SHARP SERVICE MANUAL

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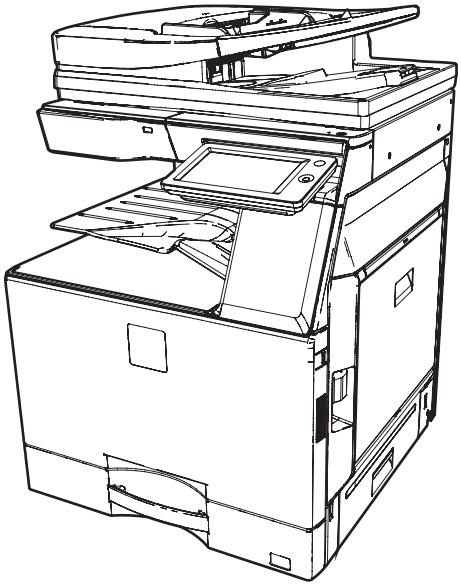

DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM

MODEL MX-2630N

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

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

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NOTE FOR SERVICING

1. Precautions for servicing

- 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.
- There is a high temperature area inside the machine. Use extreme care when servicing.

  It may cause a burn.
- There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.
- Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.

  It may damage eyes by reflection of laser beams.
- When servicing with the machine operating, be careful not to squeeze you hands by the chain, the belt, the gear, and other driving sections.
- 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.
- 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.
- The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
- Do not throw toner or a toner cartridge in a fire. Otherwise, toner may ignite and burn you.
- When replacing a lithium battery on a PWB, only use the specified replacement battery.

  If a battery of different specification is used, it may cause a machine malfunction or breakdown.
- 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 otherwise cause a machine breakdown or malfunction.

CAUTION
DOUBLE POLE/NEUTRAL FUSING

ATTENTION.
Double pôle/fusible sur le neutre

2. Warning for servicing

- 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.
- 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.
- Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.

  To protect the machine and the power unit from lightening, grounding must be made.
- When connecting the grounding wire, never connect it to the following points.
  - 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

  It may cause an explosion, a fire or an electric shock.
- Do not damage, break, or stress the power cord.

  Do not put heavy objects on the power cable. Do not stress, forcibly bend, or pull the power cord.

  It may cause a fire or an electric shock.
- 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.
- Do not place liquids or foreign metallic objects inside the machine.

  It may cause a fire or an electric shock.
- Do not touch the power cord, insert the phone jack, operate the machine, or perform service on the machine with wet or oily hands.

  It may cause an electric shock.

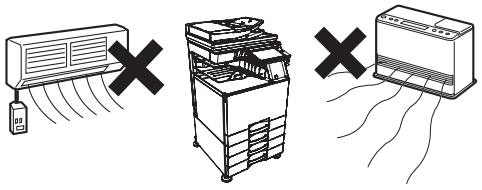
3. Note for installing site

Do not install the machine at the following sites.

- **Place of high temperature, high humidity, low temperature, low humidity, place under an extreme change in temperature and humidity.**

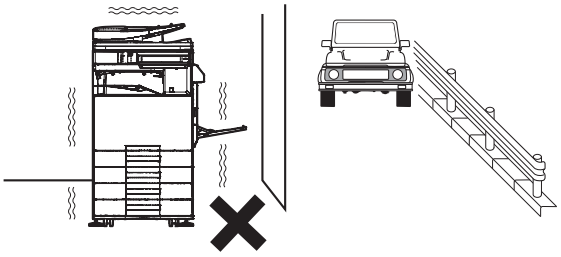
  Paper may get damp and form condensation inside the machine, causing paper jam or copy dirt.

  For operating and storing conditions, refer to the specifications described later.



- **Place of extreme vibrations**

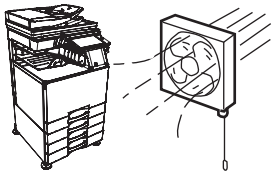
  It may cause a breakdown.



- **Poorly ventilated place**

  An electrostatic type copier will produce ozone.

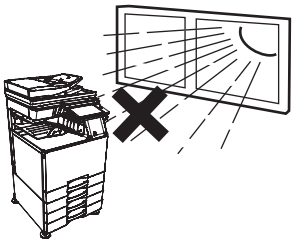
  The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce an ozone smell. Install the machine in a well ventilated place.



- **Place of direct sunlight.**

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

  It may cause a breakdown or output quality problems.



- **Place which is full of organic gases such as ammonium**

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

  Installation of this machine near a diazo-type copier and blue print machine may result in poor quality output.

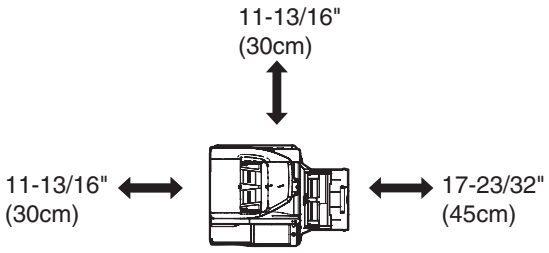
- **Place of much dust**

  When dust or contaminants enters the machine, it may cause a breakdown or poor quality output.

- **Place near a wall**

  The machine will require ventilation.

  If ventilation is not proper, poor output or machine failure may result.



- **Unstable or irregular surface**

  If the machine is dropped or tips over, it may cause injury or machine malfunction.

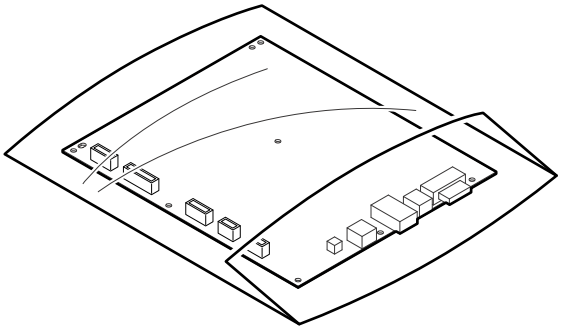
  Use an optional desk or an exclusive-use desk.

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

4. Note for handling PWB and electronic parts

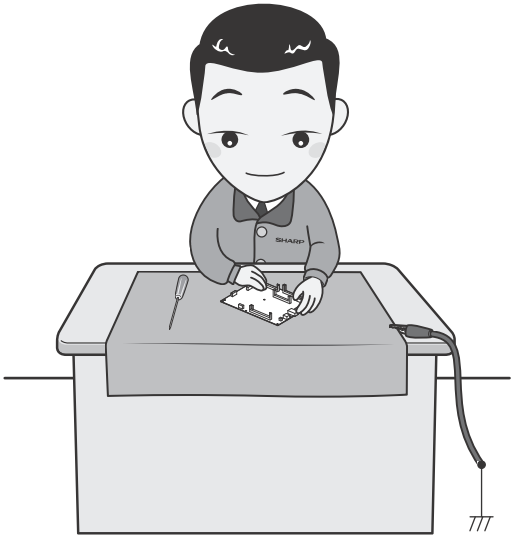
When handling the PWB and the electronic parts, be sure to observe the following precautions in order to prevent against damage by static electricity.

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



- When and after removing the parts from an anti-static bag (case), use an earth band as shown below:
  - Put an earth band to your arm, and connect it to the machine.

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



5. Note for repairing/replacing the LSU

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

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

If the above precaution is neglected or the LSU is modified, ones safety may be at risk.

6. Note for handling the drum unit, the transfer unit, the developing unit

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

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

Drum unit

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

Transfer unit

- Be careful not to leave fingerprints, oil, grease, or other foreign material on the transfer roller, primary transfer belt, and the secondary transfer roller.

Developing unit

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

7. Screw tightening torque

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

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

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

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

However, for the other conditions of tightening screws than specified on this table, or under special circumstances, the details are described on the separate page. Refer to the descriptions on such an exception.

Important

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

Screw kinds and tightening torques

Normal screws, set screws (including step screws)

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

Tapping screws (for iron)

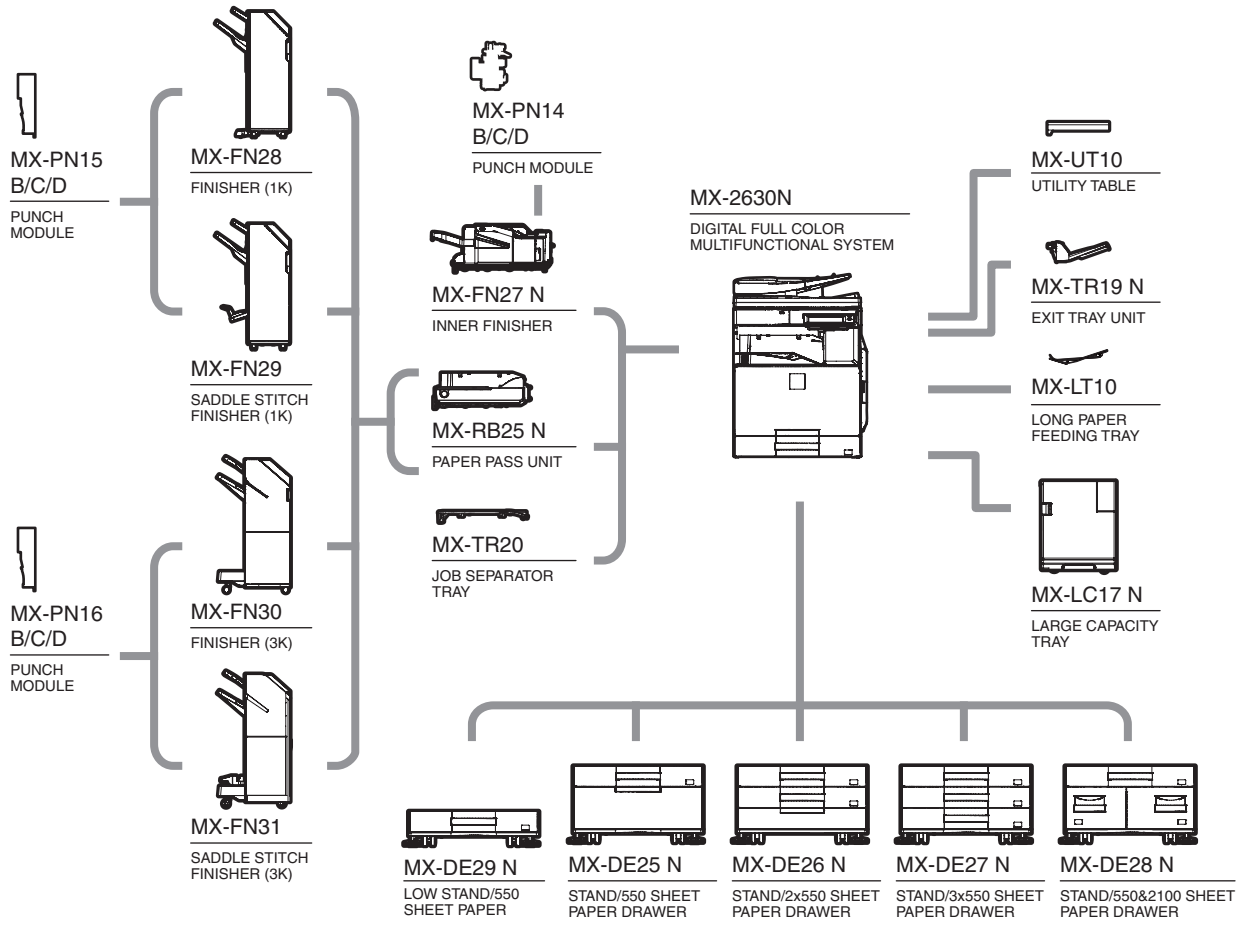
Screw diameter	Material to be fixed	Tightening torque (N·m)	Tightening torque (kgf·cm)	Tightening torque (lbft)
M3	Steel plate (Plate thickness 0.8mm or above)	1.0 - 1.2	10 - 12	0.7 - 0.9
M4	Steel plate (Plate thickness 0.8mm or above)	1.6 - 1.8	16 - 18	1.2 - 1.3
M3	Steel plate (Plate thickness less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

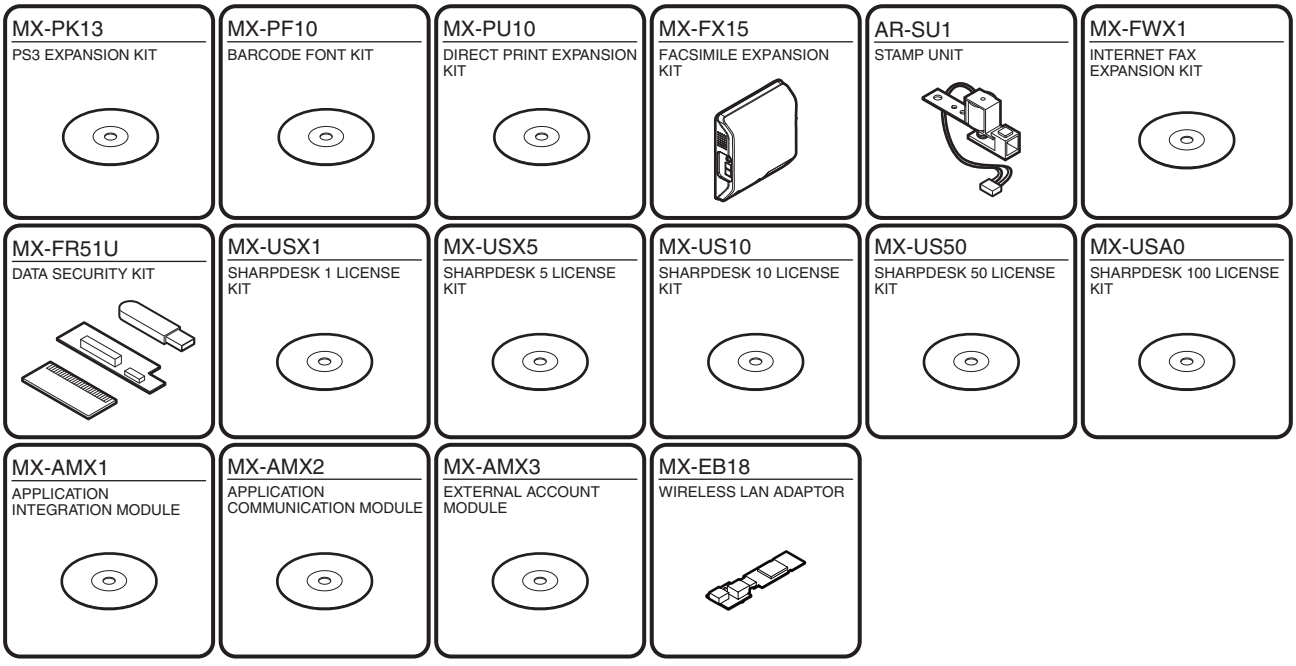
Tapping screw (for plastic)

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

[1] PRODUCT OUTLINE

1. System diagram





2. Option list

	Model name	Description	MX-2630N	Remarks
Document Feed System	—	REVERSING SINGLE PASS FEEDER	STD	
Paper Feed System	MX-DE25 N	STAND/550 SHEET PAPER DRAWER	OPT	
	MX-DE26 N	STAND/2x550 SHEET PAPER DRAWER	OPT	
	MX-DE27 N	STAND/3x550 SHEET PAPER DRAWER	OPT	
	MX-DE28 N	STAND/550&2100 SHEET PAPER DRAWER	OPT	
	MX-DE29 N	LOW STAND/550 SHEET PAPER	OPT	
	MX-LC17 N	LARGE CAPACITY TRAY	OPT	
	MX-LT10	LONG PAPER FEEDING TRAY	OPT	
Paper Exit System	MX-TR19 N	EXIT TRAY UNIT	OPT	
	—	EXIT TRAY CABINET	STD	
	MX-TR20	JOB SEPARATOR TRAY	OPT	
	MX-FN27 N	INNER FINISHER	OPT	
	MX-PN14B	PUNCH MODULE	OPT	For MX-FN27 N
	MX-PN14C		OPT	
	MX-PN14D		OPT	
	MX-FN28	FINISHER (1K)	OPT	
	MX-FN29	SADDLE STITCH FINISHER (1K)	OPT	
	MX-RB25 N	PAPER PASS UNIT	OPT	
	MX-PN15B	PUNCH MODULE	OPT	For MX-FN28/FN29
	MX-PN15C		OPT	
	MX-PNX5D		OPT	
	MX-FN30	FINISHER (3K)	OPT	
	MX-FN31	SADDLE STITCH FINISHER (3K)	OPT	
	MX-PN16B	PUNCH MODULE	OPT	For MX-FN30/FN31
	MX-PN16C		OPT	
	MX-PN16D		OPT	
Printer Expansion	MX-PK13	PS3 EXPANSION KIT	OPT	
	MX-PF10	BARCODE FONT KIT	OPT	
	MX-PU10	DIRECT PRINT EXPANSION KIT	OPT	
Image Send Expansion	MX-FX15	FACSIMILE EXPANSION KIT	OPT	*2
	AR-SU1	STAMP UNIT	OPT	
	MX-FWX1	INTERNET FAX EXPANSION KIT	OPT	
Authentication / Security	MX-FR51U	DATA SECURITY KIT	OPT	
Application / Solution	MX-USX1	SHARPDESK 1 LICENSE KIT	OPT	
	MX-USX5	SHARPDESK 5 LICENSE KIT	OPT	
	MX-US10	SHARPDESK 10 LICENSE KIT	OPT	
	MX-US50	SHARPDESK 50 LICENSE KIT	OPT	
	MX-USA0	SHARPDESK 100 LICENSE KIT	OPT	
	MX-AMX1	APPLICATION INTEGRATION MODULE	OPT	
	MX-AMX2	APPLICATION COMMUNICATION MODULE	OPT	*1
	MX-AMX3	EXTERNAL ACCOUNT MODULE	OPT	*1
Other	MX-EB18	WIRELESS LAN ADAPTOR	OPT	*2
	MX-UT10	UTILITY TABLE	OPT	

STD: Standard equipment

OPT: Installable option

*1: Option in some area

*2: No support in some area

[2] SPECIFICATIONS

1. Basic specifications

A. Engine specification

Photo Conductor	OPC (Diameter: Bk: φ30mm, CL (Y/M/C): φ30mm x3)
Recording method	Electronic Photo (Laser)
Development method	Dry-Type Dual-Component Magnetic Brush Development
Charging method	Charged Saw-Tooth Method
Transfer method	Middle Transfer Belt
Separation method	Discharge Separation Method *Sub Separation pawl is equipped.
Cleaning method	Counter Blade
Fusing method	Belt Method
Waste toner disposal	Toner Collecting Container

B. Engine speed (ppm)

(1) Tray1-4,LCC

Paper size	26 ppm machine	
	Monoc hrome	Color
A3	15	15
8K	15	15
11x17	15	15
B4, 8.5x14, 8.5x13, 8.5x13.4, 8.5x13.5	16	16
A4, B5, 16K, A5	26	26
8.5x11	26	26
A4R, 16KR, 8.5x11R, B5R, 7.25x10.5R	21	21
A5R, 5.5x8.5R	21	21
A3W, 12x18	14	14
SRA4	25	25
SRA3	15	15
Extra (- 210mm) and the length of horizontal scanning is 257mm and over.	26	26
Extra (210.1 - 215.9mm) and the length of horizontal scanning is 257mm and over.	26	26
Extra (216 - 225mm) and the length of horizontal scanning is 257mm and over.	25	25
Extra (- 225mm) and the length of horizontal scanning is less than 257mm.	21	21
Extra (225.1 - 297mm)	21	21
Extra (297.1mm -)	14	14
Heavy Paper (A3, 11x17, 8K)	15	15
Heavy Paper (B4, 8.5x14, 8.5x13, 8.5x13.4, 8.5x13.5)	15	15
Heavy Paper (A4, B5, 8.5x11, 16K, 5.5x8.5R, A5R, A5)	26	26
Heavy Paper (A4R, 16KR, 8.5x11R, B5R, 7.25x10.5R)	21	21
Heavy Paper (A3W, 12x18)	14	14
Heavy Paper (Extra: - 215.9mm)	26	26
Heavy Paper (Extra:216 - 225mm)	25	25
Heavy Paper (Extra:225.1 - 297mm)	21	21
Heavy Paper (Extra:297.1mm -)	14	14
Heavy Paper (Postcard: HIGH/Round trip postcard) *1	26	26
Heavy Paper (Postcard: LOW/Round trip postcard) *1	14	14
Heavy Paper (SRA4)	25	25
Heavy Paper (SRA3)	15	15

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

(2) Bypass

Paper size	26 ppm machine	
	Monoc hrome	Color
A3	15	15
8K	15	15
11x17	15	15
B4, 8.5x14, 8.5x13, 8.5x13.4, 8.5x13.5	16	16
A4, 16K	26	26
8.5x11	26	26
B5, A5	26	26
A4R, 16KR, 8.5x11R, B5R, 7.25x10.5R	20	20
A5R, 5.5x8.5R	20	20
A3W, 12x18	14	14
SRA4	25	25
SRA3	14	14
OHP (A4, 8.5x11)	25	21
OHP (A4R, 8.5x11R)	20	17
Extra	14	14
Extra (- 210mm) and the length of horizontal scanning is 257mm and over.	26	26
Extra (210.1 - 215.9mm) and the length of horizontal scanning is 257mm and over.	26	26
Extra (216 - 225mm) and the length of horizontal scanning is 257mm and over.	25	25
Extra (- 225mm) and the length of horizontal scanning is 257mm and over.	20	20
Extra (225.1 - 297mm)	20	20
Extra (297.1mm -)	14	14
Envelope (Monarch, Com-10, DL, C5, Chokei-3, Chokei-4, Youkei-2, Youkei-4, Kakugata-2, Kakugata-3)	17	15
Heavy Paper (A3, 11x17, 8K)	15	13
Heavy Paper (B4, 8.5x14, 8.5x13, 8.5x13.4, 8.5x13.5)	15	13
Heavy Paper (A4, 8.5x11, 16K, B5, A5R, 5.5x8.5R, A5)	25	21
Heavy Paper (A4R, 16KR, 8.5x11R, B5R, 7.25x10.5R)	20	17
Heavy Paper (A3W, 12x18)	14	13
Heavy Paper (Extra)	14	13
Heavy Paper (Extra: - 215.9mm)	25	21
Heavy Paper (Extra:216 - 225mm)	25	21
Heavy Paper (Extra:225.1 - 297mm)	20	17
Heavy Paper (Extra:297.1mm -)	14	13
Heavy Paper (Postcard: HIGH/Round trip postcard) *1	25	21
Heavy Paper (Postcard: LOW/Round trip postcard) *1	14	13
Heavy Paper (SRA4)	25	21
Heavy Paper (SRA3)	14	13

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

C. First copy time

Engine	Mono	Color
OC	4.7	6.7
RSPF	7.6	9.7

D. Printable area

Void area	Top: 4±1mm Rear: 2mm or more, 5mm or less, Total 8mm or less FR total: 4mm±2mm
Max printable area	319mmx1,292mm

E. Engine resolution

Resolution *1	Copy	Writing 600x600dpi 9,600 (equivalent)x600dpi	
	Print	Writing 600x600dpi 9,600 (equivalent)x600dpi	
Tone (equivalent to 256 levels *2)	Copy	Writing	
		600x600dpi	4bit
		9,600(equivalent)x600dpi	—
	Print	Writing	
	PCL	600x600dpi	1bit, 4bit
		9,600(equivalnet)x600dpi	—
	PS	600x600dpi	1bit, 4bit
		9,600(equivalnet)x600dpi	—

*1: Default resolution is 600dpi

*2: The Dither and Error Diffusion methods using 8bit input will be performed.

F. Scanner section

(1) Resolution / Gradation

Scan Resolution for Copying (dpi)		Monochrome	Color
	OC	600x600dpi (default) 600x400dpi 600x300dpi	600x600dpi
	RSPF	600x600dpi 600x400dpi (default) 600x300dpi	600x600dpi
Exposure Lamp	White LED		
Scan Levels	10bit		

(2) Document Glass

Type	Fixing Method (Flat bed)
Scan Range	297x432mm
Original Cover Standard Location	Left back
Detection	Yes
Detection size	Auto Detect
Heater (Scanner section)	Service parts

G. Document feeder

(1) RSPF

Type	RSPF (Reversing single pass feeder)	
Scan Speed	Monochrome (A4/8.5x11)	Color (A4/8.5x11)
Copy	Single: 80 sheets/minute (600x300dpi, 4bit) 60 sheets/minute (600x400dpi, 4bit) 41 sheets/minute (600x600dpi, 4bit) Duplex: 25 pages/minute (600x300dpi, 4bit) 23 pages/minute (600x400dpi, 4bit) 20 pages/minute (600x600dpi, 4bit)	Single: 41 sheets/minute (600x600dpi, 4bit) Duplex: 20 sheets/minute (600x600dpi, 4bit)
Fax	Single: 80 sheets/minute (200x200dpi, 1bit) Duplex: 25 pages/minute (200x200dpi, 1bit)	N/A
Internet FAX	Single: 80 sheets/minute (200x200dpi, 1bit) Duplex: 25 pages/minute (200x200dpi, 1bit)	N/A
Scanner	Single: 80 sheets/minute (200x200dpi, 1bit) Duplex: 25 pages/minute (200x200dpi, 1bit)	Single: 80 sheets/minute (200x200dpi, 1bit) Duplex: 25 pages/minute (200x200dpi, 1bit)
Document setup Direction	Upward standard (1toN feeding standard)	
Document standard position	Center standard (Rear one-side standard for random feeding)	
Document transport method	Sheet-through method	
Mix feeding (same AB or inch system, same width)	Available (Simplex/Duplex)	
Random feeding (different combination of AB/ inch system, different width)	Available (Duplex is not available) (Combination allowed: A3&B4, B4&A4R, A4&B5, B5&A5, 11&8.5-inch. AMS effective. 2-sided scanning is disabled during random feeding.)	
Document weight	Single	Thin paper: 35 - 49g/m^2, 9 - 13- lb. Bond Plain paper: 50 - 128g/m^2, 13 - 32 lb. Bond *Thin paper mode (36 sheets/minute (600x300dpi), 28 sheets/minute (600x400dpi), 19 sheets/minute (600x600dpi) (when A4/8.5x11)) is set up for the thin paper.
	Duplex	50 - 105 g/m^2, 13 - 28 lb. Bond
Document capacity	Max. 120 sheets (64g/ m^2 17 lb. Bond) Max. 100 sheets (80g/m^2, 20 lb. Bond) or max. 13cm, 1/2 inch or less	
Types of document that may not be transported	The following documents are NOT allowed; OHP, second original drawing, tracing paper, carbon paper, thermal paper, wrinkled / broken / torn document, document with cuts and pastes, documents printed by an ink ribbon, and perforated document except 2-punched / 3-punched (Perforated document by punch unit is allowed.)	
Paper detection	Yes	
Detectable paper size	Auto detection	
Paper Feeding Direction	Right hand feeding	
Stamp	Option	
Power Source	Provided from the main unit	
Dimensions	W 580 x D 465 x H 155mm, W 22 53/64 x D 18 20/64 x H 6 7/64inch	
Weight	Approx.6.7kg, Approx.14.8lb.	

H. Paper feed section

(1) Basic specification

Type	Standard	1 Tray + Multi bypass
	Maximum	1 Tray (Std) + Tandem desk + Multi bypass + LCC
Heater	Service part	

Tray		Tray 1	Multi Bypass
Paper Capacity	Standard paper (80g/m^2)	550 sheets	100 sheets
Paper Size Detection		Not available	Available
Paper Type Settings		Yes	
Method to change paper size		By user	By user
Default Paper Size Settings	Inch-system	8.5x11	—
	AB-system	A4	—
Detection of Remaining Paper		None and 3 levels (100%, 67%, 33%, None)	Available Detect “None” status only.
Display of paper remaining		No	—

(2) Extra Paper Capacity

Paper type	Feeding Tray	Multi Bypass
Postcard	Yes	20 sheets
Envelope	N/A	20 sheets
OHP	N/A	20 sheets
Heavy paper	106 - 220g/m^2: 200 sheets, 221 - 300g/m^2: 100 sheets	106 - 256g/m^2: 40 sheets 257 - 300g/m^2: 20 sheets
Tab paper	N/A	20 sheets
Glossy paper	N/A	1 sheet
Others	N/A	1 sheet

(3) Feedable Paper Type

Paper feed section			Tray1	Multi Bypass
Min.paper weight			60g/m^2	55g/m^2
Max.paper weight			300g/m^2	300g/m^2
Paper Type	Thin paper 55-59g/m^2 13-16 lb. bond		-	Yes
	Plain paper 60-105g/m^2 16-28 lb. bond		Yes	Yes
	Recycled Paper		Yes	Yes
	Colored Paper		Yes	Yes
	Letter head		Yes	Yes
	Pre printed		Yes	Yes
	Pre Punched		Yes	Yes
	Heavy Paper 106-176g/m^2 28 lbs bond-65 lbs Cover		Yes	Yes
	Heavy Paper 177-220g/m^2 65 lbs Cover-80 lbs Cover		Yes	Yes
	Heavy Paper 221-256g/m^2 80 lbs Cover-140 lbs Index		Yes	Yes
	Heavy Paper 257-300g/m^{2}140 lbs Index-110 lbs Cover		Yes	Yes
	Embossed paper		-	Yes
	Envelope		-	Yes
	Transparency		-	Yes
	Label		-	Yes
	Tab Paper		-	Yes
	Glossy Paper		-	Yes
	User setting 1-7		Yes	Yes
Paper Size	SRA3	320x450	Yes	Yes
	12x18 (A3W)	305x457	Yes	Yes
	SRA4	320x225	Yes	Yes
	Ledger (11x17)	279x432	Yes	Yes
	Legal (8.5x14)	216x356	Yes	Yes
	Asian Legal (8.5x13.5)	216x343	Yes	Yes
	Mexican Legal (8.5x13.4)	216x340	Yes	Yes
	Foolscap (8.5x13)	216x330	Yes	Yes
	Letter (8.5x11)	279x216	Yes	Yes
	Letter-R (8.5x11R)	216x279	Yes	Yes
	Executive-R (7.25x10.5R)	184x266	Yes	Yes
	Invoice-R(5.5x8.5R)	140x216	Yes	Yes
	A3	297x420	Yes	Yes
	B4	257x364	Yes	Yes
	A4	297x210	Yes	Yes
	A4R	210x297	Yes	Yes
	B5	257x182	Yes	Yes
	B5R	182x257	Yes	Yes
	A5	210x148	Yes	Yes
	A5R	148x210	Yes	Yes
	8K	270x390	Yes	Yes
	16K	270x195	Yes	Yes
	16KR	195x270	Yes	Yes
	Postcard	100x148	Yes	Yes
	Monarch	98x191	-	Yes
	COM10	105x241	-	Yes
	DL	110x220	-	Yes
	C5	229x162	-	Yes
	Custom-Custom Size		Yes	Yes
	Extra		-	Yes

Paper feed section			Tray1	Multi Bypass
Paper Size	Custom range	Min X	182mm / 7_1/4 inch	140mm/ 5_1/2 inch
		Max X	457mm / 18 inch	457mm/ 18 inch
		Min Y	132mm / 5_1/4 inch	90mm/ 3_5/8 inch
		Max Y	320mm / 12_1/2 inch	320mm/ 12_1/2 inch
	Long paper	Width: 90 - 320mm Length: 458 - 1300mm	-	Yes

I. Paper exit section

(1) Exit capacity

	Center	Right side (Option)
Exit capacity	250 sheets 80g/m^2	100 sheets 80g/m^2
Shifter	Yes	N/A

J. Operation panel

Size	7 inch
Form	Dot matrix LCD, Touch panel
Number of Display Dot	1024 x 600 dot (WSVGA)
Color	Yes
LCD Drive Display Area (WxD)	154.21 x 85.92 mm
LCD Back Light	LED backlight method
LCD Contrast Adjustment	Yes
Angle/Position Adjustment	Yes (free stop)
Touch Panel Method	Resistive touch display (effective 2-point touch)

K. Controller board

CPU			ARM11 600MHz ARM9 400MHz (1W energy saving mode 75MHz:)	
SOC			Intel ATOM E3827 1.75GHz	
Interface				
IEEE1284 Parallel			No	
Ethernet			1 port	
	Interface		10Base-T, 100Base-TX, 1000Base-T	
	Support Protocol		TCP/IP(IPv4, IPv6): Supported IPX/SPX: Not Supported EtherTalk: Not Supported	
USB 2.0(High speed) (Host)			ARM11	Not used
	2 port		SOC	For Wireless LAN module (internal)
		USB HUB (4 port)		Front port
				For IC card reader (internal)
				Keyboard (internal)
				Rear port
USB 2.0 (High speed) (device)	1port (default off)			

L. Memory·Hard disk

Flash memory	mSATA SSD	ICU PWB		HDD*1
		REUS	SOC	
		On board	On board	
16MB	16GB	1 GB(STD)	4 GB(STD)	250GB

*1: HDD capacity may vary depending on the procurement condition.

mSATA SSD

Utilized memory Area	Boot/Program area FAX data storage area: 1GB

M. Wireless LAN

Item	Specification	
Compliant regulation	IEEE802.11 n/g/b	
Transmission method	IEEE802.11n/g	OFDM method
	IEEE802.11b	DS-SS method
HOST I/F	USB 2.0 Type A - Connect the module to MFP's internal USB I/F	
DEVICE I/F	IEEE802.11 n/g/b	
Antenna type	Integrated antenna	
Access mode	Infrastructure mode, Software AP mode	
Security	WEP, WPA/WPA2-mixed PSK, WPA/WPA2-mixed EAP*,WPA2 PSA,WPA2 EAP* *Not applicable to access point mode	

N. Warm-up time

Warm up time	Main power SW on*1	10 sec
	Sub Power SW on*1	10 sec
Availability of Preheat mode		Yes
Jam recovery time		10 sec

*1: Result may change depending on the environmental condition.

O. Power source

	100V	200V
Voltage / Current	110 - 127V 12A	220-240V 8 A
Frequency	60Hz	50/60Hz
Power source cord	Fixed type (Direct)	Inlet type
Power switch	2 switches Primary switch: in the front cover Secondary switch (momentary SW): on the operation panel	

P. Power consumption

	100V	200V
Max. rated power consumption*1	1.44 kW	1.84 kW
Fax waiting power consumption is 1W or less/ *Condition of Standing by Network: Connect with TCP/IP protocol only.	Yes (Except when using Fax/NW simultaneously.)	No
Time to move into Preheat mode	1 minute (Default)	
Recovery time from Preheat mode	6 seconds	
Time to move into Sleep mode	1 minute (Default)	Europe: 11 minutes Other: 1minute

*1: Power ON. Dehumidiator switch: OFF

Q. Security

Admin/Service password scheme	Yes

2. Copy function

A. Copy magnification ratio

Copy ratio	AB system: 25%, 50%, 70%, 81%, 86%, 100% 115%, 122%, 141%, 200%, 400% Inch system: 25%, 50%, 64%, 77%, 100% 121%, 129%, 200%, 400%
Zoom	25 - 400% (25 - 200% for the document feeder)
Preset magnification ratio	4 levels (Reduction: 2 levels / Enlargement: 2 levels)
XY zoom	Yes

B. Exposure mode

Exposure mode	Auto, Text, Text/Printed Photo, Printed Photo, Text/Photo Photo, Map, Pale-color document
Mode of copy original	Auto, Text, Text/Printed Photo, Printed Photo
Color tone enhancement	Text, Text/Printed Photo, Printed Photo, Text/Photo Photo, Map, Pale-color document
Manual levels	9 levels

3. Printer function

A. Printer driver supported OS

OS		Custom PCL6 SPDL2-c	Custom PS	PPD	PC-Fax	TWAIN
Windows	Vista	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Vista 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2008	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2008 x 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 7	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 7 x 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8 x 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8.1	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Windows 8.1 x 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
	Server 2012 x 64	CD-ROM	CD-ROM	CD-ROM	CD-ROM	CD-ROM
Mac	X10.4	No	CD-ROM	No	No	No
	X10.5	No	CD-ROM	No	No	No
	X10.6	No	CD-ROM	No	No	No
	X10.7	No	CD-ROM	No	No	No
	X10.8	No	CD-ROM	No	No	No
	X10.9	No	CD-ROM	No	No	No
	X10.10	No	CD-ROM	No	No	No

B. PDL emulation·Font

PDL (command)		Pre-installed font	Optional Font
PCL5c/PCL6 compatible	STD	European outline font =80 styles Line printer font (BMP) =1 style	Barcode font =28 styles
Genuine Postscript3	OPT	European outline font =139 styles	—
Font for List Print Scalable font	STD	Arfic mobile font	—

4. Image send function

A. Mode

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

B. Support image

Mode	Format / Compression method	Item
Scanner	File format (Mono 2 gradation)	TIFF, PDF, PDF/A-1b, Encrypted PDF, XPS
	File format (Color/ Grayscale)	Color TIFF, JPEG, PDF, PDF/A-1b, Encrypted PDF, XPS
	Compression method (Mono 2 gradation)	Non-compression, G3 (1-dimentional)= MH (Modified Huffman), G4= MMR (Modified MR)
	Compression method (Color/ Grayscale)	JPEG (High/Middle/Low), Black Letter Emphasis
Internet Fax Direct SMTP	File format (Monochrome)	TIFF-FX(TIFF-F / TIFF-S)
	Compression method (Monochrome)	G3 (1-dimentional)= MH (Modified Huffman), G4 = MMR (Modified MR)
Fax	Compression method (Monochrome)	MH/ MR/ MMR/JBIG
File per page (Setting of the number of pages available)		

C. 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
Selection of image quality		N/A	Halftone (B&W only) ON/OFF	Halftone (B&W only) ON/OFF

D. Number of available Fax sending/receiving

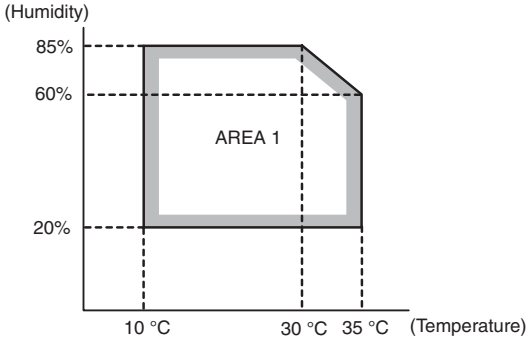
Sending	100 messages (in common use with Image send) or 20000 images (in common use with Copy/Print/Image send)
Receiving	400 messages/2000 images (in common use with Fax and Internet Fax for both messages and images)

*Use ITU-T No.1 chart

5. Dimension and weight

Outer dimensions (WxDxH)	608 x 650 x 834 (mm) 23.15/16 x 25.19/32 x 32.27/32 (inch)
Dimensions occupied by machine	1003 x 650 x 834 (mm) when extending bypass tray 39.1/2 x 25.19/32 x 32.27/32 (inch) when extending bypass tray
Weight (Not including consumables. Including photoconductor and developer.)	78.8 kg, 173.724lb with AC cord

6. Environmental conditions



1 : '18/Mar.

[3] CONSUMABLE PARTS

1. Consumable system table

A. North America, Central America, South America

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Toner cartridge (Black)	MX-60NT-BA	Toner cartridge (Black toner)	1	40K	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60NT-CA	Toner cartridge (Cyan toner)	1	24K	10	
Toner cartridge (Magenta)	MX-60NT-MA	Toner cartridge (Magenta toner)	1	24K	10	
Toner cartridge (Yellow)	MX-60NT-YA	Toner cartridge (Yellow toner)	1	24K	10	
Developer (Black)	MX-60NV-BA	Developer (Black developer)	1	2700K rotation	10	Standard printable number 360K Maximum printable number 400K
Developer (Cyan/ Magenta/ Yellow)	MX-60NV-SA	Developer (Cyan/Magenta/Yellow) (3 colors/set)	1	2700K rotation	10	Standard printable number 300K Maximum printable number 340K
Drum	MX-60NR-SA	Drum	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
Drum unit	MX-40NU-SA	Drum unit (Process unit+Drum)	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
		Color identification seal (C/M/Y/K) 1 each	1			
		Charger cleaner	1			

B. Europe, Australia, New Zealand

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Toner cartridge (Black)	MX-60GT-BA	Toner cartridge (Black toner)	1	40K	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60GT-CA	Toner cartridge (Cyan toner)	1	24K	10	
Toner cartridge (Magenta)	MX-60GT-MA	Toner cartridge (Magenta toner)	1	24K	10	
Toner cartridge (Yellow)	MX-60GT-YA	Toner cartridge (Yellow toner)	1	24K	10	
1 Toner cartridge (Black)	MX-60GT-BB	Toner cartridge (Black toner)	1	20k	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60GT-CB	Toner cartridge (Cyan toner)	1	12k	10	
Toner cartridge (Magenta)	MX-60GT-MB	Toner cartridge (Magenta toner)	1	12k	10	
Toner cartridge (Yellow)	MX-60GT-YB	Toner cartridge (Yellow toner)	1	12k	10	
Developer (Black)	MX-60GV-BA	Developer (Black developer)	1	2700K rotation	10	Standard printable number 360K Maximum printable number 400K
Developer (Cyan/ Magenta/ Yellow)	MX-60GV-SA	Developer (Cyan/Magenta/Yellow) (3 colors/set)	1	2700K rotation	10	Standard printable number 300K Maximum printable number 340K
Drum	MX-60GR-SA	Drum	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K

1 : '18/Mar.

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Drum unit	MX-40GU-SA	Drum unit (Process unit+Drum)	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
		Color identification seal (C/M/Y/K) 1 each	1			
		Charger cleaner	1			

C. Asia, Hong Kong

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Toner cartridge (Black)	MX-60AT-BA	Toner cartridge (Black toner)	1	40K	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60AT-CA	Toner cartridge (Cyan toner)	1	24K	10	
Toner cartridge (Magenta)	MX-60AT-MA	Toner cartridge (Magenta toner)	1	24K	10	
Toner cartridge (Yellow)	MX-60AT-YA	Toner cartridge (Yellow toner)	1	24K	10	
1 Toner cartridge (Black)	MX-60AT-BB	Toner cartridge (Black toner)	1	20k	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60AT-CB	Toner cartridge (Cyan toner)	1	12k	10	
Toner cartridge (Magenta)	MX-60AT-MB	Toner cartridge (Magenta toner)	1	12k	10	
Toner cartridge (Yellow)	MX-60AT-YB	Toner cartridge (Yellow toner)	1	12k	10	
Developer (Black)	MX-60AV-BA	Developer (Black developer)	1	2700K rotation	10	Standard printable number 360K Maximum printable number 400K
Developer (Cyan/ Magenta/ Yellow)	MX-60AV-SA	Developer (Cyan/Magenta/Yellow) (3 colors/set)	1	2700K rotation	10	Standard printable number 300K Maximum printable number 340K
Drum	MX-60AR-SA	Drum	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
Drum unit	MX-40AU-SA	Drum unit (Process unit+Drum)	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
		Color identification seal (C/M/Y/K) 1 each	1			
		Charger cleaner	1			

D. Middle East, Africa, Taiwan, Philippines, Israel

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Toner cartridge (Black)	MX-60FT-BA	Toner cartridge (Black toner)	1	40K	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60FT-CA	Toner cartridge (Cyan toner)	1	24K	10	
Toner cartridge (Magenta)	MX-60FT-MA	Toner cartridge (Magenta toner)	1	24K	10	
Toner cartridge (Yellow)	MX-60FT-YA	Toner cartridge (Yellow toner)	1	24K	10	
1 Toner cartridge (Black)	MX-60FT-BB	Toner cartridge (Black toner)	1	20K	10	*Life: A4/Letter size at area coverage 5%
Toner cartridge (Cyan)	MX-60FT-CB	Toner cartridge (Cyan toner)	1	12K	10	
Toner cartridge (Magenta)	MX-60FT-MB	Toner cartridge (Magenta toner)	1	12K	10	
Toner cartridge (Yellow)	MX-60FT-YB	Toner cartridge (Yellow toner)	1	12K	10	
Developer (Black)	MX-60FV-BA	Developer (Black developer)	1	2700K rotation	10	Standard printable number 360K Maximum printable number 400K

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Developer (Cyan/ Magenta/ Yellow)	MX-60FV-SA	Developer (Cyan/Magenta/Yellow) (3 colors/set)	1	2700K rotation	10	Standard printable number 300K Maximum printable number 340K
Drum	MX-60FR-SA	Drum	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
Drum unit	MX-40FU-SA	Drum unit (Process unit+Drum)	1	1350K rotation	10	Standard printable number BK:180K CL:150K Maximum printable number BK:200K CL:170K
		Color identification seal (C/M/Y/K) 1 each	1			
		Charger cleaner	1			

2. Maintenance parts list

A. North America, Central America, South America

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Fusing belt kit	MX-607FB	Fusing belt unit	1	250K	4	
Pressure roller kit	MX-607LH	Pressure roller	1	250K	10	
Primary transfer belt kit	MX-607B1	Primary transfer belt unit	1	250K	10	
Primary transfer blade kit	MX-607TL	Primary transfer blade	1	250K	10	
		Cleaning roller	1			
PTC kit	MX-608CU	PTC unit	1	250K	10	
Secondary transfer roller kit	MX-607U2	Secondary transfer roller	1	250K	10	
Filter kit	MX-607FL	Ozone filter	1	300K	10	
Toner collection container	MX-607HB	Toner collection container (with LSU cleaner x 2)	1	50K	10	5% coverage for each color, 30% color ratio
Main charger kit	MX-407MK	Main charger unit	1	Drum rotation 1350K	10	Maximum Printable Number 200K (BK)/ 170K (CL)
		Cleaning gum	1			
		Cleaning blade	1			
Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	MX-SC11	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	MX-SC12	Staple cartridge	4	2000 times x 4	32	
Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2		20	
Primary transfer belt unit	MX-607U1	Primary transfer belt unit	1		1	
Fusing unit	MX-407FU1	Fusing unit (120V)	1		1	

B. Europe, Australia, New Zealand, Asia, Middle East

Item	Model name	Content	Qty	Life	Qty in collective package	Remarks
Fusing belt kit	MX-607FB	Fusing belt unit	1	250K	4	
Pressure roller kit	MX-607LH	Pressure roller	1	250K	10	
Primary transfer belt kit	MX-607B1	Primary transfer belt unit	1	250K	10	
Primary transfer blade kit	MX-607TL	Primary transfer blade	1	250K	10	
		Cleaning roller	1			
PTC kit	MX-608CU	PTC unit	1	250K	10	
Secondary transfer roller kit	MX-607U2	Secondary transfer roller	1	250K	10	
Filter kit	MX-607FL	Ozone filter	1	300K	10	
Toner collection container	MX-607HB	Toner collection container (with LSU cleaner x 2)	1	50K	10	5% coverage for each color, 30% color ratio
Main charger kit	MX-407MK	Main charger unit	1	Drum rotation 1350K	10	Maximum Printable Number 200K (BK)/ 170K (CL)
		Cleaning gum	1			
		Cleaning blade	1			
Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	MX-SC11	Staple cartridge	3	5000 times x 3	20	
Staple cartridge	MX-SC12	Staple cartridge	4	2000 times x 4	32	
Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2		20	
Primary transfer belt unit	MX-607U1	Primary transfer belt unit	1		1	
Fusing unit	MX-407FU	Fusing unit (230V)	1		1	

3. Definition of developer/drum life end

When the developer/drum counter reaches the maximum printable count.

When the developer/drum rpm reaches the specified count.

When either of the above reach the specified count, it is judged as life end.

In an actual case, the ratio of monochrome output and color output may differ greatly.

When data of mixed documents (monochrome and color) are output, monochrome document data may be output in the color mode in order to prevent against fall in the job efficiency. (ACS auto color selection).

In addition, when correction or warm-up operation is performed as well as output operation, the developer and the drum rotates.

Therefore, the developer/drum consuming level cannot be determined only by the copy/print quantity. When, therefore, the rpm reaches the specified amount, it is judged as life end.

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

However, when the copy/print quantity is large and the developer/drum counter reaches the maximum printable quantity even if the rpm does not reach the specified amount, it is judged as life end.

The table which shows the relation between the standard printable quantity and the maximum printable quantity in the specified rpm amount is as follows.

* Standard printable quantity means the printing quantity under the specified developer/drum count by using the specified test data

Developer

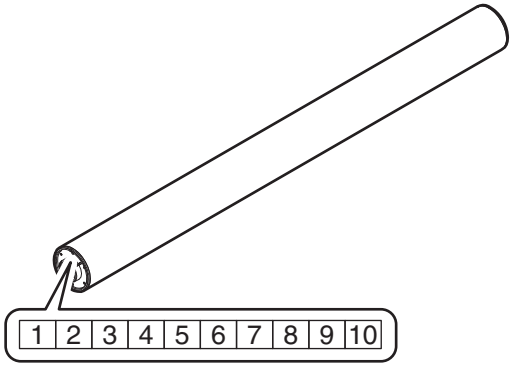
	Standard printable number		Maximum printable number		Rotation	
	Mono	Color	Mono	Color	Mono	Color
26 ppm machine	360K	300K	400K	340K	2700K	2700K

Drum

	Standard printable number		Maximum printable number		Rotation	
	Mono	Color	Mono	Color	Mono	Color
26 ppm machine	180K	150K	200K	170K	1350K	1350K

4. Production number identification

A. OPC drum

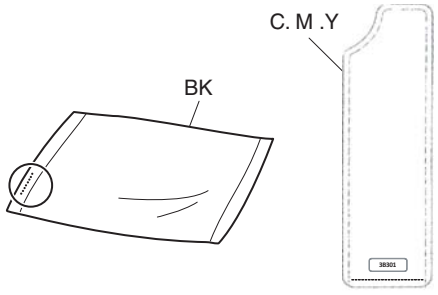


The lot number is comprised of 10 digits. Each digit indicates the content as follows.

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

Digit	Character type	Content
1	Number	For this model is 2
2	Alphabet	Model conformity code
3	Number	End digit of the production year
4	Number or X, Y, Z	Production month X stands for October Y November Z December
5	Number	Day of the production date
6		
7	Number or X, Y, Z	Day of the month of packing X stands for October Y November Z December
8	Number	Day of the packing date
9		
10	Alphabet	Production factory

B. Developer



The lot number is 8 digits (BK) and 5 digits (CMY) in length. Each digit indicates the content as follows.

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

[BK]

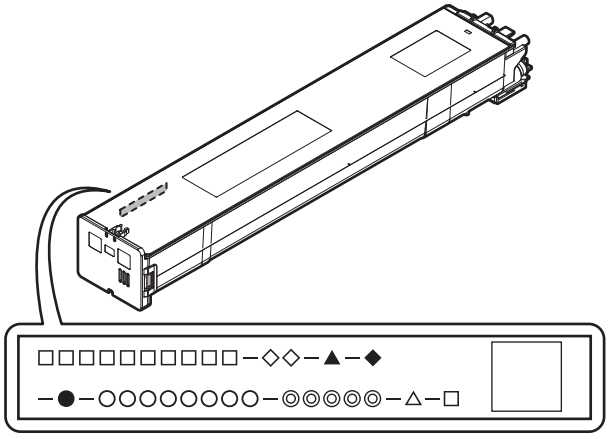
Digit	Character type	Content
1	Alphabet	Production factory
2	Number	End digit of the production year
3	Number	Production month
4		
5	Number	Day of the production date
6		
7	hyphen	
8	Number	production lot

[C,M,Y]

Digit	Character type	Content
1	Number	End digit of the production year
2	Alphabet	Production factory
3	Number or X, Y	Production month 0 stands for October X November Y December
4	Number	Day of the production date
5		

C. Toner cartridge

The number is printed on the side of the toner cartridge



□: Unit code/Model name

◇: Color code
(Black: BK/Cyan: CY/Magenta: MA/Yellow: YE)

▲: Destination

◆: Skating

●: Production factory

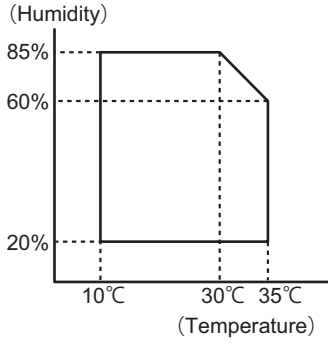
○: Production date (YYYYMMDD)

◎: Serial number

△: Version number

□: Line No.

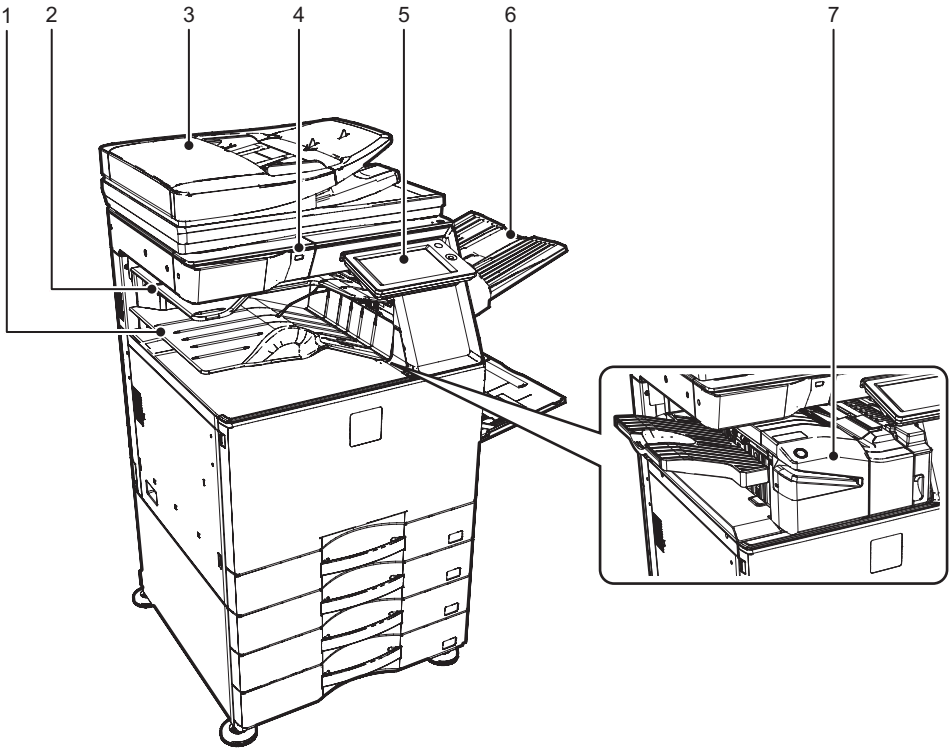
5. Environmental conditions



Standard environmental conditions	Temperature	21 – 25°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.	

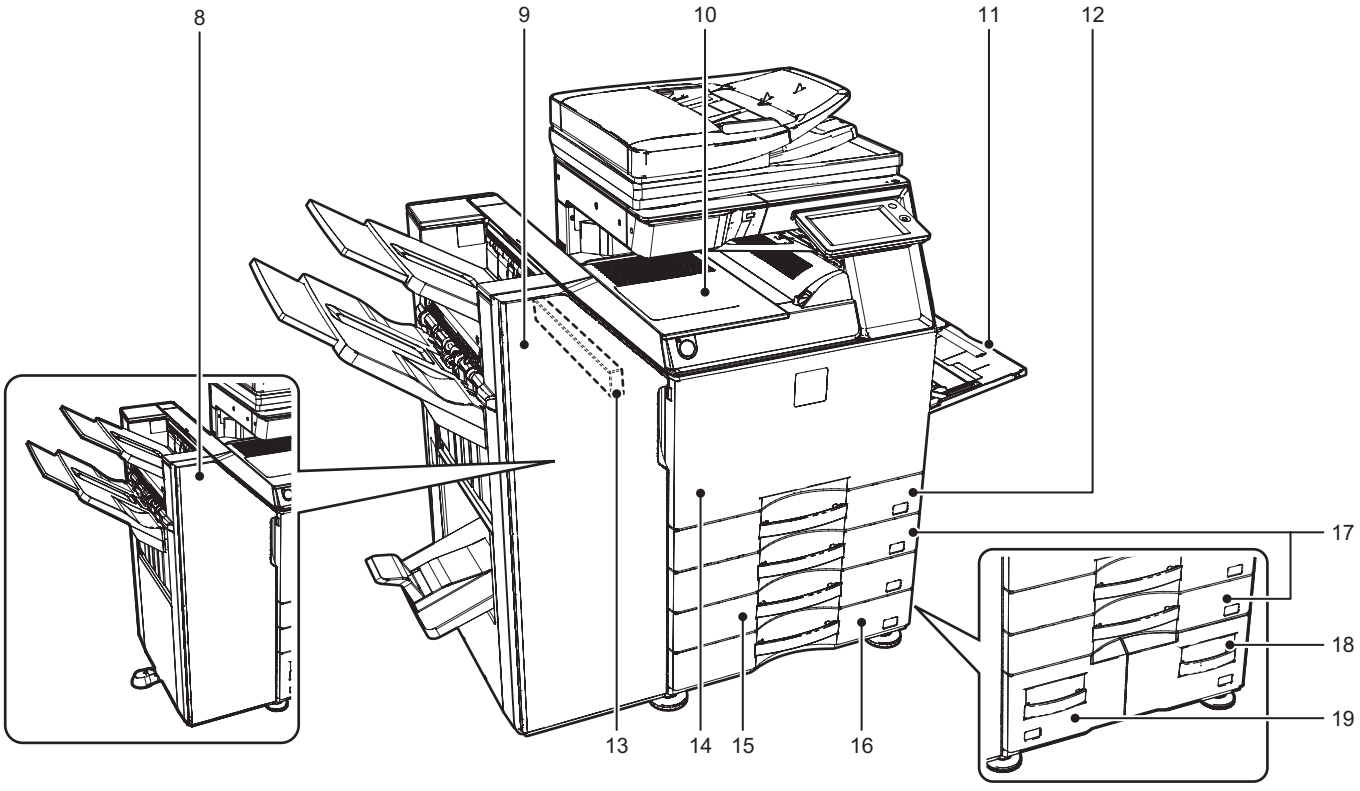
[4] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view



No.	Name	Function/Operation
1	Output tray (exit tray cabinet)	Output is delivered to this tray.
2	Job separator tray (upper tray)*	Received faxes and printed papers are delivered to this tray.
3	Automatic document feeder	It automatically feeds and scans multiple originals. 2-sided originals can be automatically scanned.
4	USB port (A type)	This is used to connect a USB device such as a USB memory device to the machine. Supports USB 2.0 (Hi-Speed).
5	Operation panel	This panel hosts the [Power] button, [Power Save] button/indicator, error indicator, [Home Screen] button, main power button, data notification indicator and touch panel. Use the touch panel to operate each of these functions.
6	Exit tray unit (right tray)*	Set this tray as the output tray if needed.
7	Inner finisher*	This staples paper. A punch module can also be installed to punch holes in output paper.

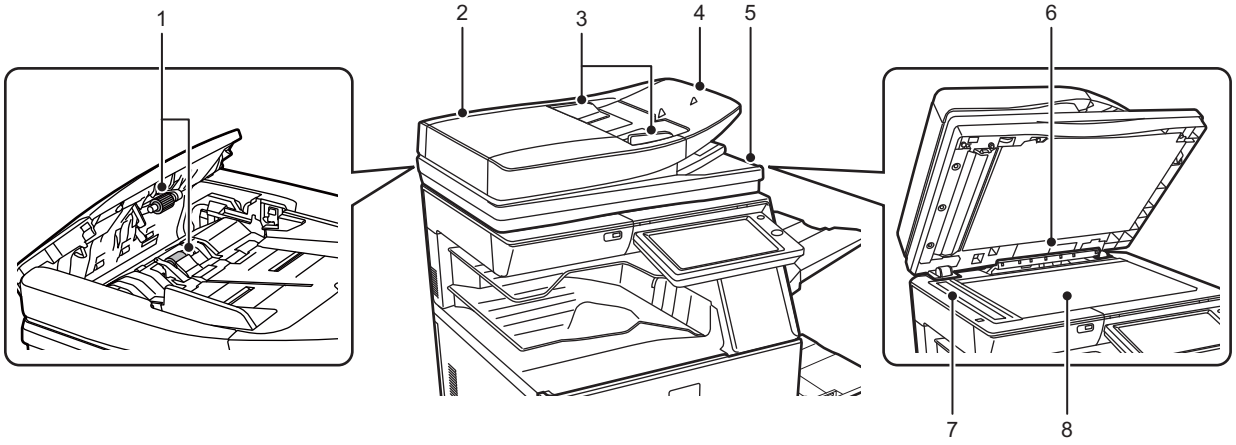
* Optional



No.	Name	Function/Operation
8	Finisher*	This staples paper. A punch module can also be installed to punch holes in output paper.
9	Saddle Stitch Finisher*	This staples and folds paper. A punch module can also be installed to punch holes in output paper.
10	Paper pass unit*	Relay between the machine and the finisher or saddle stitch finisher.
11	Bypass tray	Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, pull out the extension guide.
12	Tray 1	Store paper in this tray.
13	Punch module*	This is used to punch holes in output. Requires an inner finisher, finisher, or saddle stitch finisher.
14	Front cover	Open this cover to switch the main power switch to "On" or "Off" to replace a toner cartridge.
15	Tray 3 (when a stand/2x550/3x550 sheet paper drawer is installed)*	Store paper in this tray.
16	Tray 4 (when a stand/3x550 sheet paper drawer is installed)*	Store paper in this tray.
17	Tray 2 (when a stand/550/2x550/3x550/ 550&2100 sheet paper drawer is installed)*	Store paper in this tray.
18	Tray 4 (when a stand/550&2100 sheet paper drawer is installed)*	Store paper in this tray.
19	Tray 3 (when a stand/550&2100 sheet paper drawer is installed)*	Store paper in this tray.

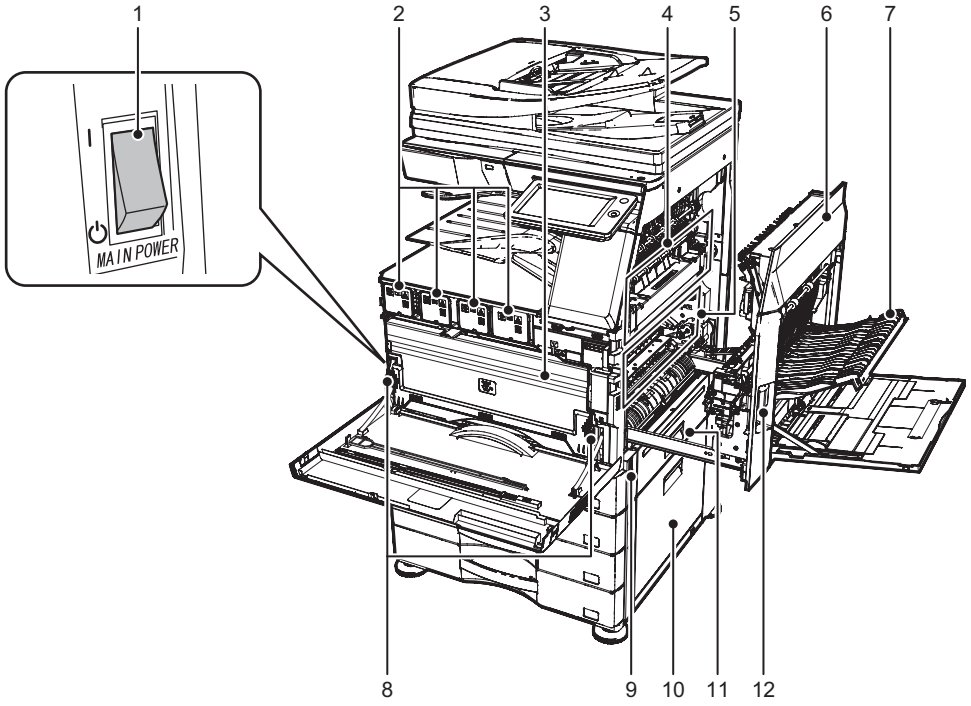
* Optional

A. REVERSING SINGLE PASS FEEDER



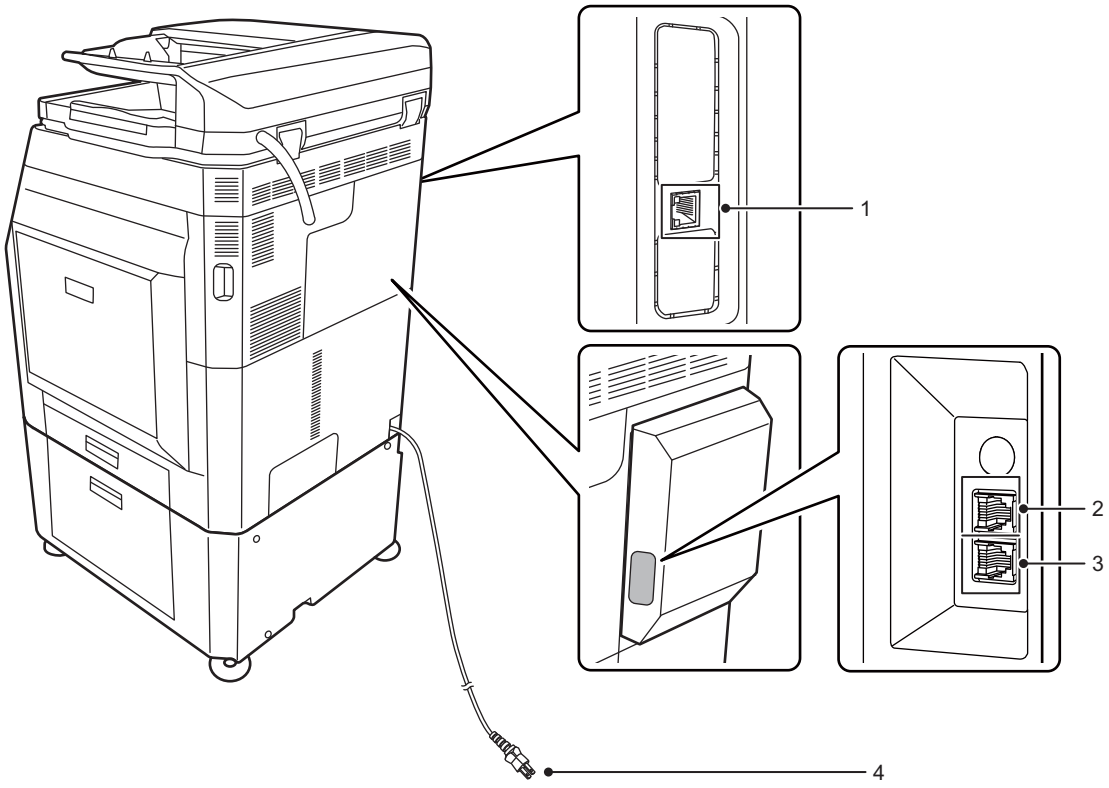
No.	Name	Function/Operation
1	Document feed roller	Feeds a document to the transport section. Makes a buckle on paper between the registration roller and this roller to correct the start position of document skew and document image scan.
2	Document feeding cover	Open this cover to remove an original misfeed.
3	Original guides	These guides help ensure that the original is scannedcorrectly. Adjust the guides to the width of the original.
4	Document feeder tray	Place the original. Place the original with the print side facing up.
5	Original exit tray	The original is discharged to this tray after scanning.
6	Original size detector	This unit detects the size of an original placed on the document glass.
7	Scanning area	Originals placed in the automatic document feeder are scanned here.
8	Document glass	If you want to scan books or other thick originals that cannot be fed through the automatic document feeder, place them on this glass.

2. Internal structure



No.	Name	Function/Operation	Note
1	The main power switch	Use this switch to turn on the power for the machine. When using the fax or Internet fax functions, always keep this switch in the " | " position.	
2	Toner cartridge	This cartridge contains toner. When the toner in a cartridge runs out, replace with new one.	
3	Waste toner box	This container collects excess toner that remains after printing.	Note A service technician collects replaced waste toner box.
4	Fusing unit	Heat is applied here to fuse the transferred image onto the paper.	Important The fusing unit is hot. Take care not to burn yourself when removing a misfeed.
5	Transfer belt	During full color printing, the toner images of the four colors on the photoconductive drums are combined together on the transfer belt. During black and white printing, only the black toner image is transferred onto the transfer belt.	Important Do not touch or damage the transfer belt. This may cause a defective image.
6	Right side cover	Open this cover to remove a paper misfeed.	
7	Paper reversing section cover	This unit is used for reversing paper when 2-sided printing is performed. Open this cover to remove a paper misfeed.	
8	Waste toner box release button	Press this button when you need to release the waste toner box lock to replace the waste toner box or clean the laser unit.	
9	Handle	Pull this out and grasp it when moving the machine.	
10	A stand/550/2x550/3x550/550&2100 sheet paper drawer right-side cover	Open this to remove a paper misfeed in tray 2, 3 and 4.	
11	Paper tray right side cover	Open this to remove a paper misfeed in tray 1.	
12	Right side cover release lever	To remove a paper misfeed, pull and hold this lever up to open the right side cover.	

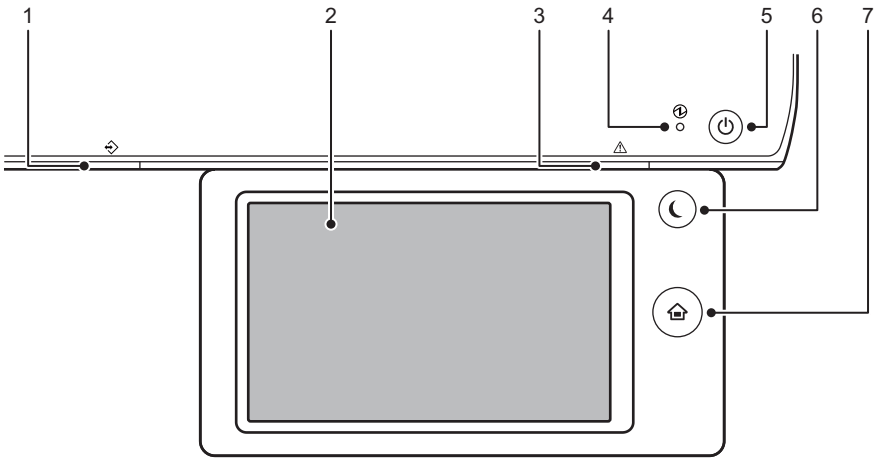
3. I/F connectors



No.	Name	Function/Operation
1	LAN connector	Connect the LAN cable to this connector when the machine is used on a network. Use a shielded LAN cable.
2	Extension phone jack (TEL)*	When the fax function of the machine is used, an extension phone can be connected to this jack.
3	Telephone line jack (LINE)*	When the fax function of the machine is used, the telephone line is connected to this jack.
4	Power plug	

* Optional

4. Operation panel



No.	Name	Function/Operation
1	Data notification indicator	The indicator lights solidly or blinks to indicate the status of a job. When the Job separator or Exit tray unit (right tray) is used for output, this blinks until the output is removed.
2	Touch panel	Messages and keys appear on the touch panel display. Operate the machine by directly tapping the displayed keys.
3	Error indicator	Lights solidly or blinks to indicate the status of the error.
4	Main power indicator	This lamp lights up when the machine's main power switch is in the " " position. Blinks green during the time that the [Power] button does not operate immediately after the main power switch is switched on.
5	[Power] button	Use this button to turn the machine's power on and off.
6	[Power Save] button/indicator	Use this button to set the machine to Sleep mode for energy saving. [Power Save] button blinks when the machine is in Sleep Mode.
7	[Home Screen] key	Use this button to display the home screen.

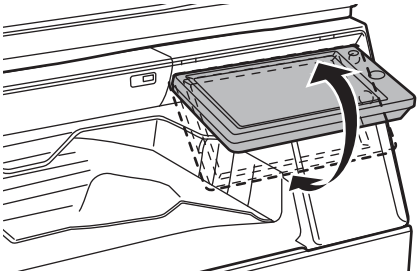
Important

[Home Screen] key

Use your finger to touch the [Home Screen] key. If you use a pen or other tool to touch the key, it may not operate properly. Risk of mal-functioning if you use with jewelry or other accessories.

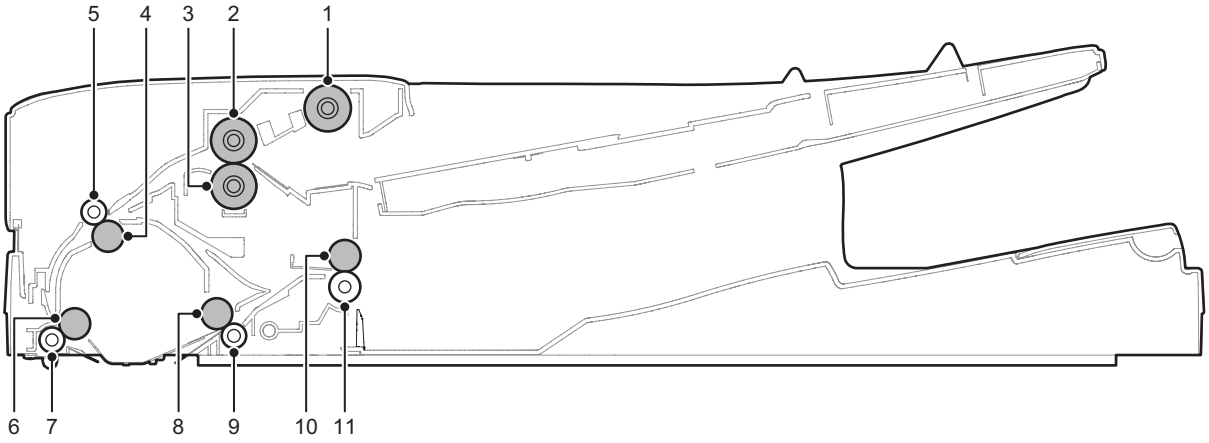
Note

You can change the angle of the touch panel.



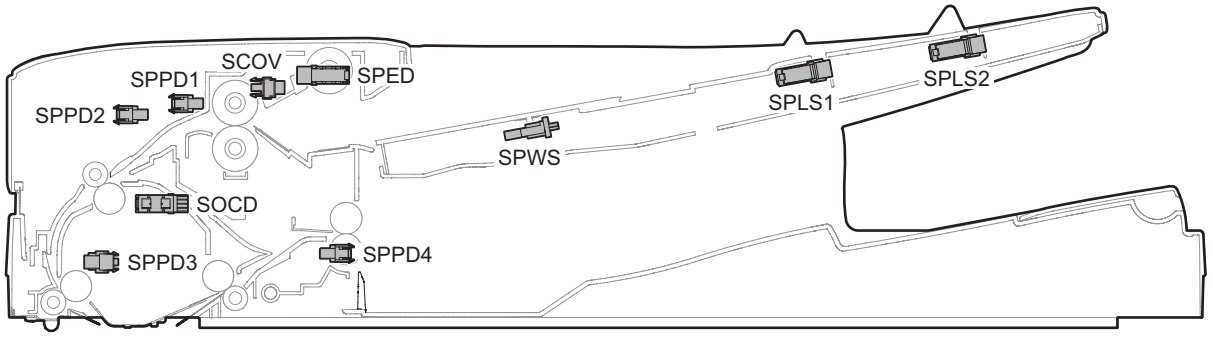
5. RSPF

A. Rollers



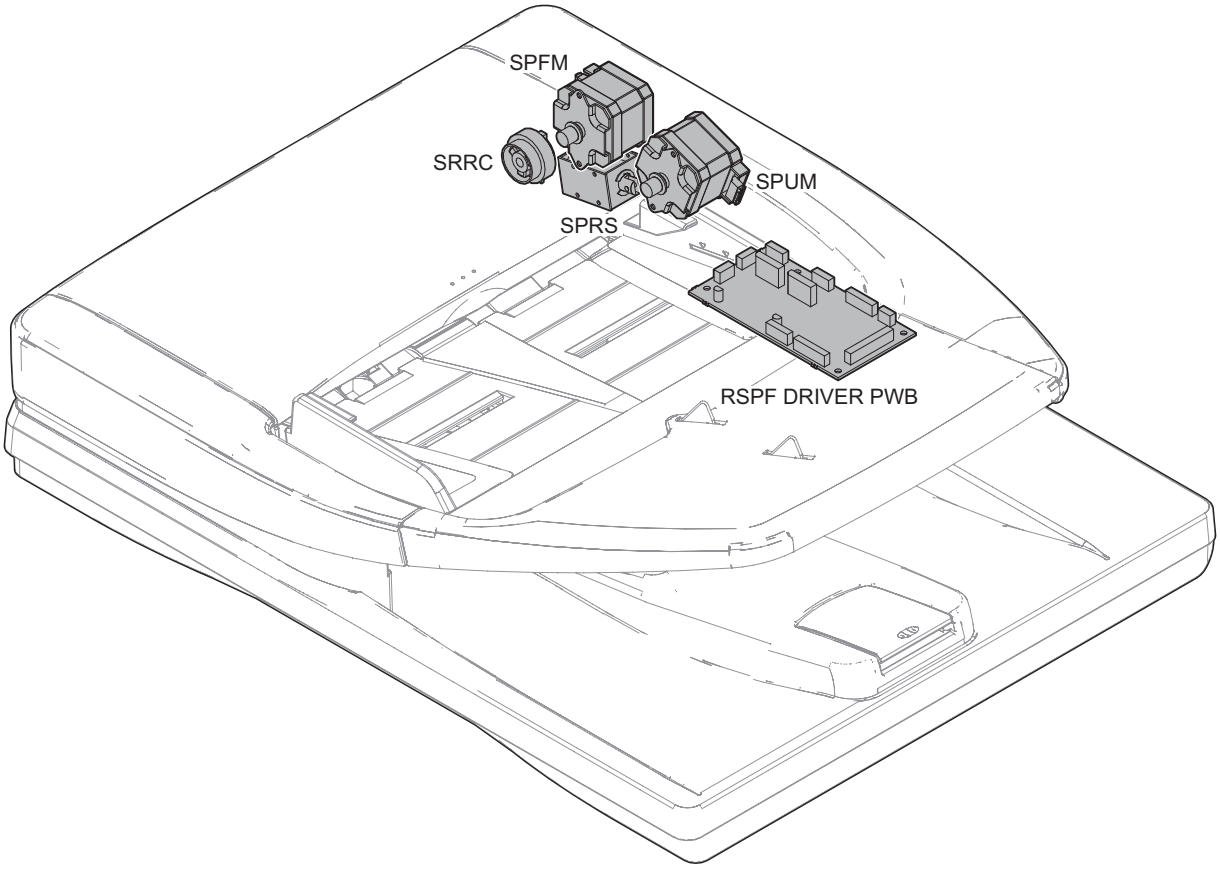
No.	Name	Function and operation
1	Pickup roller	Picks up document and feed it to the document feed roller
2	Document feed roller	Feeds a document to the transport section. Makes a buckle on paper between the registration roller and this roller to correct the start position of document skew and document image scan
3	Separation roller	Separates a document to prevent double-feeding
4	Registration roller (Drive)	Transports a document to the transport roller 1 / Controls the transport timing of the document and adjusts the document scanning timing
5	Registration roller (Idle)	Apply a pressure to a document and the registration roller to provide the transport power of the transport roller to the document
6	Transport roller 1 (Drive)	Transports a document transported from the registration roller to the document scanning section
7	Transport roller 1 (Idle)	Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document
8	Transport roller 2 (Drive)	Transports a document transported from the document scanning section to the paper exit roller
9	Transport roller 2 (Idle)	Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document
10	Paper exit roller (Drive)	Discharges a document. Switchbacks the document and transports it to the registration roller when scanning the back surface
11	Paper exit roller (Idle)	Apply a pressure to a document and the paper exit roller to provide the transport power of the paper exit roller to the document

B. Sensors and switches



Signal name	Name	Type	Function and operation
SCOV	Cover open/close sensor	Transmission type	Detects open/close of the RSPF cover
SOCD	RSPF open/close sensor	Transmission type	Detects open/close of the RSPF unit
SPED	Document sensor	Transmission type	Detects document empty in the RSPF paper feed tray
SPLS1	Paper size sensor 1	Transmission type	Detects the document length in the RSPF paper feed tray
SPLS2	Paper size sensor 2	Transmission type	Detects the document length in the RSPF paper feed tray
SPPD1	Document pass sensor 1	Transmission type	Detects paper feed and the document size in random paper feed
SPPD2	Document pass sensor 2	Transmission type	Detects paper pass
SPPD3	Document pass sensor 3	Transmission type	Detects paper pass
SPPD4	Document pass sensor 4	Transmission type	Detects paper exit and switchback
SPWS	Document size sensor	Volume type resistor	Detects the document width

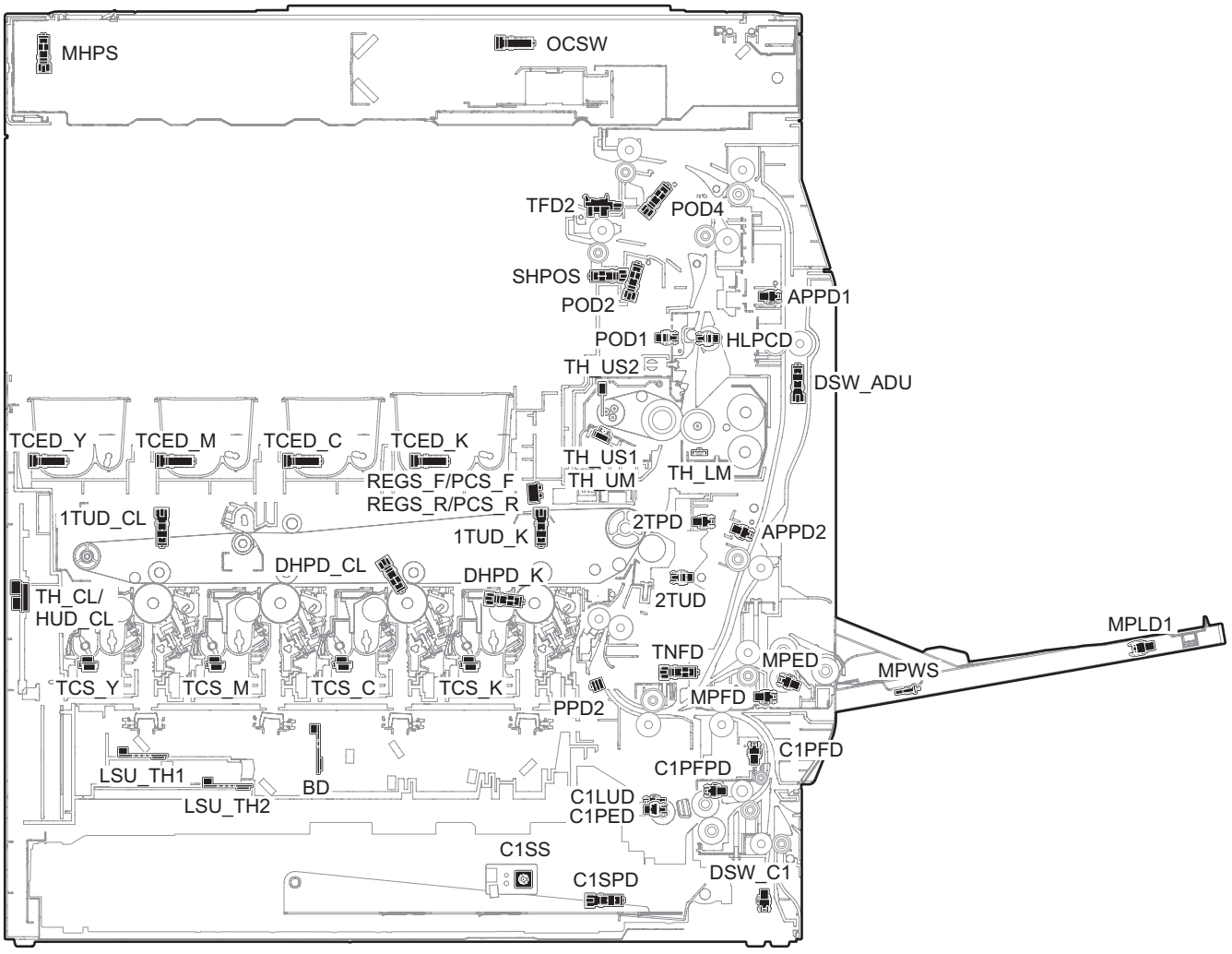
C. Motors/Clutches/Solenoidos/PWB



Signal name	Name	Type	Function and operation
SPFM	RSPF transport motor	Stepping motor	Transports a document
SPRS	Paper exit roller solenoid	Electromagnetic solenoid	Controls ON/OFF of the power of the paper exit roller
SPUM	RSPF paper feed motor	Stepping motor	Feeds a document
SRRC	Registration roller clutch	Electromagnetic clutch	Controls the registration roller

Name	Function and operation
RSPF DRIVER PWB	Drives the motor, the solenoid and the clutch in the RSPF section

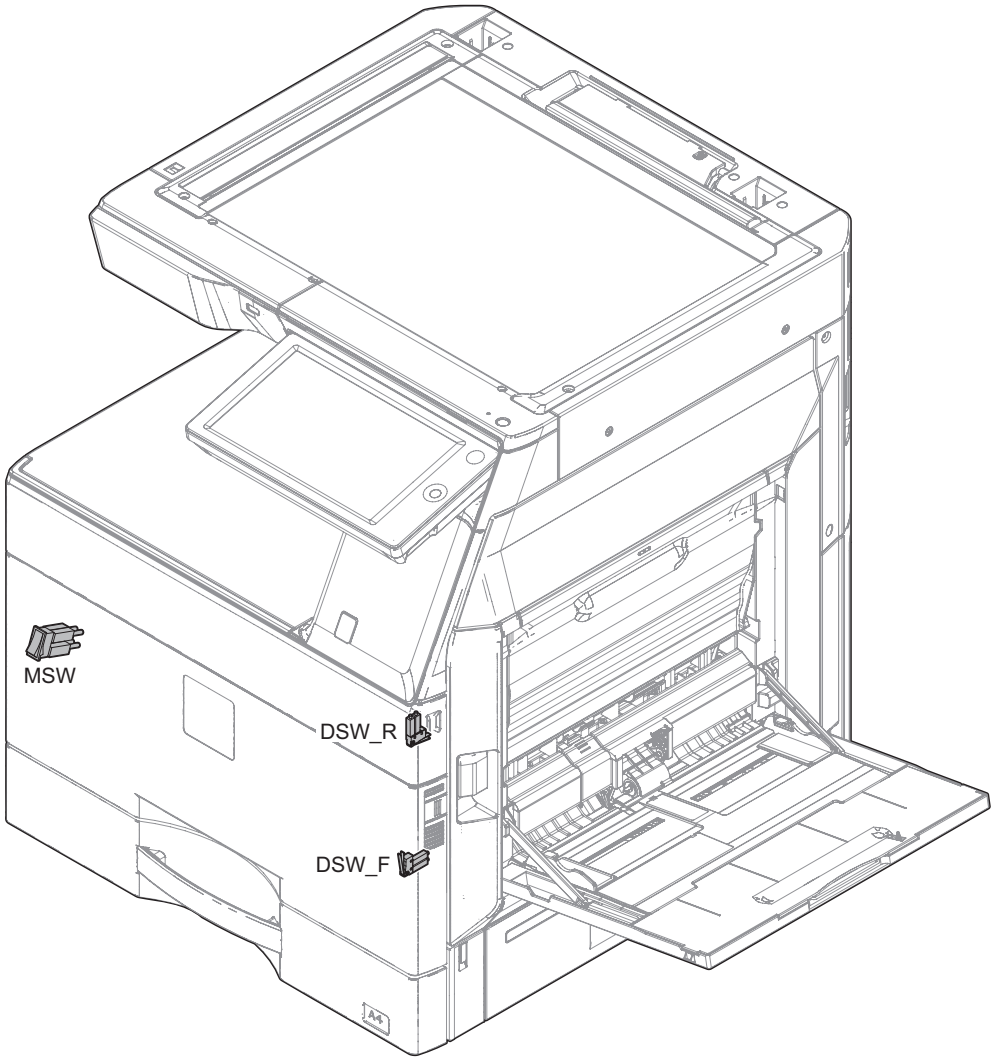
6. Sensors



Signal name	Name	Type	Function and operation
1TUD_CL	Transfer mode sensor (CL)	Transmission type	Detects separation of the transfer belt and the transfer mode (Detection is made by combination of 1TUD_CL/1TUD_K signals)
1TUD_K	Transfer mode sensor (BK)	Transmission type	Detects separation of the transfer belt and the transfer mode (Detection is made by combination of 1TUD_CL/1TUD_K signals)
2TPD	Secondary transfer paper sensor	Transmission type	Detects paper remained after recover from paper JAM
2TUD	Secondary transfer position sensor	Transmission type	Detects the position (separation) of the secondary transfer unit
APPD1	ADU paper transport sensor 1	Transmission type	Detects paper entry and paper pass in the ADU section
APPD2	ADU paper transport sensor 2	Transmission type	Detects paper pass of the transport roller 8 in the ADU section
BD	Laser beam sensor	Bindiode	Detects lase beam scan timing
C1LUD	Paper feed tray upper limit sensor (Paper feed tray 1)	Transmission type	Detects the upper limit of the paper lift up (Paper feed tray 1)
C1PED	Paper empty sensor (Paper feed tray 1)	Transmission type	Detects paper empty (Paper feed tray 1)
C1PFD	Paper transport sensor (Paper feed tray 1)	Transmission type	Detects paper pass in the paper transport section (Paper feed tray 1)
C1PFPD	Paper pass sensor (Paper feed tray 1)	Transmission type	Detects paper pass in the paper transport section (Paper feed tray 1)
C1SPD	Paper remaining quantity sensor (Paper feed tray 1)	Transmission type	Detects the paper remaining quantity (Paper feed tray 1)
C1SS	Tray installation sensor	Tact switch	Detects open/close of the paper feed tray (Paper feed tray 1)
DHPD_K	Drum phase sensor (K)	Transmission type	Detects rotation and the phase of the OPC drum (K)
DHPD_CL	Drum phase sensor (CL)	Transmission type	Detects rotation and the phase of the OPC drum (CL)
DSW_ADU	ADU paper guide open/close sensor	Transmission type	Detects open/close of the ADU paper guide
DSW_C1	Transport cover open/close sensor (Paper feed tray 1)	Transmission type	Detects open/close of the transport section cover (Paper feed tray 1)
HLPCD	Fusing pressure sensor	Transmission type	Detects the fusing pressure state
LSU_TH1	LSU temperature sensor 1	Thermistor	Detects the LSU temperature
LSU_TH2	LSU temperature sensor 2	Thermistor	Detects the LSU temperature
MHPS	Scanner home position sensor	Transmission type	Detects the scanner home position
MPED	Paper empty sensor (Manual paper feed tray)	Transmission type	Detects presence of paper (Manual paper feed tray)
MPFD	Paper feed sensor (Manual paper feed tray)	Transmission type	Detects paper pass (Manual paper feed tray)
MPLD1	Paper length sensor (Manual paper feed tray)	Transmission type	Detects the paper length (Manual paper feed tray)

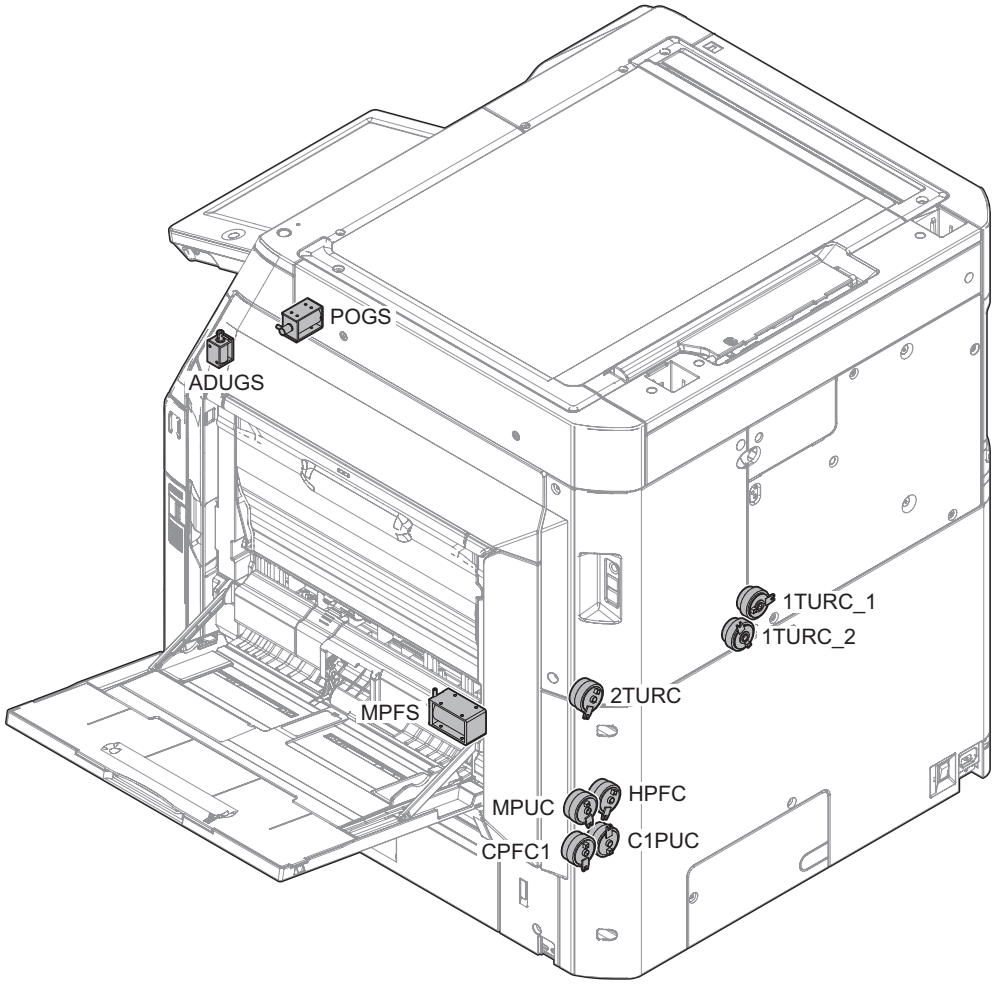
Signal name	Name	Type	Function and operation
MPWS	Paper width sensor (Manual paper feed tray)	Volume type resistor	Detects the paper width (Manual paper feed tray)
OCSW	Paper size detection trigger sensor	Transmission type	Detects generation of the paper size detection trigger signal
POD1	Paper exit sensor 1	Transmission type	Detects paper transport from the fusing section
POD2	Paper exit sensor 2	Transmission type	Detects paper transport to the lower paper exit tray
POD4	Paper exit sensor 4	Transmission type	Detects paper transport to the upper paper exit tray
PPD2	Paper transport sensor 2	Reflection type	Detects paper pass in the transport roller 5 and registration roller
REGS_F/ PCS_F	Image registration / Density sensor (F)	Reflection type	Detects image color shift and the toner patch density
REGS_R/ PCS_R	Image registration / Density sensor (R)	Reflection type	Detects image color shift and the toner patch density
SHPOS	Shifter home position sensor	Transmission type	Detects the shifter home position
TCED_C	Toner cartridge ejector position sensor (C)	Transmission type	Detects ejecting position of toner cartridge (C)
TCED_K	Toner cartridge ejector position sensor (K)	Transmission type	Detects ejecting position of toner cartridge (K)
TCED_M	Toner cartridge ejector position sensor (M)	Transmission type	Detects ejecting position of toner cartridge (M)
TCED_Y	Toner cartridge ejector position sensor (Y)	Transmission type	Detects ejecting position of toner cartridge (Y)
TCS_C	Toner sensor (C)	Magnetic sensor	Detects toner supply from the toner cartridge Detects the toner density (C)
TCS_K	Toner sensor (K)	Magnetic sensor	Detects toner supply from the toner cartridge Detects the toner density (K)
TCS_M	Toner sensor (M)	Magnetic sensor	Detects toner supply from the toner cartridge Detects the toner density (M)
TCS_Y	Toner sensor (Y)	Magnetic sensor	Detects toner supply from the toner cartridge Detects the toner density (Y)
TFD2	Paper exit tray full sensor (Lower paper exit tray)	Magnetic sensor	Detects paper full in the lower paper exit tray
TH_CL/ HUD_CL	Temperature / humidity sensor	Thermistor	Detects the temperature and the humidity
TH_LM	Fusing temperature sensor	Thermistor	Detects the surface temperature of the fusing roller (pressure)
TH_US1	Fusing temperature sensor	Thermistor	Detects the surface temperature at the edge section of the fusing belt
TH_UM	Fusing temperature sensor (main)	Thermistor	Detects the surface temperature at the center of the fusing belt
TH_US2	Fusing temperature sensor (sub)	Thermistor	Detects the surface temperature at the edge section of the fusing belt
TNFD	Waste toner full sensor	Transmission type	Detects full of waste toner

7. Switches



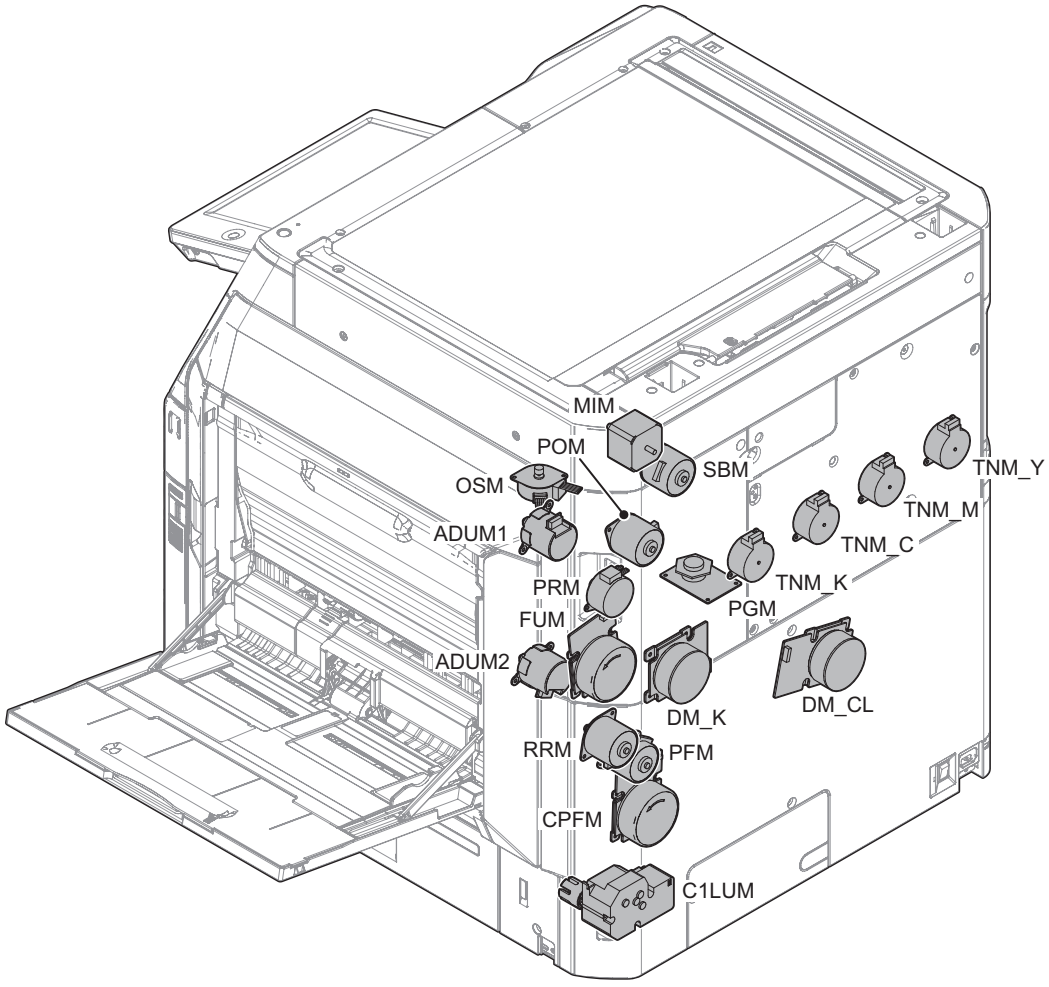
Signal name	Name	Type	Function and Operation
DSW_F	Front door open/close switch	Micro switch	Detects open/close of the front door. Detects ON/OFF of the power line of the fusing unit, the motors, and the LSU laser.
DSW_R	Right transport unit (right door) open/close switch	Micro switch	Detects open/close of the right paper transport section (right door). Detects ON/OFF of the power line of the fusing unit, the motors, and LSU laser.
MSW	Main power switch	Seesaw switch	Turns ON/OFF the main power.

8. Clutches and solenoids



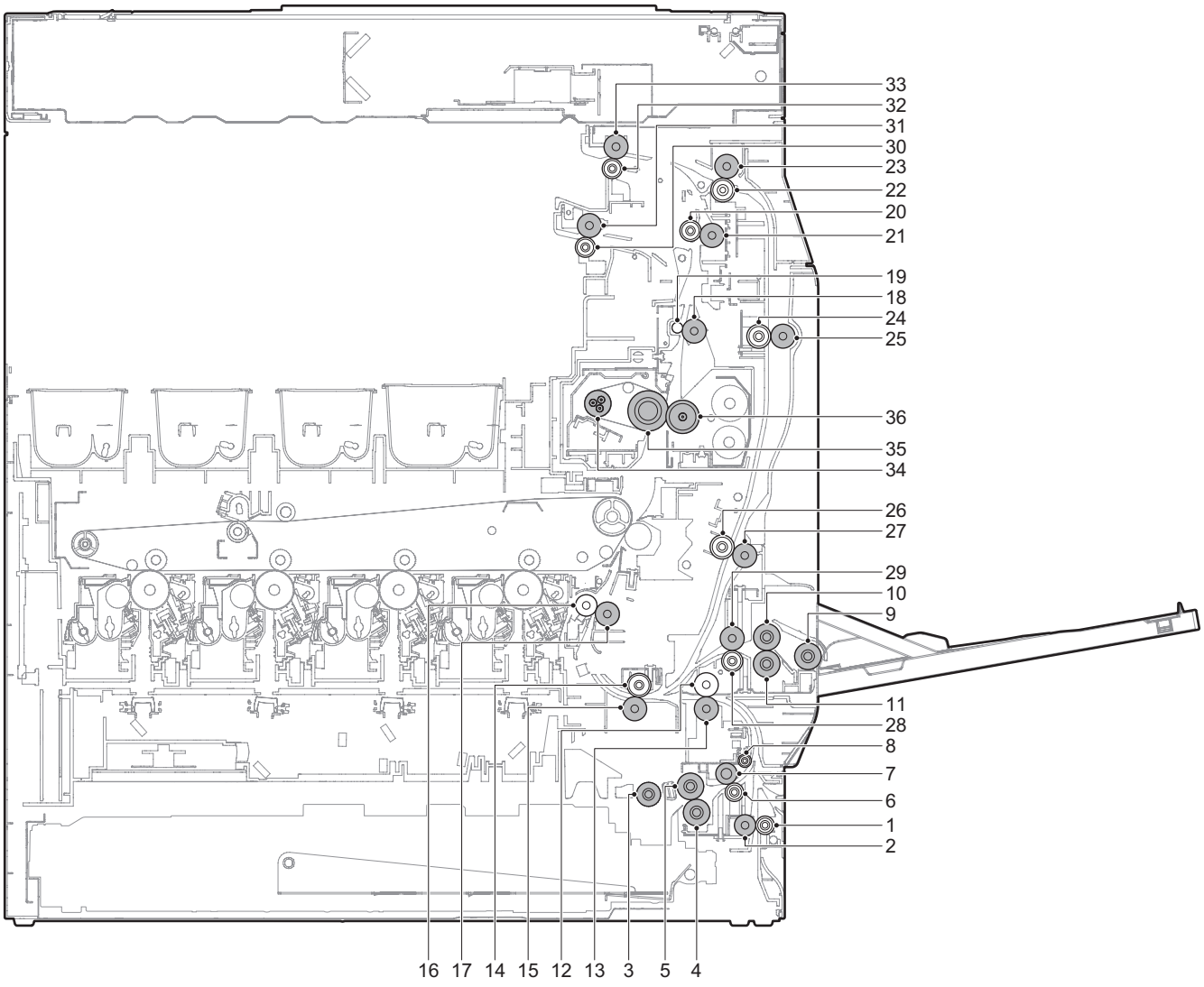
Signal name	Name	Type	Function and Operation
1TURC_1	Primary transfer separation clutch 1	Magnetic clutch	Controls separation of the primary transfer unit
1TURC_2	Primary transfer separation clutch 2	Magnetic clutch	Controls separation of the primary transfer unit
2TURC	Secondary transfer separation clutch	Magnetic clutch	Controls separation of the secondary transfer unit
ADUGS	ADU gate solenoid	Magnetic solenoid	Controls the paper exit gate
CPFC1	Tray vertical transport clutch	Magnetic clutch	Controls the transport roller of the paper feed tray 1 section
C1PUC	Paper feed clutch (Paper feed tray 1)	Magnetic clutch	Controls ON/OFF of the paper feed roller in the paper feed tray 1 section (Paper feed tray 1)
HPFC	Horizontal transport clutch (Paper feed tray 1, Manual paper feed tray)	Magnetic clutch	Controls ON/OFF of the transport roller (Paper feed tray 1, Manual paper feed tray)
MPUC	Manual paper feed clutch (Manual paper feed tray)	Magnetic clutch	Controls ON/OFF of the paper feed roller in the manual paper feed section (Manual paper feed tray)
MPFS	Paper feed solenoid (Manual paper feed tray)	Magnetic solenoid	Controls the paper feed roller (Manual paper feed tray)
POGS	Gate solenoid	Magnetic solenoid	Controls ON/OFF of the gate solenoid selecting upper tray and lower tray

9. Motors



Signal name	Name	Type	Function and Operation
ADUM1	ADU motor 1	DC brushless motor	Drives the transport roller in the right door and right paper exit section
ADUM2	ADU motor 2	DC brushless motor	Drives the transport roller in the right door section
C1LUM	Paper tray lift motor (Paper feed tray 1)	DC brush motor	Lifts the lift plate of the paper feed tray (Paper feed tray 1)
CPFM	Paper feed motor	DC brushless motor	Drives the paper feed section
DM_CL	Drum motor (CL)	DC brushless motor	Drives the OPC drum/developing section (CL)
DM_K	Drum motor (K)	DC brushless motor	Drives the OPC drum/developing section (K) and primary transfer section
FUM	Fusing motor	DC brushless motor	Drives the fusing section
MIM	Scan motor	Stepping motor	Drives the scanner unit (scan, return operations)
OSM	Offset motor	Stepping motor	Offsets (shifts) paper
PFM	Transport motor	DC brushless motor	Drives the transfer roller 5
PGM	Polygon motor	DC brushless motor	Scans laser beams
POM	Paper exit motor	DC brushless motor	Drives the roller in the paper exit section
PRM	Fusing pressure control motor	Stepping motor	Controls ON/OFF of the fusing roller pressure
RRM	Registration motor	DC brushless motor	Drives the registration roller (Controls the timing of the transfer image for the paper)
SBM	Reverse motor	DC brushless motor	Drives the transport roller in duplex mode
TNM_C	Toner motor (C)	Stepping motor	Supplies toner from the toner cartridge (C) to the developing unit
TNM_K	Toner motor (K)	Stepping motor	Supplies toner from the toner cartridge (K) to the developing unit
TNM_M	Toner motor (M)	Stepping motor	Supplies toner from the toner cartridge (M) to the developing unit
TNM_Y	Toner motor (Y)	Stepping motor	Supplies toner from the toner cartridge (Y) to the developing unit

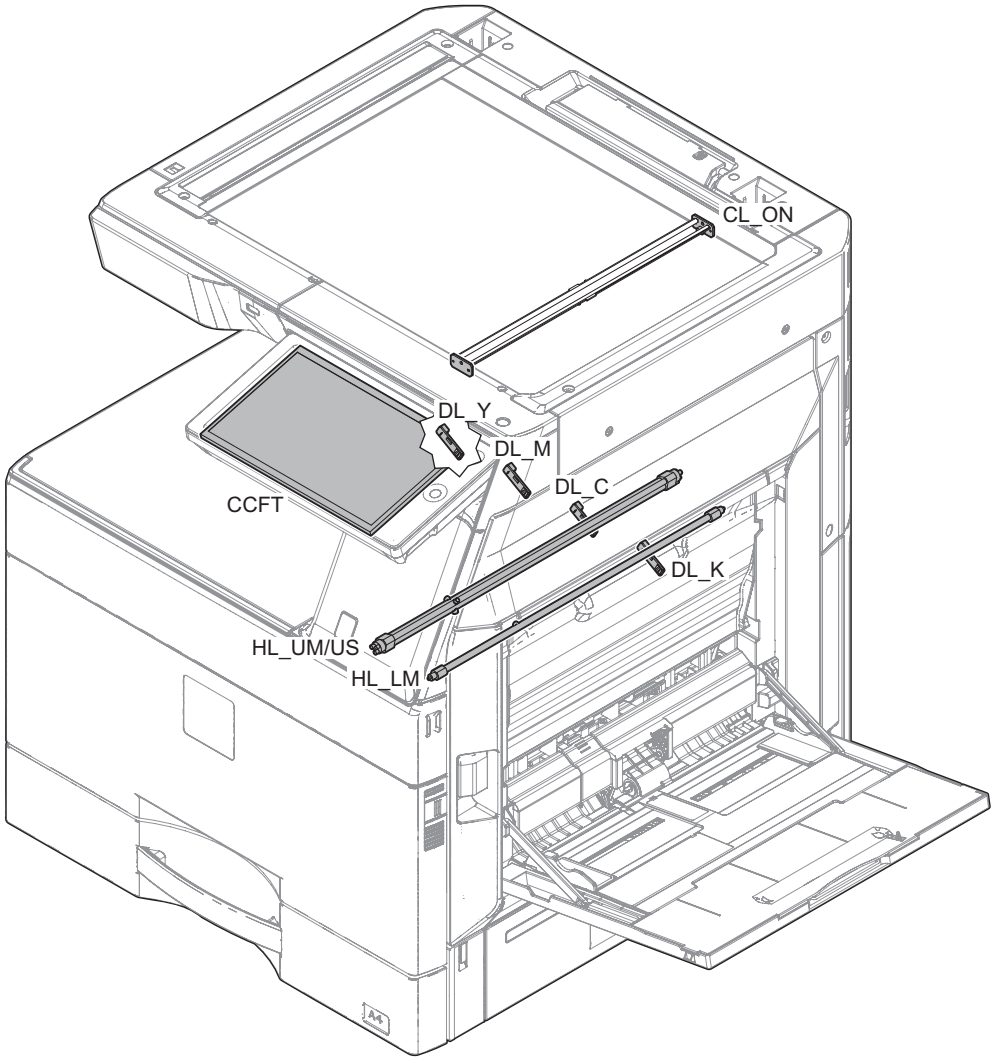
10. Rollers



No.	Name	Function and Operation
1	Transport roller 1 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
2	Transport roller 1 (Drive)	Transports paper fed from the paper feed tray to the transport roller 4
3	Paper pickup roller (Paper feed tray 1)	Feeds paper to the paper feed roller
4	Separation roller (Paper feed tray 1)	Separates paper to prevent double feeding
5	Paper feed roller (Paper feed tray 1)	Feeds paper to the paper transport section
6	Transport roller 2 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
7	Transport roller 2(Drive)	Transports paper fed from the paper feed tray 1 to the transport roller 3
8	Transport roller 3	Transports paper from the transport roller 2 to the transport roller 4
9	Paper pickup roller (Manual paper feed tray)	Feeds paper to the paper feed roller
10	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section
11	Separation roller (Manual paper feed tray)	Separate paper to prevent double feeding
12	Transport roller 4 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
13	Transport roller 4 (Drive)	Transports paper from the transport roller 1 and 3 to the transport roller 5
14	Transport roller 5 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
15	Transport roller 5 (Drive)	Transports paper to the registration roller. Paper is buckled between the registration roller and this roller to correct the paper skew and the relation between images and paper
16	Registration roller (Idle)	Apply a pressure to paper and the registration roller to provide the transport power of the transport roller to paper
17	Registration roller (Drive)	Transports paper to the transfer section. Controls the transport timing of paper and adjusts relative position between the images and paper
18	Transport roller 6 (Drive)	Transports paper to the paper exit section

No.	Name	Function and Operation
19	Transport roller 6 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
20	Transport roller 7 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
21	Transport roller 7 (Drive)	Transports paper to the paper exit section
22	Transport roller 8 (Idle)	Apply a pressure to paper and the paper exit roller to provide the transport power of the transport roller to paper
23	Transport roller 8 (Drive)	Transports paper to paper exit roller 1 or paper exit roller 2 or transport roller 9
24	Transport roller 9 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
25	Transport roller 9 (Drive)	Transports paper transported from the switchback section to the transport roller 10
26	Transport roller 10 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
27	Transport roller 10 (Drive)	Transports paper transported from transport roller 9 to the transport roller 5
28	Transport roller 11 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
29	Transport roller 11 (Drive)	Transports paper transported from manual paper tray to the transport roller 5
30	Paper exit roller 2 (Idle)	Apply a pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper
31	Paper exit roller 2 (Drive)	Transports paper to the lower paper exit tray
32	Paper exit roller 1 (Idle)	Apply a pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper
33	Paper exit roller 1 (Drive)	Transports paper to the upper paper exit tray or switchback to the ADU section
34	Heat roller	Heats the fusing belt
35	Fusing roller	The sponge layer of the roller forms a wide nip between the fusing belt and fusing roller
36	Pressure roller	Heats the back surface of paper to fuse toner on the paper

11. Lamps

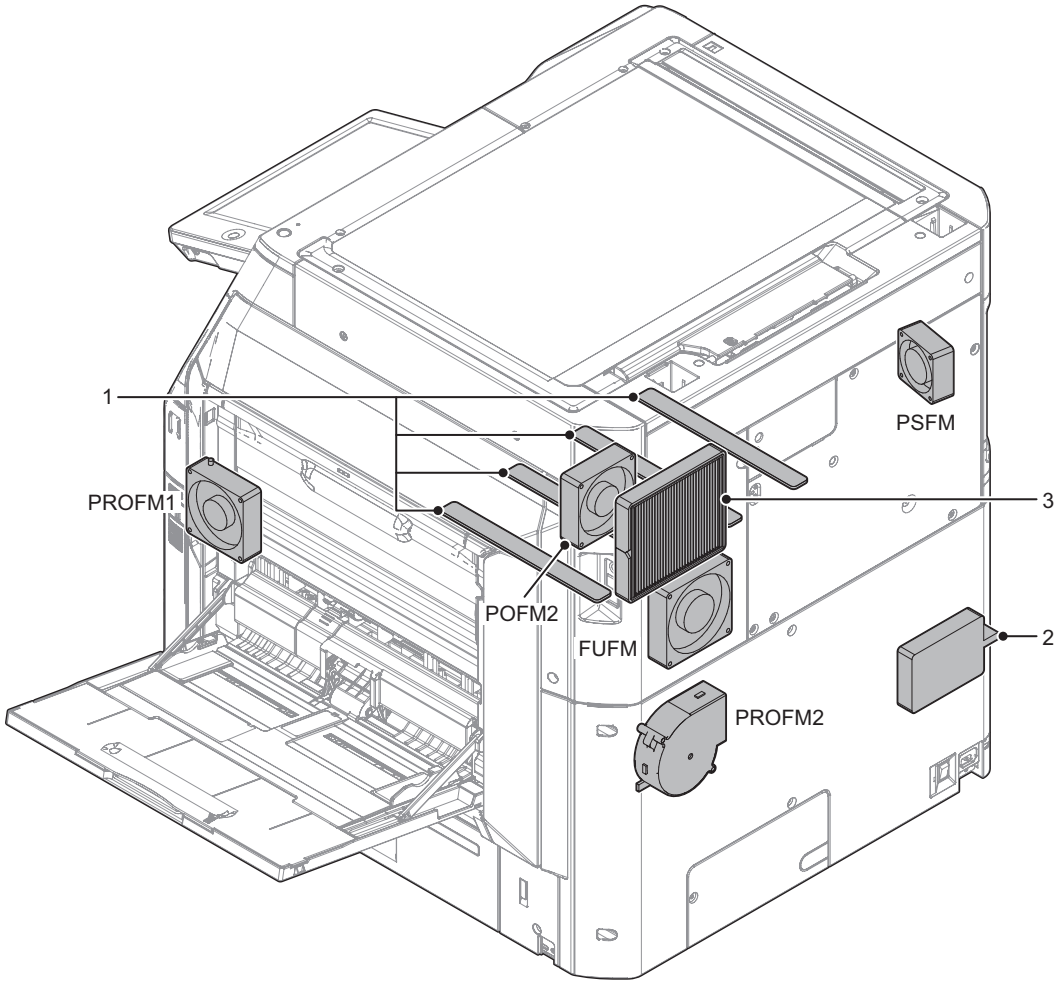


Signal name	Name	Type	Function and Operation
CCFT	LCD backlight	LED	LCD backlight
CL_ON	Scanner lamp	LED	Radiates light onto a document for the CCD to scan the document image
DL_C	Discharge lamp (C)	LED	Discharges electric charges on the OPC drum (C)
DL_K	Discharge lamp (K)	LED	Discharges electric charges on the OPC drum (K)
DL_M	Discharge lamp (M)	LED	Discharges electric charges on the OPC drum (M)
DL_Y	Discharge lamp (Y)	LED	Discharges electric charges on the OPC drum (Y)
HL_LM	Heater lamp	Halogen lamp	Heats the fusing roller
HL_UM/US	Heater lamp	Halogen lamp	Heats the fusing roller and the fusing belt

1 : '18/Mar.

12. Fans and filter

1



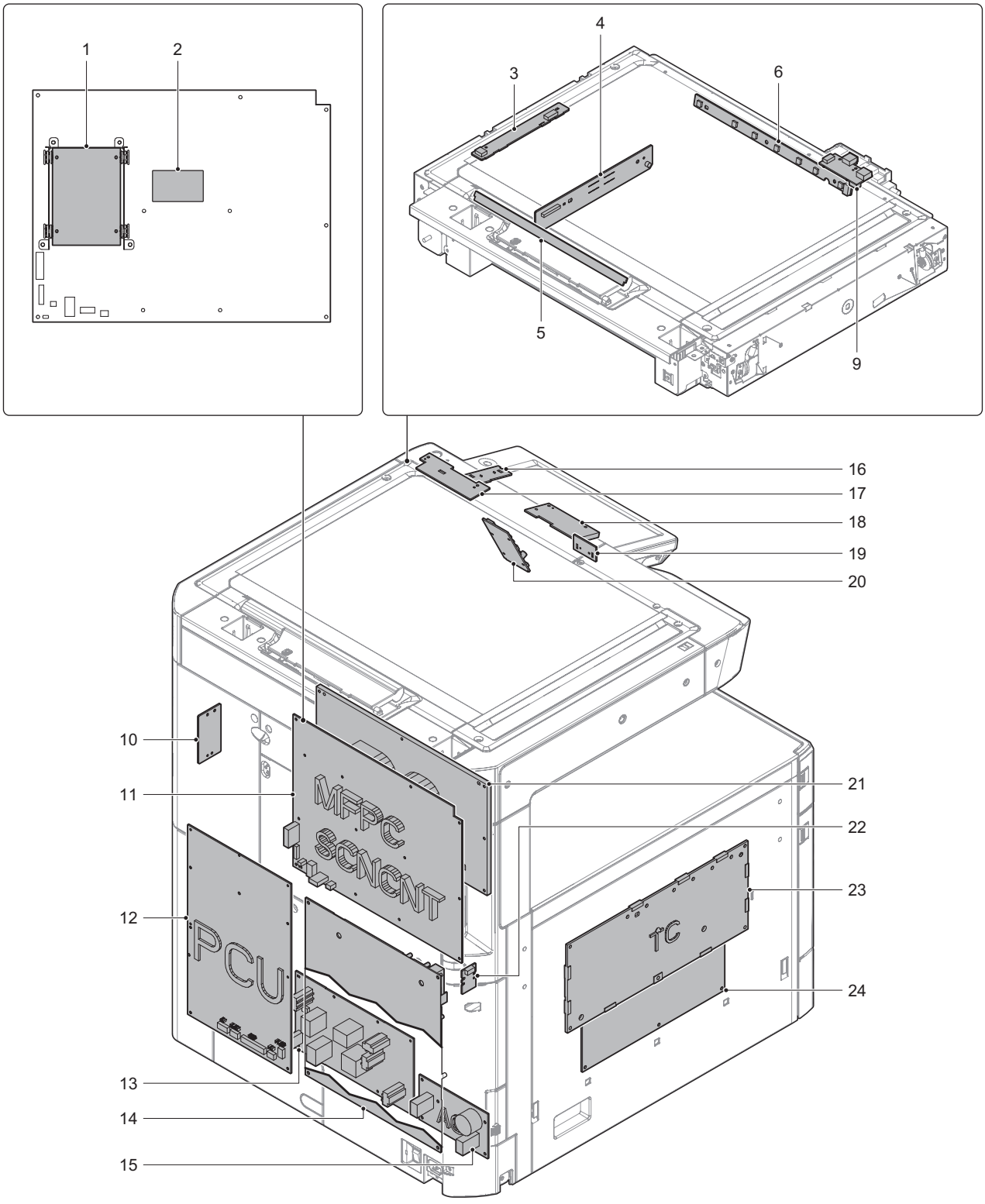
Signal name	Name	Function and Operation
FUFM	Fusing cooling fan	Cools the fusing section and the paper exit section
POFM2	Paper exit cooling fan	Cools the fusing section and the paper exit section
PROFM1	Process fan motor 1	Discharges air and cools the process section
PROFM2	Process fan motor 2	Discharges air and cools the process section
PSFM	Power cooling fan motor	Cools the power unit

No.	Name	Function and Operation
1	Toner filter	Prevents toner splash
2	Ozone filter	Absorbs ozone generated in the image process section
1 3	UFP filter	Absorbs ultrafine particle For Europe

1 : '18/Mar.

13. PWB/memory device

1

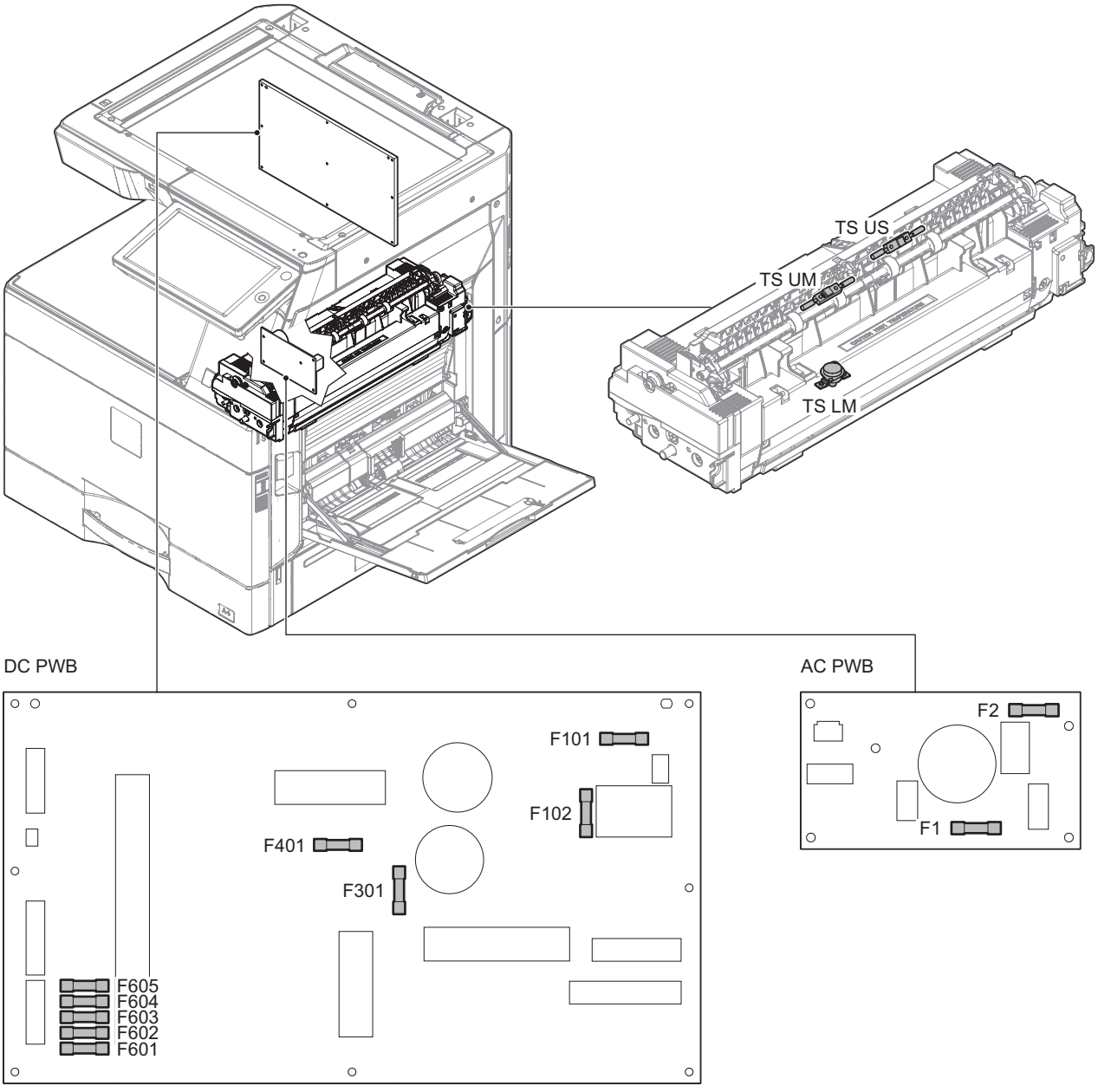


No.	Name	Function and Operation
1	HDD	Stores the filing data, the watermark data, the log data and authentication data also used as a work memory
2	mSATA SSD	Stores the SOC program data, snapshot, the e-manual data, the log data
3	LED DRIVER PWB	Drives the scanner lamp
4	CCD PWB	Scan document images and performs A/D conversion of the scanning signal
5	Document size detection PWB (Light emitting)	Drives the LED for the document size detection
6	Document size detection PWB (Light receiving)	Outputs the document size detection signal
1 7		

1 : ‘18/Mar.

No.	Name	Function and Operation
1 8		
9	USB I/F PWB	USB interface
10	RD I/F PWB	Detects each sensor in the right door unit
11	SCN-MFP control PWB	Controls image data (compression, decompression and filing) and controls the whole machine. Converts print data into image data.
12	PCU PWB	Controls engine section
13	HL PWB	Drives the heater lamp
14	MC PWB	Generates the main charger voltage and the DV bias voltage
15	AC PWB	Noise filter for AC input power supply
16	HOME PWB	Outputs the key operation signal
17	KEY PWB	Power switch, Buzzer, sound, power ON/OFF condition display LED, error display LED (red)
18	LCD IF PWB	Relay each device in the operation panel
19	LED PWB	Display indication state of MFP
20	LVDS PWB	Converts the display data signal to the LCD display signal from SCN-MFP control PWB and controls the touch panel
21	DC POWER PWB	Generates DC voltage
22	BD PWB	Detects laser and outputs the synchronous signal
23	TC PWB	Generates the transfer voltage
24	LSU PWB	Controls the LSU and generates the video data. Controls laser diode and power

14. Fuses and thermostats



Signal name	Name	Type	Section
F1	Fuse	20A 250V	AC PWB (For 100V series)
F1	Fuse	10A 250V	AC PWB (For 200V series)
F2	Fuse	10A 250V	AC PWB (For 200V series)
F101	Fuse	12A 250V	DC Power PWB
F102	Fuse	2A 250V	DC Power PWB
F301	Fuse	5A 250V	DC Power PWB
F401	Fuse	3.15A 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

Signal name	Name	Type	Function and Operation
TS LM	Thermostat	Mechanical thermostat	Shuts down the heater lamp (HL_LM) circuit when the fusing section is overheated
TS UM	Thermostat	Mechanical thermostat	Shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated (center section)
TS US	Thermostat	Mechanical thermostat	Shuts down the heater lamp (HL_US) circuit when the fusing section is overheated (edge section)

[5] ADJUSTMENTS AND SETTINGS

1. General

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

However, there is no need to perform all the adjustment items.

Perform only the necessary adjustments according to the need.

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

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

2. Adjustment item list

Job No.	Adjustment item list					Simulation
ADJ 1	Developing unit adjustment	1-A	Toner density control reference value setting			25-2
ADJ 2	High voltage values adjustment	2-A	Main charger grid voltage adjustment			8-2
		2-B	Developing bias voltage adjustment			8-1
		2-C	Transfer current and voltage adjustment			8-6
ADJ 3	Image density sensor adjustment	3-A	Image density sensor adjustment			44-2
ADJ4	Print image position, image magnification ratio adjustment (Print engine) (Manual adjustment)	4-A	Print image magnification ratio adjustment (main scanning direction) (Print engine) (Manual adjustment)			50-10
		4-B	Print image position (main scanning direction, sub scanning direction adjustment, (Print engine) (Manual adjustment)			50-10
ADJ5	Print engine image distortion adjustment, OPC drum phase adjustment, Color registration adjustment (Print engine section)	5-A	Print engine image distortion adjustment (Manual adjustment), OPC drum phase adjustment (Automatic adjustment), Color registration adjustment (Automatic adjustment)			50-22
		5-B	Print engine image skew (LSU skew) adjustment (Manual adjustment) (No need to adjust normally)			50-20 (64-1)
		5-C	Color registration offset adjustment (No need to adjust normally)			50-20
ADJ6	Scan image distortion adjustment (Document table mode)	6-A	Scanner (reading) unit parallelism adjustment (sub scanning direction distortion adjustment)			
		6-B	Scan image (main scanning direction) distortion adjustment			
ADJ7	Scanner image skew adjustment (RSPF mode)	7-A	RSPF scan image skew adjustment			
ADJ8	Scan image focus adjustment	8-A	Image focus adjustment (document table mode, RSPF front surface mode)			48-1
ADJ9	Scan image magnification ratio adjustment (Manual adjustment)	9-A	Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment)			48-1
		9-B	Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (Document table mode)			48-1
		9-C	Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (RSPF mode)			48-1
		9-D	Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (RSPF mode)			48-1
ADJ10	Scan image off-center adjustment (Manual adjustment)	10-A	Scan image off-center adjustment (Manual adjustment) (Document table mode)			50-12
		10-B	Scan image off-center adjustment (Manual adjustment) (RSPF mode)			50-12/50-6
ADJ11	Copy image position, image loss adjustment (Manual adjustment)	11-A	Copy image position, image loss (Manual adjustment) (Document table mode)			50-1
		11-B	Image scanning position adjustment (Manual adjustment) (RSPF mode)			53-8
		11-C	Copy image position, image loss (Manual adjustment) (RSPF mode)			50-6
ADJ12	Print lead edge image position adjustment (printer mode)					50-5
ADJ13/ SET1	Color balance and density adjustment		Note before execution of the image quality adjustment			
			Copy image quality check			
			Printer image quality check			
		13-A	Scanner calibration	13-A (1)	Scanner calibration (CCD calibration) (document table mode)	63-3
		SET 1	Color balance adjustment target setup	1A	Copy color balance adjustment target setup	63-7/8/11
				1B	Printer color balance adjustment target setup	67-26/27/ 28
		13-B	FR density variation correction	13-B (1)	FR density unevenness automatic correction	61-11
				13-B (2)	FR density unevenness visual inspection correction	61-12
		13-C	Copy, printer color balance and density adjustment (Automatic adjustment) (Basic adjustment)			46-74
		13-D	Copy image quality adjustment (Basic adjustment)	13-D (1)	Copy color balance and density adjustment (Automatic adjustment)	46-24
				13-D (2)	Copy color balance and density adjustment (Manual adjustment)	46-21

Job No.	Adjustment item list					Simulation
ADJ13/ SET1	Color balance and density adjustment	13-E	Copy, Image send, FAX image quality adjustment (Individual adjustment)	13-E (1)	Color copy density adjustment (for each color copy mode) (separately for the low density area and the high density area) (No need to adjust normally)	46-1
				13-E (2)	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
				13-E (3)	Color copy color balance, gamma adjustment (for each color copy mode) (No need to adjust normally)	46-10
				13-E (4)	Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)	46-16
				13-E (5)	Automatic monochrome (Copy/scan/FAX) mode document density scanning operation (exposure operation) conditions setting (No need to set normally)	46-19
				13-E (6)	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
				13-E (7)	Copy, scan low density image density adjustment (for each mode) (No need to adjust normally)	46-63
				13-E (8)	Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)	46-27
				13-E (9)	Monochrome (Copy/scan/FAX) mode color document reproduction adjustment (No need to adjust normally)	46-37
				13-E (10)	Color copy mode dark area gradation (black component quantity) adjustment (No need to adjust normally)	46-38
				13-E (11)	Color (copy/scan) mode sharpness adjustment (No need to adjust normally)	46-60
				13-E (12)	Copy high density image density reproduction setting (Normally unnecessary to the setting change)	46-23
				13-E (13)	Copy color balance adjustment (single color copy mode) (No need to adjust normally)	46-25
				13-E (14)	RSPF mode (copy/scan/FAX) density adjustment (No need to adjust normally)	46-9
				13-E (15)	Copy gamma, color balance adjustment for each dither (Automatic adjustment)	46-54
				13-E (16)	Dropout color adjustment (Normally not required)	46-55
				13-E (17)	Watermark adjustment (Normally not required)	46-66
		13-F	Printer image quality adjustment (Basic adjustment)	13-F (1)	Printer color balance adjustment (Automatic adjustment)	67-24
				13-F (2)	Printer color balance adjustment (Manual adjustment)	67-25
		13-G	Printer image quality adjustment (Individual adjustment)	13-G (1)	Printer density adjustment (low density section density adjustment) (No need to adjust normally)	67-36
				13-G (2)	Printer high density image density reproduction setting (supporting the high density section tone gap) (No need to adjust normally)	67-34
				13-G (3)	Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)	67-54
ADJ14	Paper size sensor adjustment	14-A	Manual paper feed tray paper size (width) sensor adjustment			40-2
		14-B	RSPF paper feed tray document size (width) sensor adjustment			53-6
ADJ15	Document size detection adjustment	15-A	Sensitivity adjustment of the original size sensor			41-2
ADJ16	Touch panel coordinate setting					65-1
ADJ17	Fusing paper guide position adjustment					

3. Details of adjustment

ADJ 1 Developing unit adjustment

1-A Toner density control reference value setting

This adjustment must be performed in the following cases.

- When developer is replaced

Important

Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

Important

Perform the toner density reference control level adjustment with the toner cartridges removed.

If adjustment is performed with toner cartridge installed, the EE-EL trouble code or an over toner condition may occur.

1) Sim10-3 to remove all toner cartridges
2) With the front cover opened, enter Sim25-2
3) Close the front cover
4) Select a developing unit to be adjusted
5) When [EXECUTE] key is pressed, it is highlighted. The DV roller rotates and the toner density sensor detects toner density and the output value is displayed.

   The above operation is executed for 1 minutes and the average value of the toner density sensor detection level is set (saves) as the reference toner density control value.

   When the reference toner density control adjustment operation is completed [EXECUTE] key returns to normal from highlight.

   This makes known about whether the adjustment operation is completed or not.

   The above operation is executed each of the lower speed mode and the middle speed mode and the reference toner density control value is set for each of them.

   Important

   If the operation is interrupted within 1 minutes the adjustment result is not reflected.

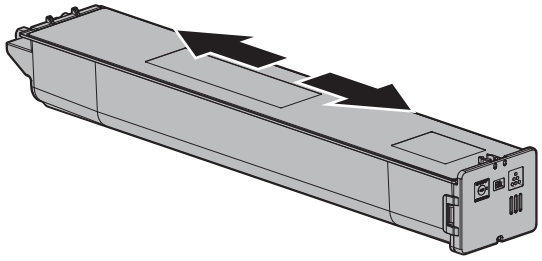
   When [EXECUTE] key is pressed during the operation, the operation is stopped and [EXECUTE] key returns to the normal display.

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

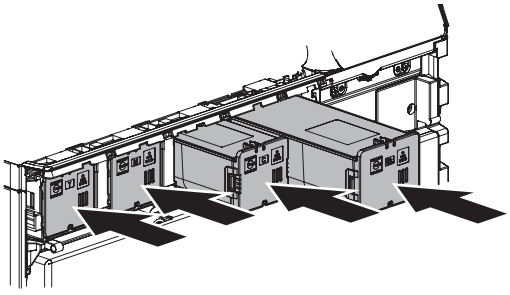
   Troubleshoot the cause, remove the cause and perform setting again.

Error display	Error name	Details of error
EE-EL	EL abnormality	Sensor output level less than 77 or control voltage over 207
EE-EU	EU abnormality	Sensor output level over 177 or control voltage less than 52
EE-EC	EC abnormality	Sensor output level other than 128 ± 10

6) Cancel Sim 25-2
7) Confirm that "Instal the toner cartridge " is displayed and instal the toner cartridge by the following procedures
8) Shake the toner cartridge horizontally several times



9) Open the front cover and insert each toner cartridge



Important

Be sure to install the color cartridge to their proper positions.

Avoid installation to a different color position.

Important

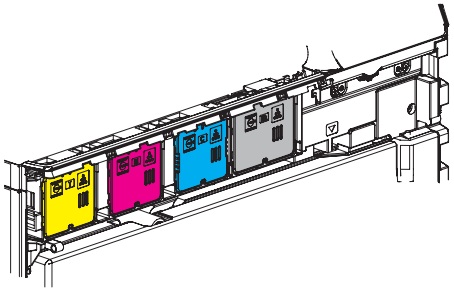
Do not forcibly insert the toner cartridge.

Push it in until the cartridge is securely locked in place.

Important

Developing units removed, be sure to remove the toner cartridges as well to prevent toner clogging.

Mounting location of the toner cartridge of each color



10) Close the front cover
11) Confirm that "Toner replacement in progress" is displayed and wait until the display disappears (It takes 30 sec - 6 min)

Note

This procedure is for checking the toner supply operation from the toner cartridge to the DV unit. The operation time differs depending on the toner quantity in the toner cartridge, uneven distribution of toner and the internal state of the toner cartridge.

Important

Do not perform operations which interrupt the above operation such as opening the front cover, entering the Sim mode and turning OFF/ON the power. If this precaution is ignored. Trouble codes F2-40 - 43 or F2-64 - 67 or a over toner condition may occur.

Important

When replacing developer always replace all the three colors of Yellow, Magenta and Cyan.

If only one color is replaced color balance may be adversely affected. Black developer can be replaced individually.

Important

When developer is replaced be sure to perform the color balance adjustment.

Important

When not replacing the developer. do not execute Sim25-2

ADJ 2 High voltage values adjustment

2-A Main charger grid voltage adjustment

This adjustment must be performed in the following cases.

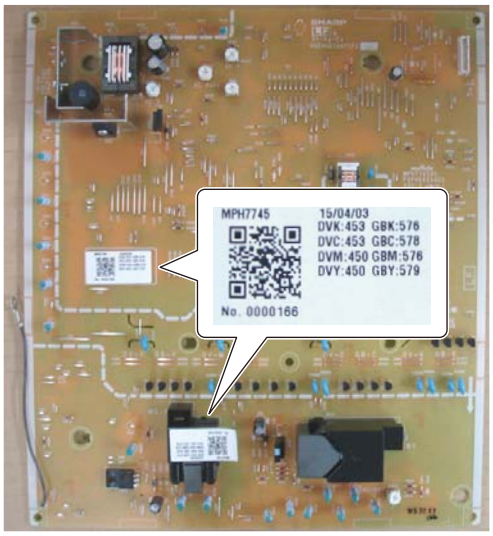
- When the MC PWB has been replaced
- U2 trouble has occurred
- The PCU PWB has been replaced
- The EEPROM of the PCU PWB has been replaced

1) Enter the Sim 8-2 mode
2) Select an output mode and an item to be adjusted

Item/Display (mode)			mode		adjustment range	actual voltage
MIDDLE	A	MIDDLE SPEED GB_K	Main charger grid voltage (middle speed mode)	K	50 - 850	-607V ±5V
	B	MIDDLE SPEED GB_C		C	50 - 850	-607V ±5V
	C	MIDDLE SPEED GB_M		M	50 - 850	-607V ±5V
	D	MIDDLE SPEED GB_Y		Y	50 - 850	-607V ±5V
LOW	A	LOW SPEED GB_K	Main charger grid voltage (low speed mode)	K	50 - 850	-598V ±5V
	B	LOW SPEED GB_C		C	50 - 850	-598V ±5V
	C	LOW SPEED GB_M		M	50 - 850	-598V ±5V
	D	LOW SPEED GB_Y		Y	50 - 850	-598V ±5V

3) Enter the adjustment value (specified value) in the middle speed mode and press [OK] key.

Enter the adjustment value of each mode which is specified on the label attached on the MC PWB.



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

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

Important

Note that the adjustment value may differ depending on the MC-PWB. Since the adjustment value label is attached on the MC PWB, the PWB must be removed in order to check the adjustment value. This is a troublesome procedure. Therefore it is advisable to put down the adjustment value in advance.

When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

Important

Since the high voltage output cannot be checked with a digital multi meter in this model, a judgement of the output must be made by checking the print image quality

2-B Developing bias voltage adjustment

This adjustment must be performed in the following cases.

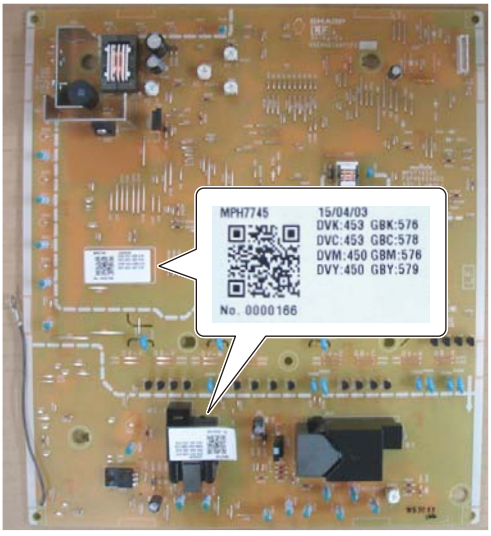
- When the MC PWB has been replaced
- U2 trouble has occurred
- The PCU PWB has been replaced
- The EEPROM of the PCU PWB has been replaced

1) Enter the Sim 8-1 mode
2) Select an output mode and an item to be adjusted.

Item/Display (mode)			Content		Adjustment range	Actual voltage
MIDDLE	A	MIDDLE SPEED DVB_K	Developing bias voltage (middle speed)	K	0 - 600	–450V ±5V
	B	MIDDLE SPEED DVB_C		C	0 - 600	–450V ±5V
	C	MIDDLE SPEED DVB_M		M	0 - 600	–450V ±5V
	D	MIDDLE SPEED DVB_Y		Y	0 - 600	–450V ±5V

Item/Display (mode)			Content		Adjustment range	Actual voltage
LOW	A	LOW SPEED DVB_K	Developing bias voltage (low speed)	K	0 - 600	–450V ±5V
	B	LOW SPEED DVB_C		C	0 - 600	–450V ±5V
	C	LOW SPEED DVB_M		M	0 - 600	–450V ±5V
	D	LOW SPEED DVB_Y		Y	0 - 600	–450V ±5V

3) Enter the adjustment value (specified value) in the middle speed mode and press [OK] key.
Enter the adjustment value of each mode which is specified on the label attached on the MC PWB.



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

Important

Note that the adjustment value may differ depending on the MC PWB . Since the adjustment value label is attached on the MC PWB, the PWB must be removed in order to check the adjustment value. This is a troublesome procedure. Therefore it is advisable to put down the adjustment value in advance.

When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

Important

Since the high voltage output cannot be checked with a digital multi meter in this model, a judgement of the output must be made by checking the print image quality.

2-C Transfer current and voltage adjustment

This adjustment must be performed in the following cases.

- When the TC 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 an item to be adjusted

Item/Display		Content				Setting range	Default value	Actual output value
A	TC1 LOW SPEED CL K	Primary transfer bias adjustment value	color	K	low speed	0 - 255	85	10 µA
B	TC1 MIDDLE SPEED CL K				middle speed	0 - 255	94	12 µA
C	TC1 LOW SPEED CL C			C	low speed	0 - 255	85	10 µA
D	TC1 MIDDLE SPEED CL C				middle speed	0 - 255	94	12 µA
E	TC1 LOW SPEED CL M			M	low speed	0 - 255	85	10 µA
F	TC1 MIDDLE SPEED CL M				middle speed	0 - 255	94	12 µA
G	TC1 LOW SPEED CL Y			Y	low speed	0 - 255	85	10 µA
H	TC1 MIDDLE SPEED CL Y				middle speed	0 - 255	94	12 µA
I	TC1 LOW SPEED BW K		monochrome	K	low speed	0 - 255	85	10 µA
J	TC1 MIDDLE SPEED BW K				middle speed	0 - 255	94	12 µA

Item/Display		Content				Setting range	Default value	Actual output value
K	TC2 PLAIN CL SPX	Secondary transfer bias adjustment value	color	Plain paper	front surface	0 - 255	90	-30 µA
L	TC2 PLAIN CL DPX				back surface	0 - 255	90	-30 µA
M	TC2 PLAIN BW SPX		monochrome		front surface	0 - 255	90	-30 µA
N	TC2 PLAIN BW DPX				back surface	0 - 255	90	-30 µA
O	TC2 HEAVY1 CL SPX		color	Heavy paper 1	front surface	0 - 255	90	-30 µA
P	TC2 HEAVY1 CL DPX				back surface	0 - 255	96	-35 µA
Q	TC2 HEAVY1 BW SPX		monochrome		front surface	0 - 255	90	-30 µA
R	TC2 HEAVY1 BW DPX				back surface	0 - 255	96	-35 µA
S	TC2 HEAVY2 CL SPX		color	Heavy paper 2	front surface	0 - 255	90	-30 µA
T	TC2 HEAVY2 CL DPX				back surface	0 - 255	96	-35 µA
U	TC2 HEAVY2 BW SPX		monochrome		front surface	0 - 255	90	-30 µA
V	TC2 HEAVY2 BW DPX				back surface	0 - 255	96	-35 µA
W	TC2 HEAVY3 CL SPX		color	Heavy paper 3	front surface	0 - 255	90	-30 µA
X	TC2 HEAVY3 CL DPX				back surface	0 - 255	96	-35 µA
Y	TC2 HEAVY3 BW SPX		monochrome		front surface	0 - 255	90	-30 µA
Z	TC2 HEAVY3 BW DPX				back surface	0 - 255	96	-35 µA
AA	TC2 HEAVY4 CL		color	Heavy paper 4		0 - 255	90	-30 µA
AB	TC2 HEAVY4 BW		monochrome			0 - 255	90	-30 µA
AC	TC2 OHP CL		color	OHP		0 - 255	103	-40 µA
AD	TC2 OHP BW		monochrome			0 - 255	103	-40 µA
AE	TC2 ENVELOPE CL		color	envelope		0 - 255	90	-30 µA
AF	TC2 ENVELOPE BW		monochrome			0 - 255	90	-30 µA
AG	TC2 THIN CL		color	thin paper		0 - 255	90	-30 µA
AH	TC2 THIN BW		monochrome			0 - 255	90	-30 µA
AI	TC2 GLOSSY PAPER CL		color	gloss paper		0 - 255	90	-30 µA
AJ	TC2 GLOSSY PAPER BW		monochrome			0 - 255	90	-30 µA
AK	TC2 EMBOSS CL		color	emboss paper		0 - 255	90	-30 µA
AL	TC2 EMBOSS BW		monochrome			0 - 255	90	-30 µA
AM	TC2 LABEL CL		color	label paper		0 - 255	90	-30 µA
AN	TC2 LABEL BW		monochrome			0 - 255	90	-30 µA
AO	TC2 FRONT EDGE LOW SPX	front edge bias adjustment value	front surface low speed			0 - 255	76	-20 µA
AP	TC2 FRONT EDGE LOW DPX		back surface low speed			0 - 255	69	-15 µA
AQ	TC2 FRONT EDGE MIDDLE SPX		front surface middle speed			0 - 255	76	-20 µA
AR	TC2 FRONT EDGE MIDDLE DPX		back surface middle speed			0 - 255	69	-15 µA
AS	TC2 BACKEND LOW SPX	rear edge bias adjustment value	front surface low speed			0 - 255	76	-20 µA
AT	TC2 BACKEND LOW DPX		back surface low speed			0 - 255	69	-15 µA
AU	TC2 BACKEND MIDDLE SPX		front surface middle speed			0 - 255	0	-0 µA
AV	TC2 BACKEND MIDDLE DPX		back surface middle speed			0 - 255	0	-0 µA
AW	TC2 INTERVAL LOW SPEED	interval bias adjustment value	low speed(+)			0 - 255	66	4 µA
AX	TC2 INTERVAL MIDDLE SPEED		middle speed(+)			0 - 255	95	8 µA
AY	TC2 CLEANING MINUS LOW SPEED	cleaning bias adjustment value	low speed(–)			0 - 255	54	-4 µA
AZ	TC2 CLEANING MINUS MIDDLE SPEED		middle speed(–)			0 - 255	59	-8 µA
BA	TC2 CLEANING PLUS LOW SPEED		low speed(+)			0 - 255	66	4 µA
BB	TC2 CLEANING PLUS MIDDLE SPEED		middle speed(+)			0 - 255	95	8 µA
BC	PTC LOW SPEED CL	PTC current adjustment value	color	low speed		0 - 255	109	-200 µA
BD	PTC MIDDLE SPEED CL			middle speed		0 - 255	206	-400 µA
BE	PTC LOW SPEED BW		monochrome	low speed		0 - 255	109	-200 µA
BF	PTC MIDDLE SPEED BW			middle speed		0 - 255	206	-400 µA
BG	CASE VOLT LOW CL	PTC voltage adjustment value	color	low speed		0 - 255	0	0 V
BH	CASE VOLT MIDDLE CL			middle speed		0 - 255	0	0 V
BI	CASE VOLT LOW BW		monochrome	low speed		0 - 255	0	0 V
BJ	CASE VOLT MIDDLE BW			middle speed		0 - 255	0	0 V
BK	DHV LOW SPEED CL SPX	separation bias adjustment value	color	low speed	front surface	0 - 255	80	1000 V
BL	DHV LOW SPEED CL DPX				back surface	0 - 255	109	1500 V
BM	DHV LOW SPEED BW SPX		monochrome		front surface	0 - 255	80	1000 V
BN	DHV LOW SPEED BW DPX				back surface	0 - 255	109	1500 V
BO	DHV MIDDLE SPEED CL SPX		color	middle speed	front surface	0 - 255	226	3500 V
BP	DHV MIDDLE SPEED CL DPX				back surface	0 - 255	226	3500 V
BQ	DHV MIDDLE SPEED BW SPX		monochrome		front surface	0 - 255	226	3500 V
BR	DHV MIDDLE SPEED BW DPX				back surface	0 - 255	226	3500 V

*Heavy paper 1:106-176g/m^2 Heavy paper 2:177-220g/m^2 Heavy paper 3:221-256g/m^2 Heavy paper 4:257-300g/m^2

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

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

By setting the value (specified value) the specified output is provided.

ADJ 3 Image density sensor adjustment

Before executing this adjustment, check to confirm the following items.

- Check to confirm that the color image density sensor (image registration sensor) is clean
- Check to confirm that the transfer belt is clean and free from scratches.

3-A Image density sensor adjustment

The image density sensor and the transfer belt surface are used to make the sensitivity adjustment of the image registration sensor.

This adjustment executes automatically at the outset of registration adjustment operation and process control operation as well as Sim 44-2

Normally therefore it is not required to perform this adjustment. It is performed only when the sensor is replaced or when the adjustment result is checked.

1) Enter Sim 44-2 mode
2) Press [EXECUTE] key.

   The sensitivity adjustment of the color image density sensor (image registration sensor) is automatically performed.

   After completion of the adjustment the adjustment result is displayed and [EXECUTE] key returns to the normal display.

   If the adjustment is not completed normally. "ERROR" is displayed.

When an error occurs, check the following sections for any abnormality.

- Color image density sensor
- The PCU PWB
- Transfer belt (dirt, scratch)
- Transfer belt cleaner

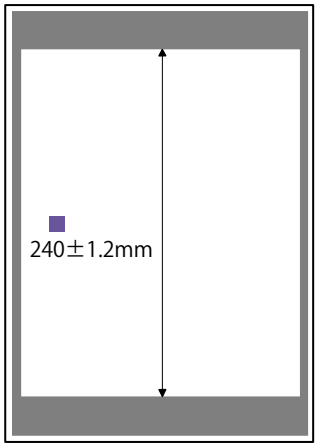
ADJ 4 Print image position, image magnification ratio adjustment (Print engine) (Manual adjustment)

4-A Print image magnification ratio adjustment (main scanning direction) (Print engine) (Manual adjustment)

This adjustment must be performed in the following cases.

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

1) Enter the SIM 50-10 mode.
2) Set A4 (11 x 8.5) paper in the paper feed tray.
3) Select the paper feed tray set in procedure 2) with the scroll key.
4) Touch [EXECUTE] key.
   The check pattern is printed out.
5) Check that the inside dimension of the printed halftone is 240±1.2mm.



   If the above requirement is not met, do the following steps.
6) Change the set value of set item A.
   When the set value is changed by 1, the dimension is changed by 0.1mm.
   When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased , the BK image magnification ration in the main scanning direction is decreased.
   Repeat procedure 2) to 6) until a satisfactory result is obtained.

4-B Print image position (main scanning direction, sub scanning direction) adjustment (Print engine) (Manual adjustment)

This adjustment must be performed in the following cases.

- When LSU unit is replaced or removed.
- When a paper tray is replaced.
- When the paper tray section is disassembled.
- When the manual feed tray is replaced.
- When the manual feed tray is disassembled.
- When the duplex mode paper transport section is disassembled.
- When the registration roller section is disassembled.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

Note

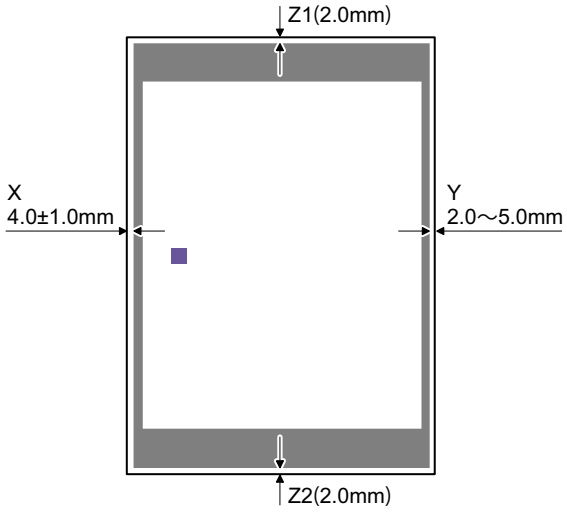
Before execution of this adjustment, check to insure the following item

- The print image magnification ratio adjustment ADJ4-A (main scanning direction) (print engine) (manual adjustment) has been properly adjusted.

1) Enter SIM 50-10 mode.
2) Select the target paper feed tray with the scroll key.
3) Touch [EXECUTE] key.
   The adjustment pattern is printed

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

Measure the dimension of the void area in the front and the rear frame direction of the adjustment pattern and check that all the following conditions are satisfied.



	Content	Standard adjustment value
X	Lead edge void area	4.0 ± 1.0mm
Y	Rear edge void area	2.0mm - 5.0mmm
Z1 / Z2	FRONT/REAR VOID AREA	Total 4.0 ± 2.0mm

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

5) Change the adjustment value.

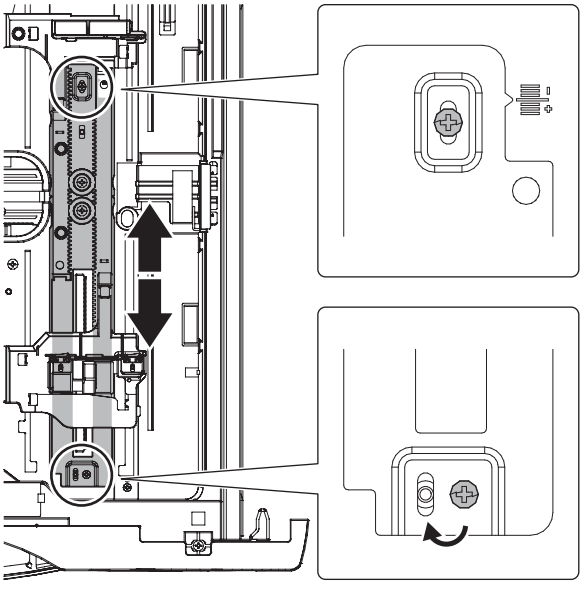
Enter the adjustment value and touch [OK] key or [EXECUTE] key.When touch [EXECUTE] key, the adjustment pattern is printed.

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

When the set value is changed by 1 the shift distance is changed by 0.1mm.

Repeat procedures 3) - 6) until the conditions of procedure 5) are satisfied. In case a satisfactory result cannot be obtained by repeating the above procedures, perform the following procedure.

6) loosen the paper feed tray off-center adjustment screws (2 pcs) at the center section of the lift plate of the paper feed tray and change the gear until position in the front/rear frame direction. Repeat the adjustment procedure from 4).



ADJ 5 Print engine image distortion adjustment, OPC drum phase adjustment, Color registration adjustment (Print engine section)

This adjustment must be performed in the following cases.

- When the color shift occurred.
- When LSU unit is replaced
- When the unit is installed or when the installing place is changed.
- When maintenance work is performed (replacement of the OPC drum, the transfer unit, the transfer belt)
- When ADJ4-A print engine image magnification ratio adjustment (main scanning direction) is performed.
- U2 trouble has occurred.
- When the PCU PWB is replaced.
- When EEPROM on the PCU PWB is replaced.
- When the color phase is not proper even after execution of the color balance adjustment.
- When the OPC drum drive section is disassembled.
- When the primary transfer unit is replaced (when it removed from the machine)
- When the developing unit or the OPC drum unit is removed from the machine.

5-A Print engine image distortion adjustment (manual adjustment), OPC drum phase adjustment (auto adjustment), color registration adjustment (auto adjustment)

This adjustment performs the print engine image distortion adjustment, the OPC drum phase adjustment and the color registration adjustment simultaneously.

1) Enter SIM 50-22 mode.
2) Touch [EXECUTE] key.
[EXECUTE] key is highlighted and the image registration auto adjustment is started. (it takes about 15 sec to complete the adjustment)
3) When the adjustment is completed, [EXECUTE] key returns to the normal display and the value of the adjustment result is displayed. The current skew level for each color is displayed on the SKEW display section.

Display /Item	Content		Display	Default value	NOTE
MAIN F	C M Y	Registration adjustment value main scanning direction F side	1.0 - 399.0	200	
MAIN R	C M Y	Registration adjustment value main scanning direction R side	1.0 - 399.0	200	
SUB	C M Y	Registration adjustment value sub scanning direction	1.0 - 399.0	200	
SKEW	C M Y	Print skew amount calculation result	L99.9 - R99.9	0	If the value is positive “L” is displayed at the head of the value if negative “R” is displayed.
PHASE	OPC drum phase adjustment value		1 - 8	1	

4) Write down the displayed skew level.

Meaning of the skew level value and the adjustment procedure

* If OK is displayed for all items of SKEW C, M, Y, there is no need to perform the adjustment.
* When “R” is displayed at the head of the value, turn the LSU skew adjustment screw clockwise.
* When ”L” is displayed at the head of the value, turn the LSU skew adjustment screw counterclockwise.
* The turning amount of the adjustment screw corresponds to each adjustment value. C, M and Y indicate numbers of clicks. The display value is rounded at the decimal point.
* C, M and Y (SKEW) shows the number of adjustment click steps for each adjustment screw of C, M and Y.

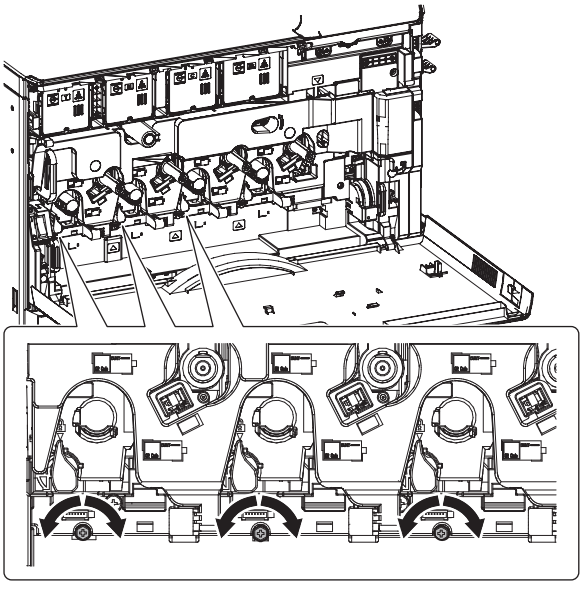
Contents in ( )
MAIN, SUB: Difference from the previous adjustment value of image registration.
Example: 105 for this time and 103 for the previous time, it is displayed as 105.0 (+2.0)
SKEW: Judgment of LSU skew adjustment result OK or NG.
PHASE: OPC drum phase adjustment value of the previous time.

5) If the display of C, M and Y (SKEW) is NG. all the LSU skew adjustment screws to adjust and perform the procedures 2) to 4).

Repeat the procedures 2) to 5) until the display of C, M and Y (SKEW) becomes OK. C, M and Y (SKEW) is OK, go to the procedure 6).

For the adjustment, remove the front cover and the waste toner box and turn the skew adjustment screw.

6) Repeat the procedures 2) to 4) again and check to confirm that C, M and Y (SKEW) are OK. If any of them is NG turn the LSU skew adjustment screw of the corresponding color to adjust.



When the adjustment is made by turning the LSU skew adjustment screw of K, the states of C, M and Y (SKEW) are changed. Execute SIM50-22 to check to confirm that C, M and Y (SKEW) are OK. When an abnormality occurs ERROR is displayed.

In this case, check each drive section and process section

The adjustment result can be checked by the following manual adjustment mode.
*ADJ5B

Image skew adjustment (manual adjustment) (SIM 50-20)

*ADJ5C

Color registration offset adjustment (SIM 50-20)

Note

When the color registration is greatly shifted due to replacement of the LSU etc, if SIM 50-22 is used to perform the color registration automatic adjustment an error may occur.

In this case, the adjustment may be properly executed by setting the adjustment items A - I of SIM 50-20 to 200 and executing the automatic adjustment again. If color shift in an actual print image differs in the center, the front side and the rear side the color shift offset adjustment can improve it. Normally there is a difference in color shift in several dots. Perform the adjustment only when the adjustment is required.

5-B Print engine image skew (LSU skew) adjustment (manual adjustment) (No need to adjust normally)

If a more accurate adjustment that the auto adjustment ADJ5A is required, use this method of adjustment.

This adjustment is made by changing the parallelism of the LSU unit scan laser beams for the OPC drum.

1) Enter the SIM 50-20 or 64-1 mode.
2) Select the paper feed tray with A3 (11” x 17”) paper in it and touch [EXECUTE] key.
3) The image skew (image registration) adjustment pattern is printed.
4) Check the printed black image for any skew.

Use the four cross points printed in black to measure the squareness.

There are following two methods of checking the black image for any skew

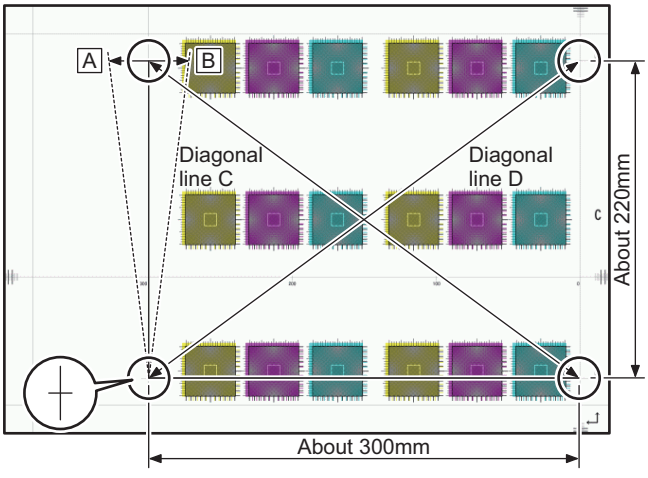
Method 1

Measure the distances between opposing corners of the rectangle print pattern and compare the two distances to check the squareness.

Method 2

Check the squareness of the vertical and horizontal sides of the rectangle print pattern by using A3 or 11” x 17” paper sides.

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



Method 1

Measure the length of the diagonal lines of the rectangle print pattern.

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

Check to insure that the difference between C and D is in the following range.

C – D = ±0.8mm

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

Method 2

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

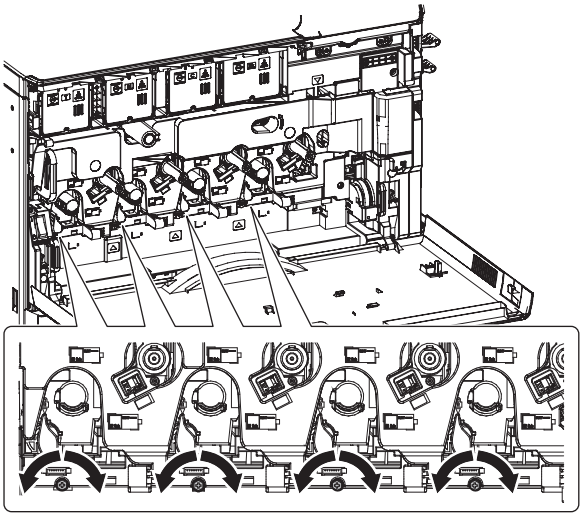
Measure the slant (skew) of the vertical side for the horizontal side of paper as shown in the figure.

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

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

5) Open the front cover, remove the waste toner box and turn the four LSU image skew adjustment screws in the same direction by the same amount.

For the adjustment, remove the front cover and the waste toner box and turn the skew adjustment screw.



Skew adjustment screw rotation direction

When C is greater that Din the method 1 or there is some skew in some skew in the direction A in the method 2, turn the screw clockwise.

When C is smaller that D in the method 1 or there is some skew in the direction B in the method 2, turn the screw counterclockwise.

Reference of the rotation amount of the skew adjustment screw

In case of the method1, 0.8mm / 1.5 rotations

In case of the method2, 0.5mm / 1.5 rotations

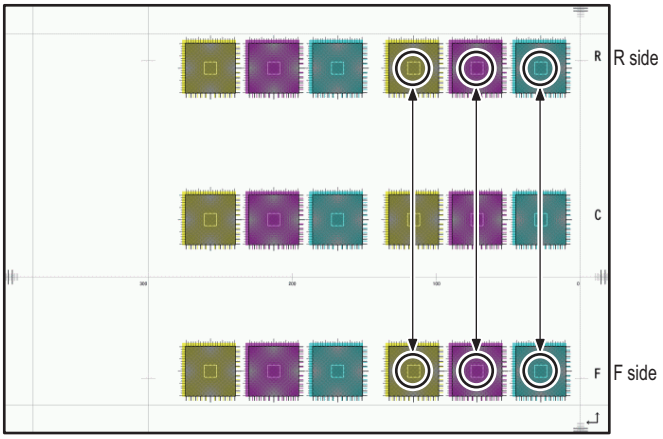
Repeat the procedures 2)to 6).

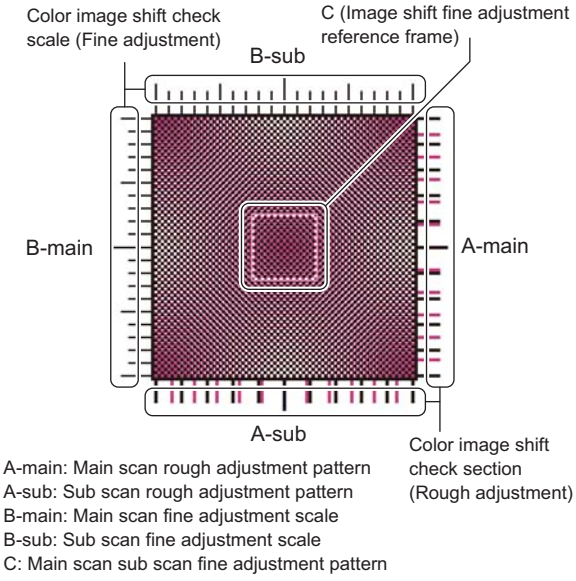
After completion of the black image skew adjustment, go to the procedure 7).

6) Perform the same procedure as 1) and 2).

7) Check the printed color image for any skew.

If the difference between the shift amounts on the F and R sides is within ±1 scale of the fine adjustment check scale. there is no need to perform the adjustment. Measure the skew amount from the print patterns on the front and rear sides of each color.





A-main: Main scan rough adjustment pattern
A-sub: Sub scan rough adjustment pattern
B-main: Main scan fine adjustment scale
B-sub: Sub scan fine adjustment scale
C: Main scan sub scan fine adjustment pattern

In each Y, M and C color print pattern printed separately in the F side and in the R side, note the same print color pattern and check to confirm that the F side and the R side are in the same condition.

Rough adjustment pattern check:

Check the sub scan rough adjustment color image shift check section on R side and the F side of each color, use the center position of the black scale as the reference and check the balance in shifts of the color image line positions in the positive and the negative directions. The balance in the R side must be the same as that in the F side

Fine adjustment pattern check:

Check the square frames on the R side and the F side of each color (normally five sections of high density can be seen)

Check the sub scanning direction position of the center area of high density (one of the above five section). These must be on the same position on the R side and the F side.

In this case, use the sub scan direction color image shift check scale (five adjustment) as the reference. Visually check the color density and make the darkest section as the center and use it as the read value of the shift amount. Check that the difference in the center position of the dark density section is within ±1 step. The positional relations of the front and the rear frame of the print color patterns of a same color are compared. There is no need that all the colors are in the same state. Compare only the positional relations of color patterns of a same color. If the above condition is not satisfied, perform the following procedure.

8) Turn the LSU skew adjustment screw of the adjustment target color to adjust.

Skew adjustment screw rotation direction

When the F side is skewed to the right side for R side:

Turn the screw clockwise.

When the F side is skewed to the left side for the R side:

Turn the screw counterclockwise.

Reference of the rotation amount of the skew adjustment screw

Skew of difference by one step between F and R sides (difference by one scale of the fine adjustment check scale) / turn for about 2 clicks.

Repeat the procedure 7) to 8) until satisfactory result is obtained.

5-C Color registration offset adjustment (No need to adjust normally)

This adjustment is used to set the offset value for the auto color registration adjustment (ADJ5A).

If there is any difference in color phase at the center and the four corner of an actual print image, this adjustment may improve it. Especially when there is any color shift at the center area, this adjustment may improve it effectively. This adjustment cannot eliminate color shifts in all the areas, but average the overall color shifts. After the auto adjustment, use this color registration offset adjustment to correct color shift partially, performing the adjustment efficiently.

Note

Before execution of this adjustment, check to confirm that the following adjustment has been performed.
*ADJ5A or ADJ5B image skew adjustment (LSU unit)

Kinds of adjustment values

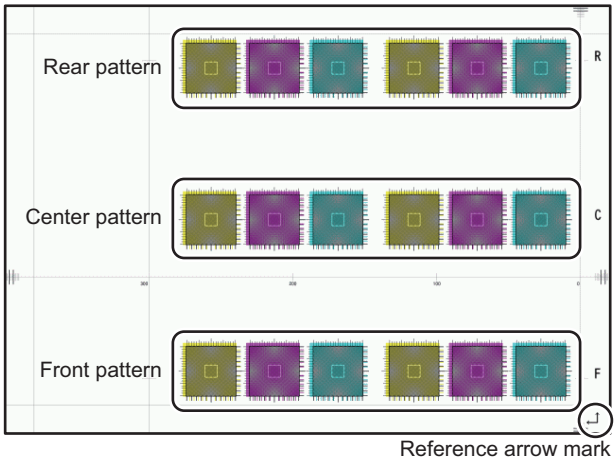
There are following two kinds of registration adjustment values.

- Base registration adjustment value: XXX (FRONT) / XXX (REAR)

  They are manual adjustment values and auto adjustment values and reflected when the auto registration adjustment is executed. If varies for every operation of the auto registration adjustment.
- offset adjustment value: OFFSETXXF / OFFSETXXR

  They are the offset adjustment values added to the above base registration adjustment values and are not changed unless SIM50-20 is executed to change.

1) Enter SIM 50-20 mode.
2) Select the paper feed tray with A3 (11” x 17”) paper in it.
3) Touch [EXECUTE] key.
   The color image registration check pattern is printed.



Reference arrow mark

4) Check the color image registration.

   There 6 color image registrations in total, two on each of the F side, the R side and the center. Check all the patterns to confirm that they are within the specified range. Also check to confirm that there is not much shift in each color image registration check pattern.

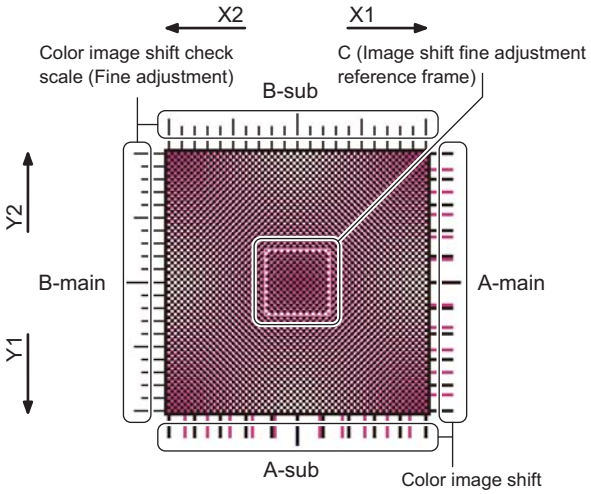
Note

There are two kinds of adjustment, one in the main scanning direction and the other in the sub scanning direction. The vertical direction in the above figure is that in the main scanning direction and the horizontal direction is that in the sub scanning direction.

There are also two kinds of adjustments the rough adjustment and the fine adjustment. Perform the rough adjustment then perform the fine adjustment deliberately.

For the main scan direction image registration the offset on the F side the R side and at the center is independently adjusted.

If there is a difference in the sub scanning direction image registration between the F and R sides, perform the skew adjustment AJ5A.



A-main: Main scan rough adjustment pattern
A-sub: Sub scan rough adjustment pattern
B-main: Main scan fine adjustment scale
B-sub: Sub scan fine adjustment scale
C: Main scan sub scan fine adjustment pattern

Check the print patterns of the rough adjustment and the fine adjustment of 18 check patterns.

How to check the rough adjustment pattern and input of the adjustment value:

Visually check the color image registration check section, use the center position of the black scale as the reference and check the shift balance in the positive and negative directions at the color image line position.

Use the center position of the black scale as the reference and check that the color image line is symmetrical in the positive side and the negative side.

If shift is in the arrow mark X1 and Y1 increase the adjustment value. if shift is in the arrow mark X2 and Y2 decrease the adjustment value.

The reference arrow on the check pattern faces the positive direction.

Guideline on adjustment value

1 scale/20 (Changing the set value by 20 shifts the scale by one.)

Checking fine adjustment pattern and entering the adjustment value

Check whether the darkest spot (one of five spots usually seen) is within the center area of reference frame for image registration fine adjustment in the square frame.

At that time, use the color image registration check scale (for fine adjustment) as reference.

Assume the spot where looks the darkest color as center and read out the shift amount.

Check whether the center position of the dark density section is within ± 1 step.

(The adjustment won't be necessary if the print pattern for fine adjustment is placed 0 ± 1 step of reference pattern.)

Increase the adjustment value if the position is shifting toward the arrow X1 or Y1. Decrease the value if shifting toward the arrow X2 or Y2.

Reference adjustment value

1 scale / 2 (When the set value is changed by 2, shift is made by 1 scale.)

Perform this adjustment if there is a considerable difference in color shift in the square and at the center area.

Select adjustment item (OFF SET X F / OFF SET X R / OFF SET X S) and change adjustment value.

OFF SET X F:

F side main scanning direction registration offset set value (The color shift on the F side and at the center area is changed.)

OFF SET X R:

R side main scanning direction registration offset set value (The color shift on the R side and at the center area is changed.)

OFF SET X S:

Sub scanning direction registration offset set value (The overall color shift toward sub scanning direction overall.)

Adjustment conditions and method

To adjust evenly overall, adjust so that the color shifts on the F side, the R aide and at the center are of the same level.

To adjust with the center area most focused, adjust so that the color shift at the center becomes smaller than that on the F side and the R side.

When the offset adjustment value is 0, if the color registration adjustment (automatic adjustment) is performed, the color shift on the F side and that on the R side are automatically adjusted to be smaller than that on the center area.

Display/Item		Content	Adjustment value range	Default value
A	CYAN (FRONT)	Image registration adjustment Value (Main scanning direction) (Cyan) (F side)	1 - 399	200
B	CYAN (REAR)	Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1 - 399	200
C	MAGENTA (FRONT)	Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1 - 399	200
D	MAGENTA (REAR)	Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1 - 399	200
E	YELLOW (FRONT)	Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1 - 399	200
F	YELLOW (REAR)	Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1 - 399	200
G	CYAN (SUB)	Image registration adjustment value (Sub scanning direction) (Cyan)	1 - 399	200
H	MAGENTA (SUB)	Image registration adjustment value (Sub scanning direction) (Magenta)	1 - 399	200
I	YELLOW (SUB)	Image registration adjustment value (Sub scanning direction) (Yellow)	1 - 399	200
J	OFFSET_ C_MAIN_F	Image registration offset adjustment value (Main scanning direction) (Cyan) (F side)	1 - 99	50
K	OFFSET_ C_MAIN_R	Image registration offset adjustment value (Main scanning direction) (Cyan) (R side)	1 - 99	50
L	OFFSET_ M_MAIN_F	Image registration offset adjustment value (Main scanning direction) (Magenta) (F side)	1 - 99	50
M	OFFSET_ M_MAIN_R	Image registration offset adjustment value (Main scanning direction) (Magenta) (R side)	1 - 99	50
N	OFFSET_ Y_MAIN_F	Image registration offset adjustment value (Main scanning direction) (Yellow) (F side)	1 - 99	50
O	OFFSET_ Y_MAIN_R	Image registration offset adjustment value (Main scanning direction) (Yellow) (R side)	1 - 99	50
P	OFFSET_ C_SUB	Image registration offset adjustment value (Sub scanning direction) (Cyan)	1 - 99	51
Q	OFFSET_ M_SUB	Image registration offset adjustment value (Sub scanning direction) (Magenta)	1 - 99	51
R	OFFSET_ Y_SUB	Image registration offset adjustment value (Sub scanning direction) (Yellow)	1 - 99	51
S	OFFSET_ C_SUB_HV12	Image registration offset adjustment value (Sub scanning direction) (Cyan) (Heavy paper 1/2)	1 - 99	50
T	OFFSET_ M_SUB_HV12	Image registration offset adjustment value (Sub scanning direction) (Magenta) (Heavy paper 1/2)	1 - 99	50
U	OFFSET_ Y_SUB_HV12	Image registration offset adjustment value (Sub scanning direction) (Yellow) (Heavy paper 1/2)	1 - 99	50
V	OFFSET_ C_SUB_HV34	Image registration offset adjustment value (Sub scanning direction) (Cyan) (Heavy paper 3/4)	1 - 99	50
W	OFFSET_ M_SUB_HV34	Image registration offset adjustment value (Sub scanning direction) (Magenta) (Heavy paper 3/4)	1 - 99	50
X	OFFSET_ Y_SUB_HV34	Image registration offset adjustment value (Sub scanning direction) (Yellow) (Heavy paper 3/4)	1 - 99	50

ADJ 6 Scan image distortion adjustment (Document table mode)

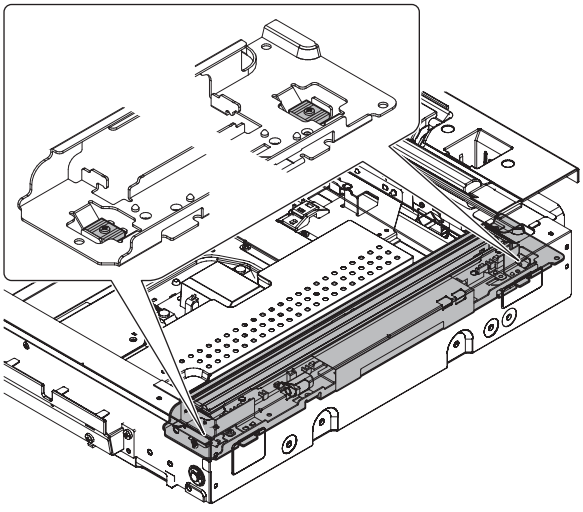
This adjustment must be performed in the following cases:

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

6-A Scanner (reading) unit parallelism adjustment (Sub scanning direction distortion adjustment)

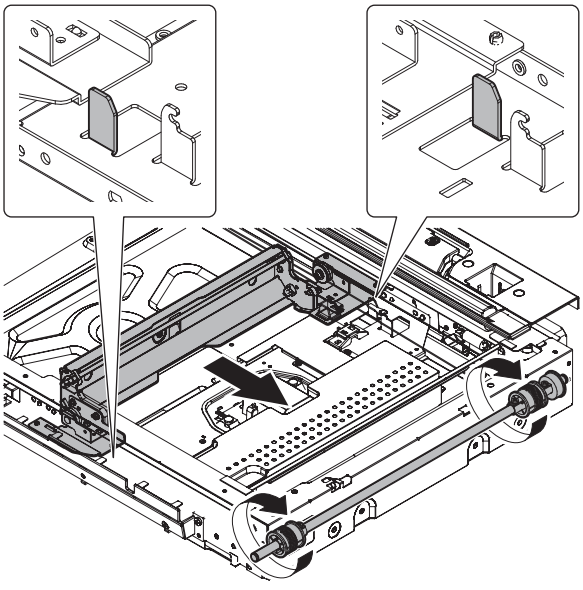
Before execution of this adjustment, remove the document table glass.

1) Remove the lamp unit, and then loosen the screws which are fixing the scanner unit and the drive wire. Release the scanner unit from the drive wire.



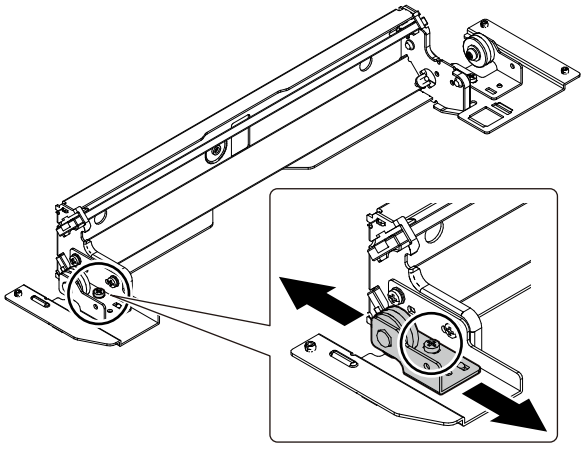
2) Turn the scanner drive pulley manually and shift the 2/3 mirror unit to bring it into contact with the stopper.

   When the 2/3 mirror unit is in contact with the two stoppers on the front and the rear frames simultaneously, the parallelism is proper.



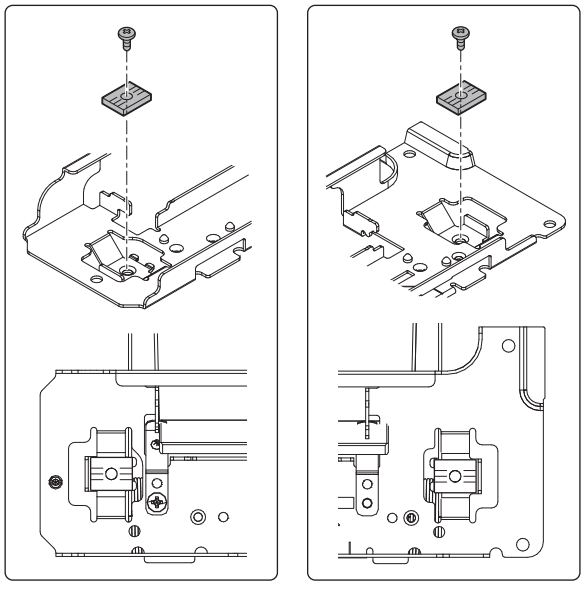
If this requirement is not met, do the following steps.

3) Loosen the fixing screw of the pulley angle on the front frame side of the 2/3 mirror unit.



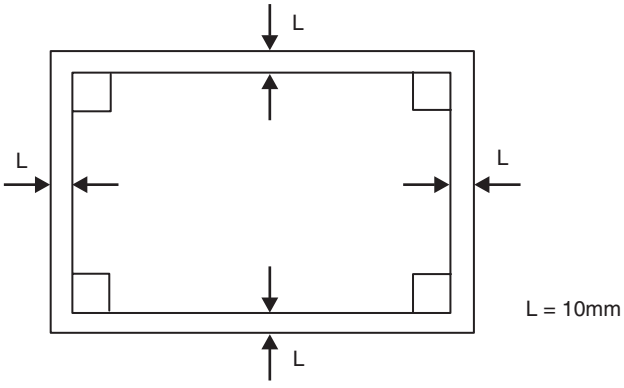
4) Adjust the position of the pulley angle on the front frame side of the 2/3 mirror unit so that it is in contact with two stoppers on the front and the rear frames simultaneously.

5) Screw edge face of scanner unit and right edge face of the frame together on both sides to fix the scanner unit while this unit is in contact with both stoppers.

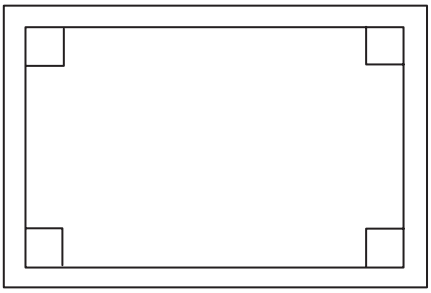


6-B Scan image (main scanning direction) distortion adjustment

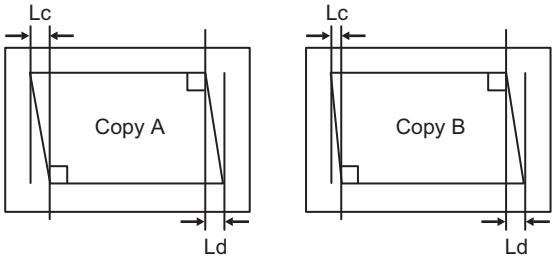
1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



2) Set the test chart prepared in the procedure 1) on the document table and make a copy on A3 (11" x 17") paper.
3) Check for distortion in the main scanning direction.
   If the four angles of the rectangle of the copy image are right angles, it is judged that there is no distortion. (The work is completed.)



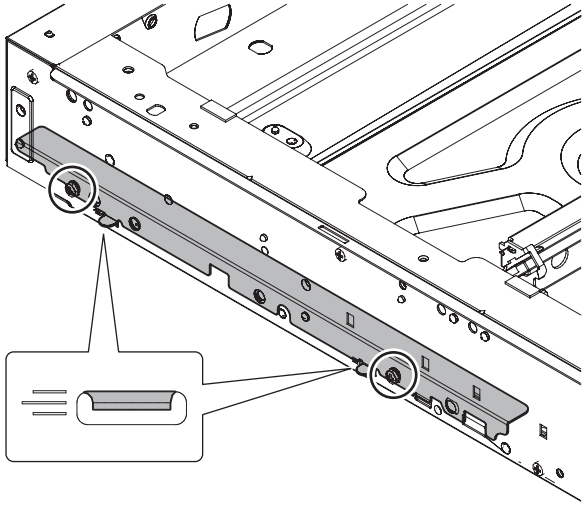
   If there is any distortion in the main scanning direction, perform the following procedure.
4) Check the difference (distortion balance) between left-hand and right-hand side images distortions.



There is no difference between the distortion on the right and that on the left.
Lc = Ld

There are some differences between the distortion on the right and that on the left.
Lc ≠ Ld

   If Lc = Ld, the distortion on the left is equal to that on the right.
   (The distortions are balanced.)
   If the above condition is satisfied, go to the procedure 6).
   If not, perform the following procedures.
5) Change the height balance of the scanner rail on the front frame side.



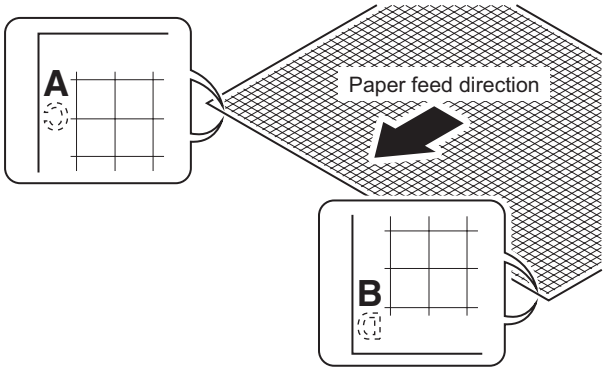
   Remove the left cover of the operation panel. Loosen the scanner rail fixing screw to change the balance between the right and the left heights of the scanner rail.
   Repeat the procedures 2) - 5) until there is no difference in image distortions (distortion balance) between both sides.
6) Without changing the balance of the scanner rail on the front frame side, change the overall height.
7) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11" x 17") paper. Check that the distortion in the main scanning direction is within the specified range.
   Repeat the procedures 6) and 7) until the distortion in the main scanning direction is in the specified range.

ADJ 7 Scanner image skew adjustment (RSPF mode)

7-A RSPF scanner image skew adjustment

This adjustment must be performed in the following cases:
- The RSPF section has been disassembled.
- The RSPF unit has been replaced
- The RSPF unit generates skewed scanned images.

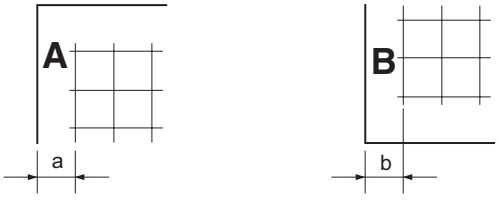
1) Create an adjustment chart by printing the self print pattern (grid pattern) available in Simulation 64-2 in duplex mode.
   SIM 64-2 set values
   A = 1, B = 1, C = 254, D = 255
   Make sure that the print grid pattern is almost in parallel with the paper edges, and apply position marks 'A' and 'B' to the front and rear side of leading edge on front side of the paper.



2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in RSPF duplex mode, and then check the image for skews (Set in the RSPF feed tray so that the mark on the adjustment chart is at the edge).
   • Check with one of the following methods.

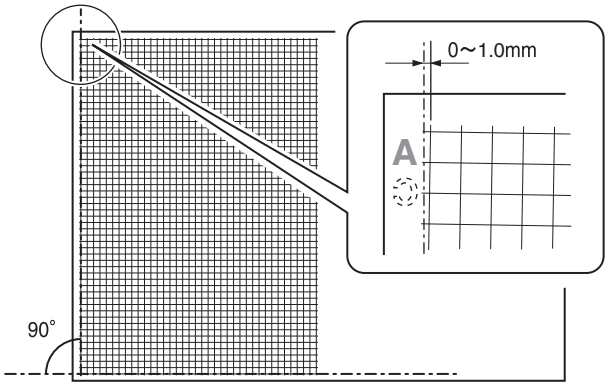
Check Method 1

(Front side)
Make sure that the output satisfies the condition:
|a-b| ≤ ± 1 mm.



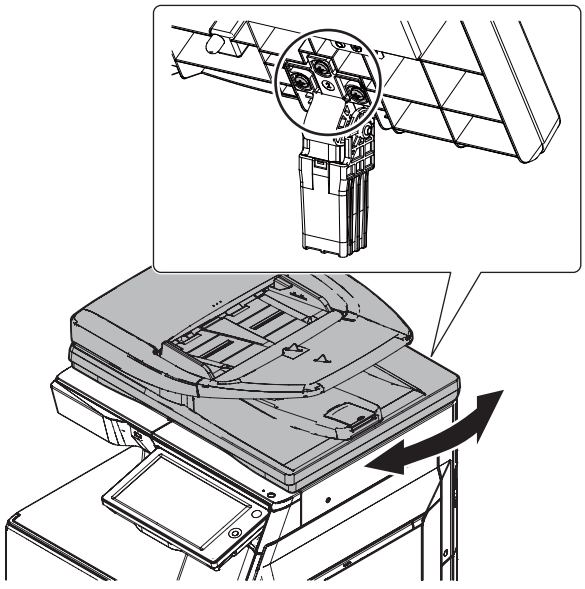
Check Method 2

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



If the copy image is not in the above state, perform the procedure 3).

3) Open the RSPF unit, and loosen the fixing screw of the hinge.



4) Slide the RSPF unit in the arrow direction to make the skew adjustment.
5) Make a copy again and measure a and b on the copied test chart. Repeat procedures 2) to 5) until the condition (a - b = ± 1 mm or less) is satisfied.

ADJ 8 Scan image focus adjustment

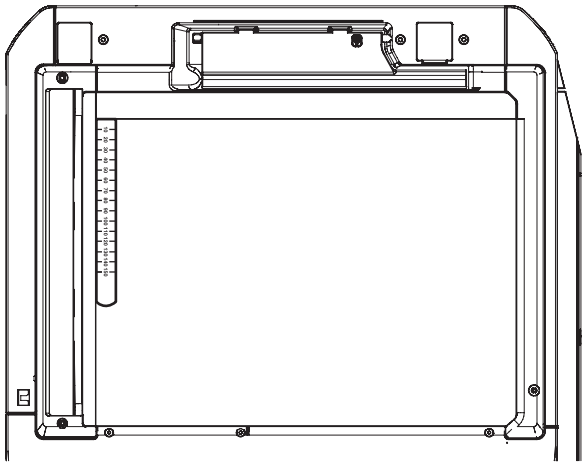
8-A Image focus adjustment (Document table mode/RSPF front surface mode)

This adjustment must be performed in the following cases:

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

1) Enter the SIM 48-1 mode.
2) Set the adjustment item CCD (MAIN) to 50 (default value).

   Select the adjustment item with the scroll key, and enter the adjustment value with 10-key and press [OK] key.
3) Place a scale on the original table as illustrated below.



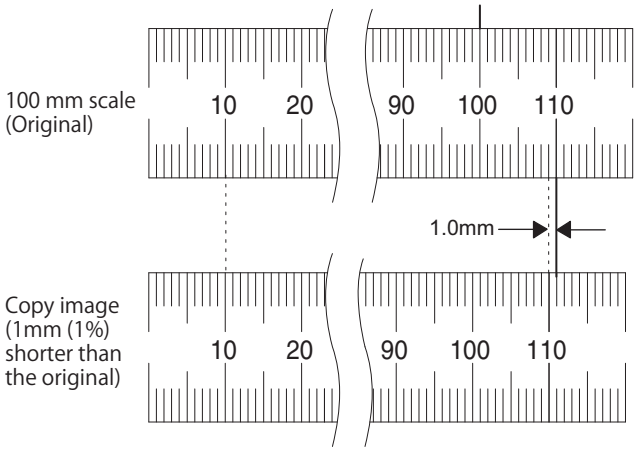
4) Make a normal copy on A4 paper.
5) Compare the copied image of the scale and the actual scale length in terms of length.
6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.

   Main scanning direction copy magnification ratio correction ratio = (Original size - Copy image size) / Original size x 100%

   (Example)

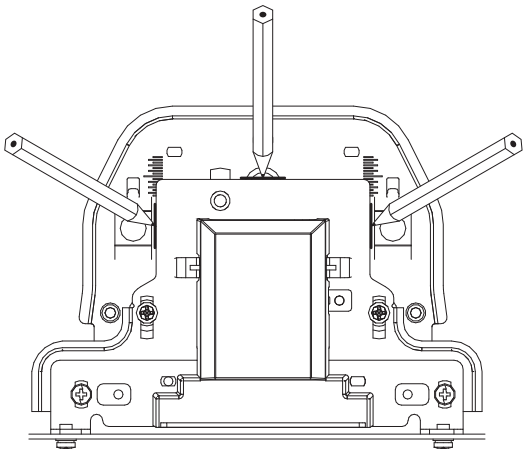
   Compare the scale of 10 mm with the scale of 10 mm on the copy image.

   Main scanning direction copy magnification ratio correction ratio = (100 - 99) / 100 x 100 = 1



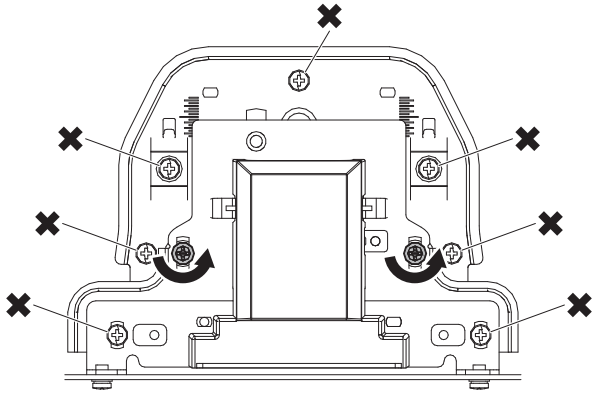
   If the copy magnification ratio is not satisfactory, perform the following procedures.
7) Remove the document table glass.
8) Remove the dark box cover.

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



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

10) Loosen the CCD unit fixing screws.



NOTE: Never loosen the screws marked with X.

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

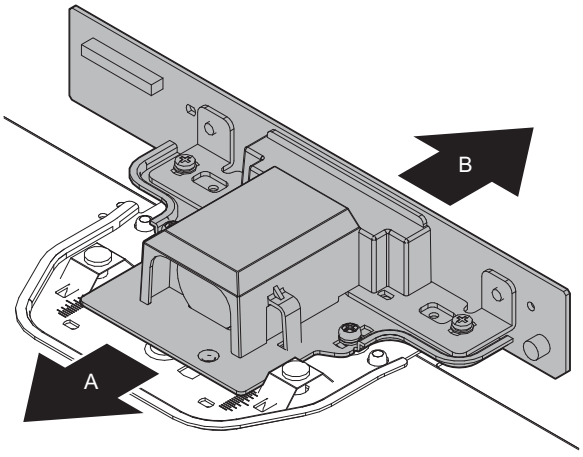
11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

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

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

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

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



12) Make a copy and check the copy magnification ratio again.

If the copy magnification ratio is not in the range of 100 ± 0.8%, repeat the procedures of 9) - 11) until the condition is satisfied.

NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range (100 ± 0.8%) and the specified resolution is obtained based on the optical system structure.

ADJ 9 Scan image magnification ratio adjustment (Manual adjustment)

9-A Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (Document table mode)

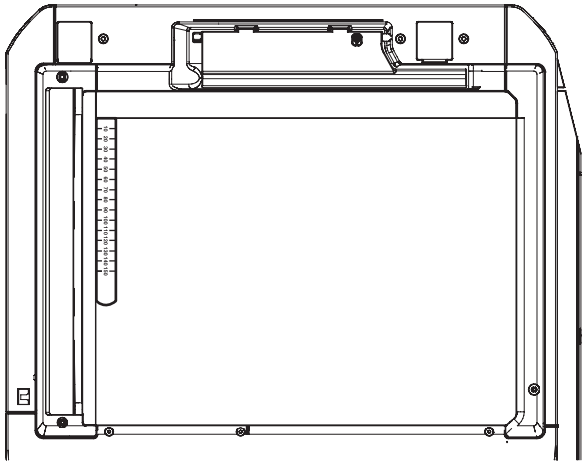
NOTE: If the default adjustment value of the scan image magnification ration adjustment (main scanning direction) of SIM 48-1 is changed, copy image quality may be degraded. Therefore, this adjustment must be executed only when there is a special necessity.

This adjustment must be performed in the following cases:

- When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
- When the scanner motor is replaced.
- U2 trouble has occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM of the SCN-MFP control PWB is replaced.

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

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



2) Enter the SIM 48-1 mode.
3) Make a normal copy and obtain the copy magnification ratio.

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

4) Check that the copy magnification ratio is within the specified range (100 ± 0.8%).

If the copy magnification ratio is within the specified range (100 ± 0.8%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the CCD (MAIN) adjustment value of Simulation 48-1.

When the adjustment value is increased, the copy magnification ratio is increased.

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

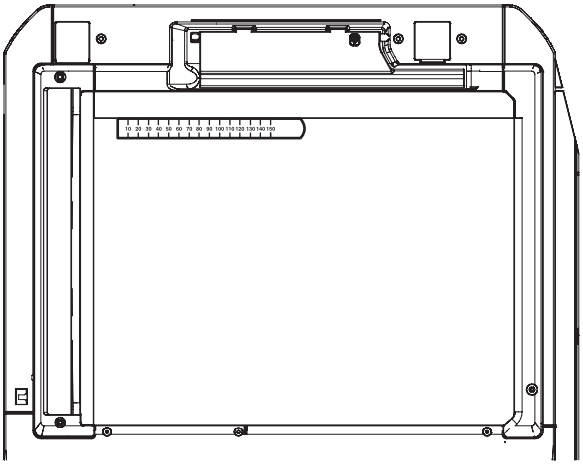
Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ± 0.8%).

9-B Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (Document table mode)

This adjustment must be performed in the following cases:

- When the copy magnification ratio in the copy image sub scanning direction is not properly adjusted.
- When the scanner motor is replaced.
- U2 trouble has occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM of the SCN-MFP control PWB is replaced.

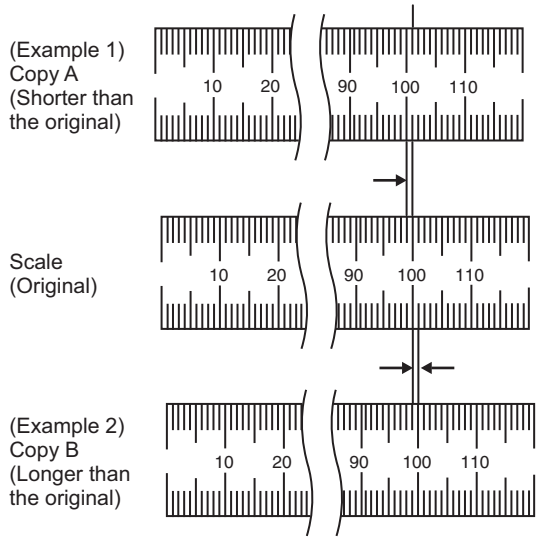
1) Place a scale on the document table as shown in the figure below.



2) Enter the SIM 48-1 mode.
3) Make a normal copy and obtain the copy magnification ratio.

   Go to the copy mode, and make a copy.

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



4) Check that the copy magnification ratio is within the specified range (100 ± 0.8%).

   If the copy magnification ratio is within the specified range (100 ± 0.8%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the CCD (SUB) adjustment value of Simulation 48-1.

   When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased.

   When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

   Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ± 0.8%).

9-C Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (RSPF mode)

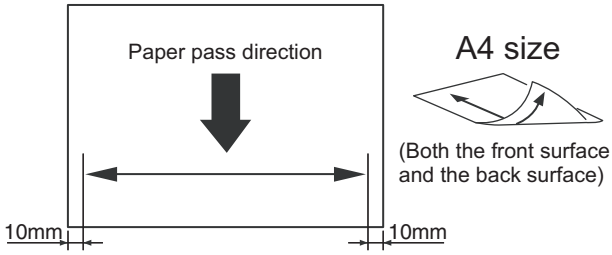
This adjustment must be performed in the following cases:

- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.
- When U2 trouble occurs.
- When the copy magnification ratio of the RSPF mode copy image in the main scanning direction is not proper.
- When the RSPF is disassembled.

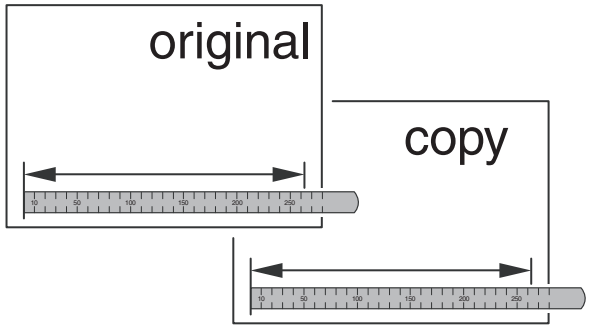
a. Adjustment procedures

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

   The adjustment chart is prepared by the following procedures. Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



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



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

   Image magnification ratio = Original size / Original size x 100 (%)

   Image magnification ratio = 99 / 100 x 100 = 99 (%)

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

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

5) Enter the SIM 48-1 mode.

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

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

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

When the adjustment value is increased, the image magnification ratio is increased. When the adjustment value is changed by 1, the image magnification ratio is changed by 0.02%

8) Make a normal copy and obtain the copy magnification ratio.

Repeat the procedures of 1) - 8) until a satisfactory result is obtained.

9-D Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (RSPF mode)

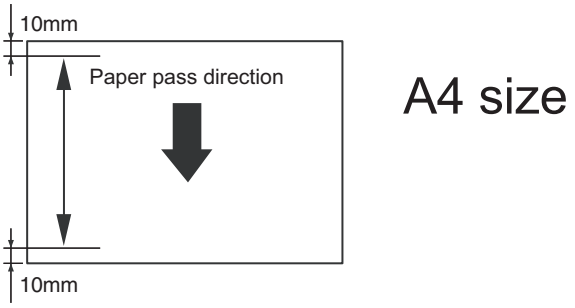
This adjustment must be performed in the following cases:

- When the SCN-MFP CONTROL PWB is replaced.
- When the EEPROM on the SCN-MFP CONTROL PWB is replaced.
- When U2 trouble occurs.
- When the copy magnification ratio of the RSPF mode copy image in the sub scanning direction is not proper.
- When the RSPF is disassembled.

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

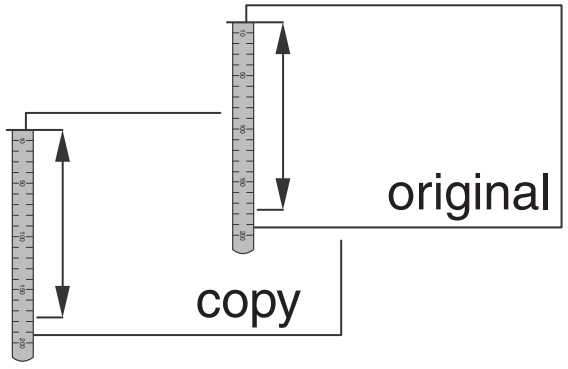
The adjustment chart is prepared by the following procedures.

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



2) Make a duplex copy at the normal ratio on A4 paper.

3) Measure the images on the copy paper and the original images.



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

Image magnification ratio = Original size / Original size x 100 (%)

Image magnification ratio = 99 / 100 x 100 = 99 (%)

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

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

5) Enter the SIM 48-1 mode.

6) Select an adjustment item with the scroll key.

SPF(SUB)	Sub scanning direction image magnification ratio (Front surface)
SPFB(SUB)	Sub scanning direction image magnification ratio (Back surface)

7) Enter an image magnification ratio adjustment value with 10-key, and press [OK] key.

When the adjustment value is increased, the image magnification ratio is increased. When the adjustment value is changed by 1, the image magnification ratio is changed by 0.1%.

8) Make a normal copy and obtain the copy magnification ratio.

Repeat the procedures of 1) - 8) until a satisfactory result is obtained.

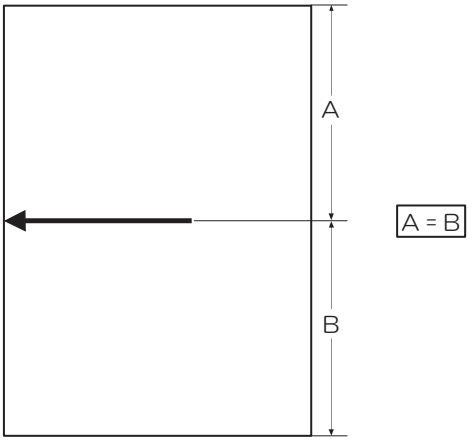
ADJ 10 Scan image off-center adjustment (Manual adjustment)

10-A Scan image off-center adjustment (Manual adjustment) (Document table mode)

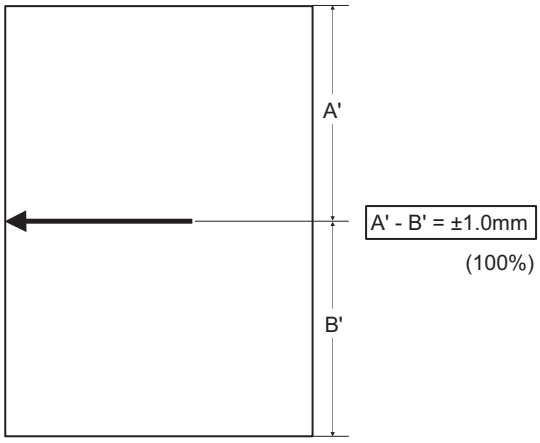
This adjustment must be performed in the following cases:

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

1) Make a copy of the adjustment chart (using the document table) in the adjustment mode.



2) Check the copy image center position.
If A - B = ± 1.0mm, the adjustment is not required.



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

3) Enter the SIM 50-12 mode.
4) Select the adjustment mode OC with the scroll key.
5) Enter the adjustment value with 10-key, and press [OK] key.
The entered value is set.
When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.
6) Go to the copy mode, and make a copy
Repeat the procedures of 1) - 6) until the above condition is satisfied.

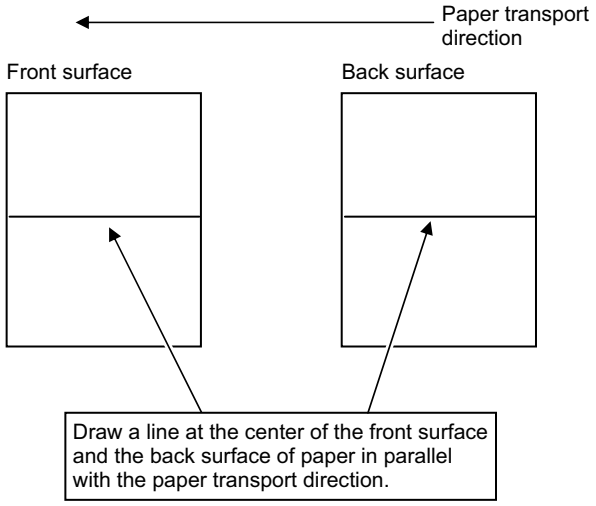
10-B Scan image off-center adjustment (Manual adjustment) (RSPF mode)

This adjustment must be performed in the following cases:

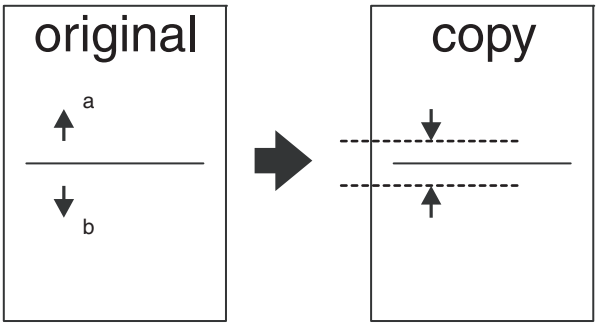
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.
- When the scanner (reading) section is disassembled.
- When the scanner (reading) unit is replaced.
- When a U2 trouble occurs.
- When the RSPF section is disassembled.
- When the RSPF unit is replaced.

NOTE: To execute this adjustment, it is required that the ADJ10-A Scan image off-center adjustment (Document table mode) must have been properly adjusted.

1) Prepare the adjustment chart.
Draw a line at the center of the front surface and the back surface of A4 (11" x 8.5") paper in parallel with the paper transport direction.



2) Set the adjustment chart to the RSPF.
3) Make a duplex copy in the normal magnification ratio from the manual paper feed tray, and check the image position on the front surface and the back surface of the copy paper.



If the difference is within the range of 0 ± 2.7mmm there is no need to perform the adjustment.
If the adjustment is required, perform the following procedures.

4) Enter the SIM 50-12 or 50-6 mode.
5) Select an adjustment mode with the scroll key.

(SIM50-12)

SPF(SIDE1)	Front surface mode
SPF(SIDE2)	Back surface mode

(SIM50-6)

OFFSET SPF1	Front surface mode
OFFSET SPF2	Back surface mode

6) Enter an adjustment value with 10-key, and press [OK] key.
Change for change in the adjustment value: 0.1mm/step
When the adjustment value is increased, the print image is shifted to the rear.
Repeat the procedures of 2) - 6) until a satisfactory result is obtained.

ADJ 11 Copy image position and image loss adjustment (Manual adjustment)

11-A Copy image position, image loss, and void area adjustment (Manual adjustment) (Document table mode)

This adjustment must be performed in the following cases:

- When the scanner (reading) section is disassembled.
- When the scanner (reading) unit is replaced.
- When the LSU is replaced or removed.
- When the registration roller section is disassembled.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.
- The SCN-MFP control PWB has been replaced.
- The EEPROM on the SCN-MFP control PWB has been replaced.

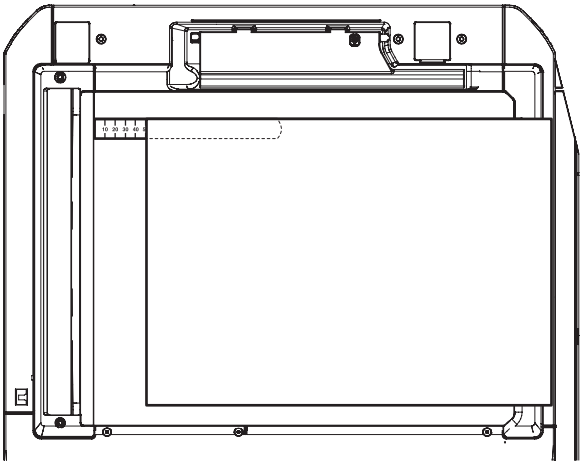
Before executing this adjustment, be sure to confirm that the ADJ 4/ADJ 5 Print engine image skew, image position, image magnification ratio adjustments have been completed normally.

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

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

   Place a scale so that it is in parallel with the scanning direction and that its lead edge is in contact with the document guide plate.

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



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

Item/ Display		Content	Setting range	Default value
A	RRCA	Document lead edge reference position (OC)	0 - 99	50
G	LEAD	Lead edge image loss area setting	0 - 99	40
H	SIDE	Side image loss area adjustment	0 - 99	20

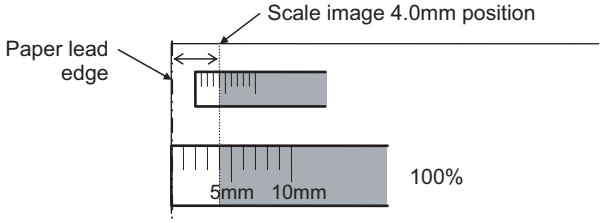
4) Perform the image lead edge reference position adjustment.

   Shift to the copy mode, and make a copy at 100% in the document table mode.

   When the adjustment value of RRCA is proper, the lead edge image from 4.0 mm is not copied in 100% copy scale.

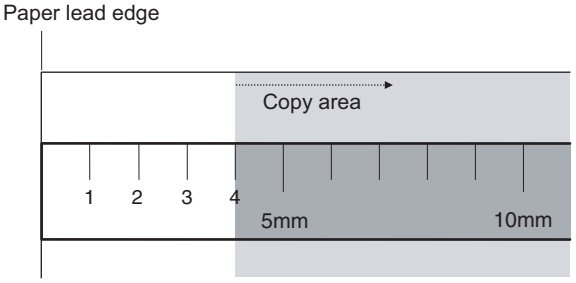
   If not, change and adjust the RRCA value.

   Repeat the above procedures until a satisfactory result is obtained.



5) Image loss adjustment

   When the adjustment item of the image loss below is set to the default value, it is adjusted to the standard state. If it is not in the below standard state, or when it is set to a desired value, change these adjustment items.



Void area: 4.0 mm, Image loss: 4.0 mm

Item/ Display	Content		Adjustment range	Default value	Standard adjustment value
LEAD	Image loss adjustment	Lead edge image loss adjustment	0 - 99	40	4±1.0mm
SIDE		Side image loss adjustment	0 - 99	20	4±2.0mm

When the adjustment value is increased, the image loss is increased. When the adjustment value is decreased, the image loss is decreased.

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

11-B Image scanning position adjustment (Manual adjustment) (RSPF mode)

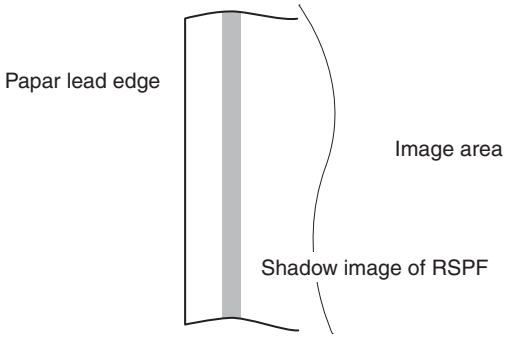
This adjustment must be performed in the following cases:

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

This simulation is to adjust the scanning position when scanning in the RSPF mode.

If this adjustment is made improperly, the scanner stop position is shifted from the specified position and a shade of the document table may be reflected on the lead edge section of the scan image in the RSPF mode.

1) Make a copy in the RSPF mode, and check for any shade on the lead edge section of the copy image.



If there is any shade of the document table on the lead edge section of the copy image, perform the following procedures.

2) Enter the SIM 53-8 mode, and press [MANUAL] key.
3) Enter an adjustment value with 10-key, and press [OK] key.

When the set value is increased, the distance from the home position to the RSPF scanning position is increased.

When the set value is changed by 1, the scanning position is changed by 0.1mm.

Perform the procedures of 1) - 3) until a satisfactory result is obtained.

NOTE: After execution of this adjustment, be sure to execute ADJ 11C Copy image position, image loss, void area adjustment (Manual adjustment) (RSPF mode).

11-C Copy image position, image loss, void area adjustment (Manual adjustment) (RSPF mode)

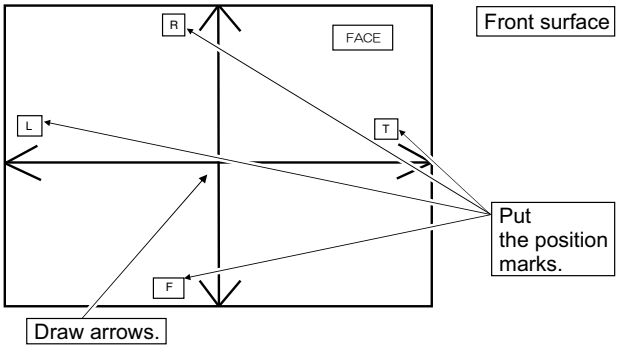
This adjustment must be performed in the following cases:

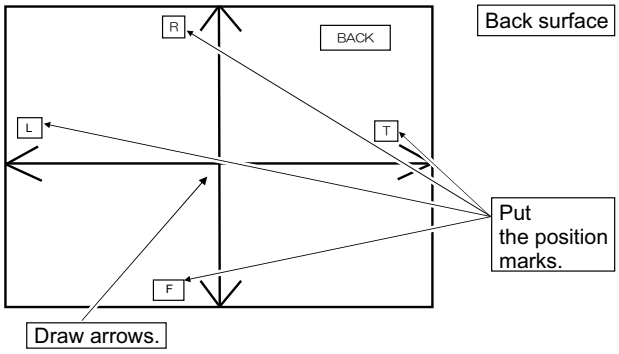
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.
- When the scanner (reading) section is disassembled.
- When the scanner (reading) unit is replaced.
- When U2 trouble occurs.
- When the RSPF section is disassembled.
- When the RSPF unit is replaced.

1) The adjustment chart can be made by the following procedures.

Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces.

At the same time, put marks of the lead edge, the trail edge, the front end, and the rear end as well as the identification marks of the front surface and the back surface.





2) Enter the SIM 50-6 mode.

RSPF

Item/Display		Content	Setting range	Default value
A	SIDE1	Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2	Back surface document scan position adjustment (CCD)	1 - 99	50
C	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	40
F	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	20
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	40

*Item A, B: When the adjustment value is increased, the scan timing is delayed.

*Item C – H: When the adjustment value is increased, the image loss is increased.

Lead edge image loss adjustment

1) Set the lead edge image loss adjustment values (LEAD EDGE (SIDE1/SIDE2) on the front surface and the back surface to the following values.

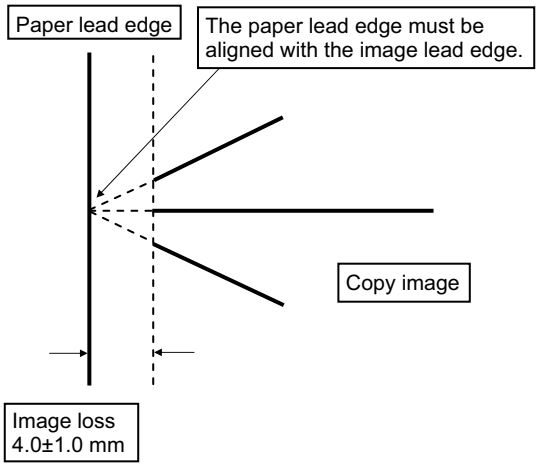
When the set value is increased, the lead edge image loss is increased.

(Standard set value)

LEAD EDGE(SIDE 1): 20 Lead edge image loss set value (Front surface)

LEAD EDGE(SIDE 2): 20 Lead edge image loss set value (Back surface)

2) Make a duplex copy in 100% in the RSPF mode. Check to confirm that the lead edge image loss is within 4.0 ± 1.0 mm on the front surface and the back surface. The paper lead edge must be aligned with the presumed image lead edge.



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

3) Enter the adjustment value of SIDE1/SIDE2 with 10-key, and press [OK] key.

Adjust so that the paper lead edge is aligned with the presumed image lead edge.

SIDE1: Front surface lead edge scan position adjustment

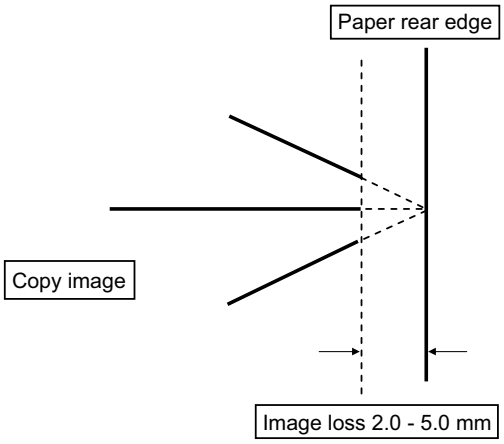
SIDE2: Back surface lead edge scan position adjustment

When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.

Perform the procedures of 2) - 3) until a satisfactory result is obtained.

Rear edge image loss adjustment

1) Make a duplex copy in 100% in the RSPF mode. Check to confirm that the rear edge image loss is 2.0 - 5.0mm on the front surface and the back surface.



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

2) Enter the adjustment value of TRAIL EDGE (SIDE1/SIDE2) with 10-key, and press [OK] key.

TRAIL EDGE(SIDE1): Rear edge image loss adjustment value (Front surface)

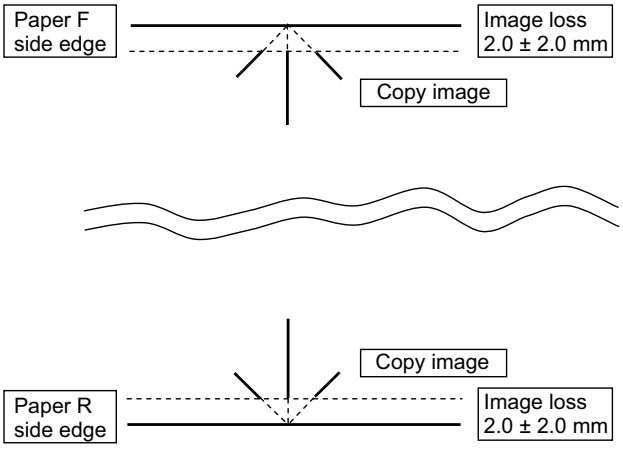
TRAIL EDGE(SIDE2): Rear edge image loss adjustment value (Back surface)

When the adjustment value is increased, the rear edge image loss is increased.

Perform the procedures of 1) - 2) until a satisfactory result is obtained.

Front/rear frame direction image loss adjustment

1) Make a duplex copy in 100% in the RSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are 2.0 ± 2.0mm on the front surface and the back surface.



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

2) Enter the adjustment value of FRONT/REAR (SIDE 1) / FRONT/REAR (SIDE 2), and press [OK] key.

FRONT/REAR(SIDE 1): Front/Rear image loss adjustment value (Front surface)

FRONT/REAR(SIDE 2): Front/Rear image loss adjustment value (Back surface)

When the adjustment value is increased, the front/rear image loss is increased.

Perform the procedures of 1) - 2) until a satisfactory result is obtained.

ADJ 12 Print lead edge image position adjustment (PRINTER MODE)

This adjustment must be performed in the following cases:

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

Note This adjustment should be performed if the user wishes to increase the lead edge void area for printer mode greater than the standard value (3 mm).

1) Enter the SIM 50-5 mode.
2) Select the set item M with the scroll key, and enter the value corresponding to the paper feed tray with A4 (11" x 8.5") paper in it.

Display/Item		Content	Setting range	Default
A	DEN-C	Printer lead edge image position adjustment	1 - 99	30
B	DEN-B	Rear edge void area adjustment	1 - 99	30
C	FRONT/ REAR	FRONT/REAR void area adjustment	1 - 99	20
D	DENB-MFT	Manual feed rear edge void area adjustment correction value	1 - 99	50
E	DENB-CS1	Tray 1 rear edge void area adjustment correction value	1 - 99	50

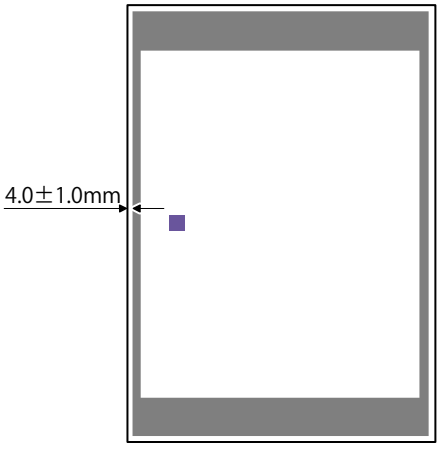
Display/Item			Content		Setting range		Default
F	DENB-CS2		Tray 2 rear edge void area adjustment correction value		1 - 99		50
G	DENB-CS3		Tray 3 rear edge void area adjustment correction value		1 - 99		50
H	DENB-CS4		Tray 4 rear edge void area adjustment correction value		1 - 99		50
I	DENB-LCC		LCC rear edge void area adjustment correction value		1 - 99		50
J	DENB-ADU		ADU rear edge void area adjustment correction value		1 - 99		55
K	DENB-HV		Heavy paper correction value		1 - 99		50
L	MULTI COUNT		Number of print		1 - 999		1
M	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
N	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1
		NO		No		1	

3) Press [EXECUTE] key.

   The check pattern is printed.

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

   Standard adjustment value: 4.0 ± 1.0mm



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

5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.

6) Change the adjustment value.

   Enter the adjustment value and press the [OK] key or the [EXECUTE] key.

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

   When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance is decreased.

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

ADJ 13 Color balance/density adjustment

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

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

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

The importance levels of them are shown below:

(Since the following items affect the color balance/density directly, they must be adjusted or set before execution of the image quality adjustments.)

1) The following item must be adjusted properly.

Job No.	Adjustment item	Simulation
ADJ5	Print engine image distortion adjustment/ OPC phase adjustment/ Color registration adjustment (Print engine section)	50-22/20

(Though the following items affect the color 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
ADJ1	Developing unit adjustment	ADJ1A	Toner density control reference value setting	25-2
ADJ2	High voltage adjustment	ADJ2A	Adjust the main charger grid voltage	8-2
		ADJ2B	Adjust the developing bias voltage	8-1
		ADJ2C	Transfer current and voltage adjustment	8-6
ADJ8	Scan image focus adjustment			48-1

Note for the color balance/density check and adjustments

- For the color balance adjustments, be sure to use the paper specified for color (recommended paper).

  Note that, if another kind of paper is used for the color balance adjustment, proper image qualities (color balance, density) may not be obtained.
- When setting the adjustment pattern on the document table in the automatic color 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.

Relationship between the servicing job contents and the color balance/density check and adjustment

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

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

There are following three, major cases.

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

(3) Copy color balance and density check

Before checking the copy color 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 a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11), and check that they are proper.

a. Note for execution of the color balance and density check in the color copy mode

To check the copy color balance and density, use the gray test chart (UKOG-0162FCZZ) and the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11). Set the copy density level to "3" in the Text/Printed Photo mode (Manual), and make a copy.

At that time, all the color balance adjustments in the user adjustment mode must be set to the default (center).

In addition, be sure to use the specified paper for color.

b. Note for checking the monochrome copy mode density

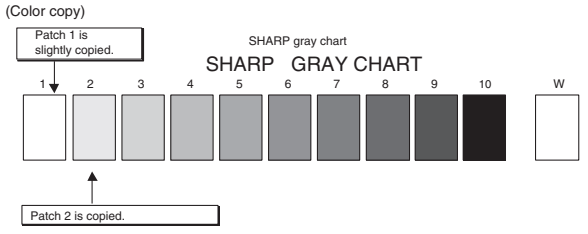
To check the density, use the gray test chart (UKOG-0162FCZZ). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

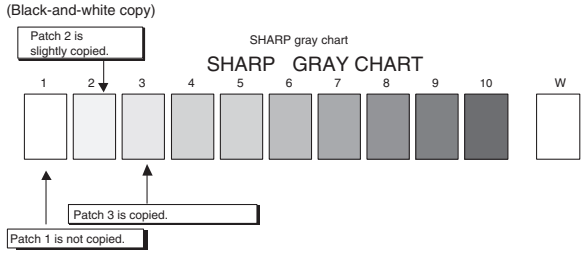
In addition, all the color balance adjustments in the user adjustment mode must be set to the default (center).

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

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

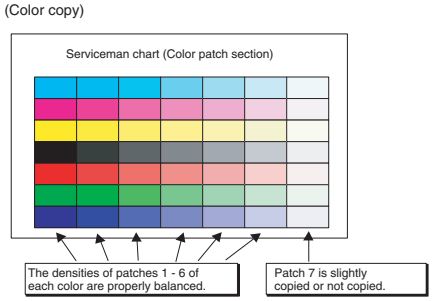
For the color (gray) balance, use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) to check.





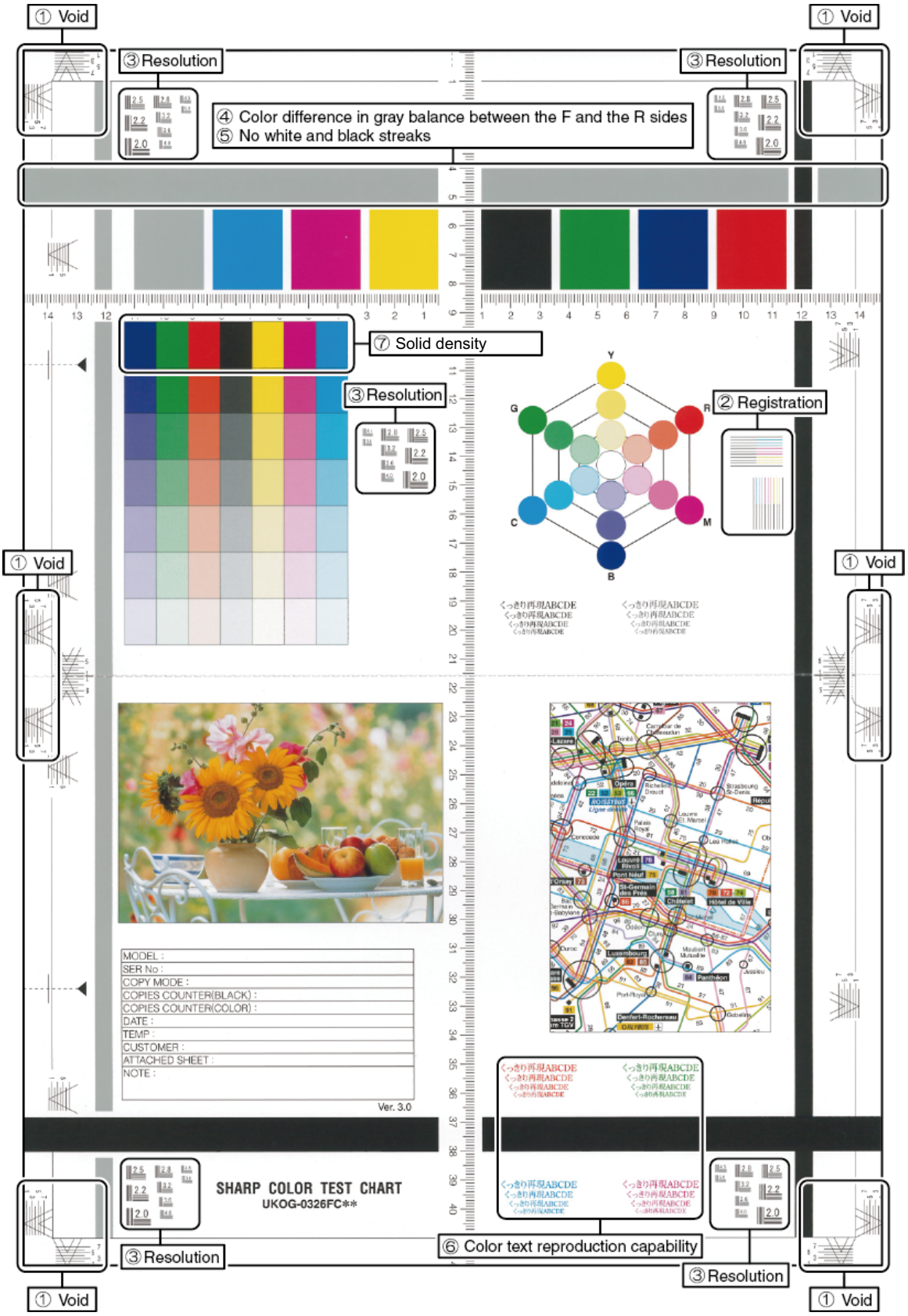
Check with the servicing color test chart (UKOG-0326FCZZ/ UKOG-0326FC11)

In the copy color balance check with the servicing color test chart, check to insure the following conditions.



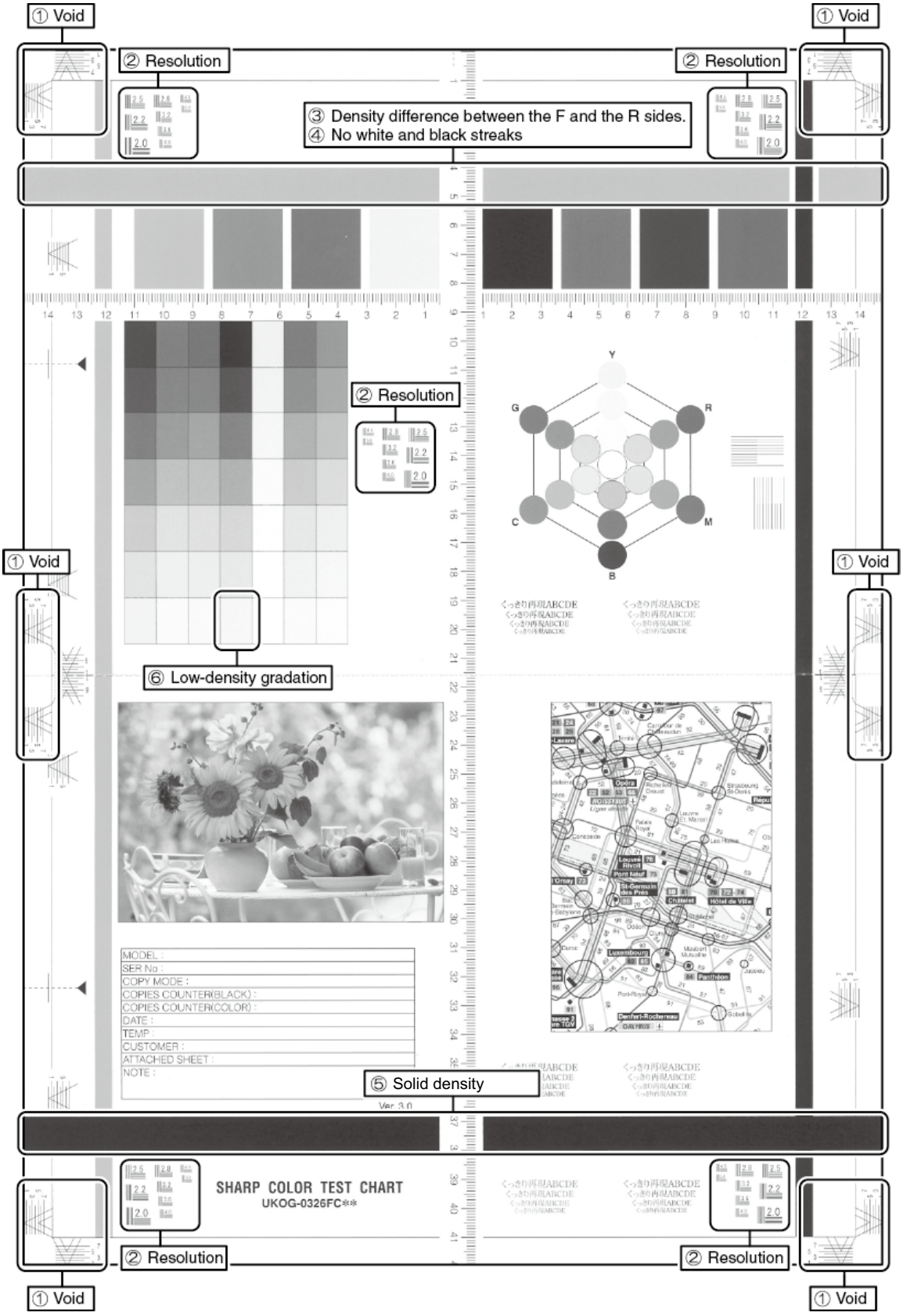
Color copy check items (Check to confirm the following:)

1) There are 12 void areas.
2) Registrations (one point for the main scanning, and one point for the sub scanning) are not shifted.
3) The resolution of 5.0 (5 points) can be seen.
4) The color difference in gray balance between the F and the R sides is not so great.
5) There are no white and black streaks.
6) Color texts are clearly reproduced.
7) The solid density is not so light.



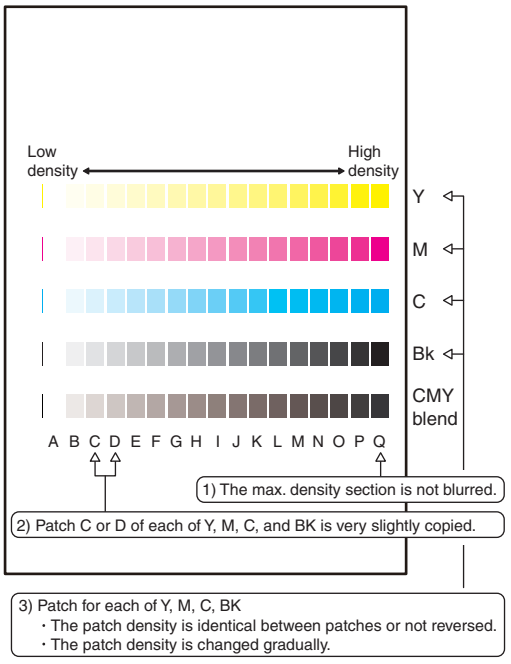
Monochrome copy check items (Check to confirm the following:)

1) There are 12 void areas.
2) The resolution of 4.0 (5 points) can be seen.
3) The density difference between the F and the R sides is not so great.
4) There are no white and black streaks.
5) The background solid is not so light.
6) The black low-density gradation is copied slightly.



(Method 2)

Use SIM46-21 to print the color balance adjustment sheet, and check each process (CMY) black patch color balance and the black patch in order to confirm that the color balance adjustment is proper or not more precisely.



If the color balance of each patch of the process black (CMY) is slightly shifted to Magenta, it means that the adjustment is proper. If the color balance of the adjustment pattern printed in this mode is slightly shifted to Magenta, it is converted into the natural gray color balance by the color table in an actual copy mode.

(When the color balance target is DEF 1.)

(4) Printer color balance/density check

Before checking the copy color 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)

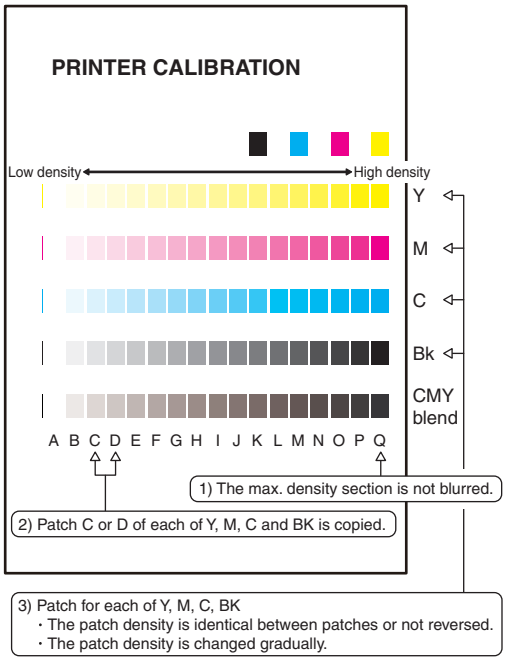
Execute SIM 64-5 to print the print test pattern.

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. The density level of each color must be almost at the same level.

(Method 2)

Use SIM 67-25 to print the color balance adjustment sheet and compare each process (CMY) black patch color balance and the black patch to check the color balance.



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

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. In an actual print mode, it is converted into the natural gray color balance by the color table. (When the color balance target is DEF 1.)

13-A Scanner calibration (CCD calibration)

13-A (1) Scanner calibration (CCD calibration) (Document Glass Mode)

This adjustment must be performed in the following cases:

- When the CCD unit is replaced.
- When a U2 trouble is occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP 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 scanner adjustment chart (UKOG-0356FCZZ) is free from dirt and scratches.

  If they are dirty, clean them.

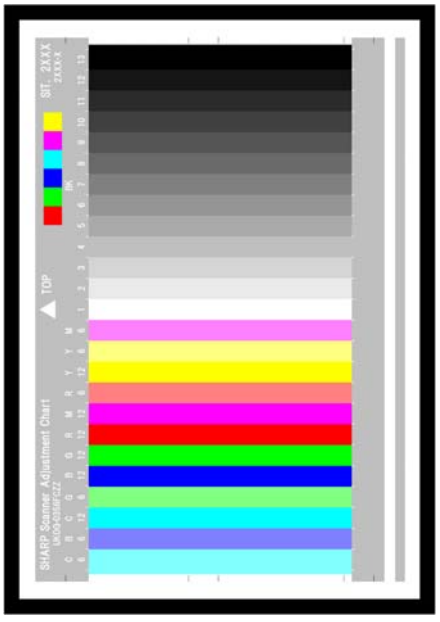
  If they are scratched or streaked, replace with new one.

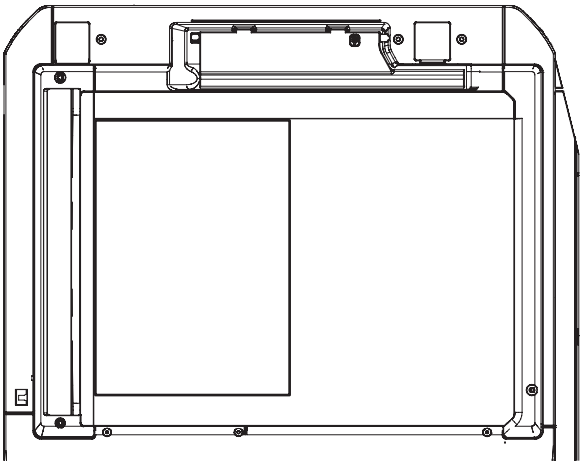
Note Since the scanner adjustment chart (UKOG-0356FCZZ) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag.

Adjustment procedures

1) Set the scanner adjustment chart (UKOG-0356FCZZ) to the reference position on the left rear frame side of the document table.

   Set the chart in order that the arrow mark is placed on the left side.





   If the scanner adjustment 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 scanner adjustment chart.

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.

SET 1 Color balance adjustment target setup

a. General

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

There are following three kinds of the target.

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

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

This setting is required in the following cases.

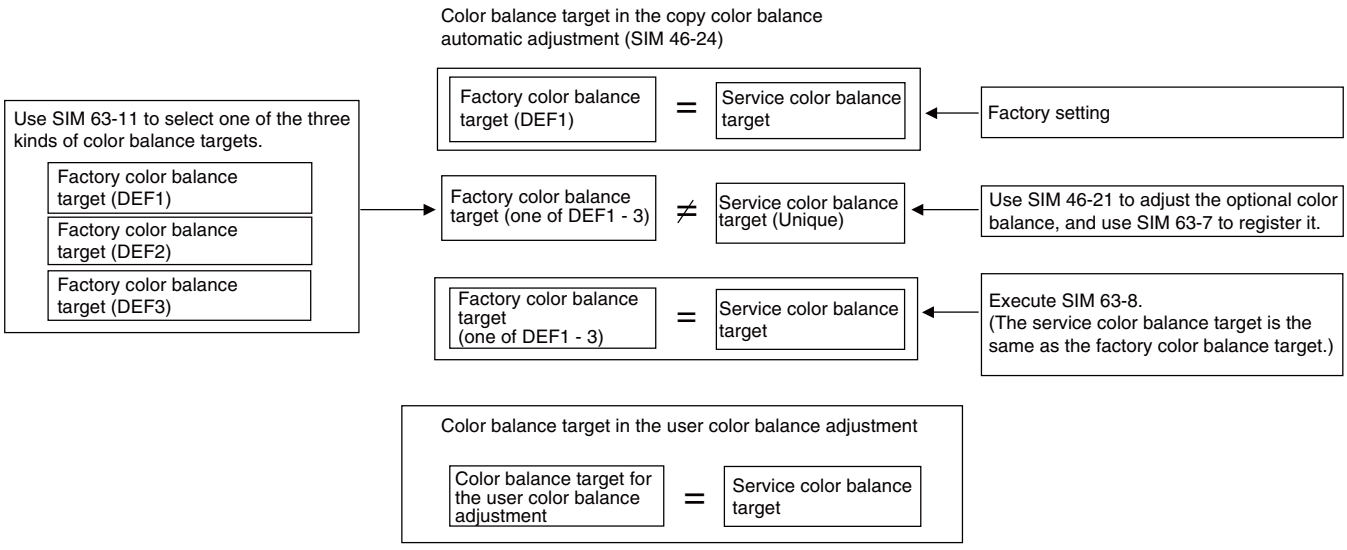
- When the color balance and density adjustments are executed manually (SIM46-21) (SIM67-25)
- U2 trouble has occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.
- When the user requests for customizing the color balance.
- When the service color balance target gamma is judged as improper.

SET 1A Copy color balance adjustment target setup

- Each color balance target for the copy color balance adjustment

Type		Descriptions
A	Factory color balance (gamma) target	There are three kinds of the color balance target, and each of them is specified according to the machine design. Use SIM 63-11 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction.
B	Service color balance (gamma) target	This target is used when the user requests to customize the color balance to user's desired level. In advance, the user's unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 46-21 to adjust the color balance and with SIM 63-7 to register it. This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user's color balance adjustment is also changed. When, however, SIM 63-8 is executed, the color balance is set to the factory color balance target set with SIM 63-11. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1)) If the user does not request for customizing the color balance, be sure to use SIM 63-8 to set the color balance to the factory color balance target.
C	User color balance (gamma) target	Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly.

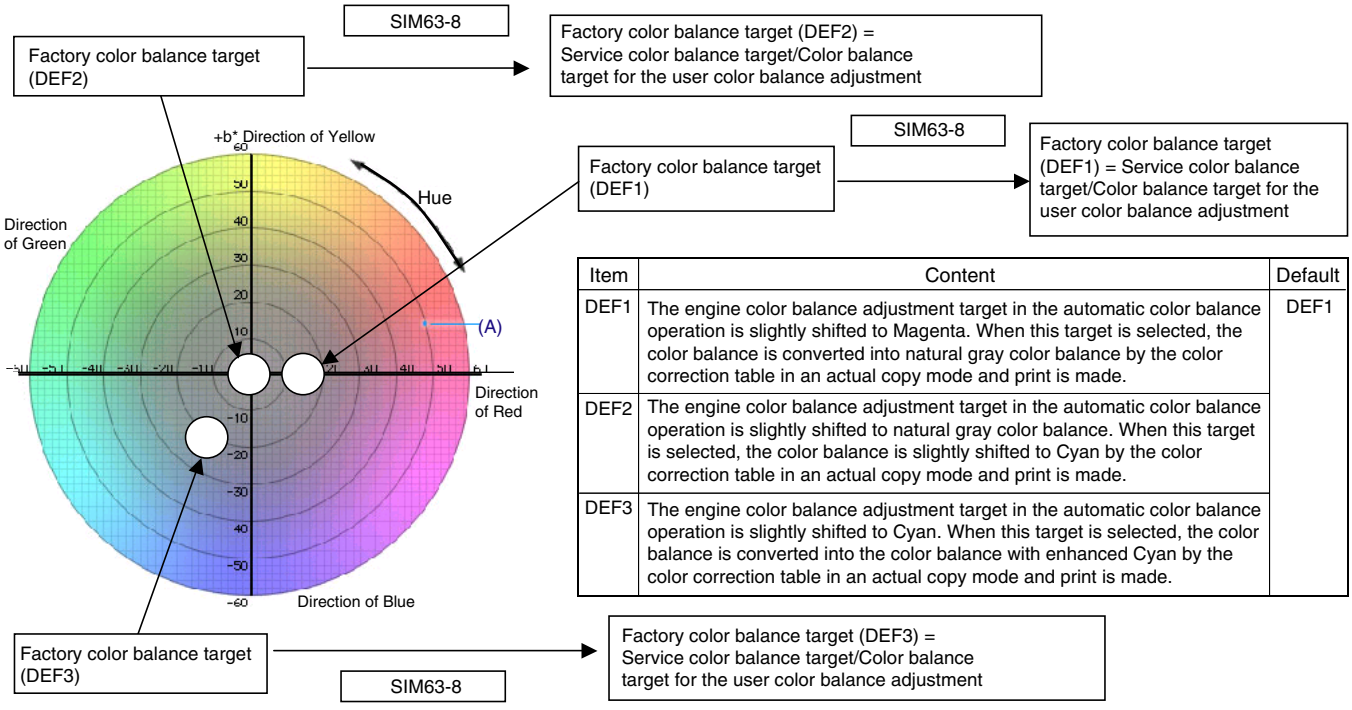
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the copy color balance adjustment (Automatic adjustment) (SIM 46-74/46-24)



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

  By use of SIM 63-11, one of the following color balances can be set as the factory color balance target.

  Each of the three color balances cannot be changed. (Fixed)



Item	Content	Default
DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color correction table in an actual copy mode and print is made.	DEF1
DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color correction table in an actual copy mode and print is made.	
DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color correction table in an actual copy mode and print is made.	

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

  For the service color balance target, an optional color balance can be adjusted with SIM 46-21 and registered with SIM 63-7. When, however, SIM 63-8 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 63-11.

- Color balance target in the user color balance adjustment

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

(Meaning of the service color balance target gamma data and the purpose of registration)

This procedure must be executed only when the color balance is customized with SIM 46-21.

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

After completion of the customized color balance adjustment (Manual) with SIM 46-21 according to the user's request, use SIM 63-7 to register the service color balance target data by using adjustment pattern that was printed in this mode.

Important

In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-21.

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

It is recommended to keep the printed adjustment pattern created with SIM 46-21. This adjustment pattern can be used to register the same color balance target to another machine.

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

The service color balance target data is registered immediately after the color balance adjustment (Manual) with SIM 46-21.

If a considerable time has passed after completion of the color balance adjustment (Manual) with SIM 46-21, the color balance of the adjustment pattern at the time of adjustment differs from the color balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The accuracy of the service color balance target data can be judged as follows.

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

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

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

The color balance adjustment pattern used in registration was made and printed by the color balance adjustment (Manual) with SIM 46-21. This procedure may have been executed erroneously

a. Setting procedure

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

1) Use SIM 46-21 (Copy color balance adjustment (manual adjustment) mode) to print color patch image (adjustment pattern).

   In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-21.

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

2) Enter the SIM 63-7 mode.
3) Press [SETUP] key.
4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the copy color balance adjustment (Manual adjustment) (SIM 46-21) on the document table.

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

   If the color balance could not be adjusted satisfactorily with SIM 46-21 (Color balance adjustment (Manual)), do not execute SIM 63-7 to register the service color balance target data.
5) Press [EXECUTE] key.

   The color patch image (adjustment pattern) is read.
6) The color balance (gamma) target set level of each color (KCMY) can be checked with K/C/M/Y keys.

   Check that the set level is increased in the sequence of B - P (MAX).

   If there is no variation or variation is reversed, it is judged as abnormal.
7) Press [OK] key.

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

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

This procedure must not be executed when the copy color balance was adjusted with SIM 46-21 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 63-7.

When the factory color balance target is changed with SIM 63-11, be sure to execute this procedure.

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

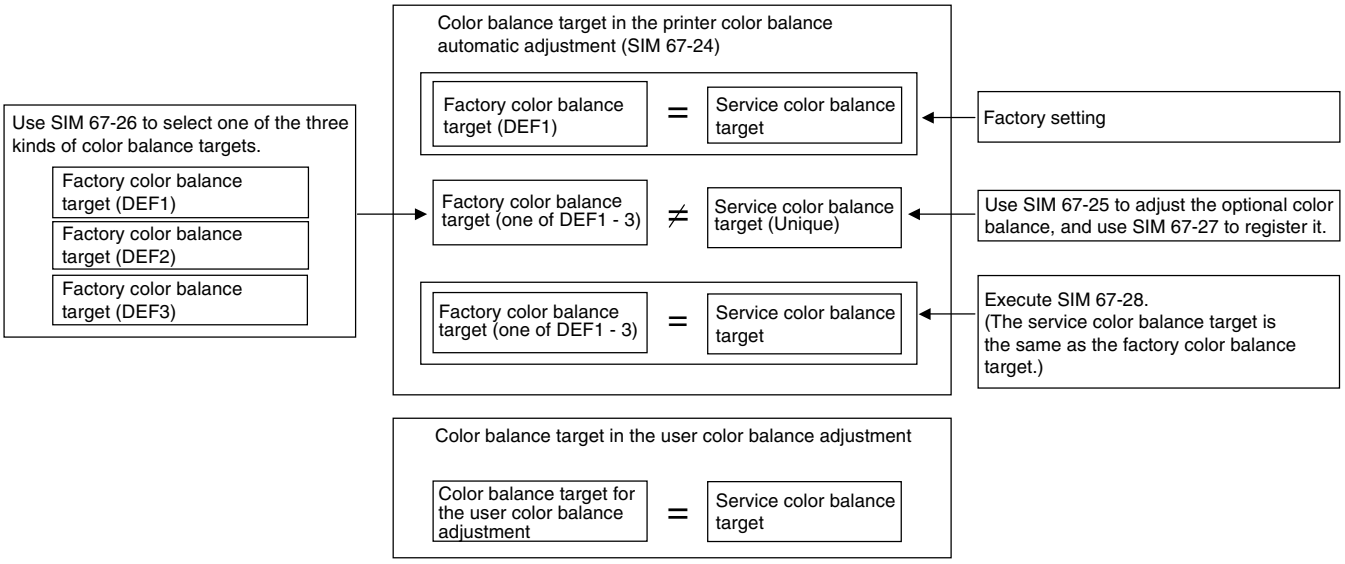
   The service color balance target and the color balance target for the user color balance adjustment are set to the same color balance as the factory color balance target.

SET 1B Printer color balance adjustment target setup

- Color balance target for the printer color balance adjustment

Type		Descriptions
A	Factory color balance (gamma) target	There are three kinds of the color balance targets, and each of them is specified according to the machine design. Use SIM 67-26 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction.
B	Service color balance (gamma) target	This target is used when the user requests to customize the color balance to user's desired level. In advance, the user's unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 67-25 to adjust the color balance and with SIM 67-27 to register it. This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user's color balance adjustment is also changed. When, however, SIM 67-28 is executed, the color balance is set to the factory color balance target set with SIM 67-26. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1)) If the user does not request for customizing the color balance, be sure to use SIM 67-28 to set the color balance to the factory color balance target.
C	User color balance (gamma) target	Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly.

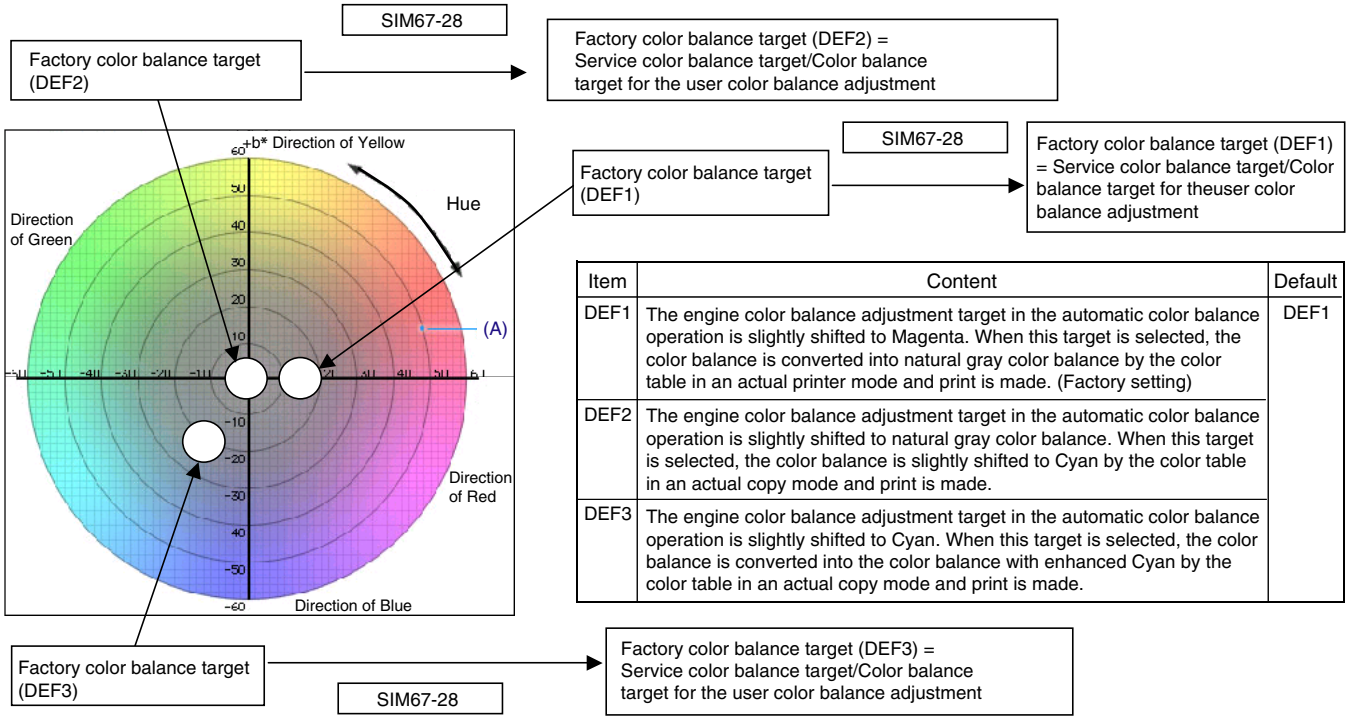
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the printer color balance adjustment (Automatic adjustment) (SIM 46-74/76-24)



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

  By use of SIM 67-26, one of the following color balances can be set as the factory color balance target.

  Each of the three color balances cannot be changed. (Fixed)



Item	Content	Default
DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual printer mode and print is made. (Factory setting)	DEF1
DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made.	
DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made.	

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

  For the service color balance target, an optional color balance can be adjusted with SIM 67-25 and registered with SIM 67-27. When, however, SIM 67-28 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 67-26.

- Color balance target in the user color balance adjustment

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

(Meaning of the service color balance target gamma data and the purpose of registration)

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

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

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

Important

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 color 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 color balance target to another machine.

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

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

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

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

When result of the color balance adjustment (Auto) with selecting the service color balance target in SIM 46-74/67-24 is unsatisfactory or abnormal.

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

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

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

a. Setting procedure

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

1) Use SIM 67-25 (Printer color balance adjustment (manual adjustment) mode) to print color patch image (adjustment pattern).

   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 color balance is shifted from the standard, an adjustment is required. If not, an adjustment is not required. When an optional color balance is requested by the user, make an adjustment.
2) Enter the SIM 67-27 mode.
3) Press [SETUP] key.
4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the printer color balance adjustment (Manual adjustment) (SIM 67-25) on the document table.

   A color 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 color patch image (adjustment pattern).

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

   The color patch image (adjustment pattern) is read.
6) The color balance (gamma) target set level of each color (K, C, M and Y) can be checked with K/C/M/Y keys.

   Check that the set level is increased in the sequence of B - P (MAX). If there is no variation or variation is reversed, it is judged as abnormal.
7) Press [OK] key.

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

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

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

When the factory color balance target is changed with SIM 67-26, be sure to execute this procedure.

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

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

13-B FR density variation correction

Make sure followings are confirmed prior to the adjustment:

- Charge unevenness is not occurring
- A paper tray with A4 (LT) size papers is available.
- The auto correction of FR density unevenness will clear the correction value in “ADJ13B manual correction of FR density unevenness”. Do not execute auto correction if you wish to maintain the manual correction value.
- Execute Sim 61-13 if any one of DV unit, Drum Process unit and LSU unit has been replaced.

13-B (1) FR density unevenness automatic correction (32 point adjustment for all colors)

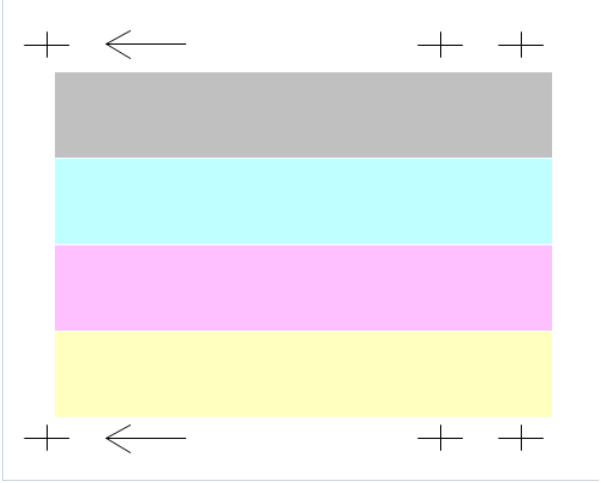
This adjustment must be performed in the following cases.

- Density unevenness toward main scan direction has been observed

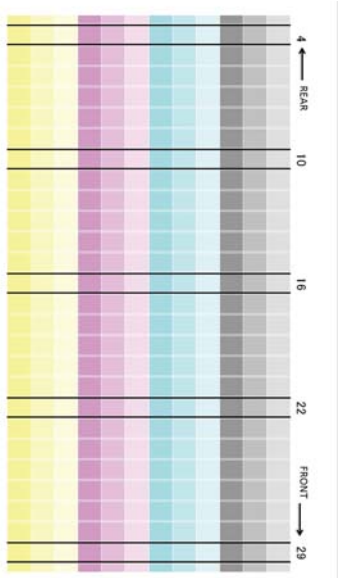
1) Enter Simulation 61-11.
2) Press [AUTO CORRECTION] key.

   Press [DATA] to confirm present auto correction value.
3) Select the density level to adjust and press [EXECUTE] key.

   The adjustment pattern will be output.
4) Place the adjustment pattern in the step 3) and the arrows on the adjustment pattern should be placed on left side (A4R/LTR direction) on the document table. and press [EXECUTE] key. Also put five blank sheets on top of the adjustment pattern.



5) After scanning the adjustment pattern, the data will be updated and the adjustment result pattern will be printed automatically. Check whether density on front and rear side matches.



6) Press [RETRY] and repeat the steps in 3) to 5) until you are satisfied with the result in step 5).

Execute Sim 61-13 to clear auto/manual correction value to default setting.

7) Execute Simulation 46-74 (Copy/Printer color balance adjustment) after completing all the adjustments.

13-B (2) FR density unevenness visual inspection (CMYK 5 point adjustment or CMYK 32 point adjustment)

This adjustment must be performed in the following cases.

- Density unevenness toward main scan direction has been observed:

1) Enter Simulation 61-12.
2) Press [VISUAL INSPECTION] key.

Press [DATA] to confirm present manual correction value.

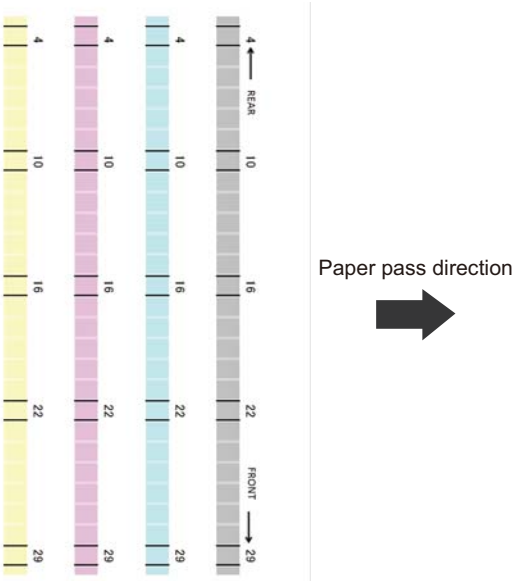
3) Select the density level to adjust and press [EXECUTE] key.

The adjustment pattern will be output.

4) Check the adjustment pattern in the step 3).

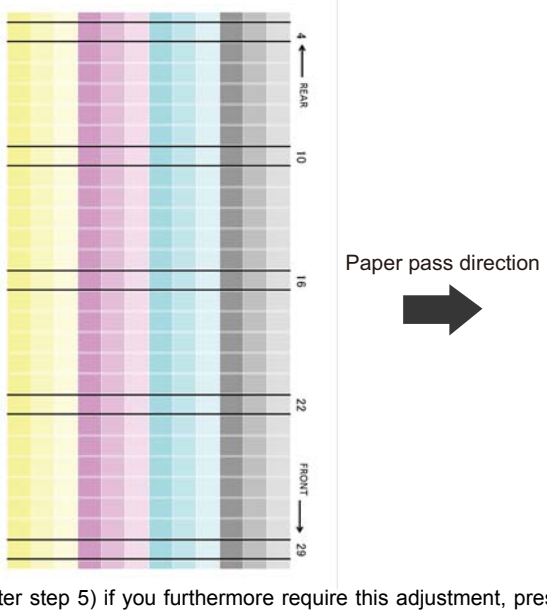
Select either [5 POINT CORRECTION] or [32 POINT CORRECTION], enter adjustment value and press [EXECUTE] key.

Larger the adjustment value, the higher the density and vice versa.



5) The adjustment result pattern will be printed automatically.

Check whether density on front and rear side matches.



6) After step 5) if you furthermore require this adjustment, press [RETRY] key and repeat the steps 3) to 5).

Execute Simulation 61-13 to clear auto/manual correction value to resume the factory default setting.

Execute Simulation 46-74 (Copy/Printer color balance adjustment) after completing all the adjustments.

13-C Copy/Printer color 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 SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP scanner PWB is replaced.

a. General

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

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

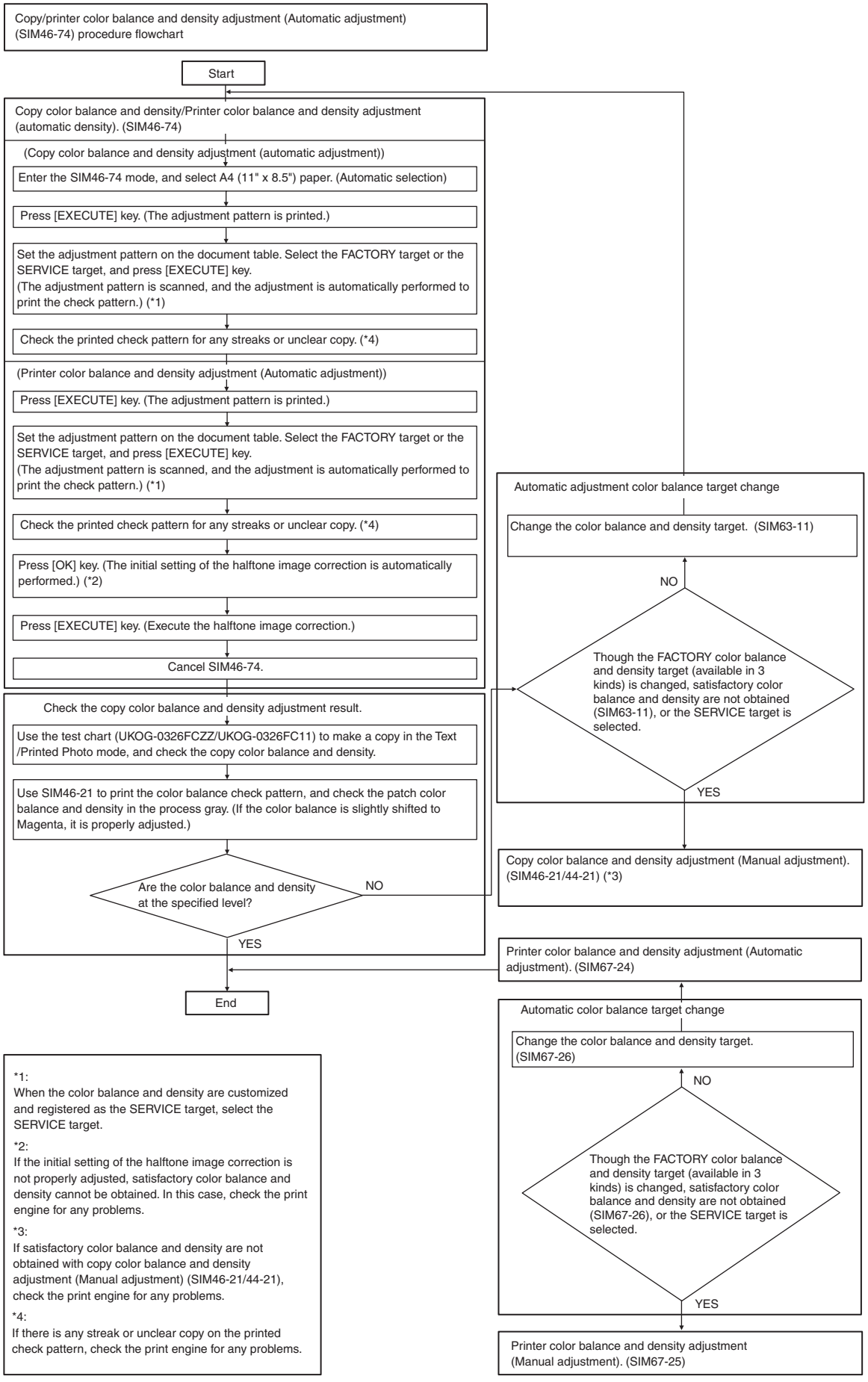
This mode is also advisable to effectively perform both of the automatic copy color balance and density adjustment (SIM46-24) and the automatic printer color balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer color balance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

The color balance adjustment (automatic adjustment) is used to adjust the copy density of each of Cyan, Magenta, Yellow, and Black automatically.

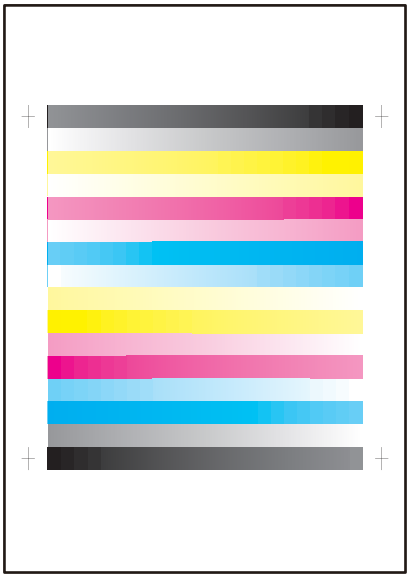
When this adjustment is executed, the color balance adjustments of all the copy/printer modes are revised.

b. Adjustment procedures

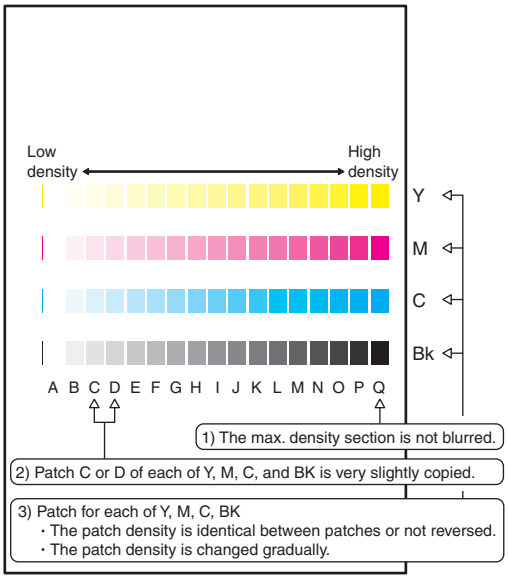
(Auto color balance adjustment by the serviceman)



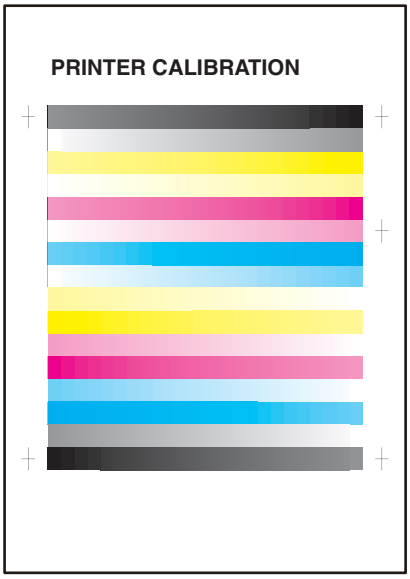
1) Enter the SIM46-74 mode.
2) Press [EXECUTE] key.
   The copy color patch image (adjustment pattern) is printed out.
   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.
   Set the color patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the color patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed color patch image (adjustment pattern).



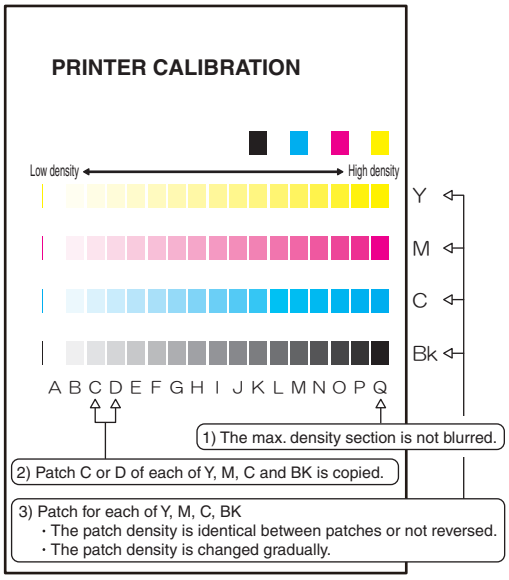
4) Select [FACTORY] target, and press [EXECUTE] key.
   When the color balance is customized by the manual color balance adjustment (SIM 46-21) according to the user's request, and the color balance is registered with SIM63-7 as the service target, if the color balance is required to be adjusted, select the [SERVICE] target.
   The copy color balance adjustment is automatically executed and prints the color balance check patch image.
   If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.



5) Press [EXECUTE] key.
   The printer color patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
6) Set the color patch image (adjustment pattern) printed in the procedure 5) on the document table.
   Set the color patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the color patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed color patch image (adjustment pattern).



7) Select [FACTORY] target, and press [EXECUTE] key.
   When the color balance is customized with the manual color balance adjustment (SIM 67-25) according to the user's request and the color balance is registered as the service target with SIM 67-27, if the color balance is adjusted to that color balance, select the [SERVICE] target.
   The printer color balance adjustment (step 1) is automatically performed and the color 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 the simulation.

11) Check the copy color balance and density.

(Refer to the item of the copy color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment.

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 color balance adjustment.

12) Check the printer color balance and density.

(Refer to the item of the printer color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 7), change the factory color balance target with SIM 67-26 and repeat the procedures from 1). If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment. 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 color balance adjustment.

If the color 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.

13-D 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 SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.

13-D (1) Copy color balance and density adjustment (Automatic adjustment)

a. General

The color balance adjustment (automatic adjustment) is used to adjust the copy density of each of Cyan, Magenta, Yellow, and Black automatically. When this adjustment is executed, the color balance adjustments of all the copy modes are revised.

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

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

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

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

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

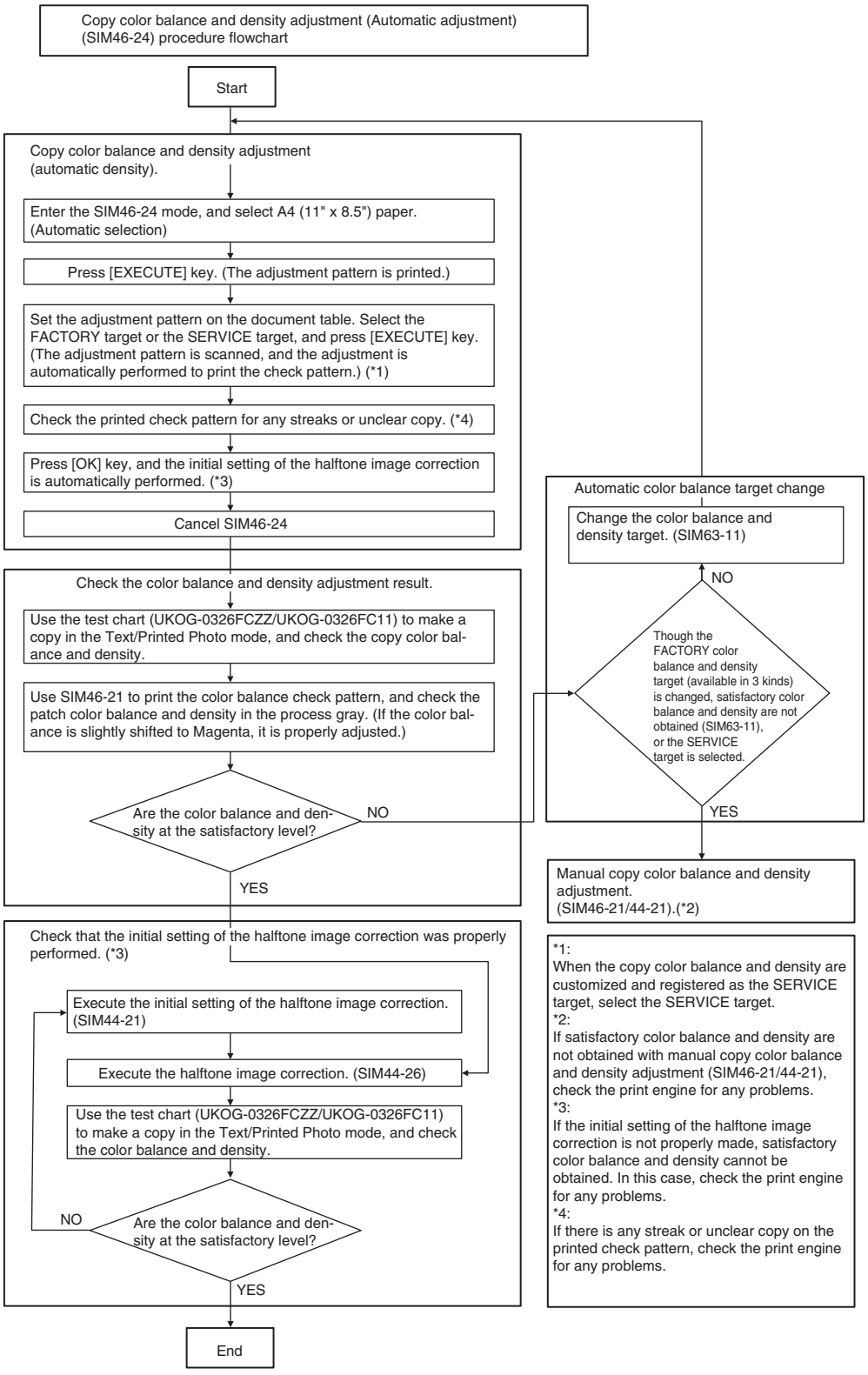
When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

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

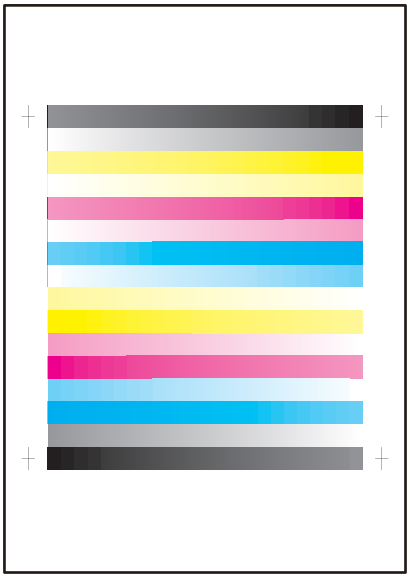
To perform the adjustment, the above difference must be fully understood.

b. Adjustment procedure

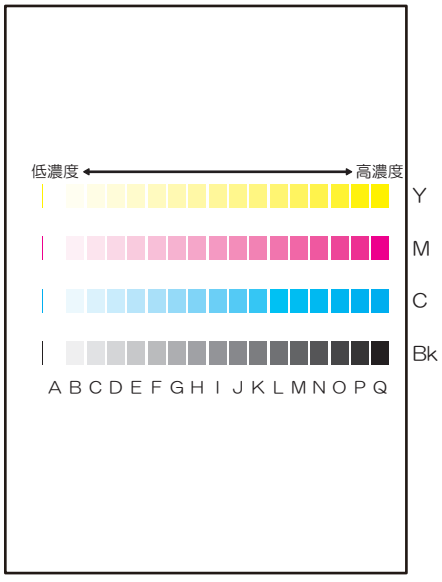
(Auto color balance adjustment by the serviceman)



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 color patch image (adjustment pattern) is printed out.
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.
   Place the printed color 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 color patch image (adjustment pattern) paper.



4) Select [FACTORY] target, and press [EXECUTE] key.
   When the color balance is customized with the manual color balance adjustment (SIM 46-21) according to the user's request and the color balance is registered as the service target with SIM 63-7, if the color balance is adjusted to that color balance, select the service target.
   The copy color balance adjustment is automatically executed to print the color 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.

b. Adjustment procedure

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.

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 color balance and density. (Refer to the item of the copy color balance and density check.)
7) Use SIM44-26 to execute the halftone image correction. (Forcible execution)
   Press [EXECUTE] key.
   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 color balance and density. (Refer to the item of the copy color balance and density check.)
   If the copy color 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-0326FCZZ/UKOG-0326FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance and density check.)
    Though the above procedures 9) - 11) are performed, the copy color 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 satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).
    If a satisfactory result on the color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 46-21).
    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 color balance adjustment.
    If the color 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.

13-D (2) Copy color balance and density adjustment (Manual adjustment)

a. General

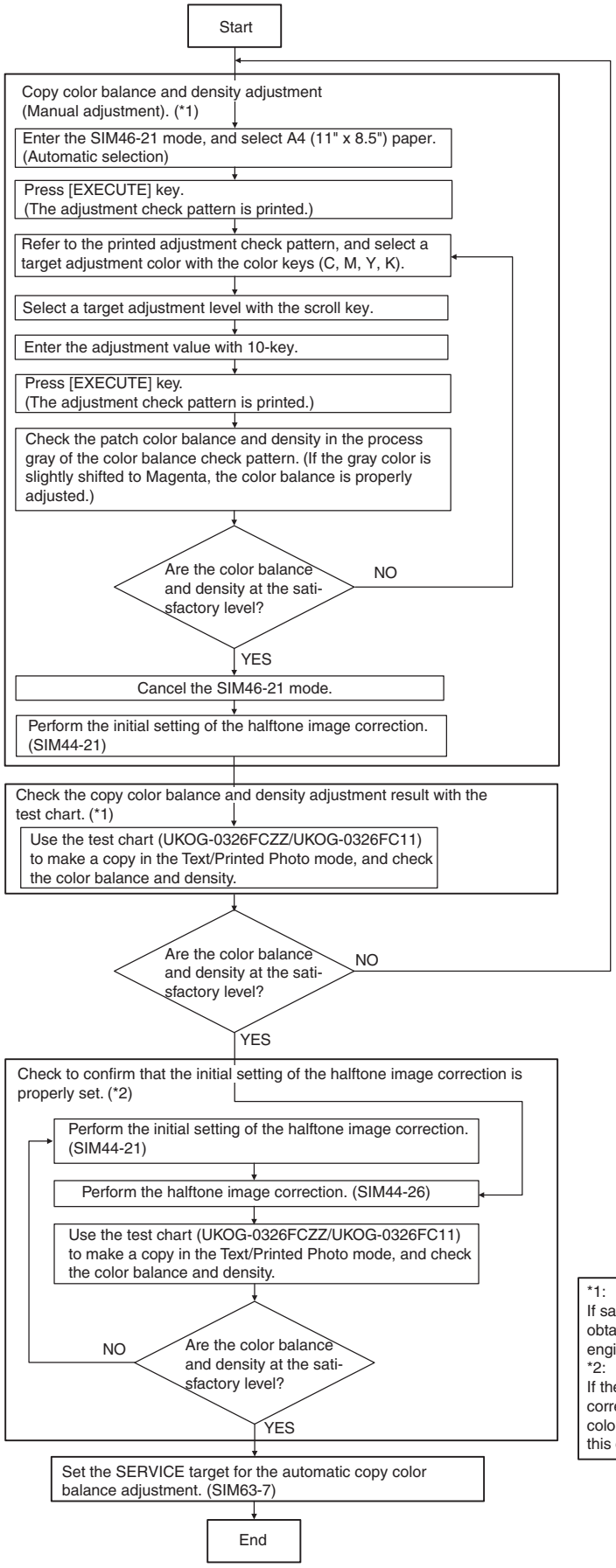
The color balance adjustment (Manual adjustment) is used to adjust the copy density of CMYK. This is used at the following situation.

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 color balance.

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

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

Copy color balance and density adjustment (Manual adjustment) procedure flowchart (SIM46-21)

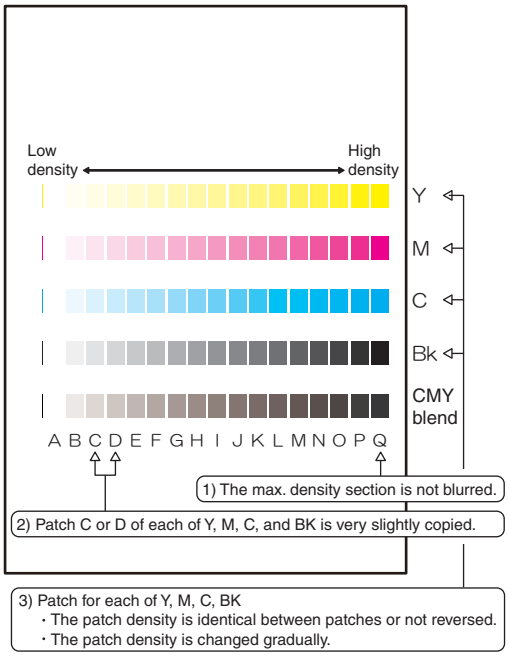


*1:
If satisfactory color balance and density are not obtained with the adjustment, check the print engine for any problems.
*2:
If the initial setting of the halftone image correction is not properly adjusted, satisfactory color balance and density cannot be obtained. In this case, check the print engine for any problems.

1) Enter the SIM46-21 mode.
2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

   The color balance adjustment pattern is printed.
3) Check that the following specification is satisfied or the color 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.

   The density level of each color must be almost at the same level.

   Patch B may not be copied.

   Patch A must not be copied.

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

   If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. If the color balance of the adjustment pattern printed in this mode is slightly shifted to Magenta, it is converted into the natural gray color balance by the color correction table in an actual copy mode. (When the color balance target is DEF 1.)
4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.
5) Enter the adjustment value with 10-key and press [OK] key.

   The adjustment value is set in the range of (1 - 999). When SIM 46-24 is used to adjust the automatic color 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) - 5) until the condition of 3) is satisfied.

   When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q to a same level collectively.

   Then, adjust each patch density individually. This is an efficient way of adjustment.
6) 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 color balance/density check.)
7) Execute SIM 44-21. (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 color balance adjustment data as the reference data for the halftone correction.

   Immediately after execution of Color balance adjustment (Manual) with SIM 46-21, be sure to execute this procedure.

   When Color balance adjustment (Auto) is executed with SIM 46-24, this procedure is automatically executed.
8) Use SIM 44-26 to execute the halftone image correction. (Forcible execution) Press [EXECUTE] key.

   After completion of the operation, the simulation is canceled.
9) 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 color balance/density check.)

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

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

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

13-E 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 14B and ADJ 14C 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.

Simulation No. and descriptions of the adjustment		Copy Mode				Image Scan Mode					
		Color		Monochrome		Color		Monochrome			
		Auto	Manual	Auto	Manual	Auto	Manual	Auto	Manual	FAX	Printer
46-01	Color copy density adjustment (for each color copy mode) (separately for the low density area and the high-density area) (No need to adjust normally)	○	○	—	—	—	—	—	—	—	—
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 color balance adjustment (separately for the low-density area and the high-density area) (No need to adjust normally)	—	—	—	—	○	○	—	—	—	—
46-09	RSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)	○	○	○	○	○	○	○	○	○	—
46-10	Color copy color balance, gamma adjustment (for each color 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)	—	—	○	—	—	—	○	—	○	—
46-21	Copy color balance and density adjustment (Manual adjustment)	○	○	○	○	—	—	—	—	—	—
46-23	Copy high density image density reproduction setting (Normally unnecessary to the setting change)	○	○	○	○	—	—	—	—	—	—
46-24	Copy color balance and density adjustment (Automatic adjustment)	○	○	○	○	—	—	—	—	—	—
46-25	Copy color balance adjustment (Single color copy mode) (No need to adjust normally)	—	○	—	—	—	—	—	—	—	—
46-26	Single color copy mode color balance default setting	—	○	—	—	—	—	—	—	—	—
46-27	Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)	○	○	—	—	—	—	—	—	—	—
46-30	Copy mode sub scanning direction resolution setting	○	○	—	—	—	—	—	—	—	—
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)	—	—	○	—	—	—	○	—	○	—
46-36	2-color (red, black) copy mode fine color adjustment (No need to adjust normally)	—	○	—	—	—	—	—	—	—	—
46-37	Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)	—	—	○	○	—	—	○	○	○	○
46-38	Color copy mode dark area gradation (black component quantity) 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)	—	—	—	—	—	—	—	—	○	—

Simulation No. and descriptions of the adjustment		Copy Mode				Image Scan Mode					
		Color		Monochrome		Color		Monochrome			
		Auto	Manual	Auto	Manual	Auto	Manual	Auto	Manual	FAX	Printer
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	Resolution setting for each color copy mode (No need to adjust normally)	—	—	○	○	—	—	—	—	—	—
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, color balance adjustment for each dither (Automatic adjustment) (No need to adjust normally)	○	○	○	○	—	—	—	—	—	○
46-55	Dropout color setting	—	—	—	—	—	—	—	○	—	—
46-58	Pseudo resolution UP function setting	○	○	○	○	—	—	—	—	—	—
46-60	Color (Copy/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)	○	○	—	—	○	○	—	—	—	—
46-65	Color correction table setting (No need to adjust normally)	○	○	—	—	—	—	—	—	—	—
46-66	Watermark adjustment	○	○	○	○	—	—	—	—	—	○
46-68	Scan mode auto resolution judgement adjustment	—	—	—	—	○	—	○	—	—	—
46-74	Printer/Copy color 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	—	—	—	—	○	○	—	—	—	—

13-E (1) Color copy density adjustment (for each color 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
- 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 46-1 mode.
2) Select the copy mode to be adjusted with the scroll key.

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

Display/Item		Content		Setting range	Default
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
R	LIGHT (COLOR TONE ENHANCEMENT)	Light (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
S	SINGLE COLOR	Single color	LOW	1 - 99	50
			HIGH	1 - 99	50
T	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
U	TWO COLOR	Two-color	LOW	1 - 99	50
			HIGH	1 - 99	50
V	TWO COLOR (COPY TO COPY)	Two-color (Copy 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.

13-E (2) 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.

13-E (3) Color copy color balance, gamma adjustment (for each color copy mode) (No need to adjust normally)

This adjustment is used to execute the color balance adjustment for each density level in each color copy mode.
This adjustment must be performed in the following cases:

- When there is necessity to change the color 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 a color to change the adjustment value with the color key.
4) Select the density level (point) to be adjusted with the scroll key.

Item/Display		Density level (Point)	Adjustment value range	Default
A	POINT1	Point1	1 - 999	500
B	POINT2	Point2	1 - 999	500
C	POINT3	Point3	1 - 999	500
D	POINT4	Point4	1 - 999	500
E	POINT5	Point5	1 - 999	500
F	POINT6	Point6	1 - 999	500
G	POINT7	Point7	1 - 999	500
H	POINT8	Point8	1 - 999	500
I	POINT9	Point9	1 - 999	500
J	POINT10	Point10	1 - 999	500
K	POINT11	Point11	1 - 999	500
L	POINT12	Point12	1 - 999	500
M	POINT13	Point13	1 - 999	500
N	POINT14	Point14	1 - 999	500
O	POINT15	Point15	1 - 999	500
P	POINT16	Point16	1 - 999	500
Q	POINT17	Point 17	1 - 999	500

5) 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 color densities selected with the color keys 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 color balance and the density for each density level (point).
6) 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.

13-E (4) 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	Point1	1 - 999	500
B	POINT2	Point2	1 - 999	500
C	POINT3	Point3	1 - 999	500
D	POINT4	Point4	1 - 999	500
E	POINT5	Point5	1 - 999	500
F	POINT6	Point6	1 - 999	500
G	POINT7	Point7	1 - 999	500
H	POINT8	Point8	1 - 999	500
I	POINT9	Point9	1 - 999	500
J	POINT10	Pint10	1 - 999	500
K	POINT11	Point11	1 - 999	500
L	POINT12	Point12	1 - 999	500
M	POINT13	Point13	1 - 999	500
N	POINT14	Point14	1 - 999	500
O	POINT15	Point15	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.
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.

13-E (5) 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.

Display/ Item	Content	Set value	Default
AE_MODE	Auto exposure mode	MODE1	Japan:MODE1 Overseas: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

Note

MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

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

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

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.)

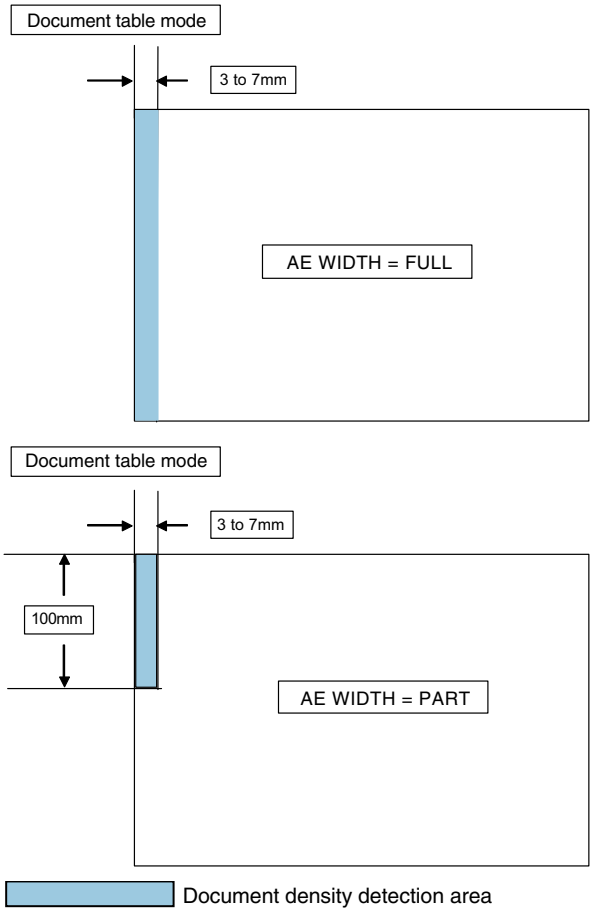
In addition, the original type is automatically determined and the processing is carried out in an optimum original mode.

AE WIDTH FULL: Document density reading area in monochrome auto mode is 3 - 7mm (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 - 7mm (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.



13-E (6) 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.

RSPF

Display/Item		Content	Set value	Default
A	COPY: OC	Copy mode (for OC)	1 - 250	196
B	COPY: RSPF	Copy mode (for RSPF)	1 - 250	196
C	SCAN: OC	Scanner mode (for OC)	1 - 250	196
D	SCAN: RSPF	Scanner mode (for RSPF)	1 - 250	196
E	FAX: OC	FAX mode (for OC)	1 - 250	196
F	FAX: RSPF	FAX mode (for RSPF)	1 - 250	196

13-E (7) 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 COPY: TEXT / PRINTED PHOTO	Text print (Color copy)	1 - 9	3
B	COLOR COPY: TEXT	Text (Color copy)	1 - 9	3
C	COLOR COPY: PRINTED PHOTO	Printed Photo (Color copy)	1 - 9	5
D	COLOR COPY: PHOTOGRAPH	Photograph (Color copy)	1 - 9	5
E	COLOR COPY: TEXT/PHOTO	Text/Photograph (Color copy)	1 - 9	3
F	COLOR COPY: MAP	Map (Color copy)	1 - 9	5
G	COLOR COPY: LIGHT	Light document (Color copy)	1 - 9	6
H	COLOR COPY: TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Text print (Color copy)	1 - 9	5
I	COLOR COPY: TEXT (COPY TO COPY)	Copy document, Text (Color copy)	1 - 9	5

Display/Item		Content	Set value	Default
J	COLOR COPY: PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (Color copy)	1 - 9	5
K	COLOR PUSH: TEXT/PRINTED PHOTO	Text print (Color PUSH)	1 - 9	5
L	COLOR PUSH: TEXT	Text (Color PUSH)	1 - 9	5
M	COLOR PUSH: PRINTED PHOTO	Printed photo (Color PUSH)	1 - 9	5
N	COLOR PUSH: PHOTOGRAPH	Photograph (Color PUSH)	1 - 9	5
O	COLOR PUSH: TEXT/PHOTO	Text/Photograph (Color PUSH)	1 - 9	5
P	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.

13-E (8) Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)

Adjustment 1

By changing Text/Printed Photo, Text/Photograph, automatic copy mode Text, line image edge section gamma and the density, the reproducibility of text and line profile can be varied optionally.

With this adjustment, the density and the thickness of fine text and lines can be varied.

Check the result of this adjustment by text/printed photo copy mode (manual).

This adjustment is required in the following cases.

- When the reproducibility of text and line copy image is to be changed.
- When there is request from the user.

1) Enter the SIM 46-27 mode.
2) Select the mode to be adjusted with the scroll key.

Display/Item		Content	Set value	Default
A	BLACK TEXT (SLOPE)	Black character edge gamma skew adjustment	1 - 99	50
B	BLACK TEXT (INTERCEPT)	Black character edge density adjustment	1 - 99	50
C	COLOR TEXT (SLOPE)	Color character edge gamma skew adjustment	1 - 99	50
D	COLOR TEXT (INTERCEPT)	Color character edge density adjustment	1 - 99	50
E	ED TEXT (SLOPE)	Text/Map mode gamma skew adjustment (Text/Map mode)	1 - 99	50
F	ED TEXT (INTERCEPT)	Text/Map mode density adjustment (Text/Map mode)	1 - 99	50

3) Enter the adjustment value with 10-key.

When the adjustment values of items A and C are changed, the gamma at the character edge and the line edge section is changed.

When the adjustment value is increased, the image contrast of character edge and line edge is increased. When the adjustment value is decreased, the image contrast of character and line edge is decreased.

When the adjustment value of the item B and D are increased, the image density at the character edge and the line edge section is increased, and vice versa.

4) Press [OK] key.
5) Make a copy in color text/printed photo copy mode (manual), check the copy.

When checking, use a copy of the document with a thin character and line image.

If a satisfactory result is not obtained, return to the SIM 46-27 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

Adjustment 2

This adjustment is used to change the gamma and the density in the Text/Map copy mode.
This adjustment is required in the following cases.

- To change the contrast and the density of the Text/Map copy mode images.
- When there is request from the user.

1) Enter the SIM 46-27 mode.
2) Select the mode to be adjusted with the scroll key.

Display/Item		Content	Set value	Default
A	BLACK TEXT (SLOPE)	Black character edge gamma skew adjustment	1 - 99	50
B	BLACK TEXT (INTERCEPT)	Black character edge density adjustment	1 - 99	50
C	COLOR TEXT (SLOPE)	Color character edge gamma skew adjustment	1 - 99	50
D	COLOR TEXT (INTERCEPT)	Color character edge density adjustment	1 - 99	50
E	ED TEXT (SLOPE)	Text/Map mode gamma skew adjustment (Text/Map mode)	1 - 99	50
F	ED TEXT (INTERCEPT)	Text/Map mode density adjustment (Text/Map mode)	1 - 99	50

3) Enter the adjustment value with 10-key.

When the adjustment value of the adjustment item E is changed, the gamma (contrast) is changed.

When the adjustment value is increased, the contrast is increased, and vice versa.

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

4) Press [OK] key.
5) Make a copy in the color Text/Map copy mode (manual), and check the output print.

If a satisfactory result is not obtained, use SIM46-27 to change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

13-E (9) 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.

RSPF model

Display/Item		Content	Set value	Default
A	R-Ratio	Gray making setting (R)	0 - 1000	137
B	G-Ratio	Gray making setting (G)	0 - 1000	827
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 red image is increased. When the adjustment value is decreased, copy density of red image is decreased.
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.

13-E (10) Color copy mode dark area gradation (black component quantity) adjustment (No need to adjust normally)

Use to adjust the black component amount in the color copy mode.

(except character and line image)

As a result of this adjustment, the gradation of the shade part changes.

This adjustment is required in the following cases.

- When reproduction as solid of black image is required.
- To make the black background and the dark area darker
- When change of gradation of the shade part is required.
- When there is request from the user.

1) Enter the SIM 46-38 mode.
2) Select the AUTO MODE or the MANUAL MODE with the mode key.
3) Select the mode to be adjusted with the scroll key.

Display/Item (Copy mode)		Select button	Content	Default
MANUAL	TEXT PRT	(-)LUT2	Text print (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	TEXT	(-)LUT2	Text (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	PRINTED PHOTO	(-)LUT2	Printed photo (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	PHOTO	(-)LUT2	Photograph (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	TEXT PHOTO	(-)LUT2	Text/Photograph (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	MAP	(-)LUT2	Map (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	CPY TO CPY/ TXT PRT	(-)LUT2	Copy document/Text printed (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	CPY TO CPY/ TEXT	(-)LUT2	Copy document/Text (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	CPY TO CPY/ PHOTO	(-)LUT2	Copy document/Printed photo (Manual)	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
	LIGHT ORIGINAL	(-)LUT2	Pencil	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		
AUTO	AUTO	(-)LUT2	Auto mode judgment	NORMAL
		(-)LUT1		
		NORMAL		
		(+)LUT1		
		(+)LUT2		

4) Press the black component amount select button.

   When reproduction as solid of black image is required: Selects + button

   When there is desire to darken copy of black image: Selects + button

   When a dark color image is reproduced in the black: Selects - button
5) Make a copy in color copy mode and check the copy.

   If a satisfactory result is not obtained, return to the SIM 46-38 mode and change the adjustment value.

   Repeat the above procedures until a satisfactory result is obtained.

13-E (11) Color (Copy/Scan) mode sharpness adjustment (No need to adjust normally)

Use for sharpness adjustment in copy/scan mode and smoothness (asperity) adjustment of the dark area in copy/scan mode.

This adjustment is required in the following cases.

- When changing the sharpness of copy/scan 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.

Display/Item		Content		Setting range	Default
A	SCREEN FILTER LEVEL	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3
			Soft emphasis	2	
			Auto	3	
B	CPY CL AUTO FILTER LEVEL	Sharpness (filter) adjustment for the auto copy mode (Text, Text/Printed Photo/ Text, Text/Printed Photo image)	SOFT	1	2
			CENTER	2	
			HIGH	3	
C	CPY PUSH AUTO FILTER LEVEL	Sharpness (filter) adjustment for the auto push scan mode (Text, Text/Printed Photo/ Text, Text/ Printed Photo image)	SOFT	1	2
			CENTER	2	
			HIGH	3	
D	COLOR COPY: CMY	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1
			ON	1	
E	COLOR COPY: K	Soft filter applying setting to K image in color copy mode	OFF	0	1
			ON	1	
F	SINGLE COLOR: CMY	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1
			ON	1	
G	2 COLOR COPY: CMY	Soft filter applying setting to C, M, Y image in 2-color copy mode	OFF	0	1
			ON	1	
H	2 COLOR COPY: K	Soft filter applying setting to K image in 2-color copy mode	OFF	0	1
			ON	1	
I	B/W COPY	Soft filter applying setting in monochrome copy mode	OFF	0	1
			ON	1	
J	COLOR PUSH: RGB	Soft filter applying setting to image in push scan color mode	OFF	0	1
			ON	1	
K	B/W PUSH	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1
			ON	1	
L	COLOR PRINT: CMY	Soft filter applying setting to CMY image in color print mode	OFF	0	1
			ON	1	
M	COLOR PRINT: K	Soft filter applying setting to K image in color print mode	OFF	0	1
			ON	1	
N	B/W PRINT	Soft filter applying setting in monochrome print mode	OFF	0	1
			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, C:

   When selecting AUTO, Select HIGH to obtain clear images. Select SOFT to reduce moire.

   • Adjustment item D- K:

   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.

13-E (12) 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.

1) Enter the SIM 46-23 mode.
2) Select the item A, B with the scroll key.

Display/Item		Content		Setting range	Default
A	CMY (0: ENABLE 1: DISABLE)	0	CMY engine maximum density correction mode Enable	0 - 1	0
		1	CMY engine maximum density correction mode Disable		
B	K (0: ENABLE 1: DISABLE)	0	K engine maximum density correction mode Enable	0 - 1	1
		1	K engine maximum density correction mode Disable		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	500
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	500
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500

- If a tone gap occurs on part of high density, set 0 to item A and B

  The density of high density part decreases. However, the tone gap is better.
- In case of more increase of the density on high density part, set 1 to item A and B.

  The tone gap may occur in high density part.

Note

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 color balance density adjustment. (Auto adjustment)

13-E (13) Copy color balance adjustment (Single color copy mode) (No need to adjust normally)

This adjustment is used to set the color balance and the density in the single color copy mode to the user's request.

The adjustment is made by changing Y, M, C components of each color.

This adjustment is not required normally, but executed when there is a request from the user.

When the default adjustment value is changed, this adjustment is required in the following cases.

- When it is required to change the color balance in the single color copy mode.
- When there is request from the user.

a. Adjustment procedure

1) Enter the SIM 46-25 mode.
2) Select the color to be adjusted with the scroll key.
3) Select the color (YMC) to be adjusted with the color key.
4) Enter the adjustment value with 10-key.

Display/Item		Adjustment range	Default		
			C	M	Y
A	RED	0 - 255	0	255	200
B	GREEN	0 - 255	255	0	255
C	BLUE	0 - 255	255	150	0
D	CYAN	0 - 255	255	0	0
E	MAGENTA	0 - 255	0	255	0
F	YELLOW	0 - 255	0	0	255
G	ORANGE	0 - 255	0	150	255
H	NAVY	0 - 255	255	200	0
I	LIGHT GREEN	0 - 255	150	0	150
J	LIGHT BLUE	0 - 255	150	20	0
K	AQUA MARINE	0 - 255	170	0	50
L	PURPLE	0 - 255	128	255	0
M	PINK	0 - 255	0	150	20
N	YELLOW GREEN	0 - 255	128	0	255
O	BEIGE	0 - 255	0	50	170

5) Press [OK] key.
6) Make a copy in the single color copy mode and check the copy.

   If a satisfactory result is not obtained, return to the SIM 46-25 mode and change the adjustment value.

   Repeat the above procedures until a satisfactory result is obtained.

13-E (14) RSPF 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 RSPF mode differs from copy in document table mode.
- When copy density in RSPF mode is low or too high.
- When the RSPF unit is replaced.
- When the RSPF unit is disassembled.
- The CCD unit has been replaced.
- U2 trouble has occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.

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".

   When adjusting density on high density part, select "D".

   RSPF

Item/Display		Content	Setting range	Default
A	COPY: LOW	Copy mode exposure adjustment (Low density side)	1 - 99	48
B	SCAN: LOW	Scanner mode exposure adjustment (Low density side)	1 - 99	48
C	FAX: LOW	FAX mode exposure adjustment (Low density side)	1 - 99	48
D	COPY: HIGH	Copy mode exposure adjustment (High density side)	1 - 99	53
E	SCAN: HIGH	Scanner mode exposure adjustment (Low density side)	1 - 99	53
F	FAX: HIGH	FAX mode exposure adjustment (High density side)	1 - 99	53

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 RSPF 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.

13-E (15) Copy gamma, color balance adjustment for each dither (Automatic adjustment)

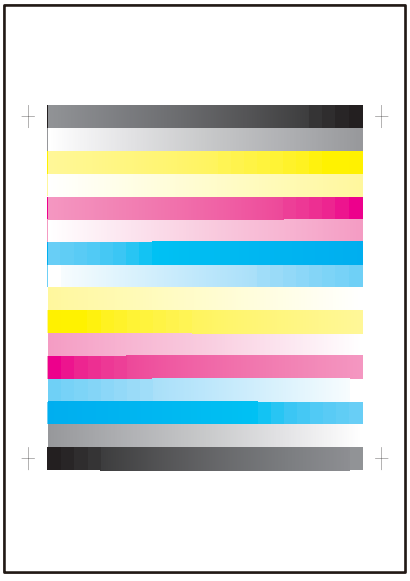
This simulation is used to improve the image quality in a certain mode. (Refer to the list in procedure 6.)

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 color 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 color 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 color balance in the heavy paper mode
BLACK EDGE	Adjustment item (K) to improve the reproduction of lines, text density, and thickness
COLOR EDGE	Adjustment item (Color) to improve the reproduction of lines, text density, and thickness
COLOR ED	Adjustment item to improve the color balance in the text mode and the map 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 600	Adjustment item to improve the density and gradation in the monochrome auto mode Text/ Printed Photo mode and Text/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 manual paper feed tray.

13-E (16)
Dropout color adjustment (Normally not required.)

This adjustment is used to adjust the level of chroma of color images which are reproduced as monochrome images in the image send mode (monochrome manual text mode).

This adjustment must be performed in the following cases:

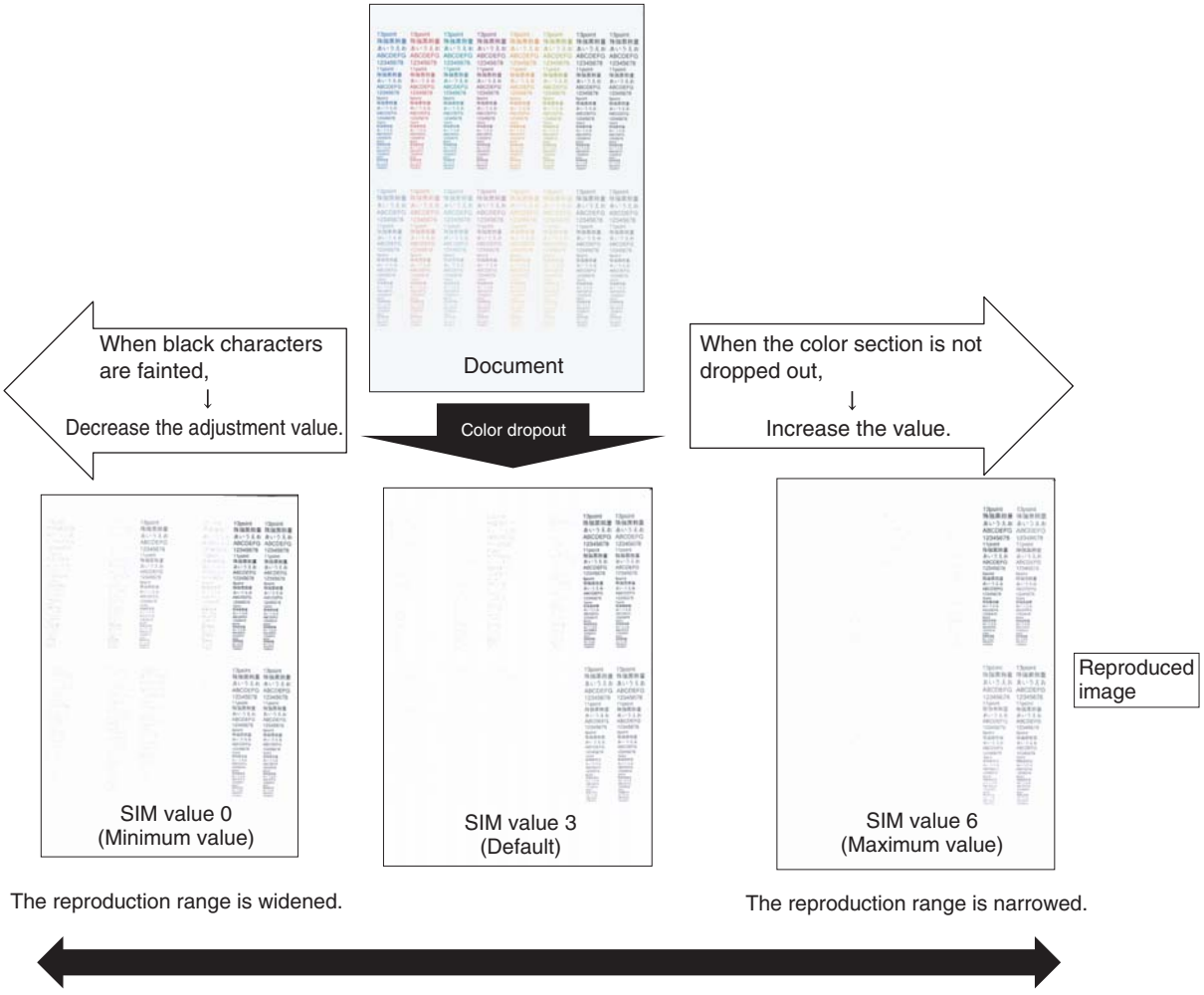
- When there is request from the user.

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 fainted 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 fainted or cracked.

13-E (17) Watermark adjustment (Normally not required)

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.

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.

Item/Display		Content	Setting range	Default setting
A	WOVEN DEN BK LOW	Watermark density level (Color: Black/Adjustment for light images)	0 - 255	15
B	WOVEN DEN BK MIDDLE	Watermark density level (Color: Black, Density: Standard)	0 - 255	19
C	WOVEN DEN BK HIGH	Watermark density level (Color: Black, Density: Dark)	0 - 255	23
D	WOVEN DEN C LOW	Watermark density level (Color: Cyan / Adjustment for light images)	0 - 255	19
E	WOVEN DEN C MIDDLE	Watermark density level (Color: Cyan, Density: Standard)	0 - 255	23
F	WOVEN DEN C HIGH	Watermark density level (Color: Cyan, Density: Dark)	0 - 255	27
G	WOVEN DEN M LOW	Watermark density level (Color: Magenta / Adjustment for light images)	0 - 255	15
H	WOVEN DEN M MIDDLE	Watermark density level (Color: Magenta, Density: Standard)	0 - 255	18
I	WOVEN DEN M HIGH	Watermark density level (Color: Magenta, Density: Dark)	0 - 255	21
J	CONTR AST	Contrast adjustment	0 - 255	2
K	HT TYPE (POSI)	For half-tone index watermark type positive	42 - 43	42
L	HT TYPE (NEGA)	For half-tone index watermark type negative	42 - 43	42

Description

A~I:

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.

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.

J:

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.)

K:

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.

L:

To reproduce the containing characters of watermark copy (secondary output) more clearly, set to 43.

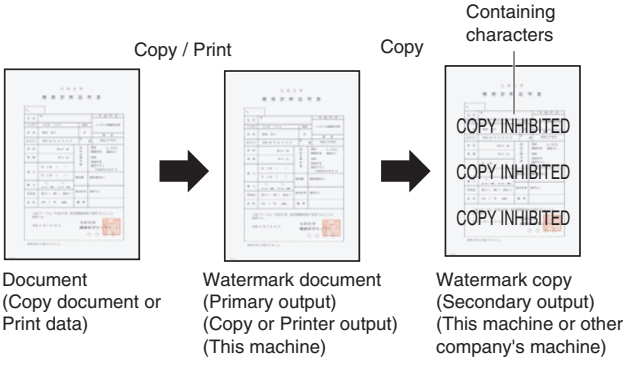
In that case, however, the containing characters of the watermark document (primary output) can be easily reproduced.

Changing adjustment values of adjustment items A - I and trade off

Kinds of watermarks (Mode selected in the watermark copy mode)	Density value	Adjustment values of adjustment items A - I	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



Watermark color	The watermark color is available in Cyan, Magenta, and Black.
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 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 color balance adjustment. * Use SIM46-54 to execute the color balance adjustment for each dither. * Adjust the watermark print contrast in the system setting. • Though the watermark of cyan or magenta is selected in the black and white mode, the black watermark is synthesized. • For a document which is judged as monochrome with ACS selected, though the watermark color is specified as cyan or magenta, the black watermark is synthesized. • 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.

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 for adjusting the watermark with SIM46-54

When the color balance automatic adjustment is executed with SIM46-74 or SIM46-24 but the containing characters are reproduced, use SIM46-54 to execute the color balance automatic adjustment for each dither.

However, note the following items.

- When either of item K or L 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 K or L 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.

13-F Printer image quality adjustment (Basic adjustment)

Requisite condition before execution of the printer color balance/density adjustment

Before execution of the printer color balance/density adjustment, the copy color balance/density adjustment must have been completed properly.

This adjustment is required in the following cases.

- Basically same as when the copy color balance/density adjustment is required.
- After the copy color balance/density adjustment.

13-F (1) Printer color balance adjustment (Automatic adjustment)

The color balance adjustment (auto adjustment) is used to adjust the print density of each color (Cyan, Magenta, Yellow, Black) automatically with SIM 67-24 or the user program.

When this adjustment is executed, the color balance adjustments of all the print modes are revised.

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

1) Auto color balance adjustment by the serviceman (SIM 67-24 is used.)
2) Auto color balance adjustment by the user (The user program mode is used.) (The color balance target is the service target.)

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

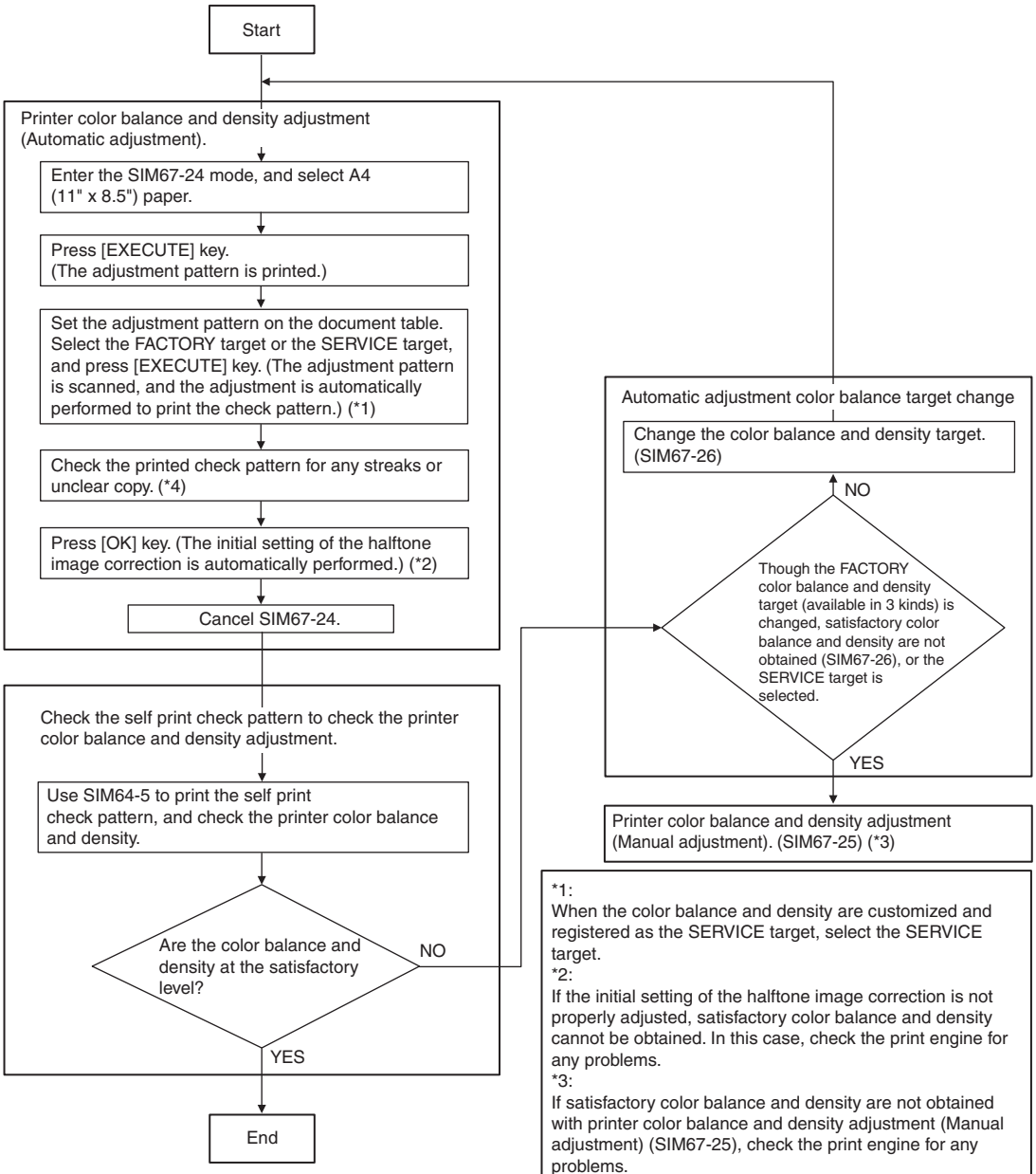
   If the print color balance is lost for some reasons, the user can use this color balance adjustment to recover the balance.

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

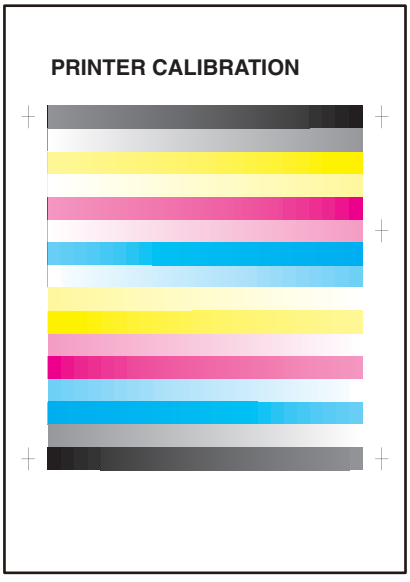
   To perform the adjustment, the above difference must be fully understood.

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

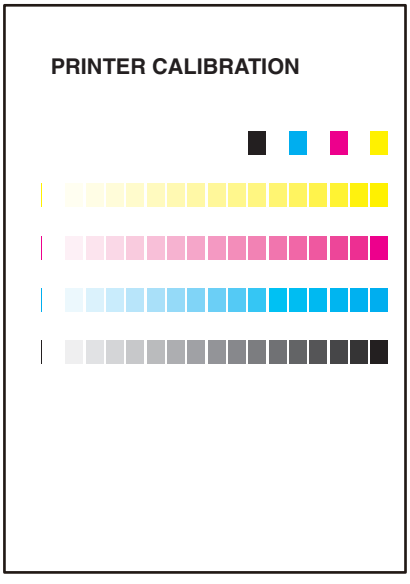


*1:
When the color balance and density are customized and registered as the SERVICE target, select the SERVICE target.
*2:
If the initial setting of the halftone image correction is not properly adjusted, satisfactory color balance and density cannot be obtained. In this case, check the print engine for any problems.
*3:
If satisfactory color balance and density are not obtained with printer color balance and density adjustment (Manual adjustment) (SIM67-25), 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 SIM 67-24 mode.
2) Press [EXECUTE] key.
   The color patch image (adjustment pattern) is printed out.
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.
   Place the printed color 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 color patch image (adjustment pattern) paper.



4) Select [FACTORY] key, and press [EXECUTE] key.
   When the color balance is customized with the manual color balance adjustment (SIM 67-25) according to the user's request and the color balance is registered as the service target with SIM 67-27, if the color balance is adjusted to that color balance, select the service target.
   The copy color balance adjustment is automatically executed and prints the color 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.

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 color balance and density.
   (Refer to the item of the printer color balance and density check.)
   When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 67-26 and repeat the procedures from 1).
   If a satisfactory result on the color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25).
   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 color balance adjustment.

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

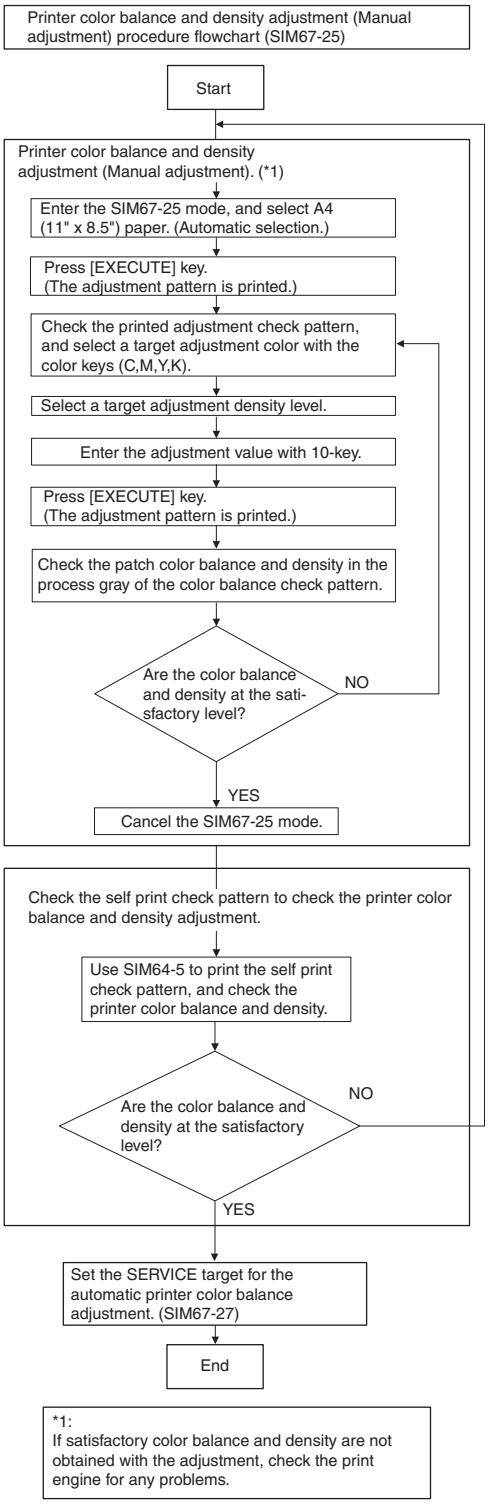
Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

13-F (2) Printer color balance adjustment (Manual adjustment)

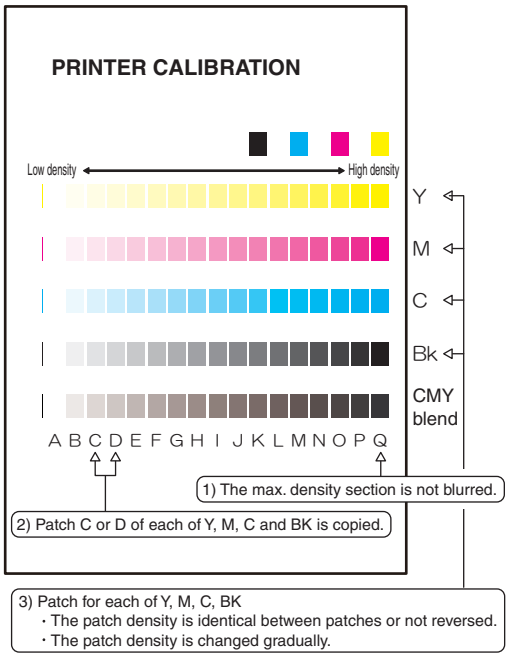
The color balance adjustment (Manual adjustment) is used to adjust the printer density of C, M, Y and K. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request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

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

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



1) Enter the SIM 67-25 mode.
2) Press [EXECUTE] key.
   The color patch image (Adjustment pattern) is printed.
3) Check that the following condition is satisfied or the color 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.

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

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

If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. In an actual print mode, it is converted into the natural gray color balance by the color table. (When the color balance target is DEF 1.)

4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.
5) Enter the adjustment value with 10-key and press [OK] key.
   The adjustment value is set in the range of (1 - 999). When SIM 67-24 is used to adjust the automatic color 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) - 5) until the condition of 3) is satisfied.
   When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q (MAX) to a same level collectively.
   Then, adjust each patch density individually. This is an efficient way of adjustment.

6) Check the color balance and density.

(Refer to the item of the printer color balance and density check.)

Note

If the color balance is customized, use SIM 67-27 to register the color balance as the service target.

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

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

13-G Printer image quality adjustment (Individual adjustment)

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 14E (1) and ADJ 14E (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.

13-G (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.

13-G (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.

1) Enter the SIM 67-34 mode.
2) Select the item A, B with the scroll key.

Display/Item		Content		Setting range	Default
A	CMY 0:ENABLE 1:DISABLE	CMY engine maximum density correction mode Enable	0	0 - 1	0
		CMY engine maximum density correction mode Disable	1		
B	K 0:ENABLE 1:DISABLE	K engine maximum density correction mode Enable	0	0 - 1	1
		K engine maximum density correction mode Disable	1		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	500
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	500
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500
G	PRINTER TOTAL TONER LIMIT SETUP	Printer total toner limit set up		0 - 3	0

- 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.

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 color balance and density adjustment. (Automatic adjustment)

13-G (3) Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)

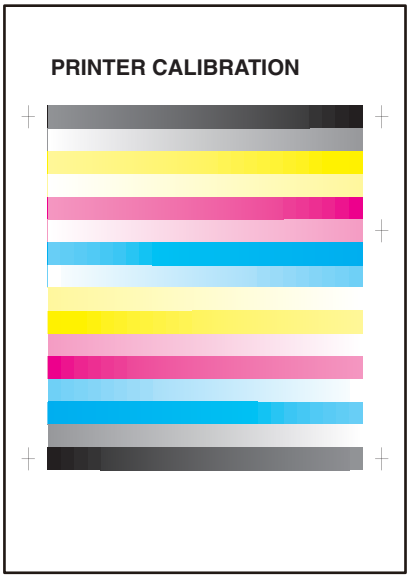
This adjustment is used to adjust the color balance and the density in the monochrome mode, the heavy paper mode, and the gloss paper mode.

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

1) Enter the SIM67-54 mode.
2) Press [EXECUTE] key.

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

3) Set the color patch image (adjustment pattern) printed in the procedure 2) 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).

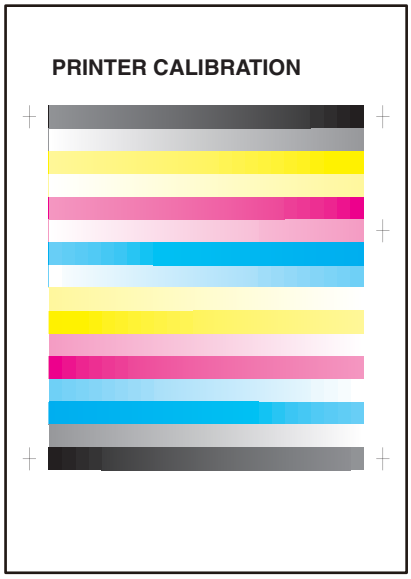


4) Press [EXECUTE] key.
   The color balance adjustment is automatically performed.
   The color patch image (adjustment pattern) is printed out.
   Check it for any abnormality.
5) Press [OK] key.
   The list of the adjustment items (for each dither) is displayed.
6) Select an adjustment item (for each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

Select item (Mode/Image)	Content
HEAVY PAPER	Adjustment item to improve the color balance in the heavy paper mode
B/W	Adjustment item to improve the density and gradation in the monochrome mode
4BIT_GRAPHICS	Adjustment item to improve the color balance in the text mode
DOT_SCREEN1	Adjustment item to improve the color balance in Dot (High Line Number).
DOT_SCREEN2	Adjustment item to improve the color balance in Dot (Low Line Number) mode
DOT_SCREEN1_BW	Adjustment item to improve the density and gradation in Dot mode of Monochrome High Quality mode
SHIGH	Adjustment item to improve the color balance in Super Fine Text mode

7) Press [EXECUTE] key.
   The color patch image (adjustment pattern) is printed out.

8) Set the color patch image (adjustment pattern) printed in the procedure 7) 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).



9) Press [EXECUTE] key.
   The color 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 color balance and density check.)

ADJ 14 Paper size sensor adjustment

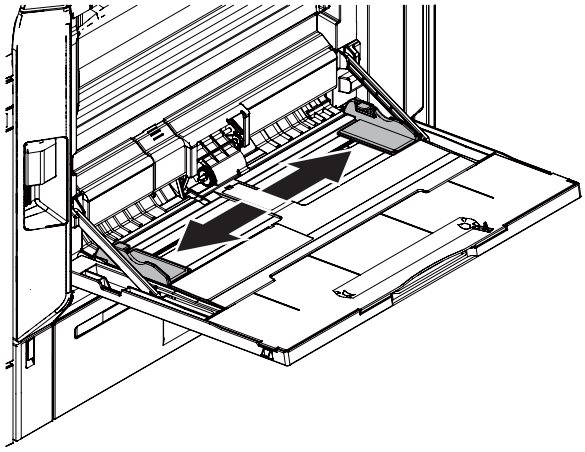
14-A Manual paper feed tray paper size (width) sensor adjustment

This adjustment must be performed in the following cases:

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

1) Enter the SIM 40-2 mode.

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



3) Press [EXECUTE] key.
   [EXECUTE] key is highlighted. Then it returns to the normal display.
   The maximum width position detection level of the manual paper feed guide is recognized.
4) Set the manual paper feed guide to the A4 size.
5) Press [EXECUTE] key.
   [EXECUTE] key is highlighted. Then it returns to the normal display.
   The A4 size width position detection level of the manual paper feed guide is recognized.
6) Set the manual paper feed guide to the width for the A4R size.
7) Press [EXECUTE] key.
   [EXECUTE] key is highlighted. Then it returns to the normal display.
   Set the manual paper feed guide to the width for the A4R size.
8) Open the manual paper feed guide to the minimum width position.
9) Press [EXECUTE] key.
   [EXECUTE] key is highlighted. Then it returns to the normal display.
   The minimum width position detection level of the manual paper feed guide is recognized.

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

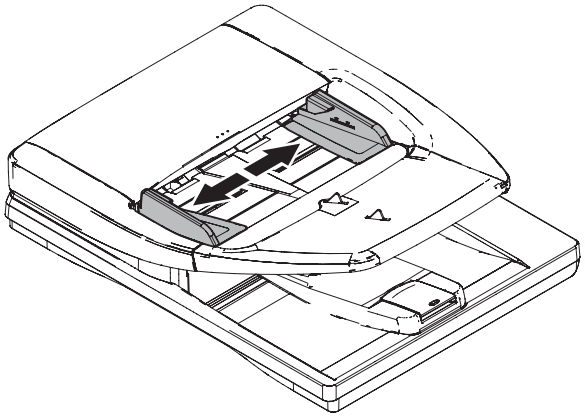
When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

14-B RSPF paper feed tray document size (width) sensor adjustment

This adjustment must be performed in the following cases:

- The RSPF paper feed tray section has been disassembled.
- The RSPF paper feed tray unit has been replaced.
- When a U2 trouble occurs.
- The scanner PWB has been replaced.
- The EEPROM on the scanner PWB has been replaced.

1) Enter the SIM 53-6 mode.
2) Open the RSPF paper feed guide to the maximum width position.



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

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

ADJ 15 Document size detection adjustment

This adjustment must be performed in the following cases:

- When the original size sensor section has been disassembled.
- When the original size sensor section has been replaced.
- When U2 trouble has occurred.
- When the SCN-MFP control PWB is replaced.
- When the EEPROM on the SCN-MFP control PWB is replaced.

15-A Adjust the sensitivity of the original size sensor

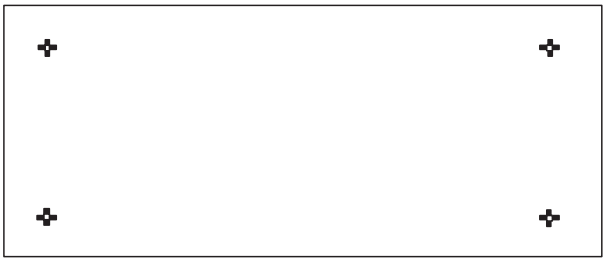
1) Enter the SIM41-2 mode.
2) Execute the sensor adjustment without document.
   With the document cover open, without placing a document on the table glass, press [EXECUTE] key.
3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.
   If the adjustment is completed normally, "DOCUMENT SIZE PHOTO SENSOR LEVEL IS ADJUESTED" is displayed.

ADJ 16 Touch panel coordinate setting

This adjustment must be performed in the following cases:

- The operation panel has been replaced.
- U2 trouble has occurred.
- The SCN MFP PWB has been replaced.
- The EEPROM on the SCN MFP PWB has been replaced.

1) Enter the SIM 65-1 mode.



2) Precisely press the cross mark points (4 positions).

   When the cross mark is pressed precisely, a buzzer sounds and the display is reversed. When all the four points are pressed and the touch panel adjustment is completed, the display returns to the simulation sub number entry screen.

   In case of an error, the display returns to the entry screen again.

   Check to confirm that there is no shift between the display frame and the detection position when the touch panel is pressed.

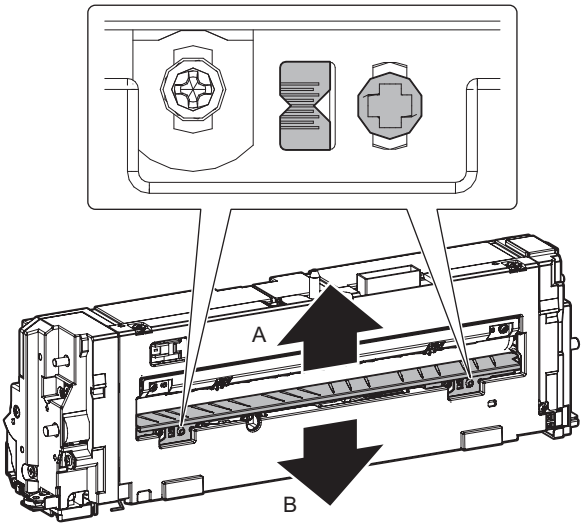
* When pressing the touch panel, never use a sharp tip (such as a needle or a pin).

ADJ 17 Fusing paper guide position adjustment

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

- When a paper jam occurs in the fusing section.
- When wrinkles are made on paper in the fusing section.
- When an image deflection or an image blur is generated in the paper rear edge section.

1) Loosen the fusing paper guide fixing screws on the two positions in the front/rear frame direction.
2) Use the fusing paper guide position scale as the reference to shift the paper guide in the arrow direction A or B.



   The standard fixing position is at two scales in direction B from the marking scale center. However, the position may be varied depending on the situation.

* When a wrinkle is made on paper, change the position in the error direction A.

* When an image deflection or unclear image is generated in the lead edge area of paper, change the position in the arrow direction B.

[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.

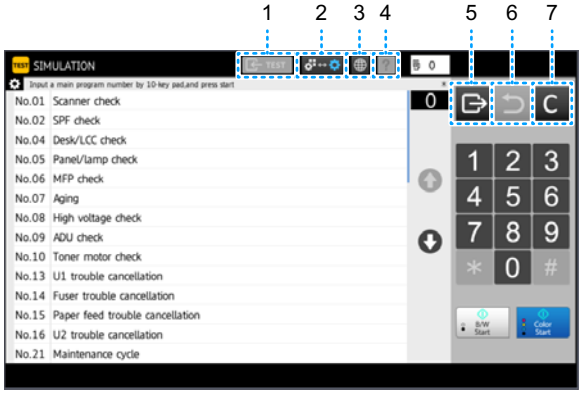
1) Various adjustments
2) Setting of the specifications and functions
3) Canceling troubles
4) Operation check
5) Counters check, setting clear
6) Machine operating conditions (operation hysteresis) data check, clear
7) Various (adjustments, setting, operation, counters, etc) data transport.

The operating procedures and displays depend on the design of the operation panel of the machine.

Simulation mode.

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

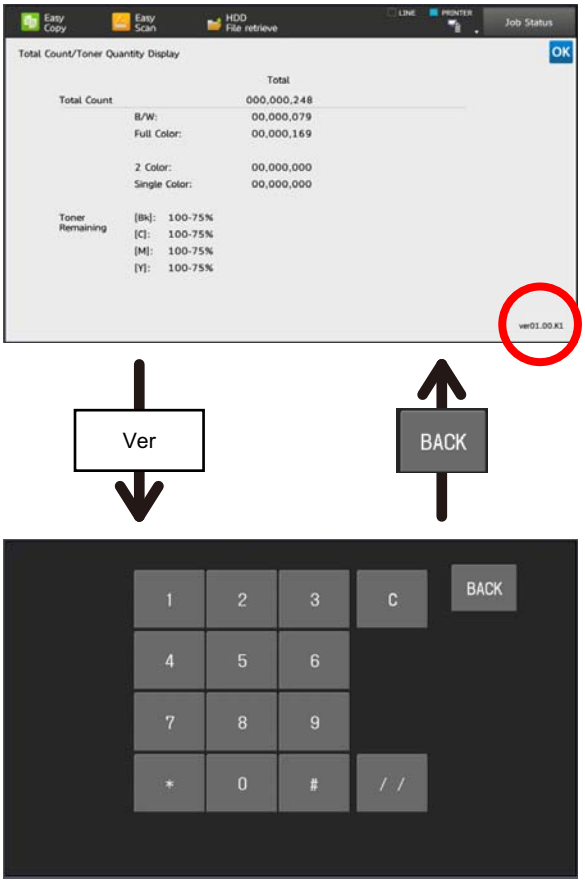


No.	Name	Function
1	TEST key	Change test mode
2	Mode setting key	Change Easy mode, Classic mode
3	Language setting key	Change language in simulation mode
4	INFO key	Display operation of current display
5	EXIT key	Exit from simulation mode
6	BACK key	Back to the previous display
7	Clear key	Clear input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

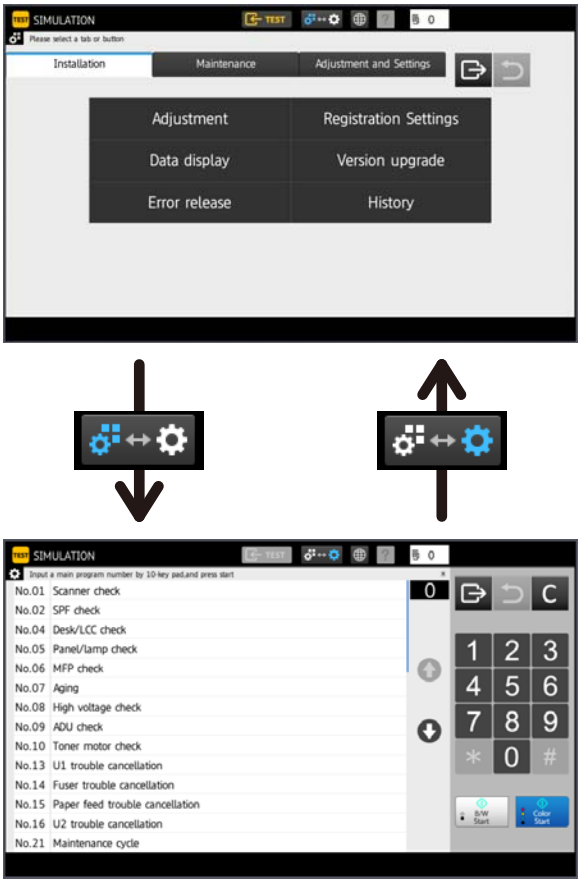
3. Starting the simulation

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 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
			50-22	Auto adjustment of registration & drum position
		2 Positioning	50-10	Manual image position adjustment
		3 Copy	46-21	Color 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
6	Ready for transport		6-90	Load move for shipment
			10-3	Toner cartridge eject sensor check
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
			50-22	Auto adjustment of registration & drum position
		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
		5 Replacing developer	10-3	Toner cartridge eject sensor check
			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
			50-22	Auto adjustment of registration & drum position
		2 Image Quality Automatic Adjustment	50-22	Auto adjustment of registration & drum position
			50-20	Registration 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		10-3	Toner cartridge eject sensor check
			25-2	Automatic developer adjustment
			44-2	Process control gain adjustment
			46-74	Copy/printer gradation auto adjustment
3	Scanner/ SPF		41-1	PD sensor check
			41-2	Document size photo-sensor setup
			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
			63-5	Standard scanner gamma setup
4	Paper feeding, Transport and paper ejection	1	40-2	Bypass tray adjustment
		2	3-10	Finisher adjustment
5	Copy		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	

B. List of classic mode

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
1-1	Used to check the operation of the scanner (reading) unit and the control circuit			
1-2	Used to check the sensors in the scanner (reading) section and the related circuit			
1-5	Used to check the operation of the scanner (reading) unit and the control circuit			
2-1	Used to check the operations of the automatic document feeder and the control circuit			
2-2	Used to check the operations of the sensors and the detectors in the automatic document feeder section and the control circuit			
2-3	Used to check the operations of the loads in the automatic document feeder and the control circuit			
3-2	Used to check the operations of the sensors and the detectors in the finisher and the control circuit			
3-3	Used to check the operation of the load in the finisher and the control circuit			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
3-10	Used to adjust the finisher			4
4-2	Used to check the operations of the sensors and detectors in the desk/large capacity tray (LCC) and the control circuit of those			
4-3	Used to check the operations of the loads in the desk/large capacity tray (LCC) and the control circuit of those			
4-5	Used to check the operations of the paper feed desk paper transport clutch (DTRC) and the LCC paper transport clutch (LTRC)			
5-1	Used to check the operation of the display, LCD in the operation paper and the control circuit			
5-2	Used to check the operation of the heater lamp and the control circuit			
5-3	Used to check the operation of the scanner lamp and the control circuit			
5-4	Used to check the operation of the discharge lamp and the control circuit			
6-1	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuit			
6-2	Used to check the operations of each fan motor and its control circuit			
6-3	Used to check the operations of the transport unit and the control circuit			
6-6	Used to perform fusing pressure release and applying and to check the operations of the control circuit			
6-90	Used to reset the machine to the factory setting (The scanner is set to the lock enable position)	6		
7-1	Used to set the operating conditions of aging			
7-6	Used to set the operating intermittent aging cycle			
7-8	Used to display the warm up time			
7-9	Color setting in the color copy test mode (used to check the copy operation and the image quality for each color)			
7-12	The document reading number of sheets (for aging operation)			
8-1	Used to check and adjust the operations of the developping voltage in each print mode and the control circuit. *When the middle speed is adjusted the low speed are also adjusted simultaneously			
8-2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. *When the middle speed is adjusted the low speed are also adjusted simultaneously			
8-6	Used to check and adjust the operation of the transport voltage and the control circuit			
8-10	Main charger current output setting			
9-2	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit			
9-3	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit			
10-1	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit			
10-3	Used to check the ejector position sensor	6	2-5	2
13	Used to cancel the self-diag U1 trouble	5	6	
14	Used to cancel the self-diag H3, H4, H5 troubles	5	6	
15	Used to cancel the self-diag U6 trouble	5	6	
16	Used to cancel the self-diag U2 trouble	5	6	

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
21-1	Used to set the maintenance cycle		4	
22-1	Used to check the print count value in each section and each operation mode	3-1	1-1	9-1
22-2	Used to check the total number of misfeed and troubles			
22-3	Used to check misfeed positions and the misfeed count of each position		1-2	
22-4	Used to check the trouble (self diag) history			
22-5	Used to check the ROM version of each unit	3-2	1-3	9-2
22-6	Used to output the setting/adjustment data, the firmware version and the counter list	3-3	1-4	9-3
22-8	Used to check the number of operations (counter value) of the finisher, the SPF and the scan (reading) unit		1-1	
22-9	Used to check the number of use (print quantity) of each paper feed section	3-1	1-1	9-1
22-10	Used to check the system configuration (option, internal hardware)	3-2	1-3	9-2
22-11	Used to check the use frequency (send/ receive) of FAX			
22-12	Used to check the SPF misfeed positions and the number os misfeed at each position		1-2	
22-13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge) and the fusing unit)	3-1	1-1	9-1
22-14	Used to display the use status of the toner cartridge			
22-18	Used to display the user data delete history			
22-19	Used to check the values of the counters related to the scan - image send			
22-40	Used to display the error code list and the contents			
22-41	Used to check JAM code information			
22-42	Used to check the JAM/trouble data			
22-43	JAM data details display			
22-90	Used to output the various set data lists			
23-2	Used to output the trouble history list of paper jam and misfeed	3-3	1-4	9-3
23-80	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 detectors in the paper feed section and the paper transport section			
23-81	Used to export paper feed time list			
24-1	Used to clear the jam counter and the trouble counter		3	
24-2	Used to clear the number of use (the number of prints) of each paper feed section		3	
24-3	Used to clear the finisher, SPF and the scan (reading) unit counter		3	
24-4	Used to clear the maintenance counter the printer counter of the transport unit and the fusing unit		3	
24-5	Used to clear the developer counter			
24-35	Used to clear the toner cartridge use status data			
25-1	Used to check the operations of the developing section			
25-2	Used to make the initial setting of toner density when replacing developer		2-2 -5	2
25-4	Used to display the operation data of the toner supply quantity			
25-5	Used to display the toner density correction data			
25-10	Developer/drum serial no setting			
26-1	Used to set Yes/No of installation of the right paper exit tray	2-1		

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
26-2	Used to set the paper size of the large capacity tray (LCC)	2-1		
26-3	Used to set the specifications of the auditor	2-1		
26-5	Used to set the count mode of the total counter and the maintenance counter	2-2		
26-6	Used to set the specifications of the destination			
26-7	Used to set the machine ID			
26-8	Used to set the counter mode (long scale)	2-2		
26-10	Used to set the trial mode of the network scanner			
26-18	Used to set Disable/Enable of the toner save mode operation	2-4		
26-30	Used to set the operation mode corresponding to the CE mark			
26-32	Used to set the specifications of the fusing cleaning operation			
26-35	Used to set the display/mode of Sim 22-4 trouble history when a same trouble occurred repeatedly. There are two display modes. Display as one trouble and display as several series of troubles			
26-38	Used to set continue/stop of print when the maintenance life is reached			
26-41	Used to set Enable/Disable of the magnification ratio automatic select function in the center binding mode			
26-49	Used to set the print speed of postcard mode			
26-50	Used to set functions	2-1		
26-52	Used to set whether non-printed paper is counted up or not	2-2		
26-65	Used to set the finisher alarm mode	2-1		
26-66	Simulation password setting			
26-69	Used to set the operating conditions for toner near end	2-4		
26-73	Enlargement continuous shoot, A3 wide copy mode image loss adjustment			
26-74	Used to set the OSA trial mode			
26-78	Used to set the password of the remote operation panel	2-1		
26-79	Used to set Yes/No of the pop-up display of security			
26-85	Simulation function setting			
27-2	Used to set the sender's registration number and the HOST server telephone number	2-5		
27-4	Used to set the initial call and toner order auto send	2-5		
27-5	Used to set the machine tag No.			
27-6	Used to set of the manual service call			
27-7	Used to set of the enable, alert callout	2-5		
27-9	Used to set the paper transport time recording Yes/No threshold value and shading gain adjustment retry number	2-5		
27-10	Used to clear the trouble prediction history information			
27-11	Used to check the serial communication retry number and the scanner gain adjustment retry number history			
27-12	Used to check the high density, halftone process control and the automatic registration adjustment error history			
27-13	Used to check the history of paper transport time between sensors			
27-14	Used to set the FSS function connection test mode	2-5		
27-15	Used to display the FSS connection status	2-5		
27-16	Used to set the FSS alert send	2-5		
27-17	Used to set the FSS paper order alert	2-5		

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
30-1	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuit			
30-2	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuit			
40-2	Manual paper feed tray paper width sensor adjustment			4
40-7	Used to set the adjustment value of the manual paper feed tray paper width sensor			
41-1	Used to check the operations of the document size sensor and the control circuit			3
41-2	Used to adjust the document size sensor detection level			3
41-3	Used to check the operations of the document size sensor and the control circuit			
43-1	Used to set the fusing temperature in each mode			
43-2	Used to set the fusing operation and preheating			
43-20	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (Sim43-2) in each paper mode			
43-21	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (Sim43-2) in each paper mode			
43-24	Fuser motion setup			
43-35	Fusing nip operation check			
44-1	Used to set each correction operation function in the image forming section			
44-2	Used to adjust the sensitivity of the image density sensor		2-2 -3	2
44-4	Used to set the conditions of the high density process control operation			
44-6	Used to execute the high density process control forcibly	1-5	2-3	
44-9	Used to display the result data of the high density process control operation			
44-12	Used to display the operation data of the high density process control and the image density sensor			
44-14	Used to display the output level of the temperature and humidity sensor			
44-15	Used to set the OPC drum idle rotation			
44-17	Process refresh execution			
44-21	Used to set the halftone process control target			5
44-22	Used to display the toner patch density level in the halftone process control operation			
44-24	Used to display the correction target and the correction level in the halftone process control operation			
44-25	Used to set the calculating conditions of the correction value for the halftone process control			
44-26	Used to execute the halftone process control compulsory	1-5	2-3	
44-27	Used to clear the correction data of the halftone process control			
44-28	Used to set the process control execution conditions			
44-29	Used to set the operating conditions of the process control during a job			
44-31	Used to adjust the OPC drum phase (Manual adjustment)			
44-37	Used to set the development bias correction level in the continuous printing operation			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
44-43	Used to display the identification information of the developing unit			
44-62	Used to set the process control execution conditions			
46-1	Used to adjust the copy density in the copy mode			
46-2	Used to adjust the copy density in the copy mode			
46-4	Used to adjust the density in the image send mode			
46-5	Used to adjust the density in the image send mode			
46-8	Used to adjust the image send mode color balance RGB			
46-9	Used to adjust the scan image density			3
46-10	Used to adjust the copy color balance and the gamma (for each color copy mode)			
46-16	Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode)			
46-19	Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents			
46-21	Copy color balance adjustment (manual adjustment)	1-3		5
46-23	Used to set the density correction of copy high density section (high density tone gap supported)			
46-24	Copy color balance adjustment (auto adjustment)			5
46-25	Used to adjust the copy color balance (single color copy mode)			
46-26	Used to reset the single color mode color balance set value to the default			
46-27	Used to adjust the gamma/density of copy images, text and line image edges			
46-30	Used to adjust the resolution in the sub scanning direction in the copy mode			
46-32	Used to adjust the document background density reproducibility in the monochrome auto copy mode			
46-36	Used to adjust the colors in the two color copy mode			
46-37	Used to adjust the reproduction capability of monochrome mode color			
46-38	Used to adjust the black component amount in the color copy mode			
46-39	Used to adjust the sharpness of FAX send images			
46-40	Used to adjust the FAX send image density (Collective adjustment of all the modes)			
46-41	Used to adjust the FAX send image density (Normal)			
46-42	Used to adjust the FAX send image density (Fine)			
46-43	Used to adjust the FAX send image density (Super fine)			
46-44	Used to adjust the FAX send image density (Ultra fine)			
46-45	Used to adjust the FAX send image density (600dpi)			
46-46	Used to adjust the FAX send image density (RGB RIP)			
46-47	Used to set the compression rate of copy and scan images (JPEG)			
46-48	Used to set the copy output resolution of copy mode			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
46-51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode			
46-52	Used to set the gamma default for the copy mode heavy paper and the image process mode			1-3
46-54	Used to perform the engine halftone automatic density adjustment (dither)			1-3
46-55	Used to adjust the drop out color in the image send mode (monochrome manual text mode)			
46-58	Used to set the copy mode pseudo resolution (smoothing process)			
46-60	Used to adjust the sharpness in the copy/scan mode			
46-61	Used to adjust the area separation recognition level			
46-62	Used to set the operating condition of the ACS the area separation the background image process and the auto exposure mode			
46-63	Used to adjust the density in the copy low density section			
46-65	Used to set the color correction table			
46-66	Used to adjust the reproduction capability of watermarks in the copy/printer mode			
46-68	Used to adjust the auto resolution judgement (For MX-xx60/xx70 series)			
46-74	Copy color balance adjustment (Auto adjustment)/printer color balance adjustment (Auto adjustment)	1-1 -5	2-2 -3	1-2 -3
46-90	Used to set the process operation of high compression PDF images			
46-91	Used to adjust the reproduction capability of black text			
48-1	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction)			1-1
48-5	Used to correct the scan image magnification ratio (in the sub scanning direction)			1-1
48-6	Used to adjust the rotation speed of each motor			
49-1	Used to perform the firmware update	4	5	
49-3	Used to update the operation manual	4	5	
49-5	Used to perform the watermarks update	4	5	
49-6	Used to perform the OCR update			
49-10	Used to perform the ACU update			
50-1	Copy image position, image loss adjustment			1-1
50-5	Used to adjust the print lead edge image position			1-1
50-6	Used to adjust the copy image position and the image loss (SPF mode)			1-1
50-10	Used to adjust print image position	1-2	2-1	1-1
50-12	Used to perform the scan image off center position adjustment			1-1
50-20	Image registration adjustment (Main scanning direction)			1-2
50-22	Used to adjust the image registration (Main scan direction, sub scan direction)	1-1	2-1	1-1 -2
50-23	Used to set the registration for temperature adjustment			
50-24	Used to display the detail data of SIM 44-2, 50-20, 21 and 22			
50-27	Used to perform the image loss adjustment of scanned images in the FAX or image send mode			
50-28	Used to automatically adjust the image loss, void area, image off center and image magnification ratio			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
51-1	Used to adjust the ON/OFF timing of the secondary transport voltage			
51-2	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the SPF resist roller			
53-6	Used to adjust the detection level of the SPF document width			3
53-7	Used to adjust the SPF document size width sensor			
53-8	Used to adjust the document lead edge reference and the SPF mode document scan position			3
53-9	SPF dirt detection setting			
53-10	SPF dirt detection execution			
55-1	Used to set the specification of the engine control operations (SOFT SW)			
55-2	Used to set the specifications of the scanner control operation (SOFT SW)			
55-3	Used to set the specifications of the controller operation (SOFT SW)			
55-10	Used to set the special stamp text for Taiwan			
56-1	Used to transport data between HDD - MFP PWB SRAM/EEPROM			
56-2	Used to backup the data in the EEPROM and HDD to the USB memory			
56-3	Used to backup the document filing data to the USB memory			
56-4	Used to backup the JOB log data to the USB memory			
56-5	Used to import the SIM22-6 data to a USB memory in the text format			
56-6	Used to output the JAM/trouble data			
56-7	Used to export system log data to the USB memory			
56-8	Used to perform ICC profile update			
56-15	MFP EEPROM data restore			
56-99	Used to export system log data to the USB memory	3-4	1-5	9-4
60-1	Used to check the memory operations (read/write) of the SCU-MFP PWB			
61-1	Used to check the LSU polygon motor rotation and laser detection			
61-3	Used to set the laser power			
61-4	Used to print the print image skew adjustment pattern			
61-11	Used to correct the laser power automatically		2-3	1-2 -3
61-12	Laser power manual correction			
61-13	Used to clear the laser power correction value		2-3	1-3
61-14	Used to set the laser power correction			1-3
62-1	Used to format the HDD			
62-2	Used to check read/write of the HDD (partial)			
62-3	Used to check read/write of the HDD (all areas)			
62-6	Used to perform the self diagnostics of the HDD			
62-7	Used to print the HDD self diagnostics error log			
62-8	Used to format the HDD			
62-10	Used to clear the job completion list data			
62-11	Used to delete the document filing data			
62-12	Used to set Enable/Disable of auto format in a HDD trouble			
62-13	Used to format the HDD (Operation manual watermark data only)			
62-14	Used to delete the document filing management data			
62-20	Used to check the status display of HDD			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
63-1	Used to display the shading correction result			
63-2	Used to perform shading	1-5		3
63-3	Used to perform scanner (CCD) color balance and gamma auto adjustment	1-5	2-3	3
63-4	Used to display the scanner test chart patch density			
63-5	Used to perform the scanner (CCD) color balance and gamma default setting		2-3	3
63-7	Used to register the service target of the copy mode auto color balance adjustment			5
63-8	Used to set the default of the service target of the copy mode auto color balance adjustment			5
63-11	Used to set the target color balance of the copy mode auto color balance adjustment			5
64-1	Test print (self print) (color mode)			
64-2	Test print (self print) (monochrome mode)			8
64-4	Printer test print (self print)			
64-5	Printer test print (self print) (PCL)	1-4		
64-6	Printer test print (self print) (PS)			
65-1	Used to adjust the touch panel (LCD display section) detection coodinates			7
65-2	Used to display the touch panel (LCD display section) detection coodinates			
65-5	Used to check the operation panel key input			
66-1	Used to display the image send-related soft SW (2-150) on the LCD to allow changing the soft SW while checking with the LCD	2-3		
66-2	Used to enter a country code and set the default value for the country code			
66-3	Used to check read/write of the EEPROM and the SDRAM on the MODEM controller and display the result			
66-4	Used to send the selected signals to the line and the main unit speaker (send level: max)			
66-5	Used to send the selected signal to the line and the main unit speaker (send level: soft SW setting)			
66-6	Used to print the confidential registration check table (BOX No, BOX name, passcode			
66-7	Used to output all image data saved in the image memory			
66-8	Used to send the selected sound message to the line and the speaker (send level: max)			
66-9	Used to send the selected sound message to the line and the speaker (send level: soft SW setting)			
66-10	Used to clear the FAX and image send image data			
66-11	Used to send the selected signal at 300bps to the line and the speaker (send level: max)			
66-12	Used to send the selected signal at 300bps to the line and the speaker (send level: soft SW setting)			
66-13	Used to register dial number for Sim66-14/15/16 dial test			
66-14	Used to execute the dial pulse (10pps) send test and to adjust the make time			
66-15	Used to execute the dial pulse (20pps) send test and to adjust the make time			
66-16	Used to execute the DTMF signal send test and to adjust the send level			
66-17	Used to send the DTMF signal to the line and the speaker (send level: max)			
66-18	Used to send the DTMF signal to the line and the speaker (send level: soft SW setting)			
66-21	Used to print the selected items (system error, protocol monitor)			

Sim No.		Easy Mode		
		Installation	Maintenance	Adjustment and Settings
66-22	Used to set the handset sound volume (Japan model only)			
66-29	Used to initialize the telephone book data			
66-30	Used to display the TEL/LIU status change, the display is highlighted by status change			
66-31	Used to set ON/OFF the port for output to TEL/LIU			
66-32	Used to check the fixed data received from the line and to display the result			
66-33	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			
66-36	Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually			
66-39	Used to check and change the destination setting saved in EEPROM of the FAX BOX			
66-42	Used to rewrite the program to power control installed in the FAX BOX			
66-43	Used to write the adjustment value into the power control installed in the FAX BOX			
66-61	Used to display the image send-related soft SW (151-250) on the LCD to allow changing the soft SW while checking with the LCD			
66-62	Used to import the FAX receive data into a USB memory in PDF file type			
67-17	Printer reset			
67-24	Printer color balance adjustment (Auto adjustment)			6
67-25	Printer color balance adjustment (Manual adjustment)	1-4		6
67-26	Used to set the target color balance of the printer mode auto color balance adjustment			6
67-27	Used to set the service target of the printer mode auto color balance adjustment			6
67-28	Used to set the default of the service target of the printer mode auto color adjustment			6
67-31	Used to clear the printer calibration value			
67-33	Used to change the gamma of the printer screen			
67-34	Used to set the density correction in the printer high density section			
67-36	Used to adjust the density in the low density section			
67-41	Used to set 2 color print			
67-42	Used to set 2 color print color density			
67-43	Used to adjust 2 color mode color balance			
67-52	Used to set the default of the gamma of the printer screen			1-3
67-54	Printer color balance adjustment			1-3

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 speed with the touch panel key.
2) Press [EXECUTE] key.
   Scanning is once performed at the speed corresponding to the scan resolution (operation speed).

RSPF

Item/Display		Operation mode	Default value
OC SCAN	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (297mm/s)	
	600DPI	600DPI (198mm/s)	
	1200DPI	1200DPI (99mm/s)	

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 operating status of the sensor is displayed.

When "MHPS" is highlighted, the scanner unit is in the home position.

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 speed with the touch panel key.
2) Press [EXECUTE] key.
   Scanning is repeated at the speed corresponding to the scan resolution (operation speed).
   When [EXECUTE] key is pressed, the operation is terminated.

RSPF

Item/Display		Operation mode	Default value
OC SCAN	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (297mm/s)	
	600DPI	600DPI (198mm/s)	
	1200DPI	1200DPI (99mm/s)	

2

2-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the automatic document feeder and the control circuit.
Section	SPF

Operation/Procedure

1) Select the operation mode and the speed with the touch panel key.
2) Press [EXECUTE] key.
   The RSPF repeats paper feed, transport, and paper exit operations at the speed corresponding to the scan resolution (operation speed).
   When [EXECUTE] key is pressed, the operation is terminated.

RSPF

Item/Display		Operation mode	Default value
SPF SCAN (SINGLE)	300DPI	300DPI(396.0mm/s)	300DPI (396.0mm/s)
	400DPI	400DPI(297.0mm/s)	
	600DPI	600DPI(198.0mm/s)	
SPF SCAN (DOUBLE)	300DPI	300DPI(396.0mm/s)	300DPI (396.0mm/s)
	400DPI	400DPI(297.0mm/s)	
	600DPI	600DPI(198.0mm/s)	

2-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the automatic document feeder section and the control circuits.
Section	Automatic document feeder

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

Display	Content
SPED	Document sensor
SPPD1	Document transport sensor 1
SPLS1	Paper size detector 1
SPLS2	Paper size detector 2
SOCD	SPF open/close sensor
SPPD2	Document transport sensor 2
SPPD3	Document transport sensor 3
SPPD4	Document transport sensor 4
SCOV	SPF cover open/close detector
SSET	SPF installation detection
STMPU	SPF stamp UN installation detection
SWD_LEN	SPF document guide plate position (Unit: 0.1mm)
SWD_AD	SPF document detection volume output AD value

Important

SWD_LEN and SWD_AD are not ON/OFF display.

2-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the automatic document feeder and the control circuit.
Section	SPF

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.

RSPF

Display	Content
SPUM_F	SPF paper feed motor (normal rotation)
SPUM_R	SPF paper feed motor (reverse rotation)
SPFM_F	SPF transport motor (normal rotation)
SPFM_R	SPF transport motor (reverse rotation)
SPRS	Paper exit roller pressure control solenoid (SPF)
SRRC	Registration roller clutch (SPF)
STMPS	Stamp solenoid

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 circuit.
Section	Finisher

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

Inner finisher

No,/Display item	Content
FNECODTC	Staple-less staple connection detection signal
FNINTSNS	Punch unit paper rear edge detection signal
FNMANSW	Manual staple switch
FNMSW1	Front cover switch
FNPS1	Discharged paper sensor
FNPS2	Paddle home position sensor
FNPS3	Return belt home position sensor
FNPS4	Front alignment plate home position sensor
FNPS5	Rear alignment plate home position sensor
FNPS6	Processing tray paper sensor
FNPS7	Assist home position sensor
FNPS8	Paper fold home position sensor
FNPS9	Stack tray paper height sensor
FNPS10	Stack tray lower limit sensor
FNPS11	Staple shift home position sensor
FNPS12	Manual staple sensor
FNPS14	Stack tray home position sensor
FNPS16	Divide sensor
FNPUDTC	Punch unit connection detection signal
FNSTPLHP	Staple home position sensor
FNSTPLLS	Staple empty detection
FNSTPLRE	Staple lead edge sensor

Inner finisher punch unit

No,/Display item	Content
FCFULL_S	Punch dust full sensor
FCPI_S	Punch home position sensor
FCPUENCS	Punch motor rotation sensor
FCRI_S	Punch mode sensor
FCYKPTRS	Punch unit paper rear edge sensor

Staple-free Staple Unit

No,/Display item	Content
FNPS13	Staple-free staple unit position sensor
FNPS15	Staple-free staple unit home position sensor

1K finisher

No,/Display item	Content
BLTHPS	Release position sensor
ENT	Inlet sensor
EXGPLTHP	Paper exit guide plate open/close home position sensor
FDRSW	Door open/close sensor
HITHP	Flapper home position sensor
JOGHPS	Jogger home position sensor
LDWNLMUT	Lift tray lower limit lower sensor
LMDLT	Intermediate feeder left sensor
PRFEX	Proof paper exit sensor
PRFTRYFL	Proof tray full sensor
RMDLT	Intermediate feeder right sensor
SFTROLHP	Shift home position sensor
STMHP	Staple shift home position detection
STPDRRHP	Staple driver home position sensor
STPNEND	Staple near end sensor
STPSPRM	Staple self-priming sensor
STPTRPAP	Staple tray paper empty sensor
UDWNLMUT	Lift tray lower limit upper sensor
UPCVR	Upper cover open/close sensor
UPEX	Shift paper exit (Lift tray paper exit) sensor
UPLMUTSW	Lift tray upper switch
UTNRH	Tray near home detection sensor
UTRPH	Lift tray paper surface sensor

1K saddle finisher

No,/Display item	Content
BDLTRS	Bundle transport sensor
BLTHPS	Release home position sensor
ENDSHP	Rear edge stopper home position sensor
ENDSTRS	Rear edge stopper transport sensor
ENT	Inlet sensor
EXGPLTHP	Paper exit guide plate open/close home position sensor
FDRSW	Door open/close sensor
FLDCMHP	Folding cam home position sensor
FLDEX	Half folding paper exit sensor
FLDPLTHP	Folding blade home position sensor
HITHP	Flapper home position sensor
JOGHPS	Jogger home position sensor
LDWNLMUT	Lift tray lower limit lower sensor
LMDLT	Intermediate feeder left sensor
LPRSRLHP	Bundle transport lower pressure release home position sensor
PRFEX	Proof paper exit sensor
PRFTRYFL	Proof tray full sensor
RMDLT	Intermediate feeder right sensor
SDLFLLL	Half folding tray full lower sensor
SDLFLLU	Half folding tray full upper sensor
SFTROLHP	Shift home position sensor
SSSTPCHP	Saddle stitch staple clincher home position sensor
STMHP	Staple shift home position detection
STPDRRHP	Staple driver home position sensor
STPNEND	Staple near end sensor
STPSPRM	Staple self-priming sensor
STPTRPAP	Staple tray paper empty sensor
STTKSH	Staple retracting sensor
UDWNLMUT	Lift tray lower limit upper sensor
UPCVR	Upper cover open/close sensor

No,/Display item	Content
UPEX	Shift paper exit (Lift tray paper exit) sensor
UPLMUTSW	Lift tray upper limit switch
UPRSRLHP	Bundle transport upper pressure release home position sensor
UTNRH	Tray near home detection sensor
UTRPH	Lift tray paper surface sensor

1K finisher punch unit

No,/Display item	Content
PAPPOS	Horizontal registration detection sensor
PAPPOSHP	Horizontal registration detection shift home position sensor
PNCHENC	Punch rear position sensor
PNCHHP	Punch home position sensor
PNCHHPFL	Punch hopper full sensor
PNCHMVHP	Punch shift home position sensor
PSLTDSW1	Punch selection DIP SW1
PSLTDSW2	Punch selection DIP SW2

3K finisher

No,/Display item	Content
FN1DDS	DIP SW1 detection sensor
FN1DO	Paper exit paper surface detection sensor 1
FN1DPS	Push SW1 detection sensor
FN2DDS	DIP SW2 detection sensor
FN2DO	Paper exit paper surface detection sensor 2
FN2DPS	Push SW2 detection sensor
FN3DDS	DIP SW3 detection sensor
FN4DDS	DIP SW4 detection sensor
FNAMS	Manual staple operation SW
FNB	Buffer sensor
FNDCP	Punch connection detection signal
FNDCS	Saddle connection detection signal
FNDES	Staple empty detection sensor
FNDFET	Escape tray full detection sensor
FNDOCFD	Front door open/close detection sensor
FNDOGPN	Alignment unit paddle lift paper surface detection sensor
FNDOHS	Staple cuing detection sensor
FNDPMS	Manual staple paper detection sensor
FNDPOPT	Process tray paper surface sensor
FNE	Entry port sensor
FNEE	Escape paper exit sensor
FNFMTLC	Load tray full (Large coated paper full) sensor
FNFMTLS	Load tray middle (Large coated paper full) sensor
FNFMTSS	Load tray lower limit (Small coated paper full) sensor
FNHPAR	Rear edge assist home position sensor
FNHPCSLS	Staple-free stapling clinch home position sensor
FNHPDSS	Staple drive home position sensor
FNHPFECE	Escape/saddle transport switch flapper home position sensor
FNHPFR	Rear edge falling home position sensor
FNHPGJFN	Alignment unit front alignment plate lift home position sensor
FNHPGJRN	Alignment unit rear alignment plate lift home position sensor
FNHPGKS	Take-up knurling lift home position sensor
FNHPGPN	Alignment unit paddle lift home position sensor
FNHPJF	Front edge alignment plate home position sensor
FNHPJFN	Alignment unit front alignment plate home position sensor
FNHPJR	Rear edge alignment plate home position sensor
FNHPJRN	Alignment unit rear alignment plate home position sensor
FNHPMSS	Staple shift home position sensor
FNHPMT	Load tray home position sensor
FNHPP	Paddle home position sensor
FNHPRPN	Alignment unit paddle rotation home position sensor
FNHPS	Oscillation home position sensor
FNHPTF	Front edge tongue home position sensor
FNHPTR	Rear edge tongue home position sensor
FNMCSLS	Staple-free stapling motor clock sensor
FNOCFD	Front door open/close switch
FNSSS	Staple safety switch
FNTBP	Preprocessing timing sensor
FNULMT	Load tray upper limit sensor

3K saddle finisher

No,/Display item	Content
FN1DDS	DIP SW1 detection sensor
FN1DO	Paper exit paper surface detection sensor 1
FN1DPS	Push SW1 detection sensor
FN2DDS	DIP SW2 detection sensor
FN2DO	Paper exit paper surface detection sensor 2
FN2DPS	Push SW2 detection sensor
FN3DDS	DIP SW3 detection sensor
FN4DDS	DIP SW4 detection sensor
FNAMS	Manual staple operation SW
FNB	Buffer sensor
FNDCP	Punch connection detection signal
FNDCS	Saddle connection detection signal
FNDES	Staple empty detection sensor
FNDFET	Escape tray full detection sensor
FNDOCFD	Front door open/close detection sensor
FNDOGPN	Alignment unit paddle lift paper surface detection sensor
FNDOHS	Staple cuing detection sensor
FNDPMS	Manual staple paper detection sensor
FNDPOPT	Process tray paper surface sensor
FNE	Entry port sensor
FNEE	Escape paper exit sensor
FNFMTLC	Load tray full (Large coated paper full) sensor
FNFMTLS	Load tray middle (Large coated paper full) sensor
FNFMTSS	Load tray lower limit (Small coated paper full) sensor
FNHPAR	Rear edge assist home position sensor
FNHPCSLS	Staple-free stapling clinch home position sensor
FNHPDSS	Staple drive home position sensor
FNHPFECE	Escape/saddle transport switch flapper home position sensor
FNHPFR	Rear edge falling home position sensor
FNHPGJFN	Alignment unit front alignment plate lift home position sensor
FNHPGJRN	Alignment unit rear alignment plate lift home position sensor
FNHPGKS	Take-up knurling lift home position sensor
FNHPGPN	Alignment unit paddle lift home position sensor
FNHPJF	Front edge alignment plate home position sensor
FNHPJFN	Alignment unit front alignment plate home position sensor
FNHPJR	Rear edge alignment plate home position sensor
FNHPJRN	Alignment unit rear alignment plate home position sensor
FNHPMSS	Staple shift home position sensor
FNHPMT	Load tray home position sensor
FNHPP	Paddle home position sensor
FNHPRPN	Alignment unit paddle rotation home position sensor
FNHPS	Oscillation home position sensor
FNHPTF	Front edge tongue home position sensor
FNHPTR	Rear edge tongue home position sensor
FNMCSLS	Staple-free stapling motor clock sensor
FNOCFD	Front door open/close switch
FNSSS	Staple safety switch
FNTBP	Preprocessing timing sensor
FNULMT	Load tray upper limit sensor
FSDU	Saddle unit detection sensor
FSE	Saddle unit entry port sensor
FSEB	Saddle unit folding bundle paper exit sensor
FSEPB	Saddle unit folding bundle loading paper empty sensor
FSESFS	Saddle unit staple front staple empty sensor

No,/Display item	Content
FSESRS	Saddle unit staple rear staple empty sensor
FSHPDSS	Saddle unit staple drive home position sensor
FSHPEL	Saddle unit switch lever home position sensor
FSHPG	Saddle unit gripper home position sensor
FSHPJ	Saddle unit alignment plate home position sensor
FSHPP	Saddle unit paddle home position sensor
FSHPSR	Saddle unit rear edge stopper home position sensor
FSHPT	Saddle unit pushing home position sensor
FSMCE	Saddle unit paper exit motor clock sensor
FSMCF	Saddle unit folding motor clock sensor
FSPV	Saddle unit vertical path sensor

3K finisher punch unit

No,/Display item	Content
FC1DR	Punch horizontal registration detection sensor 1
FC2DR	Punch horizontal registration detection sensor 2
FC3DR	Punch horizontal registration detection sensor 3
FC4DR	Punch horizontal registration detection sensor 4
FC5DR	Punch horizontal registration detection sensor 5
FCDFWP	Punch dust full detection sensor
FCEP	Punch hole encoder sensor
FCHPP	Punch hole home position sensor
FCHPR	Punch horizontal registration home position sensor

Paper pass unit

No,/Display item	Content
PDOS1	Relay cover open/close detection 1
PDOS2	Relay cover open/close detection 2
PDPPD1	Relay transport detection 1
PDPPD2	Relay transport detection 2

3-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the load in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

Inner finisher

No,/Display item	Content
FNM1	Transport motor
FNM10	Paddle motor
FNM2	Roller motor
FNM3	Front alignment motor
FNM4	Rear alignment motor
FNM5	Assist motor
FNM6	Tray shift motor
FNM7	Staple shift motor
FNM9	eco staple motor
FNSL	Rear edge falling motor
FNSTPLIF	Staple motor

1K finisher

No,/Display item	Content
BLT_M	Release motor
ENTRS_M	Entry port transport motor
EXGPLT_M	Paper exit guide plate open/close motor
EXTRS_M	Paper exit transport/Flapping, drawing roller motor
JCTG_S	Branch solenoid
JOG_M	Jogger motor
PSN_M	Flapping motor
SFT_M	Shift motor
STPMOV_M	Staple motor
STPMV_M	Staple shift motor
TRYLFT_M	Tray lift motor
UPTRS_M	Proof transport motor

1K Saddle finisher

No,/Display item	Content
BLT_M	Release motor
ENDS_M	Rear edge stopper motor
ENTRS_M	Entry port transport motor
EXGPLT_M	Paper exit guide plate open/close motor
EXTRS_M	Paper exit transport/Flapping, drawing roller motor
FLDPLT_M	Folding blade motor
FLTRS_M	Folding transport motor
GDLED	Guide LED
JCTG_S	Branch solenoid
JOG_M	Jogger motor
LPRSRL_M	Bundle transport lower pressure release motor
PSN_M	Flapping motor
SFT_M	Shift motor
STPMOV_M	Staple motor
STPMV_M	Staple shift motor
TRYLFT_M	Tray lift motor
UBTRS_M	Bundle transport upper motor
UPRSRL_M	Bundle transport upper pressure release/ Reference fence evacuation motor
UPTRS_M	Proof transport motor

1K Finisher punch unit

No,/Display item	Content
PNCH_M	Punch motor
PNCHMV_M	Punch shift motor
STSMOV_M	Punch horizontal registration detection shift motor

3K Finisher

No,/Display item	Content
FNCDP	Paddle drive clutch
FNCDRUS	Oscillation lower roller drive clutch
FNCEDCE	Escape transport drive switch clutch
FNMAR	Rear edge assist motor
FNMB	Buffer motor
FNMDJFN	Alignment unit front alignment plate drive motor
FNMDJRN	Alignment unit rear alignment plate drive motor
FNMDT	Tongue drive motor
FNME	Discharge motor
FNMEC	Entry port transport motor
FNMFECES	Escape/Saddle transport switch flapper motor
FNMFR	Rear edge falling motor
FNMGJFN	Alignment unit front alignment plate lift motor
FNMGJRN	Alignment unit rear alignment plate lift motor
FNMGMT	Load paper tray lift motor
FNMGPN	Alignment unit paddle lift motor
FNMGRS	Take-up switch roller lift motor
FNMJF	Front alignment motor
FNMJR	Rear alignment motor
FNMMSS	Staple horizontal shift motor
FNMRPN	Alignment unit paddle rotation motor
FNMS	Oscillation motor
FNMSLS	Staple-free staple motor
FNMSS	Staple motor

3K Saddle finisher

No,/Display item	Content
FNCDP	Paddle drive clutch
FNCDRUS	Oscillation lower roller drive clutch
FNCEDCE	Escape transport drive switch clutch
FNMAR	Rear edge assist motor
FNMB	Buffer motor
FNMDJFN	Alignment unit front alignment plate drive motor

No,/Display item	Content
FNMDJRN	Alignment unit rear alignment plate drive motor
FNMDT	Tongue drive motor
FNME	Discharge motor
FNMEC	Entry port transport motor
FNMFECES	Escape/Saddle transport switch flapper motor
FNMFR	Rear edge falling motor
FNMGJFN	Alignment unit front alignment plate lift motor
FNMGJRN	Alignment unit rear alignment plate lift motor
FNMGMT	Load paper tray lift motor
FNMGPN	Alignment unit paddle lift motor
FNMGRS	Take-up switch roller lift motor
FNMJF	Front alignment motor
FNMJR	Rear alignment motor
FNMMSS	Staple horizontal shift motor
FNMRPN	Alignment unit paddle rotation motor
FNMS	Oscillation motor
FNMSLS	Staple-free staple motor
FNMSS	Staple motor
FSMC	Saddle transport motor
FSMDLE	Saddle switch lever drive motor
FSME	Saddle discharge motor
FSMF	Saddle folding motor
FSMG	Saddle gripper motor
FSMJ	Saddle alignment motor
FSMS	Saddle staple motor
FSMSR	Saddle rear edge stopper motor

3K finisher punch unit

No,/Display item	Content
FCMR	Punch horizontal registration motor
FCP	Punch hole motor

Paper pass unit

No,/Display item	Content
PDPTM	Relay unit transport motor

3-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the finisher.
Section	Finisher

Operation/Procedure

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

Inner finisher

Item/Display		Content	Setting range	Default value
A	ALIGNMENT	Alignment position adjustment	50 - 150	100
B	ALIGNMENT CENTER	Alignment position center adjustment	90 - 110	100
C	STAPLE FRONT	Stapling position adjustment (one position in front)	50 - 150	100
D	STAPLE REAR	Stapling position adjustment (one position at the rear)	50 - 150	100
E	STAPLE BOTH	Stapling position adjustment (staple pitch of two positions binding)	50 - 150	100
F	MANUAL STAPLE POSITION	Manual stapling position adjustment	80 - 120	100
G	STAPLELESS STAPLE Y	Staple-free stapling position adjustment (Y : Main scanning direction)	70 - 130	100
H	STAPLELESS STAPLE X	Staple-free stapling position adjustment (X : Sub scanning direction)	85 - 115	100
I	STAPLELESS STAPLE PRESSURE	Staple-free stapling welding pressure adjustment (Motor rotation)	85 - 115	100
J	BELT PRESSURE	Return belt pressure adjustment	90 - 110	100
K	MANUAL STAPLE TIME	Manual staple time out setting	1 - 5	2
L	MANUAL STAPLE PULLOUT TIME	Manual staple pull out time out setting	0 - 10	0
M	PUNCH X	Punch hole position adjustment (X : Sub scanning direction)	80 - 120	100

1K Finisher / 1K Saddle finisher

Item/Display		Content	Setting range	Default value
A	STAPLE POSITION	Stapling position adjustment	93 - 107	100
B	JOGGER(A3)	Jogger position adjustment A3	97 - 103	100
C	JOGGER(B4)	Jogger position adjustment B4	97 - 103	100
D	JOGGER(A4-R)	Jogger position adjustment A4-R	97 - 103	100
E	JOGGER(A4)	Jogger position adjustment A4	97 - 103	100
F	JOGGER(B5-R)	Jogger position adjustment B5-R	97 - 103	100
G	JOGGER(B5)	Jogger position adjustment B5	97 - 103	100
H	JOGGER(11 x 17)	Jogger position adjustment 11 x 17	97 - 103	100
I	JOGGER(8.5 x 14)	Jogger position adjustment 8.5 x 14	97 - 103	100
J	JOGGER(8.5 x 11R)	Jogger position adjustment 8.5 x 11R	97 - 103	100
K	JOGGER(8.5 x 11)	Jogger position adjustment 8.5 x 11	97 - 103	100
L	JOGGER(12 x 18)	Jogger position adjustment 12 x 18	97 - 103	100
M	JOGGER(8KR)	Jogger position adjustment 8K	97 - 103	100
N	JOGGER(16K-R)	Jogger position adjustment 16K-R	97 - 103	100
O	JOGGER(16K)	Jogger position adjustment 16K	97 - 103	100
P	JOGGER(OTHER)	Jogger position adjustment Other	97 - 103	100
Q	HITTING ROLLER START(A3)	Flapping roller operation start timing adjustment A3	90 - 110	100
R	HITTING ROLLER START(B4)	Flapping roller operation start timing adjustment B4	90 - 110	100
S	HITTING ROLLER START(A4-R)	Flapping roller operation start timing adjustment A4-R	90 - 110	100
T	HITTING ROLLER START(A4)	Flapping roller operation start timing adjustment A4	90 - 110	100
U	HITTING ROLLER START(B5-R)	Flapping roller operation start timing adjustment B5-R	90 - 110	100
V	HITTING ROLLER START(B5)	Flapping roller operation start timing adjustment B5	90 - 110	100

Item/Display		Content	Setting range	Default value
W	HITTING ROLLER START(11 x 17)	Flapping roller operation start timing adjustment 11 x 17	90 - 110	100
X	HITTING ROLLER START(8.5 x 14)	Flapping roller operation start timing adjustment 8.5 x 14	90 - 110	100
Y	HITTING ROLLER START(8.5 x 11R)	Flapping roller operation start timing adjustment 8.5 x 11R	90 - 110	100
Z	HITTING ROLLER START(8.5 x 11)	Flapping roller operation start timing adjustment 8.5 x 11	90 - 110	100
AA	HITTING ROLLER START(12 x 18)	Flapping roller operation start timing adjustment 12 x 18	90 - 110	100
AB	HITTING ROLLER START(8K)	Flapping roller operation start timing adjustment 8K	90 - 110	100
AC	HITTING ROLLER START(16K-R)	Flapping roller operation start timing adjustment 16K-R	90 - 110	100
AD	HITTING ROLLER START(16K)	Flapping roller operation start timing adjustment 16K	90 - 110	100
AE	HITTING ROLLER START(OTHER)	Flapping roller operation start timing adjustment Other	90 - 110	100
AF	HITTING ROLLER TIME(A3)	Flapping roller flapping time adjustment A3	90 - 110	100
AG	HITTING ROLLER TIME(B4)	Flapping roller flapping time adjustment B4	90 - 110	100
AH	HITTING ROLLER TIME(A4-R)	Flapping roller flapping time adjustment A4-R	90 - 110	100
AI	HITTING ROLLER TIME(A4)	Flapping roller flapping time adjustment A4	90 - 110	100
AJ	HITTING ROLLER TIME(B5-R)	Flapping roller flapping time adjustment B5-R	90 - 110	100
AK	HITTING ROLLER TIME(B5)	Flapping roller flapping time adjustment B5	90 - 110	100
AL	HITTING ROLLER TIME(11 x 17)	Flapping roller flapping time adjustment 11 x 17	90 - 110	100
AM	HITTING ROLLER TIME(8.5 x 14)	Flapping roller flapping time adjustment 8.5 x 14	90 - 110	100
AN	HITTING ROLLER TIME(8.5 x 11R)	Flapping roller flapping time adjustment 8.5 x 11R	90 - 110	100
AO	HITTING ROLLER TIME(8.5 x 11)	Flapping roller flapping time adjustment 8.5 x 11	90 - 110	100
AP	HITTING ROLLER TIME(12 x 18)	Flapping roller flapping time adjustment 12 x 18	90 - 110	100
AQ	HITTING ROLLER TIME(8K)	Flapping roller flapping time adjustment 8K	90 - 110	100
AR	HITTING ROLLER TIME(16K-R)	Flapping roller flapping time adjustment 16K-R	90 - 110	100

Item/Display		Content	Setting range	Default value
AS	HITTING ROLLER TIME(16K)	Flapping roller flapping time adjustment 16K	90 - 110	100
AT	HITTING ROLLER TIME(OTHER)	Flapping roller flapping time adjustment Other	90 - 110	100
AU	HITTING ROLLER TIME(1-10)	Sheet number type flapping roller flapping time adjustment 1 - 10 sheets	90 - 110	100
AV	HITTING ROLLER TIME(11-20)	Sheet number type flapping roller flapping time adjustment 11 - 20 sheets	90 - 110	100
AW	HITTING ROLLER TIME(21-30)	Sheet number type flapping roller flapping time adjustment 21 - 30 sheets	90 - 110	100
AX	HITTING ROLLER TIME(31-40)	Sheet number type flapping roller flapping time adjustment 31 - 40 sheets	90 - 110	100
AY	HITTING ROLLER TIME(40-50)	Sheet number type flapping roller flapping time adjustment 41 - 50 sheets	90 - 110	100
AZ	SKEW QUANTITY(A3)	Skew correction striking quantity adjustment A3	75 - 125	100
BA	SKEW QUANTITY(B4)	Skew correction striking quantity adjustment B4	75 - 125	100
BB	SKEW QUANTITY(A4-R)	Skew correction striking quantity adjustment A4-R	75 - 125	100
BC	SKEW QUANTITY(A4)	Skew correction striking quantity adjustment A4	75 - 125	100
BD	SKEW QUANTITY(B5-R)	Skew correction striking quantity adjustment B5-R	75 - 125	100
BE	SKEW QUANTITY(B5)	Skew correction striking quantity adjustment B5	75 - 125	100
BF	SKEW QUANTITY(A5)	Skew correction striking quantity adjustment A5	75 - 125	100
BG	SKEW QUANTITY(11 x 17)	Skew correction striking quantity adjustment 11 x 17	75 - 125	100
BH	SKEW QUANTITY(8.5 x 14)	Skew correction striking quantity adjustment 8.5 x 14	75 - 125	100
BI	SKEW QUANTITY(8.5 x 11R)	Skew correction striking quantity adjustment 8.5 x 11R	75 - 125	100
BJ	SKEW QUANTITY(8.5 x 11)	Skew correction striking quantity adjustment 8.5 x 11	75 - 125	100
BK	SKEW QUANTITY(5.5 x 8.5)	Skew correction striking quantity adjustment 5.5 x 8.5	75 - 125	100
BL	SKEW QUANTITY(12 x 18)	Skew correction striking quantity adjustment 12 x 18	75 - 125	100
BM	SKEW QUANTITY(8K)	Skew correction striking quantity adjustment 8K	75 - 125	100
BN	SKEW QUANTITY(16K-R)	Skew correction striking quantity adjustment 16K-R	75 - 125	100
BO	SKEW QUANTITY(16K)	Skew correction striking quantity adjustment 16K	75 - 125	100
BP	SKEW QUANTITY(OTHER)	Skew correction striking quantity adjustment Other	75 - 125	100
BQ	SKEW MODE(A3)	Skew correction striking control switch A3	0 - 1	0
BR	SKEW MODE(B4)	Skew correction striking control switch B4	0 - 1	0
BS	SKEW MODE(A4-R)	Skew correction striking control switch A4-R	0 - 1	0
BT	SKEW MODE(A4)	Skew correction striking control switch A4	0 - 1	0

Item/Display		Content	Setting range	Default value
BU	SKEW MODE(B5-R)	Skew correction striking control switch B5-R	0 - 1	0
BV	SKEW MODE(B5)	Skew correction striking control switch B5	0 - 1	0
BW	SKEW MODE(A5)	Skew correction striking control switch A5	0 - 1	0
BX	SKEW MODE(11 x 17)	Skew correction striking control switch 11 x 17	0 - 1	0
BY	SKEW MODE(8.5 x 14)	Skew correction striking control switch 8.5 x 14	0 - 1	0
BZ	SKEW MODE(8.5 x 11R)	Skew correction striking control switch 8.5 x 11R	0 - 1	0
CA	SKEW MODE(8.5 x 11)	Skew correction striking control switch 8.5 x 11	0 - 1	0
CB	SKEW MODE(5.5 x 8.5)	Skew correction striking control switch 5.5 x 8.5	0 - 1	0
CC	SKEW MODE(12 x 18)	Skew correction striking control switch 12 x 18	0 - 1	0
CD	SKEW MODE(8K)	Skew correction striking control switch 8K	0 - 1	0
CE	SKEW MODE(16K-R)	Skew correction striking control switch 16K-R	0 - 1	0
CF	SKEW MODE(16K)	Skew correction striking control switch 16K	0 - 1	0
CG	SKEW MODE(OTHER)	Skew correction striking control switch Other	0 - 1	0
CH	PUNCH Y	Punch hole position adjustment (Y : Main scanning direction)	95 - 105	100
CI	PUNCH X	Punch hole position adjustment (X : Sub scanning direction)	85 - 115	100
CJ	SADDLE STITCHING	Saddle stitch position adjustment	85 - 115	100
CK	SADDLE FOLDING	Folding position adjustment	85 - 115	100
CL	FOLDING TIME *	Folding time adjustment	0 - 29	0

* This is displayed only when 1K Saddle finisher is connected.

3K Finisher / 3K Saddle finisher

Item/Display		Content	Setting range	Default value
A	ALIGNMENT	Alignment position adjustment	50 - 150	100
B	FRONT ADJUST	Front alignment position adjustment	50 - 150	100
C	REAR ADJUST	Rear alignment position adjustment	50 - 150	100
D	ALIGNMENT CENTER	Alignment position center adjustment	90 - 110	100
E	STAPLE FRONT	Stapling position adjustment (one position in front)	50 - 150	100
F	STAPLE REAR	Stapling position adjustment (one position at the rear)	50 - 150	100
G	STAPLE BOTH	Stapling position adjustment (staple pitch of two positions binding)	50 - 150	100
H	MANUAL STAPLE POSITION	Manual stapling position adjustment	80 - 120	100
I	STAPLELESS STAPLE POSITION	Staple-free stapling position adjustment	80 - 115	100
J	BUFFER SHIFT(1-2)	Buffer paper shift quantity adjustment (1-2 sheets)	40 - 160	100
K	BUFFER SHIFT(2-3)	Buffer paper shift quantity adjustment (2-3 sheets)	40 - 160	100
L	PUNCH X	Punch hole position adjustment (X : Sub scanning direction)	80 - 120	100
M	PUNCH Y	Punch hole position adjustment (Y : Main scanning direction)	97 - 115	100
N	EJECTING ROLLER	Paper exit roller height adjustment	70 - 130	100
O	KNURLING ROLLER	Take-up knurling height adjustment	0 - 150	100
P	KNURLING ROLLER RETREAT	Take-up knurling evacuation height adjustment	0 - 200	100
Q	STAPLELESS STAPLE PRESSURE	Staple-free stapling welding pressure adjustment (Motor rotation)	85 - 115	100
R	DELIVERY SPEED(NON-SORT)	Paper exit speed adjustment (Non-sort)	90 - 110	100
S	DELIVERY SPEED(ESCAPE)	Paper exit speed adjustment (Escape)	90 - 110	100
T	EJECTING SPEED(SHIFT)	Bundle paper eject speed adjustment (Shift bundle ejection)	95 - 105	100
U	EJECTING SPEED(STAPLE)	Bundle paper eject speed adjustment (Staple bundle ejection)	95 - 105	100
V	MANUAL STAPLE TIME	Manual staple time out setting	1 - 5	2
W	MANUAL STAPLE PULLOUT TIME	Manual staple pull out time out setting	0 - 10	0
X	STITCHING UNIT	Saddle staple position adjustment	80 - 120	100
Y	STITCHING UNIT THIN	Saddle staple position adjustment (Thin paper)	80 - 120	100
Z	FOLDING UNIT	Saddle folding position adjustment	80 - 120	100
AA	FOLDING UNIT THIN	Saddle folding position adjustment (Thin paper)	80 - 120	100
AB	SADDLE ALIGNMENT	Saddle alignment width adjustment	80 - 120	100
AC	STITCHING AND FOLDING	Saddle staple folding position adjustment	30 - 70	50
AD	SADDLE FOLDING(A4-R/8.5 x 11R)	Saddle folding position adjustment A4-R/8.5 x 11R	30 - 70	50
AE	SADDLE FOLDING(B4/8.5 x 14)	Saddle folding position adjustment B4/8.5 x 14	30 - 70	50
AF	SADDLE FOLDING(A3/11 x 17)	Saddle folding position adjustment A3/11 x 17	30 - 70	50
AG	SADDLE FOLDING(12 x 18)	Saddle folding position adjustment 12 x 18	30 - 70	50
AH	SADDLE FOLDING(CUSTOM)	Saddle folding position adjustment Custom size	30 - 70	50

4

4-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the desk/large capacity tray (LCC), and the control circuit of those.
Section	Desk/Large capacity tray (LCC)

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

Desk

Display	Content
D1MDC	Desk 3 installation detection connector
D1PED	Desk 3 paper empty sensor
D1PPD	Desk 3 paper transport sensor
D1PQD	Desk 3 remaining paper quantity sensor
D1PRED1	Desk 3 paper rear edge sensor 1
D1PRED2	Desk 3 paper rear edge sensor 2
D1PRED3	Desk 3 paper rear edge sensor 3
D1PRED4	Desk 3 paper rear edge sensor 4
D1ULD	Desk 3 upper limit detector
D2MDC	Desk 4 installation detection connector
D2PED	Desk 4 paper empty sensor
D2PPD	Desk 4 paper transport sensor
D2PQD	Desk 4 remaining paper quantity sensor
D2PRED1	Desk 4 paper rear edge sensor 1
D2PRED2	Desk 4 paper rear edge sensor 2
D2PRED3	Desk 4 paper rear edge sensor 3
D2PRED4	Desk 4 paper rear edge sensor 4
D2ULD	Desk 4 upper limit detector

Tandem LCC

Display	Content
D1CDT	Desk 3 insertion detection
D1LUD	Desk 3 upper limit sensor
D1PED	Desk 3 paper empty sensor
D1PFD	Desk 3 paper transport sensor
D1PPD1	Desk 3 paper transport sensor 1
D1PPD2	Desk 3 paper transport sensor 2
D1PQD	Desk 3 remaining paper quantity sensor
D2CDT	Desk 4 insertion detection
D2LUD	Desk 4 upper limit sensor
D2PED	Desk 4 paper empty sensor
D2PQD	Desk 4 remaining paper quantity sensor
DHOD	Horizontal transport open/close detection

LCC

Display	Content
24VM	LCC 24V power monitor
LCCD	LCC main unit connection sensor
LCLSW	LCC tray open/close switch
LDD	LCC tray lower limit sensor
LLSW	LCC upper limit switch
LPED	LCC tray paper empty sensor
LPFD	LCC transport sensor
LPFPD	LCC transport sensor 2
LPUD	LCC paper upper surface sensor
LRE	LCC lift motor encoder sensor
LUD	LCC tray upper limit sensor
LWRSW	LCC reverse winding detection switch

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 circuit of those.
	Section.
Section	Desk/Large capacity tray (LCC)

Operation/Procedure

1) Select the load item that is required to operation check with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

Desk

Display	Content
D1LM	Tray 3 lift-up motor
D1PFC	Tray 3 paper feed clutch
D2LM	Tray 4 lift-up motor
D2PFC	Tray 4 paper feed clutch
DPFM	Desk transport motor
DPTRC	Desk paper transport clutch

Tandem LCC

Display	Content
D1LM	Tray 3 lift-up motor
D1PFC	Tray 3 paper feed clutch
D2LM	Tray 4 lift-up motor
D2PFC	Tray 4 paper feed clutch
DPFM	Desk transport motor
DPTRC	Desk paper transport clutch

LCC

Display	Content
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFM	LCC paper transport motor
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch

4-5

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the paper feed desk paper transport clutch (DTRC) and the LCC paper transport clutch (LTRC).
Section	Desk/Large capacity tray (LCC)

Operation/Procedure

Check the ON operation

Press the button of the code name for checking the ON operation.

Checking is started. When the operation is normal, the button on the display is highlighted. When it is abnormal, the button is not highlighted.

Check the OFF operation

Press the highlighted button which is ON.

When the operation is normal, the highlighted button on the display returns to the normal display. When it is abnormal, the highlighted display is maintained.

Button	Content
DTRC	Desk transport clutch
LTRC	A4 LCC transport clutch

5

5-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the display, LCD in the operation panel, and control circuit.
Section	Operation panel

Operation/Procedure

The LCD is changed as shown below.

The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.

The LCD display contrast change and the LED lighting status are checked.

5-2

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 the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected heater lamp operates ON/OFF.
   When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:
Remove the front cabinet upper and the paper exit tray, and the lighting status of each heater lamp can be checked through the clearance between the fusing pressure release drive gear and the frame fusing section.

HL_UM	Main heater lamp (Upper main)
HL_US	Sub heater lamp (Upper sub)
HL_LM	Heater lamp (Lower main)

5-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner lamp and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The scanner lamp lights up for 10 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

5-4

Purpose	Operation test/check
Function (Purpose)	Used to check the operation 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. When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected discharge lamp is lighted for 30 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

DL_K	Discharge lamp K
DL_C	Discharge lamp C
DL_M	Discharge lamp M
DL_Y	Discharge lamp Y

6

6-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.
Section	Paper transport/Paper exit section

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

Load operation check method:
The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

Display	Content
C1LUM	Paper tray lift motor (Paper feed tray 1)
C1PUC	Paper feed clutch (Paper feed tray 1)
C2LUM	Paper tray lift motor (Paper feed tray 2)
C2PUC	Paper feed clutch (Paper feed tray 2)
CPFC1	Tray vertical transport clutch 1
CPFC2	Tray vertical transport clutch 2
CPFM	Transport motor
FUM	Fusing motor
HPFC	Horizontal transport clutch
MPFS	Paper feed motor solenoid (Manual feed tray)
MPUC	Paper feed clutch (Manual feed tray)
OSM	Offset motor

Display	Content
PFM	Transport motor
POGS	Paper exit gate solenoid
POM	Paper exit motor
RRM	Registration motor
SBM_F	Reverse motor (normal rotation)
SBM_R	Reverse motor (reverse rotation)
TRC_DSK	Desk clutch
TRC_FIN	Finisher clutch
TRC_LCC	LCC clutch

6-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of each fan motor and its control circuit.
Section	Others

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.
   Press [ALL] key to select all the fans collectively.

Load operation check method:
The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

Display	Content
FUFM	Fusing cooling fan
POFM2	Paper exit cooling fan
PROFM1	Process fan 1
PROFM2	Process fan 2
PSFM	Power cooling fan

6-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the transport unit and the control circuit.
Section	Process (Transport)

Operation/Procedure

1) Select the operation mode with the mode select button.

Mode select button	Content
TC1	Primary transfer (normal rotation)
TC1_R	Primary transfer (reverse rotation)
TC2	Secondary transfer

2) When [EXECUTE] key is pressed, the operation of the mode selected in 1) is performed.

Mode select button	Mode display	Content	NOTE
TC1	BLACK	Monochrome mode position	Black mode position -> Color mode position -> Drum separation position -> (Black mode position) (Repeated in this sequence.)
	COLOR	Color mode position	
	FREE	Non-transport position	
TC1_R	BLACK	Monochrome mode position	Black mode position -> Drum separation position -> Color mode position -> (Black mode position) (Repeated in this sequence.)
	FREE	Non-transport position	
	COLOR	Color mode position	
TC2	PRINT	Print position	Print position -> Drum separation position (Repeated in this sequence)
	FREE	Non-transport position	

6-6

Purpose	Operation test/check
Function (Purpose)	Used to perform fusing pressure release and applying, and to check the operations of the control circuits.
Section	Fusing

Operation/Procedure

1) Press [FUSER] key to highlight it.
2) Press [EXECUTE] key, and fusing pressure applying and fusing pressure release are repeated.

During this period, the status of the fusing roller pressure is displayed.

PRINT	Fusing pressure applying	Fusing pressure applying -> Fusing pressure release -> (Fusing pressure applying) The operation is repeated.
FREE	Fusing pressure release	

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 operating conditions of aging.
Section	Others

Operation/Procedure

1) Select an item to be set with the touch panel key.
2) Press [EXECUTE] key.
   The machine is rebooted in the aging mode.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

AGING	Aging operation setup
INTERVAL	Intermittent operation setting
MISFEED DISABLE	JAM detection ignoring setting
FUSING DISABLE	Fusing unit ignoring setting
WARMUP DISABLE	Warming up ignoring setting
DV CHECK DISABLE	Developing unit ignoring setting
SHADING DISABLE	Shading correction operation omitting setting
CCD GAIN FREE	CCD gain adjustment omitting setting

7-6

Purpose	Setting
Function (Purpose)	Used to set the operating intermittent aging cycle.
Section	

Operation/Procedure

1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
2) Press [OK] key.
   The time entered in procedure 1) is set.
   * The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

7-8

Purpose	Operation display
Function (Purpose)	Used to display the warm-up time.
Section	

Operation/Procedure

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

* Interruption of counting by pressing [EXECUTE] key is inhibited.

7-9

Purpose	Operation test/check
Function (Purpose)	Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color).
Section	

Operation/Procedure

1) Select the copy color with the touch panel key.
   (Two or more colors can be selected.)
   The key of the selected color is highlighted.
2) Press [EXECUTE] key.
   Copying is performed with the selected color.

When [CLOSE] key is pressed, the display goes into the copy operation menu in the simulation mode.

K	Setup/cancel of black
C	Setup/cancel of cyan
M	Setup/cancel of magenta
Y	Setup/cancel of yellow

7-12

Purpose	Operation test/check
Function (Purpose)	The document reading number of sheets setting (for aging operation)
Section	SPF

Operation/Procedure

1) Set document reading quantity with 10-key.
   (Setting range:0 - 255)
2) Press [OK] key. The set value is saved.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

8

8-1

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.
Section	Process (Developing)

Operation/Procedure

1) Select a speed with [MIDDLE] and [LOW] keys on the touch panel.
2) Select a target item to be adjusted with scroll keys.
3) Enter the setting value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the r s key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key. Press [OK] key. The set value is saved.

Item/Display (Mode)			Content		Adjustment range	Actual voltage
MIDDLE	A	MIDDLE SPEED DVB_K	Developing bias voltage (Middle speed mode)	K	0 - 600	–450V +/- 5V
	B	MIDDLE SPEED DVB_C	Developing bias voltage (Middle speed mode)	C	0 - 600	–450V +/- 5V
	C	MIDDLE SPEED DVB_M	Developing bias voltage (Middle speed mode)	M	0 - 600	–450V +/- 5V
	D	MIDDLE SPEED DVB_Y	Developing bias voltage (Middle speed mode)	Y	0 - 600	–450V +/- 5V
LOW	A	LOW SPEED DVB_K	Developing bias voltage (Low speed mode)	K	0 - 600	–450V +/- 5V
	B	LOW SPEED DVB_C	Developing bias voltage (Low speed mode)	C	0 - 600	-450V ±5V
	C	LOW SPEED DVB_M	Developing bias voltage (Low speed mode)	M	0 - 600	-450V ±5V
	D	LOW SPEED DVB_Y	Developing bias voltage (Low speed mode)	Y	0 - 600	-450V ±5V

8-2

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.
Section	Process (Charging)

Operation/Procedure

1) Select a speed with [MIDDLE] and [LOW] keys on the touch panel.
2) Select a target item to be adjusted with scroll keys.
3) Enter the adjustment value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the r s key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key. The set value is saved.

Item/Display (Mode)			Content		Adjustment range	Actual voltage
MIDDLE	A	MIDDLE SPEED GB_K	Main charger grid voltage (Middle speed mode)	K	50 - 850	-607V ±5V
	B	MIDDLE SPEED GB_C	Main charger grid voltage (Middle speed mode)	C	50 - 850	-607V ±5V
	C	MIDDLE SPEED GB_M	Main charger grid voltage (Middle speed mode)	M	50 - 850	-607V ±5V
	D	MIDDLE SPEED GB_Y	Main charger grid voltage (Middle speed mode)	Y	50 - 850	-607V ±5V
LOW	A	LOW SPEED GB_K	Main charger grid voltage (Low speed mode)	K	50 - 850	-598V ±5V
	B	LOW SPEED GB_C	Main charger grid voltage (Low speed mode)	C	50 - 850	-598V ±5V
	C	LOW SPEED GB_M	Main charger grid voltage (Low speed mode)	M	50 - 850	-598V ±5V
	D	LOW SPEED GB_Y	Main charger grid voltage (Low speed mode)	Y	50 - 850	-598V ±5V

8-6

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the transport voltage and the control circuit.
Section	Process (Transport)

Operation/Procedure

1) Select a target item to be adjusted with scroll keys.
2) Enter the set value with 10-key.
   Enter the default value specified on the following list.
3) Press [OK] key. The set value is saved.

Item/Display		Content				Setting range	Default value
A	TC1 LOW SPEED CL K	Primary transfer bias adjustment value	Color	K	Low speed	0 - 255	85
B	TC1 MIDDLE SPEED CL K				Middle speed	0 - 255	94
C	TC1 LOW SPEED CL C			C	Low speed	0 - 255	85
D	TC1 MIDDLE SPEED CL C				Middle speed	0 - 255	94
E	TC1 LOW SPEED CL M			M	Low speed	0 - 255	85
F	TC1 MIDDLE SPEED CL M				Middle speed	0 - 255	94
G	TC1 LOW SPEED CL Y			Y	Low speed	0 - 255	85
H	TC1 MIDDLE SPEED CL Y				Middle speed	0 - 255	94
I	TC1 LOW SPEED BW K		Monochrome	K	Low speed	0 - 255	85
J	TC1 MIDDLE SPEED BW K				Middle speed	0 - 255	94
K	TC2 PLAIN CL SPX	Secondary transfer bias adjustment value	Color	Standard paper <Middle speed>	Front surface	0 - 255	90
L	TC2 PLAIN CL DPX				Back surface	0 - 255	90
M	TC2 PLAIN BW SPX		Monochrome		Front surface	0 - 255	90
N	TC2 PLAIN BW DPX				Back surface	0 - 255	90
O	TC2 HEAVY1 CL SPX		Color	Heavy paper 1<106 -176g/m^2> <Low speed >	Front surface	0 - 255	90
P	TC2 HEAVY1 CL DPX				Back surface	0 - 255	96
Q	TC2 HEAVY1 BW SPX		Monochrome		Front surface	0 - 255	90
R	TC2 HEAVY1 BW DPX				Back surface	0 - 255	96
S	TC2 HEAVY2 CL SPX		Color	Heavy paper 2 <177 - 220g/m^2> <Low speed >	Front surface	0 - 255	90
T	TC2 HEAVY2 CL DPX				Back surface	0 - 255	96
U	TC2 HEAVY2 BW SPX		Monochrome		Front surface	0 - 255	90
V	TC2 HEAVY2 BW DPX				Back surface	0 - 255	96

Item/Display		Content				Setting range	Default value
W	TC2 HEAVY3 CL SPX	Secondary transfer bias adjustment value	Color	Heavy paper 3 <221- 256g/ m^2> <Low speed>	Front surface	0 - 255	90
X	TC2 HEAVY3 CL DPX				Back surface	0 - 255	96
Y	TC2 HEAVY3 BW SPX		Monochrome		Front surface	0 - 255	90
Z	TC2 HEAVY3 BW DPX				Back surface	0 - 255	96
AA	TC2 HEAVY4 CL		Color	Heavy paper 4 <257 - 300g/m^2> <Low speed >		0 - 255	90
AB	TC2 HEAVY4 BW		Monochrome			0 - 255	90
AC	TC2 OHP CL		Color	OHP <Low speed >		0 - 255	103
AD	TC2 OHP BW		Monochrome			0 - 255	103
AE	TC2 ENVELOPE CL		Color	Envelope <Low speed >		0 - 255	90
AF	TC2 ENVELOPE BW		Monochrome			0 - 255	90
AG	TC2 THIN CL		Color	Thin paper <Low speed >		0 - 255	90
AH	TC2 THIN BW		Monochrome			0 - 255	90
AI	TC2 GLOSSY PAPER CL		Color	Gross paper <Low speed >		0 - 255	90
AJ	TC2 GLOSSY PAPER BW		Monochrome			0 - 255	90
AK	TC2 EMBOSS CL		Color	Embossed paper <Low speed >		0 - 255	90
AL	TC2 EMBOSS BW		Monochrome			0 - 255	90
AM	TC2 LABEL CL		Color	Label <Low speed >		0 - 255	90
AN	TC2 LABEL BW		Monochrome			0 - 255	90
AO	TC2 FRONT EDGE LOW SPX	Front edge bias adjustment value	In low speed front surface print			0 - 255	76
AP	TC2 FRONT EDGE LOW DPX		In low speed back surface print			0 - 255	69
AQ	TC2 FRONT EDGE MIDDLE SPX		In middle speed front surface print			0 - 255	76
AR	TC2 FRONT EDGE MIDDLE DPX		In middle speed back surface print			0 - 255	69
AS	TC2 BACKEND LOW SPX	Rear edge bias adjustment value	In low speed front surface print			0 - 255	76
AT	TC2 BACKEND LOW DPX		In low speed back surface print			0 - 255	69
AU	TC2 BACKEND MIDDLE SPX		In middle speed front surface print			0 - 255	0
AV	TC2 BACKEND MIDDLE DPX		In middle speed back surface print			0 - 255	0
AW	TC2 INTERVAL LOW SPEED	Bias reference value between papers	In low speed print (+ pole)			0 - 255	66
AX	TC2 INTERVAL MIDDLE SPEED		In middle speed print (+ pole)			0 - 255	95
AY	TC2 CLEANING MINUS LOW SPEED	Cleaning negative bias adjustment value	In low speed print (- pole)			0 - 255	54
AZ	TC2 CLEANING MINUS MIDDLE SPEED		In middle speed print (- pole)			0 - 255	59
BA	TC2 CLEANING PLUS LOW SPEED	Cleaning negative bias adjustment value	In low speed print (+ pole)			0 - 255	66
BB	TC2 CLEANING PLUS MIDDLE SPEED		In middle speed print (+ pole)			0 - 255	95
BC	PTC LOW SPEED CL	PTC current adjustment value	Color	Low speed		0 - 255	109
BD	PTC MIDDLE SPEED CL			Middle speed		0 - 255	206
BE	PTC LOW SPEED BW		Monochrome	Low speed		0 - 255	109
BF	PTC MIDDLE SPEED BW			Middle speed		0 - 255	206
BG	CASE VOLT LOW CL	PTC case voltage adjustment value	Color	Low speed		0 - 255	0
BH	CASE VOLT MIDDLE CL			Middle speed		0 - 255	0
BI	CASE VOLT LOW BW		Monochrome	Low speed		0 - 255	0
BJ	CASE VOLT MIDDLE BW			Middle speed		0 - 255	0
BK	DHV LOW SPEED CL SPX	Separation bias reference value	Color	Low speed	Front surface	0 - 255	80
BL	DHV LOW SPEED CL DPX				Back surface	0 - 255	109
BM	DHV LOW SPEED BW SPX		Monochrome		Front surface	0 - 255	80
BN	DHV LOW SPEED BW DPX				Back surface	0 - 255	109
BO	DHV MIDLLE SPEED CL SPX		Color	Middle speed	Front surface	0 - 255	226
BP	DHV MIDLLE SPEED CL DPX				Back surface	0 - 255	226
BQ	DHV MIDLLE SPEED BW SPX		Monochrome		Front surface	0 - 255	226
BR	DHV MIDLLE SPEED BW DPX				Back surface	0 - 255	226

8-10

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.
Section	Process (Charging)

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. (The set value is saved.)

Item/Display			Contents	Setting range	Default value	Changeable range
MIDDLE	A	MIDDLE SPEED MC_K	Main charger total current (Middle speed mode) K	50 to 100	83	-500 to -800 micro A
LOW	A	LOW1 SPEED MC_K	Main charger total voltage (Middle speed 1 mode) K	50 to 100	83	-500 to -800 micro A

9

9-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.
Section	Duplex

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

APPD1	ADU paper transport detector 1
APPD2	ADU paper transport detector 2
DSW_ADU	ADU paper guide open/close detector

9-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.
Section	Duplex

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

Display	Content
ADUM1	ADU motor 1
ADUM2	ADU motor 2
ADUGS	ADU gate solenoid

10

10-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.
Section	Process (Developing)

Operation/Procedure

1) Select a target of the operation check with the touch panel key. When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected load operation is performed for 10 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

Important

This simulation must be executed without installing the toner cartridges.

If this simulation is executed with the toner cartridges installed, toner will be forcibly supplied to the developing unit, resulting in overtoner.

If this simulation is erroneously executed with the toner cartridges installed, overtoner state may be deleted by making a few black background copy in the single color copy mode of the target color.

TNM_K	Toner motor K
TNM_C	Toner motor C
TNM_M	Toner motor M
TNM_Y	Toner motor Y

10-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the toner cartridge discharge sensor and the related circuit.
Section	Process (Developing)

Operation/Procedure

1) Select a target of the operation check with the touch panel key.
2) Press [EXECUTE] key.

TCE_K	Toner cartridge discharge K
TCE_C	Toner cartridge discharge C
TCE_M	Toner cartridge discharge M
TCE_Y	Toner cartridge discharge Y

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 execute cancellation of the trouble.

14

14--

Purpose	Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag H3, H4, H5 troubles.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

15

15--

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U6" trouble.
Section	LCC

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

16

16--

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U2" trouble.
Section	SCN MFP PWB / PCU PWB

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

21

21-1

Purpose	Setting
Function (Purpose)	Used to set the maintenance cycle.
Section	

Operation/Procedure

* Do not change the default setting value of the maintenance counter on SIM21-1. The replacement timing of the fusing cleaning roller, the filter and PS paper dust removal cleaner may not clarify.

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. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	MAINTE-NANCE COUNTER (TOTAL)	Maintenance counter (Total)	0: Default 1 - 300: 1K - 300K 999: Free	250K
B	MAINTE-NANCE COUNTER (COLOR)	Maintenance counter (Color)	0: Default 1 - 300: 1K- 300K 999: Free	250K

22

22-1

Purpose	Adjustment/Setting/Operation data output/ Check
Function (Purpose)	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)
Section	

Operation/Procedure

Change the display page with scroll key on the touch panel.

Item	Display	Content	
Total output quantity	TOTAL OUT (BW)	Total output quantity of black and white	All prints including jams
	TOTAL OUT (COL)	Total output quantity of color	All prints including jams
Total use quantity	TOTAL (BW)	Total use quantity of black and white	Effective paper (including self print, excluding jams)
	TOTAL (COL)	Total use quantity of full color	Effective paper (including self print, excluding jams)
	TOTAL (2COL)	Total use quantity of 2-color	Effective paper (including self print, excluding jams)
	TOTAL (3COL)	Total use quantity of 3-color	Effective paper (including self print, excluding jams)
	TOTAL (SGL_COL)	Total use quantity of single color	Effective paper (including self print, excluding jams)
Copy	COPY (BW)	Black and white copy counter	Billing target (excluding self print)
	COPY (COL)	Full color copy counter	Billing target (excluding self print)
	COPY (2COL)	2-color copy counter	Billing target (excluding self print)
	COPY (SGL_COL)	Single color copy counter	Billing target (excluding self print)
Print	PRINT (BW)	Black and white print counter	Billing target (excluding self print)
	PRINT (COL)	Full color print counter	Billing target (excluding self print)
	PRINT (2COL)	2-color print counter	Billing target (excluding self print)
	PRINT (3COL)	3-color print counter	Billing target (excluding self print)
	PRINT (SGL_COL)	Single color print counter	Billing target (excluding self print)
Document filing	DOC FIL (BW)	Black and white document filing print counter	
	DOC FIL (COL)	Color document filing print counter	
	DOC FIL (2COL)	2-color document filing print counter	
	DOC FIL(SGL COL)	Single color document filing print counter	
Other	OTHER (BW)	Black and white other counter	Self print quantity
	OTHER (COL)	Color other counter	Self print quantity

22-2

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the total number of misfeed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)
Section	

Operation/Procedure

The paper jam, trouble counter value is displayed.

MACHINE JAM	Machine JAM counter
RSPF/DSPF JAM	SPF JAM counter
TROUBLE	Trouble counter

22-3

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check misfeed positions and the misfeed count of each position. * Presumption of the faulty point by this data is possible.
Section	

Operation/Procedure

The paper jam and misfeed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

22-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the trouble (self diag) history.
Section	

Operation/Procedure

The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.)

22-5

Purpose	Others
Function (Purpose)	Used to check the ROM version of each unit (section).
Section	Firmware

Operation/Procedure

The ROM version of the installed unit in each section is displayed. When there is any trouble in the software, use this simulation to check the ROM version, and upgrade the version if necessary.

Display	Content
S/N	Serial No. (The codes for November and December are "X" and "Y" respectively.)
BUNDLE	Bundle version
ICU-MAIN	ICUM (MAIN section)
ICU-BIOS	ICUM (BIOS section)
ASIC-MAIN	ASIC (MAIN section)
ASIC-SUB	ASIC (SUB section)
LANGUAGE	Language support data version
LANGUAGE (LIST)	Language data for list printing
EOSA	ESCP font ROM
UNICONTENTS	Contents data for display
SIM-TEXT	Language data for simulation
PCL (PROFILE)	Color profile data
POWER-CON	Power controller program
FONT BARCODE	Font data for bar code
FONT PS	PS font data
FONT PCL	PCL font data
FONT SPDL	Simple PDL font data
FONT OFFICE	Office Direct font data
WATER MARK	Water mark data
E-MANUAL	Users manual data
OCR-DIC	OCR dictionary data
SCU	SCU
PCU	PCU
DESK/ESK (TANDEM)	Desk unit
LCC	LCC
FINISHER/FINISHER (1KFIN)/ FINISHER (3KFIN)/ FINISHER (INNER)	Finisher
JOGGER	3K finisher jogger
FIN-SUB	3K finisher sub
SADDLE	Saddle
PUNCH/UNCH(3K)/ UNCH(IN)	Punch unit
FAX OPT1	FAX 1-Line (Option section)

22-6

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the setting/adjustment data (simulation, FAX soft switch, counter), the firmware version, and the counter list.
Section	

Operation/Procedure

* When installing or servicing, this simulation is executed to print the adjustment data and set data for use in the next servicing. (Memory trouble, PWB replacement, etc.)

1) Select the print list mode with 10-key.

Display	Print list mode	Print content
DATA PATTERN	NO.1	Firmware version, counter data, etc.
	NO.2	SIM50-24 data
	NO.3	Data related to the process control
2SIDED PRINT	1-SIDED	One sided printing (Default)
	2-SIDED	Double sided printing

2) Press [EXECUTE] key to start printing the list selected in step 1).

22-8

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the number of operations (counter value) of the finisher, the SPF, and the scan (reading) unit.
Section	

Operation/Procedure

The counter values of the finisher, the SPF, and the scanner related counters are displayed.

Display	Content
SPF	Document feed quantity
SCAN	Number of times of scan
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Document cover open/close counter
HP_ON	Number of scanner HP detection
OC LAMP TIME	Total lighting time of the scanner lamp
FIN OUTPUT	Finisher output counter
STAPLELESS STAPLE	Stapleless staple counter
MANUAL STAPLE	Manual staple counter

22-9

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the number of use (print quantity) of each paper feed section.
Section	Paper feed, ADU

Operation/Procedure

The counter values related to paper feed are displayed.

Display	Content
TRAY1	Paper feed counter (Paper feed tray 1)
TRAY2	Paper feed counter (Paper feed tray 2)
TRAY3	Paper feed counter (Paper feed tray 3)
TRAY4	Paper feed counter (Paper feed tray 4)
MFT	Manual paper feed counter
LCC	LCC paper feed counter
ADU	ADU paper transport counter
TRAY1_TTL	Accumulated tray 1 paper feed counter
TRAY2_TTL	Accumulated tray 2 paper feed counter
TRAY3_TTL	Accumulated tray 3 paper feed counter
TRAY4_TTL	Accumulated tray 4 paper feed counter
MFT_TTL	Accumulated manual paper feed counter
LCC_TTL	Accumulated side LCC paper feed counter
ADU_TTL	Accumulated ADU paper feed counter
TRAY1_RETRY	Paper feed retry counter (Paper feed tray 1)
TRAY2_RETRY	Paper feed retry counter (Paper feed tray 2)
TRAY3_RETRY	Paper feed retry counter (Paper feed tray 3)
TRAY4_RETRY	Paper feed retry counter (Paper feed tray 4)
MFT_RETRY	Manual paper feed retry counter
LCC_RETRY	LCC paper feed retry counter

22-10

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the system configuration (option, internal hardware).
Section	

Operation/Procedure

The system configuration is displayed.

(The model names of the installed devices and options are displayed.)

Item display name	Display content	Content
MACHINE	MX-2630N	Main unit
SPF	STANDARD	RIVERSING SINGLE PASS FEEDER
STAMP	AR-SU1	Finish stamp
DESK	MX-DE25 N	STAND/550 SHEET PAPER DRAWER
	MX-DE26 N	STAND/2x550 SHEET PAPER DRAWER
	MX-DE27 N	STAND/3x550 SHEET PAPER DRAWER
	MX-DE28 N	STAND/550&2100 SHEET PAPER DRAWER
	MX-DE29 N	LOW STAND/550 SHEET PAPER DRAWER
LCC	MX-LC17 N	A4 Large capacity tray
PUNCHER	MX-PN14A	Punch unit
	MX-PN14B	
	MX-PN14C	
	MX-PN14D	
	MX-PN15A	
	MX-PN15B	
	MX-PN15C	
	MX-PN15D	
	MX-PN16A	
	MX-PN16B	
	MX-PN16C	
	MX-PN16D	
FINISHER	MX-FN27 N	Inner finisher
	MX-FN28	Finisher (1K)
	MX-FN29	Saddle stitch finisher (1K)
	MX-FN30	Finisher (3K)
	MX-FN31	Saddle stitch finisher (3K)
EXIT TRAY	MX-TR19 N	Exit tray unit
	STANDARD	Exit tray cabinet
SEPARATOR	MX-TR20	Job separator tray
FAX1	MX-FX15	Facsimile expansion kit
PS	MX-PK13	PS expansion kit
SECURITY	MX-FR-51U	Data security kit (commercial version)
ICU_PWB (REUS)	*****MB	ICU REUS capacity
ICU_PWB (SOC)	*****MB	ICU SOC capacity
HDD	*****GB	Hard disk capacity
SSD	*****MB	SSD capacity
BARCODE	MX-PF10	Barcode font kit
INTERNET-FAX	MX-FWX1	Internet Fax expansion kit
AIM	MX-AMX1	Application integration module
ACM	MX-AMX2	Application communication module
EAM	MX-AMX3	External account module
OFFICE DRT	MX-PU10	Direct print expansion kit

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	FAX

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX OUTPUT	FAX print quantity counter
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time

22-12

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)
Section	SPF

Operation/Procedure

The paper jam and misfeed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

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) and the fusing unit
Section	Process

Operation/Procedure

The number of prints and the number of rotations in the process section are displayed.

Item/Display	Content
MAINTENANCE ALL	Maintenance counter (Total) (Counter)
MAINTENANCE COL	Maintenance counter (Color)
FUSING BELT	Fusing belt
FUSING ROLLER	Fusing roller
PRESSURE ROLLER	Fusing pressure roller
SEPARATE PAWL	Fusing separation pawl
SEPARATE PLATE	Fusing separation plate
FUSING WEB UNIT	Fusing web unit
FUSING WEB SEND	Fusing web cleaning send counter
FUSING LOAD	Fusing pressure release roller
TC1 BELT	Primary transfer belt
TRANSFER BLADE	Transfer cleaning blade
TC CL ROLLER	Transfer cleaning roller
TC2 ROLLER	Secondary transfer roller
PTC	PTC counter
PS PAPER	Paper dust cleaner
OZONE FILTER	Ozone filter
DEVE CTRG (K)	DV unit (K)
DEVE CTRG (C)	DV unit (C)
DEVE CTRG (M)	DV unit (M)
DEVE CTRG (Y)	DV unit (Y)
DRUM UNIT (K)	OPC drum unit (K)
DRUM UNIT (C)	OPC drum unit (C)
DRUM UNIT (M)	OPC drum unit (M)
DRUM UNIT (Y)	OPC drum unit (Y)
MAIN CHARGER (K)	Main charger (K)
MAIN CHARGER (C)	Main charger (C)
MAIN CHARGER (M)	Main charger (M)
MAIN CHARGER (Y)	Main charger (Y)
MC CLEAN (K)	MC cleaner K
MC CLEAN (C)	MC cleaner C
MC CLEAN (M)	MX cleaner M
MC CLEAN (Y)	MC cleaner Y
DRUM BLADE (K)	OPC drum cleaning blade K
DRUM BLADE (C)	OPC drum cleaning blade C
DRUM BLADE (M)	OPC drum cleaning blade M
DRUM BLADE (Y)	OPC drum cleaning blade Y
TONER CTRG (K)	Toner cartridge (K)
TONER CTRG (C)	Toner cartridge (C)
TONER CTRG (M)	Toner cartridge (M)
TONER CTRG (Y)	Toner cartridge (Y)

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 near end (Unit)	Accumulated No. of end (Unit)
		INSTALL	NN END	END
TONER(K)	Toner cartridge use counter (K)	0 - 510	0 - 510	0 - 510
TONER(C)	Toner cartridge use counter (C)	0 - 510	0 - 510	0 - 510
TONER(M)	Toner cartridge use counter (M)	0 - 510	0 - 510	0 - 510
TONER(Y)	Toner cartridge use counter (Y)	0 - 510	0 - 510	0 - 510

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 values of the counters related to the scan - image send.
Section	

Operation/Procedure

Used to display the counter value related to the network scanner

Change the display with scroll key.

Item/Display		Content
Network scanner	NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
	NET SCN ORG_CL	Network scanner document read quantity counter (Color scan job)
	NET SCN ORG_2CL	Network scanner document read quantity counter (2-Color scan job)
	NET SCN ORG_SGL	Network scanner document read quantity counter (Single-color scan job)
Internet FAX	INTERNET FAX OUTPUT	Number of internet FAX output
	INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
	INTERNET FAX RECEIVE	Number of internet FAX receive
	INTERNET FAX SEND	Number of internet FAX send
E-Mail	MAIL COUNTER	Number of times of E-MAIL send

Item/Display		Content
FTP	FTP COUNTER	Number of FTP send
Other	SMB SEND	Number of SMB send
	USB CNT	Number of times of USB storage
	TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
	SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
	SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
	SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
	SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)

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			
	Display	Content	JAM CODE/ TROUBLE CODE	DATE/ TIME	TOTAL COUNT (BW)	TOTAL COUNT(CL)
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	Total output quantity of color
SPF JAM	SPF JAM COUNT	Number of SPF JAM troubles	Generated JAM code (SPF)			
TROUBLE	TROUBLE COUNT	Number of troubles	Generated trouble code			

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 (Similar with SIM27-18 display content)

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)
TOTAL_CL	Total Count (CL)	Total counter (color)
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_CL	External air temperature sensor temperature/AD value
HUD_CL	External air humidity sensor humidity/AD value
TH1_LSU	LSU thermistor temperature/AD value
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 (differential) temperature/ AD value
TH_SUB2	Fusing upper sub thermistor 2 temperature/AD value
TH_SUB2_CS	Fusing upper sub thermistor 2 (compensation) temperature/AD value
TH_SUB2_D	Fusing upper sub thermistor 2 (differential) temperature/AD value
TH_LM	Fusing lower sub thermistor 2 temperature/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)
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

Display	Content	
66	AB series fixed form	SRA3
67		SRA3R
68		SRA4
69		SRA4R
06A		318 x 469 mm
06B		469 x 318 mm
06C		234 x 318 mm
06D		318 x 234 mm
06E		312 x 440 mm
06F		440 x 312 mm
70		220 x 312 mm
71		312 x 220 mm
82	Domestic special (Envelope)	DBL Postcard
83		DBL Postcard-R
84		Postcard
85		Postcard-R
87		119 x 277 mm
89		120 x 235 mm
08B		90 x 205 mm
08D		90 x 185 mm
08F		240 x 332 mm
91		216 x 277 mm
93		197 x 267 mm
95		190 x 240 mm
97		162 x 229 mm
99		142 x 205 mm
09B		119 x 197 mm
09D		120 x 176 mm
09F		114 x 162 mm
0A1		98 x 148 mm
0A3		105 x 235 mm
0A5		95 x 217 mm
0A7		98 x 190 mm
0A9		92 x 165 mm
0AA		AB series E-version
0AB		AB series L-version
0AC		AB series panorama size
0AD		AB series name card size
0AE		AB series identification photo
0AF		AB series name card small
0B0	Other	A3 width
0B1		B4 width
0B2		A4 width
0B3		A3 width (Long size)
0B4		B4 width (Long size)
0B5		A4 width (Long size)
0BC		Custom (Large size)
0BD		Custom (Small size)
0BF		Custom
0C2	Oversea special (Envelope)	Monarch
0C3		Monarch-R
0C4		DL
0C5		DL-R
0C6		C4
0C7		C4-R
0C8		C5
0C9		C5-R
0CA		C6
0CB		C6-R
0CC		C65
0CD		C65-R
0CE		ISOB5
0CF		ISOB5-R
0D0		Size6-1/2
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

Display	Content	
0DC	Oversea special (Envelope)	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
HV2	Heavy paper 2
PL2	Plain paper 2 (not used)
HV3	Heavy paper 3
HV4	Heavy paper 4
GLS	Glossy paper

Display content detail: Job mode (JOB)

Display	Content
SHD	Shading.
PCL	Process control
SIM	Test mode (Sim)
ICP	Interruption copy
CP	Copy
FXS	FAX send scan
AXS	AXIS
FXP	FAX reception print
PR	Printer
FXC	FAX communication report print
00A	Zaurus print
SLF	Self/Test print
00C	Document counter
RMT	Remote maintenance
00E	SIM 52-01
00F	Tandem (Cordless handset)
CFP	Confidential print
NET	Network scanner
PRF	Proof print

22-90

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the various set data lists.
Section	

Operation/Procedure

1) Change the display with scroll key.
2) Select the print target with the keys on the touch panel.
3) Press [EXECUTE] key to start self print of the list.

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
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 <FmSdata>[amp] 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 output the trouble history list of paper jam and misfeed. (If the number of troubles of misfeed is considerably great, the judgment is made that repair is required.)
Section	

Operation/Procedure

Press [EXECUTE] key to execute print.

The trouble history of paper jams and misfeed is printed.

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, clear the counters.)
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

MACHINE	Machine JAM counter
SPF	SPF JAM counter
TROUBLE	Trouble counter

24-2

Purpose	Data clear
Function (Purpose)	Used to clear the number of use (the number of prints) of each paper feed section.
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.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT	Manual paper feed counter (Total)
LCC	LCC paper feed counter (LCC)
ADU	ADU paper feed counter

24-3

Purpose	Data clear
Function (Purpose)	Used to clear the finisher, RSPF, and the scan (reading) unit counter.
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

SPF	RSPF document feed counter (No. of discharged sheets)
SCAN	Scan counter
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Document cover open/close counter
HP_ON	Number of scanner HP detection
OC LAMP TIME	Total lighting time of the scanner lamp
DSPF LAMP TIME(*)	DSPF section lamp total lighting time
FIN OUTPUT	Finisher output counter
STAPLELESS STAPLE	Stapleless staple counter
MANUAL STAPLE	Manual staple counter

24-4

Purpose	Data clear
Function (Purpose)	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)
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.

Item/Display		Content
Maintenance	MAINTENANCE ALL	Maintenance counter (Total) (Counter)
		Maintenance counter (Total) (Number of use days)
	MAINTENANCE COL	Maintenance counter (Color) (Counter)
		Maintenance counter (Color) (Number of use days)
Fusing	FUSING BELT	Fusing belt (Counter)
		Fusing belt (Number of use days)
		Fusing belt (Accumulated number of rotations)
	FUSING ROLLER	Fusing roller (Counter)
		Fusing roller (Number of use days)
		Fusing roller (Accumulated number of rotations)
	PRESS ROLLER	Pressure roller (Counter)
		Pressure roller (Number of use days)
		Pressure roller (Accumulated number of rotations)
	FUSING LOAD	Fusing Pressure release roller (Accumulated number of rotations)
Separation	SEPARATE PAWL	Separation pawl (Counter)
		Separation pawl (Number of use days)
		Separation pawl (Accumulated number of rotations)
	SEPARATE PLATE	Separation plate (Counter)
		Separation plate (Number of use days)
		Separation plate (Accumulated number of rotations)
Transfer	TC1 BELT	Primary transfer belt (Counter)
		Primary transfer belt (Number of use days)
		Primary transfer belt (Accumulated number of rotations)
	TRANS BLADE	Transfer blade (Counter)
		Transfer blade (Number of use days)
		Transfer blade (Accumulated number of rotations)
	TC CL ROLLER	Transfer cleaning roller (Counter)
		Transfer blade (Number of use days)
		Transfer cleaning roller (Accumulated number of rotations)
	TC2 BELT	Secondary transfer belt (Counter)
		Secondary transfer belt (Number of use days)
		Secondary transfer belt (Accumulated number of rotations)
	PTC	PTC counter (Counter)
		PTC counter (Number of use days)
		PTC counter (Accumulated number of rotations)

Item/Display		Content
Drum	DRUM UNIT K	Drum unit (K) (Counter)
		Drum unit (K) (Number of use days)
		Drum unit (K) (Accumulated number of rotations)
	DRUM UNIT C	Drum unit (C) (Counter)
		Drum unit (C) (Number of use days)
		Drum unit (C) (Accumulated number of rotations)
	DRUM UNIT M	Drum unit (M) (Counter)
		Drum unit (M) (Number of use days)
		Drum cartridge (M) (Accumulated number of rotations)
	DRUM UNIT Y	Drum unit (Y) (Counter)
		Drum unit (Y) (Number of use days)
		Drum unit (Y) (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 C	Main charger (C) (Counter)
		Main charger (C) (Number of use days)
		Main charger (C) (Accumulated number of rotations)
	MAIN CHARGER M	Main charger (M) (Counter)
		Main charger (M) (Number of use days)
		Main charger (M) (Accumulated number of rotations)
	MAIN CHARGER Y	Main charger (Y) (Counter)
		Main charger (Y) (Number of use days)
		Main charger (Y) (Accumulated number of rotations)
	MC CLEAN K	MC Cleaner K (Number of rotations)
	MC CLEAN C	MC Cleaner C (Number of rotations)
	MC CLEAN M	MC Cleaner M (Number of rotations)
	MC CLEAN Y	MC Cleaner Y (Number of rotations)
Drum blade	DRUM BLADE K	Drum blade K (Counter)
		Drum blade K (Number of use days)
		Drum blade K (Accumulated number of rotations)
	DRUM BLADE C	Drum blade C (Counter)
		Drum blade C (Number of use days)
		Drum blade C (Accumulated number of rotations)
	DRUM BLADE M	Drum blade M (Counter)
		Drum blade M (Number of use days)
		Drum blade M (Accumulated number of rotations)
	DRUM BLADE Y	Drum blade Y (Counter)
		Drum blade Y (Number of use days)
		Drum blade Y (Accumulated number of rotations)
Other	PS PAPER	PS paper dust cleaner (Counter)
		PS paper dust cleaner (Number of use days)
	OZONE FILTER	Ozone filter (Counter)
		Ozone filter (Number of use days)

24-5

Purpose	Data clear
Function (Purpose)	Used to clear the developer counter. (After replacement of developer, clear the 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.

Note

When SIM25-2 is executed, this counter is also cleared automatically.

Button display	Content
DV_K	Developer cartridge print counter (K)
	Developer cartridge accumulated traveling distance (cm) (K)
	Number of day that used developer (day) (K)
DV_C	Developer cartridge print counter (C)
	Developer cartridge accumulated traveling distance (cm) (C)
	Number of day that used developer (day) (C)
DV_M	Developer cartridge print counter (M)
	Developer cartridge accumulated traveling distance (cm) (M)
	Number of day that used developer (day) (M)
DV_Y	Developer cartridge print counter (Y)
	Developer cartridge accumulated traveling distance (cm) (Y)
	Number of day that used developer (day) (Y)

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 operations of the developing section.
Section	Process (Developing section)

Operation/Procedure

1) Select the process speed with [MIDDLE], [LOW] keys.
2) Press [EXECUTE] key.
   The developing motor and the OPC drum motor rotate for 3 minutes and the output level of the toner density sensor is displayed.

TCS_K	Toner sensor output value (K)
TCS_C	Toner sensor output value (C)
TCS_M	Toner sensor output value (M)
TCS_Y	Toner sensor output value (Y)
TSG_K	Toner density sensor control voltage level (K)
TSG_C	Toner density sensor control voltage level (C)
TSG_M	Toner density sensor control voltage level (M)
TSG_Y	Toner density sensor control voltage level (Y)

LOW	Process speed: Low speed
MIDDLE	Process speed: Medium speed

Important

The toner cartridge must be removed before executing this simulation.

If this simulation is executed with the toner cartridge installed, toner will be forcibly supplied to the developing unit, resulting in over toner and a trouble.

25-2

Purpose	Setting
Function (Purpose)	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)
Section	Image process (Photo conductor/Developing/Transfer/Cleaning)

Operation/Procedure

1) Select a color to be adjusted with the touch panel.
2) Press [EXECUTE] key.

The developing motor rotates for 1 min, and the toner density sensor makes sampling of the toner density. The detected level is displayed.

After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

Important

When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation except when new developer is supplied. If it is executed in other cases, undertoner or overtone may occur, causing a trouble.

Division	Item/Display	Display range	Default value
Toner density control adjustment value in the low speed process mode	AT DEVE ADJ_L_K	1 - 255	128
	AT DEVE ADJ_L_C	1 - 255	128
	AT DEVE ADJ_L_M	1 - 255	128
	AT DEVE ADJ_L_Y	1 - 255	128
Toner density control adjustment value in the medium speed process mode	AT DEVE ADJ_M_K	1 - 255	128
	AT DEVE ADJ_M_C	1 - 255	128
	AT DEVE ADJ_M_M	1 - 255	128
	AT DEVE ADJ_M_Y	1 - 255	128
Toner density sensor control voltage level in the low speed process mode	AT DEVE VO_L_K	1 - 255	128
	AT DEVE VO_L_C	1 - 255	128
	AT DEVE VO_L_M	1 - 255	128
	AT DEVE VO_L_Y	1 - 255	128
Toner density sensor control voltage level in the medium speed process mode	AT DEVE VO_M_K	1 - 255	128
	AT DEVE VO_M_C	1 - 255	128
	AT DEVE VO_M_M	1 - 255	128
	AT DEVE VO_M_Y	1 - 255	128

Display during execution of the simulation

Item/Display	Content
TCS_K	Toner sensor output value (K)
TCS_C	Toner sensor output value (C)
TCS_M	Toner sensor output value (M)
TCS_Y	Toner sensor output value (Y)
TSG_K	Toner density sensor control voltage level (K)
TSG_C	Toner density sensor control voltage level (C)
TSG_M	Toner density sensor control voltage level (M)
TSG_Y	Toner density sensor control voltage level (Y)

Error content

Display	Error name	Error content
EE-EL	EL abnormality	The sensor output level is less than 77, or the control voltage exceeds 207.
EE-EU	EU abnormality	The sensor output level exceeds 177, or the control voltage is less than 52.
EE-EC	EC abnormality	The sensor output level is outside of 128 +/- 10.

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.

25-5

Purpose Adjustment/Setting/Operation data check

Function (Purpose) Used to display the toner density correction data. (Not used in the market.)

Section Process

Operation/Procedure

The toner density correction data are displayed.

25-10

Purpose Setting

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

Section

Operation/Procedure

26

26-1

Purpose Setting

Function (Purpose) Used to set Yes/No of installation of the right paper exit tray.

Section Paper exit

Operation/Procedure

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

This setting is required to use the right paper exit tray unit.

Item/Display			Content
A	0	YES	Paper exit tray:
	1	NO	Paper exit tray:
B	0	YES	Job separator
	1	NO	Job separator

26-2

Purpose Setting

Function (Purpose) Used to set the paper size of the large capacity tray (LCC). (When the paper size is changed, this simulation must be executed to change the paper size in software.)

Section Paper feed

Operation/Procedure

Select a paper size and a weight system to be changed.

Item	Setting value	Content
Tray4 (Tandem)	0	8.5x11
	1	A4
	2	B5
LCC	0	8.5x11
	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 specifications of the auditor. (Setting must be made according to the auditor use conditions.)

Section Auditor

Operation/Procedure

Select an item to be set with the touch panel.

Item/Display		Content	Default value
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation.	P10
OUTSIDE AUDITOR	NONE	No external connection vendor is used.	NONE
	P VENDOR1	Coin vendor mode (Only the copy mode can be controlled.)	
	P VENDOR3	Vendor mode in which signals for the intercard connected to the PCU are used for communication in parallel I/F.	
	P OTHER	Mode for an external auditor connected to the SCU.	
	VENDOR-EX (*1)	Vendor I/F for EQUITRAC	
	VENDOR-EX (MULTI) (*1)	VENDOR-EX + Multi job cueing Enable mode	
	S_VENDOR	Serial vendor mode	
DOC ADJ	ON	Support for the auditor in document filing print	OFF
	OFF	No support for the auditor in document filing print	

Item/Display		Content	Default value
PF ADJ	ON	Continuous printing is performed in the duplex print mode. If the remaining money expires during continuous printing, the sheets in the machine are discharged without being printed on the back surfaces.	OFF
	OFF	Continuous printing is not performed in the duplex print mode. (The remaining amount is checked for printing every surface in all the printing process.) If the remaining money expires during printing, the sheet is discharged without printing on the back surface.	
VENDOR MODE (*2)	MODE1	Vendor mode 1	MODE 3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	
COUNTUP TIMING	FUSER_IN	Mode in which the detection timing of the paper lead edge by the sensor after the paper passes the fusing section is used as the money charging timing.	EXIT_OUT
	FUSER_OUT	Mode in which the detection timing of the paper rear edge by the sensor after the paper passes the fusing section is used as the money charging timing.	
	EXIT_OUT	Mode in which the detection timing of the paper rear edge by the paper exit sensor of the right paper exit tray or of the after process unit is used as the money charging timing.	
IMS CONTROL	ON	Image send mode is limited.	OFF
	OFF	Image send mode is not limited.	
PRINTER CONTROL	MODE1	All the items in OUTSIDE AUDITOR and VENDOR MODE are allowed to select.	MODE 3
	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.

(*2) Refer to the details of the vendor mode.

Details of the vendor mode

	Completion of the specified quantity. (Money remaining)	Insufficient money during copy job		Completion of the specified quantity. (No money remaining)
		BW/Color (no money remaining)	Color (Money remaining)	
	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 setting time of auto clear. Default is 60 seconds, which can be changed in the system setting.

Operation 2:
Auto clear is not made.

Operation 3:
The display is shifted to the initial screen.

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. (A3/11x17 size)

Section

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the setting value with 10-key
   1 = Count up by 1, 2 = Count up by 2
3) Press [OK] key.
   The set value in step 2) is saved.

Item/Display		Content	Default value
A	TOTAL (B/W)	Total counter (B/W)	2
B	TOTAL (COL)	Total counter (Color)	
C	MAINTNANCE (B/W)	Maintenance counter (B/W)	2
D	MAINTNANCE (COL)	Maintenance counter (Color)	
E	DEV (B/W)	Developer counter (B/W)	
F	DEV (COL)	Developer counter (Color)	

26-6

Purpose	Setting
Function (Purpose)	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.
Section	

Operation/Procedure

1) Select an item to be set with the touch panel.
2) Press [EXECUTE] key.
   The selected set content is saved.

U.S.A.	United States of America
CANADA	Canada
INCH	Inch series, other destinations
JAPAN	Japan
AB_B	AB series (B5 detection), other destinations
EUROPE	Europe
U.K.	United Kingdom
AUS.	Australia
AB_A	AB series (A5 detection), other destinations

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	-	-	-	-	-	-	-	-	-

26-8

Purpose	Setting
Function (Purpose)	Counter mode setting (Long scale)
Section	

Operation/Procedure

1) Select a setting item with the scroll key.
2) Enter the set value with 10-key.
   1 = 1 count up, 2 = 2 count up
3) Press [OK] key.

Item/Display		Content	Setting range	Default value	Default value (Taiwan)
A	TOTAL(B/W) LONG SIZE(S)	Long scale (Small) Total counter (B/W)	1 - 10	3	2
B	TOTAL (COL) LONG SIZE(S)	Long scale (Small) Total counter (Color)	1 - 10	3	2
C	MAINTE (B/W) LONG SIZE(S)	Long scale (Small) Maintenance counter (B/W)	1 - 10	3	2
D	MAINTE (COL) LONG SIZE(S)	Long scale (Small) Maintenance counter (Color)	1 - 10	3	2
E	DEV(B/W) LONG SIZE(S)	Long scale (Small) Developer counter (B/W)	1 - 10	3	2
F	DEV(COL) LONG SIZE(S)	Long scale (Small) Developer counter (color)	1 - 10	3	2
G	TOTAL(B/W) LONG SIZE(L)	Long scale (Large) Total counter (B/W)	1 - 10	5	2
H	TOTAL (COL) LONG SIZE(L)	Long scale (Large) Total counter (Color)	1 - 10	5	2
I	MAINTE (B/W) LONG SIZE(L)	Long scale (Large) Maintenance counter (B/W)	1 - 10	5	2
J	MAINTE (COL) LONG SIZE(L)	Long scale (Large) Maintenance counter (Color)	1 - 10	5	2
K	DEV(B/W) LONG SIZE(L)	Long scale (Large) Developer counter (B/W)	1 - 10	5	2
L	DEV(COL) LONG SIZE(L)	Long scale (Large) Developer counter (color)	1 - 10	5	2

Long Scale (Small): 631 - 1050mm

Long Scale (Large): 1051 - 1300mm

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 in step 1) is saved.

TRIAL MODE (0: YES 1: NO)	0	Trial mode setting
	1	Trial mode cancel (Default)

26-18

Purpose	Setting
Function (Purpose)	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)
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		Default value
A	COPY(0:OFF 1:SV1 2:SV2 :SV3)	0	Copy toner save mode is inhibited	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 :SV2 3:SV3)	0	Printer toner save mode is inhibited	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 :NO)	0	Copy toner save setting is displayed.	Refer to the following destionation list.
		1	Copy toner save setting is not displayed.	
D	PRINTER TS DISPLAY(0:YES 1:NO)	0	Printer toner save setting is displayed.	Refer to the following destionation list.
		1	Printer toner save setting is not displayed.	

<Default value of each destination>

Destination	C (Setting No.)	D (Setting No.)
U.S.A.	0 (Display)	0 (Display)
CANADA	0 (Display)	0 (Display)
INCH	0 (Display)	0 (Display)
JAPAN	1 (Not display)	1 (Not display)
TAIWAN	0 (Display)	0 (Display)
EUROPE	0 (Display)	0 (Display)
U.K.	1 (Not display)	1 (Not display)
AUS.	0 (Display)	0 (Display)
AB	0 (Display)	0 (Display)

26-30

Purpose	Setting
Function (Purpose)	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Control allowed
1	Control inhibited

2) Press [OK] key.
   The set value in step 1) is saved.
   * Even in Enable state, the control may not be executed due to the power frequency, etc.

<Default value of each destination>

U.S.A	1 (CE not supported)	EUROPE	0 (CE supported)
CANADA	1 (CE not supported)	U.K.	0 (CE supported)
INCH	1 (CE not supported)	AUS.	0 (CE supported)
JAPAN	1 (CE not supported)	AB_A	0 (CE supported)
AB_B	1 (CE not supported)		

26-32

Purpose	Setting
Function (Purpose)	Used to set the specifications of the fusing cleaning operation.
Section	Fusing

Operation/Procedure

1) Enter the set value with 10-key.
   Enable/Disable of the user fusing cleaning function is set.
2) Press [OK] key.

Item/Display		Content	Setting range		Default value
A	CLEANING PRINT SET	User fusing cleaning function is Enable.	0	YES	0
		User fusing cleaning function is Disable.	1	NO	

26-35

Purpose	Setting
Function (Purpose)	Used to set the display mode of SIM 22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble and display as several series of troubles.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Only once display. (Default)
1	Any time display.

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

26-38

Purpose	Setting
Function (Purpose)	Used to set Continue/Stop of print when the maintenance life is reached.
Section	

Operation/Procedure

1) Enter the set value with 10-key.
2) Press [OK] key.
   The set value in step 1) is saved.

Item/Display		Content		Default value
A	MAINTENANCE LIFE OVER (0: CONTINUE 1: STOP)	0	Setting of Print Continue/ Stop when the maintenance life is over (Print Continue)	0
		1	Setting of Print Continue/ Stop when the maintenance life is over (Print Stop)	
B	FUSER WEB END (0: CONTINUE 1: STOP)	0	Continue/Stop setting of print when the fusing web is end (Print Continue)	1
		1	Continue/Stop setting of print when the fusing web is end (Print Stop)	

26-41

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	AMS Disable
1	AMS Enable

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

<Default value of each destination>

U.S.A	0 (Disable)	U.K.	1 (Enable)
CANADA	0 (Disable)	AUS.	0 (Disable)
INCH	0 (Disable)	AB_A	0 (Disable)
JAPAN	0 (Disable)	CHINA	0 (Disable)
AB_B	0 (Disable)	KOREA	0 (Disable)
EUROPE	1 (Enable)	BRAZIL	0 (Disable)

26-49

Purpose	Setting
Function (Purpose)	Used to set the print speed of postcards mode.
Section	

Operation/Procedure

Select the copy speed mode with the touch panel. (Default: LOW)

Item/Setting value	Content	Default value
LOW	Postcard copy speed LOW	LOW
HIGH	Postcard copy speed HIGH	

26-50

Purpose	Setting
Function (Purpose)	Used to set functions.
Section	

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. (The set value is saved.)

Item/Display		Content		Default value
A	BW REVERSE	0	BW reverse copy Disable	Refer to *2
		1	BW reverse copy Enable	
B	COLOR MODE	2-color/Single color copy mode Enable/Disable setting		0 *1
C	FINISHER FUNCTION	0	Finisher special paper The number of paper exit is limited.	0 *3
		1	Finisher special paper The number of paper exit is not limited.	
D	COLOR MODE (PRINTER)	0	All colors and monochrome counters are displayed.	2
		1	All are displayed except for the 3-color print counter.	
		2	Monochrome and full color print counters are displayed.	
E	FEED TRAY COLOR	0	Paper feed tray color display ON during paper feed	0
		1	Paper feed tray color display OFF during paper feed	
F	BANNER SIZE PRINT	0	Banner size print disable	0
		1	Banner size print enable	
G	WIRELESS SET	0	Disables wireless LAN setting.	0
		1	Enables wireless LAN setting.	
H	POWER SHUT-OFF SET	0	Automatic power shut off is displayed.	*2
		1	Automatic power shut off is not displayed.	
I	USB DEVICE	0	USB device setting is disabled	0
		1	USB device is enabled	
J	PUNCH UNIT DESTINATION	0	No destination set	0
		1	2 holes	
		2	2, 3 holes	
		3	2, 4 holes	
		4	4 holes (4 holes wide)	

(*1) Default values for each destination of item B

Set value	Mode		2-Color/Single Counter
	Single	2-color	
0	OFF	OFF	OFF
1	OFF	ON	OFF
2	ON	OFF	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	OFF	ON	ON
6	ON	OFF	ON
7	ON	ON	ON

(*2)

<Default value of each destination>

Destination	Item A	Item H
U S A	1	1
CANADA	1	1
INCH	1	1
TAIWAN	1	1
EUROPE	1	0
U K	0	0
AUS	1	1
BRAZIL	1	1

(*3)

	Target paper	Target paper setting	
		0	1
Inner finisher	Postcard, envelope	The operation is stopped when 10 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and 10 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection.	If it is set to "1," the operation is stopped when the paper exit tray is full or when 250 sheets (35.5mm thick) are discharged.
	Label sheet, tab sheet, OHP	The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and 100 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection.	

	Target paper	Target paper setting	
		0	1
Saddle Stitch Finisher	Postcard, envelope	The operation is stopped when 30 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and 30 or less sheets of a kind are sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection.	If it is set to "1," the operation is stopped when the paper exit tray is full or when 500 sheets (67mm thick) are discharged.
Saddle Stitch Finisher	Label sheet, tab sheet, OHP	The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and 100 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection.	If it is set to "1," the operation is stopped when the paper exit tray is full or when 500 sheets (67mm thick) are discharged.

26-52

Purpose Setting

Function (Purpose) Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Count up
1	No count up

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

<Default value of each destination>

Destination	Default
U.S.A	0 (Counted)
CANADA	0 (Counted)
INCH	0 (Counted)
JAPAN	1 (Not counted)
AB_B	0 (Counted)
EUROPE	0 (Counted)
U.K.	0 (Counted)
AUS.	1 (Not counted)
AB_A	0 (Counted)

26-65

Purpose Setting

Function (Purpose) Used to set the finisher alarm mode.

Section

Operation/Procedure

Use the touch key to set.

Item	Set value	Content	Default value
LIMIT COPIES	ON	Number of stapling sets: Maximum staple setting is set value.	ON
	OFF	Number of stapling sets. Not Limited	

26-66

Purpose Setting

Function (Purpose) Used to set the password for the simulation.

Section

Operation/Procedure

1) The current password for the simulation is displayed.
2) Enter the set value with 10-key.
3) Press [SET] key.

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		Default value
A	TONER PREPARATION (0:YES 1:NO)		0	The toner preparation message is displayed.	0
			1	The toner preparation message is not displayed.	
B	REMAINING TONER LEVEL	5%	0	Toner preparation at remaining toner level of 5%	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	The toner near end message is not displayed.	
D	TONER END		1	Operation setup 1	2
			2	Operation setup 2	
			3	Operation setup 3	
E	TONER END COUNT		1	Operation is allowed when TONER END is detected.	1
			2	Operation is stopped when TONER END is detected. *2	
			3	Operation is stopped when TONER END is detected. *3	
F	TONER E-MAIL ALERT		0	Low status send of E-mail alert (When the toner preparation message is displayed) (in near near toner end)	0
			1	Low status send of E-mail alert (near toner end)	

Item/Display		Content		Default value
G	TONER MIB UNIT	0	Receive the remaining toner level MIB in 1% increment.	0
		1	Receive the remaining toner level MIB in 5% increment.	
		2	Receive the remaining toner level MIB in 25% increment.	

Item E (TONER END COUNT) setting value and printable quantity

Setting value	Printable quantity at A4/5% equivalent conversion
1	0
2	25
3	50

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display.

B: The toner remaining quantity at which the toner preparation message is displayed.

C: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

D: Machine operation at toner end

E: Number of allowable copy/print/FAX when the toner near end message is displayed. (Range: 0 - 50 sheets)

The number of output print allowed in item D is based on the assumption that the sheets are of A4 size with print ratio of 5%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Important

When item A is set to "0" and item E is properly set, printing can be made after toner near end. However, improper phenomena such as insufficient density, thin spots, or improper color balance may result depending on the using conditions. When item E is set to "1" printing is disabled after toner near end. In this case, toner end display is made in the toner near end status, and copy/print/FAX outputs are disabled.

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		Default value
A	OSA TRIAL MODE (0: YES 1: NO)	0	Used to set the OSA trial mode.	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 security.

Section

Operation/Procedure

1) Enter the set value with 10-key.
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	

26-85

Purpose	Setting
Function (Purpose)	Used to set the function of the simulation mode.
Section	

Operation/Procedure

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

Item/Display		Content	Setting range		Default value
A	DISP SET	Password input display for transferring between each simulation ON	YES	1	0
		Password input display for transferring between each simulation OFF	NO	0	

27

27-2

Purpose	Setting
Function (Purpose)	Used to set the sender's registration number and the HOST server telephone number. (FSS function)
Section	

Operation/Procedure

1) Select an item to be set with touch panel.
   [USER FAX NO] [SERVA TEL NO]
2) Enter the set value with 10-key.
3) Press [SET] key.
   The set value in step 2) is saved.

USER FAX_NO.	Sender registration number (Max. 16 digits)
SERVA TEL_NO.	Host server telephone number (Max. 16 digits) * If the connection process is not completed normally when registering the FSS, calling to the HOST may be continuously made every time when the power is turned ON (from OFF) or rebooted. In this case, enter "*********" to inhibit calling to the HOST.

27-4

Purpose	Setting
Function (Purpose)	Used to set the initial call and toner order auto send. (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	Remarks
A	FSS MODE	NEB1	Set the FSS MODE	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	3	
		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	TONER ORDER TIMING(C)	EMPTY	Toner order auto send timing setting (C)	Empty	0 - 11	0	3	
		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		
I	TONER ORDER TIMING(M)	EMPTY	Toner order auto send timing setting (M)	Empty	0 - 11	0	3	
		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		
J	TONER ORDER TIMING(Y)	EMPTY	Toner order auto send timing setting (Y)	Empty	0 - 11	0	3	
		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		
K	TEMP HISTORY CYCLE		Frequency of acquiring the temperature and humidity history		1 - 1440		60	Unit: min.
L	LOG OUTPUT CAPACITY(PCU)		Log output capacity		0 - 50		30	Unit: [KB]

Item/Display		Content		Setting range		Default value	Remarks
M	TONER ORDER TIMING CONTROL	Toner order timing control	Toner order alert call at fixed toner remaining amount	0 - 1	0	1	
	LOG OUTPUT CAPACITY(PCU)		Toner order alert call at predicted toner consumption amount		1		
N	TONER ORDER DELIVERY SETTING	Toner order delivery setting		0 - 1	0	0	
					1		
O	TONER ORDER DELIVERY INTERVAL	Toner order delivery interval setting		1 - 15		3	Unit: Date
P	REMOTE FIRMWARE UPDATE (PULL)	Pull type firmware update is inhibited or not allowed.		0 - 1	0	1	0 : Allowed 1 : Inhibited
					1		
Q	FIRMWARE VER. SEARCH INTERVAL	Firmware search interval setting		1 - 90		7	Unit: Date

27-5

Purpose Setting

Function (Purpose) Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function)

Section Communication (RIC/MODEM)

Operation/Procedure

1) Enter the password (max. 8 digits) with 10-key.
   The entered password is displayed on the column of "NEW".
   In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

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.

0	Allow (Default)
1	Inhibit

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

27-7

Purpose Setting

Function (Purpose) Used to set of the enable, alert callout. (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	FUNCTION (0:YES 1:NO)	FSS function enable	0	1
		FSS function disable	1	
B	ALERT (0:YES 1:NO)	Alert call enable (*1)	0	0
		Alert call disable	1	
C	CONNECTION (0: FAX 1: No Use 2: HTTP)	FAX connection enable	0	0
		Not used.	1	
		HTTP connection enable	2	

*1 Alert send timing

No alert cause	Initial state / Trouble / Continuous JAM alert
Maintenance	When the maintenance timing is reached.
Service call	When pressing Service call.
Toner send request	When the toner order automatic send setting is reached.
Toner collection request	Revision of the toner installation date (only for a new product)
Alert resend	

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 - 100	10 (TIMES)
D	JAM ALERT PERIOD	Continuous JAM alert interval value	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
	Automatic registration adjustment 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.

[RSPF]

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	
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
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	Scanner gain adjustment retry history
TONER ORDER(K)	99/99/99 99:99:99	8 digits	Black toner order alert call date/ time
TONER ORDER(C)	99/99/99 99:99:99	8 digits	Cyan toner order alert call date/ time
TONER ORDER(M)	99/99/99 99:99:99	8 digits	magenta toner order alert call date/time
TONER ORDER(Y)	99/99/99 99:99:99	8 digits	Yellow toner order alert call date/time

27-12

Purpose	Others
Function (Purpose)	Used to check the high density, halftone process control and the automatic registration adjustment error history. (FSS Function)
Section	

Operation/Procedure

The high density, halftone process control and the automatic registration adjustment error history is displayed.

HV_ERR1	High density process control error history 1
HV_ERR2	High density process control error history 2
HV_ERR3	High density process control error history 3
HV_ERR4	High density process control error history 4
HV_ERR5	High density process control error history 5
H_TONE ERR1	Halftone process control error history 1
H_TONE ERR2	Halftone process control error history 2
H_TONE ERR3	Halftone process control error history 3
H_TONE ERR4	Halftone process control error history 4
H_TONE ERR5	Halftone process control error history 5
AUTO REG ADJ1	Automatic registration adjustment error history 1
AUTO REG ADJ2	Automatic registration adjustment error history 2
AUTO REG ADJ3	Automatic registration adjustment error history 3
AUTO REG ADJ4	Automatic registration adjustment error history 4
AUTO REG ADJ5	Automatic registration adjustment error history 5

27-13

Purpose	Others
Function (Purpose)	Used to check the history of paper transport time between sensors. (FSS function)
Section	

Operation/Procedure

Change the display with scroll key.

Item/Display	Content
FEED TIME1	History of paper transport time between sensors 1
FEED TIME2	History of paper transport time between sensors 2
FEED TIME3	History of paper transport time between sensors 3
FEED TIME4	History of paper transport time between sensors 4
FEED TIME5	History of paper transport time between sensors 5
FEED TIME6	History of paper transport time between sensors 6
FEED TIME7	History of paper transport time between sensors 7
FEED TIME8	History of paper transport time between sensors 8
FEED TIME9	History of paper transport time between sensors 9
FEED TIME10	History of paper transport time between sensors 10

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.

0	Disable (Default)
1	Enable

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	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 setting	Alert send Enable	0	0
			Alert send Disable	1	
B	TONER ORDER ALERT (0:YES 1:NO)	Toner order alert send Enable setting	Alert send Enable	0	0
			Alert send Disable	1	
C	TONER CTRG ALERT (0:YES 1:NO)	Toner cartridge replacement alert send Enable setting	Alert send Enable	0	0
			Alert send Disable	1	
D	JAM ALERT (0:YES 1:NO)	Continuous JAM alert send Enable setting	Alert send Enable	0	0
			Alert send Disable	1	
E	TROUBLE ALERT (0:YES 1:NO)	Trouble alert send Enable setting	Alert send Enable	0	0
			Alert send Disable	1	
F	PAPER ORDER ALERT (0:YES 1:NO)	Paper order alert send Enable setting	Alert send Enable	0	0
			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 operations 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 detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

Display	Contents
1TUD_CL	Transfer mode sensor (CL)
1TUD_K	Transfer mode sensor (K)
2TPD	2nd transfer rear paper sensor
2TUD	2nd transfer position sensor
CCHPD_C	MC cleaner HP-C *
CCHPD_K	MC cleaner HP-K *
CCHPD_M	MC cleaner HP-M *
CCHPD_Y	MC cleaner HP-Y *
CCMD_C	MC cleaner shift detection C *
CCMD_K	MC cleaner shift detection K *
CCMD_M	MC cleaner shift detection M *
CCMD_Y	MC cleaner shift detection Y *
DHPD_C	Drum phase sensor C *
DHPD_CL	Drum phase sensor CL *
DHPD_K	Drum phase sensor K *
DHPD_M	Drum phase sensor M *
DHPD_Y	Drum phase sensor Y *
DSW_C1	Transport cover open/close detector (Paper feed tray 1)
DSW_C2	Cassette 2 transport cover open/close detection
DSW_F	Front door open/close detection SW
DSW_FU	Front door upper open/close detection SW
DSW_R	Right transport unit (Right door) open/close detection
HLPCD	Fusing pressure sensor
POD1	Paper exit sensor 1
POD2	Paper exit sensor 2
POD3	Paper exit sensor 3
POD4	Paper exit sensor 4
PPD2	Paper transport sensor 2
PRTPD	Paper exit paper sensor (Right paper exit tray)
SHPOS	Shifter home positions sensor
TCED_C	Toner cartridge discharge sensor C
TCED_K	Toner cartridge discharge sensor K
TCED_M	Toner cartridge discharge sensor M
TCED_Y	Toner cartridge discharge sensor Y
TED4	Upper paper empty detection sensor

Display	Contents
TFD2	Paper exit tray full sensor (Center paper exit tray)
TFD3	Paper exit tray full sensor (Right paper exit tray)
TNFD	Waste toner full detection sensor
WEBEND	Web end detection *

* Not used

30-2

Purpose Operation test/check

Function (Purpose) Used to check the operations 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 detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

Display	Contents
C1LUD	Paper feed tray upper limit sensor (Paper feed tray 1)
C1PED	Paper empty sensor (Paper feed tray 1)
C1PFD	Paper transport detector (Paper feed tray 1)
C1PFPD	Paper feed immediate detection sensor
C1SPD	Paper remaining quantity sensor (Paper feed tray 1)
C1SS	Paper feed tray 1 detector
C1SS1	Paper feed tray size detector PWB
C1SS2	Paper feed tray size detector PWB
C1SS3	Paper feed tray size detector PWB
C1SS4	Paper feed tray size detector PWB
C2LUD	Paper feed tray upper limit sensor (Paper feed tray 2)
C2PED	Paper empty sensor (Paper feed tray 2)
C2PFD	Paper transport detector (Paper feed tray 2)
C2SPD	Paper remaining quantity sensor (Paper feed tray 2)
C2SS1	Paper feed tray size detector PWB
C2SS2	Paper feed tray size detector PWB
C2SS2ETM	Desk2 module empty detection
C2SS3	Paper feed tray size detector PWB
C2SS4	Paper feed tray size detector PWB
C2SSSETD	Desk2 installation detection
MPED	Paper empty sensor (Manual paper feed tray)
MPFD	Paper feed sensor (Manual paper feed tray)
MPLD1	Paper length detector (Manual paper feed tray)

40

40-2

Purpose Adjustment/Setup

Function (Purpose) Manual paper feed tray paper width sensor adjustment.

Section Paper feed

Operation/Procedure

1) Open the manual paper feed guide to the max. width (MAX).
2) Press [EXECUTE] key.
   The max. width (MAX) detection level is recognized.
3) Open the manual paper feed guide to P1 width (A4).
4) Press [EXECUTE] key.
   The P1 width (A4) detection level is recognized.
5) Open the manual paper feed guide to P2 width (A4R).
6) Press [EXECUTE] key.
   The P2 width (A4R) detection level is recognized.
7) Open the manual paper feed guide to the min. width (MIN).
8) Press [EXECUTE] key.
   The min. width (MIN) detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed. When completed normally, "COMPLETE" is displayed.

MAX POSITION	Manual feed max. width
P1(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/Setup

Function (Purpose) Used to set the adjustment value of the manual paper feed tray paper width sensor.

Section Paper feed

Operation/Procedure

1) Select a target item to be adjusted 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	Default value
A	MAX POSITION	Manual feed max. width	241
B	P1 (A4) POSITION	Manual feed P1 position width (A4)	231
C	P2 (A4R) POSITION	Manual feed P2 position width (A4R)	140
D	MIN POSITION	Manual feed min. width	19

41

41-1

Purpose Operation test/check

Function (Purpose) Used to check the operations of the document size sensor and the control circuit.

Section

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

OCSW	Document cover status	Open: Normal display Close: Highlighted
PD1 - 7	Document detection sensor status	No document: Normal display Document present: Highlighted

41-2

Purpose Adjustment

Function (Purpose) Used to adjust the document size sensor detection level.

Section

Operation/Procedure

1) Open the document cover, and press [EXECUTE] key without place a document on the document table.
   The sensor level without document is recognized.
2) Set A3 (11" x 17") paper on the document table, and press [EXECUTE] key.
   The sensor level when detecting the document is displayed.

41-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the document size sensor and the control circuit.
Section	

Operation/Procedure

The detection output level (A/D value) of OCSW and the document sensor (PD1 - PD7) is displayed in real time.

The light receiving range of PD1 - PD7 is 1 - 255. (Default: 128)

Item/Display	Content	Detection level range
OCSW	Original cover SW	0-1 ("1" to Close)
PD1	Document detection 1	0 - 255
PD2	Document detection 2	0 - 255
PD3	Document detection 3	0 - 255
PD4	Document detection 4	0 - 255
PD5	Document detection 5	0 - 255
PD6	Document detection 6	0 - 255
PD7	Document detection 7	0 - 255

43

43-1

Purpose	Setting
Function (Purpose)	Used to set the fusing temperature in each mode.
Section	

Operation/Procedure

1) Select the SW-A or the SW-B.
2) Select an item to be set with scroll keys.
3) Select an item to be set with displayed value.
   The set value in step 3) is saved.

Display	Content	Setting range	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	
		+20	
HEAVY PAPER GR	Used to change the fusing temperature setting of heavy paper series	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
THIN PAPER GR	Used to change the fusing temperature setting of thin paper series	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
RECYCLED PAPER GR	Used to change the fusing temperature setting of recycled paper series	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
GLOSSY PAPER GR	Used to change the fusing temperature setting of gloss paper series	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
ENV PAPER GR	Used to change the fusing temperature setting of envelope series	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
EMBOSS PAPER GR	Used to change the fusing temperature setting of embossed paper	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
OHP PAPER	Used to change the fusing temperature setting of OHP paper	-20	0
		-15	
		-10	
		-5	
		0	
		+5	
		+10	
		+15	
		+20	
FUSING CONDITION ADJ	Fusing condition adjustment setting	0	0
		1	
		2	
		3	
		4	
		5	
ENV PAPER PRESS PATTERN	Envelop paper pressure adjustment	0	0
		1	
		2	
WUP&RDY GR ADJ LL	WUP/Ready LL environment fine adjustment	-10	0
		-7	
		-5	
		-3	
		0	
		+3	
		+5	
		+7	
		+10	

Display	Content	Setting range	Default
PLAIN PAP ADJ LL	Normal paper LL environment fine adjustment	-10	0
		-7	
		-5	
		-3	
		0	
		+3	
		+5	
		+7	
		+10	
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	

43-2

Purpose Setting

Function (Purpose) Used to set the fusing temperature and pre-heating.

Section

Operation/Procedure

1) Select the SW-A or SW-B.
2) Select an item to be set with scroll keys.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value in step 3) is saved.

Item / Display		Content	Setting range	Default value
A	WARMUP FUMON TH_UM T	Fusing motor previous rotation start TH_UM set value	0 - 200	List of Default values and set values for each destination
B	WARMUP FUMOFF	Fusing motor previous rotation complete time	0 - 255	
C	WARMUP END TIME	Warm-up complete time	0 - 255	
D	HI WU FM ON TMP	FM preliminary rotation start TH_UM when warming up at alpha degree C or above	0 - 200	
E	HI WU END TIME	Warm-up completion time when warm-up at alpha degree C or above	0 - 255	
F	LO WARMUP TIME	Setting value applying time in warm-up of 120 degrees C or below (Timer from Ready completion)	0 - 255	
G	HI WARMUP TIME	Setting value applying time in warm-up of 120 degree C or above (Time from Ready completion)	0 - 255	
H	HI WARMUP BORDER	Threshold value alpha to apply the setting value in warm-up of alpha degree C or above	1 - 119	
I	JOBEND 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	
K	TH_LM E-STAR	TH_LM set value when preheating	30 - 200	
L	TH_US E-STAR	TH_US set value when preheating	30 - 200	
M	TH_UM PRE-JOB	TH_UM set value from recovering the preheating	30 - 200	

List of destination groups

Group	Destination				
Group B	U. S. A	CANADA	INCH	–	–
Group C	EUROPE	U. K	AUS.	AB_A	AB_B

List of Default values and set values for each destination

Item	Default value (30 ppm)				Default value (35/40 ppm)			
	SW_A		SW_B		SW_A		SW_B	
	Group B	Group C	Group B	Group C	Group B	Group C	Group B	Group C
A	0	0	0	0	0	0	0	0
B	20	20	20	20	20	20	20	20
C	7	7	30	30	7	7	30	30
D	0	0	0	0	0	0	0	0
E	7	7	30	30	7	7	30	30
F	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0
H	60	60	60	60	60	60	60	60
I	8	8	8	8	8	8	8	8
J	135	135	135	135	135	135	135	135
K	100	100	100	100	100	100	100	100
L	135	135	135	135	135	135	135	135
M	150	150	155	155	150	150	155	155

Code descriptions

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

43-20

Purpose Adjustment/Setup

Function (Purpose) Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) 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

Item / Display		Content	Setting range	Default value	
				30 ppm	35/40 ppm
A	WARMUP FUMON TH_UM T LL	Correction value for fusing motor pre-rotation start TH_UM set value under LL environment	1 - 99	50	50
B	WARMUP FUMOFF LL	Fusing motor prior rotation completion time under LL environment	1 - 99	60	60
C	WARMUP END TIME LL	Correction value for warm-up completion time under LL environment	1 - 99	75	75
D	HI_WU_FM_ON_TMP_LL	Correction value for FM prior rotation start TH_UM in warm-up at alpha degree C or above under LL environment	1 - 99	50	50
E	HI_WU_END_TIME_LL	Correction value for warm-up completion time in warm-up at alpha degree C or above under LL environment	1 - 99	65	65
F	LO_WARMUP_TIME_LL	Correction value of the setting value applying time in warm-up of 120degree C or below under LL environment (Time from Ready completion)	1 - 99	65	65
G	HI_WARMUP_TIME_LL	Correction value of the setting value applying time in warm-up of 120degree C or above under LL environment (Time from Ready completion)	1 - 99	65	65
H	HI_WARMUP_BORDER_LL	Correction value of the threshold value alpha to apply the setting value in warm-up of alpha degree C or above under LL environment	1 - 99	50	50
I	JOBEND_FUMON_TIME LL	Correction value for the after rotation time when completing a job under LL environment	1 - 99	50	50
J	TH_UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	55	55
K	TH_LM E-STAR LL	Correction value for preheating TH_LM set value under LL environment	1 - 99	55	55
L	TH_US E-STAR LL	Correction value for preheating TH_US set value under LL environment	1 - 99	55	55
M	TH_UM PRE-JOB LL	Correction value for the set value of TH_UM when restoring from preheating under LL environment	1 - 99	55	55

* Item WARMUP END TIME LL: 1 Count = 1s Change
Correction value for the other items: 1 count for 1degrees C change

Code descriptions

TH_UM	Fusing thermistor main (Front surface of paper)
TH_LM	Fusing thermistor main (Back 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 43-2) 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

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	List of Default values and set values for each destination
B	WARMUP FUMOFF HH	Fusing motor previous rotation completion time	1 - 99	
C	WARMUP END TIME HH	Warm-up completion time	1 - 99	
D	HI_WU_FM_ ON_TMP HH	FM preliminary rotation start TH_UM when warming up at alpha degree C or above	1 - 99	
E	HI_WU_END _TIME HH	Warm-up completion time when warm-up at alpha degree C or above	1 - 99	
F	LO_WARMU P_TIME_HH	Correction value for AF - AH application time (Time from Ready complete)	1 - 99	
G	HI_WARMUP _TIME HH	Correction value for AJ - AL application time (Time from Ready complete)	1 - 99	
H	HI_WARMUP _BORDER_H H	Threshold value alpha to which AN - AP is applied	1 - 99	
I	JOBEND_FU MON_TIME HH	After-rotation time after completion of a job	1 - 99	
J	TH_UM E-STAR HH	TH_UM set value when preheating	1 - 99	
K	TH_LM E-STAR HH	TH_LM set value when preheating	1 - 99	
L	TH_US E-STAR HH	TH_US set value when preheating	1 - 99	
M	TH_UM PRE-JOB HH	Resetting from preheating TH_UM set value	1 - 99	

* Item WARMUP END TIME HH: 1 Count = 1s Change

Correction value for the other items: 1 count for 1 degrees C change

Code descriptions

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

List of destination groups

Group	Destination				
Group B	U. S. A	CANADA	INCH	–	–
Group C	EUROPE	U. K	AUS.	AB_A	AB_B

List of Default values and set values for each destination

Item	Default value (30 ppm)		Default value (35/40 ppm)	
	Group B	Group C	Group B	Group C
A	50	50	50	50
B	50	50	50	50
C	50	50	50	50
D	50	50	50	50
E	50	50	50	50
F	50	50	50	50
G	50	50	50	50
H	50	50	50	50
I	50	50	50	50
J	50	50	50	50
K	50	50	50	50
L	50	50	50	50
M	50	50	50	50

43-24

Purpose Adjustment/Setup

Function (Purpose) Used to set the temperature adjustment value.

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

Item / Display		Content	Setting Value	Default value
A	COOL_DOWN _HEAVY	Cool down time (Heavy paper)	1-60	List of Default values and set values for each destination
B	COOL_DOWN _OHP	Cool down time (OHP)	1-60	
C	COOL_DOWN _ENVELOPE	Cool down time (Envelope)	1-60	
D	FUS_MOTOR	Fusing web motor operating interval	3-20	
E	POWER SET	Power supply voltage 1:100V, 2 :110 - 120V, 3 : 220 - 240V	1-3	

* Each cool down time: 1 count = 1sec change

List of destination groups

Group	Destination				
Group B	U. S. A	CANADA	INCH	TAIWAN	–
Group C	EUROPE	U. K	AUS.	AB_A	AB_B

List of Default values and set values for each destination

Item	Default value (30 ppm)		Default value (35/40 ppm)	
	Group B	Group C	Group B	Group C
A	8	8	8	8
B	8	8	8	8
C	8	8	8	8
D	10	10	10	10
E	2	3	2	3

43-35

Purpose Adjustment and setting

Function (Purpose) Fusing nip operation check

Section Fusing

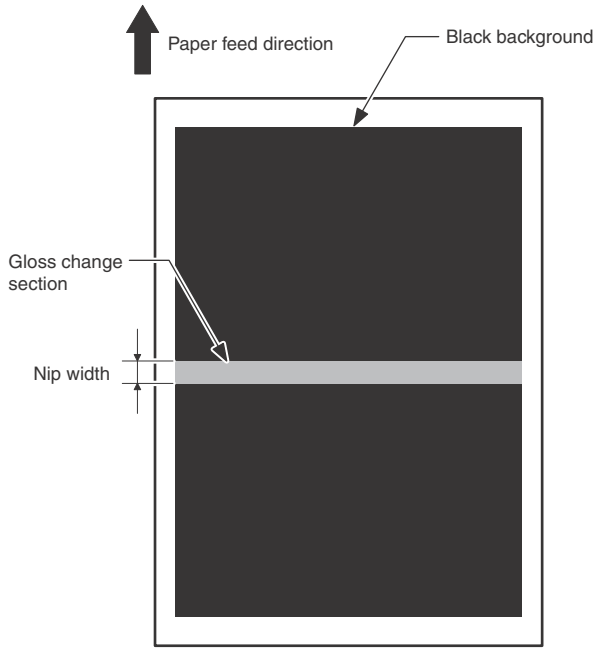
Operation/Procedure

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	2
		CS1			2	
		CS2			3	
		CS3			4	
		CS4			5	



44

44-1

Purpose	Setting
Function (Purpose)	Used to set each correction operation function in the image forming (process) section.
Section	Image process (Photo conductor/Developing/Transfer/Cleaning)

Operation/Procedure

1) Select an item to be set with the touch panel. (The selected item is highlighted.)
2) Press [EXECUTE] key. (The set value is saved.)

Important

Set the items to the default values unless a change is specially required.

Item/ Display	Content	Setting range	Default value
HV	Normal operation high density process control Enable/Disable setting	Black text on white background (Inhibit: 0=NO) white text on black background (Allow: 1=YES)	Allow
HT	Normal operation halftone process control Enable/Disable setting		Allow
TN_PIX_SUP	Setting of Enable/Disable of toner supply control for the yield count		Allow
TN_FB	Enable/Disable setting of FEEDBACK toner supply control		Allow
TN_INT	Enable/Disable setting of the interval toner supply control		Allow
TN_RECV	Enable/Disable setting of developer recovery		Allow
TN_ADJ	Enable/Disable setting of the sensor output adjustment		Allow
TN_EMP	Setting of Enable/Disable of the toner falling distance detection control		Allow
TN_EMP_INT	Setting of Enable/Disable of the toner falling distance detection control of job interruption		Allow
TN_EMP_NEW	Enable/Disable setting of fall amount detection control of a new cartridge		Allow
TN_PIX_TBL	Enable/Disable setting of toner supply control by the yield count		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 VG MC	Enable/Disable setting of the grid correction by the MC total current correction		Allow
MD VG DV	Enable/Disable setting of the VG grid correction by the developer bias absolute value		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
MD LD HV	Enable/Disable process control laser power voltage correction		Allow
MD DL	Enable/Disable setting of the membrane decrease discharge light quantity correction		Allow
MD DL EV	Enable/Disable setting of the membrane decrease environment discharge quantity correction		Disable
MD MC	Enable/Disable setting of the MC total current correction by an increase in the resistance		Allow
MD MC EV	Enable/Disable setting of the MC total current correction by environmental change		Allow
AR_AUTO	Auto registration adjustment Enable/ Disable setting		Allow
AR_ERROR	Auto registration adjustment execution error check Enable/Disable setting		Allow
AR_PHASE	Enable/Disable setting of drum phase fitting calculation feedback Enable/ Disable setting		Allow
DM_PHASE	Drum phase fitting Enable/Disable setting		Allow
TC	Enable/Disable setting of transfer output correction		Allow
PTC_ENV	PTC environment correction Enable/ Disable setting		Allow

44-2

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the sensitivity of the image density sensor (registration sensor).
Section	Process

Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is executed automatically.

After completion of the adjustment, the adjustment result is displayed.

If the adjustment is not executed normally, "ERROR" is displayed.

Classification	Item/Display		Content	Setting range	Default value
PROCON/EGIST	A	REGS_F LED	Light emitting quantity adjustment value	1 - 255	21
	B	REGS_R LED		1 - 255	21
	C	REGS_F	Transfer belt substrate detection level value (F side) when the light emitting quantity adjustment is completed.	0 - 255	0
	D	REGS_R	Transfer belt substrate detection level value (R side) when the light emitting quantity adjustment is completed.	0 - 255	0
	E	REGS_F DARK	Specular reflection dark voltage (F side)	0 - 255	0
	F	REGS_R DARK	Specular reflection dark voltage (R side)	0 - 255	0
PROCON	G	PCS_F_DARK	Diffuse reflection dark voltage (F side)	0 - 255	0
	H	PCS_R_DARK	Diffuse reflection dark voltage (R side)	0 - 255	0
	I	PCS_F_V1	Linearity correction coefficients (F side)	0 - 255	0
	J	PCS_F_V2		0 - 255	0
	K	PCS_F_V3		0 - 255	0
	L	PCS_F_V4		0 - 255	0
	M	PCS_F_V5		0 - 255	0
	N	PCS_R_V1	Linearity correction coefficients (R side)	0 - 255	0
	O	PCS_R_V2		0 - 255	0
	P	PCS_R_V3		0 - 255	0
	Q	PCS_R_V4		0 - 255	0
	R	PCS_R_V5		0 - 255	0
	S	PCS_F_CL_ka	Diffuse reflection normalization coefficients	100 - 2000	500
	T	PCS_R_CL_ka		100 - 2000	500
	U	BELT_PCS_F MAX	Belt substrate F side monitor max. value (Process control)	0 - 255	0
	V	BELT_PCS_F MIN	Belt substrate F side monitor min. value (Process control)	0 - 255	0
	W	BELT_PCS_F DIF	Belt substrate F side monitor difference (BELT_PCS_F MAX-MIN)	0 - 255	0
	X	BELT_PCS_R MAX	Belt substrate R side monitor max. value (Process control)	0 - 255	0
	Y	BELT_PCS_R MIN	Belt substrate R side monitor min. value (Process control)	0 - 255	0
	Z	BELT_PCS_R DIF	Belt substrate R side monitor difference (BELT_PCS_F MAX-MIN)	0 - 255	0

Classification	Item/Display		Content	Setting range	Default value
REGIST	AA	BELT_REGS_F_MAX	Belt substrate F side monitor max. value (Registration)	0 - 255	0
	AB	BELT_REGS_F_MIN	Belt substrate F side monitor min. value (Registration)	0 - 255	0
	AC	BELT_REGS_F_DIF	Belt substrate F side monitor difference (BELT_REGS_F MAX-MIN)	0 - 255	0
	AD	BELT_REGS_R_MAX	Belt substrate R side monitor max. value (Registration)	0 - 255	0
	AE	BELT_REGS_R_MIN	Belt substrate R side monitor min. value (Registration)	0 - 255	0
	AF	BELT_REGS_R_DIF	Belt substrate R side monitor difference (BELT_REGS_R MAX-MIN)	0 - 255	0
	AG	PATCH_REGS_F_K	Toner patch detection level F (K)	0 - 255	0
	AH	PATCH_REGS_F_C	Toner patch detection level F (C)	0 - 255	0
	AI	PATCH_REGS_F_M	Toner patch detection level F (M)	0 - 255	0
	AJ	PATCH_REGS_F_Y	Toner patch detection level F (Y)	0 - 255	0
	AK	PATCH_REGS_R_K	Toner patch detection level R (K)	0 - 255	0
	AL	PATCH_REGS_R_C	Toner patch detection level R (C)	0 - 255	0
	AM	PATCH_REGS_R_M	Toner patch detection level R (M)	0 - 255	0
	AN	PATCH_REGS_R_Y	Toner patch detection level R (M)	0 - 255	0

Error name	Error content
F sensor adjustment abnormality	REGS_F LED error The target is not reached by 3 times of adjustments.
R sensor adjustment abnormality	REGS_R LED error The target is not reached by 3 times of adjustments.
F Color sensor adjustment abnormality	PCS_F_CL_ka calculation error The target is not reached
Process control F sensor adjustment abnormality	BELT_PCS_F DIF error The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 1 turn
R Color sensor adjustment abnormality	PCS_R_CL_ka calculation error The target is not reached
Process control R sensor adjustment abnormality	BELT_PCS_R DIF error The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 1 turn

Error name	Error content
Registration substrate F scan abnormality	BELT_REGS_F_ DIF error The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 1 turn
Registration substrate R scan abnormality	BELT_REGS_R_ DIF error The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 1 turn

44-4

Purpose	Setting
Function (Purpose)	Used to set the conditions of the high density process control operation.
Section	Process

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

Important

Set the items to the default values unless a change is specially required.

Item/Display		Content	Setting range	Default value
A	PCS_CL TARGET	Color image sensor adjustment target value	1 - 255	204
B	PCS_K TARGET	Black image sensor adjustment target value	1 - 255	204
C	LED_CL OUTPUT	Color image sensor light emitting start level	1 - 255	21
D	LED_K OUTPUT	Black image sensor light emitting start level	1 - 255	21
E	PCS ADJSTMENT LIMIT	Color image sensor adjustment error allowance level	1 - 255	8
F	BELT GROUND DIF	Transfer belt one-turn substrate detection level difference allowance level	1 - 255	1
G	BIAS_CL STANDARD DIF	Developing bias (for color) reference correction voltage	0 - 255	60
H	BIAS_BK STANDARD DIF	Developing bias (for black) reference correction voltage	0 - 255	0
I	BIAS PATCH INTERVAL	Toner patch making developing bias interval	1 - 255	60
J	Y_PAT TARGET ID	Process control target density level (yellow)	1 - 255	45
K	M_PAT TARGET ID	Process control target density level (magenta)	1 - 255	45
L	C_PAT TARGET ID	Process control target density level (cyan)	1 - 255	45
M	K_PAT TARGET ID	Process control target density level (black)	1 - 255	50
N	HV BK_GROUND LIMIT	Black image sensor adjustment error allowance level	1 - 255	60

44-6

Purpose	Adjustment
Function (Purpose)	Used to execute the high density process control forcibly.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

In case of a normal completion, the result is saved.

In case of an abnormal completion, "ERROR" is displayed. (Refer to the table below.)

In case of an ERROR, the previous correction data are saved.

Result display	Content description
COMPLETE	Normal complete
ERROR	Abnormal end
INTERRUPTION	Forcible interruption

Details of error display	Content description
CL_SEN_ADJ_ERR	Color image sensor adjustment abnormality
BK_SEN_ADJ_ERR	Black image sensor adjustment abnormality
K_HV_ERR	K high density process control abnormality
C_HV_ERR	C high density process control abnormality
M_HV_ERR	M high density process control abnormality
Y_HV _ERR	Y high density process control abnormality
TIMEOUT_ERR	Time out

Details of error display	Content description
CL_SEN_ADJ_ERR	Color image sensor adjustment abnormality
BK_SEN_ADJ_ERR	Black image sensor adjustment abnormality
K_EHT_ERR	K process control abnormality
C_EHT_ERR	C process control abnormality
M_EHT_ERR	M process control abnormality
Y_EHT_ERR	Y process control abnormality
TIMEOUT_ERR	Time out

44-9

Purpose	Operation data display
Function (Purpose)	Used to display the result data of the high density process control operation.
Section	Image process (Photo conductor/Developing/Transfer/Cleaning)

Operation/Procedure

Select a target display mode with [CPY/PRN], [OTHER] keys.

44-12

Purpose	Operation data display
Function (Purpose)	Used to display the operation data of the high density process control and the image density sensor (registration sensor).
Section	Image process (Photo conductor/Developing)

Operation/Procedure

Select a display mode with [TARGET] [PATCH] keys.

Mode	Item/Display	Content	Display range	Default value
TARGET	ADK_SL (K/C/M/Y)	Development characteristics gradient coefficient (High density process control operation)	-9.99 - 9.99	0
	ADK_INT(K/C/M/Y)	Development characteristics intercept level (High density process control operation 0V)	-999.9 - 999.9	0
	TARGET (K/C/M/Y)	High density process control target density level (K)	0.00 - 255.00	0
	TARGET (C/M/Y)	High density process control target density level (C/M/Y)	0.00 - 255.00	0
	PCS_F_DARK	Diffuse reflection dark voltage (F side)	0 - 255	0
	PCS_R_DARK	Diffuse reflection dark voltage (R side)	0 - 255	0
	REGS_F_DARK	Specular reflection dark voltage (F side)	0 - 255	0
	REGS_R_DARK	Specular reflection dark voltage (R side)	0 - 255	0
PATCH	n-1	High density process control nth time toner patch density level 1 (n=1-5)	0 - 255	0
	n-2	Toner patch data nth time patch 2 (n=1-5)	0 - 255	0
	n-3	Toner patch data nth time patch 3 (n=1-5)	0 - 255	0
	n-4	Toner patch data nth time patch 4 (n=1-5)	0 - 255	0
	n-1	Toner patch data nth time patch 1 (n=6-10)	0 - 255	0
	n-2	Toner patch data nth time patch 2 (n=6-10)	0 - 255	0
	n-3	Toner patch data nth time patch 3 (n=6-10)	0 - 255	0
	n-4	Toner patch data nth time patch 4 (n=6-10)	0 - 255	0
ENGINE HALFTONE	PATCH(1)	h1 patch (77) patch data	0 - 255	0
	PATCH(2)	h2 patch (103) patch data	0 - 255	0
	PATCH(3)	h3 patch (127) patch data	0 - 255	0
	TARGET(1)	h1 patch (77) target registration value	0 - 255	0
	TARGET(2)	h2 patch (103) target registration value	0 - 255	0
	TARGET(3)	h3 patch (127) target registration value	0 - 255	0

44-14

Purpose	Operation data display
Function (Purpose)	Used to display the output level of the temperature and humidity sensor.
Section	Process (OPC drum, development)/Fusing/LSU

Operation/Procedure

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

Item/Display	Content
TH_CL	External air temperature sensor temperature External air temperature sensor AD value
HUD_CL	External air humidity sensor humidity External air sensor AD value
TH1_LSU	LSU thermistor 1 temperature LSU thermistor 1 A/D value
TH2_LSU	LSU thermistor 2 temperature LSU thermistor 2 A/D value
TH_UM	Fusing upper main thermistor temperature Fusing upper main thermistor (AD value)
TH_UM_CS	Fusing upper main thermistor (compensation) temperature Fusing upper main thermistor (compensation) AD value
TH_UM_D	Fusing upper main thermistor (differential) AD value
TH_SUB2	Fusing upper sub thermistor 2 temperature Fusing upper sub thermistor 2 (AD value)
TH_SUB2_CS	Fusing upper sub thermistor 2 (compensation) temperature Fusing upper sub thermistor 2 (compensation) AD value
TH_SUB2_D	Fusing upper sub thermistor 2 (differential) AD value
TH_LM	Fusing lower main thermistor temperature Fusing lower main thermistor (AD value)
TH_US	Fusing upper sub thermistor temperature Fusing upper sub thermistor (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
E	FLAG	OPC drum idle rotation is allowed or disabled.	0 - 1 (0 : Allow 1 : Disable)	0

44-17

Purpose	Setting
Function (Purpose)	Process refresh execution
Section	Process

Operation/Procedure

1) Select a refresh item with the touch panel key.
2) Press [EXECUTE] key.
3) The refresh operation is executed.

NOTE: Do not execute this simulation unless specially required.

Display items and descriptions of contents

Display	Content
BLADE REFRESH	Blade development refresh
DEVE REFRESH	Development refresh * DEVE REFLESH execution consume W-Letter A3 100% worth of toner.

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 complete
ERROR COLOR SENSOR ADJUSTMENT	Color image density sensor sensitivity adjustment error
ERROR BLACK SENSOR ADJUSTMENT	Black image density sensor sensitivity adjustment error
[YMCK]	High density process control error [YMCK]
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) The toner patch density level made in the halftone process control operation is displayed.

Item/Display	Content
ID_n	Patch data display (n= 1 to 16)
BASE1	Belt substrate data (START)
BASE5	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.
2) Select a target adjustment color with [K] [C] [M] [Y] key.

Category	Item/Display	Content
Coefficient	[DITHER_RAW_VALUE]	Halftone process control correction value (before correction)
Reference value	[SENSOR_TARGET]	Halftone process control reference value
Correction value	[S_VALUE]	Halftone process control correction value
For printer	[PRINTER_S_VALUE]	Printer halftone process control correction value
	[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 value
	[BEFORE PRINTER_S_VALUE]	Previous printer halftone process control value

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 color with [K] [C] [M] [Y] key.
2) Select a target adjustment density level with scroll key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key.

Important

Set the items to the default values unless a change is specially required.

Item/Display		Content	Setting range	Default value	
				K	CMY
A	HIGHTLIGHT VALUE LIMIT	Highlight correction amount limit value	0 - 128	20	20
B	MAX VALUE LIMIT	Maximum density value correction limit value	0 - 128	20	20

44-26

Purpose	Adjustment/Setup
Function (Purpose)	Used to execute the halftone process control compulsory.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

The halftone process control is performed and the operation data are displayed.

COMPLETE	Normal complete
ERROR COLOR SENSOR ADJUSTMENT	Color image density sensor sensitivity adjustment error
ERROR BLACK SENSOR ADJUSTMENT	Black image density sensor sensitivity adjustment error
[YMCK]	High density process control error [YMCK] error
OTHER	Other errors

44-27

Purpose	Data clear
Function (Purpose)	Used to clear the correction data of the halftone process control.
Section	Process

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The correction data of the halftone process control are cleared.

44-28

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the process control execution conditions.
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. (The set value is saved.)

Important

Set the items to the default values unless a change is specially required.

Item/Display			Content		Setting range	Default value
A	INITIAL	YES	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0	0
		NO		Disable	1	
B	SW ON		When supplying the power (when canceling power shut-off)	Color process control Enable	0	3
				Process control Disable	1	
				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)	Color process control Enable	0	3
				Process control Disable	1	
				BK process control Enable	2	
				Pixel count judgment	3	
D	HUM_LIMIT		HUM judgment is made when turning ON the power and after passing INTERVAL TIME.	Color process control Enable	0	0
				Process control Disable	1	
				BK process control Enable	2	
E	HUM		The temperature and humidity inside the machine are monitored only during a job at the interval set by the item of HUM HOUR. When the changes in the temperature and the humidity are greater than the specified level (the set value of item HUM DIF) in comparison with the previous process control.	Color process control Enable	0	0
				Process control Disable	1	
				BK process control Enable	2	
F	REV1	YES	When the accumulated traveling distance of K or M OPC drum unit reaches the specified level after turning ON the power.	Enable	0	1
		NO		Inhibit	1	
G	REV2_BK	YES	When the accumulated traveling distance of K OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0	1
		NO		Inhibit	1	
H	REV2_CL	YES	When the accumulated traveling distance of M OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0	1
		NO		Inhibit	1	
I	REFRESH MODE	YES	Select of YES/NO of the manual process control key with key operation	Key operation display	0	1
		NO		Key operation NO display	1	

Item/Display		Content		Setting range	Default value
J	DAY	When there is no color job from when the previous color process control was performed to when the number of days set by this item setting, perform the process control when executing the next warming up.	0: Disable of the specified days judgment	0	1
			1 - 999: 1 - 999 days passing	999	
K	HI-COV	Setting of the execution conditions of the process control for the print ratio	The process control is performed by considering the average print ratio of every 10 pages as the judgment criteria.	0	1
			Print ratio judgment inhibit (The process control for the target of print ratio is not performed.)	1	
			The process control is performed by considering the average print ratio of 30 pages as the judgment criteria in a continuous print job of 30 or more pages.	2	
L	LO-COV	Setting of the execution judgment of the process control in continuous printing of low print ratio images	Enable	0	1
			Inhibit	1	
M	TonerCA-END	Setting of the process control interval reduction when the toner cartridge remaining quantity is 25% or less (If this is set to Enable, item M RATIO is changed.)	Enable	0	1
			Inhibit	1	

Item/Display		Content		Setting range	Default value
N	JOB	Simplified process control judgement (During Job)	High density process control : Allow Engine half-tone process control : Allow	0	0
			High density process control : Inhibit Engine half-tone process control : Inhibit	1	
			High density process control : Allow Engine half-tone process control : Inhibit	2	
			High density process control :Inhibit Engine half-tone process control : Allow	3	
O	JOB_END	Simplified process control judgement (After Job)	High density process control : Allow Engine half-tone process control : Allow	0	0
			High density process control : Allow Engine half-tone process control : Inhibit	1	
P	AVERAGE-PAGE	Setting of the number of pages of item	1: 10 pages - 5: 50 pages 1 step corresponds to 10 pages.	1	3
				5	

Item/Display		Content		Setting range	Default value
Q	LIMIT PAGE	Setting of the number of connected jobs of the process control and of the limit number of the process control	1: 10 pages - 99: 990 pages 1 step corresponds to 10 pages.	1	10
		A number of reservation jobs are connected. When the number of jobs exceeds the specified number of pages (the set value of this setting), the process control is performed. / The process control is performed by AND conditions of item REV condition and the specified number of pages (the set value of this setting).		99	
R	PIX_RATIO_BK	Magnification ratio setting (%) of the BK toner count specified value The set value of 100 corresponds to K print of A4 at the print ratio of 5%.		1 - 999	10
S	PIX_RATIO_CL	Magnification ratio setting (%) of the color (CMY) toner count specified value The set value of 100 corresponds to K print of A4 at the print ratio of 5%.		1 - 999	10
T	INTERVAL TIME	Setting of the leaving time when turning ON the power (including the sleep recovery time) (h: hour)		1 - 255	3
U	HUM HOUR	Interval setting of the temperature and humidity monitoring time of "HUM" (unit: 10 minutes)		1 - 24	2
V	HUM_DIF	The specified value of the area difference in humidity between the level at execution of the previous control and the current humidity (Applied to item HUM)		1 - 9	2
W	BK_RATIO	Magnification ratio setting (%) of the specified value of the BK OPC drum traveling distance of "REV2_BK"		1 - 999 (Entry of 20 corresponds to 100,000mm.)	15
X	M_RATIO	Magnification ratio setting (%) of the M OPC drum traveling distance of "REV2_CL"		1 - 999 (Entry of 20 corresponds to 100,000mm.)	15
Y	REV1_RATIO	Magnification ratio setting (%) of the REV1 OPC drum traveling distance of "REV1"		1 - 255	20
Z	SHV_PAGE	Interval of number of sheets of simplified process control standard value"		0 - 999	100
AA	SHV_RATIO	Interval of number of traveling distance of simplified process control standard value		0 - 999	20
AB	SHV_DIF	Normal process control execution setting by simplified process control result		1 - 255	60

Item/Display			Content		Setting range	Default value
AC	SHT_DIF		Half tone engine execution setting by simplified process control result		1 - 255	5
AD	COLOR BORDER		Judgment criteria whether the BK high density process control is individually performed or not (Setting of the ratio of the M OPC drum rotation distance for the K OPC drum rotation distance (%))	0: The BK process control is executed regardless of the M OPC drum traveling distance.	0 - 999	20
				1 - 999: 1 - 999(%)		
AE	BK ONLY		Setting of the frequency of execution of the 4-color high density process control when only monochrome output is continued (The result of this setting is applied only when the M OPC drum rotation distance is smaller than the set value of COLOR BORDER.)	Frequency of once for 5 times	0	5
				Frequency of once for 1 - 5 times	1 - 5	
				The 4-color high density process control is always performed.	6	
AF	HT_DIF		HT process control execution judgment developing bias variation value		1 - 255	40
AG	RG_ON_SYNC	CL	Setting of execution of the registration adjustment when executing the process control when turning ON the power	When the color process control is executed.	0	0
		ALL		Executed regardless of the process control.	1	
		CL/BK		When the color process control and the K process control are executed.	2	
AH	RG_TEMP_TIMER		Time interval from registration adjustment after turning ON the power to the next execution.		0 - 240 (MINUTE)	0
AI	RG_PERM_TIMER		Setting of inhibit time of execution of the registration adjustment		0 - 15 (HOUR)	0
AJ	RG_HOUR_TIMER		Setting of the interval time of execution of the registration adjustment		0 - 15 (Above)+(HOUR)	6
AK	RG_BW_SYNC		Setting of Enable/ Disable of the registration adjustment after a monochrome job	Enable	0	1
				Inhibit	1	
AL	2TRAN_CLEAN_TIME1		Secondary transfer cleaning process time judgment threshold value 1 (The total number of sheets for cleaning execution conditions) (Cleaning time: Short)		5 - 999	200

Item/Display		Content		Setting range	Default value
AM	2TRAN_CLEAN_TIME2	Secondary transfer cleaning process time judgment threshold value 2 (The total number of sheets for cleaning execution conditions) (Cleaning time: Medium)		5 - 999	300
AN	2TRAN_CLEAN_TIME3	Secondary transfer cleaning process time judgment threshold value 3 (The total number of sheets for cleaning execution conditions) (Cleaning time: Long)		5 - 999	500
AO	BLADE_CLEAN_TIME	Blade refresh interval setting	Enable	0	10
			Inhibit	1 - 99	
AP	MC CLEAN DISP	MC cleaning display setting	Disable	0	0
			Enable	1	
AQ	MC CLEAN DISP TIME	MC cleaning display interval setting		1 - 99	20

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	Halftone process control copier - printer conversion table select	0 - 1	0:CALCULATED 1:DEFAULT	0: Color balance calculation value (Revised every time when SIM46-74 is executed.) 1: Default (Fixed value)	0
F	HT RETRY	Halftone process control retry setting	0 - 255			20
G	HT TARGET RETRY	Halftone process control standard value registration retry	0 - 255			3

HV: High density process control

HT: Halftone process control

44-31

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the OPC drum phase. (Manual adjustment)

Section Process

Operation/Procedure

Important

For the OPC drum phase adjustment, do not use this simulation, but use SIM50-22 (auto adjustment).

1) Select item A with scroll key.
2) Enter the value corresponding to the adjustment pattern with 10-key.
3) Press [EXECUTE] key. (The adjustment pattern is printed out.)
4) Select an adjustment pattern whose deflection is within two scale lines on the adjustment pattern of C,M, Y colors.
5) Select item B with scroll key.
6) Enter the adjustment pattern sheet number selected in procedure 4).
7) Press [EXECUTE] key.
8) The adjusted adjustment pattern is printed.

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.

Item/Display		Content		Setting range	Default value
A	MUL_MC_ADJ	Multi-grid bias correction enable/ disable setting	Enable	0	1
			Disable	1	
B	MUL_DV_ADJ	Multi-fusing bias correction enable/ disable setting	Enable	0	0
			Disable	1	

44-43

Purpose Data display

Function (Purpose) Used to display the identification information of the developing unit.

Section Developing system

Operation/Procedure

The identification number and the identification signal level of the developing unit are displayed.

44-62

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.

1) 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.

Display/Item		Content
PROCON TARGET	CL ID DOWN	The densities of C, M, and Y decrease. (The C/M/Y high density process control target values decrease.)
	CL ID UP	The densities of C, M, and Y increase. (The C/M/Y high density process control target values increase.)
	BK ID DOWN	The density of K decreases. (The high density process control target value decreases.)
	BK ID UP	The density of K increases. (The high density process control target value increases.)
	ALL ID DOWN	The densities of C, M, Y and K decrease. (The C/M/Y/K high density process control target values decrease.)
	ALL ID UP	The densities of C, M, Y and K increase. (The C/M/Y/K high density process control target values increase.)
	NORMAL	The standard density of C, M, Y and K. (The C/M/Y/K high density process control target values are the standard values.)
PROCON MODE	HIGH QUALITY1	The execution frequency of the process control is high. (It is set when the color image quality is given priority.)
	HIGH QUALITY2	The execution frequency of the process control is highest. (It is set when the color image quality is given priority.)
	PRINT PERFORMANCE	The execution frequency of the process control is low. (It is set when the job speed is given priority.)
	BW MODE	The process control is executed in the normal frequency. (It is set when there are little color jobs and many monochrome jobs.)
	NORMAL	The process control is executed in the normal frequency.

(When PROCON TARGET is selected.)

2A) Select the density level.

(When PROCON MODE is selected.)

2B) Select the execution frequency of the process control.

3) Press [EXECUTE] key.

4) 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.

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46-1

Purpose	Adjustment (Color 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 r s 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 copy density is increased. When the adjustment value is decreased, the copy density is decreased.

Item/Display		Content		Setting range	Default value
A	AUTO	Auto	LOW	1 - 99	50
			HIGH	1 - 99	50
B	TEXT	Text	LOW	1 - 99	50
			HIGH	1 - 99	50
C	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
D	TEXT/PHOTO	Text/Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
E	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
F	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
G	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
H	LIGHT	Light document	LOW	1 - 99	50
			HIGH	1 - 99	50
I	TEXT(COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
R	LIGHT(COLOR TONE ENHANCEMENT)	LIGHT DOCUMENT(Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
S	SINGLE COLOR	Single color	LOW	1 - 99	50
			HIGH	1 - 99	50

Item/Display		Content		Setting range	Default value
T	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
U	TWO COLOR	2-color (red/ black) copy	LOW	1 - 99	50
			HIGH	1 - 99	50
V	TWO COLOR (COPY TO COPY)	2-color (red/ black) copy (copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50

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 r s 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 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	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)	Auto 1 (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	AUTO2(COPY TO COPY)	Auto 2 (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	AUTO3(COPY TO COPY)	Auto 3 (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 r s 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 r s 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

Mode	Item/Display		Content	Setting range	Default value
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

46-8

Purpose Adjustment (Color scanner mode)

Function (Purpose) Used to adjust the image send mode color balance RGB.

Section

Operation/Procedure

1) Select an adjustment target with [R] [G] [B] keys on the touch panel.
2) Select an adjustment target item on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

The color balance can be adjusted separately for the low density area and the high density area.

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

Item/Display		Content	Default value
A	LOW DENSITY POINT	Low density correction amount	50
B	HIGH DENSITY POINT	High density correction amount	50

46-9

Purpose Adjustment (DSPF/RSPF mode)

Function (Purpose) Used to adjust the scan image density.

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 r s 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.)

This adjustment result affects the image send mode, the copy mode, and the fax mode.

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

[RSPF]

Item/Display		Content	Setting range	Default value
A	COPY : LOW	RSPF copy mode exposure adjustment (Low density side)	1 - 99	48
B	SCAN : LOW	RSPF scanner mode exposure adjustment (Low density side)	1 - 99	48
C	FAX : LOW	RSPF FAX mode exposure adjustment (Low density side)	1 - 99	48
D	COPY : HIGH	RSPF copy mode exposure adjustment (High density side)	1 - 99	53
E	SCAN : HIGH	RSPF scanner mode exposure adjustment (Low density side)	1 - 99	53
F	FAX : HIGH	RSPF FAX mode exposure adjustment (high density)	1 - 99	53

46-10

Purpose Adjustment

Function (Purpose) Used to adjust the copy color balance and the gamma (for each color copy mode).

Section

Operation/Procedure

1) Select an adjustment target mode with the touch panel key.
2) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
3) Select an adjustment target item on the touch panel.
4) Enter the set value with 10-key.
   * When the r s key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
5) Press [OK] key. (The set value is saved.)

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

TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
PRINTED PHOTO	Printed Photo
PHOTO + TEXT/PHOTO	Photograph + Text/Printed Photo
MAP	Map
LIGHT	Light document
COPY ORG	Copy document

Item/Display		Density level (Point)	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 adjust the monochrome copy density and the gamma (for each monochrome copy mode).

Section

Operation/Procedure

1) Select an adjustment target item on the touch panel.
2) Enter the set value with 10-key.
   * When the r s key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

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

Item/Display		Density level (Point)	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

Item/Display		Density level (Point)	Setting range	Default value
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 operating conditions for the density scanning (exposure) of mono-chrome auto copy mode documents.

Section

Operation/Procedure

Select an item to be set with touch panel.

When an item is selected, it is highlighted and the setting change is saved.

Item/Display	Content	Set value	Default value
AE_MODE	Auto exposure mode	MODE1 MODE2 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

46-21

Purpose Adjustment

Function (Purpose) Copy color balance adjustment (Manual adjustment)

Section

Operation/Procedure

1) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
2) Select an adjustment target item on the touch panel.
3) Enter the set value with 10-key.
   * When the r s key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key. (The set value is saved.)

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

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

Item/Display		Density level (Point)	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

46-23

Purpose Adjustment/Setup

Function (Purpose) Used to set the density correction of copy high density section (High density tone gap supported).

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Enable
1	Inhibit

2) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range	Default value
A	CMY (0: ENABLE 1: DISABLE)	0	CMY engine highest density correction mode: Enable	0 - 1	0
		1	CMY engine highest density correction mode: Disable		
B	K (0: ENABLE 1: DISABLE)	0	K engine highest density correction mode: Enable	0 - 1	1
		1	K engine highest density correction mode: Disable		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	500
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	500
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500

* When tone gap is generated in the high density area, set items A and B to "0".

  The density of high density part decreases. However, the tone gap is better.
* To increase the density in the high density area further, set items A and B to "1".

  The tone gap may occur in high density part.

Important

Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

46-24

Purpose	Adjustment
Function (Purpose)	Copy color balance adjustment (Auto adjustment)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
   The color patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key.
   The copy color balance automatic adjustment is performed, then the adjustment result pattern is printed.
4) Press [OK] key.
   The halftone correction target registration is processed.

46-25

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance. (Single color copy mode)
Section	

Operation/Procedure

1) Select an adjustment target color with [C][M][Y] keys on the touch panel.
2) Select an adjustment target 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 image density of the target color is increased, and vice versa.

Item/Display		Setting range	Default value		
			C	M	Y
A	RED	0 - 255	0	255	200
B	GREEN	0 - 255	255	0	255
C	BLUE	0 - 255	255	150	0
D	CYAN	0 - 255	255	0	0
E	MAGENTA	0 - 255	0	255	0
F	YELLOW	0 - 255	0	0	255
G	ORANGE	0 - 255	0	150	255
H	NAVY	0 - 255	255	200	0
I	LIGHT GREEN	0 - 255	150	0	150
J	LIGHT BLUE	0 - 255	150	20	0
K	AQUA MARINE	0 - 255	170	0	50
L	PURPLE	0 - 255	128	255	0
M	PINK	0 - 255	0	150	20
N	YELLOW GREEN	0 - 255	128	0	255
O	BEIGE	0 - 255	0	50	170

46-26

Purpose	Adjustment
Function (Purpose)	Used to reset the single color mode color balance set value to the default.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The color balance value of the single color mode is reset to the default value.

46-27

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the gamma/density of color copy images, texts, and line image edges.
Section	

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. (The set value is saved.)

Item/Display (Copy mode)		Content	Setting range	Default value
A	BLACK TEXT (SLOPE)	Black character edge gamma skew adjustment	1 - 99	50
B	BLACK TEXT (INTERCEPT)	Black character edge density adjustment	1 - 99	50
C	COLOR TEXT (SLOPE)	Color character edge gamma skew adjustment	1 - 99	50
D	COLOR TEXT (INTERCEPT)	Color character edge density adjustment	1 - 99	50
E	ED TEXT (SLOPE)	Text/Map mode gamma skew adjustment (Text/Map mode)	1 - 99	50
F	ED TEXT (INTERCEPT)	Text/Map mode density adjustment (Text/Map mode)	1 - 99	50

When the adjustment values of items A and C are changed, the gamma of character edge and line edge image density section is changed.

When the adjustment value is increased, the image contrast of character edge and line edge is increased. When the adjustment value is decreased, the image contrast of text and line edge is decreased.

When the adjustment values of items B and D are increased, the image density of character edge and line edge section is decreased, and vice versa.

46-30

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the resolution in the sub scanning direction in the copy mode.
Section	

Operation/Procedure

1) Refer to the following table, and enter the set value corresponding to the resolution mode with 10-key.
2) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range		Default value
A	SCAN RESOLUTION SW	Scan resolution selection (COPY: COLOR)	Mode1	0 - 1	0	0
			Mode2		1	

RSPF

Mode	Scan mode	Resolution in the sub scanning direction (DPI)		
		25-99% [Magnification ratio]	100-200% [Magnification ratio]	201-400% [Magnification ratio]
Mode1	OC	600	600	600
	RSPF	600	600	-
Mode2	OC	300	600	600
	RSPF	300	600	-

46-32

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the document background density reproducibility in the monochrome auto copy mode.

Section

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. (The set value is saved.)

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

RSPF

Item / Display		Content	Setting range	Default value
A	COPY:OC	Copy mode (for OC)	1 - 250	196
B	COPY:RSPF	Copy mode (for RSPF)	1 - 250	196
C	SCAN:OC	Scanner mode (for OC)	1 - 250	196
D	SCAN:RSPF	Scanner mode (for RSPF)	1 - 250	196
E	FAX:OC	FAX mode (for OC)	1 - 250	196
F	FAX:RSPF	FAX mode (for RSPF)	1 - 250	196

46-36

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the colors in the 2-color copy mode.

Section

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

By changing the density level of each color, the color adjustment in the 2-color copy mode can be performed.

Item/Display			Content	Setting range	Default value			Default value
					C	M	Y	
OUTCOLOR (Output color coefficient)	A	RED	R output color	0 - 255	0	255	200	-
	B	GREEN	G output color	0 - 255	255	0	255	-
	C	BLUE	B output color	0 - 255	255	150	0	-
	D	CYAN	C output color	0 - 255	255	0	0	-
	E	MAGENTA	M output color	0 - 255	0	255	0	-
	F	YELLOW	Y output color	0 - 255	0	0	255	-
	G	ORANGE	O output color	0 - 255	0	150	255	-
	H	NAVY	N output color	0 - 255	255	200	0	-
	I	LIGHT GREEN	LG output color	0 - 255	150	0	150	-
	J	LIGHT BLUE	LB output color	0 - 255	150	20	0	-
	K	AQUA MARINE	AM output color	0 - 255	170	0	50	-
	L	PURPLE	PU output color	0 - 255	128	255	0	-
	M	PINK	P output color	0 - 255	0	150	20	-
	N	YELLOW GREEN	YG output color	0 - 255	128	0	255	-
	O	BEIGE	BE output color	0 - 255	0	50	170	-
CHROMA (Chroma adjustment)	A	RED / BLACK	Red extraction mode (The red recognition area is adjusted.)	0 - 6	-	-	-	3
	B	KS:CHROMATIC	Chromatic color extraction mode (The chromatic color recognition area is adjusted.)	0 - 6	-	-	-	3

46-37

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the reproduction capability of monochrome mode color.

Section

Operation/Procedure

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key.
4) Press [YES] key.

This is to adjust the reproduction capability of red and yellow images when copying color documents with red and yellow images in the monochrome mode.

Item/Display		Content	Setting range	Default value	
				RSPF	DSPF
A	R-Ratio	Gray making setting (R)	0 - 1000	137	127
B	G-Ratio	Gray making setting (G)	0 - 1000	827	814
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)

* B-Ratio: The value of gray making setting (B) is obtained from the formula below.

1000-R-Ratio - G-Ratio

When [DEFAULT] key is pressed, the values are set to the initial values (Default).

When the adjustment value of the adjustment item A is increased, the copy density of red images is decreased. When the adjustment value is decreased, the density is increased.

When the adjustment value of the adjustment item B is increased, the copy density of yellow images is increased. When the adjustment value is decreased, the density in also decreased.

46-38

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the black component amount in the color copy mode.
Section	

Operation/Procedure

1) Select the AUTO MODE or the MANUAL MODE with the mode key.
2) Select the mode to be adjusted with the scroll key.
3) Press the black component amount select key.

This adjusts black component amount in the color copy mode. (except character and line image)

As a result of this adjustment, the gradation of the shade part changes.

Item/Display (Copy mode)		Select button	Content	Default value
MANUAL	TEXT PRT	(-) LUT2	Text print (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT	(-) LUT2	Text (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	PRINTED PHOTO	(-) LUT2	Printed photo (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	PHOTO	(-) LUT2	Photograph/Text photograph (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT PHOTO	(-) LUT2	Text/Photograph (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	MAP	(-) LUT2	Map (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	CPY TO CPY/TXT PRT	(-) LUT2	Copy document/ Text printed (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	CPY TO CPY/TEXT	(-) LUT2	Copy document/ Text (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
	CPY TO CPY/ PHOTO	(-) LUT2	Copy document/ Printed photo (Manual)	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
MANUAL	LIGHT ORIGINAL	(-) LUT2	Pencil	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		
AUTO	AUTO	(-) LUT2	Auto mode judgment	NORMAL
		(-) LUT1		
		NORMAL		
		(+) LUT1		
		(+) LUT2		

46-39

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the sharpness of FAX send images.
Section	

Operation/Procedure

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.

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

46-40

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the FAX send image density. (Collective adjustment of all the modes)
Section	

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key

   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	EXPOSURE LEVEL(ALL)	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	1 - 99	50

46-41

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (Normal)

Section

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display			Content		Setting range	Default value
A	AUTO		Auto		1 - 99	50
B	EXPOSURE1		Exposure 1		1 - 99	50
C	EXPOSURE2		Exposure 2		1 - 99	50
D	EXPOSURE3		Exposure 3		1 - 99	50
E	EXPOSURE4		Exposure 4		1 - 99	50
F	EXPOSURE5		Exposure 5		1 - 99	50
G	EXECUTE MODE	AUTO	Print mode	Auto	1	1
		EXP1		Exposure 1	2	
		EXP2		Exposure 2	3	
		EXP3		Exposure 3	4	
		EXP4		Exposure 4	5	
		EXP5		Exposure 5	6	

46-42

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (Fine)

Section

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Fine/Automatic	1 - 99	50
B	EXPOSURE1	Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Fine/Automatic/ Halftone	1 - 99	50
H	EXPOSURE1 H_TONE	Fine/Exposure 1/ Halftone	1 - 99	50
I	EXPOSURE2 H_TONE	Fine/Exposure 2/ Halftone	1 - 99	50
J	EXPOSURE3 H_TONE	Fine/Exposure 3/ Halftone	1 - 99	50
K	EXPOSURE4 H_TONE	Fine/Exposure 4/ Halftone	1 - 99	50
L	EXPOSURE5 H_TONE	Fine/Exposure 5/ Halftone	1 - 99	50

Item/Display			Content		Setting range	Default value
M	EXECUTE MODE	AUTO	Print mode	Fine/Auto	1	1
		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/ Automatic/ 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_ONE		Fine/ Exposure 4/ Halftone	11	
		EXP5 H_TONE		Fine/ Exposure 5/ Halftone	12	

46-43

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (Super Fine)

Section

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Super Fine/Auto	1 - 99	50
B	EXPOSURE1	Super Fine/ Exposure 1	1 - 99	50
C	EXPOSURE2	Super Fine/ Exposure 2	1 - 99	50
D	EXPOSURE3	Super Fine/ Exposure 3	1 - 99	50
E	EXPOSURE4	Super Fine/ Exposure 4	1 - 99	50
F	EXPOSURE5	Super Fine/ Exposure 5	1 - 99	50
G	AUTO H_TONE	Super Fine/ Auto/Halftone	1 - 99	50
H	EXPOSURE1 H_TONE	Super Fine/ Exposure 1/Halftone	1 - 99	50
I	EXPOSURE2 H_TONE	Super Fine/ Exposure 2/Halftone	1 - 99	50
J	EXPOSURE3 H_TONE	Super Fine/ Exposure 3/Halftone	1 - 99	50
K	EXPOSURE4 H_TONE	Super Fine/ Exposure 4/Halftone	1 - 99	50
L	EXPOSURE5 H_TONE	Super Fine/ Exposure 5/Halftone	1 - 99	50

Item/Display			Content		Setting range	Default value
M	EXECUTE MODE	AUTO	Print mode	Super Fine/ Auto	1	1
		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/ Halftone	7	
		EXP1 H_TONE		Super Fine/ Exposure 1/ Halftone	8	
		EXP2 H_TONE		Super Fine/ Exposure 2/ Halftone	9	
		EXP3 H_TONE		Super Fine/ Exposure 3/ Halftone	10	
		EXP4 H_TONE		Super Fine/ Exposure 4/ Halftone	11	
		EXP5 H_TONE		Super Fine/ Exposure 5/ Halftone	12	

Item/Display			Content		Setting range	Default value
M	EXECUTE MODE	AUTO	Print mode	Ultra Fine/ Auto	1	1
		EXP1		Ultra Fine/ Exposure 1	2	
		EXP2		Ultra Fine/ Exposure 2	3	
		EXP3		Ultra Fine/ Exposure 3	4	
		EXP4		Ultra Fine/ Exposure 4	5	
		EXP5		Ultra Fine/ Exposure 5	6	
		AUTO H_TONE		Ultra Fine/ Auto/ Halftone	7	
		EXP1 H_TONE		Ultra Fine/ Exposure 1/ Halftone	8	
		EXP2 H_TONE		Ultra Fine/ Exposure 2/ Halftone	9	
		EXP3 H_TONE		Ultra Fine/ Exposure 3/ Halftone	10	
		EXP4 H_TONE		Ultra Fine/ Exposure 4/ Halftone	11	
		EXP5 H_TONE		Ultra Fine/ Exposure 5/ Halftone	12	

46-44

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (Ultra fine)

Section

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key

   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Ultra Fine/Auto	1 - 99	50
B	EXPOSURE1	Ultra Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Ultra Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Ultra Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Ultra Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Ultra Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Ultra Fine/Auto/ Halftone	1 - 99	50
H	EXPOSURE1 H_TONE	Ultra Fine/ Exposure 1/Halftone	1 - 99	50
I	EXPOSURE2 H_TONE	Ultra Fine/ Exposure 2/Halftone	1 - 99	50
J	EXPOSURE3 H_TONE	Ultra Fine/ Exposure 3/Halftone	1 - 99	50
K	EXPOSURE4 H_TONE	Ultra Fine/ Exposure 4/Halftone	1 - 99	50
L	EXPOSURE5 H_TONE	Ultra Fine/ Exposure 5/Halftone	1 - 99	50

46-45

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (600dpi).

Section

Operation/Procedure

1) Set the document on the document table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key

   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	600dpi/Auto 1	1 - 99	50
B	EXPOSURE1	600dpi/Exposure 1	1 - 99	50
C	EXPOSURE2	600dpi/Exposure 2	1 - 99	50
D	EXPOSURE3	600dpi/Exposure 3	1 - 99	50
E	EXPOSURE4	600dpi/Exposure 4	1 - 99	50
F	EXPOSURE5	600dpi/Exposure 5	1 - 99	50
G	AUTO H_TONE	600dpi/Auto/ Halftone 1	1 - 99	50
H	EXPOSURE1 H_TONE	600dpi/Exposure 1/ Halftone	1 - 99	50
I	EXPOSURE2 H_TONE	600dpi/Exposure 2/ Halftone	1 - 99	50
J	EXPOSURE3 H_TONE	600dpi/Exposure 3/ Halftone	1 - 99	50
K	EXPOSURE4 H_TONE	600dpi/Exposure 4/ Halftone	1 - 99	50
L	EXPOSURE5 H_TONE	600dpi/Exposure 5/ Halftone	1 - 99	50

Item/Display			Content		Setting range	Default value
M	EXECUTE MODE	AUTO	Print mode	600dpi/ Auto	1	1
		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/ Halftone	7	
		EXP1 H_TONE		600dpi/ Exposure 1/Halftone	8	
		EXP2 H_TONE		600dpi/ Exposure 2/Halftone	9	
		EXP3 H_TONE		600dpi/ Exposure 3/Halftone	10	
		EXP4 H_TONE		600dpi/ Exposure 4/Halftone	11	
		EXP5 H_TONE		600dpi/ Exposure 5/Halftone	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/Setup

Function (Purpose) Used to set the compression rate of copy and scan images (JPEG).

Section

Operation/Procedure

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

Category	Item/Display			Content	Setting range	Default value
FILLING (COLOR)	A	FILLING (C)	LOW	Low compression (Color)	0	0
			MIDDLE	Medium compression (Color)	1	
			HIGH	High compression (Color)	2	
FILLING (GRAY)	B	FILLING (G)	LOW	Low compression (Gray)	0	0
			MIDDLE	Medium compression (Gray)	1	
			HIGH	High compression (Gray)	2	
PRINT HOLD (COLOR)	C	PRINT (C)	LOW	Low compression (Color)	0	0
			MIDDLE	Medium compression (Color)	1	
			HIGH	High compression (Color)	2	
PRINT HOLD (GRAY)	D	PRINT (G)	LOW	Low compression (Gray)	0	0
			MIDDLE	Medium compression (Gray)	1	
			HIGH	High compression (Gray)	2	
PUSH SCAN (COLOR) (Scanner Color)	E	SCAN (C)	MIDDLE 1	Medium compression mode 1	0	1
			MIDDLE 2	Medium compression mode 2	1	
			MIDDLE 3	Medium compression mode 3	2	
PUSH SCAN (GRAY) (Scanner Gray)	F	SCAN (G)	MIDDLE 1	Medium compression mode 1	0	1
			MIDDLE 2	Medium compression mode 2	1	
			MIDDLE 3	Medium compression mode 3	2	

46-48

Purpose Adjustment/Setup

Function (Purpose) Used to change the copy output resolution to 600dpi depending on the printing quality.

Section

Operation/Procedure

1) Select a target item with scroll keys on the touch panel.

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		

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 an adjustment target color with [K][C][M][Y] keys on the touch panel.
3) Select a target adjustment density level with scroll key on the touch panel.
4) Enter the set value with 10-key.
5) Press [EXECUTE] key, or [OK] key.

   When [EXECUTE] key is pressed, the self print image is outputted.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

Item/Display	Content	Color
HEAVY	Copier heavy paper gamma	KCMY
DITH1	Black edge	K
DITH2	Color edge	KCMY
DITH3	Color error diffusion	KCMY
DITH4	Monochrome error diffusion	K
DITH8	Monochrome dither(600dpi)	K
DITH9	Monochrome dither(600dpi low)	K

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

46-52

Purpose Adjustment/Setup

Function (Purpose) Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.)

Section

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
	BLACK EDGE	Black edge
	COLOR EDGE	Color edge
	B/W ED	Monochrome error diffusion
	B/W 600	Monochrome dither 600dpi
	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.

HEAVYPAPER	Copier/Heavy paper gamma
BLACK EDGE	Black edge
COLOR EDGE	Color edge
B/W ED	Monochrome error diffusion
B/W 600	Monochrome dither 600dpi
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.

46-58

Purpose Adjustment/Setup

Function (Purpose) Used to set the copy mode pseudo resolution. (Smoothing process)

Section

Operation/Procedure

1) Select an item (mode) to be set with the button and the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

1(ON): 9600 (equivalent) x 600 dpi

0 (OFF): 600 x 600 dpi

The setting is reflected only the image edge area.

Mode	Item/Display		Content (copy mode)	Setting range		Default value
COLOR	A	AUTO	Auto	OFF	0	0
				ON	1	
	B	TEXT	Text	OFF	0	1
				ON	1	
	C	TEXT PRT	Text print	OFF	0	0
				ON	1	
	D	PRINTED PHOTO	Printed Photo	OFF	0	0
				ON	1	
	E	TEXT PHOTO	Text photograph	OFF	0	0
				ON	1	
	F	PHOTO	Photograph	OFF	0	0
				ON	1	
	G	MAP	Map	OFF	0	1
				ON	1	
	H	LIGHT	Light document	OFF	0	0
				ON	1	
	I	CPY TO CPY/ TEXT	Text (copy document)	OFF	0	1
				ON	1	
	J	CPY TO CPY/ TXT PRT	Text print (copy document)	OFF	0	0
				ON	1	
	K	CPY TO CPY/ PHOTO	Printed Photo (copy document)	OFF	0	0
				ON	1	
MONO	A	AUTO	Auto	OFF	0	0
				ON	1	
	B	TEXT	Text	OFF	0	1
				ON	1	
	C	TEXT PRT	Text print	OFF	0	0
				ON	1	
	D	PRINTED PHOTO	Printed Photo	OFF	0	0
				ON	1	
	E	TEXT PHOTO	Text photograph	OFF	0	0
				ON	1	
	F	PHOTO	Photograph	OFF	0	0
				ON	1	
	G	MAP	Map	OFF	0	1
				ON	1	
	H	LIGHT	Light document	OFF	0	0
				ON	1	
	I	CPY TO CPY/ AUTO	Auto (copy document)	OFF	0	0
				ON	1	
	J	CPY TO CPY/ TEXT	Text (copy document)	OFF	0	1
				ON	1	
	K	CPY TO CPY/ TXT PRT	Text print (copy document)	OFF	0	0
				ON	1	
	L	CPY TO CPY/ PHOTO	Printed Photo (copy document)	OFF	0	0
				ON	1	

46-60

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the sharpness in the color auto copy 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) with 10-keys.
3) Press [OK] key.

This is used to adjust the sharpness in the color auto copy mode and the smoothness (roughness) in the dark area.

Item/Display			Content		Setting range	Default value
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3
		L		Soft emphasis	2	
		AUTO		Auto	3	
B	CPY CL AUTO FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the automatic copy mode (Text, Printed Photo / Printed Photo images)	SOFT	1	2
		CENTER		CENTER	2	
		HIGH		HIGH	3	
C	CPY PUSH AUTO FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the automatic push scan mode (Text, Printed Photo / Printed Photo images)	SOFT	1	2
		CENTER		CENTER	2	
		HIGH		HIGH	3	
D	COLOR COPY : CMY	OFF	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1
		ON		ON	1	

Item/Display			Content		Setting range	Default value
E	COLOR COPY : K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1
		ON		ON	1	
F	SINGLE COLOR : CMY	OFF	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1
		ON		ON	1	
G	2 COLOR COPY : CMY	OFF	Setting of YES/NO of applying the soft filter to C/M/Y images of the 2-color copy mode	OFF	0	1
		ON		ON	1	
H	2 COLOR COPY : K	OFF	Setting of YES/NO of applying the soft filter to K images of the 2-color copy mode	OFF	0	1
		ON		ON	1	
I	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1
		ON		ON	1	
J	COLOR PUSH : RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1
		ON		ON	1	
K	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1
		ON		ON	1	
L	COLOR PRINT: CMY	OFF	Setting of ON/OFF of soft filter application to color print C, M, Y images	OFF	0	0
		ON		ON	1	
M	COLOR PRINT: K	OFF	Setting of ON/OFF of soft filter application to color print K images	OFF	0	0
		ON		ON	1	
N	B/W PRINT	OFF	Setting of ON/OFF of soft filter application to monochrome print images	OFF	0	0
		ON		ON	1	

46-61

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the area separation recognition level.

Section

Operation/Procedure

1) Select an adjustment mode.
2) Select a target adjustment item with scroll key on the touch panel.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key.

Important

This Sim is overwritten by changing Image “Quality Adjustment” -> “Copy Image Quality” -> “Image Quality Priority”.

(It is overwritten just by pressing the “Store” on screen without changing the setting.)

Make sure to set corresponding item Z to “1” after changing the value.

Then the adjustment of “Image Quality Priority” in System Settings will be invalidated. (The adjustment itself is allowed from UI point of view however, the image quality won’t change because the setting won’t be reflected to the Sim.)

- When “AUTO” in “COLOR” or “MONO” has been adjusted:

Go to COLOR -> AUTO -> and set Z to 1…. Image Quality Priority “Auto” will be invalidated.

- When “TPP” or “COPY (AUTO&TPP)” in “COLOR” or ”MONO” has been adjusted:

Go to COLOR -> TPP -> and set Z to 1…. Image Quality Priority “Text/Prtd.Photo” will be invalidated.

(The item Z is not available in “MONO” and “COPY (AUTO&TPP)”)

The adjustment of “MONO” -> “TPP” will affect FAX.

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 and AUTO)	[Color/Gray] Copy document (Text print and auto)
MONO	AUTO	[Monochrome] Auto
	TPP	[Monochrome] Manual (Text print)
	COPY(TPP and AUTO)	[Monochrome] Copy document (Text print and auto)

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: Thine 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 1 of text on dots	1 - 15	8
M	SEGMENT: ADJUST [TXT ON SCR AREA 2]	Detection level adjustment: Detection area 2 of text on dots	1 - 99	50
N	SEGMENT: ADJUST [HIGH LPI]	Detection level adjustment: High line number judgment	1 - 49	25

Item/Display		Content	Setting range	Default value
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
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	1 - 49	25
S	SEGMENT: ADJUST [SCR 1 MIDDLE]	Detection level adjustment: Medium density dots 1	1 - 49	25
T	SEGMENT: ADJUST [SCR 1 LOW]	Detection level adjustment: Low density dots 1	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.

Important

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

Item/Display		Content	Setting range	Default value
F	AE_LV_CC	AE background detection division result adjustment: For color copy	0 - 8	4
G	AE_LV_MC	AE background detection division result adjustment: For monochrome copy	0 - 8	4
H	AE_LV_CS	AE background detection division result adjustment: For color scan	0 - 8	4
I	AE_LV_MS	AE background detection division result adjustment: For monochrome scan	0 - 8	4
J	AE_JUDGE _LV_L_U	Color AE background density threshold value adjustment (lower limit)	0 - 4	0
K	AE_JUDGE LV_L_O	Color AE background density threshold value adjustment (upper limit)	0 - 10	0
L	AE_JUDGE_ LV_C	Color AE background detection level adjustment (chroma)	0 - 10	5
M	AE _ONOFF _CC (ON / OFF)	AE mode ON/ OFF switch: For color copy (ON / OFF)	0 - 1 (0 / 1)	0
N	AE _ONOFF _MC (ON / OFF)	AE mode ON/ OFF switch: For mono-chrome copy (ON / OFF)	0 - 1 (0 / 1)	0
O	AE _ONOFF _CS (ON / OFF)	AE mode ON/ OFF switch : For color scan (ON / OFF)	0 - 1 (0 / 1)	0
P	AE _ONOFF _MS (ON / OFF)	AE mode ON/ OFF switch : For mono-chrome copy (ON / OFF)	0 - 1 (0 / 1)	0
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_UNDE R	Mode 0 developing paper mode select	0 - 6	0
T	MODE1_UNDE R	Mode 1 developing paper mode select	0 - 6	0
U	MODE5_UNDE R	Mode 5 developing paper mode select	0 - 6	0
V	MODE6_UNDE R	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 COPY : TEXT/PRINTED PHOTO	Text print (color copy)	1 - 9	3
B	COLOR COPY : TEXT	Text (color copy)	1 - 9	3
C	COLOR COPY : PRINTED PHOTO	Printed photo (color copy)	1 - 9	5
D	COLOR COPY : PHOTOGRAPH	Photograph (color copy)	1 - 9	5
E	COLOR COPY : TEXT/PHOTO	Text/Photograph (color copy)	1 - 9	3
F	COLOR COPY : MAP	Map (color copy)	1 - 9	5
G	COLOR COPY : LIGHT	Light document (color density)	1 - 9	6
H	COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Character print (color copy)	1 - 9	5
I	COLOR COPY : TEXT (COPY TO COPY)	Copy document, Character (color copy)	1 - 9	5
J	COLOR COPY : PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (color copy)	1 - 9	5
K	COLOR PUSH : TEXT/PRINTED PHOTO	Text print (color PUSH)	1 - 9	5
L	COLOR PUSH : TEXT	Text (color PUSH)	1 - 9	5
M	COLOR PUSH : PRINTED PHOTO	Printed photo (color PUSH)	1 - 9	5
N	COLOR PUSH : PHOTOGRAPH	Photograph (color PUSH)	1 - 9	5
O	COLOR PUSH : TEXT/PHOTO	Text/Photograph (color PUSH)	1 - 9	5
P	COLOR PUSH : MAP	Map (color PUSH)	1 - 9	5

46-65

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the color correction table.
Section	

Operation/Procedure

1) Select an adjustment mode.
2) Select an item (mode) to be set with the scroll key.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key.

When the setting is changed, the color tone is changed. This function is used to make copies of different color tone for each copy mode.

The initial value must be set unless any special change is required.

Category	Mode	Item/Display		Content	Setting range	Default value
OC	COPY	A	TEXT PRINTED PHOTO	Text print	0 - 12	0
		B	TEXT	Text	0 - 12	3
		C	PRINTED PHOTO	Printed Photo	0 - 12	0
		D	PHOTO	Photograph	0 - 12	1
		E	TEXT PHOTO	Text photograph	0 - 12	1
		F	MAP	Map	0 - 12	3
		G	LIGHT ORIGINAL	Pencil	0 - 12	0
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	2
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	3
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	2
		K	AUTO0	Automatic mode judgment 0	0 - 12	0
		L	AUTO1	Automatic mode judgment 1	0 - 12	0
		M	AUTO2	Automatic mode judgment 2	0 - 12	1
		N	AUTO3	Automatic mode judgment 3	0 - 12	1
		O	AUTO4	Automatic mode judgment 4	0 - 12	0
		P	AUTO5	Automatic mode judgment 5	0 - 12	0
		Q	AUTO6	Automatic mode judgment 6	0 - 12	0

Category	Mode	Item/Display		Content	Setting range	Default value
OC	PREVIEW	A	TEXT PRINTED PHOTO	Text print	0 - 12	0
		B	TEXT	Text	0 - 12	3
		C	PRINTED PHOTO	Printed Photo	0 - 12	0
		D	PHOTO	Photograph	0 - 12	1
		E	TEXT PHOTO	Text photograph	0 - 12	1
		F	MAP	Map	0 - 12	3
		G	LIGHT ORIGINAL	Pencil	0 - 12	0
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	2
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	3
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	2
		K	AUTO0	Automatic mode judgment 0	0 - 12	0
		L	AUTO1	Automatic mode judgment 1	0 - 12	0
		M	AUTO2	Automatic mode judgment 2	0 - 12	1
		N	AUTO3	Automatic mode judgment 3	0 - 12	1
		O	AUTO4	Automatic mode judgment 4	0 - 12	0
		P	AUTO5	Automatic mode judgment 5	0 - 12	0
		Q	AUTO6	Automatic mode judgment 6	0 - 12	0

Category	Mode	Item/Display		Content	Setting range	Default value
SPF1 (Document feeder (RSPF)/ (DSPF)Top)	COPY	A	TEXT PRINTED PHOTO	Text print	0 - 12	4
		B	TEXT	Text	0 - 12	7
		C	PRINTED PHOTO	Printed Photo	0 - 12	4
		D	PHOTO	Photograph	0 - 12	5
		E	TEXT PHOTO	Text photograph	0 - 12	5
		F	MAP	Map	0 - 12	7
		G	LIGHT ORIGINAL	Pencil	0 - 12	4
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	6
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	7
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	6
		K	AUTO0	Automatic mode judgment 0	0 - 12	4
		L	AUTO1	Automatic mode judgment 1	0 - 12	4
		M	AUTO2	Automatic mode judgment 2	0 - 12	5
		N	AUTO3	Automatic mode judgment 3	0 - 12	5
		O	AUTO4	Automatic mode judgment 4	0 - 12	4
		P	AUTO5	Automatic mode judgment 5	0 - 12	4
		Q	AUTO6	Automatic mode judgment 6	0 - 12	4

Category	Mode	Item/Display		Content	Setting range	Default value
SPF1 (Document feeder (RSPF)/ (DSPF)Top)	PREVIEW	A	TEXT PRINTED PHOTO	Text print	0 - 12	4
		B	TEXT	Text	0 - 12	7
		C	PRINTED PHOTO	Printed Photo	0 - 12	4
		D	PHOTO	Photograph	0 - 12	5
		E	TEXT PHOTO	Text photograph	0 - 12	5
		F	MAP	Map	0 - 12	7
		G	LIGHT ORIGINAL	Pencil	0 - 12	4
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	6
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	7
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	6
		K	AUTO0	Automatic mode judgment 0	0 - 12	4
		L	AUTO1	Automatic mode judgment 1	0 - 12	4
		M	AUTO2	Automatic mode judgment 2	0 - 12	5
		N	AUTO3	Automatic mode judgment 3	0 - 12	5
		O	AUTO4	Automatic mode judgment 4	0 - 12	4
		P	AUTO5	Automatic mode judgment 5	0 - 12	4
		Q	AUTO6	Automatic mode judgment 6	0 - 12	4

Category	Mode	Item/Display		Content	Setting range	Default value
SPF2(Document feeder (DSPF) Back)	COPY	A	TEXT PRINTED PHOTO	Text print	0 - 12	8
		B	TEXT	Text	0 - 12	11
		C	PRINTED PHOTO	Printed Photo	0 - 12	8
		D	PHOTO	Photograph	0 - 12	9
		E	TEXT PHOTO	Text photograph	0 - 12	9
		F	MAP	Map	0 - 12	11
		G	LIGHT ORIGINAL	Pencil	0 - 12	8
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	10
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	11
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	10
		K	AUTO0	Automatic mode judgment 0	0 - 12	8
		L	AUTO1	Automatic mode judgment 1	0 - 12	8
		M	AUTO2	Automatic mode judgment 2	0 - 12	9
		N	AUTO3	Automatic mode judgment 3	0 - 12	9
		O	AUTO4	Automatic mode judgment 4	0 - 12	8
		P	AUTO5	Automatic mode judgment 5	0 - 12	8
		Q	AUTO6	Automatic mode judgment 6	0 - 12	8

Category	Mode	Item/Display		Content	Setting range	Default value
SPF2(Document feeder (DSPF) Back)	PREVIEW	A	TEXT PRINTED PHOTO	Text print	0 - 12	8
		B	TEXT	Text	0 - 12	11
		C	PRINTED PHOTO	Printed Photo	0 - 12	8
		D	PHOTO	Photograph	0 - 12	9
		E	TEXT PHOTO	Text photograph	0 - 12	9
		F	MAP	Map	0 - 12	11
		G	LIGHT ORIGINAL	Pencil	0 - 12	8
		H	COPY TO COPY/ TEXT PRINTED PHOTO	Copy document/ Text print	0 - 12	10
		I	COPY TO COPY/ TEXT	Copy document/ Text	0 - 12	11
		J	COPY TO COPY/ PHOTO	Copy document/ Printed Photo	0 - 12	10
		K	AUTO0	Automatic mode judgment 0	0 - 12	8
		L	AUTO1	Automatic mode judgment 1	0 - 12	8
		M	AUTO2	Automatic mode judgment 2	0 - 12	9
		N	AUTO3	Automatic mode judgment 3	0 - 12	9
		O	AUTO4	Automatic mode judgment 4	0 - 12	8
		P	AUTO5	Automatic mode judgment 5	0 - 12	8
		Q	AUTO6	Automatic mode judgment 6	0 - 12	8

46-66

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	WOVEN DEN C LOW	Watermark density level (Cyan LOW)	0 - 255	19	
	E	WOVEN DEN C MIDDLE	Watermark density level (Cyan MIDDLE)	0 - 255	23	
	F	WOVEN DEN C HIGH	Watermark density level (Cyan HIGH)	0 - 255	27	
	G	WOVEN DEN M LOW	Watermark density level (Magenta LOW)	0 - 255	15	
	H	WOVEN DEN M MIDDLE	Watermark density level (Magenta MIDDLE)	0 - 255	18	
	I	WOVEN DEN M HIGH	Watermark density level (Magenta HIGH)	0 - 255	21	
	J	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.)
	K	HT TYPE (POSI)	For halftone index watermark type positive	42 - 43	42	To reproduce the containing characters of watermark copy (secondary output) more clearly, set to 43. In that case, however, the containing characters of the watermark document (primary output) can be easily reproduced.
	L	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	0 - 1	0	1	Normally set to the default. No need to change in the market.
				ON		1		
	B	TEXT	Text mode select Enable/ Disable	OFF	0 - 1	0	1	
				ON		1		
	C	PRINTED PHOTO	Printed Photo mode select Enable/Disable	OFF	0 - 1	0	1	
				ON		1		
	D	PHOTOGRAPH	Photograph mode select Enable/Disable	OFF	0 - 1	0	1	
				ON		1		
	E	TEXT/PHOTO	Text/Photograph mode select Enable/Disable	OFF	0 - 1	0	1	
				ON		1		
	F	MAP	Map mode select Enable/ Disable	OFF	0 - 1	0	1	
				ON		1		
	G	LIGHT	Light density document mode select Enable/ Disable	OFF	0 - 1	0	1	
				ON		1		
	H	TEXT/PRINTED PHOTO (CPY TO CPY)	Copy document: Enable/ Disable of selection of the text print mode	OFF	0 - 1	0	1	
				ON		1		
	I	TEXT (CPY TO CPY)	Copy document: Enable/ Disable of selection of the text mode	OFF	0 - 1	0	1	
				ON		1		
	J	PRINTED PHOTO (CPY TO CPY)	Copy document: Enable/ Disable of selection of the printed photo mode	OFF	0 - 1	0	1	
				ON		1		
	K	AUTO	Automatic mode select Enable/Disable	OFF	0 - 1	0	1	
				ON		1		
	L	DEFAULT MODE	When the default exposure mode background is ON, the exposure mode to be set is specified.	TEXT/ PRINTED PHOTO	0 - 5	0	0	
				TEXT		1		
				PRINTED PHOTO		2		
				PHOTOGRAPH		3		
				TEXT/PHOTO		4		
				MAP		5		
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P)		0 - 200		50	
	B	LINE SPACE 2	Line space in the watermark print box (37P - 48P)		0 - 200		60	
	C	LINE SPACE 3	Line space in the watermark print box (49P - 64P)		0 - 200		70	
	D	LINE SPACE 4	Line space in the watermark print box (65P - 80P)		0 - 200		80	
	E	BLANK H/B 1	Upper margin/Lower margin in the watermark print box (24P - 36P)		0 - 200		25	
	F	BLANK H/B 2	Upper margin/Lower margin in the watermark print box (37P - 48P)		0 - 200		30	
	G	BLANK H/B 3	Upper margin/Lower margin in the watermark print box (49P - 64P)		0 - 200		35	
	H	BLANK H/B 4	Upper margin/Lower margin in the watermark print box (65P - 80P)		0 - 200		40	
	I	BLANK L/R 1	Left margin/Right margin in the watermark print box (24P - 36P)		0 - 200		60	
	J	BLANK L/R 2	Left margin/Right margin in the watermark print box (37P - 48P)		0 - 200		90	
	K	BLANK L/R 3	Left margin/Right margin in the watermark print box (49P - 64P)		0 - 200		120	
	L	BLANK L/R 4	Left margin/Right margin in the watermark print box (65P - 80P)		0 - 200		150	

46-68

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the automatic resolution judgement. (For MX-xx60/xx70 series)

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	2
C	RESULT MID RESOLUTION2	Judgement result : Slight low resolution	0 - 3	1
D	RESULT LOW RESOLUTION1	Judgement result : Low resolution	0 - 3	1
E	RESULT UNKNOWN RESOLUTION	Judgement result : Cannot judge	0 - 3	1
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 color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment)

Section

Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy color balance adjustment (Automatic adjustment) and the printer color 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 color 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 color balance adjustment is performed and the adjustment result pattern is printed.
4) Press [EXECUTE] key, and the printer color 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 color 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.

Important

The adjustment result becomes effective only when the adjustment procedure for both copy and print mode have completed successfully. For example, when the copy color 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 value	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 ®	0 - 1000	299
	E	G-RATIO ADJUSTMENT	Gray scale adjustment (G)	0 - 1000	587
BG LAYER	A	BG LAYER INTENT 1	Speed priority setting	0 - 2	1
	B	BG LAYER INTENT 2	Image quality priority setting	0 - 2	1

46-91

Purpose Adjustment

Function (Purpose) Used to adjust the reproduction capability of black text.

Section

Operation/Procedure

1) Select an item to be set with the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. The adjustment value is set.

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

Item	Display		Content	Description	Default value
A	SEGMENT PARAM	COMMON	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
		SPECIAL			
B	BG: JPEG QUALITY LV [COL: COMPACT]		JPEG recompression level adjustment [Color: High compression mode]	0: Low 1: Middle 2: High	1
C	BG: JPEG QUALITY LV [COL: ULTRA FINE]		JPEG recompression level adjustment [Color: Ultra fine mode]		1
D	BG: JPEG QUALITY LV [GRY: COMPACT]		JPEG recompression level adjustment [Gray: High compression mode]	0: Low 1: Middle 2: High	1
E	BG: JPEG QUALITY LV [GRY: ULTRA FINE]		JPEG recompression level adjustment [Gray: Ultra fine mode]		1
F	FG: TARGET AREA	TYPE0	Front ground extraction area select	0: type0 1: type1 2: type2	0
		TYPE1			
		TYPE2			
G	FG: TEXT DENSITY [COL]		Front ground black text density adjustment [Color]	0: Dark - 5: Default - 10: Light	5
H	FG: TEXT DENSITY [GRY]		Front ground black text density adjustment [Gray]		5
I	ULTRA FINE MODE	ON	High compression/ Ultra Fine mode select	0: High compression mode 1: Ultra fine mode	0
		OFF			

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 scan image magnification ratio (in the main scanning direction and the sub scanning direction).

Section

Operation/Procedure

1) Select a target adjustment item on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

When the adjustment value is increased, the image magnification ratio is increased.

A change of "1" in the adjustment value of item A, C, or E corresponds to a change of about 0.02% in the copy magnification ratio.

A change of "1" in the adjustment value of item B, D, or F corresponds to a change of about 0.1% in the copy magnification ratio.

[RSPF]

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

48-5

Purpose Adjustment

Function (Purpose) Used to correction the scan image magnification ratio (in the sub scanning direction).

Section Scanner section

Operation/Procedure

1) Select a target adjustment item on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

When the image magnification ratio in the sub scanning direction is adjusted with SIM48-1, and a different magnification ratio is specified, and the image magnification ratio is not satisfactory, perform this adjustment.

When there is an error in the image magnification ratio in reduction, change the adjustment value in the high speed mode. When there is an error in the image magnification ratio in enlargement, change the adjustment value in the low speed mode.

Item/Display		Content	Setting range	Default value
A	MR (HI)	Scanner motor (High speed)	1 - 99	50
B	MR(MID)	Scanner motor (Reference speed)	1 - 99	50
C	MR(LO)	Scanner motor (Low speed)	1 - 99	50
D	SPF(HI)	Document feed (SPF) motor (High speed)	1 - 99	50
E	SPF(MID)	Document feed (SPF) motor (Reference speed)	1 - 99	50

48-6

Purpose Adjustment

Function (Purpose) Used to adjust the rotation speed of each motor.

Section

Operation/Procedure

1) Select an adjustment target mode with [MID] [LOW A] [LOW B] LOW C] keys on the touch panel.
2) Select a target adjustment item on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

Mode Select		Item/Display		Content	Setting range	Default value		
						North America	Europe	Other
COLOR/MONO	MID	A	RRM(COLOR)	Registration motor correction value(Color)	1 - 99	56		
COLOR/MONO	MID	B	RRM(MONO)	Registration motor correction value(Monochrome)		56		
HEAVY1,2	LOW A	A	RRM(COLOR/MONO)	Registration motor correction value		46		
HEAVY3	LOW B	A	RRM(COLOR/MONO)			46		
HEAVY4	LOW C	A	RRM(COLOR/MONO)			46		
COLOR/MONO	MID	C	BTM	Belt motor correction value	1 - 99	47		
COLOR/MONO	MID	D	DM-K	** Only for the low speed machine, following items from this item are shifted.	1 - 99	45		
COLOR/MONO	MID	E	DM-CL	Drum CL motor correction value C, M, Y integrated items in low speed (30/40 cpm) machines	1 - 99	45		
COLOR/MONO	MID	H	FUM	Fusing motor correction value	1 - 99	37		
HEAVY1,2	LOW A	B				39		
HEAVY3	LOW B					39		
HEAVY4	LOW C					39		
COLOR/MONO	MID	I	CPFM	Paper feed motor correction value	1 - 99	50		
HEAVY1,2	LOW A	C				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	J	PFM	PS front motor correction value	1 - 99	50		
HEAVY1,2	LOW A	D				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	K	POM	Paper exit motor correction value	1 - 99	50		
HEAVY1,2	LOW A	E				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	L	SBM	Reverse motor correction value	1 - 99	50		
HEAVY1,2	LOW A	F				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	M	POM(OUT)	Paper exit motor correction value (From Tray exit)	1 - 99	50		
HEAVY1,2	LOW A	G				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	N	SBM(OUT)	Reverse motor correction value (From Tray exit)	1 - 99	50		
HEAVY1,2	LOW A	H				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	O	ADUM1(OUT)	ADU motor correction value (From Right paper exit tray exit)	1 - 99	50		
HEAVY1,2	LOW A	I				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
HEAVY1,2	LOW A	J	FUSER-SETTING	Fusing speed switch timing value	1 - 99	50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
HEAVY1,2	LOW A	K	RRM-START	RRM acceleration start timing	0 - 255	150		
HEAVY3	LOW B					150		
HEAVY4	LOW C					150		
HEAVY1,2	LOW A	L	RRM-END	RRM acceleration end timing	0 - 255	200		
HEAVY3	LOW B					200		
HEAVY4	LOW C					200		
HEAVY1,2	LOW A	M	RRM-OFFSET	RRM acceleration ratio	50 - 99	50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		
COLOR/MONO	MID	P	COR-IM	Imaging motors all correction values	1 - 99	50		

Mode Select		Item/Display		Content	Setting range	Default value		
						North America	Europe	Other
COLOR/MONO	MID	Q	COR-PP	Paper transport motors all correction values	1 - 99	50		
HEAVY1,2	LOW A	N				50		
HEAVY3	LOW B					50		
HEAVY4	LOW C					50		

The greater the correction value is, the higher the speed is, and vice versa. Change by +/-1 corresponds to 0.1%.

List of destination groups

Group	Destination		
North America	U. S. A	CANADA	INCH
Europe	EUROPE	U. K	AUS.
Other	AB	TAIWAN	

49

49-1

Purpose

Function (Purpose) Used to perform the firmware update.

Section

Operation/Procedure

1) Save the firmware to the USB memory.
2) Insert the USB memory into the main unit. (Use USB I/F of the operation panel section.)
3) Select a target firmware file for update with the touch panel.
4) Select a target firmware.
   Press [ALL] key to select all the Firmware collectively.
5) Press [EXECUTE] key.
6) Press [YES] key.
   The selected firmware is updated. When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

Item/Display	Content	Error display in case or abnormality
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
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
PCU	PCU program	PCU
DESK	Desk unit program	DESK
DESK(TANDEM)	Tandem desk unit program	DESKT
LCC	LCC program	LCC
FINISHER(1KFIN)	1K Finisher program	FIN1
FINISHER(3KFIN)	3K Finisher program	FIN3M
FINISHER(INNER)	Inner finisher program	INFIN
JOGGER	3K Finisher jogger program	JOG
FIN-SUB	3K Finisher sub program	FINS
SADDLE	Saddle program	SDL
PUNCH(3K)	3K Punch unit program	3PUN
PUNCH(IN)	Inner punch unit program	INPUN
FAX	Standard FAX program	FAX
FAX OPT1	Optional FAX 1st line program	FXOT1

49-3

Purpose

Function (Purpose) Used to update the operation manual.

Section

Operation/Procedure

1) Insert the USB memory into the main unit.
   * When the USB is not inserted, "INSERT A STORANGE E-MANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
2) Press the folder button of the operation manual data. (The display is shifted to the operation manual update menu.)
   The current version and the update version are displayed.
3) Press [EXECUTE] key.
   [EXECUTE] key is highlighted, and [YES] [NO] keys becomes active from gray out.
4) When [YES] key is pressed, the selected operation manual is updated.
   When update is completed normally, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

49-5

Purpose

Function (Purpose) Used to perform the watermark update.

Section

Operation/Procedure

1) Insert the USB flash drive 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.

49-10

Purpose	
Function (Purpose)	Used to perform the ACU firmware update.
Section	

Operation/Procedure

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

50

50-1

Purpose	Adjustment
Function (Purpose)	Copy image position, image loss adjustment
Section	

Operation/Procedure

1) Select an adjustment target item on the touch panel.
2) Enter the set value with 10-key.

   Set the items other than RRCA, LEAD, and SIDE to the default.

   RRCA: Image lead edge reference position adjustment

   LEAD: Lead edge image loss adjustment

   SIDE: Side image loss adjustment
3) Press [OK] key. (The set value is saved.)

Item/Display			Content		Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS	Registration motor ON timing adjustment	Standard Tray	1 - 99	50
C		RRCB-DSK		Desk	1 - 99	50
D		RRCB-LCC		LCC	1 - 99	50
E		RRCB-MFT		Manual paper feed	1 - 99	50
F		RRCB-ADU		ADU	1 - 99	50
G	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	40
H		SIDE	Side image loss area adjustment		0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	40
J		DENB	Rear edge void area adjustment		1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	23
L	Off-center adjustment	OFFSET_OC	OC document off-center adjustment		1 - 99	50
M	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)		1 - 99	50
N	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value		1 - 99	50
O		DENB-CS1	Tray 1 correction value		1 - 99	50
P		DENB-CS2	Tray 2 correction value		1 - 99	50
Q		DENB-CS3	Tray 3 correction value		1 - 99	50
R		DENB-CS4	Tray 4 correction value		1 - 99	50
S		DENB-LCC	LCC correction value		1 - 99	50
T		DENB-ADU	ADU correction value		1 - 99	50
U		DENB-HV	Heavy paper correction value		1 - 99	50

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (01.mm/step)

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

B - F. (RRC-B) Timing of paper (registration roller ON) for the image position on the transfer belt is adjusted. (0.1mm/step)

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

G. (LEAD) The lead edge image loss amount is adjusted. (0.1mm/step)

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

H. (SIDE) The side image loss amount is adjusted.

   * When the value is increased, the image loss is increased. (0.1mm/step)

I. (DEN-A) The paper lead edge void amount is adjusted. (0.1mm/step)

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

J. (DEN-B) The paper rear edge void amount is adjusted. (0.1mm/step)

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

K. (FRONT/REAR) The void amount on the right and left edges of paper is adjusted. (0.1mm/step)

50-5

Purpose	Adjustment
Function (Purpose)	Used to adjust the print lead edge image position. (PRINTER MODE)
Section	

Operation/Procedure

1) Select a target adjustment item (DEN-C) with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [EXECUTE] key.

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

   Standard reference value: 4.0 +/- 2.0mm

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distanced is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

Item/Display			Content		Setting range	Default value
A	DEN-C		Used to adjust the print lead edge image position. (PRINTER MODE)		1 - 99	30
B	DEN-B		Rear edge void area adjustment		1 - 99	30
C	FRONT/REAR		FRONT/REAR void area adjustment		1 - 99	23
D	DENB-MFT		Manual feed rear edge void area adjustment correction value		1 - 99	50
E	DENB-CS1		Tray 1 rear edge void area adjustment correction value		1 - 99	50
F	DENB-CS2		Tray 2 rear edge void area adjustment correction value		1 - 99	50
G	DENB-CS3		Tray 3 rear edge void area adjustment correction value		1 - 99	50
H	DENB-CS4		Tray 4 rear edge void area adjustment correction value		1 - 99	50
I	DENB-LCC		LCC rear edge void aria adjustment correction value		1 - 99	50
J	DENB-ADU		ADU rear edge void aria adjustment correction value		1 - 99	50
K	DENB-HV		Heavy paper correction value		1 - 99	50
L	MULTI COUNT		Number of print		1 - 999	1
M	PAPER	MFT	Tray selection	Manual paper feed	1	2
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
N	DUPLEX	YES	Duplex print selection	Yes	0	1
		NO		No	1	

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance from the paper lead edge to the image lead edge is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

50-6

Purpose Adjustment

Function (Purpose) Used to adjust the copy image position and the image loss. (SPF mode)

Section SPF

Operation/Procedure

1) Select an adjustment target item on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

[RSPF]

Item/Display			Content	Setting range	Default value
A	SIDE1		Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2		Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	40
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	20
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	40
I	OFSET_SPF1		RSPF front surface document off-center adjustment	1 - 99	50
J	OFSET_SPF2		RSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		RSPF document front surface magnification ratio (Sub scan)	1 - 99	50
L	SCAN_SPEED_SPF2		RSPF document back surface magnification ratio (Sub scan)	1 - 99	50

Item A, B: When the adjustment value is increased, the scan timing is delayed.

Item C - H: When the adjustment value is increased, the image loss is increased.

Item E - H: When a shadow image appears on the rear edge, increase the adjustment value to delete the shadow.

All adjustment items: 1 step = 0.1mm change

50-10

Purpose Adjustment

Function (Purpose) Used to adjust print image position

Section

Operation/Procedure

1) Select an adjustment target item on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	BK-MAG	Main scan print magnification ratio BK	60 - 140	102
B	MAIN-MFT	Print off center adjustment value (Manual paper feed)	1 - 99	59
C	MAIN-CS1	Print off center adjustment value (Tray 1)	1 - 99	50
D	MAIN-CS2	Print off center adjustment value (Tray 2)	1 - 99	50
E	MAIN-CS3	Print off center adjustment value (Tray 3)	1 - 99	50
F	MAIN-CS4	Print off center adjustment value (Tray 4)	1 - 99	50
G	MAIN-LC	Print off center adjustment value (Large capacity tray)	1 - 99	50
H	MAIN-ADU		1 - 99	67

Item/Display			Content		Setting range	Default value
I	SUB-MFT		Registration motor ON timing adjustment	Manual paper feed	1 - 99	43
J	SUB-CS1			Standard cassette	1 - 99	50
K	SUB-DSK			DESK	1 - 99	50
L	SUB-LC			LCC	1 - 99	50
M	SUB-ADU			ADU	1 - 99	50
N	MAIN-STD		Combined correction value	Standard correction amount (Off center direction)	1 - 99	44
O	SUB-STD			Standard correction amount (Paper feed direction)	1 - 99	67
P	SUB-HV-A		Shifting amount value	Heavy1, 2	1 - 99	50
Q	SUB-HV-B			Heavy3, 4	1 - 99	50
R	SUB-GLOSSY PAPER			Gross	1 - 99	50
S	SUB-EMBOSS			Emboss	1 - 99	50
T	SUB-OHP			OHP	1 - 99	50
U	SUB-ENV			Envelop	1 - 99	50
V	MULTI COUNT		Number of print		1 - 999	1
W	PAPER	MFT	Tray selection	Manual paper feed	1	2 (CS1)
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
X	DUPLEX	YES	Duplex print selection	Yes	0	1 (NO)
		NO		No	1	

50-12

Purpose Adjustment

Function (Purpose) Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)

Section

Operation/Procedure

1) Select an adjustment target item on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

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

1step = 0.1mm

Item/Display		Content	Setting range	Default value
A	OC	Document table image off-center adjustment	1 - 99	50
B	SPF (SIDE1)	SPF front surface image off-center adjustment	1 - 99	50
C	SPF (SIDE2)	SPF back surface image off-center adjustment	1 - 99	50

50-20

Purpose Adjustment

Function (Purpose) Image registration adjustment (Main scanning direction)

Section

Operation/Procedure

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	CYAN(FRONT)	Registration adjustment value main scanning direction CYAN F side	1 - 399	200
B	CYAN(REAR)	Registration adjustment value main scanning direction CYAN R side	1 - 399	200
C	MAGENTA(FRONT)	Registration adjustment value main scanning direction MAGENTA F side	1 - 399	200
D	MAGENTA(REAR)	Registration adjustment value main scanning direction MAGENTA R side	1 - 399	200
E	YELLOW(FRONT)	Registration adjustment value main scanning direction YELLOW F side	1 - 399	200
F	YELLOW(REAR)	Registration adjustment value main scanning direction YELLOW R side	1 - 399	200
G	CYAN(SUB)	Registration adjustment value sub scanning direction CYAN (Black drum reference)	1 - 399	200
H	MAGENTA(SUB)	Registration adjustment value sub scanning direction MAGENTA (Black drum reference)	1 - 399	200
I	YELLOW(SUB)	Registration adjustment value sub scanning direction YELLOW (Black drum reference)	1 - 399	200
J	OFFSET_C_MAIN_F	Registration adjustment value main scanning direction offset value CYAN (FRONT)	1 - 99	50
K	OFFSET_C_MAIN_R	Registration adjustment value main scanning direction offset value CYAN (REAR)	1 - 99	50
L	OFFSET_M_MAIN_F	Registration adjustment value main scanning direction offset value MAGENTA (FRONT)	1 - 99	50
M	OFFSET_M_MAIN_R	Registration adjustment value main scanning direction offset value MAGENTA (REAR)	1 - 99	50
N	OFFSET_Y_MAIN_F	Registration adjustment value main scanning direction offset value YELLOW (FRONT)	1 - 99	50
O	OFFSET_Y_MAIN_R	Registration adjustment value main scanning direction offset value YELLOW (REAR)	1 - 99	50
P	OFFSET_C_SUB	Registration adjustment value sub scanning direction offset value CYAN	1 - 99	51
Q	OFFSET_M_SUB	Registration adjustment value sub scanning direction offset value MAGENTA	1 - 99	51

Item/Display			Content		Setting range	Default value
R	OFFSET_Y_SUB		Registration adjustment value sub scanning direction offset value YELLOW		1 - 99	51
S	OFFSET_C_SUB_HV12		Registration adjustment value sub scanning direction offset value CYAN (HEAVY 1/2)		1 - 99	50
T	OFFSET_M_SUB_HV12		Registration adjustment value sub scanning direction offset value MAGENTA (HEAVY 1/2)		1 - 99	50
U	OFFSET_Y_SUB_HV12		Registration adjustment value sub scanning direction offset value YELLOW (HEAVY 1/2)		1 - 99	50
V	OFFSET_C_SUB_HV34		Registration adjustment value sub scanning direction offset value CYAN (HEAVY 3/4)		1 - 99	50
W	OFFSET_M_SUB_HV34		Registration adjustment value sub scanning direction offset value MAGENTA (HEAVY 3/4)		1 - 99	50
X	OFFSET_Y_SUB_HV34		Registration adjustment value sub scanning direction offset value YELLOW (HEAVY 3/4)		1 - 99	50
Y	MULTICOUNT		Number of print		1 - 999	1
Z	PAPER	MFT	Tray selection	Manual paper feed	1	2
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
AA	DUPLEX	YES	Duplex print selection	Yes	0	1
		NO		No	1	

50-22

Purpose	Adjustment
Function (Purpose)	Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment)
Section	

Note

The contents of the following list are mainly used by the technical division, and are not necessary for the market.

Operation/Procedure

1) Press [EXECUTE] key.

   The adjustment is automatically performed, and the adjustment data are displayed.

Item/Display			Content	Setting range (unit)	Color/ History	Default value	NOTE
MAIN F	-	REG_M_F (VALUE)	Registration adjustment correction amount main scanning direction F	1.0 - 399.0 (+/-0.1)	CMY/-	200	
	( )	REG_M_F (DIF)	Registration value correction amount from the previous one, main scanning F	-399.0 - 399.0 (+/-0.1)	CMY/-	0	
MAIN R	-	REG_M_R (VALUE)	Registration adjustment correction value, main scanning direction R	1.0 - 399.0 (+/-0.1)	CMY/-	200	
	( )	REG_M_R (DIF)	Registration value correction amount from the previous one, main scanning R	-399.0 - 399.0 (+/-0.1)	CMY/-	0	
SUB	-	REG_SUB (VALUE)	Registration adjustment correction value, sub scanning direction	1.0 - 399.0 (+/-0.1)	CMY/-	200	
	( )	REG_SUB (DIF)	Registration value correction amount from the previous one, sub scanning	-399.0 - 399.0 (+/-0.1)	CMY/-	0	
SKEW	CMY	SKEW_CLC	SKEW adjustment rotating direction and the number of clicks (CMY)	L99.9 - R99.9 (+/-0.1)	KCMY/-	0	If the value is plus, L is displayed to left side of numerical value. If the value is minus, R is displayed to left side of numerical value.
	ALL_ ROTATE		SKEW adjustment rotating direction and the number of clicks (K)				If the value is plus, L is displayed to left side of numerical value. If the value is minus, R is displayed to left side of numerical value.
PHASE		PHASE_ADJ	Phase adjustment value (1: Value of this time, 2: Value of the previous time) Angle step 0° (1) -> 45° (2) -> 90° (3) -> 135° (4) -> 180° (5) -> 225° (6) -> 270° (7) -> 315° (8)	1 - 8 (+/-1)	More than 50cpm : CMY/2 Less than 50 cpm : -/2	1	-

Error displays in case of abnormal end

	Error code	Error display	Error contents	Description
Forcible end error	-	SUSPENDED	Door open end	Door open during operation
	-	SUSPENDED	CA end	CA button pressed during operation
	-	-	OFF end	Unconfirmed operation during operation (Power OFF)
Basic error	1	TONER EMPTY	Toner empty	BK or ALL color EMPTY detection
	2	BEFORE BEHAVIOR	Other condition	Other condition
	4	SENSOR CALIBLATION F	Calibration error F	The target is not reached by 3 times of retry of F or R
	5	SENSOR CALIBLATION R	Calibration error R	
	6	SENSOR CALIBRATION FR	Calibration error FR	
	7	TIME OVER	Time error	No data are obtained for 90sec from data acquisition
	8	PROCESS CONTROL	Process control error	Process control error detection
Sub scanning adjustment error	10 - 49	DATA SUB X X XXX XX		
Main scanning adjustment error	50 - 89	DATA MAIN X X XXX XX		
Adjustment range error	90 - 107	RANGE XXX X XX		

50-23

Purpose (This simulation is normally not used in the market.)

Function (Purpose) Used to set the registration for temperature adjustment.

Section

Operation/Procedure

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Contents	Setting range	Default value
A	CT_N	CT_NORM_MAIN_F_C	Normal correction temperature correction coefficient (Cyan main scanning F side)	1 - 199	104
B		CT_NORM_MAIN_R_C	Normal correction temperature correction coefficient (Cyan main scanning R side)	1 - 199	104
C		CT_NORM_SUB_C	Normal correction temperature correction coefficient (Cyan sub scanning)	1 - 199	103
D		CT_NORM_MAIN_F_M	Normal correction temperature correction coefficient (Magenta main scanning F side)	1 - 199	107
E		CT_NORM_MAIN_R_M	Normal correction temperature correction coefficient (Magenta main scanning R side)	1 - 199	107
F		CT_NORM_SUB_M	Normal correction temperature correction coefficient (Magenta sub scanning)	1 - 199	97
G		CT_NORM_MAIN_F_Y	Normal correction temperature correction coefficient (Yellow main scanning F side)	1 - 199	107
H		CT_NORM_MAIN_R_Y	Normal correction temperature correction coefficient (Yellow main scanning R side)	1 - 199	107
I		CT_NORM_SUB_Y	Normal correction temperature correction coefficient (Yellow sub scanning)	1 - 199	97
A	CP_N	CP_NORM_MAIN_F_C	Normal correction operation rate correction coefficient (Cyan main scanning F side)	1 - 199	100
B		CP_NORM_MAIN_R_C	Normal correction operation rate correction coefficient (Cyan main scanning R side)	1 - 199	100
C		CP_NORM_SUB_C	Normal correction operation rate correction coefficient (Cyan sub scanning)	1 - 199	100
D		CP_NORM_MAIN_F_M	Normal correction operation rate correction coefficient (Magenta main scanning F side)	1 - 199	100
E		CP_NORM_MAIN_R_M	Normal correction operation rate correction coefficient (Magenta main scanning R side)	1 - 199	100
F		CP_NORM_SUB_M	Normal correction operation rate correction coefficient (Magenta sub scanning)	1 - 199	100
G		CP_NORM_MAIN_F_Y	Normal correction operation rate correction coefficient (Yellow main scanning F side)	1 - 199	100
H		CP_NORM_MAIN_R_Y	Normal correction operation rate correction coefficient (Yellow main scanning R side)	1 - 199	100
I		CP_NORM_SUB_Y	Normal correction operation rate correction coefficient (Yellow sub scanning)	1 - 199	100
A	CT_J	CT_JOB_MAIN_C	Correction during job temperature correction coefficient (Cyan main scanning)	1 - 199	104
B		CT_JOB_SUB_C	Correction during job temperature correction coefficient (Cyan sub scanning)	1 - 199	103
C		CT_JOB_MAIN_M	Correction during job temperature correction coefficient (Magenta main scanning)	1 - 199	107
D		CT_JOB_SUB_M	Correction during job temperature correction coefficient (Magenta sub scanning)	1 - 199	97
E		CT_JOB_MAIN_Y	Correction during job temperature correction coefficient (Yellow main scanning)	1 - 199	107
F		CT_JOB_SUB_Y	Correction during job temperature correction coefficient (Yellow sub scanning)	1 - 199	97
A	CP_J	CP_JOB_MAIN_C	Correction during job operation rate correction coefficient (Cyan main scanning)	1 - 199	100
B		CP_JOB_SUB_C	Correction during job operation rate correction coefficient (Cyan sub scanning)	1 - 199	100
C		CP_JOB_MAIN_M	Correction during job operation rate correction coefficient (Magenta main scanning)	1 - 199	120
D		CP_JOB_SUB_M	Correction during job operation rate correction coefficient (Magenta sub scanning)	1 - 199	100
E		CP_JOB_MAIN_Y	Correction during job operation rate correction coefficient (Yellow main scanning)	1 - 199	120
F		CP_JOB_SUB_Y	Correction during job operation rate correction coefficient (Yellow sub scanning)	1 - 199	100

50-24

Purpose	(This simulation is normally not used in the market.)
Function (Purpose)	Used to display the detail data of automatic registration data.
Section	

Operation/Procedure

50-27

Purpose	Adjustment
Function (Purpose)	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.
Section	

Operation/Procedure

1) Select a target adjustment mode with [FAX] or [SCANNER] key.
2) Select an adjustment target item on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

[RSPF]

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

50-28

Purpose	Adjustment
Function (Purpose)	Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.
Section	

Operation/Procedure

51

51-1

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the ON/OFF timing of the secondary transport voltage.
Section	

Operation/Procedure

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

When the adjustment value is decreased, the transfer ON/OFF timing for the paper is advanced. When the adjustment value is increased, the timing is delayed.

When the adjustment value is changed by 1, the timing is changed by about 10ms. The setting range is -490 - +490ms.

Item/Display		Content	Default value
A	TC2 ON TIMING	Secondary transfer voltage ON timing setting	55
B	TC2 OFF TIMING	Secondary transfer voltage OFF timing setting	47
C	FRONT EDGE ON TIMING	Front edge bias ON timing setting	30
D	BACKEND OFF TIMING	Rear edge bias OFF timing setting	60
E	DHV ON TIMING	Separation output ON timing setting	30
F	DHV OFF TIMING	Separation output OFF timing setting	80

51-2

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the contact pressure (deflection amount) on paper by the main unit and the SPF registration roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.)

Section

Operation/Procedure

1) (When RSPF model)
   Select a target adjustment mode with [SIDE1] or [SIDE2] or [ENGINE] keys.
2) Select a target item to be adjusted with scroll keys.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

[RSPF]

Mode	Display/Item		Content	Default value
SIDE1	A	NORMAL_PLAIN_HIGH	RSPF front surface document deflection amount adjustment value (Normal/Plain paper/HIGH)	50
	B	NORMAL_PLAIN_LOW	RSPF front surface document deflection amount adjustment value (Normal/Plain paper/LOW)	50
	C	NORMAL_THIN _HIGH	RSPF front surface document deflection amount adjustment value (Normal/Thin paper/HIGH)	50
	D	NORMAL_THIN _LOW	RSPF front surface document deflection amount adjustment value (Normal/Thin paper/LOW)	50
	E	RANDOM_PLAIN_HIGH	RSPF front surface document deflection amount adjustment value (Random/Plain paper/HIGH)	50
	F	RANDOM_PLAIN _LOW	RSPF front surface document deflection amount adjustment value (Random/Plain paper/LOW)	50
	G	RANDOM_THIN_HIGH	RSPF front surface document deflection amount adjustment value (Random/Thin paper/HIGH)	50
	H	RANDOM_THIN_LOW	RSPF front surface document deflection amount adjustment value (Random/Thin paper/LOW)	50
SIDE2	A	NORMAL_PLAIN_HIGH_1	RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/HIGH)	50
	B	NORMAL_PLAIN_LOW_1	RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/LOW)	50
ENGINE	A	TRAY1 PLAIN PAPER (S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	40
	B	TRAY1 PLAIN PAPER (L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size)	40
	C	TRAY1 HEAVY A PAPER(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper A/Small size)	40
	D	TRAY1 HEAVY A PAPER(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper A/Large size)	40
	E	TRAY1 HEAVY B PAPER(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper B/Small size)	40
	F	TRAY1 HEAVY B PAPER(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper B/Large size)	40
	G	TRAY2 PLAIN PAPER (S)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Small size)	40
	H	TRAY2 PLAIN PAPER (L)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Large size)	40
	I	TRAY2 HEAVY A PAPER(S)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper A/Small size)	40
	J	TRAY2 HEAVY A PAPER(L)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper A/Large size)	40
	K	TRAY2 HEAVY B PAPER(S)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper B/Small size)	40
	L	TRAY2 HEAVY B PAPER(L)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper B/Large size)	40
	M	MANUAL PLAIN PAPER (S)	Manual feed tray/deflection adjustment value (Plain paper/Small size)	40
	N	MANUAL PLAIN PAPER (L)	Manual feed tray/deflection adjustment value (Plain paper/Large size)	40
	O	MANUAL HEAVY A PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper A/Small size)	40
	P	MANUAL HEAVY A PAPER(L)	Manual feed tray/deflection adjustment value (Heavy paper A/Large size)	40
	Q	MANUAL HEAVY B PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper B/Small size)	40
	R	MANUAL HEAVY B PAPER (L)	Manual feed tray/deflection adjustment value (Heavy paper B/Large size)	40
	S	MANUAL OHP	Manual feed tray/deflection adjustment value (OHP)	40

Mode	Display/Item		Content	Default value
ENGINE	T	MANUAL ENV	Manual feed tray/deflection adjustment value (Envelop)	40
	U	MANUAL LABEL	Manual feed tray/deflection adjustment value (Label)	30
	V	ADU PLAIN PAPER (S)	ADU/deflection adjustment value (Plain paper/Small size)	30
	W	ADU PLAIN PAPER (L)	ADU/deflection adjustment value (Plain paper/Large size)	30
	X	ADU HEAVY A PAPER (S)	ADU/deflection adjustment value (Heavy paper A/Small size)	40
	Y	ADU HEAVY A PAPER (L)	ADU/deflection adjustment value (Heavy paper A/Large size)	40
	Z	ADU HEAVY B PAPER (S)	ADU/deflection adjustment value (Heavy paper B/Small size)	40
	AA	ADU HEAVY B PAPER (L)	ADU/deflection adjustment value (Heavy paper B/Large size)	40
	AB	DESK (S)	DESK/deflection adjustment value (Plain paper/Small size)	40
	AC	DESK HEAVY A PAPER(S)	DESK/deflection adjustment value (Heavy paper A/Small size)	40
	AD	DESK HEAVY B PAPER(S)	DESK/deflection adjustment value (Heavy paper B/Small size)	40
	AE	DESK (L)	DESK/deflection adjustment value (Plain paper/Large size)	40
	AF	DESK HEAVY PAPER (L)	DESK/deflection adjustment value (Heavy paper A/Largel size)	40
	AG	DESK HEAVY PAPER (L)	DESK/deflection adjustment value (Heavy paper B/Large size)	40
	AH	LCC(S)	LCC/deflection adjustment value (Plain paper/Small size)	40
	AI	LCC HEAVY A PAPER(S)	LCC/deflection adjustment value (Heavy paper /Small size)	40

53

53-6

Purpose Adjustment

Function (Purpose) Used to adjust the detection level of the SPF document width.

Section

Operation/Procedure

1) Open the SPF paper feed guide to the maximum width.
2) Press [EXECUTE] key.
   The maximum width detection level is recognized.
3) Open the SPF paper feed guide to the A4R width.
4) Press [EXECUTE] key.
   The A4R width detection level is recognized.
5) Open the SPF paper feed guide to the A5R width.
6) Press [EXECUTE] key.
   The A5R width detection level is recognized.
7) Open the SPF paper feed guide to the minimum width.
8) Press [EXECUTE] key.
   The minimum width detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed and. When the above operation is completed normally, "COMPLETE" is displayed.

1	TRAYVOLMAX	Tray size volume maximum value
2	TRAYVOLA4R	Tray volume A4R size adjustment value
3	TRAYVOLA5R	Tray volume A5R size adjustment value
4	TRAYVOLMIN	Tray size volume minimum value

53-7

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the SPF document size width sensor.

Section

Operation/Procedure

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

[RSPF]

Item/Display			Setting range	Default value
A	AD_MAX	Max. width position	0 - 1023	84
B	AD_P1	A4R width position	0 - 1023	509
C	AD_P2	A5R width position	0 - 1023	808
D	AD_MIN	Min. width position	0 - 1023	961

53-8

Purpose Adjustment

Function (Purpose) Used to adjust the document lead edge reference and the SPF mode document scan position.

Section

Operation/Procedure

Select an adjustment item with [AUTO] [MANUAL] key.

<AUTO: Document lead edge reference (RRCA) adjustment>(Auto adjustment)

1) Set a sheet of black paper of A4 or 11"x 8.5" on the document table.
2) Press [EXECUTE] key. (The adjustment is performed and the adjustment value is saved.)

Item/Display	Content	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measurement distance	0-255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

<MANUAL: SPF mode document scan position adjustment>

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

Item/Display		Content	Setting range	Default value (RSPF)	Default value (DSPF)
A	ADJUST VALUE	SPF mode document scan position adjustment (Scanner stop position adjustment)	1 - 99	5	10

* When the adjustment value is increased, the scanner stop position in the RSPF mode is shifted to the right.

* When the adjustment value is changed by 1, the position is shifted by 0.1mm.

53-9

Purpose	Adjustment
Function (Purpose)	Used to set dirt detection for SPF scanning position.
Section	

Operation/Procedure

1) Select an items to be set with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

[RSPF]

Item/Display			Content		Setting range	Default value
A	SIDEA_SCAN_POSITION_SET_START	OFF	SPF front surface optimum scan position detection setting (When starting)	OFF	0	0
		ON		ON	1	
B	SIDEA_SCAN_POSITION_SET_JOB	OFF	SPF front surface optimum scan position detection setting (After a job)	OFF	0	1
		ON		ON	1	
C	SIDEA_SCAN_POSITION_LV	WEAK	SPF front surface optimum scan position detection level setting	Low	0	1
		MIDDLE		Medium	1	
		STRONG		High	2	
D	OC_DIRT_LV	WEAK	OC dirt level setting	Low	0	1
		MIDDLE		Medium	1	
		STRONG		High	2	
E	SIDEA_DIRT_ALARM_LV	WEAK	SPF front surface dirt alarm level setting	Low	0	1
		MIDDLE		Medium	1	
		STRONG		High	2	
F	SIDEA_DIRT_SHADING_SET	OFF	SPF front surface streak delete shading setting	OFF	0	1
		ON		ON	1	

53-10

Purpose	Adjustment/Setup
Function (Purpose)	SPF dirt detection execution.
Section	

Operation/Procedure

1) Press [EXECUTE] key.

[RSPF]

Item	Content
SPF SIDEA	SPF front surface dirt detection position (main scan position 1 to 8) "-": No dirt, A"*": Dirt
OC	OC surface dirt detection position (main scan position 1 to 8) "-": No dirt, "*": Dirt

55

55-1

Purpose	(Do not use this function unless specially required.)
Function (Purpose)	Used to set the specifications of the engine control operations. (SOFT SW)
Section	

Operation/Procedure

55-2

Purpose	(Do not use this function unless specially required.)
Function (Purpose)	Used to set the specifications of the scanner control operation. (SOFT SW)
Section	

Operation/Procedure

55-3

Purpose	(Do not use this function unless specially required.)
Function (Purpose)	Used to set the specifications of the controller operation. (SOFT SW)
Section	

Operation/Procedure

55-10

Purpose	Adjustment/Setting
Function (Purpose)	Used to set the special stamp text. (Taiwan only)
Section	

Operation/Procedure

1) Select an item to be set (digit, color, type) with the scroll key.
2) Enter the value corresponding to the setting item with 10-key.
3) Press [OK] key.

Item/Display			Content	Setting range	Default value
A	1ST DIGIT		First digit (left edge)	1 - 90 32 [blank: 20H] 65 - 90 [Alphabet: 41H("A") - 5AH("Z")] 48 - 57 [Numeral: 30H("0") - 39H("9")]	1
B	2ND DIGIT		Second digit		
C	3RD DIGIT		Third digit		
D	4TH DIGIT		Fourth digit		
E	5TH DIGIT		Fifth digit		
F	6TH DIGIT		Sixth digit (right edge)		
G	COLOR	K	Color specification input	0	0
		C		1	
		M		2	
		Y		3	
		R		4	
		G		5	
		B		6	

Item/Display			Content		Setting range	Default value
H	TYPE	PATTERN 1	Print composing method	Edging type	0	1
		PATTERN 2		OR process type	1	
		PATTERN 3		No-delete-composition type	2	

Input value

Print	Blank	A	B	C	E	F	G
Input value	32	65	66	67	69	70	71

Print	H	I	J	K	L	M	N
Input value	72	73	74	75	76	77	78

Print	O	P	Q	R	T	U	V
Input value	79	80	81	82	84	85	86

Print	W	X	Y	Z	0	1	2
Input value	87	88	89	90	48	49	50

Print	3	5	6	7	8	9
Input value	51	53	54	55	56	57

56

56-1

Purpose Backup

Function (Purpose) Used to transport data between HDD-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 flash drive. (Corresponding to the device cloning and the storage backup.)

Section

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Select a target transfer item with the touch panel.
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 flash drive into the main unit.
2) Select a target transfer item with the touch panel.
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 Data backup

Function (Purpose) Used to backup the document filing data to the USB flash drive.

Section

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Select a target transfer item with the touch panel.
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.

56-4

Purpose Data backup

Function (Purpose) Used to backup the JOB log data to the USB flash drive.

Section

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Press [JOB LOG EXPORT] key.
3) Press [EXECUTE] key, and press [YES] key.
   Data transfer selected in the procedure 2) is performed.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

56-5

Purpose Adjustment/Setting/Operation data check

Function (Purpose) Used to import the SIM22-6 data to a USB flash drive in the TEXT format.

Section

Operation/Procedure

1) Insert the USB flash drive 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 Operation data check

Function (Purpose) Used to import the SIM23-2 data to a USB flash drive in the TEXT format.

Section

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Select a kind of data to be imported.
3) Press [EXECUTE] key, and 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.

56-8

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to import the ICC profile data to a USB flash drive.
Section	

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Select the ICC profile data to be imported.
3) Press [EXECUTE] key, and press [YES] key.

56-15

Purpose	Backup
Function (Purpose)	MFP EEPROM data restore
Section	

Operation/Procedure

1) Confirm that new EEPROM attached on the PWB
2) Press [EXECUTE] key, and, press [YES] key.
   When the operation is completed normally, "COMPLETE" is displayed. in case of an abnormal end "ERROR" is displayed.

56-99

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to import the log data to a USB flash drive.
Section	

Operation/Procedure

1) Insert the USB flash drive into the main unit.
2) Select the log item data to be imported.
3) Press [EXECUTE] key, and press [YES] key.

Item	Contents
SIM56-5	Import SIM56-5 data.
SIM56-6	Import SIM56-6 data.
SIM00-11	Import SIM00-11 data.
SIM56-4	Import SIM56-4 job log data.
SIM56-7	Import SIM56-7 system log data.
SIM56-2	Perform simplified output of SIM56-2.

60

60-1

Purpose	Operation test/check
Function (Purpose)	Used to check the memory operations (read/write).
Section	

Operation/Procedure

1) Press [EXECUTE] key.
   Start the test.

Result display	Description
OK	Success
NG	Fail
NONE	DIMM trouble
INVALID	Execution disable

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)
LSU TESTRESULT NG: CL	Laser light emitting abnormality (C,M,Y)

61-3

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the laser power
Section	

Operation/Procedure

1) Select a target mode for adjustment with [COPY600], [PR600/FAX] on the touch panel.
2) Select an adjustment target item on the touch panel.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key. (The set value is saved.)
   When the laser power are increased, the print density is increased and the line width of line images are increased.

Mode		Item / Display	Content	Default
COPY 600	A	LASER POWER MIDDLE(K)	Laser power setting middle speed/K	100
	B	LASER POWER MIDDLE(C)	Laser power setting middle speed/C	100
	C	LASER POWER MIDDLE(M)	Laser power setting middle speed/M	100
	D	LASER POWER MIDDLE(Y)	Laser power setting middle speed/Y	100
	E	LASER POWER LOW(K)	Laser power setting low speed/K	79
	F	LASER POWER LOW(C)	Laser power setting low speed/C	79
	G	LASER POWER LOW(M)	Laser power setting low speed/M	79
	H	LASER POWER LOW(Y)	Laser power setting low speed/Y	79
	I	LASER POWER MIDDLE(BW)	Laser power setting middle speed/BW	100
	J	LASER POWER LOW(BW)	Laser power setting low speed/BW	79
	K	LASER DUTY MIDDLE(K)	Laser duty select middle speed/K	0
	L	LASER DUTY MIDDLE(C)	Laser duty select middle speed/C	0
	M	LASER DUTY MIDDLE(M)	Laser duty select middle speed/M	0
	N	LASER DUTY MIDDLE(Y)	Laser duty select middle speed/Y	0
	O	LASER DUTY LOW(K)	Laser duty select low speed/ K	0
	P	LASER DUTY LOW(C)	Laser duty select low speed/ C	0
	Q	LASER DUTY LOW(M)	Laser duty select low speed/ M	0
	R	LASER DUTY LOW(Y)	Laser duty select low speed/ Y	0
	S	LASER DUTY MIDDLE(BW)	Laser duty select middle speed/BW	0
	T	LASER DUTY LOW(BW)	Laser duty select low speed/ BW	0
	U	LASER POWER K1	Laser power setting K1	100
	V	LASER POWER K2	Laser power setting K2	100
	W	LASER POWER C1	Laser power setting C1	100
	X	LASER POWER C2	Laser power setting C2	100
	Y	LASER POWER M1	Laser power setting M1	100
	Z	LASER POWER M2	Laser power setting M2	100
	AA	LASER POWER Y1	Laser power setting Y1	100
	AB	LASER POWER Y2	Laser power setting Y2	100
PRINTER 600/ FAX	A	LASER POWER MIDDLE(K)	Laser power setting middle speed/K	100
	B	LASER POWER MIDDLE(C)	Laser power setting middle speed/C	100
	C	LASER POWER MIDDLE(M)	Laser power setting middle speed/M	100
	D	LASER POWER MIDDLE(Y)	Laser power setting middle speed/Y	100
	E	LASER POWER LOW(K)	Laser power setting low speed/K	79
	F	LASER POWER LOW(C)	Laser power setting low speed/C	79
	G	LASER POWER LOW(M)	Laser power setting low speed/M	79
	H	LASER POWER LOW(Y)	Laser power setting low speed/Y	79
	I	LASER POWER MIDDLE(BW)	Laser power setting middle speed/BW	100
	J	LASER POWER LOW(BW)	Laser power setting low speed/BW	79
	K	LASER DUTY MIDDLE(K)	Laser duty select middle speed/K	0
	L	LASER DUTY MIDDLE(C)	Laser duty select middle speed/C	0
	M	LASER DUTY MIDDLE(M)	Laser duty select middle speed/M	0
	N	LASER DUTY MIDDLE(Y)	Laser duty select middle speed/Y	0
	O	LASER DUTY LOW(K)	Laser duty select low speed/ K	0
	P	LASER DUTY LOW(C)	Laser duty select low speed/ C	0
	Q	LASER DUTY LOW(M)	Laser duty select low speed/ M	0
	R	LASER DUTY LOW(Y)	Laser duty select low speed/ Y	0
	S	LASER DUTY MIDDLE(BW)	Laser duty select middle speed/BW	0
	T	LASER DUTY LOW(BW)	Laser duty select low speed/ BW	0
	U	LASER DUTY MIDDLE(K 1BIT)	Laser duty select middle speed (1BIT)/K	0
	V	LASER DUTY MIDDLE(C 1BIT)	Laser duty select middle speed (1BIT)/C	0
	W	LASER DUTY MIDDLE(M 1BIT)	Laser duty select middle speed (1BIT)/M	0
	X	LASER DUTY MIDDLE(Y 1BIT)	Laser duty select middle speed (1BIT)/Y	0
	Y	LASER DUTY LOW(K 1BIT)	Laser duty select low speed (1BIT)/K	0
	Z	LASER DUTY LOW(C 1BIT)	Laser duty select low speed (1BIT)/C	0
	AA	LASER DUTY LOW(M 1BIT)	Laser duty select low speed (1BIT)/M	0
	AB	LASER DUTY LOW(Y 1BIT)	Laser duty select low speed (1BIT)/Y	0
	AC	LASER DUTY MIDDLE(BW 1BIT)	Laser duty select middle speed (1BIT)/BW	0
	AD	LASER DUTY LOW(BW 1BIT))	Laser duty select low speed (1BIT)/BW	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 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			Default value
A	MULTICOUNT		Print quantity (1-999)			1
B	PAPER	MFT	Tray selection	1	Manual paper feed	2 (CS 1)
		CS1		2	Paper feed tray 1	
		CS2		3	Paper feed tray 2	
		CS3		4	Paper feed tray 3	
		CS4		5	Paper feed tray 4	
		LCC		6	LCC	

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.
   Press [EXECUTE] key.

7) Press [RETRY] key if correction is still required.
8) When [DATA] key is pressed on the initial screen, the display is shifted to the automatic adjustment result display screen.

61-12

Purpose	Adjustment
Function (Purpose)	Laser power manual correction
Section	LSU

Operation/Procedure

Press an item button to be adjusted.

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.

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.
3) Laser power auto correction value (K-Y) 32 points and laser power manual correction value (K-Y) 32 points are return back to the default value.

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. However, this change will not change the initial value of SIM 61-3 (Laser power settings).

The laser power set in this Sim mode will be:

Initial value of Sim 61-3 x Initial value of Sim 61-14 (%)

The following item contents are collectively set at the same time.

Item	Mode
COPY600	MIDDLE SPEED/LOW SPEED
PR600/FAX	MIDDLE SPEED/LOW SPEED

1) Press a target item.

Item	Setting range		Default
K/BW	-2	Fine (80%)	0
	-1	Slight fine (90%)	
	0	Normal (100%)	
	1	Slight thick (110%)	
	2	Thick (120%)	
C	-2	Fine (80%)	0
	-1	Slight fine (90%)	
	0	Normal (100%)	
	1	Slight thick (110%)	
	2	Thick (120%)	
M	-2	Fine (80%)	0
	-1	Slight fine (90%)	
	0	Normal (100%)	
	1	Slight thick (110%)	
	2	Thick (120%)	
Y	-2	Fine (80%)	0
	-1	Slight fine (90%)	
	0	Normal (100%)	
	1	Slight thick (110%)	
	2	Thick (120%)	

Important

[SYSTEM SETTINGS] > [Image Quality Adjustment] > [Collective Adjustment] synchronized with Black Letter/Black Line Width Adjustment only for K/BW

62

62-1

Purpose	Data clear
Function (Purpose)	Used to format the hard disk. (HDD: Excluding the Operation manual and the watermark data)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to execute the HDD format.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-2

Purpose	Operation test/check
Function (Purpose)	Used to check read/write of the hard disk (partial).
Section	

Operation/Procedure

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

62-3

Purpose	Operation test/check
Function (Purpose)	Used to check read/write of the hard disk (all areas).
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Read/write operations are performed.

62-6

Purpose	Operation test/check
Function (Purpose)	Used to perform the self diagnostics of the hard disk.
Section	

Operation/Procedure

1) Select the self diagnosis area.
2) Press [EXECUTE] key.
   The self diagnosis operation is performed.

SHORT S.T	Partial area diagnosis
EXTENDED S.T	All area diagnosis

When the operation is completed, [EXECUTE] key returns to the normal display.

Normal completion → "OK (RESULT:0)" is displayed.
Abnormal end → "NG (RESULT: Other than 0)" is displayed.

* If the simulation cannot be executed or terminated abnormally for some reason, "ERROR" is displayed on the corresponding section.

62-7

Purpose	Operation test/check
Function (Purpose)	Used to print the hard disk self diagnosis error log.
Section	

Operation/Procedure

1) Press [EXECUTE] key.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-8

Purpose	Data clear
Function (Purpose)	Used to format the hard disk. (HDD: Excluding the Operation Manual, the watermark data, and the system area)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

* When the HDD formatting (except for the system area) is not completed normally, "HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.

62-10

Purpose	Data clear
Function (Purpose)	Used to clear the job completion list data.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to delete the job log data.

When the operation is completed, [EXECUTE] key returns to the normal display.

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.
   Used to delete the document filing data.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-12

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of auto format in a hard disk trouble.
Section	

Operation/Procedure

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

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

A	0	Enable
	1	Disable (Default)

62-13

Purpose	Data clear
Function (Purpose)	Used to format the hard disk. (Operation Manual, watermark data only)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The operation manual data are deleted.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-14

Purpose	Data clear
Function (Purpose)	Used to initialize the database file.
Section	HDD

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The database files are initialized.
   At the same time, the job log data are also cleared.

62-20

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the mirroring hard disk.
Section	Mirroring hard disk

Operation/Procedure

Enter the simulation mode, and the operation status of the HDD is displayed.

The status display is renewed in every second.

Display	Content description
OK	Normal operation
NONE	Not connected
REBUILDING	Data rebuilding
ERROR	Error occurrence
TROUBLE	Trouble

63

63-1

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

Operation/Procedure

1) Select a target color to display with [R] [G] [B] on the touch panel.

[RSPF]

Display item	Description	Remarks
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	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 under the specified value
		3: STAGE3, The gain set value is negative.
		4: END is not asserted. (Gain adjustment)
		5: STAGE2, Retry maximum
		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.
		13 : Register check error (White booting/Before gain)
		14 : Register check error (Before light quantity correction)
RSPF BACK WHITE LEVEL 1ST	First scan RSPF back surface white reference level	
RSPF BACK WHITE LEVEL 2ND	Second scan RSPF back surface white reference level	

63-2

Purpose	Adjustment
Function (Purpose)	Used to perform shading.
Section	

Operation/Procedure

1) Press [EXECUTE] key.

   Used to perform shading.

When the operation is completed, [EXECUTE] key returns to the normal display.
When the DSPF is connected, the following items are displayed.

Display	Contents
OC SHADING	OC analog correction level correction or shading correction data creation (OC mode)
DSPF SHADING	DSPF analog correction level correction or shading correction data creation (SPF mode)

63-3

Purpose	Adjustment
Function (Purpose)	Used to perform scanner (CCD) color balance and gamma auto adjustment.
Section	Scanner

Operation/Procedure

For OC mode

1) Place the scanner adjustment chart (UKOG-0356FCZZ) on the reference position of the left rear frame side of the document table.
2) Select the color which needs to be adjusted. Then, press [EXECUTE] key.

   The scanner (CCD) color balance automatic adjustment is performed.

When the operation is completed, [EXECUTE] key returns to the normal display.

63-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to display the SIT chart patch density.
Section	

Operation/Procedure

1) Set the scanner adjustment chart (UKOG-0356FCZZ) to the reference position on the left rear frame side of the document table.
2) Select the color which needs to be adjusted. Then, press [EXECUTE] key.

   The patch of the SIT chart is scanned.

   When the operation is completed, [EXECUTE] key returns to the normal display.
3) Select a data display mode.

GAMMATHROUGH	SIT chart scan data
COPY GAMMA	Copy mode gamma process data of the SIT chart scan data
SCANNER GAMMA	Image send mode gamma process data of the SIT chart scan data
SIT CHECK	SIT chart scan data/Check result

Select an target display color with [R] [G] [B] keys.

63-5

Purpose	Adjustment/Setup
Function (Purpose)	Used to perform the scanner (CCD) color balance and gamma default setting.
Section	

Operation/Procedure

1) Press [EXECUTE] key, and press [YES] key
2) The scanner (CCD) color balance and gamma are set to the default.

[RSPF]

Item/Display		Contents
1	SIDE A(OC)	Copy gamma correction 1 and color correction coefficient
2		TWAIN gamma correction 1 and color correction coefficient
3		Auto adjustment gamma correction 1 and color correction coefficient

63-7

Purpose	Adjustment/Setup
Function (Purpose)	Used to register the service target of the copy mode auto color balance adjustment.
Section	

Operation/Procedure

1) Press [SETUP] key on the touch panel.
2) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
3) Press [EXECUTE] key.

   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.

   The service target of the copy mode automatic color balance adjustment is registered according to the patch image of the scanned adjustment pattern sheet.

   The registered color balance and the density are displayed.

   Select a target color with [C] [M] [Y] [K] key.

Important

This simulation is executed only when the copy color balance is manually adjusted.

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
P	Point P target value
BASE	Background sampling value

63-8

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the default of the service target of the copy mode auto color balance adjustment.
Section	

Operation/Procedure

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

   The service target of the copy mode automatic color balance adjustment is set to the default.

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

63-11

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

Operation/Procedure

1) Select the target color balance with the touch panel.

Item/Display		Content	Default value
TARGET TBL	DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual copy mode and print is made.	DEF 1
	DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made.	
	DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made.	

64

64-1

Purpose	Operation test/check
Function (Purpose)	Test print. (Self print) (Color mode)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a target print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22)		Specification of the print pattern (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22)		1
B	DOT1 (DOT1>=2 IF A: 2,11)		Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2, 11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A: 2,11)		Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2, 11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)		Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT		Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 17 - 19)	NONE	Exposure mode specification	No process (through)	1-8 (Pattern 17-19: 2-8 except above:1-8)	1	8
		TEXT/PRINTED PHOTO		Text/Printed Photo		2	
		TEXT/PHOTO		Text/ Photograph		3	
		TEXT		Text		4	
		PHOTO		Photograph		5	
		PRINTED PHOTO		Printed Photo		6	
		MAP		Map		7	
		STANDARD DITHER		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
H	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1
		NO		No		1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 6	1	1
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	
		HEAVY2		Heavy paper 2		5	
		GLOSSY		Glossy paper		6	
		HEAVY3		Heavy paper 3		7	
		HEAVY4		Heavy paper 4		8	

Print pattern of Item A

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	* When the print width is 100 or more and all colors are selected, print is made in the three colors (CMY). * Print is started at 4mm from the paper lead edge. * Writing regardless of pound. The first one is fixed to LD1.
2	Dot print		-
9	Each color 10% area (A4/ A4R) density print		* Each interval is 41.86mm (989dot). * If m is not in the range of 1 - 13%, it is rounded. * K print is started at 17mm from the paper lead edge.
10	8-color belt print		
11	4-color dot print (sub scan)		* For every 1/4 of the sub scanning direction paper size, print is made for each color. * When N=0, print of all the background is made in 4 colors.
17	All background (halftone)	Halftone (IMG-ASIC rear process)	* When all colors are selected, print is made in CMY.
18	256 gradations pattern (Other dither)		* When all colors are selected, print is made in CMY. * 16 gradations are printed in the main scanning direction, and feedback is made, and the next 16 gradations are printed. (16 x 16 patch print) * Print is started at 5mm from the paper lead edge. * Print is made from 255 gradations, and 0-254 gradations are printed.
19	256 gradations pattern (For text dither)		* Print is made from 255 gradations, and 0-254 gradations are printed.
21	4-point dot print (main scan)	LSU-ASIC	* For every 1/4 of the main scanning direction paper size, print is made for each color. * When N=0, print of all the background is made in 4 colors.
22	Slant line	LSU-ASIC	

64-2

Purpose	Operation test/check
Function (Purpose)	Test print. (Self print) (Monochrome mode)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

	Item/Display		Content		Setting range		Default value
A	PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22)		Print pattern specification (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22)		1
B	DOT1 (DOT1>=2 IF A: 2,11)		Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2, 11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A: 2,11)		Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2, 11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)		Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT		Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 17 - 19)	NONE	Exposure mode specification	No process (through)	1-8 (Pattern 17-19: 2-8 except above: 1-8)	1	8
		TEXT/PRINTED PHOTO		Text/Printed Photo		2	
		TEXT/PHOTO		Text/ Photograph		3	
		TEXT		Text		4	
		PHOTO		Photograph		5	
		PRINTED PHOTO		Printed Photo		6	
		MAP		Map		7	
		STANDARD DITHER		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
H	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1
		NO		No		1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 6	1	1
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	
		HEAVY2		Heavy paper 2		5	
		GLOSSY		Glossy paper		6	
		HEAVY3		Heavy paper 3		7	
		HEAVY4		Heavy paper 4		8	

Print pattern of Item A

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	* When the print width is 100 or more and all colors are selected, print is made in the three colors (CMY). * Print is started at 4mm from the paper lead edge. * Writing regardless of pound. The first one is fixed to LD1.
2	Dot print		–
9	Each color 10% area (A4/ A4R) density print		* Each interval is 41.86mm (989dot). * If m is not in the range of 1 - 13%, it is rounded. * K print is started at 17mm from the paper lead edge.
10	8-color belt print		
11	4-color dot print (sub scan)		* For every 1/4 of the sub scanning direction paper size, print is made for each color. * When N=0, print of all the background is made in 4 colors.
17	All background (halftone)	Halftone (IMG-ASIC rear process)	–
18	256 gradations pattern (Other dither)		–
19	256 gradations pattern (For text dither)		–
21	4-point dot print (main scan)	LSU-ASIC	* For every 1/4 of the main scanning direction paper size, print is made for each color. * When N=0, print of all the background is made in 4 colors.
22	Slant line	LSU-ASIC	

64-4

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a target print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
3) The test print (self print) is performed.

Item/Display			Content		Setting range	Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 6	6
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 paper feed	1	2
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
E	HALFTONE	LOW	Halftone	Low line number	0	0
		HIGH		High line number	1	
F	QUALITY	STANDARD	Image quality setting	600dpi	0	1
		HIGHQUALITY		600dpi (High Quality)	1	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	0	1
		CALIB		Calibration	1	
H	PAPER TYPE	PLAIN	Paper type	Plain paper	0	0
		HEAVY		Heavy paper	1	
		HEAVY2		Heavy paper 2	2	
		GLOSSY		Glossy paper	3	
		HEAVY3		Heavy paper 3	4	
		HEAVY4		Heavy paper 4	5	

Print pattern of Item A

Pattern No.	Content
1	256 gradations pattern (COLOR)
2	256 gradations pattern (B/W)
3	256 gradations pattern (COLOR) (Y-M-C-K continuous)
4	Halftone pattern (COLOR)
5	Halftone pattern (B/W)
6	Background dot print

64-5

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print) (PCL)
Section	

Operation/Procedure

1) Set the print conditions.

Item/Display			Content		Setting range	Default value
A	PRINT PATTERN		Print pattern specification		1 - 5	3
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 paper feed	1	2
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
E	HALFTONE	LOW(IMAGE)	Halftone	For Photo	0	2
		HIGH(TEXT)		For text	1	
		AUTO		Auto (for photo/text)	2	
F	QUALITY	STANDARD	Image quality setting	600dpi	0	1
		HIGHQUALITY		600dpi (High Quality)	1	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	0	1
		CALIB		Calibration	1	
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0	0
		HEAVY		Heavy paper	1	
		HEAVY2		Heavy paper 2	2	
		GLOSSY		Glossy paper	3	
		HEAVY3		Heavy paper 3	4	
		HEAVY4		Heavy paper 4	5	
I	INTENT	PERCEPTUAL	Rendering indent	Perceptual	0	0
		COLORIMETRIC		Color metric	1	
		SATURATION		Saturation	2	
J	OUTPUT PROFILE	SHARP	Output profile	Standard	0	0
		STANDARD		Photo image	1	
		GRAPHICS		Graphics	2	
K	RGB SOURCE PROFILE	SRGB	RGB source profile	SRGB	0	0
		GAMMA1.6		Gamma 1.6	1	
		GAMMA1.8		Gamma 1.8	2	
		GAMMA2.0		Gamma 2.0	3	
		GAMMA2.6		Gamma 2.6	4	
		GAMMA3.0		Gamma 3.0	5	
		TONER SAVE		TONER SAVE	6	
L	GRAY COMPENSATION	K	Gray print method	K only	0	0
		KCMY		KCMY	1	
M	PURE BLACK PRINT	ON	Black monochrome print	set.	0	0
		OFF		not set.	1	
N	TONER SAVE MODE	OFF	Monochrome toner save	not set.	0	0
		ON		set.	1	

Print pattern of Item A

Pattern No.	Content
1	COLOR
2	B/W
3	Continuous COLOR,B/W
4	Service chart (COLOR)
5	Service chart (B/W)

Select an item to be print condition with scroll keys.
Set the print conditions with 10-key.
Select a target print color with [K] [C] [M] [Y] key.

2) Press [EXECUTE] key.
The test print (self print) is performed.

64-6

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print) (PS)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

Item/Display			Content		Setting range	Default value
A	PRINT PATTERN		Print pattern specification		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 paper feed	1	2
		CS1		Tray 1	2	
		CS2		Tray 2	3	
		CS3		Tray 3	4	
		CS4		Tray 4	5	
		LCC		LCC	6	
E	HALFTONE	LOW(IMAGE)	Halftone	For Photo	0	2
		HIGH(TEXT)		For text	1	
		AUTO		Auto (for photo/text)	2	
F	QUALITY	STANDARD	Image quality setting	600dpi	0	1
		HIGHQUALITY		600dpi (High Quality)	1	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	0	1
		CALIB		Calibration	1	
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0	0
		HEAVY		Heavy paper	1	
		HEAVY2		Heavy paper 2	2	
		GLOSSY		Glossy paper	3	
		HEAVY3		Heavy paper 3	4	
		HEAVY4		Heavy paper 4	4	
I	INTENT	PERCEPTUAL	Rendering indent	Perceptual	0	0
		COLORIMETRIC		Color metric	1	
		SATURATION		Saturation	2	
J	OUTPUT PROFILE	SHARP	Output profile	Standard	0	0
		STANDARD		Photo image	1	
		GRAPHICS		Graphics	2	
K	RGB SOURCE PROFILE	SRGB	RGB source profile	SRGB	0	0
		GAMMA1.6		Gamma 1.6	1	
		GAMMA1.8		Gamma 1.8	2	
		GAMMA2.0		Gamma 2.0	3	
		GAMMA2.6		Gamma 2.6	4	
		GAMMA3.0		Gamma 3.0	5	
		TONER SAVE		TONER SAVE	6	
L	GRAY COMPENSATION	K	Gray print method	K only	0	0
		KCMY		KCMY	1	
M	PURE BLACK PRINT	ON	Black monochrome print	set.	0	1
		OFF		not set.	1	
N	TONER SAVE MODE	OFF	Monochrome toner save	not set.	0	0
		ON		set.	1	
O	CMY SIMULATION	OFF	CMYK simulation	OFF	0	0
		SWOP		SWOP	1	
		EURO		EURO	2	
		JAPAN COLOR		JAPAN COLOR	3	
		TONER SAVE		TONER SAVE	4	

Print pattern of Item A

Pattern No.	Content
1	COLOR
2	B/W

65

65-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the touch panel (LCD display section) detection coordinates.
Section	Operation panel section

Operation/Procedure

Touch the center of the cross mark at the four corners of the screen.

When the adjustment is completed normally, the screen shifts to the simulation sub number entry menu.

In case of an error, the screen returns to the adjustment menu.

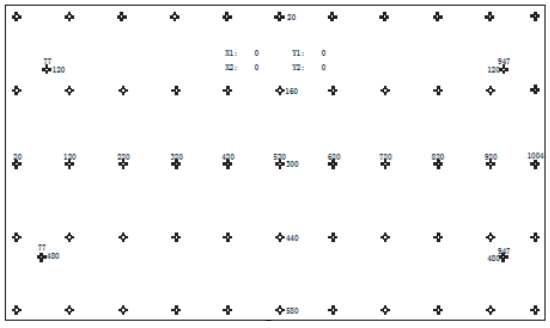
65-2

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 operation panel key input.
Section	

Operation/Procedure

Press [HOME] key.

If the key entry is effective, the guidance for pressing the next key is displayed. When all the key entries are completed, "COMPLETE" is displayed.

<Check target key>

10 Inch LCD model
HOME

66

66-1

Purpose	Setting
Function (Purpose)	Used to display the FAX-related soft SW (2 - 150) 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.
   * When [C] key is pressed, the entered value of [SW NO] is cleared.
2) Press [DATA] button.
   The soft SW data entered in procedure 1) is displayed.
   * When [SW NO] button is pressed, the display returns to the initial screen.
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.
   After saving the setting, [EXECUTE] button returns to the normal display.

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
MIDDLEANDNEAREAST	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 read/write of the EEPROM and the SDRAM on the MODEM controller and display the result.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-03, the following screen is displayed.
   * Select the page of memory check item with the scroll key.
2) When the memory check item button is selected, the display is shifted to the memory check screen.
3) When [EXECUTE] button is pressed, it is highlighted and the memory check of the selected item is started.
4) After completion of memory check, [EXECUTE] button returns to the normal display and the result of memory check is displayed.

Memory check status

NO CHECK	No check	
CHECKING	During checking	
OK	Check complete OK	
NG A##	Check complete NG	Error occurring address or data line is displayed for each item.

Check item

Check memory item		Remark
1	All Memory Device Check (once)	All the items are checked once.
2	MODEM EEPROM <1> (once)	Check only once in LINE1
3	MODEM EEPROM <1> (repeat)	Repeat check in LINE1
4	MODEM SDRAM <1> (once)	Check only once in LINE1
5	MODEM SDRAM<1>(repeat)	Repeat check in LINE1
6	MODEM EEPROM <2> (once)	Check only once in LINE 2
7	MODEM EEPROM <2> (repeat)	Repeat check in LINE2
8	MODEM SDRAM <2> (once)	Check only once in LINE 2
9	MODEM SDRAM<2>(repeat)	Repeat check in LINE2
10	MODEM EEPROM <3> (once)	Check only once in LINE3
11	MODEM EEPROM <3> (repeat)	Repeat check in LINE3
12	MODEM SDRAM <3> (once)	Check only once in LINE3
13	MODEM SDRAM<3>(repeat)	Repeat check in LINE3

The number in < > indicates the line.

66-4

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected signals to the line and the main unit speaker. (Send level: max.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-04, the screen on the right is displayed. (Default, left upper selected.)
   * Use scroll keys to switch the send mode select page.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

<Signal send table>

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 send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting) (For the kinds of send signals, refer to SIM66-04.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-05, the item selection screen is displayed.
   * Use scroll keys to switch the send mode select page.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   * When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

66-6

Purpose	Data output/Check
Function (Purpose)	Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.)
Section	FAX

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and the confidential checkable is printed.
   * If there is no confidential registration, no print is made even though [EXECUTE] key is pressed.
2) After completion of printing, [EXECUTE] button returns to the normal display.

66-7

Purpose	Data output/Check
Function (Purpose)	Used to output all image data saved in the image memory. (Confidential data are also outputted.)
Section	FAX

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and all image data saved in the image memory are outputted.
2) After completion of printing, [EXECUTE] button returns to the normal display.

66-8

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected sound messages to the line and the speaker. (Send level: Max.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-08, the item selection screen is displayed.
2) When the sound message button to be sent is selected, it is highlighted and the previously set button returns to the normal display.

<Sound message table>

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

66-9

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected sound message to the line and the speaker. (Send level: Soft SW setting) * For details of sound messages, refer to the sound message table of SIM66-08.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-09, 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.

66-10

Purpose	Data clear
Function (Purpose)	Used to clear the FAX and image send image data. (The confidential data are also cleared.)
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button.

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 register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-13, the number input screen is displayed.
   * The number saved in the memory is displayed in the column of [PRESENT:]. (If there is no data, [-------] is displayed.)
2) Enter a number with 10-key.
   The entered number is displayed in the column of [NEW:].
   After entering 20 digits, 10-key is disabled (no response). Only [C] key is enabled. (10-key [0] to [9], [*], [#], [C] key (back by one digit))
3) When [SET] key is pressed after completion of entry, the entered number is displayed (registered) in the column of [PRESENT:]. The column of [NEW:] becomes blank.

66-14

Purpose	Adjustment
Function (Purpose)	Used to execute the dial pulse (10PPS) send test and to adjust the make time.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-14, the adjustment item screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
3) To end the dial test, press [EXECUTE] button again. The button returns to the normal display and the test is terminated.

66-15

Purpose	Adjustment
Function (Purpose)	Used to execute the dial pulse (20PPS) send test and to adjust the make time.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-15, the adjustment item screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
   * The dial pulse in this example is up to 20 digits registered with SIM66-13.
3) To end the dial test, press [EXECUTE] button again. The button returns to the normal display and the test is terminated.

66-16

Purpose	Adjustment
Function (Purpose)	Used to execute the DTFM signal send test and to adjust the send level.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-16, the item selection screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse signal is sent from the line by the setting of high/low group of the signal send level.
3) To terminate the dial test, press [EXECUTE] button. The button returns to the normal display and the test is terminated.

66-17

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

Operation/Procedure

1) When the machine enters Simulation 66-17, the number selection screen is displayed.
2) When a button of a send signal 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 signals are sent.
4) To stop signal sending:
   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

66-18

Purpose	Operation test/Check
Function (Purpose)	Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-18, the number selection screen is displayed.
2) When a button of a send signal 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 signals are sent.
4) To stop signal sending:
   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

66-21

Purpose	Check
Function (Purpose)	Used to print the selected items (system error, protocol monitor).
Section	FAX

Operation/Procedure

1) When an item button to be printed is selected, it is highlighted and the previously set button returns to the normal display.
2) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and printing is started.
3) After completion of printing, [EXECUTE] button returns to the normal display.

<FAX information print content table>

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

66-22

Purpose	Setting
Function (Purpose)	Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only)
Section	FAX

Operation/Procedure

1) When the machine enters the simulation, the number of the set sound volume is displayed. (In this example, MIDDLE is set as the default sound volume.)
2) Use 10-key to set the handset sound volume. (0: MIN 1:MIDDLE 2:MAX)
3) Press [EXECUTE] button to deliver the selected on-hold tone.
   * If, however, the handset is not installed, the sound volume cannot be checked. Execution is possible.
4) When [EXECUTE] button is pressed, it is highlighted and delivery of the on-hold tone is stopped.

66-29

Purpose	Clear
Function (Purpose)	Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, InboundRouting, and the DocumentAdmin table).
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button.
   The telephone book data area cleared.
3) After completion of memory clear, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

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>

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66-32

Purpose	Operation test/Check
Function (Purpose)	Used to check the fixed data received from the line and to display the result.
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button to check the fixed data received from the line. At that time, [EXECUTE] button is highlighted.
   * Fixed data check procedure
   * The data received from the line is checked of the following fixed data status for minutes, then if they are in accord with “OK” is displayed on LCD, if not “NG” is displayed.
   * The judgment is made in 2 minutes.
     Receive speed: 300BPS
     Receive data: 00H
     Judgment data: 100byte
2) After completion of check, [EXECUTE] button returns to the normal display. The result is displayed as "OK" or "NG."

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 check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-36, the item selection screen is displayed.
2) Operation check

   Select an item to be checked on the screen.

<MFP controller I/F check item table>

MFP <- MDMC (DATA once) Data line Once	MFP -> MDMC (DATA once) Data line Once
MFP <- MDMC (DATA repeat) Data line Repeat	MFP -> MDMC (DATA repeat) Data line Repeat
MFP <- MDMC (CMD once) Command line Once	MFP -> MDMC (CMD once) Command line Once
MFP <- MDMC (CMD repeat) Command line Repeat	MFP -> MDMC (CMD repeat) Command line Repeat

66-39

Purpose	Setting
Function (Purpose)	Used to check and change the destination setting saved in EEPROM of the FAX BOX.
Section	FAX

Operation/Procedure

1) When the machine enters the simulation, the currently set destination button is highlighted. (In the default state, JAPAN is set as the destination.)
2) Select a destination button to set the destination. The selected button is highlighted and the previously selected button returns to the normal display.
   * When the destination button is changed, the new destination setting is saved to EEPROM of the FAX BOX.

<Destination setting table>

JAPAN	U.S.A/CANADA	EUROPE	AUSTRALIA
CHINA	ASIA&OTHERS		

66-42

Purpose	Setting
Function (Purpose)	Used to rewrite the program to power control installed in the FAX BOX.
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.[EXECUTE] button is highlighted and YES] and [NO] buttons become active.
2) Press [YES] button.

   The power control program is rewritten.
3) When rewriting of the power control program is normally completed, "OK" is displayed and [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

66-43

Purpose	Setting
Function (Purpose)	Used to write the adjustment value into the power control installed in the FAX BOX.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-43, the item selection screen is displayed.
   * Use scroll keys to select the select item of the power control adjustment value.
2) When [EXECUTE] key is pressed, it is highlighted and writing to the power control is executed. When writing is normally completed, "OK" is displayed. When it is failed, "NG" is displayed.
3) After completion of writing, [EXECUTE] key returns to the normal display.

<Set range and default value of each set value>

	Item	Set range	Default value
A	CI_LEVEL_JUDGE	2 to 15	6
B	CI_CYCLE_MIN	1 to 254	10
C	CI_CYCLE_MAX	2 to 255	142
D	CI_COUNT	2 to 15	3
E	RES_3.3V_LEVEL_JUDGE	2 to 15	15
F	EXHS_LEVEL_JUDGE	2 to 225	240
G	RHS_LEVEL_JUDGE	2 to 15	2
H	SON_TIMEOUT	1 to 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 controller reset/Default value setting
Section	Printer

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The set data related to the printer controller are initialized. (Including the NIC setting.)

When the operation is completed, [EXECUTE] key returns to the normal display.

67-24

Purpose	Adjustment/Setup
Function (Purpose)	Printer color balance adjustment (Auto adjustment)
Section	Printer

Operation/Procedure

1) Press [EXECUTE] key.
   The 48 color patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key.
   The printer color balance auto adjustment is performed, and the adjustment result is printed.
4) Press [OK] key.
   The halftone correction target registration is processed.

67-25

Purpose	Adjustment/Setup
Function (Purpose)	Printer color balance adjustment (Manual adjustment)
Section	Printer

Operation/Procedure

1) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
2) Select a target adjustment density level on the touch panel.
3) Enter the set value with 10-key.
   * When the rs key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key. (The set value is saved.)

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

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

Item/Display		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	Printer

Operation/Procedure

1) Select the target color balance with the touch panel.

Item/Display		Content	Default value
Target value table select	DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual printer mode and print is made.	DEF 1
	DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual printer mode and print is made.	
Target value table select	DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual printer mode and print is made.	DEF 1

67-27

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the service target of the printer mode auto color balance adjustment.
Section	Printer

Operation/Procedure

1) Press [SETUP] key on the touch panel.
2) Place the printed color balance adjustment pattern sheet printed in SIM 67-25 on the document table.
3) Press [EXECUTE] key.
   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.
   The service target of the printer mode auto color balance adjustment is set according to the scanned adjustment pattern sheet patch images.
   The registered color balance and the density are displayed.

Select a target color with [C] [M] [Y] [K] key.

Important

This simulation is executed only when the printer color balance is manually adjusted.

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
P	Point P target value
BASE	Background sampling value

67-28

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the default of the service target of the printer mode auto color balance adjustment.
Section	Printer

Operation/Procedure

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

   The service target of the printer mode auto color balance adjustment is set to the default.

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

67-31

Purpose	Data clear
Function (Purpose)	Used to clear the printer calibration value.
Section	Printer

Operation/Procedure

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

   The printer calibration data (Halftone correction data) are cleared.
   (The printer color balance correction is canceled.)

67-33

Purpose	Adjustment/Setup
Function (Purpose)	Used to change the gamma of the printer screen with different dither.
Section	Printer

Operation/Procedure

1) Select a target change color with [K] [C] [M] [Y] key on the touch panel.
2) Select a target screen with [SCREEN] key.
3) Select a target adjustment density level with scroll key.
4) Enter the set value with 10-key.
5) Press [OK] key. (The set value is saved.)

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

Item/Display		Content	Setting range	Default value
A	POINT1	Point 1	0 - 255	128
B	POINT2	Point 2	0 - 255	128
C	POINT3	Point 3	0 - 255	128
D	POINT4	Point 4	0 - 255	128
E	POINT5	Point 5	0 - 255	128
F	POINT6	Point 6	0 - 255	128
G	POINT7	Point 7	0 - 255	128
H	POINT8	Point 8	0 - 255	128
I	POINT9	Point 9	0 - 255	128
J	POINT10	Point 10	0 - 255	128
K	POINT11	Point 11	0 - 255	128
L	POINT12	Point 12	0 - 255	128
M	POINT13	Point 13	0 - 255	128
N	POINT14	Point 14	0 - 255	128
O	POINT15	Point 15	0 - 255	128
P	POINT16	Point 16	0 - 255	128
Q	POINT17	Point 17	0 - 255	128

Display	Content	Button
HEAVY PAPER	Heavy paper	CMYK
SCREEN1	600dpi 1bit Photo	
SCREEN2	600dpi 1 bit Graphics	
SCREEN3	600dpi 4 bit Photo	
SCREEN4	600dpi 4 bit Graphics	
SCREEN7	B/W 600dpi 1bit Photo	K
SCREEN8	B/W 600dpi 4bit Photo	
SCREEN11	B/W 600dpi 1bit Graphics	
SCREEN12	B/W 600dpi 4bit Graphics	
SCREEN14	DotScreen1	CMYK
SCREEN15	DotScreen2	
SCREEN16	DotScreen1_BW	K
SCREEN18	SHIGH	CMYK

67-34

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)
Section	Printer

Operation/Procedure

1) Enter the set value with 10-key.

0	Enable
1	Disable

2) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range	Default value
A	CMY (0: ENABLE 1: DISABLE)	0	CMY engine highest density correction mode: Enable	0 - 1	0
		1	CMY engine highest density correction mode: Disable		
B	K (0: ENABLE 1: DISABLE)	0	K engine highest density correction mode: Enable	0 - 1	1
		1	K engine highest density correction mode: Disable		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	500
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	500
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500

Item/Display		Content	Setting range	Default value
G	PRINTER TOTAL TONAR LIMIT SETUP	Printer total toner limitation setup	0 - 3	0

* When tone gap is generated in the high density section, set items A and B to "0."
  The density in the high density section is decreased, but tone gap is reduced.
* To increase the density in the high density section further, set items A and B to "1.
  The tone gap may occur in high density part.

Important

Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

67-36

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the density in the low density section.

Section Printer

Operation/Procedure

1) Select a set value with the scroll key.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.

Item/Display		Content	Setting range	Default value
A	A PATCH INPUT C	A patch input value C		
B	A PATCH INPUT M	A patch input value M		
C	A PATCH INPUT Y	A patch input value Y		
D	A PATCH INPUT K	A patch input value K	0 - 13	1

67-41

Purpose Adjustment/Setup

Function (Purpose) Used to set the threshold for judging the selected color printing or the black color printing in the black and white mode.

Section Printer

Operation/Procedure

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

Item/Display		Content	Setting range	Default value
A	C1	Mode1 : Threshold of Saturation	0 - 255	5
B	V1	Mode1 : Threshold of Brightness	0 - 255	0

67-42

Purpose Adjustment

Function (Purpose) Used to adjust the gradation by increasing / decreasing the selected color component amount or the black color component amount in the black and white mode.

Section Printer

Operation/Procedure

1) Select Mode1 or Mode2.
2) Select an item to be set.

Mode	Item/Display		Content	Default value
MODE 1	Black (Achromatic color)	F1	Black : Light	F2
		F2	Black : Normal	
		F3	Black : Dark	
	COLOR (Selected color)	G1	Selected color : Light	G2
		G2	Selected color : Normal	
		G3	Selected color : Dark	

67-43

Purpose Adjustment

Function (Purpose) 2 Color mode balance adjustment

Section Printer

Operation/Procedure

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

Item/Display		Content	Color	Setting range	Default value		
					C	M	Y
A	RED	R output color	CMY	0 - 255	0	235	224
B	GREEN	G output color	CMY	0 - 255	180	0	241
C	BLUE	B output color	CMY	0 - 255	235	159	0
D	CYAN	C output color	CMY	0 - 255	182	0	25
E	MAGENTA	M output color	CMY	0 - 255	0	271	0
F	YELLOW	Y output color	CMY	0 - 255	0	0	234

67-52

Purpose Adjustment/Setup

Function (Purpose) Used to set the default of the gamma of the printer screen.

Section Printer

Operation/Procedure

1) Select a target default setting mode with the touch panel.
   Press [ALL] key to select all the modes.
2) Press [EXECUTE] key and press [YES] key.

When the printer screen gamma was changed by SIM 67-33, SIM67-54, it is reset to the default.

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)
	B/W	SCREEN7 (600dpi 1bit Graphics)
		SCREEN8 (600dpi 4bit Graphics)
		SCREEN11(600dpi 1bit Graphics)
		SCREEN12 (600dpi 4bit Graphics)
		Printer B/W toner save automatic density correction amount
	4BIT_GRAPHICS	SCREEN4 (600dpi 4bit Graphics)
	DOT_SCREEN1	SCREEN14(Dot Screen1)
	DOT_SCREEN2	SCREEN15(Dot Screen2)
	DOT_SCREEN1_BW	SCREEN16(Dot Screen1 BW)
	SHIGH	SCREEN18(SHIGH)

67-54

Purpose	Adjustment
Function (Purpose)	Printer color balance adjustment
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, and the 600dpi 1bit mode.

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

1) Press [EXECUTE] key. (A4 or A3 paper is automatically selected.)

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

2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).

3) Press [EXECUTE] key.

   The color balance adjustment is automatically performed.

   The adjustment pattern is printed out. Check it for any abnormality.

4) Press [OK] key.

   The list of the adjustment items (for each dither) is displayed.

5) Select an adjustment item (for each dither).

Select item (Mode)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
B/W	SCREEN7 (600dpi 1bit) SCREEN8 (600dpi 4bit) Printer B/W toner save automatic density correction amount SCREEN11(PCL B/W 600dpi 1bit Graphics) SCREEN12(PCL B/W 600dpi 4bit Graphics)
4BIT_GRAPHICS	SCREEN4 (600dpi 4bit Graphics)
DOT_SCREEN1	SCREEN14(Dot(HIGH))
DOT_SCREEN2	SCREEN14(Dot(LOW))
DOT_SCREEN1_BW	SCREEN16(BW 600dpi DOT)
SHIGH	SCREEN18(SHIGH)

6) Press [EXECUTE] key. (A4 or A3 paper is automatically selected.)

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

7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side.

8) Press [EXECUTE] key.

   The color balance adjustment is automatically performed, and the color balance check patch image is printed out.

9) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.

   To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.

   After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.

10) Make a print, and check the print image quality.

Note

Use SIM67-52 to reset the adjustment values to the default values.

[7] SELF DIAG AND TROUBLE CODE

1. Trouble 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.

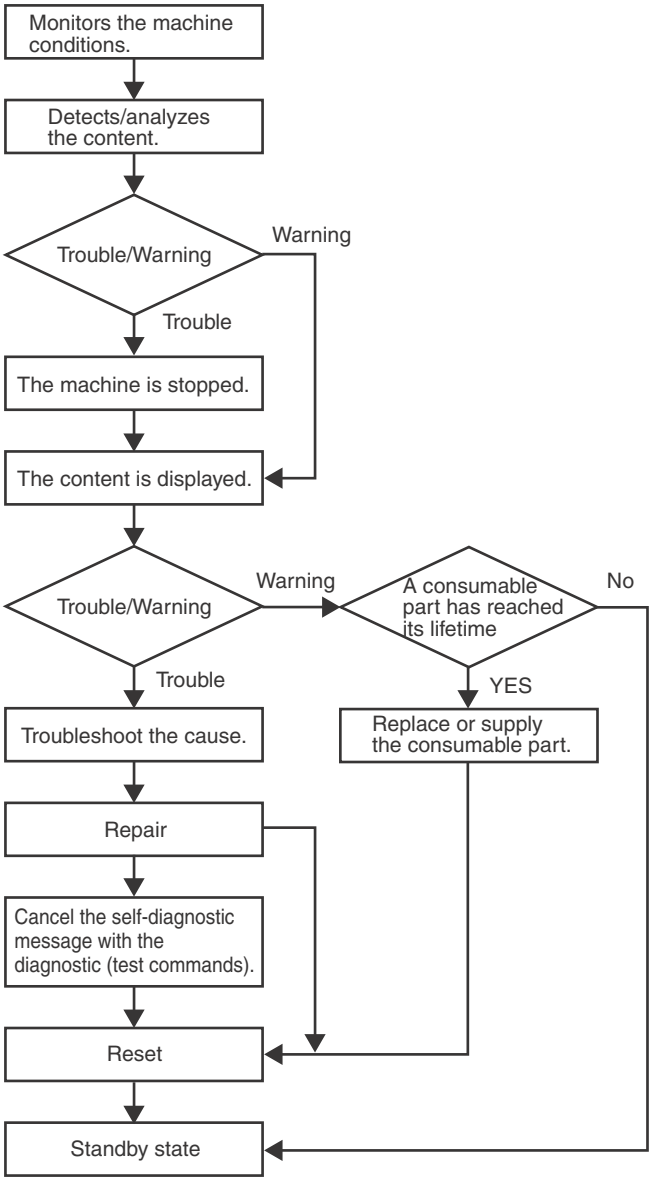
A warning message is displayed when a consumable part life is nearly expired or is expired.

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) Trouble code and operatable mode

Trouble content		Judg-ment block	Trouble code		Operatable mode							
			MX-xx60 MX-xx70 series	MX-xx50 series	Copy scan (including interrup-tion)	Scan (Push)	Scan (Pull)	ScanTo HDD	Print	List print	FAX Send	FAX print
FAX board trouble	– FAX board breakdown	SCN-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 trouble		A0(04)		×	×	×	×	×	×	×	×
Backup battery voltage fall trouble	– Backup battery voltage fall		U1(01)		× *20	× *20	× *20	× *20	× *20	× *20	× *20	× *20
Operation disable trouble 2	– Memory error (included not installed the expansion RAM)		U2(00, 11, 41, 42)		× *20	× *20	× *20	× *20	× *20	× *20	× *20	× *20
	– Serial number data error		U2(30)		× *20	× *20	× *20	× *20	× *20	× *20	× *20	× *20
	– HDD registration data check sum error		U2(50)		× *20	× *20	× *20	× *20	× *20	× *20	× *20	× *20
	– External serial I/F communication error (RIC)		U7(50, 51)		×	×	×	×	×	×	×	×
	– Memory error (included not installed the expansion RAM)		U2(40)		×	×	×	×	×	×	×	×
	– Connection trouble (Model data discrepancy) (MFPC detection)		A0(10, 15, 17, 18, 20) E7(60, 61, 62)		×	×	×	×	×	×	×	×

Trouble content		Judg-ment block	Trouble code		Operatable mode							
			MX-xx60 MX-xx70 series	MX-xx50 series	Copy scan (including interrup-tion)	Scan (Push)	Scan (Pull)	ScanT oHDD	Print	List print	FAX Send	FAX print
Operation disable trouble 3	– Memory check error when booting	SCN-MFP	E7(96)		×	×	×	×	×	×	×	×
	– Image memory trouble, decode error		E7(01, 49, 91, 92, 93, 94)		×	×	×	×	×	×	×	×
	– Image memory trouble, decode error (Image high compression)		E7(42, 46, 47, 48)		×	*17	×	×	×	○	○	○
Operation disable trouble 4	– Personal counter not-installed trouble		PC(00)		×	×	×	×	×	×	×	×
Power controller trouble	– Power controller error		L8(20)		×	×	×	×	×	×	×	×
Special function trouble	– Special function error		U2(60, 70)	U2(60)	○ *16	○ *16	○ *16	○ *16	○ *16	○ *16	○ *16	○ *16
Laser trouble	– LSU breakdown	PCU	E7(20, 24, 28, 29, A0) L6(10)		×	×	×	×	×	× *10	×	×
Engine trouble 1	– Connection trouble (Model data discrepancy) (PCU detection)		A0(21) E7(50, 55) F1(50)		×	×	×	×	×	×	×	×
Engine trouble 2	– PCU troubles (motor, fusing, etc.)		H3(00, 01, 02) H4(00, 01, 02, 30, 32) H5(01) U2(90, 91)		× *20	× *20	× *20	× *20	× *20	× *10 *20	× *20	× *20
Engine trouble 2	– PCU troubles (motor, fusing, etc.)		C1(01, 10, 14, 15, 16, 40, 41) C4(00, 05, 20, 25, 30, 31, 35, 40) F2(22, 40, 64, 70, 74) H2(00, 01, 02, 03, 05, 06) H7(10, 12) L4(02, 03, 06, 07, 11, 12, 16, 17, 18, 32, 35, 43, 50, 51, 71) L8(01, 02)		×	×	×	×	×	× *10	×	×
Process system trouble	– PCU troubles		C1(03, 05, 07) E7(21, 22, 23, 25, 26, 27, A1, A2, A3) F2(23, 24, 25, 41, 42, 43, 65, 66, 67, 71, 72, 73, 75, 76, 77, 95, 96, 97, 98)		× *19	× *19	× *19	× *19	× *19	× *10 *19	× *19	× *19
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		U6(01)		△3 *20	○ *20	○ *20	○ *20	△3 *20	△3 *10 *20	○ *20	△3 *20
Paper feed tray 4 trouble	– Paper feed tray 4 breakdown		U6(02)		△3 *20	○ *20	○ *20	○ *20	△3 *20	△3 *10 *20	○ *20	△3 *20
Paper feed tray 5 trouble	– Paper feed tray 5 breakdown		U6(09)		△3 *20	○ *20	○ *20	○ *20	△3 *20	△3 *10 *20	○ *20	△3 *20

Trouble content		Judg-ment block	Trouble code		Operatable mode							
			MX-xx60 MX-xx70 series	MX-xx50 series	Copy scan (including interrup-tion)	Scan (Push)	Scan (Pull)	ScanTo HDD	Print	List print	FAX Send	FAX print
Paper feed tray 5 trouble	– Paper feed tray 5 breakdown	PCU	U6(20, 21, 22, 51)		△3	○	○	○	△3	△3 *10	○	△3
Paper feed tray other troubles	– Paper feed tray other breakdown		U6(00, 10, 50, 52, 54, 55)		△11	○	○	○	△11	△11 *10	○	△11
Finisher trouble	– After-process breakdown		F1(00, 01, 02, 03, 04, 05, 06, 08, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22, 23, 28, 29, 30, 31, 32, 33, 34, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 53, 54, 55, 78, 83, 89)		△4	△4	△4	△4	△4	△4 *10	△4	△4
Other troubles	– Other troubles		EE(EC, EL, EU)		○	○	○	○	○	○	○	○
Process control trouble	– Process control breakdown (PCU detection)		F2(39, 49, 50, 51, 52, 53, 58, 78)		○ *12	○	○	○	○	○	○	○
Operation disable trouble	– Connection trouble (Model data discrepancy) (SCU detection)	SCN-MFP	A0(22)		×	×	×	×	×	×	×	×
Color system trouble (SCU detection)	– SCU Color trouble (SCU detection)		UC(02)		△9	△9	△9	△9	○	○	△9	○
Anti-copy trouble	– Anti-copy system		UC(20)		×	×	×	×	○	○	×	○
Scanner trouble 1	– EEPROM error		U2(80, 81)		× *20	× *20	× *20	× *20	○ *20	○ *20	× *20	○ *20
Scanner trouble 2	– Scanner section breakdown (mirror motor, lens, copy lamp)		L1(00) L3(00)		×	×	×	×	○	○	×	○
CCD trouble	– CCD breakdown (shading, etc.)		E7(10, 11, 14)		×	×	×	×	○	○	×	○

(2) Trouble where only history data are saved

Trouble content	Judg-ment block	Trouble code		Operatable mode							
		Phoenix	Griffin	Copy scan (including interrup-tion)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
Trouble history	PCU	F2(45) L4(09, 75, 76, 77, 78, 79)		○	○	○	○	○	○	○	○
	SCN-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.

△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.

△11: When detected during other than a job, the operation is enabled in other than the DESK and the LCC.

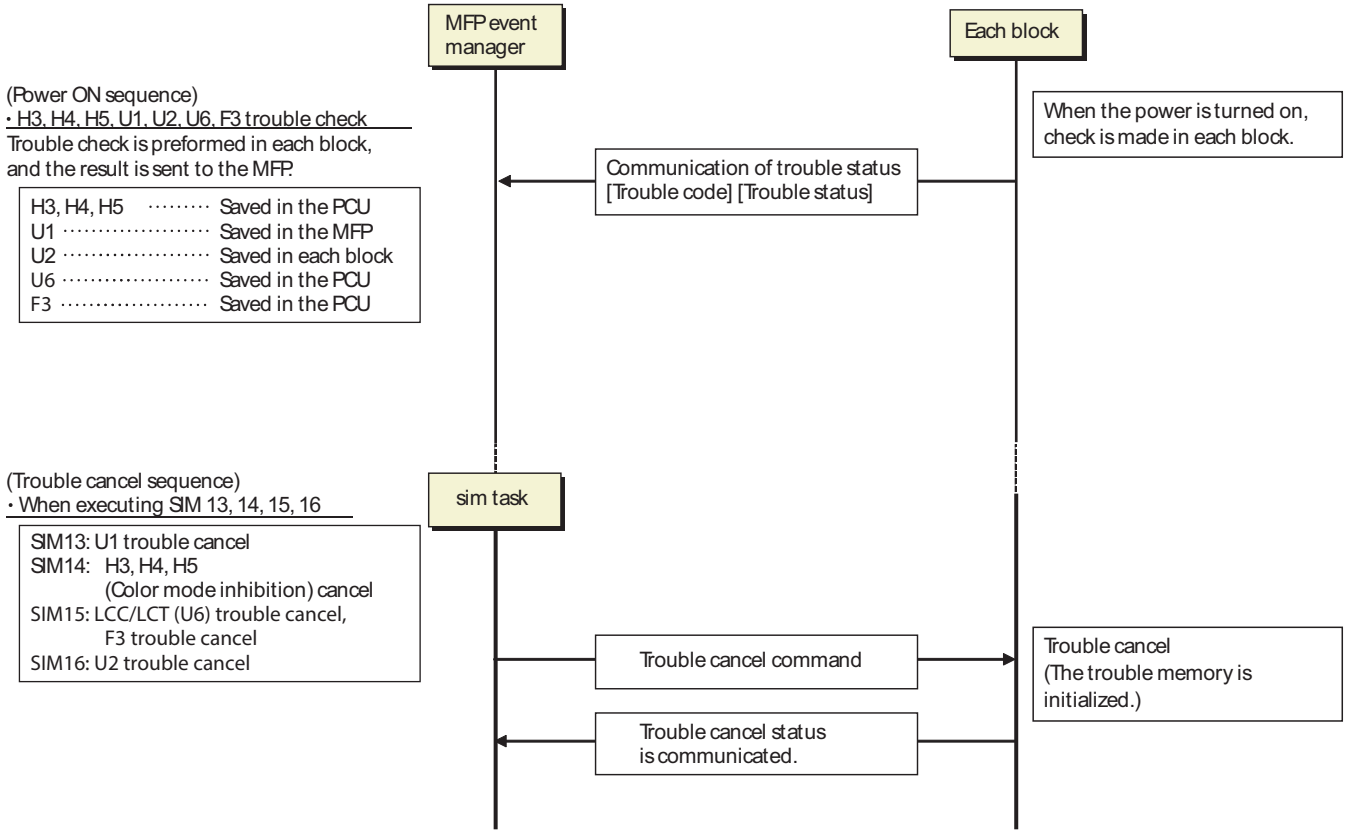
*12: A trouble message is displayed. (Example: Ready to copy. F2 trouble)

△15: FAST notification function (When in U2-22, trouble notification cannot be made. If there is no abnormality in the FAX software or the FAST data in U2-23, trouble notification can be made.)

△17: Job execution enable only in a format other 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.

(3) 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) ↑ ↓ Last (High 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)
	U2	11	MFPC PWB EEPROM counter check sum error
		00	MFP EEPROM read/write error
	E7	48	Scanner expansion PWB ASIC memory error
		47	Inconsistency between the MFP and the ACRE firmware
		42	Image data trouble (Scanner expansion PWB (ACRE) ASIC)
	A0	04	Scanner expansion PWB (ACU) ROM error
	U1	01	Battery trouble
	E7	60	Combination error between PWB and firmware (MFPC PWB detection)

F. Trouble code list

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
A0	01	PCU PWB ROM error	SCN-MFP			O		
	02	SCN-MFP PWB ROM error	SCN-MFP			O		
	04	ACU ROM error	SCN-MFP			O		
	10	Controler ROM error	SCN-MFP			O		
	15	Incompatible DSK BOOT and program firmware	SCN-MFP			O		
	17	Inconsistency between the UI data and the CPU firmware version	SCN-MFP			O		
	18	Incompatible ASIC-MAIN firmware	SCN-MFP			O		
	20	Conflict firmware and EEPROM data version (MFP)	SCN-MFP			O		
	21	Conflict firmware and EEPROM data version (PCU)	PCU			O		
	22	Conflict firmware and EEPROM data version (SCU)	SCN-MFP			O		
C1	10	Main charger trouble (Monochrome)	PCU			O		
	14	Main charger trouble (Color)	PCU			O		
	15	High voltage MC-K circuit trouble	PCU			O		
	16	High voltage MC-CL circuit trouble	PCU			O		
	40	High voltage MC PWB trouble	PCU			O		
	41	High voltage MC/TC PWB trouble	PCU			O		
C4	00	PTC high voltage trouble	PCU			O		
	05	High voltage PTC circuit trouble	PCU			O		
	20	1TC high voltage trouble	PCU			O		
	25	High voltage 1TC circuit trouble	PCU			O		
	30	2TC open trouble	PCU			O		
	31	2TC short trouble	PCU			O		
	35	High voltage 2TC circuit trouble	PCU			O		
	40	High voltage TC PWB trouble	PCU			O		
E7	01	MFP image data error	SCN-MFP			O		
	03	HDD trouble	SCN-MFP			O		
	04	HDD-ASIC error	SCN-MFP			O		
	10	Shading error (Black correction)	SCN-MFP			O		
	11	Shading error (White correction)	SCN-MFP			O		
	14	CCD-ASIC error	SCN-MFP			O		
	20	LSU laser detection error (K)	PCU			O		
	21	LSU laser detection error (C)	PCU			O		
	22	LSU laser detection error (M)	PCU			O		
	23	LSU laser detection error (Y)	PCU			O		
	24	LSU LD driver trouble (K)	PCU			O		
	25	LSU LD driver trouble (C)	PCU			O		
	26	LSU LD driver trouble (M)	PCU			O		
	27	LSU LD driver trouble (Y)	PCU			O		
	28	LSU - PCU connection error	PCU			O		
	29	LSU ASIC frequency error	PCU			O		
	42	Image data trouble (Scanner expansion PWB (ACRE) ASIC)	SCN-MFP			O		
	46	Image data decode error (Scanner expansion PWB (ACRE) ASIC)	SCN-MFP			O		
	47	Inconsistency between the MFP and the ACRE firmware	SCN-MFP			O		
	48	Scanner expansion PWB (ACRE) ASIC memory error	SCN-MFP			O		
	49	Water Mark data error	SCN-MFP			O		
	50	Combination error between PWB and firmware (PCU PWB detection)	PCU			O		
	55	PCU PWB information sum error	PCU			O		
	60	Combination error between PWB and firmware	SCN-MFP			O		
	61	Combination error between the SCN-MFP PWB and the PCU PWB	SCN-MFP			O		
	62	Combination error between the SCN-MFP PWB and the Scanner	SCN-MFP			O		
	80	MFP - SCU PWB communication error	SCN-MFP			O		
	90	SCN-MFP - PCU PWB communication error	SCN-MFP			O		
	91	FAX reception image data error	SCN-MFP			O		
	92	Copy image data error	SCN-MFP			O		
	93	Copy, image send, FAX, filing, print image data process error	SCN-MFP			O		
	94	Image file data process error (when importing file data)	SCN-MFP			O		
	96	MFPC PWB memory check error	SCN-MFP			O		
	99	LSU LD driver connection trouble	PCU			O		
	A0	LSU EEPROM/LD driver read/write error (K)	PCU			O		
	A1	LSU EEPROM/LD driver read/write error (C)	PCU			O		
	A2	LSU EEPROM/LD driver read/write error (M)	PCU			O		
	A3	LSU EEPROM/LD driver read/write error (Y)	PCU			O		
	A7	mSATA SSD trouble	SCN-MFP			O		
EE	EC	Auto toner density adjustment error	PCU			O		
	EL	Auto toner density adjustment error (over toner)	PCU			O		
	EU	Auto toner density adjustment error (under toner)	PCU			O		

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F1	00	Finisher - PCU PWB communication error	PCU		O			
	01	Jogger motor trouble	PCU		O			
	02	Inlet transport motor trouble	PCU		O			
	03	Swinging motor trouble	PCU		O			
	04	Finisher paddle trouble	PCU		O			
	05	Return belt motor trouble	PCU		O			
	06	Paper exit transport/Tapping motor trouble	PCU		O			
	08	Stapler moving motor trouble	PCU		O			
	10	Staple operation trouble	PCU		O			
	11	Finisher grip motor trouble	PCU		O			
	12	Proof transport motor trouble	PCU		O			
	13	Paper exit guide plate switching motor trouble	PCU		O			
	14	Rear paper edge flap motor trouble	PCU		O			
	15	Finisher paper exit tray lift operation trouble	PCU		O			
	16	Escape/Saddle transport switching flapper motor trouble	PCU		O			
	18	Finisher paper bundle hold motor section trouble	PCU		O			
	19	Finisher Jogger motor F trouble	PCU		O			
	20	Finisher Jogger motor R trouble	PCU		O			
	22	Finisher assist motor trouble	PCU		O			
	23	Safety switch trouble	PCU		O			
	28	Flap motor trouble	PCU		O			
	29	Fuse break detection	PCU		O			
	30	Communication error between finisher and saddle unit	PCU		O			
	31	Finisher saddle motor trouble (Saddle stitch finisher) (FSFOM)	PCU		O			
	32	Communication error between the finisher and the punch unit (Saddle stitch finisher)	PCU		O			
	33	Punch unit shift operation trouble	PCU		O			
	34	Punch operation trouble	PCU		O			
	35	Side registration detection motor trouble	PCU		O			
	37	Finisher PWB backup memory error	PCU		O			
	38	Finisher punch unit PWB backup memory error	PCU		O			
	41	Saddle paper positioning operation trouble	PCU		O			
	42	Switching lever drive motor trouble	PCU		O			
	43	Saddle alignment operation trouble	PCU		O			
	44	Gripper motor trouble	PCU		O			
	45	Saddle staple trouble	PCU		O			
	46	Saddle pushing plate motor section trouble	PCU		O			
	47	Saddle paper transport motor trouble	PCU		O			
	48	Bundle transport upper pressure release / reference fence escape motor trouble	PCU		O			
	49	Bundle transport lower pressure release motor trouble	PCU		O			
	50	Main unit - Finisher combination error	PCU		O			
	51	Communication trouble between the finisher main and sub	PCU		O			
	53	Unsupported main unit error	PCU		O			
	54	Unset finisher punch unit destination trouble	PCU		O			
	55	After-process unit ROM error	PCU		O			
	78	Finisher staple-free staple motor section trouble	PCU		O			
	83	Guide sub motor trouble	PCU		O			
	89	Shift motor trouble	PCU		O			
F2	22	Discharge lamp trouble (K)	PCU					O
	23	Discharge lamp trouble (C)	PCU					O
	24	Discharge lamp trouble (M)	PCU					O
	25	Discharge lamp trouble (Y)	PCU					O
	39	Process thermistor trouble	PCU					O
	40	Toner density sensor trouble (K)	PCU					O
	41	Toner density sensor trouble (C)	PCU					O
	42	Toner density sensor trouble (M)	PCU					O
	43	Toner density sensor trouble (Y)	PCU					O
	45	Color image density sensor trouble	PCU					O
	49	LSU thermistor trouble	PCU					O
	50	K drum phase sensor trouble	PCU					O
	51	CL drum phase sensor trouble	PCU					O
	58	Temperature/humidity sensor trouble (HUD_M/TH_M)	PCU					O
	64	Toner supply operation trouble (K)	PCU					O
	65	Toner supply operation trouble (C)	PCU					O
	66	Toner supply operation trouble (M)	PCU					O
F2	67	Toner supply operation trouble (Y)	PCU					O
	70	Improper toner cartridge detection (K)	PCU					O
	71	Improper toner cartridge detection (C)	PCU					O

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Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F2	72	Improper toner cartridge detection (M)	PCU					O
	73	Improper toner cartridge detection (Y)	PCU					O
	74	Toner cartridge CRUM error (K)	PCU					O
	75	Toner cartridge CRUM error (C)	PCU					O
	76	Toner cartridge CRUM error (M)	PCU					O
	77	Toner cartridge CRUM error (Y)	PCU					O
	78	Registration image density sensor trouble	PCU					O
	95	Eject operation trouble (K)	PCU					O
	96	Eject operation trouble (C)	PCU					O
	97	Eject operation trouble (M)	PCU					O
	98	Eject operation trouble (Y)	PCU					O
F3	12	Paper feed tray 1 lift operation trouble	PCU	O				
	22	Paper feed tray 2 lift operation trouble	PCU	O				
F6	00	MFPC PWB - FAX communication trouble	SCN-MFP				O	
	01	FAX control PWB EEPROM read/write error	FAX				O	
	02	FAX power supply trouble	FAX				O	
	04	FAX MODEM operation trouble	FAX				O	
	21	Improper combination of TEL/LIU PWB and FAX soft switch	FAX				O	
	30	FAX 1-chip microprocessor access error (FAX detection)	FAX				O	
	97	Incompatibility between FAX control PWB and the main machine	SCN-MFP				O	
	98	Incompatibility between the FAX control PWB destination and the main machine destination	SCN-MFP				O	
H2	00	Thermistor open trouble (Upper Main TH_UM detection) TH_UM	PCU	O				
	01	Thermistor open trouble (Lower Main TH_LM) TH_LM	PCU	O				
	02	Thermistor open trouble (Upper Sub TH_US1 detection) TH_SUB2_2	PCU	O				
	03	Thermistor open trouble (Upper Main TH_UM compensation) TH_UM_CS	PCU	O				
	05	Thermistor open trouble (Upper Sub TH_US1 compensation) TH_SUB2_2_CS	PCU	O				
	06	Thermistor open trouble (Upper edge) TH_US2	PCU	O				
H3	00	Fusing section high temperature trouble (Upper Main) TH_UM	PCU	O				
	01	Fusing section high temperature trouble (Lower Main) TH_LM	PCU	O				
	02	Fusing section high temperature trouble (Upper Sub) TH_US1	PCU	O				
1 H4	00	Fusing section low temperature trouble (Upper Main) TH_UM	PCU	O				
	01	Fusing section low temperature trouble (Lower Main) TH_LM	PCU	O				
	02	Fusing section low temperature trouble (Upper Sub) TH_US1	PCU	O				
	30	Upper main thermistor differential input abnormality (TH_UM)	PCU	O				
	32	Upper sub thermistor differential input abnormality (TH_US1)	PCU	O				
H5	01	5 times continuous POD1 not-reach jam	PCU	O				
H7	10	Recovery error from low fuser temp. (TH_UM)	PCU	O				
	11	Recovery error from low fuser temp. (TH_US1)	PCU	O				
L1	00	Scanner feed trouble	SCU	O				
L3	00	Scanner return trouble	SCU	O				
L4	02	Paper feed motor trouble	PCU			O		
	03	Fusing motor trouble	PCU			O		
	06	Transfer unit lift trouble	PCU			O		
	09	PS motor trouble	PCU			O		
	11	Shift motor trouble	PCU			O		
	12	Secondary transfer separation trouble	PCU	O		O		
	16	Fusing pressure release trouble	PCU			O		
	17	Drum motor lock trouble (BK)	PCU			O		
	18	Drum motor lock trouble (CL)	PCU			O		
	32	Power source cooling fan trouble	PCU			O		
	35	Fusing cooling fan trouble	PCU			O		
	43	Paper exit cooling fan 2 trouble	PCU			O		
	50	Process fan trouble	PCU			O		
	51	Process fan 2 trouble	PCU			O		
	71	Motor control IC access error	PCU			O		
	75	Paper exit motor lock trouble	PCU			O		
	76	Reverse motor lock trouble	PCU			O		
	77	ADU motor Upper lock trouble	PCU			O		
	78	ADU motor Lower lock trouble	PCU			O		
	79	PS front motor lock trouble	PCU			O		
L6	10	Polygon motor trouble	PCU			O		
L8	01	Full wave signal detection error	PCU			O		
	02	Full wave signal error	PCU			O		
	20	Communication error of MFPC PWB/LSU mother board	SCN-MFP			O		
PC	-	Personal counter not detected	SCN-MFP	O				
U1	01	Battery trouble	SCN-MFP			O		

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
U2	00	MFP EEPROM read/write error	SCN-MFP			O		
	05	Erroneous detection of account management data / HDD internal authentication DB table error	SCN-MFP			O		
	11	MFPC PWB EEPROM counter check sum error	SCN-MFP			O		
	30	MFPC PWB and PCU PWB manufacturing No. data inconsistency	SCN-MFP			O		
	40	SD card system storage data area error	SCN-MFP			O		
	41	HDD system storage data area error	SCN-MFP			O		
	42	Machine adjustment data (system storage data area) error	SCN-MFP			O		
	50	HDD user authentication data check sum error	SCN-MFP			O		
	60	Watermark check error	SCN-MFP			O		
	70	OCR dictionary check error	SCN-MFP			O		
	80	SCN MFP PWB EEPROM read/write error	SCN-MFP			O		
	81	SCN MFP PWB EEPROM check sum error	SCN-MFP			O		
	90	PCU PWB EEPROM read/write error	PCU			O		
	91	PCU PWB EEPROM check sum error	PCU			O		
U6	00	PCU PWB - Paper feed desk (paper feed tray 3, 4) communication trouble	PCU			O		
	01	Desk paper feed tray 1 lift trouble	PCU		O			
	02	Desk paper feed tray 2 lift trouble	PCU		O			
	09	LCC lift motor trouble	PCU		O			
	10	Desk paper feed unit paper transport motor trouble	PCU		O			
	20	LCC control PWB - PCU PWB communication error	PCU		O			
	21	LCC transport motor trouble	PCU		O			
	22	LCC 24V power abnormality	PCU		O			
	23	LCC tray descending trouble	PCU		O			
	50	Desk - Main unit combination trouble	PCU		O			
	51	LCC - Main unit combination trouble	PCU		O			
	52	PCU PWB - Paper feed desk (paper feed tray 2) communication trouble	PCU		O			
	54	Option installation combination trouble (LCC)	PCU		O			
	55	Option installation combination trouble (DESK)	PCU		O			
U7	50	MFPC PWB - Vendor machine communication error	SCN-MFP			O		
	51	Vendor machine error	SCN-MFP			O		
U9	01	Touch panel trouble	SCN-MFP			O		
UC	02	CPT - ASIC error	SCN-MFP			O		
	20	DOCC ASIC error	SCN-MFP			O		

G. Details of error codes and countermeasures

A0-01 PCU PWB ROM error

Trouble detection	PCU
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 SCN-MFP PWB ROM error

Trouble detection	SCN-MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. SCN-MFP PWB trouble.
Check & Remedy	Use SIM49-1 to perform the firmware version-up procedure again. Replace the SCN-MFP PWB.

A0-04 ACU ROM error

Trouble detection	SCN-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 Controller ROM error

Trouble detection	SCN-MFP
Cause	The content of the color profile is abnormal. Combination error between the SCN-MFP PWB firmware and the color profile
Check & Remedy	Upgrade the firmware collectively. Replace the SCN-MFP PWB.

A0-15 Incompatible DSK BOOT and program firmware

Trouble detection	SCN-MFP
Cause	Installation of the normal firmware was performed with a security kit enable.
Check & Remedy	Stop installation of the normal firmware.

A0-17 Inconsistency between the UI data and the CPU firmware version

Trouble detection	SCN-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.

A0-18 Conflict firmware version ASIC-MAIN

Trouble detection	SCN-MFP
Cause	Combination version error in MFPC ASIC
Check & Remedy	Check the combination of the firmware. Use SIM49-1 to perform the firmware version-up procedure again.

A0-20 Machine level error (CTL detection)

Trouble detection	SCN-MFP
Cause	Inconsistency between the MFP firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

A0-21 Machine level error (PCU detection)

Trouble detection	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 (SCN-MFP)

Trouble detection	SCN-MFP
Cause	Inconsistency between the SCN-MFP PWB firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

C1-10 Main charger trouble (Monochrome)

Trouble detection	PCU
Cause	Open circuit or short circuit of the main charger (Black) output
1) Check & Remedy	Use SIM8-2 to check the output of [GB-K]. If the leakage noise or the flickering on the screen of the panel is detected; (1) Abnormality of the charger (BK) -> Remove and insert the charger (BK) or replace the charger (BK). (2) Imperfect insertion of the charger (BK) -> Remove and insert the charger (BK). (3) Abnormality of MC-K harness (Transformer B801 of the high-voltage MC PWB) -> Remove and insert MC-K harness or replace MC-K harness. (4)Abnormality of GB-K/DV-KCMY wiring -> Check GB-K/DV-KCMY wiring./Replace. (5) Abnormality of the developing unit (K/C/M/Y) -> Insert and remove the developing unit./Replace. (6) Abnormality of the high voltage MC PWB spring contact (GB,DV). -> Check the high voltage MC PWB spring contact.
2) Check & Remedy	Use SIM8-2 to check the output of [GB-K]. If the leakage noise etc. is not detected; (1) Charger (BK) not inserted. -> Insert the Charger (BK). (2) Disconnection/ breakage of MC-K harness (Transformer B801 of the high-voltage MC PWB) -> Insert the harness./Replace. (3) High MC PWB trouble. -> Replace the high MC PWB. (4) PCU PWB trouble -> Replace PCU PWB.

C1-14 Main charger trouble (Color)

Trouble detection	PCU
Cause	Open circuit or short circuit of the main charger (Color) output
1) Check & Remedy	Use SIM8-2 to check the output of [GB-C/M/Y]. If the leakage noise or the flickering on the screen of the panel is detected; (1) Abnormality of the charger (C/M/Y) -> Remove and insert the charger (C/M/Y) or replace the charger (C/M/Y). (2) Imperfect insertion of the charger (C/M/Y) -> Remove and insert the charger (C/M/Y). (3) Abnormality of MC-CL harness (Transformer B901 of the high-voltage MC PWB) -> Remove and insert MC-CL harness or replace MC-CL harness. (4)Abnormality of GB-CMY wiring -> Check GB-CMY wiring./Replace. (5)Abnormality of the high voltage MC PWB spring contact (GB,DV) -> Check the high voltage MC PWB spring contact.
2) Check & Remedy	Use SIM8-2 to check the output of [GB-C/M/Y]. If the leakage noise etc. is not detected; (1) Charger (C/M/Y) not inserted. -> Insert the Charger (C/M/Y). (2) Disconnection/ breakage of MC-CL harness (Transformer B901 of the high-voltage MC PWB) -> Insert the harness./Replace. (3) High MC PWB trouble. -> Replace the high MC PWB. (4) PCU PWB trouble -> Replace PCU PWB.

C1-15 High-voltage MC Black circuit trouble

Trouble detection	PCU
Cause	1) Pin getting away of a harness (MC-K-ERR) and breaking (MC PWB Input connector CN1-10pin) 2) High-voltage error circuit (MC-K-ERR) damage
Check & Remedy	1) Check connection of the harness.(MC PWB Input connector CN1-10pin) Replace the harness. 2) Check disconnection of the high voltage MC PWB connector./Replace.

C1-16 High-voltage MC color circuit trouble

Trouble detection	PCU
Cause	1) Pin getting away of a harness (MC-CMY-ERR) and breaking (MC PWB Input connector CN1-11pin) 2) High-voltage error circuit (MC-CMYERR) damage
Check & Remedy	1) Check connection of the harness.(MC PWB Input connector CN1-11pin) Replace the harness. 2) Check disconnection of the high voltage MC PWB connector./Replace.

C1-40 High-voltage MC PWB trouble

Trouble detection	PCU
Cause	1) Input harness disconnection in the high voltage MC PWB. 2) Harness (MC-K-ERR, MC-CMY-ERR) pin disconnection (MC PWB input connector CN1-10pin,CN1-11pin) 3) 24V fuse meltdown in the high voltage MC PWB 4) High voltage error circuit (MC-K-ERR, MC-CMY-ERR) breakage in the high voltage MC PWB
Check & Remedy	1) Check the harness and the connector (MC PWB Input connector CN1) 2) Check or replace the harness.(MC PWB input connector CN1-10pin, CN1-11pin) 3) 4) Replace the MC PWB

C1-41 High-voltage MC/TC PWB trouble

Trouble detection	PCU
Cause	1) PCU connector (input harness to the high voltage MC PWB and the TC PWB) disconnection. (PCU PWB input CN10) 2) Both input connectors disconnections of the high voltage MC PWB and the high voltage TC PWB.(MC PWB input connector CN1,TC PWB input connector CN1) 3) 24V fuses meltdown in the high voltage MC PWB and the high voltage TC PWB
Check & Remedy	1) Check the connections of the connectors to the high voltage MC PWB and the high voltage TC PWB on the PCU PWB or connect these connectors again (PCU PWB input CN10). 2) Check the connectors of the high voltage MC PWB and the high voltage TC PWB and connect these connectors again.(MC PWB input connector CN1,TC PWB input connector CN1) 3) Check or replace the high voltage MC PWB and the high voltage TC PWB

C4-00 PTC High-voltage output trouble

Trouble detection	PCU
Cause	(1) Abnormality of PTC unit (2) Imperfection insertion of PTC unit (3) PTC unit not inserted (4) Disconnection, abnormality of PTC unit. (Transformer B801 of the high-voltage TC PWB) (5) High voltage TC PWB trouble (6) PCU PWB trouble
Check & Remedy	(1)Remove and insert PTC unit./Replace. (2) Remove and insert PTC unit. (3) Insert PTC unit. (4) Insert PCT harness. /Replace. (Transformer B801 of the high-voltage TC PWB) (5) Replace the high voltage TC PWB. (6 Replace PCU PWB.

C4-05 High-voltage MC Black circuit trouble

Trouble detection	PCU
Cause	1) Pin getting away of a harness (PTC-ERR) and breaking (TC PWB Input connector CN1-4pin) 2) High-voltage error circuit (PTC-ERR) damage
Check & Remedy	1) Check connection of the harness.(TC PWB Input connector CN1-4pin) Replace the harness. 2) Check disconnection of the high voltage TC PWB connector./Replace.

C4-20 1st transfer High-voltage output trouble

Trouble detection	PCU
Cause	Open circuit of the 1st transfer out put.
1) Check & Remedy	Use SIM8-6 to check the out put of [1TC-K/C/M/Y].If the leakage noise or the flickering on the screen of the panel is detected; (1) Abnormality of 1ST transfer unit. --> Remove and insert the 1ST transfer unit. --> Replace the 1ST transfer unit. (2) Imperfect insertion the 1ST transfer unit. --> Remove and insert the 1ST transfer unit. (3) Abnormality of the 1TC-K/C/M/Y harness. --> Check 1TC-K/C/M/Y wiring.Replace. (4) Abnormality of the high voltage TC PWB spring contact. --> Check the high voltage TC PWB spring contact. (5) High TC PWB trouble. --> Replace the high TC PWB. (6) PCU PWB trouble. --> Replace the PCU PWB.
2) Check & Remedy	Check the operation of the 1ST transfer separation clutch1/2(1TURC_1,1TURC_2). If the clutch or gera do not move smoothly or have noise, (1) Abnormality of 1ST transfer separation clutch. --> Check connection of harness and check the clutch. --> Replace the clutch. (2) Abnormality of 1ST transfer unit. --> Check the 1ST transfer unit. --> Replace the 1ST transfer unit.
3) Check & Remedy	Check the operation of OPC Drum. If it is not normal movement, (1) Abnormality of Drum drive motor (DVM_K.DVM_CL). --> Check Drum drive motor (DVM_K,DVM_CL). (2) Abnormality of OPC Drum (K/C/M/Y). --> Check OPC Drum (K/C/M/Y). --> Replace OPC Drum (K/C/M/Y).

C4-25 High-voltage 1TC circuit trouble

Trouble detection	PCU
Cause	1) Pin getting away of a harness (1TC-ERR) and breaking (TC PWB Input connector CN1-2pin) 2) High-voltage error circuit (1TC-ERR) damage
Check & Remedy	1) Check connection of the harness.(1TC PWB Input connector CN1-2pin) Replace the harness. 2) Check disconnection of the high voltage TC PWB connector./Replace.

C4-30 2nd transfer High-voltage output trouble (open)

Trouble detection	PCU
Cause	Open circuit of the 2nd transfer out put.
1) Check & Remedy	Use SIM8-6 to check the out put of [2TC]. If the leakage noise or the flickering on the screen of the panel is detected; (1) Abnormality of 1ST transfer unit. --> Remove and insert the 1ST transfer unit. --> Replace the 1ST transfer unit. (2) Imperfect insertion the 1ST transfer unit. --> Remove and insert the 1ST transfer unit. (3) Abnormality of 2nd transfer unit. --> Remove and insert the 2nd transfer unit. --> Replace the 2ST transfer unit. (4) Imperfect insertion the 2nd transfer unit. --> Remove and insert the 2nd transfer unit. (5) Abnormality of the 2nd TC harness. (Transformer B501 of the high-voltage TC PWB) --> Check 2nd TC harness wiring.Replace. (6) High voltage TC PWB trouble. --> Replace the high voltage TC PWB. (7) PCU PWB trouble. --> Replace the PCU PWB.
2) Check & Remedy	Check the operation of the 2nd transfer separation clutch (2TCRC). If the clutch or gera do not move smoothly or have noise, (1) Abnormality of 2nd transfer separation clutch. --> Check connection of harness and check the clutch. --> Replace the clutch. (2) Abnormality of 2nd transfer unit. --> Check the 2nd transfer unit. --> Replace the 2nd transfer unit.

C4-31 2nd transfer High-voltage output trouble (short)

Trouble detection	PCU
Cause	1) Abnormality of 1ST transfer unit. 2) Imperfect insertion the 1ST transfer unit. 3) High voltage TC PWB trouble.
Check & Remedy	Use SIM8-6 to check the out put of [2TC]. 1) Check the 1ST transfer unit. Replace the 1ST transfer unit. 2) Remove and insert the 1ST transfer unit. 3) Replace the high TC PWB.

C4-35 High-voltage 2TC circuit trouble

Trouble detection	PCU
Cause	1) Pin getting away of a harness (2TC-ERR) and breaking (TC PWB Input connector CN1-3pin) 2) High-voltage error circuit (2TC-ERR) damage
Check & Remedy	1) Check connection of the harness.(TC PWB Input connector CN1-3pin) Replace the harness. 2) Check disconnection of the high voltage TC PWB connector./Replace.

C4-40 High-voltage TC PWB trouble

Trouble detection	PCU
Cause	1) Input harness disconnection in the high voltage TC PWB. 2) Harness (1TC-ERR, 2TC-ERR, PTC-ERR) pin disconnection 3) 24V fuse meltdown in the high voltage TC PWB 4) High voltage error circuit (1TC-ERR, 2TC-ERR, PTC-ERR) breakage in the high voltage TC PWB
Check & Remedy	1) Check the harness and the connector (TC PWB Input connector CN1) 2) Check or replace the harness.(TC PWB input connector CN1-2pin, CN1-3pin, CN1-4pin) 3) 4) Replace the MC PWB

E7-01 SCN-MFP image data error

Trouble detection	MFP
Cause	Image data transfer error in the SCN-MFP PWB. SCN-MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the SCN-MFP PWB. Check or replace the SCN-MFP PWB.

E7-03 HDD trouble

Trouble detection	SCN-MFP
Cause	Connector, harness connection trouble in the SCN-MFP PWB and HDD. HDD (error file management area) data abnormality (FAT breakage). SCN-MFP PWB trouble.
	Break down HDD HDD connector trouble error file management area data abnormality (FAT breakage)
	HDD is not set normally. SCN-MFP PWB trouble
Check & Remedy	Check connection of the connector and the harness of the SCN-MFP PWB and HDD. Use SIM62-2, 3 to check read/write operations of the HDD. Replace the HDD. Check or replace the SCN-MFP PWB.

E7-04 HDD-ASIC error

Trouble detection	SCN-MFP
Cause	ASIC trouble. (SCN-MFP PWB trouble.)
Check & Remedy	Check or replace the SCN-MFP PWB.

E7-10 Shading error Black correction (OC)

Trouble detection	SCN-MFP
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. SCN-MFP PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check the CCD unit. Check or replace the SCN-MFP PWB.

E7-11 Shading error White correction (OC)

Trouble detection	SCN-MFP
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. SCN-MFP 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 SCN-MFP PWB.

E7-14 CCD-ASIC error (OC)

Trouble detection	SCN-MFP
Cause	SCN-MFP PWB trouble. CCD unit trouble. Improper Installation of the harness to the CCD unit.
Check & Remedy	Check or replace the SCN-MFP PWB. Check or replace the CCD unit. Check connection of the harness to the CCD unit.

E7-20 LSU laser detection error (K)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU PWB trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU harness and connector. Replace the LSU.

E7-21 LSU laser detection error (C)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU PWB trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU harness and connector. Replace the LSU.

E7-22 LSU laser detection error (M)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU PWB trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU harness and connector. Replace the LSU.

E7-23 LSU laser detection error (Y)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU harness, connector trouble LSU PWB trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU harness and connector. Replace the LSU.

E7-24 LSU LD driver error (K)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU connector trouble LSU PWB trouble
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check or replace the LSU PWB. Check connection of the LSU connector. Replace the LSU.

E7-25 LSU LD driver error (C)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU connector trouble. LSU PWB trouble.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU connector. Replace the LSU.

E7-26 LSU LD driver error (M)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU connector trouble. LSU PWB trouble.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU connector. Replace the LSU.

E7-27 LSU LD driver error (Y)

Trouble detection	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. LSU connector trouble. LSU PWB trouble.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the LSU PWB. Check connection of the LSU connector. Replace the LSU.

E7-28 LSU - PCU connection error

Trouble detection	PCU
Cause	Communication error between the CPU in the PCU PWB and the LSU PWB ASIC. Improper connection of the communication connector between the PCU PWB and the LSU PWB. Harness trouble between the PCU PWB and the LSU PWB. PCU PWB trouble. LSU control PWB trouble. LSU trouble. LSU mother PWB trouble.
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU PWB. Check the LSU PWB. Replace the PCU PWB. Replace the LSU.

E7-29 LSU ASIC frequency error

Trouble detection	PCU
Cause	Oscillation abnormality of the external oscillator used in the LSU ASIC. LSU ASIC abnormality on the LSU PWB. Frequency abnormality of picture transfer clock of SCN-MFP PWB.
Check & Remedy	Check the LSU PWB. Check connection of the connector and the harness between the SCN-MFP PWB and the LSU PWB.

E7-42 Image data trouble (Scanner expansion PWB (ACRE) ASIC)

Trouble detection	SCN-MFP
Cause	An image data error occurs. An image data send error occurs. Scanner expansion PWB (ACRE) connection trouble. Scanner expansion PWB (ACRE) trouble. SCN-MFP PWB trouble.
Check & Remedy	Check connection of the scanner expansion PWB (ACRE). Check the scanner expansion PWB (ACRE), and replace if necessary. Check the SCN-MFP PWB, and replace if necessary.

E7-46 Image data decode error (Scanner expansion PWB (ACRE) ASIC)

Trouble detection	SCN-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. SCN-MFP PWB trouble.
Check & Remedy	Check connection of the scanner expansion PWB (ACRE). Check the scanner expansion PWB (ACRE), and replace if necessary. Check the SCN-MFP 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 detection	SCN-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. SCN-MFP 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 SCN-MFP PWB, and replace if necessary.

E7-49 Water Mark data error

Trouble detection	SCN-MFP
Cause	Watermark data trouble. mSATA SSD trouble.
Check & Remedy	Use SIM49-5 to upload the watermark data. Replace the mSATA SSD.

E7-50 engine connection trouble

Trouble detection	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 detection	PCU
Cause	PCU EEPROM sum check error. PCU EEPROM trouble. PCU EEPROM contact trouble.
Check & Remedy	Replace the PCU PWB. Replace the PCU EEPROM.

E7-60 Combination error between PWB and firmware

Trouble detection	SCN-MFP
Cause	A PWB/firmware which is not compatible with the machine specifications is detected in the SCN-MFP PWB. SCN-MFP PWB trouble.
Check & Remedy	Check the kind and the version of the firmware. Check or replace the SCN-MFP PWB.

E7-61 Combination error between the SCN-MFP PWB and the PCU PWB

Trouble detection	SCN-MFP
Cause	Combination error between the SCN-MFP PWB and the PCU PWB. SCN-MFP PWB trouble. PCU PWB trouble.
Check & Remedy	Check the combination between the SCN-MFP PWB and the PCU PWB. Replace the SCN-MFP PWB or PCU PWB.

E7-62 Combination error between the SCN-MFP PWB and the scanner

Trouble detection	SCN-MFP
Cause	Combination error between the SCN and the scanner on the SCN-MFP PWB.
Check & Remedy	Check the SCN-MFP PWB. Replace the SCN-MFP PWB.

E7-80 Communication error between the SCN-MFP PWB and the scanner

Trouble detection	SCN-MFP
Cause	SCN-MFP PWB trouble.
Check & Remedy	Replace the SCN-MFP PWB.

E7-90 SCN-MFP - PCU PWB communication error

Trouble detection	SCN-MFP
Cause	SCN-MFP PWB - PCU PWB connection trouble. PCU PWB trouble. SCN-MFP PWB trouble.
Check & Remedy	Check connection of the SCN-MFP PWB and PCU PWB. Replace the PCU PWB. Replace the SCN-MFP PWB.

E7-91 Decode error (FAX reception print)

Trouble detection	SCN-MFP
Cause	Compression dater abnormality. HDD trouble. mSATA SSD trouble. Image compression/transmission data corruption. SCN-MFP PWB trouble. Memory attachment state abnormality.
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 SCN-MFP PWB. Replace the FAX control PWB.

E7-92 Decode error (FCOT)

Trouble detection	SCN-MFP
Cause	Compression dater abnormality. Image compression/transmission data corruption. SCN-MFP PWB trouble DRAM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Replace the HDD. Replace the SCN-MFP PWB.

E7-93 Decode error (Usual processing)

Trouble detection	SCN-MFP
Cause	Compression dater abnormality. Image compression/transmission data corruption. SCN-MFP PWB trouble DRAM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. (FAX Job case) Check the FAX PWB. (Other case) Check connection SCN-MFP PWB and HDD Replace the SCN-MFP PWB.

E7-94 Decode error (additional processing)

Trouble detection	SCN-MFP
Cause	Compression dater abnormality. Image compression/transmission data corruption. SCN-MFP PWB trouble DRAM memory trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. (FAX Job case) check the FAX PWB. (Other case) check connection SCN-MFP PWB and HDD Replace the SCN-MFP PWB.

E7-96 SCN-MFP PWB memory check error (SCN-MFP ASIC)

Trouble detection	SCN-MFP
Cause	At the time of access, data change occurrence Abnormality of installation of the memory. Memory device trouble or contact error
Check & Remedy	Use SIM60-01 to check the read/write operations of the memory. Visually check the installation of the memory (MFP-ASIC side). Re-install the memory. If the trouble recurs, perform the following actions. Replace the memory. Replace SCN-MFP PWB.

E7-99 LSU LD driver connection trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Improper connection of the communication connector between the PCU PWB and the LSU PWB. LSU PWB trouble
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU PWB. Replace the PCU PWB. Replace the LSU PWB. Replace the harness.

E7-A0 LSU EEP ROM/LD-driver read/write error (K)

Trouble detection	PCU
Cause	EEPROM/LD-driver trouble. EEPROM/LD-driver access circuit trouble.
Check & Remedy	Check connection between PCU PWB and LSU PWB. Check the LSU PWB and replace the PCU PWB. Replace the LSU.

E7-A1 LSU EEP ROM/LD-driver read/write error (C)

Trouble detection	PCU
Cause	EEPROM/LD-driver trouble. EEPROM/LD-driver access circuit trouble.
Check & Remedy	Check connection between PCU PWB and LSU PWB. Check the LSU PWB and replace the PCU PWB. Replace the LSU.

E7-A2 LSU EEP ROM/LD-driver read/write error (M)

Trouble detection	PCU
Cause	EEPROM/LD-driver trouble. EEPROM/LD-driver access circuit trouble.
Check & Remedy	Check connection between PCU PWB and LSU PWB. Check the LSU PWB and replace the PCU PWB. Replace the LSU.

E7-A3 LSU EEP ROM/LD-driver read/write error (Y)

Trouble detection	PCU
Cause	EEPROM/LD-driver trouble. EEPROM/LD-driver access circuit trouble.
Check & Remedy	Check connection between PCU PWB and LSU PWB. Check the LSU PWB and replace the PCU PWB. 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.

EE-EC Automatic toner density adjustment error

Trouble detection	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 detection	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 detection	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.

F1-00 Finisher - PCU PWB communication error

Trouble detection	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 (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher jogger motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher jogger motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the jogger motor. Replace the home position sensor. Replace the Finisher control PWB.

F1-02 Inlet transport motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher inlet transport motor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher inlet transfer motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the inlet transfer motor. Replace the Finisher control PWB.

F1-03 Swinging motor trouble (3K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher swinging motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the finisher swinging motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher swinging motor. Replace the home position sensor Replace the finisher control PWB

F1-04 Finisher paddle trouble

Trouble detection	PCU
Cause	motor trouble. Finisher control PWB trouble. Home position sensor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM3-3 to check the operation of the finisher paddle motor. Check connection of the connector and the harness. Replace the finisher control PWB. Replace the finisher paddle motor. Replace the harness.

F1-04 Finisher paddle trouble (3K FIN)

Trouble detection	PCU
Cause	motor trouble. Clutch trouble. Finisher control PWB trouble. Connection trouble of the connector and the harness. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher exit motor. Use SIM3-3 to check the operation of the paddle drive clutch. Check connection of the connector and the harness. Replace the finisher control PWB. Replace the finisher exit motor. Replace the paddle drive clutch. Replace the paddle HP sensor. Replace the harness.

F1-05 Return belt motor trouble (INF)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Return belt motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher return belt motor. Use SIM3-2 to check the operation of the home position sensor. Replace the finisher return belt motor. Check connection of the connector and the harness. Replace the finisher control PWB.

F1-06 Paper exit transport/Tapping-Gathering roller motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Paper exit transport/Tapping-Gathering roller motor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit transport/Tapping-Gathering roller motor. Check connection of the connector and the harness. Replace the Paper exit transport/Tapping-Gathering roller motor. Replace the finisher control PWB.

F1-08 Stapler shift motor trouble

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher stapler shift motor trouble. Home position sensor trouble. Finisher control PWB 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. Check connection of the connector and the harness. Replace the stapler shift motor. Replace the home position sensor. Replace the finisher control PWB.

F1-10 Staple motor trouble

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Staple motor trouble. Home position sensor trouble. Finisher control PWB 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. Check connection of the connector and the harness. Replace the staple motor. Replace the home position sensor. Replace the finisher control PWB.

F1-11 Finisher bundle exit motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher bundle exit motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of finisher bundle exit motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher bundle exit motor. Replace the home position sensor. Replace the finisher control PWB.

F1-12 Proof transport motor trouble (1K FIN)

Trouble detection	PCU
Cause	Motor driver detects the abnormality. (DC motor control trouble) (First time is jam detection, Second time is trouble detection)
Check & Remedy	Use SIM3-3 to check the operation of the proof transport motor. Check connection of the connector and the harness. Replace the proof transport motor. Replace the finisher control PWB.

F1-13 Paper exit guide plate switching motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Paper exit guide plate switching motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit guide plate switching motor. Use SIM3-2 to check the operation of the home position sensor Check connection of the connector and the harness Replace the paper exit guide plate switching motor Replace the home position sensor Replace the finisher control PWB

F1-14 Rear paper edge flap motor trouble (3K FIN)

Trouble detection	PCU
Cause	motor trouble. Finisher control PWB trouble. Connection trouble of the connector and the harness. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher rear paper edge flap motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher control PWB. Replace the finisher rear paper edge flap motor. Replace the home position sensor. Replace the harness.

F1-15 Finisher tray lift motor trouble

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. tray lift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the tray lift motor. Use SIM3-2 to check the operation of the home position sensor. Replace the finisher control PWB. Replace the tray lift motor. Replace the home position sensor.

F1-15 Finisher tray lift motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Area sensor trouble. Paper exit paper surface detection sensor trouble. Stapler safety switch trouble.
Check & Remedy	Use SIM3-3 to check the operation of the movable tray motor Check the harness and the connector connection from the control PWB to the motor and the sensor Replace the stacker control PWB Replace the movable tray motor Replace the following area sensors. - Loading tray upper limit sensor - Loading tray home position sensor - Loading tray full load sensor (Large coat paper full) - Loading tray middle sensor (Large size full load) - Loading tray lower limit sensor Small size full load) Replace the paper exit paper surface detection sensor 1 Replace the stapler safety switch Replace the harness from the control PWB to the motor and the sensor

F1-16 Escape/Saddle transport switching flapper motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the escape/ saddle transport switching flapper motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the stacker control PWB. Replace the escape/saddle transport switching flapper motor. Replace the home position sensor. Replace the harness.

F1-18 Finisher paper bundle hold trouble (INF)

Trouble detection	PCU
Cause	Check connection from the control PWB to the motor and the sensor. Paddle motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paddle motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the paddle motor. Replace the home position sensor. Replace the finisher control PWB.

F1-19 Front alignment motor trouble

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher paper alignment motor F trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the finisher paper alignment motor F. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher paper alignment motor F. Replace the home position sensor. Replace the finisher control PWB.

F1-20 Rear alignment motor trouble

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher paper alignment motor R trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the finisher paper alignment motor R. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher paper alignment motor R. Replace the home position sensor. Replace the finisher control PWB.

F1-22 Finisher assist motor trouble (INF/3K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher assist motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the finisher assist motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher assist motor. Replace the home position sensor. Replace the finisher control PWB.

F1-23 Safety switch trouble

Trouble detection	PCU
Cause	control PWB trouble connection trouble of harness connection trouble of connector safety switch trouble front door switch trouble front door sensor trouble
Check & Remedy	Check connection between the control PWB and sensor Replace the control PWB Replace safety switch Replace front door switch Replace front door sensor

F1-28 Flap motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Flap motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the flap motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the flap motor. Replace the home position sensor. Replace the finisher control PWB.

F1-28 Drawing lift motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the drawing lift motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the drawing lift motor. Replace the home position sensor. Replace the finisher control PWB.

F1-29 Fuse break detection trouble (1K FIN)

Trouble detection	PCU
Cause	Over current (PWB breakage, harness short-circuit, solenoid trouble)
Check & Remedy	Use SIM3-3 to check the operation of the each motor and the solenoid. Use SIM3-2 to check the operation of the each sensor. Check connection of the connector and the harness. Replace each motor. Replace the finisher control PWB.

F1-30 Communication trouble between the finisher and the saddle (3K FIN)

Trouble detection	PCU
Cause	Control PWB trouble. Disconnection of harness. Connector connection trouble. Firmware of the after-process is not the latest version.
Check & Remedy	Check the harness and the connector connection from the finisher to the saddle. Replace the stacker control PWB. Replace the saddle control PWB. Replace the harness from the finisher to the saddle. Upgrade the firm wares of the master software and the saddle software.

F1-31 Finisher saddle motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Saddle motor trouble. Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the saddle motor. Check connection of the connector and the harness. Replace the saddle motor. Replace the finisher control PWB.

F1-31 Paper exit motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the paper exit motor. Replace the saddle paper exit clock sensor. Replace the harness.

F1-32 Communication trouble between the finisher and the punch unit

Trouble detection	PCU
Cause	Control PWB trouble. Disconnection of harness. Connector connection trouble. Firmware of the after-process is not the latest version.
Check & Remedy	Check connection of the connector and the harness. Replace the finisher control PWB. Replace the punch unit control PWB. Replace the harness.

F1-33 Finisher punch shift motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher punch shift motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the finisher punch shift motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher punch shift motor. Replace the home position sensor. Replace the finisher control PWB.

F1-33 Finisher punch side registration motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the punch unit side registration motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the punch control PWB. Replace the punch unit side registration motor. Replace the punch unit side registration home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-34 Punch motor trouble

Trouble detection	PCU
Cause	Punch 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 finisher punch motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher punch motor. Replace the home position sensor. Replace the finisher control PWB.

F1-35 Side registration detection motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Side registration detection motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the side registration detection motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the side registration detection motor. Replace the home position sensor. Replace the finisher control PWB.

F1-37 Finisher PWB backup memory error

Trouble detection	PCU
Cause	Finisher control PWB trouble.
Check & Remedy	Turn OFF/ON the power Replace the finisher control PWB.

F1-38 Finisher punch unit PWB backup memory error

Trouble detection	PCU
Cause	Punch control PWB trouble.
Check & Remedy	Turn OFF/ON the power Replace the punch control PWB.

F1-41 Saddle paper positioning motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher saddle paper positioning motor trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher saddle paper positioning motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher saddle paper positioning motor. Replace the home position sensor. Replace the finisher control PWB.

F1-41 Saddle paper positioning motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble
Check & Remedy	Use SIM3-3 to check the operation of the rear edge stopper motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the rear edge stopper motor. Replace the rear edge stopper home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-42 Switching lever drive motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble
Check & Remedy	Use SIM3-3 to check the operation of the switching lever drive motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the switching lever drive motor. Replace the switching lever home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-43 Saddle alignment operation trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle alignment motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the saddle alignment motor. Replace the home position sensor. Replace the finisher control PWB.

F1-44 Gripper motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the gripper motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the gripper motor. Replace the saddle gripper motor home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-45 Saddle staple motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the saddle staple motor. Replace the saddle staple drive home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-46 Saddle pushing plate motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Finisher saddle pushing plate motor trouble. Home position sensor (Folding blade home position) trouble Home position sensor (Folding cam home position) trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the finisher saddle pushing plate motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the finisher saddle pushing plate motor. Replace the home position sensor. Replace the finisher control PWB.

F1-46 Push and holding motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor, clock sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the push and folding motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the push and folding motor. Replace the push and folding home position sensor. Replace the saddle folding motor clock sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-47 Paddle trouble (Saddle section) (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper exit motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the saddle control PWB. Replace the saddle paper exit motor. Replace the saddle paddle home position sensor. Replace the harness from the control PWB to the motor and the sensor.

F1-48 Bundle transport upper pressure release/reference fence escape motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Bundle transport upper pressure release/reference fence escape motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the bundle transport upper pressure release/reference fence escape motor Use SIM3-2 to check the operation of the home position sensor Check connection of the connector and the harness Replace the bundle transport upper pressure release/reference fence escape motor Replace the home position sensor Replace the finisher control PWB

F1-49 Bundle transport lower pressure release motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Bundle transport upper pressure release/reference fence escape motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the bundle transport lower pressure release motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the bundle transport lower pressure release motor. Replace the home position sensor. Replace the finisher control PWB.

F1-50 Main unit - Finisher combination error

Trouble detection	PCU
Cause	The finisher which is not supported by the main unit model is installed. Finisher control PWB trouble.
Check & Remedy	Install a proper finisher. Replace the finisher control PWB.

F1-51 Communication trouble between the master and the sub software at finisher (3K FIN)

Trouble detection	PCU
Cause	Control PWB trouble. Firmware of the finisher is not the latest version.
Check & Remedy	Upgrade the firmware of the finisher. Replace the finisher control PWB.

F1-53 Unsupported after-process unit main unit trouble

Trouble detection	PCU
Cause	Firmware of the finisher is not the latest version.
Check & Remedy	Upgrade the firmware of the finisher.

F1-54 Unset finisher punch unit destination trouble (INF)

Trouble detection	PCU
Cause	Incorrect destination setting of the punch unit.
Check & Remedy	Set the correct destination setting for the punch unit in the service mode.

F1-55 After-process unit ROM trouble

Trouble detection	PCU
Cause	Main firmware trouble. Conflict the main firmware version and the boot version.
Check & Remedy	Upgrade the firmware of the finisher.

F1-78 Finisher staple-free staple motor section trouble

Trouble detection	PCU
Cause	Motor lock Finisher control PWB trouble Home position, encoder sensor trouble Disconnection of harness or connector
Check & Remedy	Use SIM3-3 to check the operation of the staple-free staple motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the stacker control PWB. Replace the staple-free staple unit. Replace the harness from the control PWB to the motor and the sensor.

F1-83 Guide sub motor trouble (3K FIN)

Trouble detection	PCU
Cause	Motor lock. Control PWB trouble. Disconnection of harness. Connector connection trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the guide sub motor. Check the harness and the connector connection from the control PWB to the motor and the sensor. Replace the stacker control PWB. Replace the guide sub motor. Replace the front tongue-shaped home position senor. Replace the rear tongue-shaped home position senor. Replace the harness from the control PWB to the motor and the sensor.

F1-89 Shift motor trouble (1K FIN)

Trouble detection	PCU
Cause	Connection trouble of the connector and the harness. Shift motor trouble Home position sensor trouble Finisher control PWB trouble
Check & Remedy	Use SIM3-3 to check the operation of the shift motor. Use SIM3-2 to check the operation of the home position sensor. Check connection of the connector and the harness. Replace the shift motor. Replace the home position sensor. Replace the finisher control PWB.

F2-22 Discharge lamp trouble (K)

Trouble detection	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 the operation of the discharge lamp on. Replace the discharge lamp PWB (K). Check the harness and the connector. Replace the PCU PWB.

F2-23 Discharge lamp trouble (C)

Trouble detection	PCU
Cause	Contact trouble between the discharge lamp PWB (C) and the PCU PWB. Discharge lamp PWB (C) trouble. PCU PWB trouble.
Check & Remedy	Use SIM5-4 to check the operation of the discharge lamp on. Replace the discharge lamp PWB (C). Check the harness and the connector. Replace the PCU PWB.

F2-24 Discharge lamp trouble (M)

Trouble detection	PCU
Cause	Contact trouble between the discharge lamp PWB (M) and the PCU PWB. Discharge lamp PWB (M) trouble. PCU PWB trouble.
Check & Remedy	Use SIM5-4 to check the operation of the discharge lamp on. Replace the discharge lamp PWB (M). Check the harness and the connector. Replace the PCU PWB.

F2-25 Discharge lamp trouble (Y)

Trouble detection	PCU
Cause	Contact trouble between the discharge lamp PWB (Y) and the PCU PWB. Discharge lamp PWB (Y) trouble. PCU PWB trouble.
Check & Remedy	Use SIM5-4 to check the operation of the discharge lamp on. Replace the discharge lamp PWB (Y). Check the harness and the connector. Replace the PCU PWB.

F2-39 Temperature/humidity sensor trouble (Indoor temperature detection trouble)

Trouble detection	PCU
Cause	Detection of abnormality by the temperature sensor on internal temperature/ humidity sensor PCU PWB trouble.
Check & Remedy	Check internal temperature/humidity sensor and check the connection of harness and connector. Check the PCU PWB.

F2-40 Toner density sensor trouble (K)

Trouble detection	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.

F2-41 Toner density sensor trouble (C)

Trouble detection	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.

F2-42 Toner density sensor trouble (M)

Trouble detection	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.

F2-43 Toner density sensor trouble (Y)

Trouble detection	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.

F2-45 Color image density sensor trouble

Trouble detection	PCU
Cause	Image density sensor trouble. Image density sensor harness and PCU PWB connector connection trouble. Image density sensor dirt. Transfer belt cleaning trouble.
Check & Remedy	Use SIM44-6 to execute the process control. Clean the image density sensor. Replace the image density sensor.

F2-49 LSU thermistor trouble

Trouble detection	PCU
Cause	The LSU temperature is outside of -28°C - 78°C. LSU thermistor trouble. LSU thermistor harness and connector connection trouble PCU PWB trouble. LSU PWB trouble.
Check & Remedy	Check the harness and the connector connection at LSU thermistor. Replace the PCU PWB. Replace the LSU.

F2-50 K drum phase sensor trouble

Trouble detection	PCU
Cause	Drum phase sensor dirt. Drum phase sensor trouble. Drum phase sensor harness and connector connection trouble Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Check the sensor condition and check the connection. Use SIM30-1 to check the operation of "DHPD_K". Replace the drum phase sensor. Repair the drum drive section. Replace the PCU PWB.

F2-51 CL drum phase sensor trouble

Trouble detection	PCU
Cause	Drum phase sensor dirt. Drum phase sensor trouble. Drum phase sensor harness and connector connection trouble Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Check the sensor condition and check the connection. Use SIM30-1 to check the operation of "DHPD_CL". Replace the drum phase sensor. Repair the drum drive section. Replace the PCU PWB.

F2-58 Temperature/humidity sensor trouble (Indoor humidity detection trouble)

Trouble detection	PCU
Cause	Detection of abnormality by the humidity sensor on internal temperature/ humidity sensor.
Check & Remedy	Check internal temperature/humidity sensor and check the connection of harness and connector. Check the PCU PWB.

F2-64 Toner supply operation trouble (K)

Trouble detection	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble. Toner transport pipe 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 transport pipe section.

F2-65 Toner supply operation trouble (C)

Trouble detection	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble. Toner transport pipe 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 transport pipe section.

F2-66 Toner supply operation trouble (M)

Trouble detection	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble. Toner transport pipe 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 transport pipe section.

F2-67 Toner supply operation trouble (Y)

Trouble detection	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble. Toner transport pipe 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 transport pipe section.

F2-70 Improper toner cartridge detection (K)

Trouble detection	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.

F2-71 Improper toner cartridge detection (C)

Trouble detection	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.

F2-72 Improper toner cartridge detection (M)

Trouble detection	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.

F2-73 Improper toner cartridge detection (Y)

Trouble detection	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 detection	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.

F2-75 Toner cartridge CRUM error (C)

Trouble detection	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.

F2-76 Toner cartridge CRUM error (M)

Trouble detection	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.

F2-77 Toner cartridge CRUM error (Y)

Trouble detection	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 detection	PCU
Cause	PCU PWB trouble Harness connection trouble between PCU PWB and Image density sensor
Check & Remedy	Check printed image for image density trouble. Check the harness connection between PCU PWB and the sensor. Clean the image density sensor. Check the condition of Transfer belt surface. If the error cannot be fixed, replace the image sensor exclusive for registration. Replace the transfer belt. Replace the PCU PWB. Replace the developer.

F2-95 Ejecting operation trouble (K)

Trouble detection	PCU
Cause	Ejecting sensor trouble. Harness connection trouble. Toner motor trouble. PCU PWB trouble
Check & Remedy	Use SIM10-03 to check the operation of the eject arm. Check the harness connection at the eject sensor. Replace the eject sensor. Check the harness connection at the toner motor. Replace the toner motor. Replace the PCU PWB.

F2-96 Ejecting operation trouble (C)

Trouble detection	PCU
Cause	Ejecting sensor trouble. Harness connection trouble. Toner motor trouble. PCU PWB trouble
Check & Remedy	Use SIM10-03 to check the operation of the eject arm. Check the harness connection at the eject sensor. Replace the eject sensor. Check the harness connection at the toner motor. Replace the toner motor. Replace the PCU PWB.

F2-97 Ejecting operation trouble (M)

Trouble detection	PCU
Cause	Ejecting sensor trouble. Harness connection trouble. Toner motor trouble. PCU PWB trouble
Check & Remedy	Use SIM10-03 to check the operation of the eject arm. Check the harness connection at the eject sensor. Replace the eject sensor. Check the harness connection at the toner motor. Replace the toner motor. Replace the PCU PWB.

F2-98 Ejecting operation trouble (Y)

Trouble detection	PCU
Cause	Ejecting sensor trouble. Harness connection trouble. Toner motor trouble. PCU PWB trouble
Check & Remedy	Use SIM10-03 to check the operation of the eject arm. Check the harness connection at the eject sensor. Replace the eject sensor. Check the harness connection at the toner motor. Replace the toner motor. Replace the PCU PWB.

F3-12 Paper feed tray 1 lift operation trouble

Trouble detection	PCU
Cause	LUD1 sensor trouble. Paper feed tray 1 lift up motor trouble. Connection trouble of the connector and the harness at the PCU PWB and lift up unit and paper feed unit.
Check & Remedy	Check connection of the harness and the connector of LUD1. Replace the lift-up unit. Replace the PCU PWB.

F3-22 Paper feed tray 2 lift operation trouble

Trouble detection	PCU
Cause	LUD2 sensor trouble. Paper feed tray 2 lift up motor trouble. Connection trouble of the connector and the harness at the PCU PWB and lift up unit and paper feed unit.
Check & Remedy	Check connection of the harness and the connector of LUD2. Replace the lift-up unit. Replace the PCU PWB.

F6-00 MFPC PWB - FAX communication trouble

Section		SCN-MFP
Case 1	Cause	FAX PWB trouble.
	Check and Remedy	Replace the FAX PWB.
Case 2	Cause	FAX PWB - SCN-MFPC PWB connector and harness trouble
	Check and Remedy	Check the connector and the harness between the FAX PWB and the SCN-MFPC PWB.
Case 3	Cause	FAX PWB - Mother board connector and harness trouble
	Check and Remedy	Check the connector and the harness between the FAX PWB and the mother board.
Case 4	Cause	FAX PWB ROM trouble / ROM pin breakage
	Check and Remedy	Check the ROM of the FAX PWB.

F6-01 FAX PWB EEPROM read/write error

Section		FAX
Case 1	Cause	FAX PWB EEPROM trouble
	Check and Remedy	Check that no trouble occurs after replacement of PIC. Execute the memory check of SIM66-3 to insure that EEPROM can be accessed.
Case 2	Cause	FAX PWB PIC access circuit trouble
	Check and Remedy	Replace the FAX 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

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

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.
Case 3	Cause	Different Fax PWB information (Soft Switch)
	Check and Remedy	Check Fax PWB information (Soft Switch)

F6-30 FAX 1-chip microprocessor access error (FAX detection)

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 PWB and Use SIM66-42 to rewrite the program.

F6-97 Incompatibility between FAX PWB and the main machine

Section		FAX
Case 1	Cause	The FAX PWB installed is improper. FAX PWB trouble.
Check and Remedy		Install a proper FAX PWB. Replace the FAX PWB.

F6-98 Incompatibility between the FAX PWB destination and the main machine destination

Section		FAX
Case 1	Cause	Incompatibility between the destination information written into the FAX PWB PCI and that in the main machine (set with SIM26-6)
	Check and Remedy	Check the destination of the FAX control PWB. Check the destination of the main machine (SIM26-06)

H2-00 Thermistor open trouble (Upper main TH_UM detection) (TH_LM)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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.

H2-01 Thermistor open trouble (Lower main TH_LM) (TH_LM)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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 Thermistor open trouble (Upper sub TH_US1 detection) (TH_SUB2_2)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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.

H2-03 Thermistor open trouble (Upper main TH_UM compensation) (TH_UM_CS)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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.

H2-05 Thermistor open trouble (Upper sub TH_US1 compensation) (TH_SUB2_2_CS)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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.

H2-06 Thermistor open trouble (Upper edge) (TH_US2)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Thermistor connector and harness trouble AC Power unit trouble
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.

H3-00 Fusing section high temperature trouble (Upper main) (TH_UM)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Fusing section connector connection trouble AC Power unit trouble
Check & Remedy	Use SIM5-2 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp keeps on lighting, check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H3-01 Fusing section high temperature trouble (Lower main) (TH_LM)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Fusing section connector connection trouble AC Power unit trouble
Check & Remedy	Use SIM5-2 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp keeps on lighting, check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H3-02 Fusing section high temperature trouble (Upper sub) (TH_US1)

Trouble detection	PCU
Cause	Thermistor trouble PCU PWB trouble Fusing section connector connection trouble AC Power unit trouble
Check & Remedy	Use SIM5-2 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp keeps on lighting, check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H4-00 Fusing section low temperature trouble (Upper main) (TH_UM)

Trouble detection	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. AC Power unit trouble. Interlock switch trouble.
Check & Remedy	Use SIM05-02 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp does not light on correctly, check the cut-line of the heater harness and the thermostat. Check the interlock switch. Check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H4-01 Fusing section low temperature trouble (Lower main) (TH_LM)

Trouble detection	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. AC Power unit trouble. Interlock switch trouble.
Check & Remedy	Use SIM05-02 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp does not light on correctly, check the cut-line of the heater harness and the thermostat. Check the interlock switch. Check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H4-02 Fusing section low temperature trouble (Upper sub) (TH_US1)

Trouble detection	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. AC Power unit trouble. Interlock switch trouble.
Check & Remedy	Use SIM05-02 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp does not light on correctly, check the cut-line of the heater harness and the thermostat. Check the interlock switch. Check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H4-30 Thermistor differential input trouble (Upper main) (TH_UM)

Trouble detection	PCU
Cause	HL_UM does not light. Thermistor trouble. Harness trouble. PCU PWB trouble.
Check & Remedy	Use SIM05-02 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp does not light on correctly, check the cut-line of the heater harness and the thermostat. Check the interlock switch. Check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H4-32 Thermistor differential input trouble (Upper sub) (TH_US1)

Trouble detection	PCU
Cause	HL_UM does not light. Thermistor trouble. Harness trouble. PCU PWB trouble.
Check & Remedy	Use SIM05-02 to check the flushing operation of the heater lamp. When the lamp lights on correctly, check the thermistor or the harness. Check the input circuit of the thermistor on the PCU PWB. When the lamp does not light on correctly, check the cut-line of the heater harness and the thermostat. Check the interlock switch. Check the lamp control circuit on the AC PWB and the PCU PWB. Use SIM14 to cancel the trouble.

H5-01 5 times continuous POD1 not-reach jam

Trouble detection	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. (Upper main) (TH_UM)

Trouble detection	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. AC Power unit trouble. Interlock switch trouble
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Replace the thermostat conduction. Replace the heater lamp. Replace the PCU PWB. Replace the AC PWB. Check connection of the connector and the harness.

H7-12 Recovery error from low fuser temp. (TH_LM)

Trouble detection	PCU
Cause	Thermistor trouble. Thermostat trouble. Heater lamp trouble. PCU PWB trouble. AC Power unit trouble. Interlock switch trouble Connector, harness connection trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Replace the thermostat conduction. Replace the heater lamp. Replace the PCU PWB. Replace the AC PWB. Check connection of the connector and the harness.

L1-00 Scanner feed trouble

Trouble detection	SCN-MFP
Cause	Mirror unit trouble Wire is removed from the mirror. Lock screw is not removed. Circuit trouble
Check & Remedy	Use SIM1-1 to check the mirror operation. Check the circuit related with the mirror motor (SCN-MFP PWB and MHP sensor PWB).

L3-00 Scanner return trouble

Trouble detection	SCN-MFP
Cause	Mirror unit trouble Wire is removed from the mirror. Lock screw is not removed. Circuit trouble
Check & Remedy	Use SIM1-1 to check the mirror operation. Check the circuit related with the mirror motor (SCN-MFP PWB and MHP sensor PWB).

L4-02 Paper feed motor trouble

Trouble detection	PCU
Cause	Paper feed motor trouble Connection trouble of the connector and the harness between the PCU PWB and the paper feed motor harness. PCU PWB trouble
Check & Remedy	Use SIM6-1 to check the operation of the paper feed motor. Replace the paper feed motor. Check connection of the paper feed motor harness and the connector. Replace the PCU PWB.

L4-03 Fusing motor trouble

Trouble detection	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.

L4-06 Transfer unit lift trouble

Trouble detection	PCU
Cause	Transfer unit position sensor trouble Dirt on the transfer unit position sensor. PCU PWB trouble Connection trouble of the connector and the harness. Transfer unit lift mechanism trouble Transfer unit is not installed correctly.
Check & Remedy	Use SIM6-3 to check the separating operation of the transfer unit. Replace the transfer unit position sensor. Clean the transfer unit position sensor. Replace the PCU PWB. Check connection of the connector and the harness. Repair the transfer unit lift mechanism.

L4-09 PS motor trouble

Trouble detection	PCU
Cause	PCU PWB trouble Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connection of the connector and the harness between the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L4-11 Shift motor trouble

Trouble detection	PCU
Cause	Shift motor trouble. PCU PWB trouble. Connection trouble of the connector and the harness between the PCU PWB and the shift motor. Controller circuit trouble Finisher is still installed when the connector of the finisher is removed. Communication trouble of the finisher
Check & Remedy	Use SIM6-1 to check the shift operation. Use SIM30-1 to check the operation of the shifter home position sensor. Check the connection of the connector and the harness between the PCU PWB and the shift motor. Connect the connector of the finisher. Refer to the contents of F1-00 when the communication trouble between the PCU PWB and the finisher is occurred

L4-12 Secondary transfer separation trouble

Trouble detection	PCU
Cause	The position sensor is not blocked or the position sensor is always blocked. Connection trouble of the connector and the harness between the PCU PWB and the separation position sensor. Separation clutch trouble Secondary transfer unit is not installed Separation motor trouble
Check & Remedy	Check the separation operation by the SIM06-03. Check that the sensor is blocked when the separation operation is done. Replace the separation motor, the separation sensor and the PCU PWB. Check the connection of the connector and the harness between the PCU PWB and the separation position sensor. Install the secondary transfer unit.

L4-16 Fusing pressure release trouble

Trouble detection	PCU
Cause	Fusing pressure release sensor trouble. Fusing pressure release motor trouble. Pressure release drive gear and pressure release idle gear trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the fusing pressure release sensor. Replace the fusing pressure release motor. Replace the pressure release drive gear and the pressure release idle gear. Replace the PCU PWB. Check connection of the connector and the harness.

L4-17 Drum motor trouble (BK)

Trouble detection	SCN-MFP
Cause	Drum motor trouble Connection trouble of the connector and the harness between the PCU PWB and the drum motor. PCU PWB trouble
Check & Remedy	Check the operation of the drum motor by SIM25-01. Check the connection of the harness and the connector between the PCU PWB and the drum motor. Replace the PCU PWB and the drum motor.

L4-18 Drum motor trouble (CL)

Trouble detection	PCU
Cause	Drum motor trouble Connection trouble of the connector and the harness between the PCU PWB and the drum motor. PCU PWB trouble
Check & Remedy	Check the operation of the drum motor by SIM25-01. Check the connection of the harness and the connector between the PCU PWB and the drum motor. Replace the PCU PWB and the drum motor.

L4-32 Power source cooling fan trouble

Trouble detection	PCU
Cause	Power cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check that the fan is actually rotating. Replace the power cooling fan. Replace the PCU PWB. Check connection of the connectors and the harness.

L4-35 Fusing cooling fan R trouble

Trouble detection	PCU
Cause	Fusing cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check that the fan is actually rotating. Replace the fusing cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

L4-43 Paper exit cooling fan R trouble

Trouble detection	PCU
Cause	Fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check that the fan is rotating after turning ON the power. Replace the fan. Replace the PCU PWB. Check the connector and the harness. Use SIM6-2 to check that the fan is actually rotating.

L4-50 Process fan 1 trouble

Trouble detection	PCU
Cause	Process fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check that the fan is rotating after turning ON the power. Replace the process fan. Replace the PCU PWB. Check connection of the connector and the harness.

L4-51 Process fan 2 trouble

Trouble detection	PCU
Cause	Process fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check that the fan is rotating after turning ON the power. Replace the process fan. Replace the PCU PWB. Check the connector and the harness.

L4-71 Motor control IC access error

Trouble detection	PCU
Cause	PCU PWB trouble.
Check & Remedy	Replace the PCU PWB.

L4-75 Paper exit motor trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connector and the harness of the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L4-76 Reverse motor trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connector and the harness of the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L4-77 ADU motor upper trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connector and the harness of the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L4-78 ADU motor bottom trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connector and the harness of the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L4-79 PS front motor trouble

Trouble detection	PCU
Cause	PCU PWB trouble. Motor trouble Connection trouble of the connector and the harness between the PCU PWB and the motor.
Check & Remedy	Check the connector and the harness of the PCU PWB and the motor. Replace the PCU PWB, the motor and the harness.

L6-10 Polygon motor trouble

Trouble detection	PCU
Cause	Polygon motor trouble. LSU 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.

L8-01 Full wave signal detection error

Trouble detection	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 detection	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 wave form abnormality
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness. Check the power wave form.

L8-20 Communication error of power controller PWB

Trouble detection	SCN-MFP
Cause	SCN-MFP PWB trouble.
Check & Remedy	Check the ground of the main unit. Replace the SCN-MFP PWB.

PC-- Personal counter not detected

Trouble detection	SCN-MFP
Cause	The personal counter is not installed. The personal counter is not detected. SCN-MFP PWB trouble.
Check & Remedy	Check connection of the connectors and the harness. Replace the SCN-MFP PWB.

U1-01 Battery trouble

Trouble detection		SCN-MFP
Case 1	Cause	1) Battery life 2) Battery circuit abnormality
	Check and 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 detection	SCN-MFP
Cause	EEPROM device trouble EEPROM device contact trouble Device access trouble by the noise
Check & Remedy	Replace the SCN-MFP PWB EEPROM. Replace the SCN-MFP PWB. (Refer to the pages on the necessary works after replacing the SCN-MFP PWB in the Service Manual, and perform the works.) Check that the EEPROM device is connected correctly.

U2-05 Account data error

Trouble detection	SCN-MFP
Cause	The certification database table in the HDD is broken. The certification database table is rebuilt after the broken certification database table is detected and the main unit is restarted. This error can be recognized only by the SIM22-4 which registers the error in the error records. When this error is occurred frequently, the following devices are defective. - HDD - SCN-MFP PWB
Check & Remedy	Check or replace the HDD. Check or replace the SCN-MFP PWB. Perform the operation by referring the "Necessary works and procedures when the HDD and the SCN-MFP PWB are replaced". When this error is not occurred frequently, the above operations should not be done.

U2-11 SCN-MFP PWB EEPROM counter check sum error

Trouble detection	SCN-MFP
Cause	SCN-MFP PWB EEPROM trouble EEPROM socket contact trouble SCN-MFP 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 SCN-MFP PWB. (Refer to the pages on the necessary works after replacing the SCN-MFP PWB in the Service Manual, and perform the works.)

U2-30 SCN-MFP PWB and PCU PWB manufacturing No. data inconsistency

Trouble detection	SCN-MFP
Cause	When replacing the SCN-MFP PWB or the MFPC PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB. SCN-MFP PWB trouble PCU PWB trouble
Check & Remedy	Check that the EEPROM is properly set. Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB. Replace the SCN-MFP PWB. (Refer to the pages on the necessary works after replacing the SCN-MFP PWB in the Service Manual, and perform the works.) Replace the PCU PWB.

U2-40 mSATA SSD system storage data partition error

Trouble detection	SCN-MFP
Cause	A file error occurs in the mSATA SSD system storage data partition.
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.

U2-41 HDD versatile partition error

Trouble detection	SCN-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	Backup the data by following the procedure for the trouble which can be released by turning OFF and ON the power of the main unit, and format the HDD by SIM62. Or, replace the HDD and perform SIM16.

U2-42 Machine adjustment data lost error

Trouble detection	SCN-MFP
Cause	The system data partition of mSATA SSD and the versatile partition for the backup HDD are broken.
Check & Remedy	Backup the data by following the procedure for the mSATA SSD and the HDD breakage and format the HDD by SIM62. Or, replace the HDD and perform SIM16. Perform the mechanical adjustment because the mechanical adjustment values are formatted.

U2-50 HDD user authentication data check sum error

Trouble detection	SCN-MFP
Cause	HDD trouble SCN-MFP 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 SCN-MFP PWB. (Refer to the pages on the necessary works after replacing the HDD and the SCN-MFP PWB in the Service Manual, and perform the works.)

U2-60 Watermark check error

Trouble detection	SCN-MFP
Cause	Watermark data trouble mSATA SSD trouble SCN-MFP PWB trouble
Check & Remedy	Use SIM16 to cancel the U2 trouble. Use SIM49-5 to install the watermark data. Replace the mSATA SSD. Replace the SCN-MFP PWB. (Refer to the pages on the necessary works after replacing the HDD and the SCN-MFP 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 SCN-MFP PWB EEPROM read/write error

Trouble detection	SCN-MFP
Cause	EEPROM trouble SCN-MFP PWB EEPROM access circuit trouble
Check & Remedy	Check that the EEPROM is attached correctly. Take notes of the counter data and the adjustment values to prevent from deleting the data. (When the printer option is attached, take notes of the adjustment values by SIM22-01.) Replace the SCN MFP PWB. Release this error with SIM16.

U2-81 SCN-MFP PWB EEPROM check sum error

Trouble detection	SCN-MFP
Cause	EEPROM trouble SCN-MFP PWB EEPROM access circuit trouble
Check & Remedy	Check that the EEPROM is attached correctly. Take notes of the counter data and the adjustment values to prevent from deleting the data. (When the printer option is attached, take notes of the adjustment values by SIM22-01.) Replace the SCN MFP PWB. Release this error with SIM16.

U2-90 PCU PWB EEPROM read/write error

Trouble detection	PCU
Cause	EEPROM trouble Installation of non-initialized EEPROM. PCU PWB EEPROM access circuit trouble
Check & Remedy	Check that the EEPROM is attached correctly. Check that the 256kBit EEPROM is attached. Take notes of the counter data and the adjustment values to prevent from deleting the data. (When the printer option is attached, take notes of the adjustment values by SIM22-01.) Replace the PCU PWB. Release this error with SIM16.

U2-91 PCU PWB EEPROM check sum error

Trouble detection	PCU
Cause	PCU PWB EEPROM trouble PCU PWB trouble EEPROM socket contact trouble
Check & Remedy	Check that the EEPROM is attached correctly. Take notes of the counter data and the adjustment values to prevent from deleting the data. (When the printer option is attached, take notes of the adjustment values by SIM22-01.) Replace the PCU PWB. Release this error with SIM16.

U6-00 Desk communication trouble

Trouble detection	PCU
Cause	Connection trouble or cut-line of the connector and the harness. Desk control PWB trouble Control (PCU) PWB trouble
Check & Remedy	Check the control PWB. Check connection of the connector and the harness on the communication line. Turn OFF and ON the main unit.

U6-01 Desk tray 1 lift motor trouble

Trouble detection	PCU
Cause	DLUD1 sensor trouble Desk casette 1 lift up motor trouble Connection trouble of the connector and the harness between the paper feed unit, Desk control PWB, and Lift up unit.
Check & Remedy	Check the DLUD1, the DLUD1 harness and the connector of the DLUD1. Check the lift up unit. Replace the desk control PWB. Release this error with SIM15.

U6-02 Desk tray 2 lift motor trouble

Trouble detection	PCU
Cause	DLUD2 sensor trouble Desk casette 2 lift up motor trouble Connection trouble of the connector and the harness between the paper feed unit, Desk control PWB, and Lift up unit.
Check & Remedy	Check the DLUD2, the DLUD2 harness and the connector of the DLUD2. Check the lift up unit. Replace the desk control PWB. Release this error with SIM15.

U6-09 LCC lift trouble

Trouble detection	PCU
Cause	sensor trouble LCC control PWB trouble. gear is damaged. Lift up motor trouble
Check & Remedy	Use SIM4-2 and SIM4-3 to check the operation of the LCC sensor and lift motor. Use SIM15 to cancel the error.

U6-10 Desk transport motor trouble

Trouble detection	PCU
Cause	Motor lock. Motor rotation error. Over current to the motor. Desk PWB trouble.
Check & Remedy	Use SIM4-3 to check the operation of the desk transport motor. Replace the desk control PWB. Replace the desk paper feed motor.

U6-20 LCC control PWB - PCU PWB communication error

Trouble detection	PCU
Cause	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	Cancel the error by turning OFF/ON the power. Check the connection of the harness and the connector between the machine and the LCC. Check the LCC control PWB, and replace if necessary. Check the PCU PWB, and replace if necessary.

U6-21 LCC transport motor trouble

Trouble detection	PCU
Cause	Motor lock. Motor rotation error. Over current to the motor. LCC control PWB trouble.
Check & Remedy	Use SIM4-3 to check the operation of the LCC transport motor. Check the LCC control PWB, and replace if necessary.

U6-22 LCC 24V power trouble

Trouble detection	PCU
Cause	Connection trouble of the harness and the connector. LCC control PWB trouble/A3 2nd LCT control PWB trouble. Machine power unit trouble
Check & Remedy	Check connection of the connector and the harness Check the 24 voltage at the machine power unit and the LCC control PWB/A3 2nd LCT control PWB.

U6-23 LCC Tray descending trouble (reverse winding detection)

Trouble detection	PCU
Cause	Reverse winding detection switch ON Reverse winding of the wire Reverse winding detection switch trouble Connector and harness connection trouble LCC control PWB trouble
Check & Remedy	Check the wire Replace reverse winding switch Check connection of the connector and the harness Replace the LCC control PWB Use Sim4-3 to check the motor operation

U6-50 Desk - Main unit combination trouble

Trouble detection	PCU
Cause	Improper combination between the main unit and the Desk. Desk control PWB trouble.
Check & Remedy	Install a Desk which is proper for the main unit mode. Replace the Desk control PWB.

U6-51 LCC - Main unit combination trouble

Trouble detection	PCU
Cause	Improper combination between the main unit and the LCC. Desk control PWB trouble.
Check & Remedy	Install a LCC which is proper for the main unit mode. Replace the LCC control PWB.

U6-52 Desk connection error

Trouble detection	PCU
Cause	Connection failure between the machine and paper feed tray 2 (desk unit) PCU PWB trouble.
Check & Remedy	Check connection of the connector and the harness. Replace the PCU PWB.

U6-54 Option installation combination trouble (LCC)

Trouble detection	PCU
Cause	firmware version is inconsistency
Check & Remedy	update latest firmware version

U6-55 Option installation combination trouble (DESK)

Trouble detection	PCU
Cause	firmware version is inconsistency
Check & Remedy	update latest firmware version

U7-50 SCN-MFP PWB - Vendor machine communication error

Trouble detection	SCN-MFP
Cause	Improper setting of the vendor machine specifications (SIM26-3). Vendor machine trouble. SCN-MFP PWB trouble. Connector, harness connection trouble. Strong external noises.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Change the specifications of the vendor machine (SIM26-3). Replace the SCN-MFP PWB.

U7-51 Vendor machine error

Trouble detection	SCN-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	SCN-MFP and Touch Panel
Cause	Harness connection trouble. SCN-MFP trouble. Touch Panel trouble.
Check & Remedy	Check the connector and the harness in the touch panel line (SCN MFP PWB, LVDS PWB, HOME PWB, and touch panel). Replace the SCN-MFP PWB. Replace the Touch panel.

UC-02 SCAN ASIC IPD error

Trouble detection	SCN-MFP
Cause	SCN-MFP trouble SCAN ASIC trouble
Check & Remedy	Replace the SCN-MFP PWB.

UC-20 SCAN ASIC DOCC error

Trouble detection	SCN-MFP
Cause	SCN-MFP trouble SCAN ASIC trouble
Check & Remedy	Replace the SCN-MFP PWB.

(1) Relation between the SCN-MFP PWB LED status and errors

When the machine cannot be booted, check the LED status of the MFPC PWB to presume the error content and its cause.

<Process content and LED display>

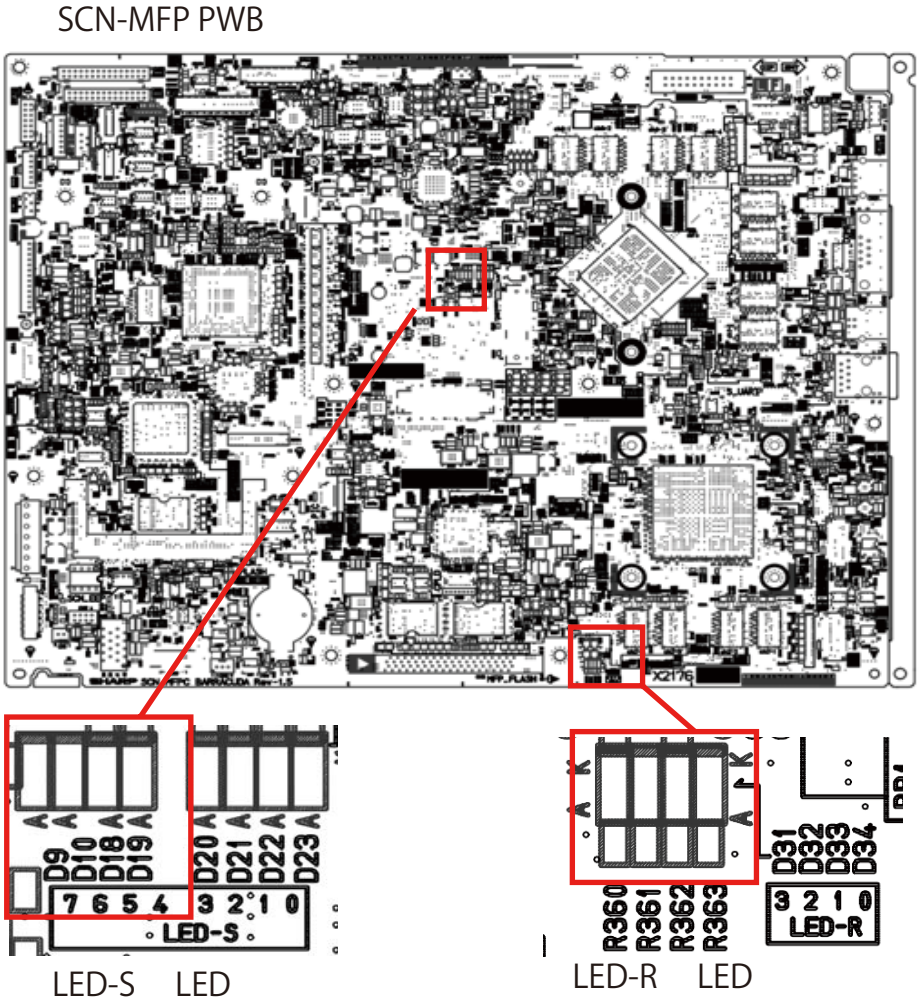
1, LED-R lighting-up status

LED status (Lighting)	Process operation content	Countermeasure at error
●●●●	Normal status	
○○○●--●○○○	Error	SCN-MFP PWB trouble. Replace SCN-MFP PWB.

2, LED-S lighting-up status

LED status (Lighting)	Process operation content	Countermeasure at error
●●●●	Normal status	
other status	Error	Replace mSATA SSD. IF still error. --> Replace SCN-MFP PWB.

* ●: LED ON / ○: LED OFF



2. JAM and troubleshooting

A. JAM code list

(1) Main machine

JAM code	JAM content
2TPD_N1	2TPD not-reached JAM (Tray 1 paper feed)
2TPD_NA	2TPD not-reached JAM (ADU paper refeed)
2TPD_NL	2TPD not-reached JAM (LCC paper feed)
2TPD_NM	2TPD not-reached JAM (Manual feed tray paper feed)
2TPD_S1	2TPD remaining JAM (Tray 1 paper feed)
2TPD_SA	2TPD remaining JAM (ADU paper refeed)
2TPD_SL	2TPD remaining JAM (LCC paper feed)
2TPD_SM	2TPD remaining JAM (Manual feed tray paper feed)
APPD1_N	APPD1 not-reached JAM
APPD1_S	APPD1 remaining JAM
APPD2_N	APPD2 not-reached JAM
APPD2_S	APPD2 remaining JAM
C1PFD_N1	C1PFD not-reached JAM (Tray 1 paper feed)
C1PFD_NL	C1PFD not-reached JAM (LCC paper feed)
C1PFD_S1	C1PFD remaining JAM (Tray 1 paper feed)
C1PFD_SL	C1PFD remaining JAM (LCC)
C1PFPD_S1	C1PFPD remaining JAM (Tray 1 paper feed)
MFT	Manual feed tray paper feed JAM (MPFD not-reached)
MFT_1ST	Manual feed tray paper feed JAM (Check the paper set condition)
MFT_LE	Manual feed tray paper feed JAM
MFT_RT	Manual feed tray paper feed JAM (Check the paper)
MPFD_S	MPFD remaining JAM
POD1_N	POD1 not-reached JAM
POD1_NA	POD1 not-reached JAM (Back surface)
POD1_S	POD1 remaining JAM
POD1_SA	POD1 remaining JAM (Back surface)
POD2_N	POD2 not-reached JAM
POD2_S	POD2 remaining JAM (When left paper exit) POD2 remaining JAM (When ADU reversing)
POD3_N	POD3 not-reached JAM
POD3_S	POD3 remaining JAM
POD4_NB	POD2 not-reached JAM (Before switchback)
POD4_SA	POD4 remaining JAM (After switchback)
POD4_SB	POD4 remaining JAM (Before switchback)
PPD2_N1	PPD2 not-reached JAM (Tray 1 paper feed)
PPD2_N1_D	PPD2 not-reached JAM (Tray 1 paper feed) (Delay of paper just before the jam from PS) *1
PPD2_NA	PPD2 not-reached JAM (ADU paper refeed)
PPD2_NA_D	PPD2 not-reached JAM (ADU paper refeed) (Delay of paper just before the jam from PS) *1
PPD2_NL	PPD2 not-reached JAM (LCC paper feed)
PPD2_NL_D	PPD2 not-reached JAM(LCC paper paper feed) (Delay of paper just before the jam from PS) *1
PPD2_NM	PPD2 not-reached JAM (Manual feed tray paper feed)
PPD2_NM_D	PPD2 not-reached JAM (manual paper feed tray paper) (Delay of paper just before the jam from PS) *1
PPD2_S1	PPD2 remaining JAM (Tray 1 paper feed)
PPD2_S1_D	PPD2 remaining JAM (Tray 1 paper feed) (Delay of paper just before the jam from PS)*1
PPD2_SA	PPD2 remaining JAM (ADU paper refeed)
PPD2_SA_D	PPD2 remaining JAM (ADU paper refeed) (Delay of paper just before the jam from PS) *1
PPD2_SL	PPD2 remaining JAM (Side LCC paper feed)
PPD2_SL_D	PPD2 remaining JAM side LCC paper feed) (Delay of paper just before the jam from PS) *1
PPD2_SM	PPD2 remaining JAM Manual feed tray paper feed)
PPD2_SM_D	PPD2 remaining JAM (manual feed tray paper feed) (Delay of paper just before the jam from PS) *1
PRI_JAM	Image preparation wait time- out
STOP_JAM	Emergency stop request JAM (Controller request)
TRAY1	Tray 1 paper feed JAM (C1PFPD not-reached JAM)
TRAY1_1ST	Tray 1 feed tray paper feed JAM (Check the paper set condition)
TRAY1_LE	Tray 1 feed tray paper feed JAM
TRAY1_RT	Tray 1 feed tray paper feed JAM (Check the paper)

(2) RSPF

JAM code	JAM content
ICU_REQ	ICU factor stop JAM
P_SHORT	Short size JAM
SDFS_S	Double feed detection JAM/Accompanied feed JAM
SPOD_N	SPOD not-reached JAM
SPOD_S	SPOD remaining JAM
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
SPSD_SCN	Exposure start notification timer end

(3) LCC

JAM code	JAM content
LCC	LCC paper feed JAM (LPFPD not-reached JAM)
LCC_1ST	LCC feed tray paper feed JAM (Check the paper set condition)
LCC_LE	LCC feed tray paper feed JAM
LCC_RT	LCC feed tray paper feed JAM (Check the paper)
LPFD_NL	LCC paper feed JAM (LPFD not-reached JAM)
LPFD_SL	LPFD remaining JAM (Side LCC paper feed)

(4) DESK

JAM code	JAM content
2TPD_N2	2TPD not-reached JAM (Tray 2 paper feed)
2TPD_N3	2TPD not-reached JAM (Tray 3 paper feed)
2TPD_N4	2TPD not-reached JAM (Tray 4 paper feed)
2TPD_S2	2TPD remaining JAM (Tray 2 paper feed)
2TPD_S3	2TPD remaining JAM (Tray 3 paper feed)
2TPD_S4	2TPD remaining JAM (Tray 4 paper feed)
C1PFD_N2	C1PFD not-reached JAM (Tray 2 paper feed)
C1PFD_N3	C1PFD not-reached JAM (Tray 3 paper feed)
C1PFD_N4	C1PFD not-reached JAM (Tray 4 paper feed)
C1PFD_S2	C1PFD remaining JAM (Tray 2 paper feed)
C1PFD_S3	C1PFD remaining JAM (Tray 3 paper feed)
C1PFD_S4	C1PFD remaining JAM (Tray 4 paper feed)
C2PFD_N3	C2PFD not-reached JAM (Tray 3 paper feed)
C2PFD_N4	C2PFD not-reached JAM (Tray 4 paper feed)
C2PFD_S2	C2PFD remaining JAM (Tray 2 paper feed)
C2PFD_S3	C2PFD remaining JAM (Tray 3 paper feed)
C2PFD_S4	C2PFD remaining JAM (Tray 4 paper feed)
D1PPD_N04	D1PPD not-reached JAM (Tray 4 paper feed)
D1PPD_S03	D1PPD remaining JAM (tandem desk left side paper feed)
D1PPD_S04	D1PPD remaining JAM (tandem desk right side paper feed)
D2PPD_S04	D2PPD remaining JAM (tandem desk left side paper feed)
PPD2_N2	PPD2 not-reached JAM (Tray 2 paper feed)
PPD2_N2_D	PPD2 not-reached JAM (Tray 2 paper feed) Delay of paper just before the jam from PS) *1
PPD2_N3	PPD2 not-reached JAM (Tray 3 paper feed)
PPD2_N3_D	PPD2 not-reached JAM (Tray 3 paper feed) Delay of paper just before the jam from PS) *1
PPD2_N4	PPD2 not-reached JAM (Tray 4 paper feed)
PPD2_N4_D	PPD2 not-reached JAM (Tray 4 paper feed) Delay of paper just before the jam from PS) *1
PPD2_S2	PPD2 remaining JAM (Tray 2 paper feed)

JAM code	JAM content
PPD2_S2_D	PPD2 remaining JAM (Tray 2 paper feed) Delay of paper just before the jam from PS) *1
PPD2_S3	PPD2 remaining JAM (Tray 3 paper feed)
PPD2_S3_D	PPD2 remaining JAM (Tray 3 paper feed) Delay of paper just before the jam from PS) *1
PPD2_S4	PPD2 remaining JAM (Tray 4 paper feed)
PPD2_S4_D	PPD2 remaining JAM (Tray 4 paper feed) Delay of paper just before the jam from PS) *1
TRAY2	Tray 2 paper feed JAM (C2PFD not-reached JAM)
TRAY2_1ST	Tray 2 feed tray paper feed JAM (Check the paper set condition)
TRAY2_LE	Tray 2 feed tray paper feed JAM
TRAY2_RT	Tray 2 feed tray paper feed JAM (Check the paper)
TRAY3	Tray 3 paper feed JAM (D1PPD not-reached JAM)
TRAY3_1ST	Tray 3 feed tray paper feed JAM (Check the paper set condition)
TRAY3_LE	Tray 3 feed tray paper feed JAM
TRAY3_RT	Tray 3 feed tray paper feed JAM (Check the paper)
TRAY4	Tray 4 paper feed JAM (D2PPD not-reached JAM)
TRAY4_1ST	Tray 4 feed tray paper feed JAM (Check the paper set condition)
TRAY4_LE	Tray 4 feed tray paper feed JAM
TRAY4_RT	Tray 4 feed tray paper feed JAM (Check the paper)

(5) Tandem DESK

JAM code	JAM content
2TPD_NT1	2TPD not-reached JAM (Tandem left side paper feed)
2TPD_NT2	2TPD not-reached JAM (Tandem right side paper feed)
2TPD_ST1	2TPD remaining JAM (tandem desk left side paper feed)
2TPD_ST2	2TPD remaining JAM (tandem desk right side paper feed)
C1PFD_NT1	C1PFD not-reached JAM (Tandem left side paper feed)
C1PFD_NT2	C1PFD not-reached JAM (Tandem right side paper feed)
C1PFD_ST1	C1PFD remaining JAM (tandem desk left side paper feed)
C1PFD_ST2	C1PFD remaining JAM (tandem desk right side paper feed)
C2PFD_NT1	C2PFD not-reached JAM (Tandem left side paper feed)
C2PFD_NT2	C2PFD not-reached JAM (Tandem right side paper feed)
C2PFD_ST1	C2PFD remaining JAM (tandem desk left side paper feed)
C2PFD_ST2	C2PFD remaining JAM (tandem desk right side paper feed)
D1PPD1_ST1	D1DPFD2 remaining JAM (tandem desk left side paper feed)
D1PPD2_NT1	DPFD2 not-reached JAM (Tandem left side paper feed)
D1PPD2_ST1	D1DPFD2 remaining JAM (tandem desk left side paper feed)
DPFD1_NT1	DPFD1 not-reached JAM (Tandem left side paper feed)
DPFD1_ST1	DPFD1 remaining JAM (tandem desk left side paper feed)
DPFD1_ST2	DPFD1 remaining JAM (tandem desk right side paper feed)
PPD2_NT1	PPD2 not-reached JAM (Tandem left side paper feed)
PPD2_NT1_D	PPD2 not-reached JAM (Tandem left side paper feed) (Delay of paper just before the jam from PS) *1
PPD2_NT2	PPD2 not-reached JAM (Tandem right side paper feed)
PPD2_NT2_D	PPD2 not-reached JAM (Tandem right side paper feed) (Delay of paper just before the jam from PS) *1
PPD2_ST1	PPD2 remaining JAM (tandem desk left side paper feed)
PPD2_ST1_D	PPD2 remaining JAM (tandem desk left side paper feed) (Delay of paper just before the jam from PS) *1
PPD2_ST2	PPD2 remaining JAM (tandem desk right side paper feed)
PPD2_ST2_D	PPD2 remaining JAM (tandem desk right side paper feed) (Delay of paper just before the jam from PS) *1
TRAY3	Tray 3 (tandem left side) paper feed JAM
TRAY3_1ST	Tray 3 (tandem left side) feed tray paper feed JAM (Check the paper set condition)
TRAY3_LE	Tray 3 (tandem left side) feed tray paper feed JAM
TRAY3_RT	Tray 3 (tandem left side) feed tray paper feed JAM (Check the paper)
TRAY4	Tray 4 (tandem right side) paper feed JAM
TRAY4_1ST	Tray 4 (tandem right side) feed tray paper feed JAM (Check the paper)
TRAY4_LE	Tray 4 (tandem right side) feed tray paper feed JAM
TRAY4_RT	Tray 4 (tandem right side) feed tray paper feed JAM (Check the paper)

*1: In SIM22-41, the description of "(Delay of paper just before the JAM from PS)" is omitted because of the limitation on the number of characters.

(6) Inner finisher

JAM code	JAM content
FCMOT	Punch motor JAM
FNENTER	Before multi-rotation JAM
FNM10	Paddle motor JAM
FNM2	Scrape belt motor JAM
FNM3	Front alignment motor JAM
FNM4	Rear alignment motor JAM
FNM5	Assist motor JAM
FNM6	Tray shift motor JAM
FNM7	Stapler shift motor JAM
FNM9	Staple-free staple bind motor JAM
FNPS1_N	Paper exit sensor delay JAM
FNPS1_S	Paper exit sensor remaining JAM
FNPS12	Manual bundle insert JAM
FNPS8	Bundle motor JAM
FNSTPLIF	Staple JAM
FNTIME	Finisher paper early reaching JAM

(7) 1K finisher

JAM code	JAM content
FCPNCH_M	Punch drive motor JAM
FCPNCHMV_M	Punch shift motor JAM
FCSTSMOV_M	Lateral registration correction motor JAM
FNBDLTRS_N	Bundle transport not-reached JAM
FNBLT_M	Release motor JAM
FNENDSTRS_N	Edge stopper paper surface sensor not-reached JAM
FNENDSTRS_S	Edge stopper paper surface sensor remaining JAM
FNENT_N	Entrance not-reached JAM
FNENT_S	Entrance remaining JAM
FNENTRS_M	Entrance transport motor JAM
FNEXGPLT_M	Paper eject cover open/close motor JAM
FNEXTRS_M	Paper exit/Tapping motor JAM
FNFLDEX_N	Folding paper exit not-reached JAM
FNFLDEX_S	Folding paper exit remaining JAM
FNJOG_M	Jogger motor JAM
FNLMDLT_N	Intermediate transport left not-reached
FNLMDLT_S	Intermediate transport left sensor remaining JAM
FNPRFEX_N	Proof paper exit not-reached JAM
FNPRFEX_S	Proof paper exit remaining JAM
FNPSN_M	Tapping motor JAM
FNRMDLT_N	Intermediate transport right not-reached
FNSFT_M	Shift motor JAM
FNSTPMOV_M	Stapler motor JAM
FNSTPMV_M	Stapler shift motor JAM
FNTRYLFT_M	Tray lift motor JAM
FNUPEX_N	Shift paper exit not-reached JAM
FNUPEX_S	Shift paper exit remaining JAM
FNUPTRS_M	Proof transport motor JAM
FSENDS_M	Edge stopper motor JAM
FSFLDPLT_M	Folding blade motor JAM
FSLPRSRL_M	Booklet transport lower pressure release motor
FSUPRSRL_M	Booklet transport upper pressure release motor/Standard fence retreat motor JAM

(8) 3K finisher

JAM code	JAM content
FCMR	Punch shift motor JAM
FCP	Punch motor JAM

JAM code	JAM content
FCP2	Punched hole JAM
FIN_TIME	Finisher paper early reaching JAM
FNB_N	Buffer sensor time-out JAM
FNB_S	Buffer sensor remaining JAM
FNCDP	Paddle Jam
FNDPMS	Manual bundle insert JAM
FNE_N	Entrance paper sensor time-out JAM
FNE_S	Entrance paper sensor remaining JAM
FNEE_N	The first escape delivery sensor time-out JAM
FNEE_S	The first escape delivery sensor remaining JAM
FNMAR	Assist motor JAM
FNMDT	Guide sub motor JAM
FNMFECES	Escape/saddle transport switching flapper motor Jam
FNMFR	Paper End Pushing Guide Motor JAM
FNMGMT	Tray lift motor Jam
FNMGRS	Return Roller Lift Motor JAM
FNMJF	Front alignment motor JAM
FNMJR	Rear alignment motor JAM
FNMMSS	Staple shift motor JAM
FNMOTERR	Motor trouble JAM
FNMS	Swing motor JAM
FNMSLS	Staple-free staple bind motor JAM
FNMSS	Staple JAM
FNSSS	Safety switch actuation Jam
FNTBP_N	Paper exit sensor time-out JAM
FNTBP_S	Paper exit sensor remaining JAM
FSE_N	Saddle entrance paper sensor time-out JAM
FSE_S	Saddle entrance paper sensor remaining JAM
FSEB_N	Saddle paper exit sensor time-out JAM
FSEB_S	Saddle paper exit sensor remaining JAM
FSMC	Paddle JAM (Saddle section)
FSMDLE	Saddle switching lever motor JAM
FSME	Saddle delivery motor JAM
FSMF	Saddle Paper Pushing Plate/Folding Motor JAM
FSMG	Gripper motor JAM
FSMJ	Saddle alignment motor JAM
FSMS	Saddle staple JAM
FSMSR	Edge stopper motor JAM

(9) Paper pass unit

JAM code	JAM content
PDPPD1_N	PDPPD1 not-reached JAM
PDPPD1_S	PDPPD1 remaining JAM
PDPPD2_N	PDPPD2 not-reached JAM
PDPPD2_S	PDPPD2 remaining JAM

3. Image send communication report code

A. Outline and code system descriptions

After completion of communication, the communication report table, the communication management table, and the protocol are described on the communication report column.

The communication report code is composed as follows:

Communication report: XX (XXXX)

The upper 2 digits of the communication report code:
Communication report code of 00 – 99 (Refer to communication report main code.)

The lower 4 digits of the communication report code:
Used by the serviceman.

The upper 2 digits: Communication report sub code 1 (Refer to communication report sub code 1.)

The lower 2 digits: Communication report sub code 2 (Refer to communication report sub code 2.)

Important

The communication report sub code 1 and sub code 2 are in hexa-decimal notation. (The others are in decimal notation.)

Important

The communication report sub code 1 is not used in the these models.

B. Details

(1) Communication report main code

Report code	Final receive signal (Send side)	Final receive signal (Receive side)
0	Abnormal signal	Abnormal signal
1	NSF, DIS	(SID), (SUB), NSS, DCS
2	CFR	(PWD), (SEP), NSC, DTC
3	FTT	EOP
4	MCF	EOM
5	PIP, PIN	MPS
6	RTN, RTP	PRI-Q
7	No signal, DCN	DCN
8	PPR	PPS-EOP
9		PPS-EOM
10		PPS-MPS, PPS-NULL
11	RNR	RR
12	CTR	CTC
13	ERR	EOR-Q
14		PPS-PRI-Q
16	Abnormal signal	Abnormal signal
17	NSF, DIS	SID, SUB, NSS, DCS
18	CFR	PWD, SEP, NSC, DTC
19	FTT	PPS-EOP
20	MCF	PPS-EOM
21	PIP, PIN	PPS-MPS, PPS-NULL
22	RTN, RTP	PRI-Q
23	No signal, DCN	DCN
24	PPR	
25	RNR	RR
26	CTR	CTC
27	ERR	EOR-Q
28		PPS-PRI-Q
29	V.8 Phase-1	V.8 Phase-1
30	V.8 Phase-2	V.8 Phase-2
31	V.8 Phase-3	V.8 Phase-3

Important

For report codes 16 – 31, V.34 MODE COMMUNICATION.

Report code (Communication result)	Display in the column of result	Content of communication interruption
0 – 31	Refer to “previous table”.	Depends on the point of communication interruption. For 16 or later, V.34 mode communication.
33	BUSY	The calling side cannot establish connection with the remote party.
34	CANCEL	A communication interruption command is made during sending/receiving. The interruption key is pressed for interruption of input. <Send/Receive/Polling/Bulletin board>
35	NG35 XXXX	Power is failed during sending/receiving. <Send/Receive/Polling/Bulletin board>
36	(No record paper)	
37	(Record paper jam)	
38	MEM. FULL	Memory over during reception. <Receive/Polling> Print is not made during reception in acting reception inhibit. <Receive/Polling>
39	(Number of paper unmatched)	
40	(Relay not received)	
41	LENGTH OVER	The send data length of one page exceeds the limit (2m) in sending. <Send/Bulletin board>
42	LENGTH OVER	The receive data length of one page exceeds the limit. <Receive/Polling>
43	(Communication) (OK)	Speaking before data transmission
44	ORIGINAL ERROR	A document jam occurs in direct sending. <Send>
45	(Picture quality error)	
46	NO RESPONSE	The FAX signal from the remote party is not detected within T1 time. <Send/Polling> (When in recall, however, the recall setting in case of a communication error is valid.)
47	TX DECODE ERROR	A decode error occurs in the FAX board. <Send/Bulletin board>
48	OK	Normal end of communication
	OK REPLY RECEIVE	OK in Internet FAX send with reception confirmation.
49	NO RX POLL	The called side does not have polling function in polling reception. <Polling> The called side has no data to send. <Polling>
50	RX POLL FAIL	In polling reception, DCN is received for DTC. <Polling> In polling sending, there is no send data. <Bulletin board>
51	PASS # NG	In poling sending, the allow number is not matched. <Bulletin board> In polling sending, the system number is not matched. <Bulletin board>
52	(No confidential function in remote party)	In confidential sending, the remote party does not have confidential function. <Send> (Including other company's machines) 1) The NSF signal has not "Confidential function" bit. 2) The NSF is not a Sharp machine.
53	(Confidential not received)	1) In confidential sending, DCN is received for NSS. <Send>
54	(Confidential BOX NO NG)	1) In confidential reception, a confidential box number which is not registered is specified.
55	(No relay function in remote party)	In relay command sending, the remote machine has no relay function. <Send> (Including other company's machine) 1) The NSF signal has not "Confidential function" bit. 2) The NSF is not a Sharp machine.
56	NO REL RX	1) In relay command sending, DCN is received for NSS. <Send> 2) In relay command reception, a remote station number which is not registered is specified. <Receive> 3) In F code relay broadcasting, an F code relay command is received.<Receive>
57	(Relay ID unmatched)	1) In relay command reception, the relay ID does not match. <Receive>
58	REJECTED	In reception, data are sent from a remote machine of receive inhibit number. <Receive> (Not rejected in the bulletin board send or the F code bulletin board send.)
59	RX NO F-CODE POLL	In F code polling (calling), the remote machine has no DIS bit 47 (polling function). <Polling> In F code polling (calling), the called side has no send data. (DIS bit 9 is 0.)<Polling>
60	NO F-CODE POLL	In F code polling (calling), DCN is received for SEP. <Polling> In bulletin board, there is no send data for SEP. <Bulletin board>
61	RX POLL # NG	In bulletin board, the sub address (bulletin board number (SEP)) is not matched. <Bulletin board>
62	F POLL PASS # NG	In bulleting board, the pass code (PWD) is not matched. <Bulletin board>
63	NO F FUNC	In F code sending, the remote machine has no DIS bit 49 (sub address function). <Send> (Check that the remote machine conforms to F code.)
64	NO F-CODE	In F code sending : <Send> 1) DCN is received for SUB. --- Check the box number. 2) DCN is received for SID. --- Check the box number and pass code. In F code receiving : <Receive> "F code relay broadcasting" or "F code confidential reception" is "Inhibited with soft SW."
65	NG65 XXXX	If the reservation of the job cannot be completed when reserving the job from PC-FAXorPC-IFAX; *If an error occurs when storing the job ticket (including fmSyncFile error); *If an error occurs when creating the thumbnail; *If an error occurs when creating the map; *If an error occurs during the storage of the control table;
67	F PASS # NG	In F code receiving, the pass code (SID) is not matched. <Receive>
68	BOX NO. NG	In F code reception, a box number which is not registered is specified. (SUB is not matched.) <Receive>
69	MEMORY OVER	Memory over in quick online sending <Send>
70	(JOB MEMORY OVER)	In PC-FAX reservation, the number of remote parties is exceeded. <Send>
71	NG71 XXXX *1	In PC-FAX reservation, data sent from PC includes some errors. <Send>
72	(NG72 XXXX) *1	In department management setting on the machine side: • In reservation from PC-FAX or PC-Internet FAX, a department number which is not registered on the machine side is specified. <Send> • In reservation from PC-FAX or PC-Internet FAX, the department number is not specified. <Send>

Report code (Communication result)	Display in the column of result	Content of communication interruption
73	NG73 XXXX *1	In reservation from PC-FAX or PC-Internet FAX, the use quantity limit is exceeded. <Send>
74	NG74 XXXX *1	When reserving specified filing in document filing in PC-FAX or PC-Internet FAX; • The pass-code for the folder is set on the machine side and the pass-code from PC-XXX does not match with it. <Send> • The pass-code for the folder is set on the machine side and no pass-code is specified by PC-XXX. <Send>
75	NG75 XXXX *1	• Reservation cannot be made due to machine busy. (Reservation of PC-FAX cannot be accepted.) • When "PC-FAX or PC-internet FAX send inhibit" is set on the machine side.
76	NG76 XXXX *1	Reserved with receive confirmation request in PC-Internet FAX, but the Internet FAX sender is not registered on the machine side. <Send>
77	NG77 XXXX *1	In reserving specified filing in PC-FAX or PC-Internet FAX, the machine has no filing function.
78	NG78 XXXX *1	The filing function is inhibited on the machine side when filing specification is reserved by PC-FAX or PC-Internet FAX.
79	NG79 XXXX *1	An authentication error occurs when PC-FAX or PC-Internet FAX is reserved.
80	NG80 XXXX *1	NIC connect failure (network abnormality) • Check for disconnection of cables. • A network trouble (CE-XX) occurs. • The port is set to DISABLE. • Authentication of the POP server is failed when POP before SMTP is enabled. • When an error other than the communication result code 93 or 94 in D-SMTP send (including error response of 5XX)
81	NG REPORT	In Internet FAX send, reply of receive confirmation of the remote machine is not normal. (Including PC-Internet FAX). • Error of the disposition-modifier. • The disposition modifier is not in an error, and the disposition type is other than displayed, dispatched, or processed.
82	NO REPORT	In Internet FAX send, time-out occurs in waiting for receive confirmation from the remote machine. (Including PC-Internet FAX). • In a case where send confirmation wait time-out time is other than 0, when send confirmation reply from an Internet FAX destination is not received. • Recalls of the set number of recalls are performed, but send confirmation reply from an internet AFX destination is not received.
83	NG LIMIT	In E-mail/FTP, Internet FAX send, the send data size exceeds the upper limit of send data.
84	REJECTED	In e-mail receive, a sender is registered in receive reject address/domain. <Receive>
85	NG85 XXXX *1	In e-mail receive, an error occurs in communication with POP3 server. • Header acquisition error. • Time-out during mail receive
86	RECEIVED	In e-mail receive, an unsupported attached file is received. Only the TIFF-F type is supported for attached files. • The TIFF-F type of the attached file cannot be recognized. • There is no attached file.
87	NG87 XXXX *1	In e-mail receive, an attached file cannot be stored in memory. • Memory over
88	NG88 XXXX *1	In SMTP e-mail receive, an attached file cannot be stored in memory. • Cannot be stored in memory. • The number of items of acting receive data is the maximum, and an additional data cannot be stored.
89	NG89 XXXX *1	In SMTP e-mail receive, an error occurs in communication with the mail server. • Time-out occurs during e-mail receive.
90	NG90 XXXX *1	After reservation by re-operation of document filing, conversion for image send cannot be made. • conversion for image sending cannot be made.
91	NG91 XXXX *1 *2	Data cannot be written to the memory device when Scan To USB is executed. • The memory device is disconnected during writing to the memory device. • An error occurs due to a memory device trouble.
92	NG92 XXXX *1 *2	The USB device memory overflows during writing data into the memory device when "Scan to USB" is executed.
93	NG93 XXXX *1	When error in D-SMTP send (with recall) • An error response of 4XX occurs during communication with the SMTP server. • Time out occurs after establishment of connection with the SMTP server.
94	NG94 XXXX *1	When busy in D-SMTP send Time out occurs during establishment of connection with the SMTP server.
95	NG95 XXXX *1	When the path is too long in execution of Scan To USB.
96	NG96 XXXX *1	When the normal process is not executed in the secure mail sending.
98	NG98 XXXX *1	The copy inhibit pattern is detected when scanning a document.
99	NG99 XXXX *1	A document which is inhibited to be copied such as a banknote is scanned.

*1: For a job status result in "Display in the column of result," "NG XXXX" is displayed. " " is the code number.
For a communication result, "Communication error (XXXX)" is displayed.

*2: The error code of Scan To USB is specified only in the job log.

- When the communication result is OK, the communication sub code 1 and the communication sub code 2 are "0000."
- Errors in ( ) are not used.

(2) Communication report sub code 1

The communication report sub code 1 (upper 2 digits) are always indicated as "00."

(3) Communication report sub code 2

Report code 2	Content of communication interruption	Send/Receive
00	When the conditions after 01 do not apply.	Send/Receive
01	Send length over	Send
02	EOL time up	Receive
03	Carrier detection time up	Receive
04	Time up of the communication start command from the machine side	Receive
05	Time up in phase C (8 min)	Send
06	Memory image decode error	Receive
07	Memory image decode error	Send
08	Time up between frames in phase C (Report code is 0 or 16.)	Send/Receive
09	Not used	—
10	Not used	—
11	Polarity reversion detection	Receive
12	Invalid command reception	Receive
13	Time up (1-minute timer/6-second time)	Receive
14	PUT error	Receive
15	In V.34 mode, time up is generated when shifting from Primary to Control.	Receive
16	In V.34 mode, time up is generated when shifting from Control to Primary.	Receive
17	Command receive time-up from MFP controller	Receive
18	Not used	—
19	Not used	—
20	Polarity reversion detection	Send
21	Invalid command reception	Send
22	Fallback retry number over	Send
23	Command retry number resend over	Send
24	Time up (T5 timer)	Send
25	Time up (T5 timer) in V.34 mode	Send
26	In V.34 mode, time up is generated when shifting from Primary to Control.	Send
27	In V.34 mode, time up is generated when shifting from Control to Primary.	Send
28	When sending the FSK signal, no response of send completion is sent back from the MODEM chip within a certain time. (V.34, other than V.34)	Send
29	Not used	—
30	A communication error is generated between MFP controller and Modem controller. (Report code is 0 or 16.)	—
31	DC current not detected (busy) Line disconnected.	Send
32	Dial tone not detected (busy)	Send
33	Busy tone detection (busy)	Send
34	T0 time up (Remote machine not responding)	Send
35	T1 time up (Remote machine not responding)	Send
36	In dialing, polarity reversion detection (Remote machine not responding)	Send
37	Calling is not made (busy)<Collision detected (including CNG detection)>	Send
38	Not used	—
60	In resend of document filed data, an error occurs in decoding or coding.	Resend
61	In resend of document filed data, setting to inhibit resolution conversion is made. (The resolution after resend is set to be Enlarged.)	Resend
62	In resend of document filed data, rotation setting is made for data which cannot be rotated.	Resend
63	In resend of document filed data, data cannot be stored in HD after conversion of resolution for resend.	Resend
64	In resending data of document file, during conversion for resending, the number of IMS management pages exceeds the upper limit (999). (IT occurs in OSA Scan to FTP also, resulting in memory over.)	Resend OSAScanToFTP
70	E-mail header acquisition error	E-mail receive
71	Time out occurs during e-mail receive.	E-mail receive
72	Receive reject occurs during e-mail receive.	E-mail receive
73	Network communication cannot be made due to port disable.	Network send
74	An authentication of the POP server is failed when POP before SMTP is enabled.	Network send
75	In the setting of SSL communication, when SSL communication is tried but the server side does not support SSL.	Network send
76	There is no image in network communication (transfer).	Network send
80	There is no attached file in received e-mail.	E-mail receive
81	The attached file of received e-mail is not of TIFF type which is supported.	E-mail receive
82	The TIFF type of the attached file in received e-mail cannot be recognized. ID error	E-mail receive
83	The TIFF type of the attached file in received e-mail cannot be recognized. Endian error	E-mail receive
84	The TIFF type of the attached file in received e-mail cannot be recognized. Version error	E-mail receive
85	The TIFF type of the attached file in received e-mail cannot be recognized. Tag data error	E-mail receive
86	The TIFF type of the attached file in received e-mail cannot be recognized. Tag parameter error	E-mail receive

Report code 2	Content of communication interruption	Send/Receive
87	The TIFF type of the attached file in received e-mail cannot be recognized. Header size error	E-mail receive
88	The TIFF type of the attached file in received e-mail cannot be recognized. Data error	E-mail receive
90	In e-mail receive, an attached file cannot be stored in memory. Memory over. Cannot be stored in memory.	E-mail receive
91	In e-mail receive, an attached file cannot be stored in memory. The file size is too great to be stored in memory.	E-mail receive
92	In SMTP e-mail receive, an attached file cannot be stored in memory. Cannot be stored in memory.	E-mail receive
93	There is character that cannot be processed. OCR processing error.	—

When the sub code 2 is "08" or "30" and the communication report is "OK," the report code is "00" or "16."

[8] FIRMWARE UPDATE

1. Outline

A. Cases where update is required

ROM update is required in the following cases:

1) When there is a necessity to upgrade the performance.
2) When installing a new spare part ROM for repair to the machine.
3) When installing a new spare parts PWB unit (with ROM) for repair to the machine.
4) When there is a trouble in the ROM program and it must be repaired.

B. Notes for update

(1) Relationship between each ROM and update

Before execution of ROM update, check combinations with ROM's installed in the other PWB's including options. Some combinations of each ROM's versions may cause malfunctions of the machine.

C. Update procedures and kinds of firmware

There are following methods of update of the firmware.

1) Update method using SIM 49-1
2) Update method using FTP
3) Update method using the Web page
4) Update method using the CN update function (There are three methods.)

   Normally, one of 1) - 3) is used to update the firmware.

   When any one of 1) - 3) is interrupted by an error such as power-off during updating, etc., and when retries of these methods are failed, the method 4) is employed.

Firmware types

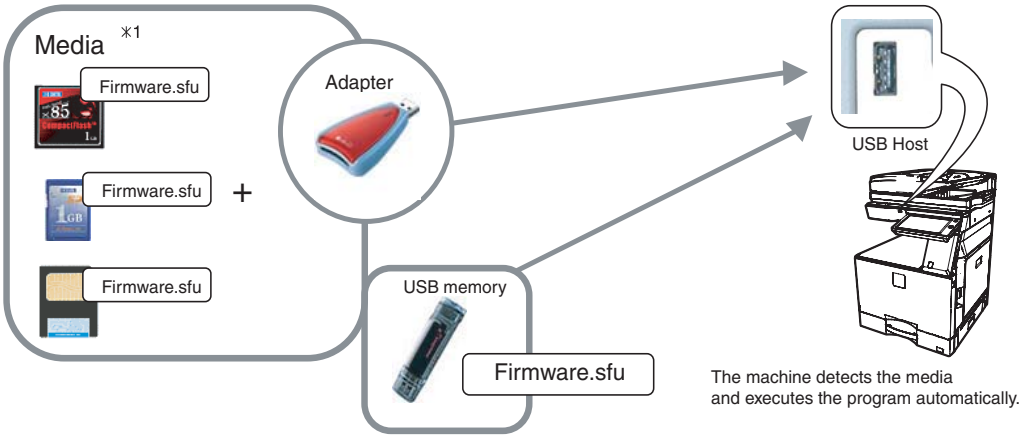
The firmware type can be displayed by SIM22-5.

Use SIM22-5 to check the firmware type.

2. Update procedure

A. Update method using SIM 49-1

For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



*1:

- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have an enouch 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.

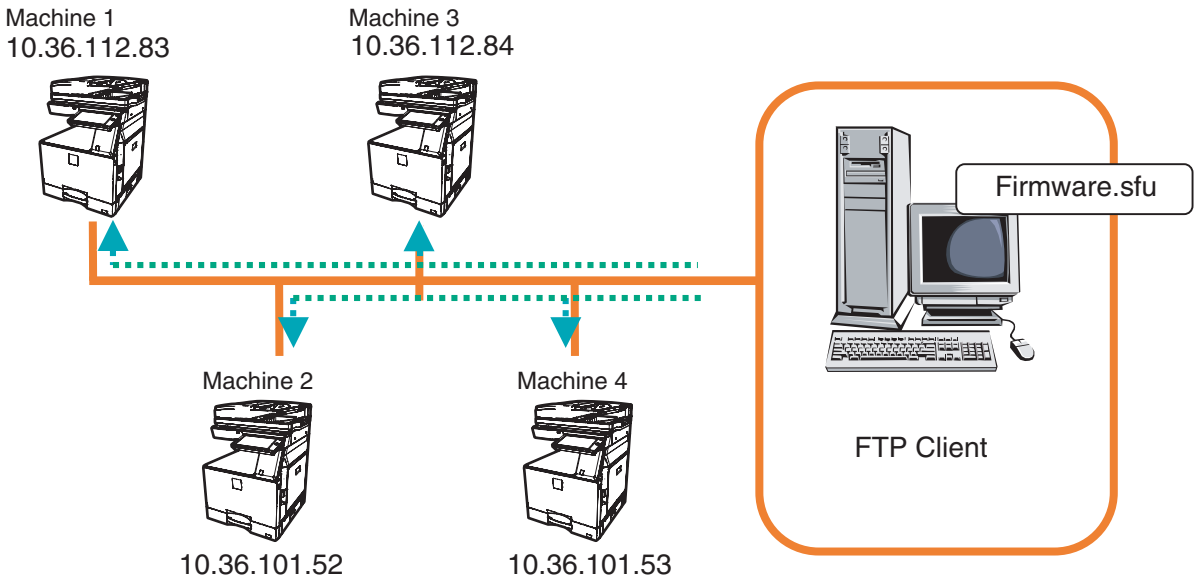
   All the firmware programs are selected.

   * 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 firemware.
6) If the update is normal completion, Display "Complete"
7) If the update is not normal completion, Display "Error" and its firmware name or dose not reboot, in this case power OFF and ON if still same machine condition, go to the CN update

B. Firmware update using FTP

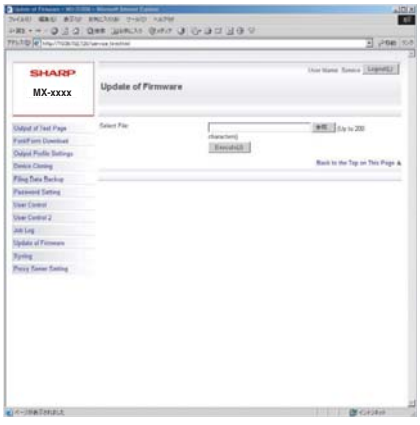
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



C. Firmware update using the Web page

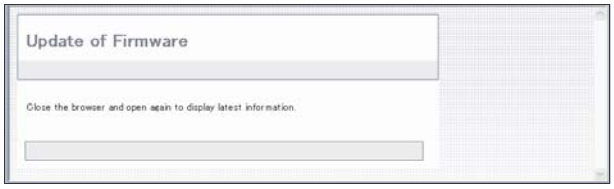
Web browser (service technician's Web page) is used to update the firmware.

1) Start the Web browser on a PC and enter the specified URL (http://xxx.xxx.xxx.xxx/service_login.html) and enter the servicing page menu.
   Default password : "service". 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 SCN MFP PWB is called the CN update.

a. Function

There are the following three functions in the CN update mode.

1) Firmware update function

   This function is used to update the firmware by transferring data from the PC which is connected to the SCN MFP 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 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.

2) 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.)

3) ROM making function

(This function is not used in the market, and not described in this manual.)

b. Purpose

This function is used in the following cases:

1) When an error occurs during firmware update operation other than the CN update.

When the power is shut down or an error occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

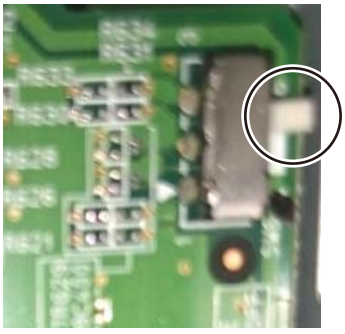
If, however, an abnormality occurs in the boot program, the mSATA SSD must be replaced with a new one having the normal boot program.

If an error occurs in the boot program, this method cannot be used. In such a case, the mSATA SSD must be replaced with a new one having the normal boot program.

c. DIP-SW used in the CN update mode

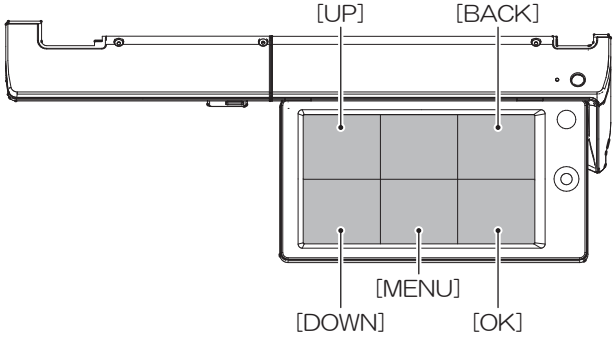
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

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 SCN MFP PWB, the PCU PWB, the FAX PWB, and each option.

It is basically same as SIM 49-01, but differs in the following points.

1) The update target ROM is automatically selected.
2) When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update.

If, however, an abnormality occurs in the boot program, this method cannot be used. On that case, the mSATA SSD 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).

a-1. Necessary items

1) mSATA SSD mounted on the SCN MFP PWB of the machine.
2) USB memory with the firmware file (SFU) saved in it.

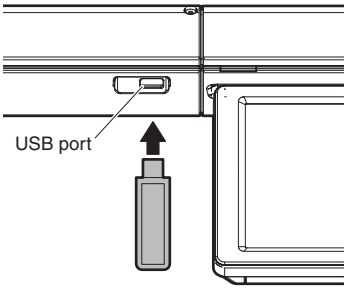
Note

Save the firmware file in the main directory or in a one-level lower directory.

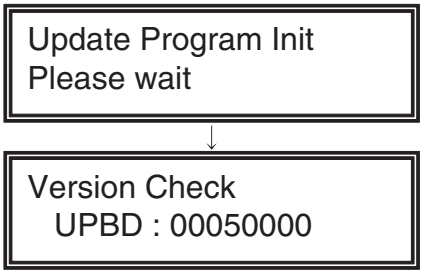
a-2. Procedures

1) Turn OFF the power, and remove the cabinet and the MFP cover.
2) Turn ON the DIP SW of the SCN MFP PWB UP DATE. (Tilt it to the PWB side.)
3) Install the USB memory into the USB port.

USB memory installing position

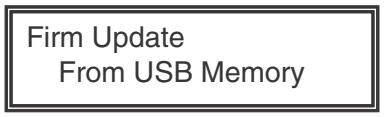


4) Turn ON the power.
5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)



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 SCN 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 SCN MFP PWB cover and the cabinet.

[9] MAINTENANCE

1. Works necessary when executing the maintenance

A. Counter check

Before execution of the maintenance, execute SIM22 to check the counter values of the following counters to confirm consuming states of each section.

1) Each consumable part counter
2) Each unit counter
3) Trouble counter, JAM counter

B. Counter reset

When a part or consumable part is replaced with new one in the maintenance. Execute SIM24 reset the following counters.

1) Maintenance counter
2) Each consumable part counter
3) Each unit counter
4) Trouble counter, JAM counter

C. Firmware version check and update

Execute SIM22-5 to check the firmware version and update it as needed.

2. Display of maintenance execution timing

The message of maintenance execution timing is displayed when each counter reaches the set value. The relations between the message and the counters are shown below.

A. Maintenance counter

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: TA	0 (Print continue)	Maintenance counter (Total)	When SIM21-1 set value is reached	Enable
	1 (Print stop)		When 90% of SIM21-1 set value is reached	
□Maintenance required: TA	1 (Print stop)		When SIM21-1 set value is reached	Disable
Maintenance required: CA	0 (Print continue)	Maintenance counter (Color)	When SIM21-1 set value is reached	Enable
	1 (Print stop)		When 90% of SIM21-1 set value is reached	
□Maintenance required: CA	1 (Print stop)		When SIM21-1 set value is reached	Disable
Maintenance required: AA	0 (Print continue)	Both of Total and Color	When SIM21-1 set value is reached	Enable
	1 (Print stop)		When 90% of SIM21-1 set value is reached	
□Maintenance required: AA	1 (Print stop)		When SIM21-1 set value is reached	Disable

* After execution of maintenance, be sure to execute SIM24-4 to clear the maintenance counter (Total) and the maintenance counter (Color).

B. Primary transfer unit

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: TK1	0 (Print continue)	Primary transfer unit print counter	When 250K is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear the primary transfer unit print counter, the accumulated number of rotations counter and the use day counter.

C. Secondary transfer unit

Display content	Display content			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: TK2	0 (Print continue)	Secondary transfer unit print counter	When 250K is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear the secondary transfer print counter, the accumulated number of rotations counter and the use day counter.

D. PTC unit

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: TK3	0 (Print continue)	PTC unit print counter	When 250K is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear the PTC unit print counter, accumulated number of rotations counter and the use day counter.

E. Fusing unit

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: FK1	0 (Print continue)	Fusing belt print counter	When 250K is reached	Enable
	1 (Print stop)			
Maintenance required: FK2	0 (Print continue)	Pressure roller print counter		Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear the fusing roller counter, fusing belt counter, the accumulated rotation number counter and the use day counter.

F. OPC drum

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: DK	0 (Print continue)	OPC drum print counter (K) OPC drum accumulated rotation number counter (K)	When 200K is reached or When 1350K rotation is reached	Enable
	1 (Print stop)			
Maintenance required: D (C/M/Y)	0 (Print continue)	OPC drum print counter (C/M/Y) OPC drum accumulated rotation number counter (C/M/Y)	When 170K is reached or When 1350K rotation is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear OPC drum print counter, the accumulated number of rotations counter and the use day counter.

G. Main charger

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: MCK	0 (Print continue)	Main charger (K) counter Main charger (K) accumulated rotation counter	When 200K is reached or When 1350K rotation is reached	Enable
	1 (Print stop)			
Maintenance required: MC (C/M/Y)	0 (Print continue)	Main charger (C/M/Y) counter Main charger (C/M/Y) accumulated rotation counter	When 170K is reached or When 1350K rotation is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear main charger count/accumulated rotation/use days counters.

H. Developer

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required: VK	0 (Print continue)	Developer print counter (K) DV unit accumulated number of rotations (K)	When 400K is reached or When 2700K rotation is reached	Enable
	1 (Print stop)			
Maintenance required: V (C/M/Y)	0 (Print continue)	Developer print counter (C/M/Y) DV unit accumulated number of rotations (C/M/Y)	When 340K is reached or When 2700K rotation is reached	Enable
	1 (Print stop)			

* After execution of the maintenance, execute SIM24-4 to clear the developer print counter, the accumulated number of rotations counter and the use day counter.

I. Waste toner box

Display content	Display condition		Print JOB Enable/Disable
	Counter name	Counter value	
Check the waste toner box	After detection of near end		Near end: Enable End: Disable

* When the waste toner box is replaced with an empty one, the message disappears

J. Toner

Display content	Display condition			Print JOB Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
K/C/M/Y Toner Low (Do not replace cartridge until requested) (Close to Near end)	No relation	Toner motor rotation time	Specified time of rotations	Enable
Change the toner cartridge (Near end)	No relation	Toner supply amount is decreasing	ATC sensor output variation	Enable
Change the toner cartridge K (End)	0 (Print continue)	The pixel count from near end reaches the specified value	Specified pixel count	Disable
	1 (Print stop)			
Change the toner cartridge C/M/Y (End)	0 (Print continue)	The pixel count from near end reaches the specified value	Specified pixel count	Enable for monochrome Disable for color
	1 (Print stop)			

1 : '18/Mar.

3. Maintenance list

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Section/ Unit work sequence	Name	Unit name	Work sequence	Part name	When calling	every 1350K rotation	every 2700K rotation	Remarks
3	Developing section	Developing unit (Monochrome)	1	Developer	x	x	▲	Maximum Printable number: 400K
			2	DV blade	x	x	x	Replace as needed
			3	DV side seal F/R	x	x	x	
			4	Toner filter	x	x	x	
			5	DV blade upper	x	x	x	
			6	Bias pin	x	x	x	
		Developing unit (Color)	1	Developer	x	x	▲	Maximum Printable number: 340K
			2	DV seal	x	x	x	Replace as needed
			3	DV side seal F/R	x	x	x	
			4	Toner filter	x	x	x	
			5	DV Blade upper	x	x	x	
			6	Bias pin	x	x	x	
4	OPC drum section	OPC drum unit (Monochrome)	1	Charger unit	x	▲	x	Maximum Printable number: 200K
			2	Drum	x	▲	x	
1			3	Cleaning blade	x	▲	x	Replace at specified rotation or printable number Recommend to be replaced after 2 year use
			4	Toner reception sheet	x	x	x	Replace as needed
			5	Side seal F/R	x	x	x	
			6	Charger cleaner	x	▲	x	
		OPC drum unit (Color)	1	Charger unit	x	▲	x	Maximum Printable number: 170K
			2	Drum	x	▲	x	
1			3	Cleaning blade	x	▲	x	Replace at specified rotation or printable number Recommend to be replaced after 2 year use
			4	Toner reception sheet	x	x	x	Replace as needed
			5	Side seal F/R	x	x	x	
			6	Charger cleaner	x	▲	x	

Section/ Unit work sequence	Name	Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000K	Remarks
1	Document feed section	RSPF unit	1	Paper pickup roller	○	○		○		○		○	Replace at 100K of the SPF paper feed counter or 1 year of use. When replacing the paper feed roller, apply grease (UKOG-0013QSZZ) to the paper feed shaft
			2	Paper feed roller	○	○		○		○		○	
			3	Separation roller	○	○		○		○		○	
			4	Torque limiter SPF	x	x		x		x		x	Replace at 400K of the SPF paper feed counter or 2 year of use
			5	Torque limiter pickup	x	x		x		x		x	
			6	Discharge brush	x	x		x		x		x	
			7	Registration roller	○	○		○		○		○	
			8	Transport roller 1	○	○		○		○		○	
			9	Transport roller 2	○	○		○		○		○	
			10	Paper exit roller	○	○		○		○		○	
			11	Sensors	x	x		x		x		x	
			12	Scan plate	○	○		○		○		○	
			13	Gears	x	x		x		x		x	
			14	Belts	x	x		x		x		x	
			15	OC mat	○	○		○		○		○	
2	Scanner section	Scanner unit	1	Drive belt	x	x		x		x		x	
			2	Drive wire	x	x		x		x		x	
			3	Sensors	x	x		x		x		x	
			4	Rails	☆	☆		☆		☆		☆	Apply grease (UKOG-0158FCZZ)
			5	Mirror	○	○		○		○		○	
			6	Lamp	○	○		○		○		○	
			7	Lens	○	○		○		○		○	
			8	CCD	○	○		○		○		○	
			9	Table glass	○	○		○		○		○	
			10	SPF glass	○	○		○		○		○	

Section/ Unit work sequence	Name	Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000K	Remarks
5	Transfer section	Primary transfer unit	1	Separation pawl	-	x		x		x		x	Replace as needed
			2	Primary transfer belt	-	▲		▲		▲		▲	
			3	Primary transfer belt drive gear	-	x		x		x		x	Replace as needed
			4	Primary transfer belt drive roller	-	○		○		○		○	Clean with alcohol
			5	Primary transfer belt follower roller	-	○		○		○		○	Clean with alcohol
			6	Primary transfer blade backup roller	-	○		○		○		○	Clean with alcohol
			7	BK auxiliary roller	-	○		○		○		○	Clean with alcohol
			8	Y auxiliary roller	-	○		○		○		○	Clean with alcohol
			9	Pre-transfer roller	-	○		○		○		○	Clean with alcohol
			10	Primary transfer roller	-	x		x		x		x	Replace as needed
			11	Resist face stay cushion	-	x		x		x		x	Replace as needed
			12	Primary transfer blade backup roller sheet	-	x		x		x		x	Replace as needed
			13	Primary transfer toner reception sheet F/R	-	x		x		x		x	Replace as needed
			14	Cleaning roller	-	▲		▲		▲		▲	Replace at same time
			15	Primary transfer cleaner sub blade	-	x		x		x		x	Replace as needed
			16	Transfer cleaner seals F/R	-	x		x		x		x	Replace as needed
			17	Primary transfer cleaner blade	-	▲		▲		▲		▲	
		Secondary transfer unit	1	Secondary transfer roller	-	▲		▲		▲		▲	
			2	Secondary transfer separation plate	-	x		x		x		x	Replace as needed
			3	Paper guide	○	○		○		○		○	
			4	Sensors	x	x		x		x		x	
		Other	1	PTC unit	-	▲		▲		▲		▲	
			2	PTC outer holder	x	○		○		○		○	Alcohol cleaning
			3	Image registration / Density sensor unit	○	○		○		○		○	
6	LSU section	LSU	1	Dust-proof glass	○	○		○		○		○	
		Other	2	Cleaning base	x	▲		▲		▲		▲	
7	Manual paper feed section	Manual paper feed unit	1	Paper pickup roller	x	○		○		○		○	Replace at 100K of manual paper feed counter or 1 year of use
			2	Paper feed roller	x	○		○		○		○	
			3	Separation roller	x	○		○		○		○	
			4	Torque limiter	x	x		x		x		x	
			5	Transport roller 10	x	○		○		○		○	
			6	Sensors	x	x		x		x		x	
8	Tray paper feed section	Tray paper feed unit	1	Paper pickup roller	x	○		○		○		○	Replace at 200K of each paper feed counter or 1 year of use
			2	Paper feed roller	x	○		○		○		○	
			3	Separation roller	x	○		○		○		○	
			4	Torque limiter	x	x		x		x		x	
			5	Transport roller 3	x	○		○		○		○	
			6	Transport roller 1	x	○		○		○		○	
			7	Transport roller 2	x	○		○		○		○	
			8	Sensors	x	x		x		x		x	
9	Paper registration section/Paper exit section/ ADU section	PS unit	1	Registration roller (idle)	x	○		○		○		○	
			2	Registration roller (drive)	x	○		○		○		○	
			3	Transport roller 5	x	○		○		○		○	
			4	Sensors	x	x		x		x		x	
		Right door unit	5	Transport roller 9	x	○		○		○		○	
			6	Transport roller 10	x	○		○		○		○	
			7	Transport roller 8	x	○		○		○		○	
			8	Sensors	x	x		x		x		x	
		Fusing rear unit	9	Transport roller 7	x	○		○		○		○	
		Paper exit unit	10	Paper exit roller 2	x	○		○		○		○	
			11	Discharge brush	x	x		x		x		x	
			12	Sensors	x	x		x		x		x	
		Other	13	Paper dust removing unit	○	○		○		○		○	
			—	Paper guides	○	○		○		○		○	

Section/ Unit work sequence	Name	Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
10	Drive section	Main drive unit	1	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			2	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			3	Shaft earth section (conductive grease)	-	x		x		x		x	Apply grease (UKOG-0012QSZZ) to the specified position when checking
			4	Belts	-	x		x		x		x	
			5	Sensors	x	x		x		x		x	
		Transport drive unit	6	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			7	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0299FCZZ) to the specified position when checking
			8	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			9	Belts	-	x		x		x		x	
			10	Connection arm	-	x		x		x		x	
		Fusing drive unit	11	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0299FCZZ) to the specified position when checking
			12	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			13	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
			14	Belts	-	x		x		x		x	
		Paper exit drive unit	15	Belts	-	x		x		x		x	
11	Fusing section	Fusing unit	1	Fusing transport roller lower	x	x		x		x		x	
			2	Gears	x	x		x		x		x	
			3	Fusing transport roller upper	x	x		x		x		x	
			4	Pressure bearing	x	x		x		x		x	
			5	Separation plate	x	x		x		x		x	
			6	Pressure roller gear	x	x		x		x		x	Replace as needed
			7	Pressure roller bearing	x	x		x		x		x	Replace as needed
			8	Pressure roller	x	▲		▲		▲		▲	Apply grease (UKOG-0235FCZZ) to the shaft section when replacing and after completion of replacement, clean the new pressure roller surface with alcohol
			9	Upper thermistor	x	x		x		x		x	Replace as needed
			10	Fusing belt unit	x	▲		▲		▲		▲	
			11	Lower thermistor	x	x		x		x		x	Replace as needed
			12	Main thermistor	x	x		x		x		x	
			13	Sub thermistor	x	x		x		x		x	Replace as needed
			14	Sensors	x	x		x		x		x	
			15	Paper guides	○	○		○		○		○	

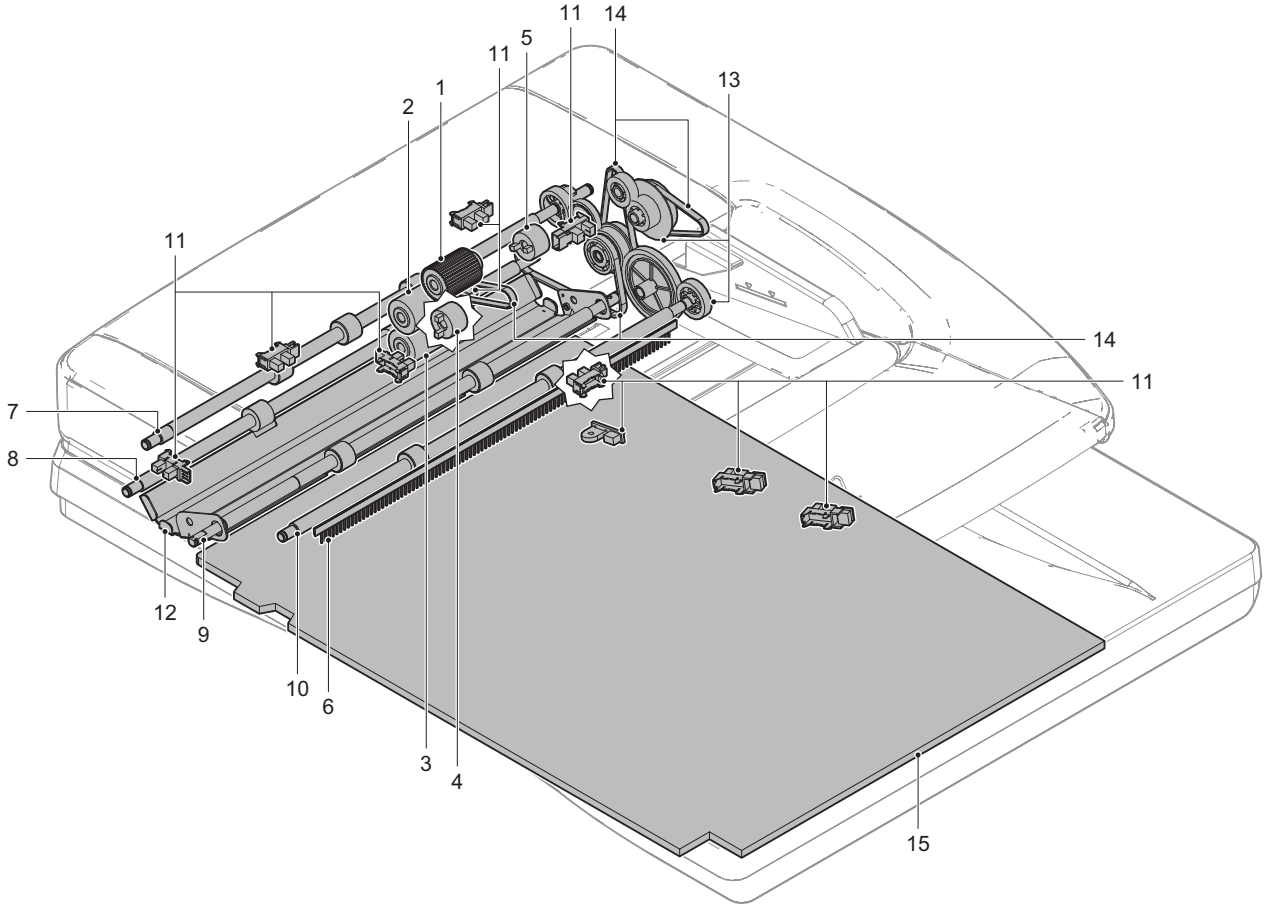
Section/ Unit work sequence	Name	Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
12	Other	Other	1	Ozone filter	x		▲		▲		▲		
			2	Right cover filter	x		○		○		○		
			3	Front cover cushion	x	x	x	x	x	x	x	x	Do not give damage to the cushion when cleaning the front cover
			4	Toner cartridge K	Replaced by the user when replacing message is displayed								
			5	Toner cartridge C									
			6	Toner cartridge M									
			7	Toner cartridge Y									
			8	Waste toner box	Replaced by the user every full detection								Replace at 50K

A. Document feed section

(1) RSPF

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

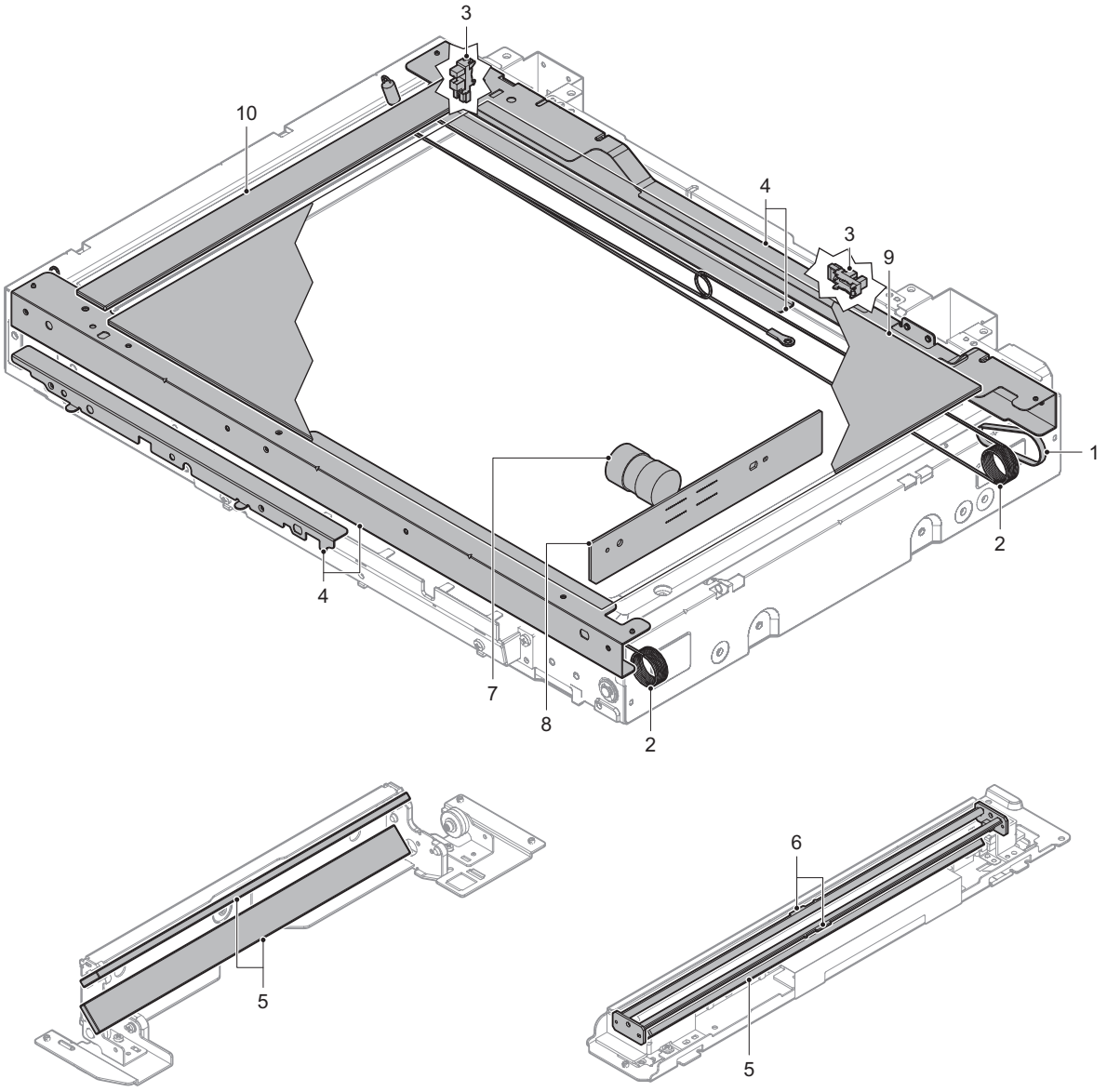
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Paper pickup roller	○	○		○		○		○	Replace at 100K of the SPF paper feed counter or 1 year of use. When replacing the paper feed roller, apply grease (UKOG-0013QSZZ) to the paper feed shaft
2	Paper feed roller	○	○		○		○		○	
3	Separation roller	○	○		○		○		○	
4	Torque limiter SPF	x	x		x		x		x	Replace at 400K of the SPF paper feed counter or 2 year of use
5	Torque limiter pickup	x	x		x		x		x	
6	Discharge brush	x	x		x		x		x	
7	Registration roller	○	○		○		○		○	
8	Transport roller 1	○	○		○		○		○	
9	Transport roller 2	○	○		○		○		○	
10	Paper exit roller	○	○		○		○		○	
11	Sensors	x	x		x		x		x	
12	Scan plate	○	○		○		○		○	
13	Gears	x	x		x		x		x	
14	Belts	x	x		x		x		x	
15	OC mat	○	○		○		○		○	



B. Scanner section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Drive belt	x	x		x		x		x	
2	Drive wire	x	x		x		x		x	
3	Sensors	x	x		x		x		x	
4	Rails	☆	☆		☆		☆		☆	Apply grease (UKOG-0158FCZZ)
5	Mirror	○	○		○		○		○	
6	Lamp	○	○		○		○		○	
7	Lens	○	○		○		○		○	
8	CCD	○	○		○		○		○	
9	Table glass	○	○		○		○		○	
10	SPF glass	○	○		○		○		○	



C. Developer section

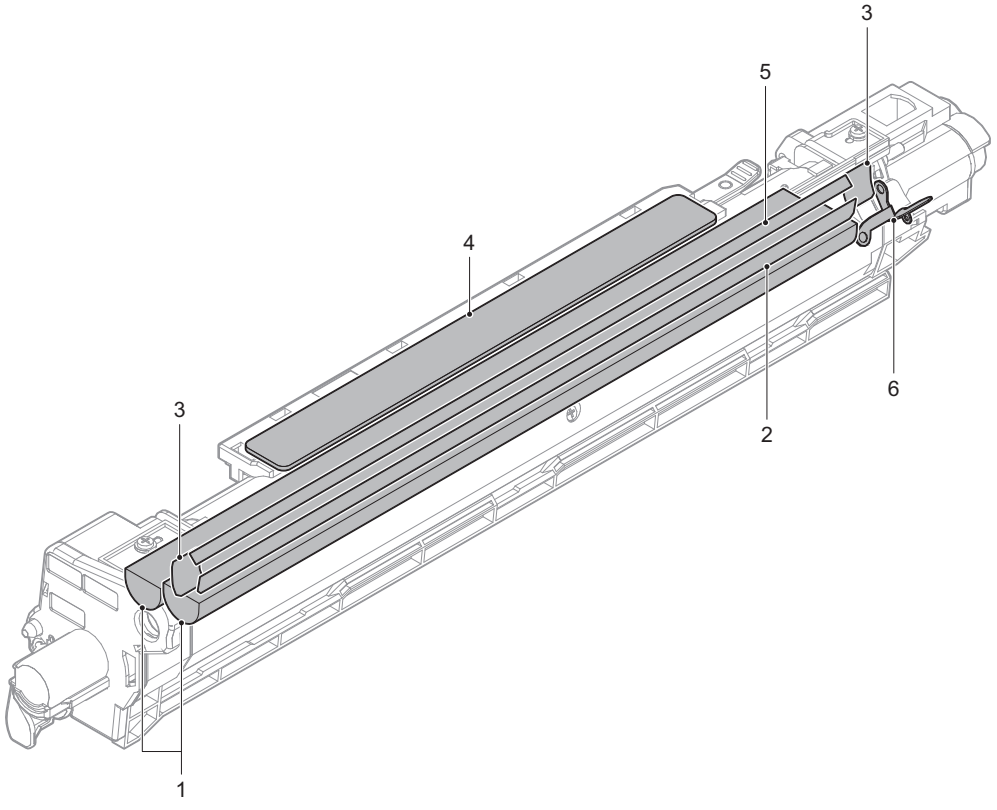
x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Monochrome

Work sequence	Part name	When calling	every 1350K rotation	every 2700K rotation	Remarks
1	Developer	x	x	▲	Maximum Printable number: 400K Standard Printable number. 360K
2	DV blade	x	x	x	Replace as needed
3	DV side seal F/R	x	x	x	
4	Toner filter	x	x	x	
5	DV blade upper	x	x	x	
6	Bias pin	x	x	x	

Color

Work sequence	Part name	When calling	every 1350K rotation	every 2700K rotation	Remarks
1	Developer	x	x	▲	Maximum Printable number: 340K Standard Printable number. 300K
2	DV seal	x	x	x	Replace as needed
3	DV side seal F/R	x	x	x	
4	Toner filter	x	x	x	
5	DV Blade upper	x	x	x	
6	Bias pin	x	x	x	



1 : '18/Mar.

D. OPC drum section

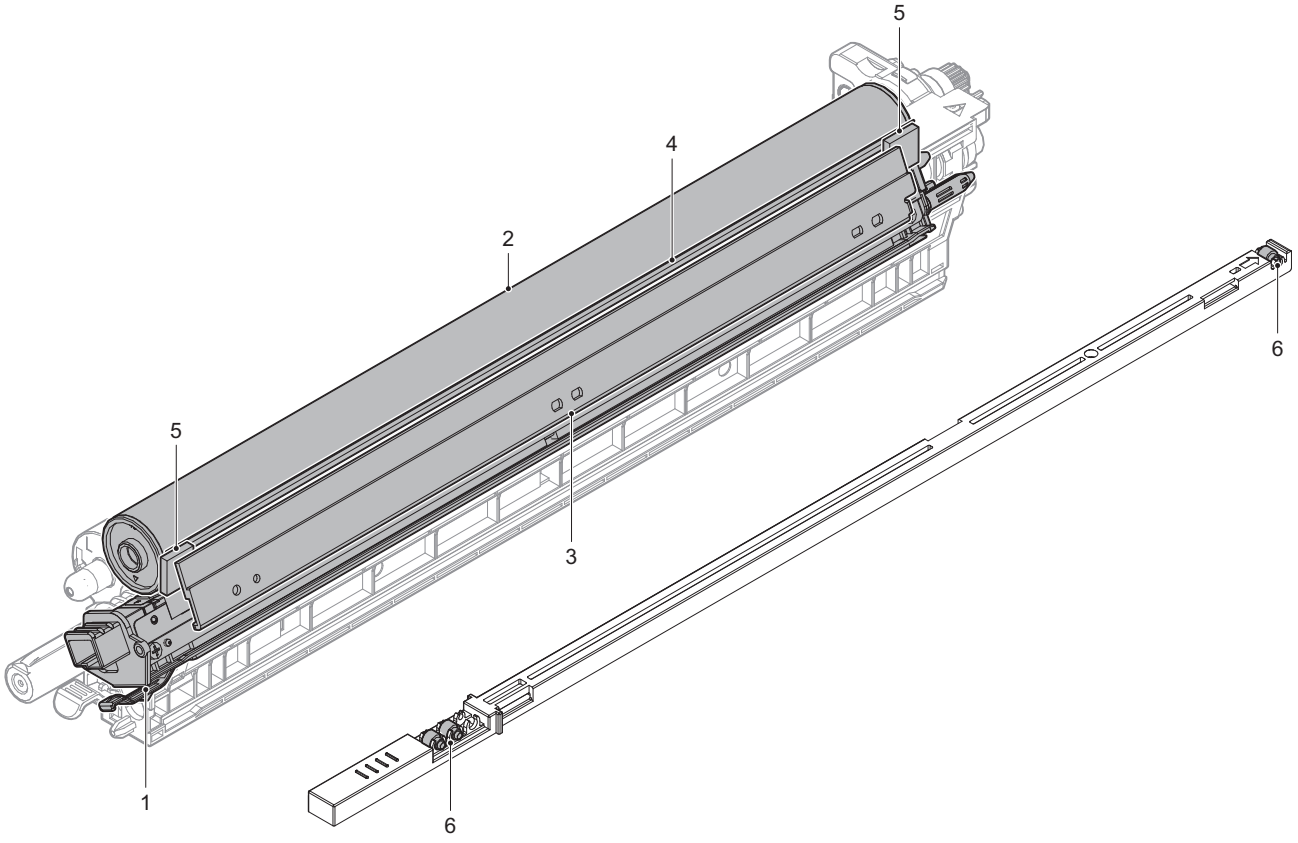
x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Monochrome

Work sequence	Part name	When calling	every 1350K rotation	every 2700K rotation	Remarks
1	Charger unit	x	▲	x	Maximum Printable number: 200K Standard Printable number. 180K
2	Drum	x	▲	x	
1 3	Cleaning blade	x	▲	x	Replace at specified rotation or printable number Recommend to be replaced after 2 year use
4	Toner reception sheet	x	x	x	Replace as needed
5	Side seal F/R	x	x	x	
6	Charger cleaner	x	▲	x	

Color

Work sequence	Part name	When calling	every 1350K rotation	every 2700K rotation	Remarks
1	Charger unit	x	▲	x	Maximum Printable number: 170K Standard Printable number. 150K
2	Drum	x	▲	x	
1 3	Cleaning blade	x	▲	x	Replace at specified rotation or printable number Recommend to be replaced after 2 year use
4	Toner reception sheet	x	x	x	Replace as needed
5	Side seal F/R	x	x	x	
6	Charger cleaner	x	▲	x	

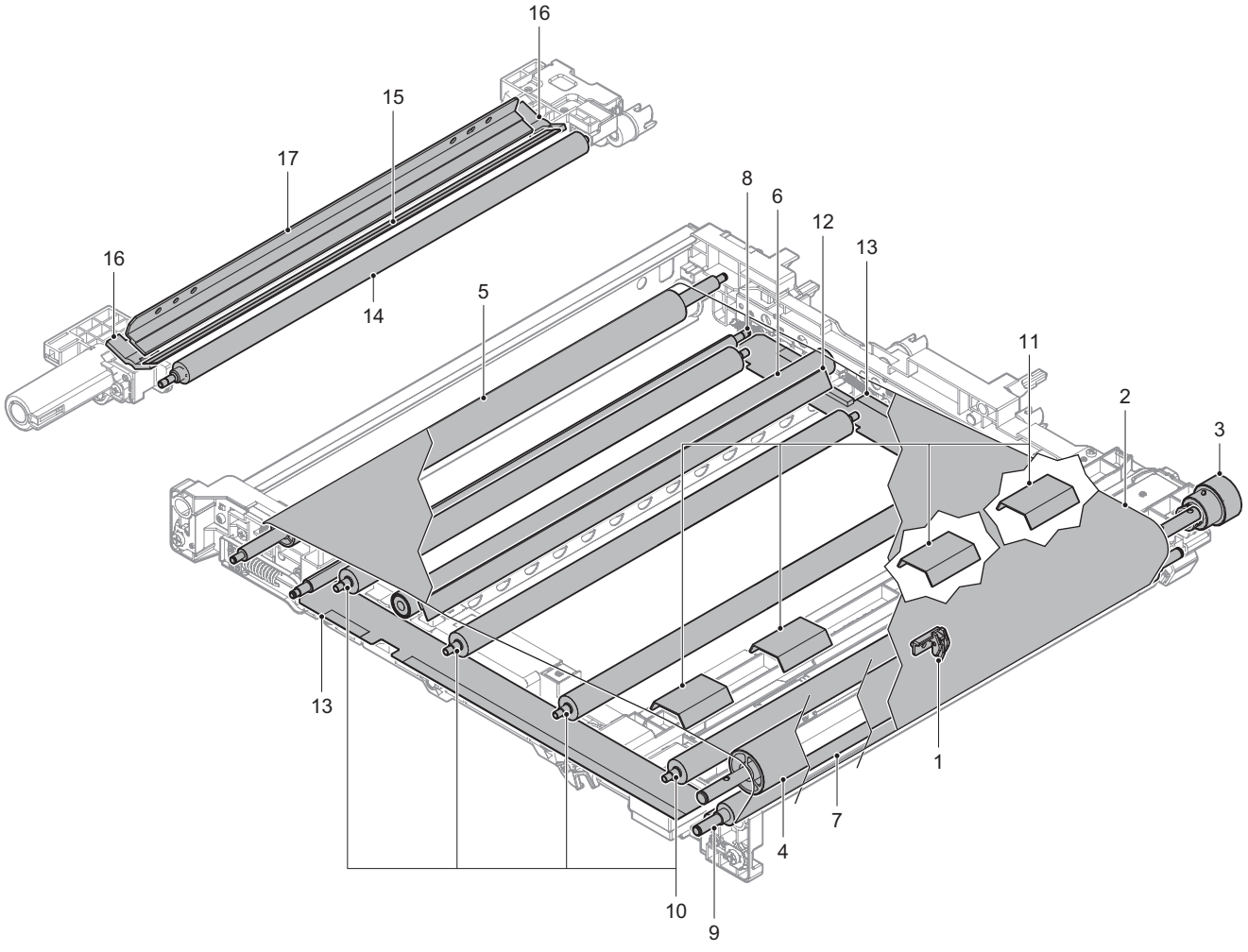


E. Transfer section

(1) Primary transfer section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

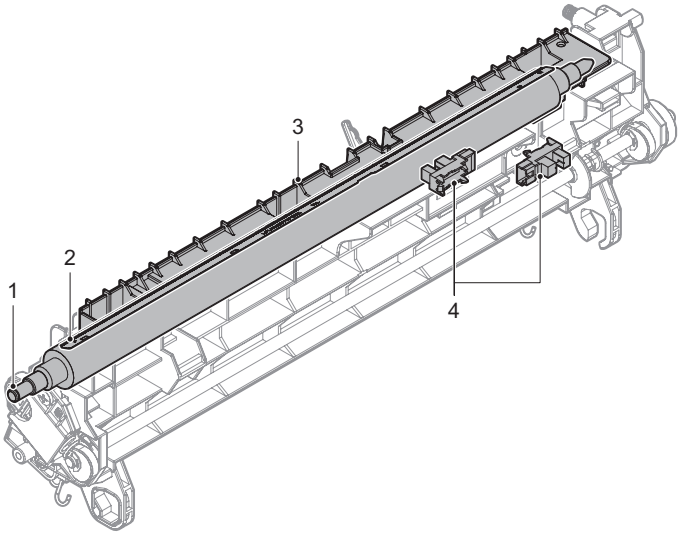
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Separation pawl	-	x		x		x		x	Replace as needed
2	Primary transfer belt	-	▲		▲		▲		▲	
3	Primary transfer belt drive gear	-	x		x		x		x	Replace as needed
4	Primary transfer belt drive roller	-	○		○		○		○	Clean with alcohol
5	Primary transfer belt follower roller	-	○		○		○		○	Clean with alcohol
6	Primary transfer blade backup roller	-	○		○		○		○	Clean with alcohol
7	BK auxiliary roller	-	○		○		○		○	Clean with alcohol
8	Y auxiliary roller	-	○		○		○		○	Clean with alcohol
9	Pre-transfer roller	-	○		○		○		○	Clean with alcohol
10	Primary transfer roller	-	x		x		x		x	Replace as needed
11	Resist face stay cushion	-	x		x		x		x	Replace as needed
12	Primary transfer blade backup roller sheet	-	x		x		x		x	Replace as needed
13	Primary transfer toner reception sheet F/R	-	x		x		x		x	Replace as needed
14	Cleaning roller	-	▲		▲		▲		▲	
15	Primary transfer cleaner sub blade	-	x		x		x		x	Replace as needed
16	Transfer cleaner seals F/R	-	x		x		x		x	Replace as needed
17	Primary transfer cleaner blade	-	▲		▲		▲		▲	



(2) Secondary transfer unit

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Secondary transfer roller	-	▲		▲		▲		▲	
2	Secondary transfer separation plate	-	x		x		x		x	Replace as needed
3	Paper guide	○	○		○		○		○	
4	Sensors	x	x		x		x		x	



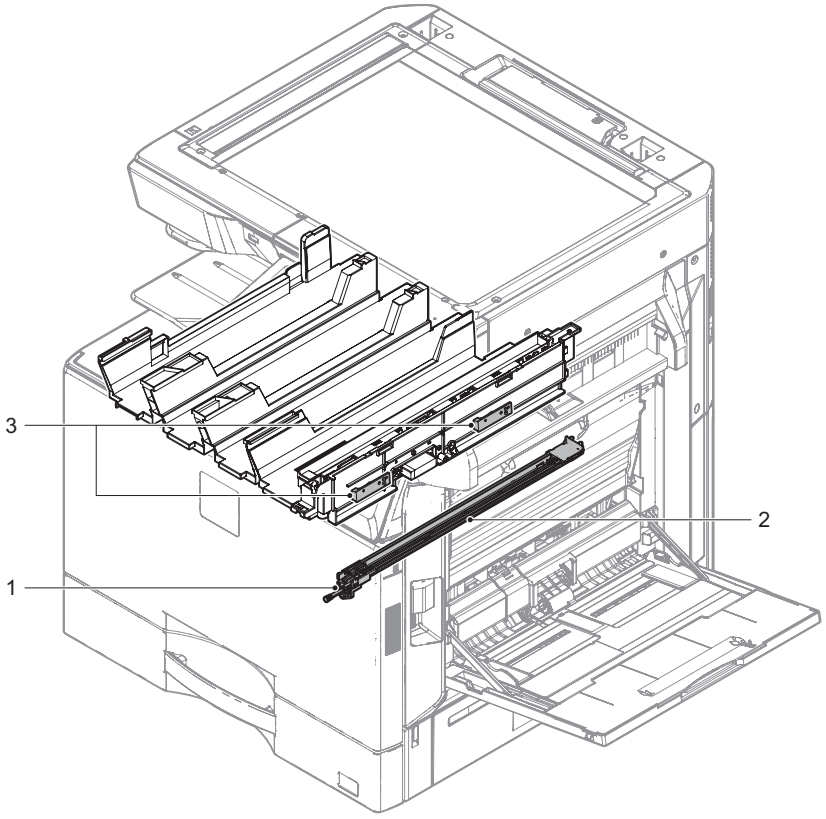
(3) Other

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	PTC unit	-	▲		▲		▲		▲	
2	2 PTC outer holder	x	○		○		○		○	Alcohol cleaning
3	Image registration / Density sensor unit	○	○		○		○		○	Clean with dry cloth

Note for cleaning the Image registration sensor, the Density sensor.

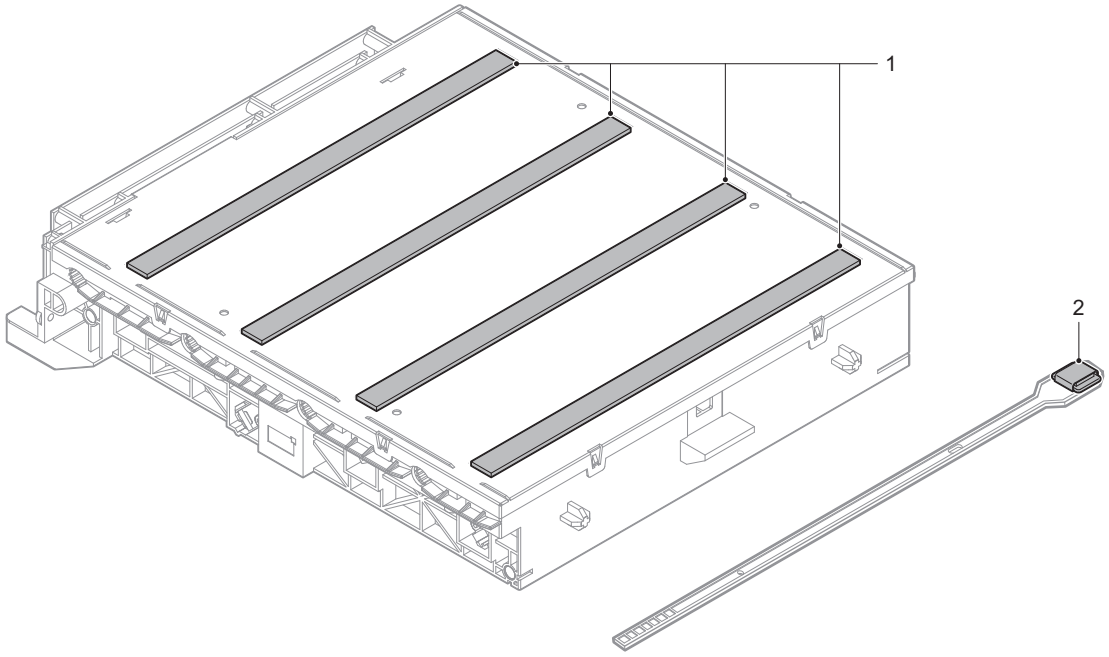
When in maintenance or in case of a service call, clean the image registration sensor and the density sensor with dry cloth and perform Sim44-2 and 46-74.



F. LSU section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

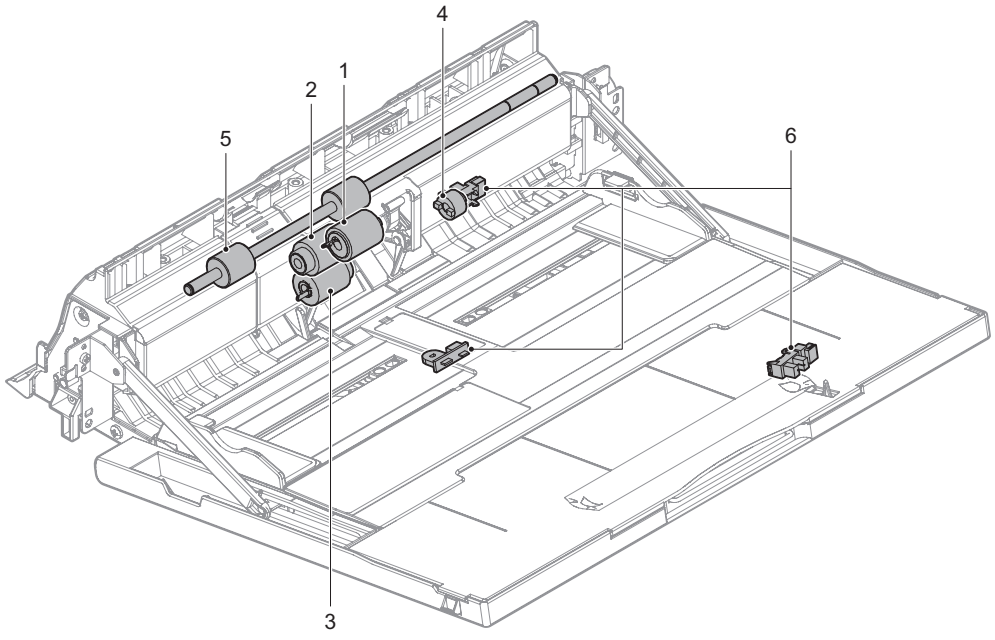
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Dust-proof glass	○	○		○		○		○	
2	Cleaning base	x	▲		▲		▲		▲	



G. Manual paper feed section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

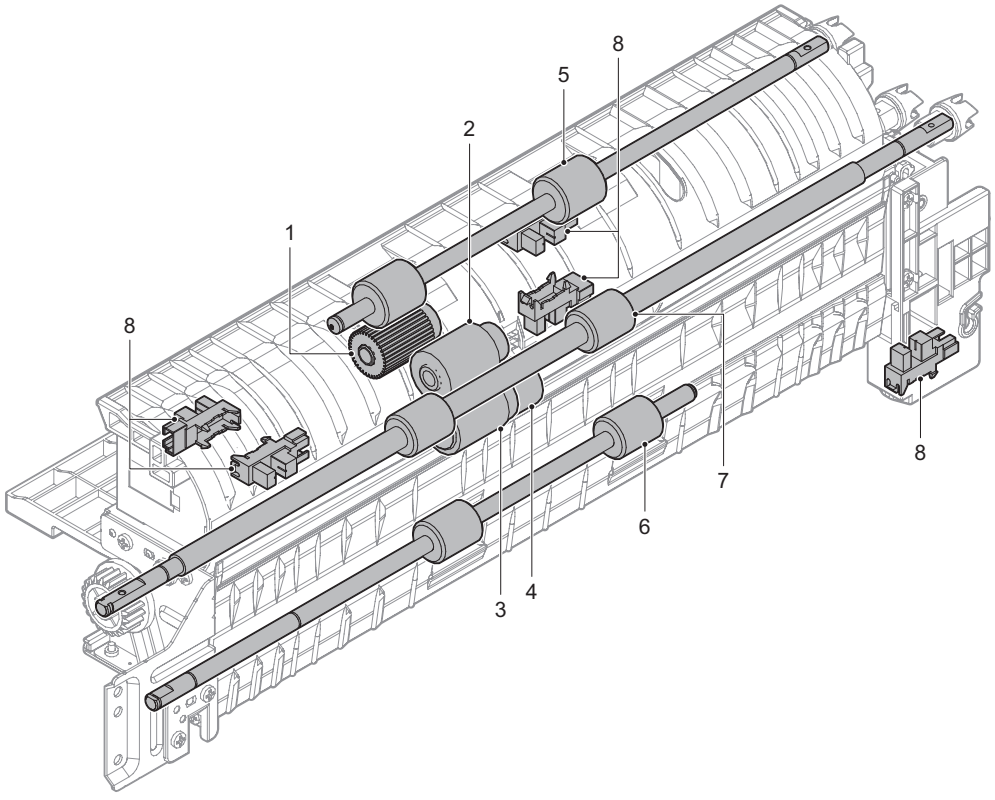
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Paper pickup roller	x	○		○		○		○	Replace at 100K of manual paper feed counter or 1 year of use
2	Paper feed roller	x	○		○		○		○	
3	Separation roller	x	○		○		○		○	
4	Torque limiter	x	x		x		x		x	
5	Transport roller 10	x	○		○		○		○	
6	Sensors	x	x		x		x		x	



H. Tray paper feed section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

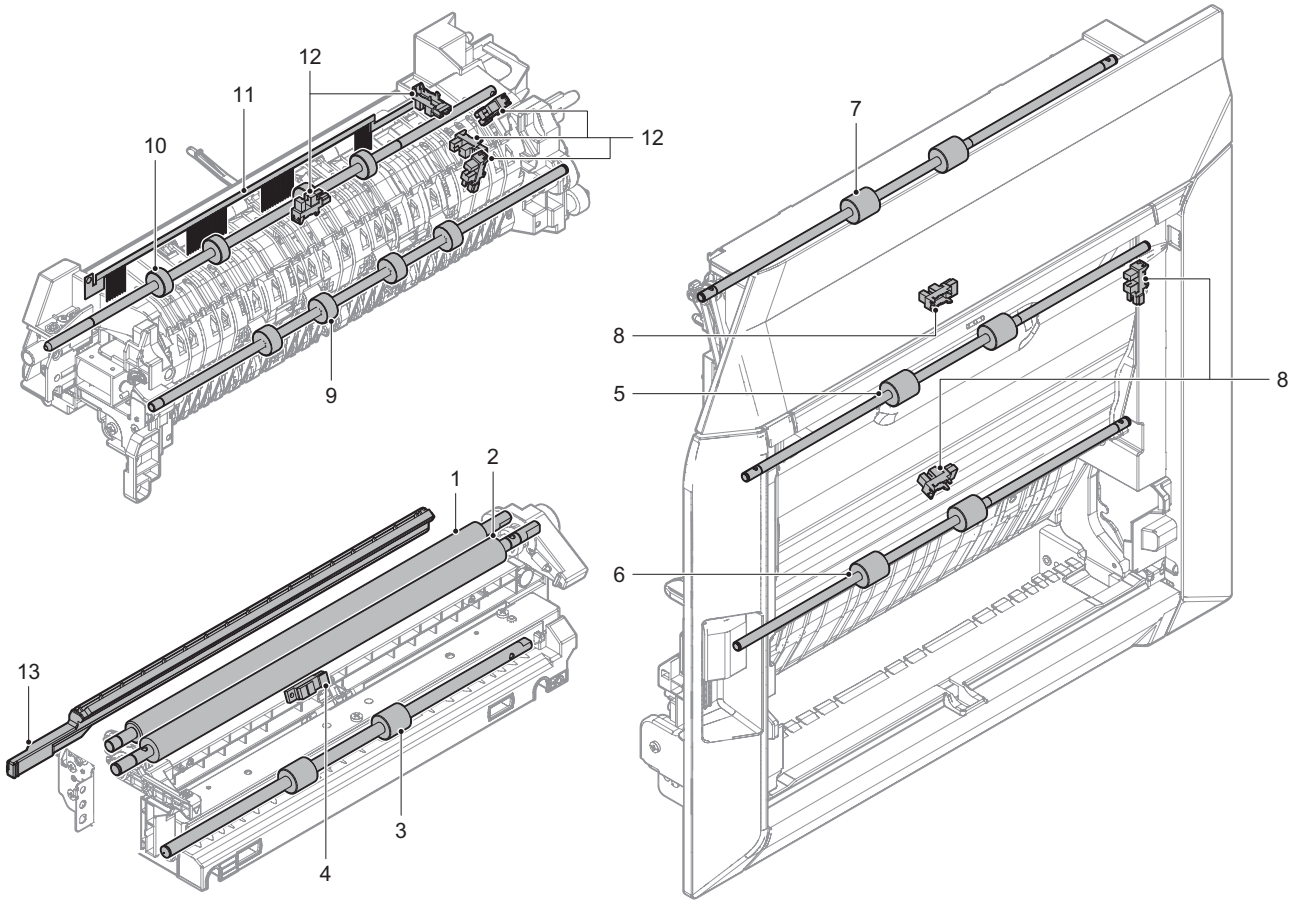
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Paper pickup roller	x	○		○		○		○	Replace at 200K of each paper feed counter or 1 year of use
2	Paper feed roller	x	○		○		○		○	
3	Separation roller	x	○		○		○		○	
4	Torque limiter	x	x		x		x		x	
5	Transport roller 3	x	○		○		○		○	
6	Transport roller 1	x	○		○		○		○	
7	Transport roller 2	x	○		○		○		○	
8	Sensors	x	x		x		x		x	



I. Paper transport section/paper exit section/ADU section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
PS unit	1	Registration roller (idle)	x	○		○		○		○	
	2	Registration roller (drive)	x	○		○		○		○	
	3	Transport roller 5	x	○		○		○		○	
	4	Sensors	x	x		x		x		x	
Right door unit	5	Transport roller 9	x	○		○		○		○	
	6	Transport roller 10	x	○		○		○		○	
	7	Transport roller 8	x	○		○		○		○	
	8	Sensors	x	x		x		x		x	
Fusing rear unit	9	Transport roller 7	x	○		○		○		○	
Paper exit unit	10	Paper exit roller 2	x	○		○		○		○	
	11	Discharge brush	x	x		x		x		x	
	12	Sensors	x	x		x		x		x	
Other	13	Paper dust removing unit	○	○		○		○		○	
	—	Paper guides	○	○		○		○		○	

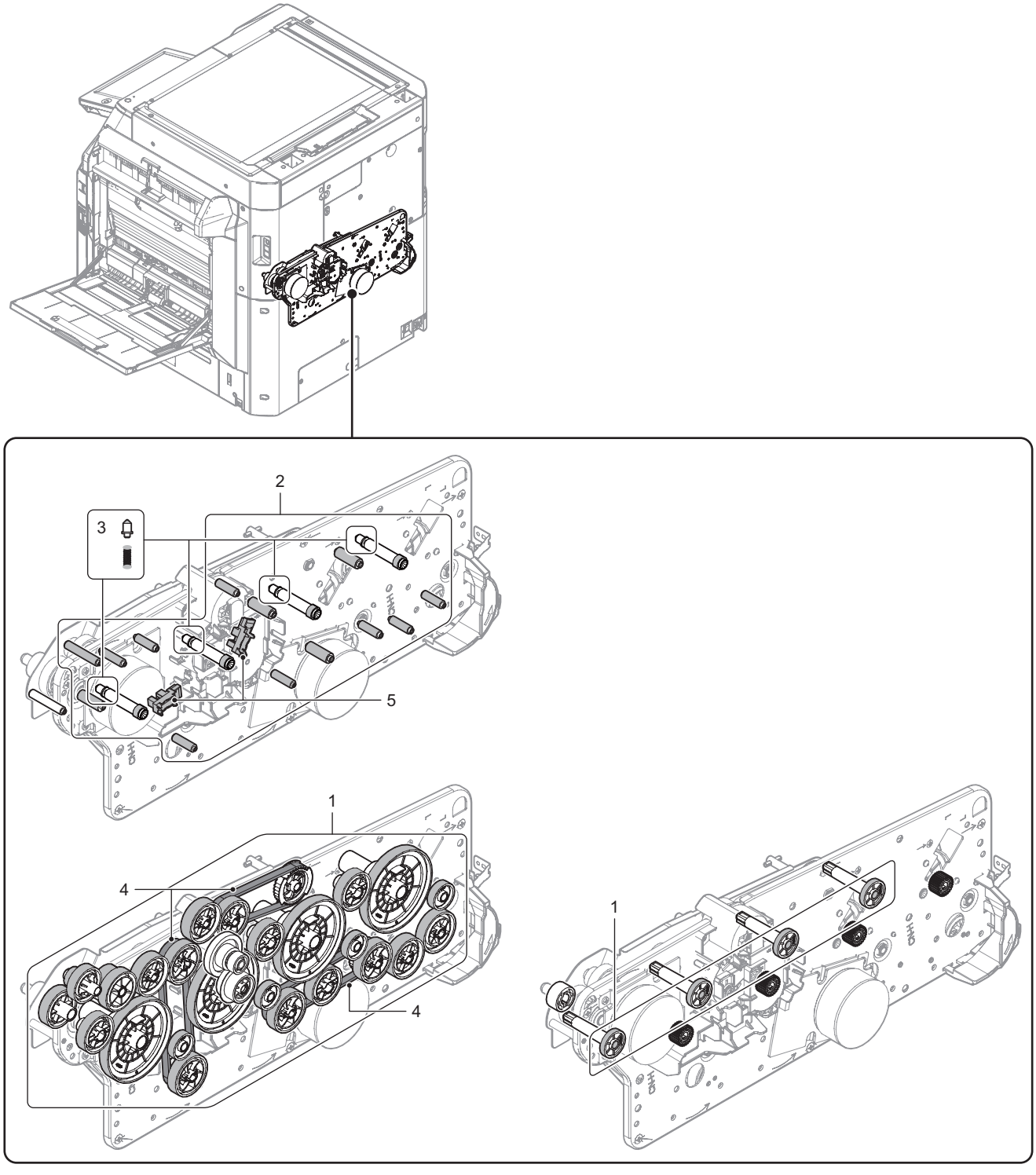


J. Drive section

(1) Main drive unit

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

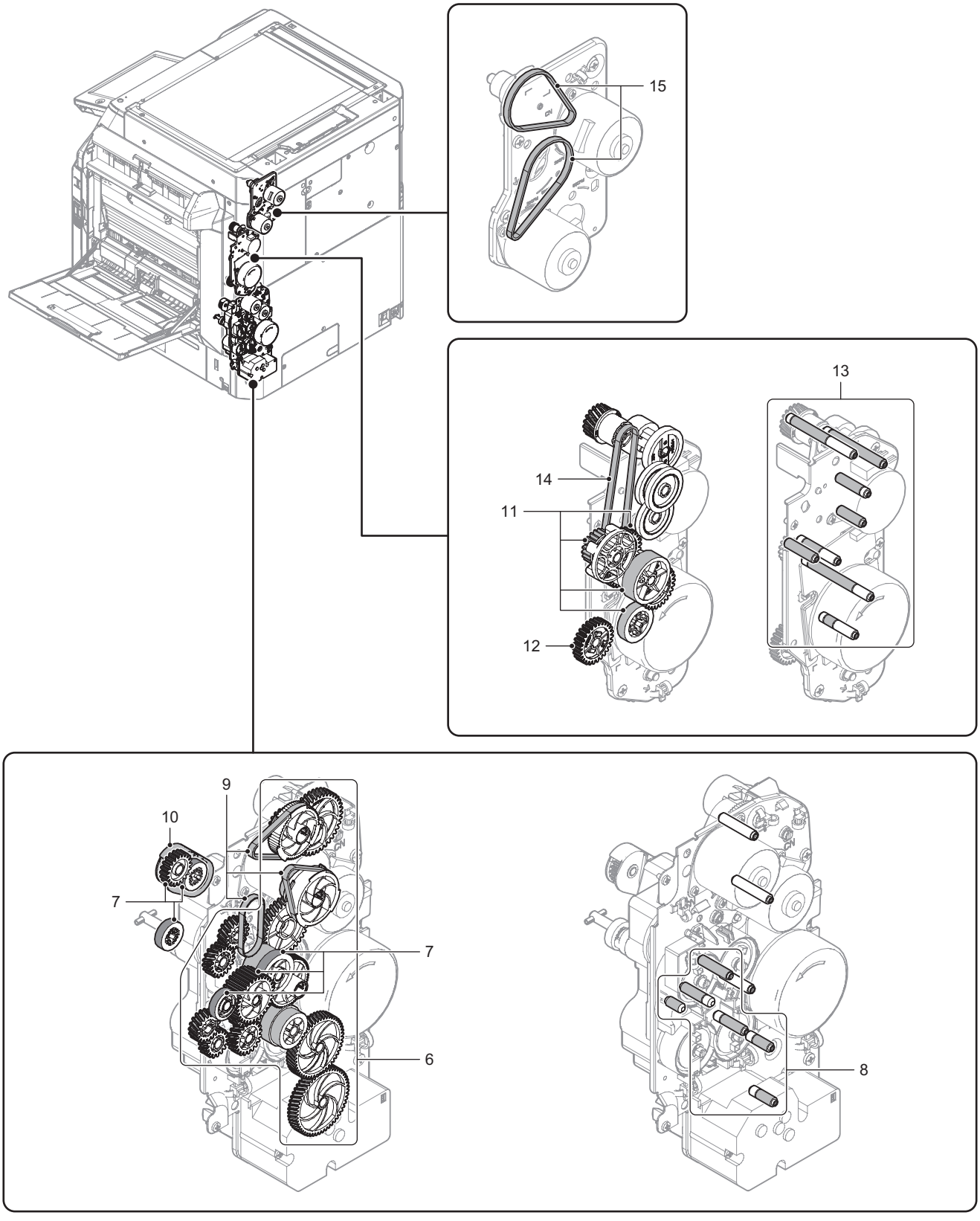
Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
2	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
3	Shaft earth section (conductive grease)	-	x		x		x		x	Apply grease (UKOG-0012QSZZ) to the specified position when checking
4	Belts	-	x		x		x		x	
5	Sensors	x	x		x		x		x	



(2) Transport drive unit / Fusing drive unit / Paper exit drive unit

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Unit name	Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
Transport drive unit	6	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
	7	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0299FCZZ) to the specified position when checking
	8	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
	9	Belts	-	x		x		x		x	
	10	Connection arm	-	x		x		x		x	
Fusing drive unit	11	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0299FCZZ) to the specified position when checking
	12	Gears (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
	13	Shafts (grease)	-	x		x		x		x	Apply grease (UKOG-0307FCZZ) to the specified position when checking
	14	Belts	-	x		x		x		x	
Paper exit drive unit	15	Belts	-	x		x		x		x	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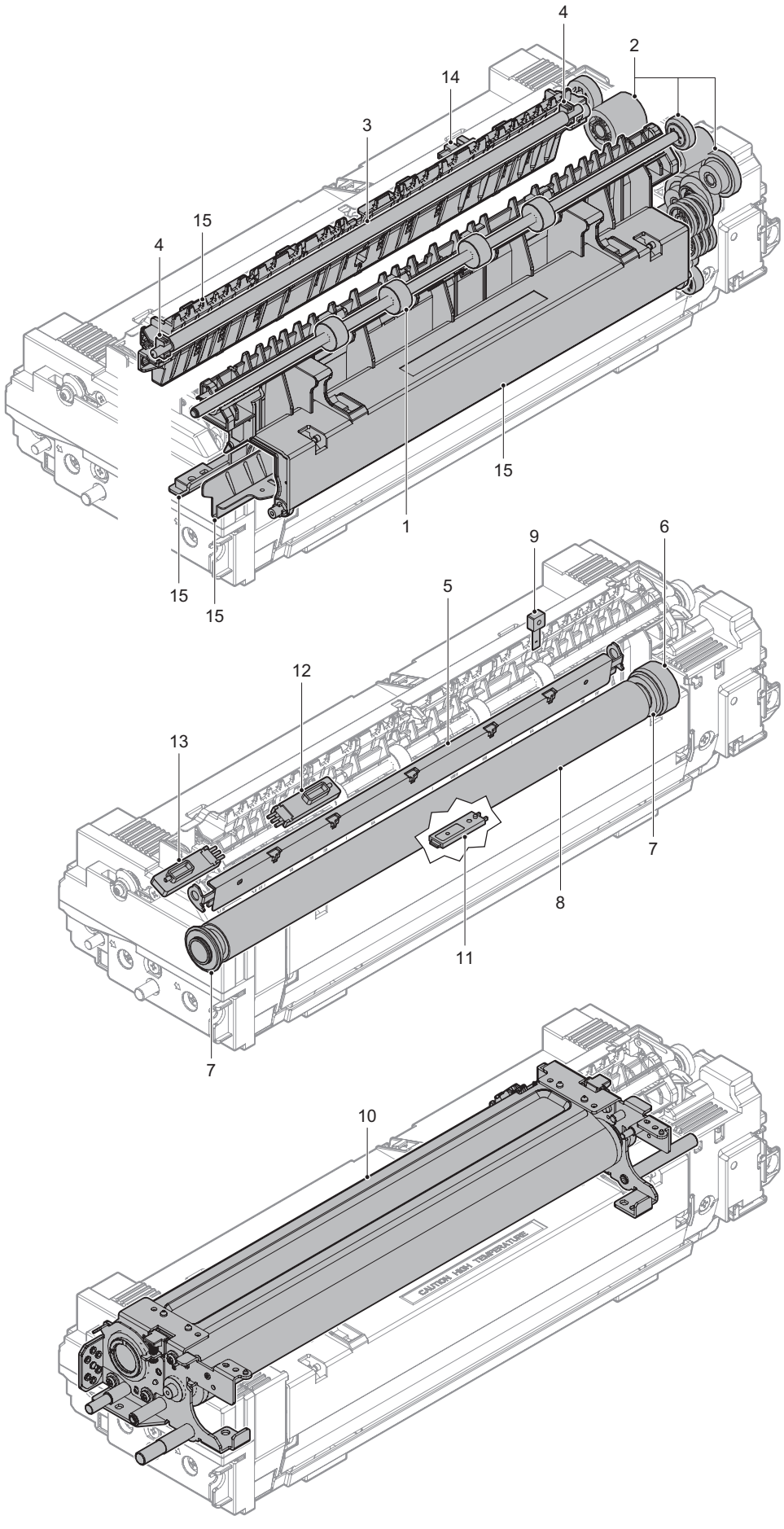
K. Fusing section

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Fusing transport roller lower	x	x		x		x		x	
2	Gears	x	x		x		x		x	
3	Fusing transport roller upper	x	x		x		x		x	
4	Pressure bearing	x	x		x		x		x	
5	Separation plate	x	x		x		x		x	
6	Pressure roller gear	x	x		x		x		x	Replace as needed
7	Pressure roller bearing	x	x		x		x		x	Replace as needed
8	Pressure roller	x	▲		▲		▲		▲	Apply grease (UKOG-0235FCZZ) to the shaft section when replacing and after completion of replacement, clean the new pressure roller surface with alcohol
9	Upper thermistor	x	x		x		x		x	Replace as needed
10	Fusing belt unit	x	▲		▲		▲		▲	
11	Lower thermistor	x	x		x		x		x	Replace as needed
12	Main thermistor	x	x		x		x		x	
13	Sub thermistor	x	x		x		x		x	Replace as needed
14	Sensors	x	x		x		x		x	
15	Paper guides	○	○		○		○		○	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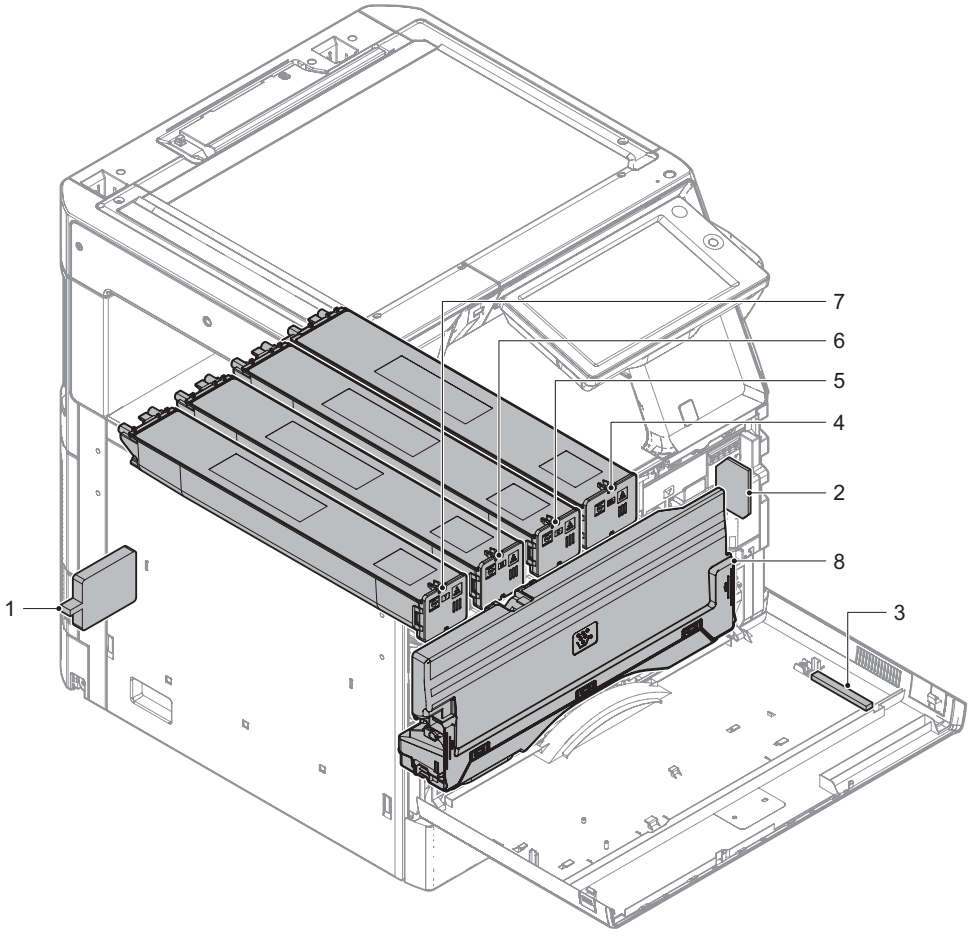
CAUTION: HIGH TEMPERATURE

L. Other

x: Check (Clean, replace, or adjust according to necessity) ○: Clean ▲: Replace △ : Adjust ☆: Lubricate

Work sequence	Part name	When calling	250K	300K	500K	600K	750K	900K	1000 K	Remarks
1	Ozone filter	x		▲		▲		▲		
2	Right cover filter	x		○		○		○		
3	Front cover cushion	x	x	x	x	x	x	x	x	Do not give damage to the cushion when cleaning the front cover
4	Toner cartridge K	Replaced by the user when replacing message is displayed								
5	Toner cartridge C									
6	Toner cartridge M									
7	Toner cartridge Y									
8	Waste toner box	Replaced by the user every full detection								Replace at 50K

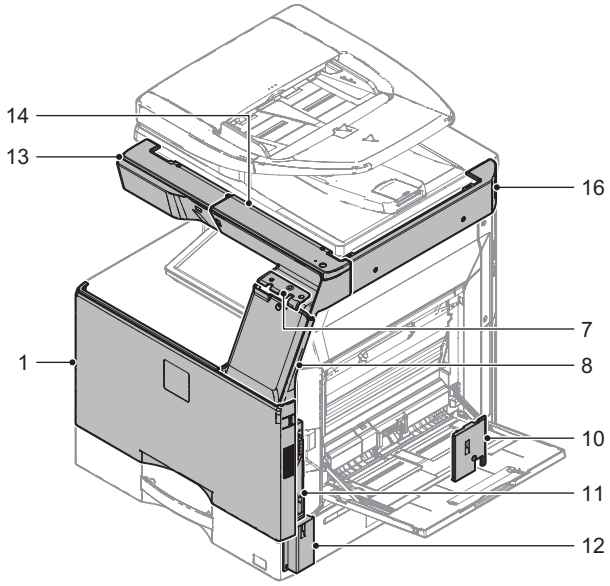


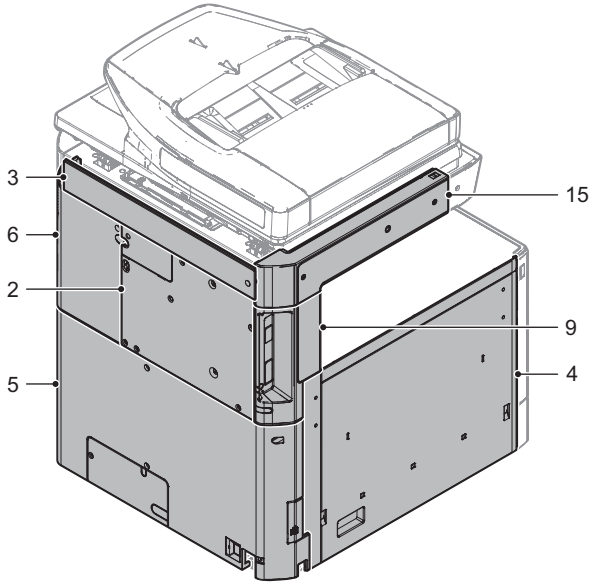
[10] DISASSEMBLY AND ASSEMBLY

1. Disassembly of Units

A. External view

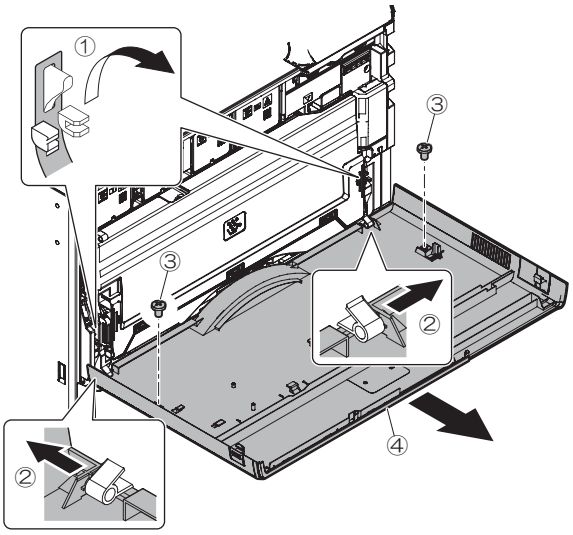
No.	Name
1	Front cover upper
2	MFPc cover
3	Rear cover upper
4	Left cover
5	Rear cover
6	Right cover rear upper
7	Panel hinge section cover
8	Front cover upper right
9	Left cover upper rear
10	Right cover rear lower
11	Right front cover
12	Right cover front lower
13	Upper cover front left
14	Upper cover front right
15	Upper cover left lower
16	Upper cover right





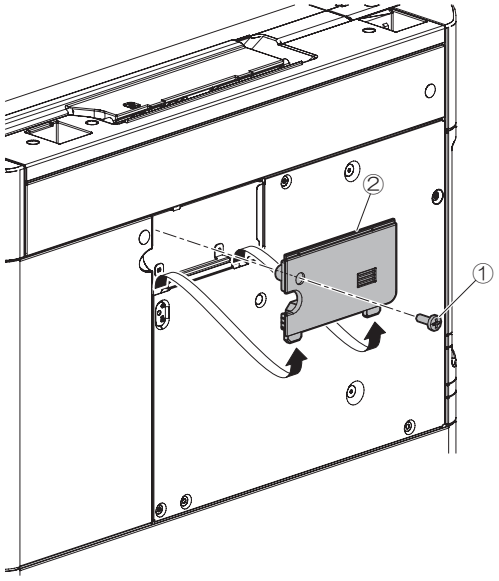
(1) Front cover upper

1) Remove the front cover upper.

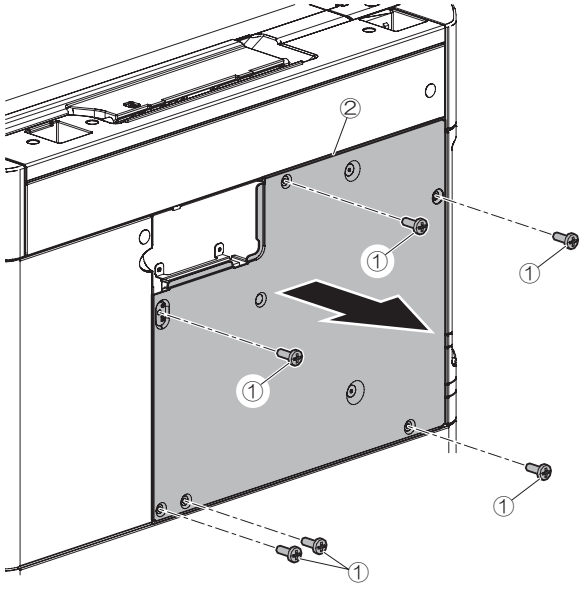


(2) MFPc cover

1) Remove the rear cabinet cover.

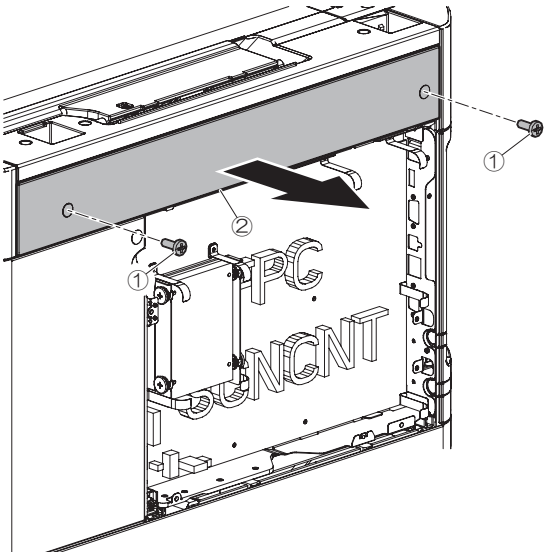


2) Remove the MFPc cover.



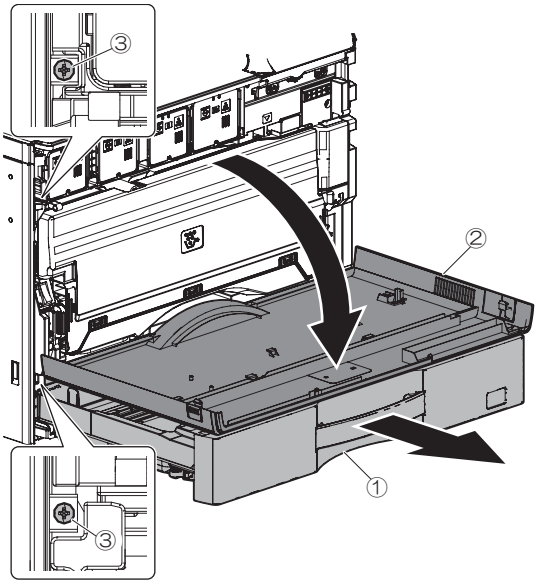
(3) Rear cover upper

1) Remove the MFPc cover.
2) Remove the rear cover upper.

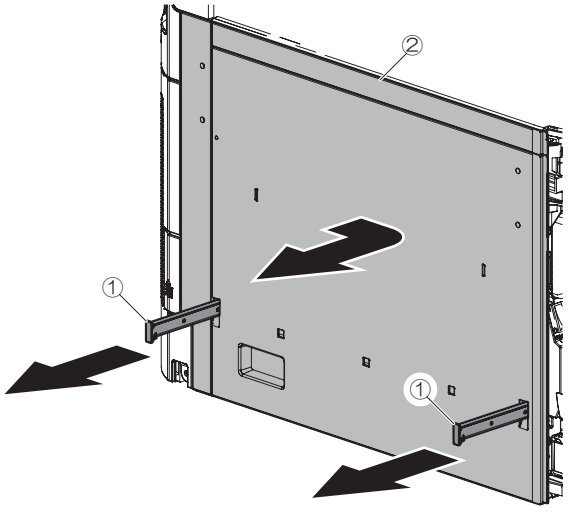


(4) Left cover

1) Pull out the tray, and open the front cover. Then, remove the screw.

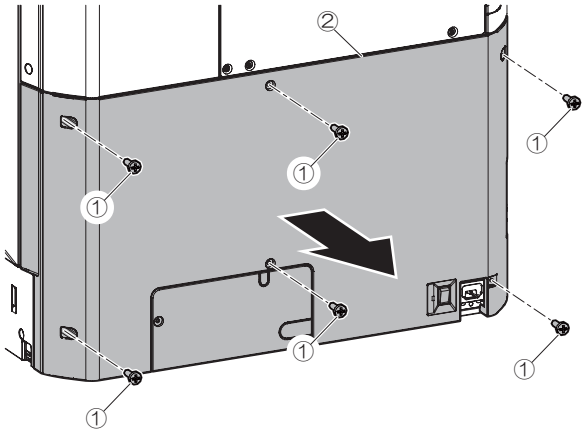


2) Pull out the handle and remove the left cover.



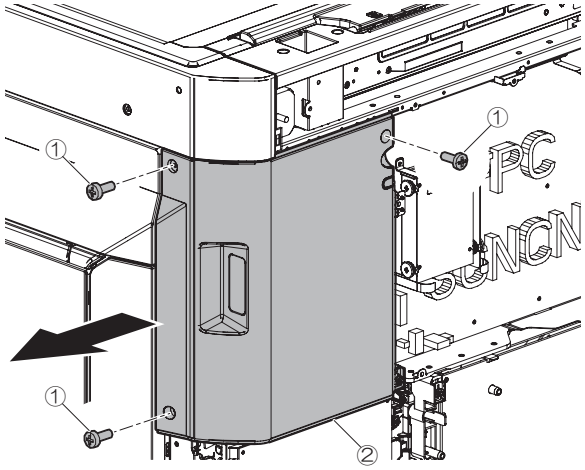
(5) Rear cover

1) Remove the rear cover.



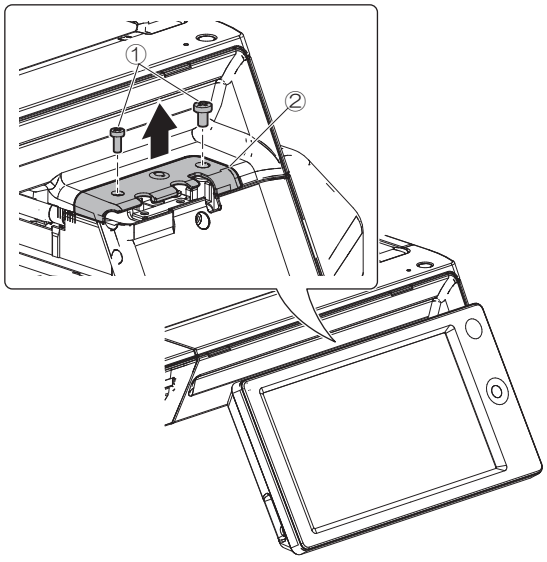
(6) Right cover rear upper

1) Remove the MFPc cover.
2) Remove the rear cover upper.
3) Remove the rear cover.
4) Remove the right cover rear upper.



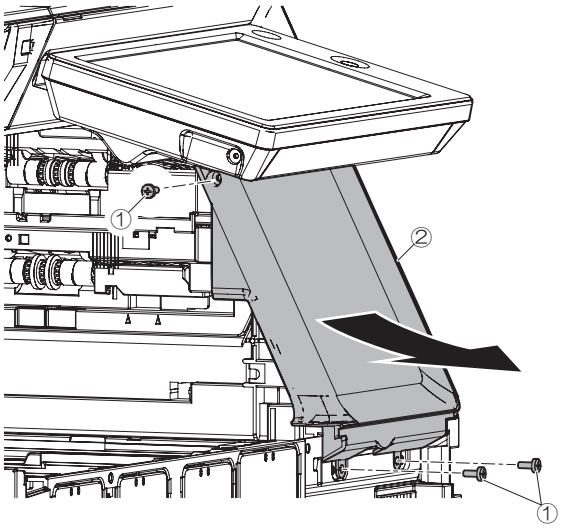
(7) Panel hinge section cover

1) Remove the panel hinge section cover.



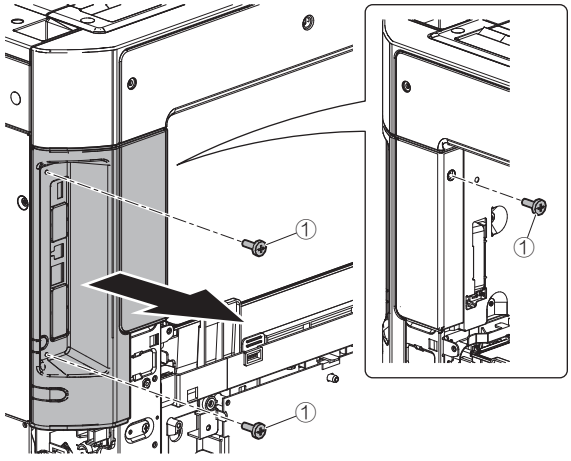
(8) Front cover upper right

1) Open the front cover. Remove the front cover upper right.



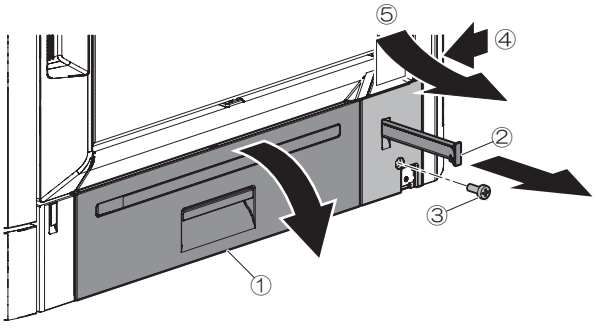
(9) Left cover upper rear

1) Remove the left cover.
2) Remove the rear cover.
3) Remove the left cover upper rear.



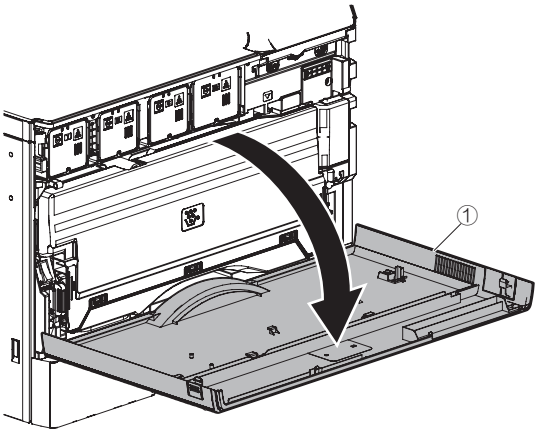
(10) Right cover rear lower

1) Open the right door and pull out the handle. Then, remove the right cover rear bottom.

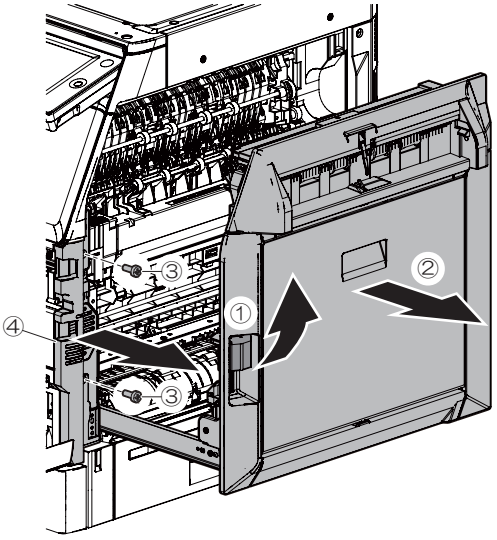


(11) Right front cover

1) Open the front cover.

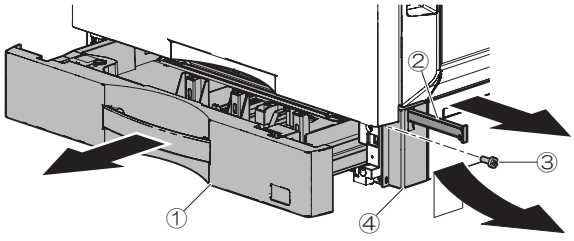


2) Open the right door.Remove the right front cover.



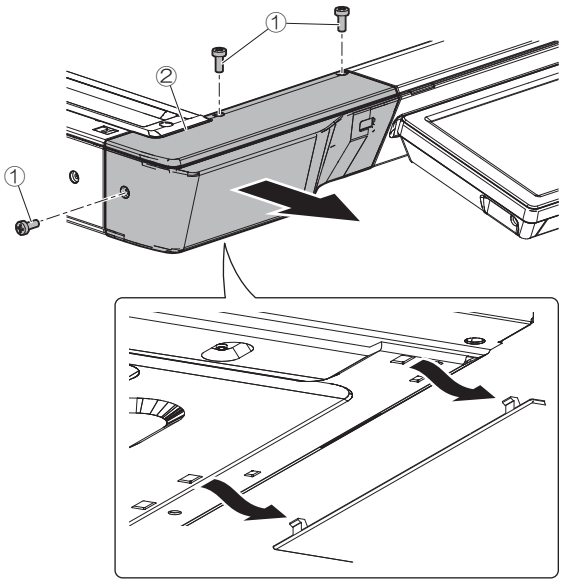
(12) Right cover front lower

1) Pull out the tray, and pull out the handle. Then, remove the right cover front bottom.



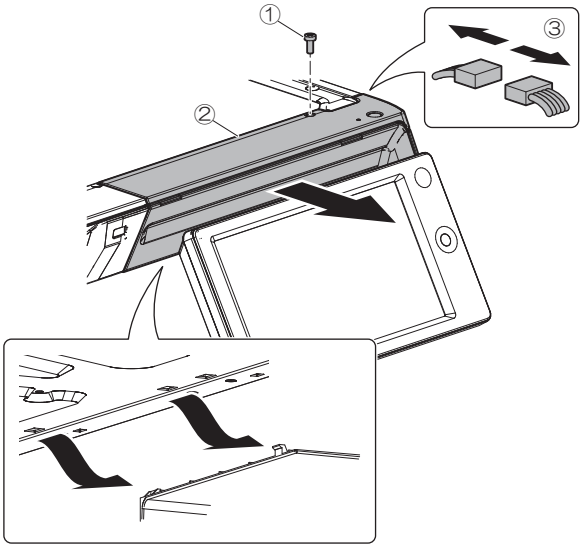
(13) Upper cover front left

1) Remove the upper cover front left.



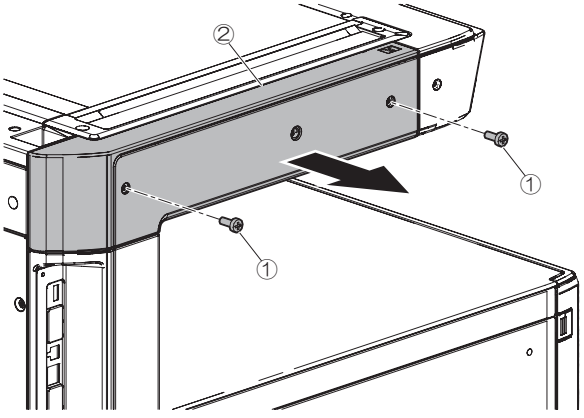
(14) Upper cover front right

1) Remove the panel hinge section cover.
2) Remove the upper cover front right.



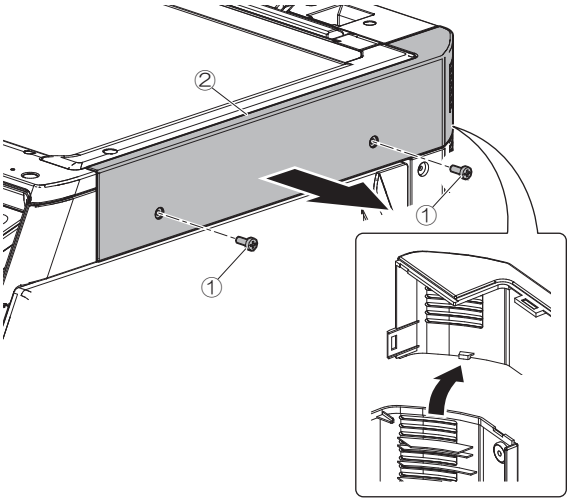
(15) Upper cover left lower

1) Remove the upper cover left lower.



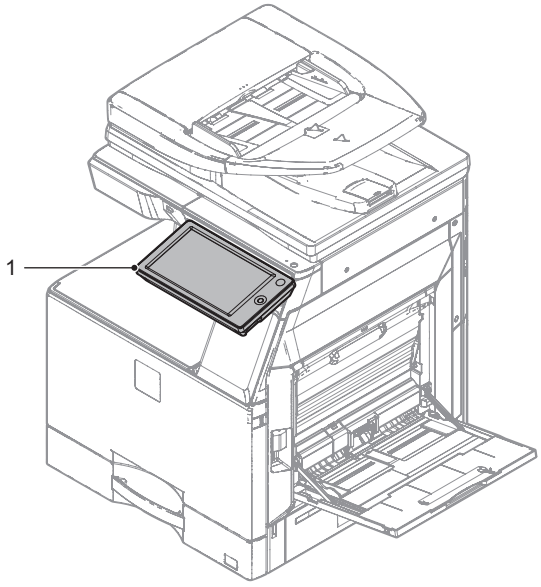
(16) Upper cover right

1) Remove the upper cover right



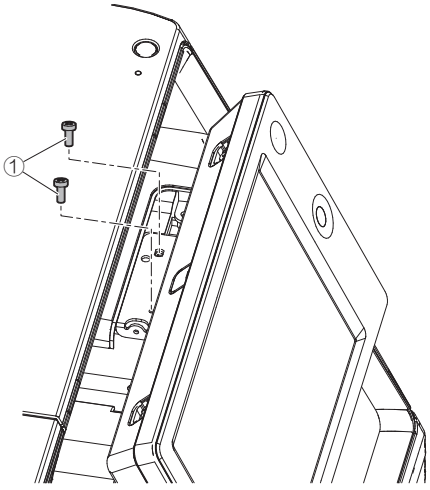
B. Operation panel section

No.	Name
1	Operation panel unit

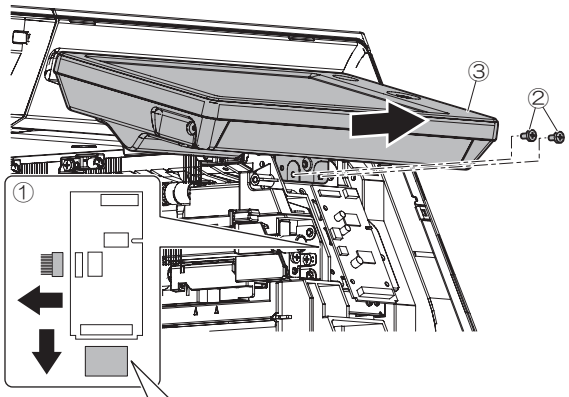


(1) Operation panel unit

1) Remove the panel hinge section cover.
2) Remove the two screws.

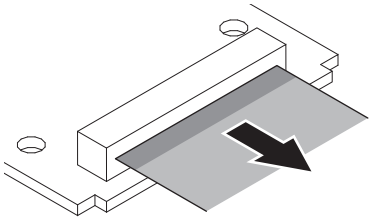


3) Remove the front cover upper right.
4) Remove the two screws and disconnect the connector. Then, remove the operation panel unit.



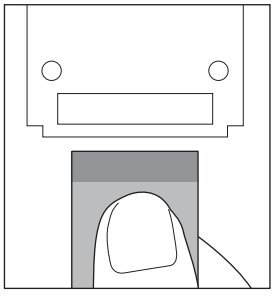
Note

When disconnecting connector

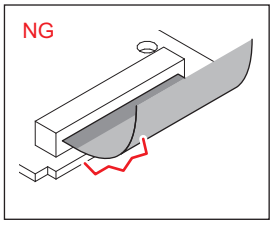


When connecting connector

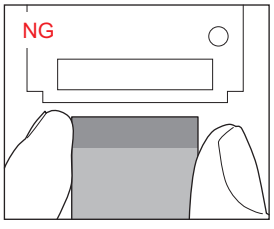
Insert the connector holding center part of connector



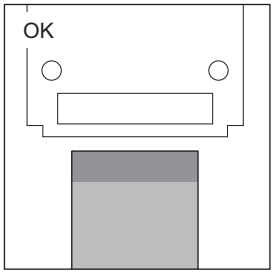
Do not bend harness

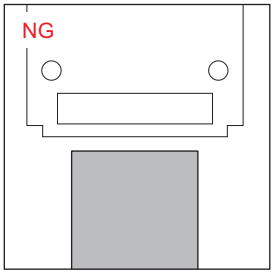


Do not hold side part of connector



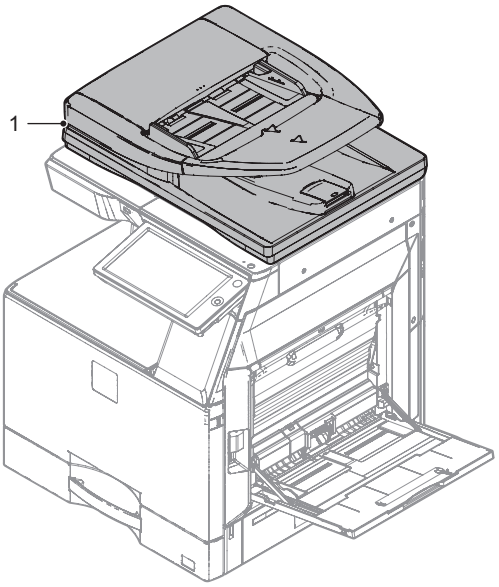
Connector facing

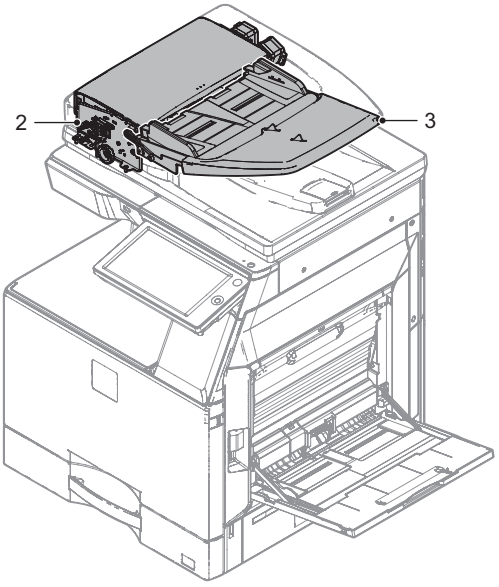




C. Auto document feeder section (RSPF)

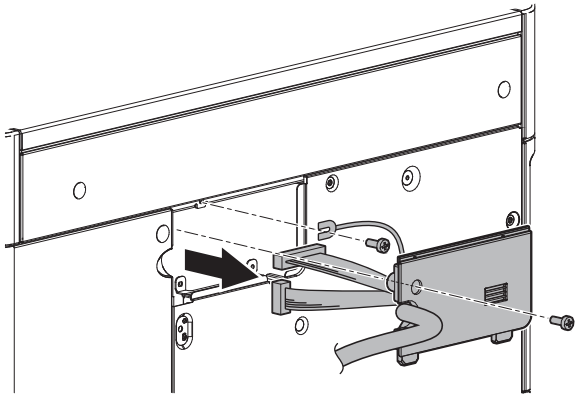
No.	Name
1	RSPF unit
2	RSPF paper feed tray unit
3	RSPF paper transport unit



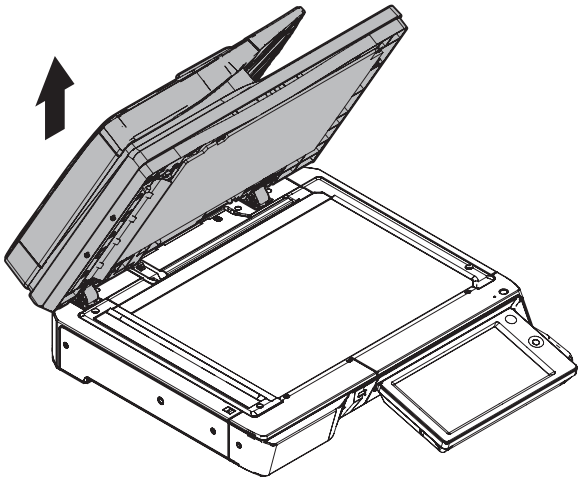


(1) RSPF unit

1) Remove the rear cabinet cover.
2) Loosen the screw fixing the earth cable and remove the earth cable. Then, disconnect the connector.

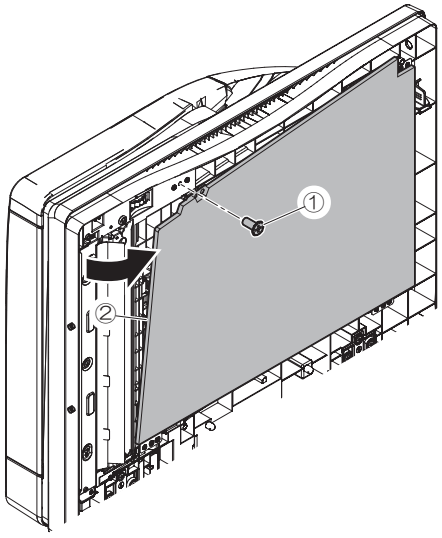


3) Remove the RSPF unit from the machine.

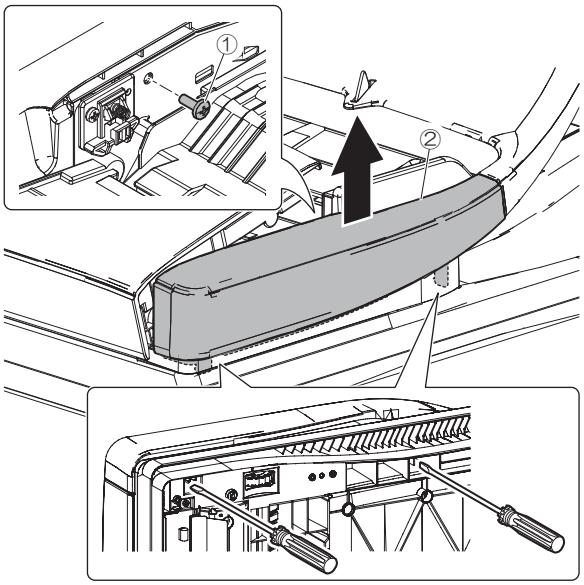


(2) RSPF paper feed tray unit

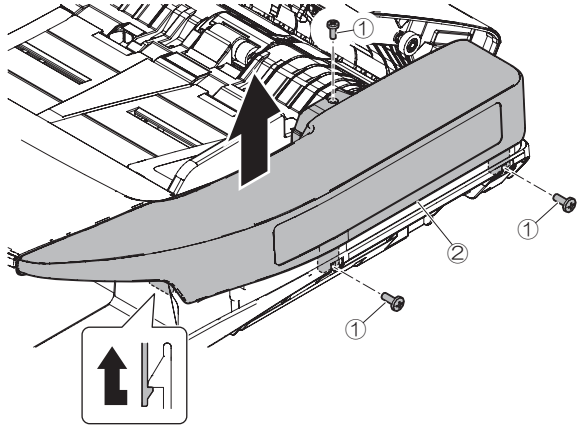
1) Turn over the left upper corner of the OC mat.



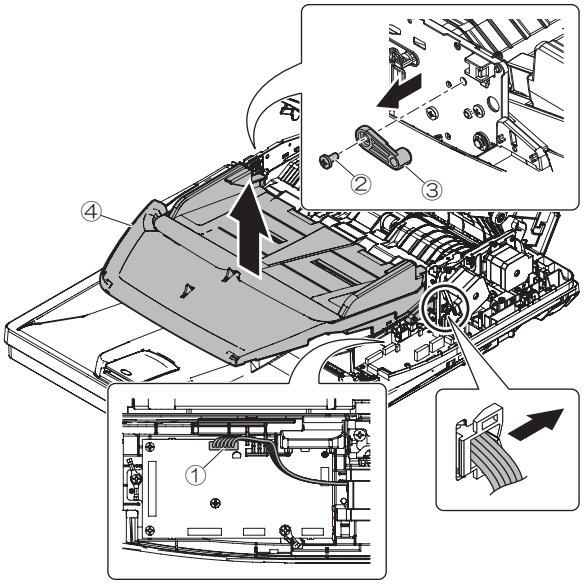
2) Remove the front cabinet.



3) Remove the rear cabinet.

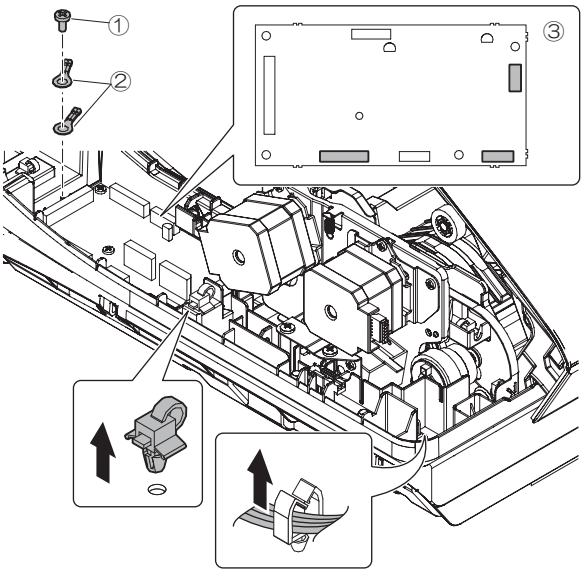


4) Disconnect the connector from the RSPF driver PWB. Remove the holder, and remove the RSPF paper feed tray unit.

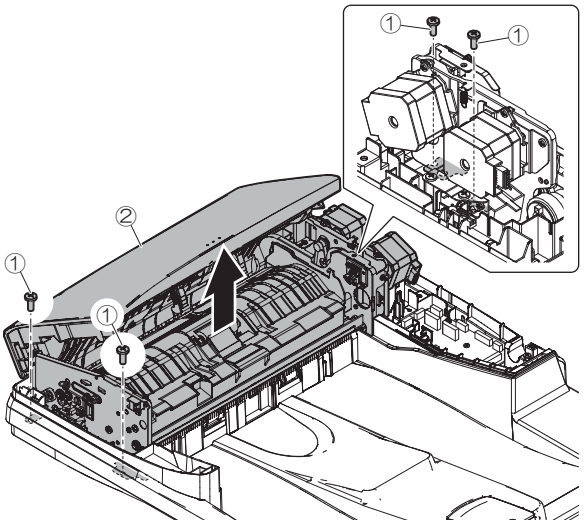


(3) RSPF paper transport unit

1) Remove the RSPF paper feed tray unit.
2) Remove the earth wire. Disconnect the connector from the RSPF driver PWB.

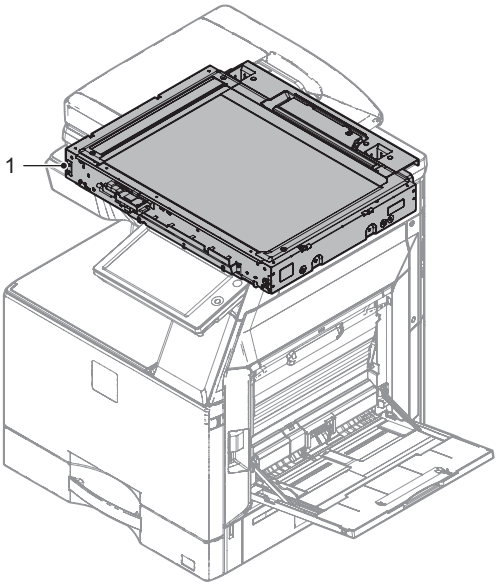


3) Remove the RSPF paper transport unit.



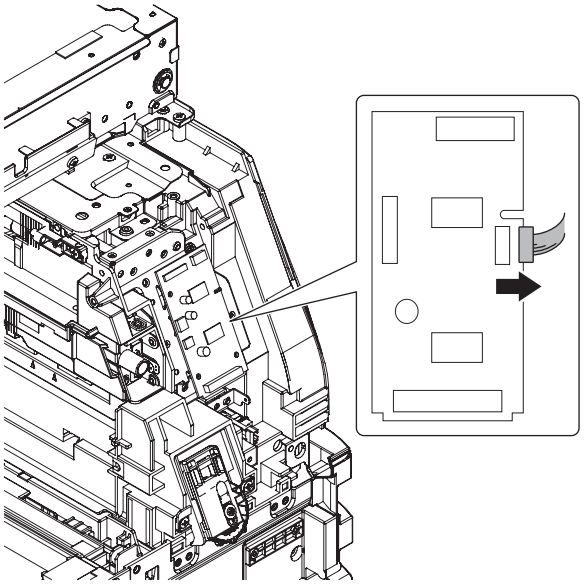
D. Scanner section

No.	Name
1	Scanner unit

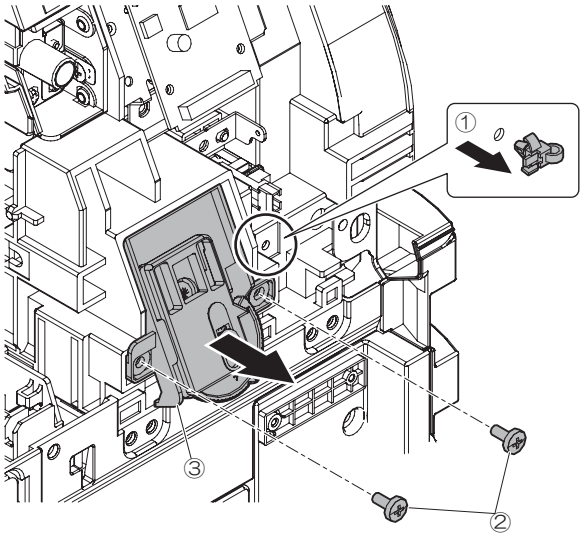


(1) Scanner unit

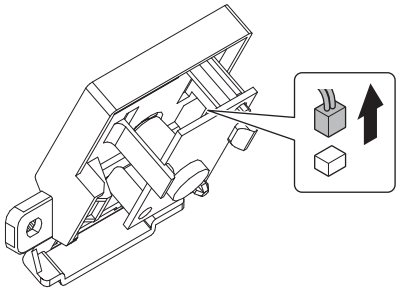
1) Remove the DSPF/RSPF unit.
2) Remove the operation panel unit.
3) Remove the table glass and the SPF glass.
4) Remove the upper cover front left, upper cover front right, upper cover right, rear cover upper and MFPC cover.
5) Disconnect the connector.



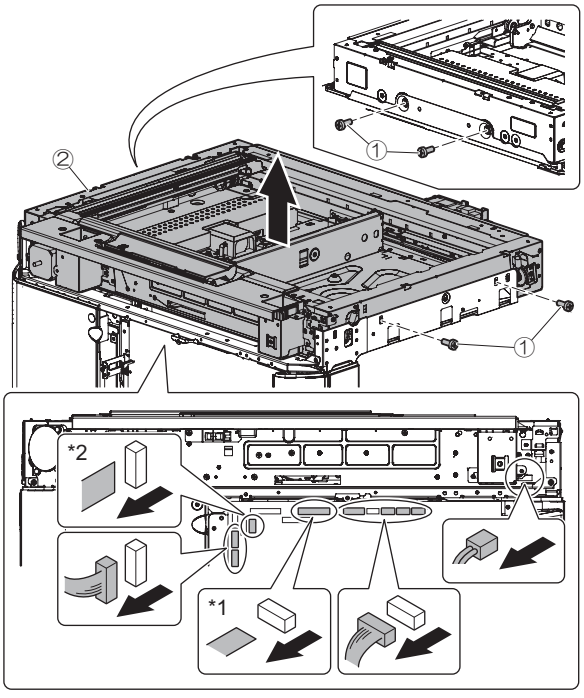
6) Remove the motion sensor PWB.



7) Disconnect the connector.

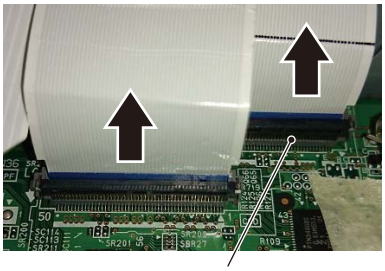


8) Remove the scanner unit.

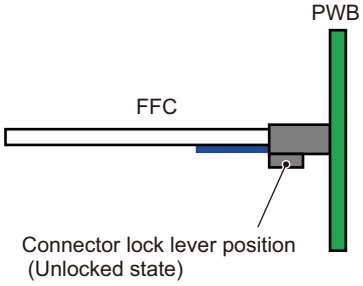


*1

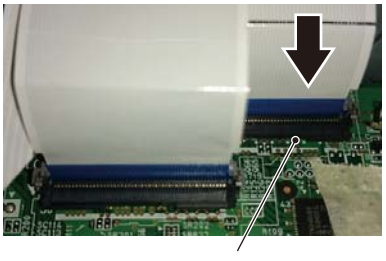
Unlocked (when removing FFC)



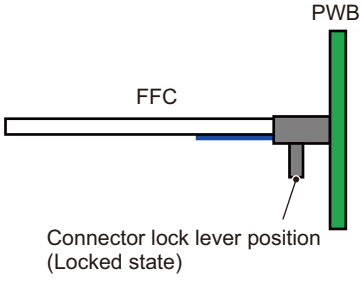
FFC can be removed by releasing the lever.



Locked (when connectiong FFC)
make sure FFC vertically inserted



FFC is locked by raising the lever
after inserting FFC.



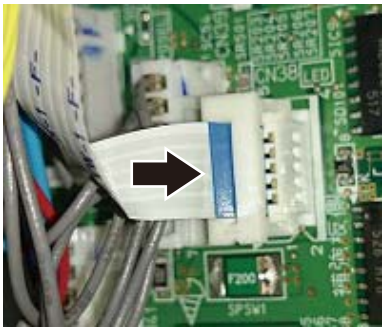
*2

Unlocked (when removing FFC)

Slide the connector in the direction of the arrow to unlock.

Pull out FFC in the direction of the arrow.

Locked (when connectiong FFC)

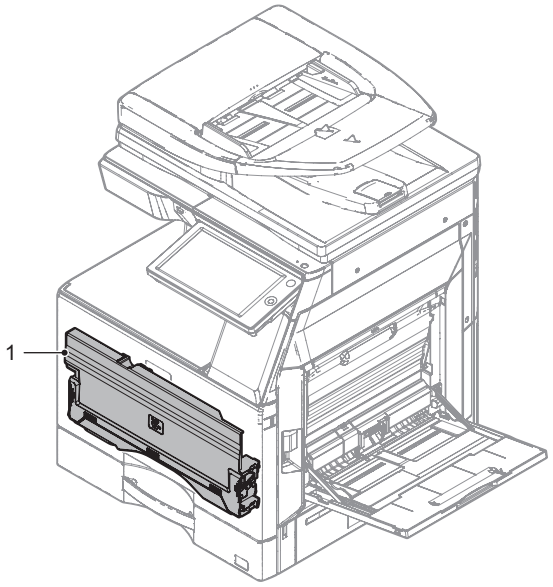


Insert FFC in the direction of the arrow, with the reinforcing plate (Blue) being placed at the right side.
make sure FFC vertically inserted

Slide the connector in the direction of the arrow to lock.

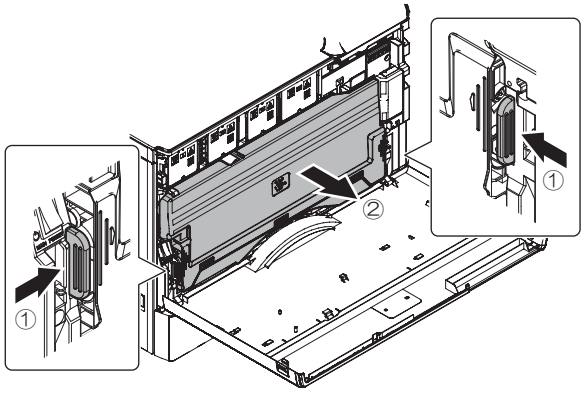
E. Waste toner collection section

No.	Name
1	Waste toner box



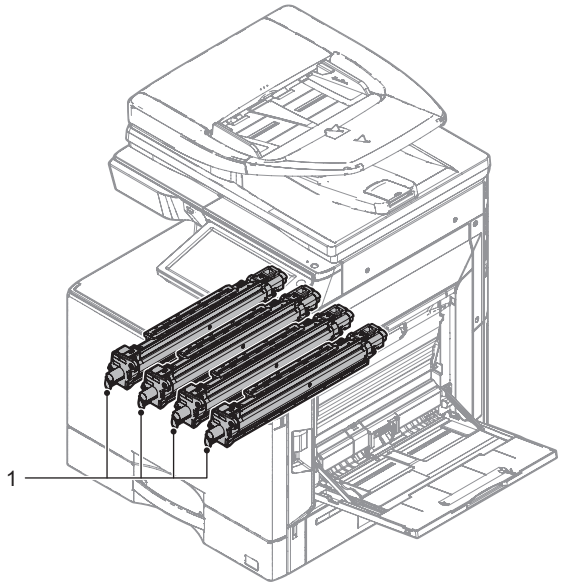
(1) Waste toner box

1) Open the front cover. Push the Waste toner lock lever to the inside, and remove the waste toner box.



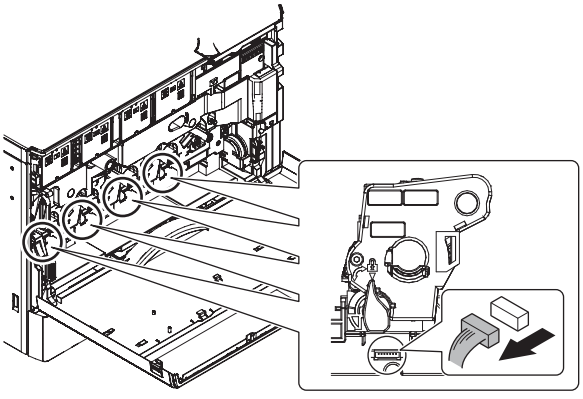
F. Developing section

No.	Name
1	Developing unit

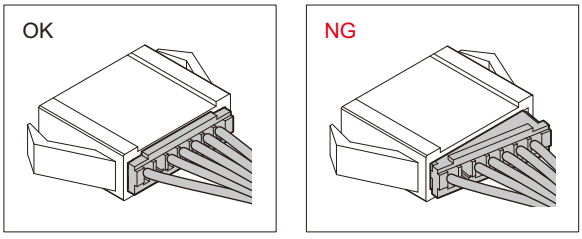


(1) Developing unit

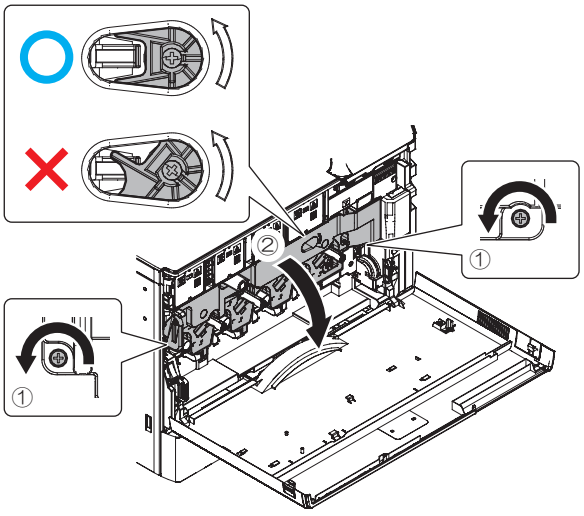
1) Remove the waste toner box.
2) Disconnect the connector of the developing unit before opening the drum positioning plate.



make sure connector correctly inserted when connecting



3) Check that the cam lock plate is aligned with the "O" mark position.
4) Turn the lock to release, and open the drum positioning plate.



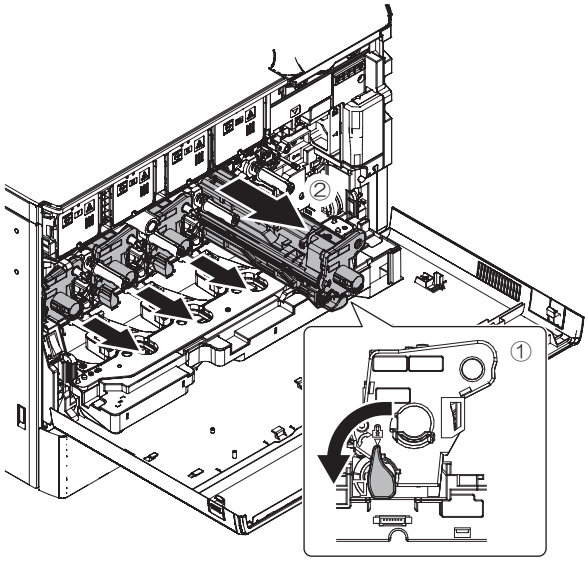
5) While pulling down the lever, pull out the developing unit to remove.

Important

When pulling out and pushing in the developing unit, put your hand beneath the unit and slide it horizontally along the guide.

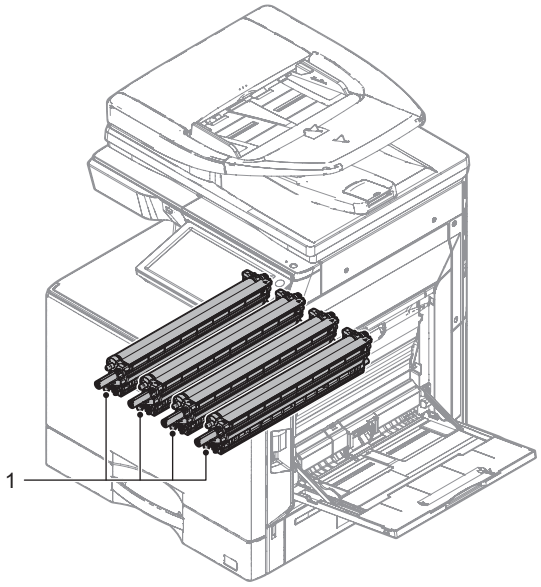
At the time, be careful not to touch the developing roller surface.

Put it in the horizontal place.



G. OPC drum section

No.	Name
1	OPC drum unit



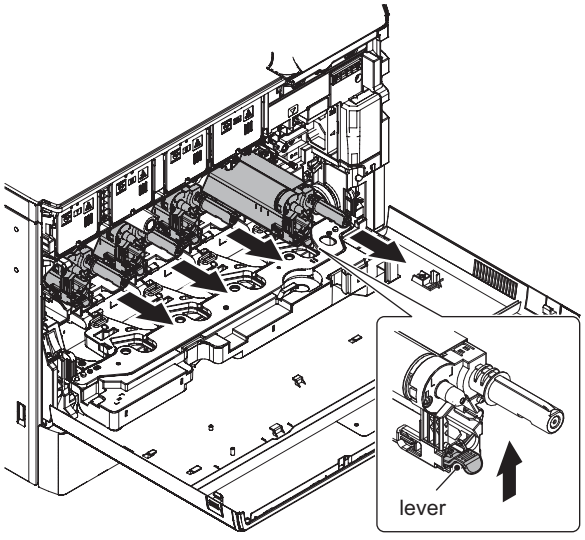
(1) OPC drum unit

1) Remove the waste toner box.
2) Open the drum positioning plate.
3) Remove the developing unit.
4) While pulling up the lever, pull out the OPC drum to remove.

Important

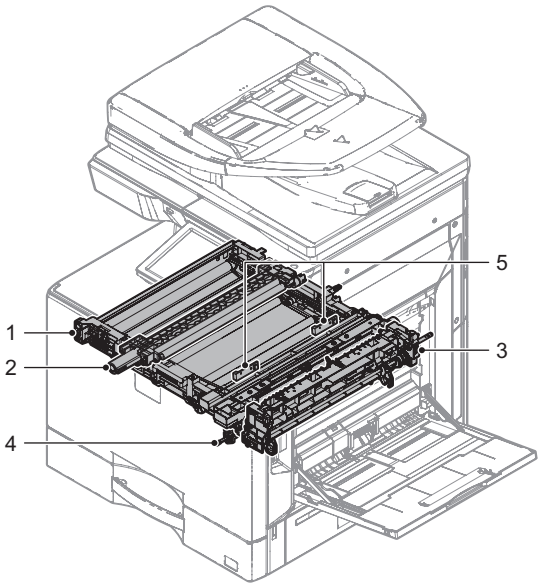
When pulling out and pushing in the OPC drum unit, put your hand beneath the unit and slide it horizontally along the guide on the right side.

At the time, be careful not to touch the OPC drum surface.



H. Transfer section

No.	Name
1	Primary transfer unit
2	Primary transfer cleaner unit
3	Secondary transfer unit
4	PTC unit
5	Registration sensor unit



(1) Primary transfer unit

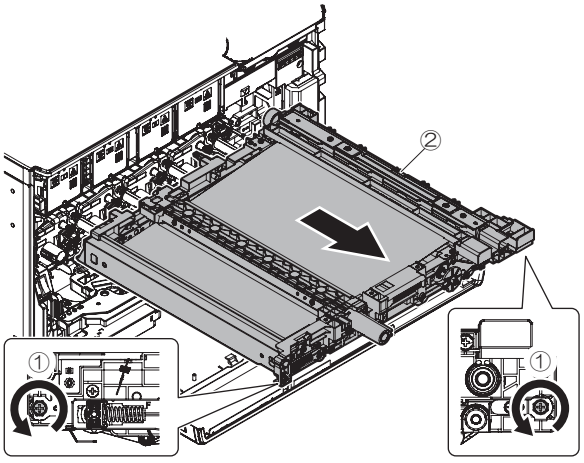
1) Remove the waste toner box.
2) Open the drum positioning plate.
3) Open the right door.
4) Loosen the screw and pill out the primary transfer unit to the position slowly where it stops.
5) Hold the handle (Green) on the right side of the primary transfer unit and guide rail (plate) on the left side of the primary transfer unit, and pull out the primary transfer unit slowly while lifting it upward.

Important

When removing the primary transfer unit, be sure to open the right door in advance.

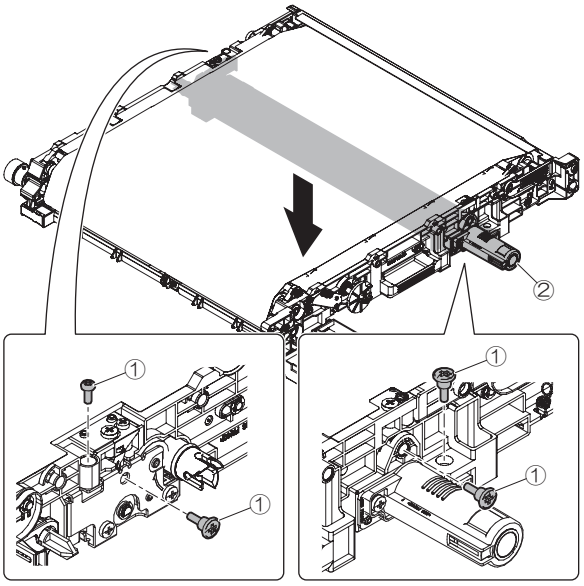
Important

Be careful not to put foreign materials and touch on the primary transfer belt.



(2) Primary transfer cleaner unit

1) Remove the primary transfer unit.
2) Turn the primary transfer unit and remove the screw.
3) Remove the primary transfer cleaner unit.



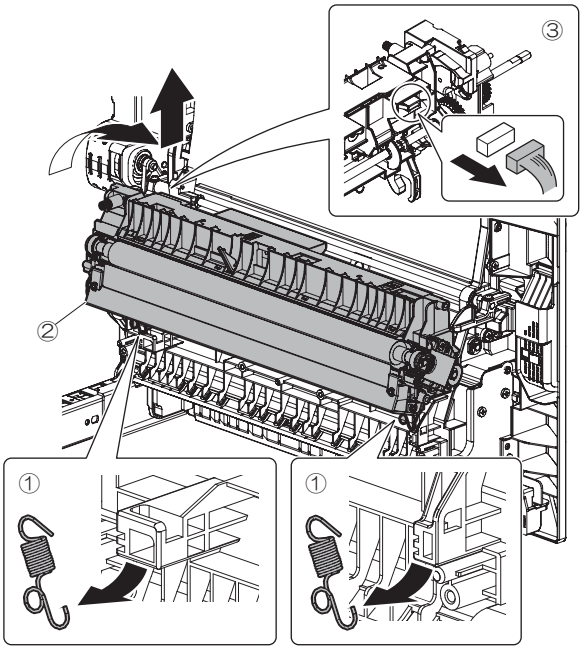
(3) Secondary transfer unit

1) Open the right door.
2) Remove the spring from the right door unit and remove the secondary transfer unit while lifting it upward from the rear side.

   Disconnect the connector from the Secondary transfer unit.

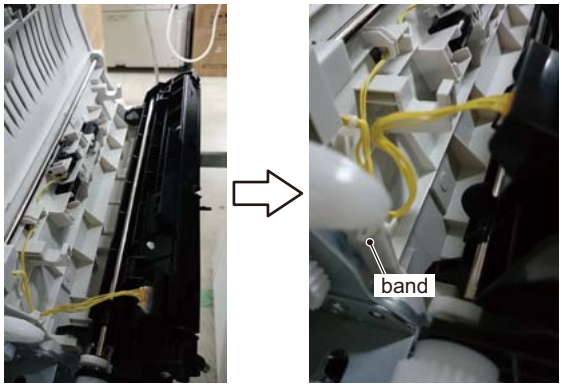
Important

Be careful not to put foreign materials on the secondary transfer roller.



* Spring is removed from the right dorr, however, the spring is not removed from the secondary transfer unit.

Fix the cable position by band after installing secondary transfer unit to the original position.

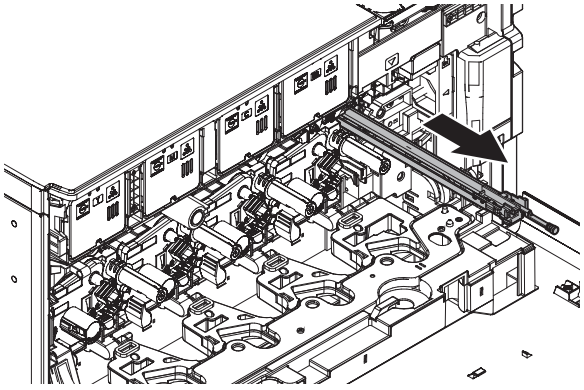


(4) PTC unit

1) Remove the waste toner box.
2) Open the drum positioning plate.
3) Remove the PTC unit.

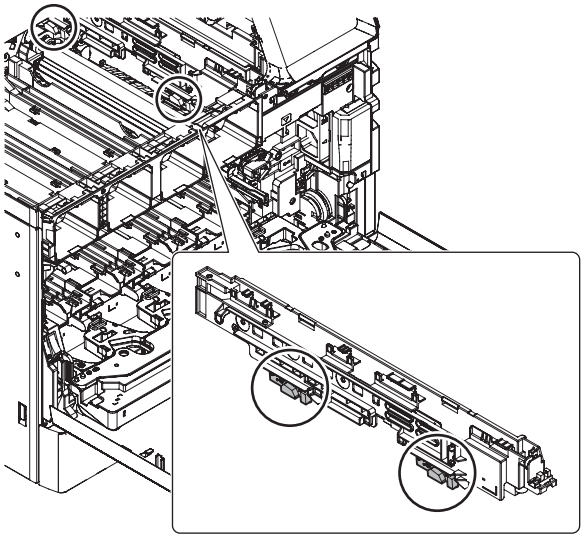
Important

Be careful not to put foreign materials on the wire and the plate.



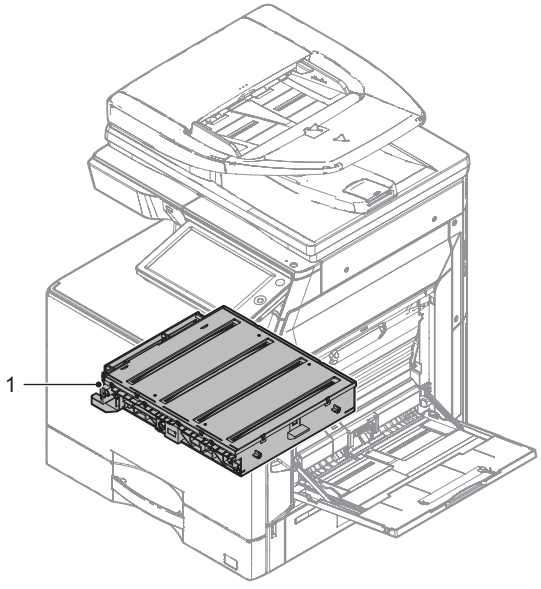
(5) Resist sensor unit

1) Remove the toner cartridge.
2) Remove the upper frame cover.
3) Remove the waste toner box.
4) Remove the developing unit.
5) Remove the OPC drum unit.
6) Open the right door.
7) Remove the primary transfer unit.
8) Clean the resist sensor unit.



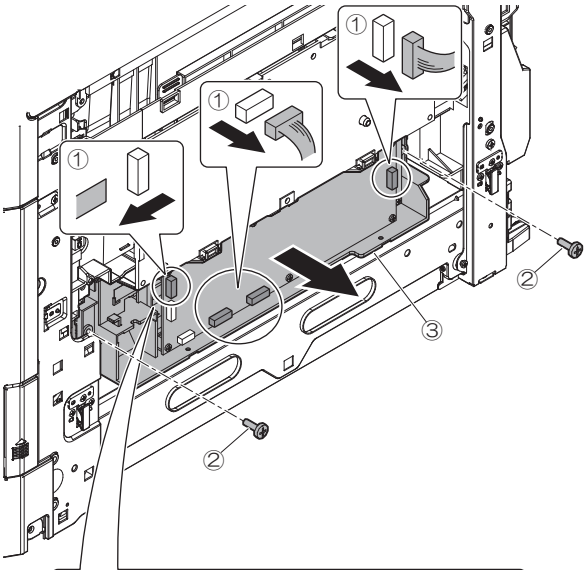
I. LSU section

No.	Name
1	LSU unit

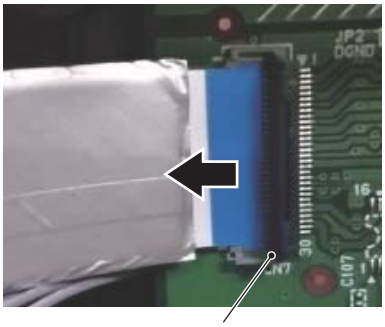


(1) LSU unit

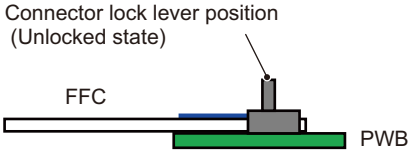
1) Remove the left cover.
2) Disconnect the FFC and the connector. Then, remove the screw, and remove the LSU unit.



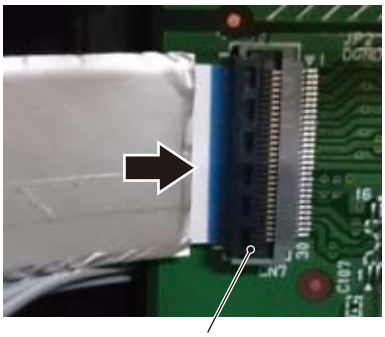
Unlocked (when removing FFC)



FFC can be removed by releasing the lever.

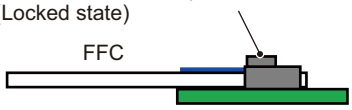


Locked (when connectiong FFC)

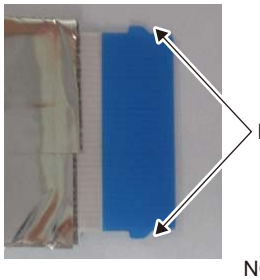


FFC is locked by lowering the lever after inserting FFC.

Connector lock lever position
(Locked state)



* Insert the FFC and the connector straight until they stop.
* Insert the FFC alignment tab to the connector alignment guide.

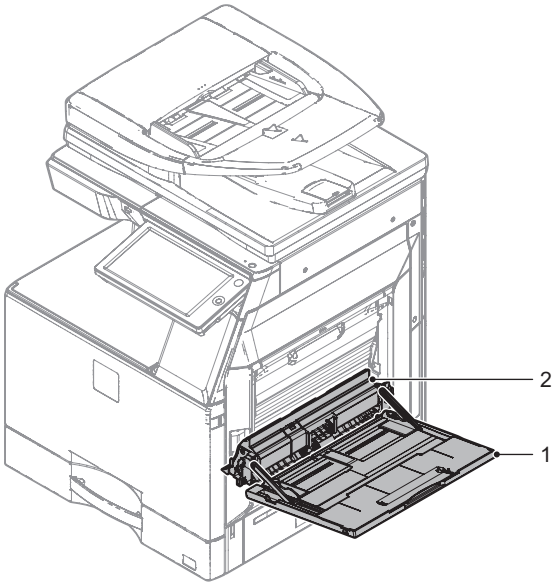


OK

NG: The FFC is not connected straight.

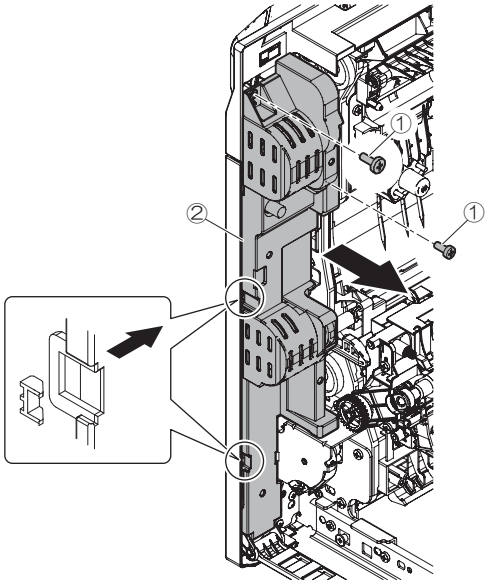
J. Manual paper feed section

No.	Name
1	Manual paper feed tray
2	Manual paper feed unit

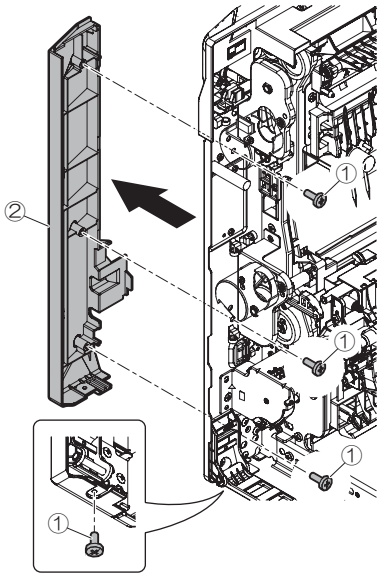


(1) Manual paper feed tray

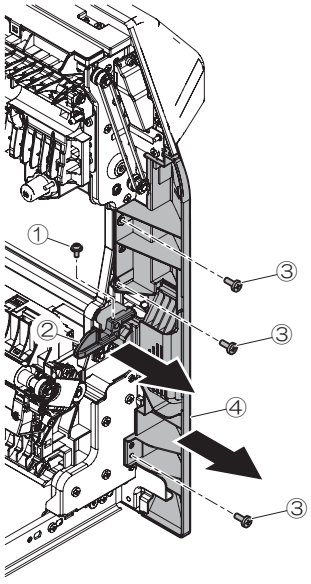
1) Remove the inner cover R upper.



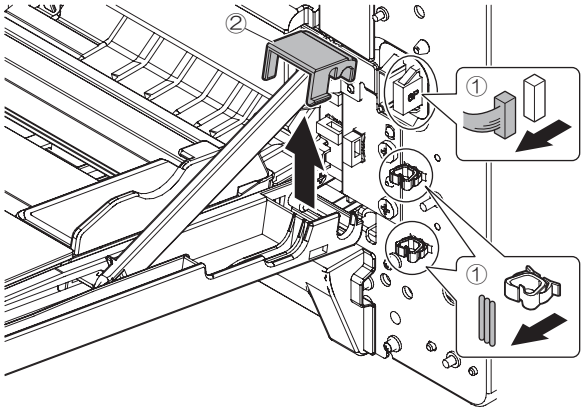
2) Remove the ADU cabinet R upper.



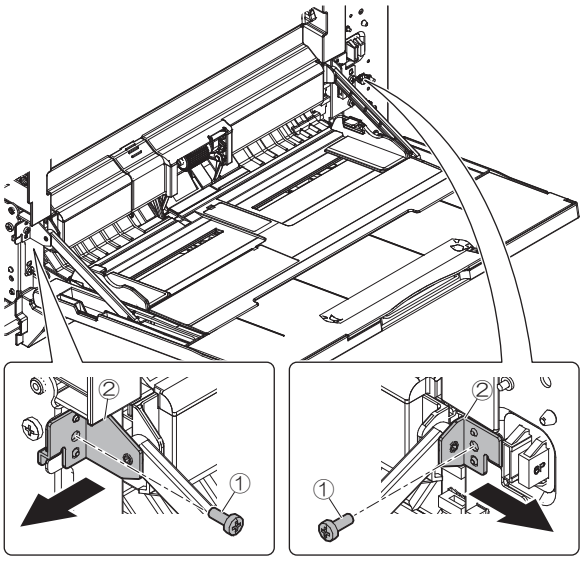
3) Remove the right door lock pawl, and remove the ADU cabinet F.



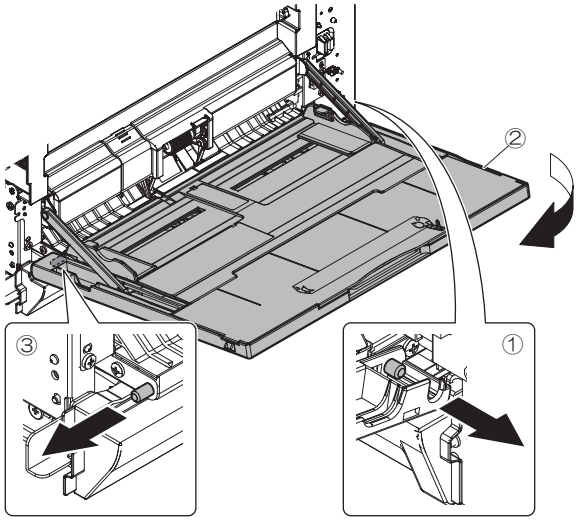
4) Remove the connector, and remove the multi-tray supporting point cover.



5) Remove the multi-tray angle.

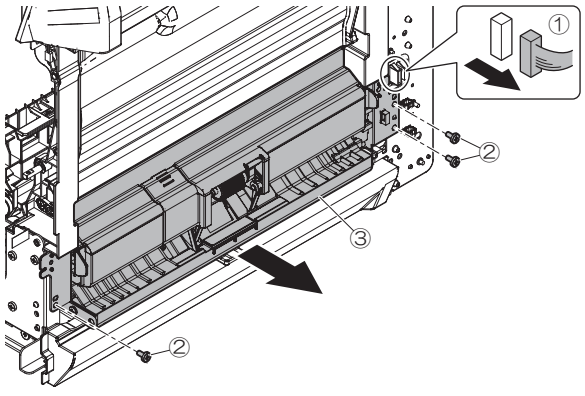


6) Remove the manual paper tray fulcrum shaft, and remove the manual paper tray.



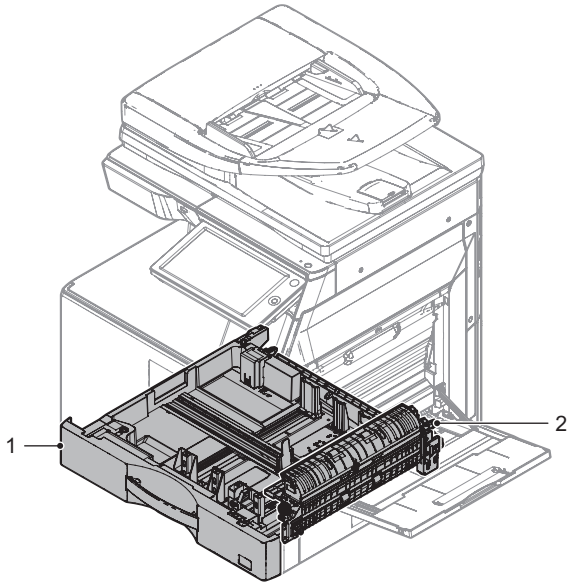
(2) Manual paper feed unit

1) Remove the manual paper feed tray.
2) Disconnect the connector, and remove the manual paper feed unit.



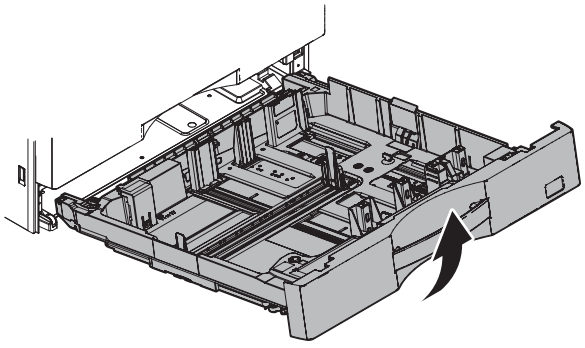
K. Tray paper feed section

No.	Name
1	Paper feed tray
2	Tray paper feed unit



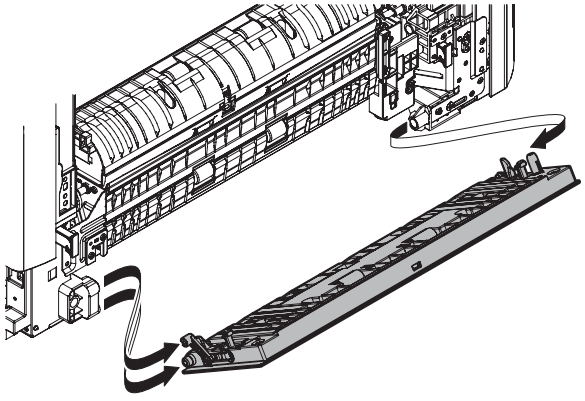
(1) Paper feed tray

1) Pull out the paper feed tray, and lift and remove it.

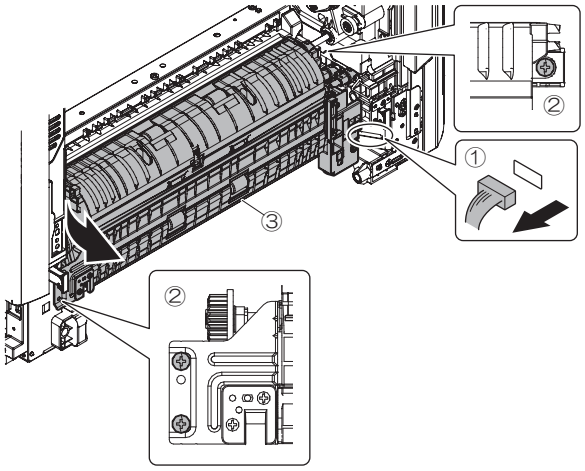


(2) Tray paper feed unit

1) Remove the paper feed tray.
2) Remove the right cover rear lower.
3) Remove the right cover front lower.
4) Remove the right door unit.

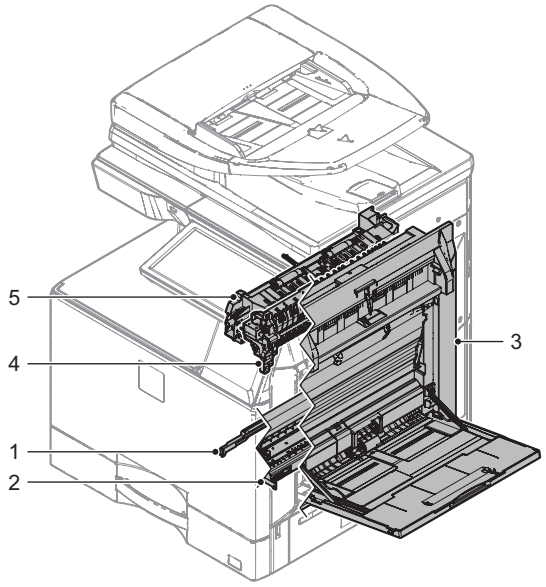


5) Disconnect the connector, and remove the tray paper feed unit.



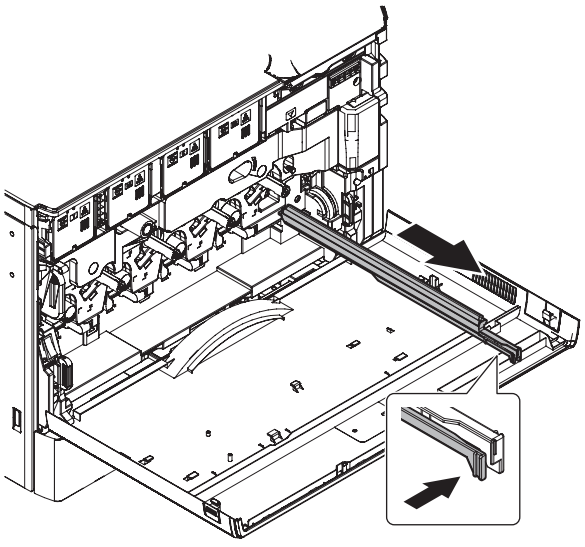
L. Paper transport/Paper exit/ADU section

No.	Name
1	Paper dust removing unit
2	PS unit
3	Right door unit
4	Fusing rear unit
5	Paper exit unit



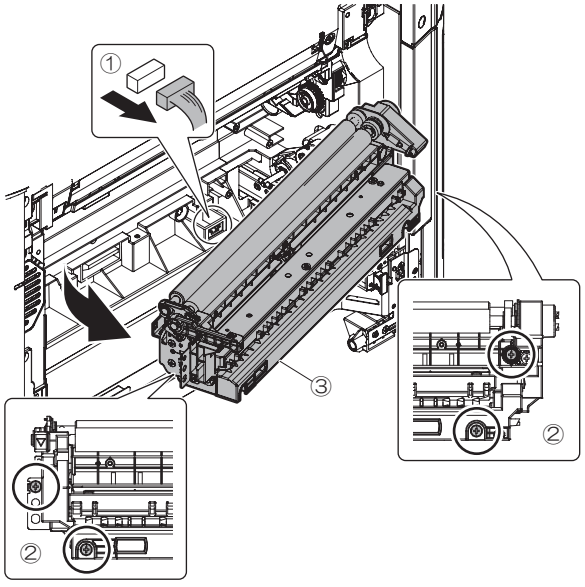
(1) Paper dust removing unit

1) Remove the waste toner box.
2) Remove the paper dust cleaner unit.



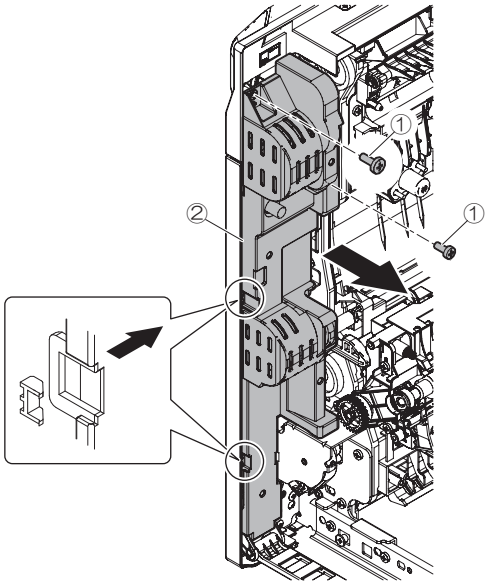
(2) PS unit

1) Paper dust removing unit
2) Remove the waste toner box.
3) Remove the paper feed tray.
4) Remove the tray paper feed unit.
5) Disconnect the connector, and remove the PS unit.

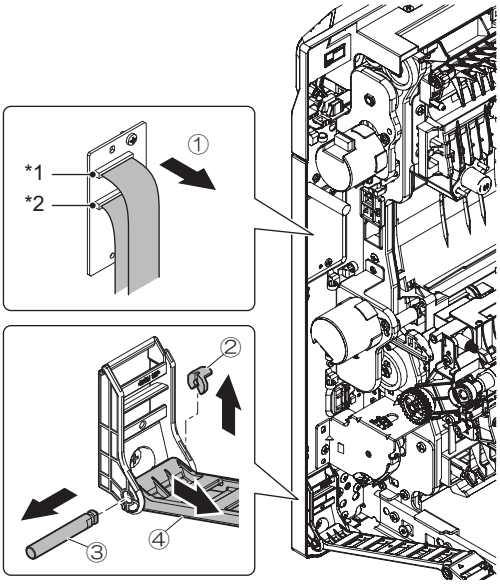


(3) Right door unit

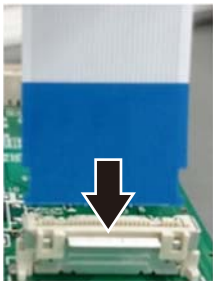
1) Remove the inner cover R upper.



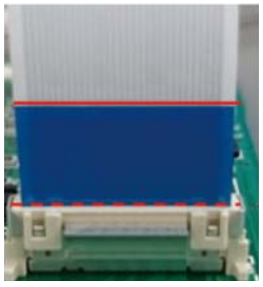
2) Remove the FFC, and remove the right door open/close harness holder.



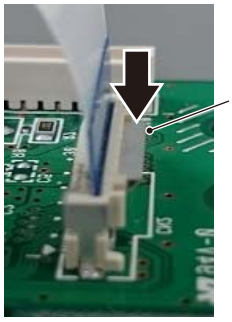
*1



Insert the FFC straight until it stops.

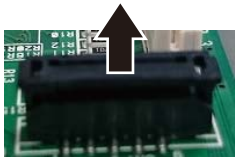


CAUTION :
Check that the FFC reinforce plate is parallel to the connector.



The lock is released by pressing the tab of the FFC connector with the direction described by the arrow.

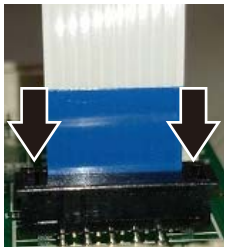
*2



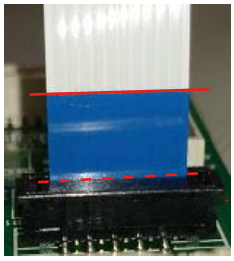
* When the lock lever is lifted up, be care ful not to damage the connector.

Lift up the lock lever before inserting the FFC.

Insert the FFC straight until it stops.

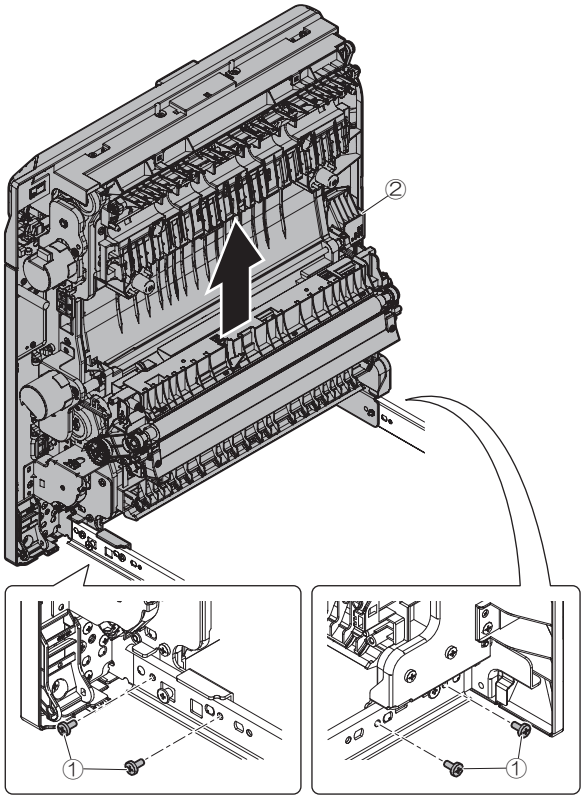


Pull down the lock lever and lock the part.



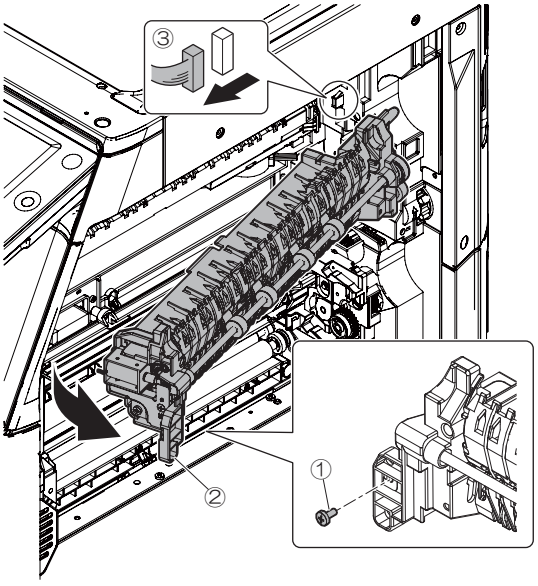
CAUTION :
Check that the FFC reinforce plate is parallel to the connector.

3) Remove the right door.



(4) Fusing rear unit

1) Remove the fusing unit.
2) Remove the fusing rear unit.Then disconnect the connector.

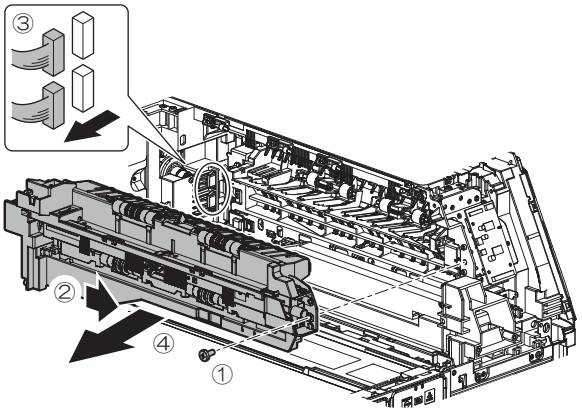


(5) Paper exit unit

1) Remove the front cover upper right.
2) Remove the paper exit unit.

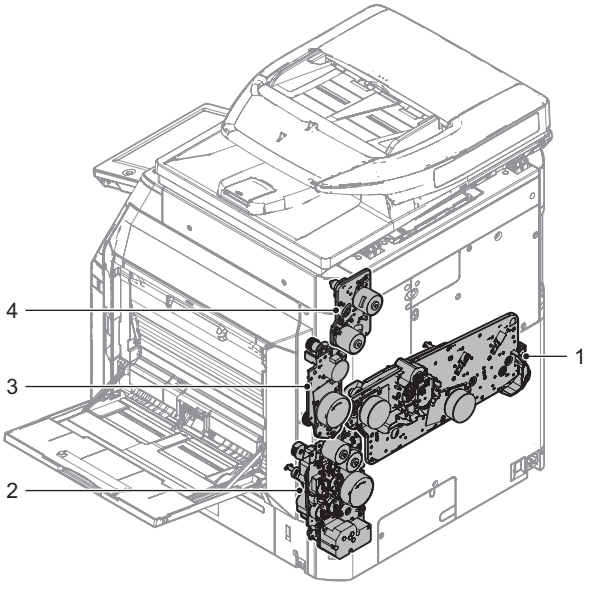
Important

When the connector is attached, check that the connector is attached firmly. (Check that the connector is attached straight.)



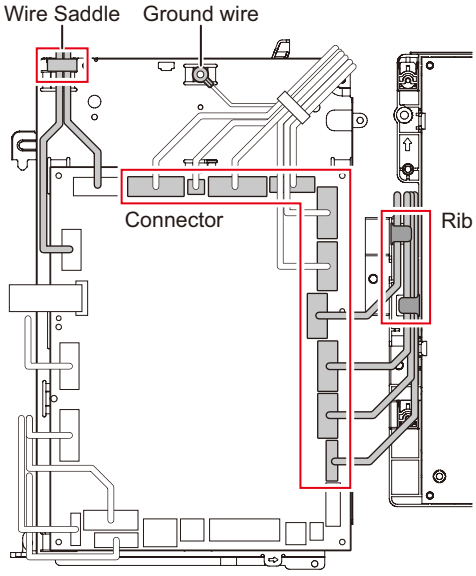
M. Drive section

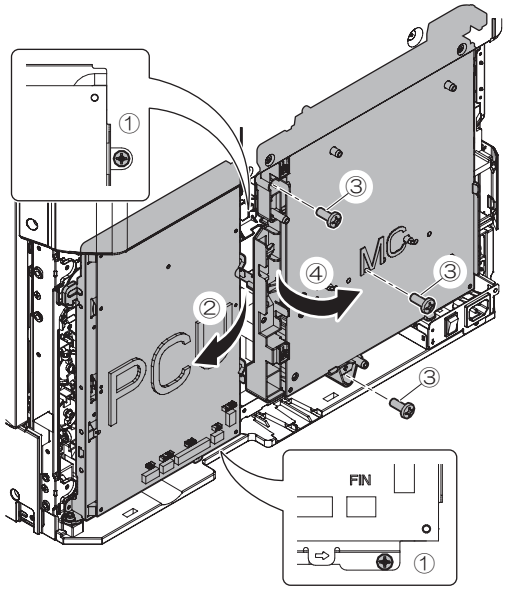
No.	Name
1	Main drive unit
2	Transport drive unit
3	Fusing drive unit
4	Paper exit drive unit



(1) Main drive unit

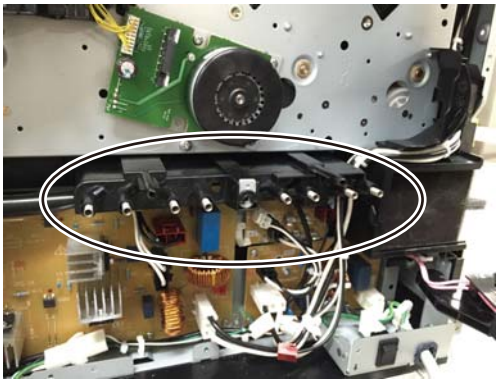
1) Remove the waste toner box.
2) Remove the developing unit.
3) Remove the OPC drum unit.
4) Remove the primary transfer unit.
5) Remove the rear cover.
6) Remove the harness from the wire saddle.
   Remove the harness from the rib.
   Remove the connector and the ground wire from the PCU PWB. Then, open the PCU PWB fixing plate unit and the MC fixing plate unit.



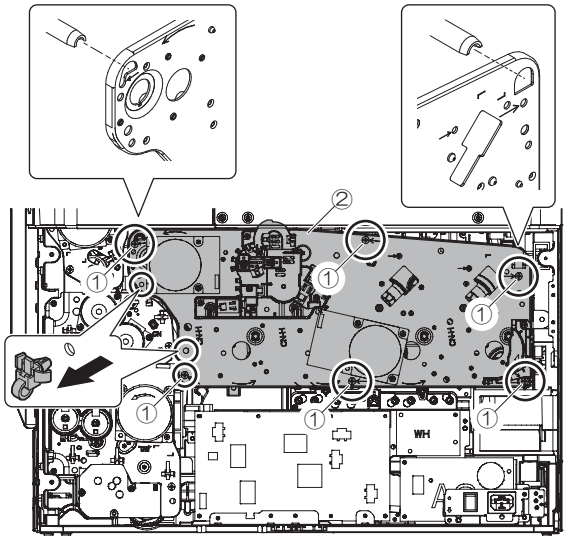


NOTE: Be careful with the following points when the MC PWB is attached.

- Check that each spring electrode is attached correctly.
- Check that each spring electrode is not bent or deformed.

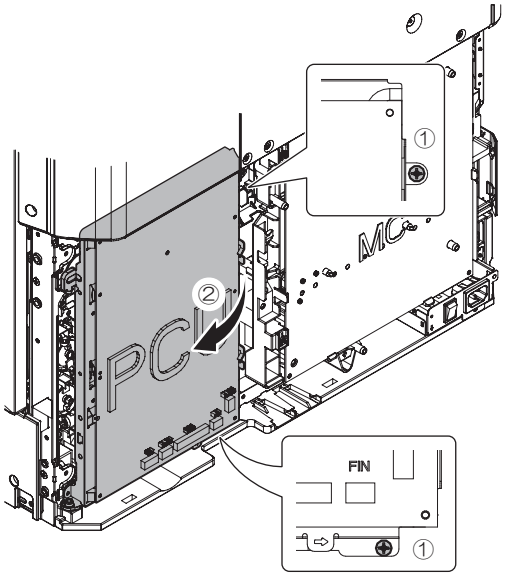


7) Remove the main drive unit.

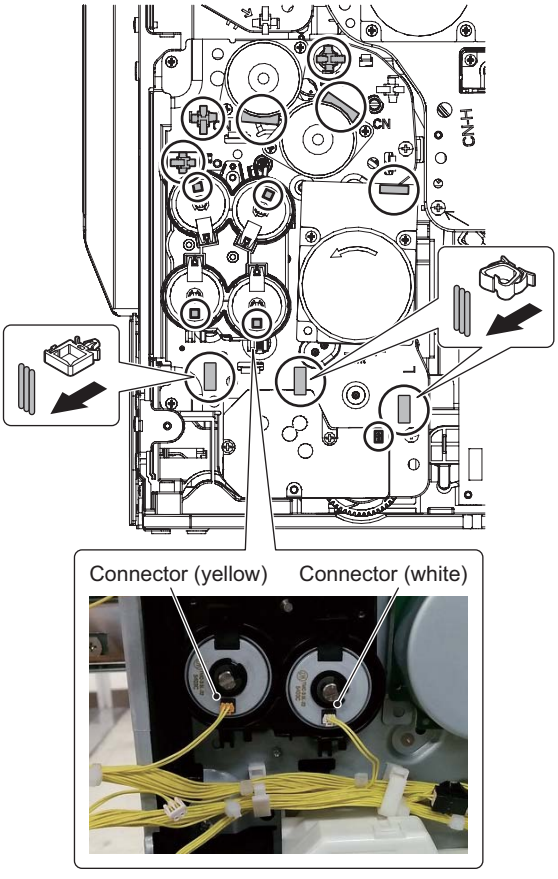


(2) Transport drive unit

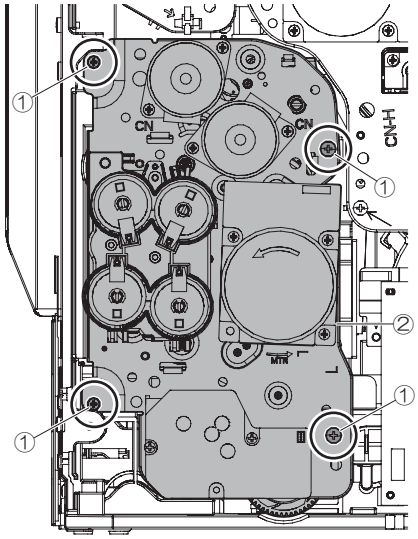
1) Remove the rear cover.
2) Remove the connector and the ground wire from the PCU PWB. Then, open the PCU PWB fixing plate unit.



3) Remove the connector, the reuse band and the harness from the transport drive unit.

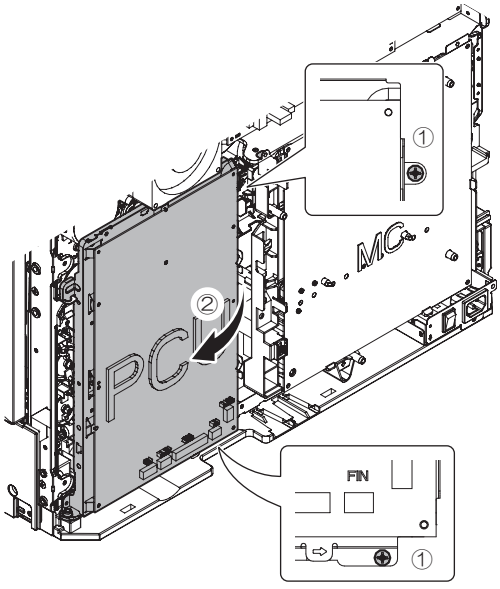


4) Remove the transport drive unit.

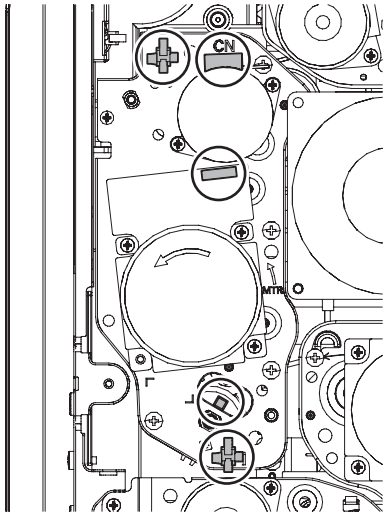


(3) Fusing drive unit

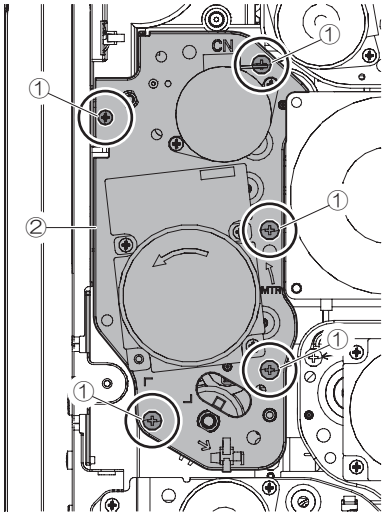
1) Remove the rear cover.
2) Remove the right cover rear upper.
3) Remove the connector and the ground wire from the PCU PWB. Then, open the PCU PWB fixing plate unit.



4) Remove the connector and the reuse band from the fusing drive unit.

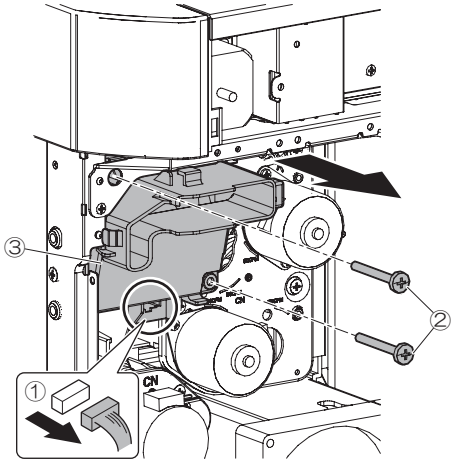


5) Remove the fusing drive unit

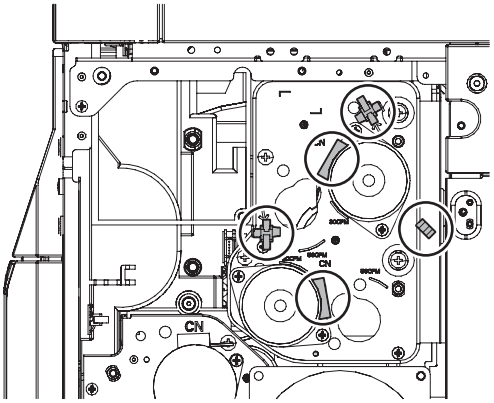


(4) Paper exit drive unit

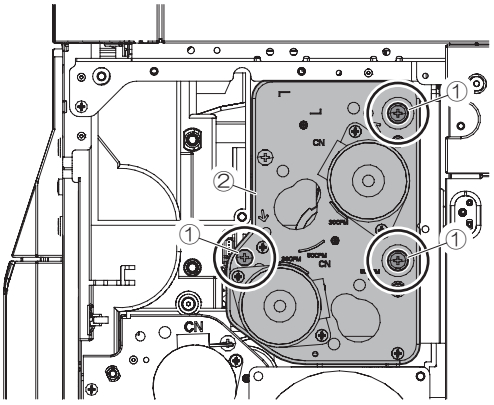
1) Remove the rear cover.
2) Remove the right cover rear upper.
3) Remove the delivery fan cover.



4) Remove the connector, the reuse band and the harness from the paper exit drive unit.

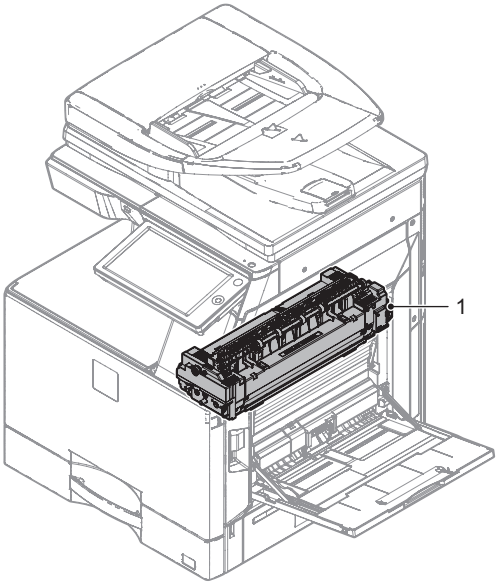


5) Remove the paper exit drive unit.



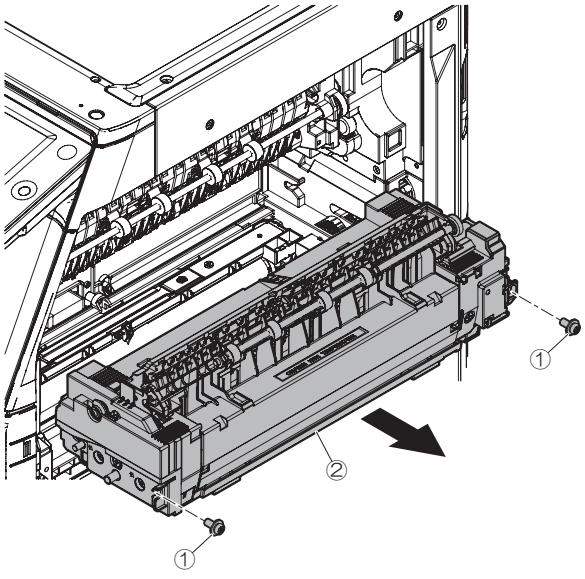
N. Fusing section

No.	Name
1	Fusing unit



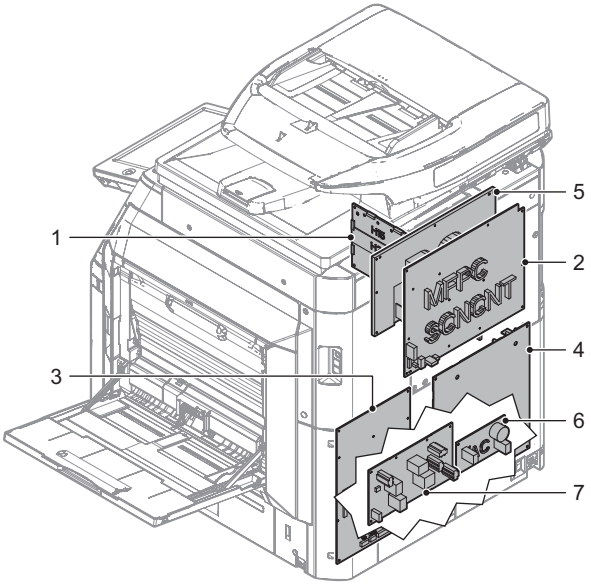
(1) Fusing unit

1) Open the right door, and remove the fusing unit.



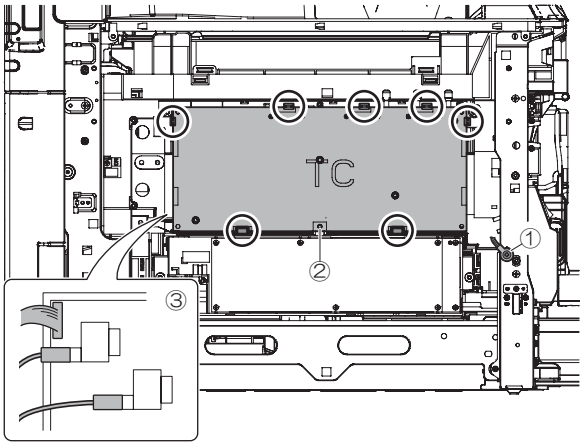
O. PWB section

No.	Name
1	TC PWB
2	SCN-MFP PWB
3	PCU PWB
4	MC PWB
5	DC POWER PWB
6	AC PWB
7	HL PWB



(1) TC PWB

1) Remove the left cover.
2) Remove the TC PWB, and disconnect the connector.

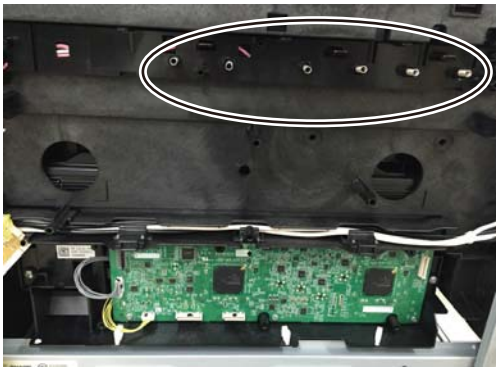


Caution with replacing the high voltage TC PWB

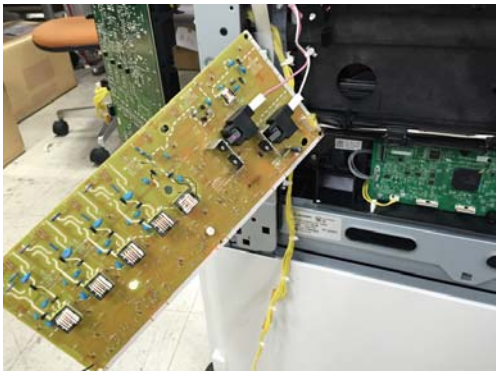
1) When the part is attached

Check the spring electrode on the main unit.

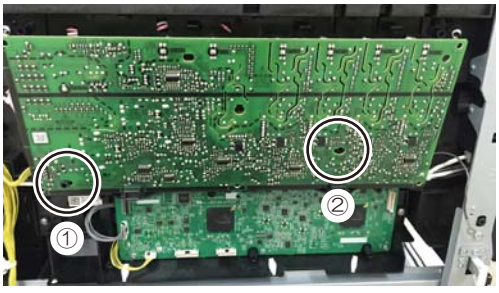
- Check that each spring electrode is attached correctly.
- Check that each spring electrode is not bent or deformed.



2) The order for fixing to the main unit

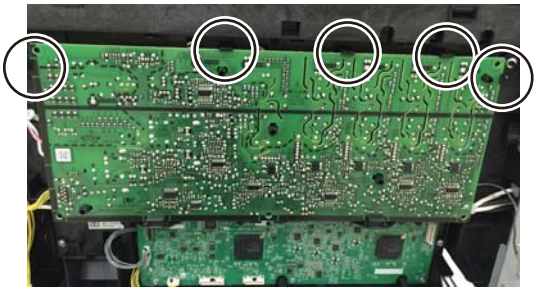


Attach the PWB in order of 1 to 2. With this order, the remaining resin boss is attached easily.



3) Check the resin pawl on the main unit.

Fix the TC PWB with the pawls (5 places) correctly.

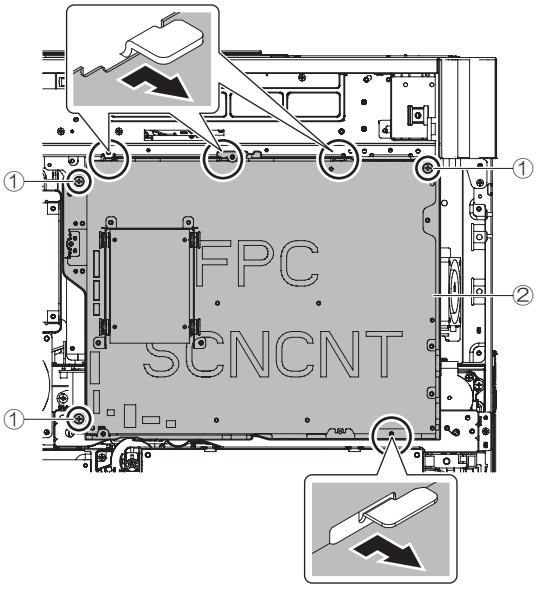


(2) SCN-MFP PWB

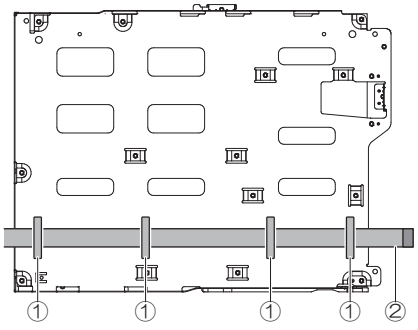
1) Remove the MFPC cover.
2) Remove the rear cover upper.
3) Remove the rear cover.
4) Remove the right cover rear upper.
5) Remove the left cover.
6) Remove the left cover upper rear.
7) Remove the connector and the FFC, and remove the MFPC PWB fixing plate unit.

Important

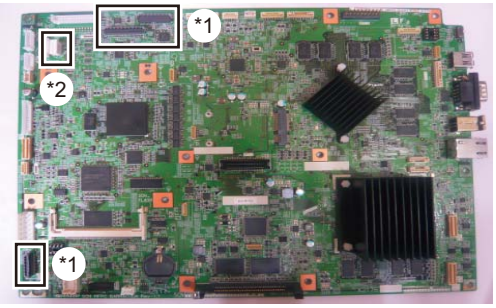
Be careful with the FFC which is attached on the rear side of the MFPC PWB fixing plate unit.



8) Remove the FFC cable.

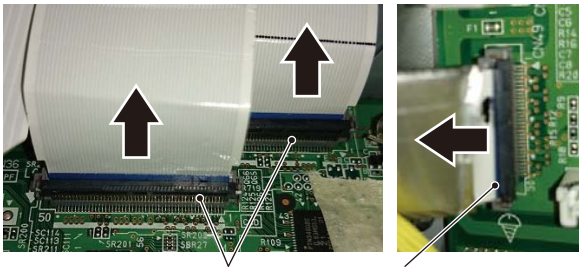


How to attach/remove the MFPC PWB FFC

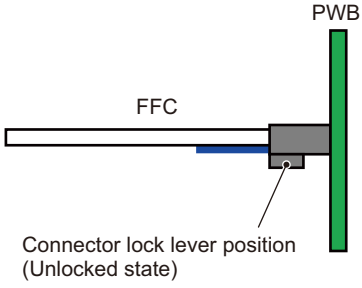


*1

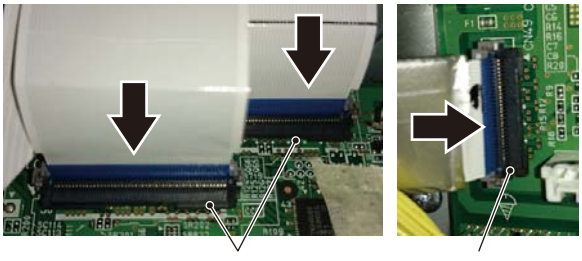
Unlocked (when removing FFC)



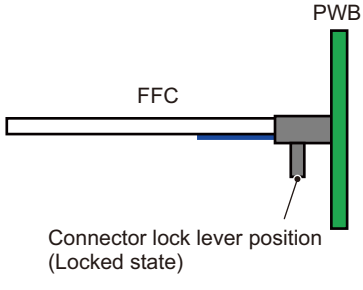
FFC can be removed by releasing the lever.



Locked (when connectiong FFC)
make sure FFC vertically inserted



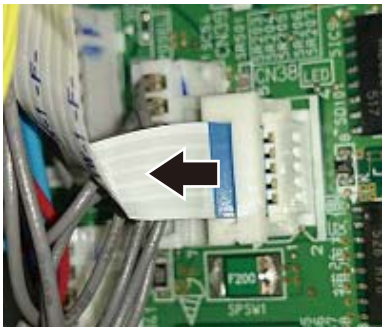
FFC is locked by raising the lever after inserting FFC.



*2

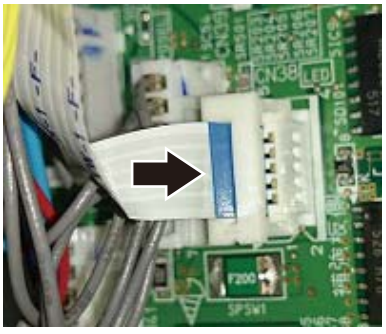
Unlocked (when removing FFC)

Slide the connector in the direction of the arrow to unlock.



Pull out FFC in the direction of the arrow.

Locked (when connectiong FFC)



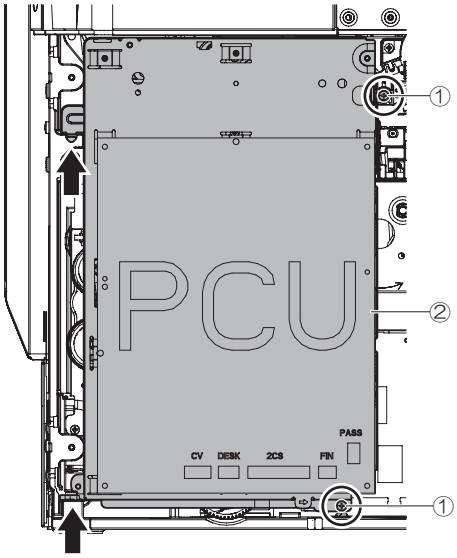
Insert FFC in the direction of the arrow, with the reinforcing plate (Blue) being placed at the right side.

Slide the connector in the direction of the arrow to lock.

9) Take out 2 eeprom from the PWB and mount them onto the new PWB.

(3) PCU PWB

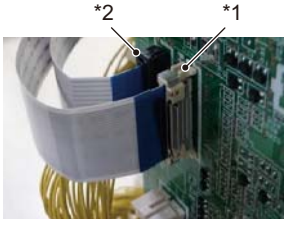
1) Remove the rear cover.
2) Remove the connector and the FFC, and remove the PCU PWB fixing plate unit.



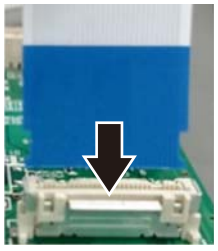
Perform the following operations after replacing the PCU PWB.

- Remove the fusing unit and turn ON the main power. Then, leave the main unit for 10 seconds.
- Turn OFF the main power.
- Attach the fusing unit.

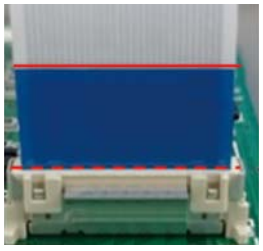
How to attach/remove the PCU PWB FFC



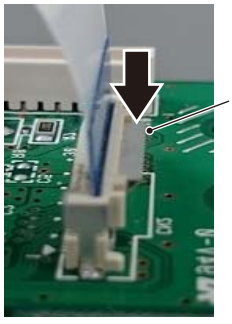
*1



Insert the FFC straight until it stops.

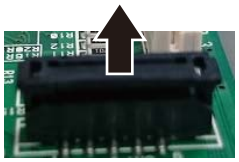


CAUTION :
Check that the FFC reinforce plate is parallel to the connector.



The lock is released by pressing the tab of the FFC connector with the direction described by the arrow.

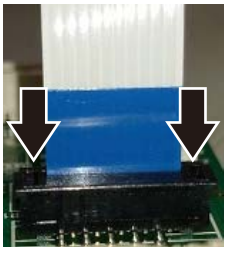
*2



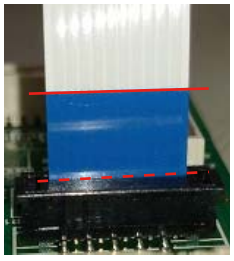
* When the lock lever is lifted up, be care ful not to damage the connector.

Lift up the lock lever before inserting the FFC.

Insert the FFC straight until it stops.



Pull down the lock lever and lock the part.

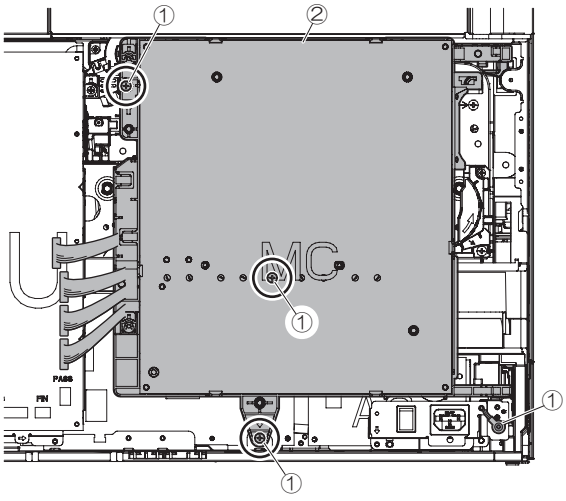


CAUTION :
Check that the FFC reinforce plate is parallel to the connector.

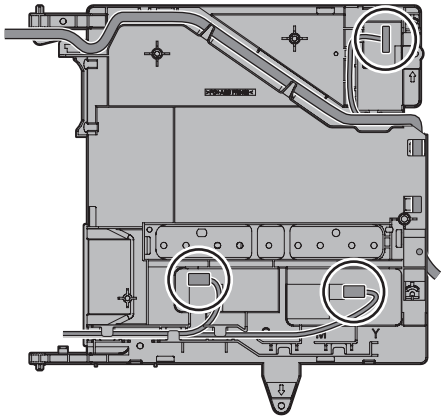
3) Take out the eeprom from the PWB and mount it onto the new PWB.

(4) MC PWB

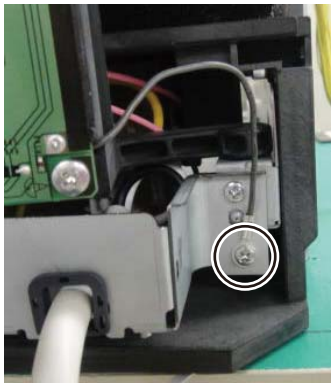
1) Remove the MFPC cover.
2) Remove the rear cover.
3) Disconnect the connector from the PCU PWB and open the MC fixing plate unit.



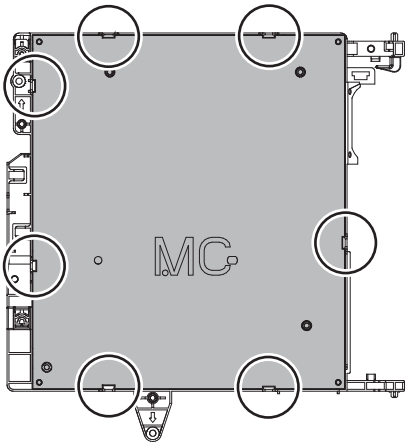
4) Disconnect the 3 harnesses on the MC PWB.



5) Disconnect the ground wire on the MC PWB.

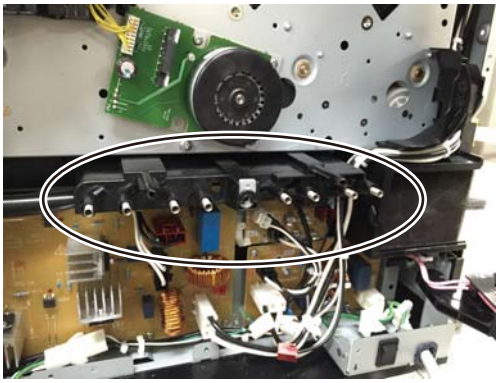


6) Remove the 7 pawls, and remove the MC PWB.



Caution with replacing the high voltage MC PWB

1) When the part is attached
   Check the spring electrode on the main unit.
   - Check that each spring electrode is attached correctly.
   - Check that each spring electrode is not bent or deformed.

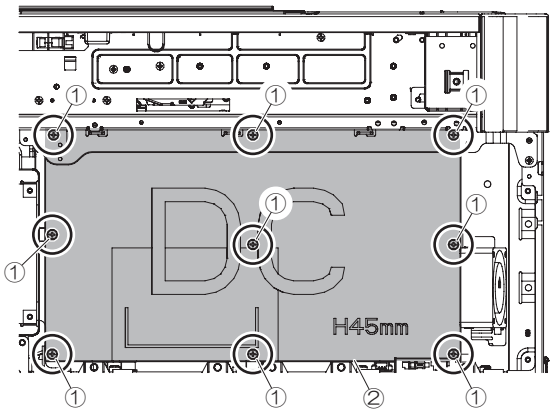


2) Check the connection to the main unit
   Fix the MC PWB with the pawls (7 places) correctly.

· The resin boss is gotten out correctly.
· The center screw of the MC PWB is fixed correctly.

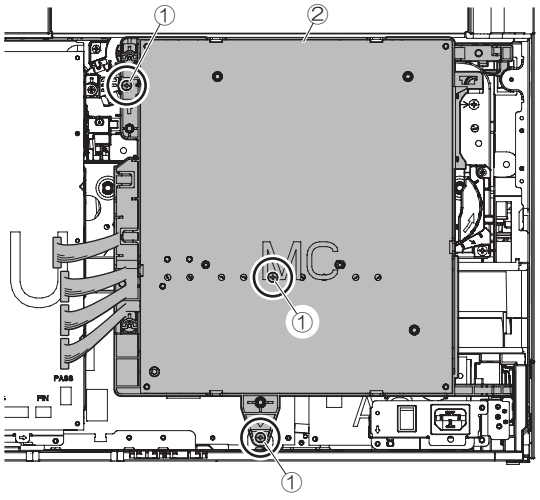
(5) DC POWER PWB

1) Remove the MFPC PWB fixing plate unit.
2) Remove the connector, and remove the low voltage power unit.

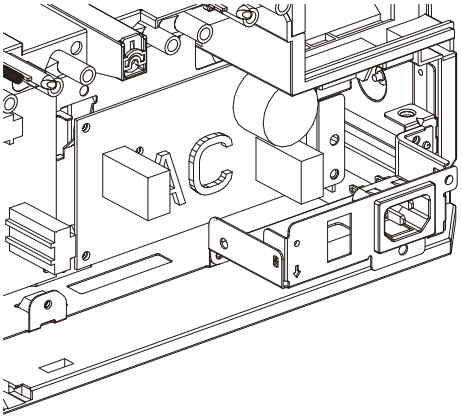


(6) AC PWB

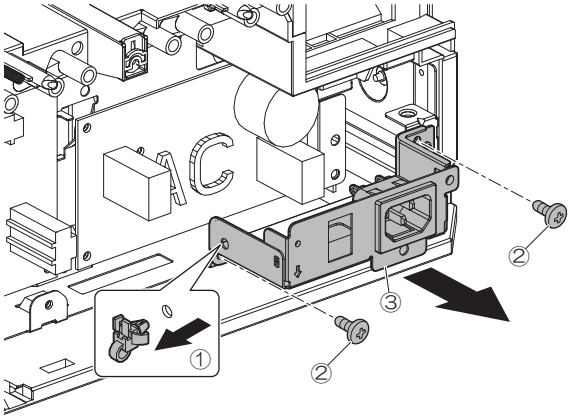
1) Remove the MFPC cover.
2) Remove the rear cover.
3) Disconnect the connector from the PCU PWB and open the MC fixing plate unit.



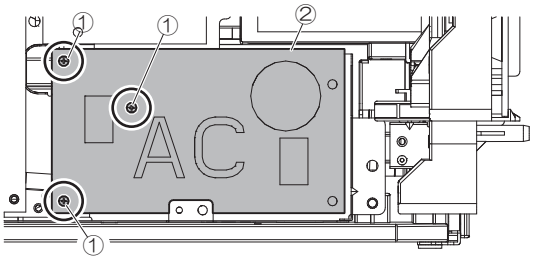
4) Disconnect the all connectors from the AC PWB.



5) Remove the reuse band.
   Remove the AC cord fixing plate unit.

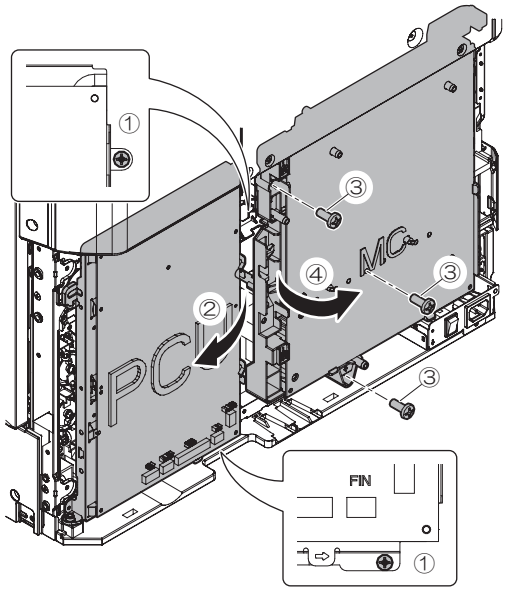


6) Remove the AC PWB.

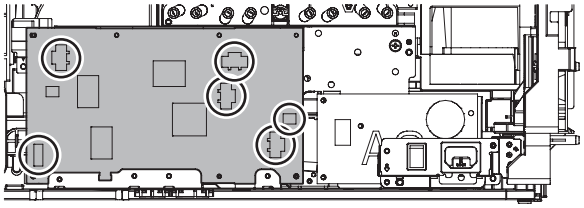


(7) HL PWB

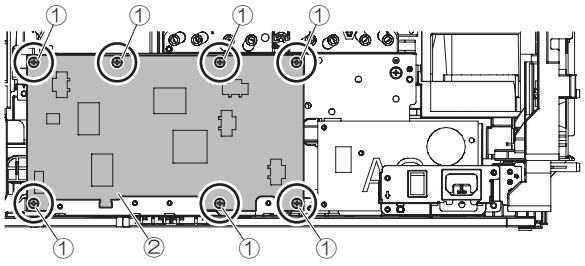
1) Remove the rear cover.
2) Remove the connector and the ground wire from the PCU PWB. Then, open the PCU PWB fixing plate unit and the MC fixing plate unit.



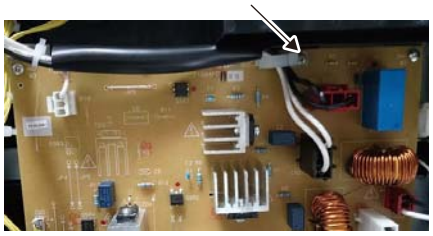
3) Disconnect the connector from the HL PWB.



4) Remove the screws, and remove the HL PWB.

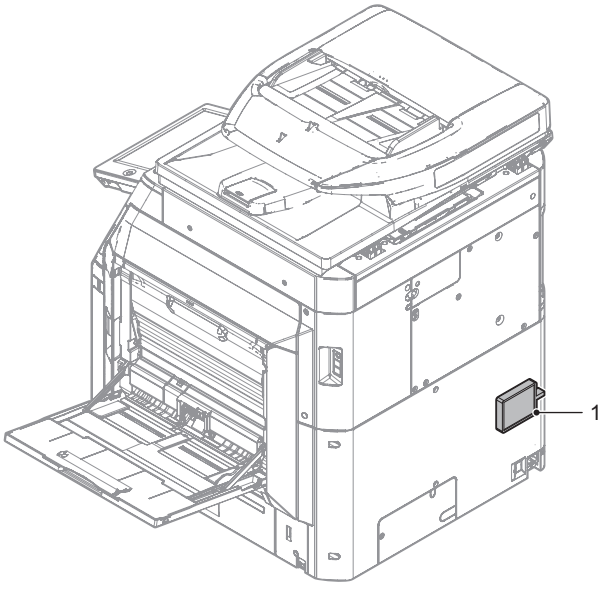


Saddle for fixing the screw
· Fix by the screw with the HL PWB.



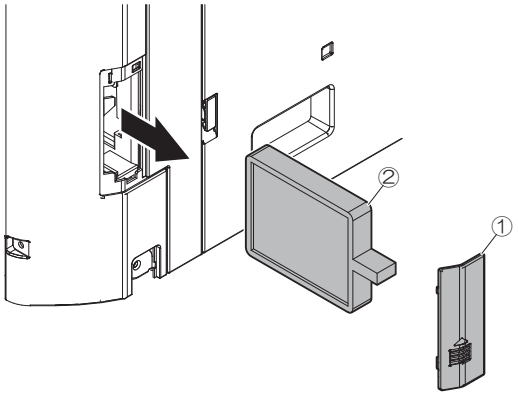
P. Filter section

No.	Name
1	Ozone filter



(1) Ozone filter

1) Remove the ozone filter cover, and remove the ozone filter.

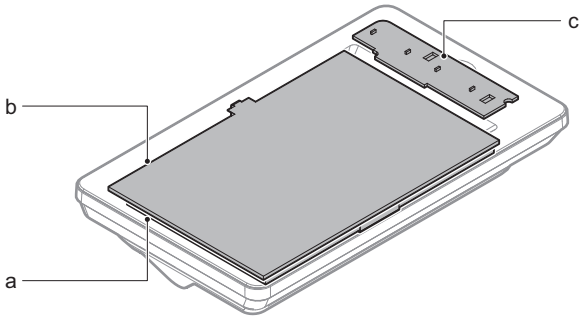


2. Disassembly and assembly of each unit

A. Operation panel section

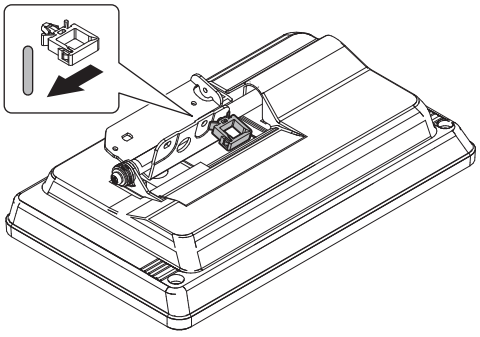
(1) Operation panel unit

Part No.	Part name
a	LCD
b	Touch panel
c	HOME PWB

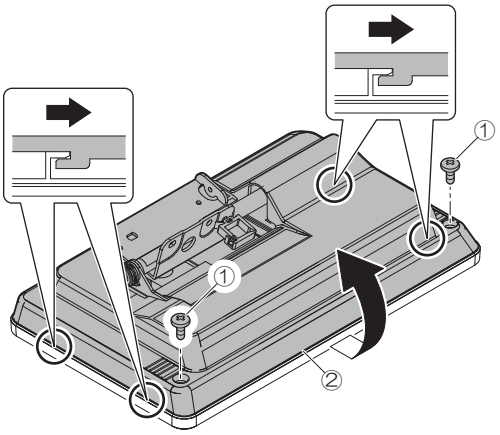


a. LCD

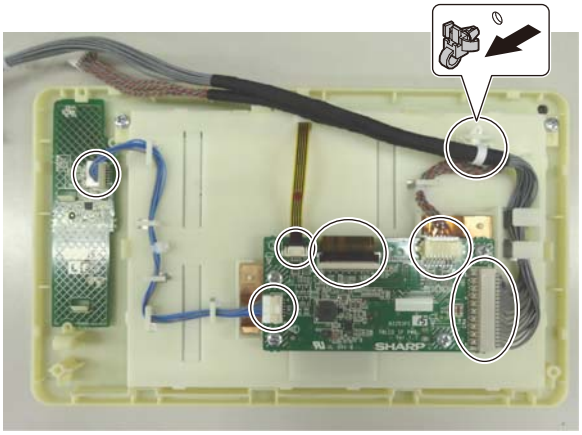
1) Remove the harness from the clamp.



2) Remove the cover and the screw then open the cover.



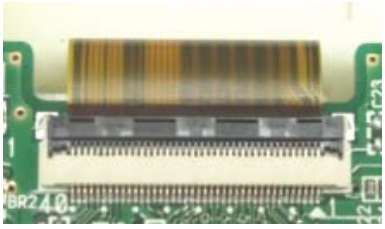
3) Remove the connector and the reuse band.



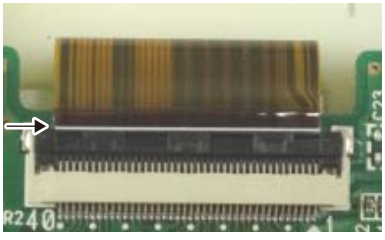
Caution of assembly

Insert the FPC straight until it stops.

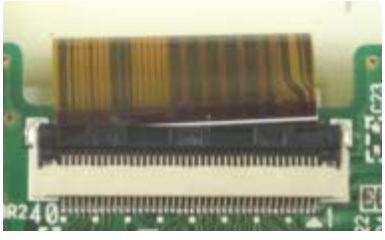
OK



NG



A white line is visible.

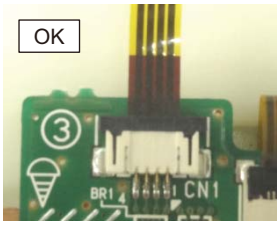


The FPC is inserted obliquely.

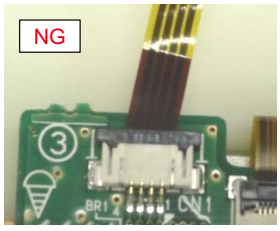
Caution of assembly

Insert the FPC straight until it stops.

OK

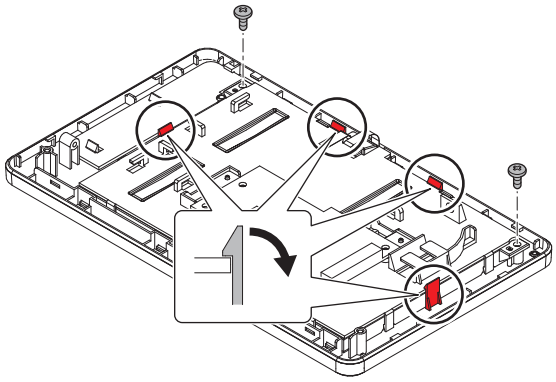


NG

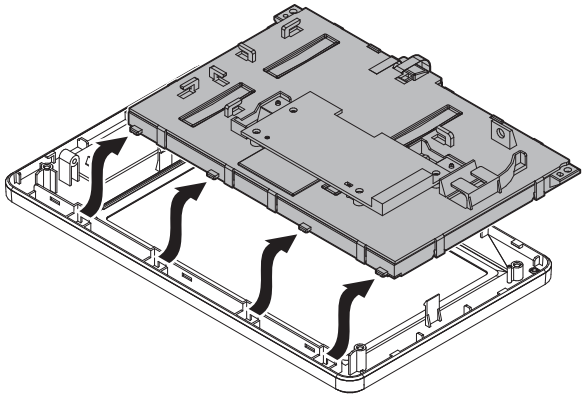


The FPC is inserted obliquely.

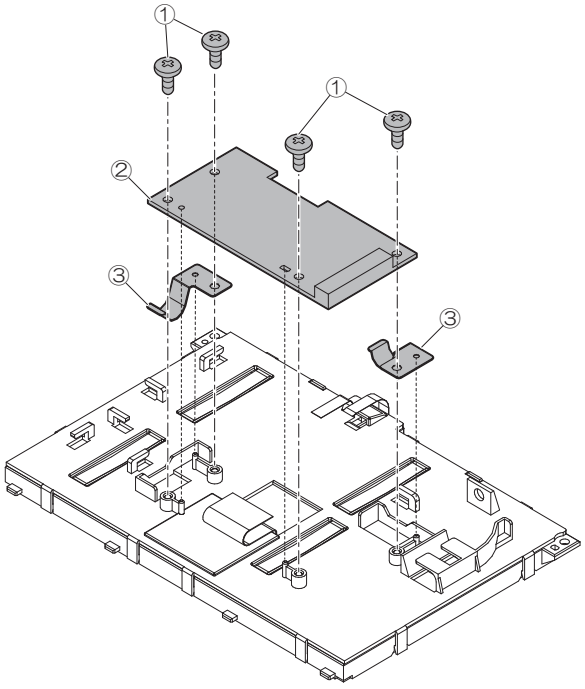
4) Remove the screws and the pawls.



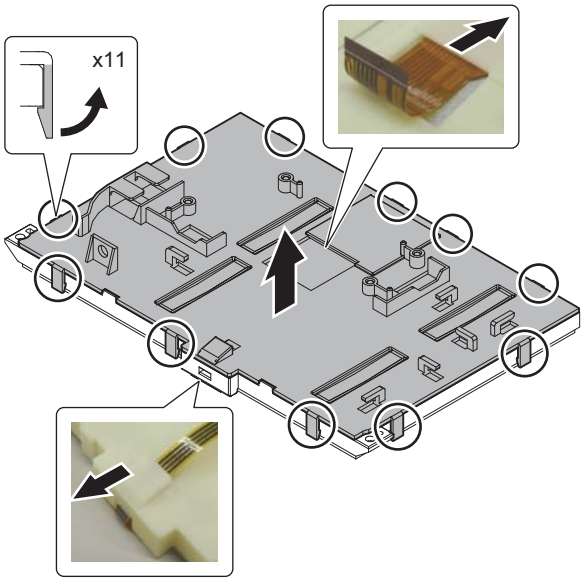
5) Remove the LCD holder unit.



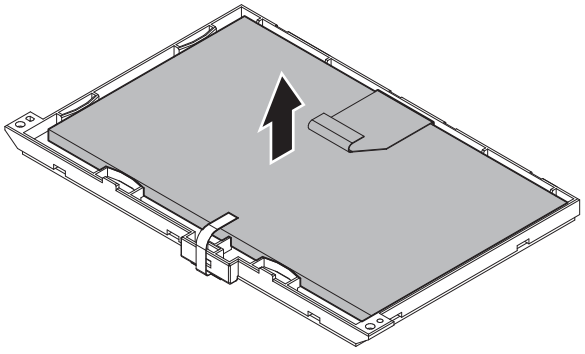
6) Remove the screws, the LCD IF PWB and the earth plates.



7) Remove the pawls and the LCD holder B. Then pull the FPC cable out of the hole.

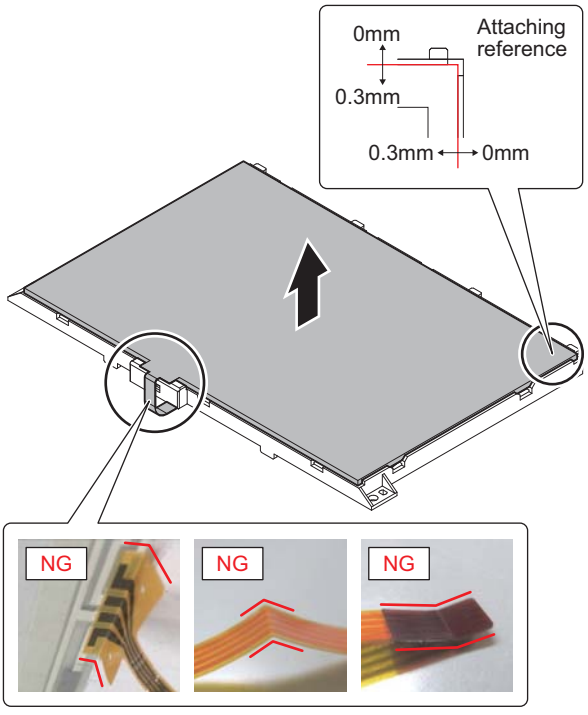


8) Remove the LCD.

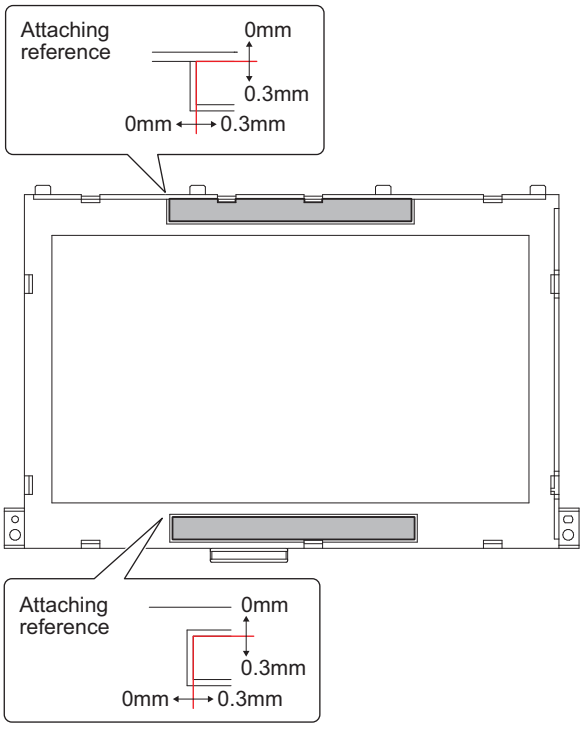


b. Touch panel

1) Remove the touch panel.

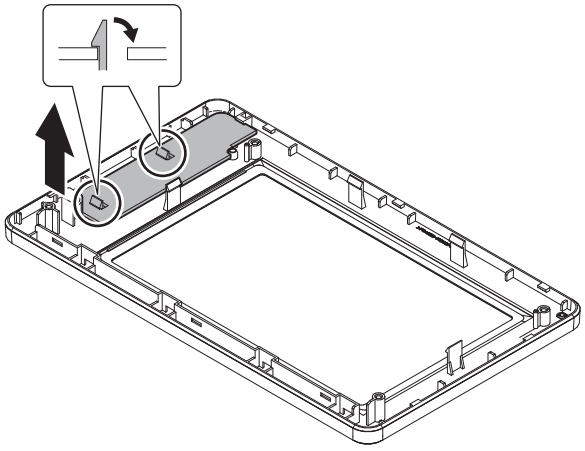


2) Remove the sheet.



c. HOME PWB

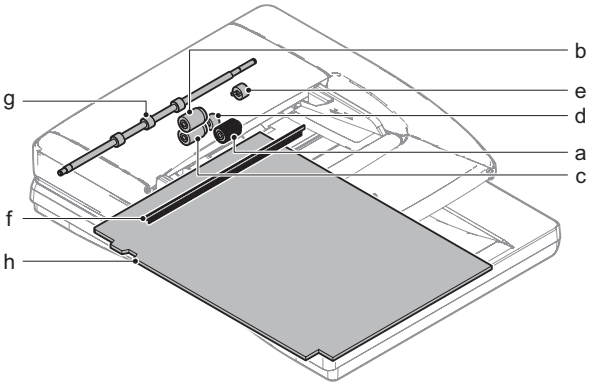
1) Remove the pawls and the HOME PWB.



B. Document feed section

(1) RSPF unit

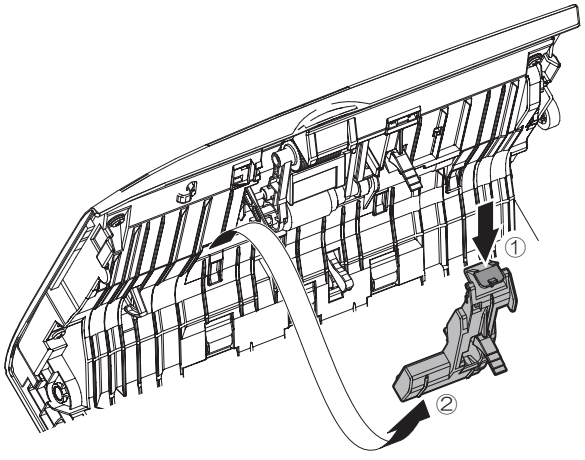
Part No.	Part name
a	Paper pickup roller
b	Paper feed roller
c	Separation roller
d	Torque limiter
e	Torque limiter pickup
f	Discharge brush
g	Registration roller
h	OC mat



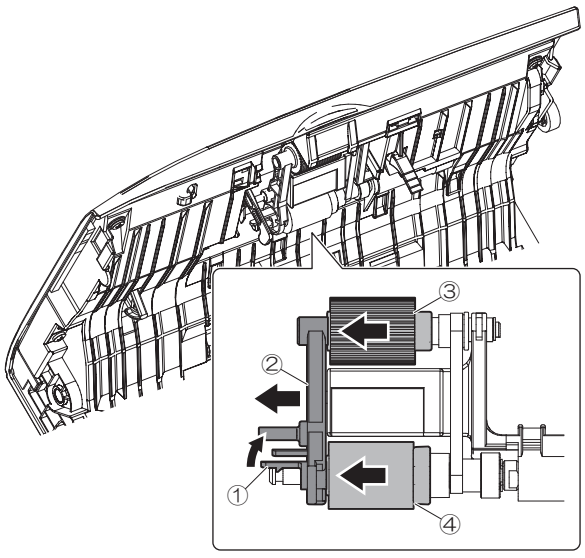
a. Paper pickup roller

b. Paper feed roller

1) Open the paper feed unit and remove the cover



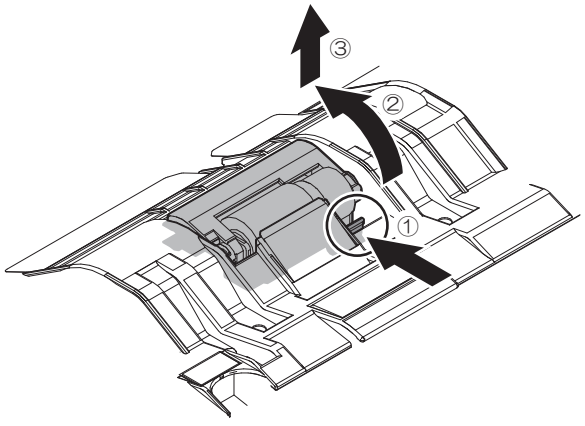
2) Remove the holder, paper pickup roller and paper feed roller



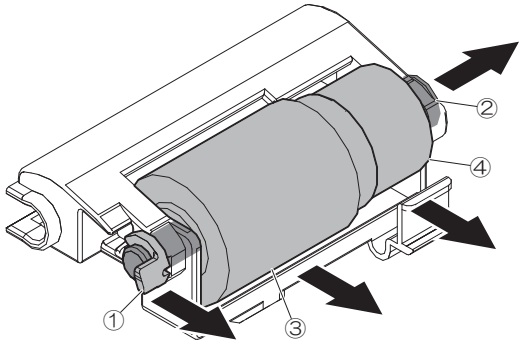
c. Separation roller

d. Torque limiter

1) Open the paper feed unit and remove the cover

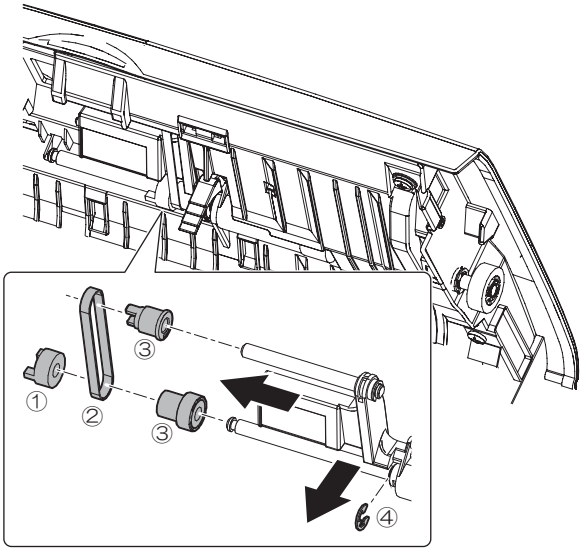


2) Remove the E-ring, shaft, separation roller and the torque limiter

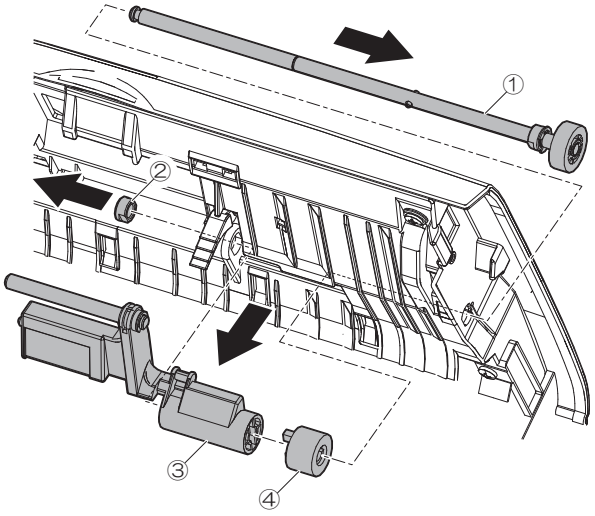


e. Torque limiter pickup

1) Remove the one-way coupling, the belt, the pulley and the E-ring

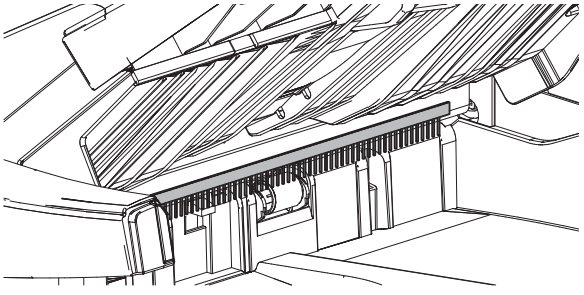


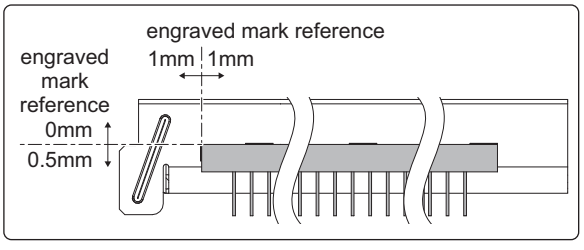
2) Pull out the shaft, remove bearing, holder and torque limiter pickup



f. Discharge brush

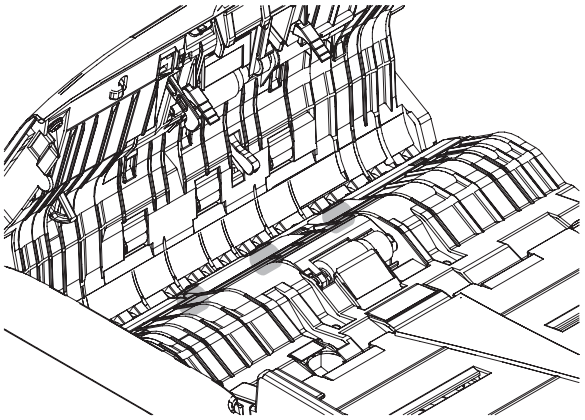
1) Open the document tray and remove the discharge brush





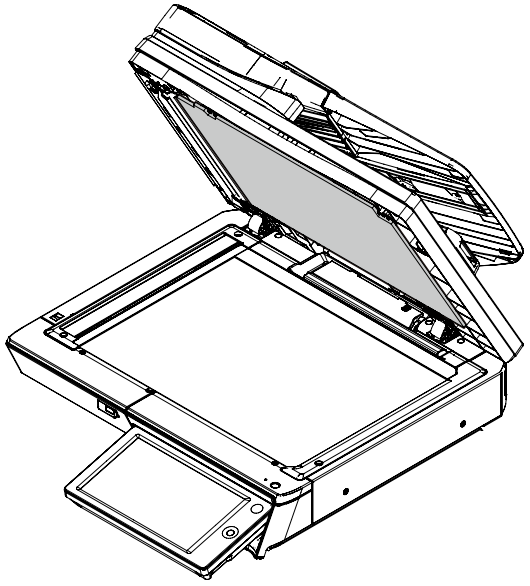
g. Registration roller

1) Open the paper feed unit and clean the registration roller



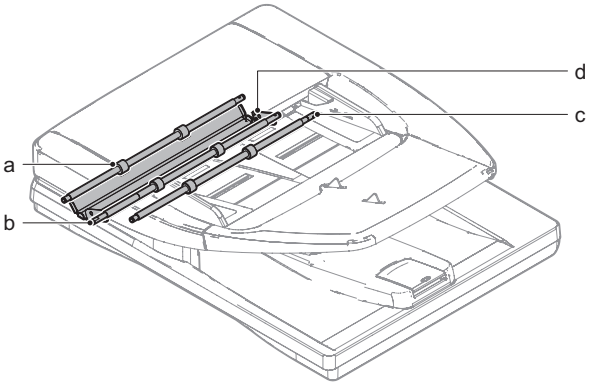
h. OC mat

1) Open the RSPF unit and clean the OC mat



(2) RSPF transport unit

Part No.	Part name
a	Transport roller 1
b	Transport roller 2
c	Paper exit roller
d	Scan plate



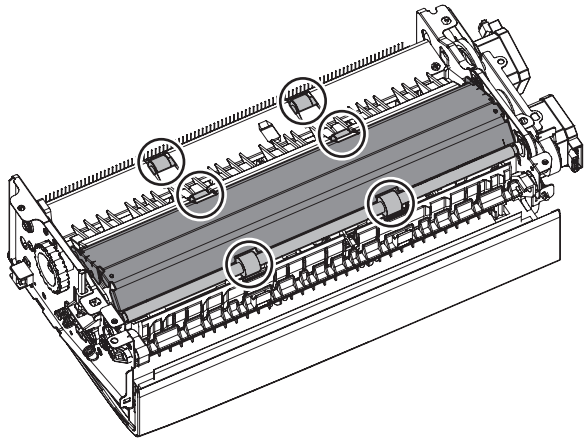
a. Transport roller 1

b. Transport roller 2

c. Paper exit roller

d. Scan plate

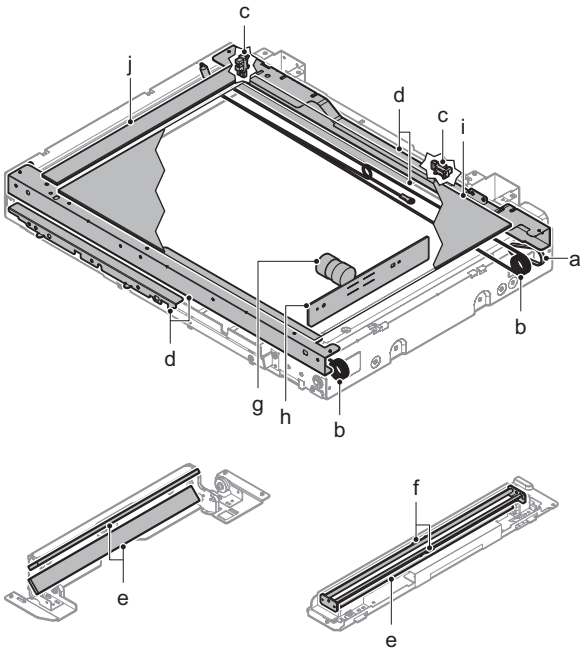
1) Clean the transport roller 1, the transport roller 2, the paper exit roller and the scan plate



C. Scanner section

(1) Scanner unit

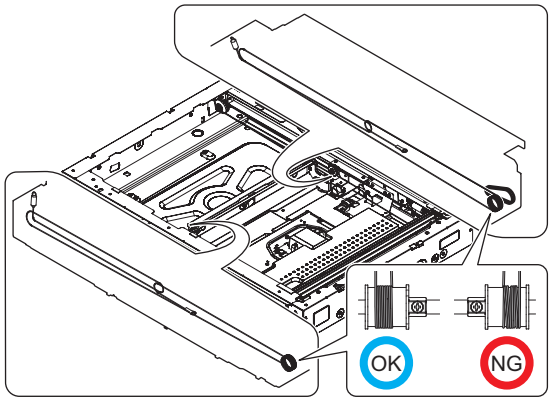
Part No.	Part name
a	Drive belt
b	Drive wire
c	Sensors
d	Rails
e	Mirror
f	Lamp
g	Lens
h	CCD
i	Table glass
j	SPF glass



a. Drive belt

b. Drive wire

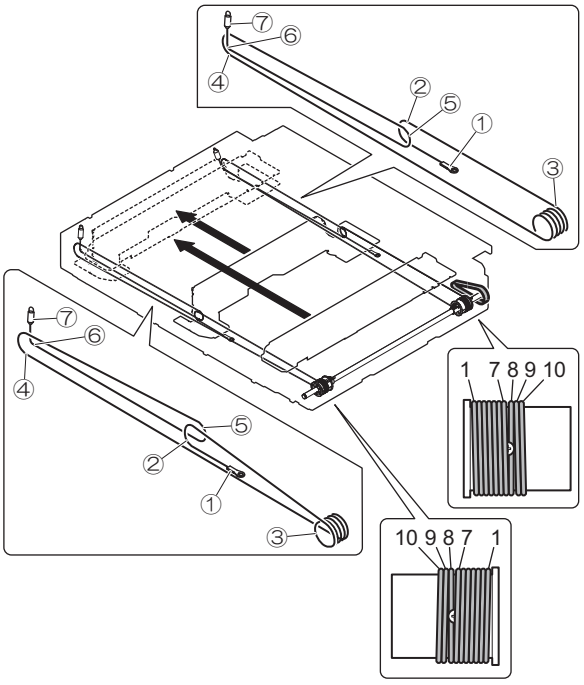
1) Remove the table glass.
2) Check the tension of the drive belt and the drive wire. Check to confirm that the drive wire in the winding pulley is wound without clearance.



Important

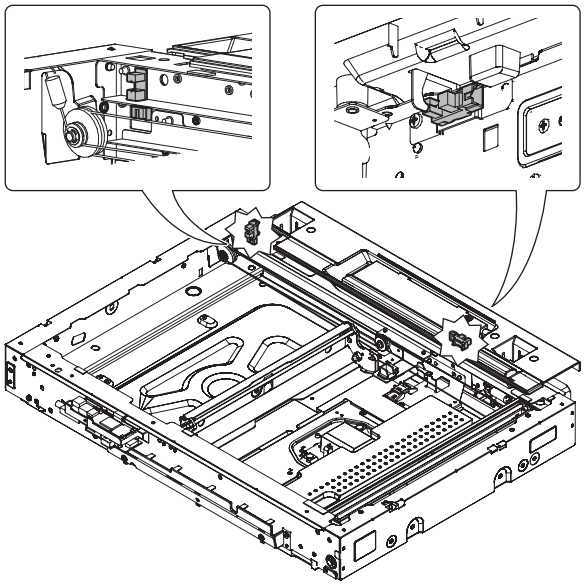
Wind the drive wire in the sequence of 1 to 7 as shown in the figure below and fix it.

When winding the drive wire around the pulley, shift the mirror unit to the vicinity of the home position, and wind 7 turns as shown in the figure, and fix the 8th turn with a screw. Then wind two turns furthermore around the pulley.



c. Sensors

1) Clean the each sensor.



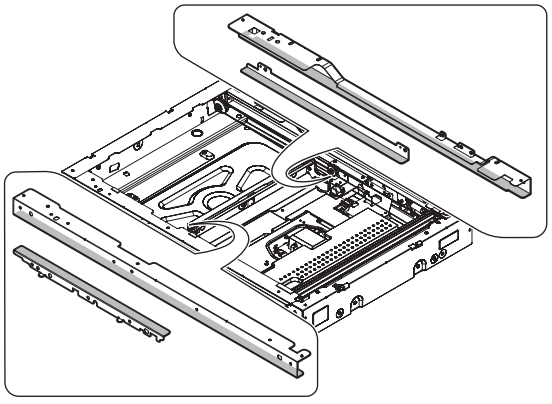
d. Rails

1) Remove the table glass.
2) Grease each rail.

Important

Be careful not to allow grease to come in contact with drive wires.

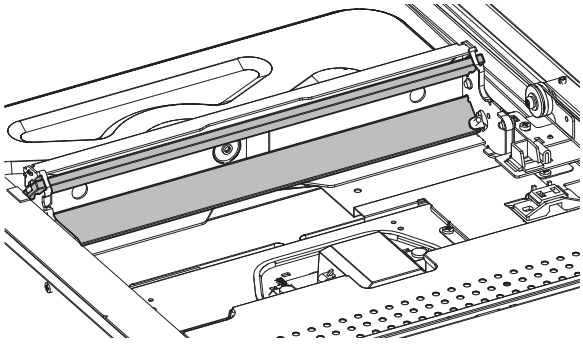
If grease contacts drive wires, clean wires thoroughly.



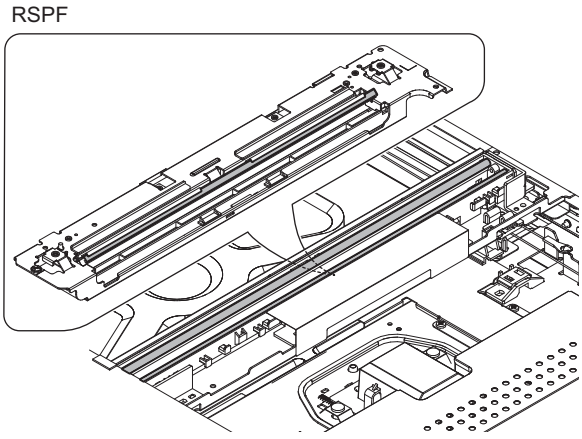
e. Mirror

f. Lamp

1) Remove the table glass.
2) Clean the No. 2 mirror, and the No. 3 mirror.



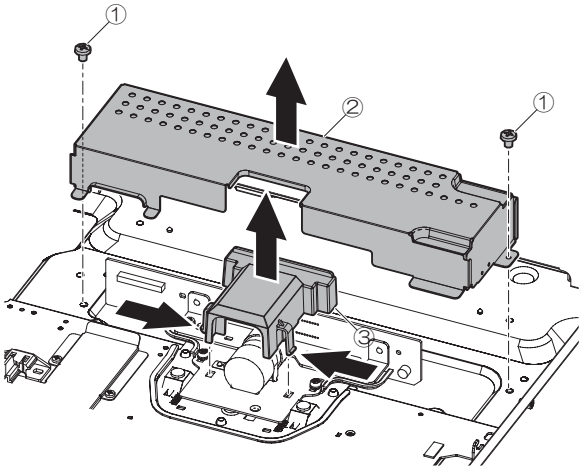
3) Clean the scanner lamp and the No. 1 mirror.



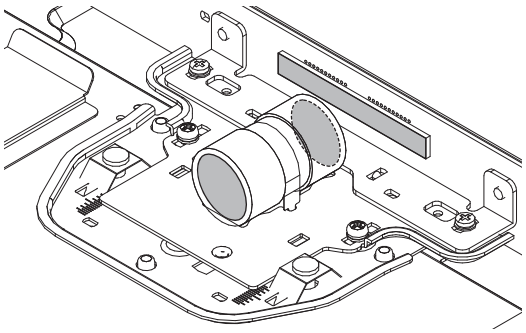
g. Lens

h. CCD

1) Remove the table glass.
2) Remove the dark box, and the cover.



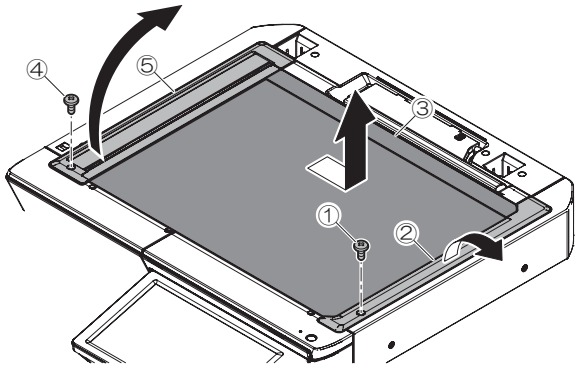
3) Clean the lens, and the CCD.



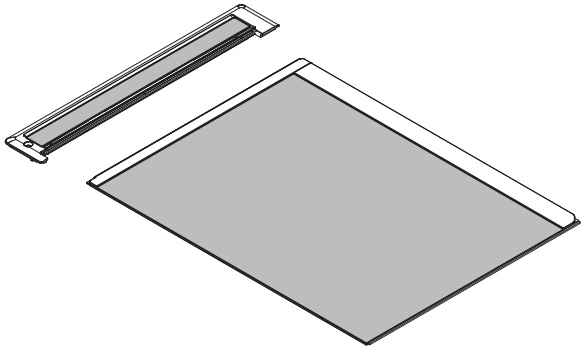
i. Table glass

j. SPF glass

1) Remove the glass holder, the table glass, and the SPF glass.



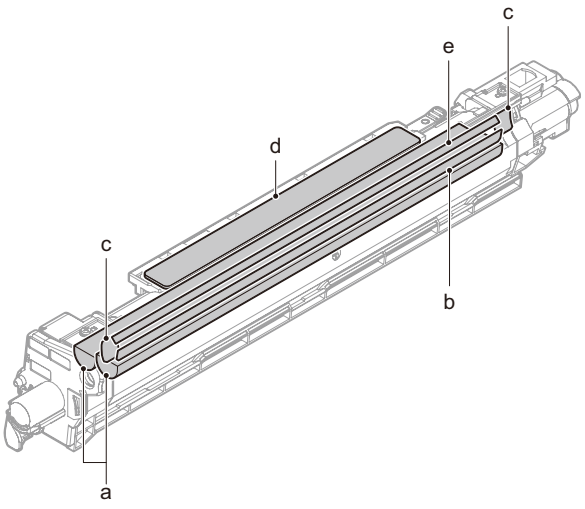
2) Clean the both surfaces of the table glass, and the SPF glass.



D. Developing section

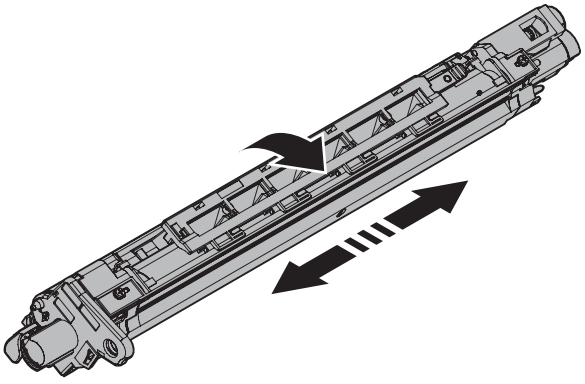
(1) Developing unit

Part No.	Part name
a	Developer
b	DV blade
c	DV side seal F·R
d	Toner filter
e	DV blade upper

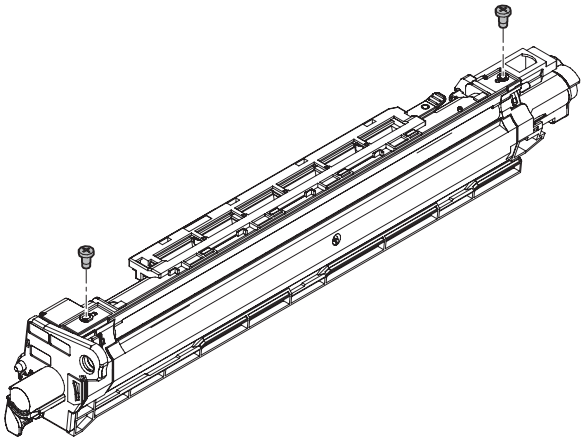


a. Developer

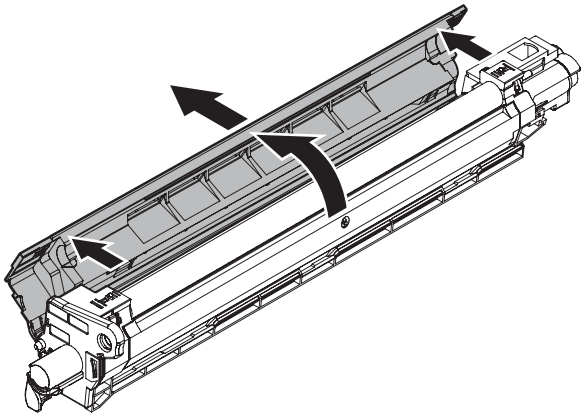
1) Tilt the developing unit slightly toward the direction of arrow and gently shake up a little.
   *To prevent the developer spilling out of developing unit



2) Remove the screw

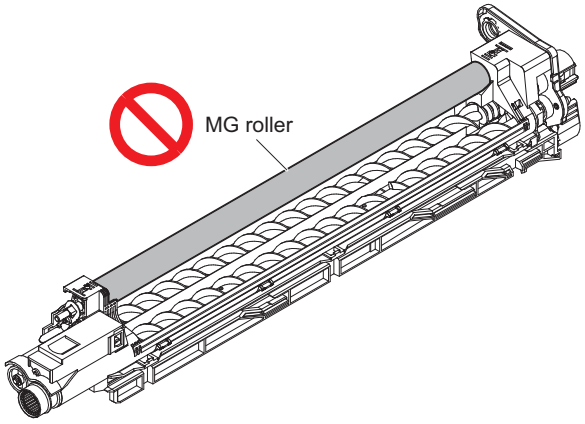


3) Press both edges of the cover and remove it while rotating.

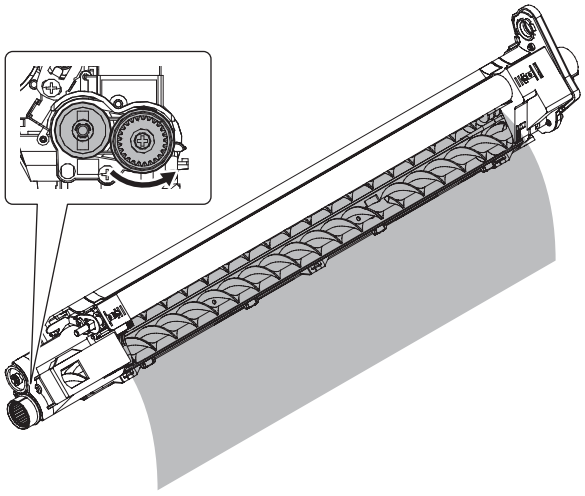


Important

Do not touch the MG roller.



4) While rotating the gear, dispose of developer



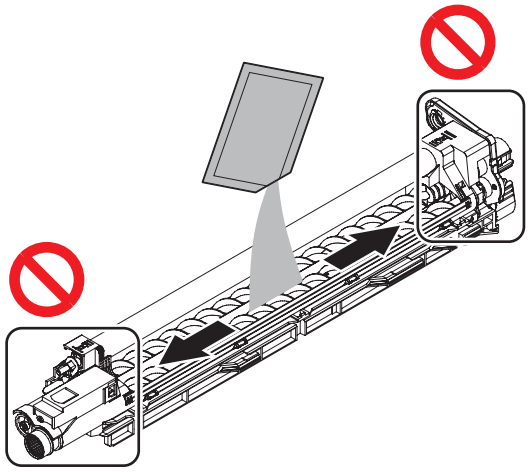
5) Loading developer to the developing unit

Important

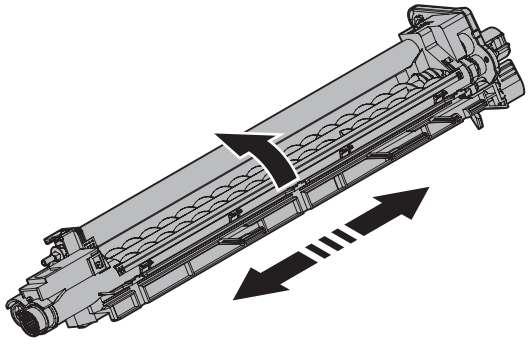
Be sure to shake the bag of developer thoroughly before pouring into the developing unit

Important

When pouring the developer into the unit, use care not to get developer into the drive section



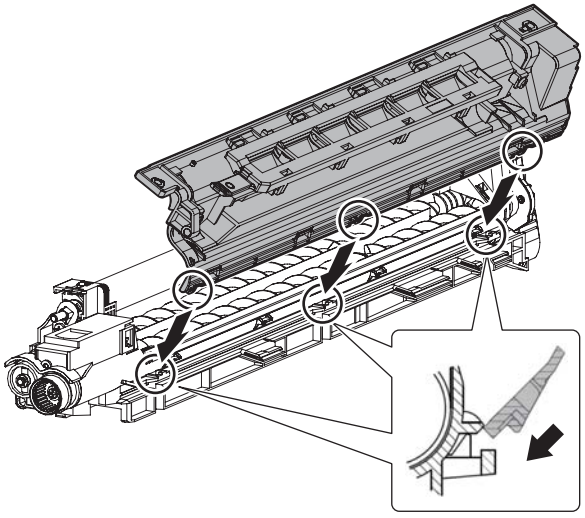
6) Slightly tilt the developing unit. Load developer on lower side of MG roller evenly on left and right.



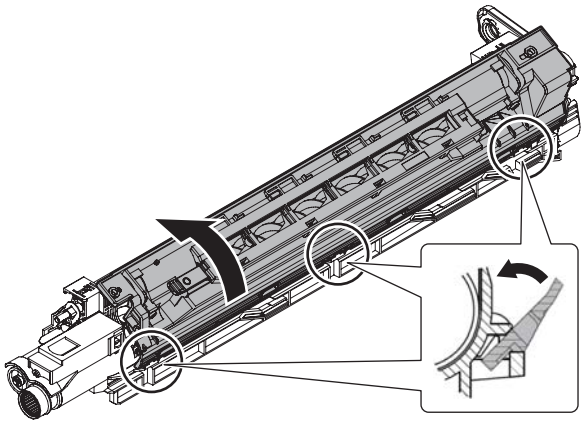
Important

Do not tilt the developing unit after loading the developer.

7) Insert the pawls on the cover into the holes on DV-BOX at an angle of 45 degrees.



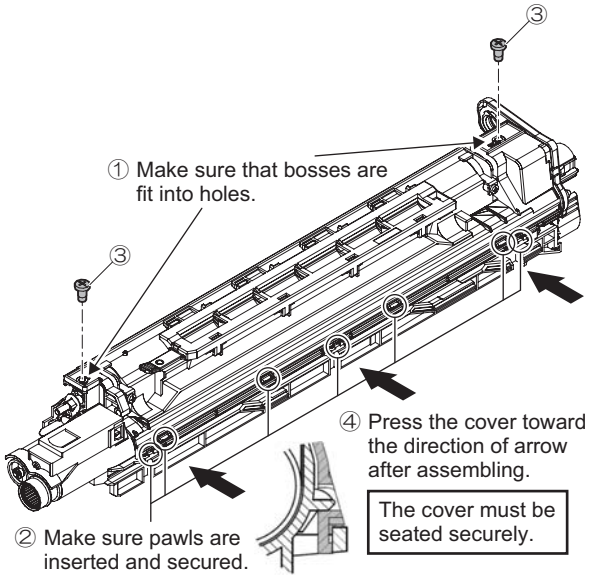
8) Rotate and insert the cover.



9) Check the mounting condition of the cover and tighten screws.

Important

Since shoulder screws are used, do not tighten too firmly.
Tightening torque of the screw 0.5 - 0.6Nm

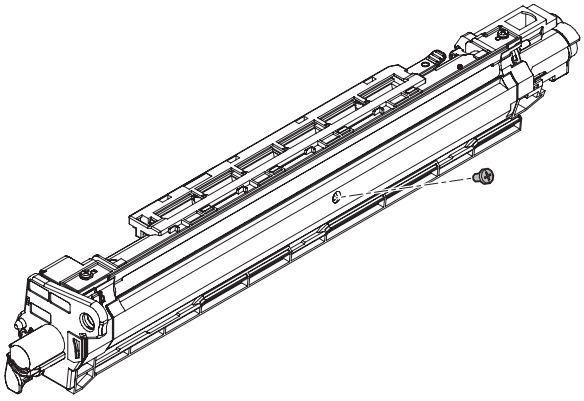


Note

Execute developer adjustment after replacement of the developer.
(Sim25-2)

b. DV blade

1) Remove the screw



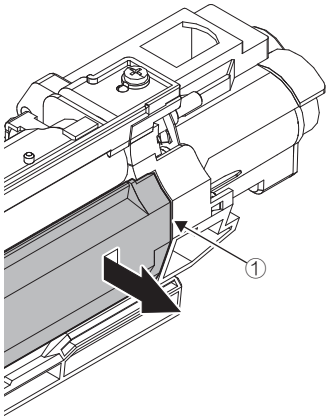
2) Pull the center section and remove the boss. Insert a flat-blade screwdriver into the space (1) in the illustration below. Slide the cover toward the front and remove the rear-side boss.

Important

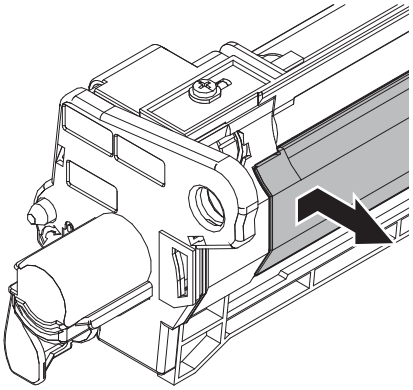
When removing the rear-side boss, press the cover gently to prevent toner dispersion.

Important

The front-side boss and rear-side boss must be handled with care to prevent fracturing.



3) Release the front-side boss while sliding the cover toward rear side and remove the cover.



4) Remove the DV blade

Important

When replacing the DV blade, affix the DV blade based on the reference position.

Important

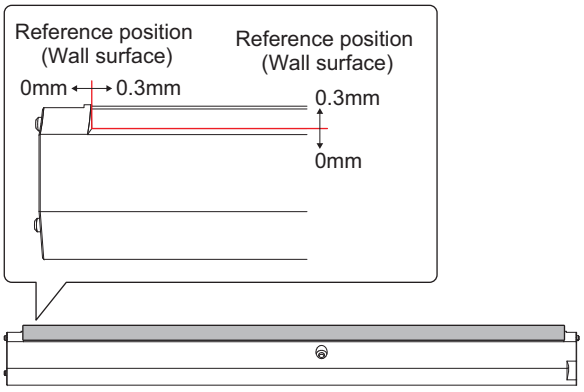
Before affixing new DV blade, make sure to remove any foreign material and remaining adhesive from affixing surface completely.

Important

Steady the DV blade after affixing the blade. (Make sure that the sheet is seated securely.)

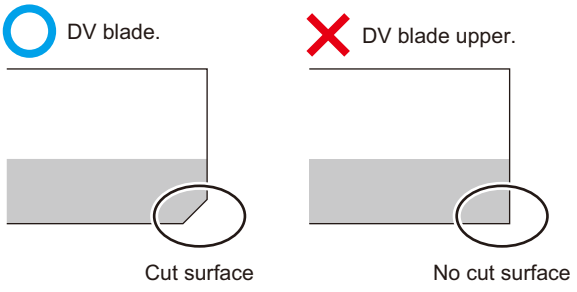
Important

Make sure there are no crinkles on lead edge of the DV blade after affixing the DV blade.



Important

Do not mistake for DV blade upper.



c. DV side seal F·R

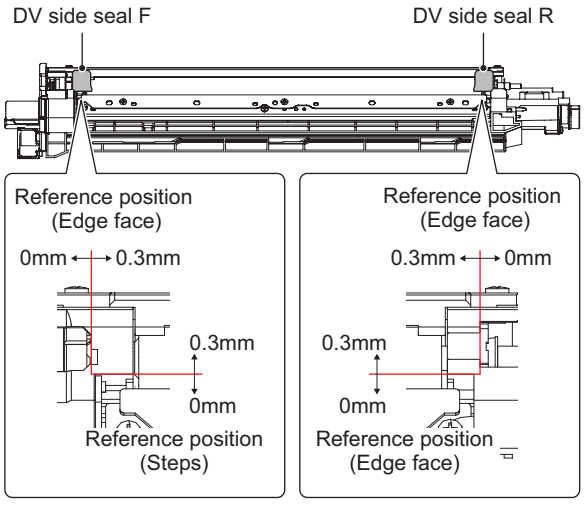
1) Remove the DV side seal F·R

Important

When replacing the DV side seal F·R, affix the seals based on the reference position.

Important

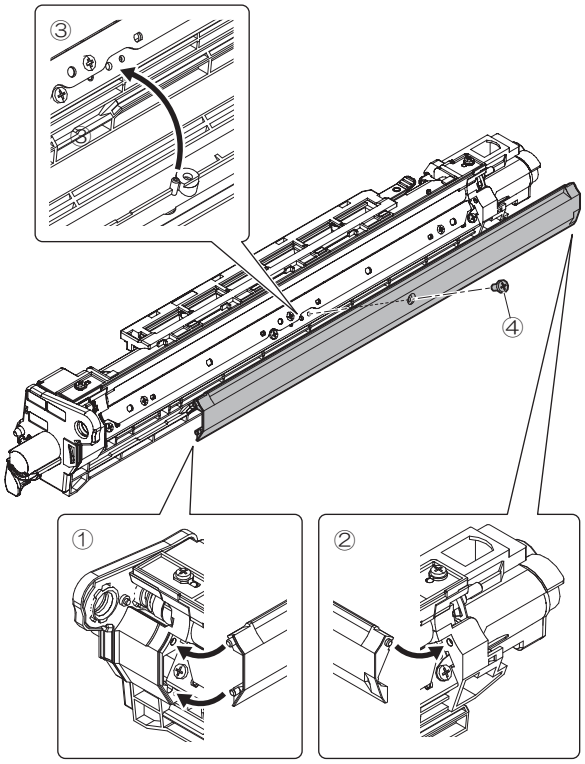
Before affixing new DV side seal F·R, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



2) Insert two front-side bosses into the holes on DV-BOX.

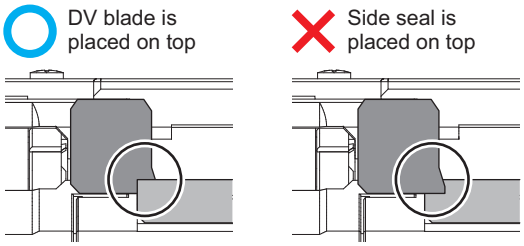
Insert one rear-side boss into the holes on DV-BOX while slightly bending the cover.

Insert the boss on back side of the cover securely and tighten screw.



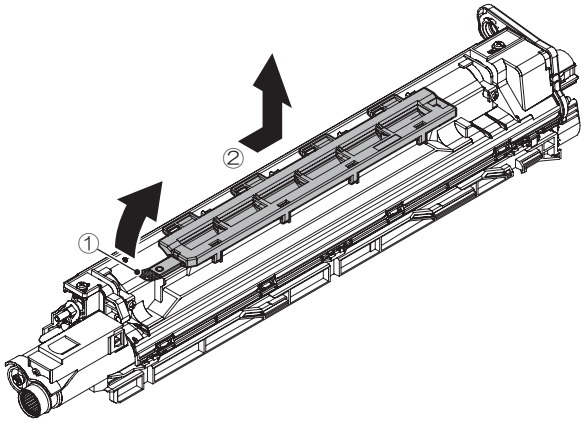
Important

Make sure a part of DV blade is placed on top of DV side seal F·R.



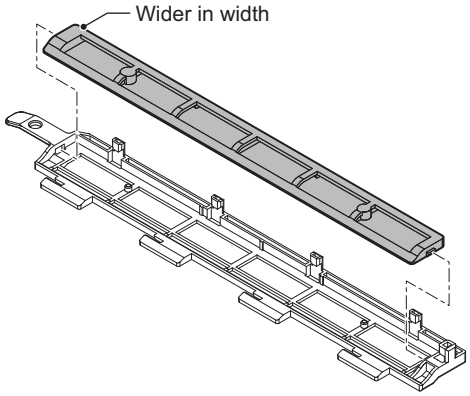
d. Toner filter

1) Uplift a knob on the filter cover (1), slide toward the direction of (2) and remove the cover.

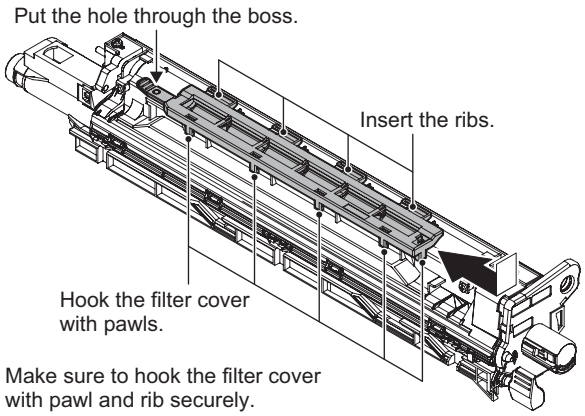


2) Remove the toner filter from the filter cover

Make sure to attach the filter in proper mounting direction for replacement.



3) Attach the filter cover.



Make sure to hook the filter cover with pawl and rib securely.

e. DV blade upper

1) Remove the DV cover
2) Remove the DV blade upper

Important

When replacing the DV blade upper, affix it based on the reference position.

Important

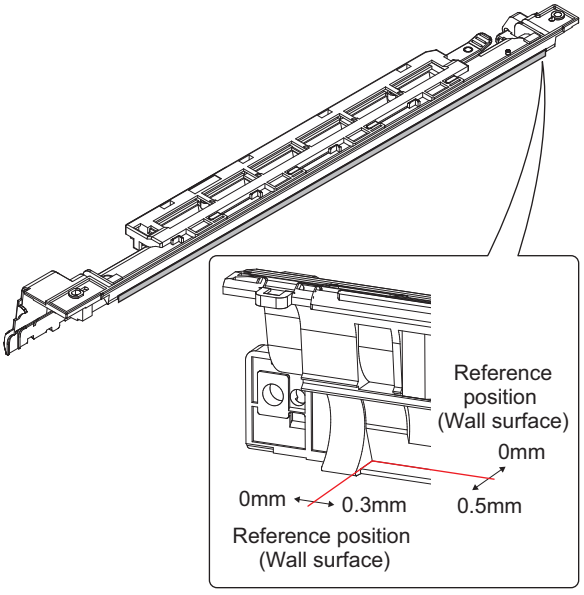
Before affixing new DV blade upper, make sure to remove any foreign material and remaining adhesive from affixing surface completely.

Important

Steady the DV blade upper after affixing the blade. (Make sure that the sheet is seated securely.)

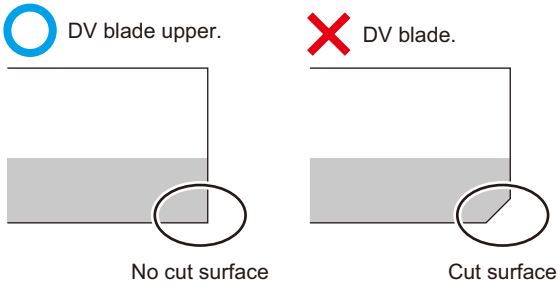
Important

Make sure there are no crinkles on lead edge of the DV blade upper after affixing the DV blade.



Important

Do not mistake for DV blade.

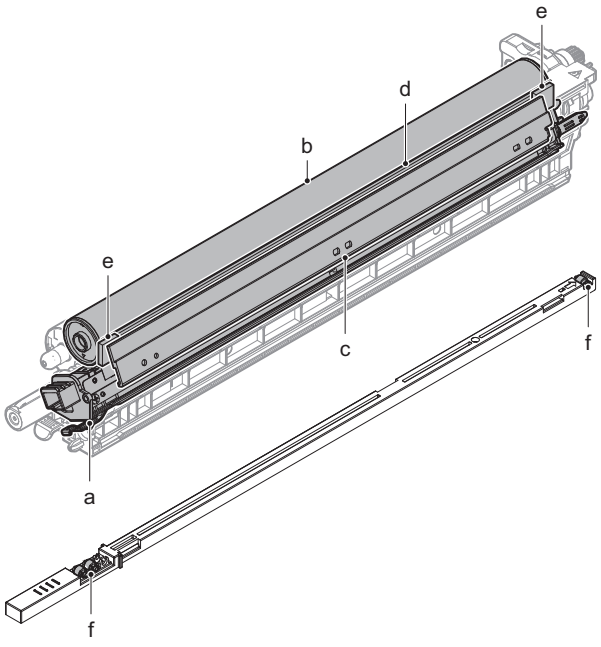


3) Attach the cover.

E. OPC drum section

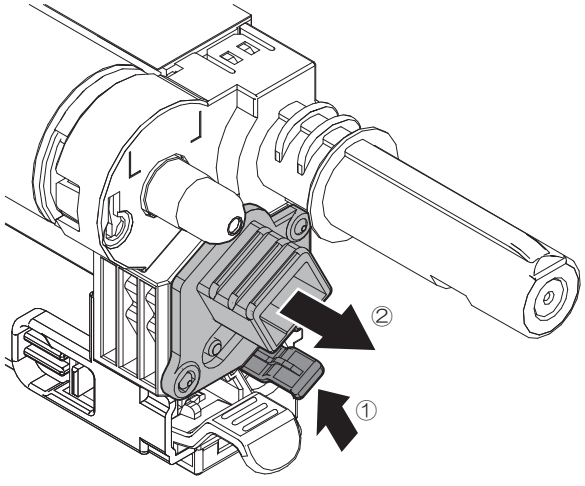
(1) OPC drum unit

Part No.	Part name
a	Charger unit
b	Drum
c	Cleaning blade
d	Toner reception sheet
e	Side seal F·R
f	Charger cleaner



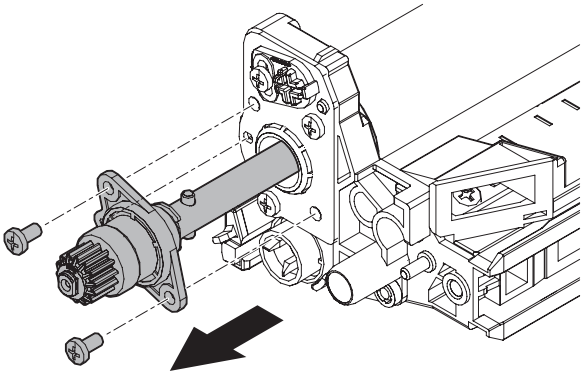
a. Charger unit

1) Uplift the lock lever and pull out the charger unit.

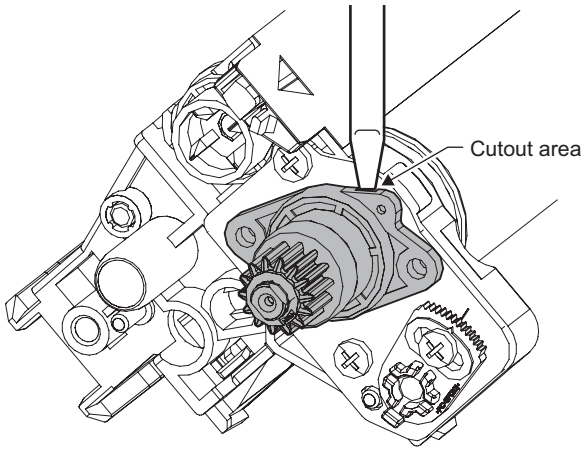


b. Drum

1) Remove the screw and pull out the shaft from the drum

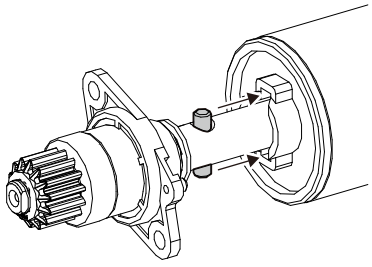


*If the drum shaft is hard to remove, insert a flat-blade screwdriver between process frame and cutout on bearing to remove (as shown in the illustration below).

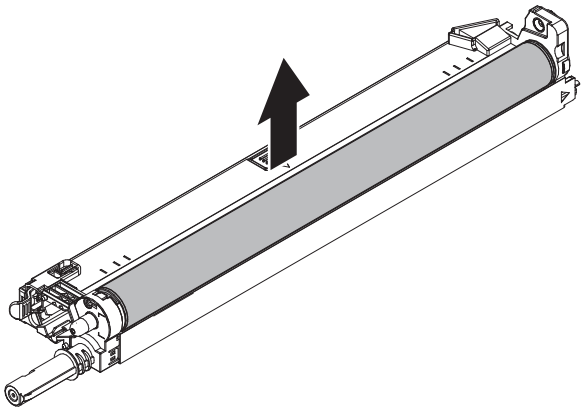


Important

When inserting the drum shaft, make sure to insert the pin all the way toward the direction of arrow (in the illustration below).

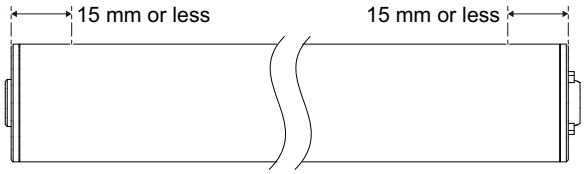


2) Remove the drum



Important

When handling the drum, make sure to hold within 15 mm of both edges or less.



Important

Note for servicing the drums

(1) Prevent contamination

Note

- Be careful not to leave fingerprints or oil dirt on the drum surface (keep the unit always oils and dust)
- When replacing the drum, cover the drum with the protection sheet and hold the protection sheet. If it is required to hold the drum directly, use enough care not to touch the cleaning blade area. 15mm inside from both edges of the drum. (If a fingerprint or oily dirt is attached to the cleaning blade area of the OPC drum, the cleaning blade may flip)

Countermeasures

If a fingerprint is attached to the drum surface erroneously, perform the following countermeasures

1) Use dry cloth to clean and remove the dirt

Check method

Check to confirm that the drum is free from fingerprints or oily dirt and that the cleaning blade is completely cleaned by the following method

- Make a print of a half tone image on all the surface of A4 (11 x 8.5) paper and check the printed paper for any abnormality in the image

(2) Prior exposure prevention

Note

- Avoid servicing in a place where there is strong light
- Do not expose the unit to light for a long time
- Cover the drum with light-blocking material (when using paper, use about 10 sheets of paper to block light)

Countermeasures

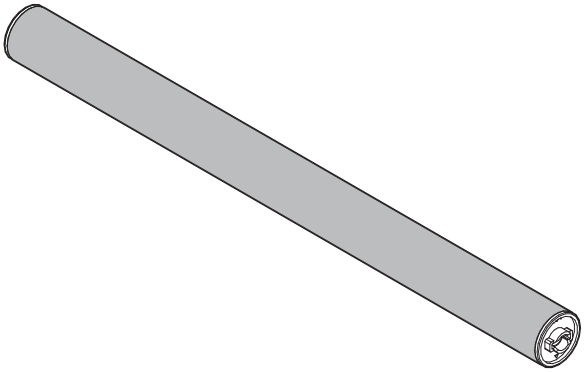
If the drum is erroneously exposed to light too much (prior exposure) perform the following countermeasures

1) Print half tone image on the whole surface of A4 (11 x 8.5) paper and check to confirm that there is no irregular density area in the previously exposed section
2) If the drum is subject to stress by being exposed to strong light. It may be recovered by leaving it in a dark and cool place. If it may not be recovered replace it with a new one

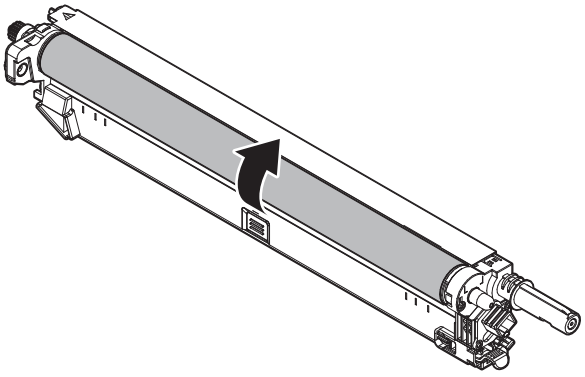
Important

When the drum is removed perform the following procedures

1) After removing the drum, apply stearic acid powder (UKOG-0312FCZZ) to the whole surface of the drum



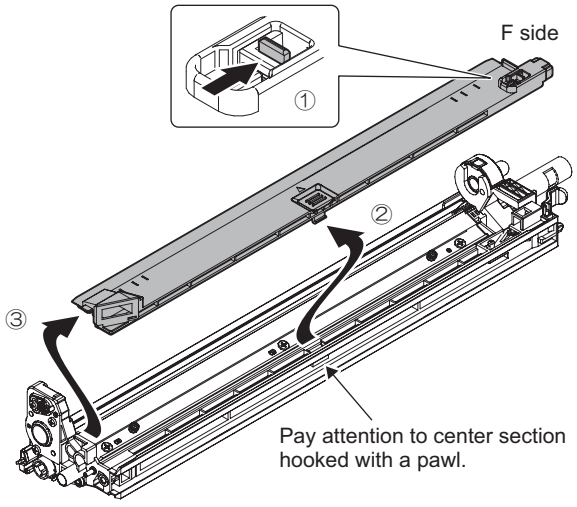
2) After mounting the drum on drum frame, hold both edges of drum within 15 mm or less. Rotate the drum manually in the forward direction twice (toward the direction of arrow as shown in the illustration below) and remove the stearic acid powder (UKOG-0312FCZZ) from drum surface.



- Do not touch the drum surface except for the both ends (15 mm) of the drum
- Any section of the drum may be touched from above the black protect sheet, but do not touch too strongly

c. Cleaning blade

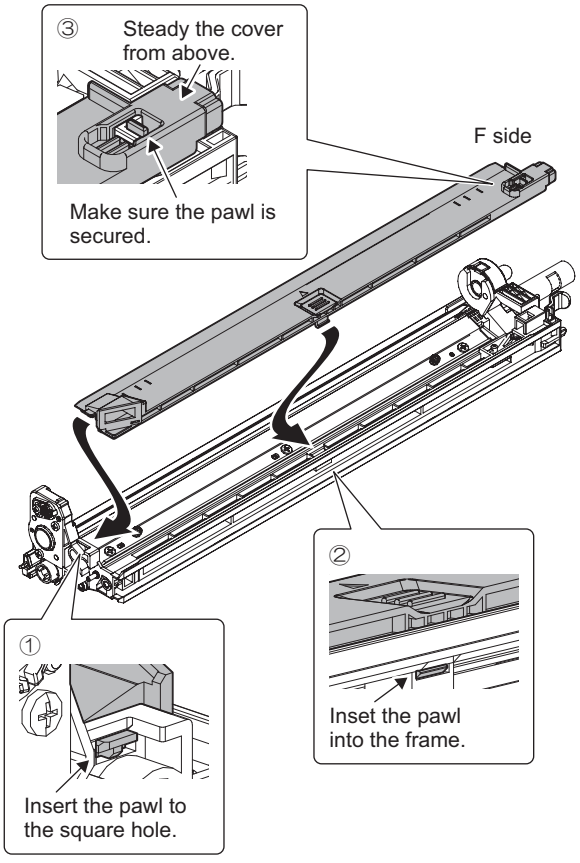
1) Remove the pawls and the MC cover.



Important

Followings must be observed while attaching the cover:

- (1) Insert the pawl on MC unit to the square hole on process frame.
- (2) Insert the pawl into the hole securely until it clicks.
- (3) Insert the pawl on front side securely.



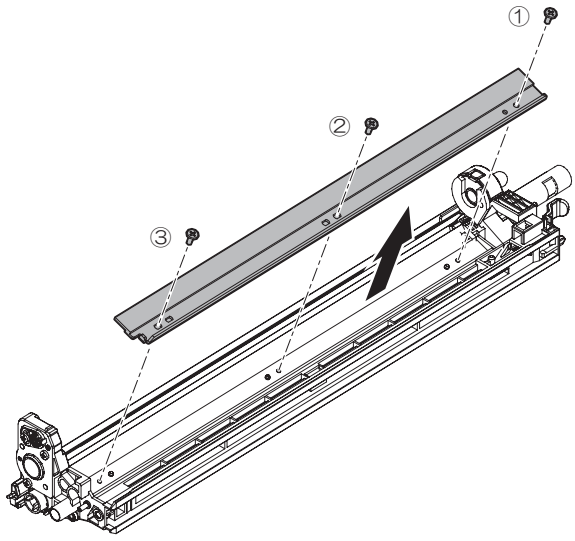
2) Remove the screw and the cleaning blade

Important

Do not touch the lead edge of the cleaning blade.

Important

When attaching the cleaning blade, tighten the screw in the order of (1) - (3).

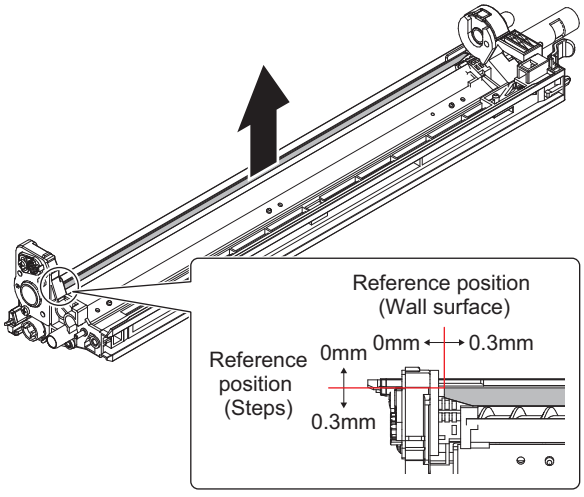


d. Toner reception sheet

1) Remove the toner reception sheet

Important

When replacing the toner reception sheet, affix the sheet based on the reference position. Clean the affixing surface with alcohol.



e. Side seal F·R

1) Remove the side seal F·R

Important

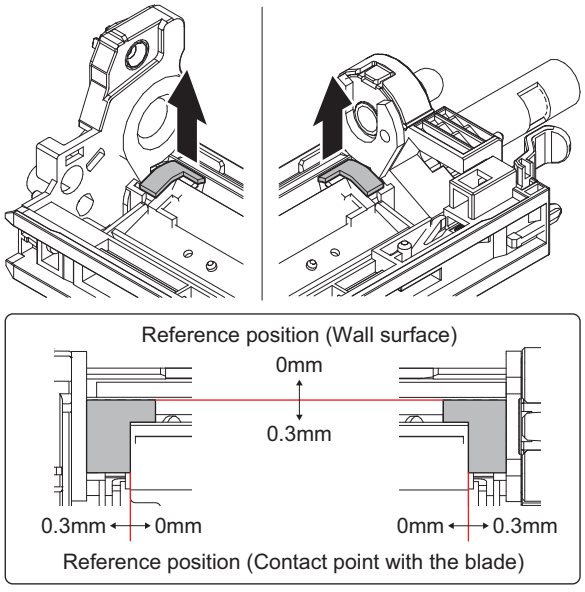
When replacing the side seal F·R, attach the cleaning blade first. Then move the side seals toward front side and attach based on the reference position. Clean the affixing surface with alcohol.

Important

Before affixing new seal, make sure to remove any foreign material and remaining adhesive from affixing surface completely.

*The blade should not be put on top of the side seals while holding down the blade.

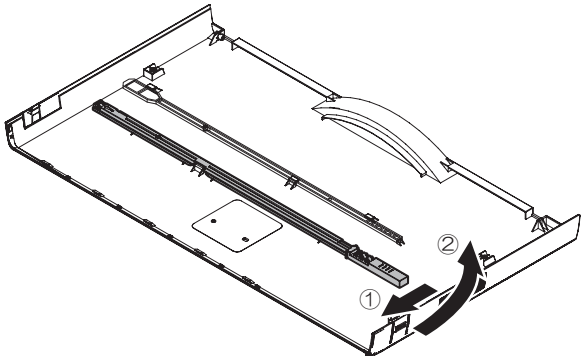
*The width of the clearance should be 0.3 mm or less.



f. Charger cleaner

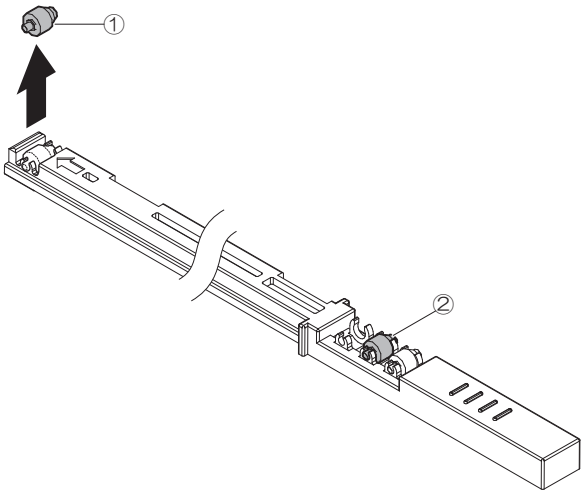
1) Open the cover and remove the MC cleaning bar.

Detach the cleaning bar by firstly detaching the bar from right-side pawl, move the right-side bar over the pawl. It will make left side of the bar slightly tilt upward; rotate the bar just a little and detach left side of the bar. Finally remove the bar from the center pawl.



2) (1) Remove the charger cleaner attached in front end of the MC cleaning bar and attach new charger cleaner.

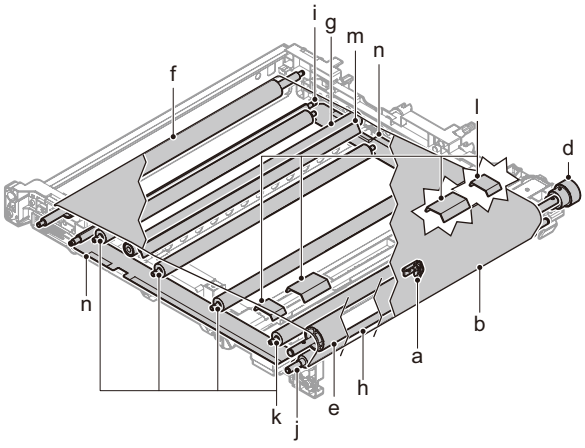
(2) If you have any spare charger cleaner, attach it near handle and keep it for next replacement.

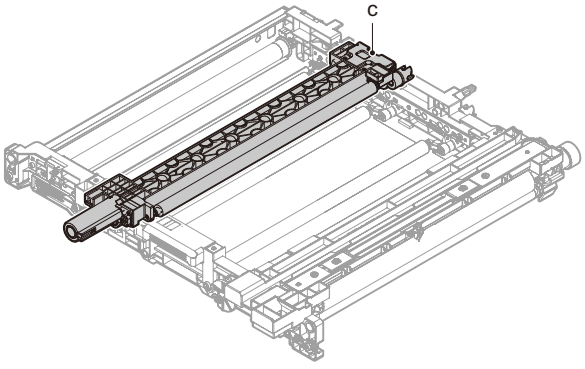


F. Transfer section

(1) Primary transfer unit

Part No.	Part name
a	Separation pawl
b	Primary transfer belt
c	Primary transfer cleaner unit
d	Primary transfer belt drive gear
e	Primary transfer belt drive roller
f	Primary transfer belt followed roller
g	Primary transfer blade backup roller
h	BK auxiliary roller
i	Y auxiliary roller
j	Pre-transfer roller
k	Primary transfer roller
l	Resist face stay cushion
m	Primary transfer blade backup roller sheet
n	Primary transfer toner reception sheet F·R





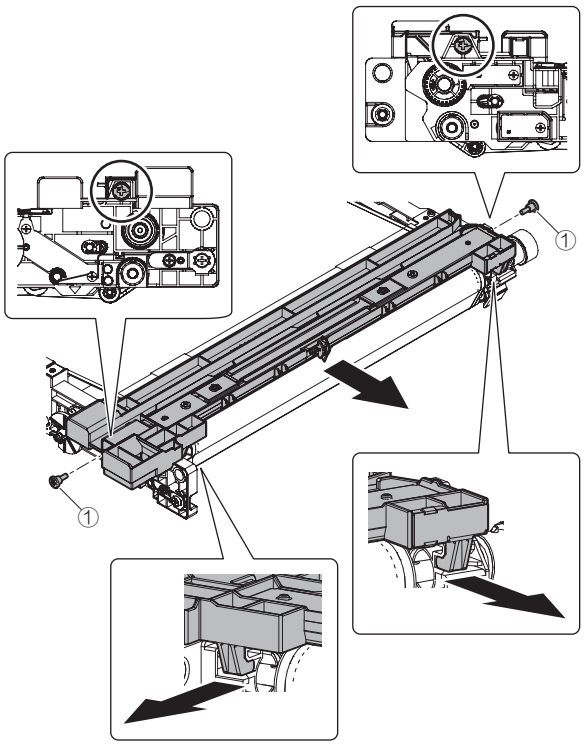
a. Separation pawl

1) Remove the screw and paper guide

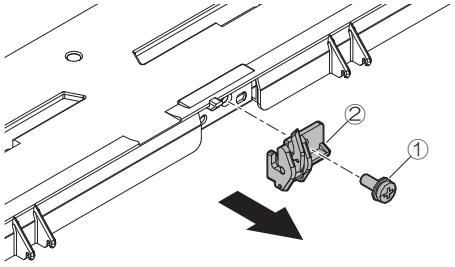
Important

After removing the paper guide, place it with the separation pawl upward to prevent damage on the tip of the pawl.

When attaching the paper guide, handle it carefully not to scratch transfer belt with separation pawl.



2) Place the paper guide with the separation pawl upward. Remove a screw and detach the separation pawl from the paper guide.



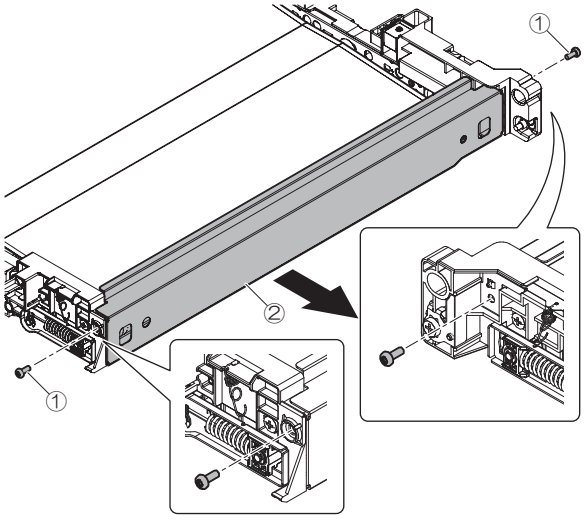
b. Primary transfer belt

c. Primary transfer cleaner unit

1) Remove the screw while Primary transfer cleaner unit in on top and remove the rail.

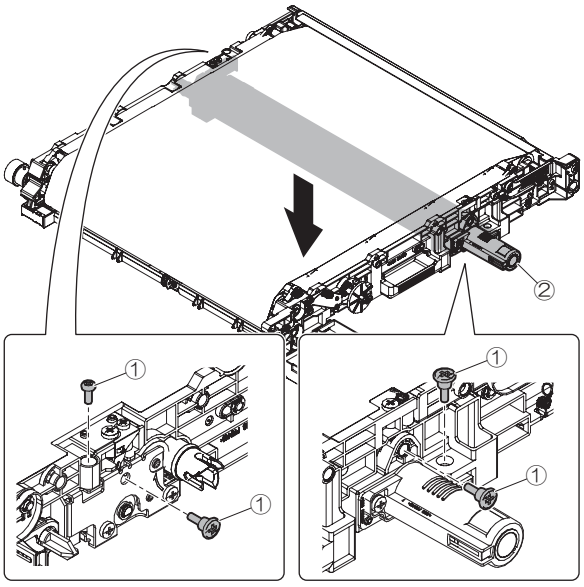
Important

Do not touch the belt.

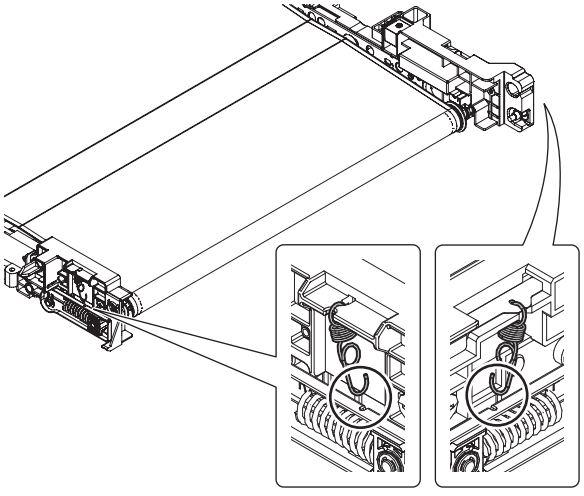


2) Flip the unit upside down and remove screws.

3) Remove primary transfer cleaner unit



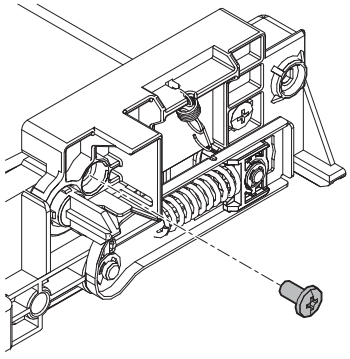
4) Remove the spring



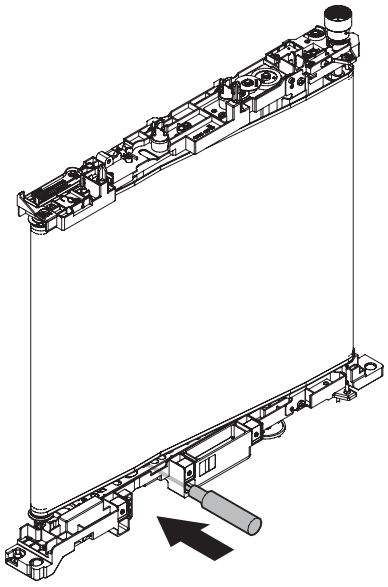
Important

Handle the belt carefully to avoid contact with floor.

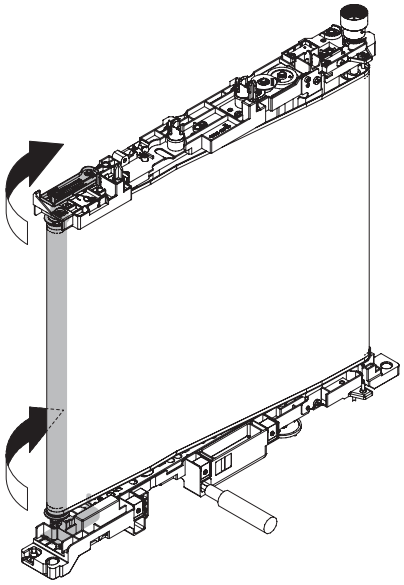
5) Remove the screw



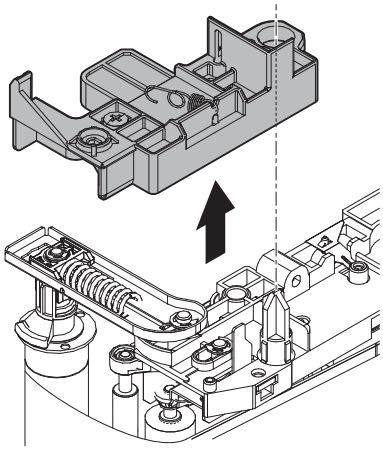
6) Insert a driver into the hole on the frame and set the unit upright.



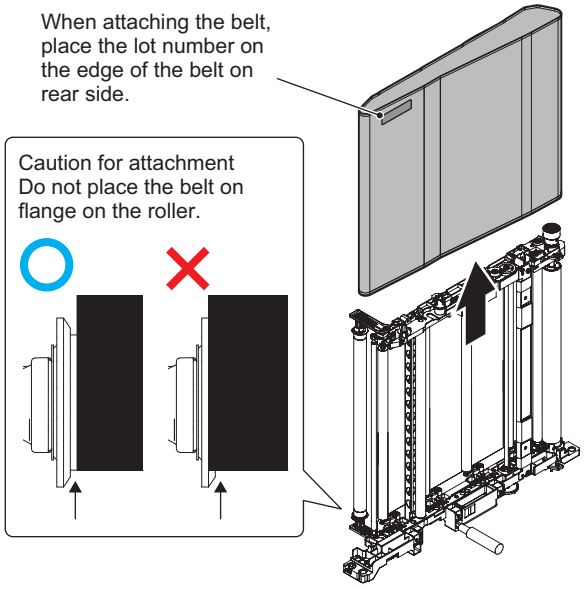
7) Fold the primary transfer belt followed roller.



8) Remove the sub frame

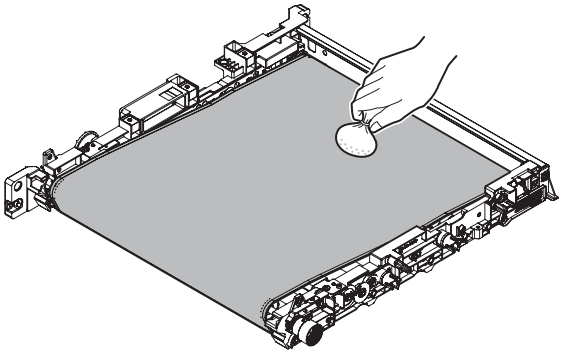


9) Pull out the primary transfer belt slowly.



NOTE: Caution for attachment
Follow the steps below after replacing the primary transfer belt.

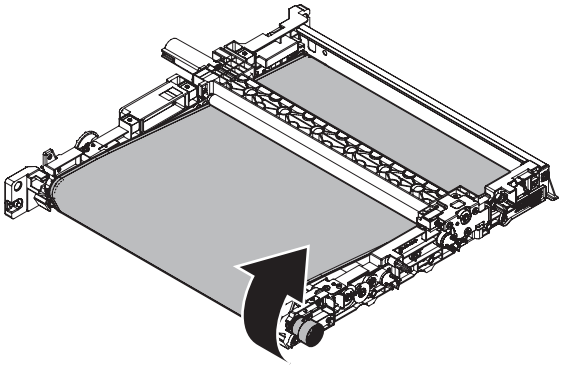
1) Apply Y powder (CKOG-0345DS51) on entire surface of the primary transfer belt with primary transfer cleaner unit being removed.



2) Attach the primary transfer cleaner unit.
3) Manually rotate the primary transfer belt drive gear and remove the powder applied on the primary transfer belt.

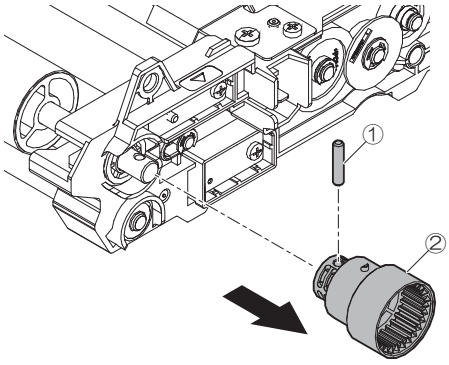
Important

Confirm proper rotation direction. Never rotate in inverse direction.



d. Primary transfer belt drive gear

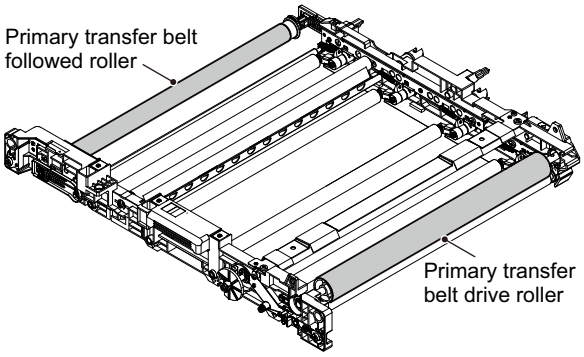
1) Pull out the pin and remove the primary transfer belt drive gear



e. Primary transfer belt drive roller

f. Primary transfer belt followed roller

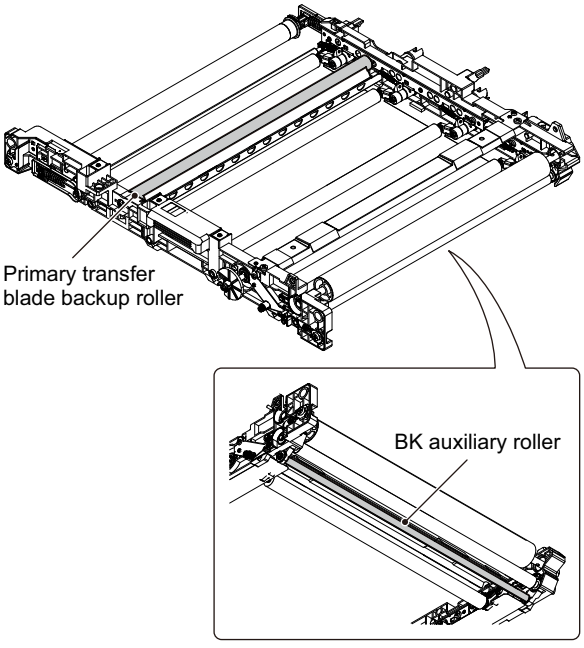
1) Clean the primary transfer belt drive roller and primary transfer belt followed roller with alcohol.



g. Primary transfer blade backup roller

h. BK auxiliary roller

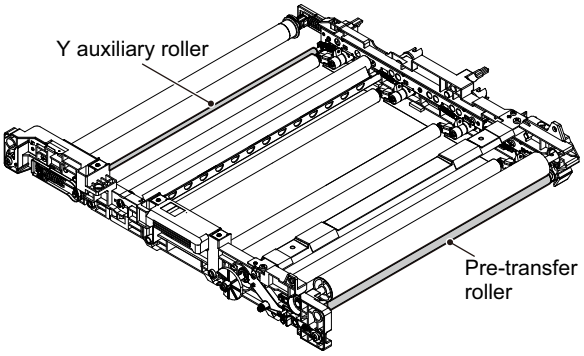
1) Clean the Primary transfer blade backup roller and BK auxiliary roller with alcohol.



i. Y auxiliary roller

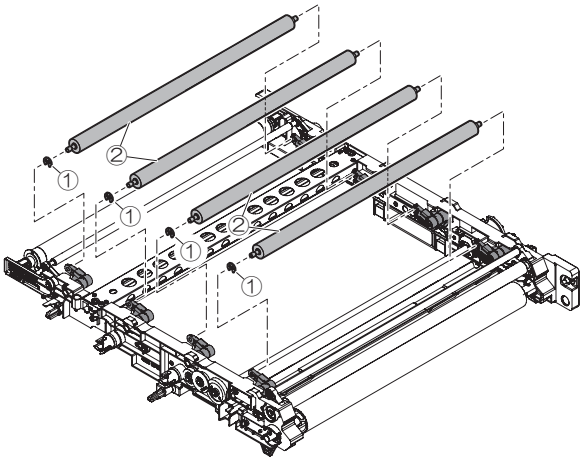
j. Pre-transfer roller

1) Clean the Y auxiliary roller and Pre-transfer roller with alcohol.



k. Primary transfer roller

1) Remove the E-ring and primary transfer roller



l. Resist face stay cushion

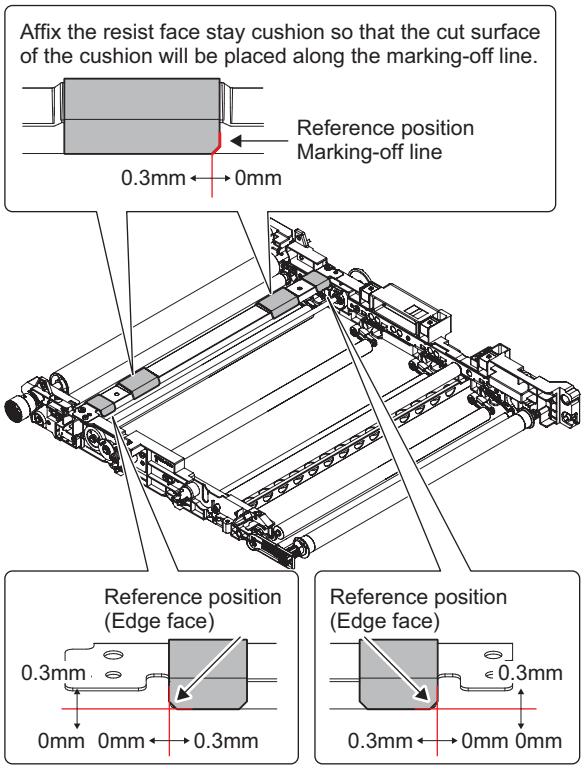
1) Remove the resist face stay cushion

Important

When replacing the resist face stay cushion, attach the cushion based on the reference position.

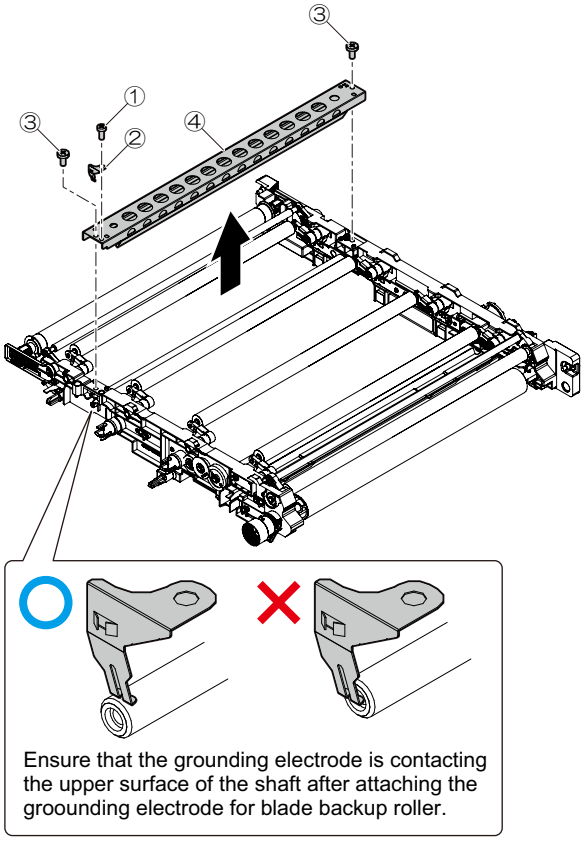
Important

Before affixing new resist face stay cushion, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



m. Primary transfer blade backup roller sheet

1) Remove the parts in the order of a screws, the grounding electrode for blade backup roller, and the frame.



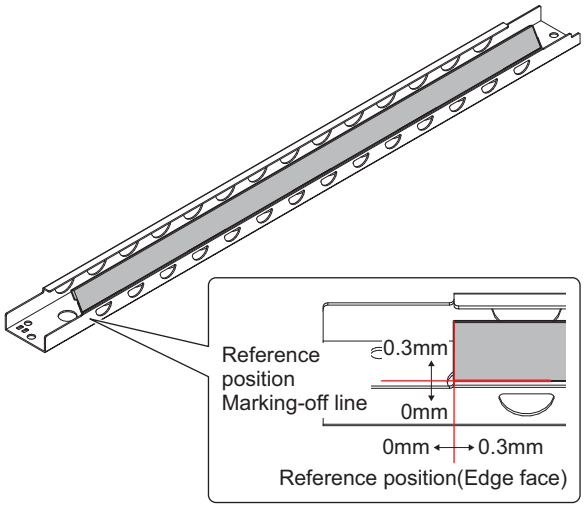
2) Remove the primary transfer blade backup roller sheet

Important

When replacing the primary transfer blade backup roller sheet, affix the sheet based on the reference position.

Important

Before affixing new primary transfer blade backup roller sheet, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



n. Primary transfer toner reception sheet F·R

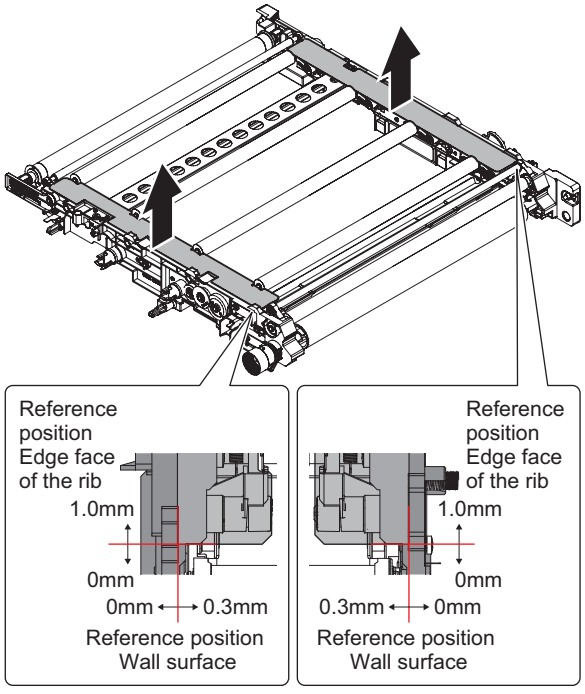
1) Remove the primary transfer toner reception sheet F·R

Important

When replacing the primary transfer toner reception sheet F·R, affix the sheets based on the reference position.

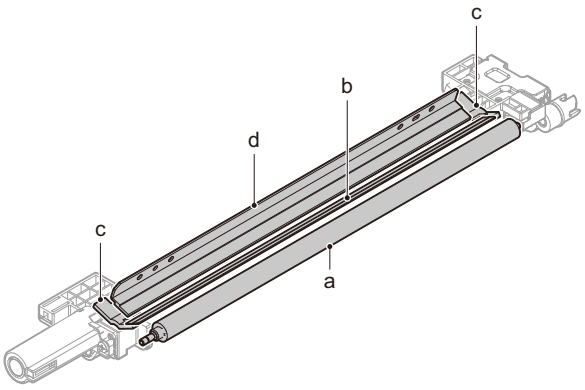
Important

Before affixing new primary transfer toner reception sheet F·R, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



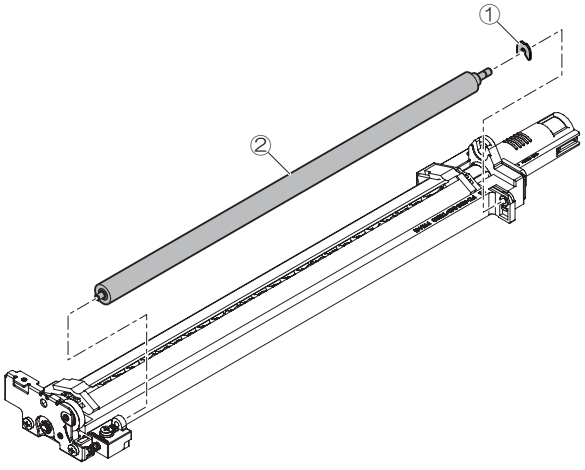
(2) Primary transfer cleaner unit

Part No.	Part name
a	Cleaning roller
b	Primary transfer cleaner sub blade
c	Transfer cleaner seals F·R
d	Primary transfer cleaner blade



a. Cleaning roller

1) Remove the E-ring and cleaning roller



b. Primary transfer cleaner sub blade

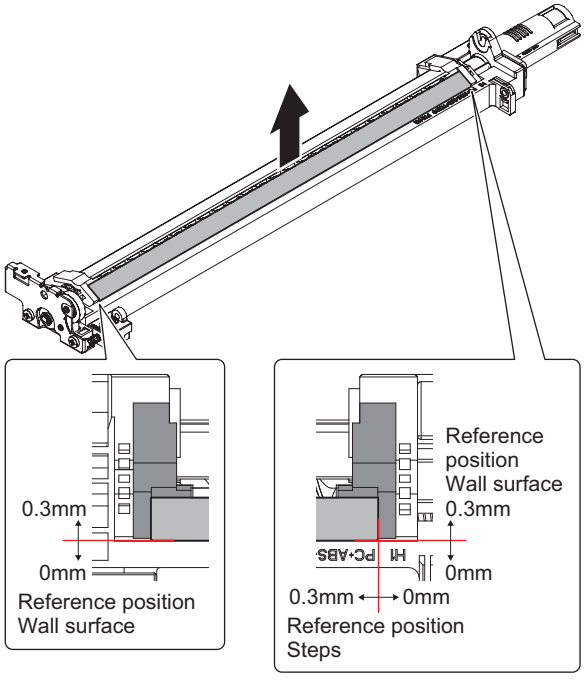
1) Remove the primary transfer cleaner sub blade

Important

Before replacing the primary transfer cleaner sub blade, affix the blade based on the reference position.

Important

Before affixing new primary transfer cleaner sub blade, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



c. Transfer cleaner seals F·R

1) Remove the transfer cleaner seals F·R

Important

When replacing the transfer cleaner seals F·R, affix the seals based on the reference position.

Important

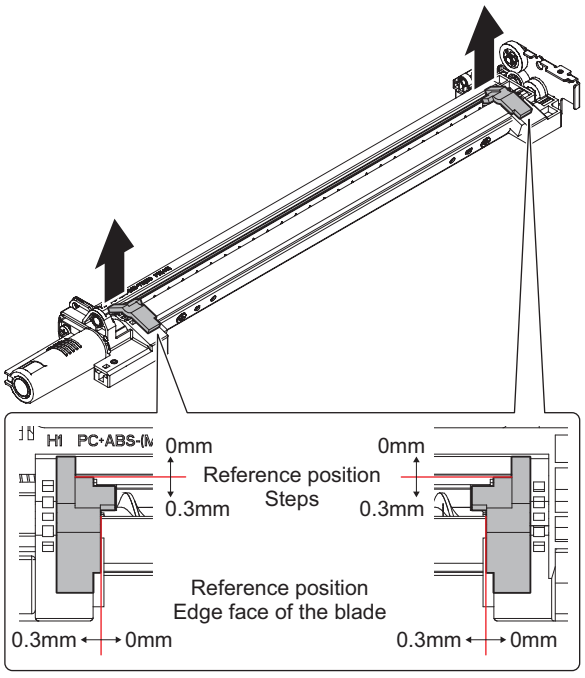
Do no place any part of the seals on top of the blade.

Important

The seals should not get stuck at rubber section on the cleaner blade.

Important

Before affixing new transfer cleaner seals F·R, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



d. Primary transfer cleaner blade

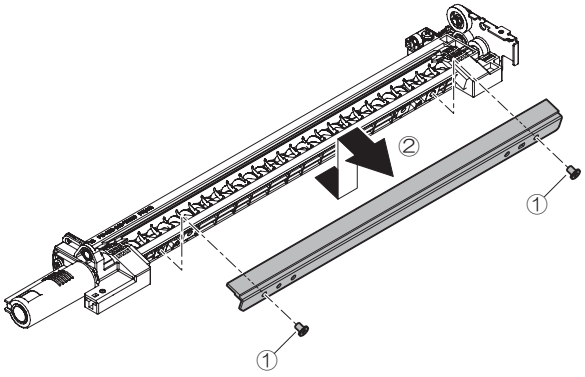
1) Remove the screw and primary transfer cleaner blade

Important

Do not touch the edge of the blade.

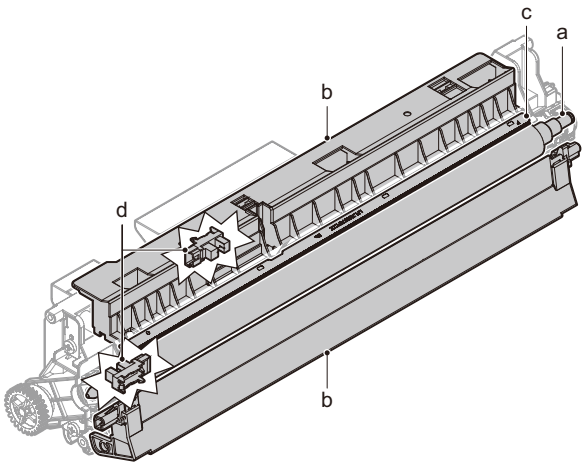
Important

Do not deform the toner agitation sheet when attaching the blade.



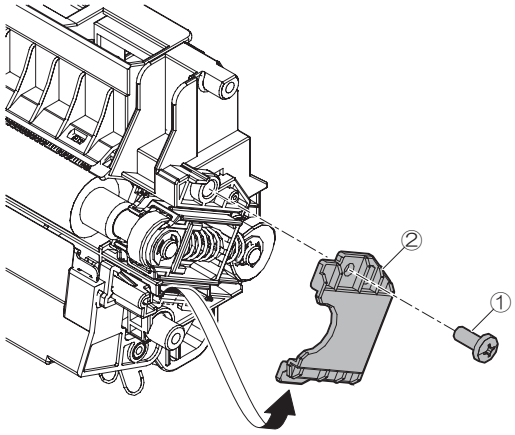
(3) Secondary transfer unit

Part No.	Part name
a	Secondary transfer roller
b	Paper guide
c	Secondary transfer separation plate
d	Sensors

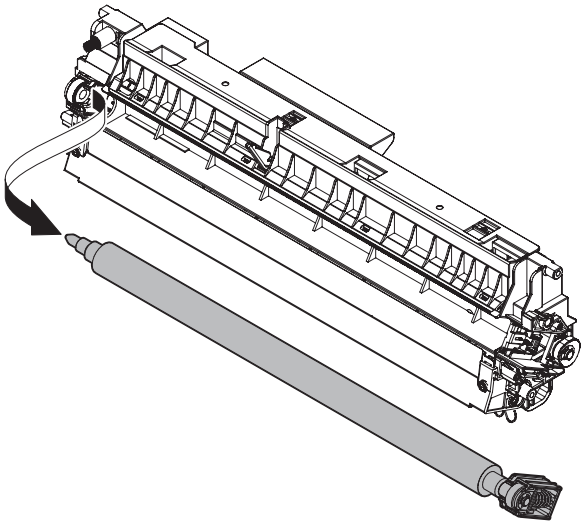


a. Secondary transfer roller

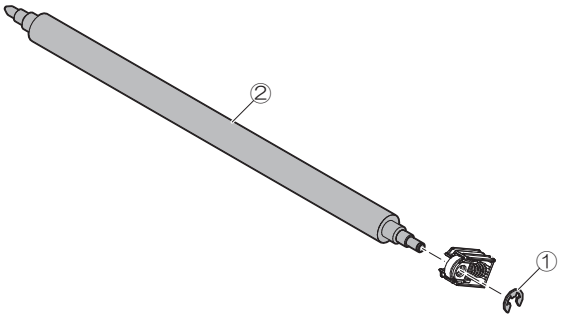
1) Remove the screw and the cover



2) Remove the secondary transfer roller sub unit

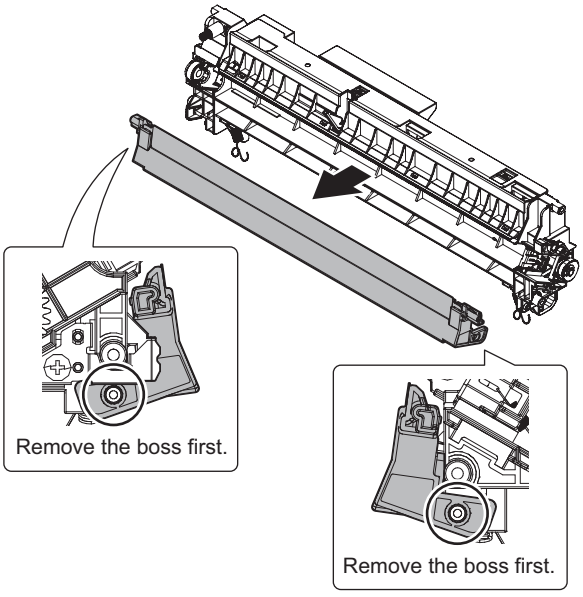


3) Remove the E-ring and the secondary transfer roller



b. Paper guide

1) Remove the plate



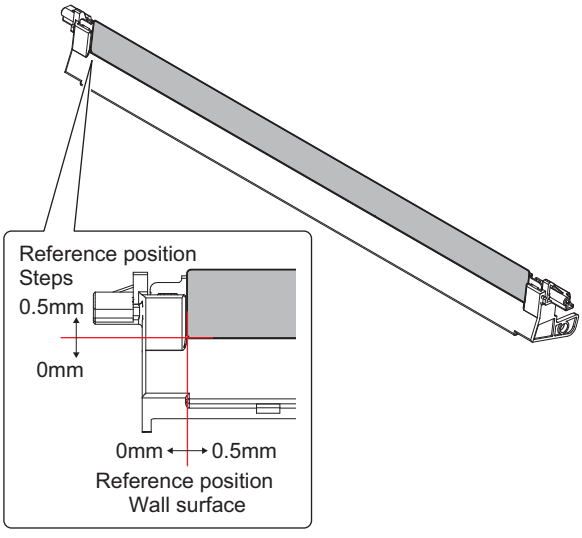
2) Remove the sheet

Important

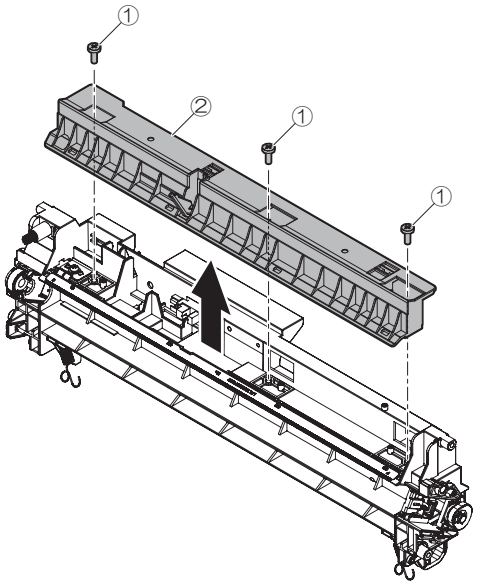
When replacing the sheet, affix the sheet based on the reference position.

Important

Before affixing new sheet, make sure to remove any foreign material and remaining adhesive from affixing surface completely.



3) Remove the screw and the cover

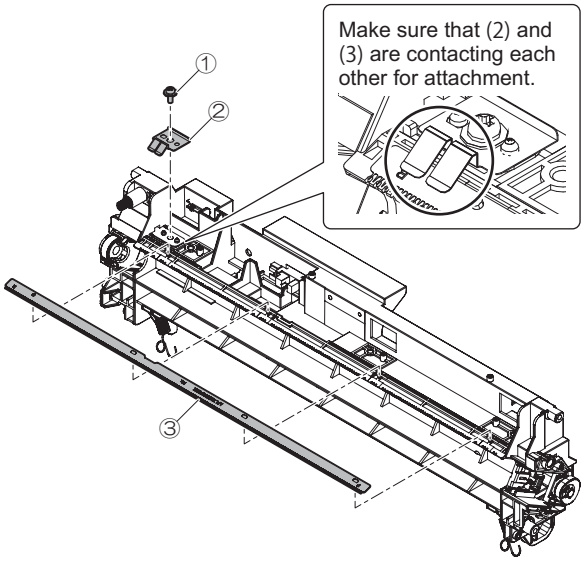


c. Secondary transfer separation plate

1) Remove the secondary transfer separation plate

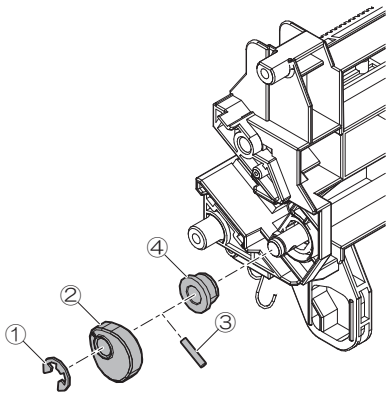
Important

Do not put any oil content etc. by directly touching separating electrode connecting plate and secondary transfer separation plate with your hand.

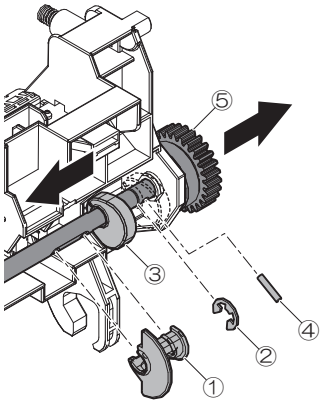


d. Sensors

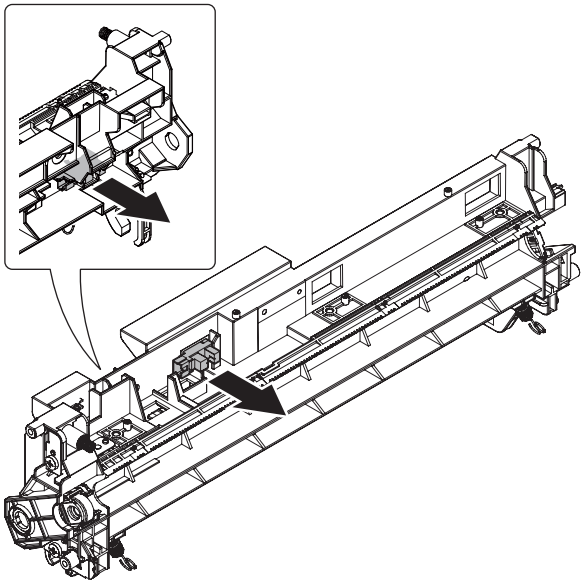
1) Remove the E-ring, secondary transfer separation sensor cam, pin, and bearing.



2) Remove the secondary transfer separation sensor cam and then E-ring. Slide secondary transfer separation cam. Remove the parallel pin and then remove the secondary transfer separation cam shaft sub assy.

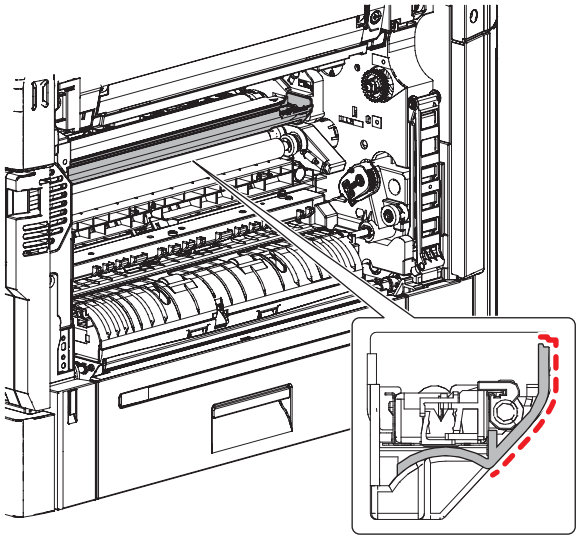


3) Remove the sensor



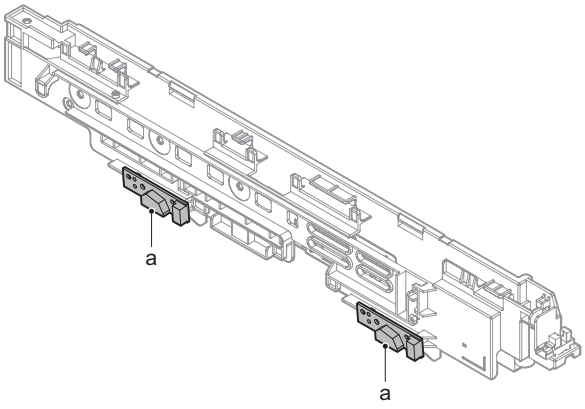
(4) PTC outer holder

1) Clean PTC outer holder with alcohol.



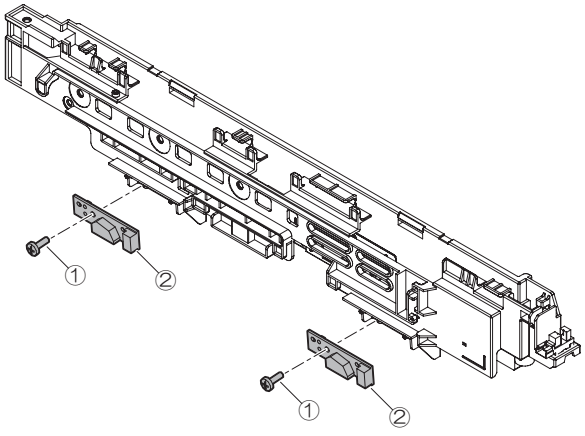
(5) Registration sensor unit

Part No.	Part name
a	Registration sensor



a. Registration sensor

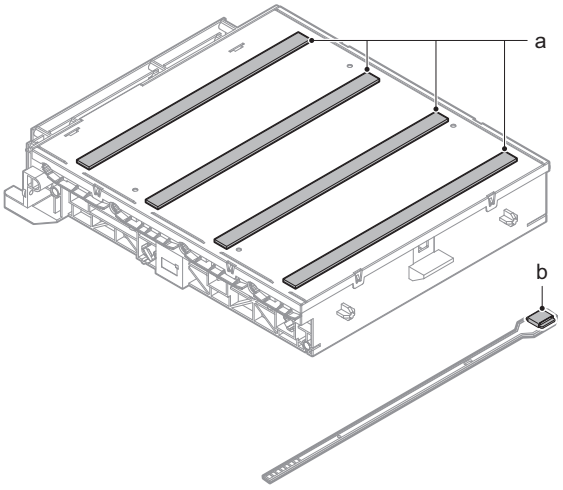
1) Remove the registration sensor



G. LSU section

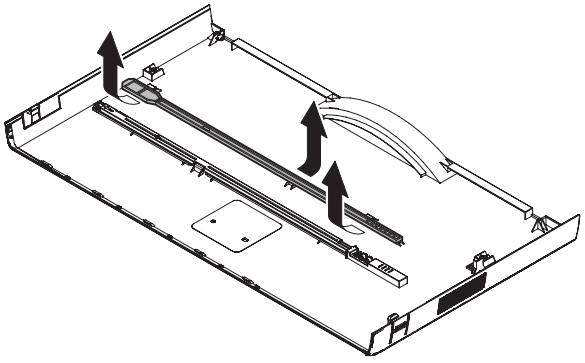
(1) LSU unit

Part No.	Part name
a	Dust proof glass
b	Cleaning base

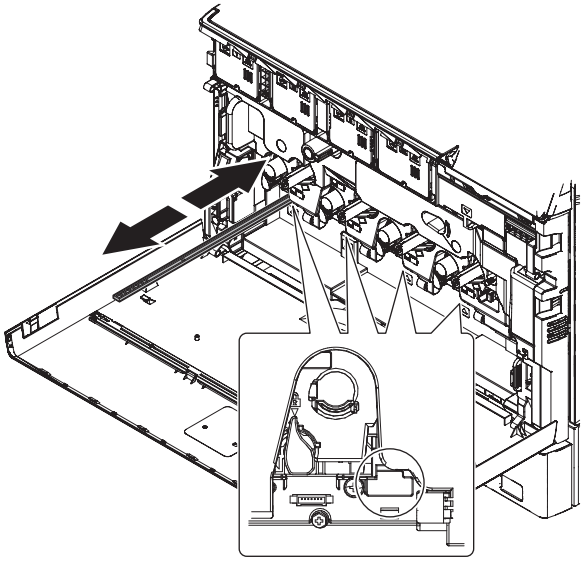


a. Dust proof glass

1) Open the cover and remove the LSU cleaning bar.

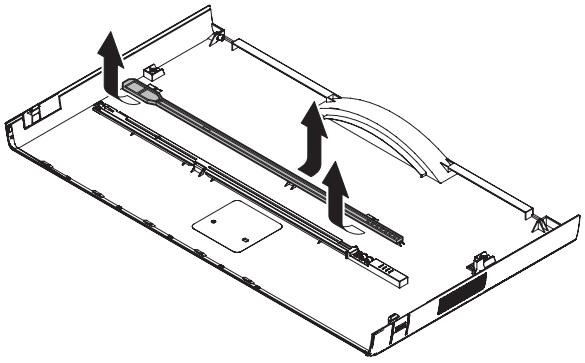


2) Remove the waste toner box
3) Insert the LSU cleaning bar with a felt facing downward. Move the bar a few times back and forth to clean the dust proof glass on LSU.

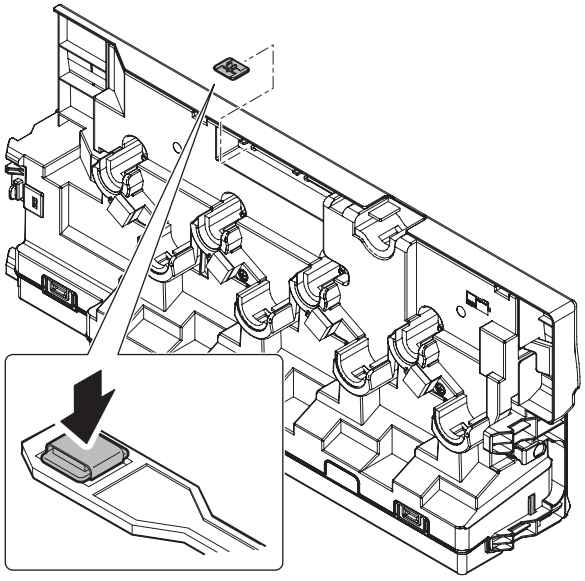


b. Cleaning base

1) Open the cover and remove the LSU cleaning bar.



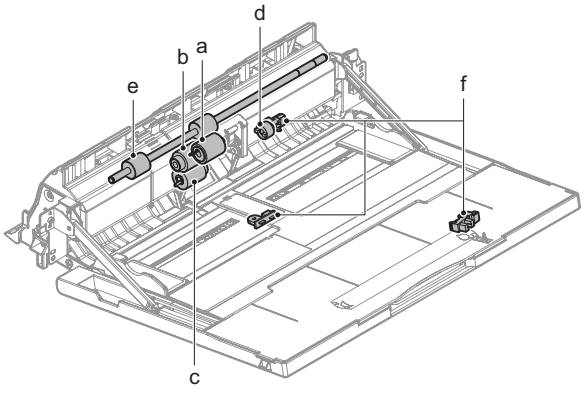
2) Remove the waste toner box
3) Remove the cleaning base from the waste toner box and attach it to the LSU cleaning bar.



H. Manual paper feed section

(1) Manual paper feed unit

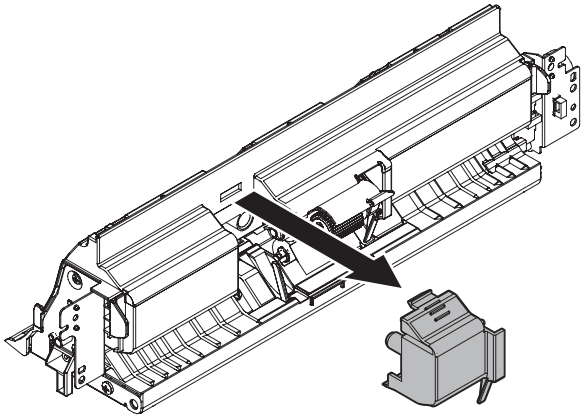
Part No.	Part name
a	Paper pickup roller
b	Paper feed roller
c	Separation roller
d	Torque limiter
e	Transport roller 11
f	Sensors



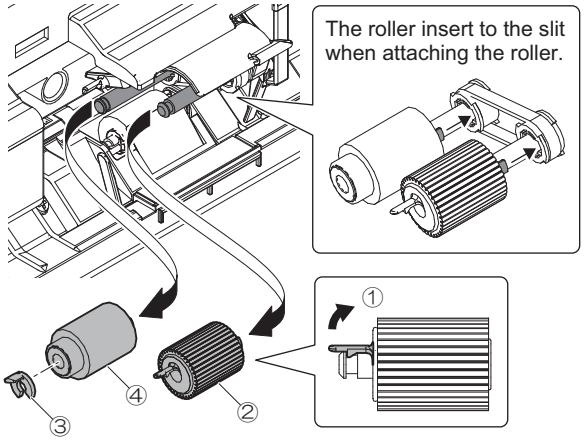
a. Paper pickup roller

b. Paper feed roller

1) Remove the cover

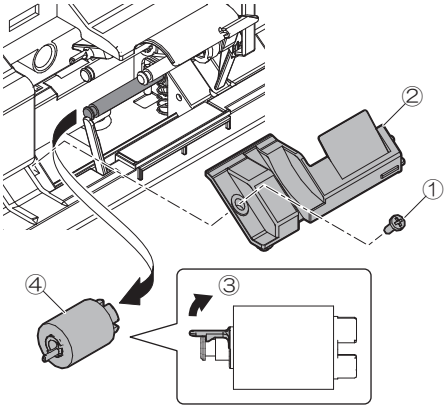


2) Uplift the pawl and detach the pickup roller. Remove the E-ring and detach the paper feed roller.



c. Separation roller

1) Remove a screw and then detach the paper guide. Uplift the pawl and then detach the separation roller.

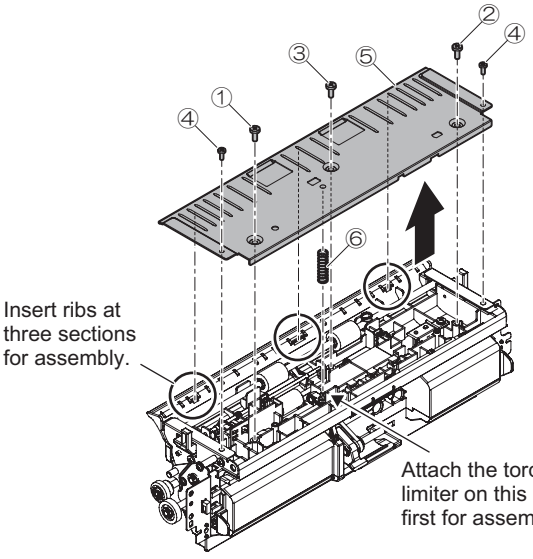


d. Torque limiter

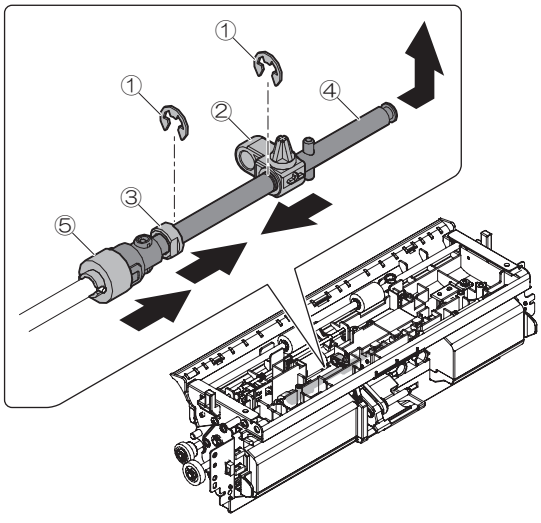
1) Remove the screw and the frame

Important

Fasten screws in the order of (1) and (2) for assembly.



2) Remove the E-ring and slide the holder and the bearing toward the direction of arrow in the illustration below. Remove the shaft and then remove the torque limiter.

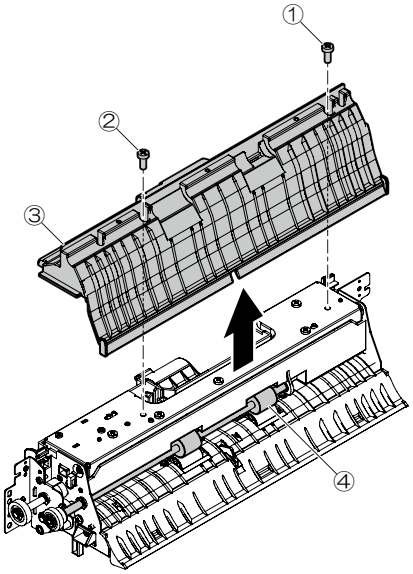


e. Transport roller 11

1) Remove the screw and the paper guide

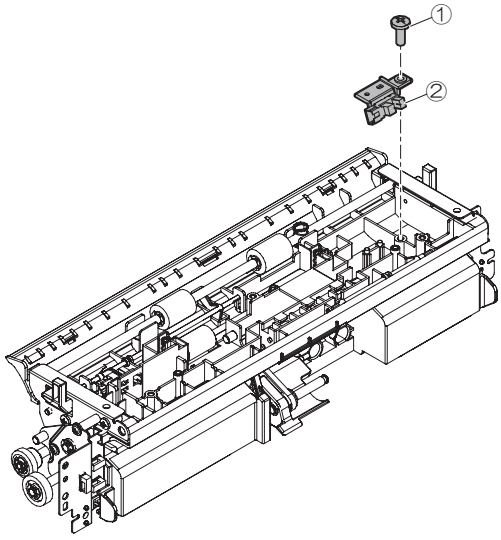
Important

Fasten screws in the order of (1) and (2) for assembly. Clean the transport roller 11.

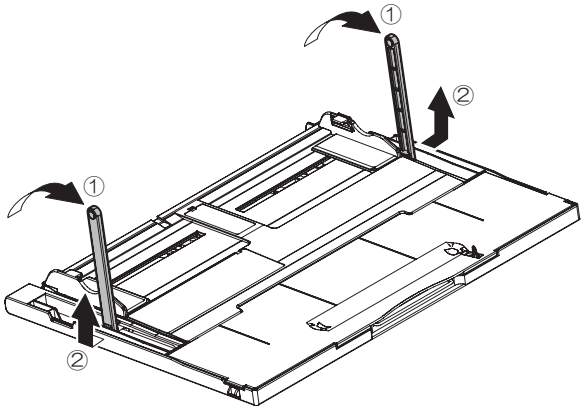


f. Sensors

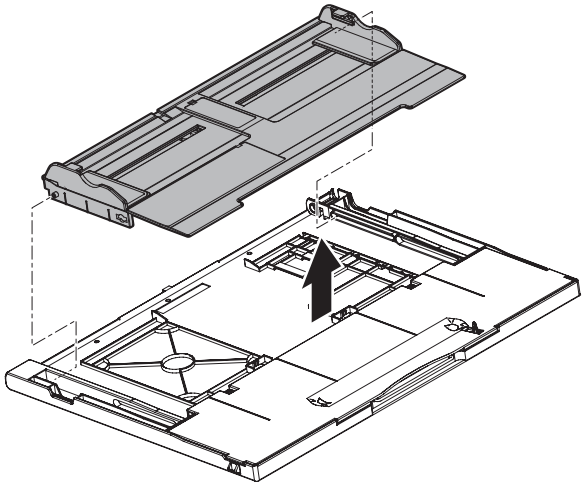
1) Remove the screw and the sensor



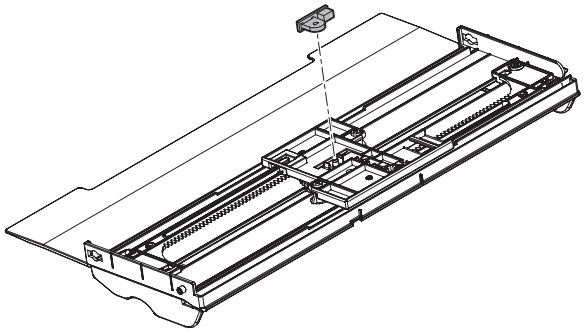
2) Remove the arm



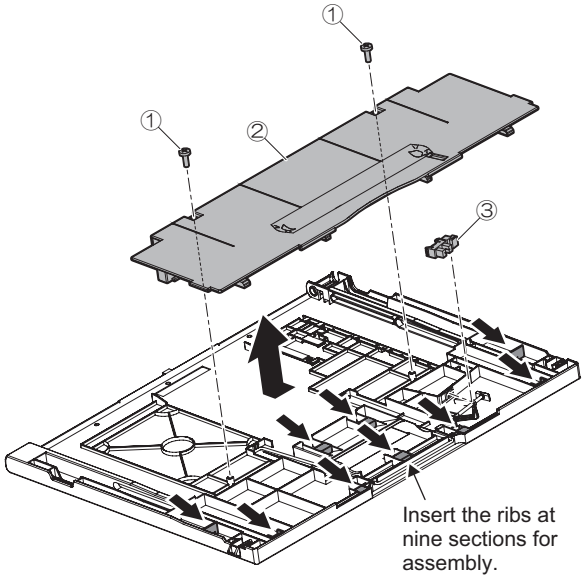
3) Remove the tray



4) Remove the sensor



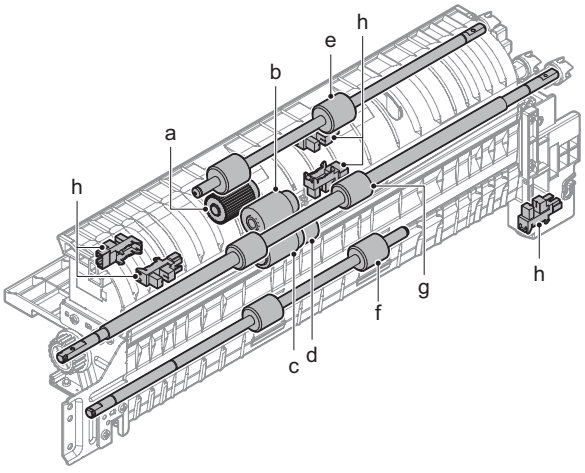
5) Remove the screw, the tray and the sensor



I. Tray paper feed section

(1) Tray paper feed unit

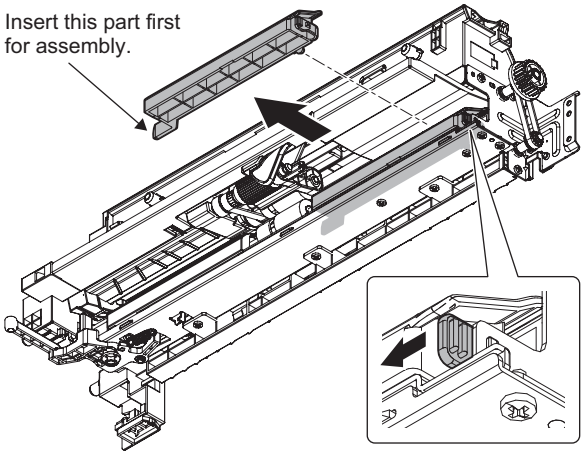
Part No.	Part name
a	Paper pickup roller
b	Paper feed roller
c	Separation roller
d	Torque limiter
e	Transport roller 3
f	Transport roller 1
g	Transport roller 2
h	Sensors



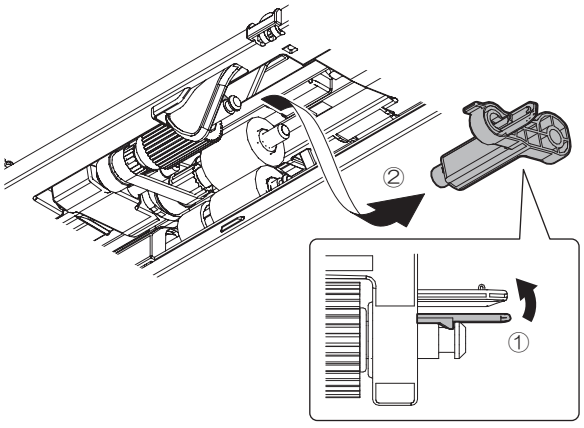
a. Paper pickup roller

b. Paper feed roller

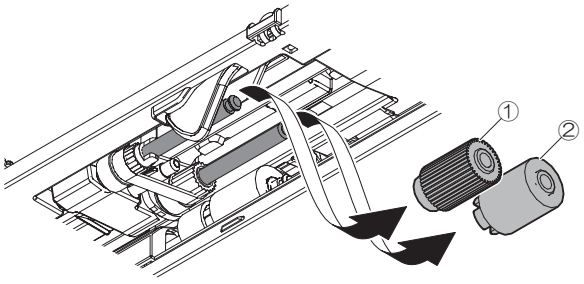
1) Remove the paper guide



2) Remove the pawl and then remove the holder.



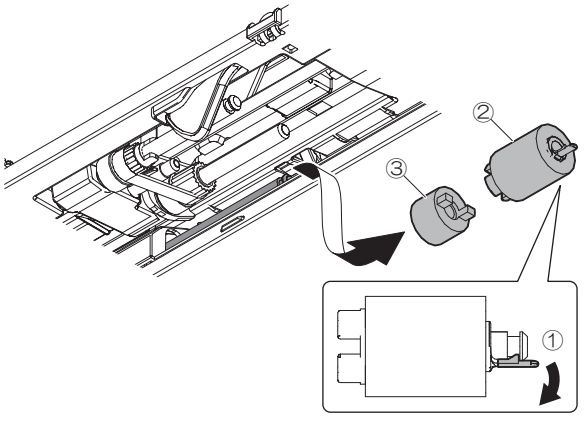
3) Remove the paper pickup roller and the paper feed roller



c. Separation roller

d. Torque limiter

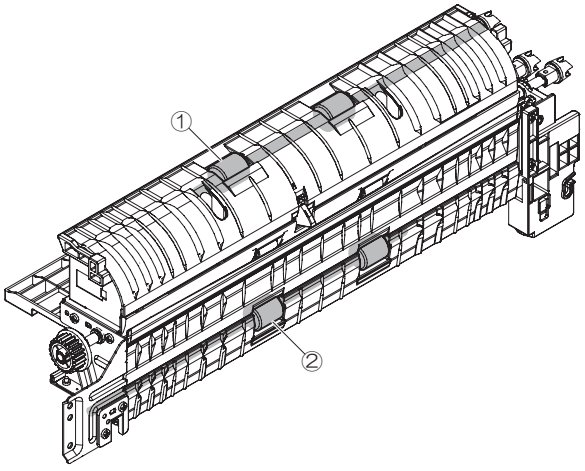
1) Remove the pawl, separation roller and then torque limiter.



e. Transport roller 3

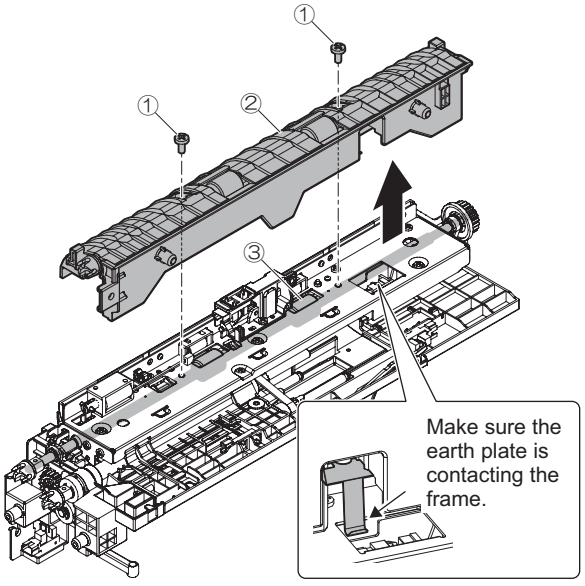
f. Transport roller 1

1) Clean the transport roller 3 and transport roller 1



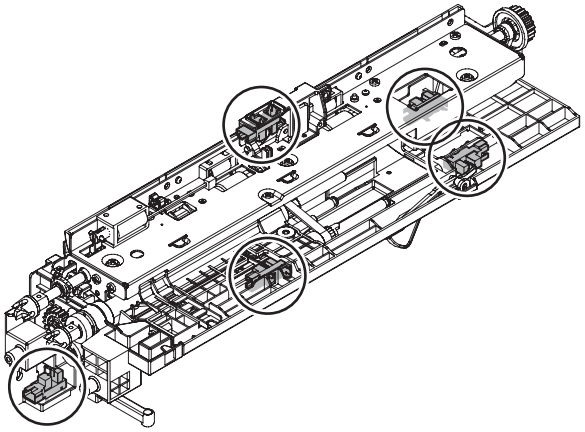
g. Transport roller 2

1) Remove the screws and the paper guide. Clean transport roller 2.



h. Sensors

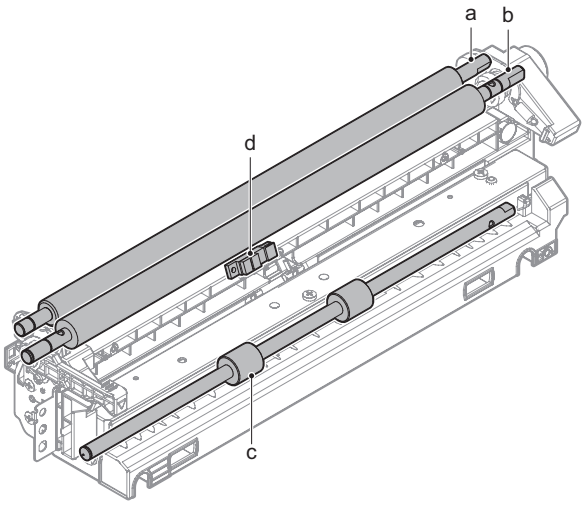
1) Clean the each sensor.



J. Paper transport section / ADU section / Paper exit section

(1) PS unit

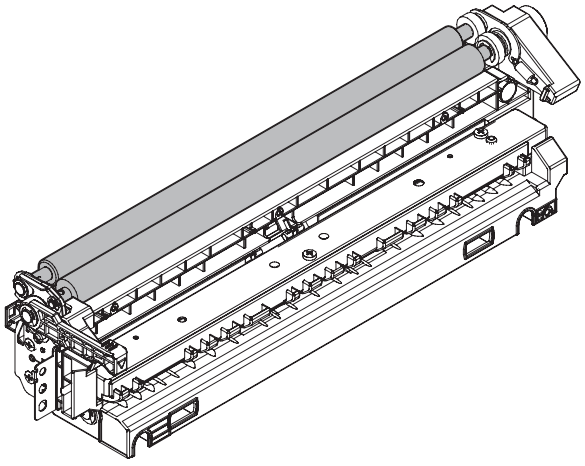
Part No.	Part name
a	Registration roller (idle)
b	Registration roller (drive)
c	Transport roller 5
d	Sensor



a. Registration roller (idle)

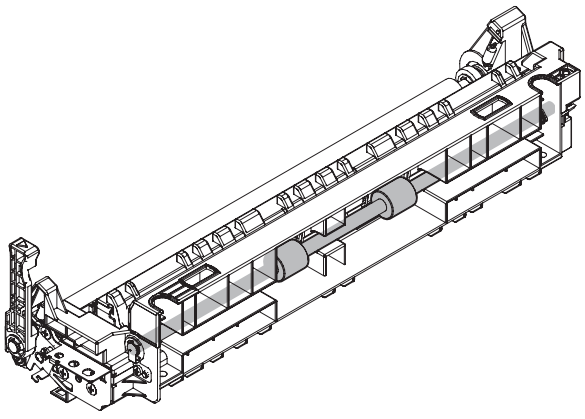
b. Registration roller (drive)

1) Clean the registration roller (idle) and the registration roller (drive).



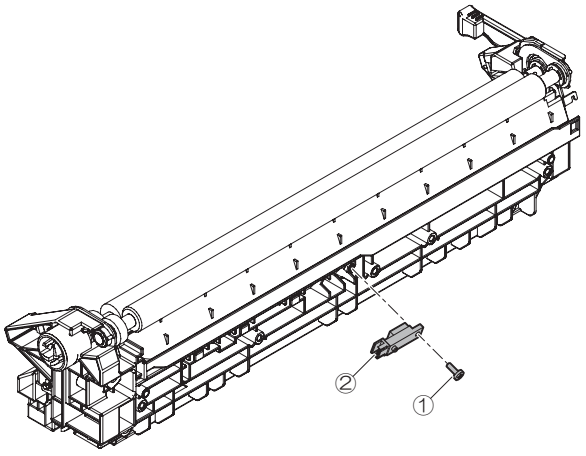
c. Transport roller 5

1) Clean the transport roller 5.



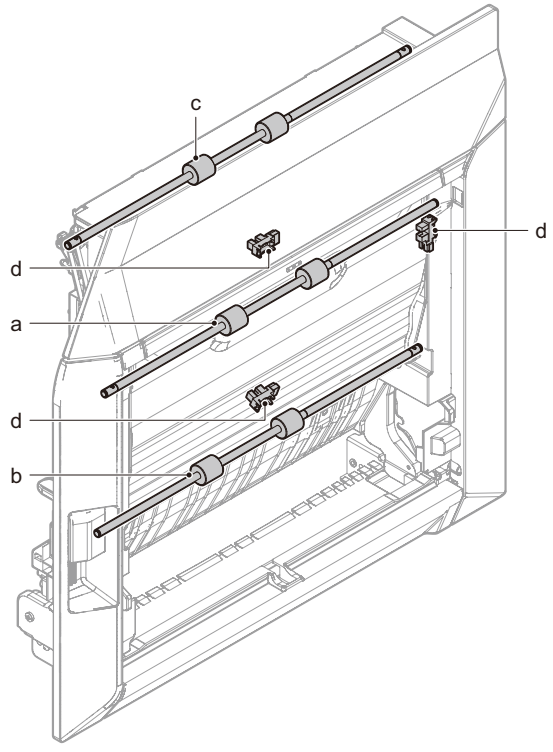
d. Sensor

1) Remove the screw and the sensor.



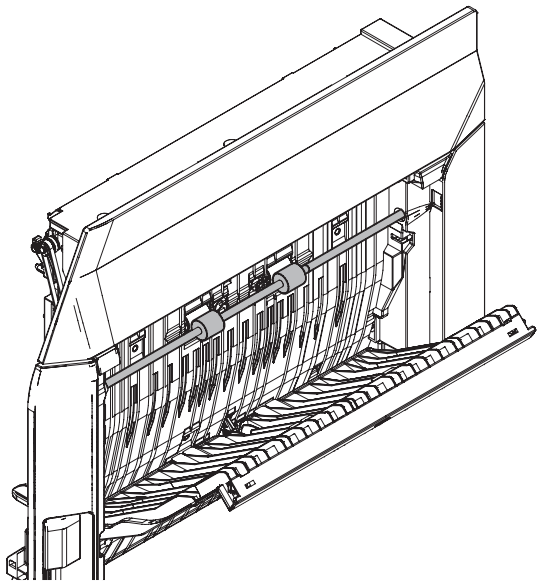
(2) Right door unit

Part No.	Part name
a	Transport roller 9
b	Transport roller 10
c	Transport roller 8
d	sensor



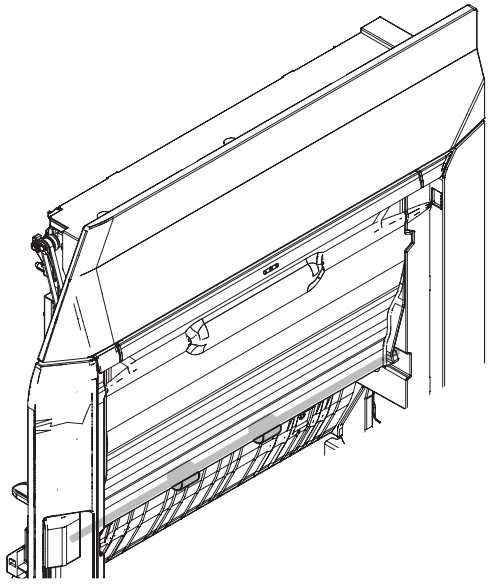
a. Transport roller 9

1) Open the door and clean the transport roller 9.



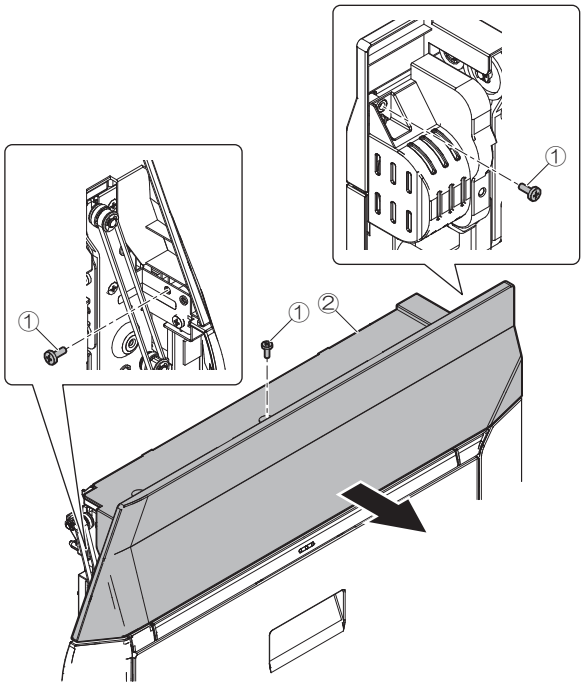
b. Transport roller 10

1) Remove the manual paper feed unit and clean the transport roller 10.

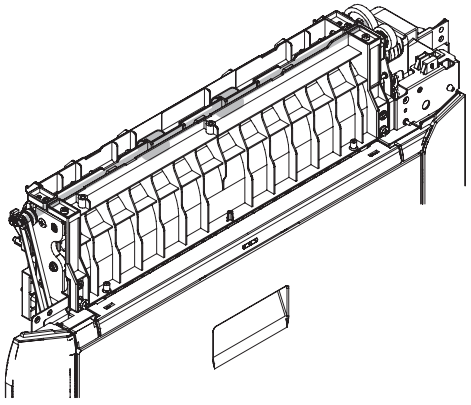


c. Transport roller 8

1) Remove the screw and cover.

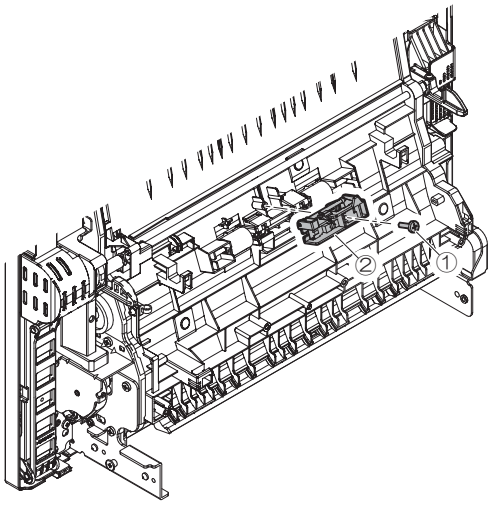


2) Clean the transport roller 8.

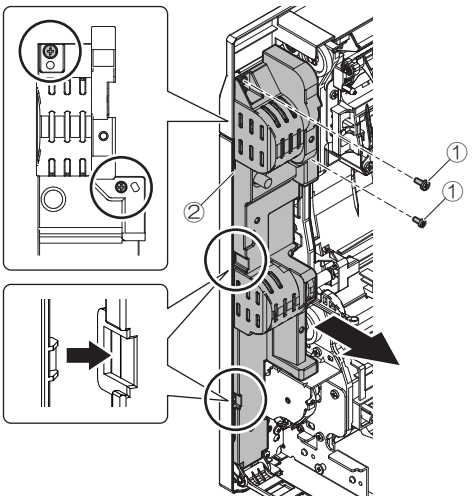


d. Sensor

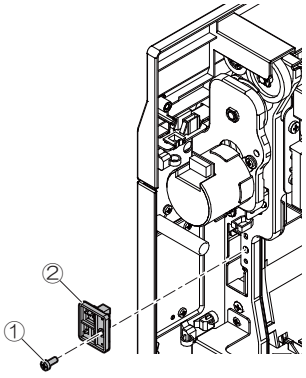
1) Remove the secondary transfer unit.
2) Remove the screw and sensor.



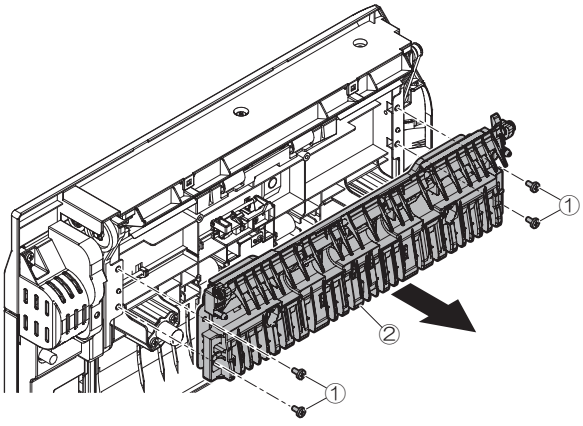
3) Remove the screw and cover.



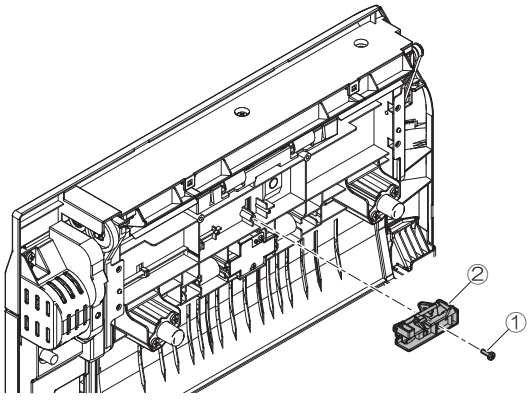
4) Remove the screw and the sensor.



5) Remove the screw and the paper guide.

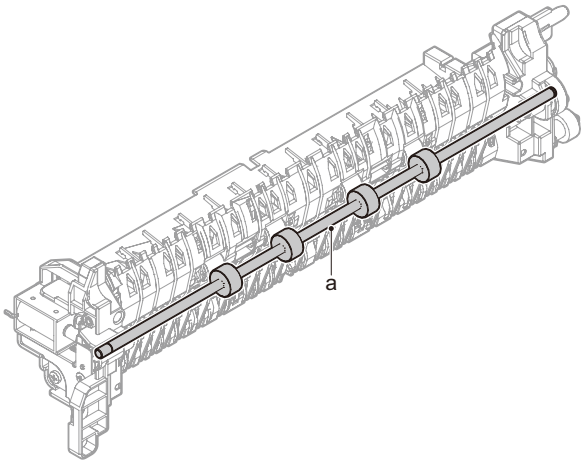


6) Remove the screw and sensor.



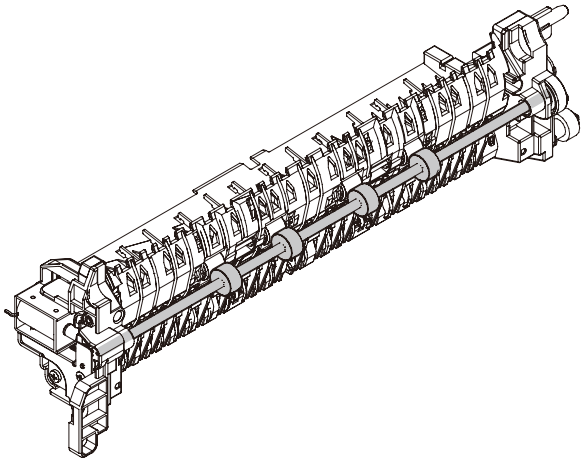
(3) Fusing rear unit

Part No.	Part name
a	Transport roller 7



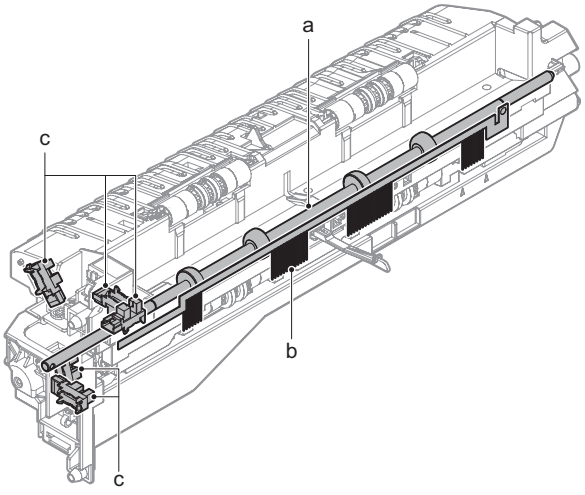
a. Transport roller 7

1) Clean the transport roller 7.



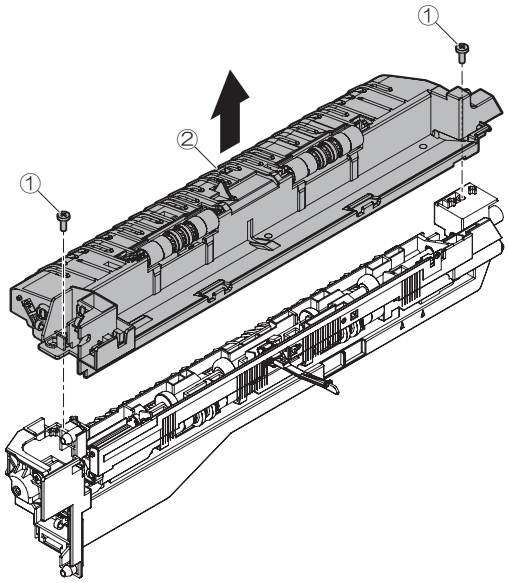
(4) Paper exit unit

Part No.	Part name
a	Paper exit roller 2
b	Discharge brush
c	Sensor

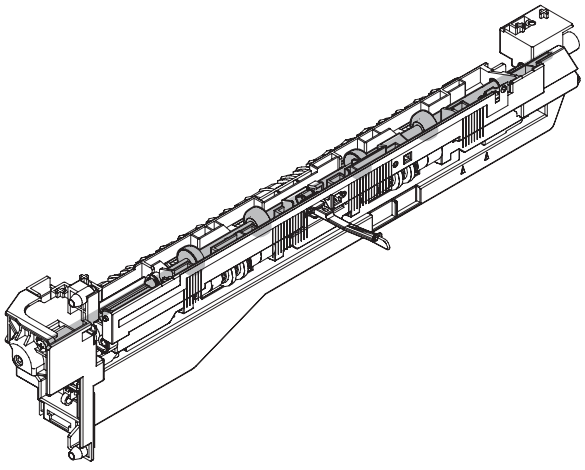


a. Paper exit roller 2

1) Remove the screw and the paper guide.

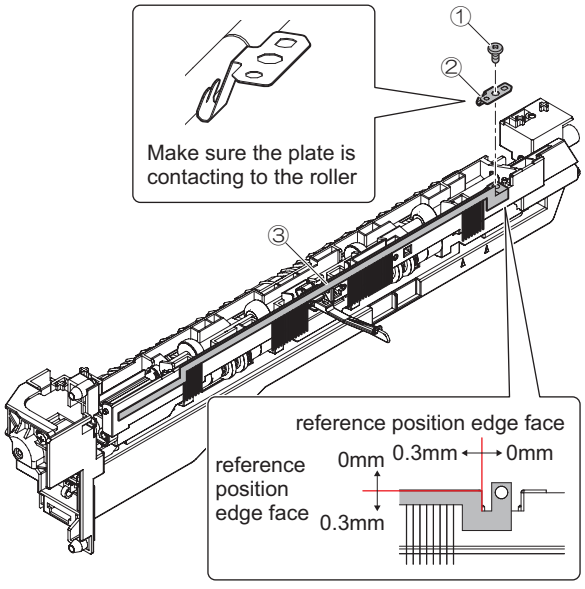


2) Clean the paper exit roller 2.



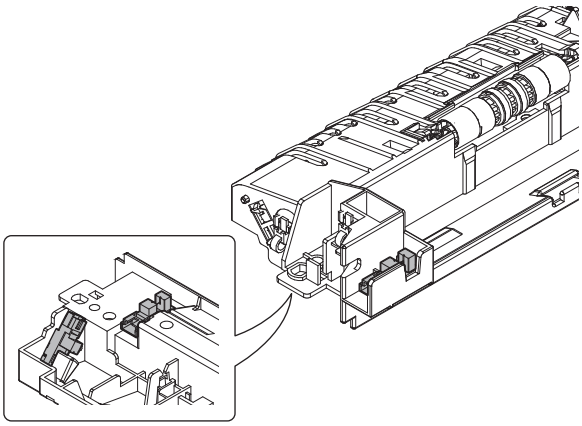
b. Discharge brush

1) Remove the screw, the earth plate and the discharge brush.

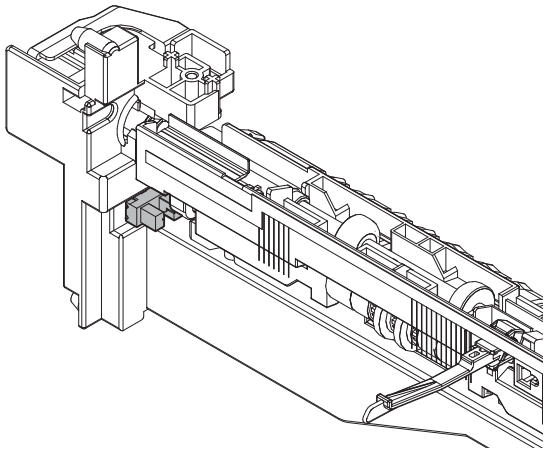


c. Sensor

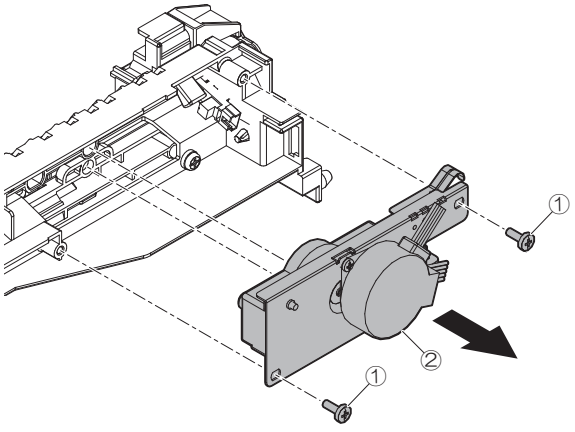
1) Remove sensors (x3) from the paper guide.



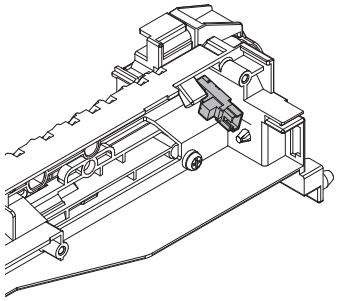
2) Remove the sensor from the paper guide.



3) Remove the screw and shifter drive.



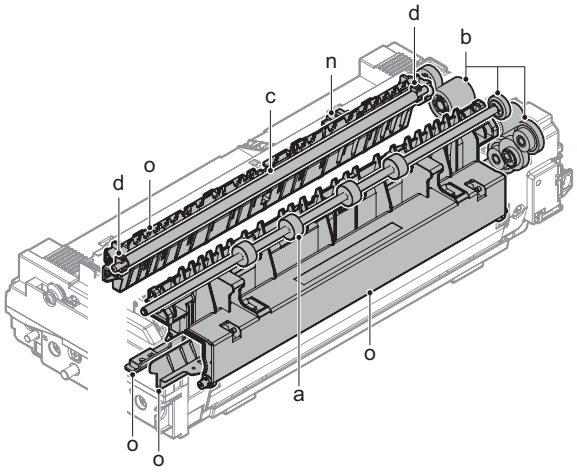
4) Remove the sensor from the paper guide.

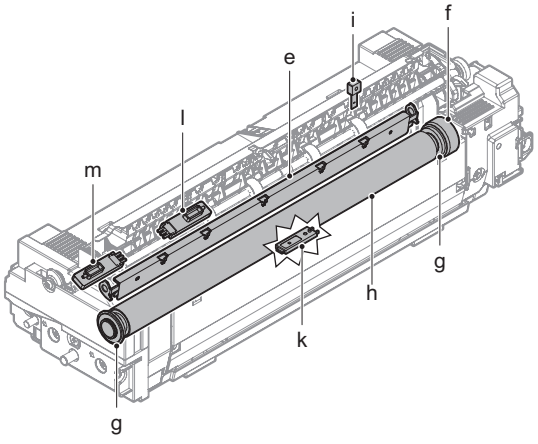


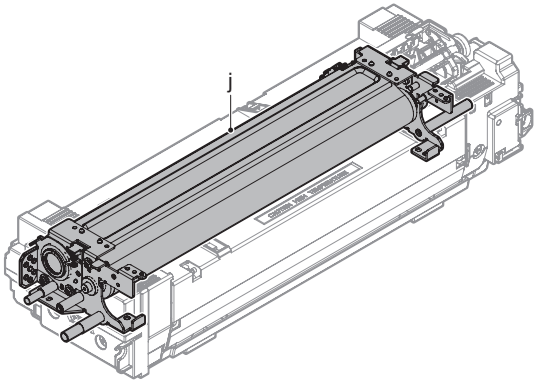
K. Fusing section

(1) Fusing unit

Part No.	Part name
a	Fusing transport roller lower
b	Gears
c	Fusing transport roller upper
d	Pressure bearing
e	Separation plate
f	Pressure roller gear
g	Pressure roller bearing
h	Pressure roller
i	Upper thermistor
j	Fusing belt unit
k	Lower thermistor
l	Main thermistor
m	Sub thermistor
n	Sensors
o	Paper guides

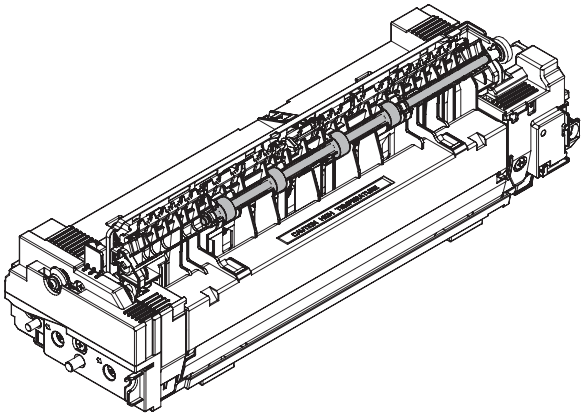




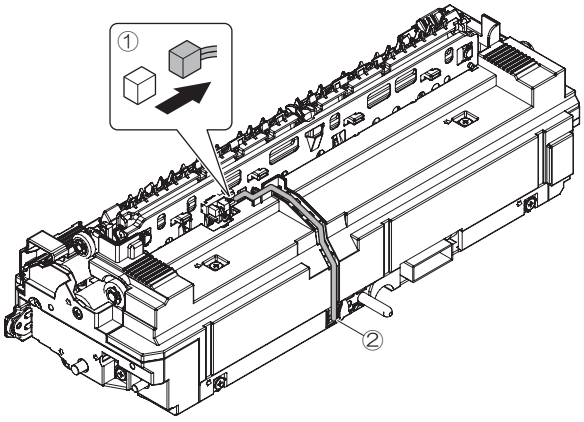


a. Fusing transport roller lower

1) Clean the fusing transport roller lower

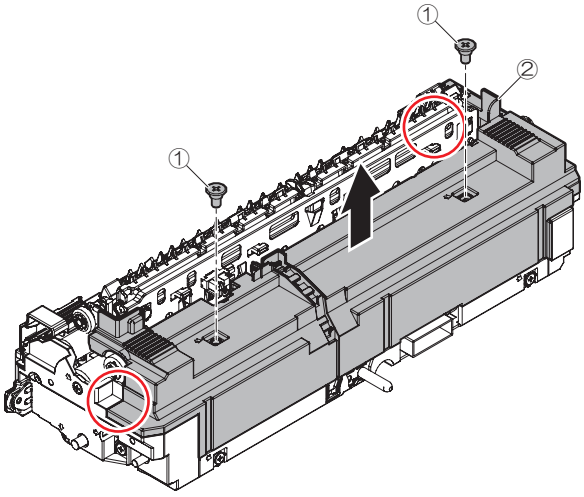


2) Remove the connector and detach the harness from the rib.

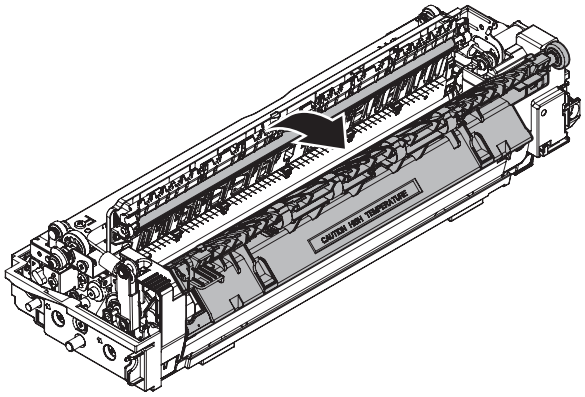


3) Remove the spring and the cover

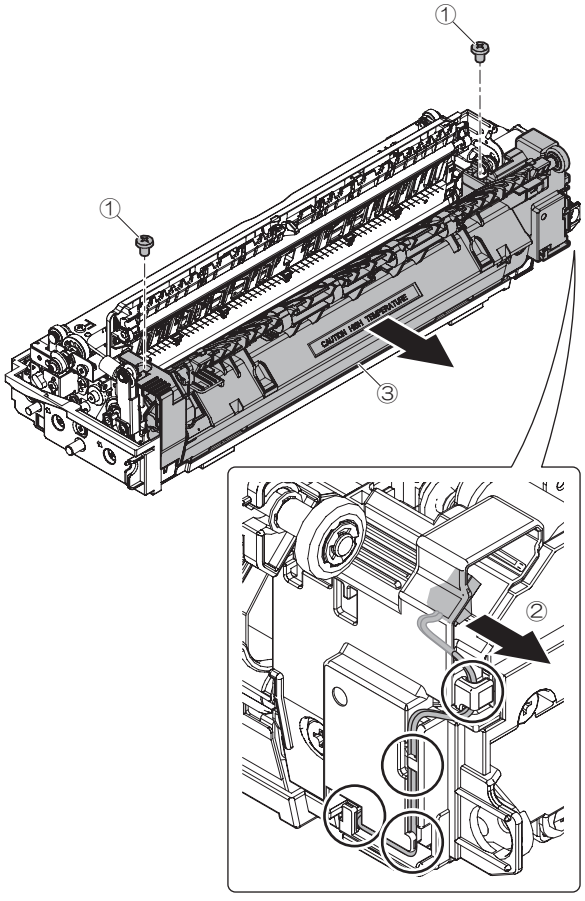
NOTE: Do not break the pawls while removing (as shown in the red circles.).



4) Open the lower paper guide and clean the upper paper guide , lower paper guide and fusing transport roller upper.

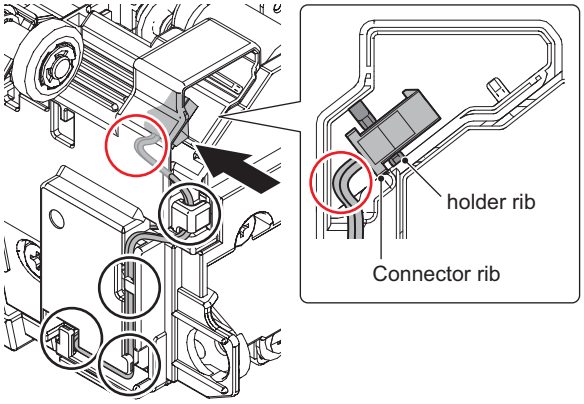


5) Remove the screws, harnesses, and then remove the paper guide.

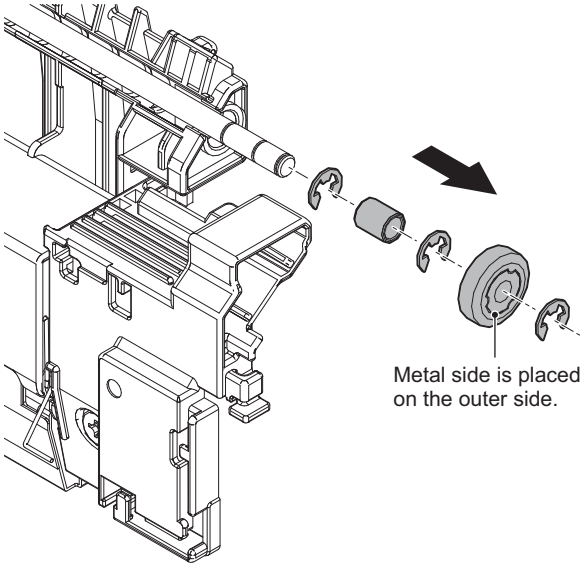


NOTE: When mounting the harnesses, make sure to wire the connectors so that the connector won't protrude.

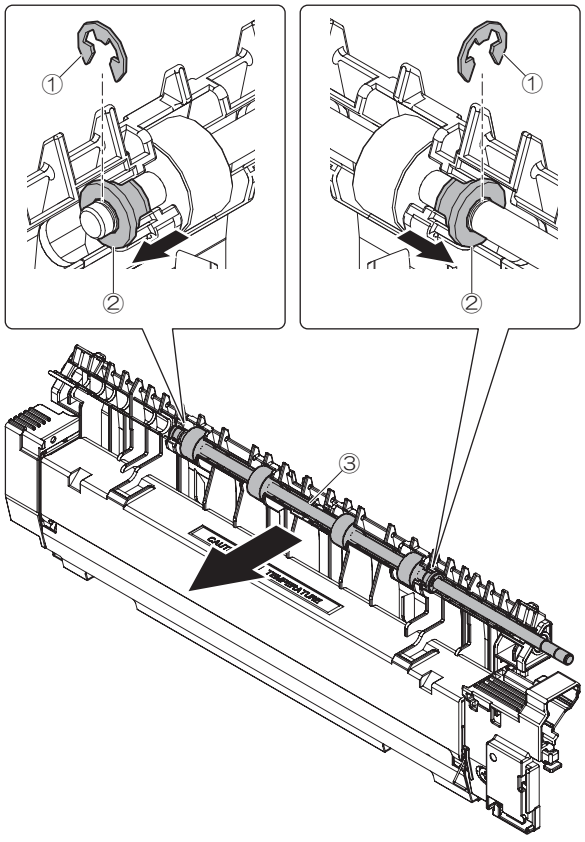
- Attach the connector in the direction shown in the illustration below. Hook the connector rib to the holder rib to fix.
- Slide extra harness into the areas in the red circle.



6) Remove the E ring, gear and bearing.

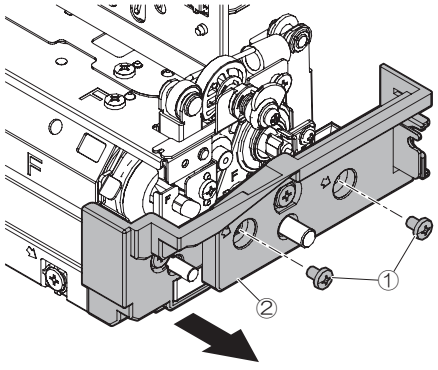


7) Remove the E ring. shift the bearing and remove the fusing transport roller lower.

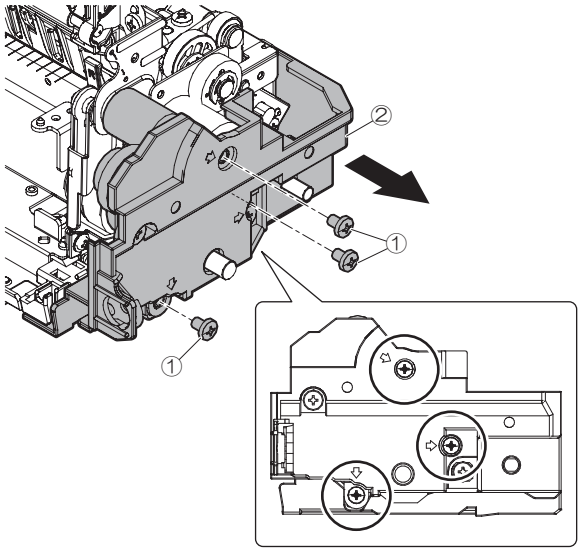


b. Gears

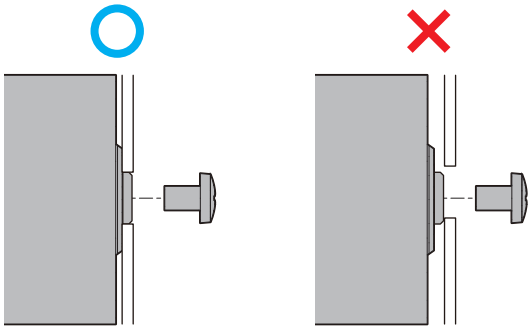
1) Remove the screw and the cover



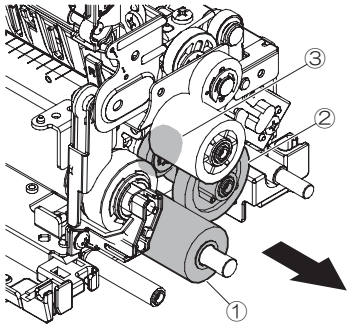
2) Remove the screw and the cover



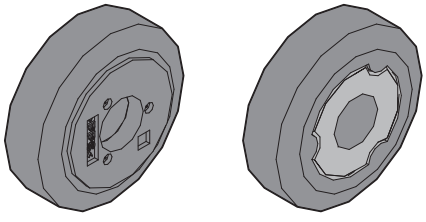
NOTE: Be sure to confirm that bearing should be fixed by the hole of cover when the cover is installed.



3) Remove the gears



NOTE: When attaching the gear (3) shown in the illustration above, make sure that resin side is placed on the outer side.



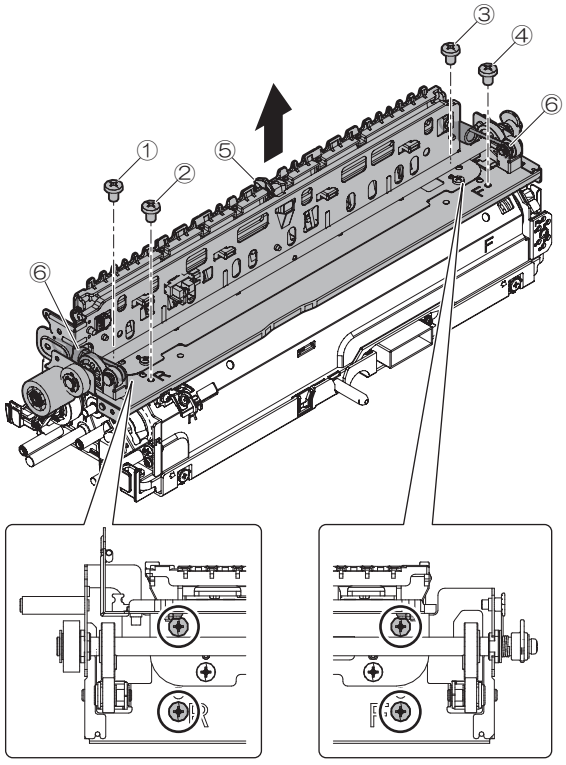
resin side Metal side

c. Fusing transport roller upper

1) Remove the screws, paper guide, and then remove the springs.

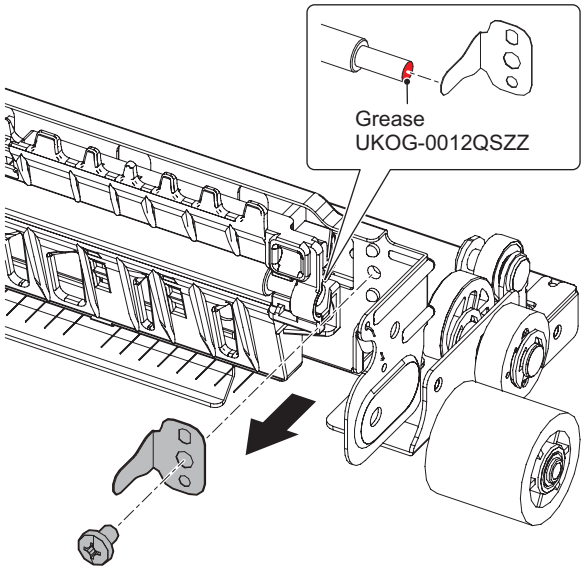
NOTE: Make sure the paper guide does not contact with the separation plate.

When attaching the paper guide, fasten screws in the order of (1)-(4) shown in the illustration below.

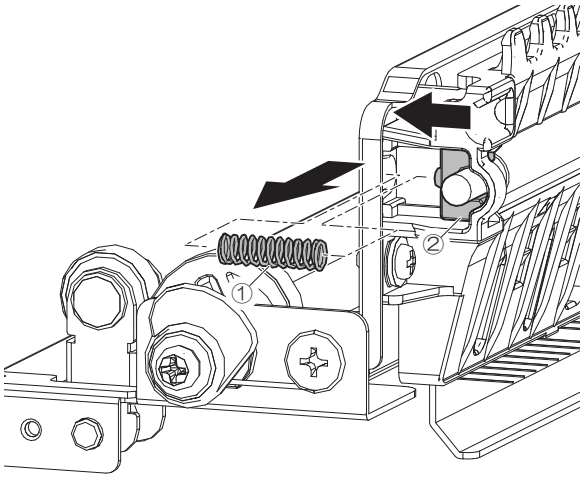


2) Remove the screw and earth plate.

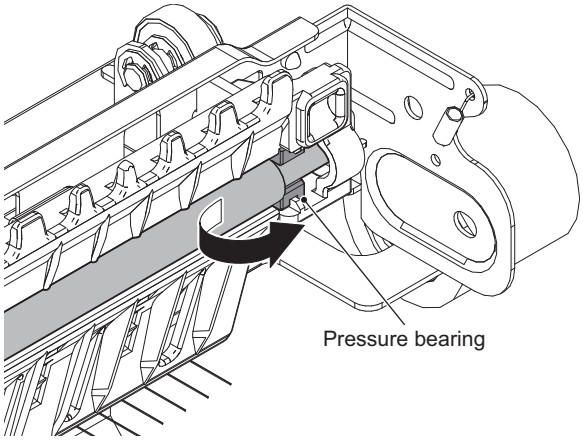
NOTE: Be sure to confirm that the edge of the fusing transport roller upper and earth plate are contacted when assembled.



3) Remove the spring and shift the pressure bearing.

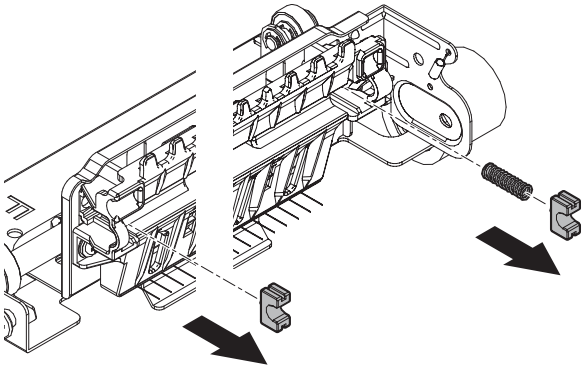


4) Hold the pressure bearing and remove the fusing transport roller upper.



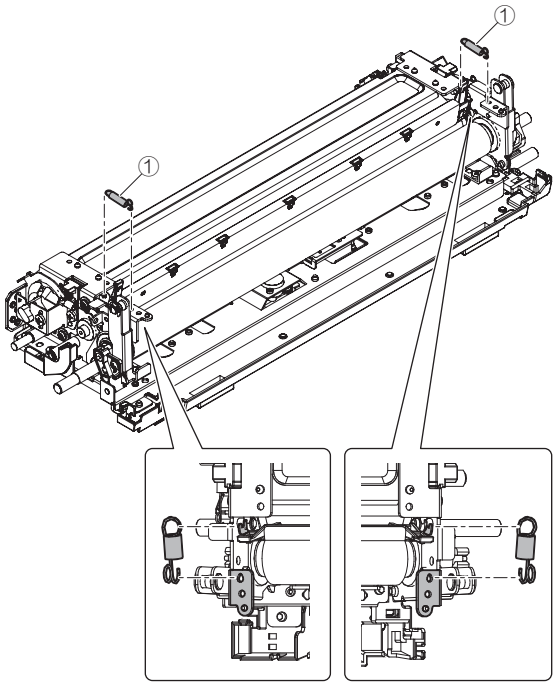
d. Pressure bearing

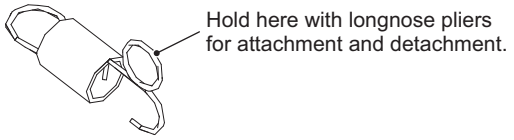
1) Remove the pressure bearing and the spring.



e. Separation plate

1) Remove the spring

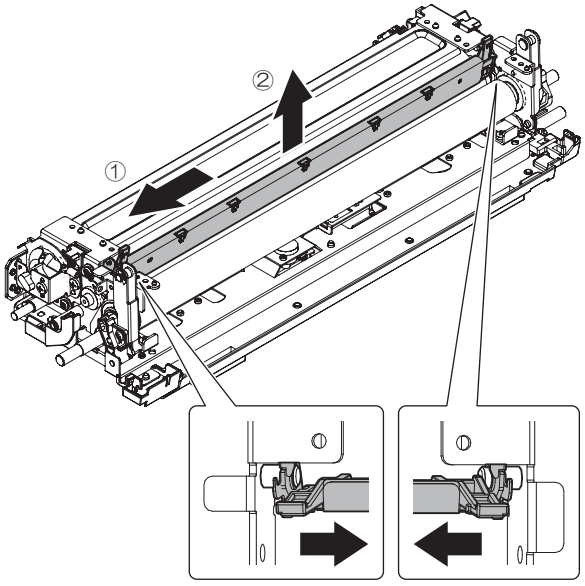




2) Slide the holder to the right and left and remove from the boss.

Important

Do not scratch, contaminate or deform the surface of separation plate.



f. Pressure roller gear

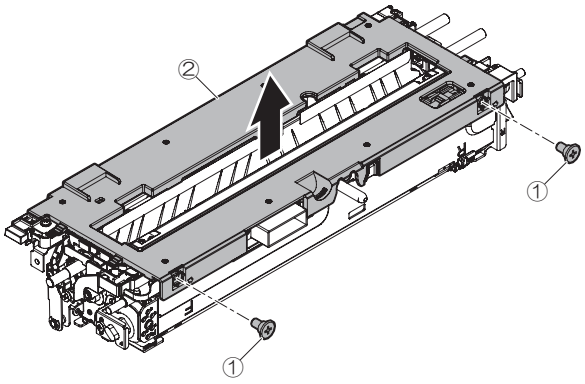
g. Pressure roller bearing

h. Pressure roller

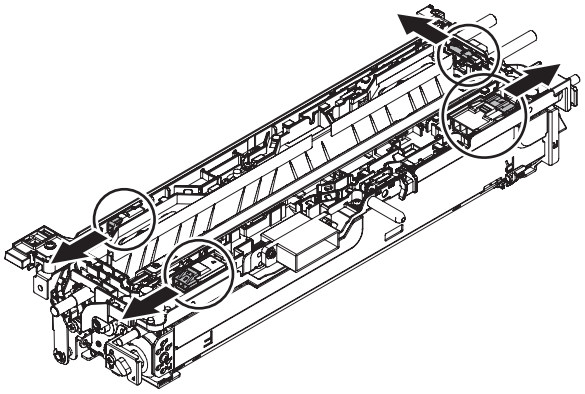
1) Turn the fusing unit upside down. Remove the screws and then remove the cover.

Important

Make sure the holder has been removed.

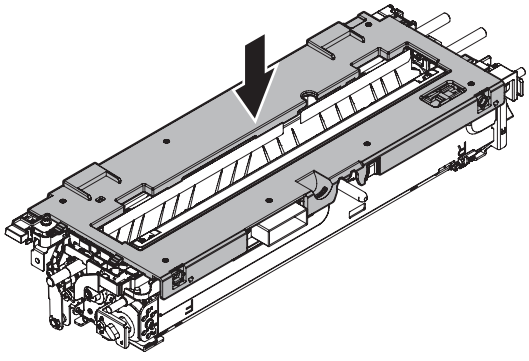


2) Disconnect the connectors and detach the harness from the rib.

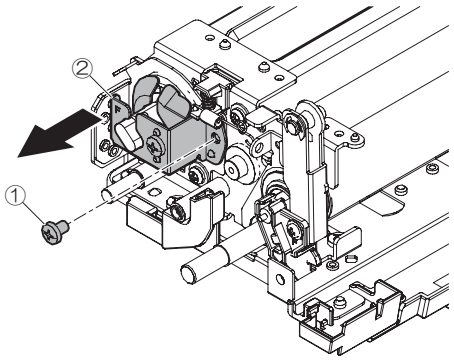


3) Attach the cover (without fastening screw).

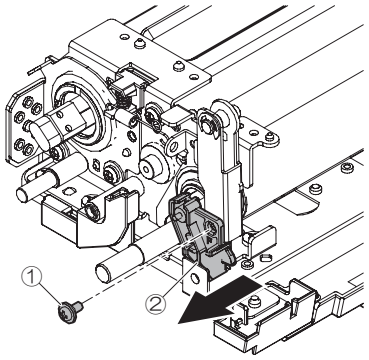
NOTE: To protect the mylar sheet, make sure to keep attaching the cover when not flipping the unit upside down.



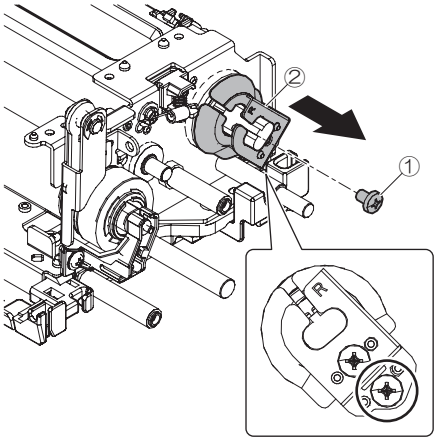
4) Remove the screw and the holder



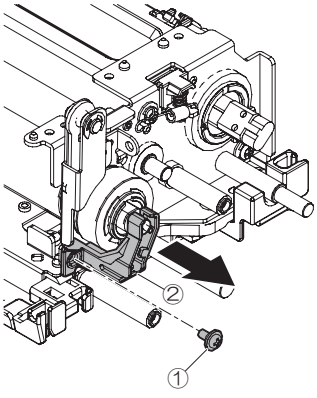
5) Remove the screw and the holder



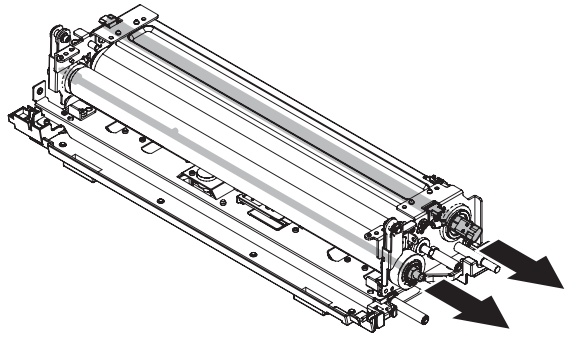
6) Remove the screw and the holder



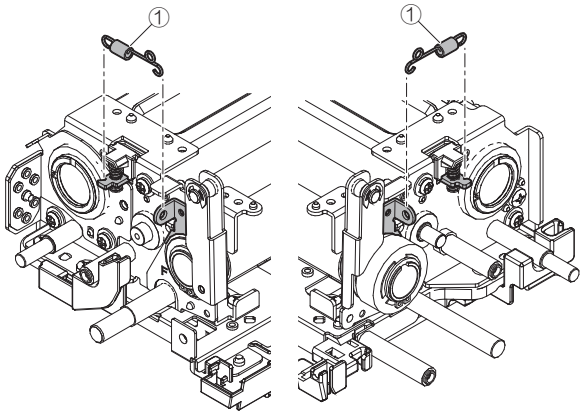
7) Remove the screw and the holder



8) Remove the upper heater lamp and low heater lamp

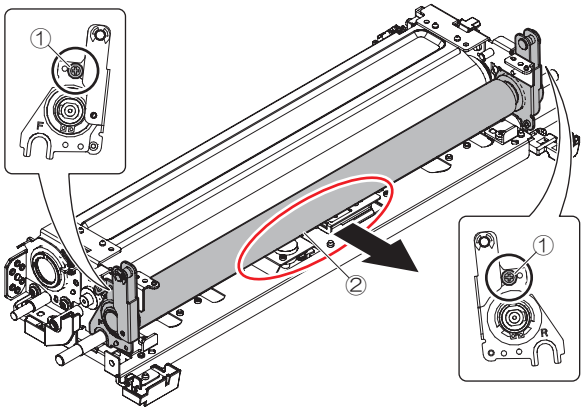


9) Remove the spring

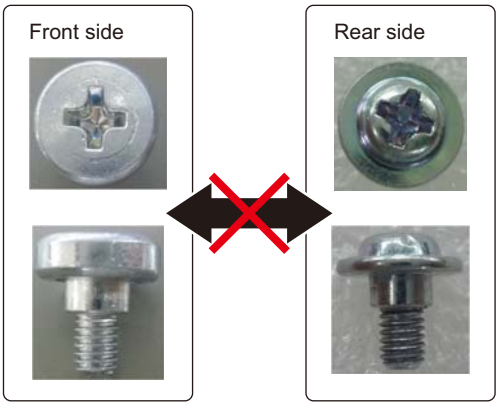


10) Remove the screw and the pressure roller unit

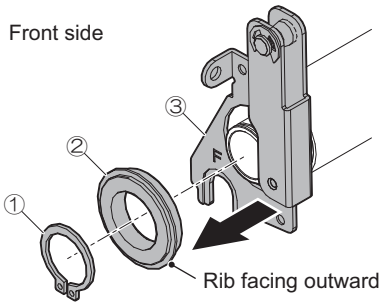
NOTE: Do not touch the thermostat and thermistor shown in the red circle in the illustration below.



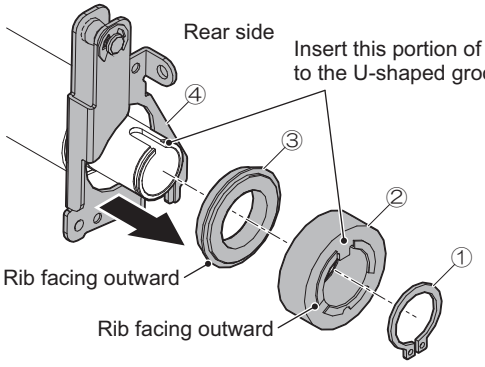
NOTE: Different screw is used for front and rear side. Make sure to fasten proper screw on each side.



11) Remove the ring, the bearing and the lever



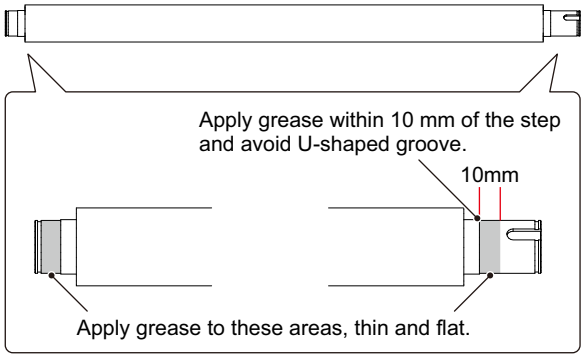
12) Remove the ring, gear, bearing and the lever



Important

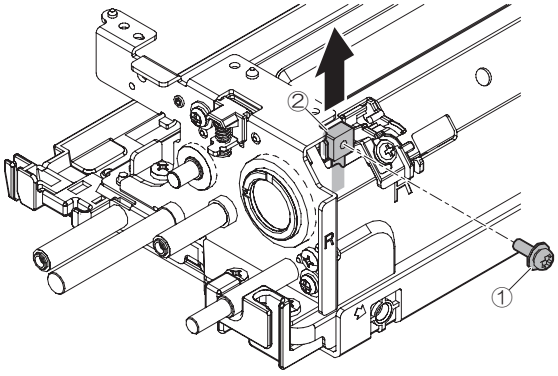
Attach the pressure roller without removing the protector sheet. Remove the sheet after completing the assembly.

Apply grease (UKOG-0235FCZZ) when replacing the pressure roller.



i. Upper thermistor

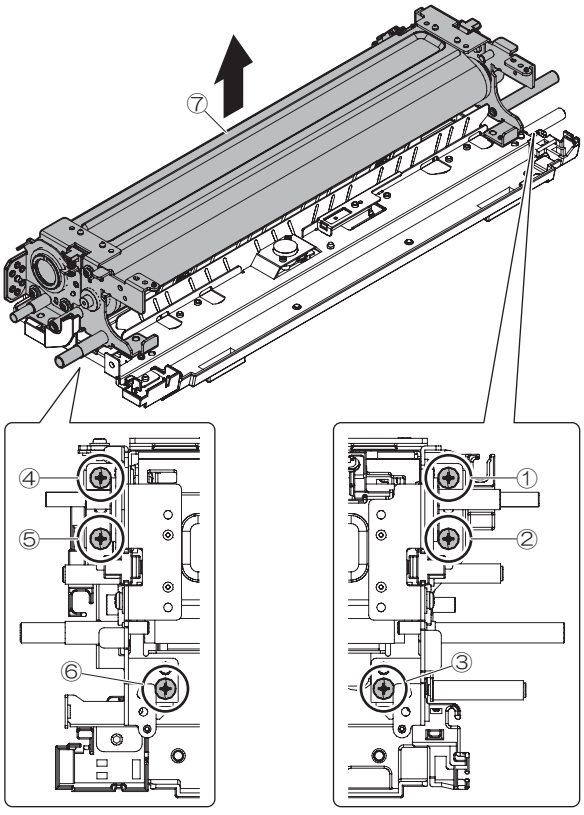
1) Remove the screw and the thermistor



j. Fusing belt unit

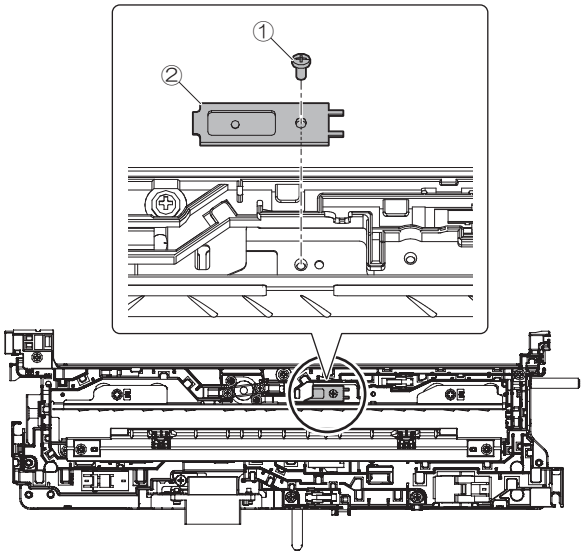
1) Remove the screw and the fusing belt unit

When attaching fusing belt unit, fasten screws in the order of (1)-(6) shown in the illustration below.



k. Lower thermistor

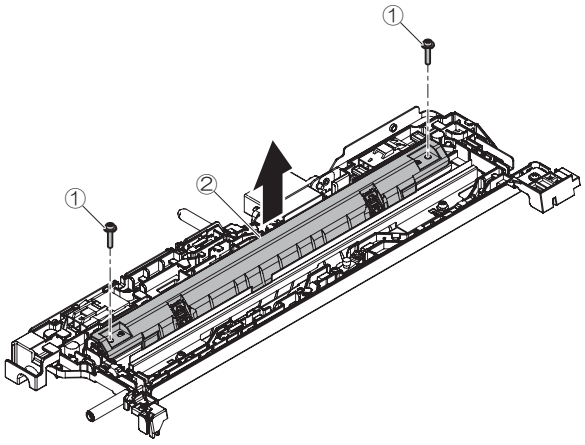
1) Remove the screw and the lower thermistor



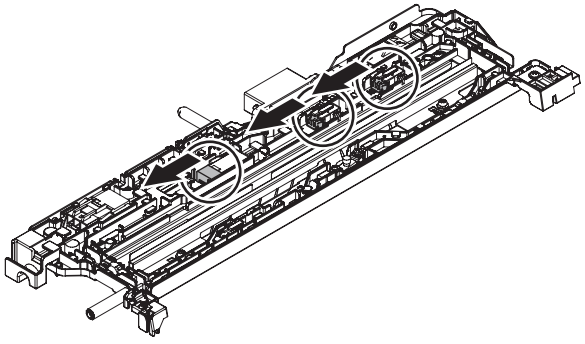
l. Main thermistor

m. Sub thermistor

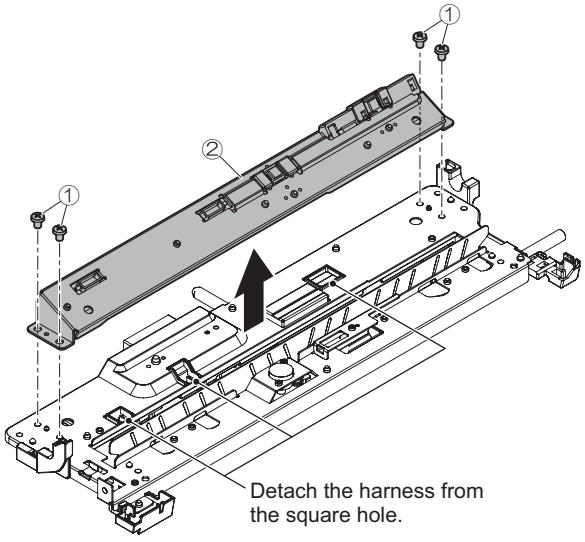
1) Remove the screws. Then remove the paper guide and clean it.



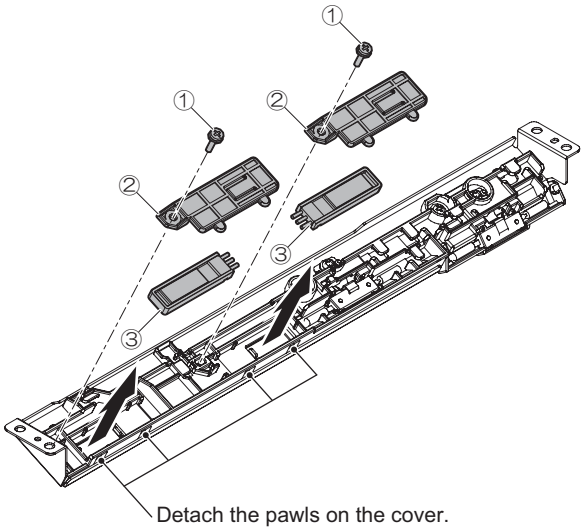
2) Disconnect the connectors and detach the harness from the rib.



3) Remove the screw and the plate

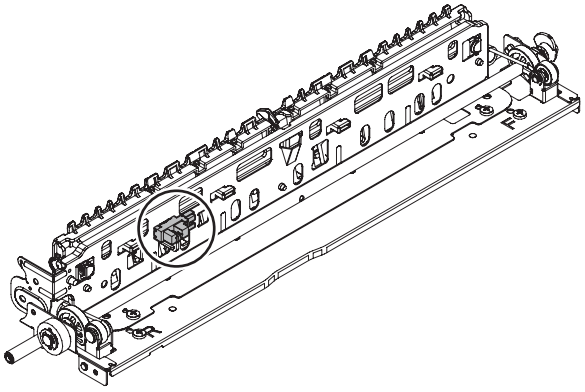


4) Remove the screw, the cover, the main thermistor and the sub thermistor



n. Sensors

1) Remove the sensor

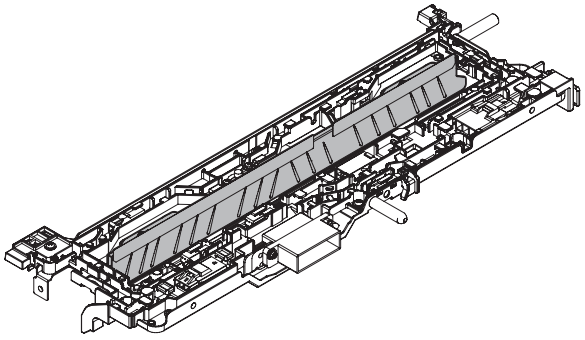


o. Paper guides

1) Clean the paper guide

Important

Do not deform the paper guide.



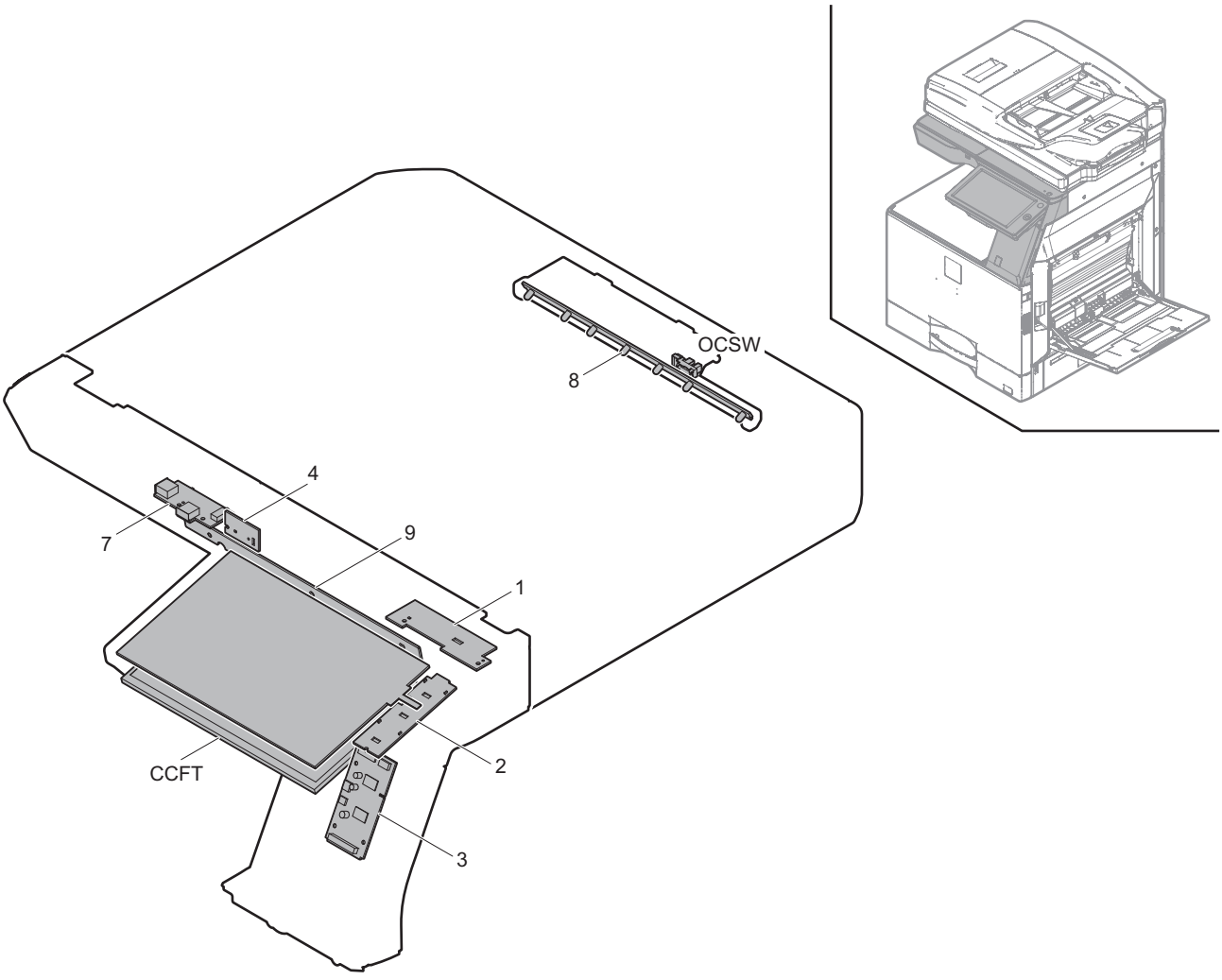
1 : '18/Mar.

[11] OPERATIONAL DESCRIPTIONS

1. Operation panel section

A. Electrical and mechanical parts location

1



Signal name	Name	Function/Operation
CCFT	LCD backlight	LCD backlight
OCSW	Paper size detection trigger sensor	Detects generation of the paper size detection trigger signal

No.	Name	Function/Operation
1	KEY PWB	Outputs the key operation signal
2	HOME PWB	Power switch, Buzzer, sound, power ON/OFF condition display LED, error display LED (red)
3	LVDS PWB	Converts the display data signal to the LCD display signal from SCN-MFP control PWB and controls the touch panel
4	LED PWB	Display indication state of MFP
1 5		
6		
7	USB I/F PWB	USB interface
8	Document size detection PWB (Light emitting)	Drives the LED for the document size detection
9	Document size detection PWB (Light receiving)	Outputs the document size detection signal

B. Operational descriptions

The operation panel unit is composed of the LCD unit, the LVDS PWB, the USB I/F PWB, and the KEY PWB. It displays the machine operation. It is provided with the USB I/F which is used for the firmware update, USB print, and Scan to USB.

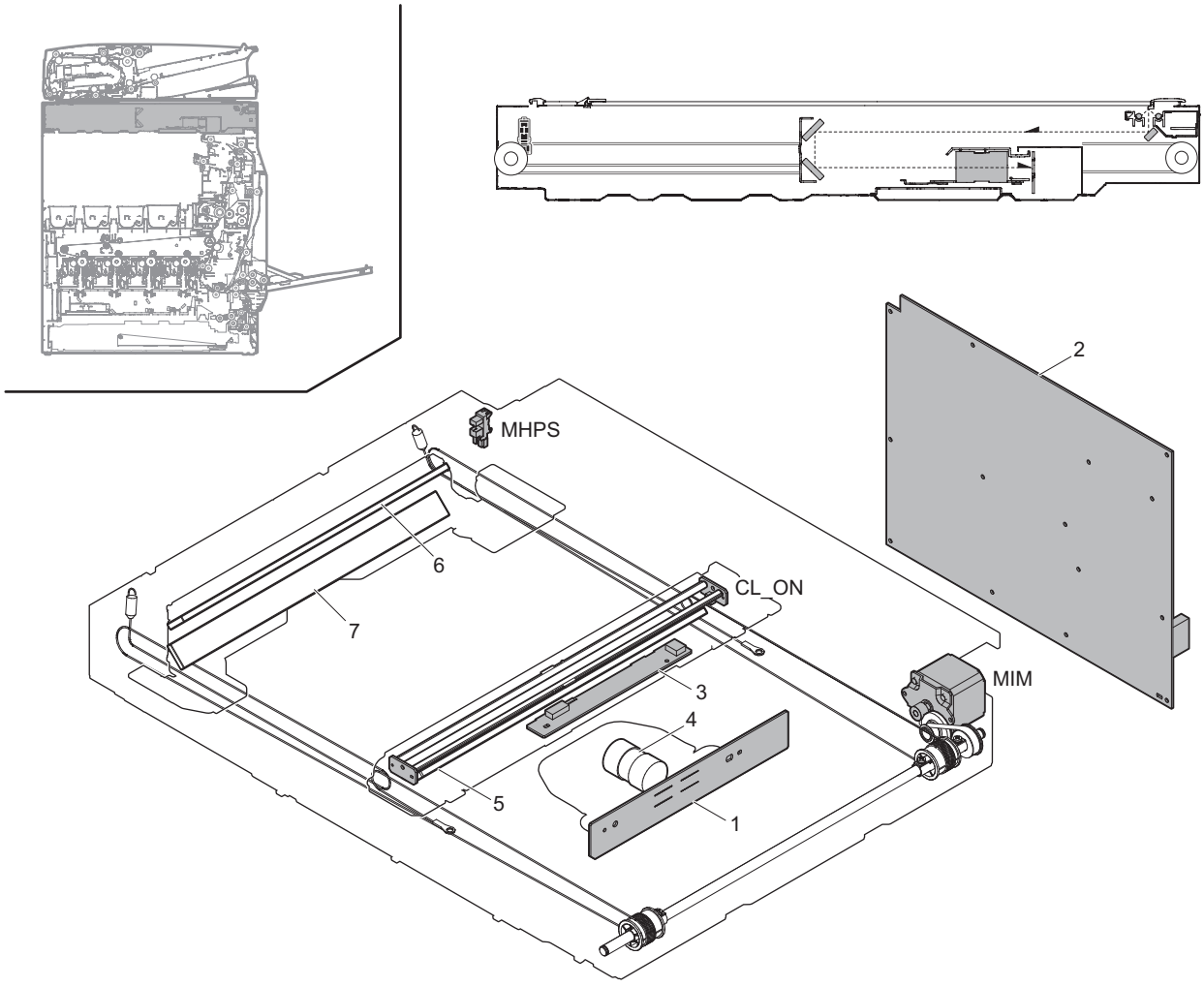
In addition, the USB I/F line is provided inside the operation panel to connect with the keyboard and the IC card reader.

A document size is detected by the document size detection PWB (light emitting) and the document size detection PWB (light receiving).

The detection timing of document size is determined according to the document size detection trigger sensor signal.

2. Scanner section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
CL_ON	Scanner lamp	Radiates light onto a document for the CCD to scan the document image
MHPS	Scanner home position sensor	Detects the scanner home position
MIM	Scan motor	Drives the scanner unit (scan, return operations)

No.	Name	Function/Operation
1	CCD PWB	Scan document images and performs A/D conversion of the scanning signal
2	SCN-MFP control PWB	Controls image data (compression, decompression and filing) and controls the whole machine. Converts print data into image data.
3	LED DRIVER PWB	Drives the scanner lamp
4	Lens	Reduces a document image (light) and project it to the CCD.
5	1st mirror	Leads a document image to the lens.
6	2nd mirror	
7	3rd mirror	

B. Operational descriptions

(1) General

This section performs the following operations.

1) Light is radiated onto the document by the scanner lamp and the reflected image is scanned by the 3-line (RGB) CCD elements to be converted into analog image signals.
2) The analog image signals are converted into 10-bit digital signals by the A/D converter.
3) The digital image signals are sent to the SCN MFP PWB for image processing.

(2) Detailed descriptions

a. Optical section drive

The optical section is driven as follows: The drive power is transmitted from the scanner motor (MIM) through the belt to the drive pulley/wire, and the copy lamp unit and the mirror base which are attached to the wire are driven.

The scanner motor (MIM) is controlled with the signals sent from the SCN MFP PWB.

b. Scanner lamp drive

The scanner lamp is driven by the scanner lamp drive voltage which is generated by the scanner lamp drive PWB with the control signals sent from the SCN MFP PWB.

c. Image scan and color separation

Light is radiated onto the document by the scanner lamp and the reflected image is scanned by the 3-line (RGB) CCD elements to be converted into analog image signals.

The color components are extracted into R, G, and B by the three kinds of CCD elements (R, G, and B).

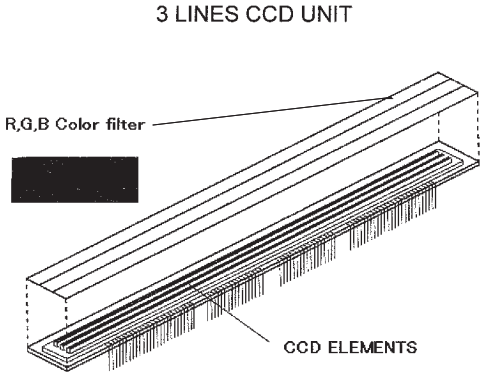
The red CCD extracts the red component of an image, the green CCD extracts the green component, and the blue CCD extracts the blue component. This operation is called color separation.

The CCD element is apparently seen as one unit, but it includes the three kinds of elements (R, G, and B).

The CCD element scans the document in the main scanning direction. Scanning in the sub scanning direction is made by shifting the scanner unit with the scanner motor.

The document images are optically reduced by the lens and reflected to the CCD.

The scanning direction is 600dpi.



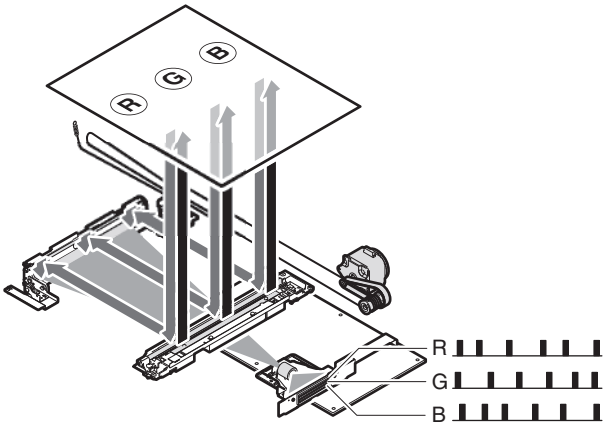
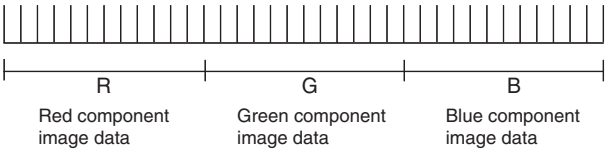


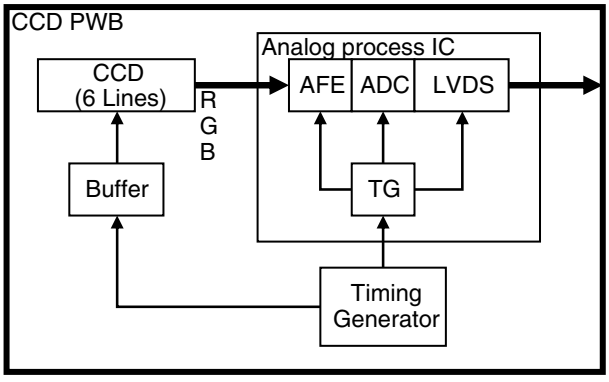
Image data of one line



d. Image signal A/D conversion

1) Each image signal (analog) of R, G, and B is converted into a 10bit digital signal by the A/D converter in the CCD PWB.

   Each color pixel has 10bit information.
2) Each 10bit digital image signal of R, G, and B is outputted from the CCD PWB and sent to the SCN MFP PWB, where it is converted into an 8bit signal and sent to the MFP PWB.



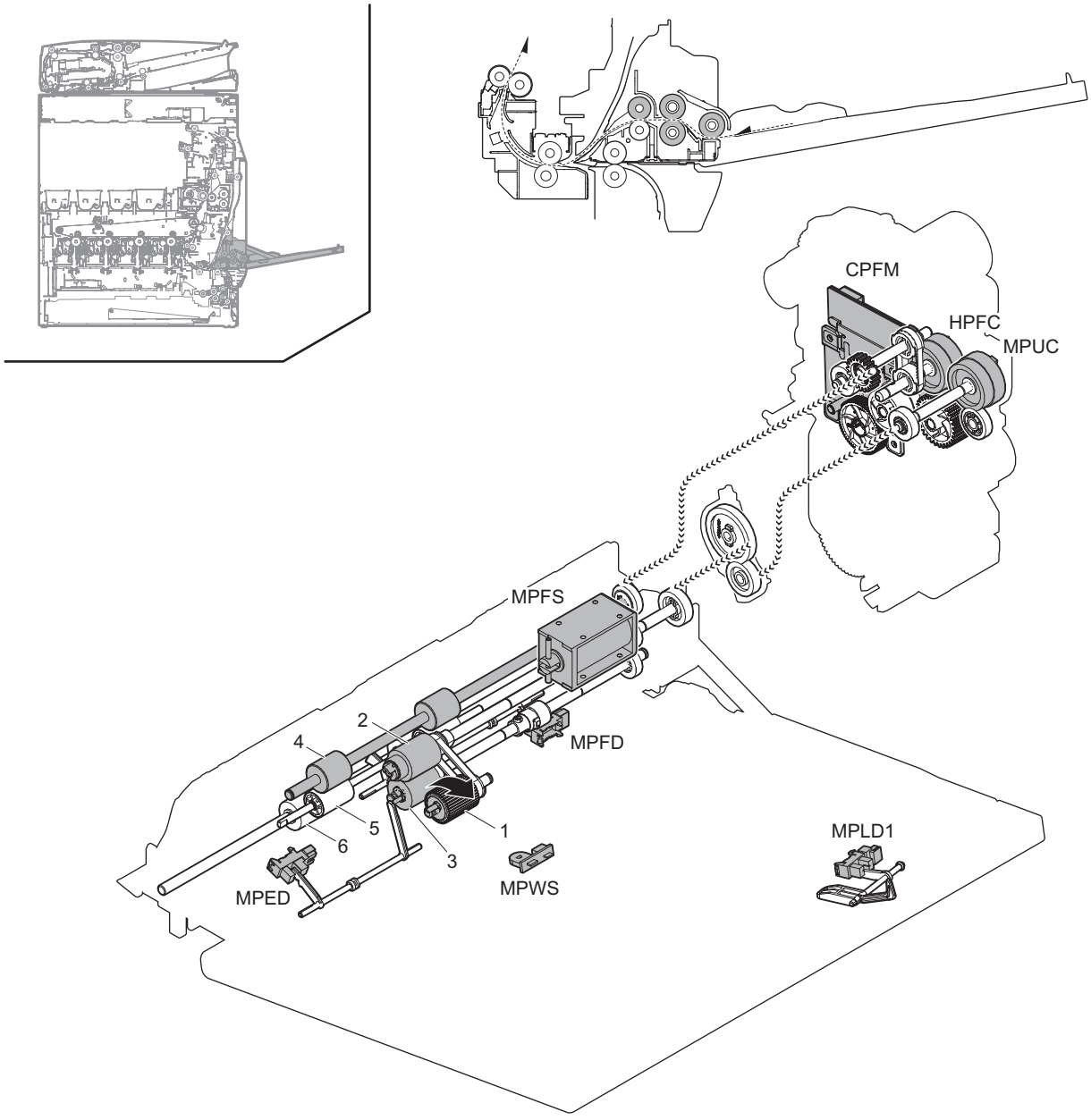
e. Zooming operation

Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction.

Zooming in the main scanning direction is not made optically, but performed by the image process technology (software).

3. Manual paper feed section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
CPFM	Paper feed motor	Drives the paper feed section
HPFC	Horizontal transport clutch (Paper feed tray 1, Manual paper feed tray)	Controls ON/OFF of the transport roller (Paper feed tray 1, Manual paper feed tray)
MPED	Paper empty sensor (Manual paper feed tray)	Detects presence of paper (Manual paper feed tray)
MPFD	Paper feed sensor (Manual paper feed tray)	Detects paper pass (Manual paper feed tray)
MPFS	Paper feed solenoid (Manual paper feed tray)	Controls the paper feed roller (Manual paper feed tray)
MPLD1	Paper length sensor (Manual paper feed tray)	Detects the paper length (Manual paper feed tray)
MPUC	Manual paper feed clutch (Manual paper feed tray)	Controls ON/OFF of the paper feed roller in the manual paper feed section (Manual paper feed tray)
MPWS	Paper width sensor (Manual paper feed tray)	Detects the paper width (Manual paper feed tray)

No.	Name	Function/Operation
1	Paper pickup roller (Manual paper feed tray)	Feeds paper to the paper feed roller
2	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section
3	Separation roller (Manual paper feed tray)	Separate paper to prevent double feeding
4	Transport roller 10 (Drive)	Transports paper transported from manual paper tray to the transport roller 5
5	Transport roller 10 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
6	Transport roller 4 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper

B. Operational descriptions

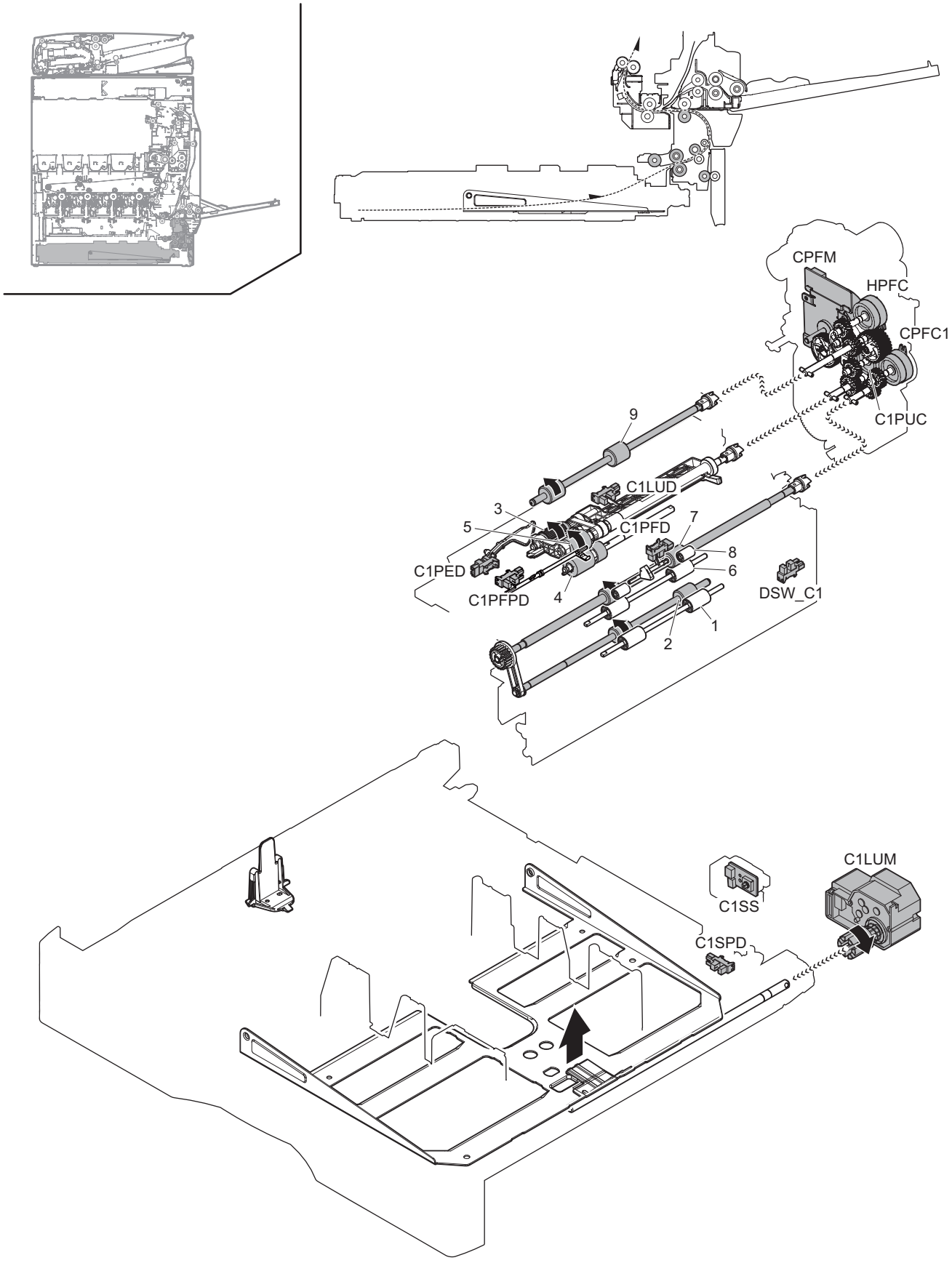
(1) Paper feed operation

The pickup roller moves up and down to press the paper surface, separating the paper on the top of the paper bundle and sending it to the paper feed roller section.

The paper feed roller feeds paper to the transport section to prevent against double feed with the separation roller. The manual paper feed clutch controls ON/OFF of the pickup roller and the paper feed roller. Paper is sent to the registration roller by the manual transport roller.

4. Tray paper feed section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
C1LUD	Paper feed tray upper limit sensor (Paper feed tray 1)	Detects the upper limit of the paper lift up (Paper feed tray 1)
C1LUM	Paper tray lift motor (Paper feed tray 1)	Lifts the lift plate of the paper feed tray (Paper feed tray 1)
C1PED	Paper empty sensor (Paper feed tray 1)	Detects paper empty (Paper feed tray 1)
C1PFD	Paper transport sensor (Paper feed tray 1)	Detects paper pass in the paper transport section (Paper feed tray 1)
C1PFPD	Paper pass sensor (Paper feed tray 1)	Detects paper pass in the paper transport section (Paper feed tray 1)
C1PUC	Paper feed clutch (Paper feed tray 1)	Controls ON/OFF of the paper feed roller in the paper feed tray 1 section (Paper feed tray 1)
C1SPD	Paper remaining quantity sensor (Paper feed tray 1)	Detects the paper remaining quantity (Paper feed tray 1)
C1SS	Tray installation sensor	Detects open/close of the paper feed tray (Paper feed tray 1)
CPFC1	Tray vertical transport clutch	Controls the transport roller of the paper feed tray 1 section
CPFM	Paper feed motor	Drives the paper feed section
DSW_C1	Transport cover open/close sensor (Paper feed tray 1)	Detects open/close of the transport section cover (Paper feed tray 1)
HPFC	Horizontal transport clutch (Paper feed tray 1, Manual paper feed tray)	Controls ON/OFF of the transport roller (Paper feed tray 1, Manual paper feed tray)

No.	Name	Function/Operation
1	Transport roller 1 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
2	Transport roller 1 (Drive)	Transports paper fed from the paper feed tray to the transport roller 4
3	Paper pickup roller (Paper feed tray 1)	Feeds paper to the paper feed roller
4	Separation roller (Paper feed tray 1)	Separates paper to prevent double feeding
5	Paper feed roller (Paper feed tray 1)	Feeds paper to the paper transport section
6	Transport roller 2 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
7	Transport roller 2 (Drive)	Transports paper fed from the paper feed tray 1 to the transport roller 3
8	Transport roller 3	Transports paper from the transport roller 2 to the transport roller 4
9	Transport roller 4 (Drive)	Transports paper from the transport roller 1 and 3 to the transport roller 5

B. Operational descriptions

(1) Paper feed front operation

- Set paper and insert the paper feed tray, and the pickup roller falls to turn ON the paper feed tray sensor.
- The lift-up motor drives the rotating plate to move it up.
- The paper upper limit sensor turns ON, and the rotation plate stops at the specified position.

(2) Paper feed operation

- When copy/print operation is started, the motor and the clutch are turned ON to rotate the pickup roller in the paper pickup timing, feeding paper.
- At the same time, the paper feed roller rotates to transport paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.

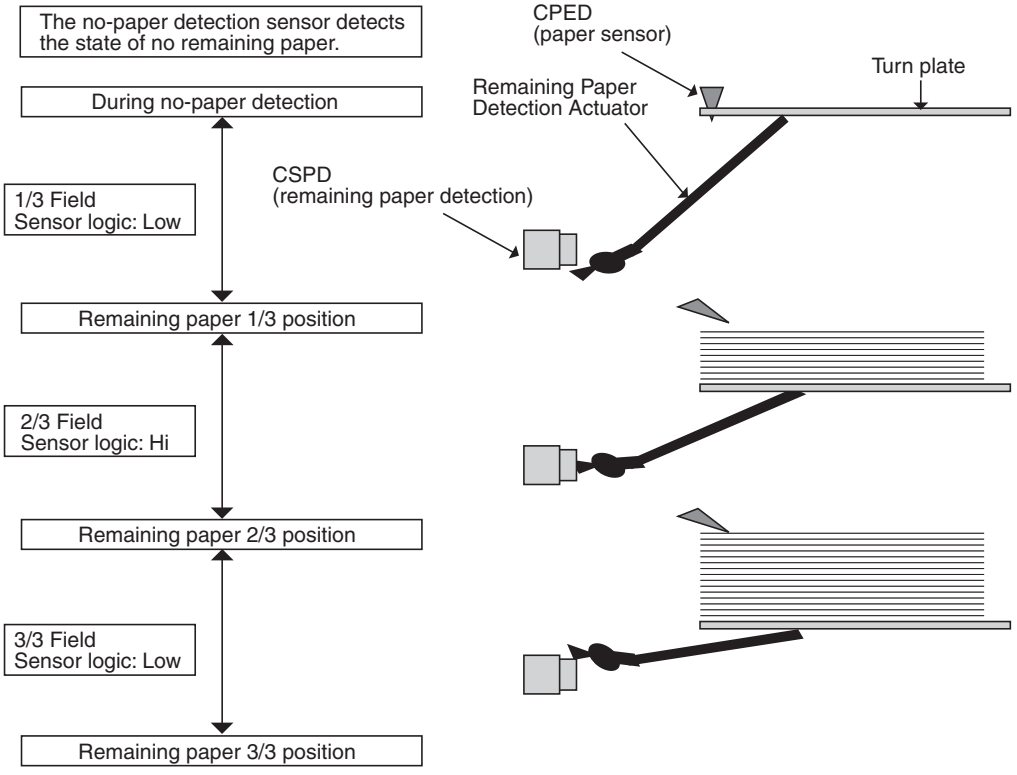
(3) Paper remaining detection

The notifying levels of paper remaining quantity are 4 steps in total; 3 steps of paper remaining quantity and 1 step of paper empty. The result is displayed.

(4) Paper remaining quantity detection method

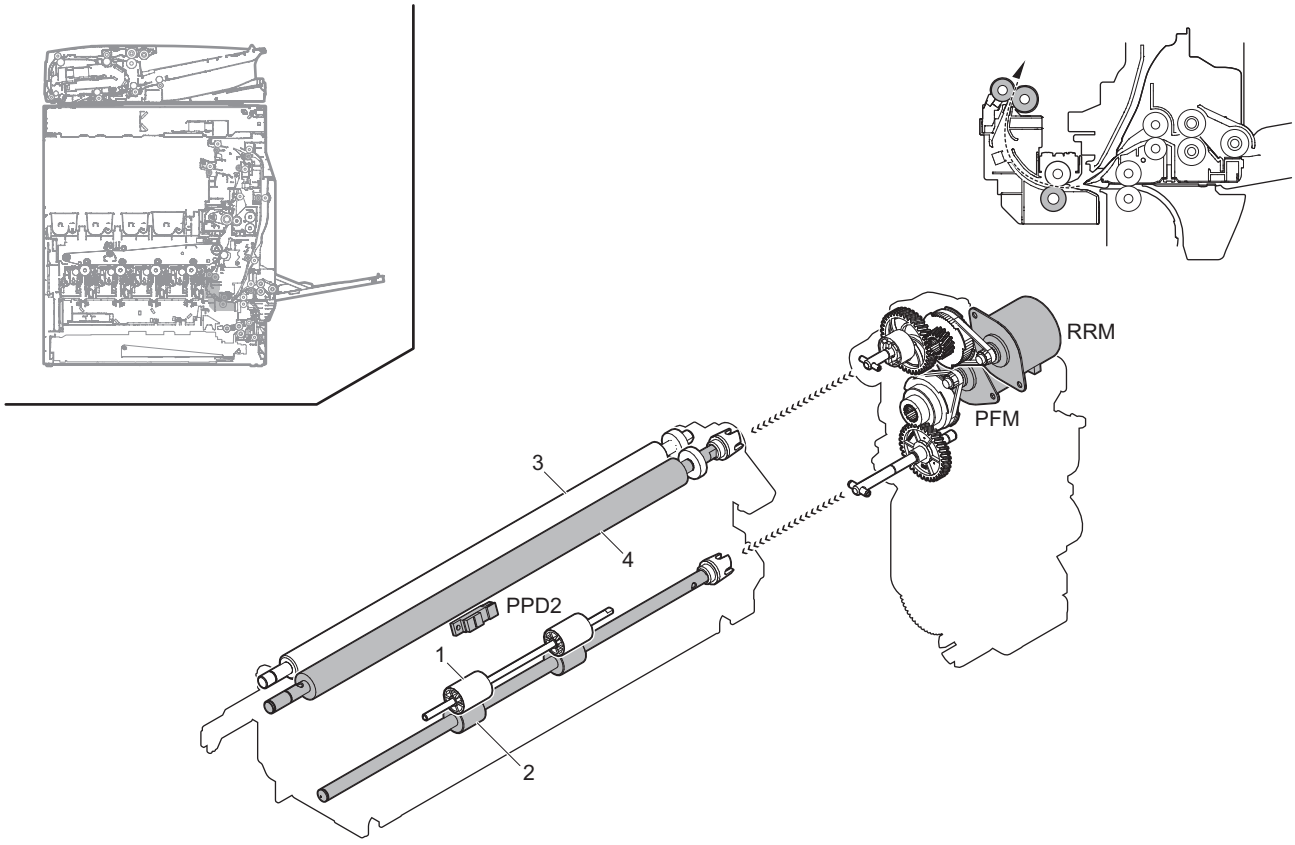
- The paper remaining quantity is judged from the number of rotations of the remaining quantity sensor from starting the lift-up operation of the paper feed tray to turning ON the upper limit sensor.

(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



5. Paper registration section (Paper transport section)

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
PFM	Transport motor	Drives the transfer roller 5
PPD2	Paper transport sensor 2	Detects paper pass in the transport roller 5 and registration roller
RRM	Registration motor	Drives the registration roller (Controls the timing of the transfer image for the paper)

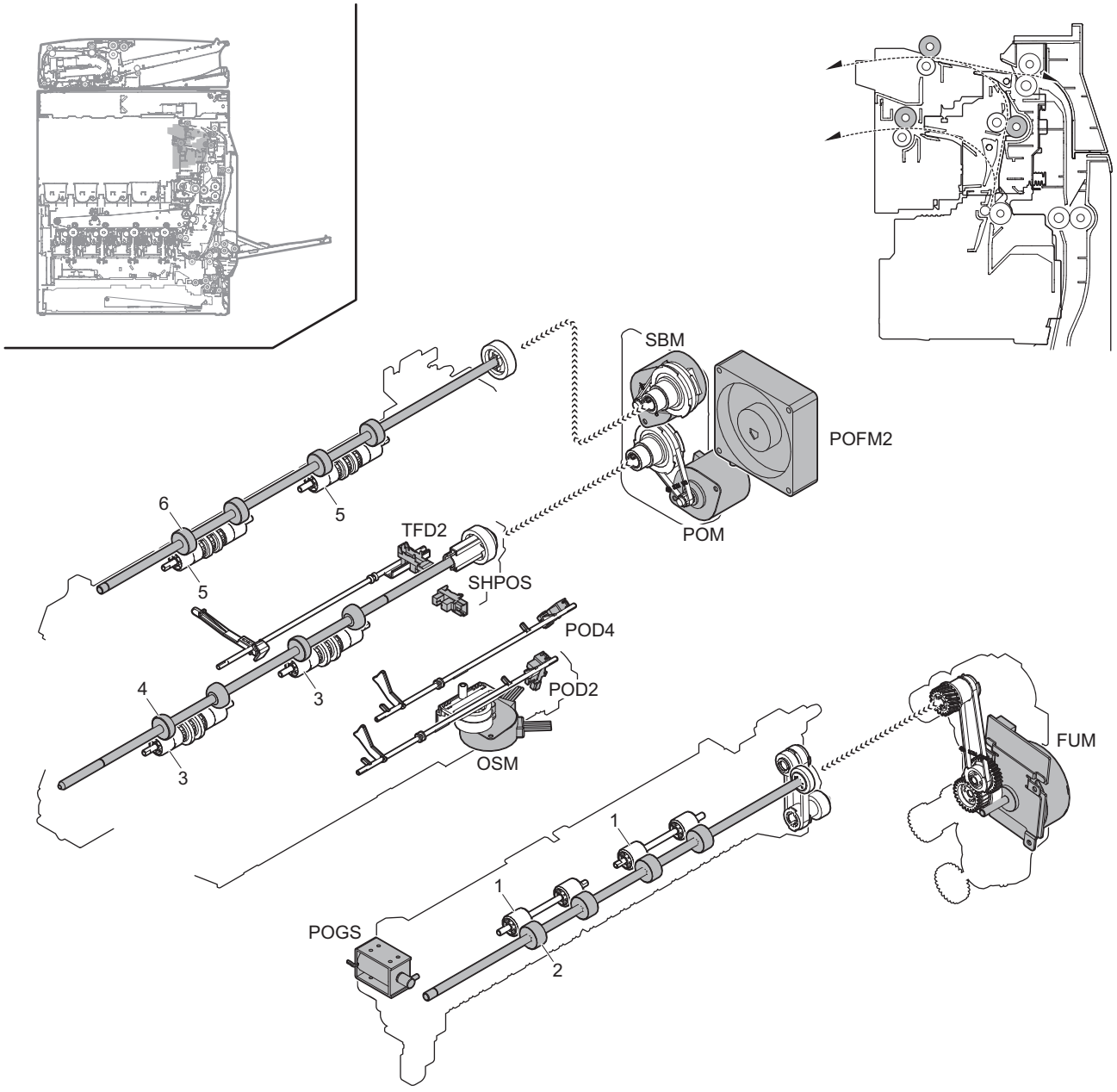
No.	Name	Function/Operation
1	Transport roller 5 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
2	Transport roller 5 (Drive)	Transports paper to the registration roller. Paper is buckled between the registration roller and this roller to correct the paper skew and the relation between images and paper
3	Registration roller (Idle)	Apply a pressure to paper and the registration roller to provide the transport power of the transport roller to paper
4	Registration roller (Drive)	Transports paper to the transfer section. Controls the transport timing of paper and adjusts relative position between the images and paper

B. Operational descriptions

Paper is fed from each paper feed section and transported to the registration roller by the transport rollers. ON/OFF control of each transport roller is made by the paper transport clutch. The registration roller controls the relative positions of transported paper and the transfer image. The registration roller is driven by the transport motor. The relative positions of paper and the transfer image are determined by the ON timing of the transport motor.

6. Paper exit section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
FUM	Fusing motor	Drives the fusing section
OSM	Offset motor	Offsets (shifts) paper
POD2	Paper exit sensor 2	Detects paper transport to the lower paper exit tray
POD4	Paper exit sensor 4	Detects paper transport to the upper paper exit tray
POFM2	Paper exit cooling fan	Cools the fusing section and the paper exit section
POGS	ADU gate solenoid	Controls the paper exit gate
POM	Paper exit motor	Drives the roller in the paper exit section
SBM	Reverse motor	Drives the transport roller in duplex mode
SHPOS	Shifter home position sensor	Detects the shifter home position
TFD2	Paper exit tray full sensor (Lower paper exit tray)	Detects paper full in the lower paper exit tray

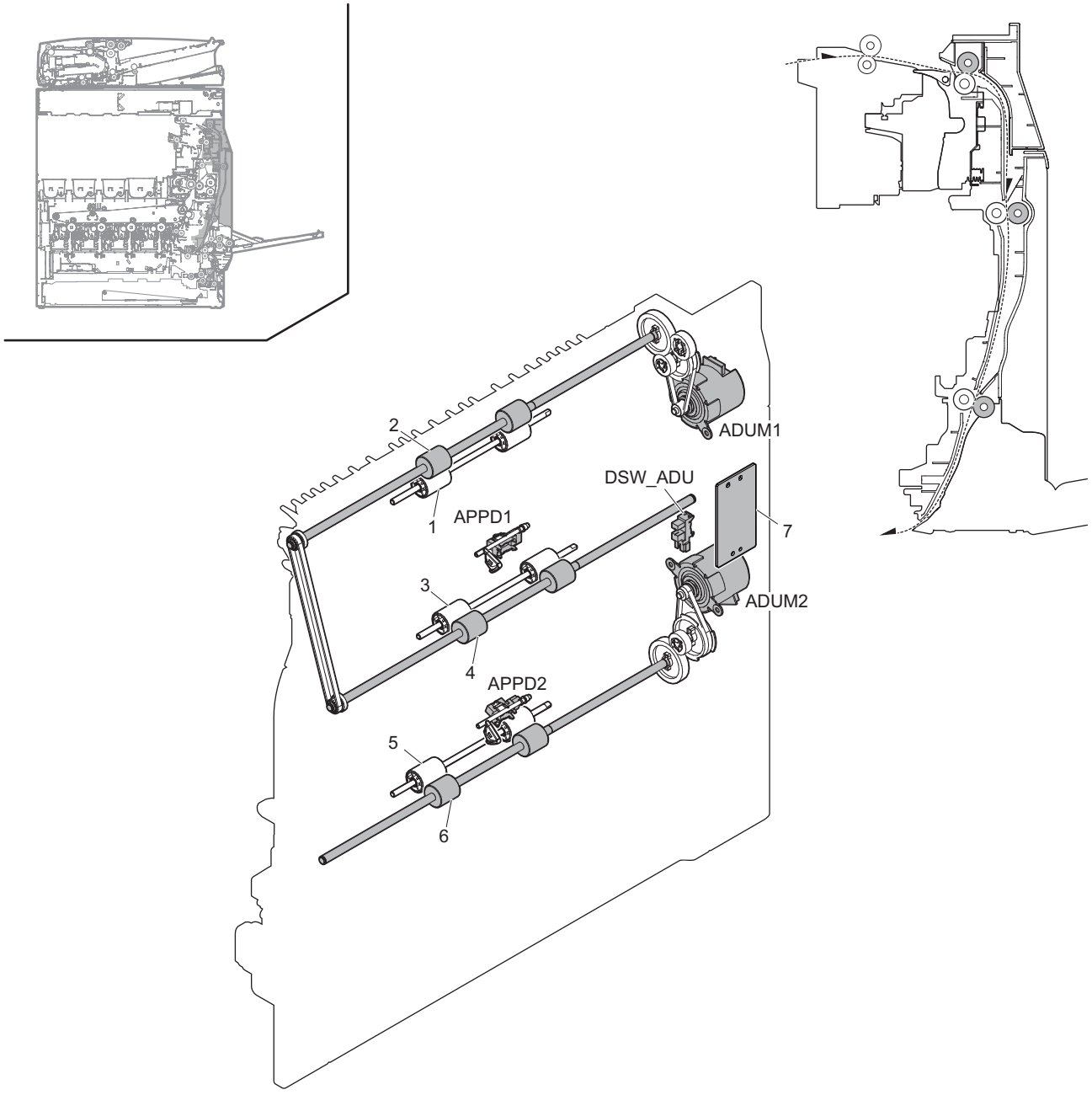
No.	Name	Function/Operation
1	Transport roller 7 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
2	Transport roller 7 (Drive)	Transports paper to the paper exit section
3	Paper exit roller 2 (Idle)	Apply a pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper
4	Paper exit roller 2 (Drive)	Transports paper to the lower paper exit tray
5	Paper exit roller 1 (Idle)	Apply a pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper
6	Paper exit roller 1 (Drive)	Transports paper to the upper paper exit tray or switchback to the ADU section

B. Operational descriptions

- The paper transported from the fusing section is sent from transport roller 6 (which is driven by the FUM motor) to paper exit roller 1, and then discharged to the inner tray.
- When the paper is discharged to the right tray: The paper is transported to paper exit roller 1, and the paper exit motor is reversed. Then the paper is passed over the right paper exit gate through paper exit roller 2 to the right tray.

7. ADU section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
ADUM1	ADU motor 1	Drives the transport roller in the right door and right paper exit section
ADUM2	ADU motor 2	Drives the transport roller in the right door section
APPD1	ADU paper transport sensor 1	Detects paper entry and paper pass in the ADU section
APPD2	ADU paper transport sensor 2	Detects paper pass of the transport roller 8 in the ADU section
DSW_ADU	ADU paper guide open/close sensor	Detects open/close of the ADU paper guide

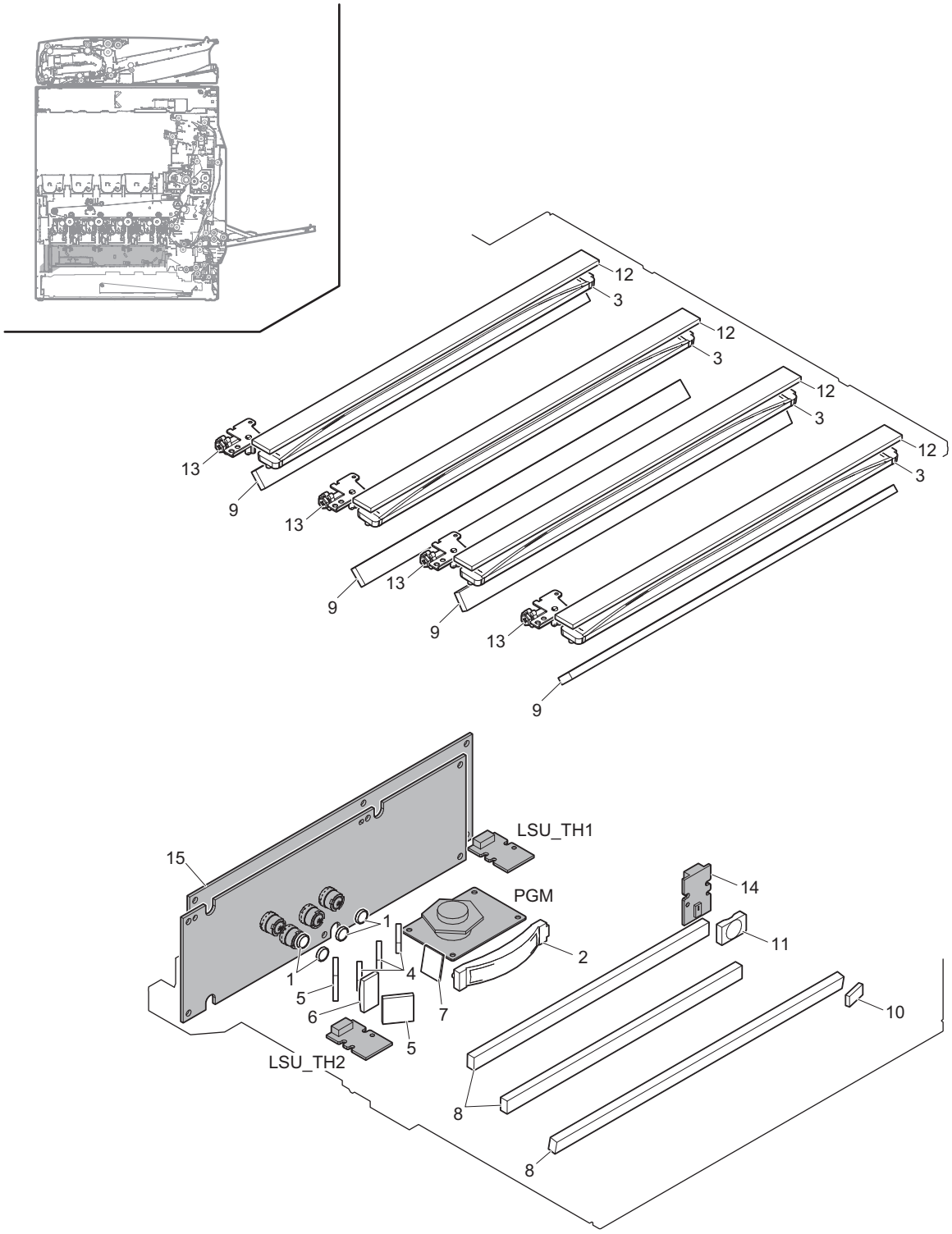
No.	Name	Function/Operation
1	Transport roller 8 (Idle)	Apply a pressure to paper and the paper exit roller to provide the transport power of the transport roller to paper
2	Transport roller 8 (Drive)	Transports paper to paper exit roller 1 or paper exit roller 2 or Transport roller 9
3	Transport roller 9 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
4	Transport roller 9 (Drive)	Transports paper transported from the switchback section to the transport roller 10
5	Transport roller 10 (Idle)	Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper
6	Transport roller 10 (Drive)	Transports paper transported from transport roller 9 to the transport roller 5
7	RD I/F PWB	Detects each sensor in the right door unit

B. Operational descriptions

- The paper transported from the fusing section is sent from transport roller 6 (which is driven by the ADU motor) to paper exit roller 1. At that time, the paper passed under the gate.
- When POD1 detects the paper lead edge, the paper exit drive motor reverses.
- By reversion of the paper exit motor, the paper is sent to the ADU section. At that time, the paper passes over the ADU guide which fell by its own weight.
- Transport rollers 7 and 8 are driven the ADU motor, and transport roller 9 by the transport motor. The paper is transported to the duplex paper feed position.
- The paper is once stopped at the duplex paper feed position, and transported again to the inside of the machine.

8. LSU section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
LSU_TH1	LSU temperature sensor 1	Detects the LSU temperature
LSU_TH2	LSU temperature sensor 2	Detects the LSU temperature
PGM	Polygon motor	Scans laser beams

No.	Name	Function/Operation
1	Colimeter lens	Forms laser beams.
2	f θ lens 1	Equalizes the laser beam dot intervals in the main scanning direction. (Corrects the laser dot intervals on the OPC drum.)
3	f θ lens 2	
4	1st Incident mirror	Reflects laser beams to the OPC drum.

No.	Name	Function/Operation
5	2nd,3rd Incident mirror	Reflects laser beams to the OPC drum.
6	Incident CYL	Leads laser beams to the Polygon motor.
7	Incident glass	Prevents dust, toner, and foreign materials to polygon motor.
8	1st Outgoing mirror	Reflects laser beams to the OPC drum.
9	last outgoing mirror	Reflects laser beams to the OPC drum.
10	BD mirror	Leads laser beams to the BD (Beam Detector).
11	Conversion lens for BD	Converges laser beams and leads to the BD (Bean Detector).
12	Filter glass	Prevents dust, toner, and foreign materials from entering the LSU.
13	Skew adjustment screw (C, M, Y, K)	Adjusts the radiating angle of laser beams for the OPC drum. By turning this adjustment screw, image skew can be adjusted.
14	BD PWB	Detects laser and outputs the synchronous signal
15	LSU PWB	Controls the LSU and generates the video data. Controls laser diode and power

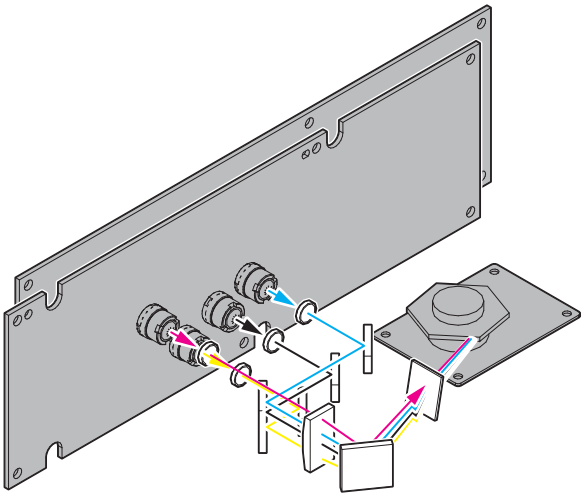
B. Operational descriptions

(1) General

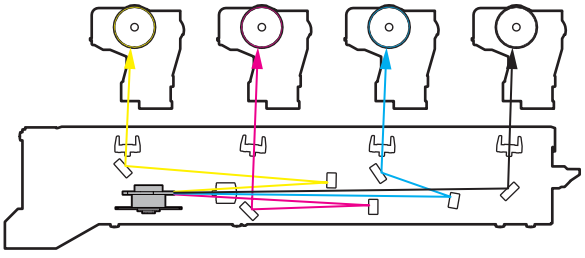
Image data sent from the LSU PWB are converted into laser beams and radiated onto the OPC drum surface. The LSU unit is composed of : (1) the optical elements from the laser to the polygon mirror, (2) the primary system including the mirror which secures the optical path, (3) the optical elements including the polygon mirror, and (4) the scanning system including the mirror which secure the optical path.

(2) Composition

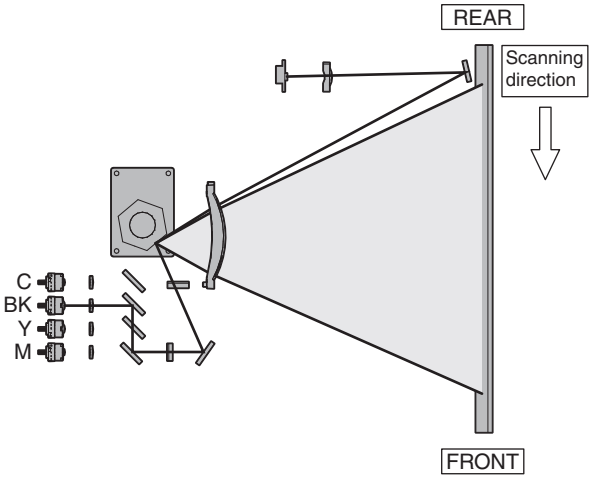
Primary system



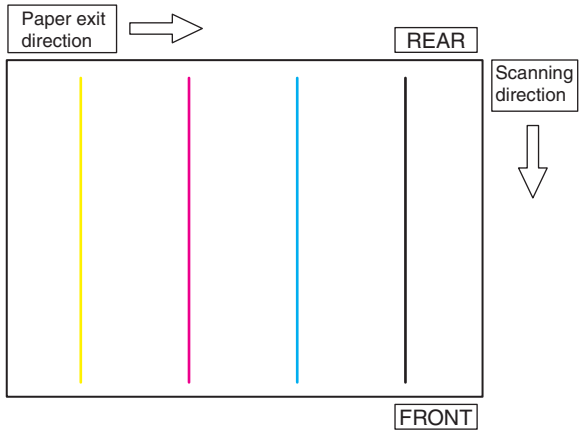
Scanning system



Main scanning direction



Writing position on paper

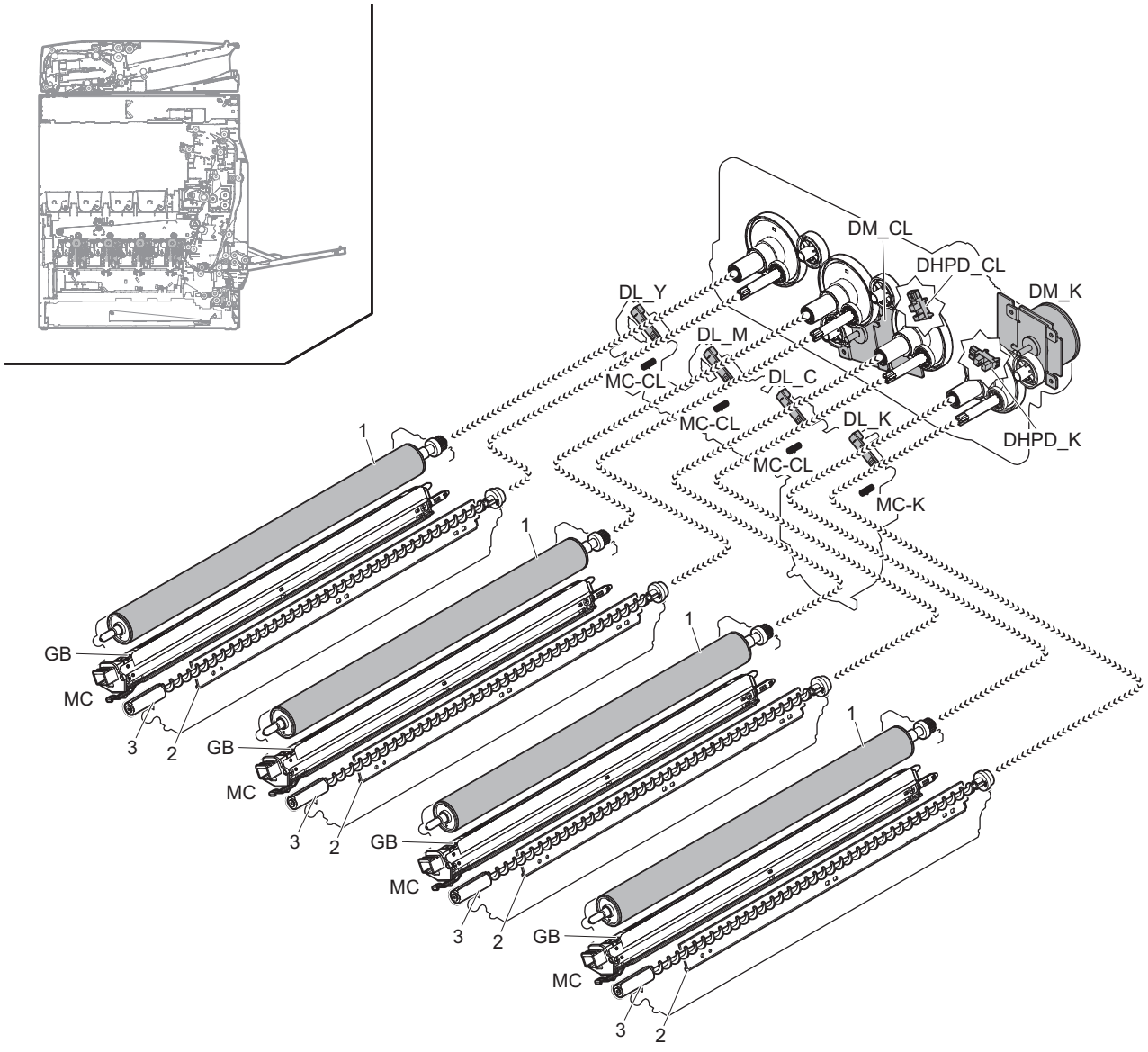


(3) Outline of LSU specifications

Process speed	180mm/sec
Resolution	600dpi
Laser beam	1 beam
Polygon motor rotation speed	42520cpm
Laser power	Max 1.1mW
Bearing type	Oil bearing
Number of mirrors	6
Laser beam diameter	50 - 85 x 50 - 80μm
Effective scan length	310mm
Laser wave length	775-800nm

9. OPC drum section

A. Electrical and mechanical parts location



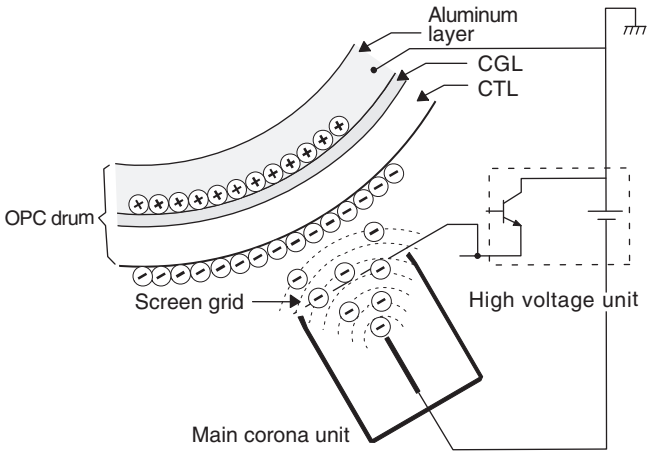
Signal name	Name	Function/Operation
DHPD_CL	Drum phase sensor (CL)	Detects rotation and the phase of the OPC drum (CL)
DHPD_K	Drum phase sensor (K)	Detects rotation and the phase of the OPC drum (K)
DL_C	Discharge lamp (C)	Discharges electric charges on the OPC drum (C)
DL_K	Discharge lamp (K)	Discharges electric charges on the OPC drum (K)
DL_M	Discharge lamp (M)	Discharges electric charges on the OPC drum (M)
DL_Y	Discharge lamp (Y)	Discharges electric charges on the OPC drum (Y)
DM_CL	Drum motor (CL)	Drives the OPC drum/developing section (CL)
DM_K	Drum motor (K)	Drives the OPC drum/developing section (K)/primary transfer unit
GB (Y, M, C, K)	Grid (Y, M, C, K)	The OPC drum surface potential is controlled.
GB (Y, M, C, K)	Main charger grid voltage (K, M, C, Y)	The OPC drum surface charging voltage is controlled.
MC (Y, M, C, K)	Main charger (Y, M, C, K)	The OPC drum surface is negatively charged.
MC-CL	Main charger applying voltage (CL)	The main charger is charged to generate negative electric charges.
MC-K	Main charger applying voltage (K)	

No.	Name	Function/Operation
1	OPC drum unit (Y, M, C, K)	Latent electrostatic images are formed.
2	Cleaning blade (Y, M, C, K)	Remaining toner on the OPC drum surface is cleaned.
3	Waste toner transport screw	Waste toner in the OPC drum unit is transported to the waste toner collection section.

B. Operational descriptions

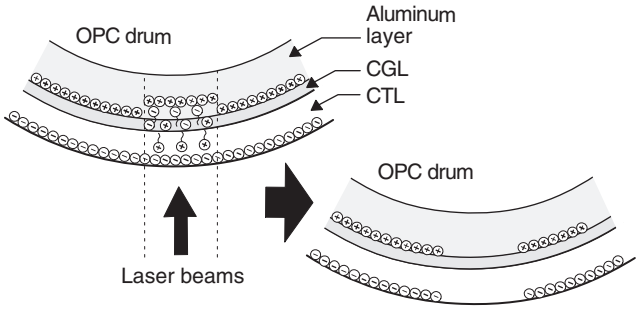
The OPC drum surface is negatively charged by the main charger, then laser image beams are radiated to the OPC drum surface by the laser (writing) unit to form electrostatic latent images.

1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

2) Laser beams are radiated to the OPC drum surface by the laser (writing) unit to form electrostatic latent images.



When laser beams are radiated onto the CGL of the OPC drum, positive and negative charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

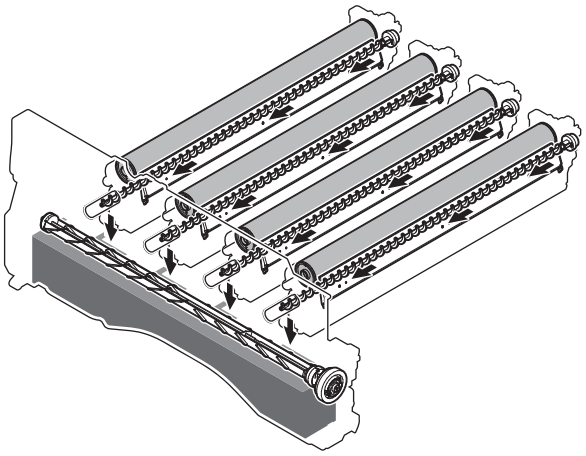
Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where laser beam are not radiated.

As a result, latent electrostatic images are formed on the OPC drum surface.

3) After transfer operation, remaining toner is removed by the cleaning blade.

Toner removed from the OPC drum surface is transported to the waste toner section by the waste toner transport screw.



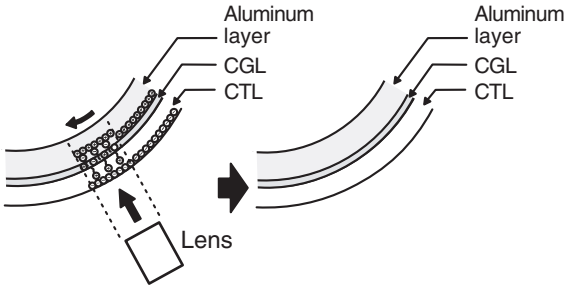
OPC drum rotation control

The OPC drum (K) is driven by the DM motor (DM_K), and the rotation speed is monitored by the OPC drum phase sensor (DHPD_K).

The color OPC drums (C, M, and Y) are driven by the DM motor (DM_CL), and the rotation speed is monitored by the OPC drum phase sensor (DHPD_CL).

Based on the signals monitored by the two sensors, the rotation speeds of K OPC drum and the color OPC drums and the rotation phase are controlled.

4) The whole surface of the OPC drum is discharged.

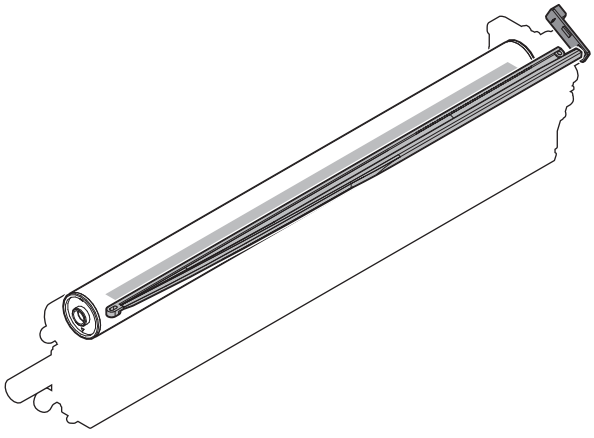


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

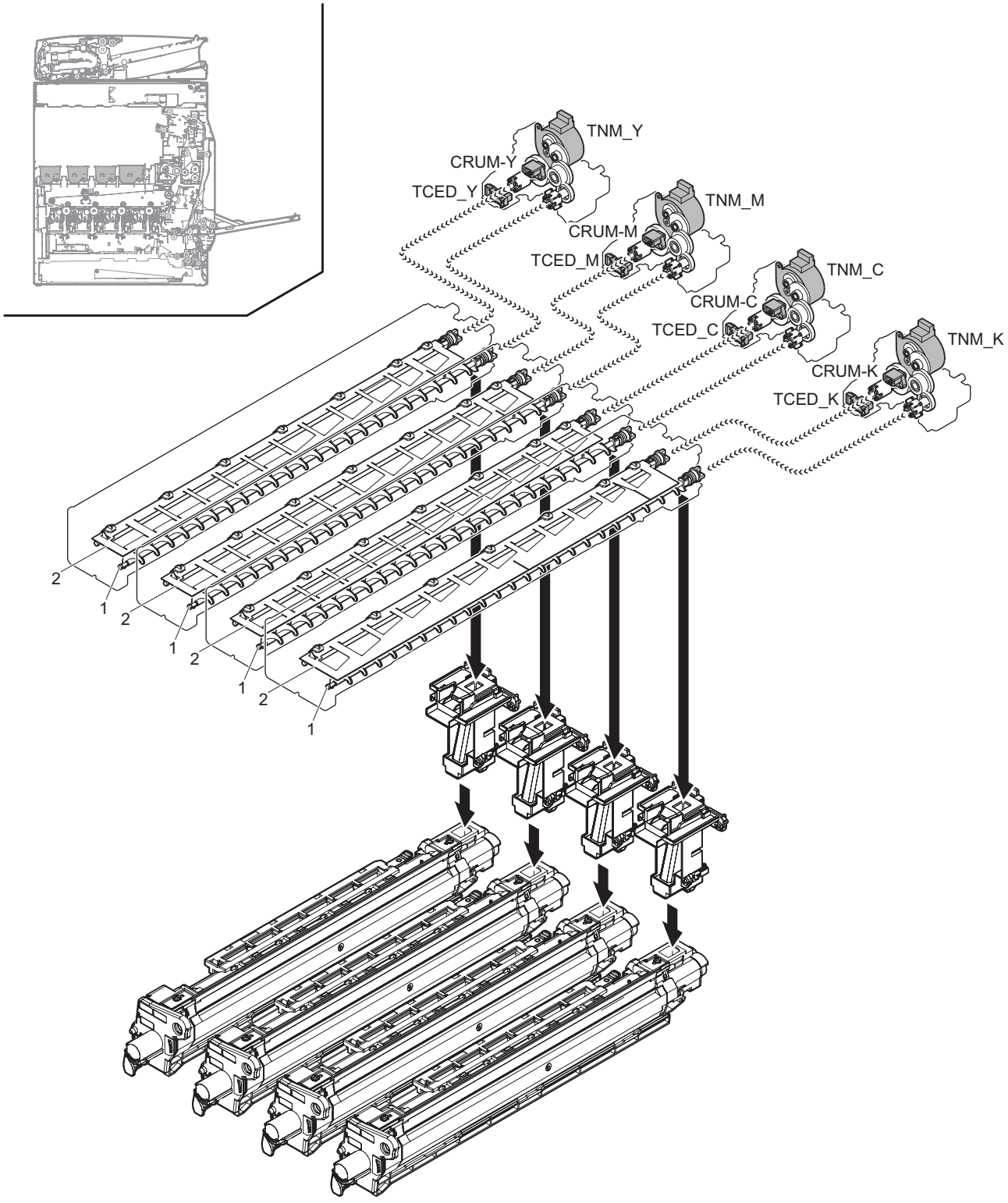
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



10. Toner supply section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
CRUM-C	CRUM-C	Saves various data of the toner cartridge.
CRUM-K	CRUM-K	Saves various data of the toner cartridge.
CRUM-M	CRUM-M	Saves various data of the toner cartridge.
CRUM-Y	CRUM-Y	Saves various data of the toner cartridge.
TCED_C	Toner cartridge ejector position sensor (C)	Detects ejecting position of toner cartridge (C)
TCED_K	Toner cartridge ejector position sensor (K)	Detects ejecting position of toner cartridge (K)
TCED_M	Toner cartridge ejector position sensor (M)	Detects ejecting position of toner cartridge (M)
TCED_Y	Toner cartridge ejector position sensor (Y)	Detects ejecting position of toner cartridge (Y)

Signal name	Name	Function/Operation
TNM_C	Toner motor (C)	Supplies toner from the toner cartridge (C) to the developing unit
TNM_K	Toner motor (K)	Supplies toner from the toner cartridge (K) to the developing unit
TNM_M	Toner motor (M)	Supplies toner from the toner cartridge (M) to the developing unit
TNM_Y	Toner motor (Y)	Supplies toner from the toner cartridge (Y) to the developing unit

No.	Name	Function/Operation
1	Toner transport screw	Transports toner from the toner cartridge to the developing unit.
2	Toner stirring plate	Moves toner to the toner transport screw to assist the toner transport operation.

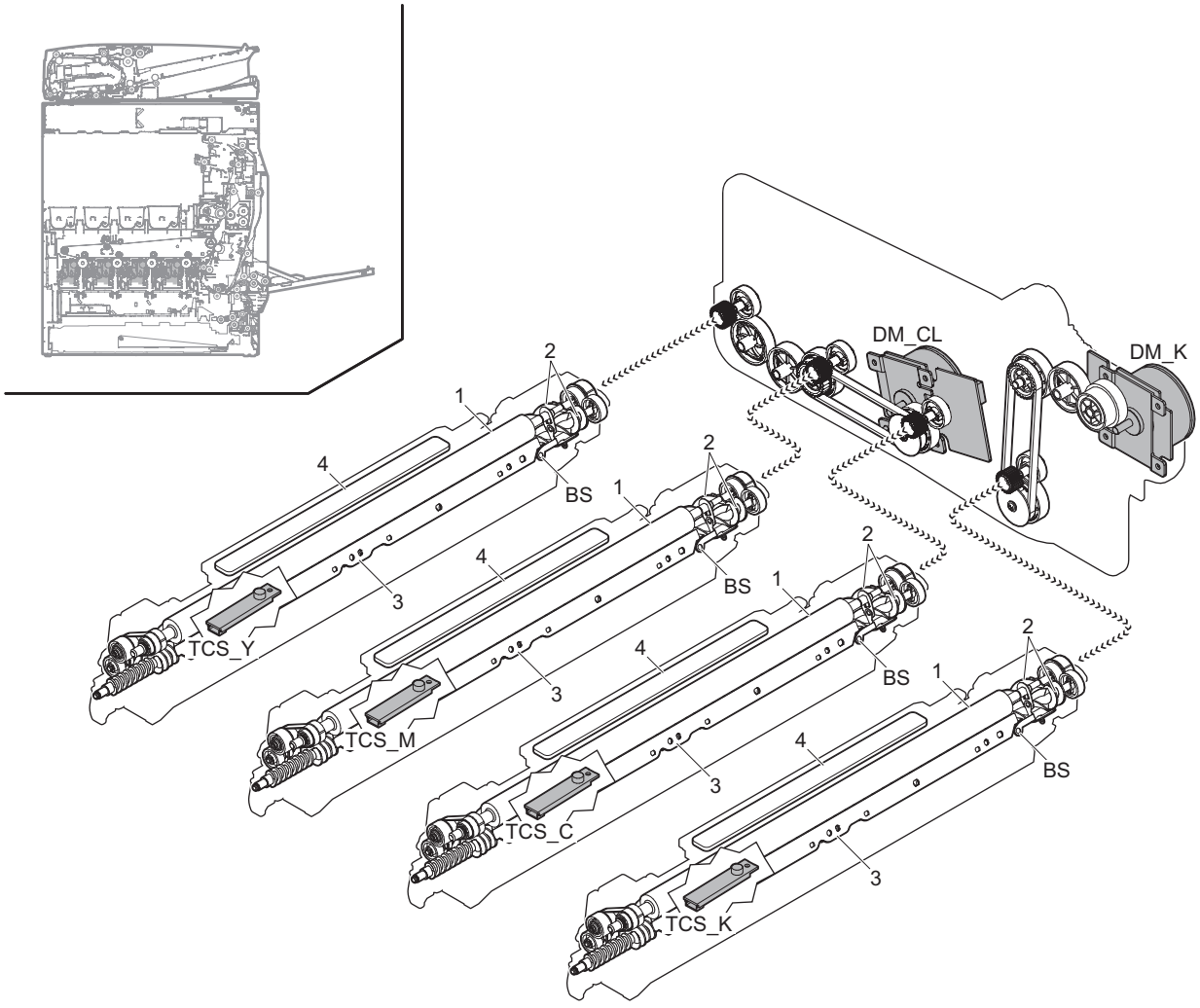
B. Operational descriptions

Based on the print pixel count and the process control information, Yes/No of toner supply is judged.

When it is judged that the toner density is decreasing, the toner motor is rotated to supply toner in the toner cartridge through the toner transport screw and the toner transfer pipe to the developing unit.

11. Developing section

A. Electrical and mechanical parts location

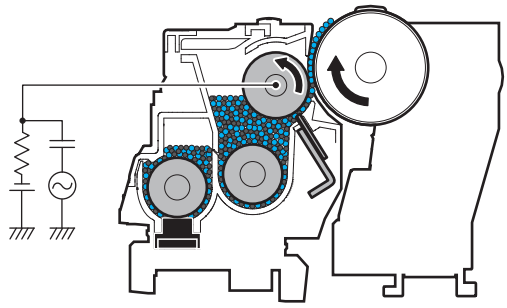


Signal name	Name	Function/Operation
BS (K, M, C, Y)	Developing bias voltage (K, M, C, Y)	Voltage to form toner images on the OPC drum. Controls the developing density.
DM_CL	Drum motor (CL)	Drives the OPC drum/developing section (CL)
DM_K	Drum motor (K)	Drives the OPC drum/developing section (K)/primary transfer unit
TCS_C	Toner sensor (C)	Detects toner supply from the toner cartridge Detects the toner density (C)
TCS_K	Toner sensor (K)	Detects toner supply from the toner cartridge Detects the toner density (K)
TCS_M	Toner sensor (M)	Detects toner supply from the toner cartridge Detects the toner density (M)
TCS_Y	Toner sensor (Y)	Detects toner supply from the toner cartridge Detects the toner density (Y)

No.	Name	Function/Operation
1	Developing roller	Attaches toner to electrostatic latent images on the OPC drum and forms toner images.
2	Stirring roller	Stirs developer and toner to negatively charge toner.
3	Doctor	Maintains the quantities of toner and developer on the DV roller at a constant levels.
4	Toner filter (K, M, C, Y)	Prevents toner splash.

B. Operational descriptions

Toner is attached to electrostatic latent images formed on the OPC drum surface by laser image beams to form toner images.



Toner and carrier in the developing unit are agitated and transported by the mixing roller.

By stirring, toner and carrier are negatively charged by mechanical friction.

The developing bias voltage (AC component and negative DC component) is applied to the developing roller.

Negatively charged toner is attracted to the exposed section on the OPC drum where the negative potential falls due to the developing bias.

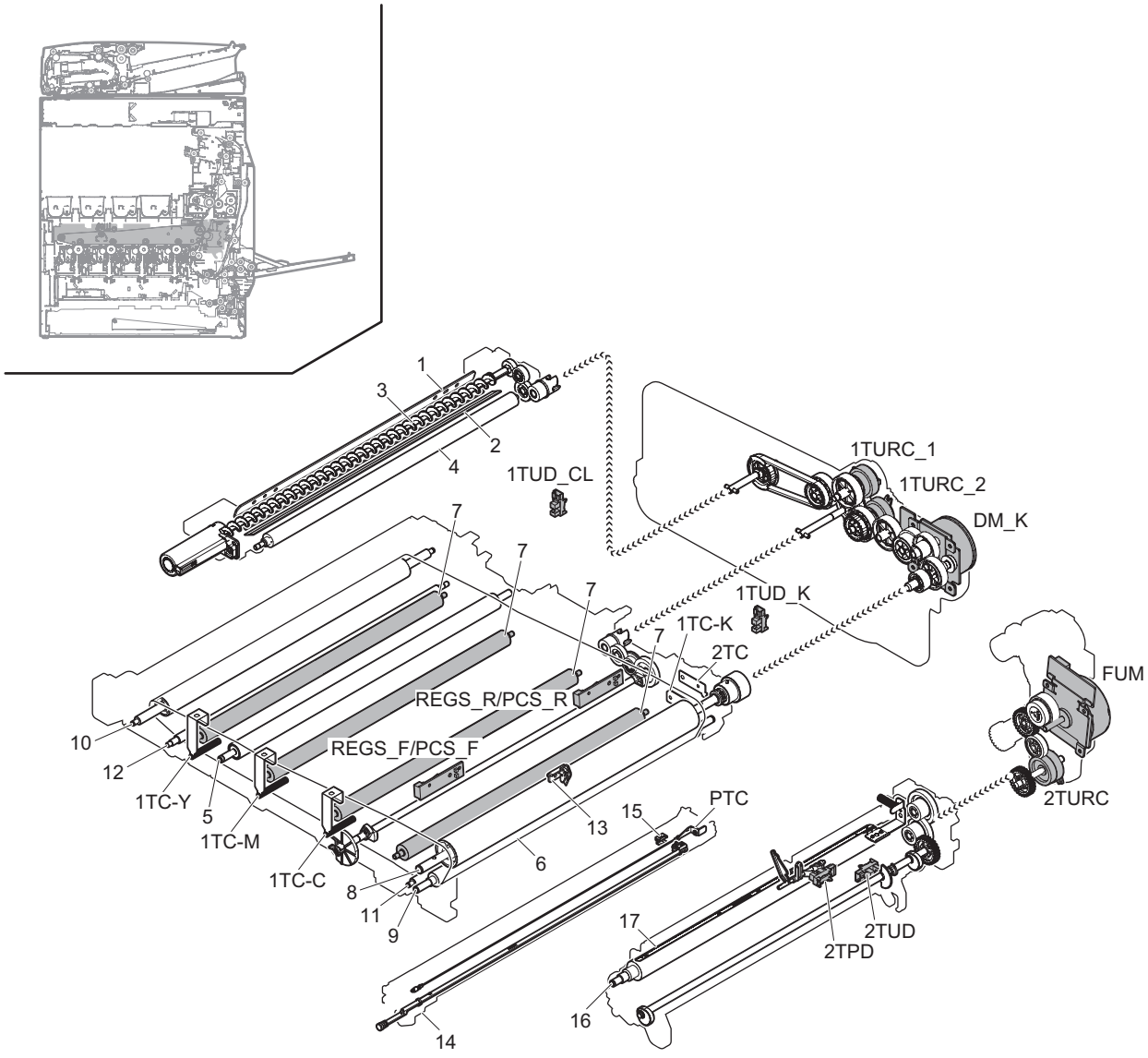
If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

The toner sensor detects the toner supply state from the toner cartridge.

In this machine, the toner density is detected by the toner sensor, but the toner supply operation is not controlled only by the toner density detection result. The toner density control is performed according to the process control data.

12. Transfer section

A. Electrical and mechanical parts location



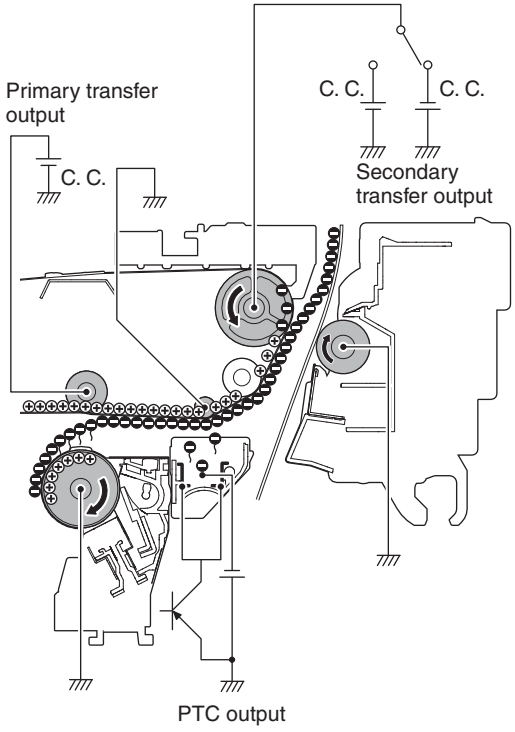
Signal name	Name	Function/Operation
1TC (CMY)	Primary transfer voltage (CMY)	Flows the transfer current to the primary transfer belt, and transfers toner images from the OPC drum to the transfer belt.
1TC (K)	Primary transfer voltage (K)	Flows the transfer current to the primary transfer belt, and transfers toner images from the OPC drum to the transfer belt.
1TUD_CL	Transfer mode sensor (CL)	Detects separation of the transfer belt and the transfer mode (Detection is made by combination of 1TUD_CL/1TUD_K signals)
1TUD_K	Transfer mode sensor (BK)	Detects separation of the transfer belt and the transfer mode (Detection is made by combination of 1TUD_CL/1TUD_K signals)
1TURC_1	Primary transfer separation clutch 1	Controls separation of the primary transfer unit
1TURC_2	Primary transfer separation clutch 2	Controls separation of the primary transfer unit
2TC	Secondary transfer voltage	Flows the transfer current to the primary transfer roller, and transfers toner images from the primary transfer belt to paper.
2TPD	Secondary transfer paper sensor	Detects paper remained after recover from paper JAM
2TUD	Secondary transfer position sensor	Detects the position (separation) of the secondary transfer unit
2TURC	Secondary transfer separation clutch	Controls separation of the secondary transfer unit
DM_K	Drum motor (K)	Drives the OPC drum/developing section (K)/primary transfer unit
FUM	Fusing motor	Drives the fusing section
PTC	PTC voltage	High voltage for PTC
REGS_F/ PCS_F	Image registration / Density sensor (F)	Detects image color shift and the toner patch density
REGS_R/ PCS_R	Image registration / Density sensor (R)	Detects image color shift and the toner patch density

No.	Name	Function/Operation
1	Cleaning blade	Cleans residual toner on the primary transfer belt.
2	Cleaning sub blade	Prevent toner from cleaner unit.
3	Primary transfer waste toner transport screw	Transports waste toner in the primary transfer cleaning unit to the waste toner collection section.
4	Cleaning roller	Stabilization of the cleaning performance.
5	Primary transfer blade backup roller	Stabilization of the contact state of a blade and roller.
6	Primary transfer belt	Transfers toner images of the OPC drum onto the transfer belt.
7	Primary transfer roller (K, C, M, Y)	Applies a high positive voltage to the primary transfer belt.
8	Primary transfer belt drive roller	Drives the transfer belt. A negative voltage is applied when in the transfer operation, and an alternate high voltage (positive and negative) is applied when cleaning.
9	Pre-transfer roller	Angle adjustment to the paper feed course of the transfer belt.
10	Primary transfer belt follower roller	Transfer belt follower drive
11	BK auxiliary roller	Stabilization of the contact state of BK drum and transfer belt.
12	Y auxiliary roller	Stabilization of the contact state of Y drum and transfer belt.
13	Separation pawl	Separates paper after transfer.
14	PTC unit	Reduces positive charges on the primary transfer belt, and improves the transfer efficiency.
15	PTC cleaner	Clean the PTC wire.
16	Secondary transfer roller	Connects the secondary transfer roller to the GND and flows the transfer current.
17	Discharge brush	Discharges the secondary transfer roller after transfer to neutralize it.

B. Operational descriptions

(1) Transfer, cleaning operation

Transfer operation



A high positive voltage is applied to the primary transfer roller to transfer toner images from the OPC drum to the primary transfer belt.

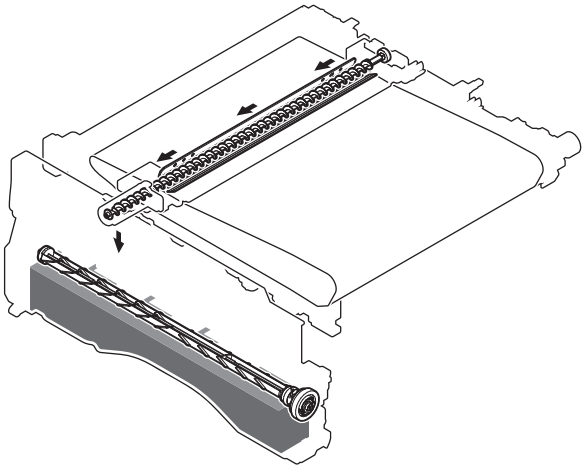
Negative electronic charges are generated by the PTC unit, supplying negative charges to toner.

This operation improves the transfer efficiency in the secondary transfer.

Then a high negative voltage is applied to the primary transfer drive roller, to transfer toner images from the primary transfer belt to paper.

Primary transfer cleaning operation

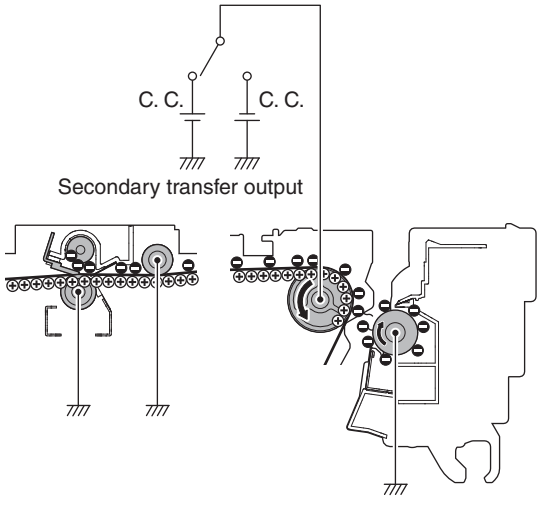
The primary transfer belt is cleaned mechanically by the cleaning blade.



Remaining toner removed from the primary transfer belt is transported to the waste toner collection section by the waste toner transport screw.

Secondary transfer cleaning

A high positive voltage is applied to the primary transfer belt to attach unnecessary toner to the primary transfer belt, and it is cleaned by the primary transfer belt cleaning.



Primary transfer belt mode select

There are three kinds of modes of the transfer belt: the free position, the color print mode, and the monochrome print mode.

Mode select is made with the developing motor, the mode select clutches 1TURC1 and 1TURC2.

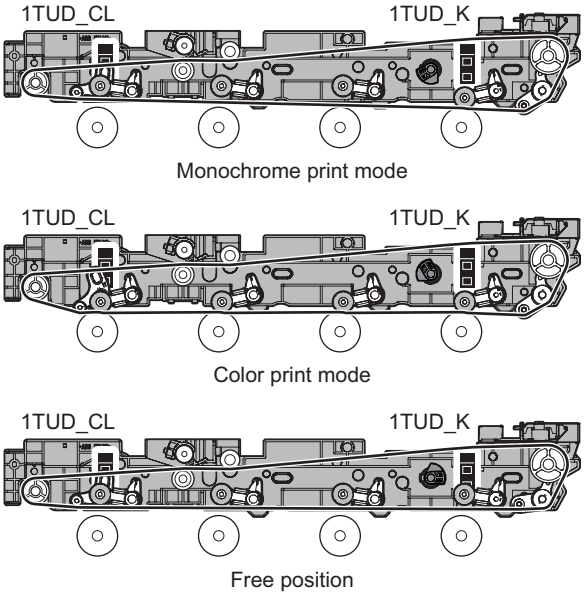
When the roller separation clutch is turned ON, the transfer cam rotates, and the primary transfer link in conjunction with the cam is shifted in the arrow direction, separating the transfer roller.

The color transfer rollers (C, M, and Y) and the black transfer roller (K) perform an independent separation operation, and the mode state is detected by the combination of the transfer mode detector 1TUD_CL and 1TUD_K signals.

To select the rotating direction of the mode select cam, two mode select clutches 1TURC1 and 1TURC2 are used.

The two mode select clutches are used to select the mode in the shortest time.

Mode	Transfer mode detector	
	1TUD_CL	1TUD_K
Monochrome print mode	ON	ON
Color print mode	OFF	ON
Free position	ON	OFF



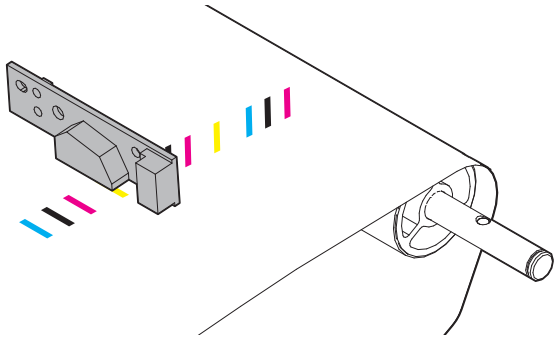
(2) Image density detection and registration detection operation

The image density detection and the image registration detection are performed the sensors which are provided separately on the front frame side and the rear frame side.

a. Functions and operations of the color image density sensor and the image registration sensor F (REGS F) provided on the front frame side

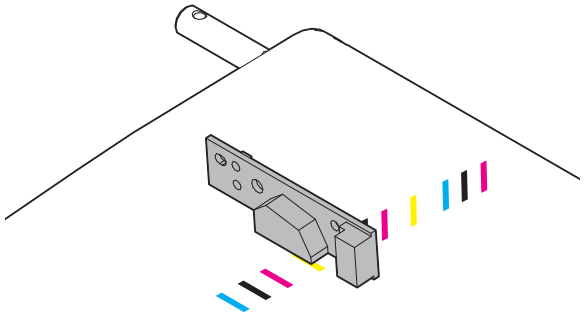
When the process control is performed with one sensor, the color toner patch density is detected. When the image registration adjustment is performed, the image registration shift on the front frame side is detected.

Before execution of the process control and the automatic registration adjustment, the standard reflection plate is closed and the sensor sensitivity adjustment is performed by using the standard reflection plate.



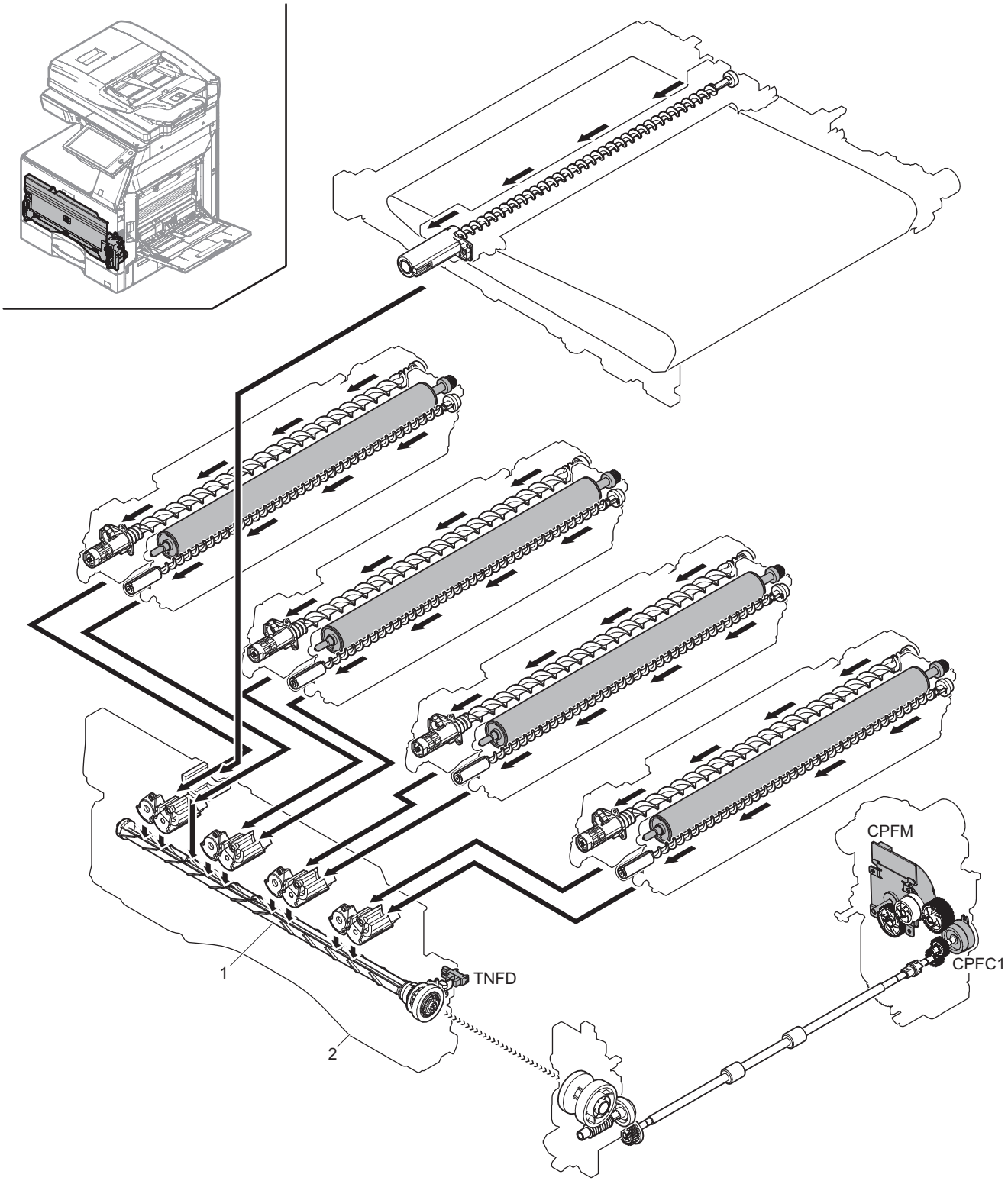
b. Functions and operations of the black image density sensor and the image registration sensor R (REGS R) provided on the rear frame side

When the process control is performed with one sensor, the black toner patch density is detected. When the image registration adjustment is performed, the image registration shift on the rear frame side is detected.



13. Waste toner collection section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
CPFC1	Tray vertical transport clutch	Controls the transport roller of the paper feed tray 1 section
CPFM	Paper feed motor	Drives the paper feed section
TNFD	Waste toner full sensor	Detects full of waste toner

No.	Name	Function/Operation
1	Waste toner transport screw	Transports waste toner to the waste toner box.
2	Waste toner box	Collects waste toner.

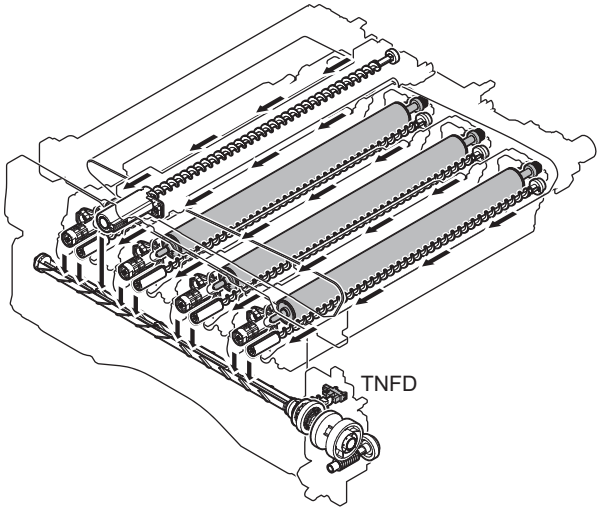
B. Operational descriptions

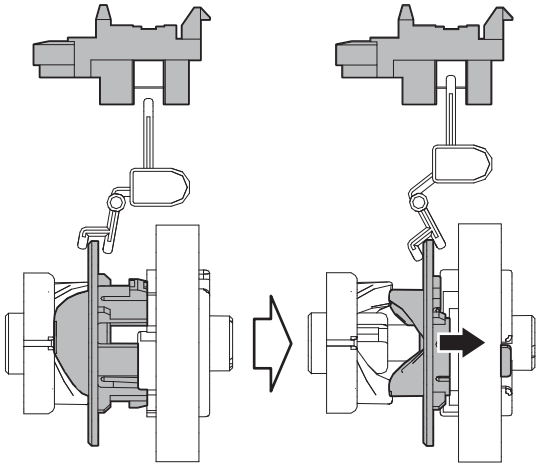
(1) Waste toner full detection operation

Waste toner generated in the OPC drum and the primary transfer cleaning section is transported to the waste toner box by the waste toner transport screw which is driven by the paper feed motor.

The toner collection box section is provided with the waste toner full detection mechanism. When the waste toner quantity in the toner collection box becomes full, the rotation load of the waste toner transport screw increases and the waste toner transport screw drive coupler is stranded to turn ON the waste toner full detector (TNFD).

When the waste toner full detector is turned ON continuously for 3 sec, it is judged as near end, and the message is display to indicate that the replacement of the toner collection box is approaching.

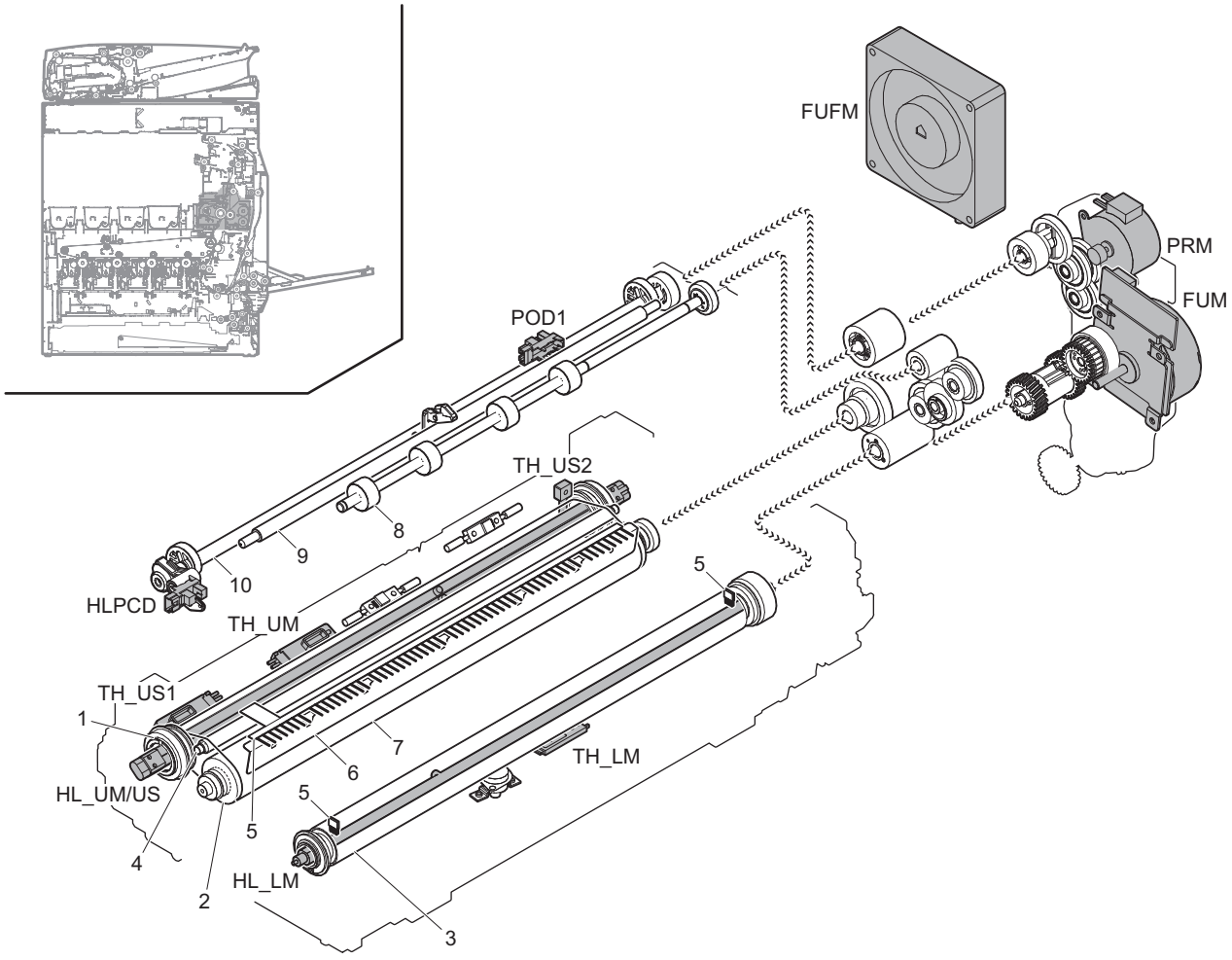




TNFD (OFF) TNFD (ON)

14. Fusing section

A. Electrical and mechanical parts location



Signal name	Name	Function/Operation
FUFM	Fusing cooling fan	Cools the fusing section and the paper exit section
FUM	Fusing motor	Drives the fusing section
HL_LM	Heater lamp	Heats the fusing roller
HL_UM/US	Heater lamp	Heats the fusing roller and the fusing belt
HLPCD	Fusing pressure sensor	Detects the fusing pressure state
POD1	Paper exit sensor 1	Detects paper transport from the fusing section
PRM	Fusing pressure control motor	Controls ON/OFF of the fusing roller pressure
TH_LM	Fusing temperature sensor	Detects the surface temperature of the fusing roller (pressure)
TH_UM	Fusing temperature sensor (main)	Detects the surface temperature at the center of the fusing belt
TH_US1	Fusing temperature sensor (sub 1)	Detects the surface temperature at the edge section of the fusing belt
TH_US2	Fusing temperature sensor (sub 2)	Detects the surface temperature at the edge section of the fusing belt

No.	Name	Function/Operation
1	Fusing roller (Heat)	Heats the fusing belt.
2	Fusing roller	The cushion layer of the roller forms a wide nip between the fusing belt and Fusing roller (Pressure).
3	Fusing roller (Pressure)	Heats the paper surface to fuse toner on the paper.
4	Belt tension roller	make tension of the fusing belt.
5	Discharge brush	Discharges static electricity generated in the fusing section to the ground.
6	Separation plate	Separates the whole surface of paper. (non-contact)
7	Fusing belt	Heats the front surface of paper to fuse toner on the paper.
8	Transport roller	Transports paper from fusing section to the paper exit section.
9	Transport roller	Transports paper from fusing section to the paper exit section.
10	Pressure shaft	Pressure fusing roller and pressure roller.

B. Operational descriptions

(1) Outline of operations

This machine employs the fusing system by the belt.

The features of the belt-type fusing system are as follows:

1) Short warm-up time
2) Low power consumption
3) Wide nip providing high fusing capability

(2) Heater lamp driving

The surface temperature of the fusing belt and the fusing roller (pressure) detected by the fusing temperature sensor is sent to the PCU. If the temperature is lower than the specified temperature, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the HL PWB.

When the power triac in the heater lamp drive circuit is turned ON, the AC power is supplied to the heater lamp to light the lamp and heat the fusing belt.

A thermostat is provided as a safety device against an abnormally high temperature in the fusing belt and the fusing roller (pressure).

When the thermostat is opened, the AC power supply to the heater lamp is cut off.

The heater lamp is arranged to fusing roller (F1) and fusing roller (B).

In heater lamp (HL_UM/US), two lamps are integrated into one.

Heater lamp operations

Heater lamp	Operation
Heater lamp (HL_UM)	Heats fusing roller (heat) and the fusing belt.
Heater lamp (HL_US)	Heats fusing roller (heat) and the fusing belt.
Heater lamp (HL_LM)	Heats fusing roller (pressure). Does not turn ON while heater lamp (HL_UM) and heater lamp (HL_LS) light up.

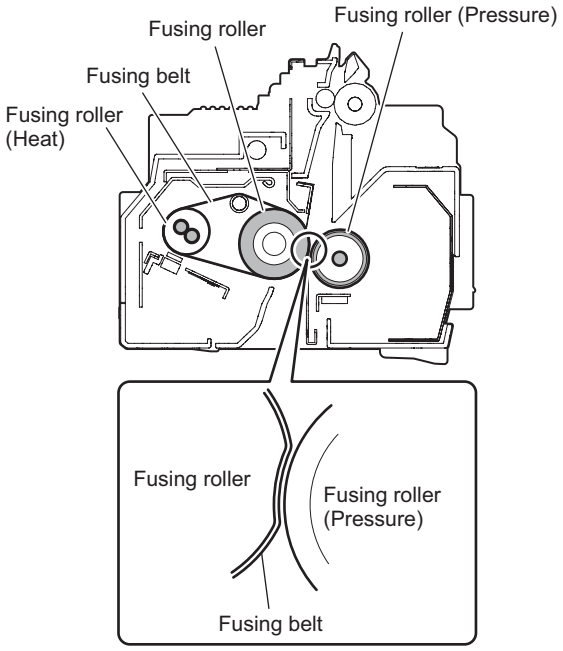
(3) Fusing operation

Color toner (Y, M, C, and K) on paper is heated and pressed by the fusing belt, fusing roller, and fusing roller (pressure) to be fused on paper.

Toner in the four layers on the paper is fused by heating from up and down and both sides.

The fusing belt, fusing roller which is provided with the sponge layer, and fusing roller (pressure) realize the following operations.

1) The nip amount is increased and the heat capacity to paper is increased.
2) By pressing with the flexible roller, toner of many layers can be fused without being deformed.
3) An even pressure is applied to rough surface of toner (due to the multi-layer composition).



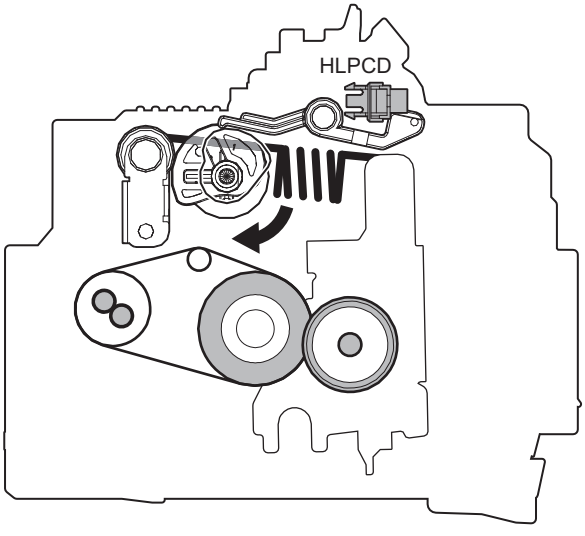
(4) Automatic pressure release system

Normally the upper and lower heat rollers are pressed. When, however, the following conditions are satisfied, the pressure is released.

- When the machine shifts to the preheat mode.
- When the machine shifts to the auto power shut off mode.
- When the power switch of the operation panel is turned OFF.
- When in the envelope mode.
- When a jam occurs.

a. Pressure release operation

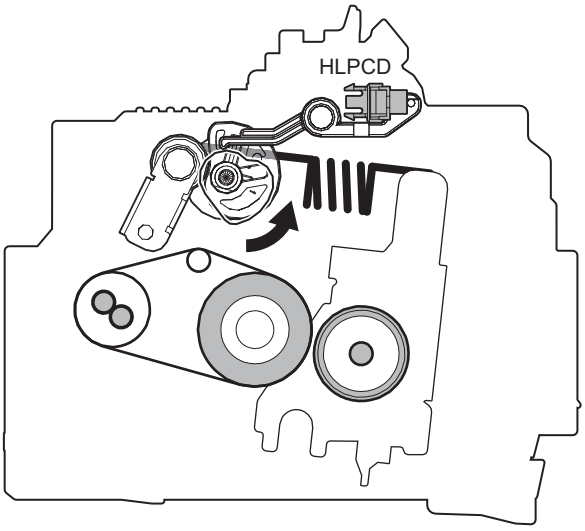
The fusing pressure control motor (PRM) rotates to turn ON the fusing pressure detector (HLPCD) (H level). When the specified time passes after turning ON the fusing pressure detector (HLPCD) (H level) by rotation of the fusing pressure control roller (PRM), the pressure release motor stops to complete the pressure release operation.



b. Pressure release operation

When the end user makes some operations or when the machine receives the Job signal, the fusing pressure control motor (PRM) rotates reversely to drive the pressure release lever to the pressing state.

When the specified time passes from turning OFF the fusing pressure detector (HLPCD), the pressure release motor stops to complete the pressing operation.



Important

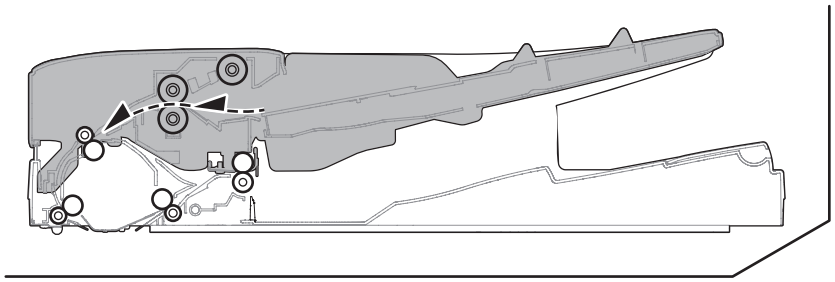
When turning OFF the main power switch of the machine, be sure to turn OFF the power switch of the operation panel and check to confirm that the LCD display goes off before turning OFF the main power switch.

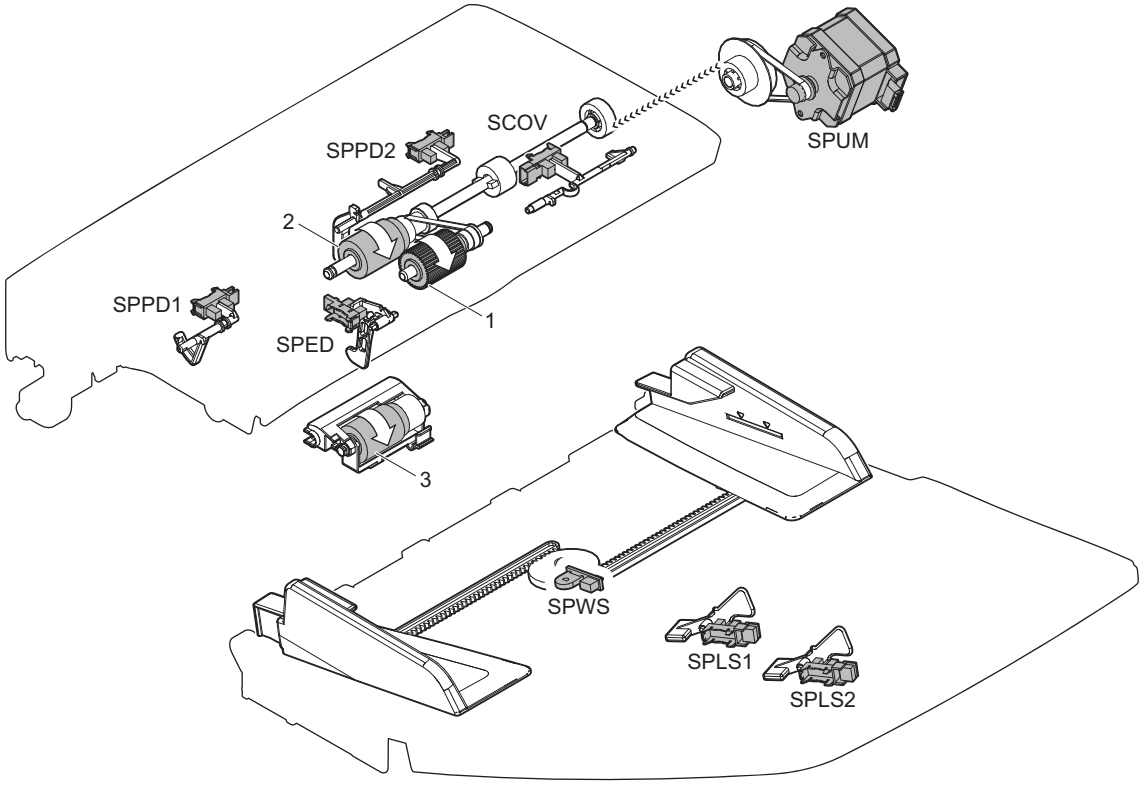
If the main power switch is turned OFF with the LCD lighted, the power is cut off before completion of the pressure release operation. If this state is kept for a long time, the fusing roller may be deformed.

15. RSPF section

A. Electrical and mechanical parts location

(1) Paper feed section

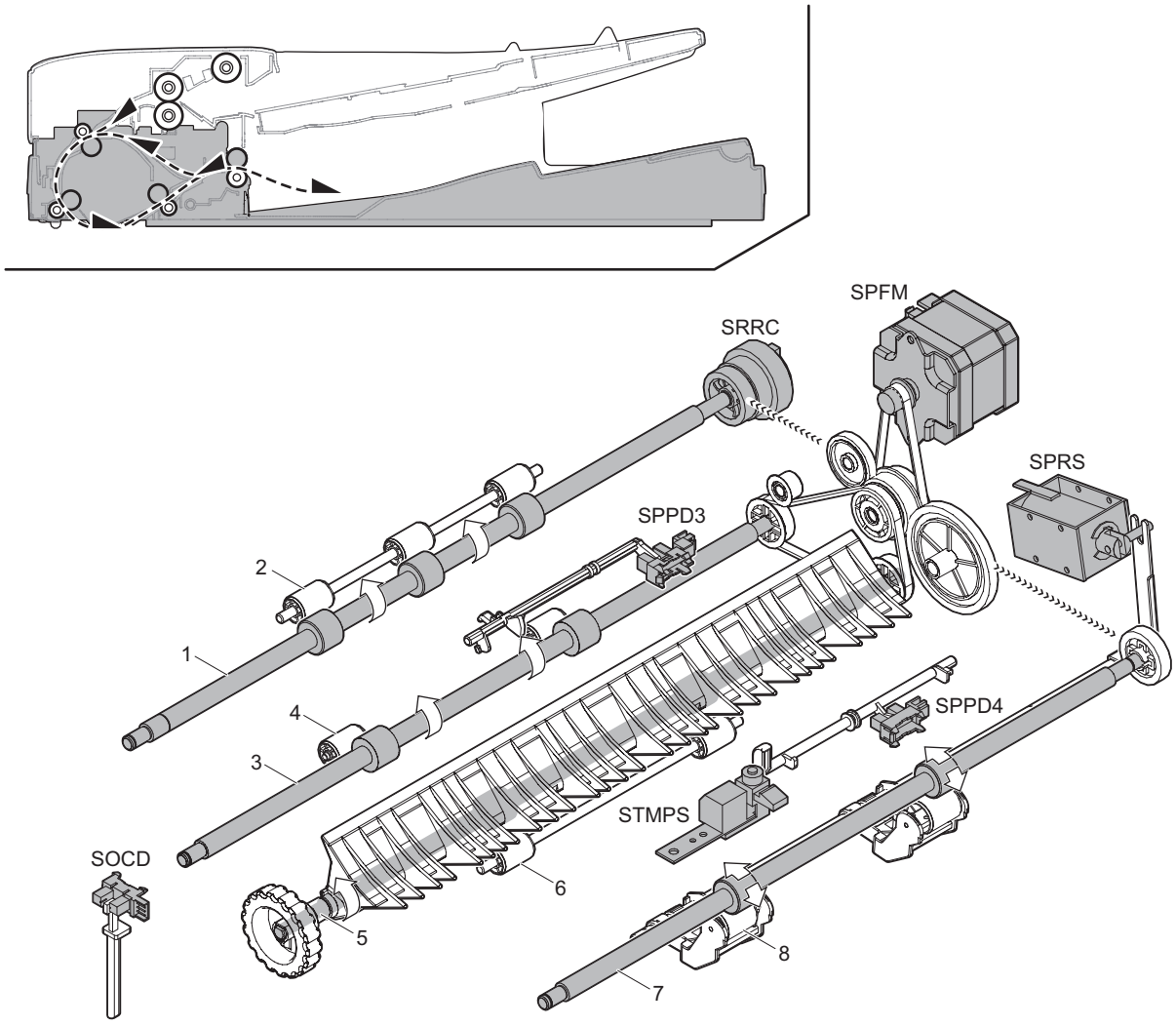




Signal name	Name	Function/Operation
SCOV	Cover open/close sensor	Detects open/close of the RSPF cover
SPED	Document sensor	Detects document empty in the RSPF paper feed tray
SPLS1	Paper size sensor 1	Detects the document length in the RSPF paper feed tray
SPLS2	Paper size sensor 2	Detects the document length in the RSPF paper feed tray
SPPD1	Document pass sensor 1	Detects paper feed and the document size in random paper feed
SPPD2	Document pass sensor 2	Detects paper pass
SPUM	RSPF paper feed motor	Feeds a document
SPWS	Document width sensor	Detects the document width of the document feed tray upper

No.	Name	Function/Operation
1	Pickup roller	Picks up document and feed it to the document feed roller
2	Document feed roller	Feeds a document to the transport section. Makes a buckle on paper between the registration roller and this roller to correct the start position of document skew and document image scan
3	Separation roller	Separates a document to prevent double-feeding

(2) Transport/paper exit section



Signal name	Name	Function/Operation
SOCD	RSPF open/close sensor	Detects open/close of the RSPF unit
SPFM	RSPF transport motor	Transports a document
SPPD3	Document pass sensor 3	Detects paper pass
SPPD4	Document pass sensor 4	Detects paper exit and switchback
SPRS	Paper exit roller solenoid	Controls ON/OFF of the power of the paper exit roller
SRRC	Registration roller clutch	Controls the registration roller
STMPS	Stamp solenoid	Drives the finish stamp

No.	Name	Function/Operation
1	Registration roller (Drive)	Transports a document to the transport roller 1 / Controls the transport timing of the document and adjusts the document scanning timing
2	Registration roller (Idle)	Apply a pressure to a document and the registration roller to provide the transport power of the transport roller to the document
3	Transport roller 1 (Drive)	Transports a document transported from the registration roller to the document scanning section
4	Transport roller 1 (Idle)	Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document
5	Transport roller 2 (Drive)	Transports a document transported from the document scanning section to the paper exit roller
6	Transport roller 2 (Idle)	Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document
7	Paper exit roller (Drive)	Discharges a document. Switchbacks the document and transports it to the registration roller when scanning the back surface
8	Paper exit roller (Idle)	Apply a pressure to a document and the paper exit roller to provide the transport power of the paper exit roller to the document

B. Operational descriptions

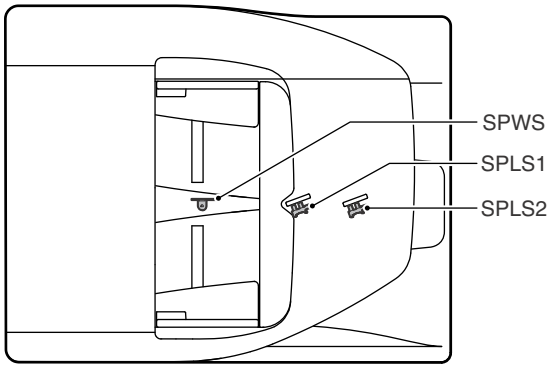
(1) Document size detection

Size detection on the document tray

The document width is detected with the RSPF document width sensor (SPWS), and the document length is detected with the RSPF document length sensors (SPLS1, SPLS2). The document size is judged from the document width and the document length according to the table below. When documents of different sizes are mixed and set on the document tray, the largest document size is detected.

	Document size	Document length sensor	
		SPLS1	SPLS2
AB series	A5	OFF	OFF
	B5	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	B5R	ON	OFF
	A4R	ON	OFF
	8.5" x 13"	ON	ON
	B4	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON
	8.5" x 14"	ON	ON
	8.5" x 13.4"	ON	ON
	8.5" x 13.5"	ON	ON
Inch series	8.5" x 5.5"	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	11" x 8.5"R	ON	OFF
	8.5" x 13"	ON	ON
	8.5" x 14"	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON
	8.5" x 13.4"	ON	ON

RSPF unit



(2) RSPF paper feed and transport operations

a. Paper feed operation

The paper feed motor is turned ON and the power of the paper feed motor is transmitted to the pickup roller and the paper feed roller.

The pickup roller descends to pickup the top document and feed it to the paper feed roller.

The paper feed roller feeds a document to the transport section.

At that time, the document is separated by the separation roller to prevent double-feeding.

b. Single face scanning

The lead edge of the fed document is aligned (registration) by the registration roller, and passed through transport roller 1 to the document scanning section, where images are scanned.

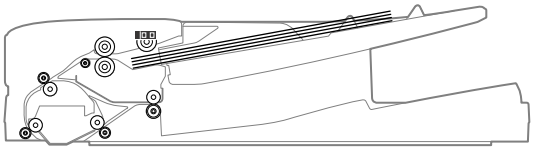
Then the document is passed through transport roller 2 to the paper exit roller.

The rollers (the registration roller, transport rollers 1 and 2, the paper exit roller) in the transport section are driven by the transport motor.

The paper exit roller (drive pulley) is separated by the paper exit roller pressure control solenoid.

When the read edge of the document passes the scanning section, the both rollers are brought into close contact to supply the power for paper exit.

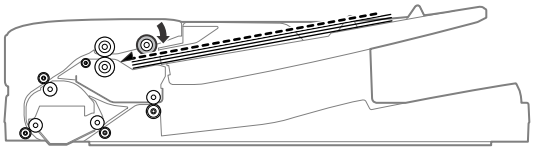
1) Document set (Document empty sensor ON)



2) Paper feed start (1st sheet)

The pick-up roller descends. (The paper feed motor is booted.)

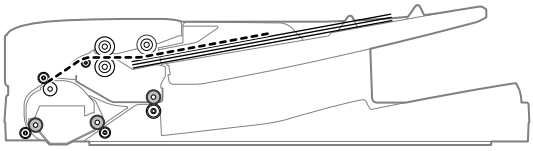
(The transport motor is booted simultaneously.)



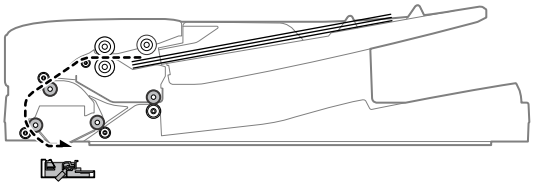
3) Registration operation (1st sheet)

(Registration clutch ON)

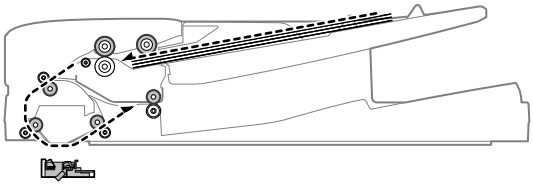
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



4) Scanning start (1st sheet)

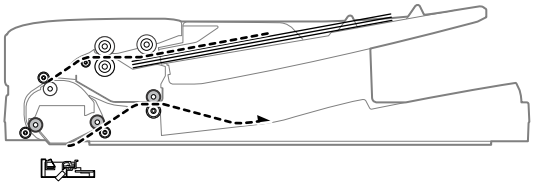


5) Paper feed start (2nd sheet)

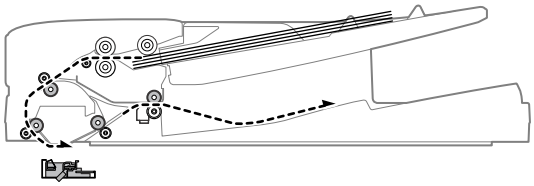


6) Scanning complete (1st sheet)/Registration operation (2nd sheet)

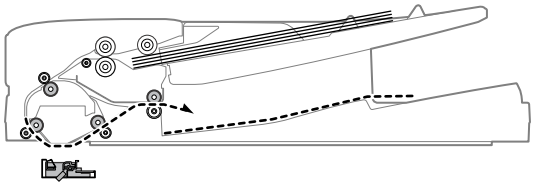
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



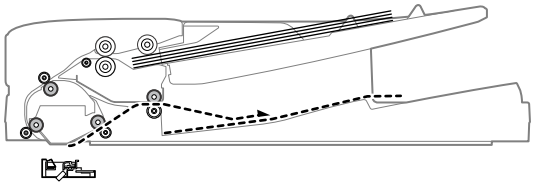
7) Scanning start (2nd sheet)



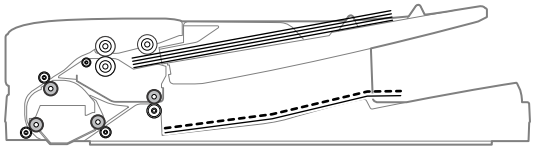
8) Paper exit complete (1st sheet)



9) Scanning complete (2nd sheet)

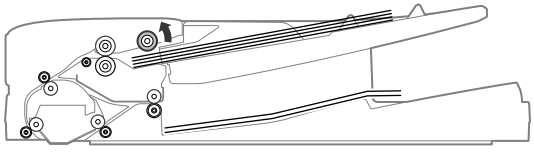


10) Paper exit complete (2nd sheet)



11) Pick-up roller lifting up

(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)



c. Duplex scanning

Images on the document surface are scanned, and detection of the rear edge of the document by sensor SPPD3 triggers the following. That is, when the rear edge of the document passes the reverse gate, the transport motor is reversed.

Due to the above operation, the paper exit roller is reversed to switchback the document, returning it to the registration roller section and aligning (registration) the document.

Then the transport motor is rotated normally to transport the document to the scanning section, scanning images on the back surface.

To reset the page order of the documents, the following operations are made which are triggered by the detection of the rear edge of the document. That is, when the rear edge of the document passes the reverse gate, the transport motor is reversed.

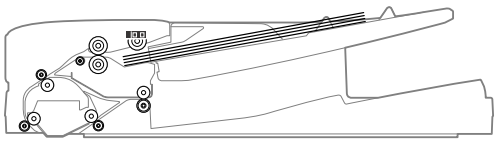
Due to the above operation, the paper exit roller is reversed to switchback the document, returning it to the registration roller section and aligning (registration) the document.

Then the transport motor is rotated normally to transport the document to the paper exit section and discharge it.

When a duplex document is scanned, the document lead edge section and the rear edge section intersect. At that timing, the paper exit roller pressure release solenoid is turned ON to make a gap between the paper exit roller (drive) and the paper exit roller (idle).

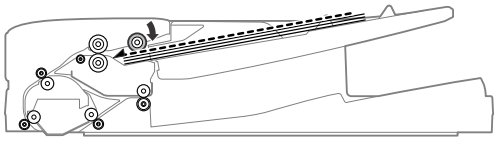
During the time from when the document rear edge passes the scanning section to when it is switch backed and send to the registration roller section, the paper exit roller pressure release solenoid is turned OFF to keep the paper exit roller (drive) and the paper exit roller (idle) in contact.

1) Document set (Document empty sensor ON)

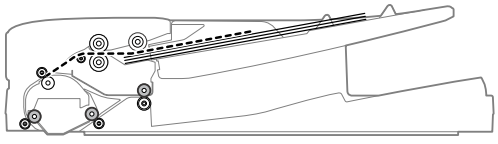


2) Paper feed start (1st sheet)

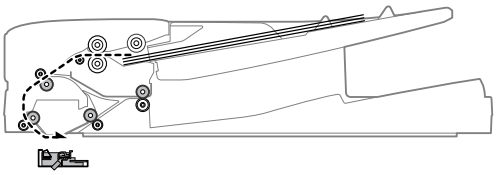
Pick-up roller descending



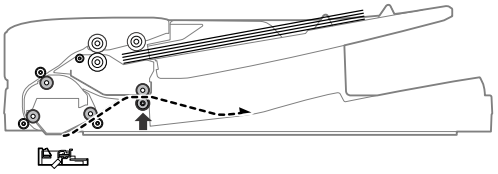
3) Registration operation (1st sheet, front surface)



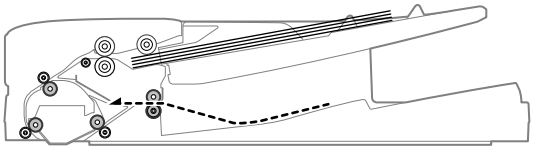
4) Scanning start (1st sheet, front surface)



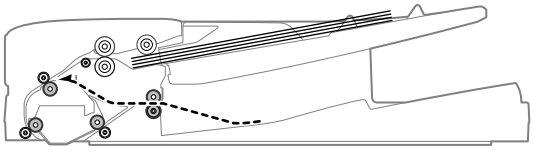
5) After completion of scanning, the reverse follower roller is pressed. (Solenoid ON)



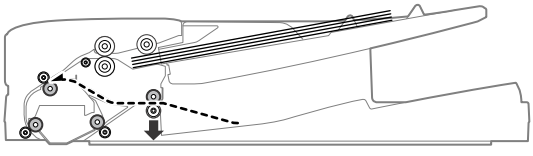
6) After stopping the operation, reversing is started.



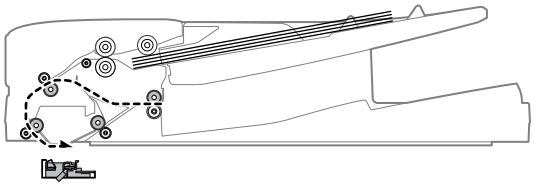
7) After reversing, registration operation is executed.



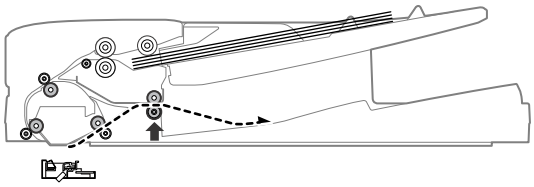
8) After turning ON the PS clutch, the reverse follower roller pressure is released.



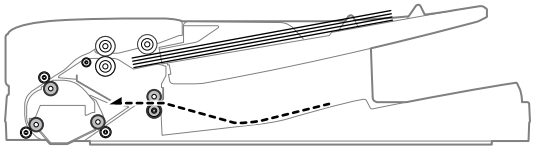
9) Scanning start (First sheet, back surface)



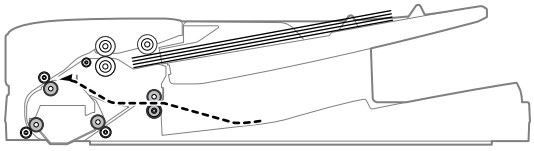
10) After completion of scanning, the reverse follower roller is pressed.



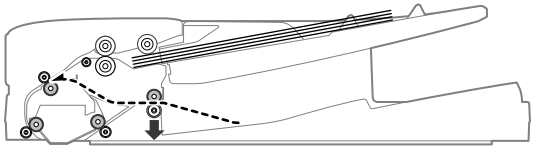
11) After stopping the operation, reversing is started.



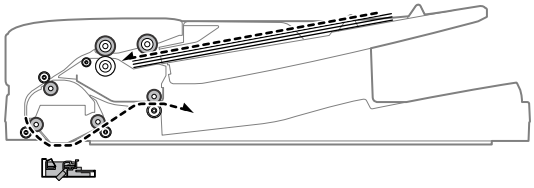
12) After reversing, registration operation is executed.



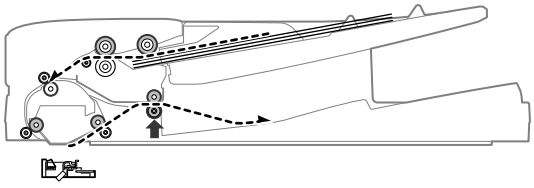
13) After turning ON the PS clutch, the reverse follower roller pressure is released.



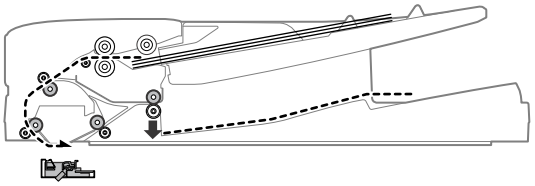
14) Scanning start (Second sheet)



15) After passing the scanning section, the reverse follower roller is pressed.

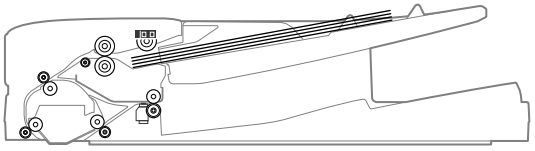


16) After discharge (First sheet), the reverse follower roller pressure is released.

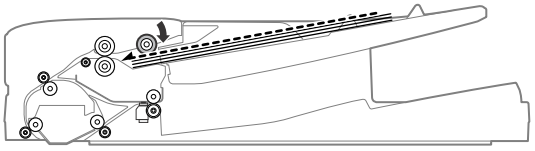


d. Stamp operation

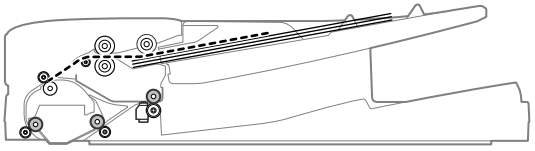
1) Document set (Document empty sensor ON)



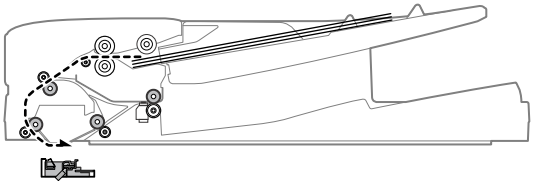
2) Paper feed start (1st sheet)
Pick-up roller descending (The paper feed motor is booted.)
(The transport motor is booted simultaneously.)



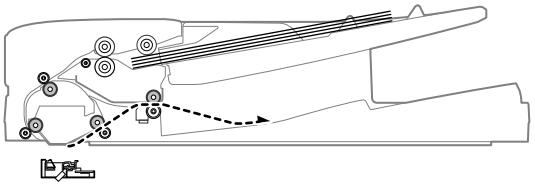
3) Registration operation (1st sheet)
(Registration clutch ON)
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



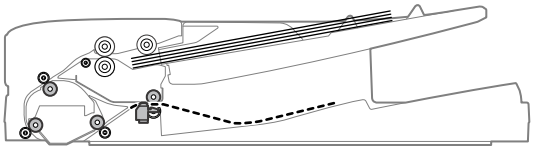
4) Scanning start (1st sheet)



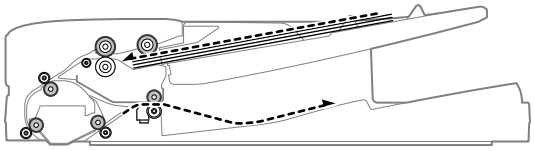
5) Scanning complete (1st sheet)



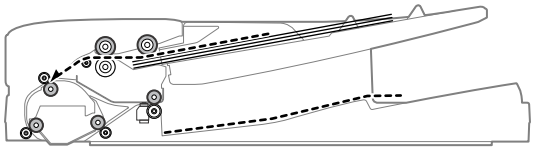
6) Stop at the stamp position/Stamp operation (1st sheet)
(Stamp solenoid ON)



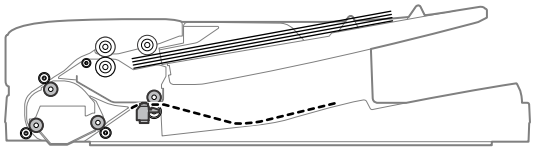
7) Paper exit start (1st sheet)/Preliminary paper feed start (2nd sheet)



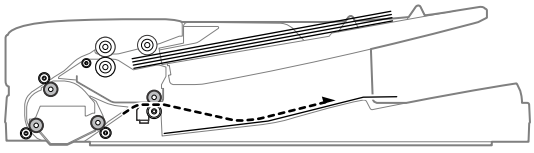
8) Paper exit complete (1st sheet)



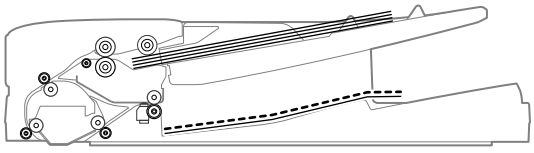
9) Stop at the stamp position/Stamp operation (2nd sheet)
(Stamp solenoid ON)



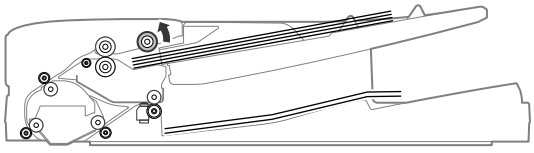
10) Paper exit start (2nd sheet)



11) Paper exit complete (2nd sheet)



12) Pick-up roller lifting up
(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)

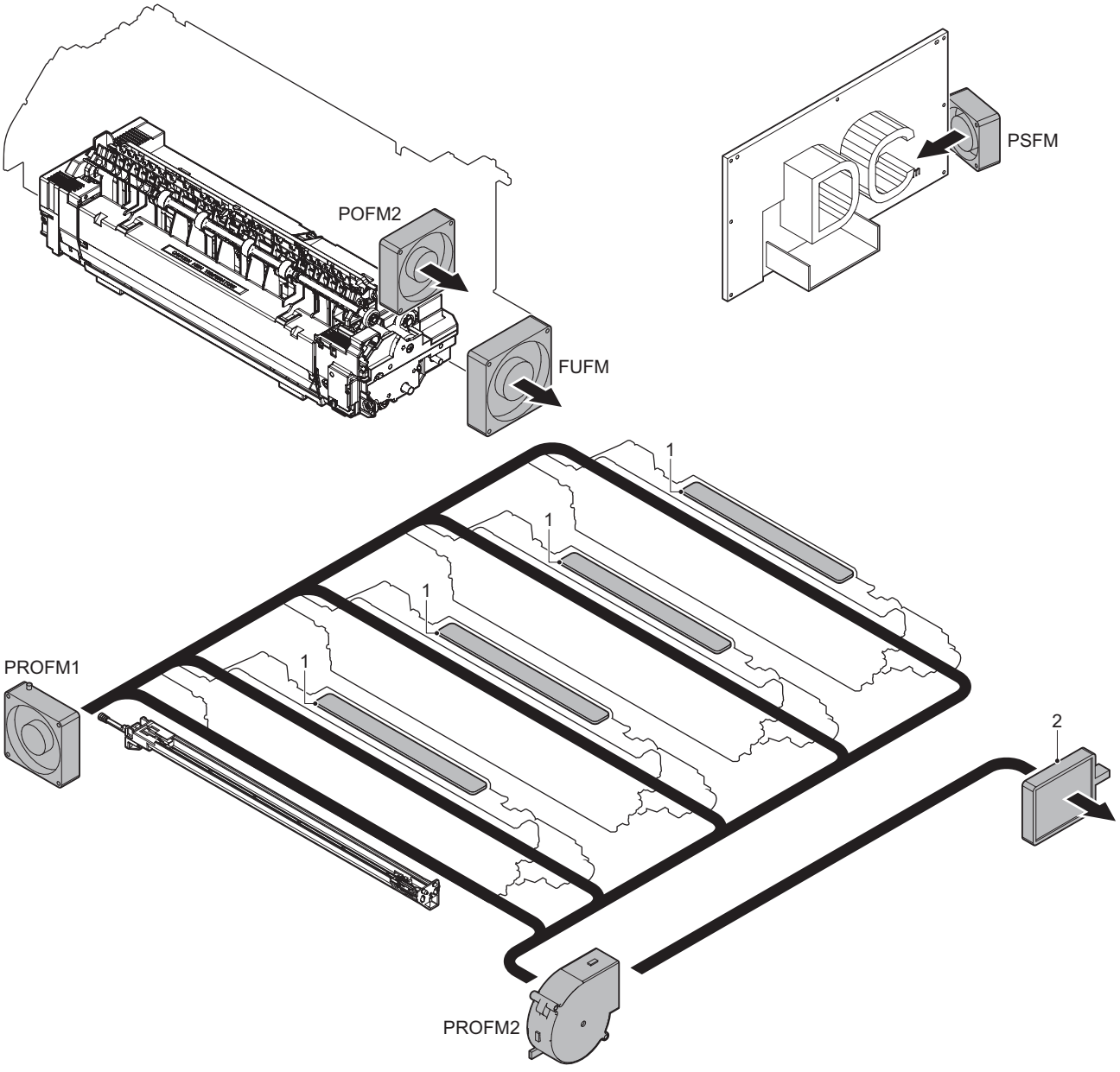


16. Fan and filter

The machine is provided with the following fan to discharge air from the process section and cool the fusing section and the power unit.

Signal name	Name	Function/Operation
FUFM	Fusing cooling fan	Cools the fusing section and the paper exit section
POFM2	Paper exit cooling fan	Cools the fusing section and the paper exit section
PROFM1	Process fan motor 1	Discharges air and cools the process section
PROFM2	Process fan motor 2	Discharges air and cools the process section
PSFM	Power cooling fan motor	Cools the power unit

The flow of air is as shown in the figure below.



The machine is provided with the following filter to remove ozone generated in the process section.

Filter process fan motor 1 produces an air flow to generate a difference in the air pressure between inside outside of the developing unit, preventing toner from splashing from the open port of the developing unit.

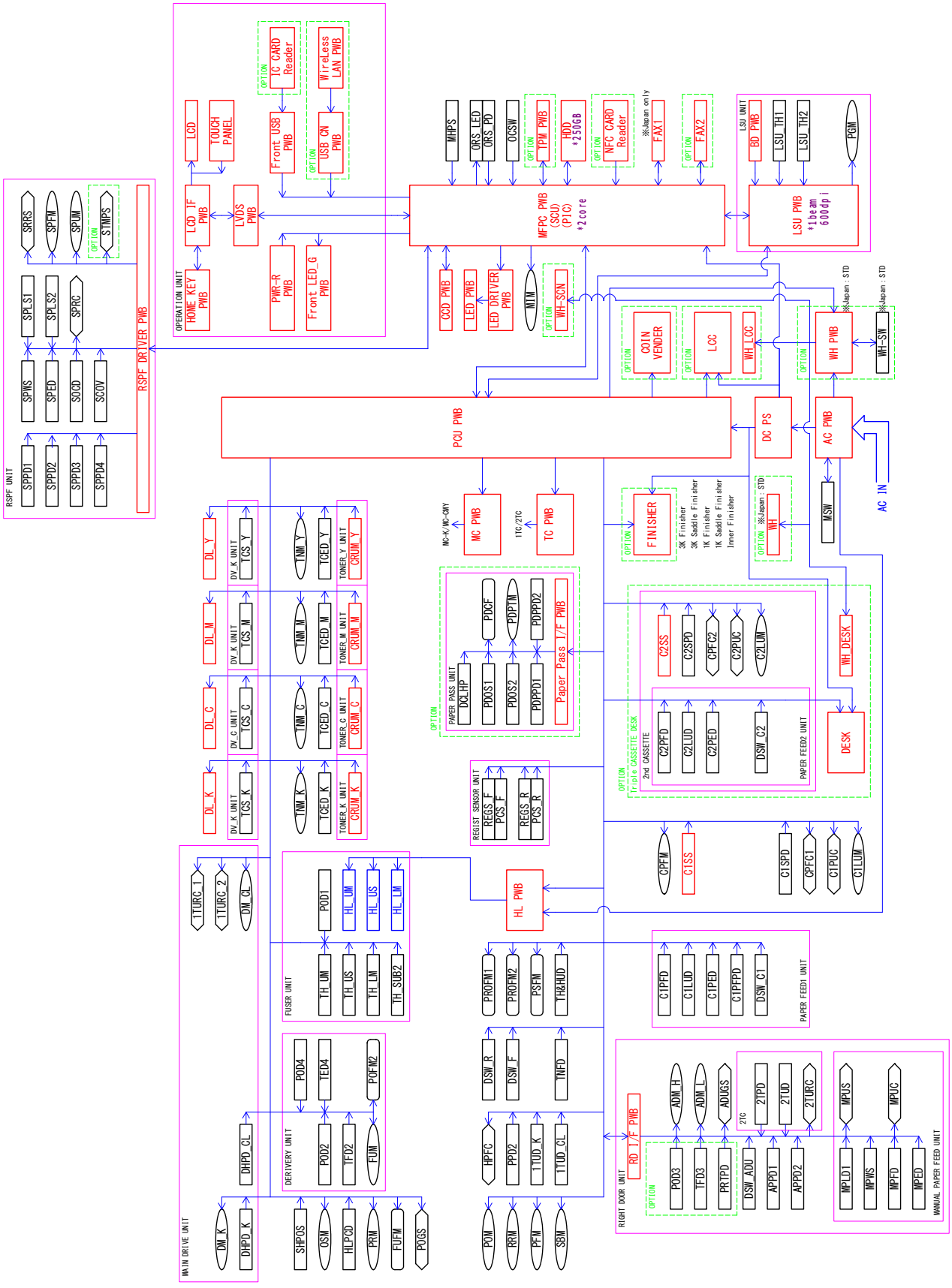
The toner filter prevents toner from leaking from the slit caused by this difference in air pressure.

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

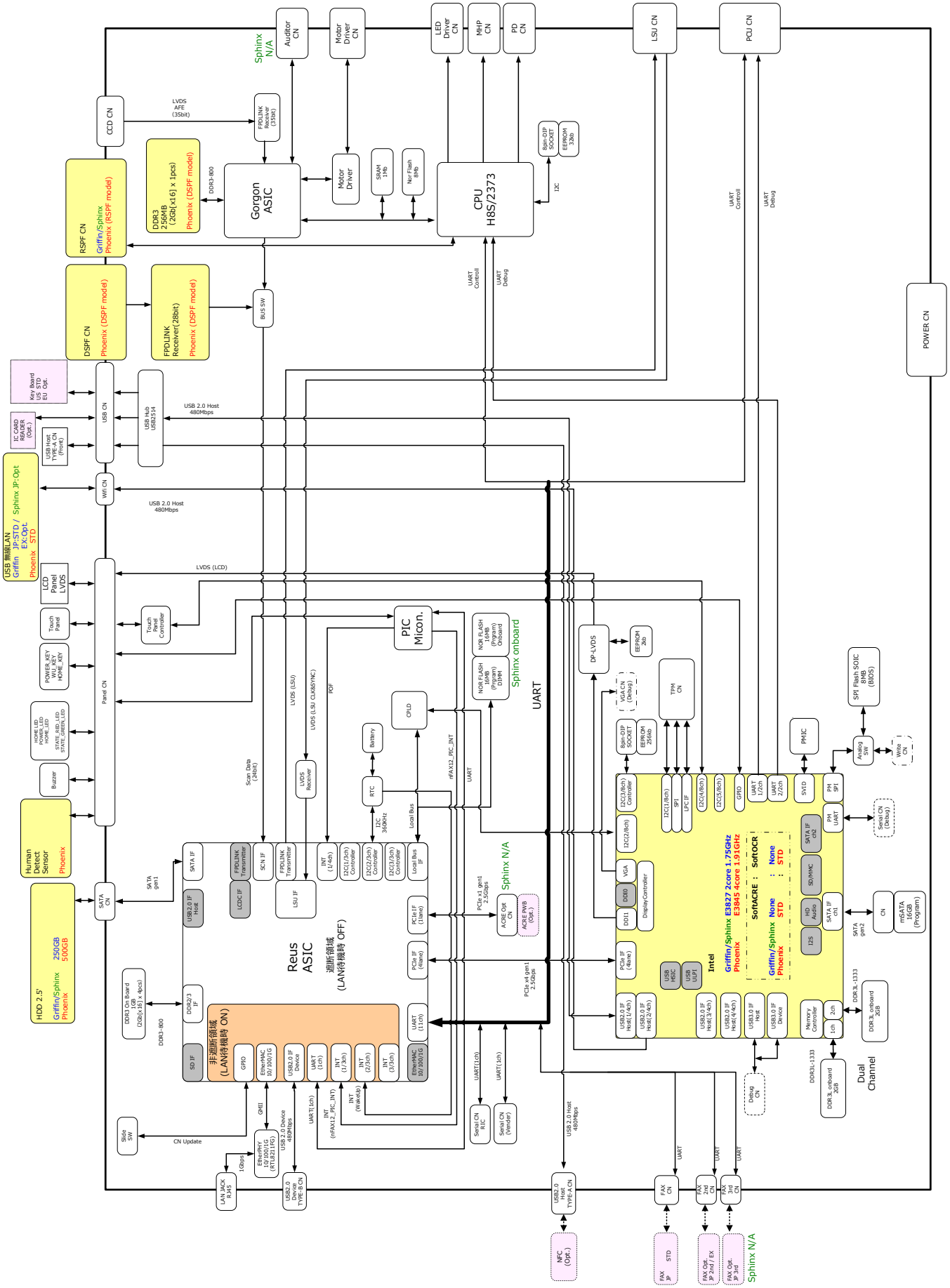
[12] ELECTRICAL SECTION

1. Block diagram

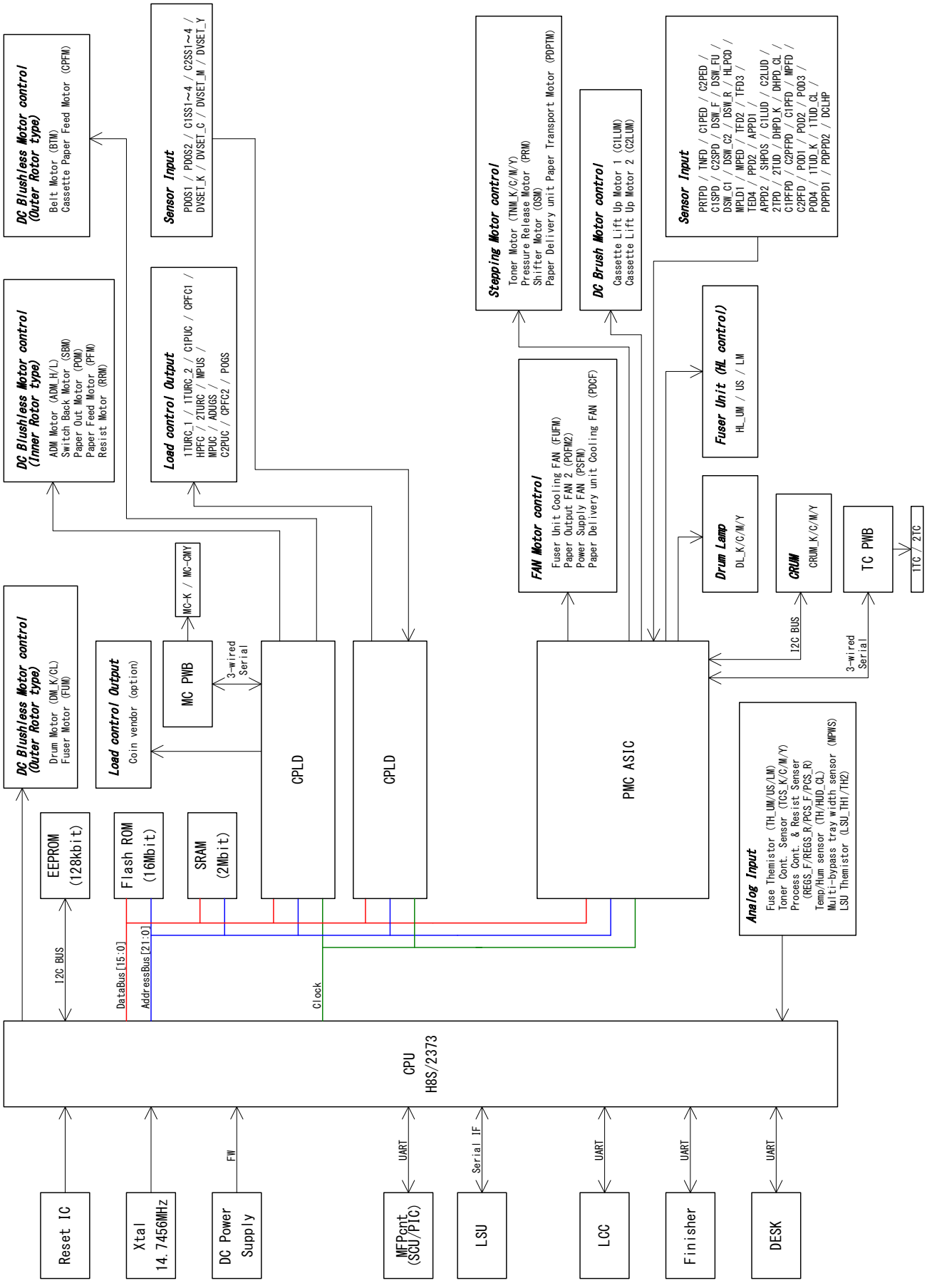
A. System block diagram



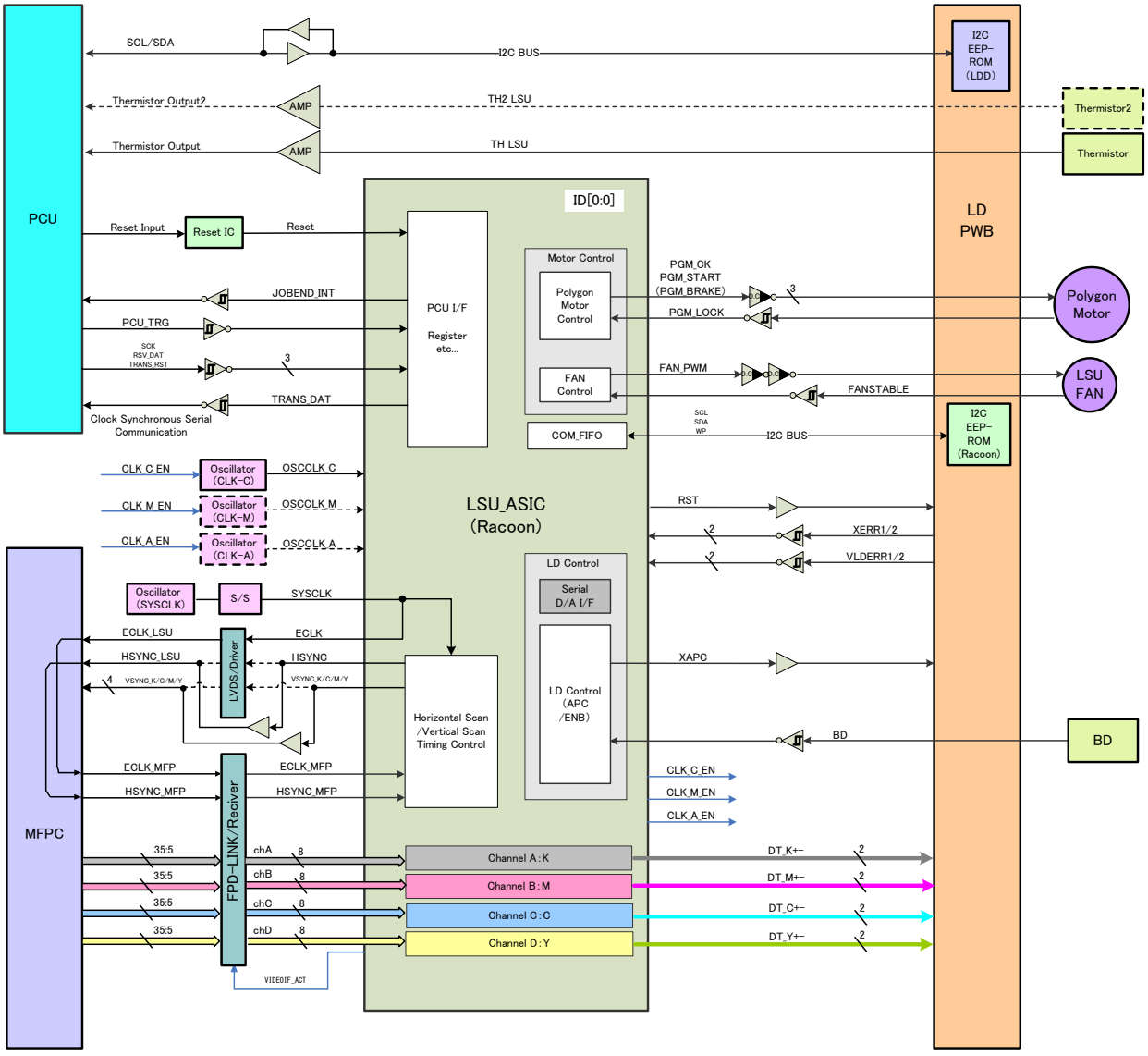
B. SCN MFP PWB


Auditor CN
Motor Driver CN
LED Driver CN
MHP CN
PD CN
LSU CN
PCU CN
POWER CN
CCD CN
LVDS AFE (35bit)
FPDLINK Receiver (35bit)
RSPF CN
Griffin/Sphinx
Phoenix (RSPF model)
DDR3 256MB (28bit x16) x 1pcs)
Phoenix (DSPF model)
DDR3-800
Gorgon ASIC
Motor Driver
SRAM 1Mb
Nor Flash 8Mb
CPU H8S/2373
8pin-DIP SOCKET
EEPROM 32kb
I2C
UART Controll
UART Debug
DSPF CN
Phoenix (DSPF model)
FPDLINK Receiver(28bit)
Phoenix (DSPF model)
BUS SW
Key Board US STD EU Opt.
IC CARD READER (Opt.)
USB Host TYPE-A CN (Front)
USB CN
USB Hub USB2514
USB 2.0 Host 480Mbps
USB 無線LAN Griffin JP:STD / Sphinx JP:Opt EX:Opt Phoenix STD
WiFi CN
LCD Panel LVDS
Touch Panel
Touch Panel Controller
POWER_KEY WAKE_KEY HOME_KEY
HOME_LED POWER_LED HOME_LED
STATE_LED_L STATE_LED_R
Buzzer
Human Detect Sensor
Griffin/Sphinx Phoenix
Panel CN
LVDS (LCD)
LVDS (LSU)
LVDS (LSU CLK&SYNC)
PDF
Scan Data (24bit)
LVDS Receiver
PIC Micon.
NOR FLASH 16MB (Program) Onboard
NOR FLASH 16MB (Program) DIMM
Sphinx onboard
UART
CPLD
Battery
RTC
I2C 360KHz
Local Bus
mFAX12_PIC_INT
DP-LVDS
EEPROM 8kb
VGA CN (Debug)
8pin-DIP SOCKET
EEPROM 256kb
TPM CN
PMIC
SPI Flash SOIC 8MB (BIOS)
Analog SW
Write CN
SATA gen1
SATA I/F
USB2.0 I/F Host
FPDLINK Transmitter
LCDC I/F
SCN I/F
FPDLINK Transmitter
LSU I/F
INT (1ch/4ch)
I2C(1/3ch) Controller
I2C(2/3ch) Controller
I2C(3/3ch) Controller
Local Bus I/F
HDD 2.5'
Griffin/Sphinx Phoenix 250GB 500GB
SATA CN
DDR3 On Board 1GB (2Gb)(x16) x 4pcs)
DDR3-800
DDR2/3 I/F
SD I/F
非遮断領域 (LANｽﾘｰﾌﾟ機時 ON)
GPIO
EtherMAC 10/100/1G
USB2.0 I/F Device
UART (1ch)
INT (1/3ch)
INT (2/3ch)
INT (3/3ch)
EtherMAC 10/100/1G
UART (11ch)
Reus ASIC
遮断領域 (LANｽﾘｰﾌﾟ機時 OFF)
PCIe I/F (1lane)
PCIe I/F (4lane)
PCIe x1 gen1 2.5Gbps
ACRE Opt CN
ACRE PWB (Opt.)
Sphinx N/A
Intel
Griffin/Sphinx E3827 2core 1.75GHz
Phoenix E3845 4core 1.91GHz
SoftACRE : SoftOCR
Griffin/Sphinx None : None
Phoenix STD : STD
I2C(1/8ch)
SPI
LPC I/F
I2C(4/8ch)
I2C(5/8ch)
GPIO
UART 1/2ch
UART 2/2ch
SVID
PM SPI
PM UART
I2C(3/8ch) Controller
I2C(2/8ch)
VGA
DDI0
DDI1
Display Controller
USB HSIC
USB USB1
I2S
HD Audio
SATA I/F ch2
SD/MMC
SATA I/F ch1
USB2.0 I/F Host(1/4ch)
USB2.0 I/F Host(2/4ch)
USB2.0 I/F Host(3/4ch)
USB2.0 I/F Host(4/4ch)
USB3.0 I/F Host
USB3.0 I/F Device
Memory Controller
16
32
DDR3L-1333
DDR 3L onboard 2GB
DDR3L-1333
DDR 3L onboard 2GB
Dual Channel
Debug CN
Serial CN (Debug)
SATA gen2
CN
mSATA 16GB (Program)
Slide SW
CN Update
GMII
EtherPHY 10/100/1G (RTL8211FS)
USB2.0 Device 480Mbps
UART T(1ch)
INT (mFAX12_PIC_INT)
INT (WakeUp)
UART(1ch)
UART(1ch)
Serial CN R/C
Serial CN (Vender)
USB 2.0 Host 480Mbps
LAN JACK RJ45
1Gbps
USB2.0 Device TYPE-B CN
USB2.0 Host TYPE-A CN
NFC (OPT.)
FAX CN
FAX 2nd CN
FAX 3rd CN
UART
FAX STD
FAX Opt. JP 2nd / EX
FAX Opt. JP 3rd
Sphinx N/A

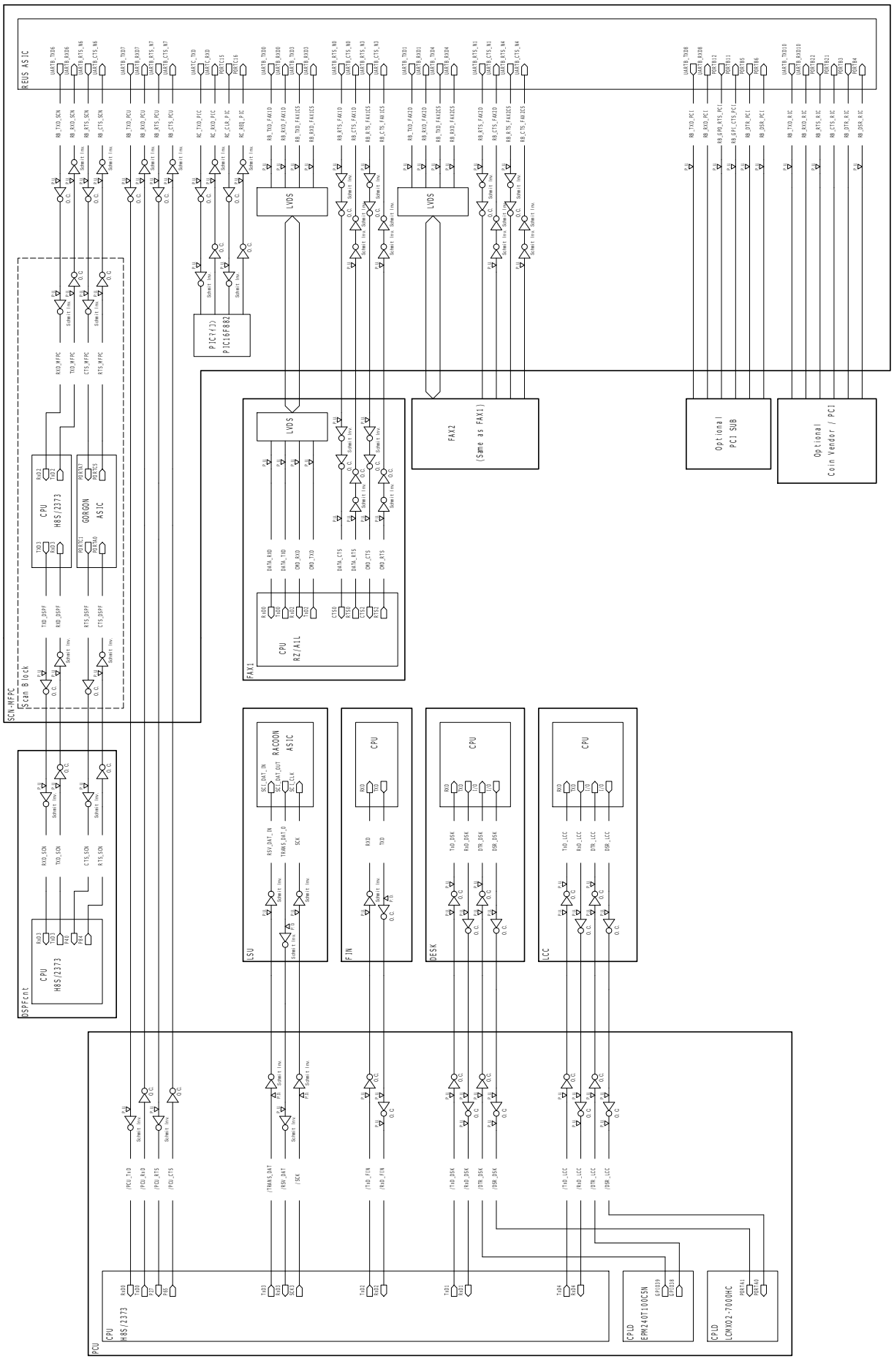
C. PCU PWB


DC Blushless Motor control (Outer Rotor type)
Belt Motor (BTM)
Cassette Paper Feed Motor (CPFM)
Sensor Input
PDOS1 / PDOS2 / C1SS1~4 / C2SS1~4 /
DVSET_K / DVSET_C / DVSET_M / DVSET_Y
DC Blushless Motor control (Inner Rotor type)
ADM Motor (ADM_H/L)
Switch Back Motor (SBM)
Paper Out Motor (POM)
Paper Feed Motor (PFM)
Resist Motor (RRM)
Load control Output
1TURC_1 / 1TURC_2 / C1PUC / CPFC1 /
HPFC / 2TURC / MPUS /
MPUC / ADUGS /
C2PUC / CPFC2 / POGS
Stepping Motor control
Toner Motor (TNM_K/C/M/Y)
Pressure Release Motor (PRM)
Shifter Motor (OSM)
Paper Delivery unit Paper Transport Motor (PDPTM)
DC Brush Motor control
Cassette Lift Up Motor 1 (C1LUM)
Cassette Lift Up Motor 2 (C2LUM)
Sensor Input
PRTPD / TNFD / C1PED / C2PED /
C1SPD / C2SPD / DSW_F / DSW_FU /
DSW_C1 / DSW_C2 / DSW_R / HLPOD /
MPLD1 / MPED / TFD2 / TFD3 /
TED4 / PPD2 / APPD1 /
APPD2 / SHPOS / C1LUD / C2LUD /
2TPD / 2TUD / DHPD_K / DHPD_CL /
C1PFPD / C2PFPD / C1PFD / MPFD /
C2PFD / POD1 / POD2 / POD3 /
POD4 / 1TUD_K / 1TUD_CL /
PDPPD1 / PDPPD2 / DCLHP
FAN Motor control
Fuser Unit Cooling FAN (FUFM)
Paper Output FAN 2 (POFM2)
Power Supply FAN (PSFM)
Paper Delivery unit Cooling FAN (PDCF)
Fuser Unit (HL control)
HL_UM / US / LM
Drum Lamp
DL_K/C/M/Y
CRUM
CRUM_K/C/M/Y
TC PWB
1TC / 2TC
DC Blushless Motor control (Outer Rotor type)
Drum Motor (DM_K/CL)
Fuser Motor (FUM)
Load control Output
Coin vendor (option)
MC PWB
MC-K / MC-CMY
3-wired Serial
CPLD
CPLD
PMC ASIC
I2C BUS
3-wired Serial
Analog Input
Fuse Themistor (TH_UM/US/LM)
Toner Cont. Sensor (TCS_K/C/M/Y)
Process Cont. & Resist Senser
(REGS_F/REGS_R/PCS_F/PCS_R)
Temp/Hum sensor (TH/HUD_CL)
Multi-bypass tray width sensor (MPWS)
LSU Themistor (LSU_TH1/TH2)
EEPROM (128kbit)
Flash ROM (16Mbit)
SRAM (2Mbit)
I2C BUS
DataBus[15:0]
AddressBus[21:0]
Clock
CPU H8S/2373
Reset IC
Xtal 14.7456MHz
DC Power Supply
FW
MFPcnt (SCU/PIC)
UART
LSU
Serial IF
LCC
UART
Finisher
UART
DESK
UART

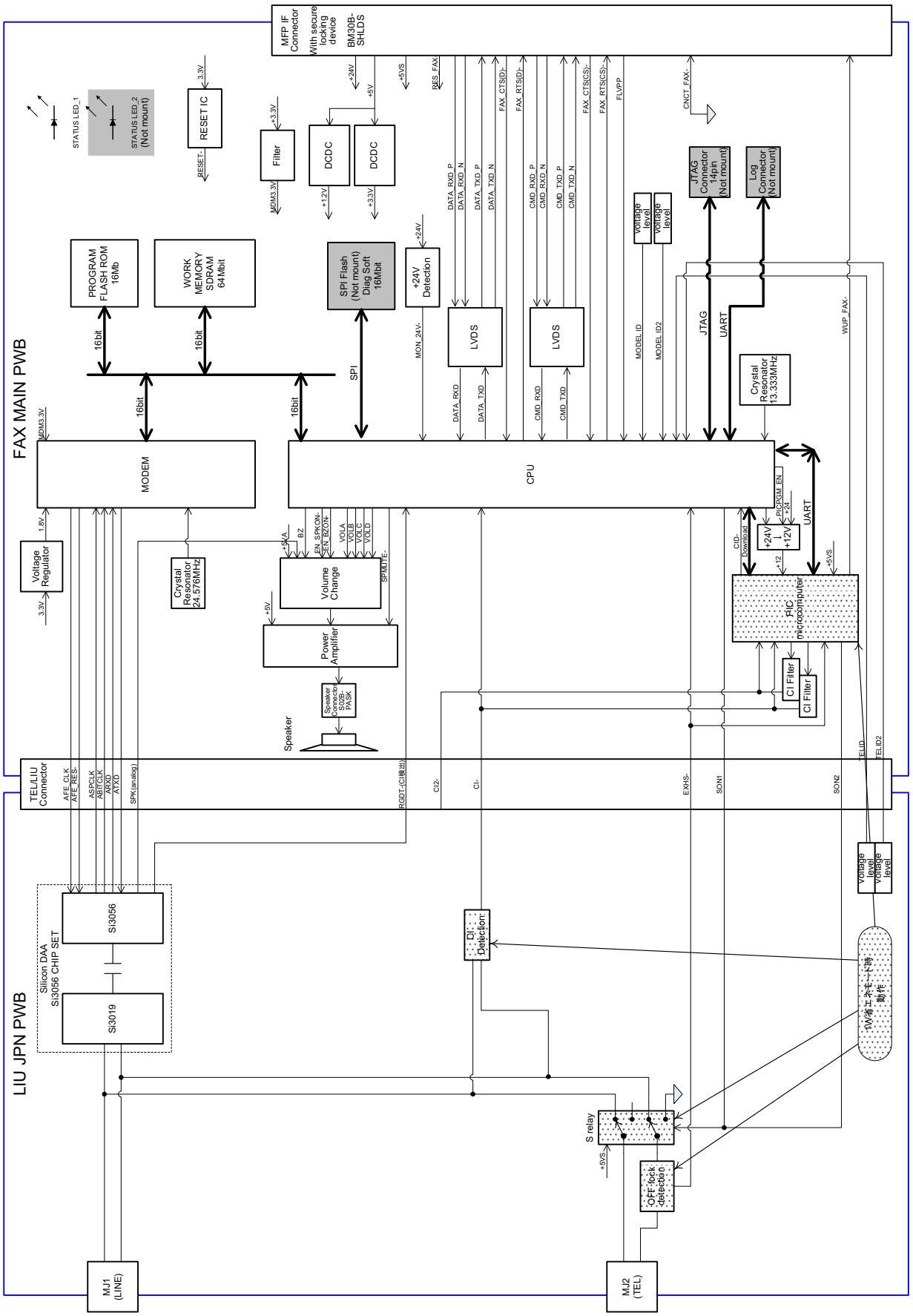
D. LSU PWB


PCU
SCL/SDA
I2C BUS
I2C EEP-ROM (LDD)
Thermistor Output2
AMP
TH2 LSU
Thermistor2
Thermistor Output
AMP
TH LSU
Thermistor
LD PWB
ID[0:0]
Reset Input
Reset IC
Reset
PCU I/F
Register etc...
Motor Control
Polygon Motor Control
PGM_CK
PGM_START
(PGM_BRAKE)
PGM_LOCK
Polygon Motor
JOBEND_INT
PCU_TRG
SCK
RSV_DAT
TRANS_RST
TRANS_DAT
Clock Synchronous Serial Communication
FAN Control
FAN_PWM
FANSTABLE
LSU FAN
COM_FIFO
SCL
SDA
WP
I2C BUS
I2C EEP-ROM (Racoon)
CLK_C_EN
CLK_M_EN
CLK_A_EN
Oscillator (CLK-C)
Oscillator (CLK-M)
Oscillator (CLK-A)
OSCCLK_C
OSCCLK_M
OSCCLK_A
LSU_ASIC (Racoon)
RST
XERR1/2
VLDERR1/2
LD Control
Serial D/A I/F
Oscillator (SYSCLK)
S/S
SYSCLK
ECLK_LSU
HSYNC_LSU
VSYNC_K/C/M/Y
ECLK
HSYNC
LVDS/Driver
XAPC
LD Control (APC /ENB)
BD
Horizontal Scan /Vertical Scan Timing Control
ECLK_MFP
HSYNC_MFP
MFPC
FPD-LINK/Reciver
35:5
chA
chB
chC
chD
Channel A:K
Channel B:M
Channel C:C
Channel D:Y
DT_K+-
DT_M+-
DT_C+-
DT_Y+-
VIDEOIF_ACT

E. SERIAL COMMUNICATION

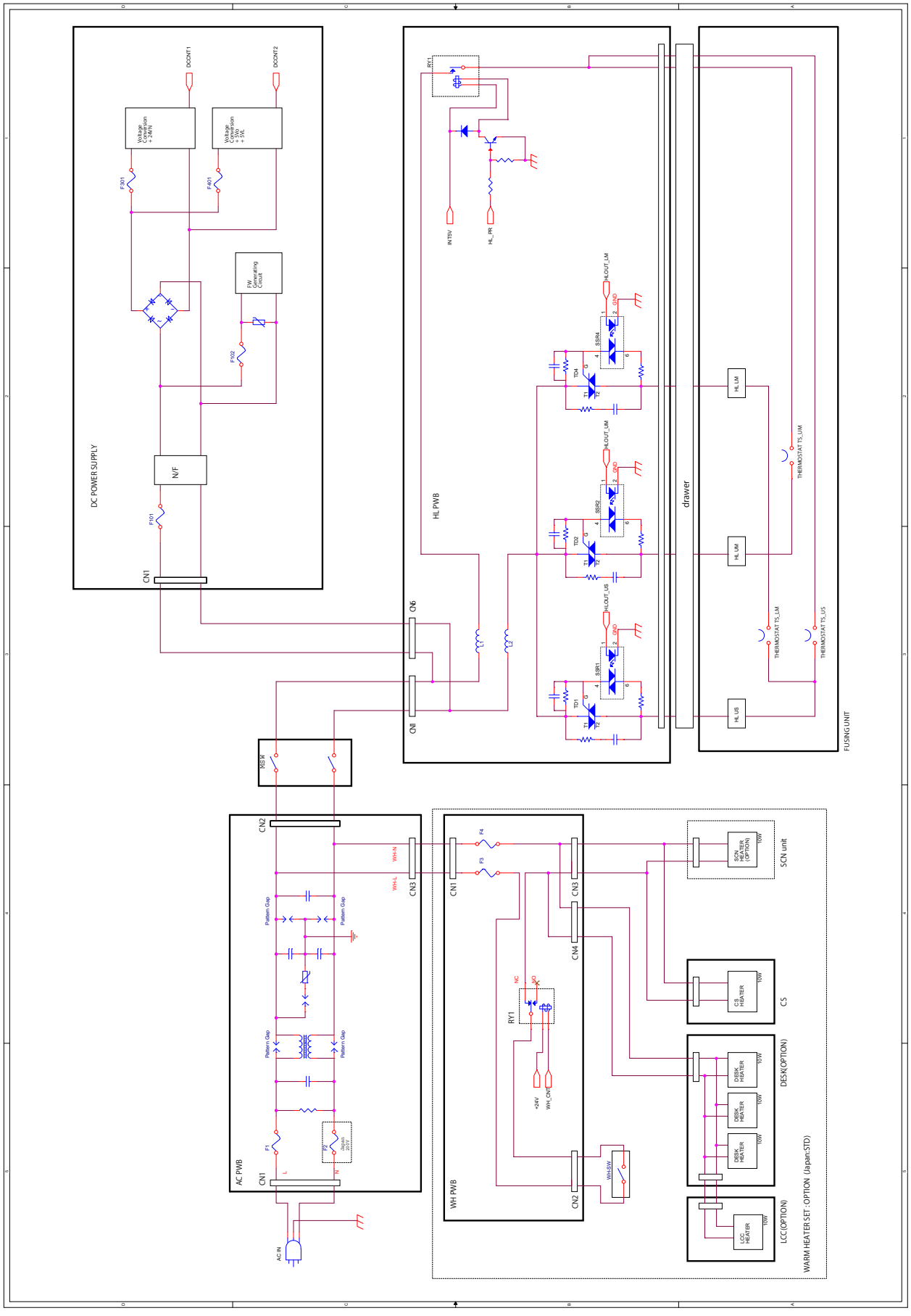


F. FAX section

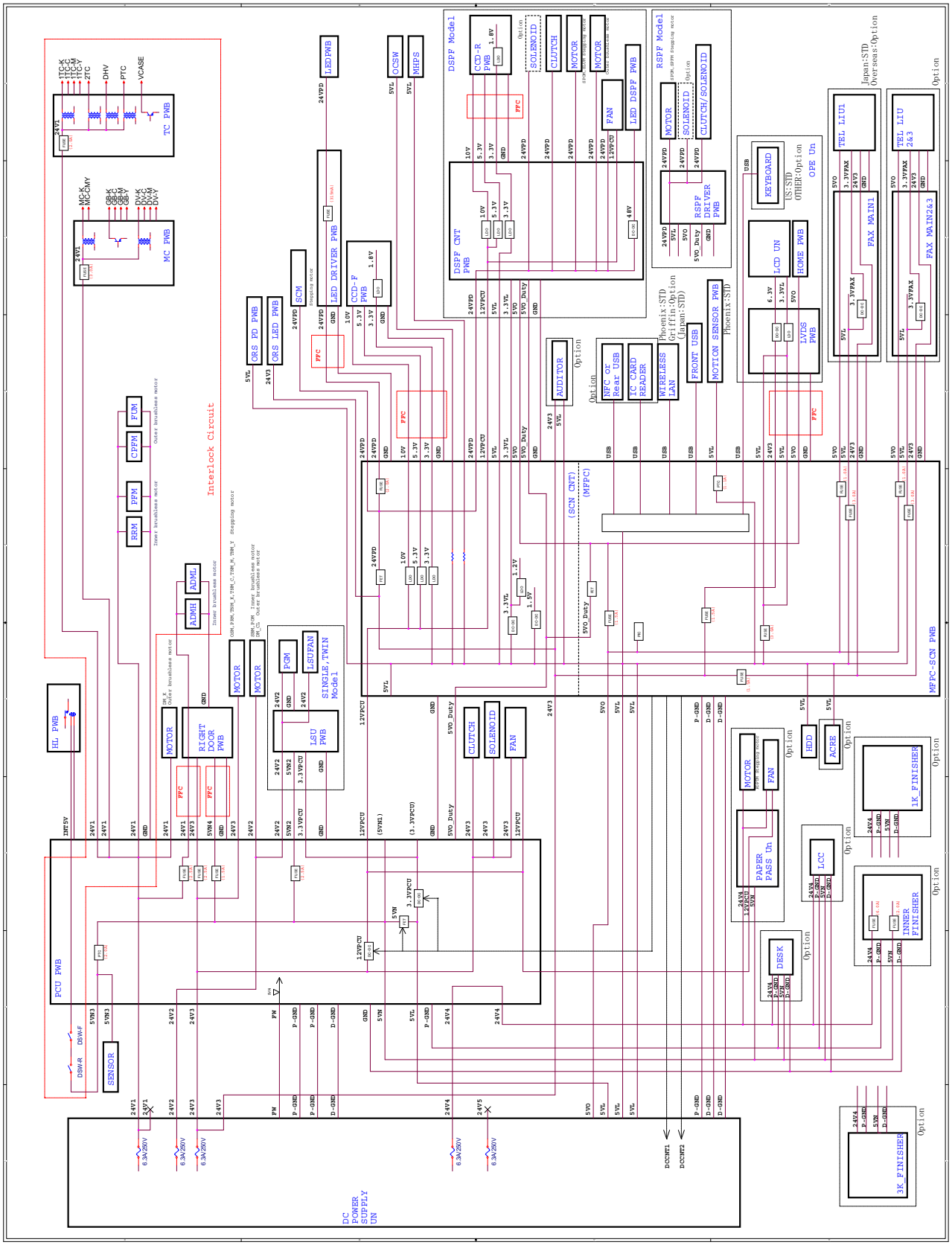


2. Power line diagram

A. AC power line diagram

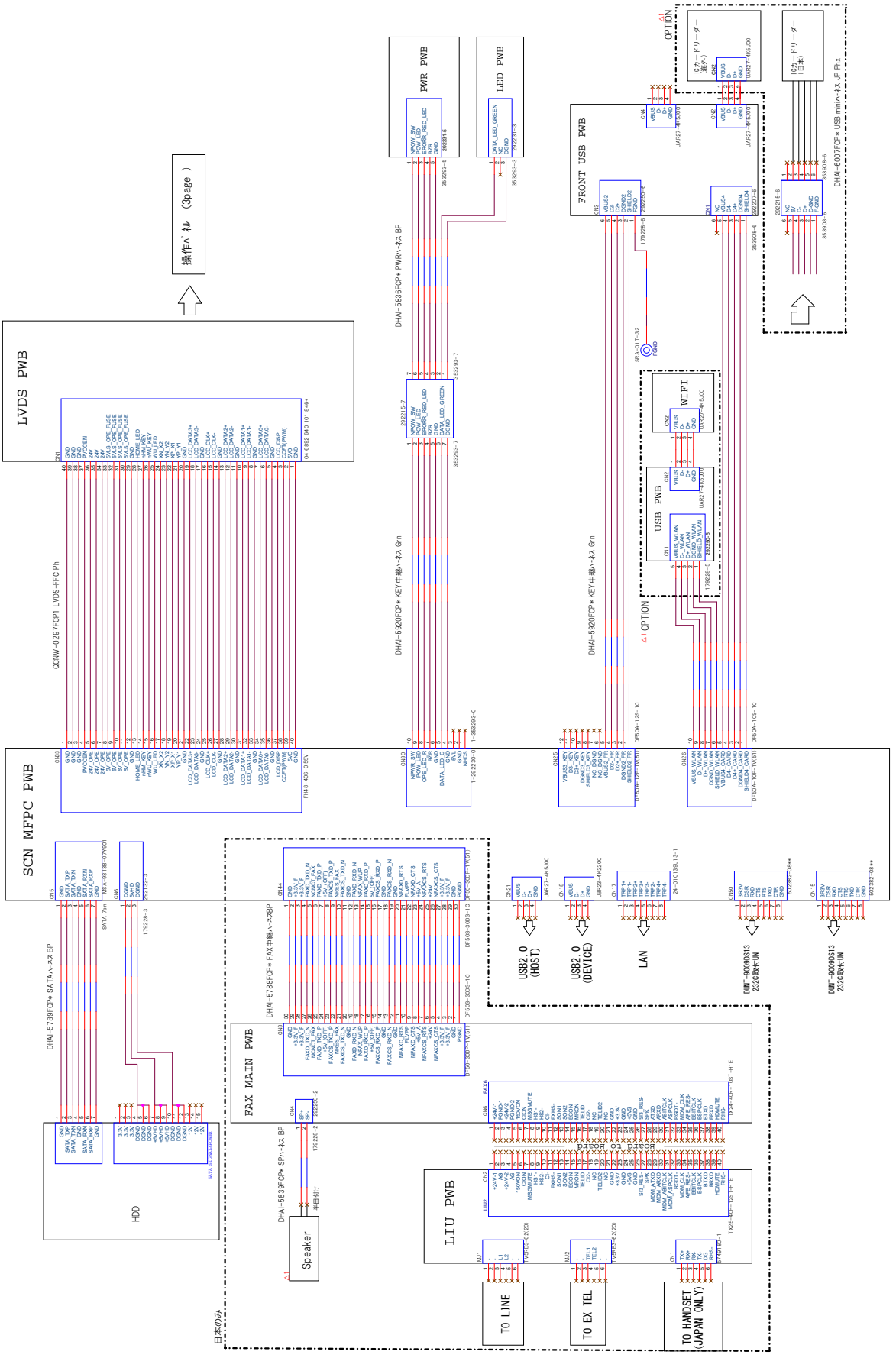


B. DC power line diagram

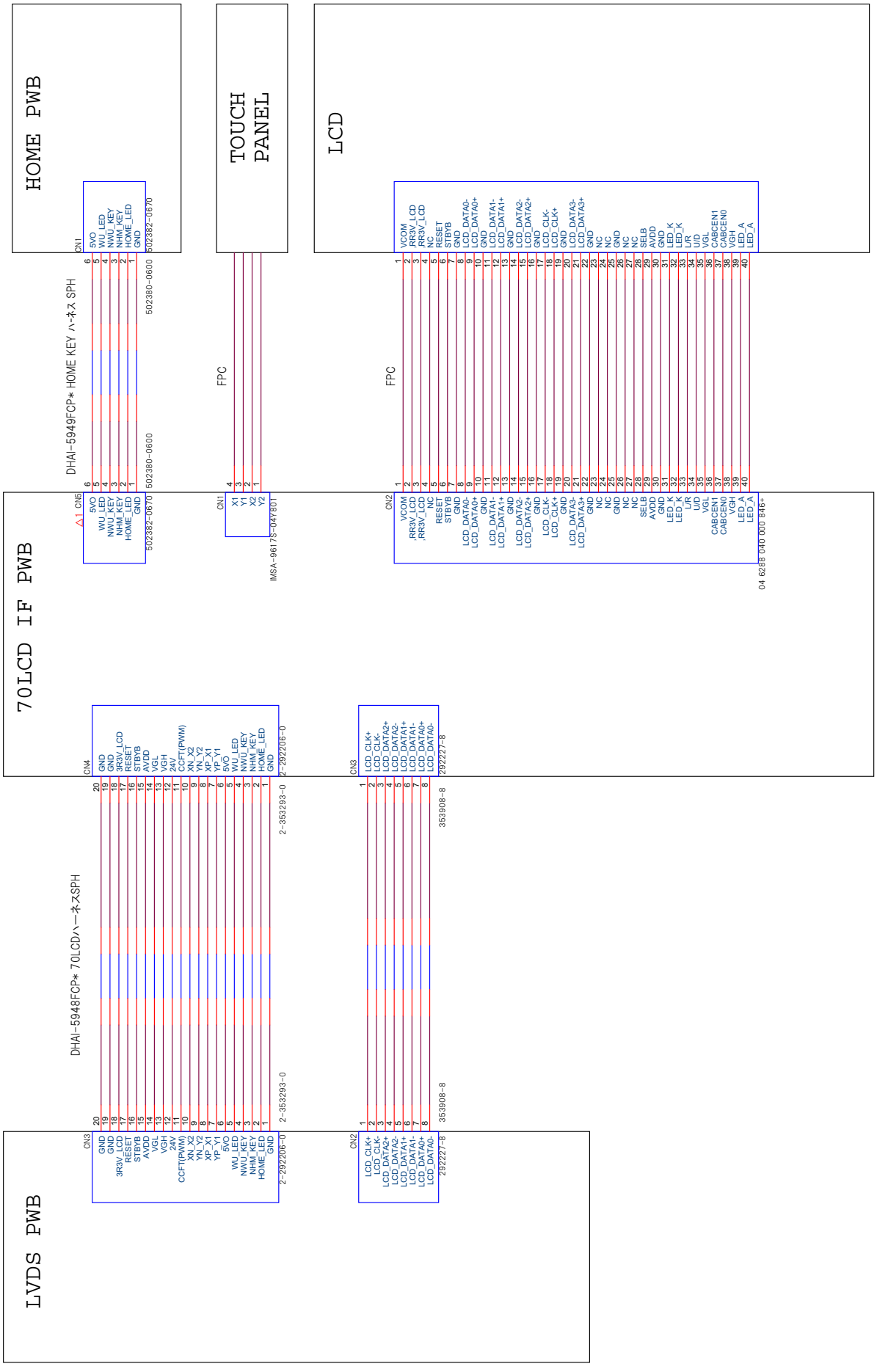


3. Actual wiring chart

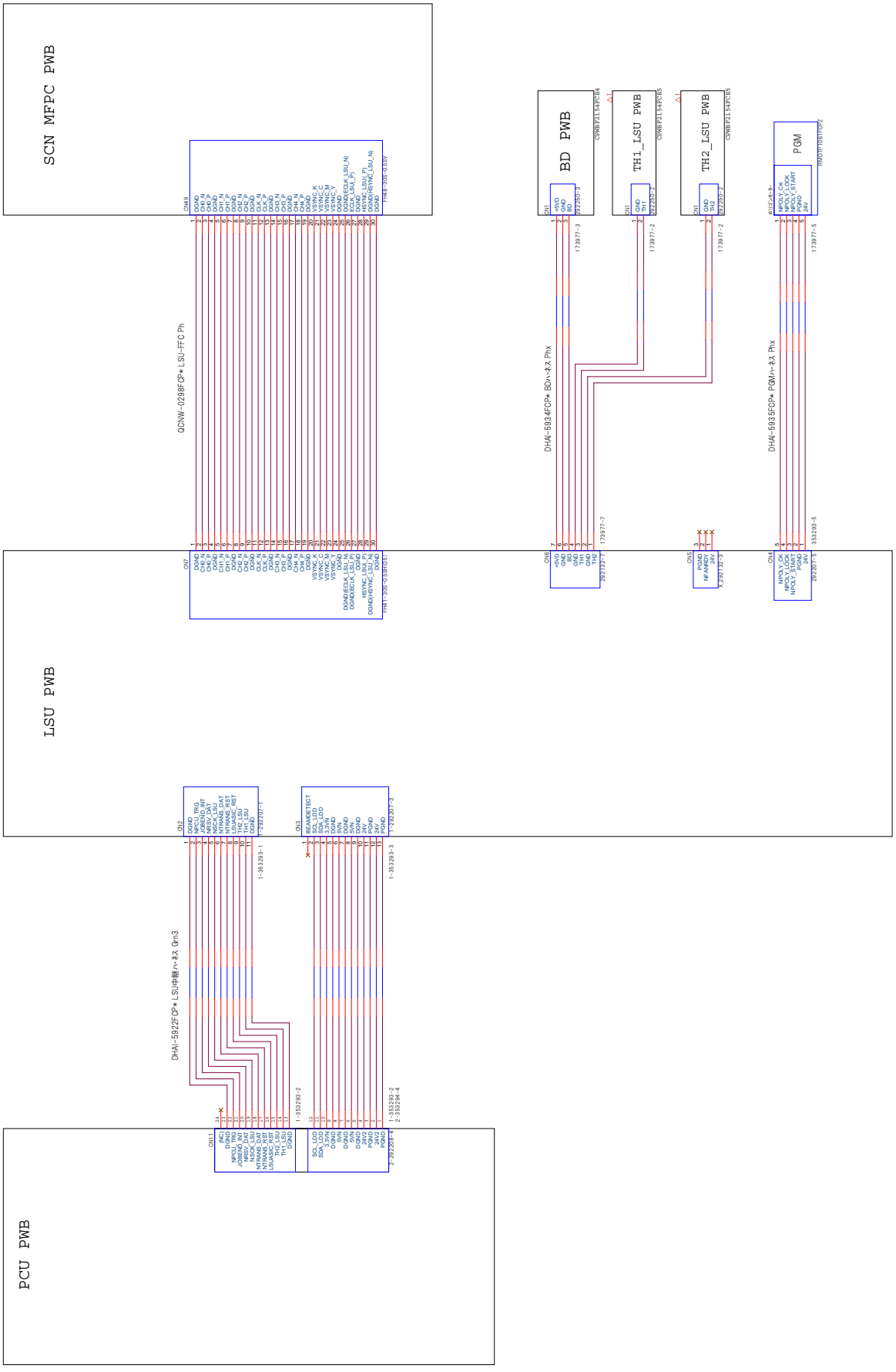
A. HDD, FAX, USB



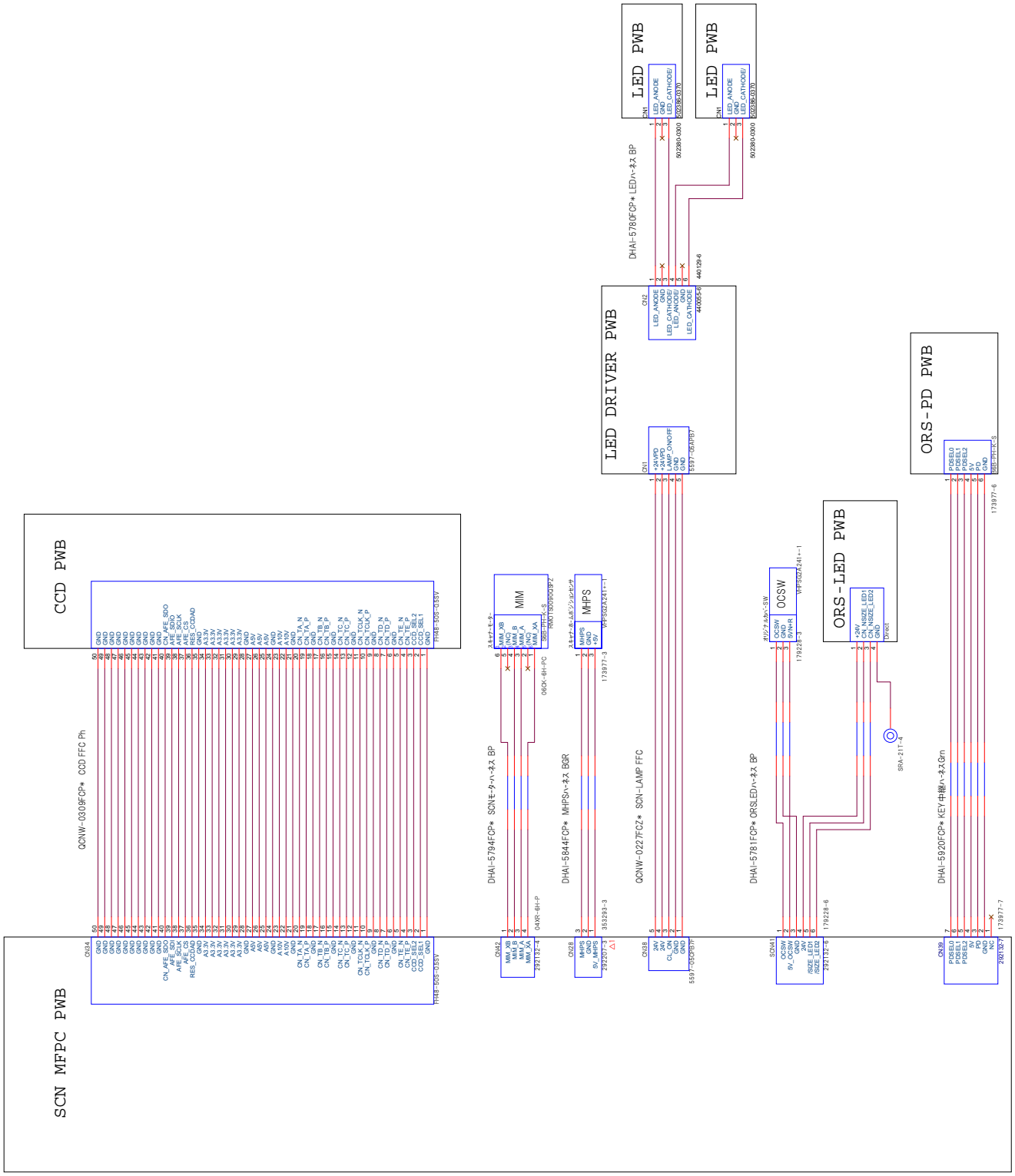
B. Operation panel



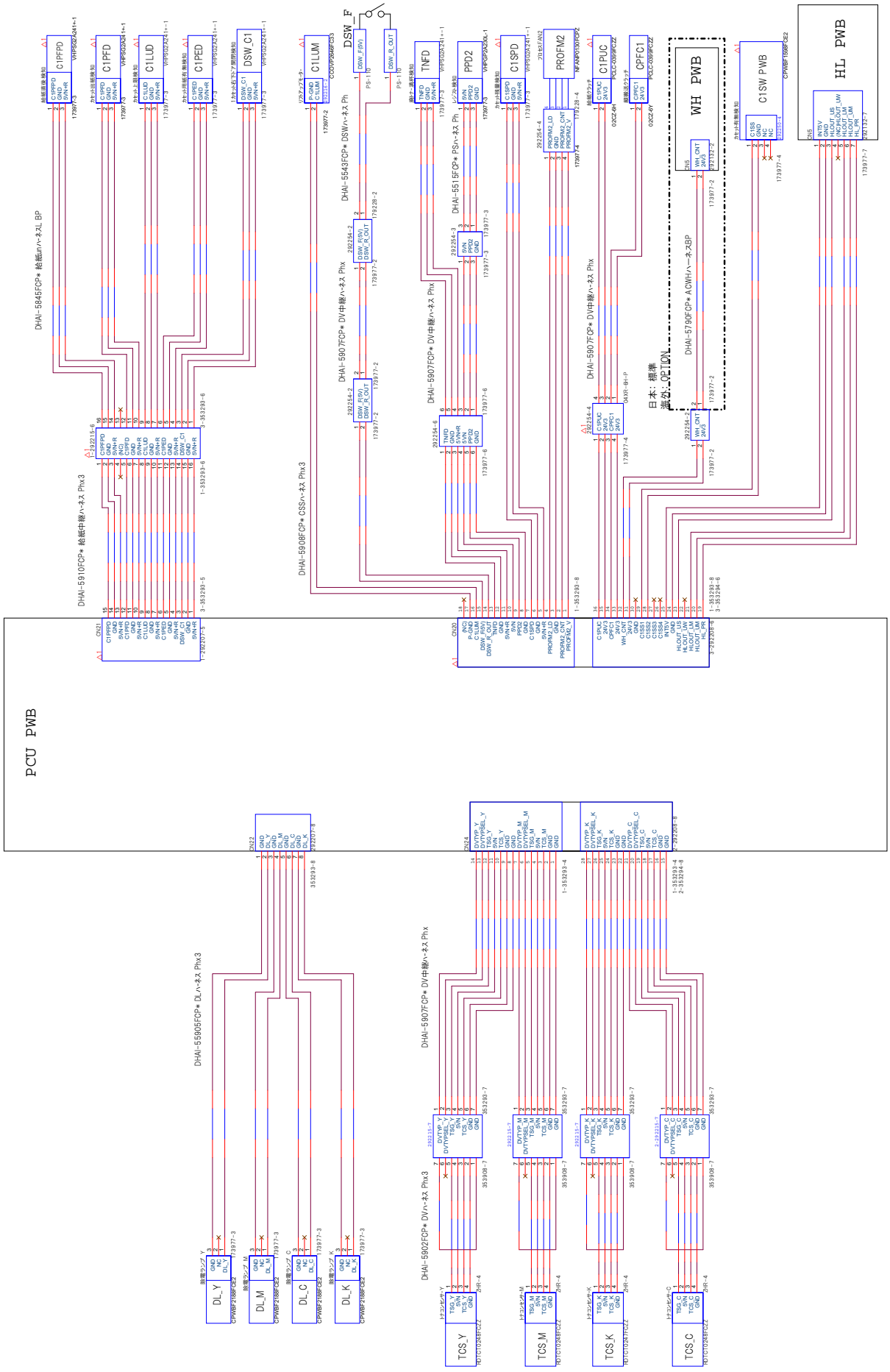
C. LSU



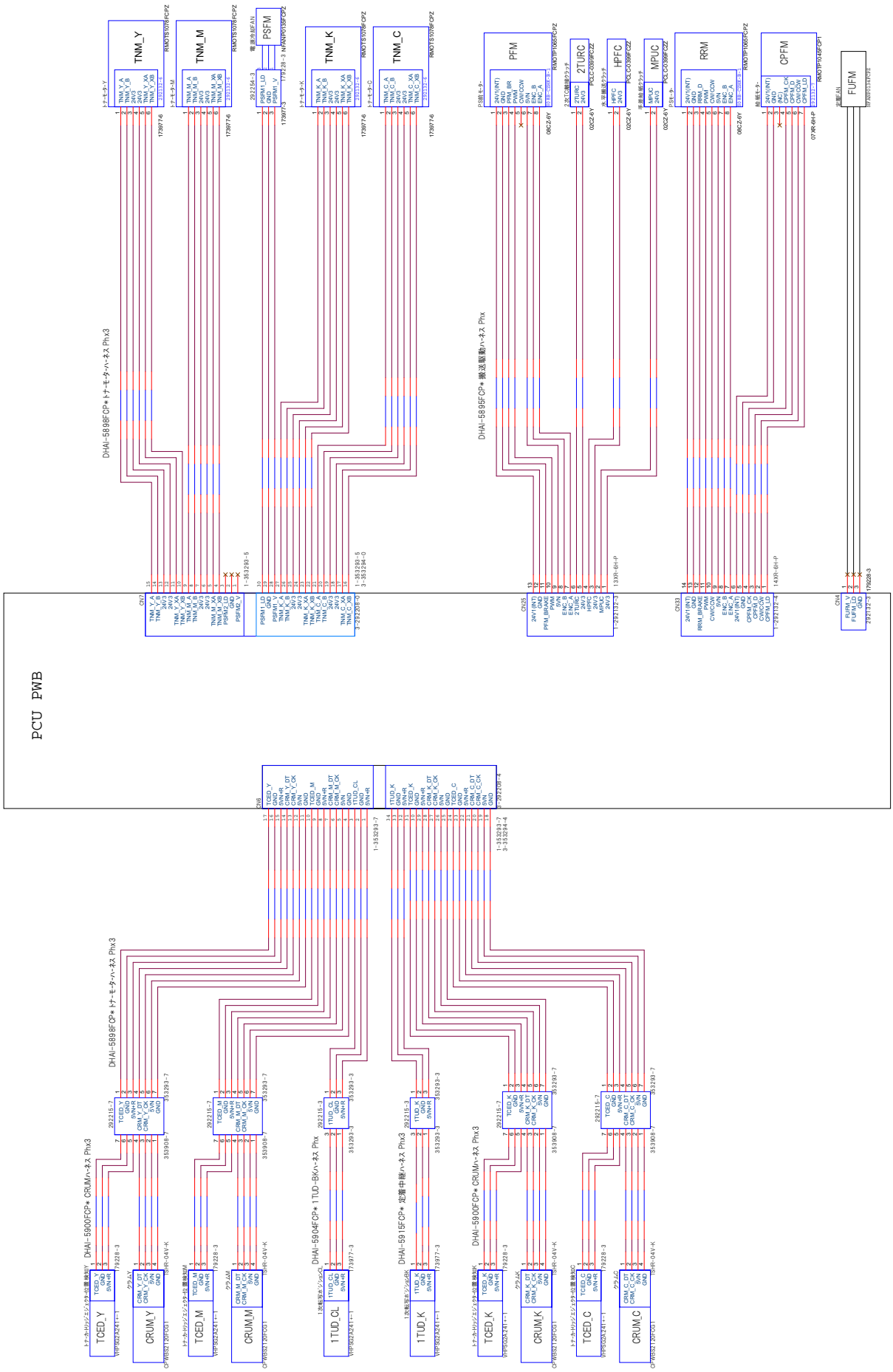
D. Scanner


SCN MFPC PWB
CCD PWB
LED DRIVER PWB
LED PWB
LED PWB
ORS-LED PWB
ORS-PD PWB
QCNW-0309FCP* CCD FFC Ph
DHAI-5794FCP* SCNモータハーネス BP
DHAI-5844FCP* MHPSハーネス BGR
QCNW-022TFCZ* SCN-LAMP FFC
DHAI-5781FCP* ORSLEDハーネス BP
DHAI-5920FCP* KEY中継ハーネス0m
DHAI-5780FCP* LEDハーネス BP
MIM
MHPS
OCSW
SRA-21T-4

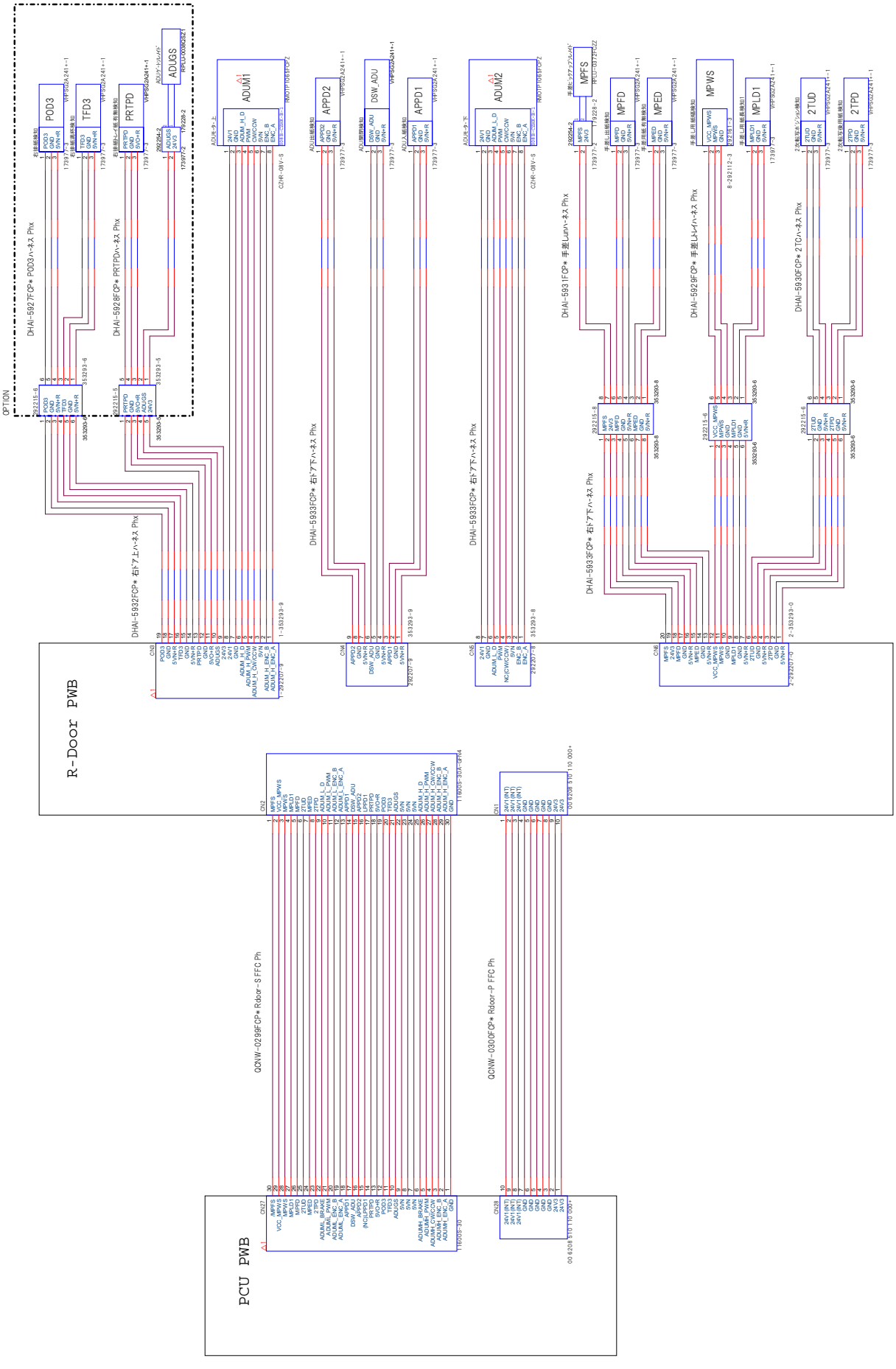
E. Paper feed, CSS1, Process, DV



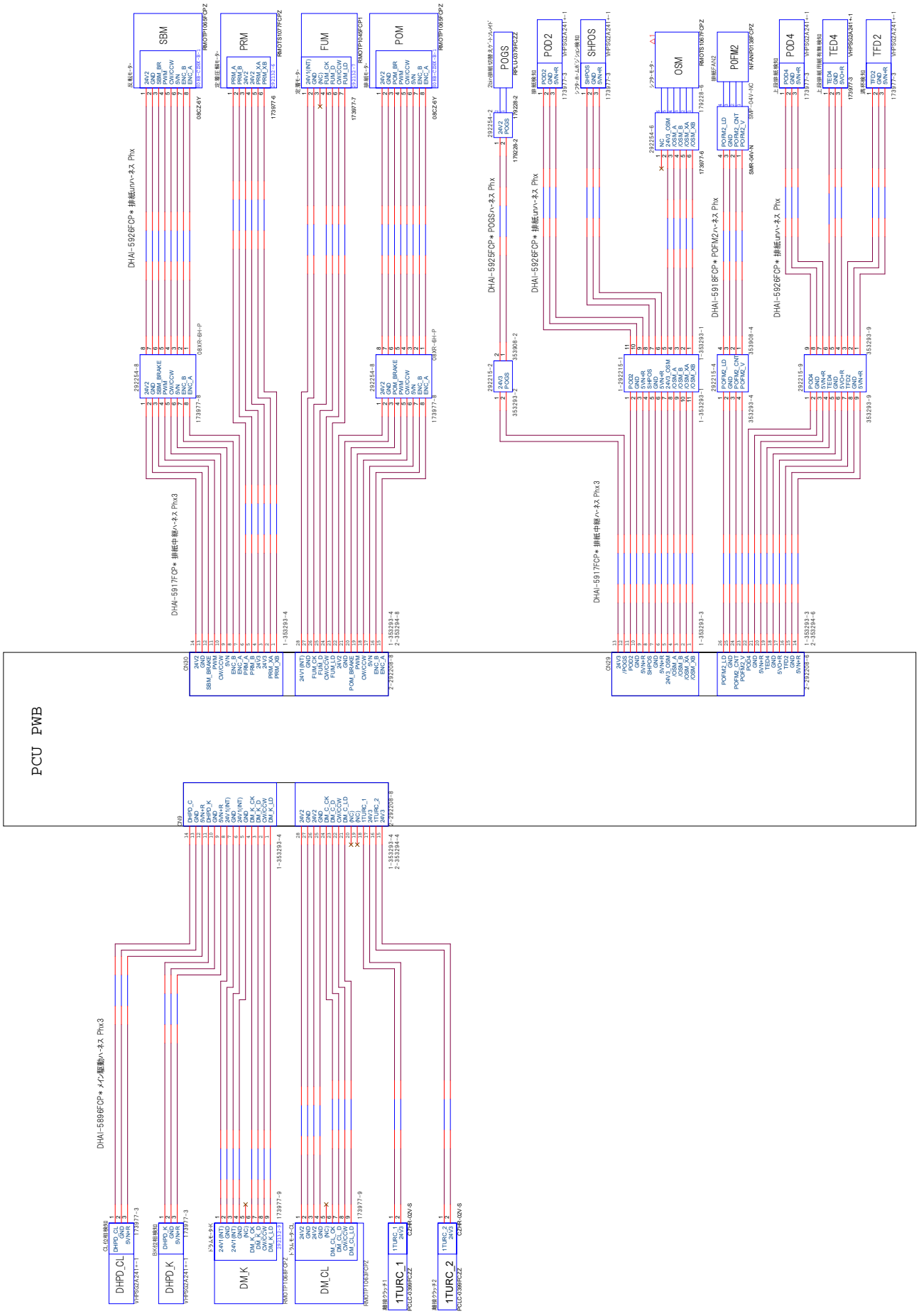
F. Toner motor, CRUM, Paper transport drive



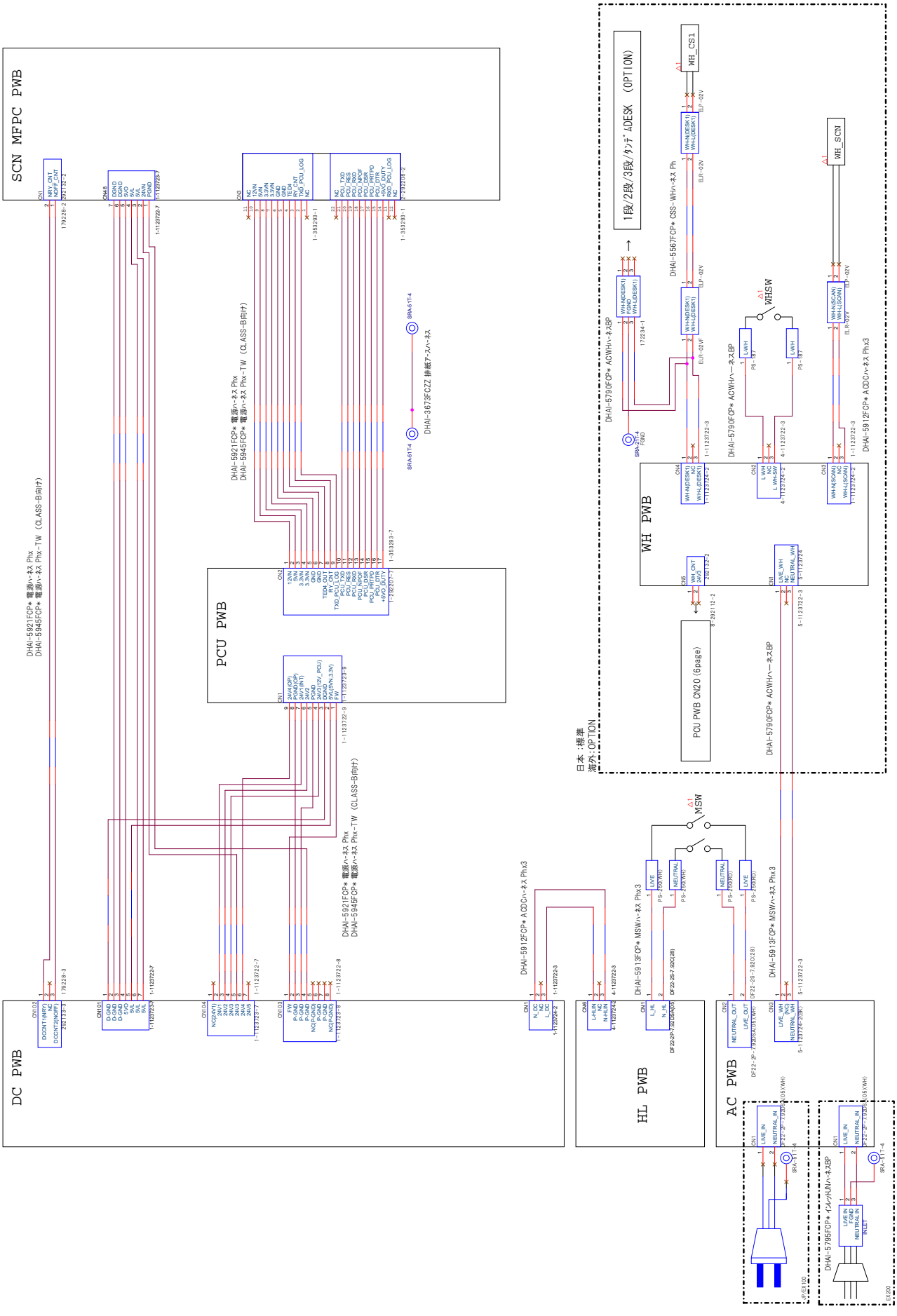
G. Right door, Manual paper feed



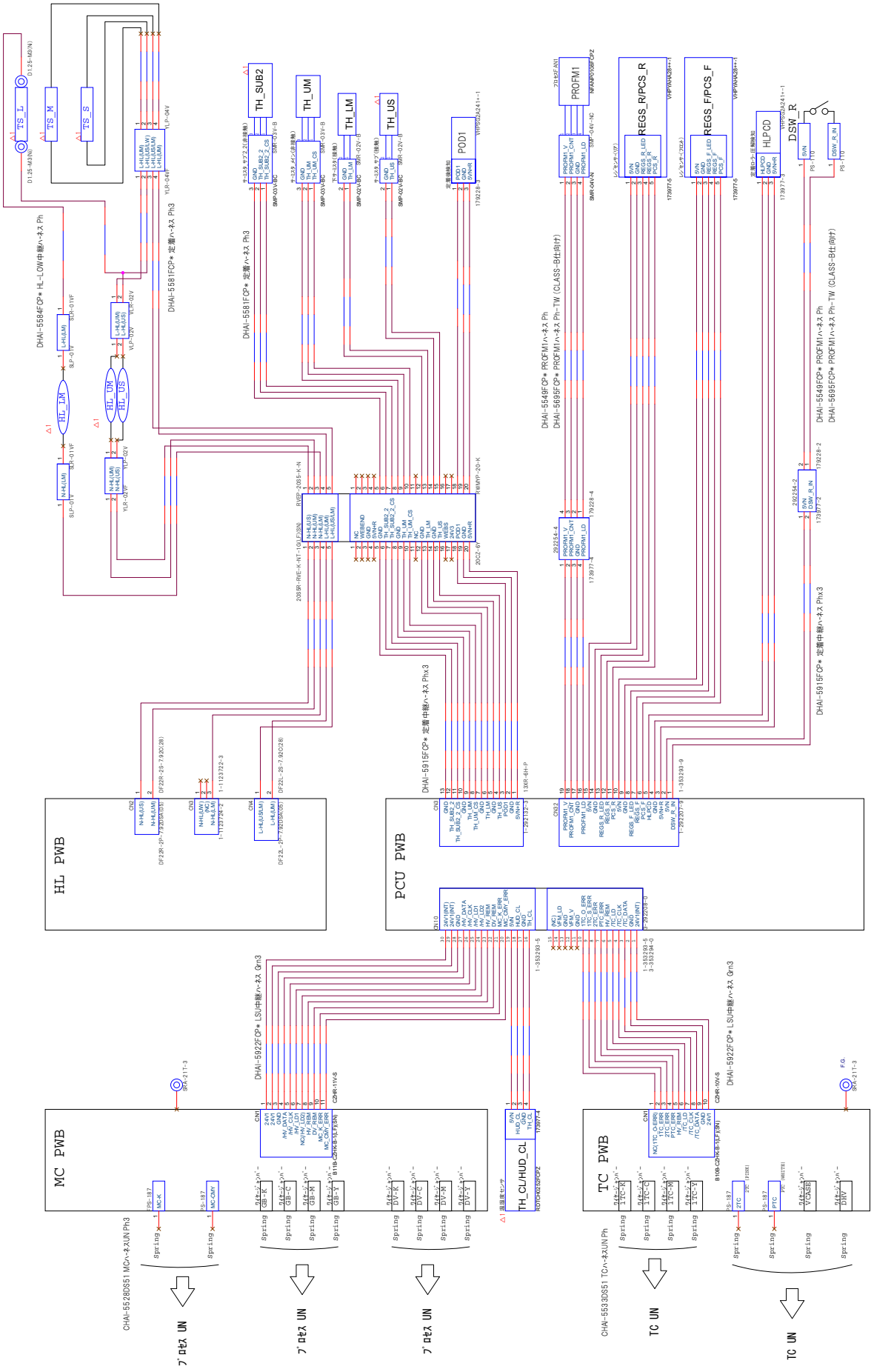
H. Paper exit, Main drive



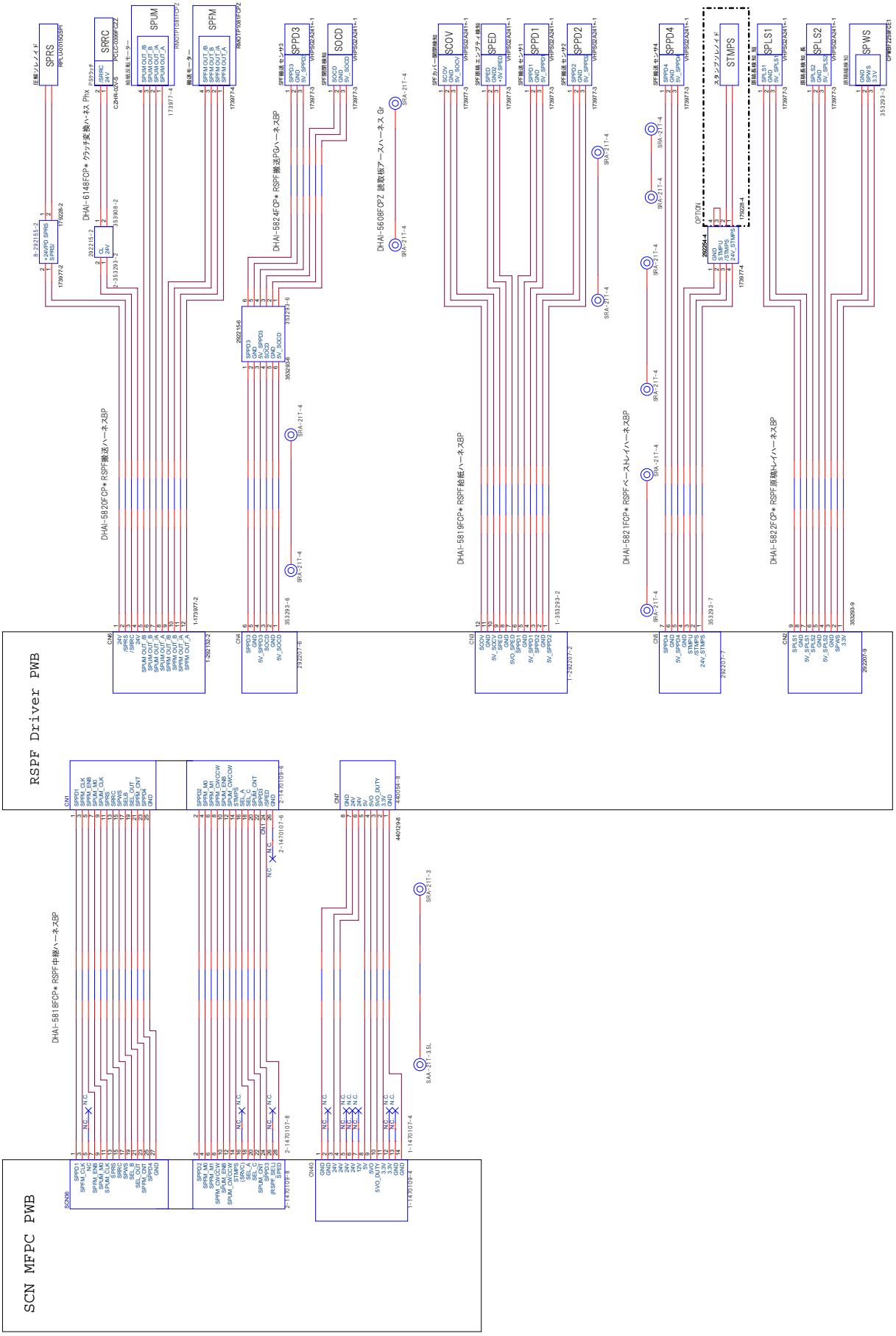
I. Power supply



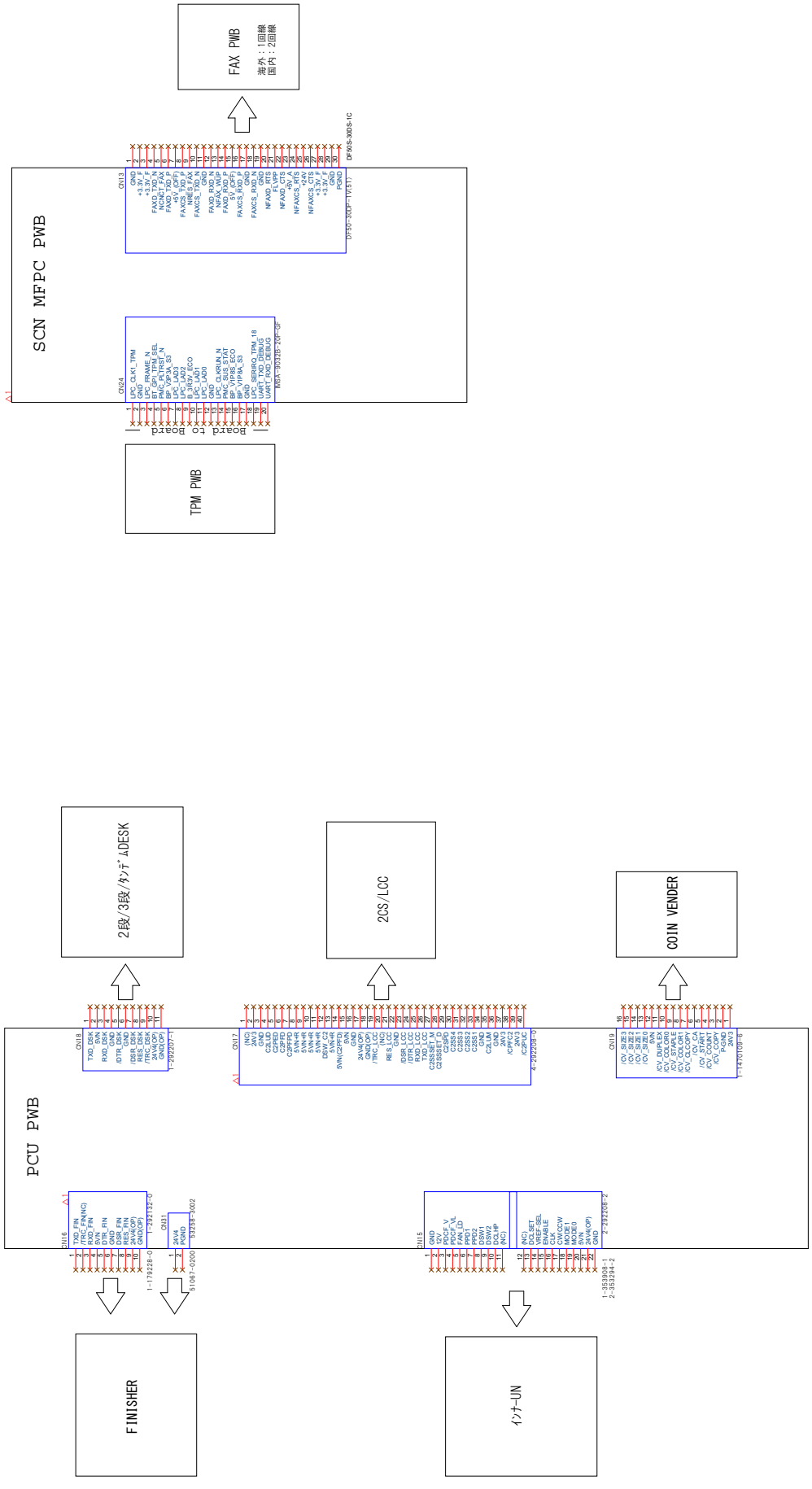
J. Fusing


HL PWB
PCU PWB
MC PWB
TC PWB
TS_L
TS_M
TS_S
HL_LM
HL_UM
HL_US
TH_SUB2
TH_UM
TH_LM
TH_US
POD1
PROFM1
REGS_R/PCS_R
REGS_F/PCS_F
HLPCD
DSW_R
TH_CL/HUD_CL
DHAI-5584FCP* HL-LOW中継ハーネス Ph
DHAI-5581FCP* 定着ハーネス Ph3
DHAI-5581FCP* 定着ハーネス Ph3
DHAI-5649FCP* PROFM1ハーネス Ph
DHAI-5695FCP* PROFM1ハーネス Ph-TW (CLASS-B仕向け)
DHAI-5649FCP* PROFM1ハーネス Ph
DHAI-5695FCP* PROFM1ハーネス Ph-TW (CLASS-B仕向け)
DHAI-5915FCP* 定着中継ハーネス Phx3
DHAI-5915FCP* 定着中継ハーネス Phx3
DHAI-5922FCP* LSU中継ハーネス Grn3
DHAI-5922FCP* LSU中継ハーネス Grn3
CHAI-5528DS51 MCハーネスUN Ph3
CHAI-5530DS51 TCハーネスUN Ph
MC UN
TC UN
TC UN

K. RSPF


RSPF Driver PWB
SCN MFPC PWB
DHAI-5820FCP* RSPF搬送ハーネスBP
DHAI-5824FCP* RSPF搬送PGハーネスBP
DHAI-5606FCP2 読取板7ースハーネス Gr
DHAI-5819FCP* RSPF給紙ハーネスBP
DHAI-5821FCP* RSPFベースNレイハーネスBP
DHAI-5822FCP* RSPF原稿Nレイハーネス
DHAI-5818FCP* RSPF中継ハーネスBP
DHAI-6148FCP* クラッチ搬送ハーネス Phx
SPRS
SRRC
SPUM
SPFM
SPPD3
SCOD
SCOV
SPED
SPPD1
SPPD2
SPPD4
STMPS
SPLS1
SPLS2
SPWS

L. Option


FAX PWB
海外：1回線
国内：2回線
SCN MFPC PWB
TPM PWB
2段/3段ｶｾｯﾄDESK
2CS/LCC
COIN VENDER
PCU PWB
FINISHER
ｲﾝﾅｰUN

[13] OTHERS

1. TOOL LIST

Name	PARTS CODE	NOTE
Y toner powder	CKOG-0345DS51	Primary transfer belt
Conductive grease (FLOIL GE-676)	UKOG-0012QSZZ	For shaft
Grease (FLOIL GP-501MR)	UKOG-0013QSZZ	Paper feed roller shaft
Grease (MOLYKOTE X5-6020)	UKOG-0158FCZZ	Scanner rail
Gray test chart	UKOG-0162FCZZ	
Grease (JFE552)	UKOG-0235FCZZ	
Grease (HANARL FL-955R)	UKOG-0299FCZZ	
Grease (FLOIL G-313S)	UKOG-0307FCZZ	
Stearic acid powder	UKOG-0312FCZZ	OPC drum
Color copy test chart	UKOG-0326FCZZ / UKOG-0326FC11	
Scanner adjustment chart	UKOG-0356FCZZ	

2. 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
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
I-101	Image data	FAX / internet FAX receive images (backup)
L-102	Not available	swap area

3. 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).

   Important

   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

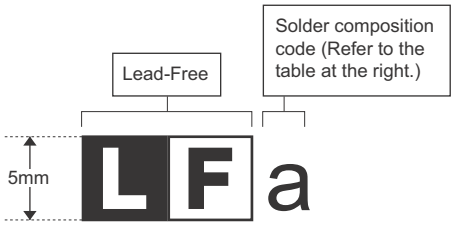
No.	Data kind	Before installation (When shipping from the factory)	After installation (After use by users)	Enable/ Disable of data backup	Backup means	Enable/ Disable of data reinstall	Data reinstall procedures	Reinstall operator
1	ICU firmware/ Snapshot	Available	Available	Disable	---	Enable	SIM49-01	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.

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 inkorrekter 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 (MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE BATTERY FROM THE PRODUCT AND CONTACT YOUR LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE) QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE AGENCE ENVIRONNEMENTALE LOCALE POUR DES INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET DE TRAITEMENT.

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