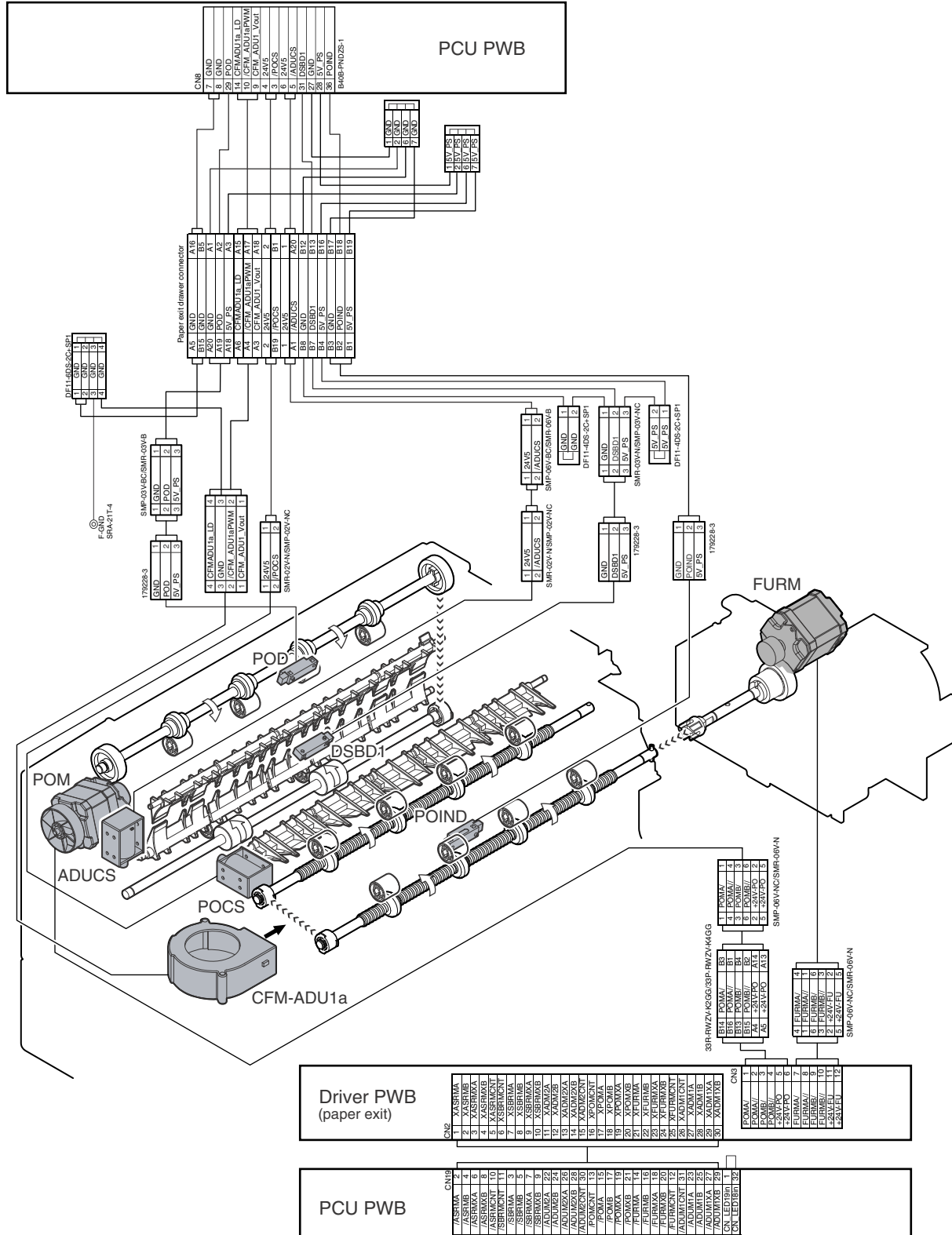
A. ADU section



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



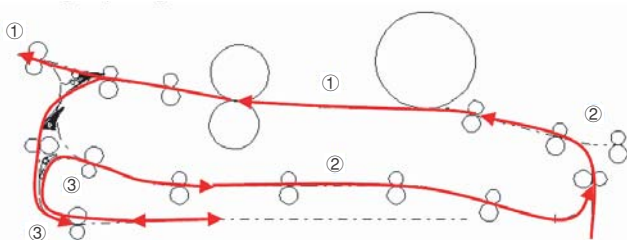
Signal name	Name	Type	Function / Operation
ADUCS	Duplex select gate solenoid	Electromagnetic clutch	Select gate solenoid for transport in the ADU section.
CFM-ADU1a	Reverse transport cooling fan	Sirocco fan	Cools paper in the reverse section.
DSBD1	Duplex reverse detection 1	Reflection type	Detects the 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

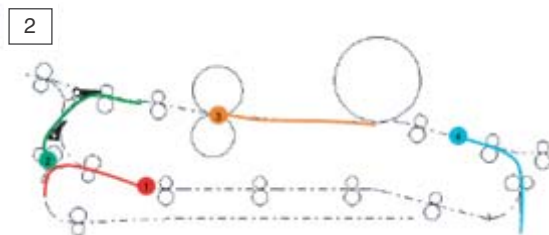
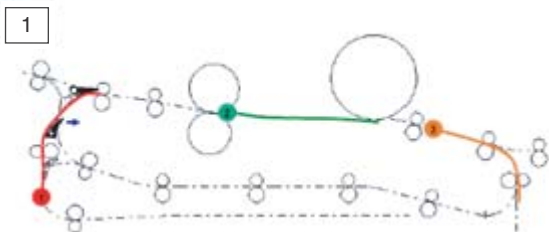
	Transport speed	Unit (mm/s)
①: Normal speed	540	(Process speed)
②: High speed I	600	(Paper feed and exit speed)
③: High speed II	1000	(Switchback speed)
④: High speed III	800	(Paper exit option receiving and sending speed : when paper exit option installed)

B. Paper transport operation in duplex print

When duplex print is selected, the paper is passed under the face-up / face-down select gate.

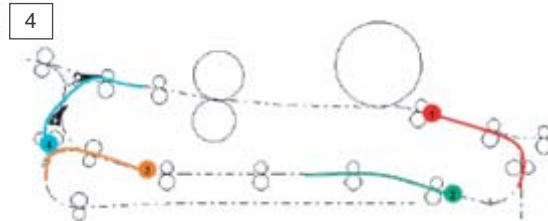
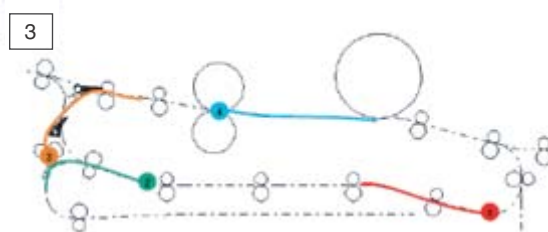
At the same time the duplex select gate is on, the paper is passed to ADU paper guide.

Paper is reversed by ADU reverse motor.



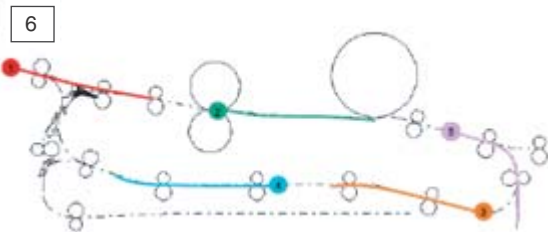
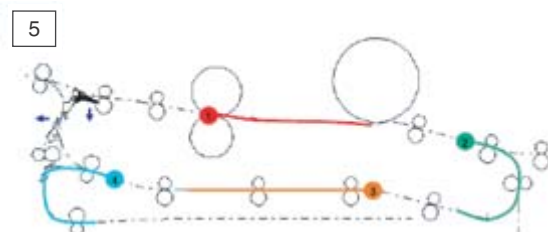
The second paper completes switchback and is passed to the reverse gate.

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.

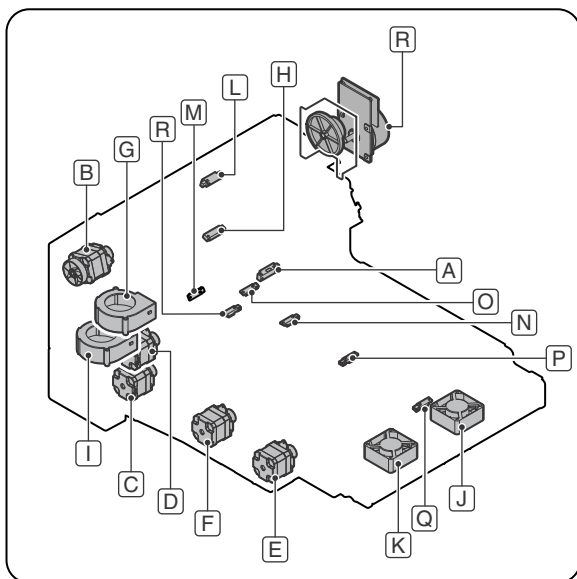
The front surface of the 5th sheets is copied on the first sheet. After that, back → front copy is made for each sheet.



3. Disassembly and assembly

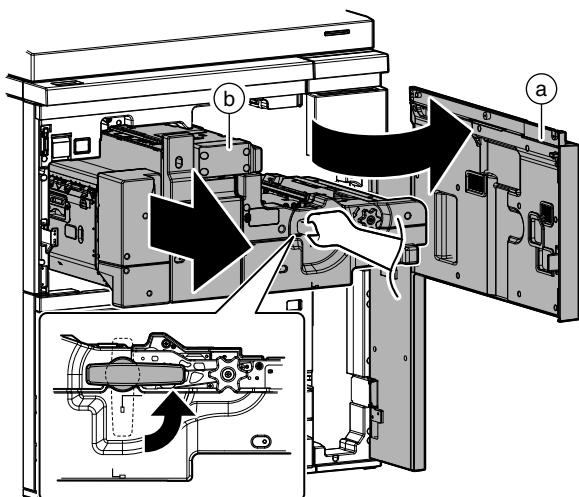
A. ADU paper exit unit

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

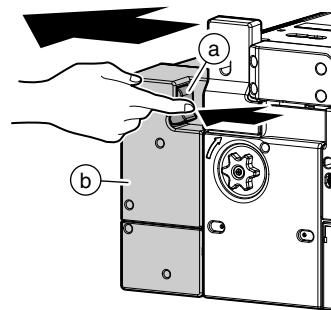


(1) ADU paper exit unit

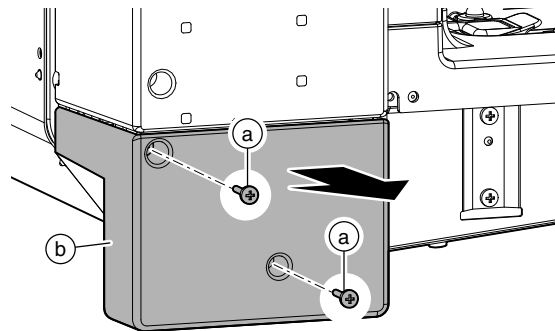
- 1) Open the front cover (a), and pull out the intermediate frame (b).



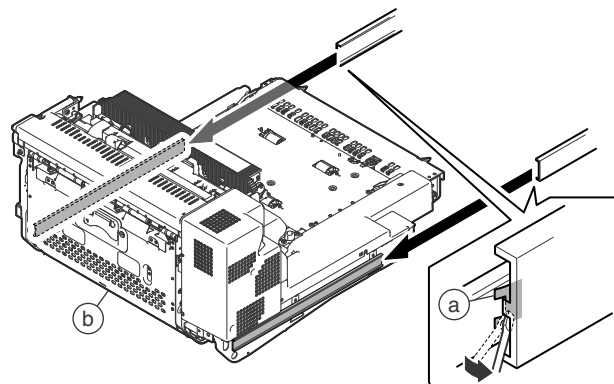
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



- 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.

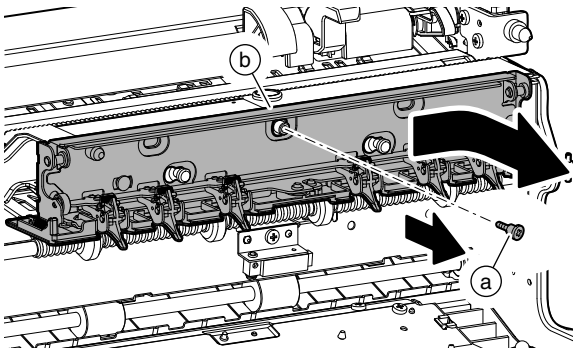


<Note for replacing the ADU unit>

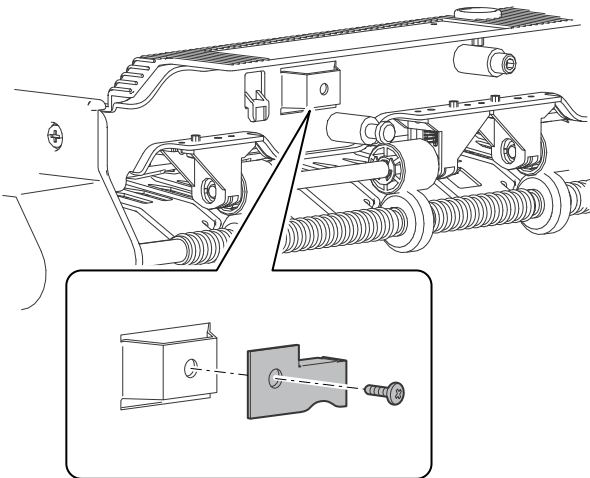
When replacing the ADU unit, the upper pawl protection plate and the fixing screw must be replaced. (If not, a jam or breakage of the fusing upper separation pawl may occur.)

* 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).

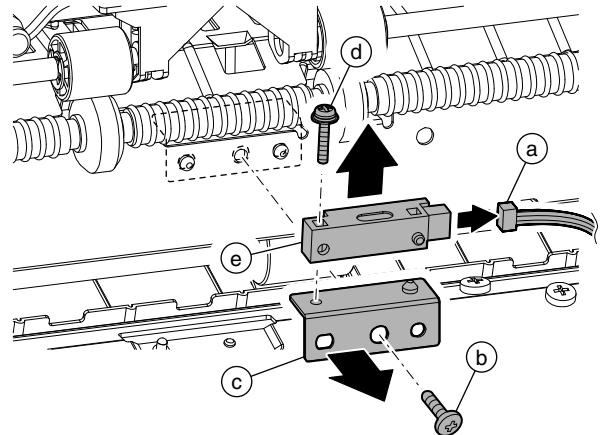


- 2) Remove the upper pawl protection plate and the fixing screw, and attach the new ADU unit.



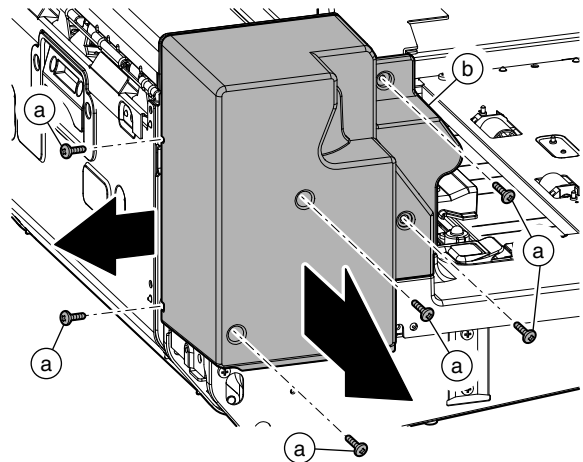
a. Paper exit paper entry detection

- 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).

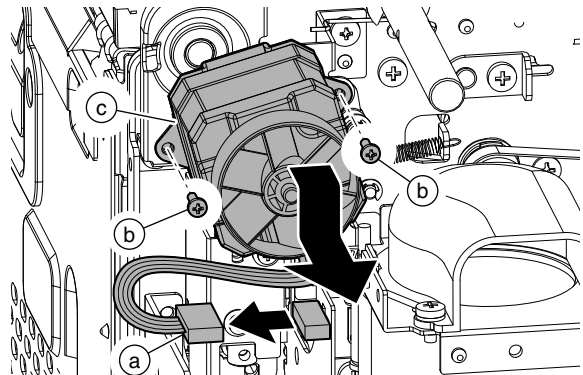


b. Paper exit motor

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).

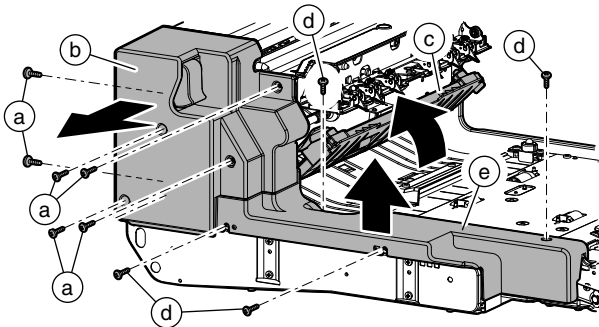


- 3) Disconnect the connector (a). Remove the screw (b), and remove the paper exit motor (c).

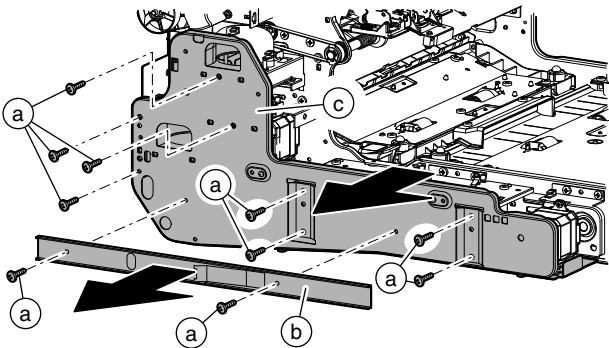


c. ADU reverse motor / Paper exit reverse motor

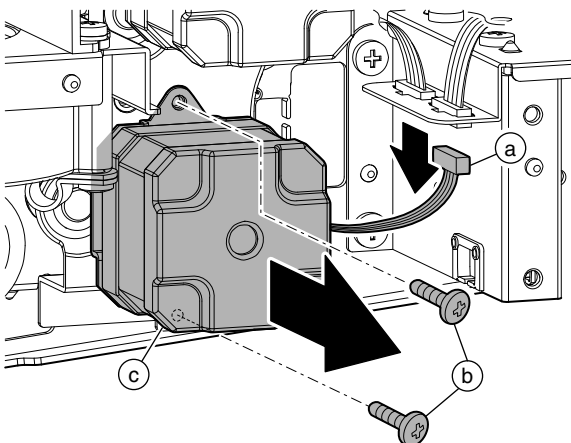
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



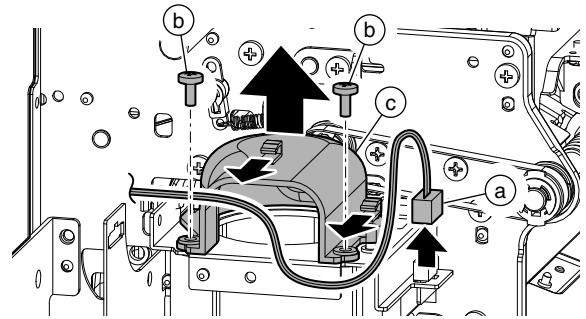
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



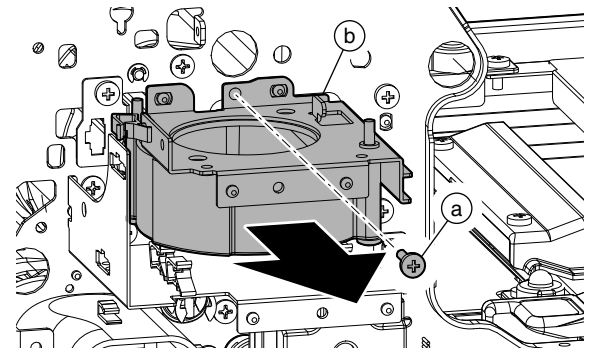
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU reverse motor (c).



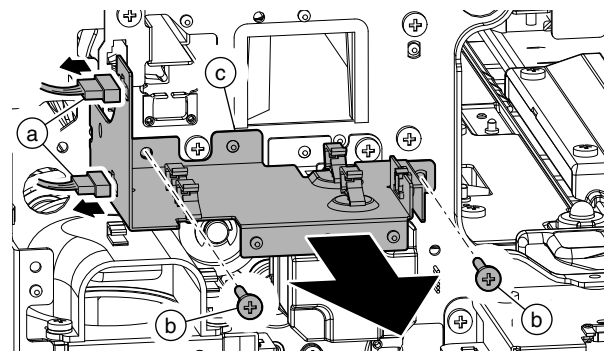
- 5) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



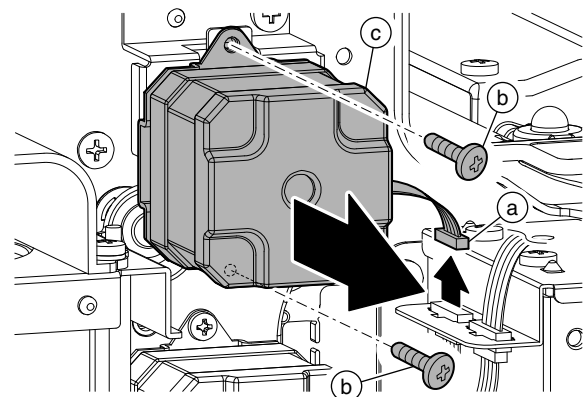
- 6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



- 7) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

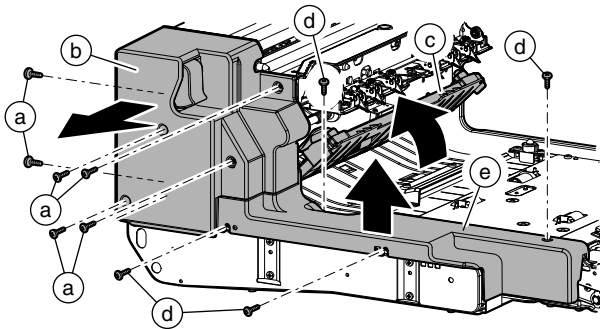


- 8) Disconnect the connector (a). Remove the screw (b), and remove the paper exit reverse motor (c).

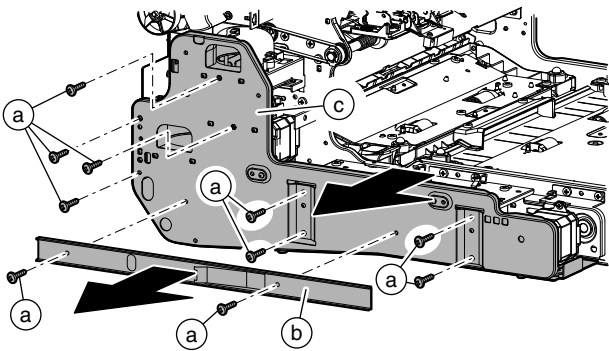


d. ADU transport motor 2 / ADU transport motor 1

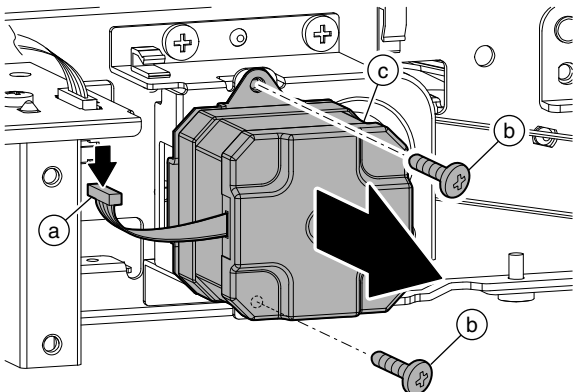
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



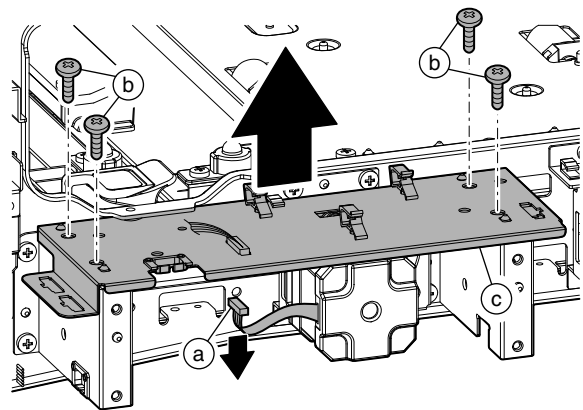
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



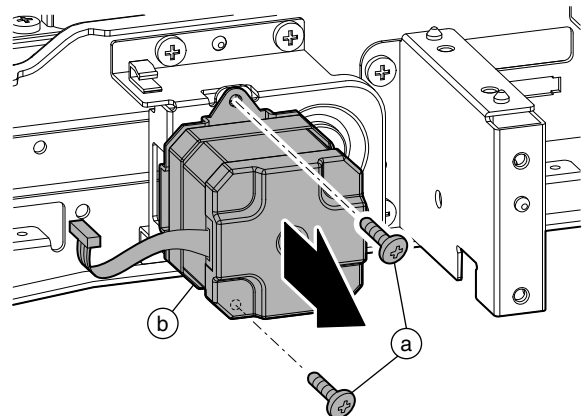
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU transport motor 2 (c).



- 5) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

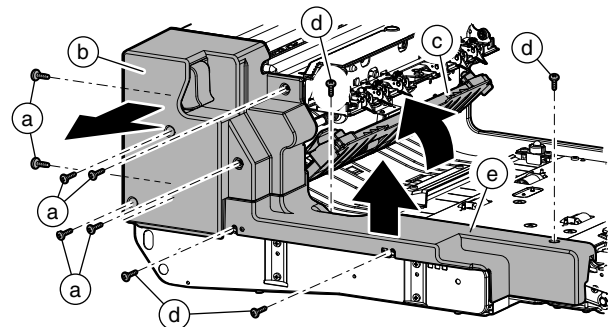


- 6) Remove the screw (a), and remove the ADU transport motor 1 (b).

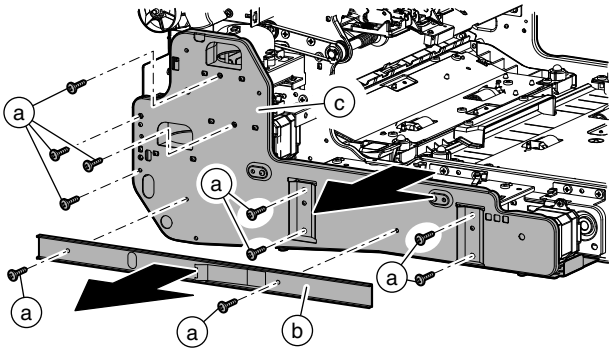


e. Reverse transport cooling fan / Duplex reverse detection 1

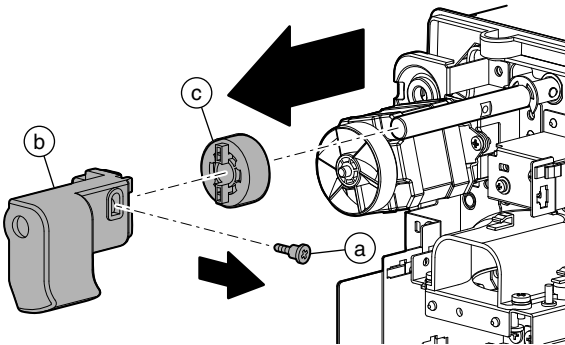
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



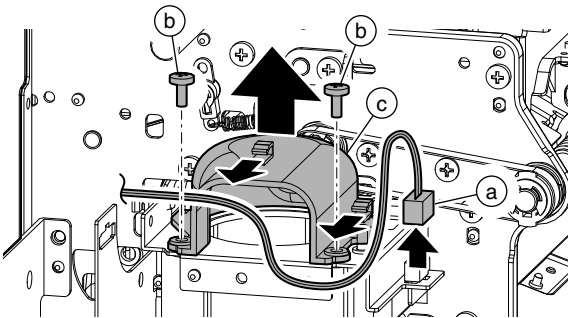
- 3) Remove the screw (a). Remove the rail (b), and the frame (c).



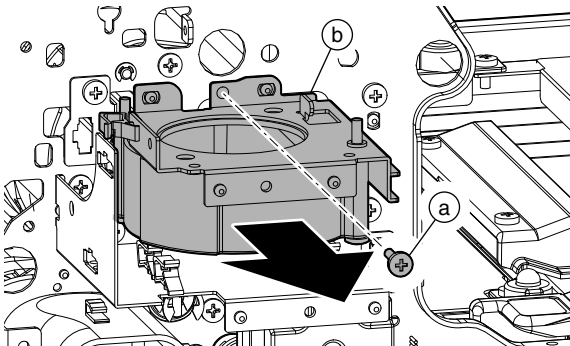
- 4) Remove the screw (a). Remove the lever (b) and the one-way clutch (c).



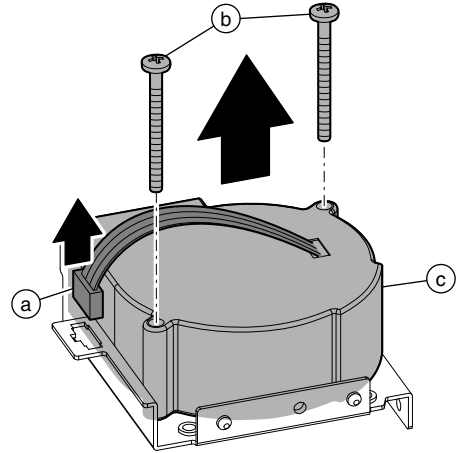
- 5) Remove the screw (a), and remove the duct (b).



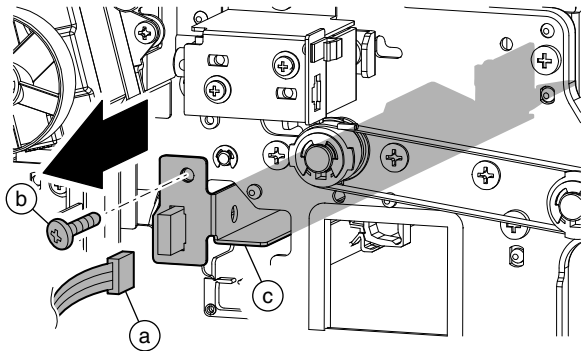
- 6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



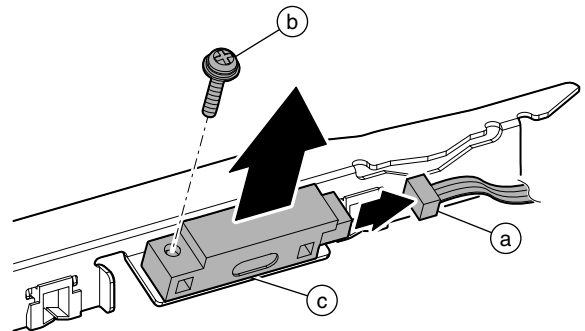
- 7) Disconnect the connector (a), and remove the screw (b). Remove the reverse transport cooling fan (c).



- 8) Disconnect the connector (a), and remove the screw (b). Pull out the stay (c).

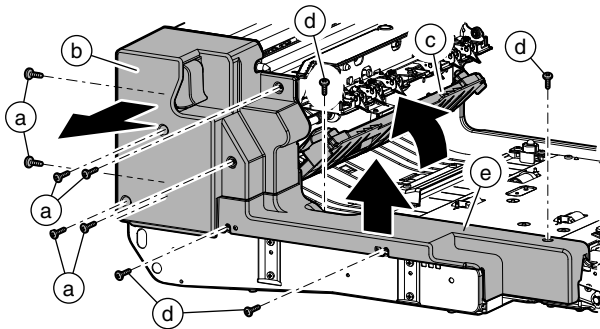


- 9) Disconnect the connector (a), and remove the screw (b). Remove the duplex reverse detection 1 (c).

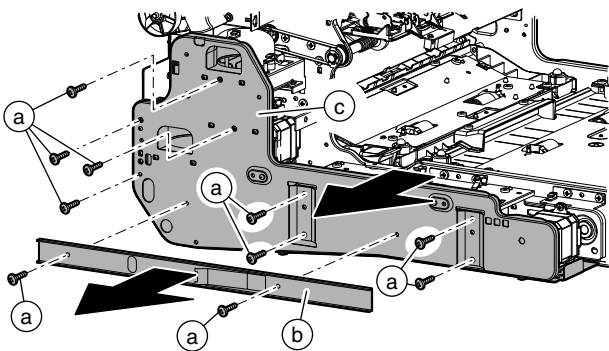


f. Reverse cooling fan

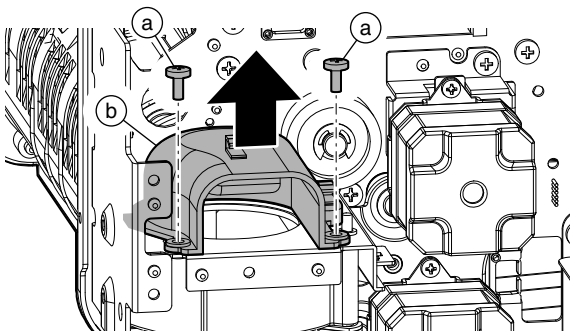
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



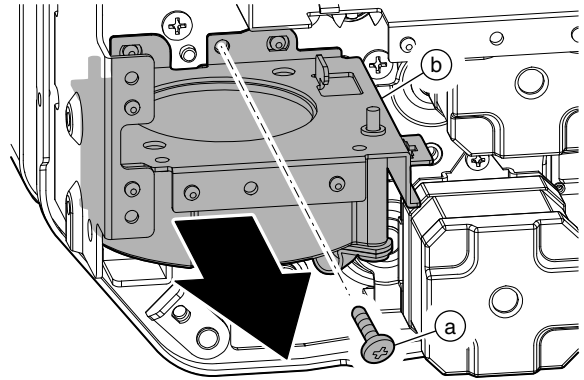
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



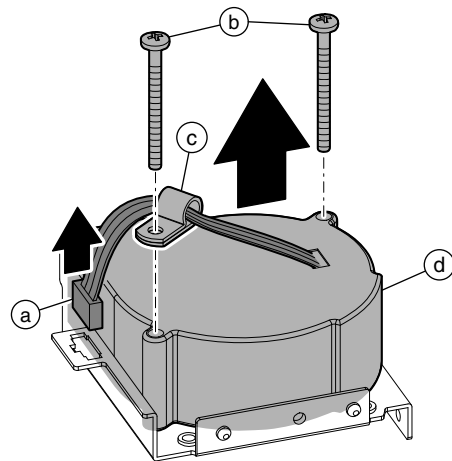
- 4) Remove the screw (a), and remove the duct (b).



- 5) Remove the screw (a), and remove the reverse cooling fan unit (b).

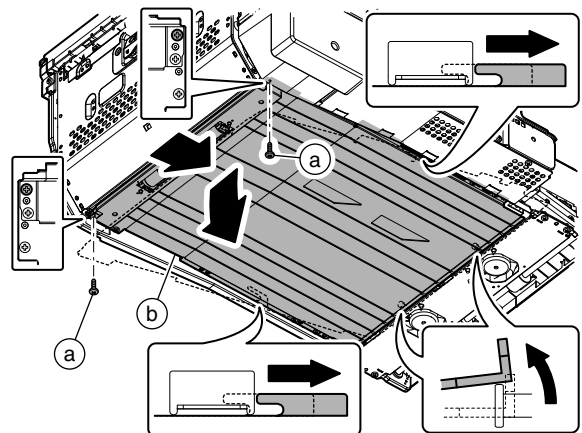


- 6) Disconnect the connector (a). Remove the screw (b) and clamp (c). Remove the reverse cooling fan (d).

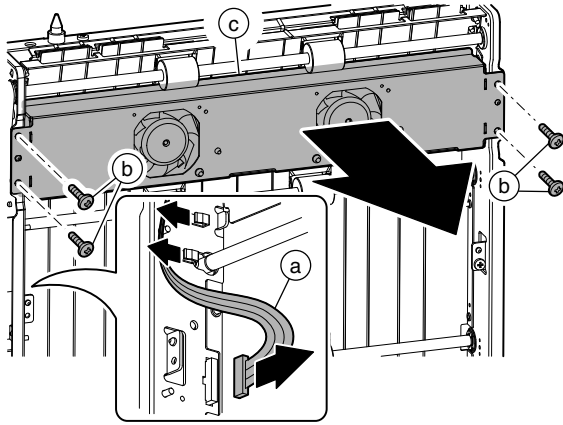


g. ADU section paper cooling fan 2 / ADU section paper cooling fan 1

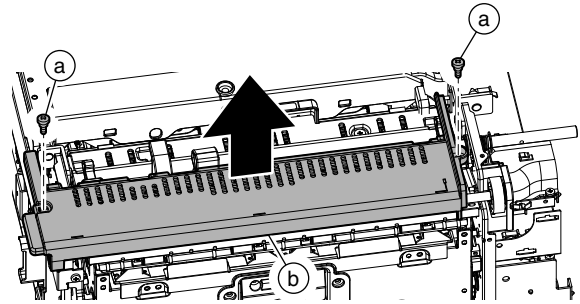
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.



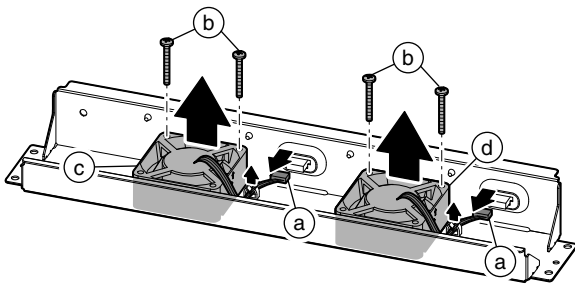
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fan unit (c).



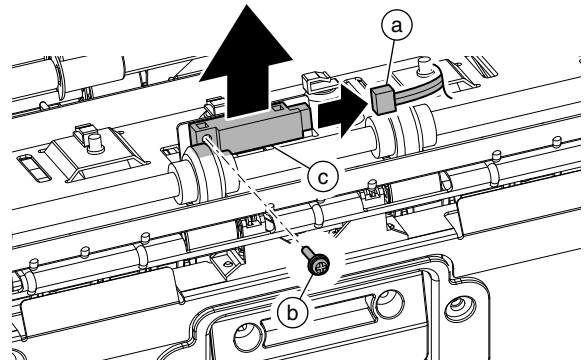
- 3) Remove the screw (a), and remove the cover (b).



- 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).

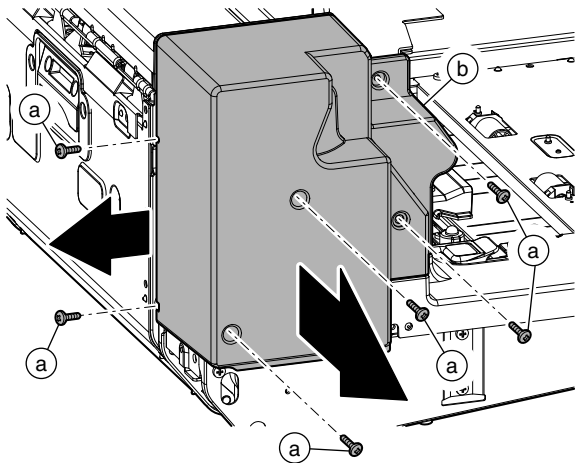


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper exit detection (c).



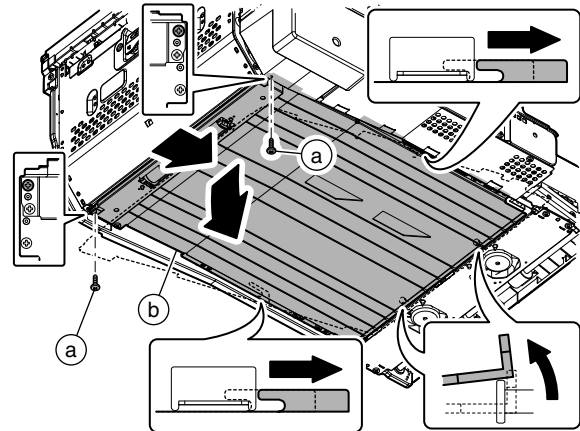
h. Paper exit detection

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).

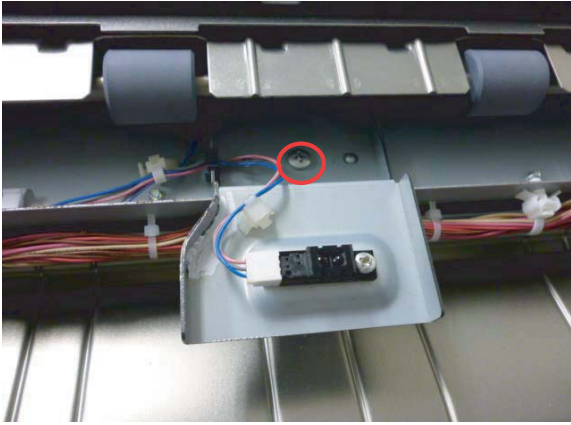


i. Duplex reverse detection 2 / Duplex reverse detection 3

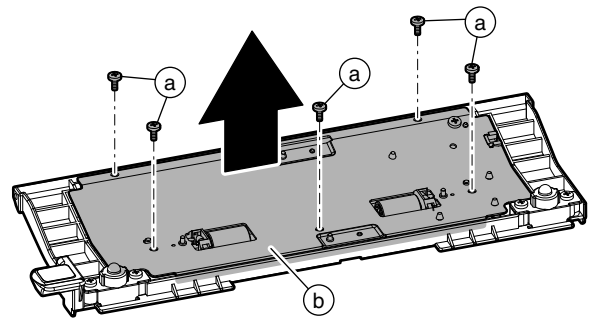
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.



- 3) Remove the screw, and remove the stay. Remove the duplex reverse detection 2/3.

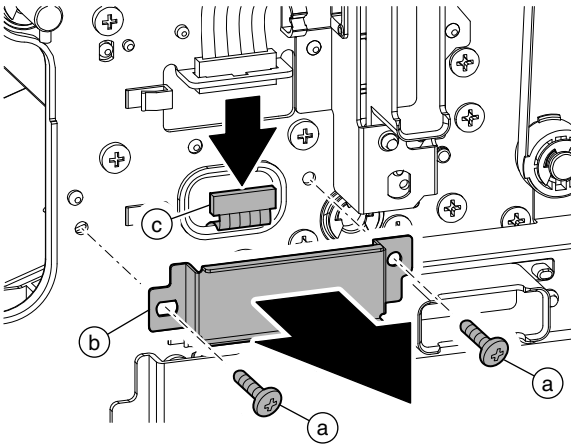


- 4) Remove the screw (a), and remove the plate (b).

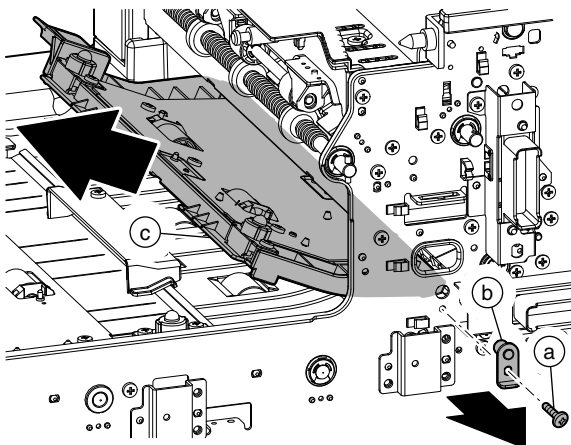


j. Face down reverse detection / ADU transport detection 1

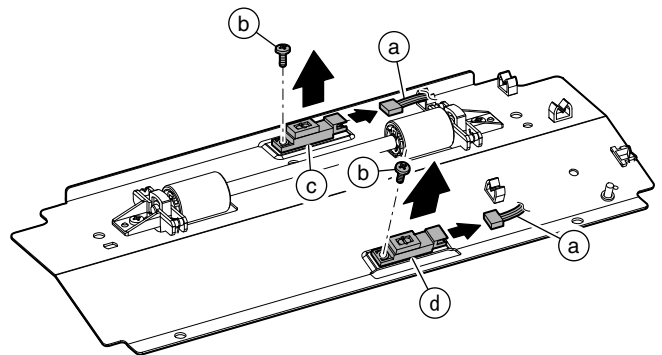
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



- 3) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).

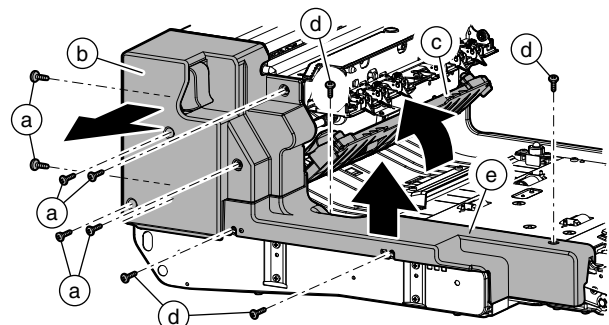


- 5) Disconnect all connectors (a), and remove the screw (b). Remove the face down reverse detection (c) and ADU transport detection 1 (d).

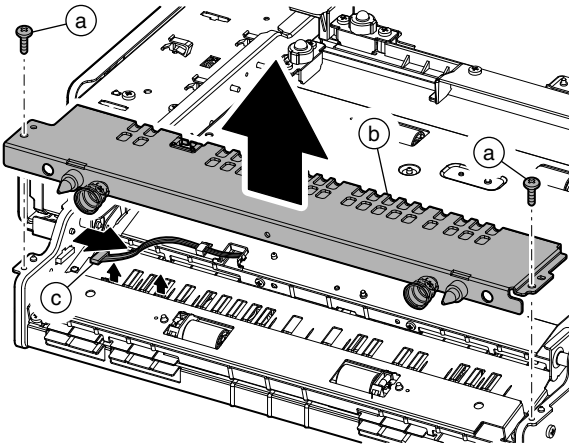


k. ADU transport detection 2 / ADU transport detection 3

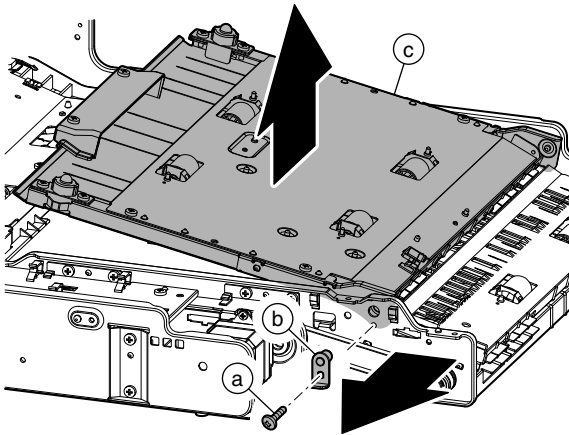
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



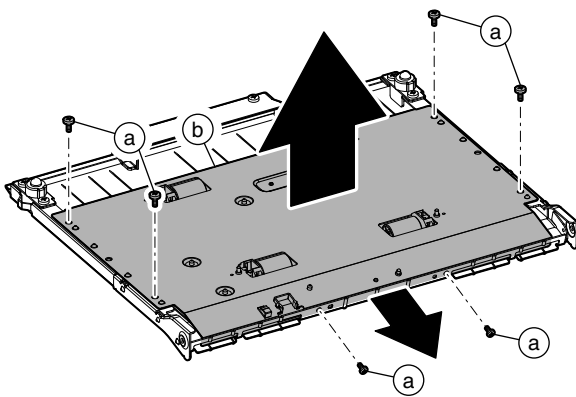
- 3) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



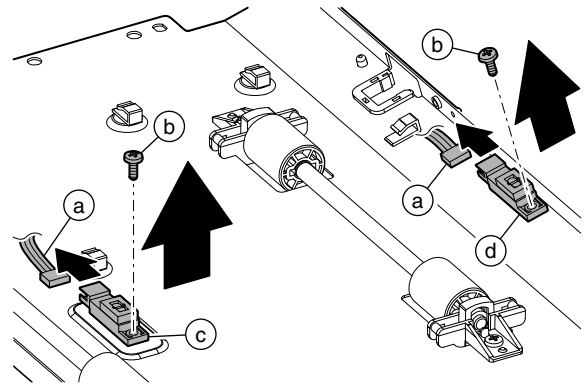
- 4) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).



- 5) Remove the screw (a), and remove the plate (b).

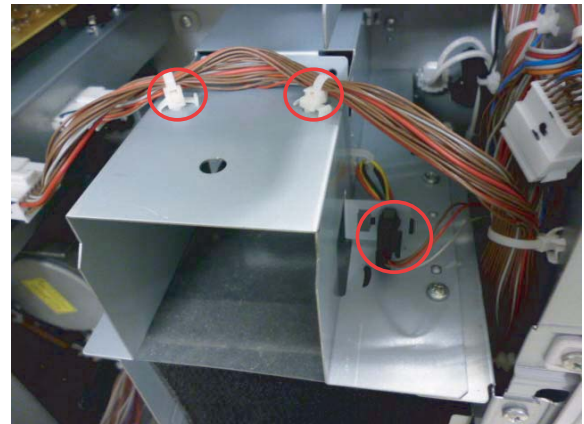


- 6) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport detection 2 (c) and ADU transport detection 3 (d).

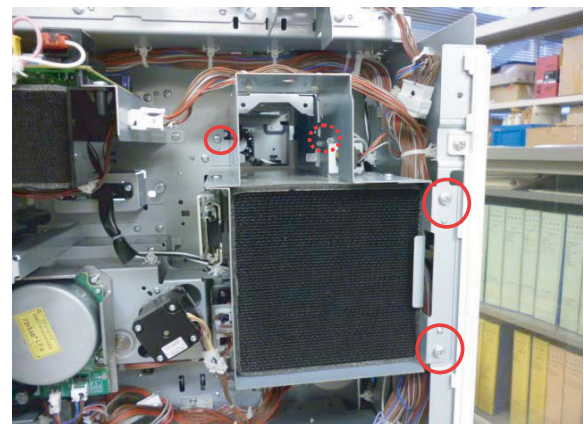


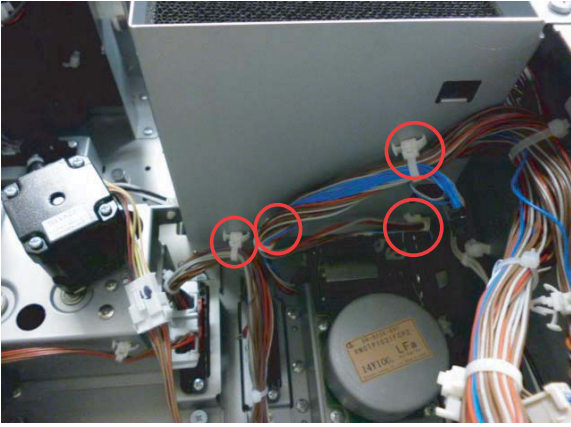
I. Decurler drive unit

- 1) Remove the rear cabinet.
- 2) Remove the PCU PWB.

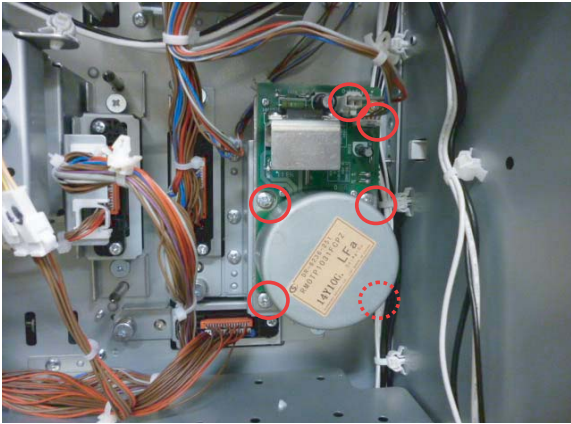


- 3) Disconnect the connector, and remove the snap band and the screw. Remove the exhaust duct.

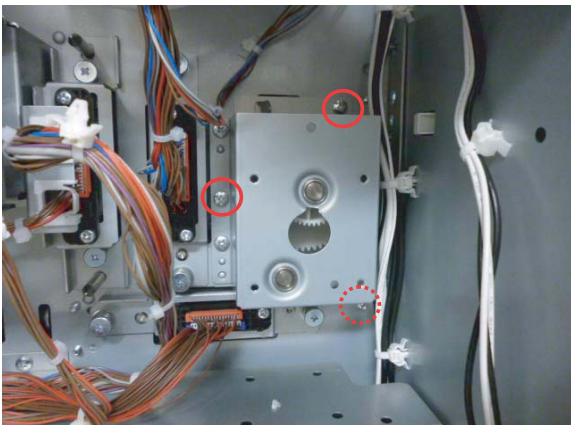




- 4) Disconnect the connector, and remove the screw. Remove the decurler motor.



- 5) Remove the screw, and remove the decurler drive unit.

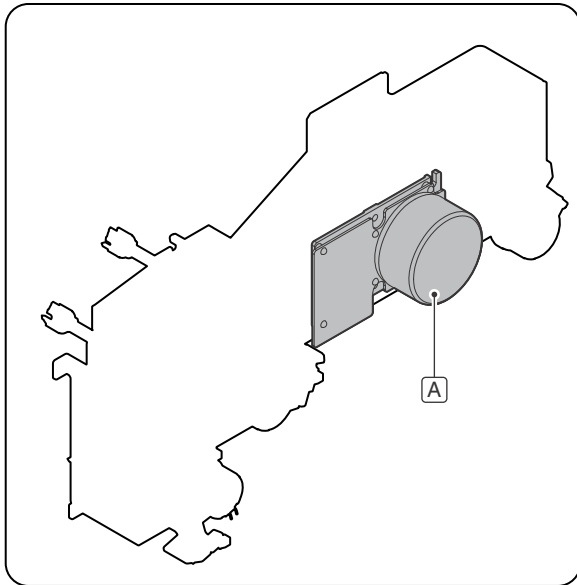


[P] DRIVE SECTION

1. Disassembly and assembly

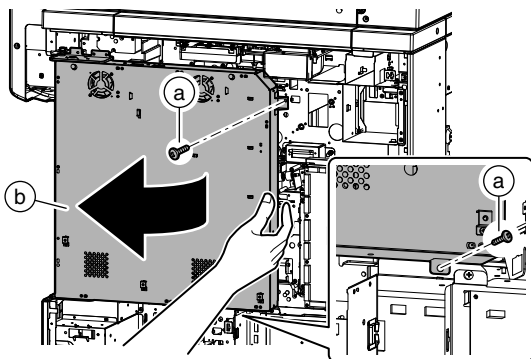
A. Tandem drive unit

Unit	Parts	Page
Tandem drive unit	A Paper feed motor 1	P - 1/a

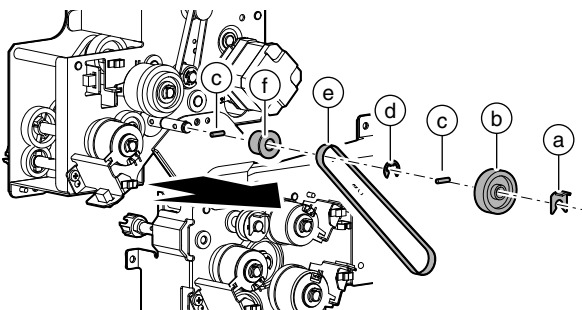


(1) Tandem drive unit

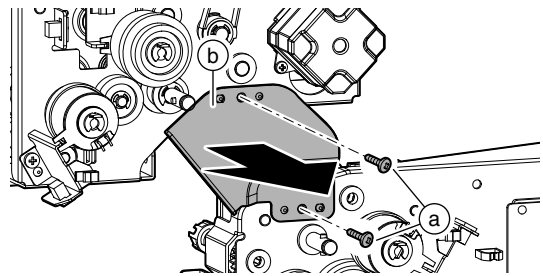
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



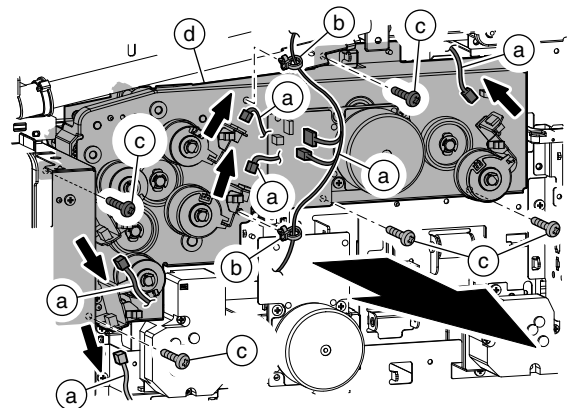
- 3) Remove the resin E-ring (a). Remove the gear (b) and the parallel pin (c). Remove the E-ring (d), the belt (e), the pulley (f), and the parallel pin (c).



- 4) Remove the screw (a), and remove the plate (b).

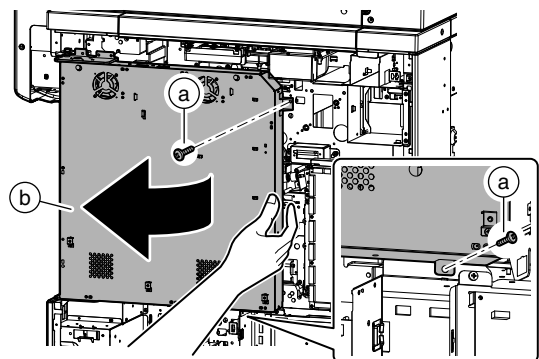


- 5) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the tandem drive unit (d).

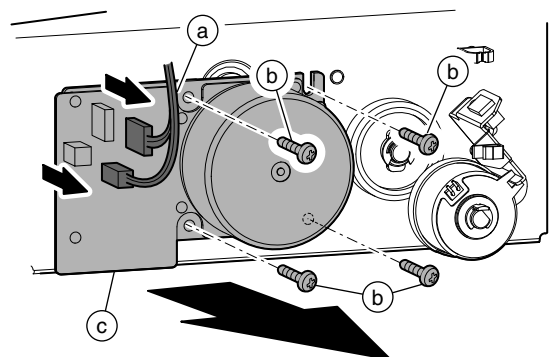


a. Paper feed motor 1

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

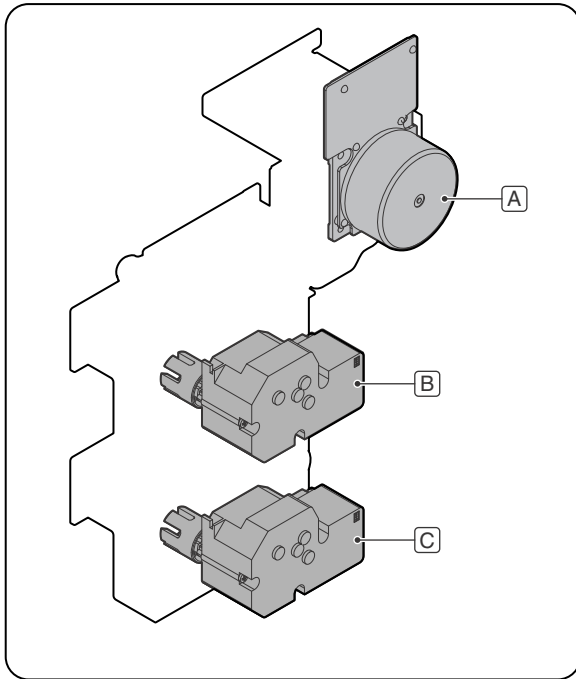


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).



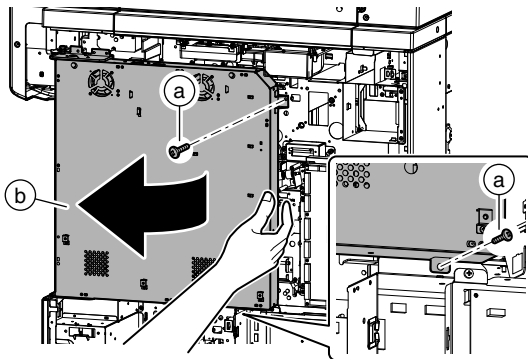
B. Multi-stage drive unit

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)	

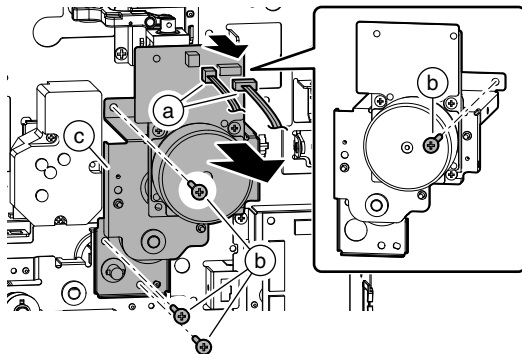


(1) Multi-stage drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

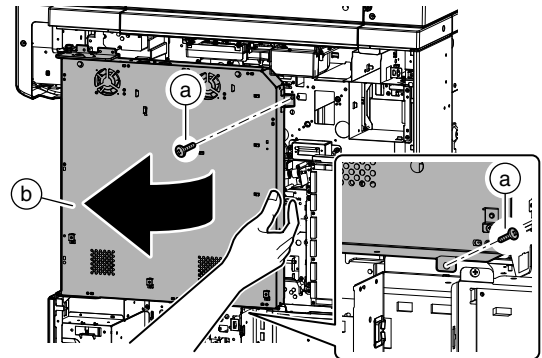


- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).

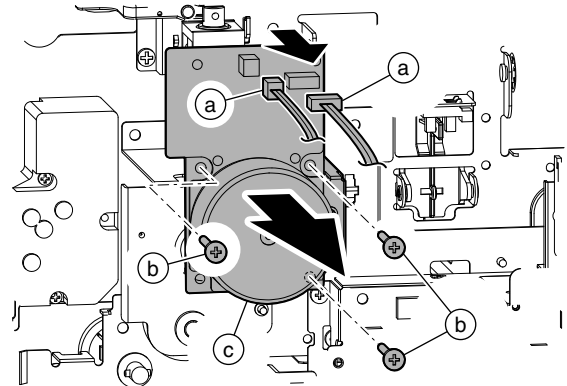


a. Paper feed motor 2

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

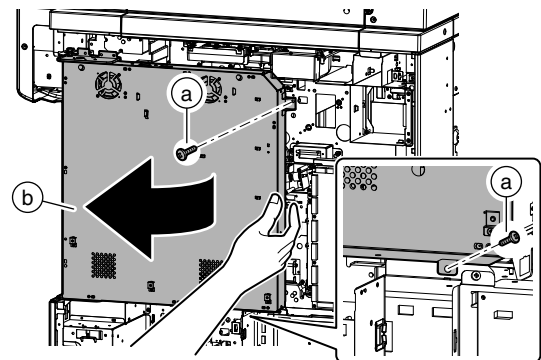


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 2 (c).

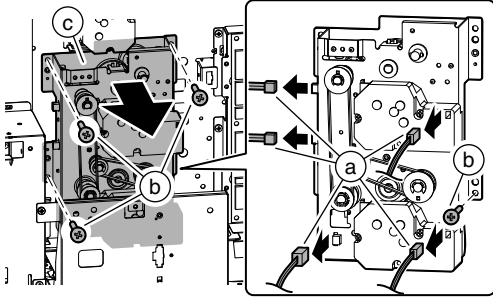


(2) Multi-stage drive B unit

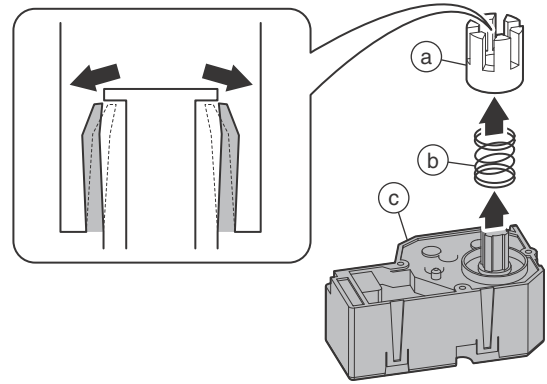
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive B unit (c).

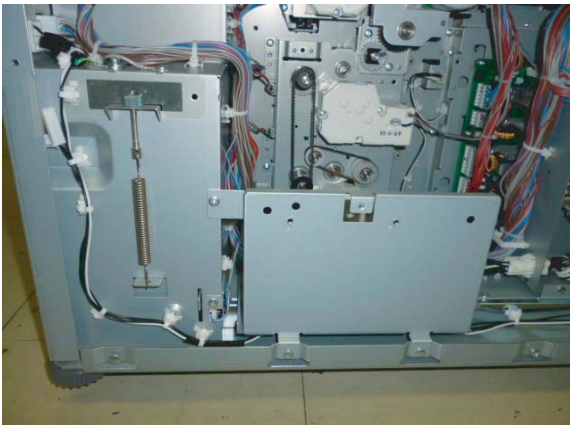


- 4) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

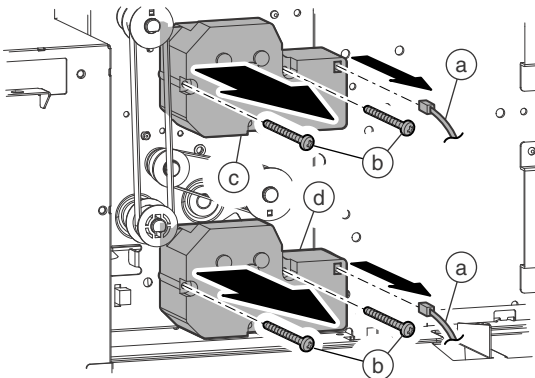


a. Paper lift motor (Tray 3) / Paper lift motor (Tray 4)

- 1) Remove the rear cabinet.
- 2) Remove the screw, and remove the plate.

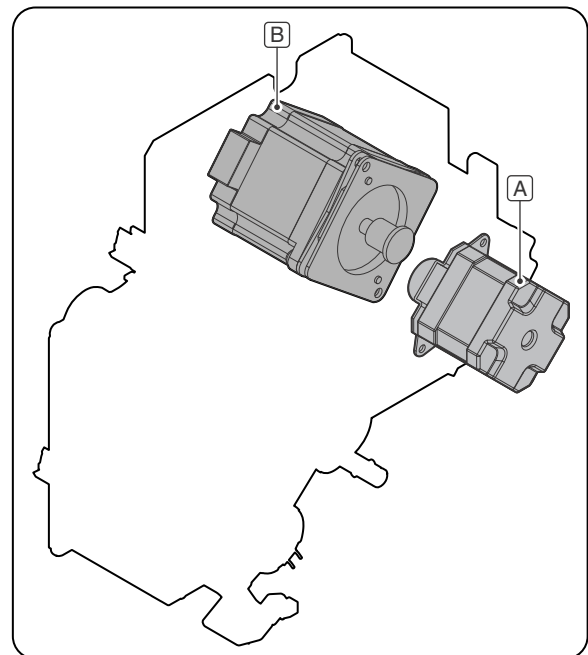


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (Tray 3) (c), and the paper lift motor (Tray 4) (d).



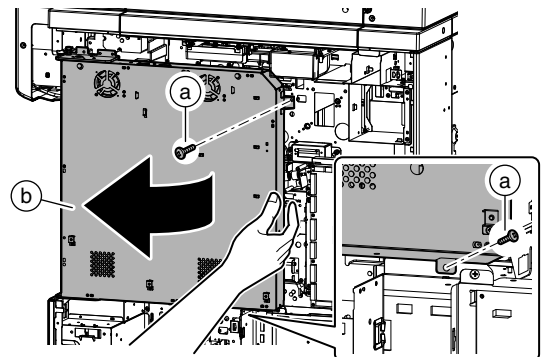
C. Transport drive unit

Unit	Parts	Page
Transport drive unit	A Transport motor	P - 4/a
	B Vertical transport motor	P - 4/b

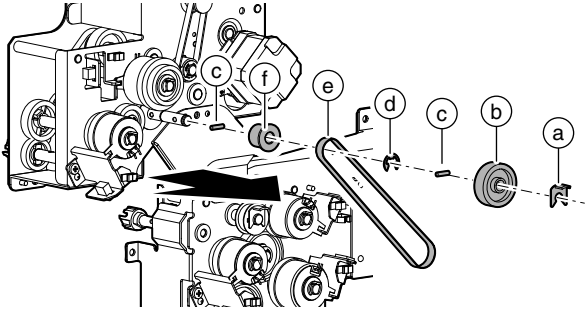


(1) Transport drive unit

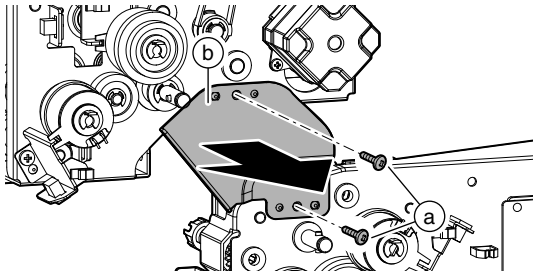
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



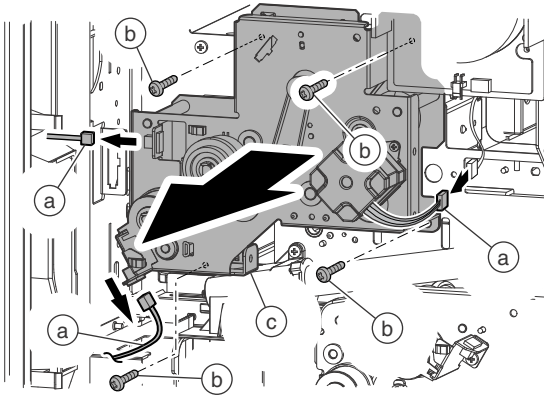
- 3) Remove the resin E-ring (a), the gear (b), and remove the parallel pin (e). Remove the E-ring (d), the belt (e), and the pulley (f).



- 4) Remove the screw (a), and remove the plate (b).

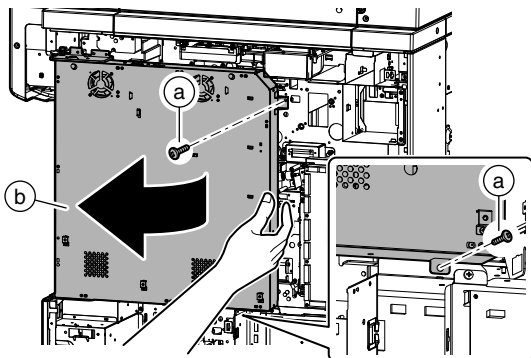


- 5) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).

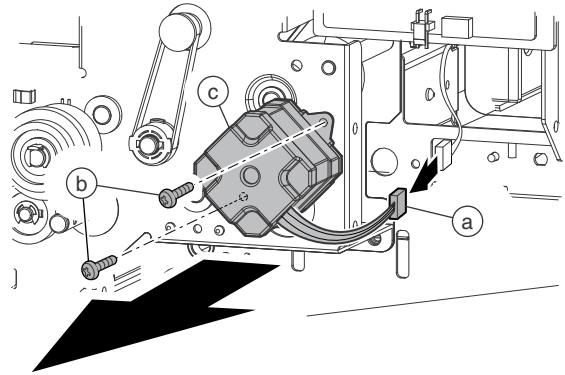


a. Transport motor

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

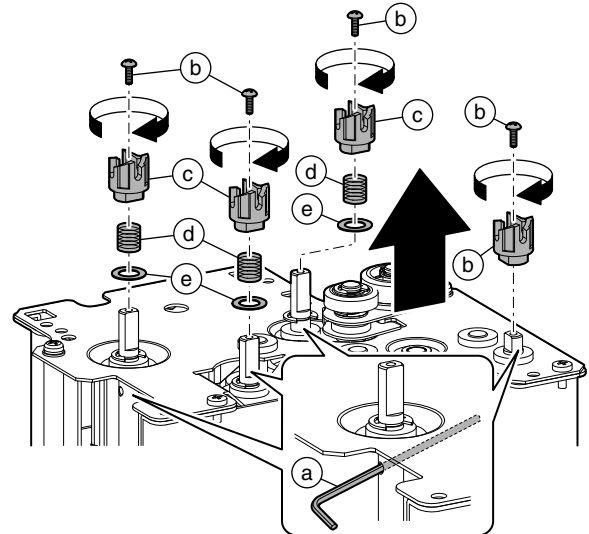


- 3) Disconnect the connector (a), and remove the screw (b). Remove the transport motor (c).

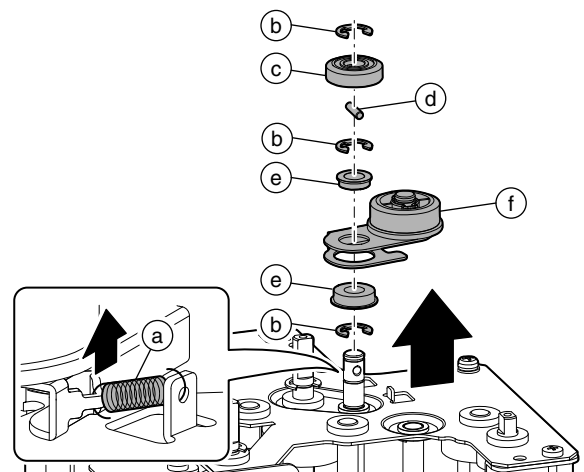


b. Vertical transport motor

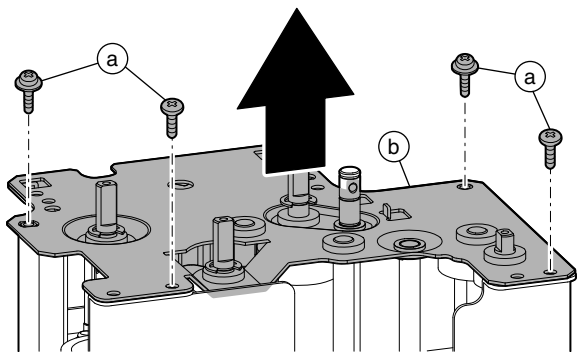
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the transport drive unit.
- 3) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



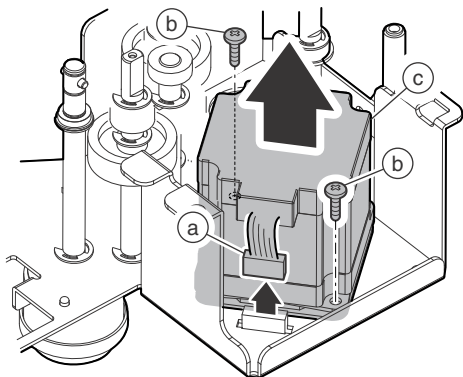
- 4) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



5) Remove the screw (a), and remove the plate (b).

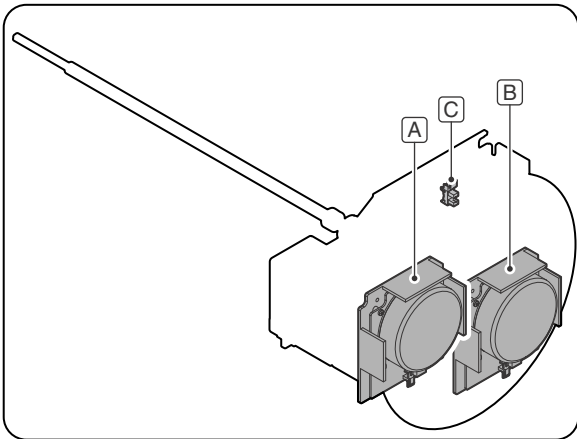


6) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport motor (c).



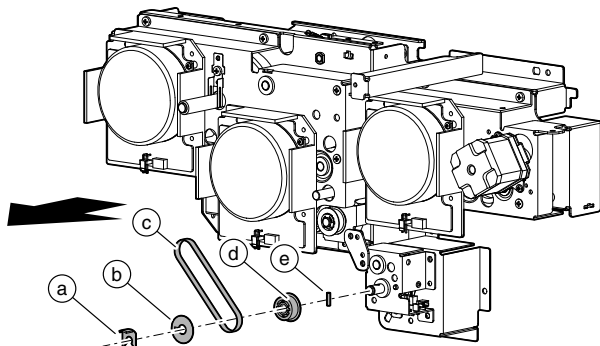
D. Drum drive unit

Unit	Parts		Page
Drum drive unit	A	Developing motor	P - 6/a
	B	Drum motor	
	C	Waste toner lock detection	P - 6/b

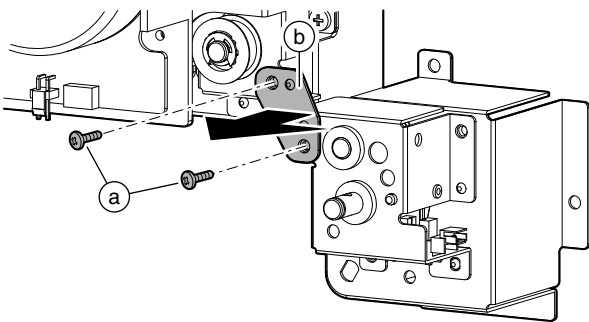


(1) Drum drive unit

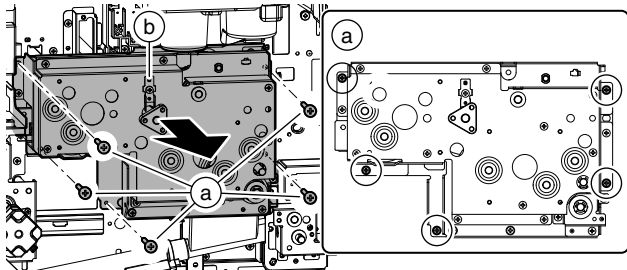
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the developing motor and the drum motor.
- 3) Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).



4) Remove the screw (a), and remove the plate (b).

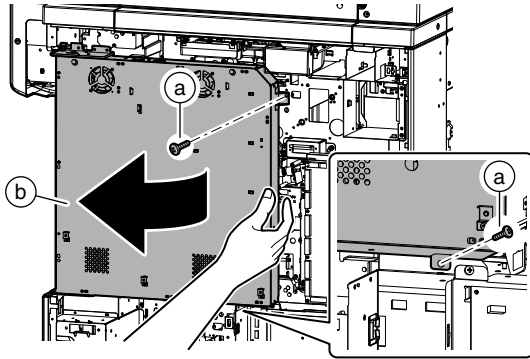


5) Remove the screw (a), and remove the drum drive unit (b).

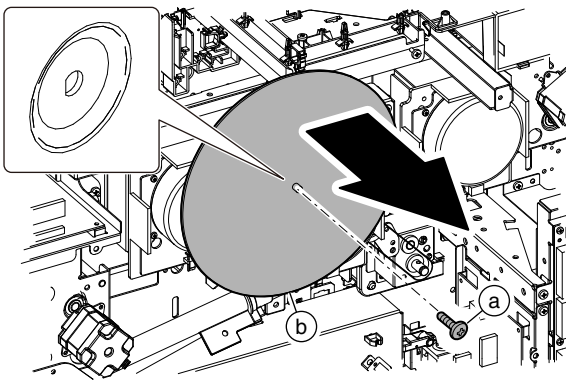


a. Developing motor / Drum motor

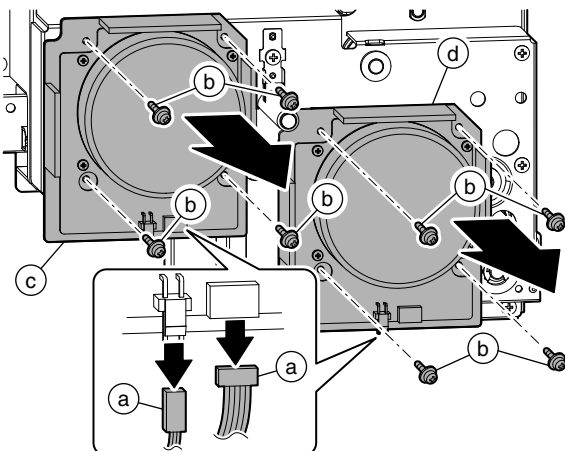
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Remove the screw (a), and remove the flywheel (b).

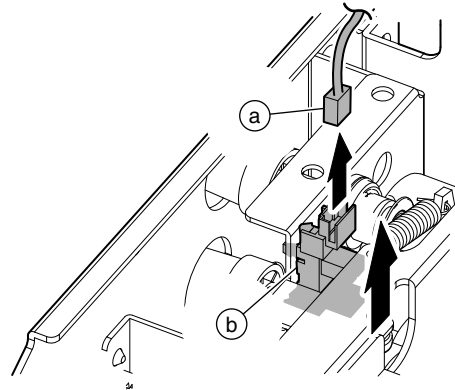


- 4) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



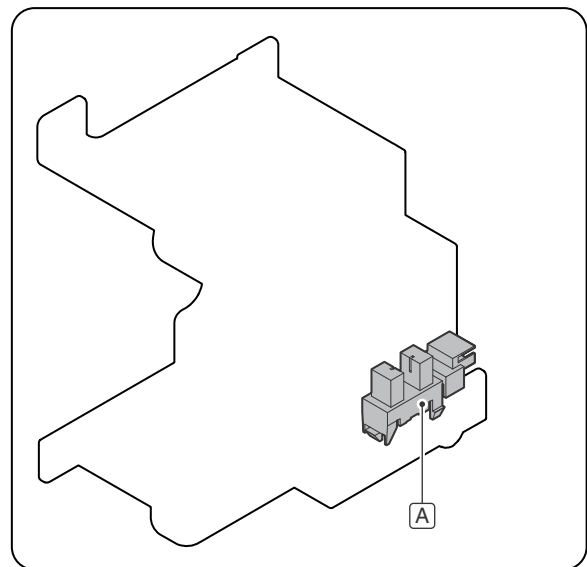
b. Waste toner lock detection

- 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).



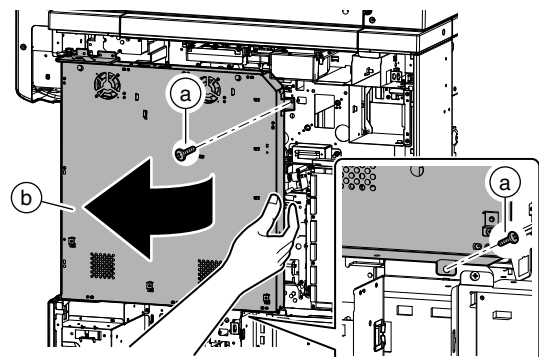
E. Waste toner transport drive unit

Unit	Parts	Page
Waste toner transport drive unit	A Waste toner lock detection 2	P - 7/a

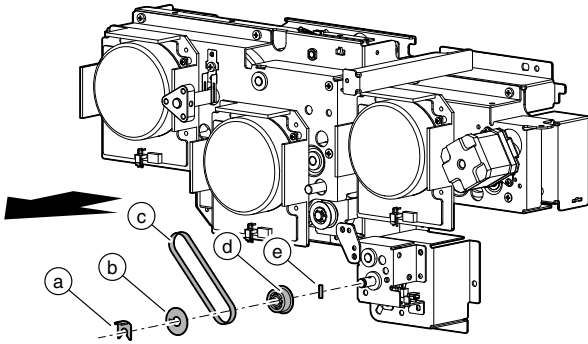


(1) Waste toner transport drive unit

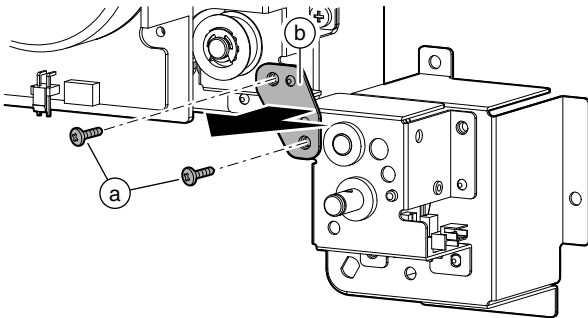
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



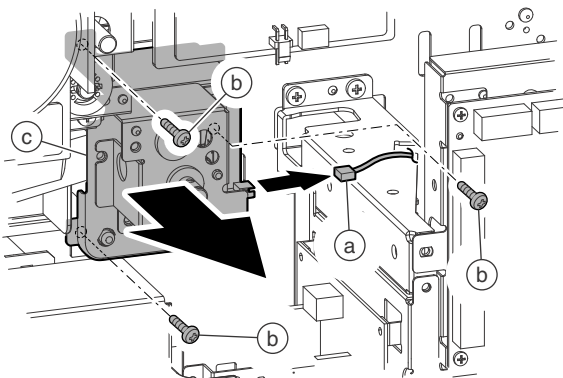
- 3) Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).



- 4) Remove the screw (a), and remove the plate (b).

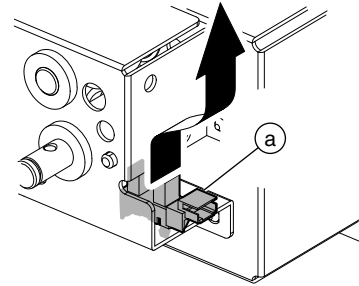


- 5) Disconnect the connector (a), and remove the screw (b). Remove the waste toner transport drive unit (c).



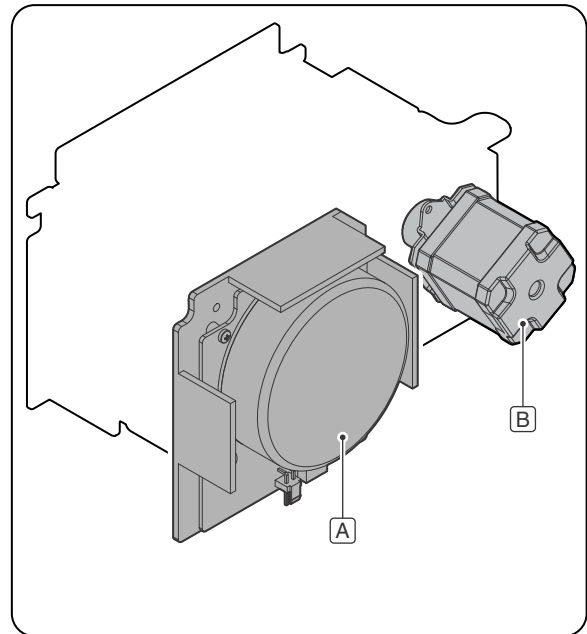
a. Waste toner lock detection 2

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the waste toner transport drive unit.
- 3) Remove the waste toner lock detection 2 (a).



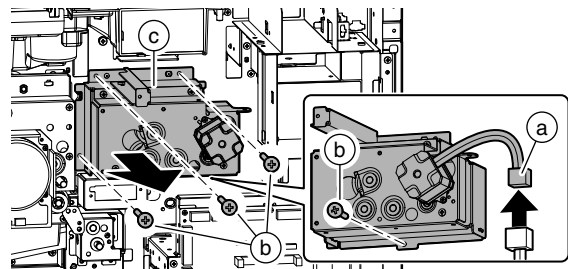
F. Fusing drive unit

Unit	Parts		Page
Fusing drive unit	A	Fusing motor	P - 8/a
	B	Fusing rear motor	



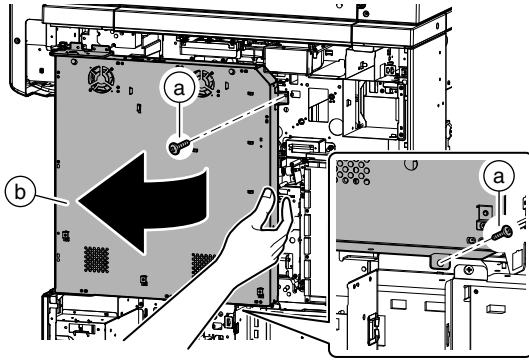
(1) Fusing drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the fusing motor.
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).

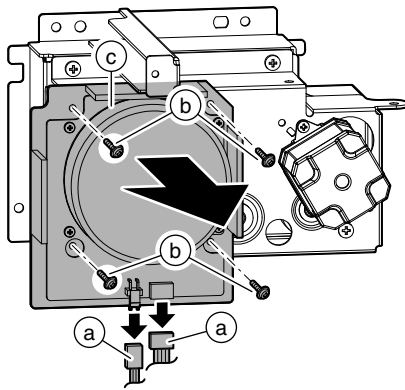


a. Fusing motor/ Fusing rear motor

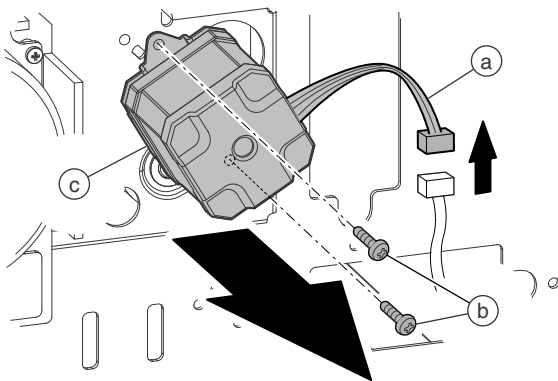
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 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

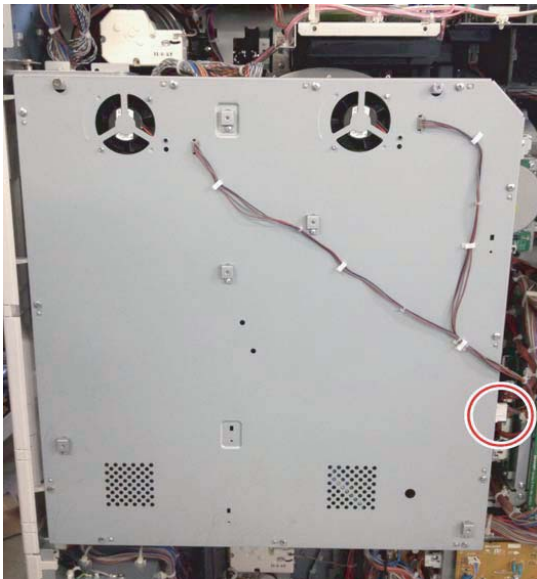
A. PWB

Parts		Page
A	MFPC PWB	Q - 1/(1)
B	HDD	
C	WH PWB	
D	AC PWB	Q - 3/(2)
E	SUB power	
F	MAIN power	
G	PCU-Flash PWB	Q - 5/(4)
H	PCU PWB	
I	HL PWB	
J	High voltage PWB	Q - 7/(7)
K	Driver PWB (Paper exit)	
L	Driver PWB (Paper feed)	
M	Size detection PWB	Q - 9/(9)
N	SCNcnt PWB	
O	POWER SW PWB / HOME KEY PWB	

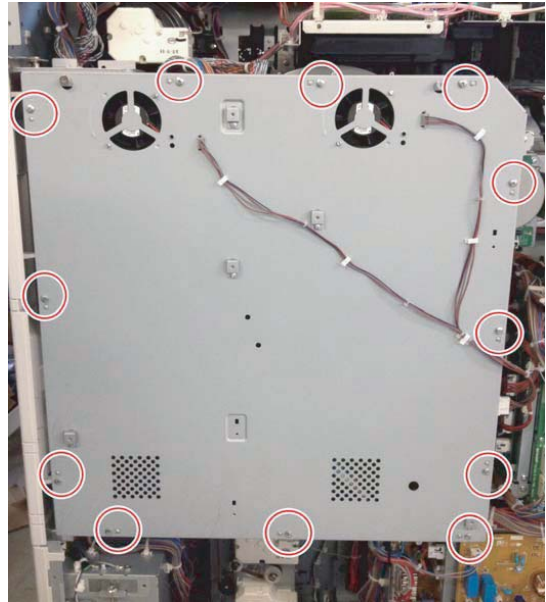
(1) MFPC PWB / HDD

a. MFPC removal

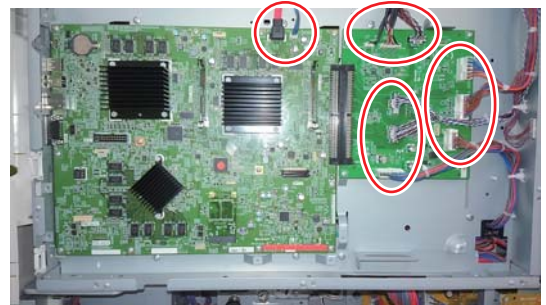
- 1) Disconnect the connector.



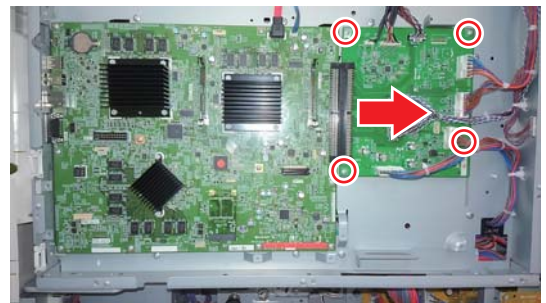
- 2) Remove the screw.



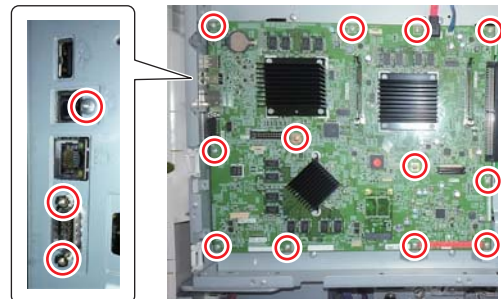
- 3) Disconnect the connector.



- 4) Remove the screw, and remove the mother PWB.

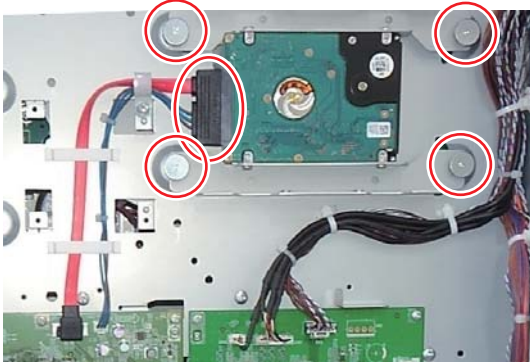


- 5) Remove the screw, and remove the MFPC PWB.



b. HDD removal

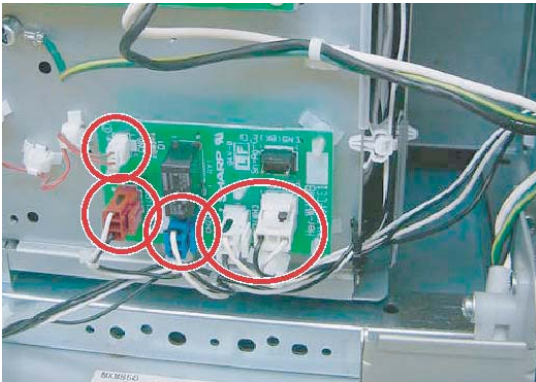
- 1) Disconnect the connector, and remove the screw. Remove the HDD.



(2) WH PWB / AC PWB

a. WH PWB removal

- 1) Disconnect the connector, and remove the WH PWB.

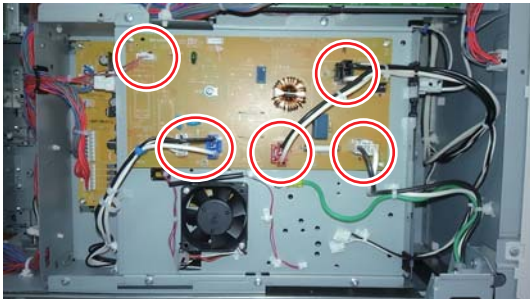


b. AC PWB removal

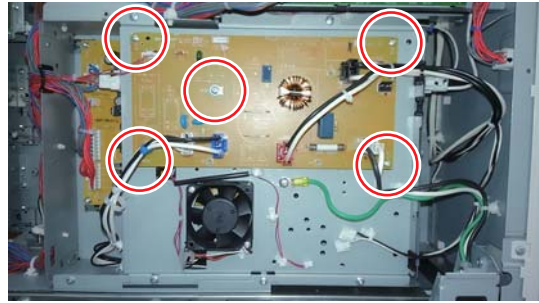
(The option WH PWB on the photo is different from the actual board.)

- 1) Disconnect the connector.

NOTE: When the dehumidifier heater is installed, disconnect the connector of the dehumidifier heater, too.



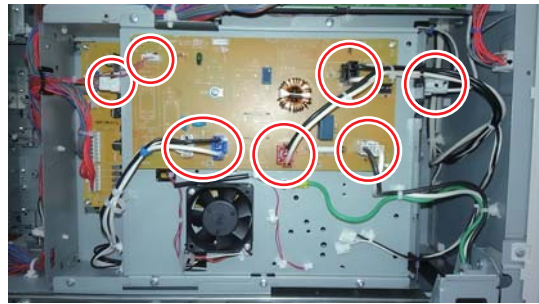
- 2) Remove the screw, and remove the AC PWB.



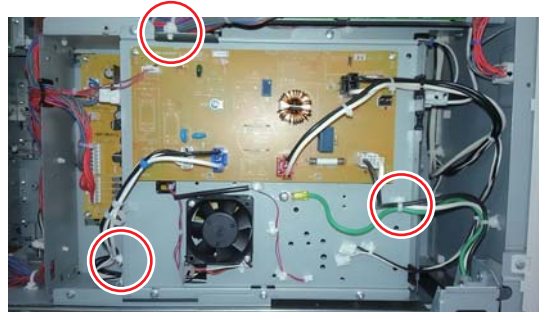
(3) SUB power / MAIN power

a. SUB power removal

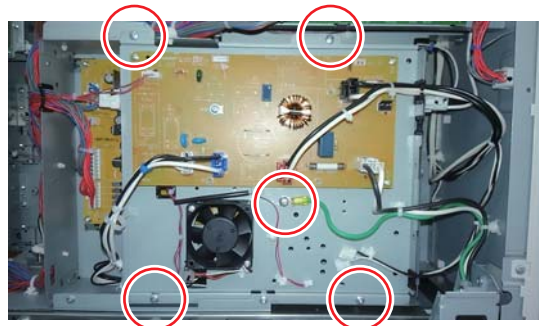
- 1) Disconnect the connector from the section where the AC PWB is installed.



- 2) Remove the snap band.



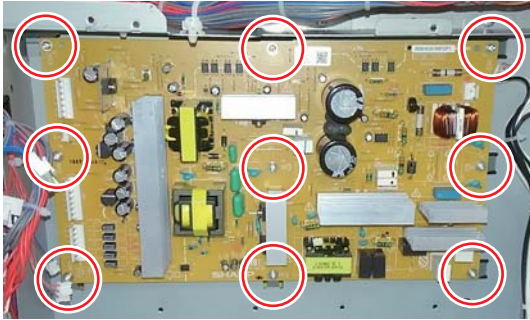
- 3) Remove the screw, and remove the plate.



4) Disconnect the connector.



5) Remove the screw, and remove the SUB power.

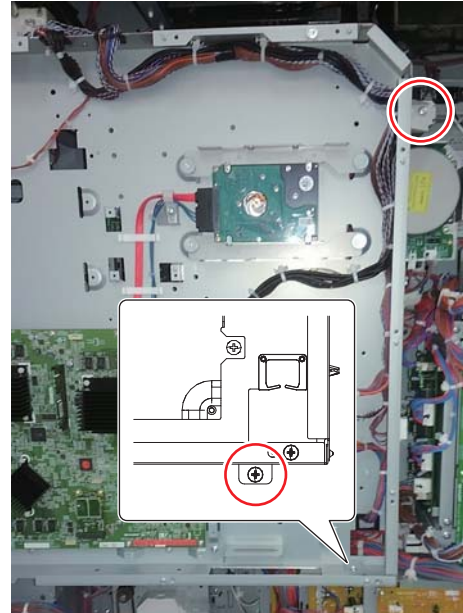


b. MAIN power removal

- 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.



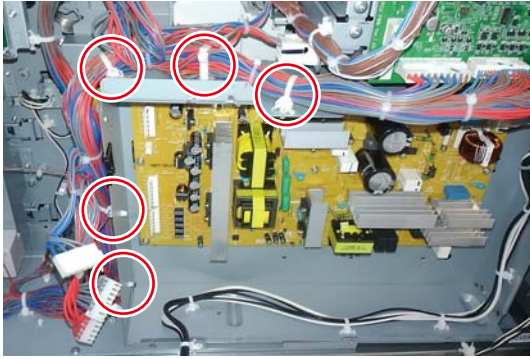
4) Open the plate on which the MFPC PWB is mounted.



5) Disconnect the connector of the SUB power.



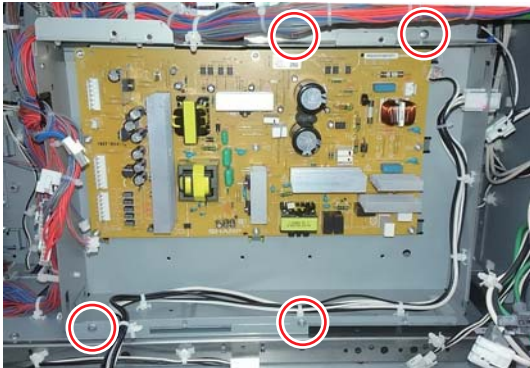
6) Remove the snap band.



7) Disconnect the connector and remove the snap band from the plate on which the SUB power is mounted.



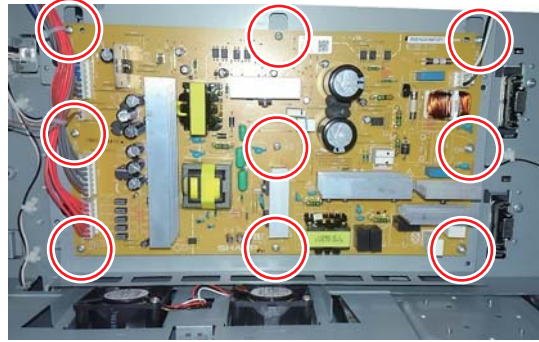
8) Remove the screw, and remove the plate.



9) Disconnect the connector.



10) Remove the screw, and remove the MAIN power.

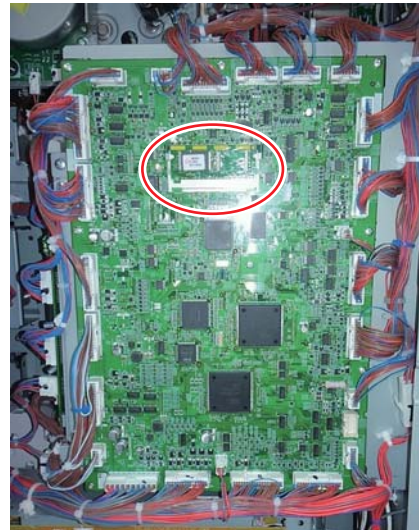


(4) PCU-Flash PWB / PCU PWB

a. PCU-Flash PWB removal

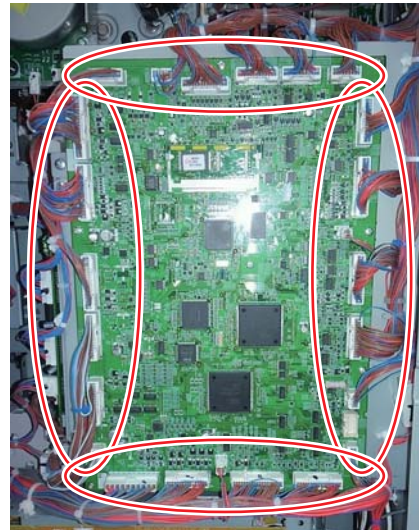
- 1) Remove the rear cabinet.
- 2) Remove the PCU-Flash PWB.

NOTE: Remove carefully without damage.

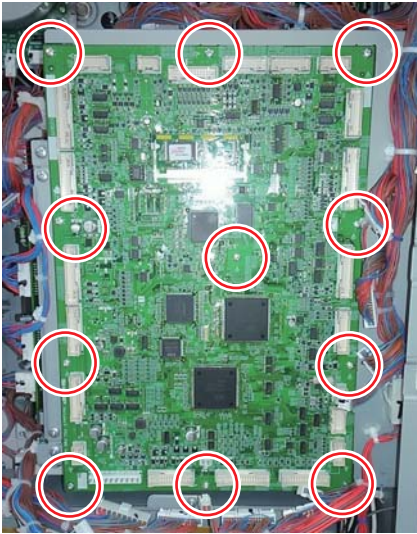


b. PCU PWB removal

- 1) Disconnect the connector.



- 2) Remove the screw, and remove the PCU PWB.



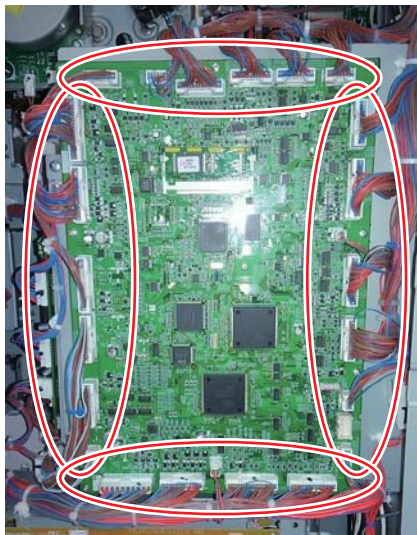
- 2) Remove the snap band, and disengage the clamp to release the HL PWB.
- 3) Remove the screw, and remove the plate.



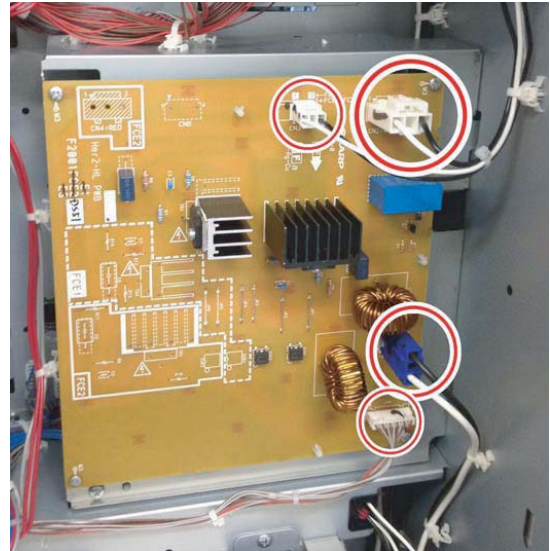
(5) HL PWB

a. HL PWB removal

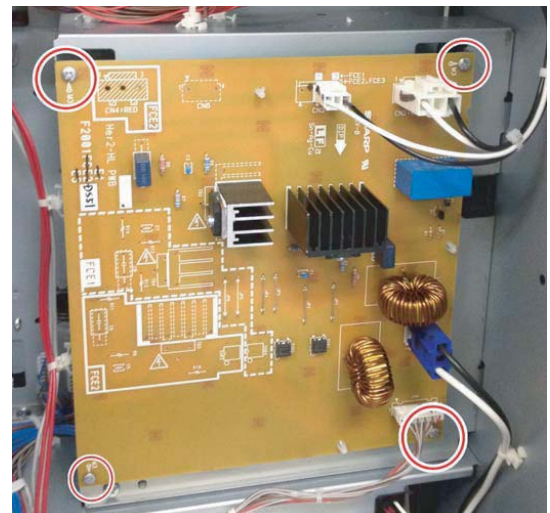
- 1) Disconnect the connector of the PCU PWB.



- 4) Disconnect the connector.



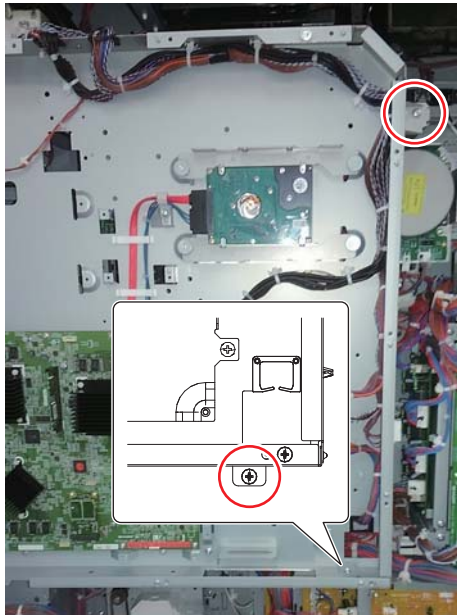
- 5) Remove the screw, and remove the HL PWB.



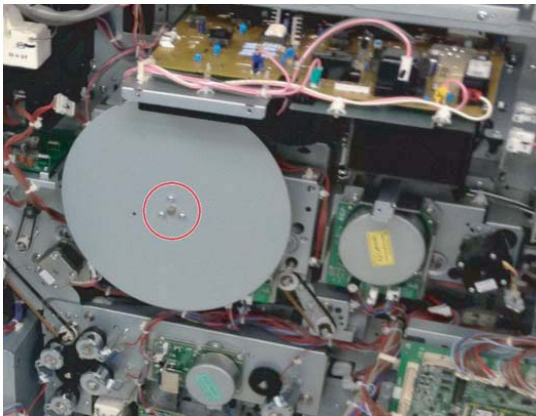
(6) High voltage PWB

a. High voltage PWB removal

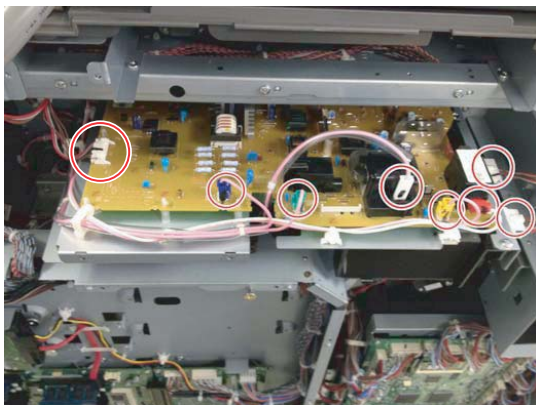
- 1) Remove the screw from the plate on which the MFPC PWB is mounted, and open it.



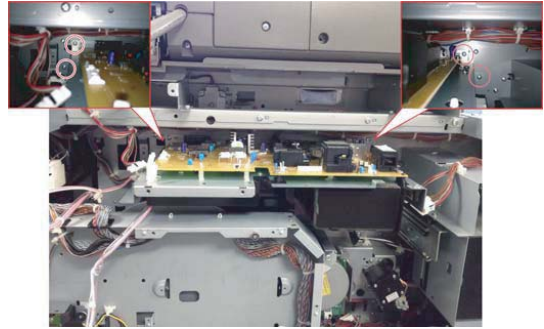
- 2) Remove the screw, and remove the flywheel.



- 3) Disconnect the connector.



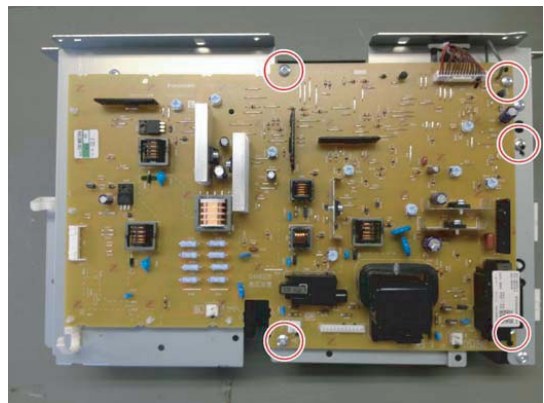
- 4) Remove the snap band, and disengage the clamp to release the harness.
- 5) Remove the screw, and remove the plate on which the high voltage PWB is mounted.



- 6) Disconnect the connector.



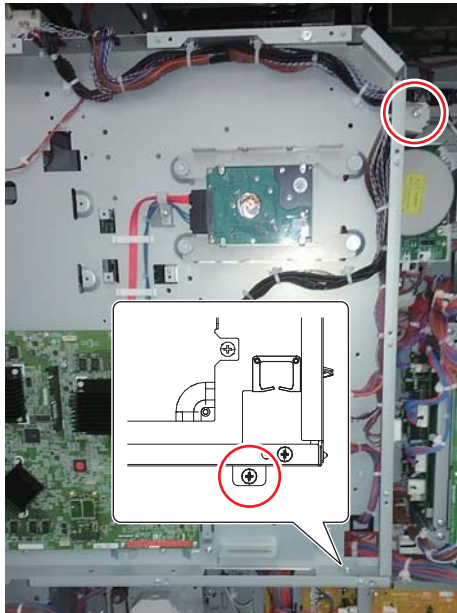
- 7) Remove the screw, and remove the high voltage PWB.



(7) Driver PWB (Paper exit)

a. Driver PWB (Paper exit) removal

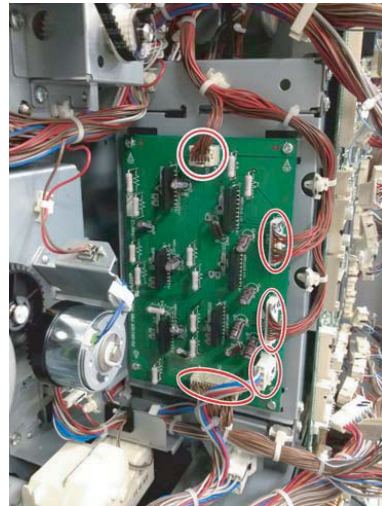
- 1) Remove the screw from the plate on which the MFPC PWB is mounted.



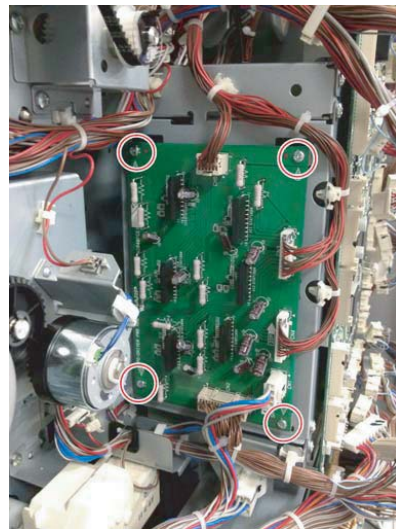
- 2) Open the plate on which the MFPC PWB is mounted.



- 3) Disconnect the connector.



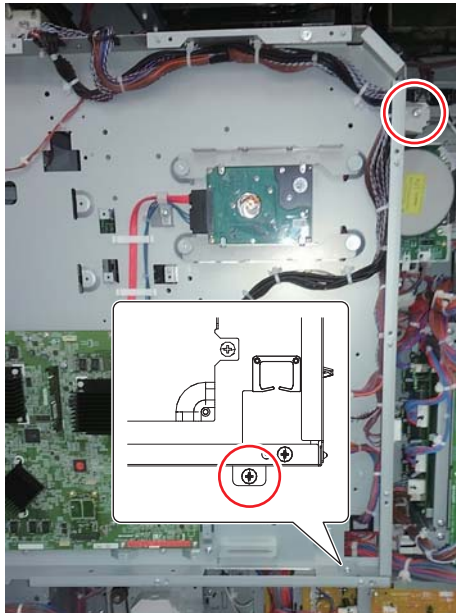
- 4) Remove the screw, and remove the driver PWB (paper exit).



(8) Driver PWB (Paper feed)

a. Driverä PWB (Paper feed) removal

- 1) Remove the screw from the plate on which the MFPC PWB is mounted.



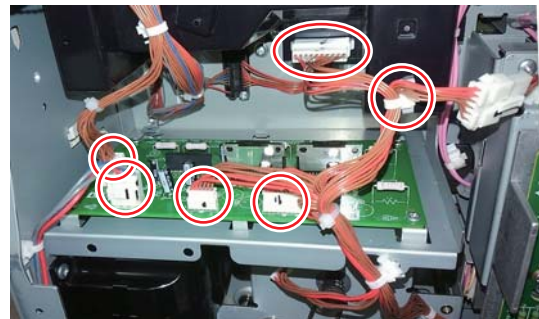
- 2) Remove the right cabinet.



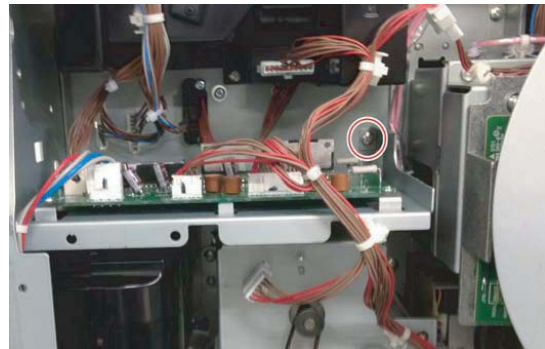
- 3) Remove the right side screw.



- 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).



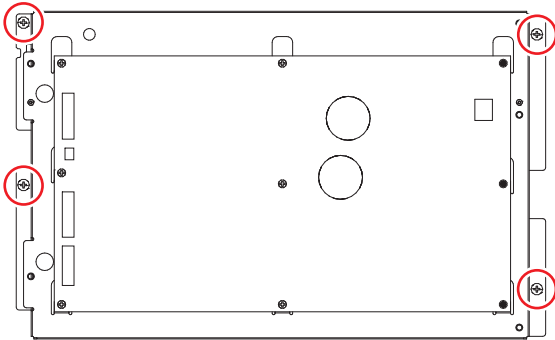
**(9) Size detection PWB /
SCNcnt PWB / KEY PWB, POWER LAMP PWB**

a. Size detection PWB removal

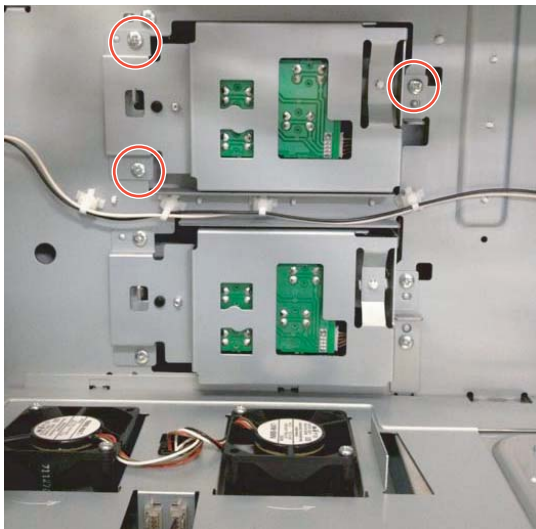
- 1) Disconnect the connector.



- 2) Remove the screw, and remove the plate.



- 3) Remove the screw.



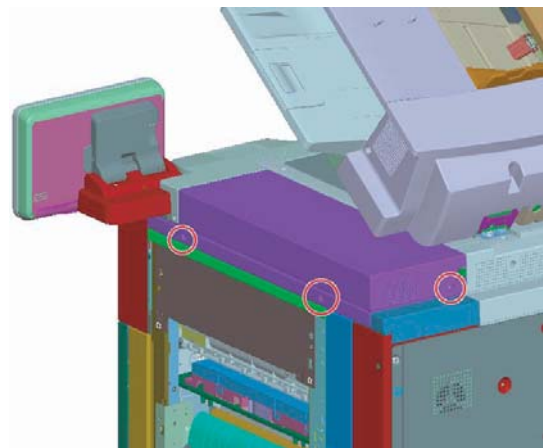
- 4) Remove the plate, and remove the screw to access the PWB.

NOTE: Be careful not to damage the harness.



b. SCNcnt PWB removal

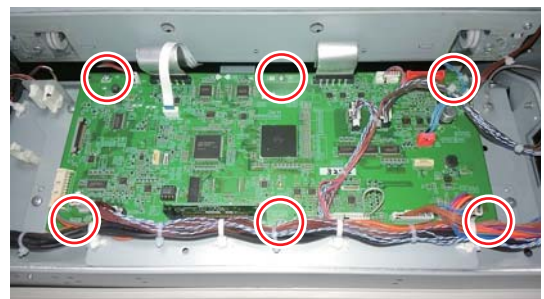
- 1) Remove the upper right rear cabinet.



- 2) Disconnect the connector.

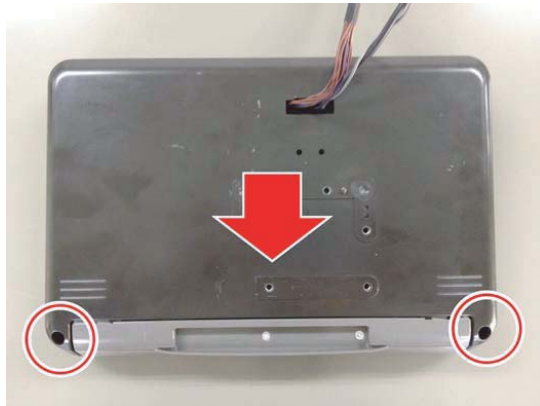


- 3) Remove the screw, and remove the SCNcnt PWB.



c. POWER SW PWB, HOME KEY PWB removal

- 1) Remove the rear cover of the operation panel unit.
NOTE: Remove the screw, and slide the arrow direction.



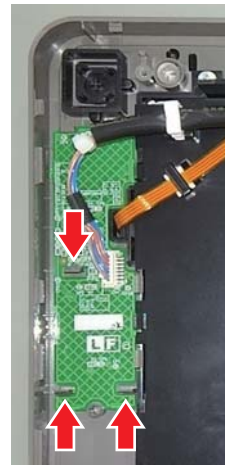
- 2) Disconnect the connector.



- 3) Remove the screw, and remove the POWER SW PWB.



- 4) Remove the HOME KEY PWB.



1. Electrical and mechanism relation diagram

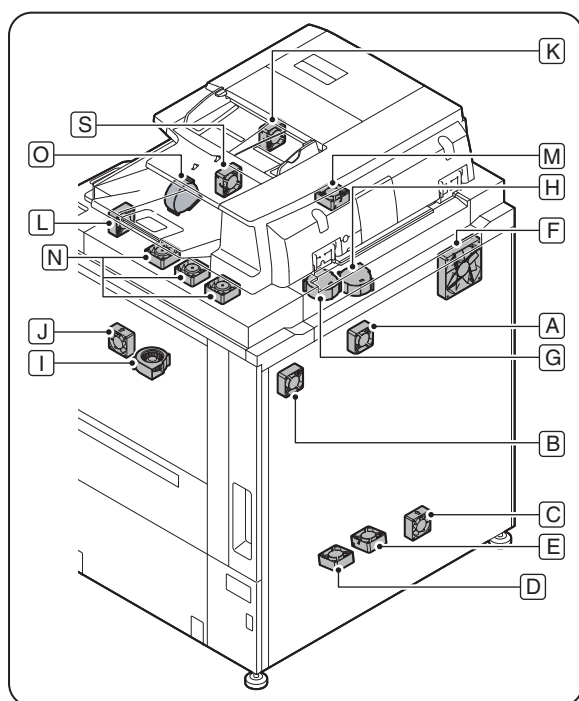


Signal name	Name	Type	Function / Operation
CFM-CL1	Process cooling fan 1	Axial-flow fan (□60)	Cools the process section.
CFM-CL2	Process cooling fan 2	Axial-flow fan (□60)	Cools the process section.
CFM-CL3	Process cooling fan 3	Axial-flow fan (□60)	Cools the process section.
CFM-CL4	Process cooling 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-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.
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

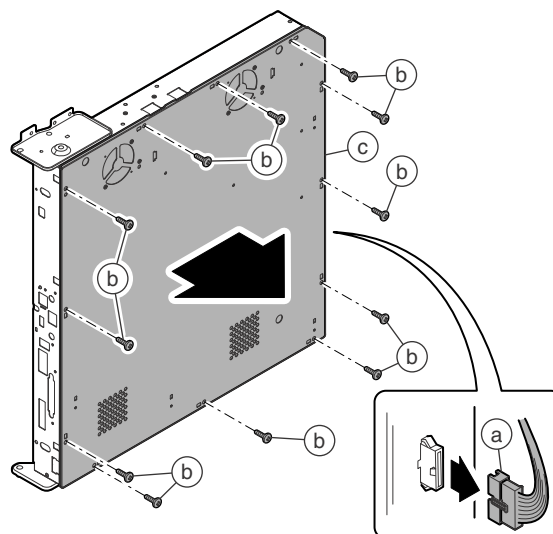
A. Fan

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	
G	Ozone exhaust fan 1	R - 4/(4)
H	Ozone exhaust fan 2	
I	Toner suction fan	R - 4/(5)
J	Developing cooling fan 1	
K	Polygon cooling fan	R - 5/(6)
L	Process cooling fan 1	
M	Paper cooling fan	R - 5/(7)
N	Process section cooling fan	
O	Process cooling fan	R - 6/(8)
		R - 7/(10)
		R - 8/(12)



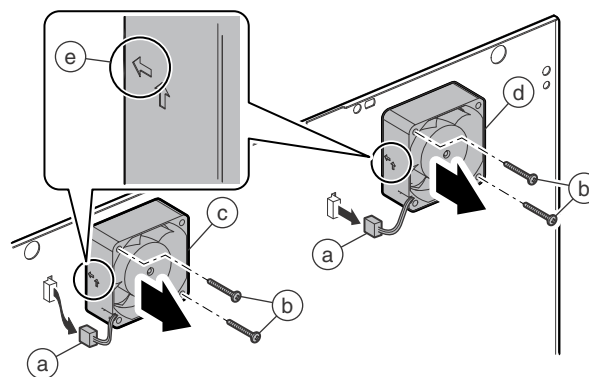
(1) HDD cooling fan / CTL cooling fan

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the cover (c).



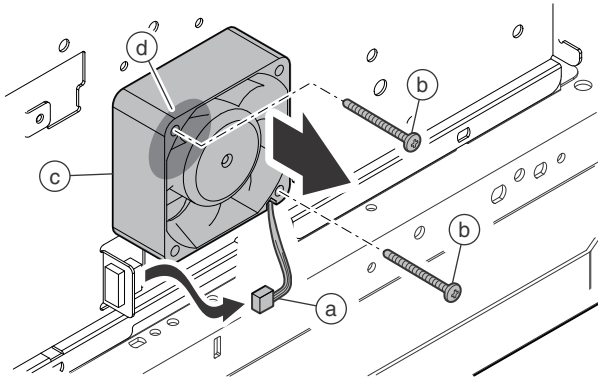
- 3) Disconnect the connector (a). Remove the screw (b), and remove the HDD cooling fan (c), and the CTL cooling fan (d).

* When installing, be careful to the direction of the arrow mark (e).



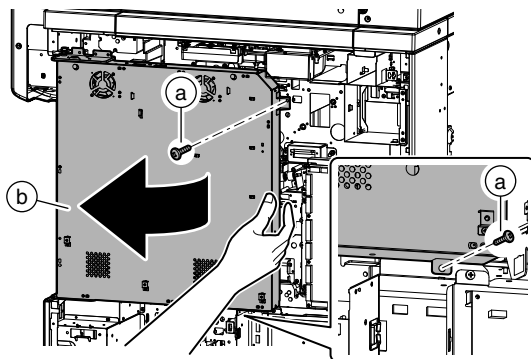
(2) Power cooling fan 3

- 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.

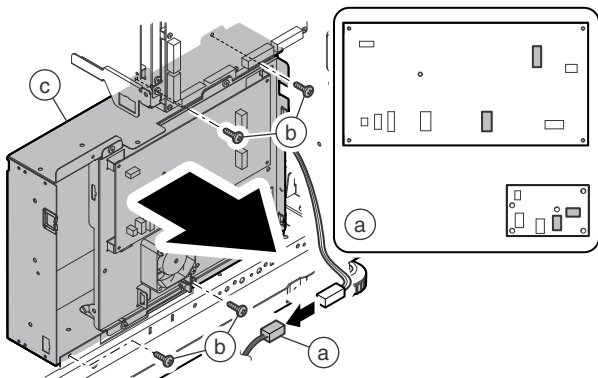


(3) Power cooling fan 1 / Power cooling fan 2

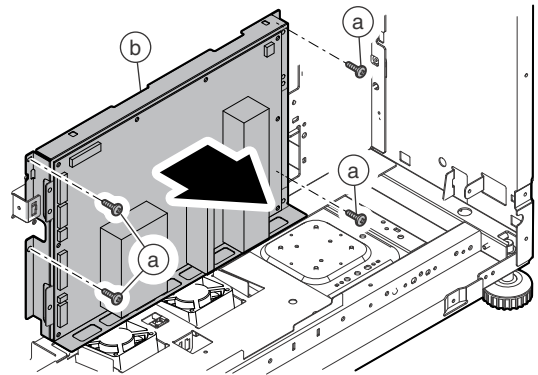
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



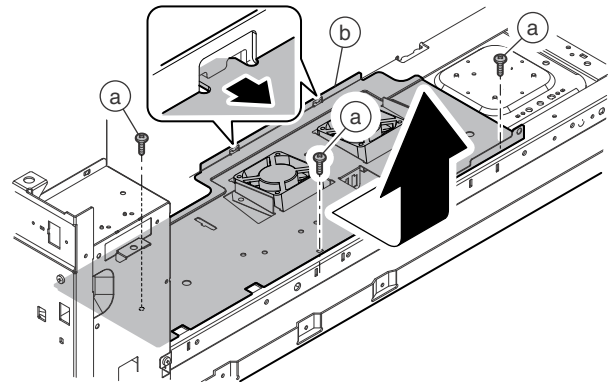
- 3) Disconnect the connector (a). Remove the screw (b), and remove the AC-OP power unit (c).



- 4) Remove the screw (a), and remove the main power unit (b).

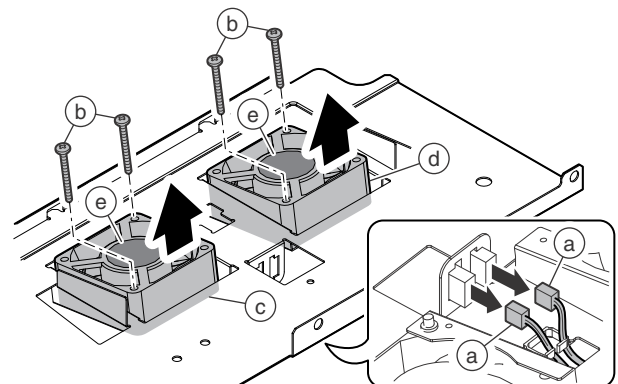


- 5) Remove the screw (a), and remove the fan unit (b).



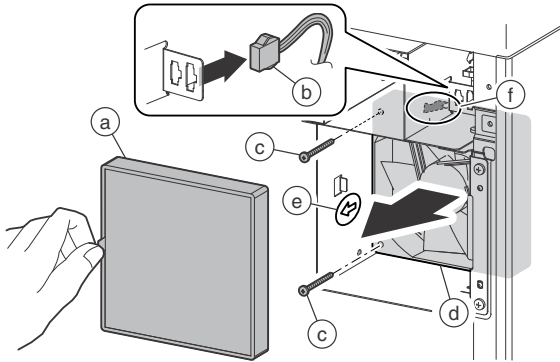
- 6) Disconnect the connector (a). Remove the screw (b), and remove the power cooling fan 1 (c), and the power cooling fan 2 (d).

- * 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.



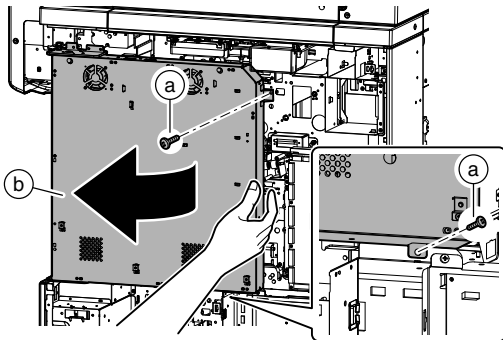
(4) Machine exhaust fan 1

- 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.

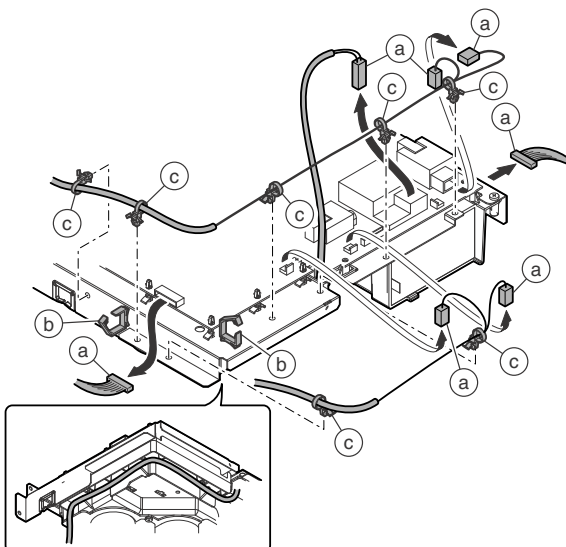


(5) Ozone exhaust fan 1 / Ozone exhaust fan 2

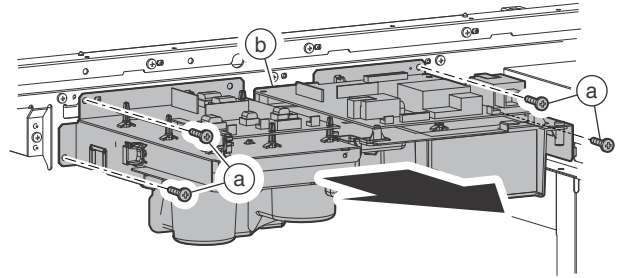
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



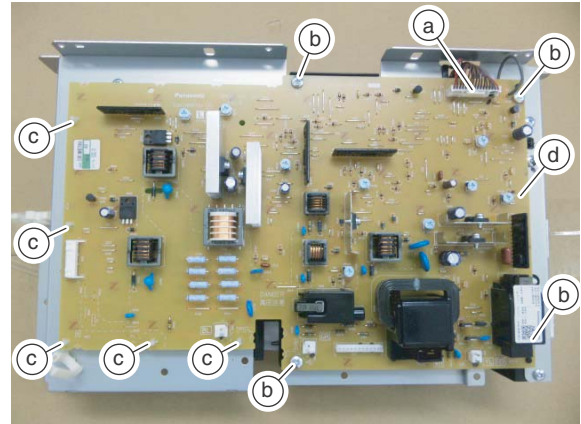
- 3) Disconnect the connector (a). Open the wire saddle (b), and remove the snap band (c).



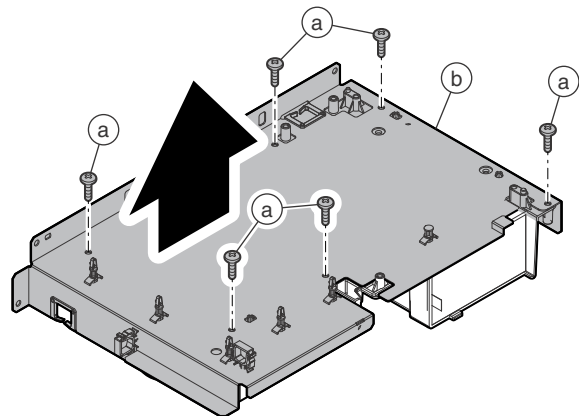
- 4) Remove the screw (a), and remove the ozone duct unit (b).



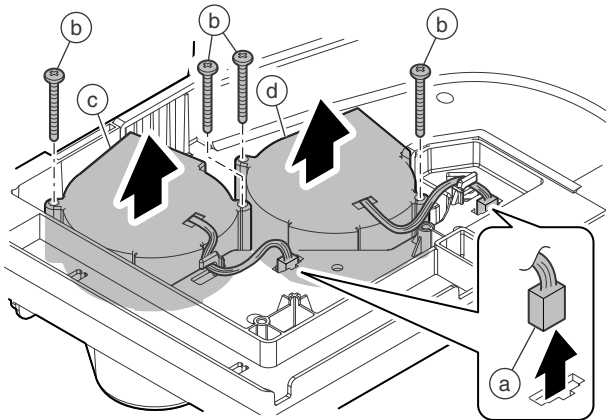
- 5) Disconnect the connector (a). Remove the screw (b) and the PWB support (c), and remove the high voltage PWB (d).



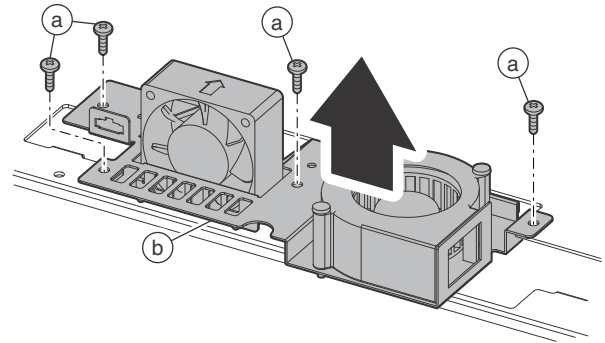
- 6) Remove the screw (a), and remove the cover (b).



- 7) Disconnect the connector (a), and remove the screw (b). Remove the ozone exhaust fan 1 (c) and the ozone exhaust fan 2 (d).

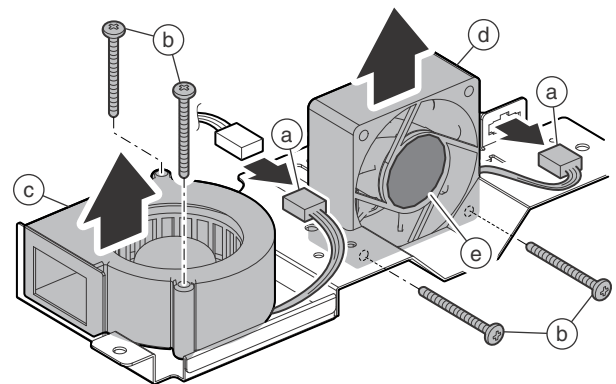


- 5) Remove the screw (a), and remove the fan unit (b).



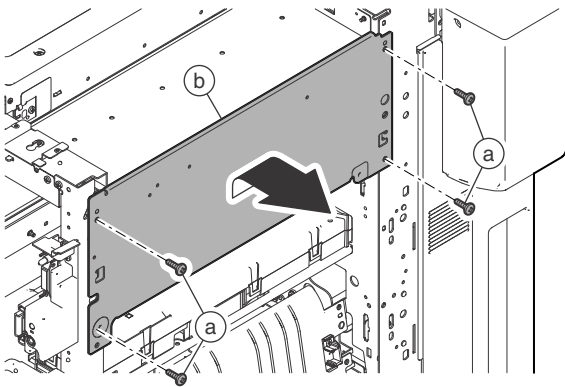
- 6) Disconnect the connector (a), and remove the screw (b). Remove the toner suction fan (c) and developing cooling fan (d).

* When installing the fan ensure that the label is installed as indicated (e). Proper air flow thru the fan is essential.

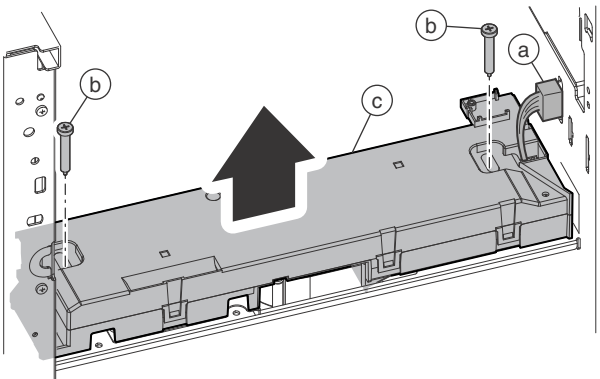


(6) Toner suction fan / Developing cooling fan 1

- 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).

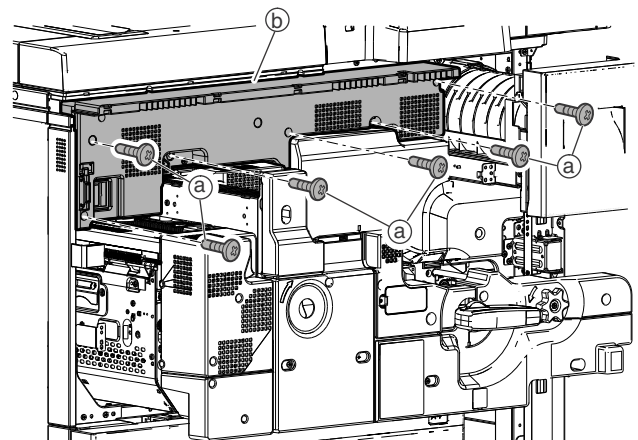


- 4) Disconnect the connector (a), and remove the step screw (b), and remove the cover (c).



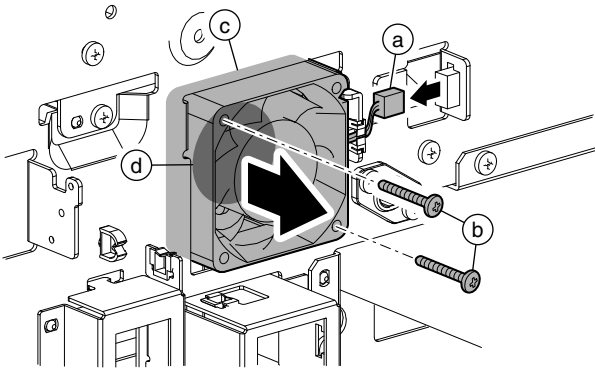
(7) Polygon cooling fan / Process cooling fan 1

- 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).



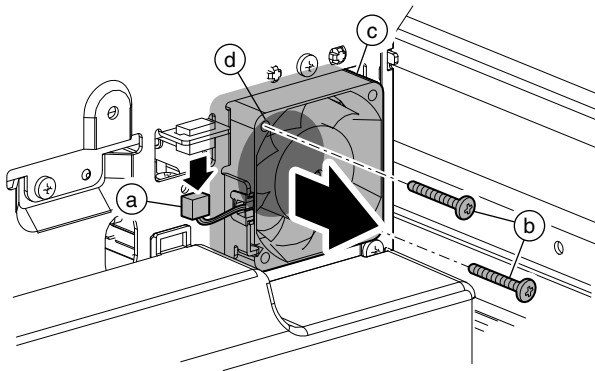
- 4) Disconnect the connector (a). Remove the screw (b), and remove the polygon cooling fan (c).

- * 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).

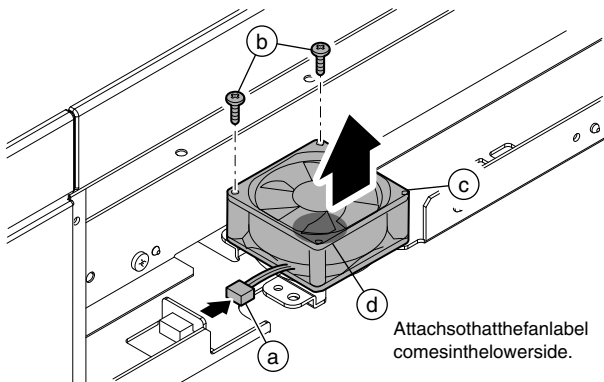
- * When installing, be careful to the direction of the fan label (d).
- * Check to confirm that the bent section of the plate is engaged with the notch of the fan.



(8) Paper cooling fan

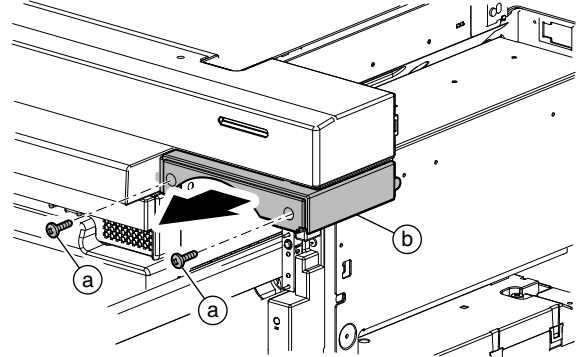
- 1) Remove the left upper cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the paper cooling fan (c).

- * When installing, face the fan label (d) downward.

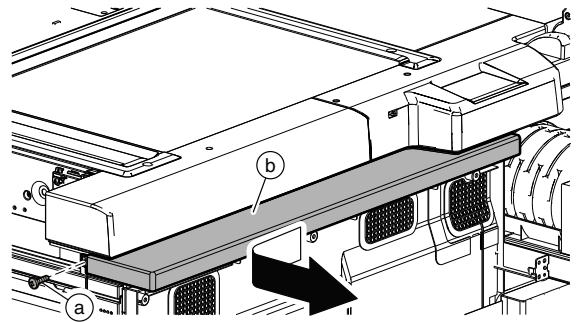


(9) Process section cooling fan

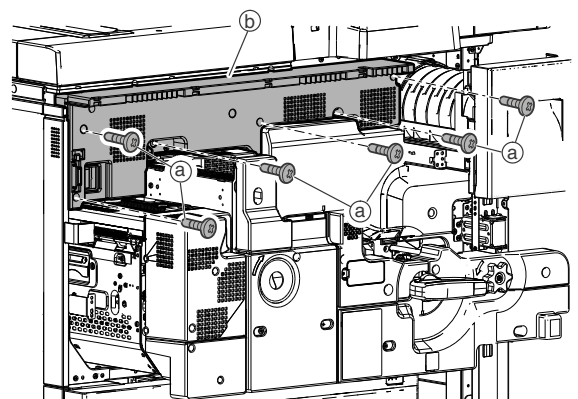
- 1) Open the front cover, and pull out the intermediate frame.
- 2) Remove the screw (a), and remove the upper cabinet front cover right (b).



- 3) Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.

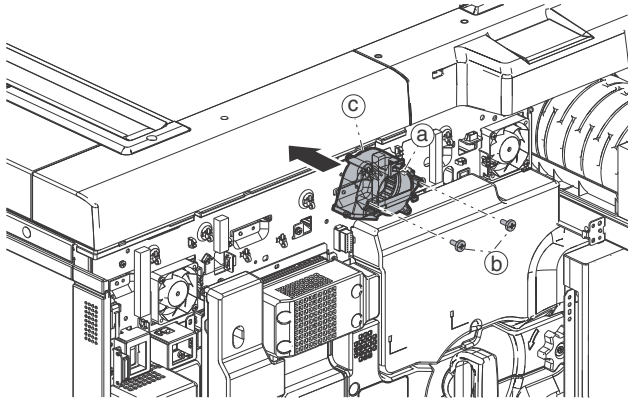


- 4) Remove the screw (a), and remove the front cover lower panel (b).



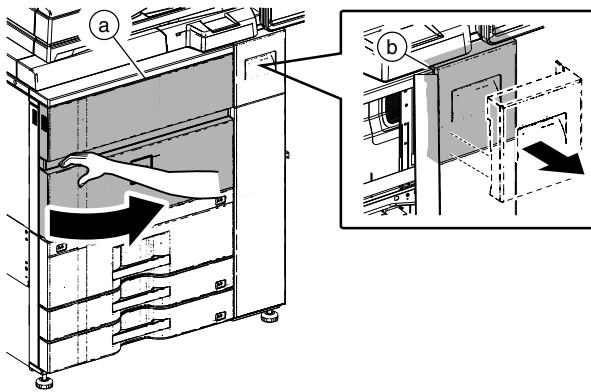
- 5) Remove the LSU.
- 6) Disconnect the connector (a) of the process section cooling fan.
Remove the screw (b), and remove the process section cooling fan (c).

NOTE: When assembling, check to confirm that the screw hole matches with the screw and that the hook is securely engaged.

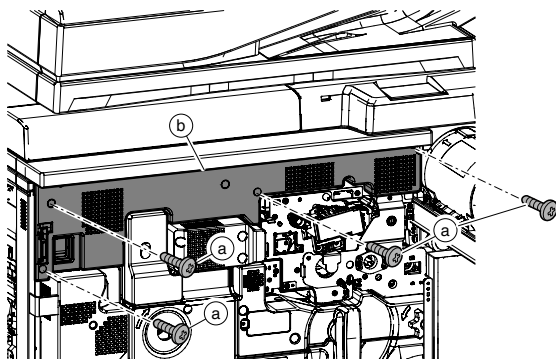


(10) Process cooling fan 2/ Process cooling fan 3/ Process cooling fan 4

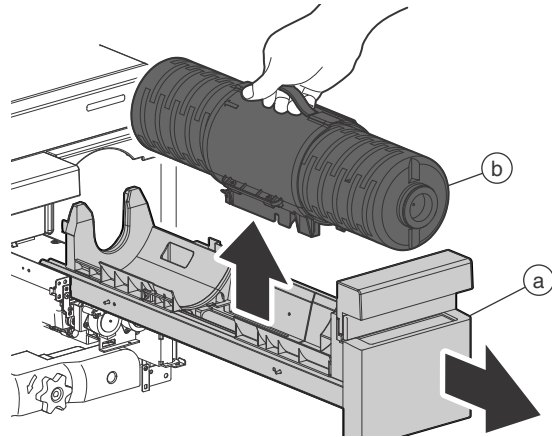
- 1) Remove the rear cabinet.
- 2) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 3) Open the front cover (a), and pull out the toner tray (b) slightly.



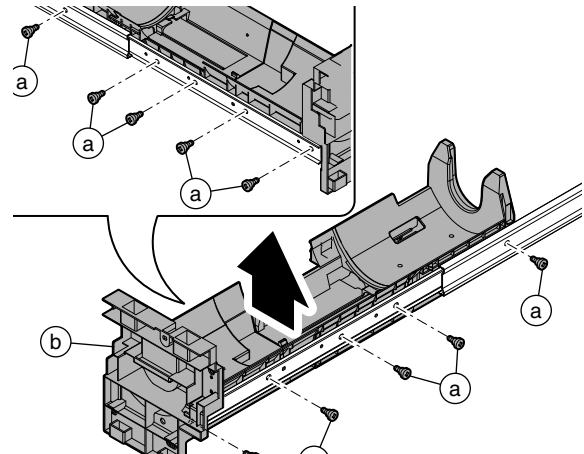
- 4) Remove the screw (a), and remove the front cover (b).



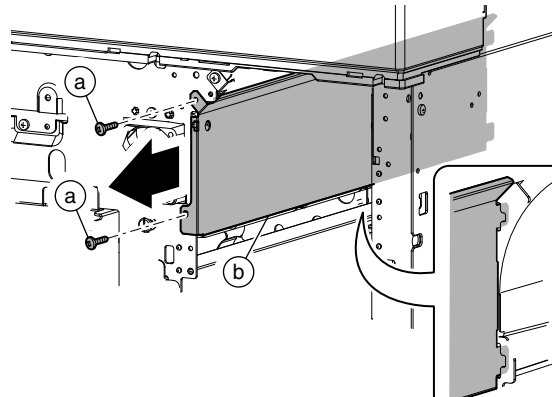
- 5) Pull out the toner tray (a), and remove the toner bottle (b).



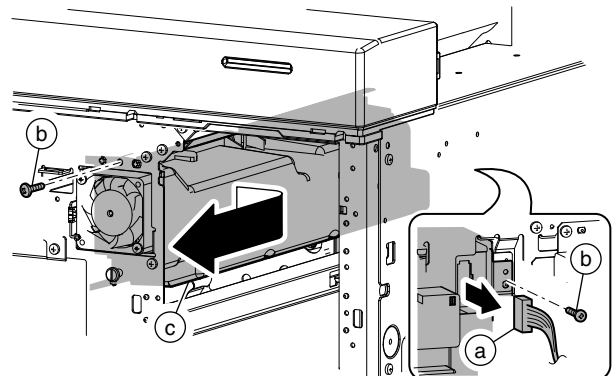
- 6) Remove the screw (a), and remove the toner tray (b).



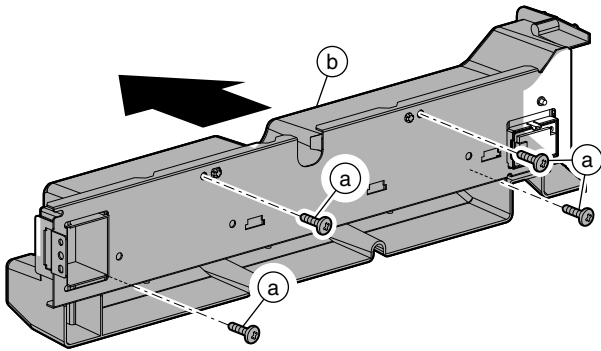
- 7) Remove the screw (a), and remove the cover (b).



- 8) Disconnect the connector (a), and remove the screw (b). Remove the duct unit (c).

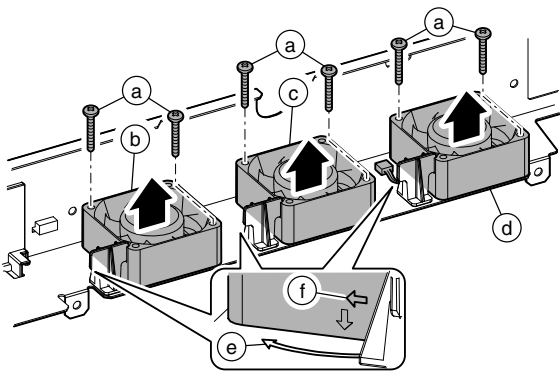


9) Remove the screw (a), and remove the duct (b).



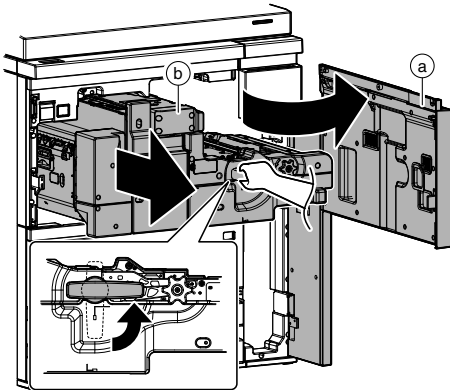
10) Remove the screw (a). Remove the process cooling fan 2 (c), the process cooling fan 3 (d), and the process cooling fan 4 (e).

* 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.

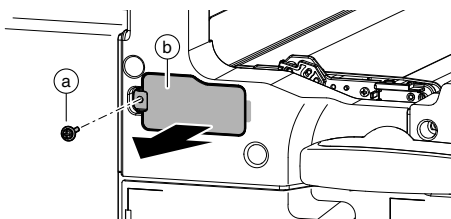


(11) Process cooling fan

1) Open the front cover (a), and pull out the intermediate frame (b).



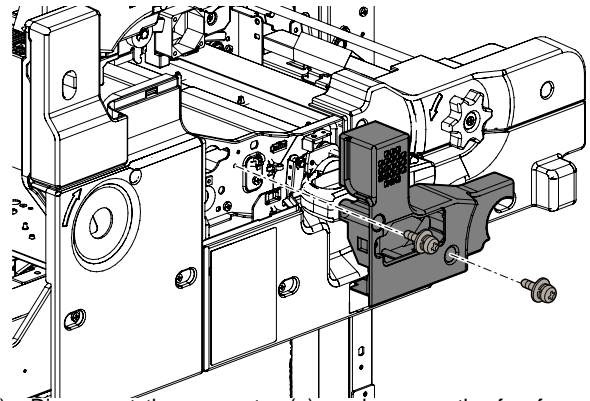
2) Remove the screw (a), and remove the cover (b).



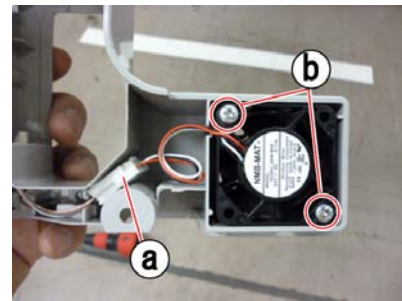
3) Disconnect the connector.



4) Remove the transfer cover.



5) Disconnect the connector (a), and remove the fan from the transfer cover.

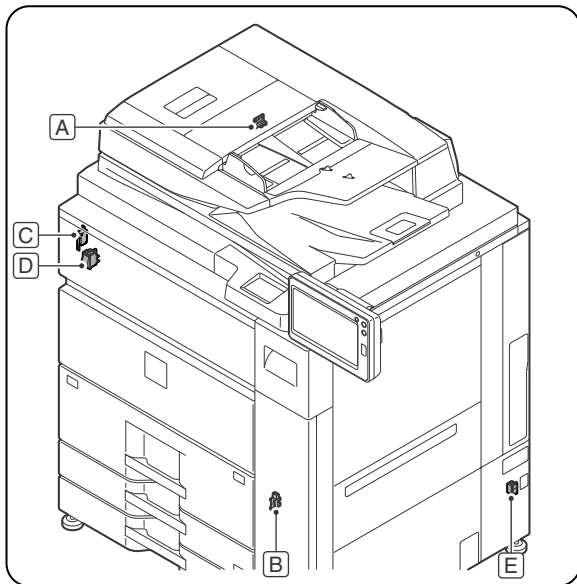


[S] SENSOR, SWITCH SECTION

1. Disassembly and assembly

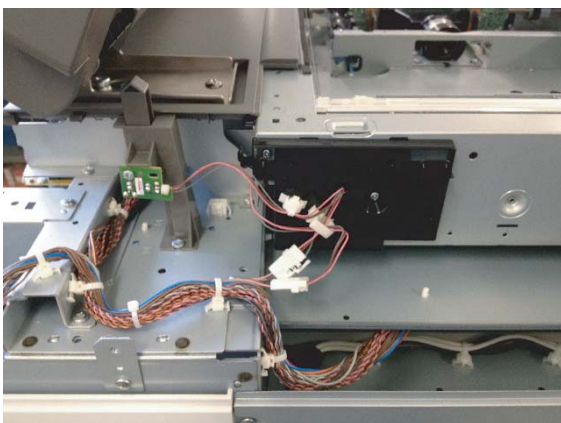
A. Sensor, switch

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)



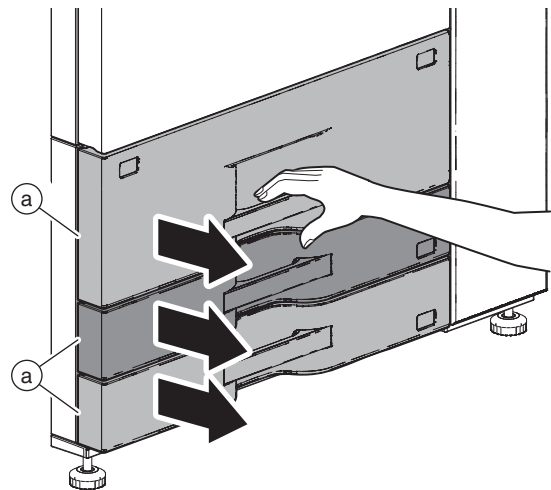
(1) Original cover SW

- 1) Remove the upper cabinet left.
- 2) Disconnect the connector and remove the snap band. Remove the screw, and remove the original cover SW.

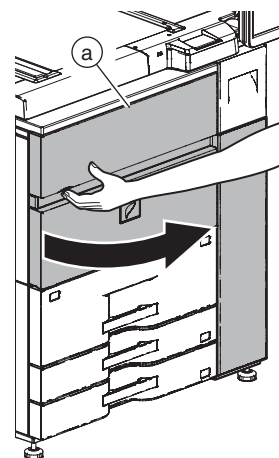


(2) Cassette right door open/close detection

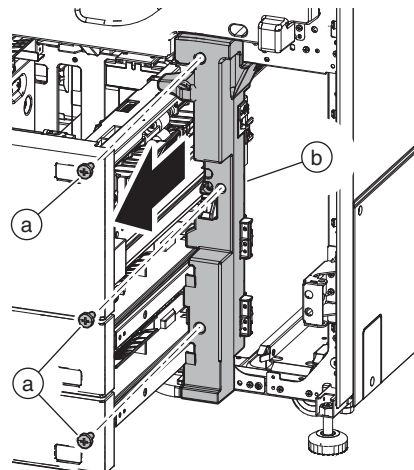
- 1) Pull out all tray (a).



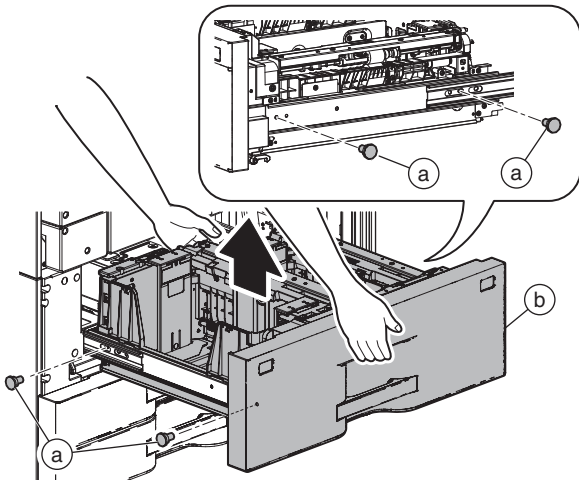
- 2) Open the front cover (a).



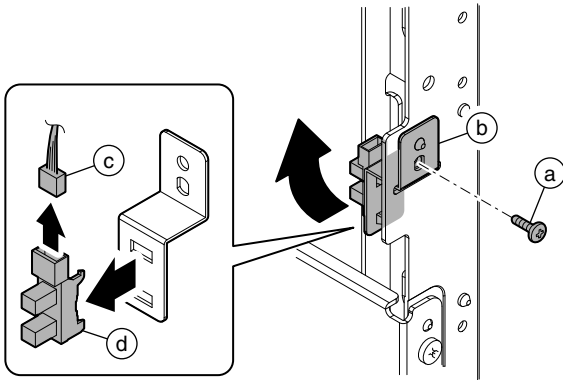
- 3) Remove the screw (a), and remove the cover (b).



- 4) Remove the screw (a), and remove the tray 1 and 2 (b).

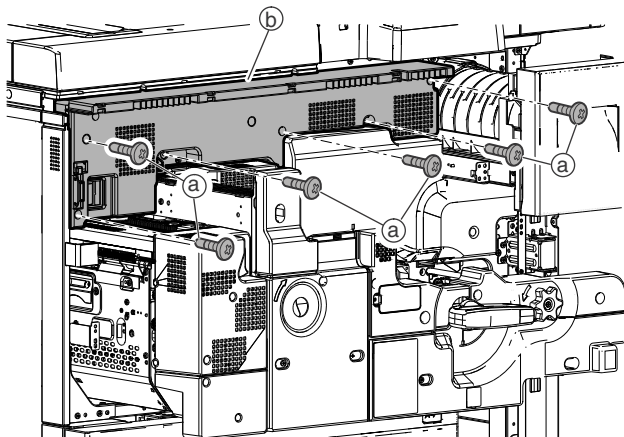


- 5) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c), and remove the cassette right door open/close detection (d).

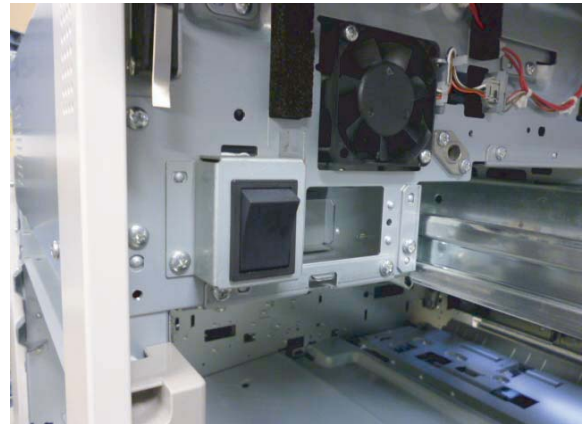


(3) Front door switch / Main switch

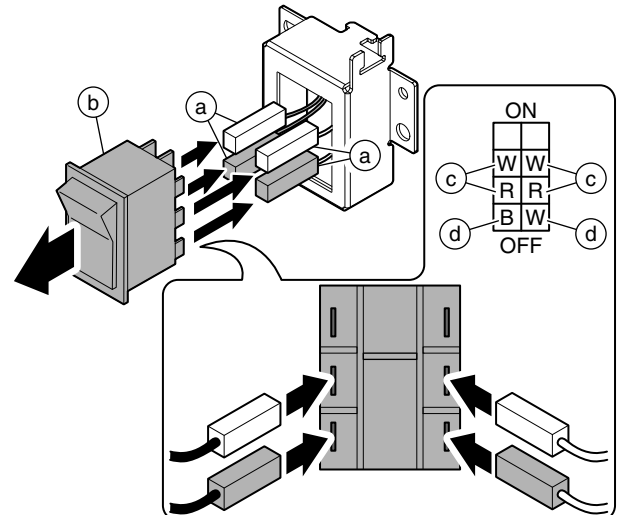
- 1) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 2) Pull out the intermediate frame.
- 3) Remove the screw (a), and remove the front cover lower panel (b).



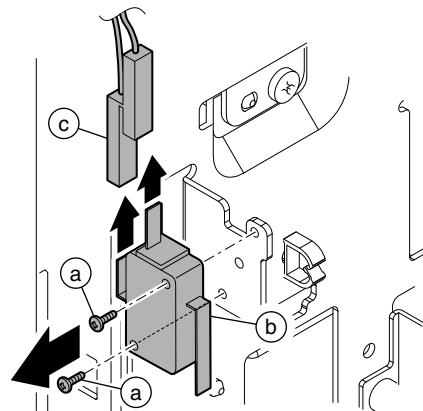
- 4) Remove the screw, and remove the main switch unit.



- 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.

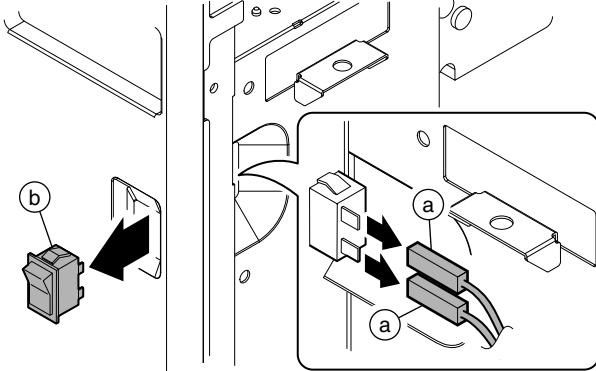


- 6) Remove the left cabinet front upper.
- 7) Remove the screw (a), and disconnect the connector (c) from the front door switch (b).
 * When inserting the connector (c), push it completely until it clicks.



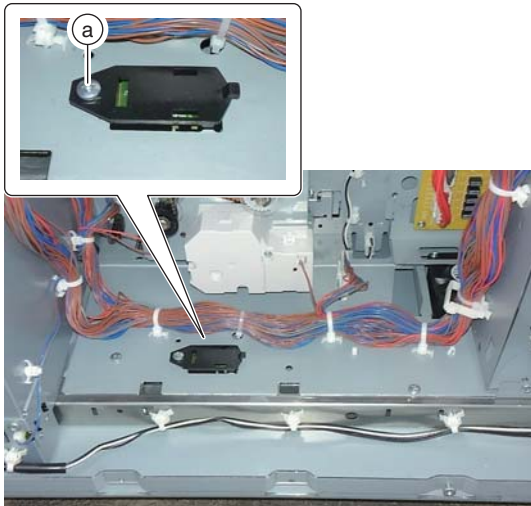
(4) Dehumidifying heater switch

- 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

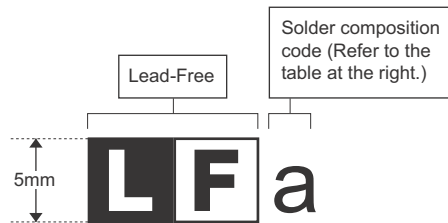
- 1) Remove the rear cabinet.
- 2) Remove the screw (a), and remove the temperature/humidity sensor 2.



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 inkorrektter Batterien.

Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder

vom Hersteller empfohlene Batterien verwendet werden.

Entsorgung der gebrauchten Batterien nur nach den vom

Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANESE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.



COPYRIGHT © 2017 BY SHARP CORPORATION

All rights reserved.

Produced in Japan for electronic Distribution

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted,
in any form or by any means,

electronic; mechanical; photocopying; recording or otherwise
without prior written permission of the publisher.

Trademark acknowledgements

- Microsoft®, Windows®, Windows® 98, Windows® Me, Windows NT® 4.0, Windows® 2000, Windows® XP, Windows® Vista, Windows® 7, Windows® 8, Windows® 8.1, Windows® Server 2003, Windows® Server 2008, Windows® Server 2012 and Internet Explorer® are registered trademarks or trademarks of Microsoft Corporation in the U.S.A. and other countries.
- PostScript is a registered trademark of Adobe Systems Incorporated.
- Macintosh, Mac OS, AppleTalk, EtherTalk, Laser Writer, and Safari are registered trademarks or trademarks of Apple Inc.
- IBM, PC/AT, and Power PC are trademarks of International Business Machines Corporation.
- Acrobat® Reader Copyright® Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Acrobat, and the Acrobat logo are trademarks of Adobe Systems Incorporated.
- PCL is a registered trademark of the Hewlett-Packard Company.
- Sharpdesk is a trademark of Sharp Corporation.
- All other trademarks and copyrights are the property of their respective owners.

SHARP CORPORATION
Business Solutions BU

First edition: November 2016
Latest edition: April 2017