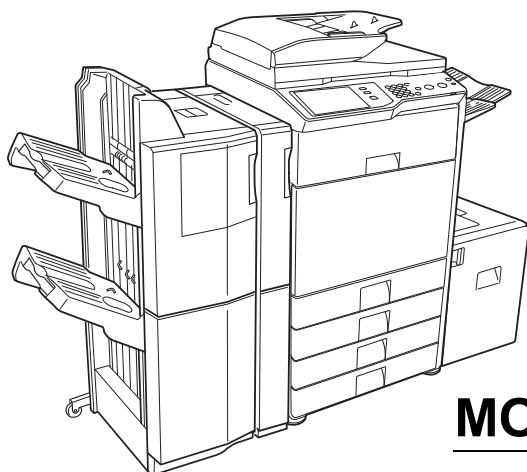


# SHARP SERVICE MANUAL

CODE: 00ZMX5001/S1E ▲



## DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM

**MX-4100N/5000N** ▲  
**MODEL MX-4101N/5001N**

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

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# NOTE FOR SERVICING

## 1. Precautions for servicing

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

## 2. Warning for servicing

- 1) Be sure to only connect the power cord 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.
- 2) If there is any abnormality such as a smoke or an abnormal smell, interrupt the job and disconnect the power plug.  
It may cause a fire or an electric shock.
- 3) Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.  
To protect the machine and the power unit from lightning, grounding must be made.
- 4) When connecting the grounding wire, never connect it to the following points.  
It may cause an explosion, a fire or an electric shock.
  - Gas tube
  - Lightning conductor
  - A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
  - Grounding wire for telephone line

- 5) Do not damage, break, or excessively twist the power cord.  
Do not put heavy objects on the power cable. Do not bend it forcibly or do not pull it extremely.  
It may cause a fire or an electric shock.
- 6) Keep the power cable away from a heat source.  
Do not insert the power plug with dust on it into a power outlet.  
It may cause a fire or an electric shock.
- 7) Do not put any type of container with liquids or metal pieces inside the machine.  
It may cause a fire or an electric shock.
- 8) Do not touch the power plug, insert the phone jack, operate the machine, or perform servicing with wet or oily hands.  
It may cause an electric shock.

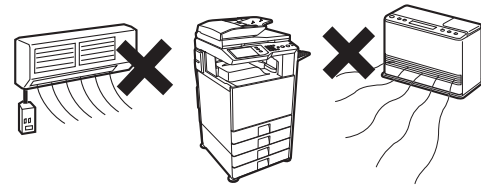
## 3. Note for installing site

Do not install the machine at the following sites.

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

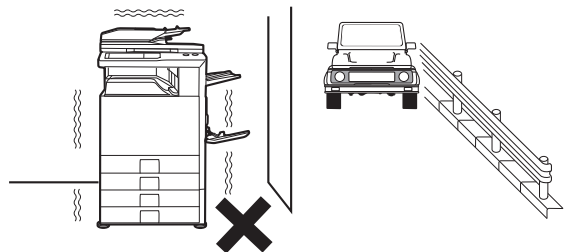
Paper may get damp and form condensation inside the machine, causing paper jam or copy dirt.

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



- 2) **Place of high vibrations**

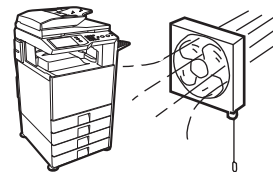
It may cause a breakdown.



- 3) **Poorly ventilated place**

An electro-static type copier will produce ozone.

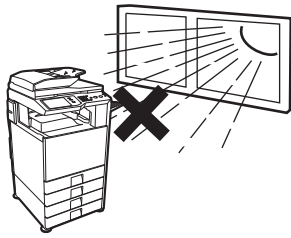
A low level of ozone is produced so as not to affect the human body. However, continuous use of such a machine may produce an odor of ozone. Install the machine in a well ventilated place, and ventilate occasionally.



4) **Place of direct sunlight.**

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

It may cause a breakdown or dirty copy.



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

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

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



6) **Place of excessive dust**

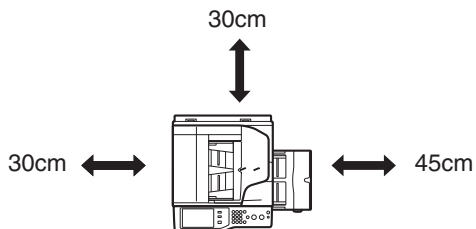
When dusts enter the machine, it may cause a breakdown or copy dirt.



7) **Place near a wall**

Some machines require intake and exhaust of air.

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



8) **Unstable or slanted surface**

If the machine drops or tips over, it may cause an injury or a breakdown.

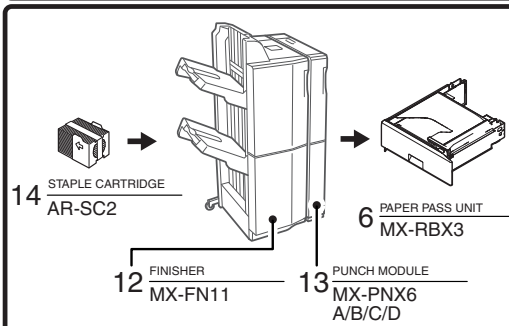
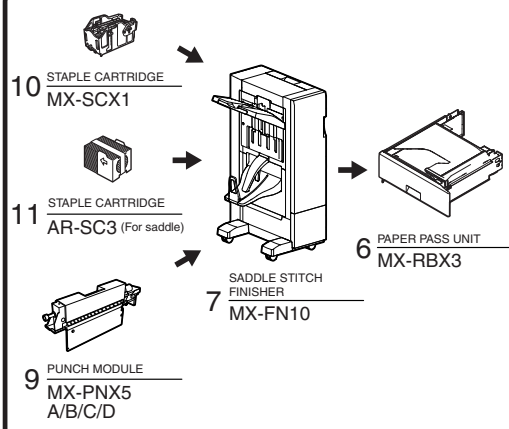
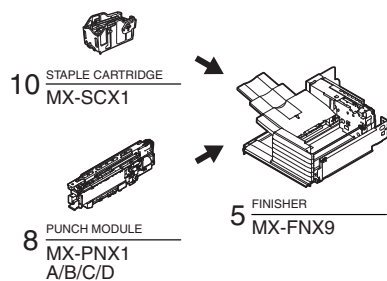
It is recommended to use an optional paper desk as outlined in the specifications.

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

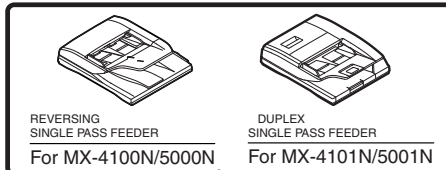
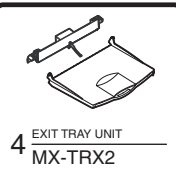
# [1] PRODUCT OUTLINE

## 1. Article constitution (Main unit and option)

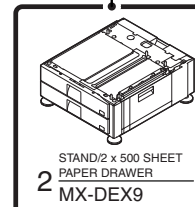
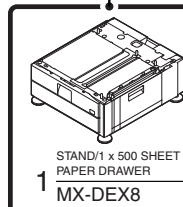
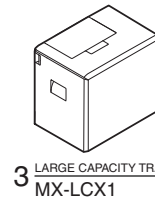
### Paper exit system



### Document feeder system

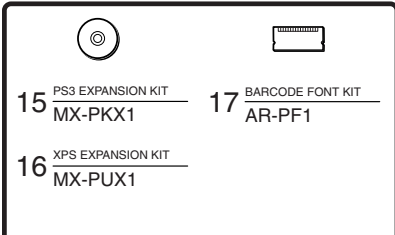


### Paper feed system

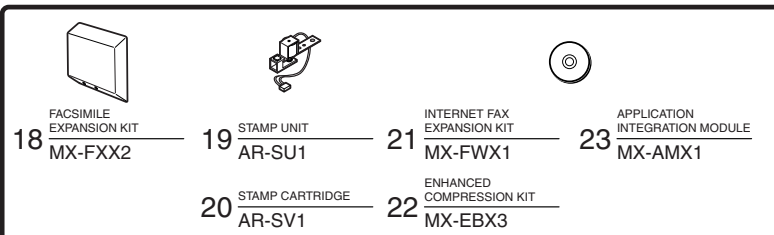


DIGITAL FULL COLOR  
MULTIFUNCTIONAL SYSTEM  
MX-4100N/5000N  
MX-4101N/5001N

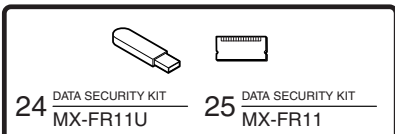
### Printer expansion



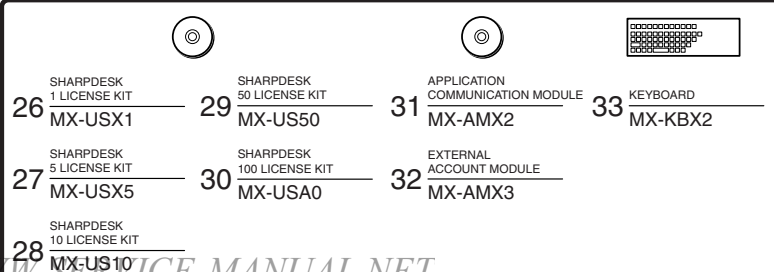
### Image send expansion



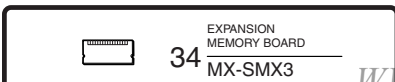
### Authentication/Security



### Application/Solution



### Memory



## 2. Mainfunction of the main unit

	MX-4100N/5000N	MX-4101N/5001N
Copier	STD	
PCL printer	STD	
PS printer	OPT*1	
Main body LCD	COLOR WVGA 8.5"	
FAX	OPT	
Scanner	STD	
Filing	STD	
HDD	STD	
RSPF/DSPF	RSPF	DSPF
Automatic duplex	STD	
Security	OPT*1	
Internet Fax	OPT*1	

STD: Standard provision. OPT: Option

OPT\*1: Product key target.

## 3. Combination of options

Section		Name	Model name	MX-4100N/4101N MX-5000N/5001N	Product key target	Remarks
Paper feed system	1	STAND/1 x 500 SHEET PAPER DRAWER	MX-DEX8	○		
	2	STAND/2 x 500 SHEET PAPER DRAWER	MX-DEX9	○		
	3	LARGE CAPACITY TRAY	MX-LCX1	○		A4
Paper exit system	4	EXIT TRAY UNIT	MX-TRX2	○		
	5	FINISHER	MX-FNX9	○		Inner finisher
	6	PAPER PASS UNIT	MX-RBX3	○		
	7	SADDLE STITCH FINISHER	MX-FN10	○		
	8	PUNCH MODULE	MX-PNX1 A/B/C/D	○		For inner finisher
	9	PUNCH MODULE	MX-PNX5 A/B/C/D	○		For saddle stitch finisher
	10	STAPLE CARTRIDGE	MX-SCX1	○		For finisher
	11	STAPLE CARTRIDGE	AR-SC3	○		For saddle
	12	FINISHER	MX-FN11	○		
	13	PUNCH MODULE	MX-PNX6 A/B/C/D	○		For finisher (MX-FN11)
	14	STAPLE CARTRIDGE	AR-SC2	○		For finisher (MX-FN11)
Printer expansion	15	PS3 EXPANSION KIT	MX-PKX1	○	○	
	16	XPS EXPANSION KIT	MX-PUX1	○*3	○	
	17	BARCODE FONT KIT	AR-PF1	○		
Image send expansion	18	FACSIMILE EXPANSION KIT	MX-FXX2	○*1		
	19	STAMP UNIT	AR-SU1	○		
	20	STAMP CARTRIDGE	AR-SV1	○		
	21	INTERNET FAX EXPANSION KIT	MX-FWX1	○	○	
	22	ENHANCED COMPRESSION KIT	MX-EBX3	○		
	23	APPLICATION INTEGRATION MODULE	MX-AMX1	○	○	
Authentication/ Security	24	DATA SECURITY KIT	MX-FR11U	○	○	Commercial version
	25	DATA SECURITY KIT	MX-FR11	○	○	Authentication version
Application/ Solution	26	SHARPDESK 1 LICENSE KIT	MX-USX1	○		
	27	SHARPDESK 5 LICENSE KIT	MX-USX5	○		
	28	SHARPDESK 10 LICENSE KIT	MX-US10	○		
	29	SHARPDESK 50 LICENSE KIT	MX-US50	○		
	30	SHARPDESK 100 LICENSE KIT	MX-USA0	○		
	31	APPLICATION COMMUNICATION MODULE	MX-AMX2	○	○	
	32	EXTERNAL ACCOUNT MODULE	MX-AMX3	○	○	
	33	KEYBOARD	MX-KBX2	STD/O*2		
Memory	34	EXPANSION MEMORY BOARD	MX-SMX3	○		1GB

STD: Standard provision. ○: Installable. ---: Cannot be connected.

\* 1: No support for some destinations.

\* 2: Standard for North America and Sweden (DSPF/RSPF model). Standard for U.K., Germany and France (DSPF model only).

\* 3: Memory expansion are required.

## [2] SPECIFICATIONS

### 1. Basic specifications

#### A. Base engine

##### (1) Type

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

##### (2) Engine composition

Photoconductor kind	OPC (Drum diameter: φ30mm) Black x 1, Color x 3
Copying method	Electronic photo (Laser)
Developing system	Dry, 2-component magnetic brush development
Charging system	Charged saw-tooth method
Transfer system	Intermediate transfer belt
Cleaning system	Counter blade
Fusing system	Heat roller
Waste toner disposal	No toner recycling system / Waste toner bottle system

##### (3) Dimensions / Weight

▲ Outer dimensions (W x D x H)	MX-4100N/5000N (RSPF model): 25-25/64 x 27-23/64 x 37-25/64 inch 645 x 695 x 950 mm MX-4101N/5001N (DSPF model): 25-25/64 x 27-23/64 x 37-25/32 inch 645 x 695 x 960 mm
Dimensions occupied by Machine (W x D) (State of the manual paper feed tray is expansion.)	39-11/64 x 27-23/64 inch 995 x 695 mm
▲ Weight (Including OPC drum/ excluding consumable parts)	MX-4100N/5000N (RSPF model): Approx. 253 lbs (115 kg) MX-4101N/5001N (DSPF model): Approx. 273 lbs (124 kg)

##### (4) Warmup

Warm-up time	MX-4100N/4101N: 120 seconds or less MX-5000N/5001N: 140 seconds or less (The value may be increased by operating condition)
Pre-heat	Yes
Recovery time from jam *	30 sec. or less

\* Condition: After the door has been opened for 60 seconds and the polygon motor has stopped.

##### (5) First copy time

Platen/ RSPF	MX-4100N/4101N		MX-5000N/5001N	
	Monochrome	Color	Monochrome	Color
Platen	4.7 sec. or less	6.7 sec. or less	4.1 sec. or less	5.9 sec. or less
RSPF	10.1 sec. or less	13.5 sec. or less	9.3 sec. or less	13.5 sec. or less
DSPF	9.5 sec. or less	15.2 sec. or less	8.8 sec. or less	15.2 sec. or less

\* Measurement conditions: When paper of A4/8.5 x 11 is fed to narrow side direction from the main unit tray 1, and the polygon motor is rotating.

Color auto judgment/magical view OFF.

The first output immediately after turning ON the power is excluded.

##### (6) Engine resolution

Writing resolution	Copy: 600 x 600dpi
	Print: 1200 x 1200dpi
Smoothing	No
Gradation (Monochrome/Color)	Copy: 600 x 600dpi Print : 600 x 600 (1bit) / 600 x 600 (4bit) / 1200 x 1200 (1bit)

##### (7) Printable area

Max. print size	299 x 450 mm
Void area Image loss	Lead edge: 4mm or less Rear edge: 2 mm or more, and 5 mm or less Total of the lead edge and the rear edge: 8mm or less

Full A3 / 11 X 17 dimension (299 x 450 mm) can be printed with PCL / PS driver.

##### (8) Engine speed (ppm)

###### a. In case of tray (1-4, LCC) paper feeding

Paper type	Paper size	Monochrome		Color	
		MX-4100N/4101N	MX-5000N/5001N	MX-4100N/4101N	MX-5000N/5001N
▲ Standard paper	A3	19	22	19	22
	B4	22	25	22	25
	A4	41	50	41	50
	B5				
	A4R	26	30	26	30
	B5R				
	A5R	29	32	29	32
	Extra	18	21	18	21
	11 x 17	19	22	19	22
	8.5 x 14	22	25	22	25
	8.5 x 13				
	8.5 x 13.4				
	8.5 x 13.5				
	8.5 x 11	41	50	41	50
	8.5 x 11R	26	30	26	30
	7.25 x 10.5R				
	5.5 x 8.5R	29	32	29	32
Heavy paper	A4	17	17	17	17
	B5				
	A5R				
	8.5 x 11				
	8.5 x 5.5R	13	13	13	13
	A4R				
	B5R				
	8.5 x 11R				
	7.25 x 10.5R				
	In the other sizes	10	10	10	10

\* LCC - Supported paper types and weights: 8.5 x 11, A4, B5: 60 - 105 g/m<sup>2</sup> (16 - 28 LB.)

**b. In case of manual paper feed tray paper feeding**

Paper type	Paper size	Monochrome		Color	
		MX-4100N/4101N	MX-5000N/5001N	MX-4100N/4101N	MX-5000N/5001N
▲ Standard paper	A3W *1	17	20	16	20
	A3	18	21	17	21
	B4	21	24	19	23
	A4	41	50	31	39
	B5			34	42
	A4R	24	29	21	27
	B5R			23	29
	A5R	29	32	29	32
	Extra	17	20	16	20
	12 x 18 *1				
	11 x 17	18	21	17	21
	8.5 x 14	21	24	19	23
	8.5 x 13				
	8.5 x 13.4				
	8.5 x 13.5				
	8.5 x 11	41	50	31	39
	8.5 x 11R	24	29	22	28
	7.25 x 10.5R			21	27
	5.5 x 8.5R	29	32	29	32
OHP	A4, 8.5 x 11	16	16	15	15
	A4R, 8.5 x 11R	12	12	11	11
Envelope	Monarch, Com-10, DL, C5	11	11	10	10
Heavy paper	A4	16	16	15	15
	B5				
	A5R				
	8.5 x 11				
	8.5 x 5.5R				
	A4R	12	12	11	11
	B5R				
	8.5 x 11R				
	7.25 x 10.5R				
	In the other sizes	9	9	8	8

\*1: Engine speed in finisher output

**(9) Power source**

	100V series	200V series
▲ Voltage / Current	MX-4100N/4101N: 110 - 127V 12A MX-5000N/5001N: 110 - 127V 16A	220 - 240V 8A
Frequency	50/60Hz	
Power source code	Fixed type (Direct connection)	Inlet
Power switch	2 switches (Primary switch: in the front cover; Secondary switch: the operation panel)	

**(10) Power consumption**

	100V series	200V series
▲ Max. Rated Power Consumption *1	MX-4100N/4101N: 1.44Kw MX-5000N/5001N: 1.92Kw	1.84Kw

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

**B. Controller board**

**(1) Controller board**

CPU	Power QUICCIII-MPC8533E (1GHz)	
Interface		
IEEE 1284 Parallel	No	
Ethernet	1 port	
	Interface	10Base-T , 100Base-TX, 1000Base-T
	Support Protocol	TCP/IP (IPv4 IPv6), IPX/SPX , NetBEUI , EtherTalk
USB 2.0 Host	1 port	
USB authentication acquisition	No	
ACRE expansion I/F	Yes	
Serial I/F	1 port	
Memory expansion slot	1 slot	
USB 2.0 Device	1 port	

**(2) Memory, hard disk**

Memory capacity, HDD capacity

Local Memory (Copy)	Standard Memory	512MB
Local Memory (Print)	Standard Memory	512MB
System Memory (Print)	Standard Memory	1GB
	Expansion Memory	1GB
	Max.	2GB
HDD	80GB *	

\* Capacity depends on procurement and sourcing status.

**C. Operation panel**

**(1) Display device**

**a. Color LCD**

Type	Dot matrix TFT LCD, touch panel
Size	8.5 inch
Display dot number	800 x 480 (W-VGA)
LCD drive display area	184.8 x 110.88mm
LCD backlight	Fluorescent lamp backlight system
LCD contrast adjustment	Yes

## D. Scanner section

### (1) Resolution/Gradation

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

### (2) Document table

Type	Document table fixed system (Flat bed)		
Scanning area	297 x 432mm		
Original standard position	Left bottom reference		
Detection	Yes		
detection size	Automatic detection		
	Platen	Inch-1	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5
		Inch-2	11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5
		Inch-3	11 x 17, 8.5 x 13.4, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5
		AB-1	A3, B4, A4, A4R, B5, B5R, A5
		AB-2	A3, A4, A4R, B5, B5R, A5, 8.5 x 13
		AB-3	8K, 16K, 16KR, B4, A4, A4R, A5
		AB-4	A3, A4, A4R, B5, B5R, A5, 8.5 x 13.4
		AB-5	A3, A4, A4R, B5, B5R, A5, 8.5 x 13.5
Dehumidifying heater (Scanner section)	Supplied as a service part DKIT-0373FCZZ		

### (3) Automatic document feeder

Type	RSPF (Reversing single pass feeder)		
Scan speed			
		Monochrome (A4 / 8.5 x 11)	Color (A4 / 8.5 x 11)
Copy		Single: 50-sheet/min. (600 x 400 dpi, 1bit) 36-sheet/min. (600 x 600 dpi, 1 bit) Duplex: 16-page/min. (600 x 400 dpi, 1bit) 14-page/min. (600 x 600 dpi, 1bit)	Single: 36-sheet/min. (600 x 600 dpi, 4 bit) Duplex: 14-page/min. (600 x 600 dpi, 4 bit)
FAX / Internet FAX		Single: 50-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 16-page/min. (200 x 200 dpi, 1 bit)	N/A
Scanner		Single: 50-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 16-page/min. (200 x 200 dpi, 1 bit)	Single: 50-sheet/min. (200 x 200 dpi, 8 bit) Duplex: 16-page/min. (200 x 200 dpi, 8 bit)
Detection	Yes		
Paper detection size (Platen/RSPF)	Auto detection (Switching one type of detection unit)		
	RSPF	Inch-1	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		Inch-2	11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		Inch-3	11 x 17, 8.5 x 13.4, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		AB-1	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 14, 8.5 x 11
		AB-2	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13, 8.5 x 11
		AB-3	8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11 x 17, 8.5 x 13, 8.5 x 11
		AB-4	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13.4, 8.5 x 11
		AB-5	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13.5, 8.5 x 11

Original standard position	Center standard (Rear one-side standard for random feeding)
Document size	Standard size (Refer to the "paper detection size") Long paper: 1000 mm (Monochrome binary only) Internet FAX 600 x 600 dpi: Max. 800 mm. When scan 400 dpi or more, long paper is not available. Mix paper feed (Same series, same width paper) enabled Random paper feed (The following two kinds of sizes can be combined; A3 and B4, B4 and A4R, B5 and A5, 11" and 8.5". AMS is available.) * In random paper feeding, scanning with duplex is not available.
Original copy weight	Single: (Thin paper) 9 - 13 lb bond (35 - 49 g/m <sup>2</sup> ), (plain paper) 13 - 32 lb bond (50 - 128 g/m <sup>2</sup> ) Duplex: 13 - 28 lb bond (50 - 105 g/m <sup>2</sup> )
Max. loading capacity of documents	Max. 100 sheet (21 lbs Bond, 80g/m <sup>2</sup> ) or 13 mm (height limitation)
Transport disable document	OHP, second original paper, tracing paper, carbon paper, thermal paper, paper with wrinkles, folds, or breakage, pasted paper, cutout document, document printed with ink ribbon, documents with perforation other than 2- or 3-holes (Perforated document by punch unit is allowed.)
Finish stamp	Option

Type	DSPF (Duplex single pass feeder)		
Scan speed			
	Monochrome (A4 / 8.5 x 11)		Color (A4 / 8.5 x 11)
Copy	Single: 70-sheet/min. (600 x 300 dpi, 1bit) 50-sheet/min. (600 x 400 dpi, 1 bit) 41-sheet/min. (600 x 600 dpi, 1 bit) Duplex: 50-page/min. (600 x 400 dpi, 1bit) 41-page/min. (600 x 600 dpi, 1bit)		Single: 41-sheet/min. (600 x 600 dpi, 4 bit) Duplex: 41-page/min. (600 x 600 dpi, 4 bit)
FAX / Internet FAX	Single: 70-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 70-page/min. (200 x 200 dpi, 1 bit)		N/A
Scanner	Single: 70-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 70-page/min. (200 x 200 dpi, 1 bit)		Single: 70-sheet/min. (200 x 200 dpi, 8 bit) Duplex: 70-page/min. (200 x 200 dpi, 8 bit)
Detection	Yes		
Paper detection size (Platen/DSPF)	Auto detection (Switching one type of detection unit)		
	DSPF	Inch-1	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		Inch-2	11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		Inch-3	11 x 17, 8.5 x 13.4, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A3, A4
		AB-1	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 14, 8.5 x 11
		AB-2	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13, 8.5 x 11
		AB-3	8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11 x 17, 8.5 x 13, 8.5 x 11
		AB-4	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13.4, 8.5 x 11
		AB-5	A3, B4, A4, A4R, B5, B5R, A5, 11 x 17, 8.5 x 13.5, 8.5 x 11
Original standard position	Center standard (Rear one-side standard for random feeding)		
Document size	Standard size (Refer to the "paper detection size") Long paper: 1000 mm (Monochrome binary only) Internet FAX 600 x 600 dpi: Max. 800 mm. When scan 400 dpi or more, long paper is not available. Mix paper feed (Same series, same width paper) enabled Random paper feed (The following two kinds of sizes can be combined; A3 and B4, B4 and A4R, B5 and A5, 11" and 8.5". AMS is available.) * In random paper feeding, scanning with duplex is not available.		
Original copy weight	Single: (Thin paper) 9 - 13 lb bond (35 - 49 g/m <sup>2</sup> ), (plain paper) 13 - 32 lb bond (50 - 128 g/m <sup>2</sup> ) Duplex: 13 - 28 lb bond (50 - 105 g/m <sup>2</sup> )		
Max. loading capacity of documents	Max. 150 sheet (21 lbs Bond, 80g/m <sup>2</sup> ) or 19.5 mm (height limitation)		
Transport disable document	OHP, second original paper, tracing paper, carbon paper, thermal paper, paper with wrinkles, folds, or breakage, pasted paper, cutout document, document printed with ink ribbon, documents with perforation other than 2- or 3-holes (Perforated document by punch unit is allowed.)		
Finish stamp	Option		



## E. Paper feed section

### (1) Type

Type	Standard: 2-stage paper feed tray + multi manual paper feed tray Full option: 4-stage paper feed tray + multi manual paper feed + LCC
Paper type setting	Yes
Dehumidifying heater	Service parts (Supported by kit)

### (2) Tray 1, 2 (Main unit)

Paper capacity	Plain paper: 500 sheets (80 g/m <sup>2</sup> )
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 11 x 17, 8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R
Paper type	Plain paper, re-printed paper, recycled paper, letter head, pre-punched paper, colored paper, heavy paper
Feedable Paper Weight	Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 - 110 lb bond (106 - 209g/m <sup>2</sup> )
Paper size setting when shipping	AB series; Tray 1: A4, Tray 2: A3 Inch series; Tray 1: 8.5 x 11, Tray 2: 11 x 17
Paper remaining detection	Yes (Paper empty and 3 levels)

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

Paper capacity	Plain paper: 100 sheets (80 g/m <sup>2</sup> ) envelope/OHP: 20 sheets
Paper size	A3W, A3, B4, A4, A4R, B5, B5R, A5R, 12 x 18, 11 x 17, 8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, envelope
Paper type	Plain paper, re-printed paper, recycled paper, letter head, pre-punched paper, colored paper, heavy paper, thin paper, envelope, OHP, label sheet, tab paper, glossy paper
Feedable Paper Weight	Thin paper: 13 lb bond - 16 lb bond (55 - 59g/m <sup>2</sup> ) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> ), 110 lb index - 140 lb index (210 - 256g/m <sup>2</sup> )

### (4) Tray 3, 4 (2-stage paper feed tray)

Paper capacity	Plain paper: 500 sheets (80 g/m <sup>2</sup> ) x 2
Paper size	A3, B4, A4, A4R, B5, B5R, 11 x 17, 8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13, 8.5 x 11, 8.5 x 11 R, 7.25 x 10.5R
Paper type	Plain paper, re-printed paper, recycled paper, letter head, pre-punched paper, colored paper, heavy paper
Feedable Paper Weight	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> )
Paper size setting when shipping	Maximum position of paper guide width
Paper remaining detection	Yes (Paper empty and 3 levels)
Power consumption	20W (Power is supplied from main unit)
Dimensions (W x D x H)	with adjuster 28-22/64 x 11-15/16 inch, 720 x 670 x 303 mm without adjuster 24-13/64 x 26-3/8 x 11-15/16 inch, 615 x 670 x 303 mm

### (5) Tray 5 (LCC)

Type	3,500-Sheet Large Capacity Tray
Transport speed	124 mm/s - 360 mm/s
Paper size	A4, B5, 8.5" x 11"
Paper size setting	Simulation setup
Paper size setting when shipping	A4
Paper type setting	Yes
Allowable paper type and weight for paper feed	Plain paper, re-printed paper, recycled paper, letter head, pre-punched paper, colored paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> )
Paper capacity	3,500 sheets (80 g/m <sup>2</sup> ) Effective height: 385 mm
Paper remaining detection	Yes (5 levels: 100%, 75%, 50%, 25%, none)
Driving form	The transport motor (DC brush-less motor) and control PWB are built-in to LCC.
Off-center adjustment	± 3mm (Move the regulation plate F/R to adjustment)
Power consumption (without heater)	Normal operation : 26.4W During lift-up : 40.8W
Power source	5V±5% and 24V±5% are supplied from main unit
External dimensions (W x D x H)	14-9/16 x 21-21/32 x 20-15/32 inch, 370 x 550 x 520 mm
Dimensions occupied by Machine (W x D)	14-9/16 x 21-21/32 inch, 370 x 550 (mm) * Clearance with main unit: 235 mm
Weight	Approx. 66.1 lbs, 30 kg
Thermal heater	Standard equipment: AC power is supplied from main unit. And main unit can control ON/OFF operation.
Optional detection	Auto detection system

## F. Paper exit section

### (1) Center tray of main unit

Paper exit section	Center section of the main unit
Paper exit system	Face-down paper exit system
Paper exit capacity	500 sheets (When A4, 8.5 x 11) (recommended paper for color)
Paper exit paper size/weight	Thin paper: 13 lb bond - 16 lb bond (55 - 59g/m <sup>2</sup> ) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 lb bond - 110 lb index (106 - 209g/m <sup>2</sup> ), 110 lb index - 140 lb index (210 - 256g/m <sup>2</sup> )
Shifter function	Yes
Paper exit full detection	Yes

\* A3W/12x8 paper exiting is not allowed.

### (2) Shifter

Paper weight	16 lb bond - 140 lb index (55 - 256g/m <sup>2</sup> )
Paper size/type	Offset mode Size: Envelope, custom size, A3W and 12 x 18 are not acceptable Type: Envelope, OHP, label paper and tab paper are not acceptable
Offset width	30 mm
Integrity	Non-offset Getting out: It doesn't fall down from tray
* In using the recommended paper, A4/8.5 x 11	Offset mode Getting out: within 50 mm FR shift: within ±10 mm JOB distance: 10 mm or more

### (3) Paper exit tray

Type	Exit tray unit
Paper exit position/system	Paper exit to external in the right side of the main unit/Paper exits in face-down
Paper exit capacity	100 sheets (When A4/8.5 x 11) (recommended paper for color)
Paper exit paper size/type	All of allowable paper for paper feed except envelope, tab paper and gloss paper.
Shifter function	No
Paper exit paper full detection	Yes

## G. Copy functions

### (1) Copy magnification ratio

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

### (2) Density/copy image quality process

Exposure mode	Automatic, Text, Text/Printed Photo, Printed Photo, Text/Photograph, Photograph, Map, light document
Number of manual steps	9 steps
Toner save mode	Yes * Off on printed photo, photograph or light document

### (3) Color copy mode

Auto color selection	Copy mode automatically discerning color/monochrome.
Full color	Full color copy
Two color	<ul style="list-style-type: none"> <li>Red/Black mode (Change red point in document into other color)</li> <li>Copies with one color (R/G/B/C/M/Y) that is replaced from red color area in document, and black color.</li> </ul>
Single color	Mode to select one color from R/G/B/C/M/Y

### (4) Duplex

System	Non stack system
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 11 x 17, 8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5R
Type and weight of paper which can be passed	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> ) Heavy paper: 28 - 110 lb bond (106 - 209 g/m <sup>2</sup> )
Paper type	Plain paper, recycled paper, colored paper, letter head, re-printed paper, pre-punched paper, heavy paper

### (5) Copy functions

Function	
Automatic paper selection	Job reservation (99 items)
Automatic magnification ratio selection	Tray installation priority
	Program call/register (48 items)
Paper type selection	Document paper size input
Auto tray switching	Indefinite paper size input
Rotation copy	Duplex copy direction switching
Electronic sort	Preview function
Special functions	
Binding margin (Left and Right/Top)	(Multi shot) (Centering provided, page printing based on number of original pages is provided)
Erase (Edge/Center/center + edge/ side erase)	
2 in 1	
Center binding (Centering provided)	Book copy
Large volume document mode	Tab copy
Tandem copy	Card shot
Cover paper insertion	Automatic temporary save
Only insertion of tab paper. Combination with tab copy is not allowed.	Filing
	Trial copy
	Document count
	Mixed document feeder
OHP insert paper	Thin paper scanning
Document control (When the data security kit is installed)	
Print menu	
Date print	Stamp
Character print	Page print
Water mark	
Modifying image	
Photo repeat	A3 wide copy
Enlargement continuous copy	Centering
Mirror image	Black-white reversion (Excluding the U.K.)
Color adjustment	
RGB	Color balance
Sharpness	Brightness adjustment
Background removal	Vividness adjustment
Auto color calibration (Setting with system)	
Registration (Setting with system)	

## H. Printer function

### (1) Platform

- IBM PC/AT
- Macintosh

### (2) Support OS

OS		Custom PCL6	Custom PCL5c	Custom PS	PPD
Windows	98 / Me	Yes	Yes	Yes	Yes
	NT 4.0 SP5 or later				
	2000		No		
	XP				
	XP x 64		Yes		
	Server 2003		No		
	Server 2003 x 64		Yes		
	Server 2008		No		
	Server 2008 x 64		Yes		
	Vista		No		
Vista x 64	No				
Mac	9.2.2	No	No	No	Yes
	X 10.2.8				
	X 10.3.9				
	10.4.11				
	X 10.5-10.5.1				

### (3) PDL emulation

PCL5c compatibility, PCL6 compatibility	Standard
PostScript 3 compatibility	Option

#### (4) Font

Emulation	Built-in fonts	Option font
PCL5c compatibility, PCL6 compatibility	Roman outline fonts = 80 fonts Line printer font (BMP) = 1 font	Font for bar code = 28 fonts
PostScript 3 compatibility	—	Roman outline fonts = 136 fonts

#### (5) Print channel

Support print channel	<ul style="list-style-type: none"><li>• PSERVER/RPRINT for network environment</li><li>• LPR</li><li>• IPP</li><li>• PAP:EtherTalk</li><li>• FTP</li><li>• NetBEUI</li><li>• Raw Port (Port 9100)</li><li>• USB 1.1 (Windows98/Me/2000/Server2003/XP/Vista)</li><li>• USB 2.0 (For Windows2000/XP/Vista only)</li><li>• HTTP (Web Submit Print)</li><li>• POP3 (E-Mail To Print)</li></ul>
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#### (6) Environment setting

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

### I. Image send function

#### (1) Mode

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

#### (2) Support system

Mode	Scanner	Internet Fax	Fax
Corresponding server/protocol	SMTP FTP (TCP / IP) SMB	POP server SMTP server ESMTP server	---

#### (3) Support image

Mode	Scanner	Internet Fax	Fax
File format	Monochrome: TIFF, PDF, Encrypted PDF, XPS Color/ Gray scale: Color TIFF, JPEG, PDF, Encrypted PDF, XPS, High compression PDF (When MX-EBX3 is installed)	TIFF-FX (TIFF-F, TIFF-S)	---
Compression system	Monochrome: • Non-compression • G3 = MH • G4 = MMR Color / Gray scale: • JPEG (High compression/ Middle compression/ Low compression)	Non-compression, MH, MMR	---
Conversion for each page to a file (Available to quantity specification)	Yes	---	

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

Item	No. of registration items
One-touch/Group	999 items Max. number of registration items for one group (500 items)
Program	48 items
Memory box	Total of bulletin board / confidential letter / relay and broadcast: 100 items
Sender registration	FAX, Internet FAX: 1 item
User list (Return address list)	Scanner: 1,000 items
Transfer table list	50 items
Sender number	18 items
Item name	30 items
File name	30 items
Fixed phrase	30 items
Meta data set list	10 items
Allow/Reject Number Setting	Fax: 50 items (Allow/Reject In total 50 items)
Allow/Reject Mail or Domain Name Setting	Internet FAX: 50 items (Allow/Reject In total 50 items)
Polling allow number	FAX: 10 items

## J. PC-Fax, PC internet Fax functions

### (1) Working environment

OS	<ul style="list-style-type: none"> <li>Windows 98</li> <li>Windows Me</li> <li>Windows NT4.0 Workstation (Service Pack5, IE4.0 or more)</li> <li>Windows 2000</li> <li>Windows XP</li> <li>Windows XP x 64</li> <li>Windows Server 2003</li> <li>Windows Server 2003 x 64</li> <li>Windows Server 2008</li> <li>Windows Server 2008 x 64</li> <li>Windows Vista</li> <li>Windows Vista x 64</li> </ul>
PC	IBM PC/AT compatible machine
CPU	Pentium II 300MHz or more
Monitor	Screen resolution: 640 X 480 pixel or above Number of colors: 256 colors or above
Memory	64 MB or more
HDD	Empty capacity of 50MB or above
Interface	USB 2.0 10BASE-T/100BASE-TX 1000BASE-T
Communication protocol	LPR / lp Port9100 (RAW) IPP USB2.0

### (2) Functions

PC-FAX send	Yes (When FAX is installed) FAX number max. 64 digits		
PC-Internet FAX send	Yes (Internet FAX expansion kit is required) Internet FAX address: max. 64 digits		
Resolution	200 x 100dpi / 200 x 200dpi / 200 x 400dpi / 400 x 400dpi / 600 x 600dpi* * Internet-Fax only		
Send document size	A3 / B4 / A4 / A5 / B5 / 11 x 17 / 8.5 x 14 / 8.5 x 11 / 5.5 x 8.5 / 8.5 x 13		
Compression system	MH / MMR / JBIG		
Broadcast send	Yes (Max. 500 items)		
F-code send	Yes	Sub address	Yes (Max. 20 digits)
		Pass code	Yes (Max. 20 digits)
Telephone book registration, Send function	Yes		
Covering letter attachment function	Yes		
Covering letter making function	Yes		
Sender print	Prints always		
Preview	Yes		
Delivery confirmation (Notification to PC by NJR)	Yes		
Document filing function	Filing Automatic temporary save		
PC- FAX send log	Yes		
User authentication	Yes		



## K. Document filing function

### (1) Basic function

Number of files that can be saved in the standard folder/user folder	<b>38GB</b> <ul style="list-style-type: none"> <li>Monochrome (Text): 5,500 pages or 3,000 files (*1)</li> <li>Full color data (Text and Photo): 2,500 pages (*2)</li> </ul>
Number of files that can be saved in temporary file folders.	<b>12GB</b> <ul style="list-style-type: none"> <li>Monochrome (Text): 1,700 pages or 1,000 files (*1)</li> <li>Full color data (Text and Photo): 800 pages (*2)</li> </ul>
Number of folders that can be made as user folders.	Max. 1,000 folders
Number of users which can be registered	Same as that of account users of the main unit

(\*1): When the standard document (A4 monochrome: test sheet C) is used.

(\*2): When the color document (A4, greg fruit) is used.

Original (Text, A4): Test Sheet C	Original (Color, A4): Greg fruit
	

### (2) Data operation by each function

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

### (3) Data operation contents

Operation content	Operation panel	WEB
Reprint	Yes	Yes
Resend		
Delete		
Shift		
Attribute change (Common/ Confidential/Protection)		
Confidential file setting		
Confidential folder setting		
File name change		
Creation of a folder		
File transfer to Local PC	No	
Machine HDD occupying rate display	Yes	
Confirmation of save data image (Preview)	Yes (The print data displays only the first page.)	
Retrieval	Yes	
Collective print (When the user name and the password of target files in the folder are the same)		
Delete with the time specified		
Multi file selection (print only)	No	

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

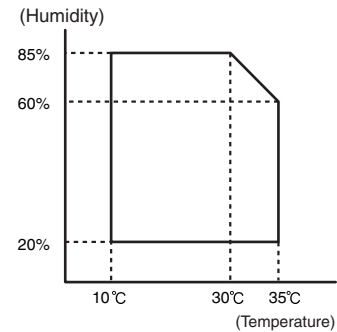
### (4) Reprint / resend limitation items for each job

Mode	Job kind	Data save	Reprint		Resend		
			Color	Mono-chrome	Color	Mono-chrome	
Copy	Copy	Color	Yes	Yes	Yes	Yes	
		Mono-chrome	No		No		
Printer	Printer	Color	Yes	No		No	No
		Mono-chrome	No	Yes			
Image send	Scan send	Color	Yes		Yes	No	Yes
		Mono-chrome	No				
	FAX send	Mono-chrome					
	Internet FAX send	Mono-chrome					
Document filing	Scan save	Color	Yes	Yes	No		
		Mono-chrome	No				

\* "Color" includes "Color/BW Mixing."

## L. Ambient conditions

### (1) Working environment



Standard environmental conditions	Temperature	20 – 25 °C
	Humidity	65 ± 5 %RH
Usage environmental conditions	Temperature	10 – 35 °C
	Humidity	20 – 85 %RH
	Atmospheric pressure	590 – 1013 hPa (height: 0 – 2000m)
Quality Guarantee Period	Toner and Developer: 24 months from the production month (unopened) Drum: 36 months from the production month	

## [3] CONSUMABLE PARTS

### 1. Supply system table

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

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1	36K *1	MX-50NTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 30K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1	15K *1	MX-31NTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1	15K *1	MX-31NTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1	15K *1	MX-31NTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer (Black)	Developer (Black) x 1	150K	MX-31NVBA	
6	Developer (Cyan/Magenta/Yellow (3 colors/set))	Developer (Cyan/Magenta/Yellow (3 colors / set)) x 1	100K	MX-31NVSA	
7	Drum	OPC Drum x 1	150K (Black) 100K (Color)	MX-31NRSA	
8	Drum Unit	OPC Drum Unit (Process unit + OPC Drum) x 1 Color identification seal (B/C/M/Y) x 1 each x 1 Charger cleaner rubber x 1	150K (Black) 100K (Color)	MX-31NUSA	

\*1: The toner life may vary depending on the document density and temperature and humidity.

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

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1	36K *1	MX-50GTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 30K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1	15K *1	MX-31GTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1	15K *1	MX-31GTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1	15K *1	MX-31GTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer (Black)	Developer (Black) x 1	150K	MX-31GVBA	
6	Developer (Cyan/Magenta/Yellow (3 colors/set))	Developer (Cyan/Magenta/Yellow (3 colors / set)) x 1	100K	MX-31GVSA	
7	Drum	OPC Drum x 1	150K (Black) 100K (Color)	MX-31GRSA	
8	Drum Unit	OPC Drum Unit (Process unit + OPC Drum) x 1 Color identification seal (B/C/M/Y) x 1 each x 1 Charger cleaner rubber x 1	150K (Black) 100K (Color)	MX-31GUSA	

\*1: The toner life may vary depending on the document density and temperature and humidity.

#### C. Asia/Hong Kong

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1	36K *1	MX-50ATBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 30K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1	15K *1	MX-31ATCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1	15K *1	MX-31ATMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1	15K *1	MX-31ATYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer (Black)	Developer (Black) x 1	150K	MX-31AVBA	
6	Developer (Cyan/Magenta/Yellow (3 colors/set))	Developer (Cyan/Magenta/Yellow (3 colors / set)) x 1	100K	MX-31AVSA	
7	Drum	OPC Drum x 1	150K (Black) 100K (Color)	MX-31ARSA	
8	Drum Unit	OPC Drum Unit (Process unit + OPC Drum) x 1 Color identification seal (B/C/M/Y) x 1 each x 1 Charger cleaner rubber x 1	150K (Black) 100K (Color)	MX-31AUSA	

\*1: The toner life may vary depending on the document density and temperature and humidity.

## D. Middle East/Taiwan/Africa/Israel/Philippines

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1	36K *1	MX-50FTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 30K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1	15K *1	MX-31FTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1	15K *1	MX-31FTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1	15K *1	MX-31FTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer (Black)	Developer (Black) x 1	150K	MX-31FVBA	
6	Developer (Cyan/Magenta/Yellow (3 colors/set))	Developer (Cyan/Magenta/Yellow (3 colors / set)) x 1	100K	MX-31FVSA	
7	Drum	OPC Drum x 1	150K (Black) 100K (Color)	MX-31FRSA	
8	Drum Unit	OPC Drum Unit (Process unit + OPC Drum) x 1 Color identification seal (B/C/M/Y) x 1 each x 1 Charger cleaner rubber x 1	150K (Black) 100K (Color)	MX-31FUSA	

\*1: The toner life may vary depending on the document density and temperature and humidity.

## E. Brazil

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1	36K *1	MX-50BTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 30K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1	15K *1	MX-31BTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1	15K *1	MX-31BTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1	15K *1	MX-31BTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer (Black)	Developer (Black) x 1	150K	MX-31NVBA	
6	Developer (Cyan/Magenta/Yellow (3 colors/set))	Developer (Cyan/Magenta/Yellow (3 colors / set)) x 1	100K	MX-31NVSA	
7	Drum	OPC Drum x 1	150K (Black) 100K (Color)	MX31NRSA	
8	Drum Unit	OPC Drum Unit (Process unit + OPC Drum) x 1 Color identification seal (B/C/M/Y) x 1 each x 1 Charger cleaner rubber x 1	150K (Black) 100K (Color)	MX-31NUSA	

\*1: The toner life may vary depending on the document density and temperature and humidity.

## 2. Recommended color paper

The following color print paper is recommended. Use this recommended color paper for the color balance adjustment. If another kind of paper is used for the color balance adjustment, proper image qualities (color balance, density, color reproduction) may not be produced.

Kind	Model	Supplier	Specification
Recommend paper	Hammermill LASER PRINT	Hammermill	[11" x 8.5", 90g/m <sup>2</sup> ] [11" x 17", 90g/m <sup>2</sup> ]
	Mondi Color Copy (90g/m <sup>2</sup> )	Mondi	[A4, 90g/m <sup>2</sup> ] [A3, 90g/m <sup>2</sup> ]

### 3. Maintenance parts list

#### A. U.S.A/Canada/South and Central America

No.	Item	Content	Life	Model name	Remarks
1	Upper heat roller kit	Upper heat roller unit x 1	200K	MX-410UH	
2-1	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-410HK	41-sheet machine for 120V
2-2	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-500HK	50-sheet machine for 120V
3	Web cleaning kit	Web unit x 1 Lower CL roller CJ2 x 1 Lower CL roller bearing x 2 CL pressure SP CJ2 x 2	150K	MX-410WC	
4	Primary transfer kit	PTC unit x 1 Primary transfer belt x 1 Transfer cleaning blade x 1 Primary transfer roller x 4 Belt drive gear x 1	300K	MX-310Y1	
5	Secondary transfer kit	Secondary transfer belt x 1 Secondary transfer roller x 1 Secondary transfer idle gear x 1	300K	MX-410Y2	
6	Filter kit	Ozone filter CJ x 1	150K	MX-450FL	
7	PS paper dust removing unit	PS paper dust removing unit x 1	150K	MX-310PD	
8	Waste toner box kit	Waste toner box unit (with LSU cleaner x 3) x 1	40K	MX-310HB	5% coverage for each color; 43% color ratio
9	DV seal kit	DV blade N kit x 1 DV side seal F x 1 DV side seal R x 1 Toner filter unit x 3	Black: 150K, Color: 100K	MX-310DS	
10	Main charger kit	Main charger unit x 1 Drum cleaning blade x 1 Cleaning Gum P2 x 1	Black: 150K, Color: 100K	MX-310MK	
11	Staple cartridge	Staple cartridge x 3	5000 times x 3	AR-SC2	For 4K finisher (MX-FN11)
12	Staple cartridge	Staple cartridge x 3	2000 times x 3	AR-SC3	For saddle stitch finisher (MX-FN10)
13	Staple cartridge	Staple cartridge x 3	5000 times x 3	MX-SCX1	For inner finisher/ saddle stitch finisher (MX-FNX9/MX-FN10)
14	Stamp cartridge	Stamp cartridge x 2	—	AR-SV1	
15	Primary transfer belt unit	Primary transfer belt unit (For service purpose) x 1	—	MX-410U1	
16	Secondary transfer belt unit	Secondary transfer belt unit (For service purpose) x 1	—	MX-410U2	
17-1	Fusing unit	Fusing unit (For service purpose: Heater lamp 120V) x 1	—	MX-410FU1	41-sheet machine for 120V
17-2	Fusing unit	Fusing unit (For service purpose: Heater lamp 120V) x 1	—	MX-500FU1	50-sheet machine for 120V



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

No.	Item	Content	Life	Model name	Remarks
1	Upper heat roller kit	Upper heat roller unit x 1	200K	MX-410UH	
2	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-410HK	
3	Web cleaning kit	Web unit x 1 Lower CL roller CJ2 x 1 Lower CL roller bearing x 2 CL pressure SP CJ2 x 2	150K	MX-410WC	
4	Primary transfer belt kit	Primary transfer belt x 1 Transfer cleaning blade x 1 PTC unit x 1	300K	MX-310B1	
5	Primary transfer roller kit	Primary transfer roller x 4 Belt drive gear x 1	300K	MX-310X1	
6	Secondary transfer belt kit	Secondary transfer belt x 1	300K	MX-310B2	
7	Secondary transfer roller kit	Secondary transfer roller x 1 Secondary transfer idle gear x 1	300K	MX-410X2	
8	PS paper dust removing unit	PS paper dust removing unit x 1	150K	MX-310PD	
9	Filter kit	Ozone filter CJ x 1	150K	MX-450FLN	
10	Waste toner box kit	Waste toner box unit (with LSU cleaner x 3) x 1	40K	MX-310HB	5% coverage for each color; 43% color ratio
11	DV seal kit	DV blade N kit x 1 DV side seal F x 1 DV side seal R x 1 Toner filter unit x 3	Black: 150K, Color: 100K	MX-310DS	
12	Main charger kit	Main charger unit x 1 Drum cleaning blade x 1 Cleaning Gum P2 x 1	Black: 150K, Color: 100K	MX-310MK	
13	Staple cartridge	Staple cartridge x 3	5000 times x 3	AR-SC2	For 4K finisher (MX-FN11)
14	Staple cartridge	Staple cartridge x 3	2000 times x 3	AR-SC3	For saddle stitch finisher (MX-FN10)
15	Staple cartridge	Staple cartridge x 3	5000 times x 3	MX-SCX1	For inner finisher/ saddle stitch finisher (MX-FNX9/MX-FN10)
16	Stamp cartridge	Stamp cartridge x 2	—	AR-SV1	
17	Primary transfer belt unit	Primary transfer belt unit (For service purpose) x 1	—	MX-410U1	
18	Secondary transfer belt unit	Secondary transfer belt unit (For service purpose) x 1	—	MX-410U2	
19	Fusing unit	Fusing unit (For service purpose: Heater lamp 230V) x 1	—	MX-410FU	

## C. Hong Kong

No.	Item	Content	Life	Model name	Remarks
1	Upper heat roller kit	Upper heat roller unit x 1	200K	MX-410UH	
2	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-410HK	
3	Web cleaning kit	Web unit x 1 Lower CL roller CJ2 x 1 Lower CL roller bearing x 2 CL pressure SP CJ2 x 2	150K	MX-410WC	
4	Primary transfer kit	Primary transfer belt x 1 Transfer cleaning blade x 1 PTC unit x 1 Primary transfer roller x 4 Belt drive gear x 1	300K	MX-310Y1	

No.	Item	Content	Life	Model name	Remarks
5	Secondary transfer kit	Secondary transfer belt x 1 Secondary transfer roller x 1 Secondary transfer idle gear x 1	300K	MX-410Y2	
6	Filter kit	Ozone filter CJ x 1	150K	MX-450FL	
7	PS paper dust removing unit	PS paper dust removing unit x 1	150K	MX-310PD	
8	Waste toner box kit	Waste toner box unit (with LSU cleaner x 3) x 1	40K	MX-310HB	5% coverage for each color; 43% color ratio
9	DV seal kit	DV blade N kit x 1 DV side seal F x 1 DV side seal R x 1 Toner filter unit x 3	Black: 150K, Color: 100K	MX-310DS	
10	Main charger kit	Main charger unit x 1 Drum cleaning blade x 1 Cleaning Gum P2 x 1	Black: 150K, Color: 100K	MX-310MK	
11	Staple cartridge	Staple cartridge x 3	5000 times x 3	AR-SC2	For 4K finisher (MX-FN11)
12	Staple cartridge	Staple cartridge x 3	2000 times x 3	AR-SC3	For saddle stitch finisher (MX-FN10)
13	Staple cartridge	Staple cartridge x 3	5000 times x 3	MX-SCX1	For inner finisher/ saddle stitch finisher (MX-FNX9/MX-FN10)
14	Stamp cartridge	Stamp cartridge x 2	—	AR-SV1	
15	Primary transfer belt unit	Primary transfer belt unit (For service purpose) x 1	—	MX-410U1	
16	Secondary transfer belt unit	Secondary transfer belt unit (For service purpose) x 1	—	MX-410U2	
17	Fusing unit	Fusing unit (For service purpose: Heater lamp 230V) x 1	—	MX-410FU	

#### D. Asia/Middle East/Agency

No.	Item	Content	Life	Model name	Remarks
1	Upper heat roller kit	Upper heat roller unit x 1	200K	MX-410UH	
2-1	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-410HK	41-sheet machine for 120V
2-2	Heat roller kit	Separation pawl upper x 4 Separation pawl lower x 4 Upper separation pawl spring x 4 Lower separation pawl spring x 4 Upper thermistor x 1 Lower thermistor x 1 Upper thermistor PA (Non-contact thermistor P) x 1 Lower heat roller unit x 1 External heating belt unit x 1	300K	MX-500HK	50-sheet machine for 120V series 41/50-sheet machine for 230V series
3	Web cleaning kit	Web unit x 1 Lower CL roller CJ2 x 1 Lower CL roller bearing x 2 CL pressure SP CJ2 x 2	150K	MX-410WC	
4	Primary transfer kit	Primary transfer belt x 1 Transfer cleaning blade x 1 PTC unit x 1 Primary transfer roller x 4 Belt drive gear x 1	300K	MX-310Y1	
5	Secondary transfer kit	Secondary transfer belt x 1 Secondary transfer roller x 1 Secondary transfer idle gear x 1	300K	MX-410Y2	
6	Filter kit	Ozone filter CJ x 1	150K	MX-450FL	
7	PS paper dust removing unit	PS paper dust removing unit x 1	150K	MX-310PD	
8	Waste toner box kit	Waste toner box unit (with LSU cleaner x 3) x 1	40K	MX-310HB	5% coverage for each color; 43% color ratio
9	DV seal kit	DV blade N kit x 1 DV side seal F x 1 DV side seal R x 1 Toner filter unit x 3	Black: 150K, Color: 100K	MX-310DS	

No.	Item	Content	Life	Model name	Remarks
10	Main charger kit	Main charger unit x 1 Drum cleaning blade x 1 Cleaning Gum P2 x 1	Black: 150K, Color: 100K	MX-310MK	
11	Staple cartridge	Staple cartridge x 3	5000 times x 3	AR-SC2	For 4K finisher (MX-FN11)
12	Staple cartridge	Staple cartridge x 3	2000 times x 3	AR-SC3	For saddle stitch finisher (MX-FN10)
13	Staple cartridge	Staple cartridge x 3	5000 times x 3	MX-SCX1	For inner finisher/ saddle stitch finisher (MX-FNX9/MX-FN10)
14	Stamp cartridge	Stamp cartridge x 2	—	AR-SV1	
15	Primary transfer belt unit	Primary transfer belt unit (For service purpose) x 1	—	MX-410U1	
16	Secondary transfer belt unit	Secondary transfer belt unit (For service purpose) x 1	—	MX-410U2	
17-1	Fusing unit	Fusing unit (For service purpose: Heater lamp 120V) x 1	—	MX-410FU1	
17-2	Fusing unit	Fusing unit (For service purpose: Heater lamp 120V) x 1	—	MX-500FU1	
17-3	Fusing unit	Fusing unit (For service purpose: Heater lamp 230V) x 1	—	MX-410FU	

#### 4. Definition the developer/drum life end

When the developer/drum counter reaches the specified level.

When the developer/drum rpm reaches the specified level.

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

In an actual case, 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 level, it is judged as life end.

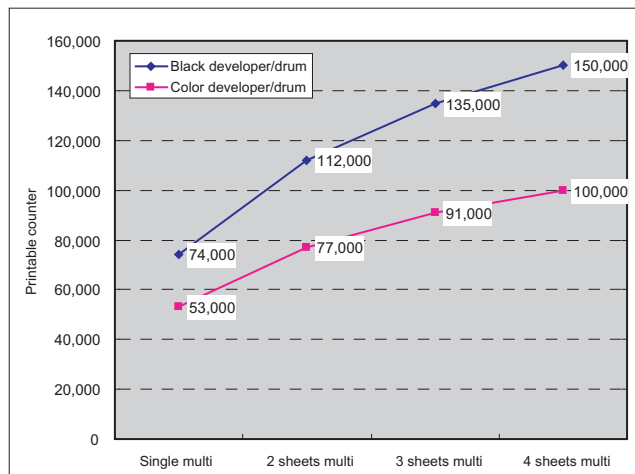
To check the drum life, use SIM22-1/22-13.

(840K rotations = 7,916,813cm)

	Developer/drum counter		Developer/drum rpm	
	B/W	Full color	B/W	Full color
Developer/drum	150K	100K	840K rotations	840K rotations

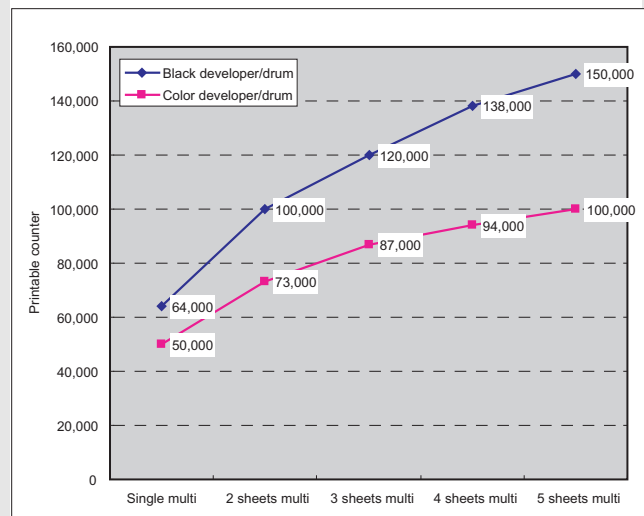
#### ▲ A. 41-sheet machine

	Black developer/drum	Color developer/drum
Single multi	74,000	53,000
2 sheets multi	112,000	77,000
3 sheets multi	135,000	91,000
4 sheets multi	150,000	100,000



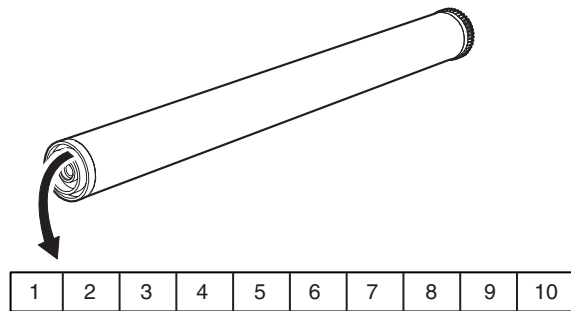
#### ▲ B. 50-sheet machine

	Black developer/drum	Color developer/drum
Single multi	64,000	50,000
2 sheets multi	100,000	73,000
3 sheets multi	120,000	87,000
4 sheets multi	138,000	94,000
5 sheets multi	150,000	100,000



## 5. Production number identification

### A. Drum cartridge

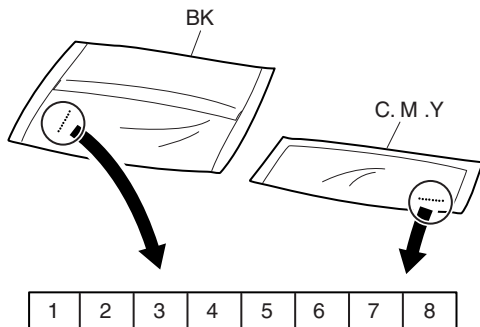


The lot number is of 10 digits. Each digit indicates the content as follows.

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

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

### B. Developer



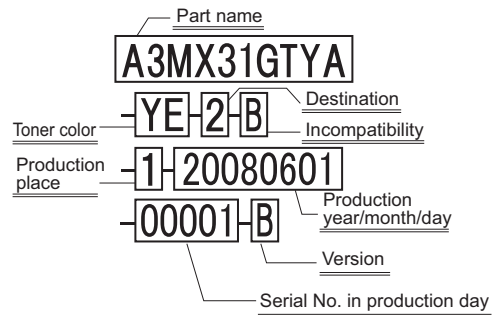
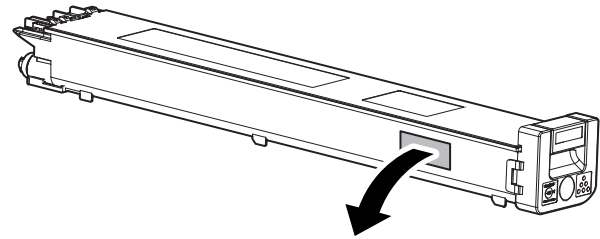
The lot number is of 8 digits. Each digit indicates the content as follows.

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

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

### C. Toner cartridge

The label indicating the management number is attached to the side of the toner cartridge.

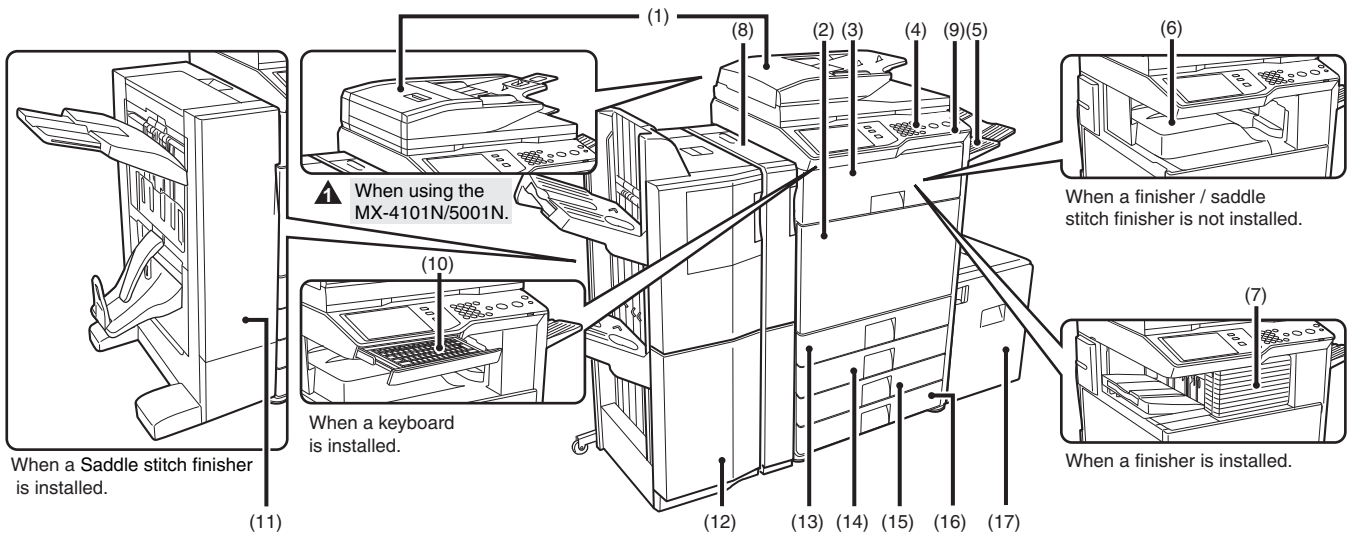


Example: 1st of production on June 1, 2008

## [4] EXTERNAL VIEW AND INTERNAL STRUCTURE

### 1. Identification of each section and functions

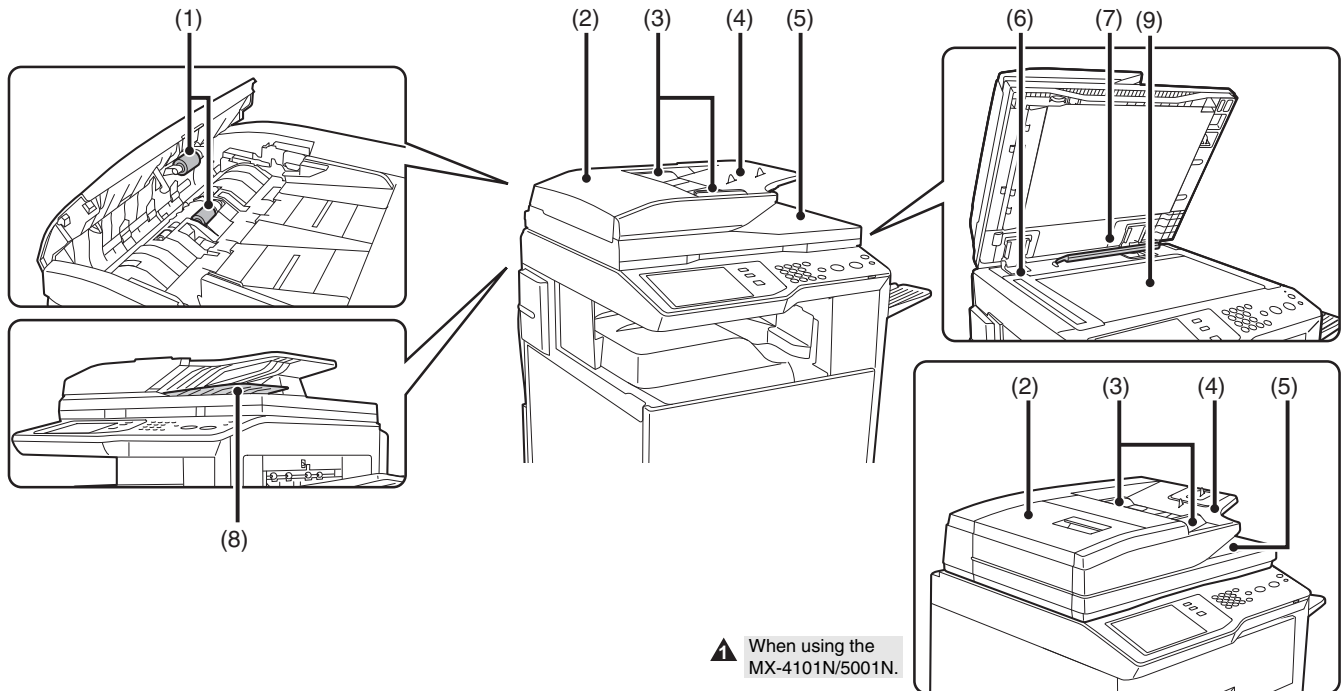
#### A. External view



No.	Name	Function/Operation	NOTE
1	Automatic document feeder	This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.	
2	Front cover	Open this cover to switch the main power switch to "On" or "Off" or to replace a toner cartridge.	
3	Paper pass unit*	This transfers output to the finisher (large capacity) or the saddle stitch finisher.	
4	Operation panel	This is used to select functions and enter the number of copies.	
5	Right tray*	When installed, output can be delivered to this tray.	
6	Output tray (center tray)	Output is delivered to this tray.	
7	Finisher*	This can be used to staple output. A punch module can also be installed to punch holes in output.	
8	Punch module	This is used to punch holes in output. Requires the finisher (large capacity).	
9	USB connector (A type)	Supports USB 2.0 (Hi-Speed). This is used to connect a USB device such as USB memory to the machine. For the USB cable, use a shielded cable.	
10	Keyboard*	This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.	
11	Saddle stitch finisher*	This can be used to staple output. The saddle stitch function for folding and stapling output and the fold function for folding output in half are also available. A punch module can also be installed to punch holes in output.	
12	Finisher (large capacity)*	This can be used to staple output.	
13	Tray 1	This holds paper.	
14	Tray 2	This holds paper.	
15	Tray 3 (when a stand/1 x 500 sheet paper drawer or a stand/2 x 500 sheet paper drawer is installed)*	This holds paper.	
16	Tray 4 (when a stand/2 x 500 sheet paper drawer is installed)*	This holds paper.	
17	Tray 5 (when a large capacity tray is installed)*	This holds paper.	

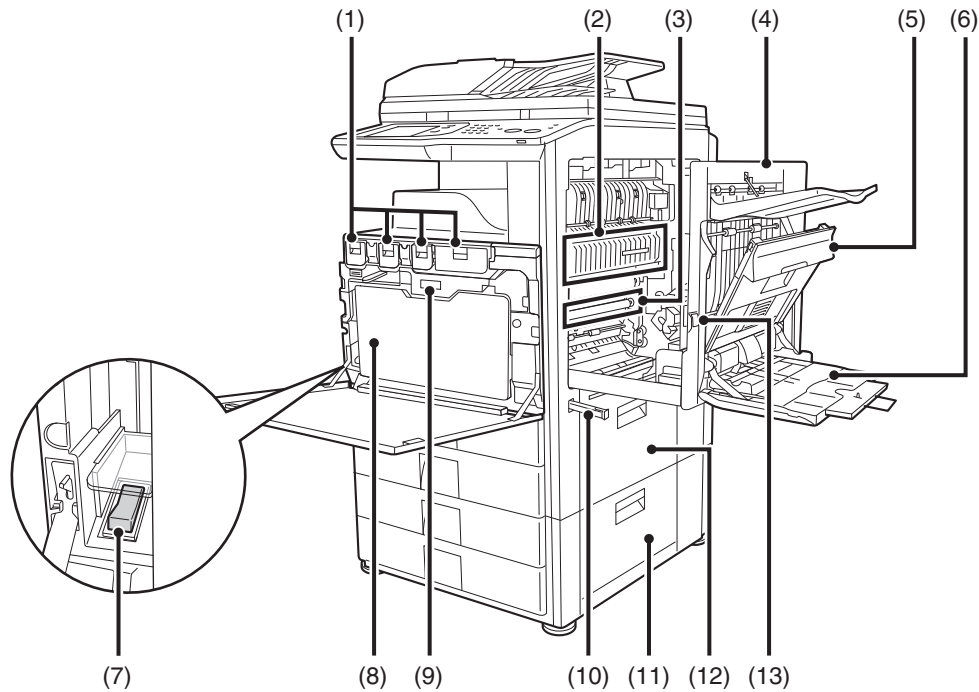
\*: Peripheral device.

## B. AUTOMATIC DOCUMENT FEEDER AND DOCUMENT GLASS



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

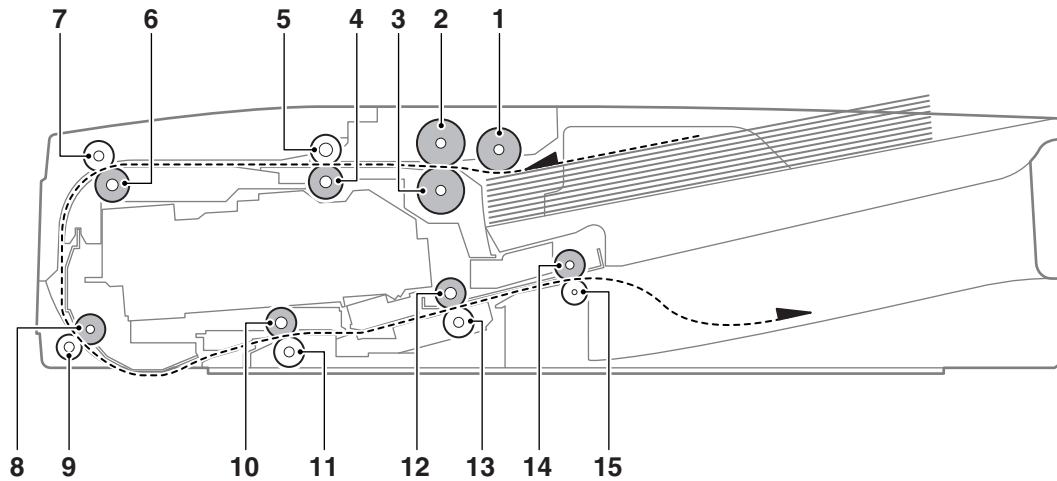
## C. Internal operation parts



No.	Name	Function/Operation
1	Toner cartridges	These contain toner for printing. When the toner runs out in a cartridge, the cartridge of the color that ran out must be replaced.
2	Fusing unit	Heat is applied here to fuse the transferred image onto the paper.
3	Transfer belt	During full color printing, the toner images of each of the four colors on each of 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.
4	Right side cover	Open this cover to remove a paper misfeed.
5	Paper reversing section cover	This is used when 2-sided printing is performed. Open this cover to remove a paper misfeed.
6	Bypass tray	Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension.
7	Main power switch	This is used to power on the machine. When using the fax or Internet fax functions, keep this switch in the "on" position.
8	Waste toner box	This collects excess toner that remains after printing.
9	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.
10	Handle	Pull this out and grasp it when moving the machine.
11	Right cover of stand/ 1 x 500 sheet paper drawer right cover of stand/ 2 x 500 sheet paper drawer (when a stand/ 1 x 500 sheet paper drawer or a stand/ 2 x 500 sheet paper drawer is installed)	Open this to remove a paper misfeed in tray 3 or tray 4.
12	Paper tray right side cover	Open this to remove a paper misfeed in tray 1 or tray 2.
13	Right side cover release lever	To remove a paper misfeed, pull and hold this lever up to open the right side cover.

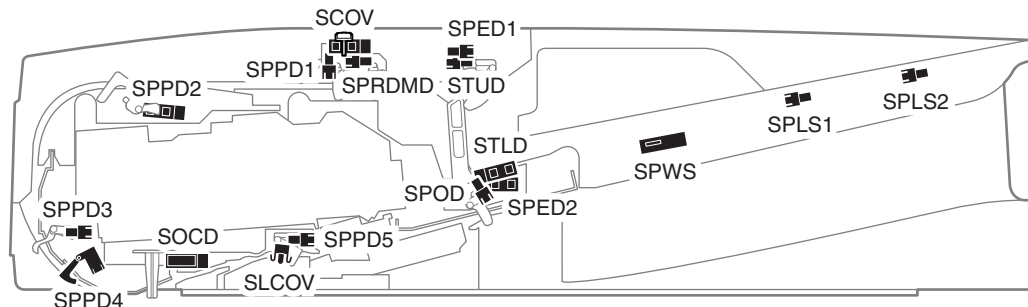
## D. DSPF

### (1) Internal structure



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

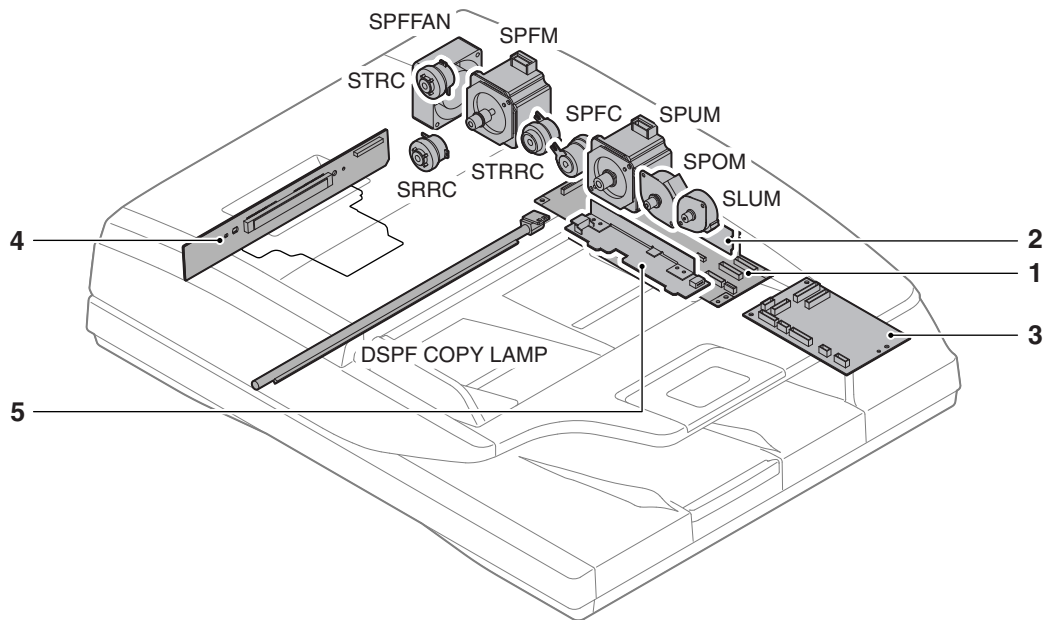
### (2) Sensors, switches



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



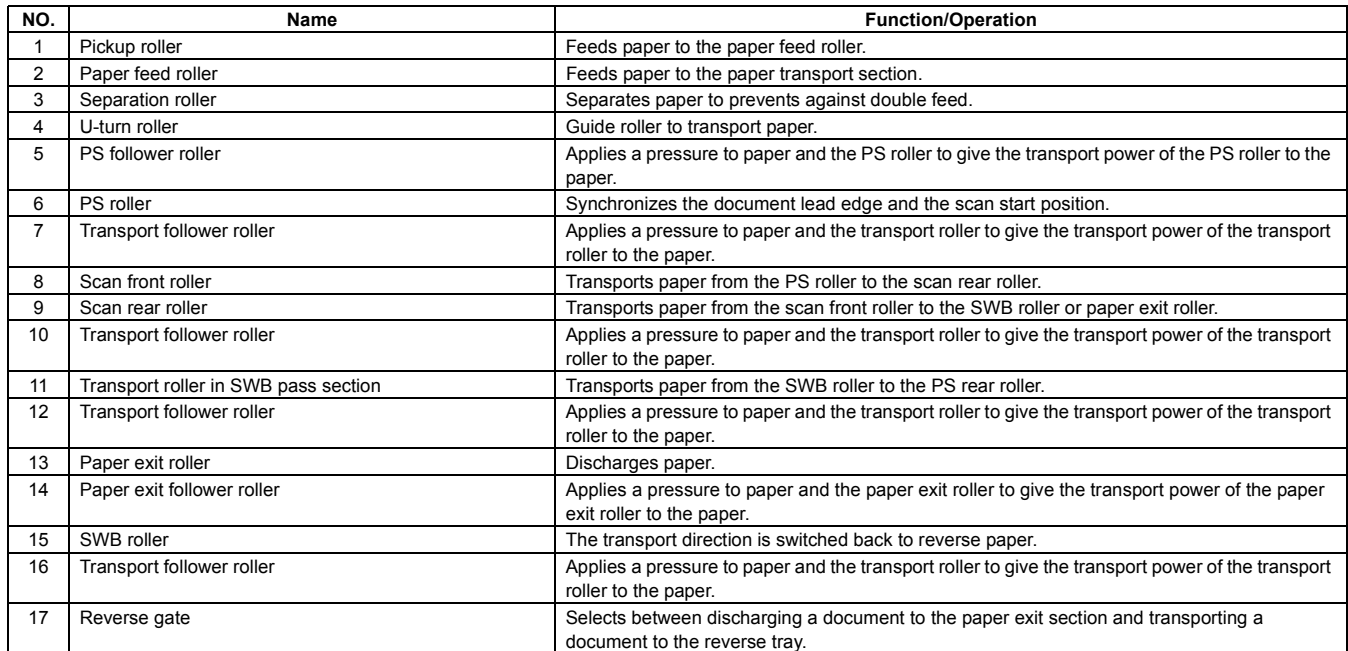
### (3) Motors, clutches, solenoids, PWB and lamps



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

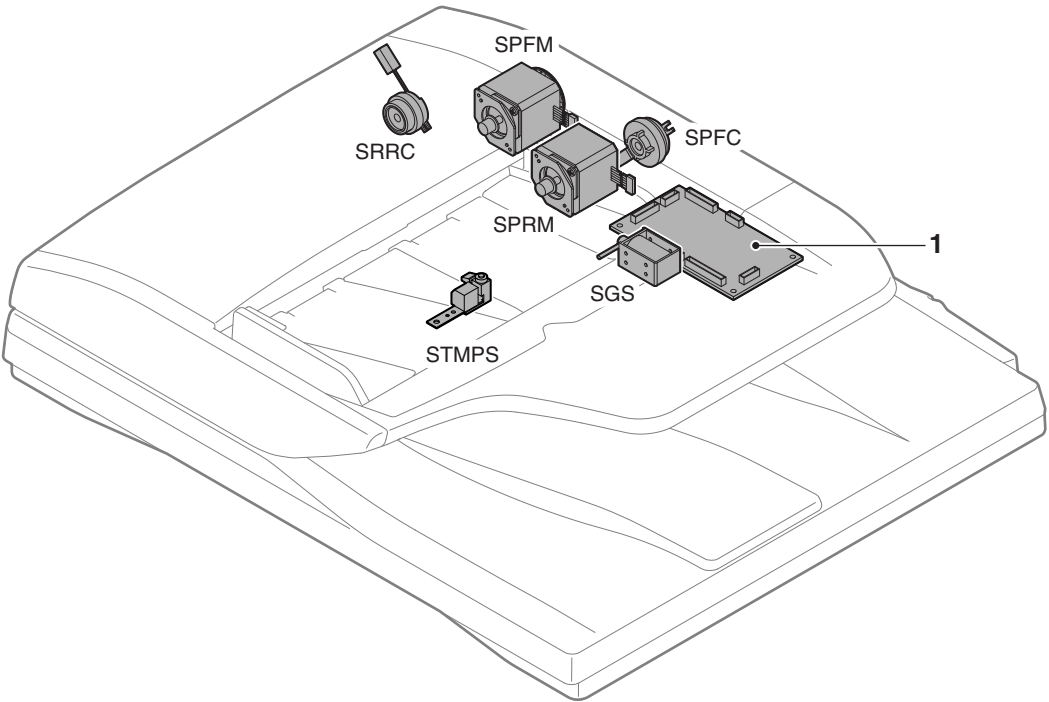
No.	Name	Function/Operation
1	DSPF control PWB	Control PWB for DSPF
2	DSPF flash PWB	Program ROM PWB for DSPF
3	DSPF driver PWB	Driver PWB for DSPF
4	DSPF CCD PWB	Scans document images.
5	DSPF CL inverter PWB	Drives the copy lamp.

### (1) Internal structure



WWW.SERVICE-MANUAL.NET

(3) Motor, clutches, solenoids and PWB

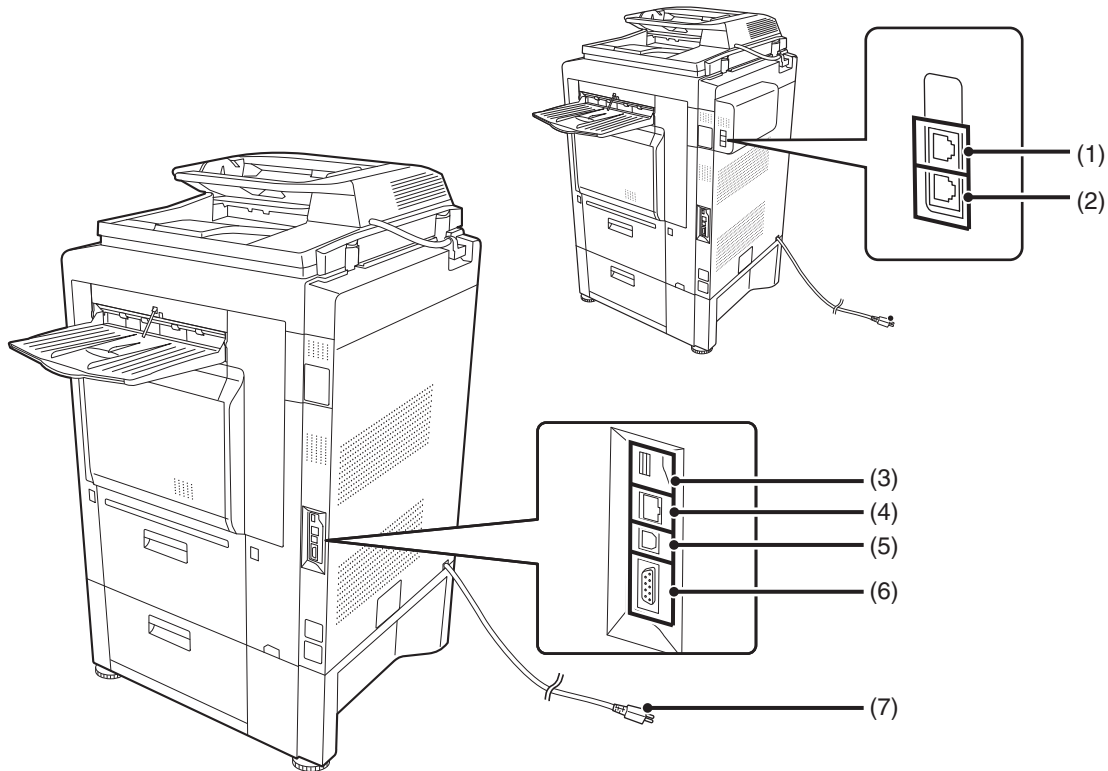


Signal name	Name	Type	Function/Operation
SGS	SPF document exit gate solenoid	Electromagnetic solenoid	Reverses the paper exit guard by ON operation.
SPFC	SPF paper feed clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller.
SPFM	SPF transport motor	Stepping motor	Drives the transport roller and the PS roller.
SPRM	SPF paper feed reverse motor	Stepping motor	Drives the roller for paper feeding and drives the SWB transport roller.
SRRC	SPF resist roller clutch	Electromagnetic clutch	Controls ON/OFF of the PS roller.
STMPS	Stamp solenoid	-	Drives the finish stamp.

NO	Name	Function/Operation
1	RSPF drive PWB	Drives the RSPF.

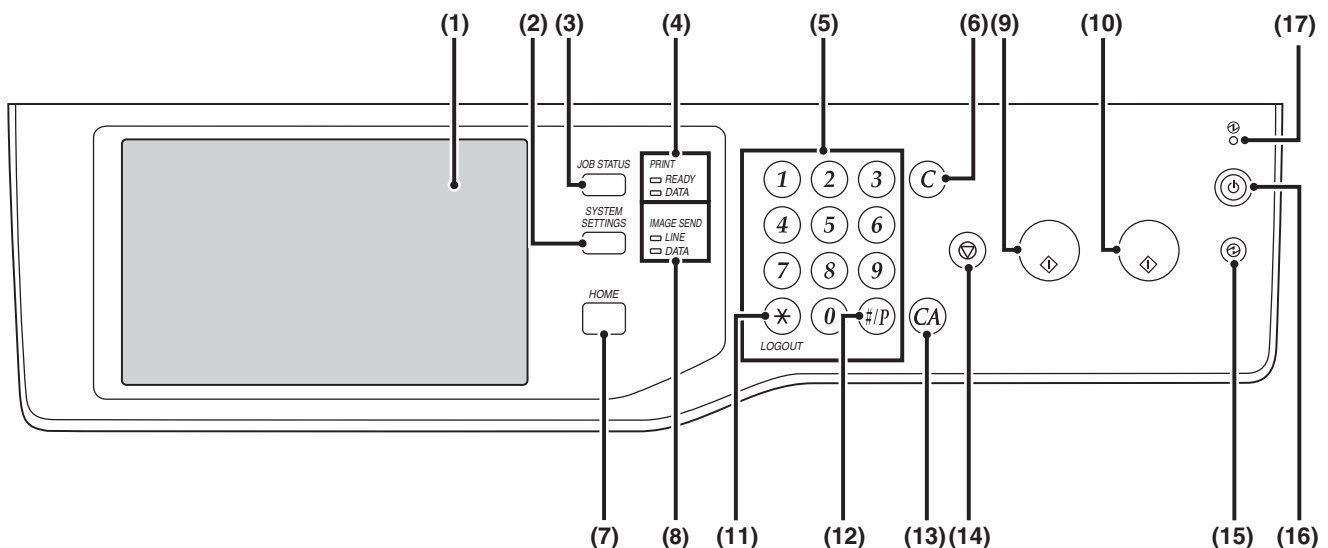
## F. Connectors









When the fax expansion kit is installed



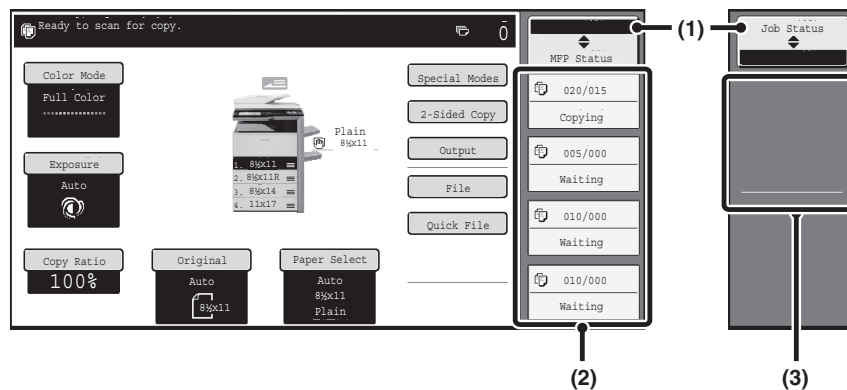
No.	Name	function/Operation
1	Extension phone socket	When the fax function of the machine is used, an extension phone can be connected to this socket.
2	Telephone line socket	When the fax function of the machine is used, the telephone line is connected to this socket.
3	USB connector (A type)	Supports USB 2.0 (Hi-Speed). This is used to connect a USB device such as USB memory to the machine. This connector is not initially available for use. If you wish to use the connector, contact your service technician.
4	LAN connector	Connect the LAN cable to this connector when the machine is used on a network. For the LAN cable, use a shielded type cable.
5	USB connector (B type)	Supports USB 2.0 (Hi-Speed). A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.
6	Service-only connector	CAUTION: This connector is for use only by service technicians. Connecting a cable to this connector may cause the machine to malfunction. Important note for service technicians: The cable connected to the service connector must be less than 118" (3 m) in length.
7	Power plug	

## G. Operation panel



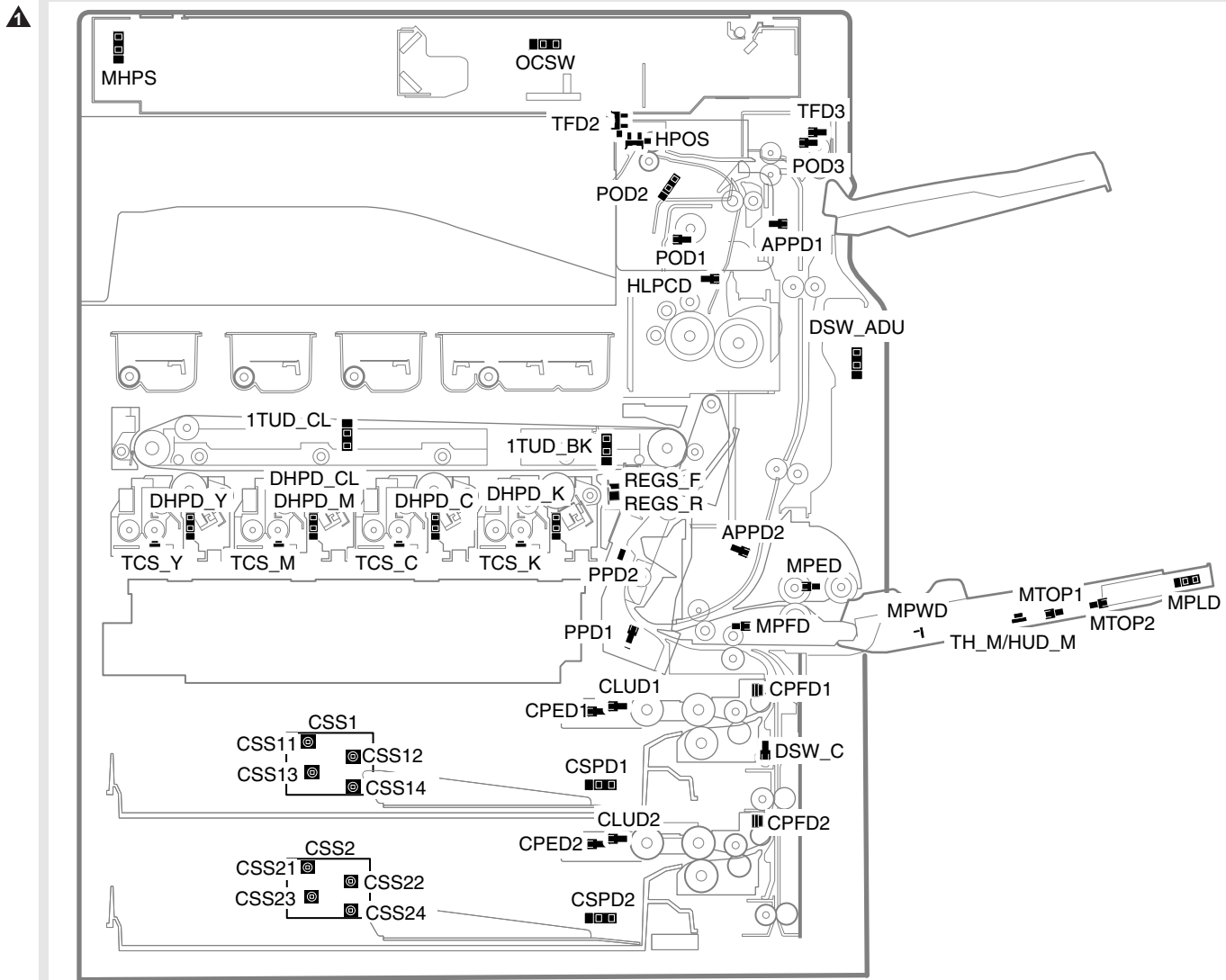
No.	Name	function/Operation
1	Touch panel	Messages and keys appear in the touch panel display. Touch the displayed keys to perform a variety of operations. When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation.
2	[SYSTEM SETTINGS]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

## H. Status display



No.	Name	function/Operation
1	Display selection key	The status display can be switched between "Job Status" and "MFP Status". If the job status screen is displayed, the status display automatically changes to "MFP Status".
2	"Job Status" display	This shows the first 4 print jobs in the print queue (the job in progress and jobs waiting to be printed). The type of job, the set number of copies, the number of copies completed, and the job status appear. Jobs cannot be manipulated in this screen. Jobs can only be manipulated in the job status screen.
3	"MFP Status" display	This shows machine system information. Maintenance Information: This shows machine maintenance information by means of codes.

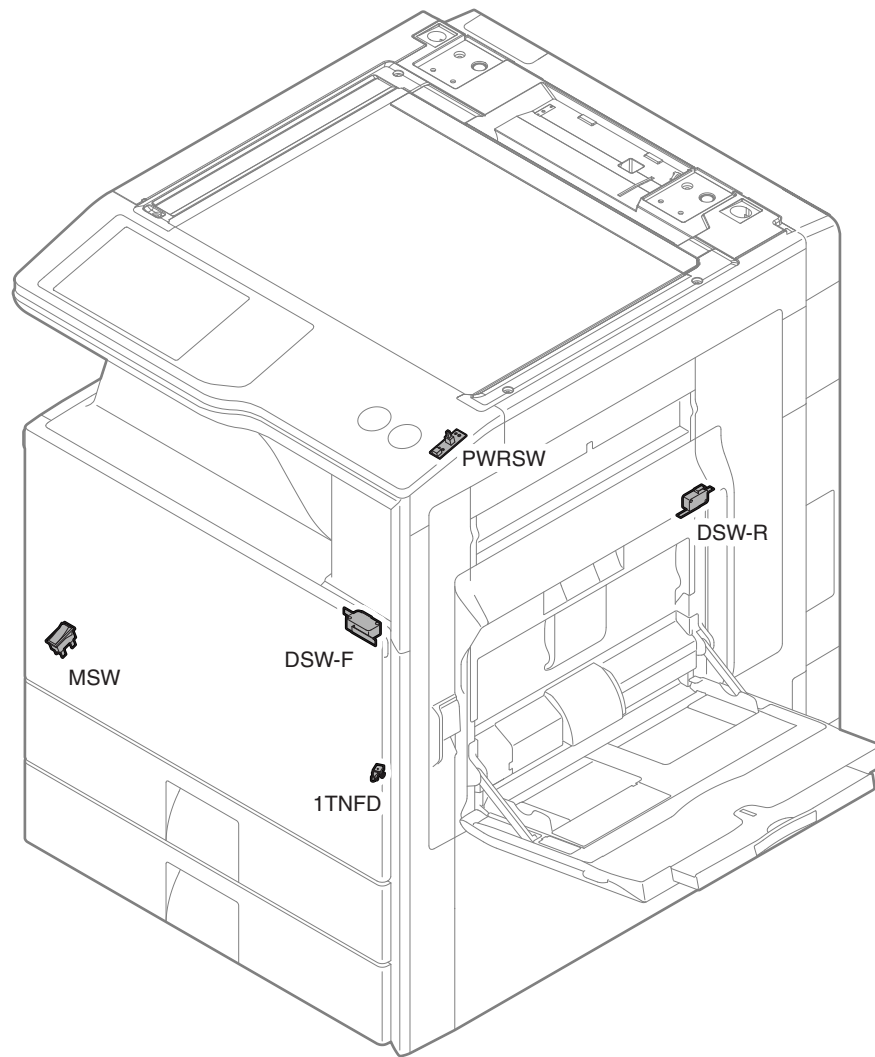
## I. Sensor



Signal name	Name	Function/Operation	Type	NOTE
1TUD_BK	Transfer belt separation BK detection	Detects the transfer belt separation BK.		
1TUD_CL	Transfer belt separation CL detection	Detects the transfer belt separation CL.		
APPD1	ADU transport path detection 1	Detects the duplex (ADU) upstream paper pass.	Transmission type	
APPD2	ADU transport path detection 2	Detects the duplex (ADU) midstream paper pass.	Transmission type	
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Detects the tray 1 upper limit.	Transmission type	
CLUD2	Tray 2 upper limit detection (Lift HP detection)	Detects the tray 2 upper limit.	Transmission type	
CPED1	Tray 1 paper empty detection	Detects the tray 1 paper empty.	Transmission type	
CPED2	Tray 2 paper empty detection	Detects the tray 2 paper empty.	Transmission type	
CPFD1	Tray 1 transport detection (Paper entry detection)	Detects tray 1 paper pass.	Reflection type	
CPFD2	Tray 2 transport detection (Paper entry detection)	Detects tray 2 paper pass.	Reflection type	
CSPD1	Tray 1 paper remaining quantity detection	Detects the tray 1 paper remaining quantity.		
CSPD2	Tray 2 paper remaining quantity detection	Detects the tray 2 paper remaining quantity.		
CSS1	Tray 1 installation detection	Detects the tray 1.		
CSS2	Tray 2 installation detection	Detects the tray 2.		
CSS11	Tray 1 rear edge detection 1	Insertion of the tray is detected by detecting either of tray 1 rear edge detection 1 – 4. The paper size of tray 1 is detected.	Duct switch	
CSS12	Tray 1 rear edge detection 2		Duct switch	
CSS13	Tray 1 rear edge detection 3		Duct switch	
CSS14	Tray 1 rear edge detection 4		Duct switch	
CSS21	Tray 2 rear edge detection 1	Insertion of the tray is detected by detecting either of tray 2 rear edge detection 1 – 4. The paper size of tray 2 is detected.	Duct switch	
CSS22	Tray 2 rear edge detection 2		Duct switch	
CSS23	Tray 2 rear edge detection 3		Duct switch	
CSS24	Tray 2 rear edge detection 4		Duct switch	
DHPD_CL	CL phase detection	Detects the CL phase.		41-sheet machine
DHPD_C	C phase detection	Detects the C phase.		50-sheet machine
DHPD_M	M phase detection	Detects the M phase.		50-sheet machine
DHPD_Y	Y phase detection	Detects the Y phase.		50-sheet machine

Signal name	Name	Function/Operation	Type	NOTE
DHPD_K	BK phase detection	Detects the BK phase.		
DSW_ADU	ADU transport open/close detection	Detects the duplex (ADU) cover open/close.	Transmission type	
DSW_C	Tray 1 and 2 transport cover open/close detection	Detects the tray 1 and 2 transport cover open/close.		
HLPCD	Fusing pressure release sensor	Detects pressure release of the fusing roller.	Transmission type	
HPOS	Shifter home position detection	Detects the shifter home position.		
MHPS	Scanner home position sensor	Detects the scanner home position.	Transmission type	
MPED	Manual feed paper empty detection	Detects the manual feed paper empty.	Transmission type	
MPFD	Manual feed paper entry detection	Detects the manual feed paper entry.	Transmission type	
MPLD	Manual feed paper length detector	Detects the manual paper feed tray paper length.		Manual paper feed unit
MPWD	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.	Volume resistor	
MTOP1	Manual paper feed tray pull-out position detector 1	Detects the manual paper feed tray paper pull-out position (storing position).	Transmission type	Manual paper feed unit
MTOP2	Manual paper feed tray pull-out position detector 2	Detects the manual paper feed tray paper pull-out position (pull-out position).	Transmission type	Manual paper feed unit
OCSW	Original cover SW	Detects the trigger for document size.	Transmission type	
POD1	Fusing rear detection	Detects the paper exit from fusing.	Transmission type	
POD2	Paper exit detection	Detects the paper from paper exit.	Transmission type	
POD3	Right tray paper exit detection	Detects the paper exit to right tray.		
PPD1	Resist pre-detection	Detects the paper in front of resist roller.	Transmission type	
PPD2	Resist detection	Detects the paper in rear of resist roller.		
REGS_F	Pro-reg sensor F	Detects the registration shift of the machine front (F) side and detects color toner patch.	Reflection type	
REGS_R	Pro-reg sensor R	Detects the registration shift of the machine rear (R) side and detects black toner patch.	Reflection type	
TCS_C	Toner density sensor	Detects the toner density (C).	Magnetic sensor	
TCS_K	Toner density sensor	Detects the toner density (K).	Magnetic sensor	
TCS_M	Toner density sensor	Detects the toner density (M).	Magnetic sensor	
TCS_Y	Toner density sensor	Detects the toner density (Y).	Magnetic sensor	
TFD2	Paper exit full detection	Detects the face down paper exit tray full.	Transmission type	
TFD3	Right tray paper exit full detection	Detects the right tray paper exit full.		
TH_LM_IN	Lower main thermister	Detects the temperature.		
TH_M/HUD_M	Temperature/humidity detection	Detects temperature and humidity.		

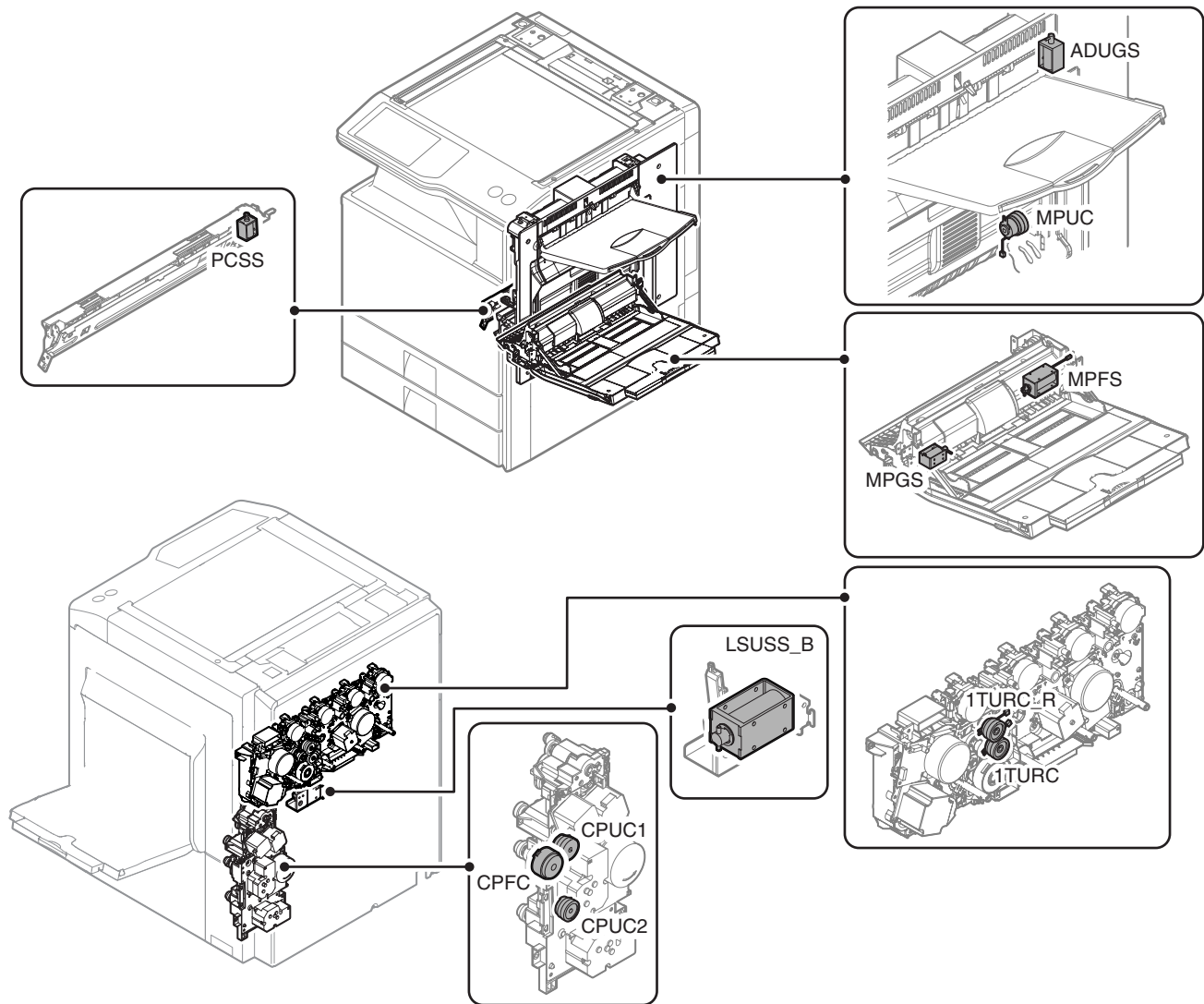
# J. Switch



Signal name	Name	Type	Function/Operation
1TNFD	Waste toner full detection switch	Mechanical switch	Detects the waste toner full.
DSW-F	Front door open/close switch	Micro switch	Detects open/close of the front door, and turns ON/OFF the power line of the fusing, motor and the LSU laser.
DSW-R	Right door open/close switch	Micro switch	Detects open/close of the right door, and turns ON/OFF the power line of the fusing, motor and the LSU laser.
MSW	Main switch	Seesaw switch	Turns ON/OFF the main DC power source.
PWRSW	Operator panel power supply switch	Push switch	Outputs the ON/OFF control signal of the DC power source.

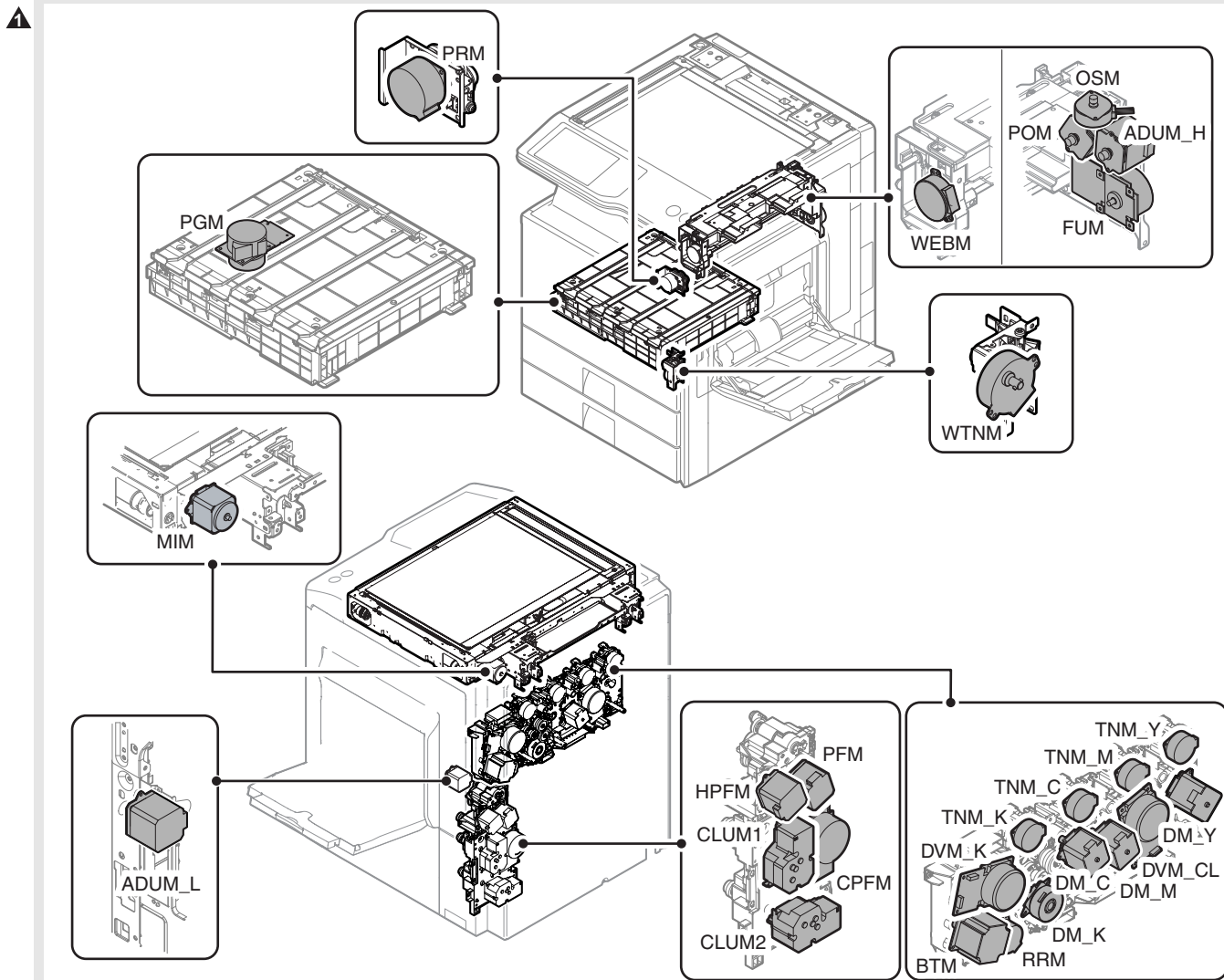


## K. Clutches and solenoids



Signal name	Name	Type	Function/Operation
1TURC	Primary transfer separation clutch	Electromagnetic clutch	Controls the primary transfer separation mode.
1TURC_R	Primary transfer separation reverse clutch	Electromagnetic clutch	Controls the primary transfer separation mode.
ADUGS	ADU gate solenoid	Electromagnetic solenoid	Controls the ADU gate.
CPFC	Tray vertical transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper transport roller in the paper feed tray section.
CPUC1	Paper feed clutch (Paper feed tray 1)	Electromagnetic clutch	Controls ON/OFF of the roller in the paper feed tray 1 section.
CPUC2	Paper feed clutch (Paper feed tray 2)	Electromagnetic clutch	Controls ON/OFF of the roller in the paper feed tray 2 section.
LSUSS_B	LSU shutter solenoid 1	Electromagnetic solenoid	Opens/closes the LSU shutter.
MPFS	Paper pickup solenoid (Manual paper feed)	Electromagnetic solenoid	Paper pickup solenoid (Manual paper feed)
MPGS	Manual paper feed gate solenoid	Electromagnetic solenoid	Controls the manual paper feed gate Open/Close.
MPUC	Manual paper feed clutch	Electromagnetic clutch	Controls the manual paper feed section paper feed roller ON/OFF.
PCSS	Process control shutter solenoid	Electromagnetic solenoid	Opens/closes the shutter of the process control and the registration sensor.

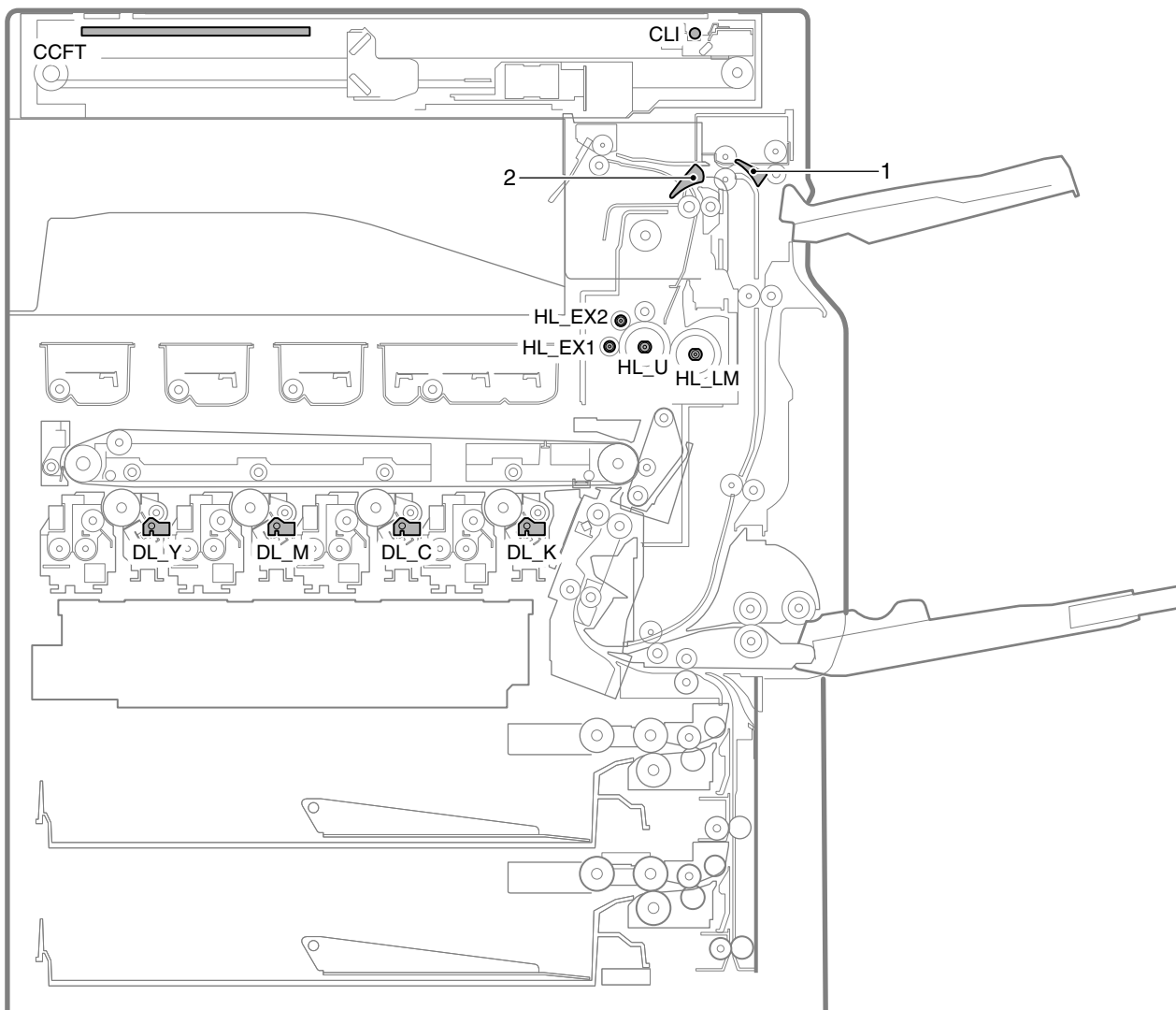
## L. Drive motor



Signal name	Name	Type	Function/Operation	NOTE
ADUM_H	ADU motor upper	Stepping motor	Drives the transport roller 13.	
ADUM_L	ADU motor lower	Stepping motor	Drives the right door section.	
BTM	Transfer belt motor	Stepping motor	Drives the transfer belt.	
CLUM1	Paper tray lift-up motor (Paper feed tray 1)	DC brush motor	Drives the lift plate of the paper feed tray.	
CLUM2	Paper tray lift-up motor (Paper feed tray 2)	DC brush motor	Drives the lift plate of the paper feed tray.	
CPFM	Paper feed motor	Brush-less motor	Drives the paper feed section.	
DM_K	BK drum motor	Stepping motor	Drives the BK drum.	
DM_M	CL drum motor	Stepping motor	Drives the CL drum.	41-sheet machine
	M drum motor		Drives the M drum.	50-sheet machine
DM_C	C drum motor	Stepping motor	Drives the C drum.	50-sheet machine
DM_Y	Y drum motor	Stepping motor	Drives the Y drum.	50-sheet machine
DVM_CL	Developing drive motor (CL)	Brush-less motor	Drives the developing section (CL).	
DVM_K	Developing drive motor (K)	Brush-less motor	Drives the OPC drum/developing section/transfer section (K).	
FUM	Fusing drive motor	Stepping motor	Drives the fusing unit.	
HPFM	Horizontal transport motor	Stepping motor	Transports paper from the paper feed section to the transport motor drive system. Transports paper from the right door section to the transport motor drive system.	
MIM	Scanner motor	Stepping motor	Scanner (reading) section	
OSM	Shifter motor	Stepping motor	Performs offset of paper.	
PFM	Transport motor	Stepping motor	Drives transport between the resist roller and the paper feed section, transport between the resist roller and the right door section.	
PGM	Polygon motor	DC brush-less motor	Scans the laser beam.	
POM	Paper exit drive motor	Stepping motor	Drives the paper exit roller.	
PRM	Fusing pressure release motor	Stepping motor	Adjusts the fusing roller pressure.	

Signal name	Name	Type	Function/Operation	NOTE
RRM	Resist motor	Stepping motor	Drives the resist roller and controls ON/OFF.	
TNM_C	Toner motor C	Stepping motor	Transports toner of the toner cartridge to the development unit.	
TNM_K	Toner motor K	Stepping motor	Transports toner of the toner cartridge to the development unit.	
TNM_M	Toner motor M	Stepping motor	Transports toner of the toner cartridge to the development unit.	
TNM_Y	Toner motor Y	Stepping motor	Transports toner of the toner cartridge to the development unit.	
WEBM	Fusing web cleaning motor	Synchronous motor	Drives the fusing web cleaning paper.	
WTNM	Waste toner drive motor	Synchronous motor	Stirs waste toner.	

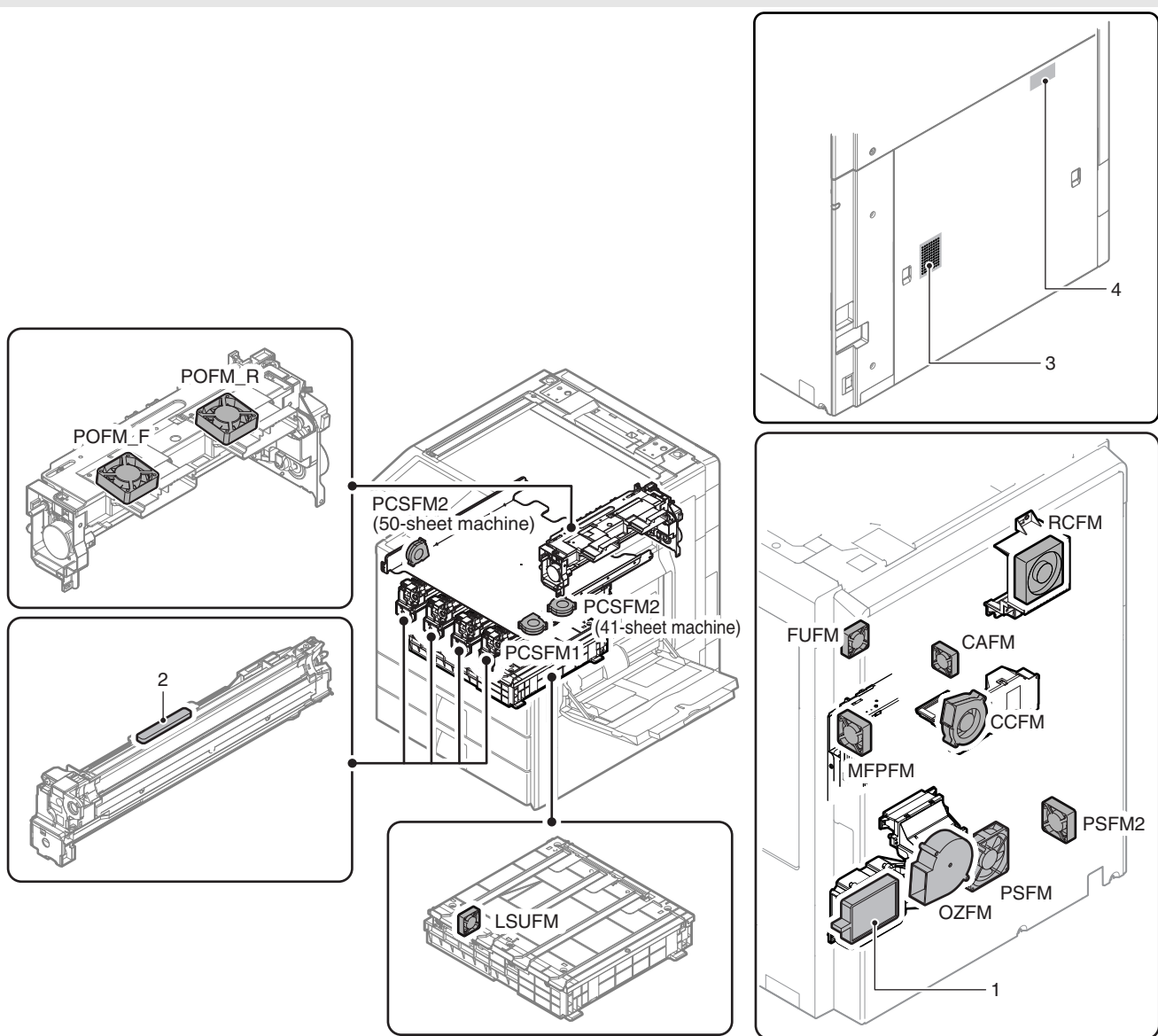
## M. Lamps, gates and heaters



Signal name	Name	Type	Function/Operation
CCFT	LCD backlight	Cold Cathode Fluorescent Tube	Backlight for LCD
CLI	Scanner lamp	Xenon lamp	Radiates lights onto a document for the CCD to scan the document image.
DL_C	Discharge lamp C	LED	Discharges electric charges on the OPC drum.
DL_K	Discharge lamp K	LED	Discharges electric charges on the OPC drum.
DL_M	Discharge lamp M	LED	Discharges electric charges on the OPC drum.
DL_Y	Discharge lamp Y	LED	Discharges electric charges on the OPC drum.
HL_LM	Heater lamp lower main		Heats the lower heat roller. (Main)
HL_UM	Heater lamp upper main		Heats the upper heat roller. (Main)
HL_EX1	Heater lamp external 1		Heats the upper heat roller. (External)
HL_EX2	Heater lamp external 2		Heats the upper heat roller. (External)

Signal name	Name	Type	Function/Operation
1	Right paper exit gate		Selects the paper path to transport paper to the duplex (ADU) section or to discharge paper to the right tray.
2	ADU reverse gate		Switches the transport route by switchback when paper is transported to the duplex (ADU) section.

## N. Fans and filters

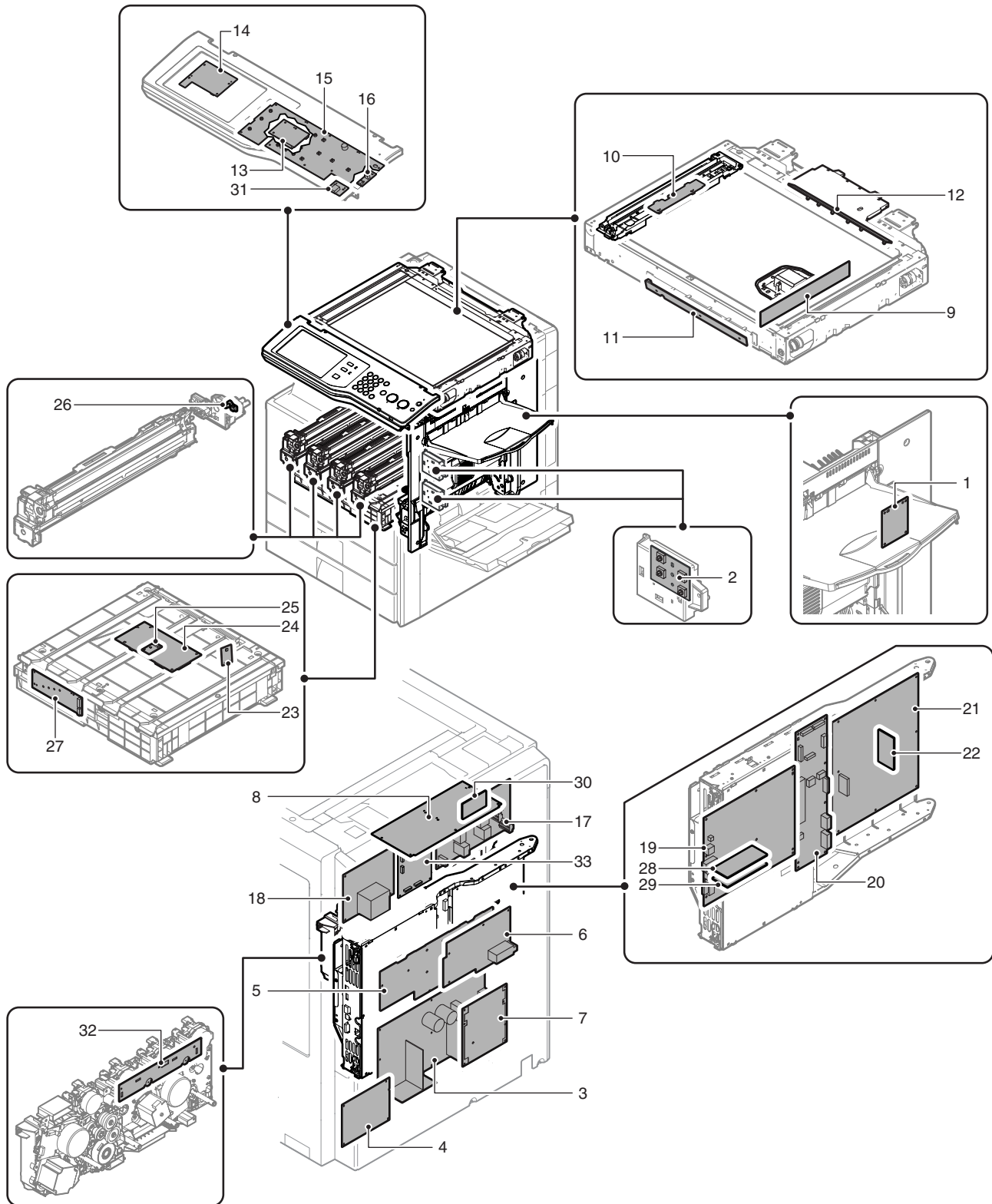


Signal name	Name	Function/Operation
CAFM	Cartridge cooling fan motor	Cools the toner cartridge.
CCFM	Process air inlet fan motor	Cools charger section of the process.
FUFM	Fusing fan motor	Cools the fusing unit and peripheral area.
LSUFM	LSU cooling fan motor	Cools the LSU section.
MFPFM	Controller cooling fan motor	Cools the controller PWB.
OZFM	Ozone fan motor	Exhausts ozone.
PCSF1	Toner cooling fan motor 1	Cools the toner bottle.
PCSF2	Toner cooling fan motor 2	Cools the toner bottle.
POFM_F	Paper exit cooling fan motor (F side)	Cools the fusing unit.
POFM_R	Paper exit cooling fan motor (R side)	Cools the fusing unit.
PSFM	Power cooling fan motor	Cools the power unit.
PSFM2	Power cooling fan motor2	Cools the power unit.
RCFM	Rear cooling fan motor	Cools rear (R) part of the machine.

NO	Name	Function/Operation	NOTE
1	Ozone filter	Absorbs ozone generated in the image process section.	
2	Toner filter	Prevents dispersing of toner.	
3	Left cabinet filter	Removes foreign materials from sucked air.	
4	TN suction filter	Removes foreign materials from sucked air.	50-sheet machine



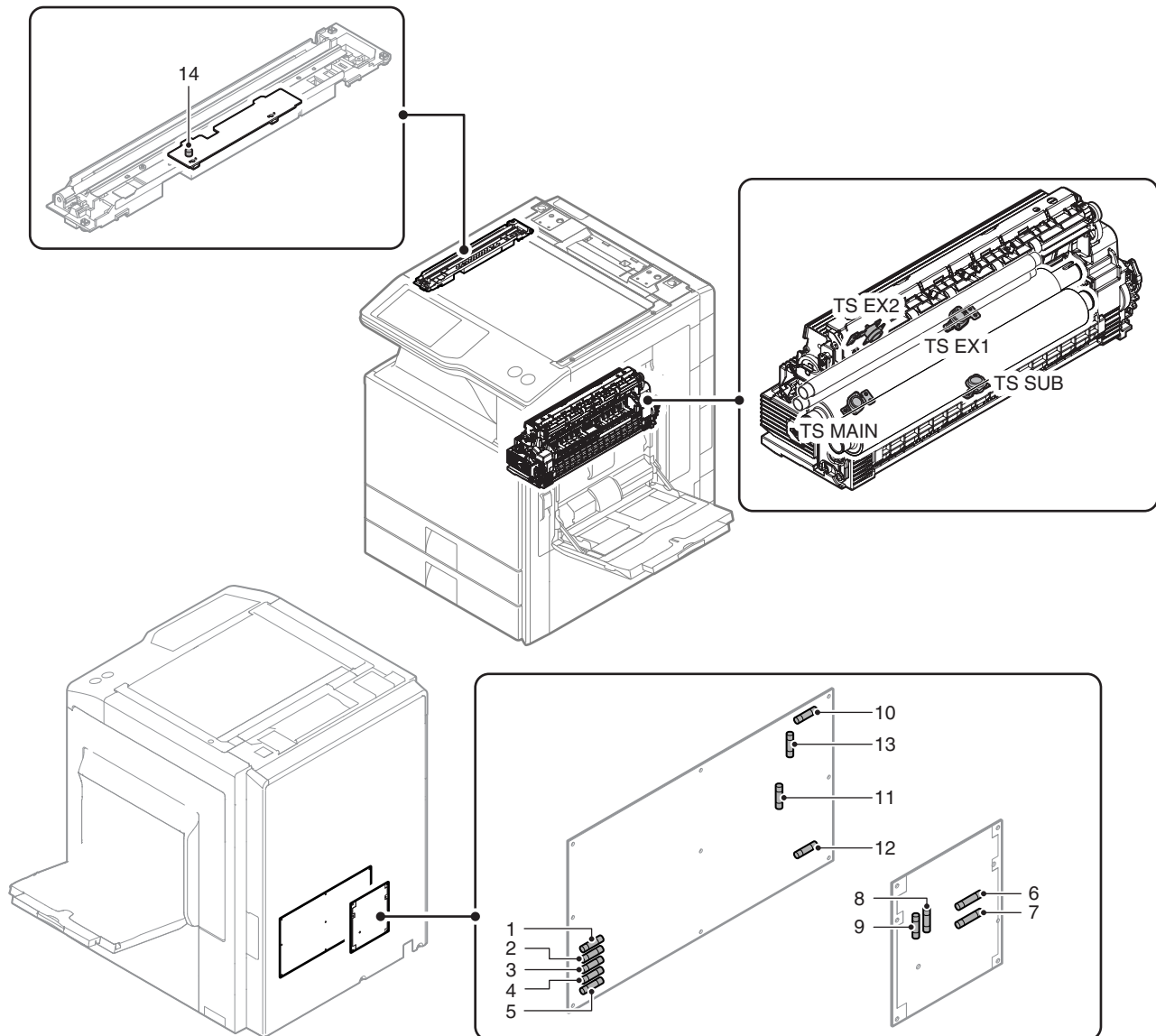
## O. PWB



NO	Name	Function/Operation
1	RD I/F PWB	Detects each sensor in the right door unit.
2	Tray installation detection PWB	Detects the tray.
3	DC power PWB	Outputs the secondary side voltage.
4	Driver main PWB	Drives the transport motor and related sections.
5	MC PWB	Generates the high voltage for the main charger and the developing bias voltage.
6	Primary transfer PWB	Generates the primary transfer voltage.
7	AC power PWB	Controls the primary side power source.
8	Scanner control PWB	Controls the scanner section.
9	CCD PWB	Scans document images.
10	CL inverter PWB	Drives the xenon lamp.

NO	Name	Function/Operation
11	Document detection light collector PWB	Outputs the document size detection signal.
12	Document detection light emitting PWB	Emits light for document size detection.
13	LCD INV PWB	Generates the high voltage for the LCD backlight.
14	LVDS PWB	Converts the display signal and outputs to the LCD.
15	MFP OPE-P PWB	Outputs the key operation signal.
16	Power SW PWB	Outputs the ON/OFF control signal of the DC power source.
17	HL PWB	Controls the heater lamp.
18	Secondary transfer PWB	Generates the secondary transfer voltage, the transfer belt cleaning voltage and the pre-transfer voltage.
19	MFP cnt PWB	Controls the image-related items and controls all over the machine.
20	Mother PWB	Interfaces the MFP cnt PWB and other PWB.
21	PCU PWB	Controls the engine section.
22	PCU Flash ROM PWB	The ROM PWB that control the PCU PWB.
23	BD PWB	Detects laser and outputs the synchronous signal.
24	LSU PWB	Controls the LSU.
25	LSU thermistor	Measures the temperature in LSU.
26	DL PWB	Discharges electric charges on the OPC drum.
27	LD PWB	Controls laser lighting.
28	PROG1 ROM PWB	Stores the program to boot the printer controller.
29	PROG2 ROM PWB	Stores the program.
30	SCN Flash ROM PWB	Stores the scanner control program.
31	USB connector PWB	For connecting the USB
32	TM drive PWB	Control the toner motor.
33	Driver sub PWB	Drives the process motor and related sections.

## P. Fuses/Thermostats

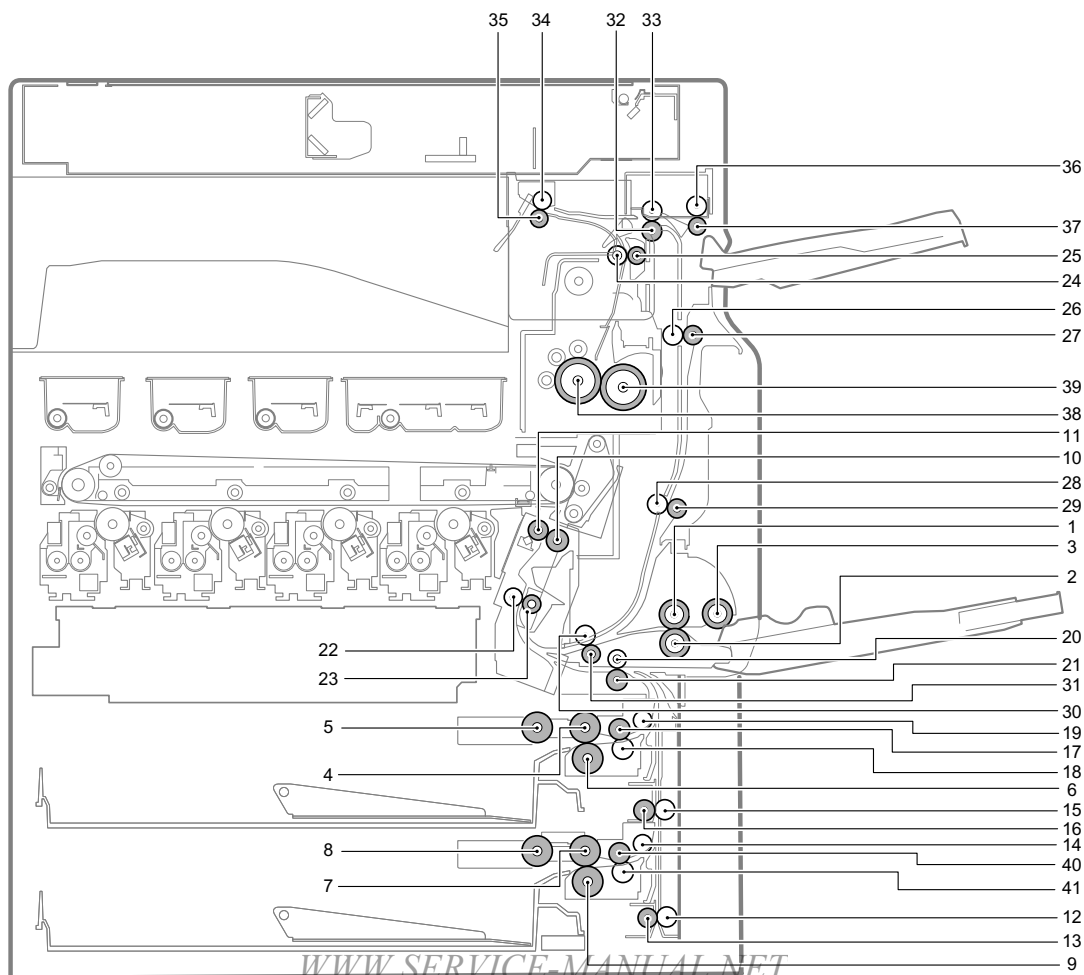




Signal name	Name	Specifications	Section
TS MAIN	Thermostat	Fusing roller overheat protection	Fusing unit
TS SUB	Thermostat	Fusing roller overheat protection	Fusing unit
TS EX1	Thermostat	Fusing roller overheat protection	Fusing unit
TS EX2	Thermostat	Fusing roller overheat protection	Fusing unit

NO	Signal name	Name	Specifications	Section
1	F401	Fuse	T6.3AH 250V (100V/200V 41-sheet machine)	DC power PWB
	F101	Fuse	T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
2	F402	Fuse	T6.3AH 250V (100V/200V 41-sheet machine)	DC power PWB
	F102	Fuse	T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
3	F403	Fuse	T6.3AH 250V (100V/200V 41-sheet machine)	DC power PWB
	F103	Fuse	T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
4	F404	Fuse	T6.3AH 250V (100V/200V 41-sheet machine)	DC power PWB
	F104	Fuse	T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
5	F405	Fuse	T6.3AH 250V (100V/200V 41-sheet machine)	DC power PWB
	F105	Fuse	T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
6	F1	Fuse	15A 250V (100V 41-sheet machine) / T10AH 250V (200V 41-sheet machine, 200V 50-sheet machine) / 20A 250V (100V 50-sheet machine)	AC power PWB
7	F2	Fuse	T10AH 250V (200V only)	AC power PWB
8	F3	Fuse	T2AH 250V	AC power PWB
9	F4	Fuse	T2AH 250V (200V only)	AC power PWB
10	F001	Fuse	15A 250V (100V) / T8AH 250V (200V)	DC power PWB
11	F101	Fuse	T5AH 250V (100V 41-sheet machine) / T2.5AH 250V (200V 41-sheet machine) / T6.3AH 250V (100V/200V 50-sheet machine)	DC power PWB
	F003	Fuse	T8A 500V (100V 50-sheet machine) / T5A 500V (200V 50-sheet machine)	DC power PWB
12	F201	Fuse	T8AH 250V (100V 41-sheet machine) / T4AH 250V (200V 41-sheet machine)	DC power PWB
13	F002	Fuse	T2AH 250V (100V 41/50-sheet machine, 200V 41-sheet machine) / T8AH 250V (200V 50-sheet machine)	DC power PWB
14	F1	Fuse	1.25A 250V	CL inverter PWB

## Q. Roller



NO.	Name	Function/Operation
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
2	Separation roller (Manual paper feed tray)	Separates paper to prevent Double Feed.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper feed roller.
4	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.
5	Paper pickup roller (No. 1 paper feed tray)	Sends paper to the paper feed roller.
6	Separation roller (No. 1 paper feed tray)	Separates paper to prevent Double Feed.
7	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.
8	Paper pickup roller (No. 2 paper feed tray)	Sends paper to the paper feed roller.
9	Separation roller (No. 2 paper feed tray)	Separates paper to prevent Double Feed.
10	Resist roller (Drive)	Transports paper to the transfer section. Controls the paper transport timing to adjust relative relations between images and paper.
11	Resist roller (Idle)	Applies a pressure to paper and the resist roller to give the transport power of the transport roller to the paper.
12	Transport roller 1 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
13	Transport roller 1 (Drive)	Transports paper from No. 3 and No. 4 paper feed tray to the transport roller 4.
14	Transport roller 3 (Idle)	Reduces friction between paper and the paper guide.
15	Transport roller 4 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
16	Transport roller 4 (Drive)	Transports paper from the transport roller 1 and paper feed roller (No. 2 paper feed tray) to the transport roller 7.
17	Transport roller 5 (Drive)	Transports paper from the paper feed tray 1 to the transport roller 7.
18	Transport roller 5 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
19	Transport roller 6 (Idle)	Reduces friction between paper and the paper guide.
20	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
21	Transport roller 7 (Drive)	Transports paper from the paper feed tray 1, 2, 3, and 4 to the transport roller 8.
22	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
23	Transport roller 8 (Drive)	Transports the paper to resist roller.
24	Transport roller 9 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
25	Transport roller 9 (Drive)	Transports paper from the fusing roller to the transport roller 13.
26	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
27	Transport roller 10 (Drive)	Transports paper from the transport roller 13 to the transport roller 11.
28	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
29	Transport roller 11 (Drive)	Transports paper from the transport roller 10 to the transport roller 12.
30	Transport roller 12 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
31	Transport roller 12 (Drive)	Transports paper from the transport roller 11 to the transport roller 8. / Transports the paper from the manual paper feed tray to the transport roller 8.
32	Transport roller 13 (Drive)	Transports paper to the duplex (ADU) section. / Transports paper to the paper exit roller 2.
33	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.
34	Paper exit roller 1 (Idle)	Applies a pressure to paper and the paper exit roller to give the transport power of the paper exit roller to the paper.
35	Paper exit roller 1 (Drive)	Discharges paper. Transports paper to the right paper exit tray. Transport paper to the duplex (ADU) section.
36	Paper exit roller 2 (Idle)	Applies a pressure to paper and the paper exit roller to give the transport power of the paper exit roller to the paper.
37	Paper exit roller 2 (Drive)	Discharges paper.
38	Fusing roller (Heating)	Heat and press toner onto paper to fuse images.
39	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).
40	Transport roller 14 (Drive)	Transports paper from the paper feed tray 2 to the transport roller 4.
41	Transport roller 14 (Idle)	Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.



## [5] ADJUSTMENTS

### 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	Adjust the developing doctor gap			
ADJ 2	Adjust the developing roller main pole			
ADJ 3	Toner density control reference value setting			25-2
ADJ 4	Adjusting high voltage values	4A	Adjust the main charger grid voltage	8-2
		4B	Adjust the developing bias voltage	8-1
		4C	Transfer voltage adjustment	8-6
ADJ 5	Image density sensor (image registration sensor) adjustment	5A	Color image density sensor (image registration sensor F) calibration	44-13
		5B	Color image density sensor (image registration sensor F), black image density sensor (image registration sensor R) adjustment	44-2
ADJ 6	Image skew adjustment (LSU unit)			61-4
ADJ 7	OPC drum phase adjustment	7A	OPC drum phase adjustment (Auto adjustment)	50-22
		7B	OPC drum phase adjustment (Manual adjustment)	44-31
ADJ 8	Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)			50-10
ADJ 9	Image off-center adjustment (Print engine section)			50-10
ADJ 10	Image registration adjustment (Print engine section)	10A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)	50-22
		10B	Image registration adjustment (Main scanning direction) (Manual adjustment)	50-20
		10C	Image registration adjustment (Sub scanning direction) (Manual adjustment)	50-21
ADJ 11	Scan image distortion adjustment	11A	Scanner (reading) unit parallelism adjustment	
		11B	Scan image (sub scanning direction) distortion adjustment	
		11C	Scan image (main scanning direction) distortion adjustment	
		11D	Scan image distortion adjustment (Whole scanner unit)	
ADJ 12	Scan image focus adjustment (CCD unit position adjustment)	12A	Document table mode image focus adjustment	
		12B	DSPF mode image focus adjustment	
ADJ 13	RSPF/DSPF parallelism adjustment	13A	RSPF height adjustment	
		13B	RSPF diagonal adjustment	
		13C	DSPF levelness adjustment	
		13D	DSPF skew adjustment	
ADJ 14	Scan image magnification ratio adjustment (Document table mode)	14A	Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)	48-1
		14B	Scan image magnification ratio adjustment (Sub scanning direction) (Document table mode)	48-1
ADJ 15	Scan image magnification ratio adjustment (RSPF/DSPF mode)	15A	Scan image magnification ratio adjustment (Main scanning direction) (RSPF mode)	48-1
		15B	Scan image magnification ratio adjustment (Sub scanning direction) (RSPF mode)	48-1
		15C	Scan image magnification ratio adjustment (Main scanning direction) (DSPF mode)	48-1
		15D	Scan image magnification ratio adjustment (Sub scanning direction) (DSPF mode)	48-1
ADJ 16	Scan image off-center adjustment	16A	Scan image off-center adjustment (Document table mode)	50-12
		16B	Scan image off-center adjustment (RSPF mode)	50-12
		16C	Scan image off-center adjustment (DSPF mode)	50-12
ADJ 17	Print area (Void area) adjustment (Print engine section)			50-10/50-1
ADJ 18	Copy image position, image loss adjustment	18A	Copy image position, image loss adjustment (Document table mode)	50-1 (50-2)
		18B	Document scan position adjustment (RSPF mode)	53-8
		18C	Document scan position adjustment (DSPF mode)	53-8
		18D	Copy image position, image loss adjustment (RSPF mode)	50-6 (50-7)
		18E	Copy image position, image loss adjustment (DSPF mode)	50-6 (50-7)
ADJ 19	Print lead edge image position adjustment (Printer mode) (Print engine section)			50-5

Job No	Adjustment item list			Simulation
ADJ 20	Copy color balance/density adjustment	20A (1)	CCD gamma adjustment (CCD calibration) (Normal document copy mode)	63-3 (63-5)
		20A (2)	CCD gamma adjustment (CCD calibration) (DSPF mode)	63-3 (63-5)
		20A (3)	Shading adjustment (DSPF mode)	
		20B	Copy color balance adjustment (Auto adjustment)	46-24
		20C	Copy color balance adjustment (Manual adjustment)	46-21
		20D	Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust)	46-1
		20E	Copy density adjustment (Each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust)	46-2
		20F	Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required)	46-10
		20G	Monochrome copy density/gamma adjustment (Each monochrome copy mode) (Normally not required)	46-16
		20H	Condition setting of document density reading operation (exposure) in the monochrome auto copy mode (Normally not required)	46-19
		20I	Document background density reproducibility adjustment in the monochrome auto copy mode (Normally unnecessary to adjust)	46-32
		20J	Copy density adjustment for low density section (Each copy mode) (Normally unnecessary to adjust)	46-63
		20K	Color copy text, line image edge gamma, density adjustment/Text-Map mode gamma, density adjustment	46-27
		20L	Color document reproducibility adjustment in the monochrome copy mode (Normally unnecessary to adjust)	46-37
		20M	Black ingredient amount adjustment in color copy mode (Normally unnecessary to adjust)	46-38
		20N	Sharpness adjustment in the color auto copy mode (Normally unnecessary to adjust)	46-60
		20O	Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust)	46-23
		20P	Copy color balance adjustment (single color copy mode) (Normally not required)	46-25
		20Q	Copy density adjustment in the RSPF mode (Normally unnecessary to adjust)	46-9
		20R	DSPF mode copy density adjustment (Normally not necessary to adjust)	
		20S	Auto color balance adjustment by the user (Copy color balance auto adjustment ENABLE setting and adjustment)	26-53
		20T	Copy color balance adjustment (Automatic adjustment for each dither)	46-54
ADJ 21	Printer color balance/density adjustment	21A	Printer color balance adjustment (Auto adjustment)	67-24
		21B	Printer color balance adjustment (Manual adjustment)	67-25
		21C	Printer density adjustment (low density part density adjustment) (Normally unnecessary to adjust)	67-36
		21D	Printer high density part density correction setting (high density part tone gap countermeasure) (Normally unnecessary to the setting change)	67-34
		21E	Auto color balance adjustment by the user (Printer color balance auto adjustment ENABLE setting and adjustment)	26-54
		21F	Copy/Printer color balance and density adjustment (Automatic adjustment)	46-74
		21G	Printer color balance adjustment (Automatic adjustment for each dither)	67-54
ADJ 22	Fusing paper guide position adjustment			
ADJ 23	Document size sensor adjustment	23A	Document size sensor detection point adjustment	41-2
		23B	Adjust the sensitivity of the original size sensor	41-2
ADJ 24	Manual paper feed tray paper size (width) sensor adjustment			40-2
ADJ 25	RSPF/DSPF tray paper size (width) sensor adjustment	25A	RSPF tray paper size (width) sensor adjustment	53-6
		25B	DSPF tray paper size (width) sensor adjustment	53-6
ADJ 26	Touch panel coordinate setting			65-1
ADJ 27	Image loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28	27A	Print image main scanning direction image magnification ratio automatic adjustment	50-28
		27B	Image off-center automatic adjustment	50-28
		27C	Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment	50-28
		27D	RSPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment	50-28
		27E	DSPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio auto adjustment	50-28

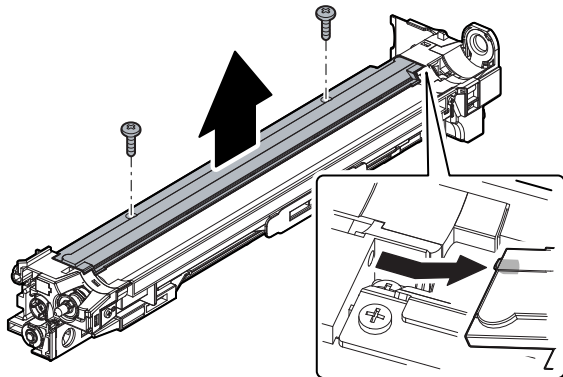
### 3. Details of adjustment

#### ADJ 1 Adjust the developing doctor gap

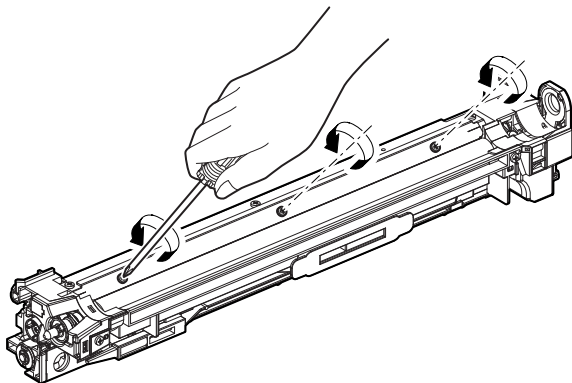
This adjustment is needed in the following situations:

- \* The developing unit has been disassembled.
- \* When the print image density is low.
- \* When there is a blur on the print image.
- \* When there is unevenness in the print image density.
- \* The toner is excessively dispersed.

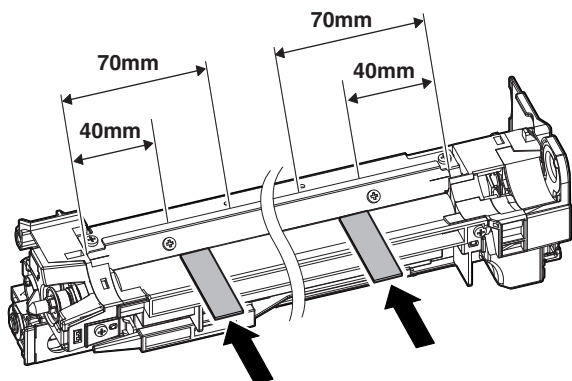
- 1) Remove the developing unit from the main unit, and remove the developing unit upper cover and the developing doctor cover.



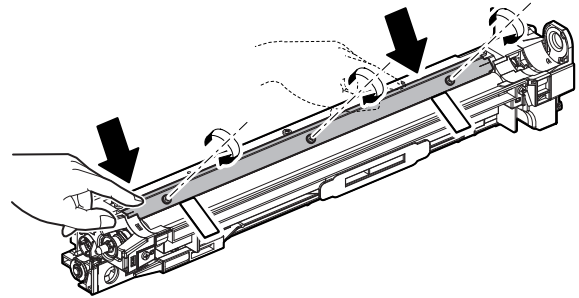
- 2) Loosen the developing doctor fixing screw.



- 3) Insert a thickness gauge of 0.60mm in between 40mm - 70mm from the edge of the developing doctor.

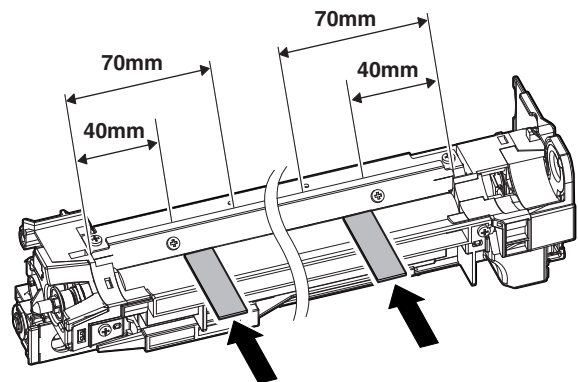


- 4) Push the developing doctor in the arrow direction, and tighten the fixing screw of the developing doctor. (Perform the similar procedure for the front frame and the rear frame.)



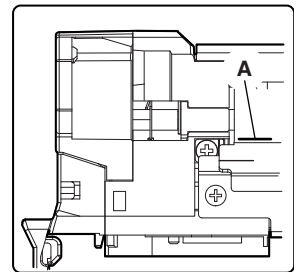
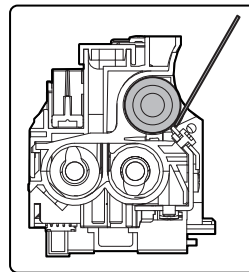
- 5) Check that the doctor gaps at two positions in 40mm - 70mm from the both sides of the developing doctor are in the range of  $0.60 \pm 0.05\text{mm}$ .

- \* When inserting a thickness gauge, be careful not to scratch the developing doctor and the developing roller.



Note for use of a thickness gauge

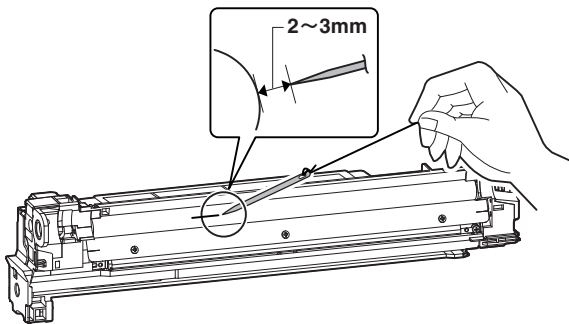
- Do not insert the gauge diagonally.
- The gauge must pass freely.
- The advisable point of measurement is the MIN point of the MG roller oscillation.
- \* Marked point (A) on the follower side (right side) of the MG roller.



## ADJ 2 Adjust the developing roller main pole

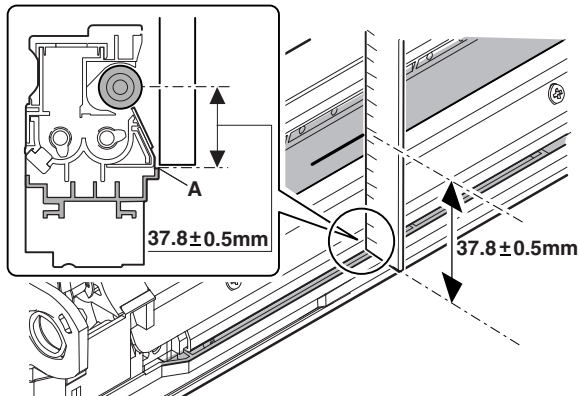
This adjustment is needed in the following situations:

- \* The developing unit has been disassembled.
  - \* When the print image density is low.
  - \* When there is a blur on the print image.
  - \* When there is unevenness in the print image density.
  - \* The toner is excessively dispersed.
- 1) Remove the developing doctor cover, and place the developing unit on a flat surface.
  - 2) Attach a piece of string to a sewing needle or pin.
  - 3) Hold the thread and bring the needle near the developing roller. (Do not use a paper clip because too heavy. It will not provide a correct position.)
  - 4) Mark the developing roller surface on the extension line of the needle with the needle at 2 - 3mm from the developing roller surface. (Never touch the needle tip with the developing roller.)

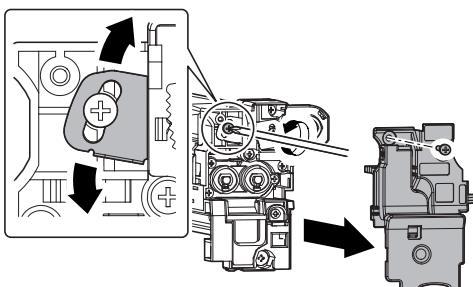


- 5) Measure the distance between the marking position and position A of the developing unit frame, and check that it is  $37.8 \pm 0.5\text{mm}$ .

If the distance is not within the above range, adjust the developing roller main pole position in the following procedures.



- 6) Remove the developing unit front cover, loosen the fixing screw of the developing roller main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



Repeat procedures 3) - 6) until the developing roller main pole position comes to the specified range.

- 7) After completion of the adjustment of the developing roller main pole position, fix the developing roller main pole adjustment plate with the fixing screw.

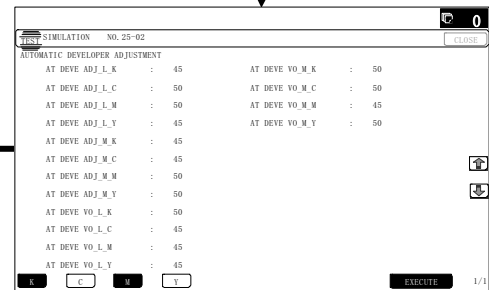
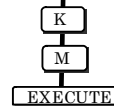
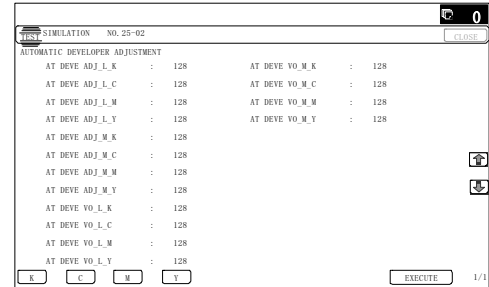
## ADJ 3 Toner density control reference value setting

This adjustment is needed in the following situations:

- \* When developer is replaced.

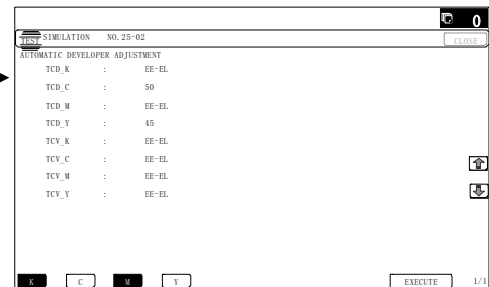
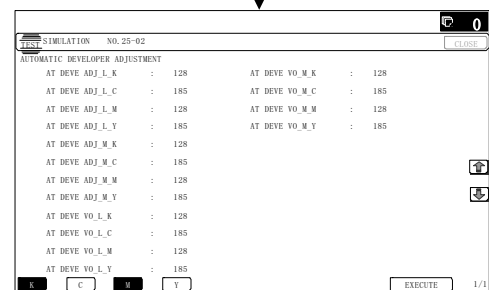
NOTE: Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

- 1) With the front cabinet open, enter SIM25-2.



Abnormal end

Adjustment completed



- 2) Close the front cabinet.
- 3) Select a developing unit to be adjusted.

- 4) When [EXECUTE] key is pressed, it is highlighted. The developing roller rotates, and the toner density sensor detects toner density, and the output value is displayed.

The above operation is executed for 3 minutes, and the average value of the toner density sensor detection level is set (saved) 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.

**NOTE:**

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

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

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

Error display	Error name	Detail of error
EE-EL	EL abnormality	Sensor output level: 1.5V or below. If not, Control voltage: 8.0V or above.
EE-EU	EU abnormality	Sensor output level: 3.45V or above. If not, Control voltage: 2.0V or below.
EE-EC	EC abnormality	Sensor output level: other than $2.5V \pm 0.2V$

- 5) Use SIM24-5 to clear the developer counter.  
6) Use SIM44-27 to clear the half-tone correction data.

**NOTE:**

- 1) 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.
- 2) After replacement of developer or the photoconductor, be sure to execute SIM44-27 to clear the half-tone correction data.  
If the above procedure is neglected, the half-tone correction may not be performed correctly.
- 3) When not replacing the developer, do not execute SIM25-2.

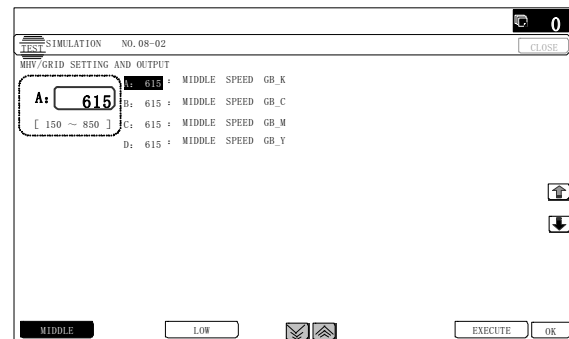
## ADJ 4 Adjusting high voltage values

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

This adjustment is needed in the following situations:

- \* When the MC/DV high voltage power PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Enter the SIM 8-2 mode.

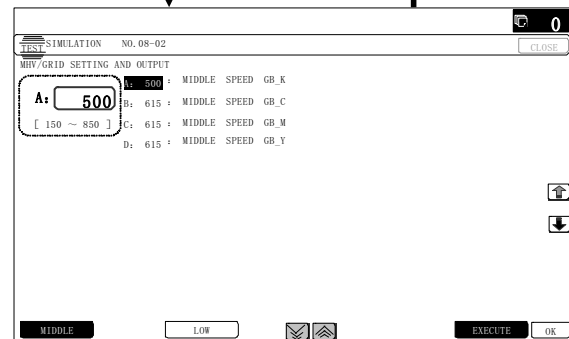


10-key

EXECUTE

EXECUTE

or after 30 sec.



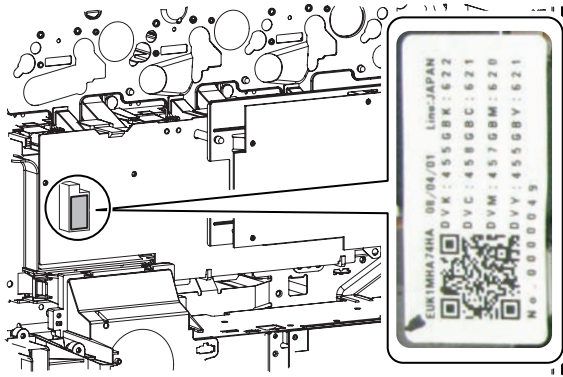
- 2) Select an output mode to be adjusted with the mode key and the scroll key.
- 3) Enter the adjustment value (specified value) of the middle speed mode and press [OK] key.

Item				Mode	Adjustment range	Monitor (MC/DV high voltage PWB)		Actual voltage
						Monitor voltage (Specified value)	Check pin	
MIDDLE	A	MIDDLE SPEED GB_K	K	Main charger grid voltage (Middle speed mode)	150 - 850	$18.5 \pm 1.1V$	GB-K	-650V
	B	MIDDLE SPEED GB_C	C	Main charger grid voltage (Middle speed mode)	150 - 850		GB-C	
	C	MIDDLE SPEED GB_M	M	Main charger grid voltage (Middle speed mode)	150 - 850		GB-M	
	D	MIDDLE SPEED GB_Y	Y	Main charger grid voltage (Middle speed mode)	150 - 850		GB-Y	
LOW	A	LOW SPEED GB_K	K	Main charger grid voltage (Low speed mode)	150 - 850	$17.7 \pm 1.1V$	GB-K	-620V
	B	LOW SPEED GB_C	C	Main charger grid voltage (Low speed mode)	150 - 850		GB-C	
	C	LOW SPEED GB_M	M	Main charger grid voltage (Low speed mode)	150 - 850		GB-M	
	D	LOW SPEED GB_Y	Y	Main charger grid voltage (Low speed mode)	150 - 850		GB-Y	

**Remark:**

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

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



GBK:XXX GBC:XXX GBM:XXX GBY:XXX

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.

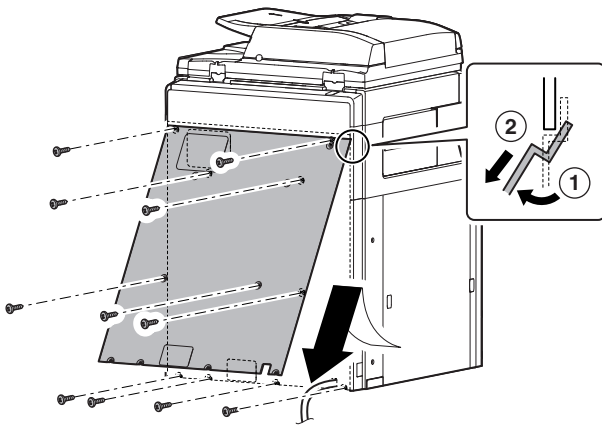
To adjust all the modes individually, first adjust the middle speed mode, and then adjust the other mode.

If the middle speed mode is adjusted after adjustment of all the modes individually, the adjustment values of the other modes are automatically changed. Use care for that.

Therefore, unless there may be an abnormality in the output voltage, there is no need to check the output value.

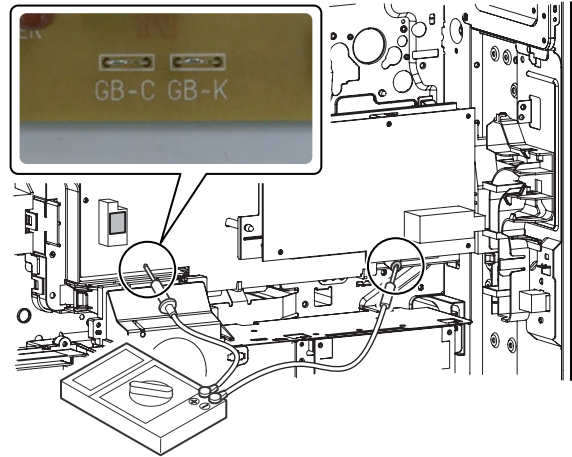
If it must be checked that the normal voltage is outputted or if an adjustment is required by referring to the output voltage, follow the procedures below.

- 1) Remove the rear cover of the machine.



- 2) Open the PWB holder.
- 3) Enter the SIM 8-2 mode.
- 4) Select an output mode to be adjusted with the mode key and the scroll key.
- 5) Check the relationship between the check pin on the MC/DV high voltage PWB and each adjustment mode.

- 6) Attach a digital multi-meter to between the check pin and GND on the MC/DV high voltage PWB corresponding to the adjusted mode.



- 7) Press [EXECUTE] key.

The main charger grid voltage is outputted for 30sec.

If this procedure is executed for a long time, the OPC drum and the developing roller may be adversely affected. Use this procedure as short as possible.

If possible, use a old developer unit and OPC drum for this adjustment.

- 8) Check the monitor voltage with the digital multi-meter.

If the monitor voltage is not in the range of the specified values shown in the table above, change the adjustment value and adjust. If the specified value voltage is not obtained even though the adjustment value is changed, the following parts may be defective.

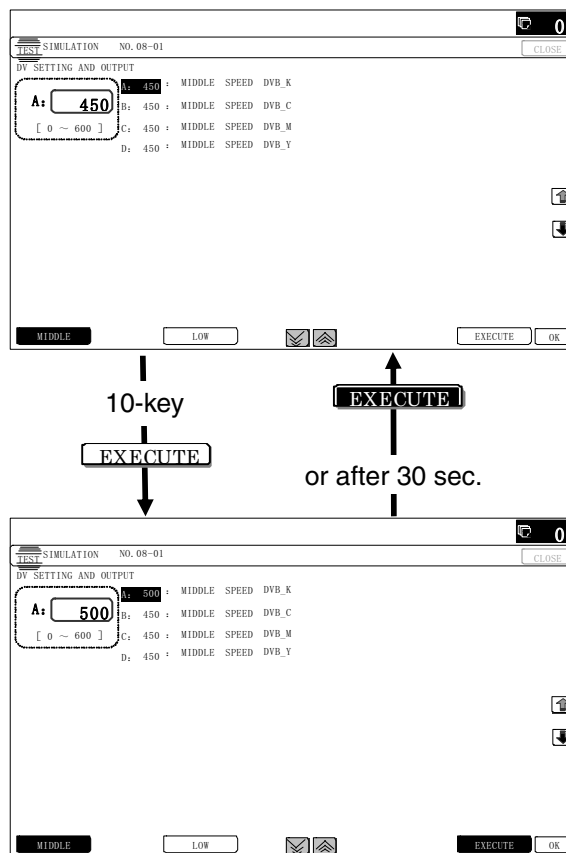
- MC/DV high voltage PWB
- PCU PWB
- Development unit
- OPC drum unit
- High voltage circuit electrode

## 4-B Adjust the developing bias voltage

This adjustment is needed in the following situations:

- \* When the MC/DV high voltage power PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Go through the modes specified in Simulation 8-1.



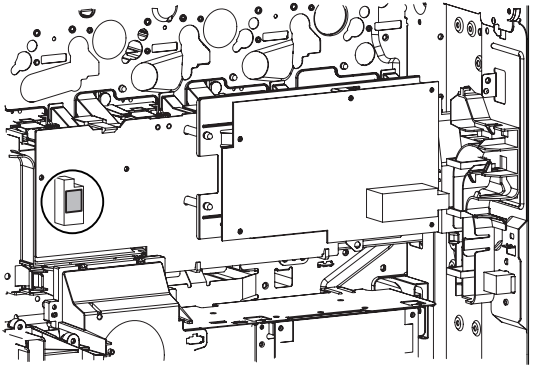
- 2) Select an output mode to be adjusted with the mode key and the scroll key.
- 3) Enter the adjustment value (specified value) of the middle speed mode and press [OK] key.

Item				Mode	Adjustment range	Monitor (MC/DV high voltage PWB)		Actual voltage
						Monitor voltage (Specified value)	Check pin	
MIDDLE	A	MIDDLE SPEED DVB_K	K	Developing bias voltage (Middle speed mode)	0-600	19.2 ± 1.2V	BS-K	-450V
	B	MIDDLE SPEED DVB_C	C	Developing bias voltage (Middle speed mode)	0-600	19.2 ± 1.2V	BS-C	-450V
	C	MIDDLE SPEED DVB_M	M	Developing bias voltage (Middle speed mode)	0-600	19.2 ± 1.2V	BS-M	-450V
	D	MIDDLE SPEED DVB_Y	Y	Developing bias voltage (Middle speed mode)	0-600	19.2 ± 1.2V	BS-Y	-450V
LOW	A	LOW SPEED DVB_K	K	Developing bias voltage (Low speed mode)	0-600	19.2 ± 1.2V	BS-K	-450V
	B	LOW SPEED DVB_C	C	Developing bias voltage (Low speed mode)	0-600	19.2 ± 1.2V	BS-C	-450V
	C	LOW SPEED DVB_M	M	Developing bias voltage (Low speed mode)	0-600	19.2 ± 1.2V	BS-M	-450V
	D	LOW SPEED DVB_Y	Y	Developing bias voltage (Low speed mode)	0-600	19.2 ± 1.2V	BS-Y	-450V

**Remark:**

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

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



DVK:XXX DVC:XXX DVM:XXX DVY:XXX

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.

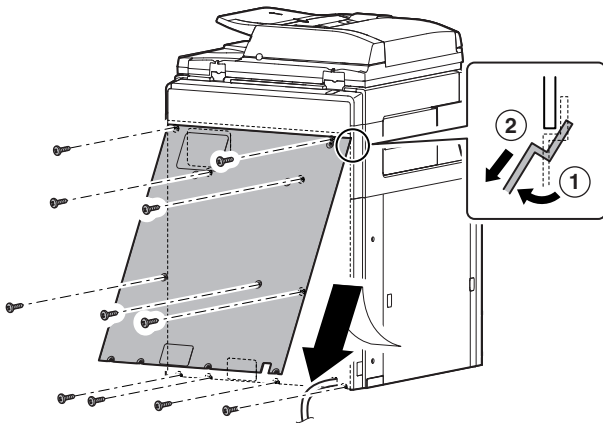
To adjust all the modes individually, first adjust the middle speed mode, and then adjust the other mode.

If the middle speed mode is adjusted after adjustment of all the modes individually, the adjustment values of the other modes are automatically changed. Follow procedure as outlined above.

Therefore, unless there may be an abnormality in the output voltage, there is no need to check the output value.

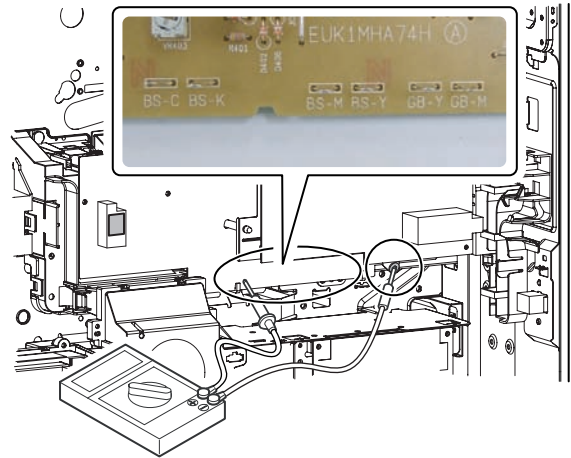
If a voltage check or adjustment must be made, follow the procedures below.

- 1) Remove the rear cover of the machine.



- 2) Open the PWB frame.
- 3) Go through the modes specified in Simulation 8-1.
- 4) Select an output mode to be adjusted with the mode key and the scroll key.

- 5) Check the relationship between the check pin on the MC/DV high voltage PWB and each adjustment mode.



- 6) Connect the digital multi-meter leads at the check pin and GND on the MC/DV high voltage PWB corresponding to the particular adjustment mode.

- 7) Press [EXECUTE] key.

The main charger voltage is outputted for 30sec.

- 8) Check the monitor voltage with the digital multi-meter.

If the monitor voltage is not in the range of the specified values shown in the table above, change the adjustment value and adjust. If the specified value voltage is not obtained even though the adjustment value is changed, the following parts may be defective.

- MC/DV high voltage PWB
- PCU PWB
- Development unit
- OPC drum unit
- High voltage circuit electrode

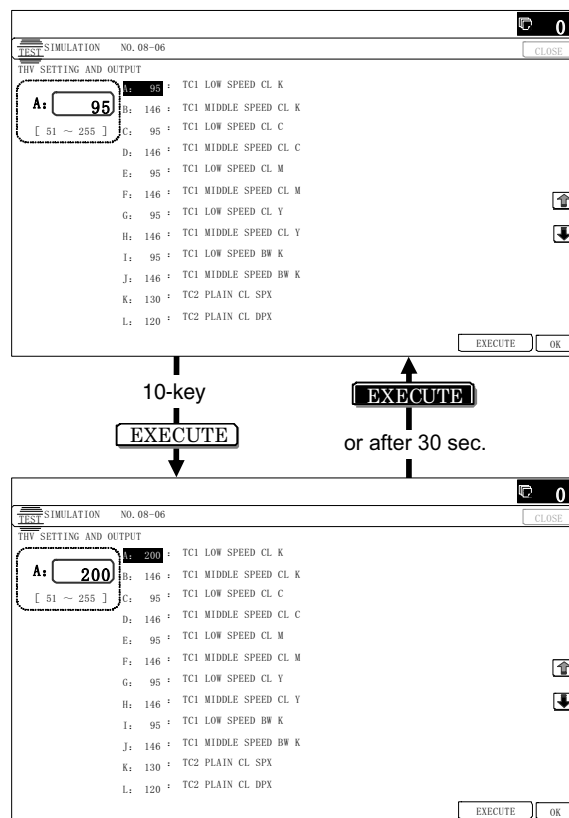


## 4-C Transfer voltage adjustment

This adjustment is needed in the following situations:

- \* When the primary transfer high voltage power PWB or Secondary transfer high voltage power PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Go through the modes specified in Simulation 8-6.



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

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

When [EXECUTE] key is pressed, the transfer voltage is outputted.

Item/Display		Content				Setting range	Default value		Actual output setting range	Default value of actual output value	
							41-sheet machine	50-sheet machine			
⚠	A	TC1 LOW SPEED CL K	Primary transport bias reference value	Color	K	In low speed	51 - 255	95		2μA - 30μA	8μA
	B	TC1 MIDDLE SPEED CL K				In middle speed		146	182		15μA
	C	TC1 LOW SPEED CL C			C	In low speed		95			8μA
	D	TC1 MIDDLE SPEED CL C				In middle speed		146			15μA
	E	TC1 LOW SPEED CL M			M	In low speed		95			8μA
	F	TC1 MIDDLE SPEED CL M				In middle speed		146			15μA
	G	TC1 LOW SPEED CL Y			Y	In low speed		95			8μA
	H	TC1 MIDDLE SPEED CL Y				In middle speed		146			15μA
⚠	I	TC1 LOW SPEED BW K	Black/ White	K	In low speed		95			8μA	
	J	TC1 MIDDLE SPEED BW K			In middle speed		146	182		15μA	

Item/Display		Content				Setting range	Default value		Actual output setting range	Default value of actual output value	
							41-sheet machine	50-sheet machine			
▲	K	TC2 PLAIN CL SPX	Secondary transport bias reference value	Color	Standard paper	Front surface	51 - 255	130	151	2μA - 100μA	40μA
	L	TC2 PLAIN CL DPX		Black/ White		Back surface		120			35μA
	M	TC2 PLAIN BW SPX				Front surface		109	130		30μA
	N	TC2 PLAIN BW DPX			Back surface	99		109	25μA		
	O	TC2 HEAVY CL SPX			Heavy paper	Front surface		88			20μA
	P	TC2 HEAVY CL DPX		Back surface		78		15μA			
	Q	TC2 HEAVY BW SPX		Front surface		78		15μA			
	R	TC2 HEAVY BW DPX		Black/ White	Back surface	68		10μA			
	S	TC2 HEAVY2 CL		Color	Heavy paper 2			88			20μA
	T	TC2 HEAVY2 BW		Black/ White				78			15μA
▲	U	TC2 GLOSSY CL	Color	Gloss paper		88		20μA			
	V	TC2 GLOSSY BW	Black/ White			78		15μA			
	W	TC2 OHP CL	Color	OHP		72	88	12μA			
	X	TC2 OHP BW	Black/ White			72	78	12μA			
	Y	TC2 ENVELOPE CL	Color	Envelope		78		15μA			
	Z	TC2 ENVELOPE BW	Black/ White			78		15μA			
	AA	TC2 CLEANING	Cleaning process				63		8μA		
	AB	TC2 CLEAN LOW SPD	Secondary transport cleaning bias reference value	In low speed print			0 - 255	0		0V --1500V	0V
	AC	TC2 CLEAN MIDDLE SPD		In middle speed print				0			0V
	AD	TC2 CLEAN CLEANING		Cleaning				85			-500V
AE	VPTC LOW SPEED CL	PTC applied voltage control (AC constant voltage setting)	Color	Low speed		0 - 255	100		0 - (1.94) - 4.01KV	2.47KV	
AF	VPTC MIDDLE SPEED CL		Middle speed		100		2.47KV				
AG	VPTC LOW SPEED BK		Black/ White	Low speed			100			2.47KV	
AH	VPTC MIDDLE SPEED BK			Middle speed			100			2.47KV	
AI	FPTC LOW SPEED CL	PTC applied voltage control (frequency setting value)	Color	Low speed		1 - 255	192		0.5KHz - 1.5KHz	0.5KHz	
AJ	FPTC MIDDLE SPEED CL		Middle speed		192		0.5KHz				
AK	FPTC LOW SPEED BK		Black/ White	Low speed			192			0.5KHz	
AL	FPTC MIDDLE SPEED BK			Middle speed			136			0.7KHz	
AM	DCPTC LOW SPEED CL	PTC applied voltage control (DC constant voltage setting value)	Color	Low speed		0 - 255	93		0 - (0.68) - 2.14KV	-1.0KV	
AN	DCPTC MIDDLE SPEED CL		Middle speed		149		-1.4KV				
AO	DCPTC LOW SPEED BK		Black/ White	Low speed			149			-1.4KV	
AP	DCPTC MIDDLE SPEED BK			Middle speed			149			-1.4KV	
AQ	PTC_HT	PTC heater operating environment setting	0: OFF 1-6: Environment conditions (TC environment table 6 steps)			0 - 6	1		Always ON		
AR	HT_DUTY	Setting of the supply power in PTC heater constant operation (Duty ratio setting)	0: OFF 10: Lighting-up fully (10 steps)			0 - 10	5		0% - 100%	50%	

## ADJ 5 Image density sensor (image registration sensor) adjustment

There are some parts variations in the image density sensor section. Therefore, the absolute detection level differs in each machine. To correct this, calibration is executed.

This adjustment is needed in the following situations:

- \* When the image density sensor (image registration sensor) is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

The targets of the adjustment are the color image density sensor (image registration sensor F) and the black image density sensor (image registration sensor R). There are following adjustment methods.

- \* Color image density sensor (image registration sensor F) calibration SIM44-13

- \* Black image density sensor (image registration sensor R) calibration SIM44-2

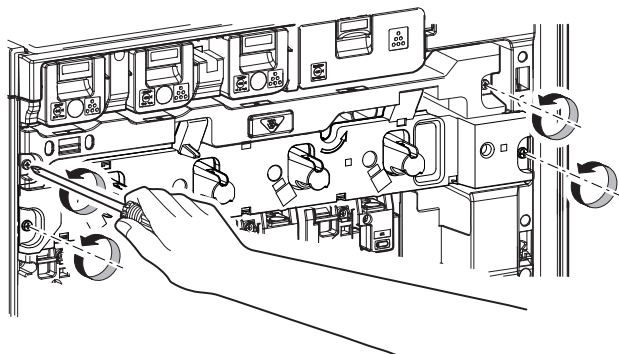
NOTE: The color image density sensor detects color image density and image registration on front frame side, the black image density sensor detects black image density and image registration on rear frame side. Therefore, two functions are assigned to each sensor array

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

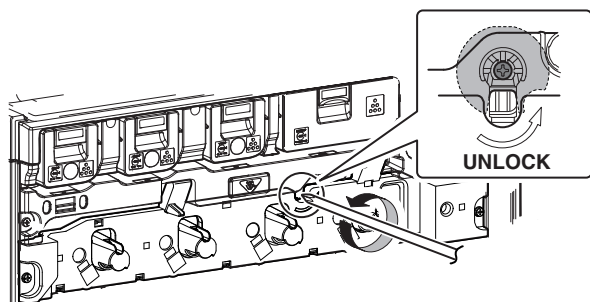
- \* Check to confirm that the color image density sensor (image registration sensor F) and the black image density sensor (image registration sensor R) are clean.
- \* Check to confirm that the image density sensor calibration plate is clean.
- \* Check to confirm that the transfer belt is clean and free from scratches.

## 5-A Color image density sensor (image registration sensor F) calibration

- 1) Open the front cabinet of the main unit, and remove the waste toner box.
- 2) Remove the primary transfer unit fixing screw.

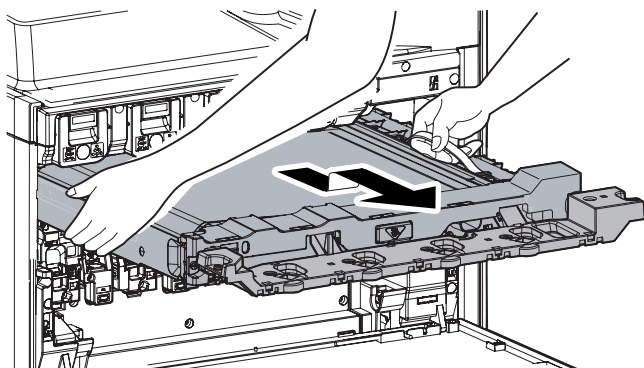


- 3) Turn to the transfer belt tension release cam and release the primary transfer belt tension.



**CAUTION:** When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. This procedure initializes the transfer roller to return it to the home position.

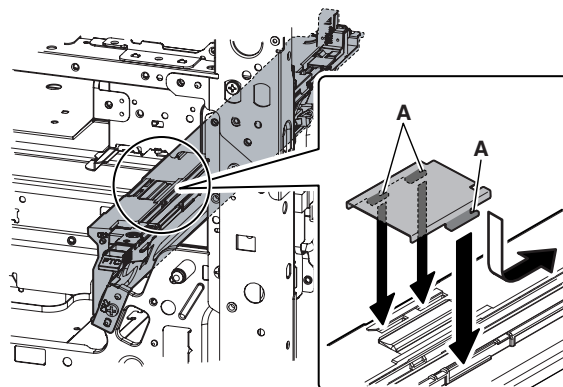
- 4) Open the right cover unit (secondary transfer unit section).
- 5) Open the process front cover, and pull out the primary transfer belt unit.



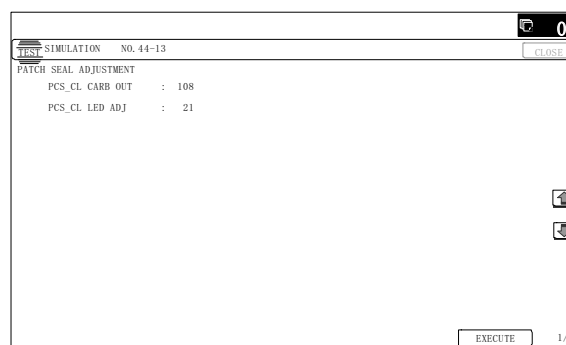
- 6) Install the color image density sensor (image registration sensor F) calibration jig (UKOG-0318FCZZ) to the sensor housing section.

Engage the pawls (A) in the sensor housing groove, and slide it to the rear frame side.

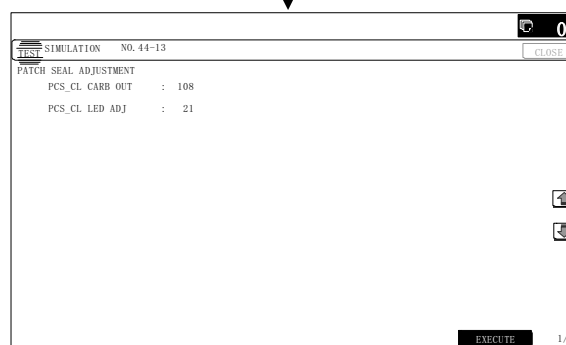
**NOTE:** Be careful not to damage the PTC terminal.



- 7) Turn on the power and enter SIM44-13 mode.



**EXECUTE**



- 8) Close the right cover unit (secondary transfer unit section).
- 9) Install the waste toner bottle to the main unit.
- 10) Close the front cabinet.

11) Press [EXECUTE] key.

Color image sensor (image registration sensor F) calibration is automatically executed. When the operation is completed, the adjustment result is displayed and [EXECUTE] key returns to the normal display.

Display/Item	Content	Adjustment value range	Default
A PCS_CL CARB OUT	Color image density sensor LED current adjustment target value	1 - 255	108
B PCS_CL LED ADJ	Color image density sensor LED current adjustment target value (PCS CL CARB OUT) registered LED current level	1 - 255	21

If the adjustment is not completed normally, "ERROR" is displayed. In that case, check the following sections for any abnormality. If any abnormality is found, repair and execute calibration again.

If an error occurs, the adjustment result is not revised.

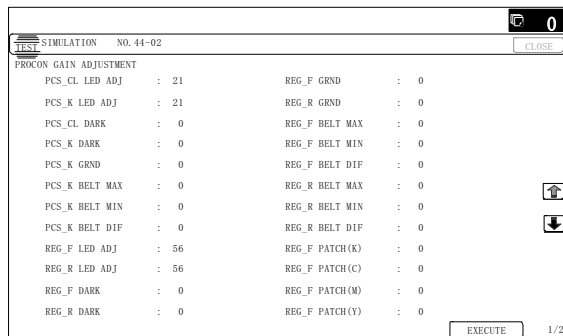
- Color image density sensor
- PCU PWB
- Image sensor calibration jig (standard reflection sheet dirt, scratch, discoloration)
- Image density sensor calibration plate

NOTE: Store the image sensor calibration jig under low temperature, low humidity and dark place.

## 5-B Color image density sensor (image registration sensor F), black image density sensor (image registration sensor R) adjustment

NOTE: This adjustment executes automatically at the outset of registration adjustment operation and process control operation as well as SIM44-2.

1) Enter SIM44-2 mode.



2) Press [EXECUTE] key.

The color image density sensor (image registration sensor F), the black image density sensor (image registration sensor R) are automatically adjusted.

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

Mode	Display/Item		Content	Range	De- fault
Adjustment value for process control operation mode	A	PCS_CL LED ADJ	Color image sensor light emitting quantity adjustment value	1 - 255	21
	B	PCS_K LED ADJ	Black image sensor light emitting quantity adjustment value	1 - 255	21
	C	PCS_CL DARK	Dark voltage of color	0 - 255	0
	D	PCS_K DARK	Dark voltage of black	0 - 255	0

Mode	Display/Item		Content	Range	De- fault
Adjustment value for process control operation mode	E	PCS_K GRND	Belt base detection level when completion of Item B adjustment	0 - 255	0
	F	PCS_K BELT MAX	Maximum value of belt base detection level	0 - 255	0
	G	PCS_K BELT MIN	Minimum value of belt base detection level	0 - 255	0
	H	PCS_K BELT DIF	Belt base detection level difference (Item E - Item F)	0 - 255	0
Adjustment value for image registration operation mode	I	REG_F LED ADJ	Image registration sensor light emitting quantity adjustment value F	1 - 255	56
	J	REG_R LED ADJ	Image registration sensor light emitting quantity adjustment value R	1 - 255	56
	K	REG_F DARK	Image registration sensor dark voltage F	0 - 255	0
	L	REG_R DARK	Image registration sensor dark voltage R	0 - 255	0
	M	REG_F GRND	Belt base detection level when completion of Item I adjustment	0 - 255	0
	N	REG_R GRND	Belt base detection level when completion of Item J adjustment	0 - 256	0
	O	REG_F BELT MAX	Maximum value of belt base detection level (F side)	0 - 255	0
	P	REG_F BELT MIN	Minimum value of belt base detection level (F side)	0 - 255	0
	Q	REG_F BELT DIF	Belt base detection level difference (Item O - Item P)	0 - 255	0
	R	REG_R BELT MAX	Maximum value of belt base detection level (R side)	0 - 255	0
	S	REG_R BELT MIN	Minimum value of belt base detection level (R side)	0 - 255	0
	T	REG_R BELT DIF	Belt base detection level difference (Item R - Item S)	0 - 255	0
	U	REG_F PATCH (K)	Patch detection level F for check (K)	0 - 255	0
	V	REG_F PATCH (C)	Patch detection level F for check (C)	0 - 255	0
	W	REG_F PATCH (M)	Patch detection level F for check (M)	0 - 255	0
	X	REG_F PATCH (Y)	Patch detection level F for check (Y)	0 - 255	0
	Y	REG_R PATCH (K)	Patch detection level R for check (K)	0 - 55	0
	Z	REG_R PATCH (C)	Patch detection level R for check (C)	0 - 255	0
	AA	REG_R PATCH (M)	Patch detection level R for check (M)	0 - 255	0

Mode	Display/Item	Content	Range	De- fault
Adjustment value for image registration operation mode	AB REG_R PATCH (Y)	Patch detection level R for check (Y)	0 - 255	0

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

Mode	Error display	Error content	
Adjustment value for process control operation mode	BK_SEN_ADJ_ERR	Black image density sensor adjustment abnormality	PCS_K LED ADJ error (The target value is not obtained after retried three times.)
	CL_SEN_ADJ_ERR	Color image sensor adjustment abnormality	PCS_CL LED ADJ error (The target value is not obtained after retried three times.)
	BELT_READ_ERR	Transfer belt surface reading abnormality	PCS_K GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)
Adjustment value for image registration operation mode	REG_SEN_F_ADJ_ERR	Registration sensor F adjustment abnormality	REG_F LED ADJ error (The target value is not obtained after retried three times.)
	REG_SEN_R_ADJ_ERR	Registration sensor R adjustment abnormality	REG_R LED ADJ error (The target value is not obtained after retried three times.)
	REG_BELT_F_READ_ERR	F side transfer belt surface reading abnormality	REG_F GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)
	REG_BELT_R_READ_ERR	R side transfer belt surface reading abnormality	REG_R GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)

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

- Color image density sensor (image registration sensor F)
- Black image density sensor (image registration sensor R)
- PCU PWB
- Transfer belt (dirt, scratch)
- Transfer belt cleaner
- Color image sensor calibration plate

If any abnormality is found, repair and adjust again.

If an error occurs, the adjustment result is not revised.

## ADJ 6 Image skew adjustment (LSU unit)

This adjustment is needed in the following situations:

- \* When the color shift occurs.
- \* When the LSU unit is replaced.
- \* When the LSU unit is removed from the main unit.
- \* When a color image registration mistake occurs.
- \* When the unit is installed or when the installing site is changed. (Required depending on the cases.)
- \* When there is an uneven density area or a difference in color balance in the main scanning direction (back and forth).

\* When the color phase is not matched by the color balance adjustment.

\* When the OPC drum drive unit is replaced.

\* When the primary transfer unit is replaced.

NOTE: This adjustment can be executed efficiently by executing the following procedures in advance.

The black (K) image skew, however, must be properly adjusted for that.

- 1) Press [REGIST] button in SIM50-22 mode to execute the automatic image registration adjustment.
- 2) The current skew level is displayed on the SKEW display menu.
- 3) Put down the displayed skew level value.

(Meaning of the skew level value)

\* When "R" is displayed in front of the value, turn and click the skew adjustment screw (LSU) clockwise by the number of the value.

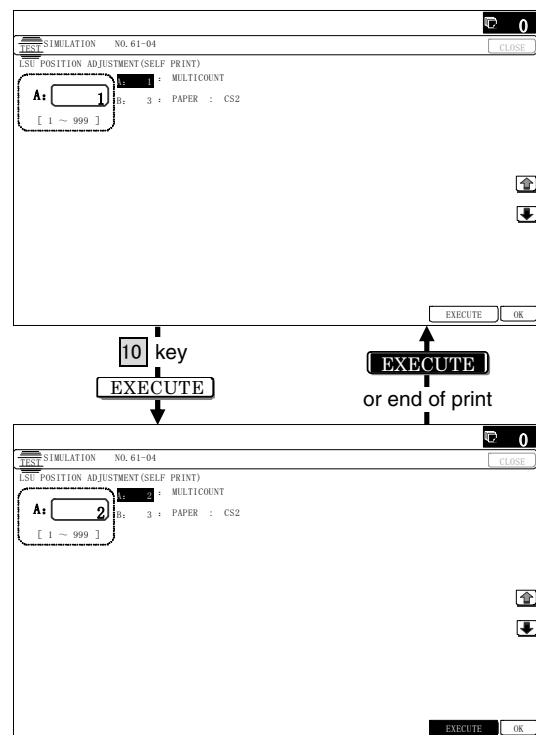
\* When "L" is displayed in front of the value, turn and click the skew adjustment screw (LSU) counterclockwise by the number of the value.

At that time, the fractional part after the decimal point is rounded.

NOTE: The K (black) image skew level cannot be checked with this adjustment.

To check and adjust the K (black) image skew, follow the procedures below and execute the adjustment.

- 1) Enter SIM61-4 mode.



- 2) Select the paper feed tray with A3 (11" x 17") paper in it by changing the value of set item B.
- 3) Press [EXECUTE] key.  
The check pattern is printed out.
- 4) Check the printed black image for any skew.  
Measure the right angle level by using the six cross patterns printed in black.

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

Method 1:

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

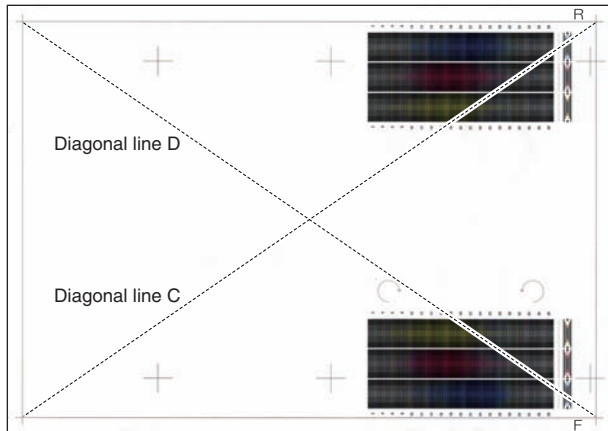
**Method 2:**

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

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

**(Method 1)**

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



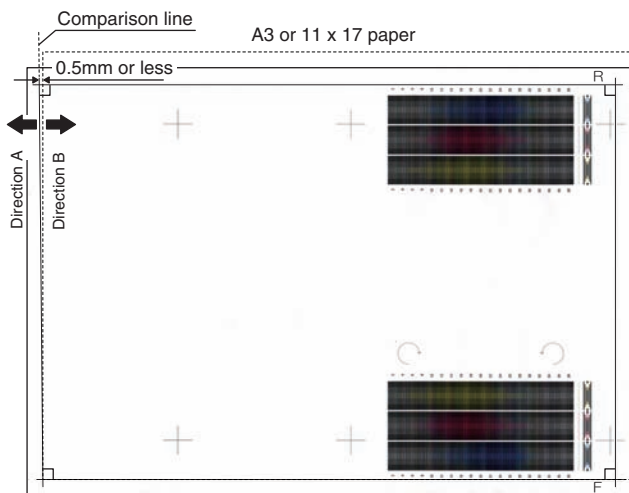
- b) Calculate the difference between the measured lengths C and D of the diagonal lines.

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

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

**(Method 2)**

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



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

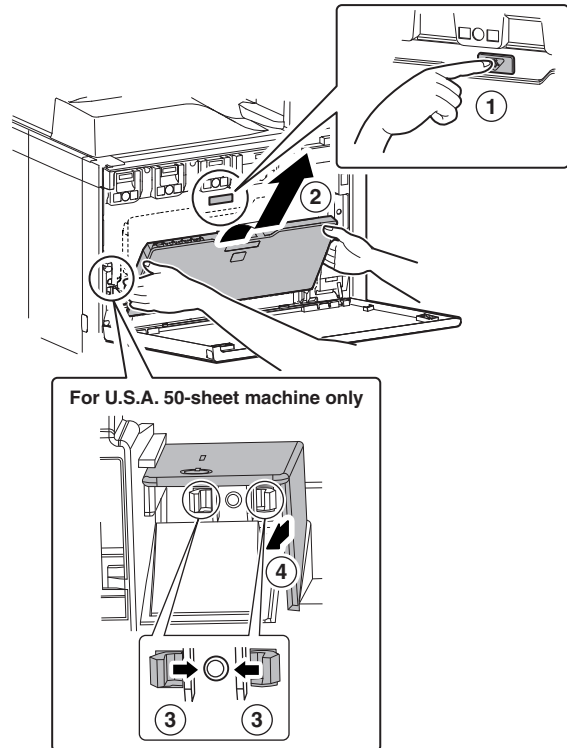
If the above distance is 0.5mm or less, there is no need to adjust.

If not, execute the following procedures.

- 5) Open the front cabinet, and remove the waste toner box.

(For U.S.A. 50-sheet machine only)

Remove the power switch cover.



- 6) Loosen the LSU unit fixing screws (2 pcs.) and shift the skew adjustment screw in the arrow direction to adjust the LSU (writing) unit skew.

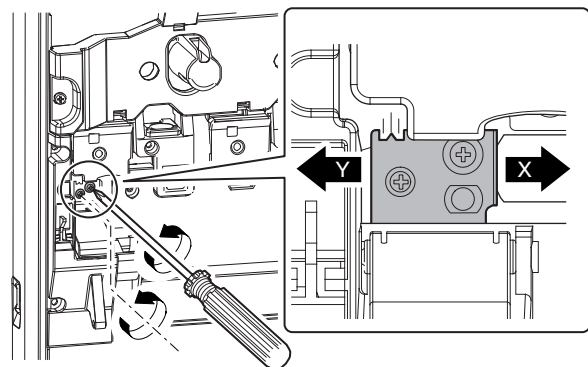
(When Method 1 is used to check the black image for any skew (right angle) in procedure 4 in advance)

When the lengths of the diagonal line are  $C > D$ , shift the adjustment screw in the direction of Y.

When the lengths of the diagonal line are  $C < D$ , shift the adjustment screw in the direction of X.

(When Method 2 is used to check the black image for any skew (right angle) in procedure 4 in advance)

If the image is skewed in the arrow direction of A, shift the adjustment screw to X direction. If the image is skewed in the arrow direction of B, shift the adjustment screw to Y direction.

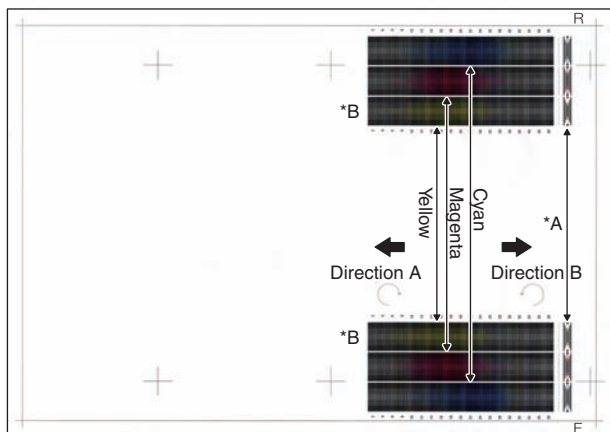


- 7) Install the waste toner box, and close the front cabinet.

- 8) Execute procedures 3) - 4).

(Repeat procedures 5) - 8) until a satisfactory result is obtained.)

- 9) If the adjustment result reaches the satisfactory level, tighten the adjustment screw.  
(The black image skew adjustment is completed with the above.)
- 10) In the above black image skew adjustment, check the color image skew pattern printed when completion of the adjustment.



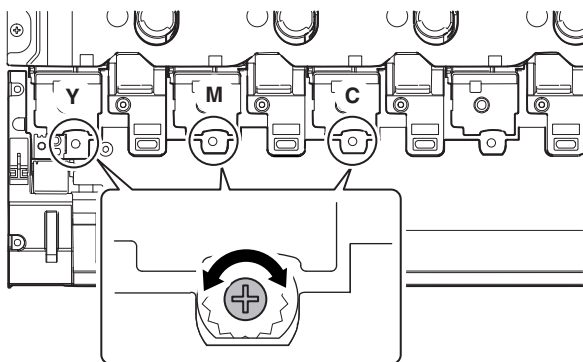
\*A: Rough adjustment print pattern  
\*B: Fine adjustment print pattern

In each Y/M/C color print pattern printed separately in the front frame direction and in the rear frame direction, note the same print color pattern and check to confirm that the difference in the highest density sections is within  $\pm 1$  step.

(Compare the front and the rear frame positions of the same-color print color patterns. All the highest density sections of all the print color patterns may not be aligned on a line. Compare only the same-color patterns.)

If the above condition is not met, do the following:

- 11) Turn the image skew adjustment screw of the target color to adjust.



**When each adjustment screw is turned, it clicks. Turn it by 5 - 6 clicks and the check pattern is changed by 1 step (1 dot size).**

When the image skew pattern on the front frame side is skewed in the arrow direction of A (to the smaller number) from the rear frame side, turn the adjustment screw counterclockwise. When the image is skewed in the arrow direction of B (to the larger number), turn the adjustment screw clockwise.

- 12) Print the check pattern.
- 13) Check the color image skew pattern.

Repeat procedures 11) - 13) until a satisfactory result is obtained.

The image skew adjustment (LSU unit) is executed by changing the parallelism of the LSU unit scan laser beam for the OPC drum.

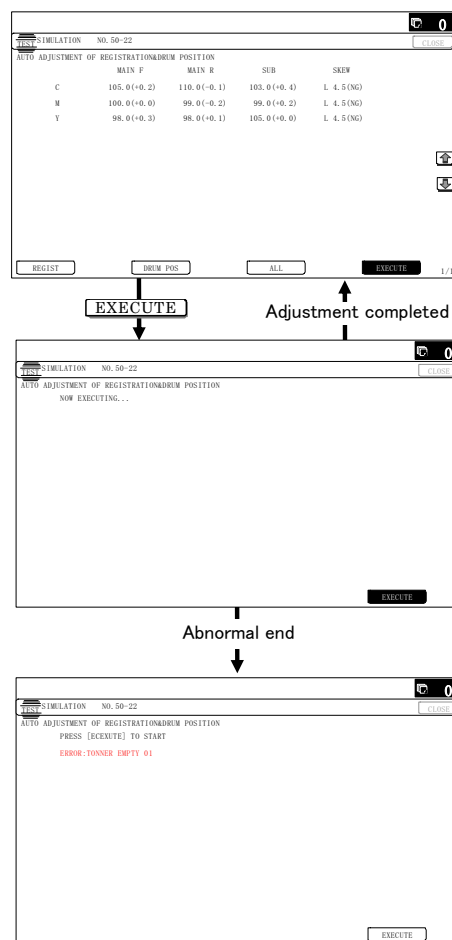
## ADJ 7 OPC drum phase adjustment

This adjustment is needed in the following situations:

- \* When the color shift occurs.
- \* When the photoconductor drum is replaced.
- \* When the OPC drum is removed from the main unit.
- \* When the OPC drum drive section is disassembled.
- \* When the OPC drum drive unit is replaced.
- \* U2 trouble has occurred.
- \* When the PCU MAIN PWB is replaced.
- \* When EEPROM on the PCU MAIN PWB is replaced.
- \* When the color image sensor (image registration sensor F) is replaced.
- \* When the color image sensor (image registration sensor R) is replaced.

### 7-A OPC drum phase adjustment (Auto adjustment)

- 1) Enter SIM50-22 mode.



- 2) Press [ALL] key.  
(The machine enters the OPC drum phase adjustment mode/image registration adjustment (auto adjustment) mode, and both adjustments are executed simultaneously in this mode.)  
The OPC drum phase adjustment and the image registration adjustment can be individually executed by [REGIST] button and [DRUM POS] button. Since, however, the image registration adjustment must be executed when the OPC drum phase adjustment is completed, both adjustment are executed in this adjustment simultaneously.
- 3) Press [EXECUTE] key.  
The OPC drum phase adjustment and the image registration adjustment are executed automatically.



- \* After completion of the adjustment, the drum motor stops and [EXECUTE] button returns to the normal display and the adjustment result is displayed.

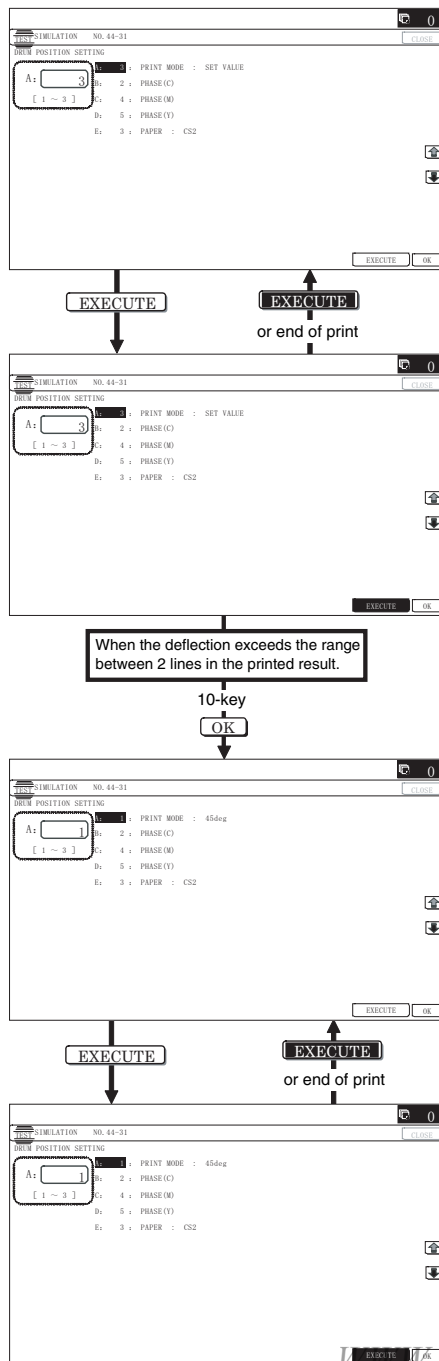
MAIN, SUB	Image regist adjustment value is displayed. ( ) is the difference from the previous adjustment value. Example: This time 105.0, previous time 103.0 : 105.0 (+2)
PHASE	OPC drum phase adjustment value is displayed. ( ) is the previous adjustment value. Example: This time 90°, previous time 45° : 3 (2)

- \* In case of an error, "ERROR" is displayed with the details.

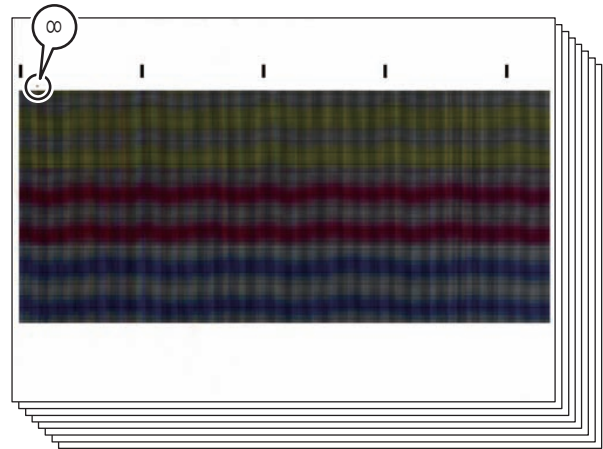
## 7-B OPC drum phase adjustment (Manual adjustment)

NOTE: The OPC drum phase adjustment by manual is not recommended. Cause judgement of adjustment pattern differ in individuals. Auto adjustment mode with SIM50-22 is recommended.

- 1) Enter SIM44-31 mode.

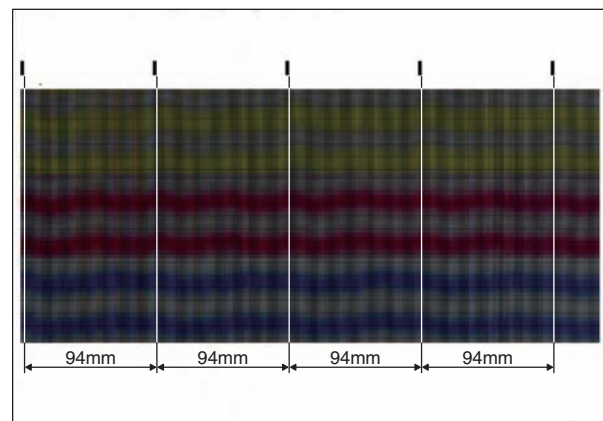


- 2) Enter "1" with 10-key in the PRINT MODE of set item A, and press [OK] key.
- 3) Select the paper feed stage with A3 (or 11" x 17") in it with PAPER SELECT of set item C, and press [OK] key.
- 4) Press [EXECUTE] key.  
The adjustment patterns (8 pages) are printed.



Each identification number ("1" - "8") is printed on each printed page of 8 adjustment patterns.

- 5) Check the deflection in 94mm pitch cycle of each C/M/Y print pattern. Select a print pattern of the smallest deflection for each color of C/M/Y, and use the pattern identification number as the adjustment value, and enter it to set item B. Press [OK] key.



NOTE: If there is a peculiar deflection other than the drum cycle (94mm pitch), check the following conditions.

- OPC drum drive section
- Transfer belt drive section
- Paper feed drive section
- Each motor speed set value (Set value of SIM48-6)

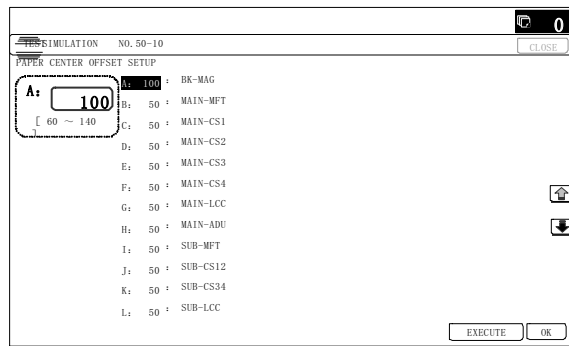
## ADJ 8 Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)

This adjustment is needed in the following situations:

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



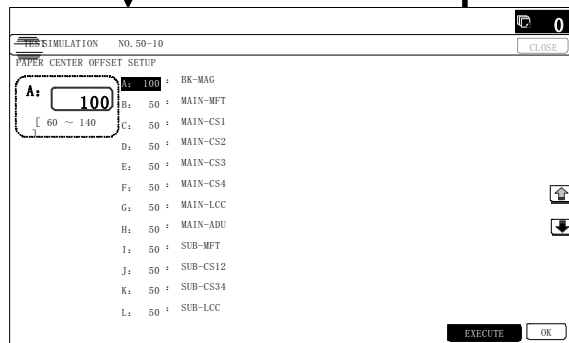
- 1) Go through the modes specified in Simulation 50-10.



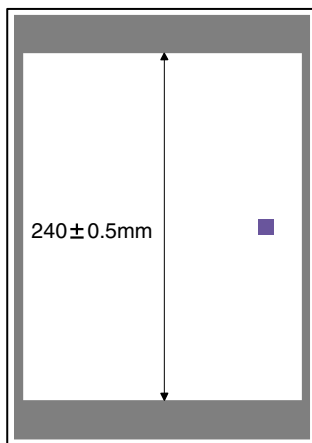
EXECUTE

EXECUTE

End of print



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



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

- 6) Change the set value of set item A.  
When the set value is changed by 1, the dimension is changed by 0.1mm.  
When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the BK image magnification ratio in the main scanning direction is decreased.  
Repeat procedures 2) - 6) until a satisfactory result is obtained.

## ADJ 9 Image off-center adjustment (Print engine section)

This adjustment is needed in the following situations:

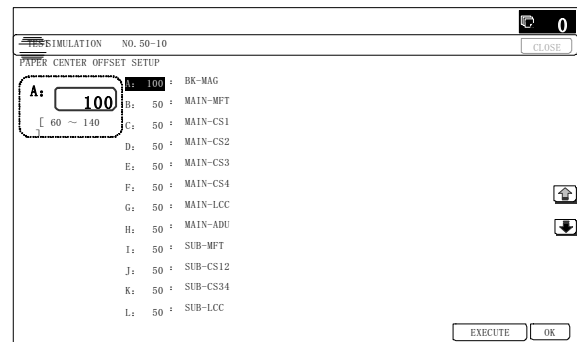
- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When [ADJ8] print engine image magnification ratio (BK) (main scanning direction) is performed.
- \* When the manual feed tray is replaced.
- \* When the manual feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the large capacity paper feed tray is installed or replaced.
- \* When the large capacity paper feed tray section is disassembled.
- \* When the regist roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

(Note)

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

- \* Check that the print engine image magnification ratio adjustment (BK) (main scanning direction) has been properly adjusted.

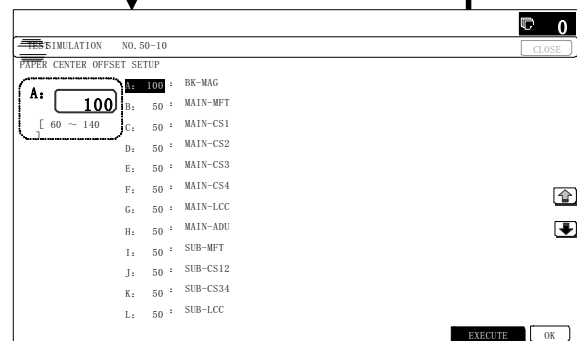
- 1) Enter SIM50-10 mode.



EXECUTE

EXECUTE

End of print



- 2) Select set item J with the scroll key and enter the value corresponding to the paper feed tray to be adjusted.

	Display/Item		Content		Setting range	De-fault	
A	BK-MAG		Main scan print magnification ratio BK		60 - 140	100	
B	MAIN-MFT		Print off center adjustment value (Manual paper feed)		1 - 99	50	
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99	50	
D	MAIN-CS2		Print off center adjustment value (Tray 2)		1 - 99	50	
E	MAIN-CS3		Print off center adjustment value (Tray 3)		1 - 99	50	
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99	50	
G	MAIN-LCC		Print off center adjustment value (LCC)		1 - 99	50	
H	MAIN-ADU		Print off center adjustment value (ADU)  NOTE: Before execution of this adjustment, check to insure that the adjustment items A - G have been properly adjusted. If not, this adjustment cannot be made properly.		1 - 99	50	
I	SUB-MFT		Registration motor ON Timing adjustment	Manual paper feed	1 - 99	50	
J	SUB-CS12			Standard tray	1 - 99	50	
K	SUB-CS34			DESK	1 - 99	50	
L	SUB-LCC			LCC	1 - 99	50	
M	SUB-ADU			ADU	1 - 99	50	
N	MULTI COUNT		Number of print		1 - 999	1	
O	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
P	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		No		1	

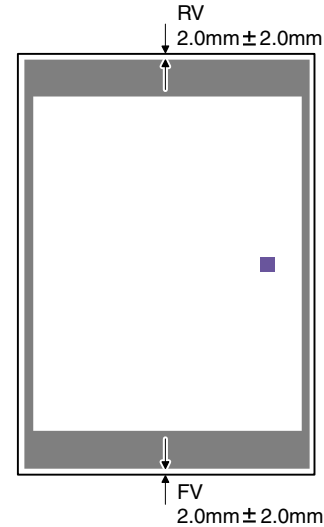
- 3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).

- 4) Press [EXECUTE] key.

The adjustment pattern is printed.

- 5) Check 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.



RV: REAR VOID AREA

FV: FRONT VOID AREA

$$RV + FV \leq 4.0\text{mm}$$

$$RV = 2.0 \pm 2.0\text{mm}$$

$$FV = 2.0 \pm 2.0\text{mm}$$

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

- 6) Select the paper feed mode adjustment item (B - H) to be adjusted with the scroll key.

- 7) Change the adjustment value.

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

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

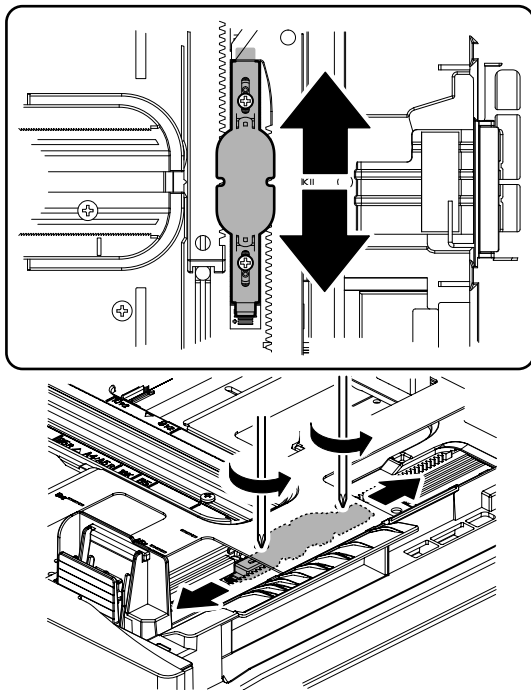
When the adjustment value is increased, the adjustment pattern is shifted to the front frame side. When it is decreased, the adjustment pattern is shifted to the rear frame side.

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

Repeat procedures 3) - 7) 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.

- 8) Loosen the paper feed tray off-center adjustment screws (2 pcs.) at the center section of the lift plate of the paper feed tray, and change the gear unit position in the front/rear frame direction. Repeat the adjustment procedures from 4).



## ADJ 10 Image registration adjustment (Print engine section)

This adjustment is needed in the following situations:

- \* When the color shift occurs.
- \* When the LSU (writing) unit is replaced.
- \* When the LSU (writing) unit is removed from the main unit.
- \* When the color image registration mistake in the main scanning direction occurs.
- \* When the color image registration mistake in the sub scanning direction occurs
- \* When the unit is installed or when the installing place is changed.
- \* When maintenance work is performed. (Replacement of the OPC drum, the OPC cartridge, the transfer unit, the transfer belt, etc.)
- \* When [ADJ8] print engine image magnification ratio (BK) (main scanning direction) is performed.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

### Note before adjustment

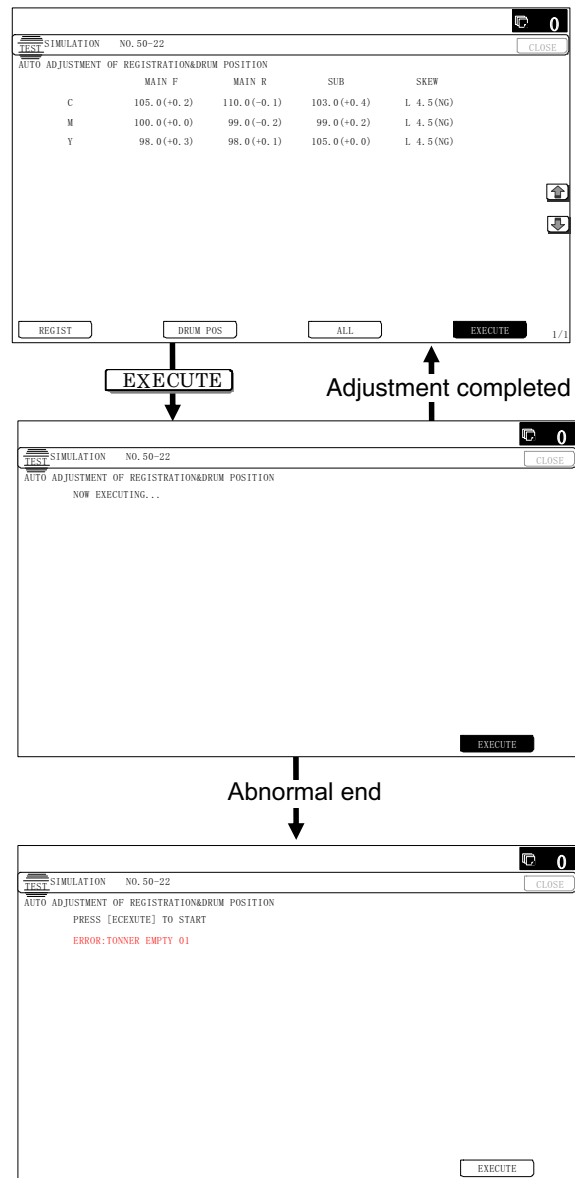
(Before execution of this adjustment, all the following adjustments must have been completed.)

- \* Image skew adjustment (LSU (writing) unit)
- \* [ADJ8] print engine image magnification ratio (BK) (main scanning direction) (print engine section)

## 10-A Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)

In this adjustment, the image registration adjustment in the main scanning direction and that in the sub scanning direction are executed simultaneously and automatically.

- 1) Enter SIM50-22 mode.



- 2) Press [REGIST] key to select the image registration adjustment auto adjustment mode.
- 3) Press [EXECUTE] key.

[EXECUTE] key is highlighted and the image registration auto adjustment is started. After completion of the adjustment, [EXECUTE] key returns to the normal display and the adjustment result is displayed.

It takes about 40 sec to complete the adjustment.

Display/ Item		Content	Dis- play	De- fault	NOTE
MAIN F	C	Registration adjustment value (Main scanning direction) (Position of writing by cyan laser is F side)	1.0 - 199.0	100	
	M	Registration adjustment value (Main scanning direction) (Position of writing by magenta laser is F side)	1.0 - 199.0	100	
	Y	Registration adjustment value (Main scanning direction) (Position of writing by yellow laser is F side)	1.0 - 199.0	100	
MAIN R	C	Registration adjustment value (Main scanning direction) (Position of writing by cyan laser is R side)	1.0 - 199.0	100	
	M	Registration adjustment value (Main scanning direction) (Position of writing by magenta laser is R side)	1.0 - 199.0	100	
	Y	Registration adjustment value (Main scanning direction) (Position of writing by yellow laser is R side)	1.0 - 199.0	100	
SUB	C	Registration adjustment value (Sub scanning direction) (Cyan drum to black drum)	1.0 - 199.0	100	
	M	Registration adjustment value (Sub scanning direction) (Magenta drum to cyan drum)	1.0 - 199.0	100	
	Y	Registration adjustment value (Sub scanning direction) (Yellow drum to magenta drum)	1.0 - 199.0	100	
SKEW	C	Calculated result of print skew amount (Cyan)	-99.9 - 99.9	-	If the value is plus, R is displayed to left side of numerical value. If the value is minus, L is displayed to left side of numerical value. When the value is in the -4 to +4 range, "OK" is displayed to right side of numerical value. If not, "NG" is displayed to right side of numerical value.
	M	Calculated result of print skew amount (magenta)	-99.9 - 99.9	-	
	Y	Calculated result of print skew amount (yellow)	-99.9 - 99.9	-	

MAIN, SUB: The entered value after adjustment is displayed.

( ) is the difference from the previous adjustment value.

Example: This time 105, previous time 103: 105 (+2)

\* In case of an error, "ERROR" is displayed with the details.

To check the auto adjustment result, use the manual image registration adjustment mode below.

\* Image registration adjustment (Main scanning direction) (Manual adjustment) (SIM50-20)

\* Image registration adjustment (Sub scanning direction) (Manual adjustment) (SIM50-21)

## 10-B Image registration adjustment (Main scanning direction) (Manual adjustment)

NOTE: If item "AR\_AUTO" in SIM44-1 is 0 (Allows) and process control is executed, the image registration adjustment is executed automatically and updates the result in each case.

In case of retaining the manual adjustment result, 1 must be set to item "AR\_AUTO" of SIM44-1 (inhibits).

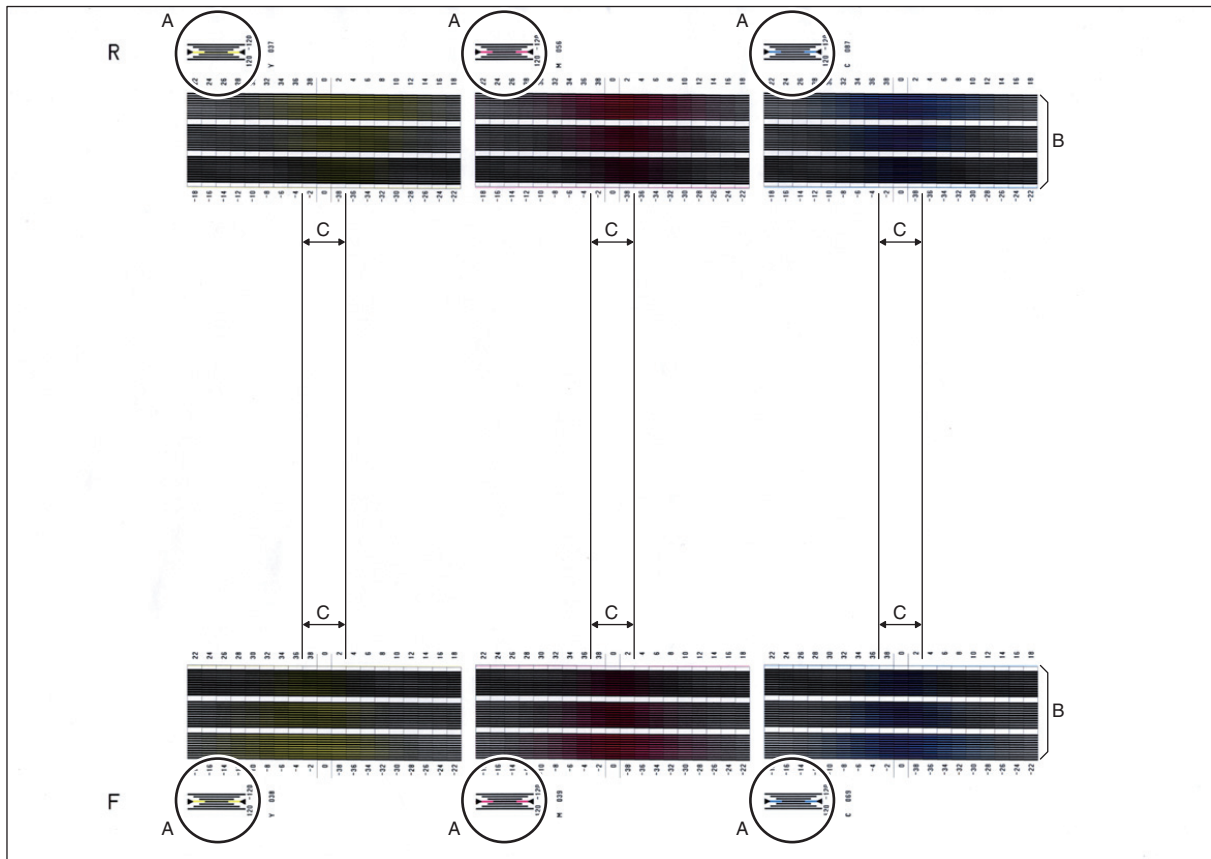
1) Enter SIM50-20 mode.



2) Select the paper feed tray with A3 (11" x 17") paper in it by changing the value of set item H.

3) Press [EXECUTE] key.

The image registration adjustment pattern in the main scanning direction is printed.



A: Rough adjustment pattern

B: Fine adjustment pattern

C: Adjustment range (0 ±1)

- 4) Check the rough adjustment and the fine adjustment print pattern positions of each color in the front frame and the rear frame sides.

Use the visually highest color density section as the center, and measure the shift amount.

The front frame registration and the rear frame registration are adjusted independently.

To check the image registration, therefore, check the front frame side and the rear frame side individually.

Rough adjustment print pattern check	Check that the rough adjustment print pattern is at the center for the rough adjustment reference pattern.
Fine adjustment print pattern check	Check that the fine adjustment print pattern is at the center for the fine adjustment reference pattern.

(If the fine adjustment print pattern is located in the range of 0 ±1 from the fine adjustment reference pattern scale, the adjustment is not required.)

If the above condition is not satisfied, select the color mode adjustment item A - F to be adjusted with the scroll key and change the adjustment value to adjust.

Display/Item	Content	Adjustment value range	Default
A	CYAN (FRONT) Image registration adjustment value (Main scanning direction) (Cyan) (F side)	1 - 199	100
B	CYAN (REAR) Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1 - 199	100

Display/Item	Content	Adjustment value range	Default
C	MAGENTA (FRONT) Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1 - 199	100
D	MAGENTA (REAR) Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1 - 199	100
E	YELLOW (FRONT) Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1 - 199	100
F	YELLOW (REAR) Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1 - 199	100

Repeat procedures 3) - 4) until a satisfactory result is obtained.

For measurement of the shift amount and the calculation of the adjustment value, refer to the following.

#### (Measurement of the shift amount and the calculation of the adjustment value)

- a) Measurement of the shift amount

\* Measurement of the fine adjustment pattern

Use the visually highest color density section as the center, and measure the shift amount.

(Example)

The measurement value of the figure is "14".

\* Measurement of the rough adjustment pattern

Check that the color line is positioned in the plus direction or in the minus direction and judge the polarity from that.

The center black line is scaled as 0, the first line mark as 40, the second line mark as 80, the third line mark as 120. The interval between the rough adjustment marks corresponds to 40.

(Example)

In the case of the figure, it is between 40 - 80 of the plus polarity, and the measurement is "40".

\* The actual shift amount is the sum of the rough adjustment reference shift amount and the fine adjustment shift amount.

Shift amount (correction value) = Rough adjustment shift amount + Fine adjustment shift amount.

When calculating, be careful of the plus polarity and the minus polarity.

(Example)

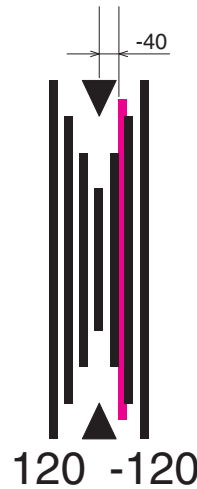
In the case of the figure, the total shift amount is 54.

**Measurement value: 54 (= 40 + 14)**



-18		22
-16		24
-14		26
-12		28
-10		30
-8		32
-6		34
-4		36
-2		38
0		0
-38		2
-36		4
-34		6
-32		8
-30		10
-28		12
-26		14
-24		16
-22		18

**Measurement value: -54 (= -40 - 14)**



-18		22
-16		24
-14		26
-12		28
-10		30
-8		32
-6		34
-4		36
-2		38
0		0
-38		2
-36		4
-34		6
-32		8
-30		10
-28		12
-26		14
-24		16
-22		18

The shift amount from the adjustment reference position is calculated for each of six kinds of adjustment items A - F.

b) Adjustment value calculation

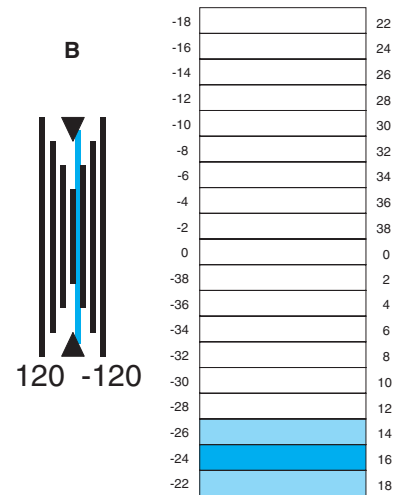
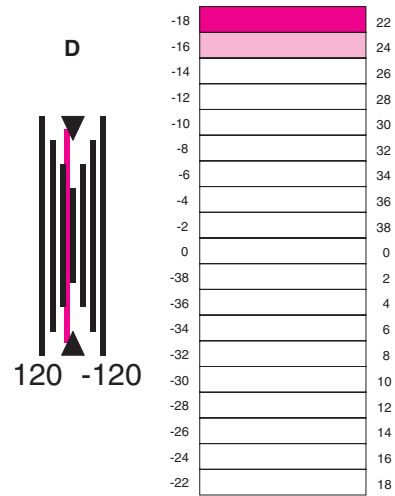
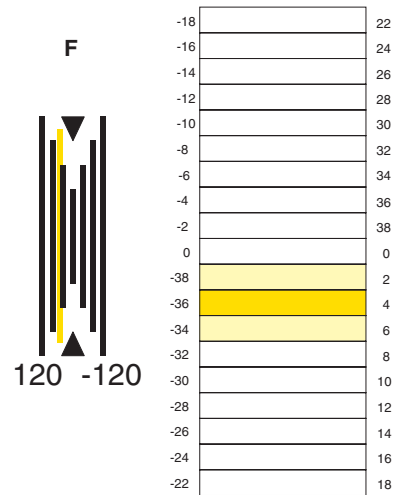
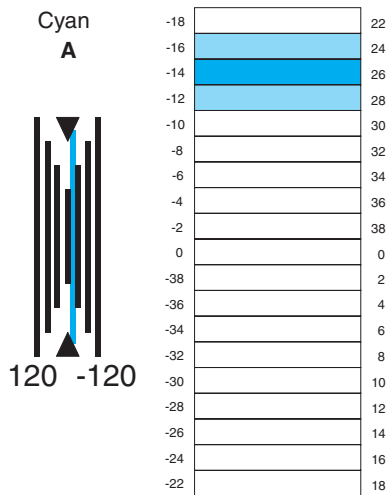
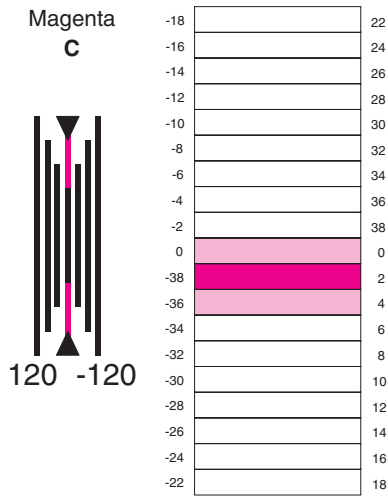
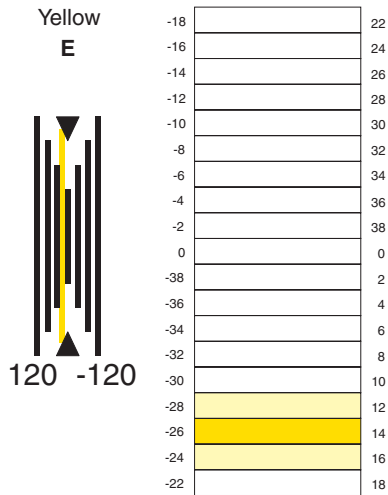
Add or subtract the shift amount calculated above to or from the current adjustment value, and the result value is used as the new adjustment value.

(When the shift amount (correction value) is plus)

Adjustment value = Current adjustment value + Shift amount (correction value)

(When the shift amount (correction value) is minus)

Adjustment value = Current adjustment value - Shift amount (correction value)



(Example)

Previous value before adjustment	New adjustment value
A: 100	A: 86 (=100-14)
B: 112	B: 88 (=112-24)
C: 95	C: 97 (=95+2)
D: 98	D: 120 (=98+22)
E: 102	E: 116 (=102+14)
F: 96	F: 140 (=96+44)

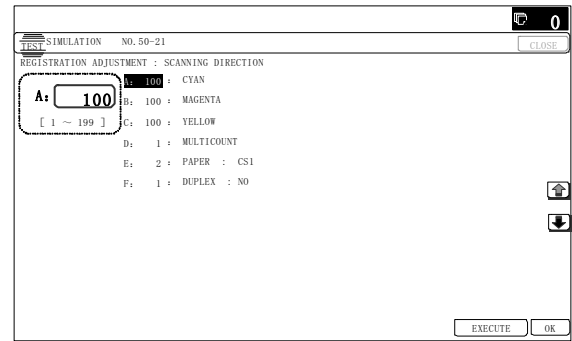
NOTE: If either of front or rear adjustment value is changed, the other adjustment print pattern position may be varied. Be careful of that.

### 10-C Image registration adjustment (Sub scanning direction) (Manual adjustment)

NOTE: If item "AR\_AUTO" in SIM44-1 is 0 (Allows) and process control is executed, the image registration adjustment is executed automatically and updates the result in each case.

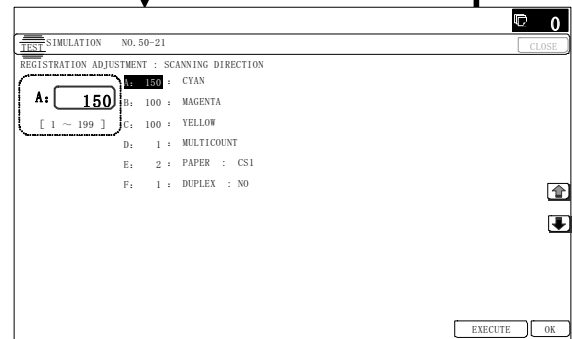
In case of retaining the manual adjustment result, 1 (inhibits) must be set to item "AR\_AUTO" of SIM44-1.

1) Enter SIM50-21 mode.



10-key  
EXECUTE

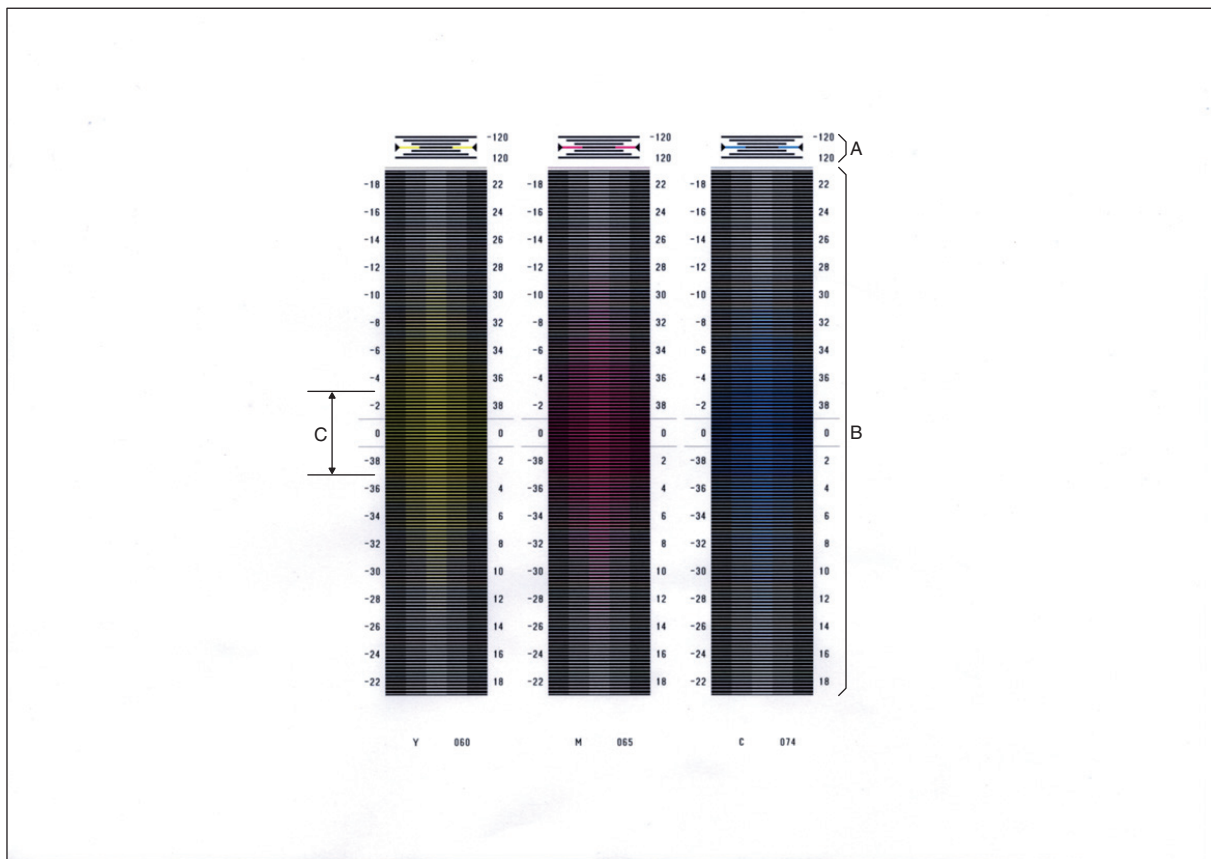
EXECUTE  
or end of print



2) Select the paper feed tray with A4 (11" x 8.5") or A3 (11" x 17") paper in it by changing the value of set item H.

3) Press [EXECUTE] key.

The sub scanning direction image registration adjustment pattern is printed.



A: Rough adjustment pattern B: Fine adjustment pattern C: Adjustment range



- 4) Check the rough adjustment and the fine adjustment print pattern positions of each color.

Use the visually highest color density section as the center, and measure the shift amount.

Rough adjustment print pattern check	Check that the rough adjustment print pattern is at the center for the rough adjustment reference pattern.
Fine adjustment print pattern check	Check that the fine adjustment print pattern is at the center for the fine adjustment reference pattern.

(If the fine adjustment print pattern is located in the range of 0  $\pm$ 1 from the fine adjustment reference pattern scale, the adjustment is not required.)

If the above condition is not satisfied, select the color mode adjustment item A - C to be adjusted with the scroll key, and change the adjustment value to adjust.

Display/Item	Content	Adjustment value range	Default
A CYAN	Image registration adjustment value (Sub scanning direction) (Cyan)	1 - 199	100
B MAGENTA	Image registration adjustment value (Sub scanning direction) (Magenta)	1 - 199	100
C YELLOW	Image registration adjustment value (Sub scanning direction) (Yellow)	1 - 199	100

Repeat procedures 3) - 4) until a satisfactory result is obtained.  
For measurement of the shift amount and the calculation of the adjustment value, refer to the following.

**(Measurement of the shift amount and the calculation of the adjustment value)**

a) Measurement of the shift amount

- \* Measurement of the fine adjustment pattern

Use the visually highest color density section as the center, and measure the shift amount.

(Example)

The measurement value of the figure is "14".

- \* Measurement of the rough adjustment pattern

Check that the color line is positioned in the plus direction or in the minus direction and judge the polarity from that.

The center black line is scaled as 0, the first line mark as 40, the second line mark as 80, the third line mark as 120. The interval between the rough adjustment marks corresponds to 40.

(Example)

In the case of the figure, it is between 40 - 80 of the plus polarity, and the measurement is "40".

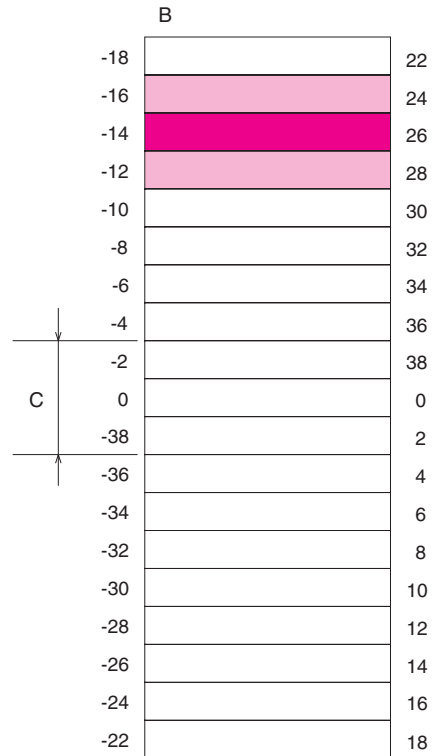
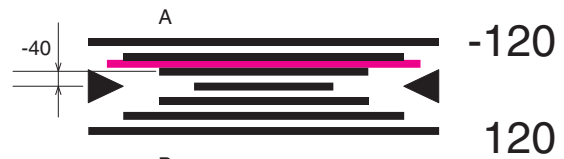
A: Rough adjustment pattern

B: Fine adjustment pattern

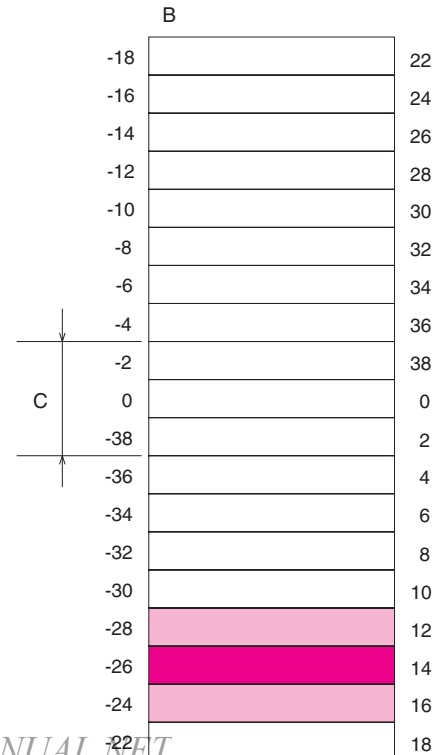
C: Adjustment range

The shift amount is calculated from the adjustment reference position for each of the three adjustment items A - C.

Measurement value: -54 (= -40 - 14)



Measurement value: 54 (= 40 + 14)



b) Adjustment value calculation

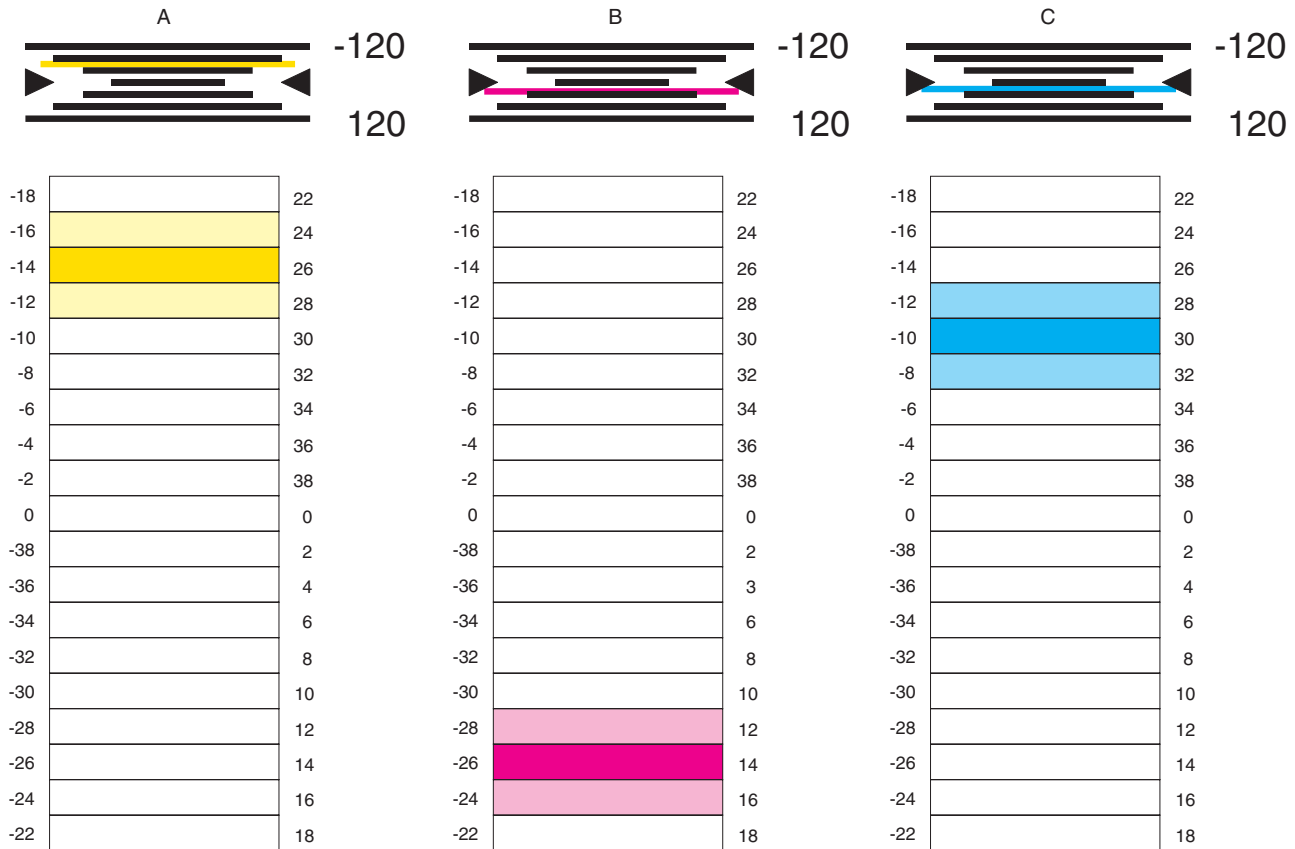
Add or subtract the shift amount calculated above to or from the current adjustment value, and the result value is used as the new adjustment value.

(When the shift amount (correction value) is plus)

Adjustment value = Current adjustment value + Shift amount (correction value)

(When the shift amount (correction value) is minus)

Adjustment value = Current adjustment value - Shift amount (correction value)



Previous value before adjustment	New adjustment value
A: 100	A: 46 (=100-54)
B: 112	B: 126 (=112+14)
C: 95	C: 125 (=95+30)

## ADJ 11 Scan image distortion adjustment

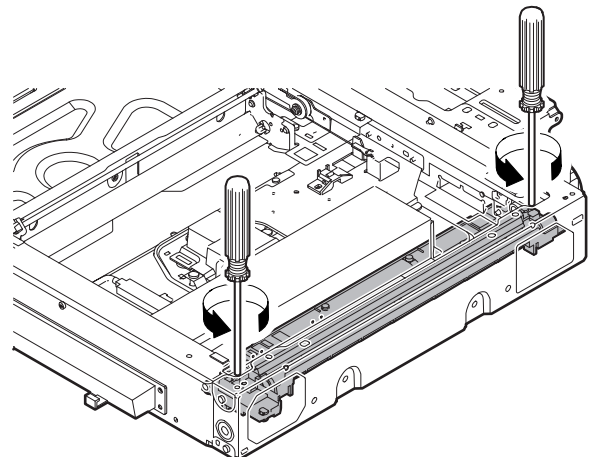
This adjustment is needed in the following situations:

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

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

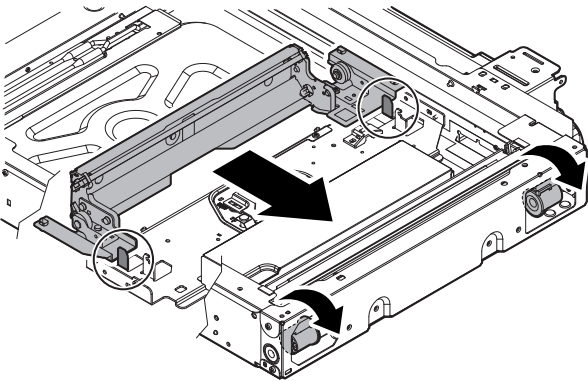
Before execution of this adjustment, remove the document table glass. (For details, refer to [C]-3.)

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



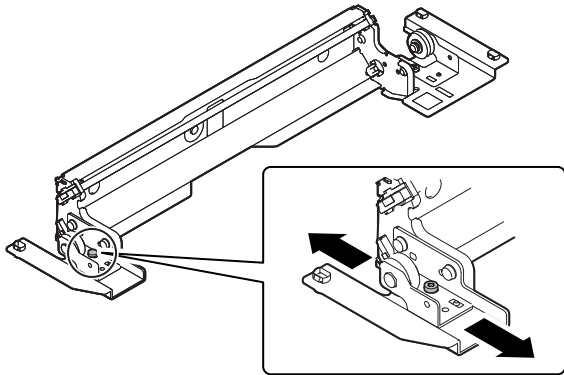
- 2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper.

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



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

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

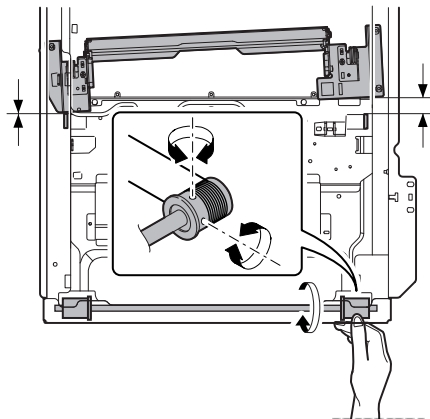


- 4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers on the front and the rear frames simultaneously.
- 5) Fix the pulley angle on the front frame side of the scanner unit B.

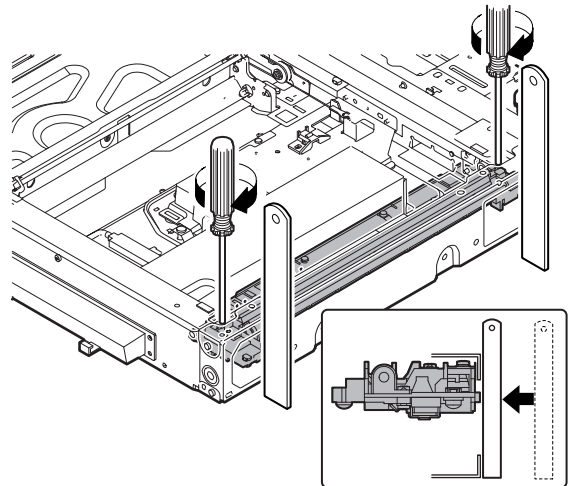
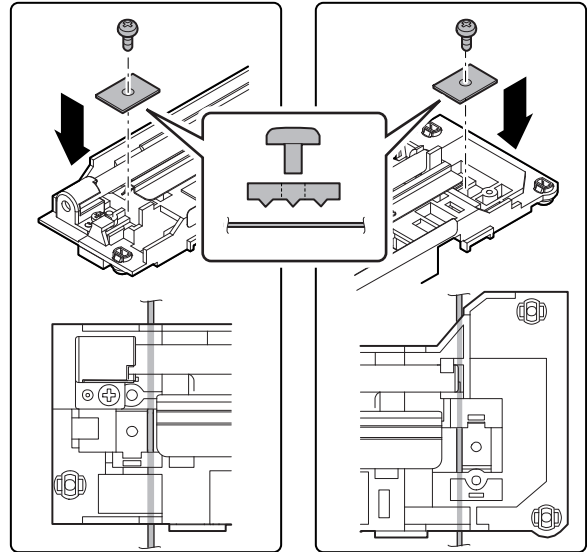
If a satisfactory result is not obtained from the above procedures, perform the following procedures.

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

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

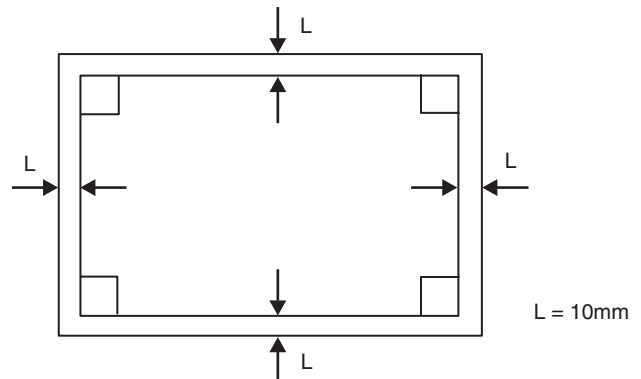


- 6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

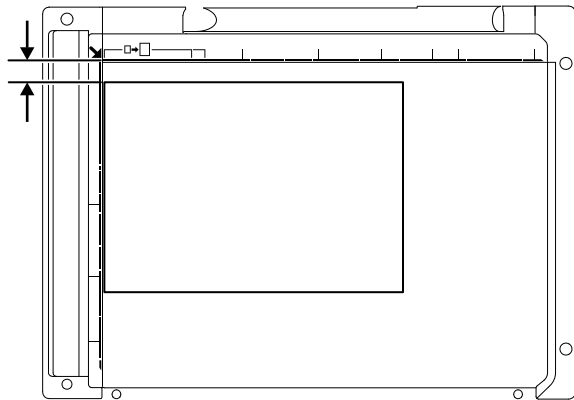


### 11-B Scan image (sub scanning direction) distortion adjustment

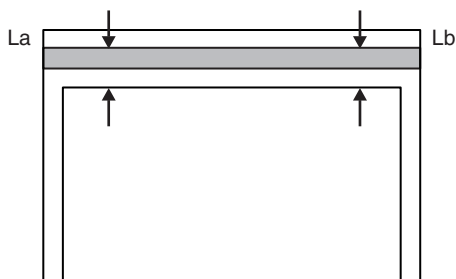
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



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

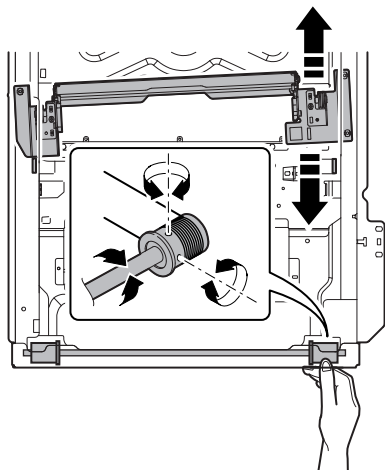


- Check for distortion in the sub scanning direction.  
If  $L_a = L_b$ , there is no distortion.



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

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



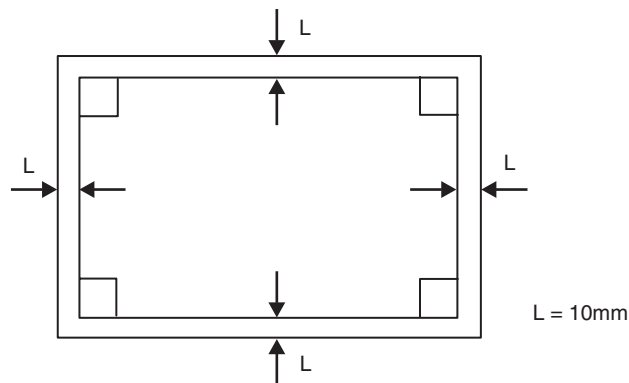
- Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)
- Tighten the scanner unit drive pulley fixing screw.

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

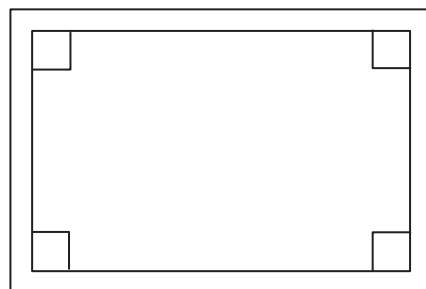
If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform "ADJ 11D Scan image distortion adjustment (whole scanner unit).

## 11-C Scan image (main scanning direction) distortion adjustment

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

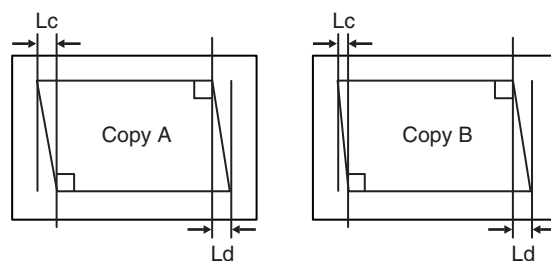


- Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11"x 17") paper.
- Check for distortion in the main scanning direction.  
If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



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

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



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

$$L_c = L_d$$

There is some difference between the distortion on the right and that on the left

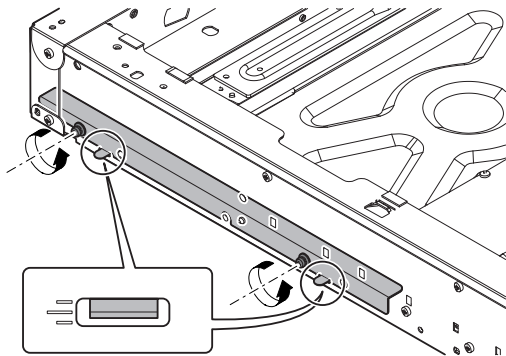
$$L_c \neq L_d$$

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

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

If not, perform the following procedures.

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



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

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

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

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

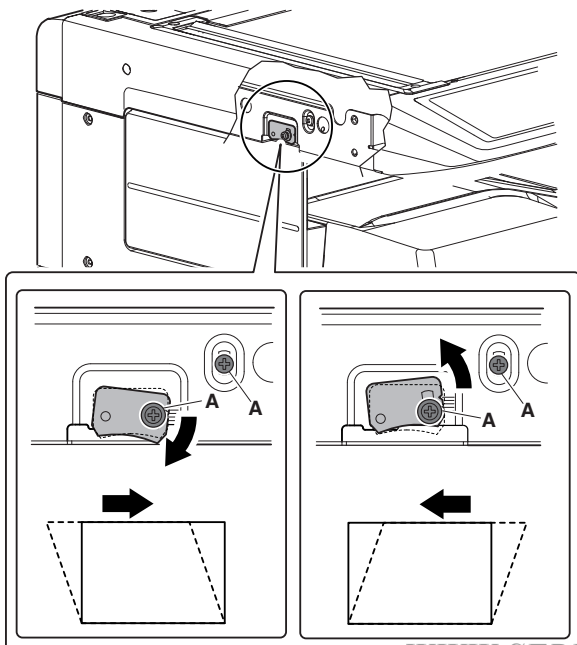
If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform ADJ 11D Scan image distortion adjustment (whole scanner unit).

## 11-D Scan image distortion adjustment (Whole scanner unit)

This adjustment is executed when scan image distortion cannot be adjusted with ADJ 11A, ADJ 11B, and ADJ 11C related to the scan image distortion adjustment.

Change the upper and lower positions of the scanner unit distortion adjustment plate on the right edge of the scanner unit so that the scan image distortion is minimized. By adjusting the distortion of the whole scanner unit, the scan image distortion is adjusted.

- 1) Loosen the fixing screw (A).
- 2) Adjust the scanner unit distortion adjustment plate.

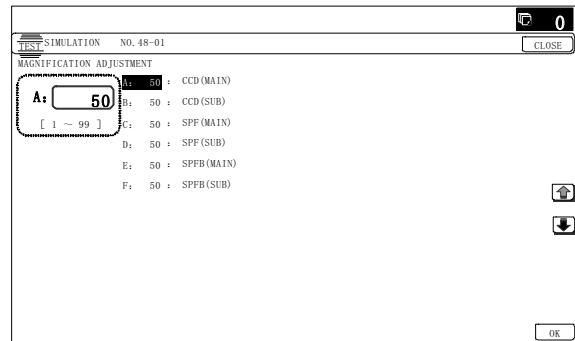


## ADJ 12 Scan image focus adjustment (CCD unit position adjustment)

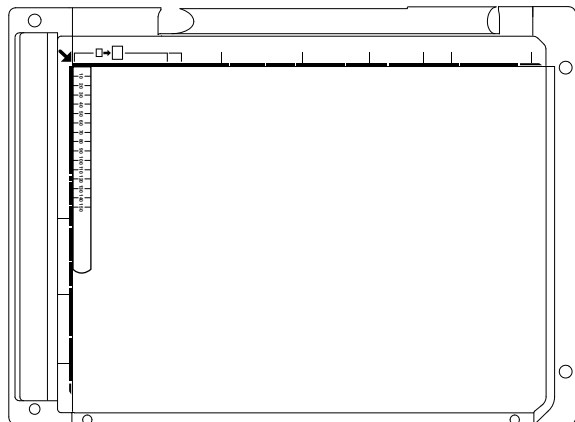
### 12-A Document table mode image focus adjustment

This adjustment is needed in the following situations:

- \* The CCD unit has been removed from the machine.
  - \* The CCD unit has been replaced.
  - \* When the copy image focus is not properly adjusted.
  - \* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
  - \* U2 trouble has occurred.
- 1) Enter the simulation 48-1 mode.



- 2) Set the adjustment item CCD (MAIN) to 50 (default value). Select the adjustment item with the scroll key, and enter the adjustment value with 10-key and press [OK] key.
- 3) Place a scale on the original table as illustrated below.



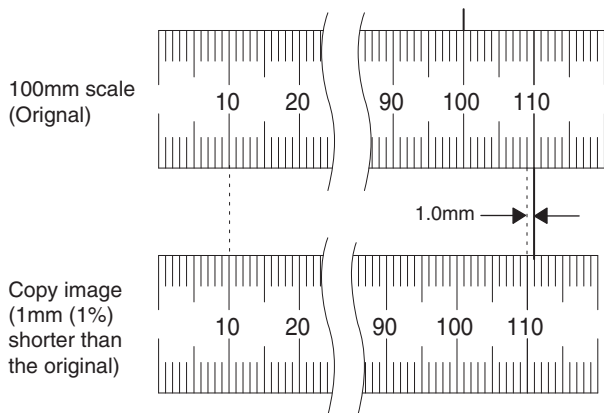
- 4) Make a normal copy on A4 paper. Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.

- 5) Compare the copied image of the scale and the actual scale length in terms of length.
- 6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.

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

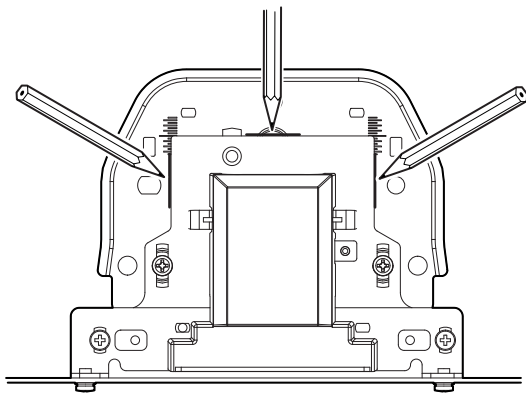
Compare the scale of 10mm with the scale of 10mm on the copy image.

Main scanning direction copy magnification ratio correction ratio =  $(100 - 99) / 100 \times 100 = 1$



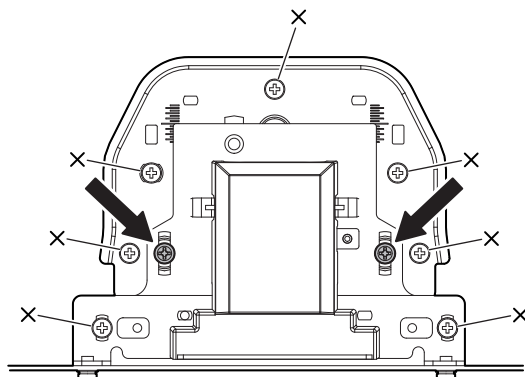
If the copy magnification ratio is not satisfactory, perform the following procedures.

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



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

- 10) Loosen the CCD unit fixing screws.



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

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

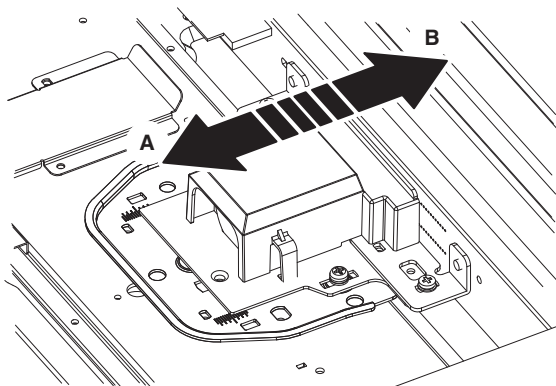
- 11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

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

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

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

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



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

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

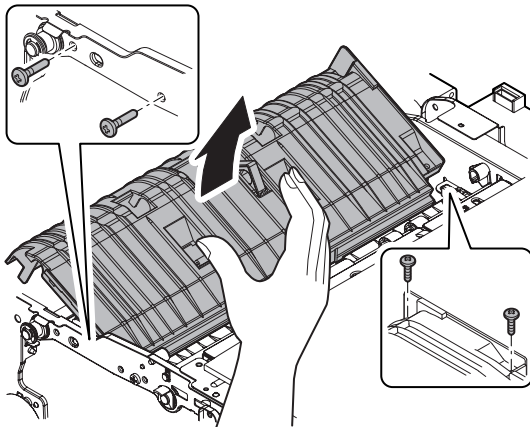
NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range ( $100 \pm 1.0\%$ ) and the specified resolution is obtained based on the optical system structure.

## 12-B DSPF mode image focus adjustment

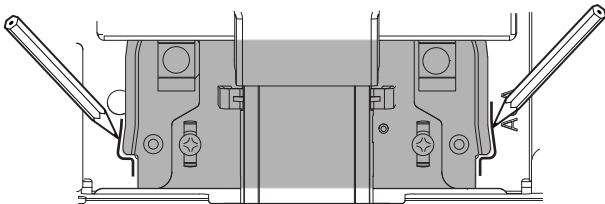
This adjustment is required in the following cases:

- \* When the DSPF CCD unit is replaced.
- \* When the DSPF CCD unit is replaced.
- \* When the COPY/SCAN/FAX image focus is not properly adjusted.
- \* When the DSPF unit is removed.
- \* When the DSPF unit is replaced.

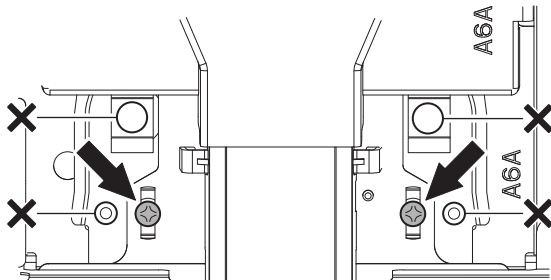
- 1) Make a duplex copy in DSPF mode.
- 2) Make sure that the copied image on the back side of the paper is satisfactorily focused.  
If the image is not satisfactorily focused, do the following steps.
- 3) Open the door. Remove the screws, and remove the transport PG upper.



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



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



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

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

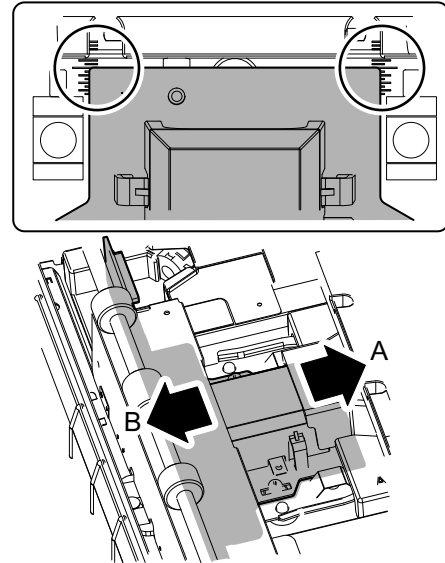
- 6) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

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

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

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

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



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

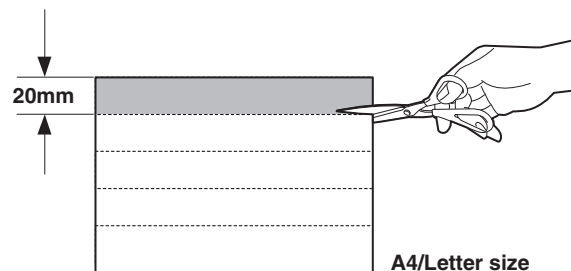
NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range ( $100 \pm 1.0\%$ ) and the specified resolution is obtained based on the optical system structure.



## ADJ 13 RSPF/DSPF parallelism adjustment

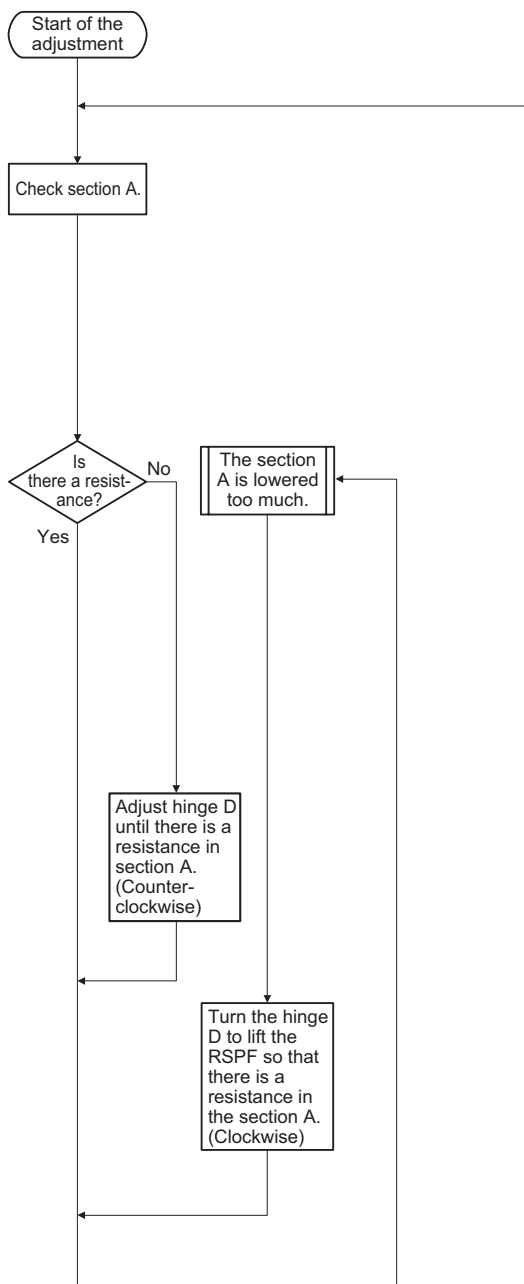
### 13-A RSPF height adjustment

- 1) Make an RSPF height adjustment sheet  
Cut copy paper in the longitudinal direction.



- 2) Perform the adjustment according to the flowchart below.

<Flow chart>



<Work procedure>

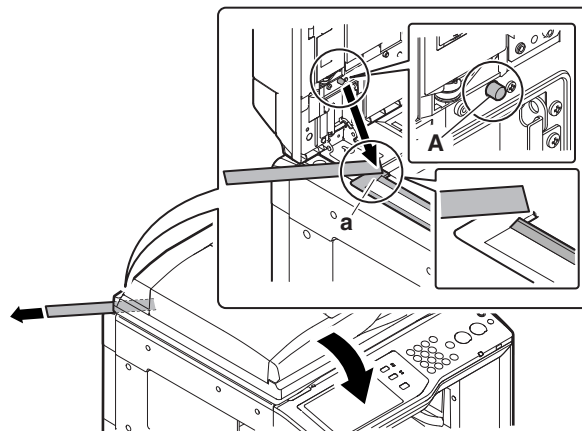
- a) Check section A.

Place the RSPF height adjustment sheet between section A and the SPF glass height adjustment resin surface (a), and close the RSPF unit.

Slowly pull out the RSPF height adjustment sheet.

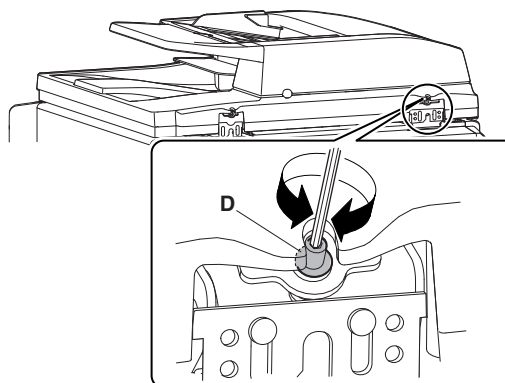
Check to insure that a slight resistance is felt when pulling out the RSPF height adjustment sheet.

\* Be careful not to cover the convex section of the glass holding resin surface with the height adjustment sheet.

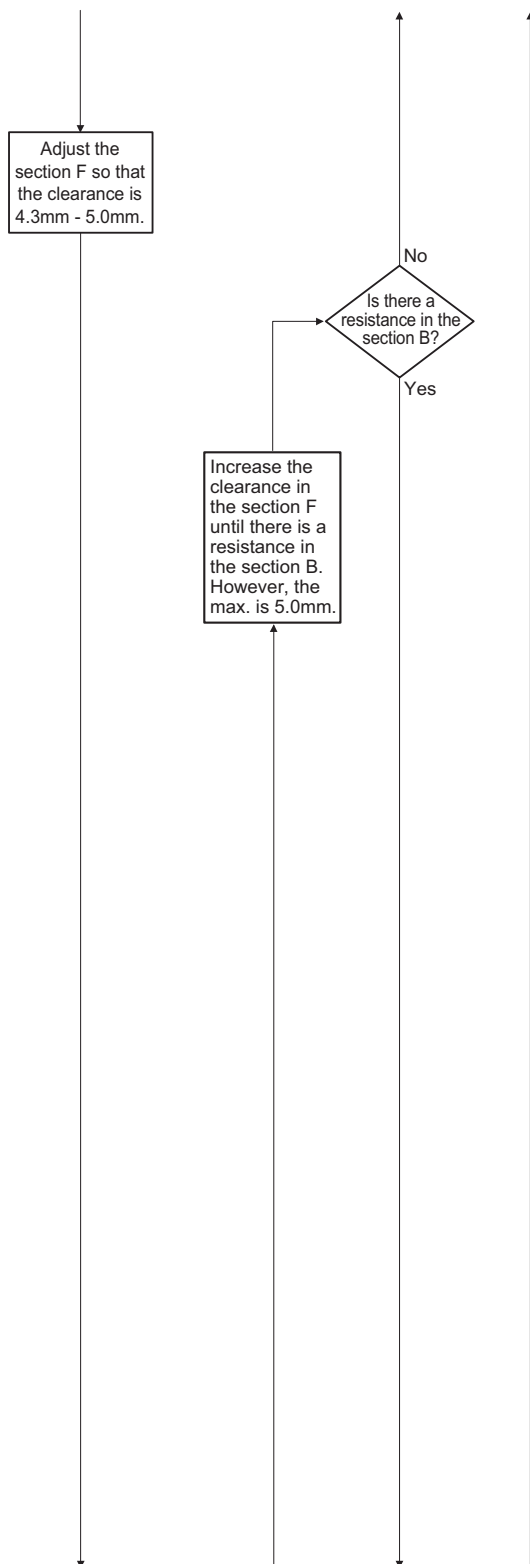


- b) If it cannot be pulled out, turn the section D clockwise and adjust in order to lift the RSPF unit.

If it can be pulled out without resistance, turn the section D counterclockwise and adjust in order to move down the RSPF unit.





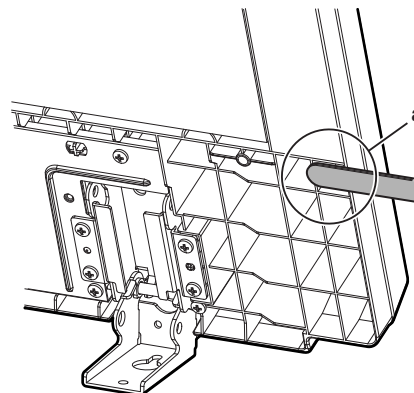
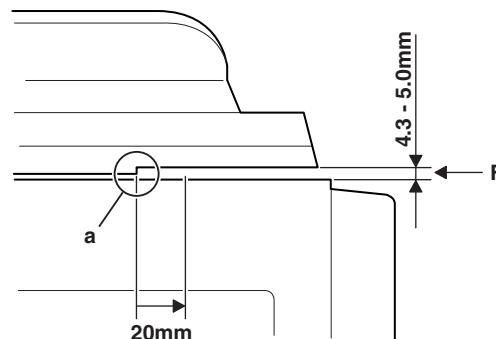


c) Adjust the section F.

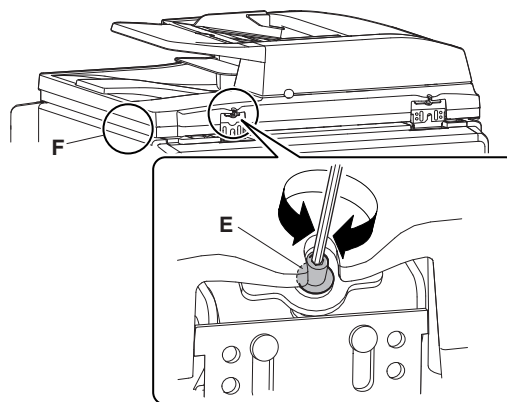
Use a clearance gauge to check to confirm that the clearance in the section F is 4.3mm - 5.0mm.

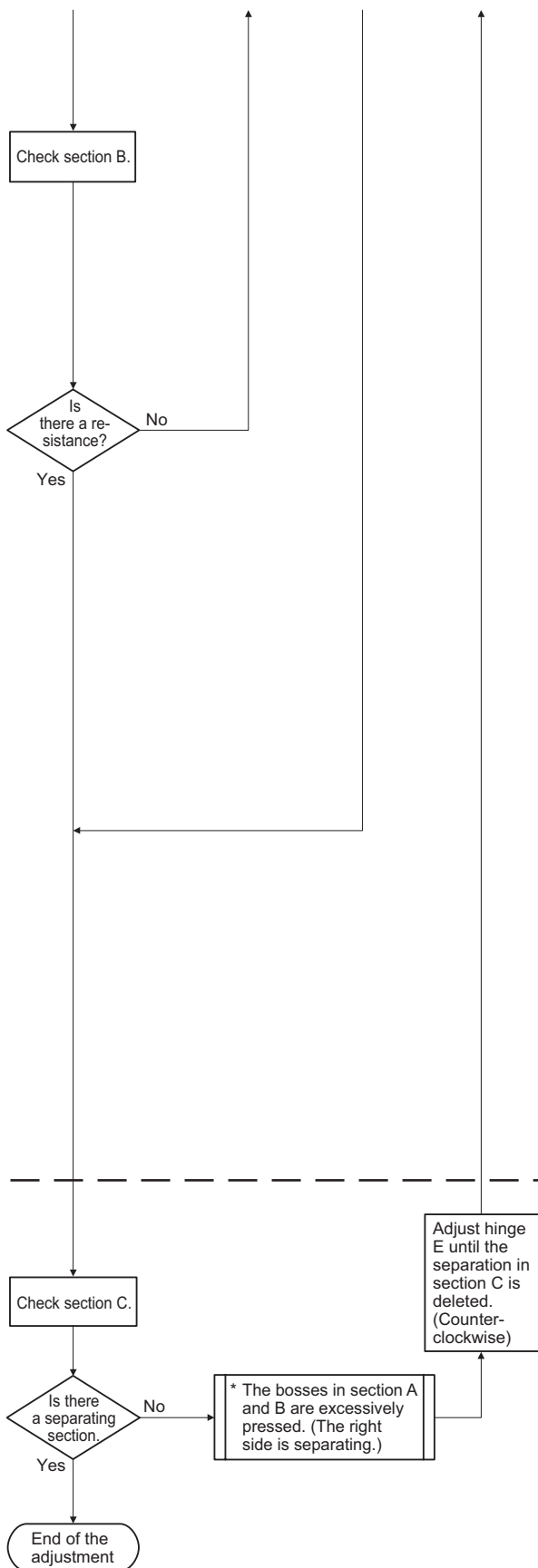
If not, turn the section E to adjust.

\* Insert a clearance gauge in the range of 20mm from the edge (a) of the right lower cover of the base.



\* Turn section E clockwise to lift the RSPF unit. Turn it counterclockwise to move down the RSPF unit.





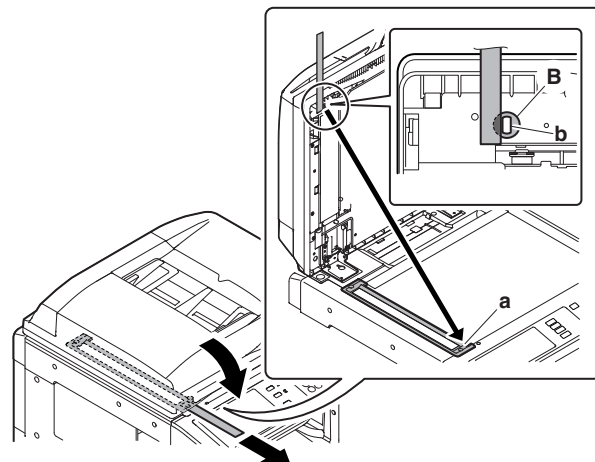
d) Check section B.

Place the RSPF height adjustment sheet between section B and the SPF glass height adjustment resin surface (a), and close the RSPF unit.

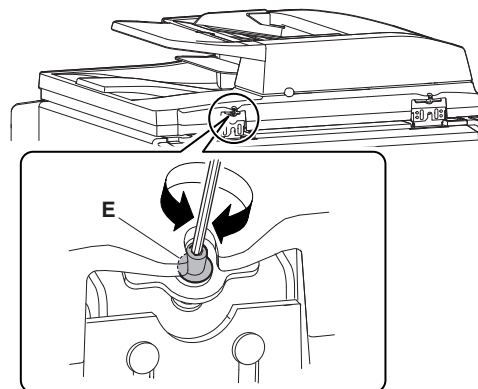
Slowly pull out the RSPF height adjustment sheet.

Check to insure that a slight resistance is felt when pulling out the RSPF height adjustment sheet. (If the boss in section B is in contact, it is O.K.)

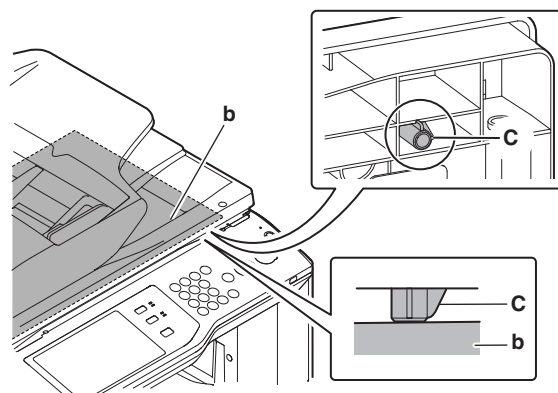
\* Be careful not to put the book sensor (b) on the height adjustment sheet.



e) If it can be pulled out without resistance, turn the hinge in section E clockwise to adjust.

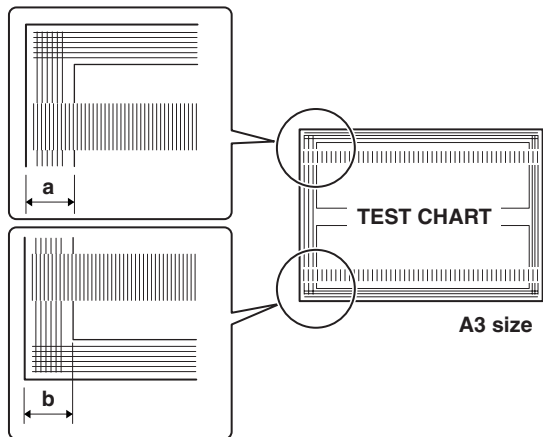


f) Check section C.

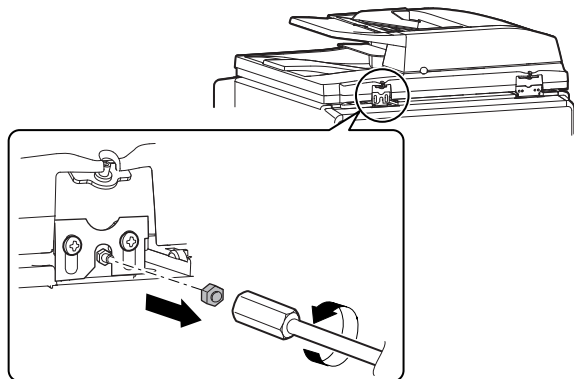


### 13-B RSPF diagonal adjustment

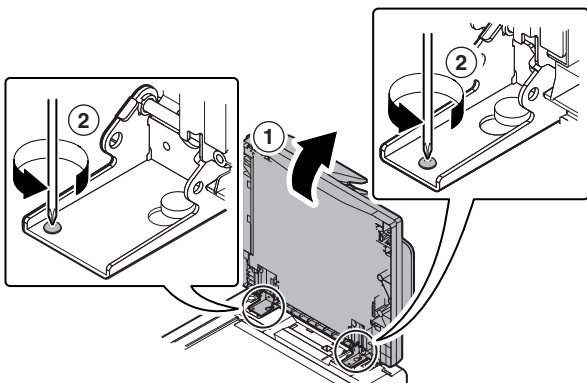
- 1) Set a test chart (A3) on the RSPF document tray, and make a copy.
- 2) Measure (a) and (b) on the copied test chart. If  $(a) - (b) = \pm 1\text{mm}$  or more, perform the diagonal adjustment.



- 3) Remove the hex nut cover in the RSPF diagonal adjustment screw section.

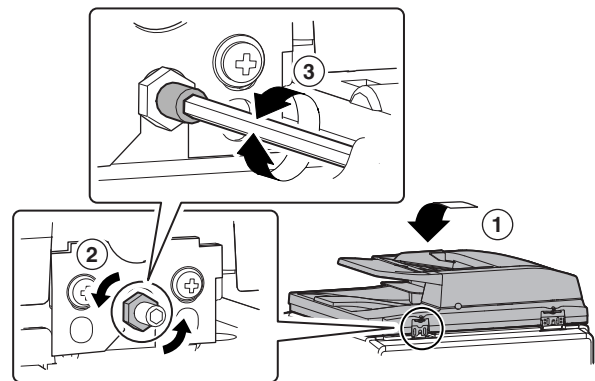


- 4) Raise the RSPF unit upright, and loosen the fixing screw of the hinge.



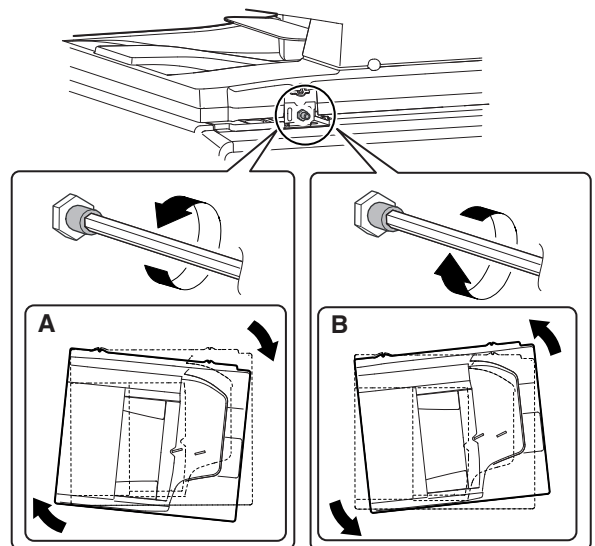
- 5) Close the RSPF unit, and loosen the hex nut of the RSPF diagonal adjustment screw section.

Turn the hex wrench of the RSPF skew adjustment screw to adjust the skew.

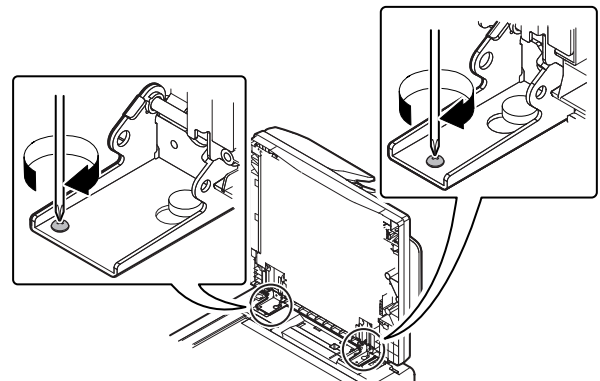


\* In the case of (A), turn the RSPF diagonal adjustment screw counterclockwise.

In the case of (B), turn the RSPF diagonal adjustment screw clockwise.



- 6) Make a copy again and measure (a) and (b) on the copied test chart. Repeat procedures 2) to 5) until the condition  $((a) - (b)) = \pm 1\text{mm}$  or less is satisfied.
- 7) Tighten the hinge section fixing screw which was loosened in the procedure 4) to tighten the hinge section.

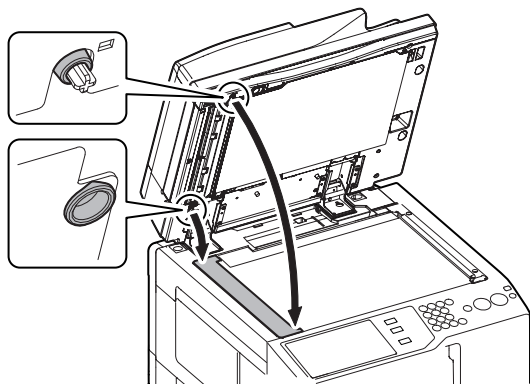


### 13-C DSPF levelness adjustment

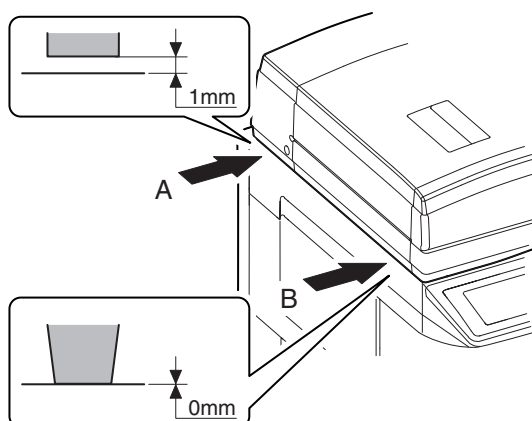
This adjustment is needed in the following situations:

- \* The DSPF section has been disassembled.
- \* The DSPF unit has been replaced.

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

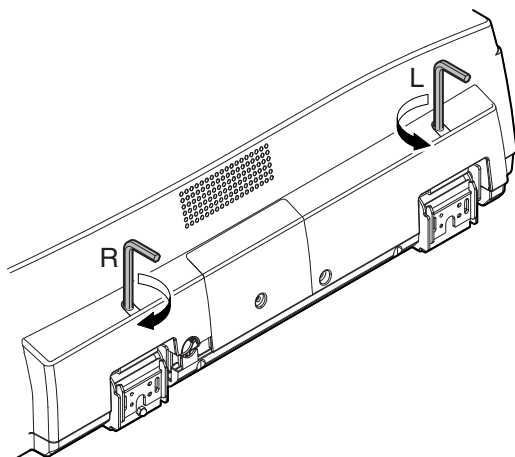


- 2) Visually check to insure that the clearance A is 1mm or less and the clearance B is 0mm (in contact).



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

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

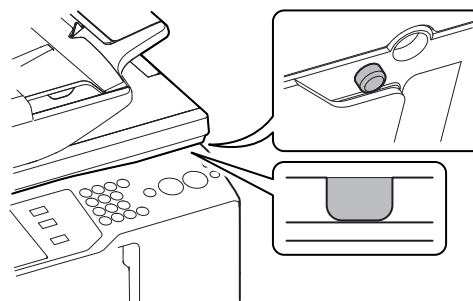


When the front frame side is higher (there is a clearance in B): Turn the height adjustment screw R of the DSPF rear frame clockwise.

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

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

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



### 13-D DSPF skew adjustment

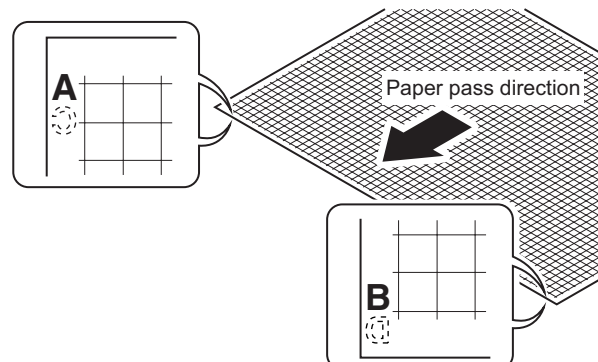
(Front surface mode)

This adjustment is needed in the following situations:

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

- 1) Create an adjustment chart by printing in duplex mode the self-print pattern 1 (grid pattern) specified in Simulation 64-1.

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



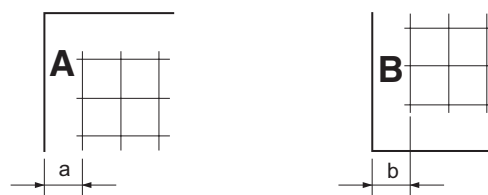
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

- Check with one of the following methods.

[Check Method 1]

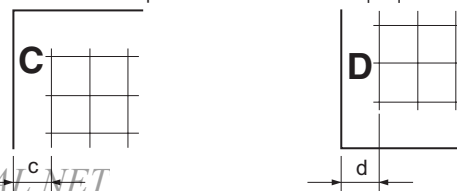
(Front side)

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



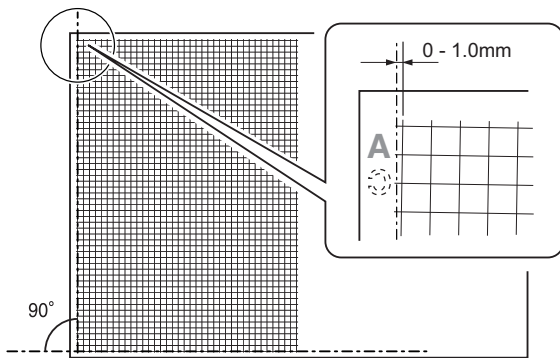
(Back side)

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



[Check Method 2]

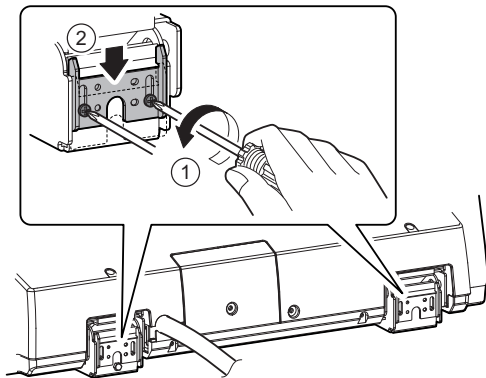
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



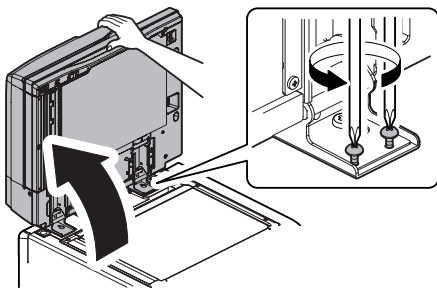
If the front surface copy image is as shown above and the back surface copy is not as shown above, go to the step 3) of "3. Skew adjustment (Back surface mode)."

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

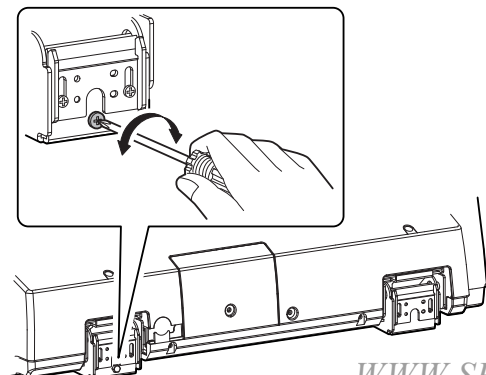
- 3) Loosen the hinge screws and lower the two attachments.



- 4) Open the DSPF and loosen the screw.



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



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

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

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

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

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

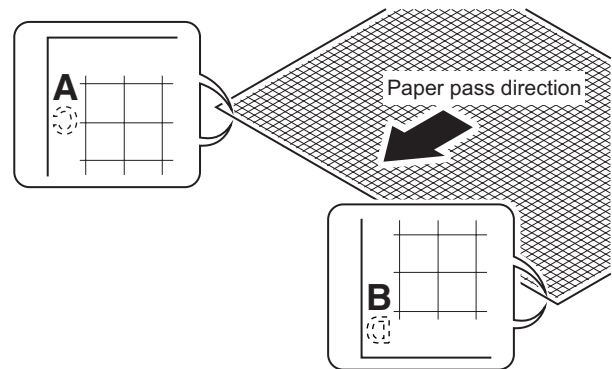
**(Skew adjustment (back surface mode))**

This adjustment is needed in the following situations:

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

- 1) Create an adjustment chart by printing in duplex mode the self-print pattern 1 (grid pattern) specified in Simulation 64-1.

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



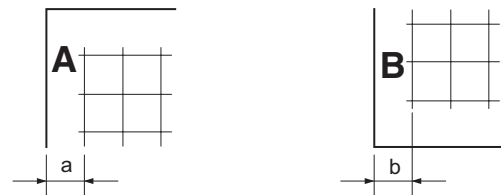
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

- Check with one of the following methods.

[Check Method 1]

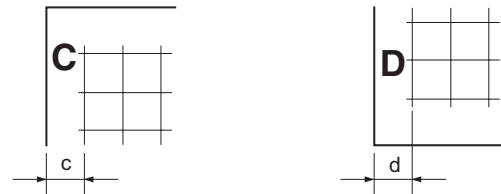
(Front side)

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



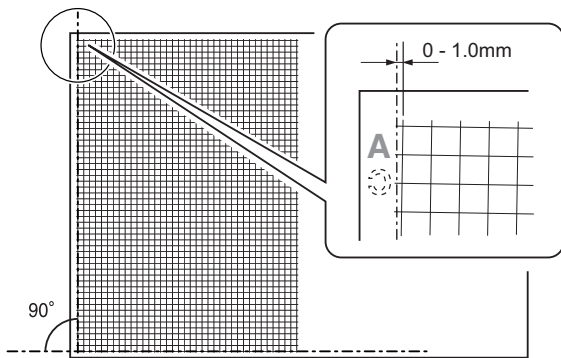
(Back side)

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



[Check Method 2]

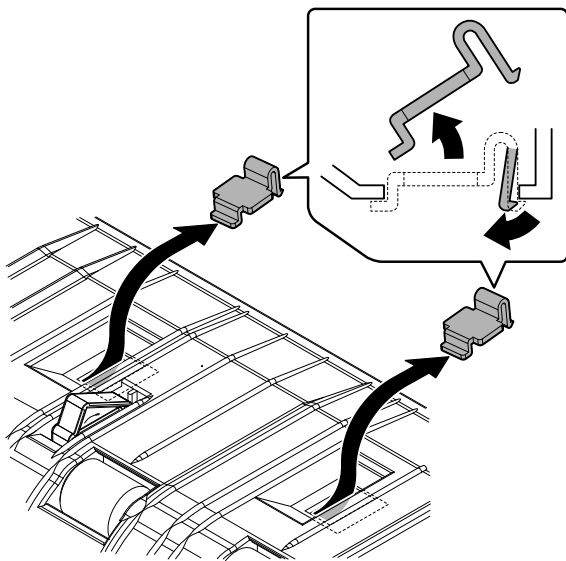
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



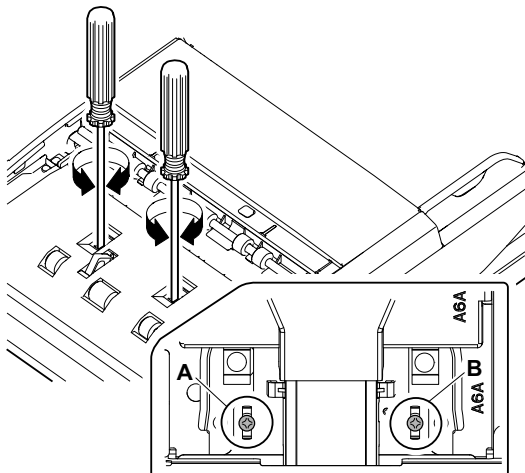
If the back surface copy image is as shown above and the front surface copy is not as shown above, go to the step 3) of "2. Skew adjustment (Front surface mode)."

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

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



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



\* When the adjustment screw is turned 180 degrees, a change of about 0.5mm is made.

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

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

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

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

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

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

NOTE: Since turning the adjustment screw too much may cause the optical axis trouble, turn in less than one turn clockwise or counterclockwise.

## ADJ 14 Scan image magnification ratio adjustment (Document table mode)

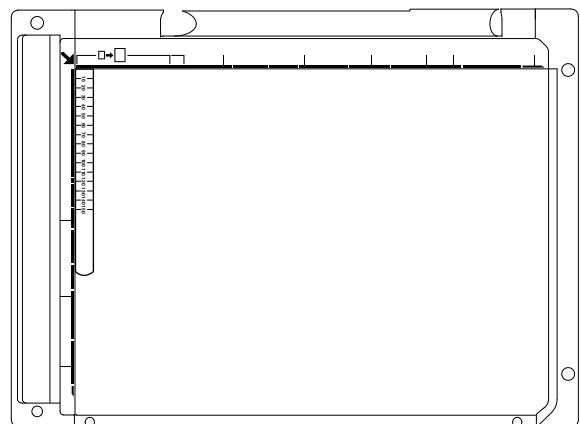
This adjustment is needed in the following situations:

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

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

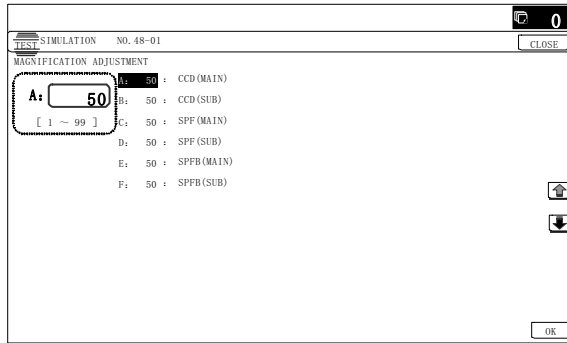
### 14-A Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)

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





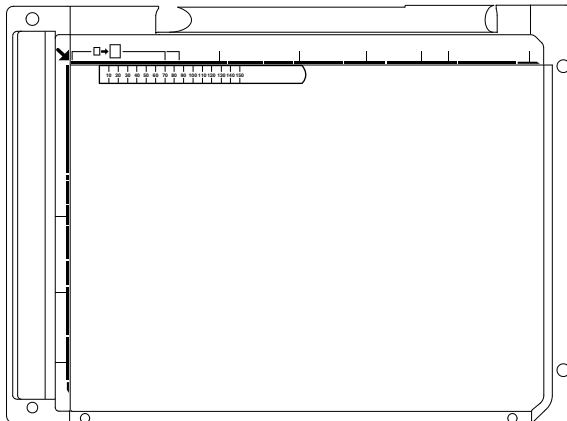
- 2) Enter the simulation 48-1 mode.



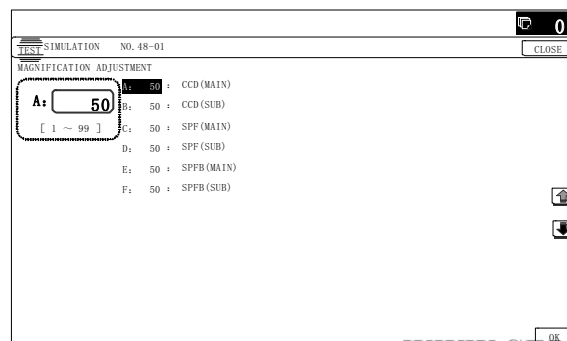
- 3) Make a normal copy and obtain the copy magnification ratio.  
Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.
- 4) Check that the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).  
If the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.
- 5) Change the CCD (MAIN) adjustment value of Simulation 48-1.  
When the adjustment value is increased, the copy magnification ratio is increased.  
When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.  
Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).

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

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

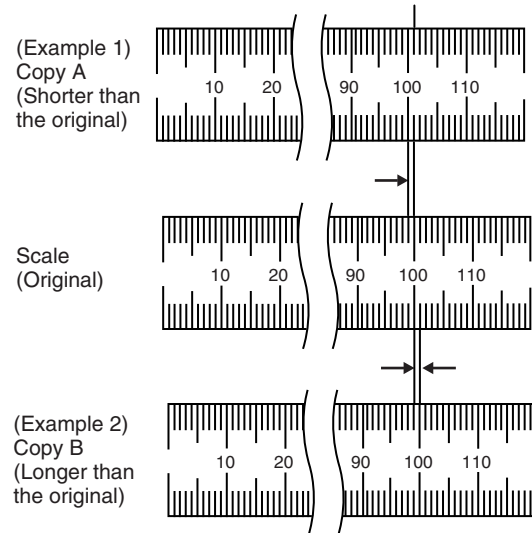


- 2) Enter the simulation 48-1 mode.



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

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



- 4) Check that the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).  
If the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.
- 5) Change the CCD (SUB) adjustment value of Simulation 48-1.  
When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased.  
When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range ( $100 \pm 1.0\%$ ).

### ADJ 15 Scan image magnification ratio adjustment (RSPF/DSPF mode)

#### 15-A Scan image magnification ratio adjustment (Main scanning direction) (RSPF mode)

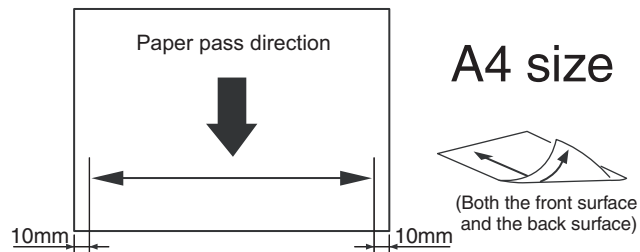
#### 15-C Scan image magnification ratio adjustment (Main scanning direction) (DSPF mode)

This adjustment must be performed in the following cases:

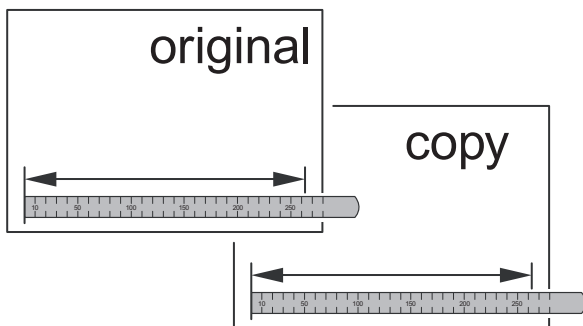
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the RSPF/DSPF is disassembled.

### a. Adjustment procedures

- Place the duplex adjustment chart shown below on the document tray of the RSPF/DSPF.  
The adjustment chart is prepared by the following procedures.  
Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



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



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

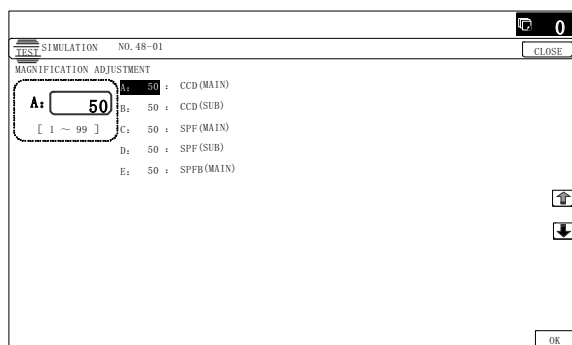
Image magnification ratio = Original size / Original size x 100 (%)

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.

- Enter the SIM48-1 mode.



### (DSPF)

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

### (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

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

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

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

- 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)

- 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%.

Repeat the procedures of 1) - 7) until a satisfactory result is obtained.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.



## 15-B Scan image magnification ratio adjustment (Sub scanning direction) (RSPF mode)

## 15-D Scan image magnification ratio adjustment (Sub scanning direction) (DSPF mode)

This adjustment must be performed in the following cases:

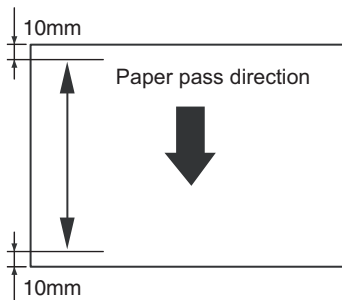
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the RSPF/DSPF is disassembled.

### a. Adjustment procedures

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

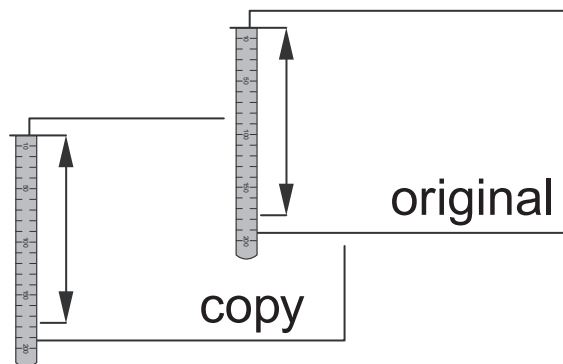
The adjustment chart is prepared by the following procedures.

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



A4 size

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



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

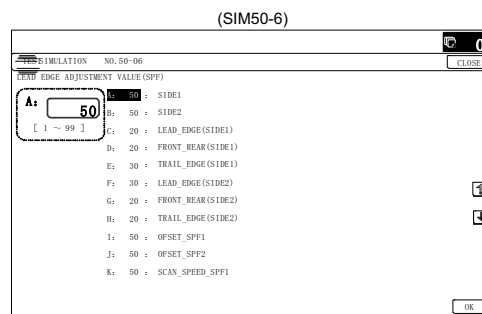
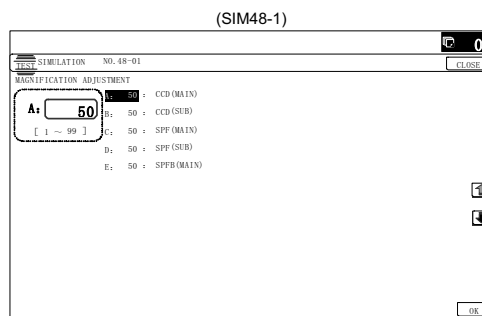
Image magnification ratio = Original size / Original size x 100 (%)

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

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

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

- 5) Enter the SIM48-1 or 50-6 mode.



### SIM48-1 (DSPF)

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

### (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

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

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

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

**SIM50-6  
(DSPF)**

Item	Display		Content	Setting range	Default value
A	SIDE1		Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2		Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1		DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2		DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		DRSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50

**(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	30

Item	Display		Content	Setting range	Default value
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	30
I	OFFSET_SPF1		RSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2		RSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		RSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50
L	SCAN_SPEED_SPF2		RSPF document back surface magnification ratio adjustment (Sub scan)	1 - 99	50

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

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

\* \* Item A - H: 1 step = 0.1mm change

\* The SPF rear edge image loss is provided for countermeasures against shades.

6) Select an adjustment item with the scroll key.

**(SIM48-1)**

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

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

**(SIM50-6)**

SCAN SPEED SPF1 Sub scanning direction image magnification ratio (Front surface)

SCAN SPEED SPF2 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 0.01%.

Repeat the procedures of 1) - 7) until a satisfactory result is obtained.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

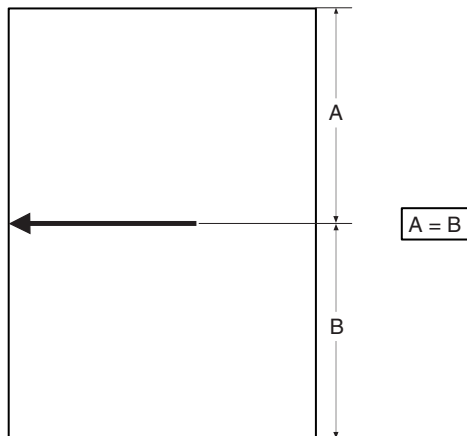
## ADJ 16 Scan image off-center adjustment

This adjustment is needed in the following situations:

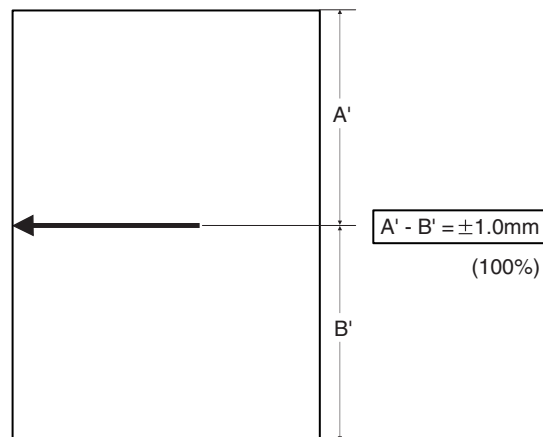
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When the RSPF section is disassembled.
- \* When the RSPF unit is installed.
- \* When the RSPF unit is replaced.
- \* When a U2 trouble occurs.
- \* When the scanner control PWB is replaced.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

### 16-A Scan image off-center adjustment (Document table mode)

- 1) Make a copy of the adjustment chart (made by yourself) in the adjustment mode (document table or RSPF).

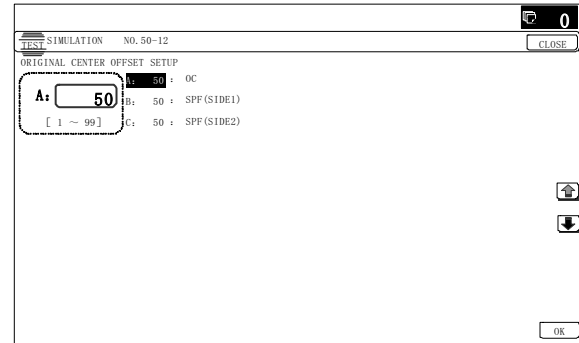


- 2) Check the copy image center position.  
If  $A' - B' = \pm 1.0\text{mm}$ , the adjustment is not required.



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

- 3) Enter the simulation 50-12 mode.



- 4) Select the adjustment mode OC with the scroll key.
- 5) Enter the adjustment value with 10-key, and press [OK] key.  
The entered value is set.  
When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.
- 6) Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy.  
Repeat the procedures of 2) - 6) until the above condition is satisfied.

### 16-B Scan image off-center adjustment (RSPF mode)

### 16-C Scan image off-center adjustment (DSPF mode)

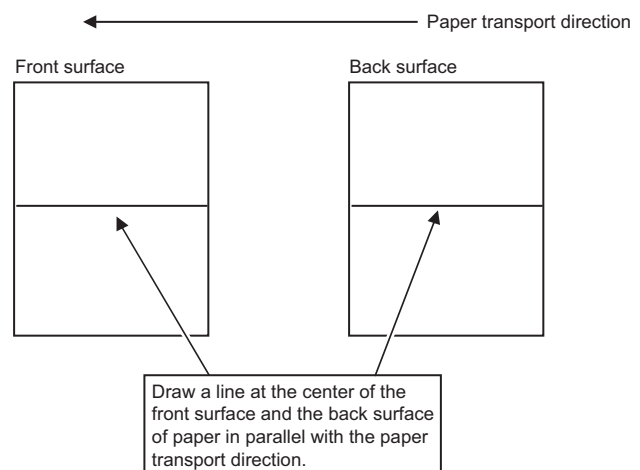
This adjustment must be performed in the following cases:

- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) section is replaced.
- \* When U2 trouble occurs.
- \* When the PF section is disassembled.
- \* When the RSPF/DSPF unit is replaced.

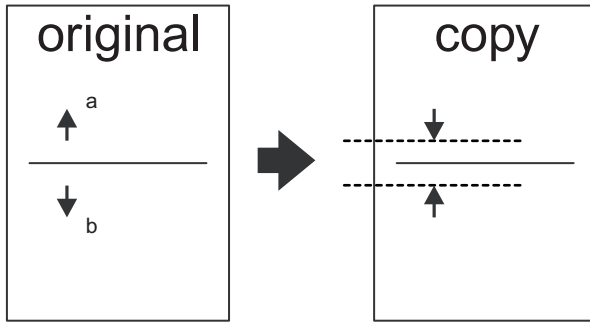
NOTE: To execute this adjustment, it is required that the document table mode off-center adjustment (ADJ 16A) must have been properly adjusted.

#### a. Adjustment procedures

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



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

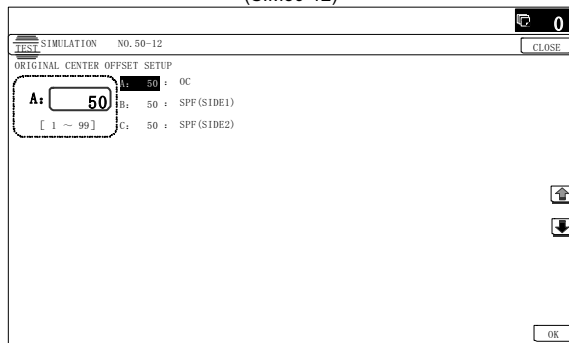


If the difference is within the range of  $0 \pm 2.7\text{mm}$  there is no need to perform the adjustment.

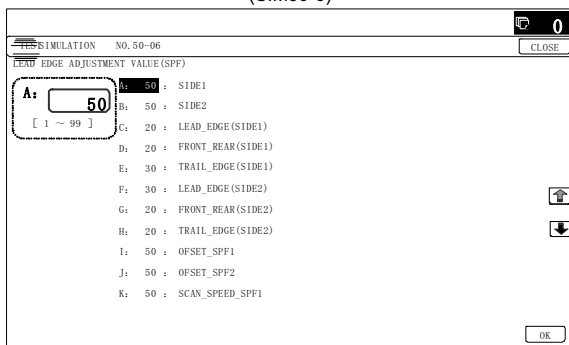
If the adjustment is required, perform the following procedures.

- 4) Enter the SIM50-12 and 50-6 mode.

(SIM50-12)



(SIM50-6)



**SIM50-12**

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

A - C: When the adjustment value is increased, the image position is shifted to the rear frame side.

1step = 0.1mm

**SIM50-6  
(DSPF)**

Item	Display	Content	Setting range	Default value
A	SIDE1	Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2	Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1) Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1) Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1) Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2) Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2) Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2) Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1	DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1	DSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50

**(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	30

Item	Display		Content	Setting range	Default value
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	30
I	OFFSET_SPF1		RSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2		RSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		RSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50
L	SCAN_SPEED_SPF2		RSPF document back surface magnification ratio adjustment (Sub scan)	1 - 99	50

- \* Item A, B: When the adjustment value is increased, the scan timing is delayed.
- \* Item C - H: When the adjustment value is increased, the image loss is increased.
- \* Item A - H: 1 step = 0.1mm change
- \* The SPF rear edge image loss is provided for countermeasures against shades.

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.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

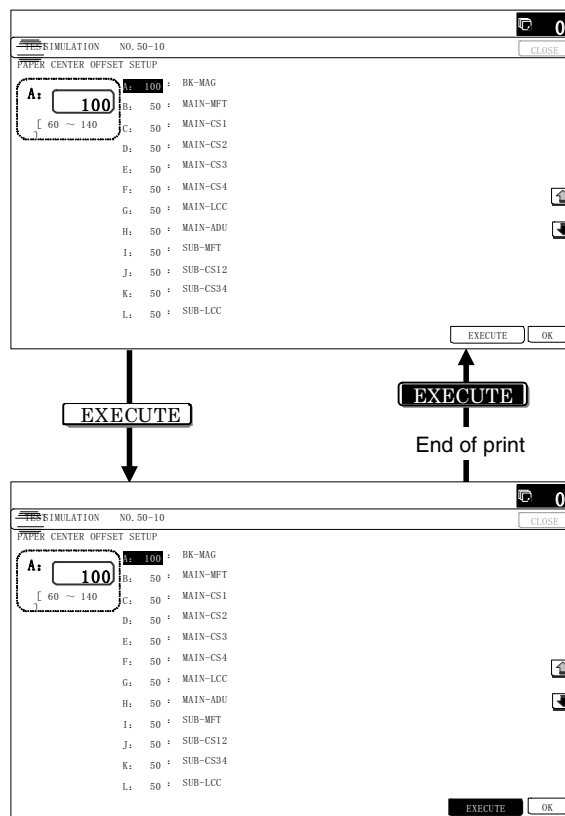
## ADJ 17 Print area (Void area) adjustment (Print engine section)

This adjustment is needed in the following situations:

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

NOTE: Before executing this adjustment, be sure to execute ADJ 8 Print image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) in advance.

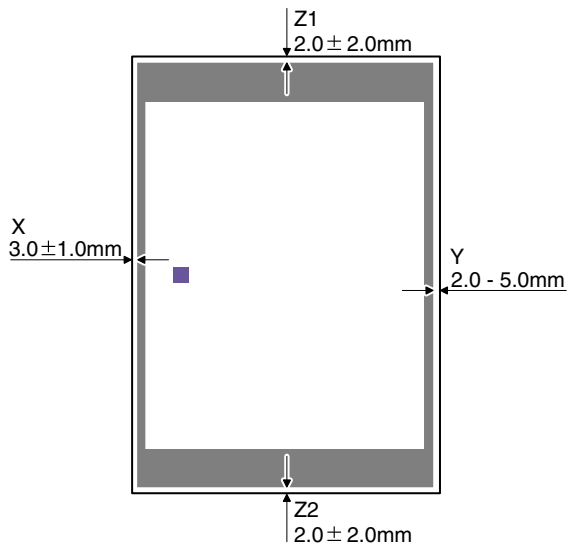
- 1) Enter SIM50-10 mode.



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

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

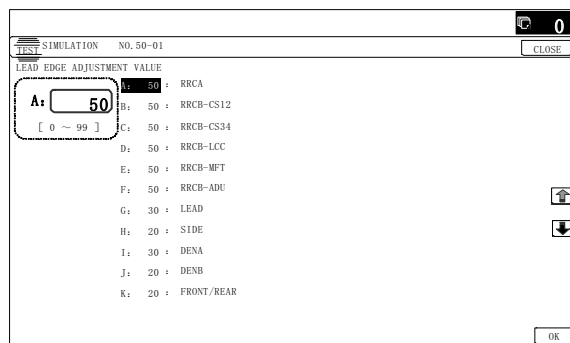
	Content	Standard adjustment value
X	Lead edge void area	$3.0 \pm 1.0\text{mm}$
Y	Rear edge void area	2.0 - 5.0mm
Z1/Z2	FRONT/REAR void area	$2.0 \pm 2.0\text{mm}$



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

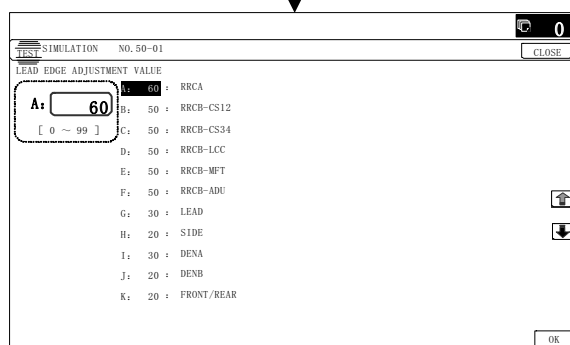
(Note) Feed paper from all the paper feed trays to confirm.

- 5) Go through the modes specified in Simulation 50-1.



10-key

OK



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

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

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

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

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

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

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

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

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

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

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

Repeat the above procedures until a satisfactory result is obtained.

## ADJ 18 Copy image position, image loss adjustment

### 18-A Copy image position, image loss adjustment (Document table mode)

This adjustment is needed in the following situations:

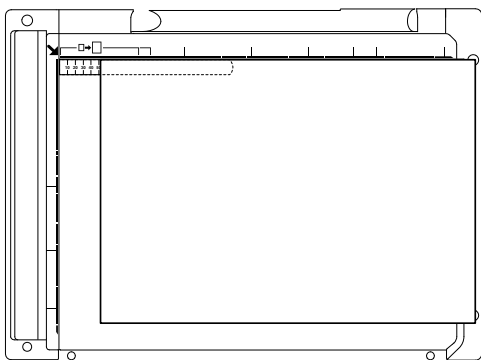
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When the LSU is replaced or removed.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU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

NOTE: Before executing this adjustment, be sure to confirm that the ADJ 17 Print area (Void area) adjustment (Print engine section) has been completed normally.

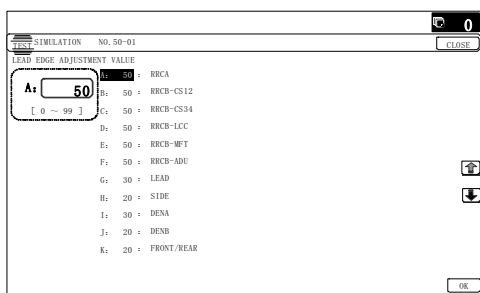
- 1) Place a scale on the document table as shown in the figure below.

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

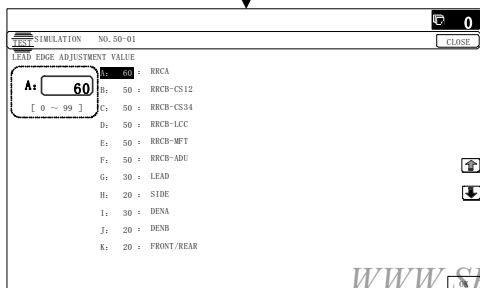
Place white paper on the document table so that the scale lead edge can be seen.



- 2) Go through the modes specified in Simulation 50-1.



10-key



- 3) Set RRCA, LEAD, and SIDE to the default values.

Display/Item			Content	Setting range	De-fault
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)	0 - 99	50
B		RRCB-CS12	Resist motor ON timing adjustment	Standard Tray	1 - 99
C		RRCB-CS34		Desk	1 - 99
D		RRCB-LCC		LCC	1 - 99
E		RRCB-MFT		Manual paper feed	1 - 99
F		RRCB-ADU		ADU	1 - 99
G	Image loss area setting value	LEAD	Lead edge image loss area setting	0 - 99	30
H		SIDE	Side image loss area adjustment	0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment	1 - 99	30
J		DENB	Rear edge void area adjustment	1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	20
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	Sub scanning direction print area correction value	DENB-CS4	Tray 4 correction value	1 - 99	50
S		DENB-LCC	LCC correction value	1 - 99	50
T		DENB-ADU	ADU correction value	1 - 99	50

- 4) Perform the image lead edge reference position adjustment.

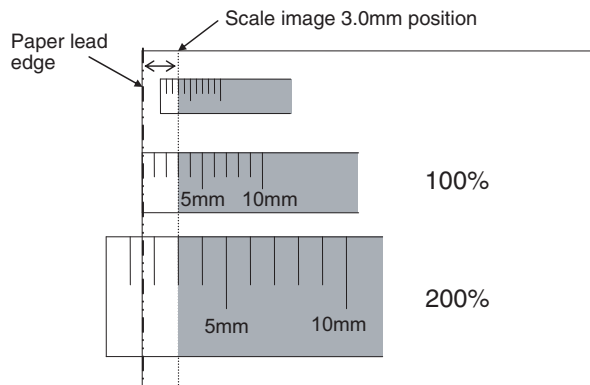
Press [CLOSE] key, and shift from the simulation mode to the copy mode and make a copy in 100% mode and in 200% mode.

When the adjustment value of RRCA is proper, the lead edge image from 3.0mm is not copied in either of 100% and 200% copy scale.

If not, change and adjust the RRCA value.

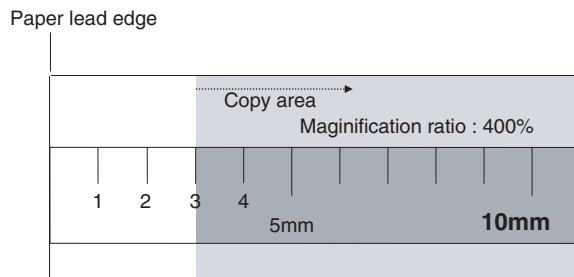
(Adjust so that the lead edge image from 3.0mm is not copied in either of different copy magnification ratios.)

Repeat the above procedures until a satisfactory result is obtained.



#### 5) Image loss adjustment

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



Void area: 3.0mm, Image loss: 3.0mm

Display /Item	Content		Adjustment range	De-fault	Standard adjustment value
LEAD	Image loss adjustment	Lead edge image loss adjustment	0 - 99	30	3.0 ± 1.0mm
SIDE		Side image loss adjustment	0 - 99	20	2.0 ± 1.0mm

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

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

### 18-B Document scan position adjustment (RSPF mode)

### 18-C Document scan position adjustment (DSPF mode)

Document scan start position adjustment

(Scanner reading position adjustment when scanning the front surface in the RSPF/DSPF mode) (RSPF/DSPF mode)

This adjustment must be performed in the following cases:

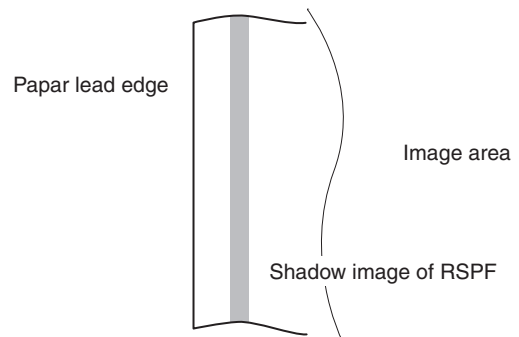
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) section is replaced.
- \* When U2 trouble occurs.
- \* When the RSPF/DSPF section is disassembled.
- \* When the RSPF/DSPF unit is replaced.

This simulation is to adjust the scanner reading position when scanning the front surface in the RSPF/DSPF mode.

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

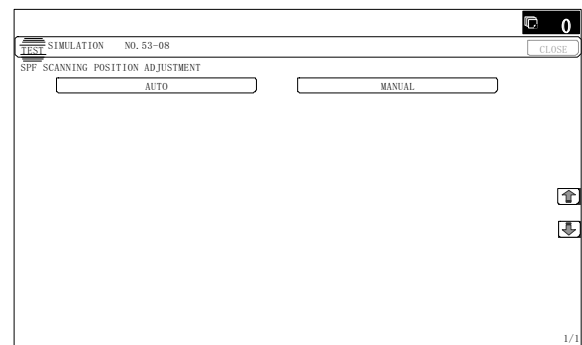
#### a. Adjustment procedures

- 1) Make a copy in the RSPF/DSPF (front surface) mode, and check for any shade on the lead edge section of the copy image.



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

- 2) Enter the SIM53-8 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/DSPF scanning position is increased. When the set value is changed by 1, the scanning position is changed by 0.1mm.

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

NOTE: After execution of this adjustment, be sure to execute ADJ18D Copy image position and image loss adjustment (DSPF mode) and ADJ18E Copy image position and image loss adjustment (DSPF mode).

### 18-D Copy image position, image loss adjustment (RSPF mode)

### 18-E Copy image position, image loss adjustment (DSPF mode)

This adjustment must be performed in the following cases:

- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When U2 trouble occurs.
- \* When the RSPF/DSPF section is disassembled.
- \* When the RSPF/DSPF unit is replaced.



NOTE: To execute this adjustment, the following items must have been properly adjusted.

- ADJ 15 Scan image magnification ratio adjustment (RSPF/DSPF mode)
- ADJ 16B RSPF mode off-center adjustment
- ADJ 16C DSPF mode off-center adjustment
- ADJ 15A Scan image magnification ratio adjustment (Main scanning direction) (RSPF mode)
- ADJ 15C Scan image magnification ratio adjustment (Main scanning direction) (DSPF mode)
- ADJ 15B Scan image magnification ratio adjustment (Sub scanning direction) (RSPF mode)
- ADJ 15D Scan image magnification ratio adjustment (Sub scanning direction) (DSPF mode)
- ADJ 17 Print area (Void area) adjustment (Print engine section)
- ADJ 18B Document scan position adjustment (RSPF mode)
- ADJ 18C Document scan position adjustment (DSPF mode)

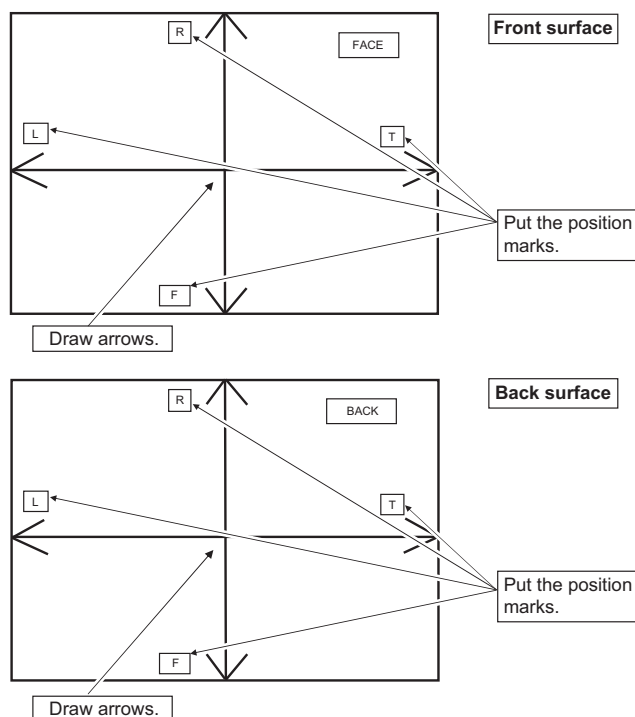
## b. Adjustment procedures

### 1) Prepare the adjustment chart.

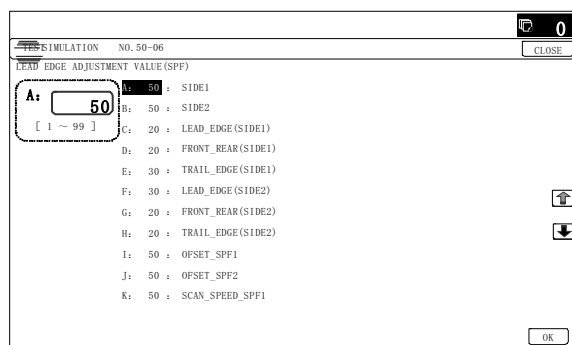
The adjustment chart can be made by the following procedures.

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

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



### 2) Enter the SIM50-6 mode.



## SIM50-6 (DSPF)

Item	Display		Content	Setting range	Default value
A	SIDE1		Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2		Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20
I	OFFSET_SPF1		RSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2		RSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		RSPF document front surface magnification ratio adjustment (Sub scan)	1 - 99	50

## (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	30

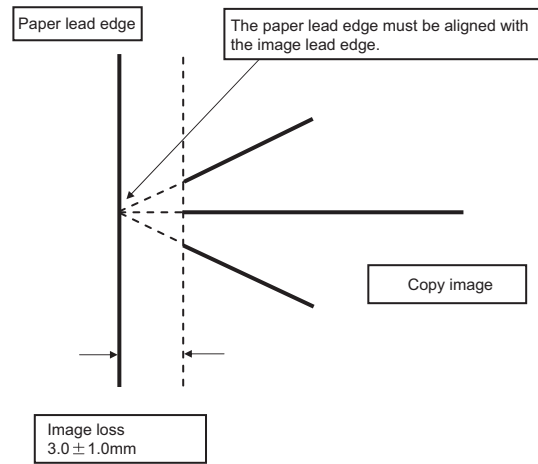
Item	Display		Content	Setting range	Default value
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	20
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	30
I	OFFSET_SPF1		RSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_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 A - H: 1 step = 0.1mm change
- \* The SPF rear edge image loss is provided for countermeasures against shades.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

#### (Lead edge image loss adjustment)

- Set the lead edge image loss adjustment values (LEAD EDGE (SIDE1/SIDE2)) on the front surface and the back surface to the following values.  
(Standard set value)  
LEAD EDGE(SIDE 1):  
30 Lead edge image loss set value (Front surface)  
LEAD EDGE(SIDE 2):  
30 Lead edge image loss set value (Back surface)  
(When the set value is increased, the lead edge image loss is increased.)  
(Change for change in the set value: 0.1mm/step)
- Make a duplex copy in 100% in the RSPF/DSPF mode. Check to confirm that the lead edge image loss is within  $3.0 \pm 1.0\text{mm}$  on the front surface and the back surface. The paper lead edge must be aligned with the presumed image lead edge.



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

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

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

SIDE1: Front surface lead edge scan position adjustment

SIDE2: Back surface lead edge scan position adjustment

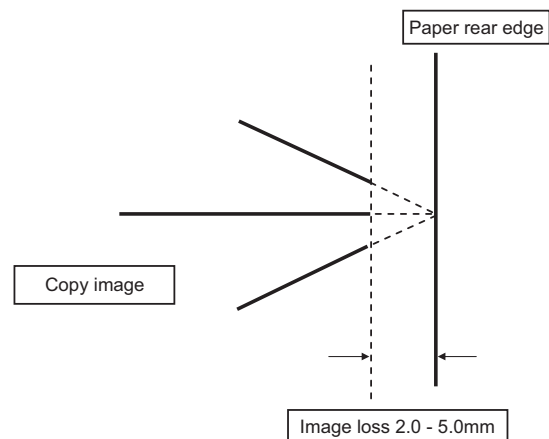
(When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)

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

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

#### (Rear edge image loss adjustment)

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



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

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

TRAIL\_EDGE (SIDE 1): Rear edge image loss adjustment value (Front surface)

TRAIL\_EDGE (SIDE 2): Rear edge image loss adjustment value (Back surface)

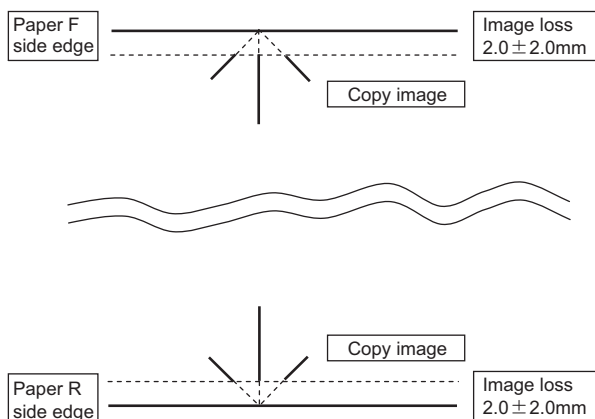
(When the adjustment value is increased, the rear edge image loss is increased.)

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

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 DSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are  $2.0 \pm 2.0\text{mm}$  on the front surface and the back surface.



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

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

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

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

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

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

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

## ADJ 19 Print lead edge image position adjustment (Printer mode) (Print engine section)

This adjustment is needed in the following situations:

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

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

- 1) Enter the simulation 50-5 mode.

10-key

EXECUTE

EXECUTE

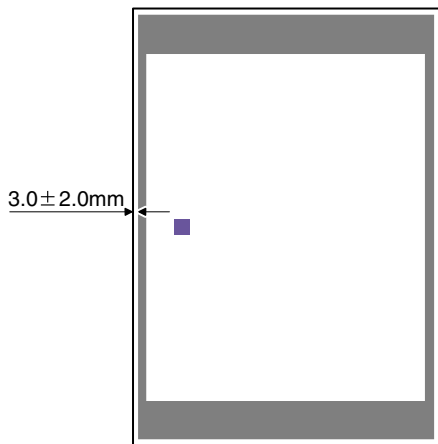
End of print

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

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
F DENB-CS2	Tray 2 rear edge void area adjustment correction value	1 - 99	50
G DENB-CS3	Tray 3 rear edge void area adjustment correction value	1 - 99	50
H DENB-CS4	Tray 4 rear edge void area adjustment correction value	1 - 99	50
I DENB-LCC	LCC rear edge void area adjustment correction value	1 - 99	50
J DENB-ADU	ADU rear edge void area adjustment correction value	1 - 99	50
K MULTI COUNT	Number of print	1 - 999	1

Display/Item			Content		Setting range		Default
L	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
M	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		No		1	

- 3) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.  
Standard adjustment value:  $3.0 \pm 2.0\text{mm}$



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

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

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

## ADJ 20 Copy color balance/density adjustment

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

- \* After completion of this adjustment, the printer color balance/density adjustment must be executed.
- \* Requisite conditions before execution of the copy color balance/density adjustment  
Before execution of the copy color balance/density adjustment, check to insure that the adjustments which affect the copy color balance/density adjustment have been completed.  
The importance levels of them are shown below.

(The following items affect the copy color balance/density adjustment, and must be checked and adjusted before execution of the image quality adjustments.)

- 1) The following adjustment items must be adjusted properly.

Job No	Adjustment Item List			Simulation
ADJ 5	Image density sensor, image registration sensor adjustment	ADJ 5A	Color image sensor calibration	44-13
		ADJ 5B	Color image density sensor, black image density sensor, image registration sensor adjustment	44-2
ADJ 6	Image skew adjustment (LSU unit)			64-1/61-4
ADJ 7	OPC drum phase adjustment	ADJ 7A	OPC drum phase adjustment (Auto adjustment)	50-22
		ADJ 7B	OPC drum phase adjustment (Manual adjustment)	44-31
ADJ 10	Image registration adjustment (Print engine section)	ADJ 10A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)	50-22
		ADJ 10B	Image registration adjustment (Main scanning direction) (Manual adjustment)	50-20
		ADJ 10C	Image registration adjustment (Sub scanning direction) (Manual adjustment)	50-21

(The following items affect the copy color balance/density adjustment, but it is not required to adjust them frequently. When, however, a trouble occurs, check and adjust them.)

- 1) The following items must be adjusted properly.

Job No	Adjustment item list			Simulation
ADJ 1	Adjust the developing doctor gap			
ADJ 2	Adjust the developing roller main pole position			
ADJ 4	Adjusting high voltage values	ADJ 4A	Adjust the main charger grid voltage	8-2
		ADJ 4B	Adjust the developing bias voltage	8-1
		ADJ 4C	Transfer voltage adjustment	8-6
ADJ 12	Scan image focus adjustment (CCD unit position adjustment)			
ADJ 20A	CCD gamma adjustment (CCD calibration)			63-3

### (Relationship between the servicing job contents and the copy color balance/density adjustment)

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

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

There are following four, major cases.

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

## (2) Copy color balance and density check

(Note)

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)

Make a copy of the gray test chart (UKOG-0162FCZZ) and a copy of the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11), 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-0317FCZZ/UKOG-0317FC11). 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

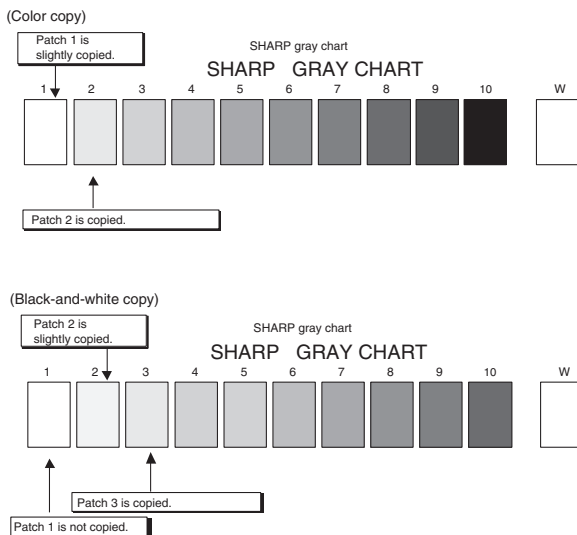
To check the density, use the gray test chart (UKOG-0162FCZZ). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

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)]

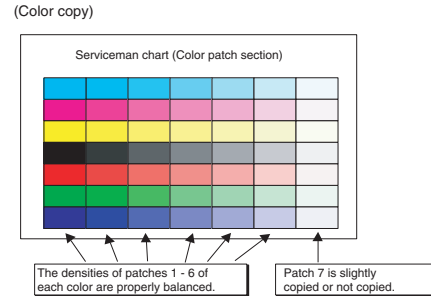
In the copy density check with the gray test chart, check to insure the following conditions.

NOTE: For the color (gray) balance, use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) to check.



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

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



## 20-A (1) CCD gamma adjustment (CCD calibration) (Normal document copy mode)

This adjustment is needed in the following situations:

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

### (1) Note before adjustment

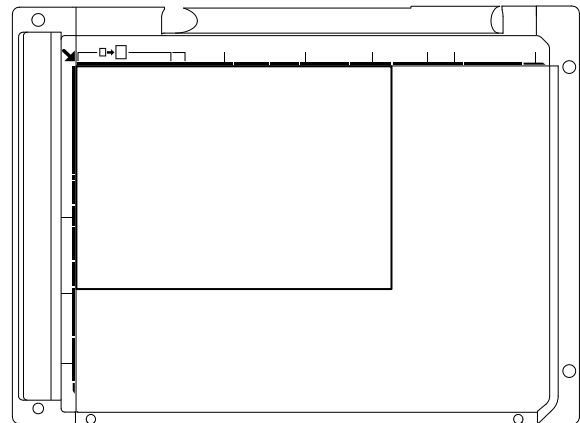
- 1) Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.  
(If there is some dust and dirt, wipe and clean with alcohol.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and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

If they are dirty, clean them.

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

### (2) Adjustment procedures

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

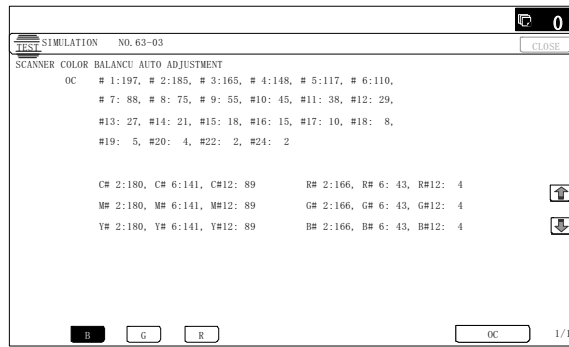


If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

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

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

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



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

## 20-A (2) CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

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

### (1) Note before adjustment

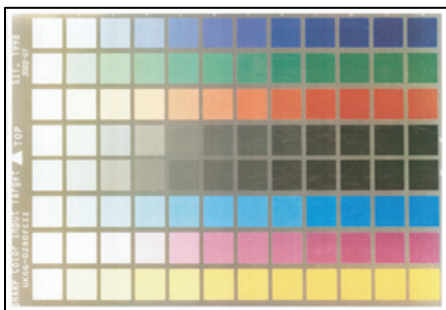
- 1) Check to insure that there is no dirt or dust on the SPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.

If they are dirty, clean them.

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

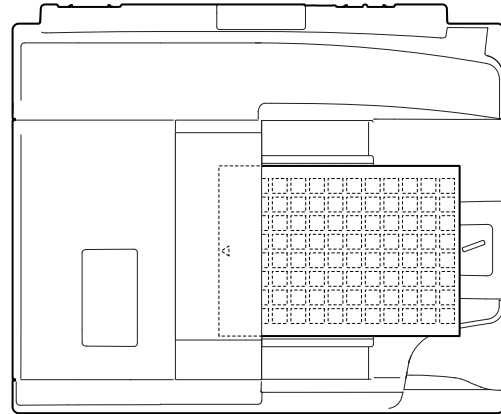
NOTE:

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



## (2) Adjustment procedures

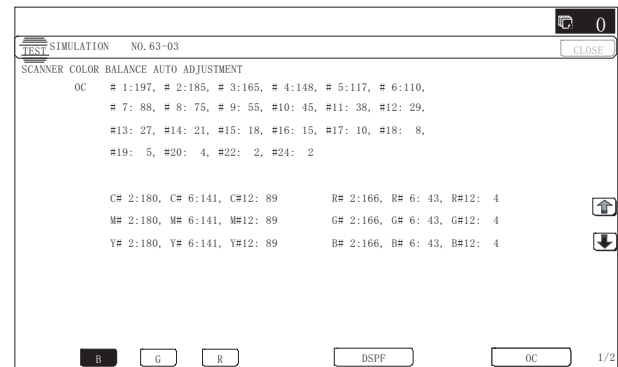
- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) face-down in the DSPF paper feed tray.



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

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

- 2) Enter the SIM 63-03 mode.



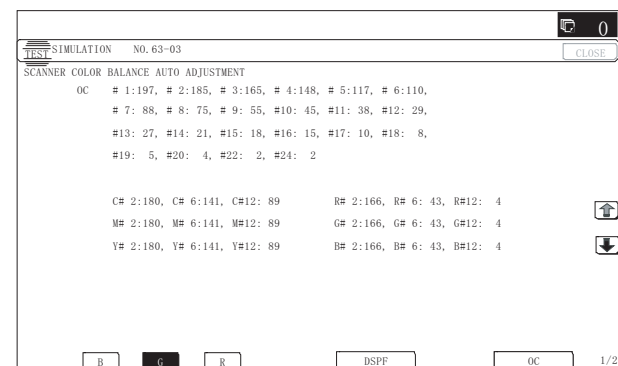
- 3) When a color button is selected, the adjustment value of the selected color is displayed.

- \* When [B] (Blue), [G] (Green), or [R] (Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.

- \* Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.

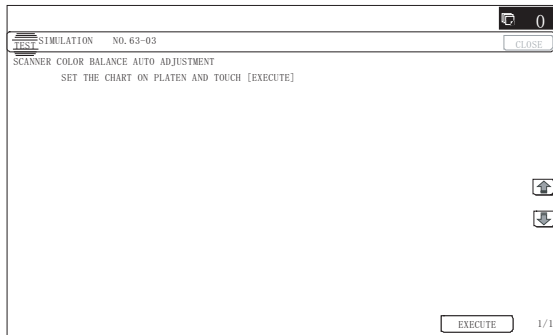
- \* If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

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



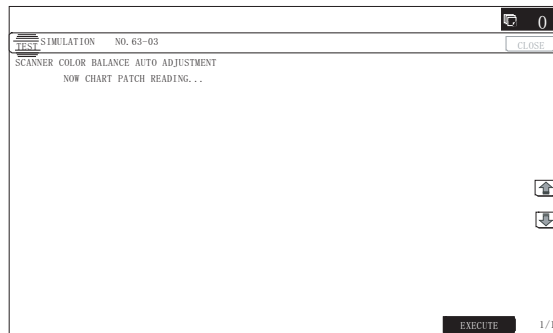


- 4) When [DSPF] button is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



- 5) Press [EXECUTE] button and it is highlighted and the color auto adjustment is executed.

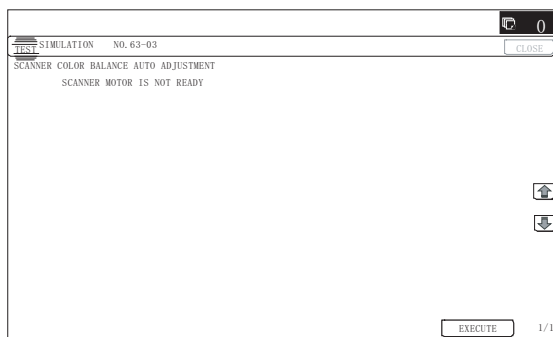
\* When [EXECUTE] button is pressed during the automatic adjustment, the automatic adjustment is interrupted.



- 6) After normal completion, the result of calculation is displayed in the initial screen.

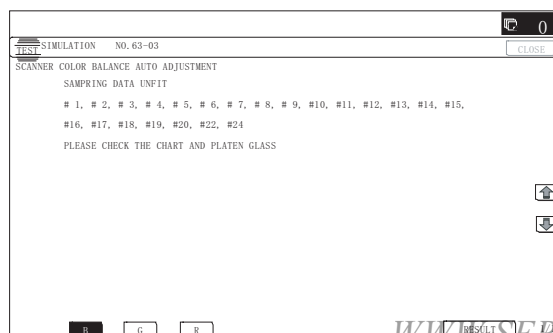
\* When an error occurs in execution, the following screen is displayed.

When [CA] key is pressed, the simulation is terminated. When [SYSTEM SETTINGS] key is pressed, the display returns to the sub number entry screen.



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

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



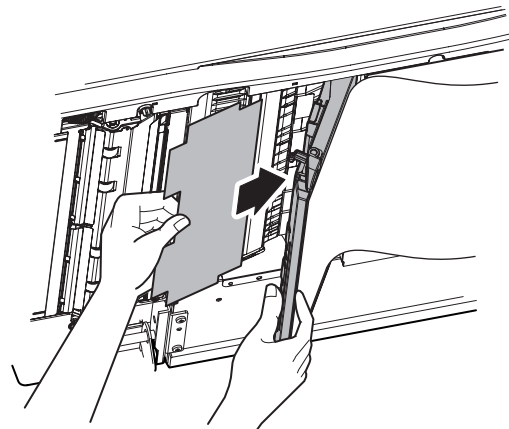
\* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] button is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)



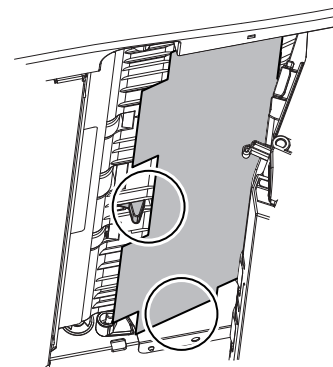
## 20-A (3)

### Shading adjustment (DSPF mode)

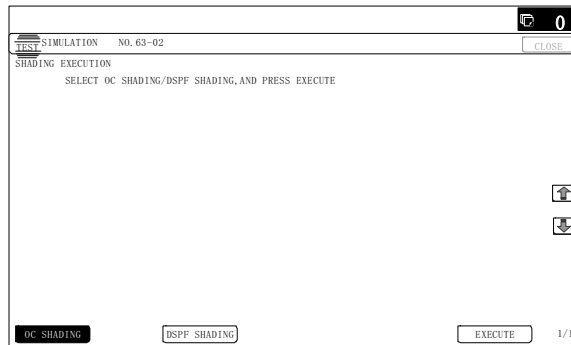
- 1) Open the lower door, and insert the white reference sheet DSPF (PSHEP5668FCZZ). Close the lower door.



\* When inserting the white reference sheet DSPF, insert it straight along the rear edge frame so that the rear edge of the white reference sheet DSPF comes at the root of the actuator as shown in the mark O.



- 2) Enter the simulation 63-2 mode.
- 3) Select, [DSPF SHADING].



- 4) When [EXECUTE] key is pressed, it is highlighted and shading is started.
  - \* When the operation is executed, the document is transported by about 25mm, and shading data are obtained during transport.
  - \* During execution, "SHADING EXECUTING..." is displayed.
  - \* When [EXECUTE] key is pressed during execution, the operation is interrupted.
  - \* When shading is completed normally, [EXECUTE] key returns to the normal display and "COMPLETED" is displayed.
  - \* When [SYSTEM SETTINGS] key is pressed during other than printing, the display returns to the sub number entry screen.

#### <Descriptions of keys>

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

#### <Result display>

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

## 20-B Copy color balance adjustment (Auto adjustment)

This adjustment is needed in the following situations:

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

### a. General

The color balance adjustment (auto adjustment) is used to adjust the copy density of Cyan, Magenta, Yellow, and Black with SIM 46-24 or the user program 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.

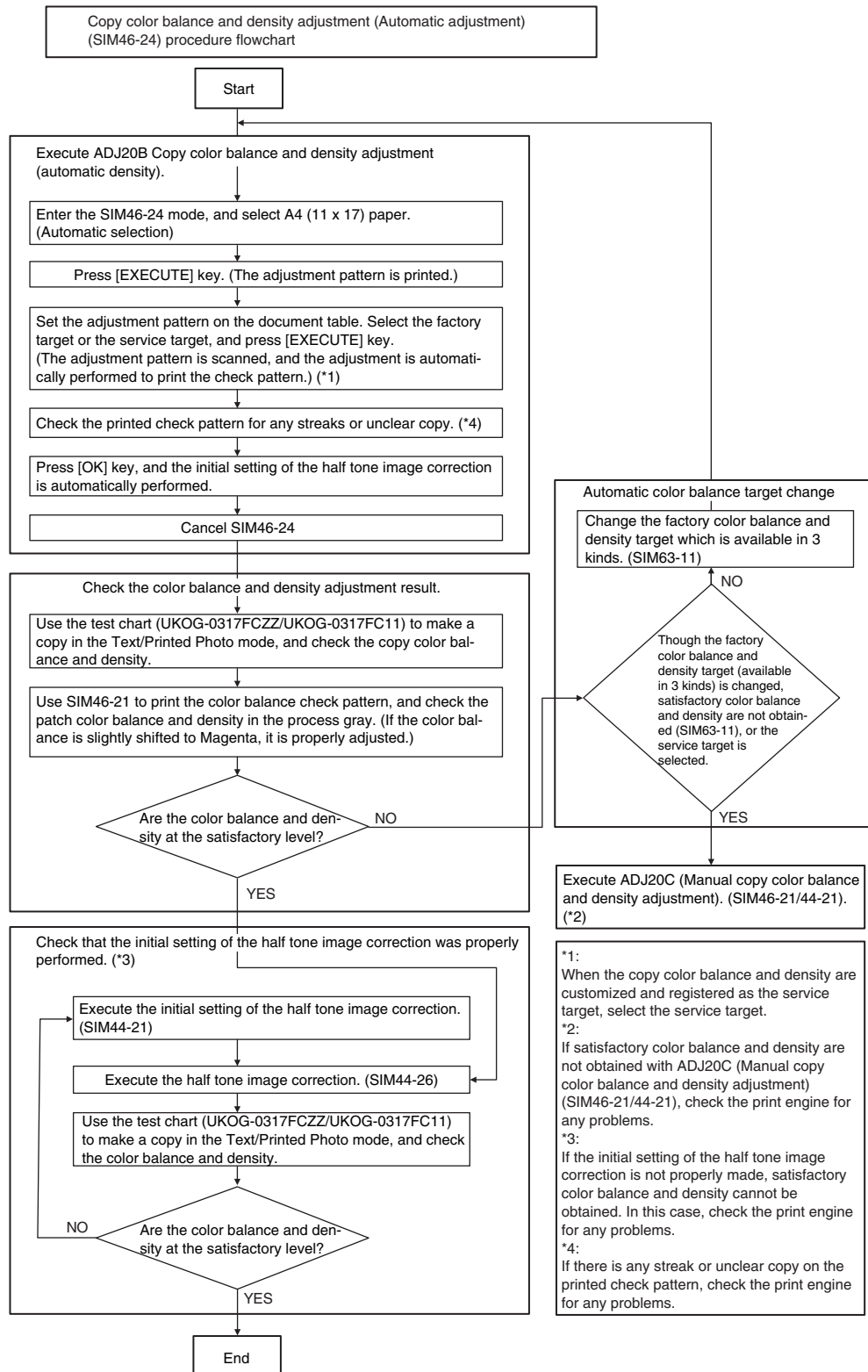
### b. Note for execution of the color balance adjustment (Auto adjustment)

- 1) The print engine section must have been adjusted properly.
- 2) The CCD gamma adjustment must have been adjusted properly.
- 3) Be sure to use the specified paper for color.

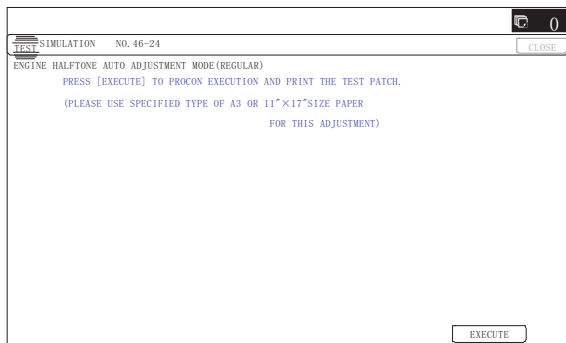


### c. Adjustment procedure

(Auto color balance adjustment by the serviceman)



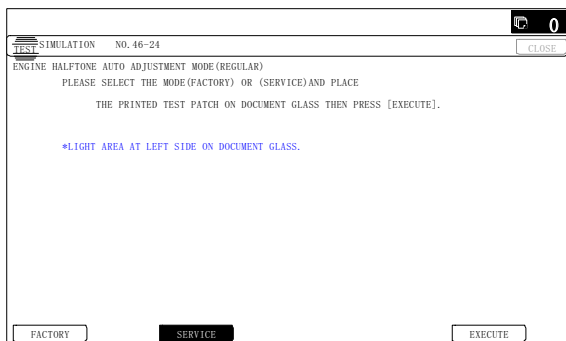
- 1) Enter the SIM 46-24 mode.



- 2) Press [EXECUTE] key. (A3 or 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) Press [FACTORY] key on the operation panel, 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.

Remark:

(Descriptions on [FACTORY] key and [SERVICE] key in the color balance auto adjustment menu.)

There are two kinds of the gamma target for the color balance auto adjustment; Factory and Service.

[FACTORY] key and [SERVICE] key are used to select one of the above two.

Factory target color balance: Standard color balance (It can be selected from the three kinds of fixed color balances with SIM 63-11.)

Service target color balance: The color balance can be customized according to the user's request. (Variable)

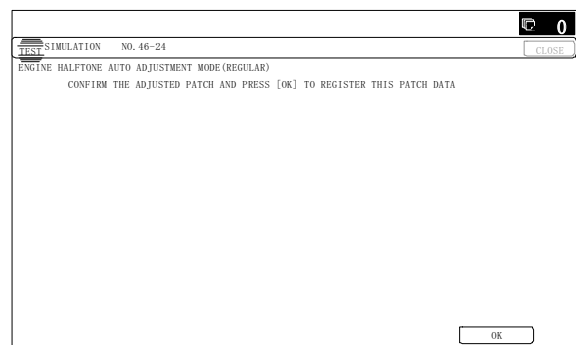
When shipping, the service target gamma data and the factory target gamma data are the same.

Both are set to the standard color balance when shipping.

For the service target, the customized color balance gamma can be registered with SIM 63-7.

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

According to data of this adjustment, the initial setting of the half tone image correction is performed.

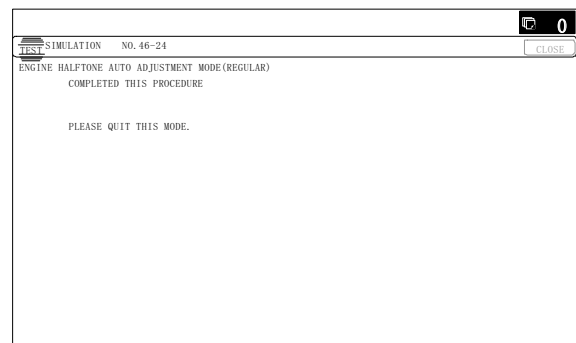


Remark:

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

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

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

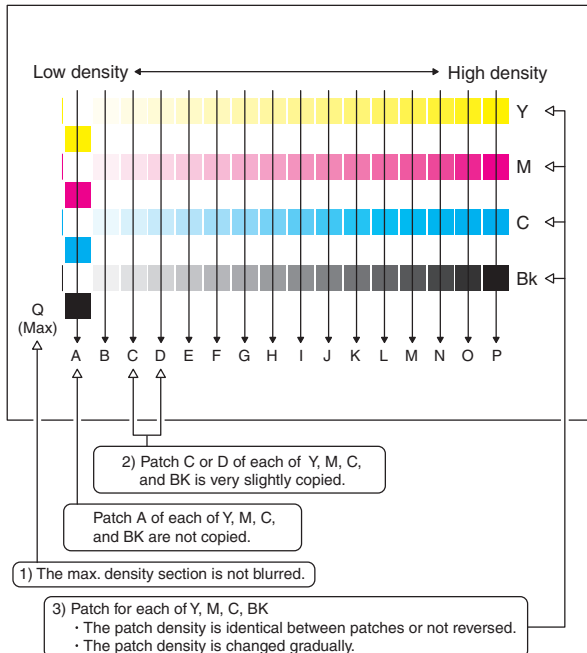


6) Check the color balance and density.

There are following three methods in the color balance and density check.

(Method 1)

Check to insure that the printed color balance check patch image is within the following specifications.



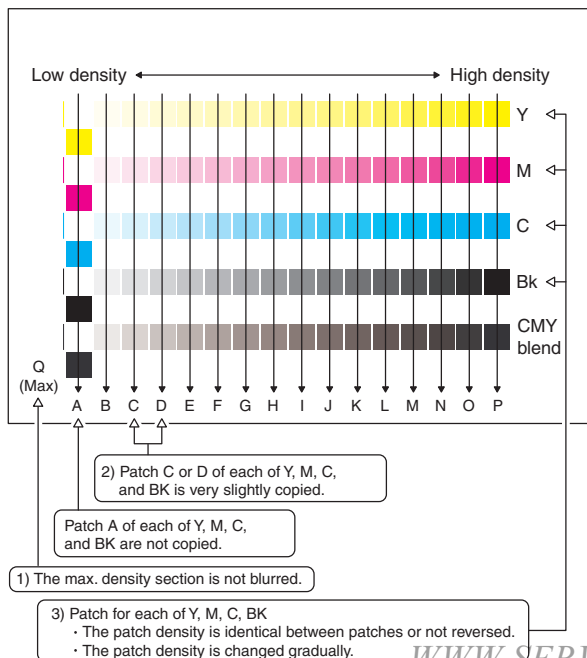
The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

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.

(Method 2)

By printing the color balance adjustment sheet with SIM 46-21 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



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.)

(Method 3)

Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) 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.)

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 (ADJ 20C).

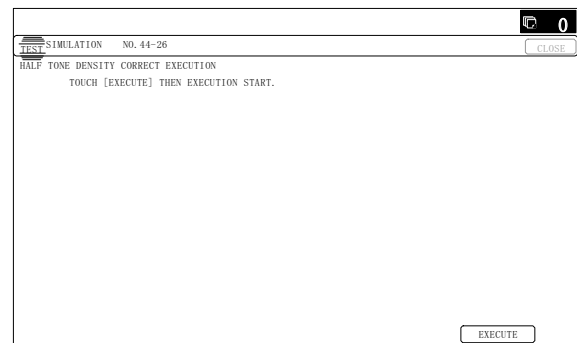
Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 20C).

7) Use SIM44-26 to execute the half tone image correction.

(Forcible execution)

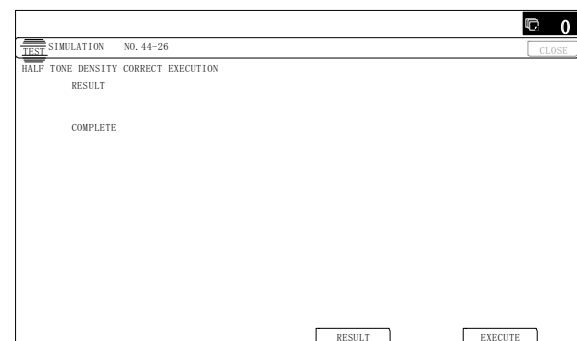
Enter the SIM44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.

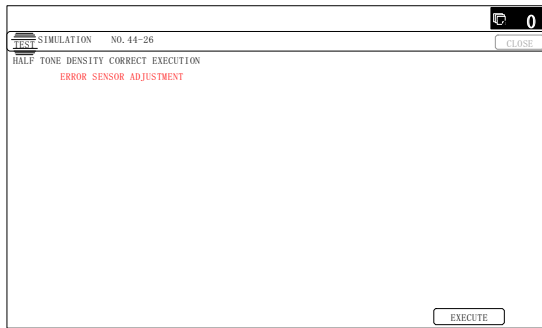


It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



(Abnormal end (Auto transition))



After completion of the operation, the simulation is canceled.

- 8) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) 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 half tone image correction. (SIM 44-21)
- 10) Execute the half tone image correction. (Forcible execution) (SIM44-26)
- 11) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed Photo mode (Manual) to check the copy 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 and repair or perform proper treatments, and try all the procedures of the print image adjustment from the beginning.

If the automatic adjustment cannot obtain satisfactory results of the copy color balance and density, use SIM 46-21 (ADJ 20C) (Manual adjustment).

## 20-C Copy color balance adjustment (Manual adjustment)

This adjustment is needed in the following situations:

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

### a. General

The color balance adjustment (Manual adjustment) is used to adjust the copy density (15 point for each color) 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.

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

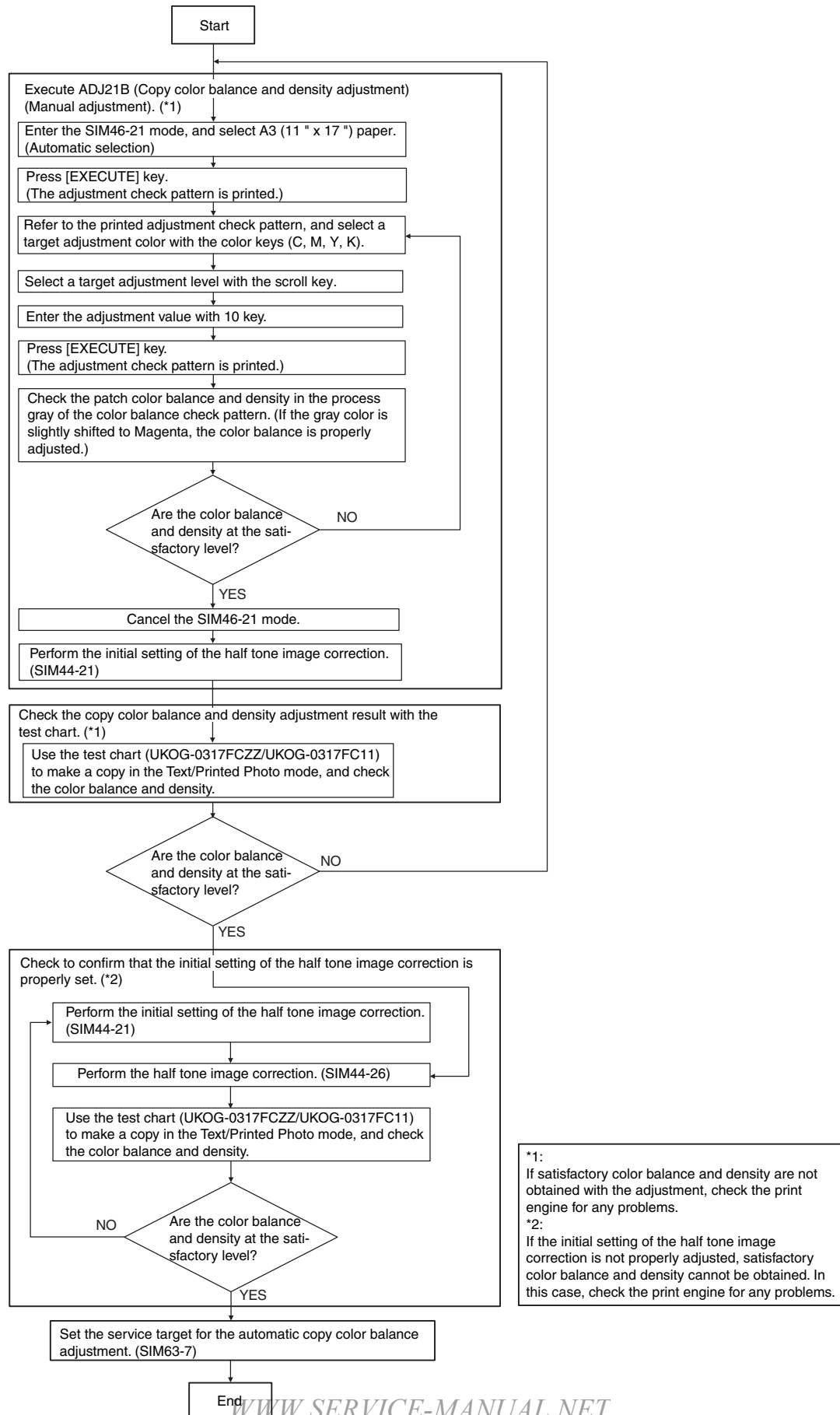
If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

### b. Note for the color balance adjustment (Manual adjustment)

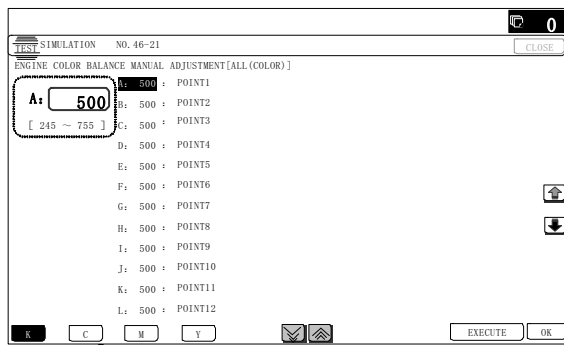
- 1) The print engine section must have been properly adjusted.
- 2) The CCD gamma must have been properly adjusted.
- 3) Set the color patch image adjustment pattern on the document table, and place 5 sheet of white paper on it.
- 4) Be sure to use the specified paper for color.

### c. Adjustment procedure

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



- 1) Enter the SIM46-21 mode.



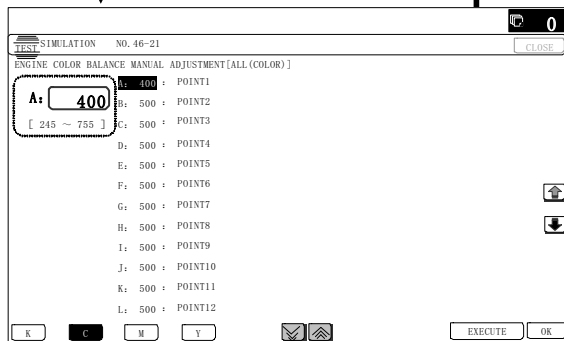
C

10-key

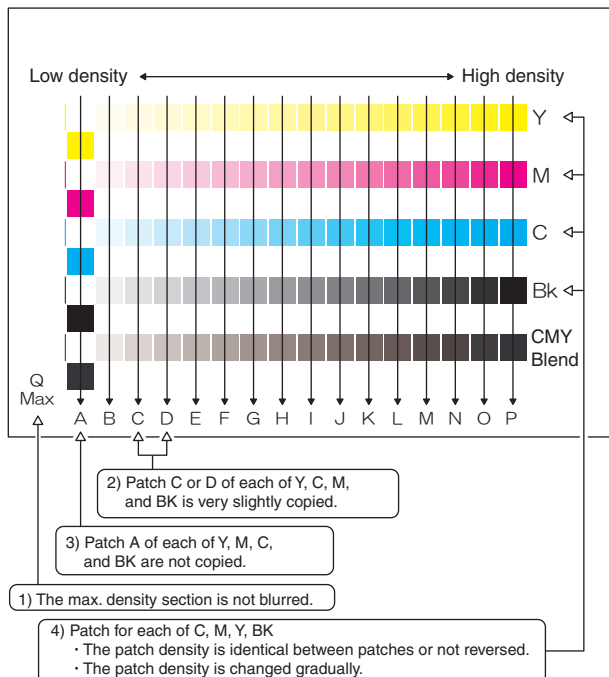
EXECUTE

EXECUTE

End of print



- 2) Press [EXECUTE] key. (A3 or 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.

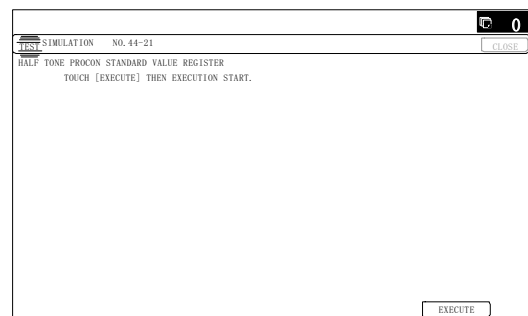
If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. If the color balance of the adjustment pattern printed in this mode is slightly shifted to Magenta, it is converted into the natural gray color balance by 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 245 - 755 (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 (MAX) to a same level collectively. Then, adjust each patch density individually. This is an efficient way of adjustment.

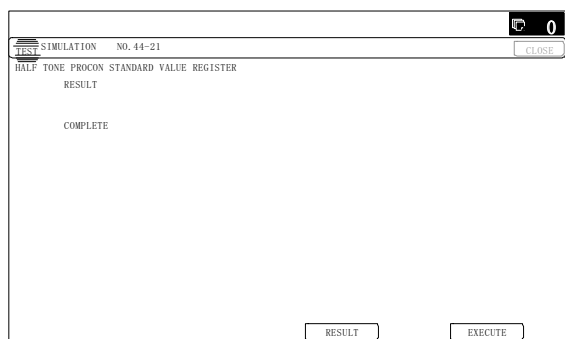
Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

- 6) Make a copy of the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) 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. (Execute the initial setting of the half tone image correction.)

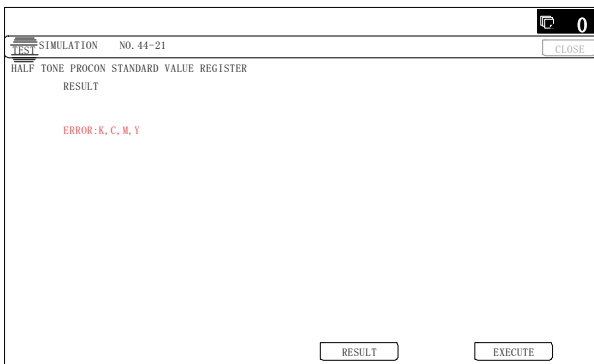


It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



(Abnormal end (Auto transition))



After completion of the operation, the simulation is canceled.

This procedure is to save the copy color balance adjustment data as the reference data for the half tone correction.

Immediately after execution of ADJ 20C (Color balance adjustment, Manual) with SIM 46-21, be sure to execute this procedure.

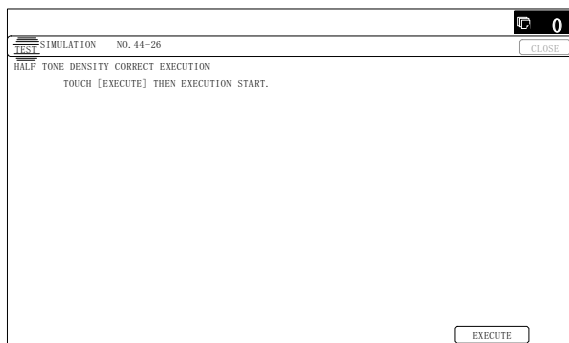
When ADJ 20B (Color balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

When [EXECUTE] key is pressed, it is highlighted and the operation is started.

- 8) Use SIM 44-26 to execute the half tone image correction. (Forcible execution)

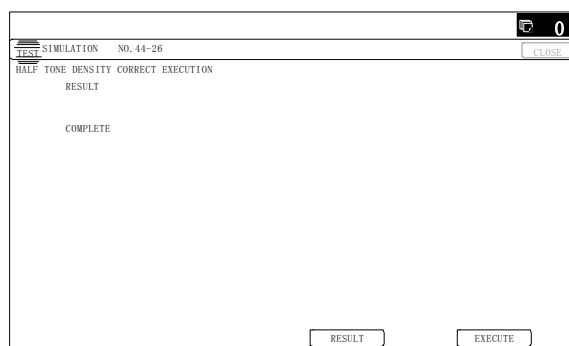
Enter the SIM 44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.

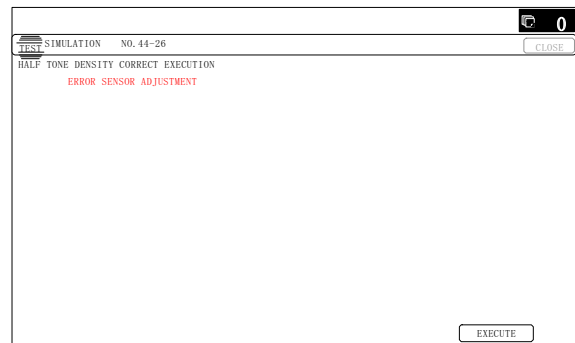


It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



(Abnormal end (Auto transition))



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.

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

(Gamma setting of auto color balance adjustment service color balance target)

#### 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.

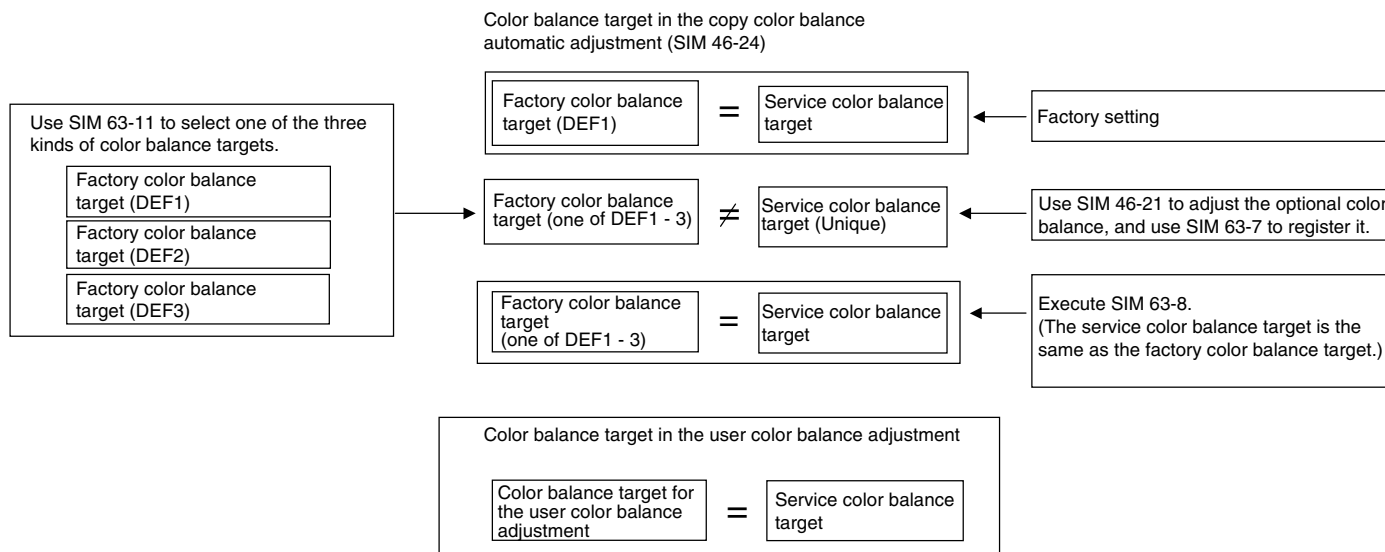
This adjustment is required in the following cases.

- \* When the copy color balance/density adjustment (manual adjustment) is executed with SIM 46-21).
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.
- \* When the user requests for customizing the color balance.
- \* When the service color balance target gamma is judged as improper.
- 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

Type		Descriptions
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 (SIM 46-24)

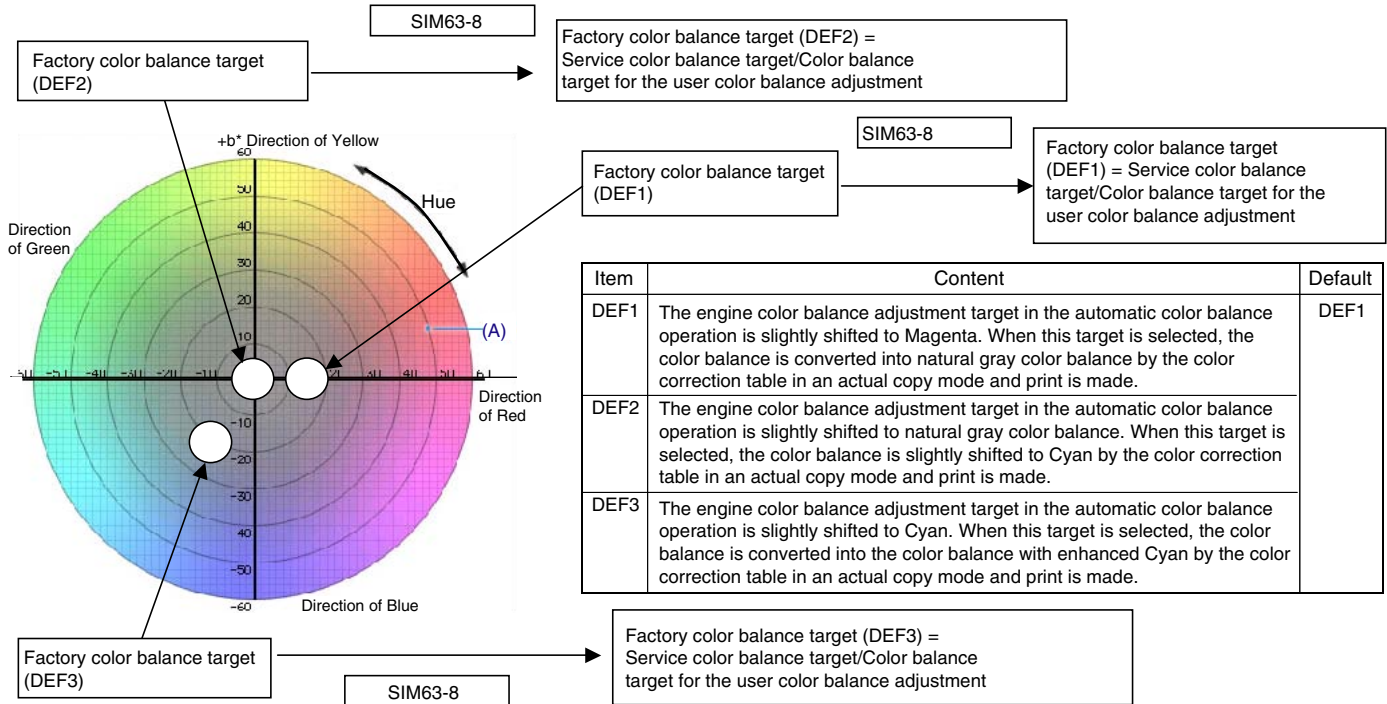




- Factory target in the copy color balance adjustment (SIM 46-24)

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)



- Service color balance target in the copy color balance adjustment (SIM 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 (SIM 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.

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

It is recommendable to keep the printed adjustment pattern 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 are basically 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 correctness of the service color balance target data can be judges as follows.

When result of the color valance adjustment (Auto) with selecting the service color balance target in SIM 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

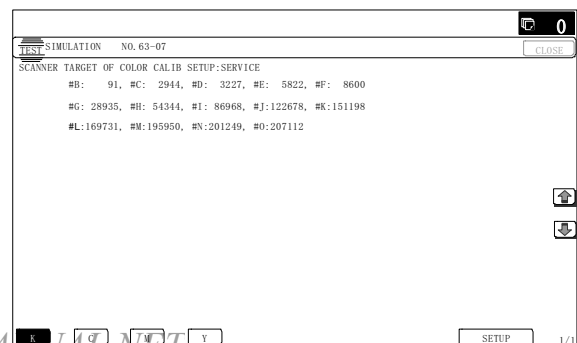
## b. Setting procedure

(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 two sheets of the color patch image (adjustment pattern).

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) (ADJ 20C) on the document table.

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

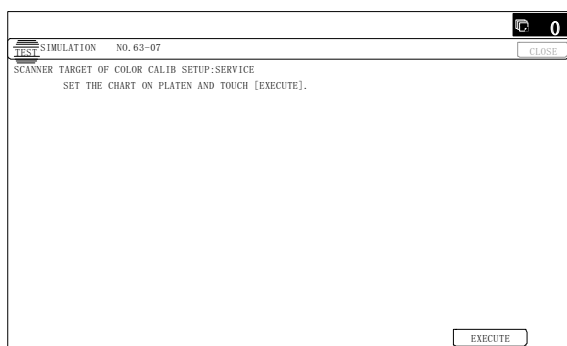
(When the color patch image (adjustment pattern) is printed by SIM 64-7, set the item B (PROC ADJ) to "0 (YES)" and press [EXECUTE] key to print.)

A 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).

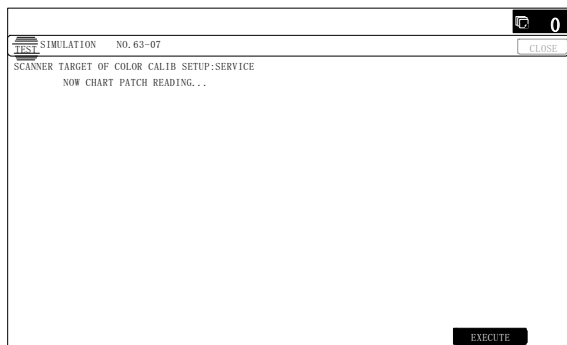
If the color balance could not be adjusted satisfactorily with SIM 46-21 (Color balance adjustment (Manual)), do not execute SIM 63-7 to register the service color balance target data.

- 5) Press [EXECUTE] key.



The color patch image (adjustment pattern) is read.

- 6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



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 - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

In case of an abnormality, repair the problem and try again.

- 7) Press [OK] key.

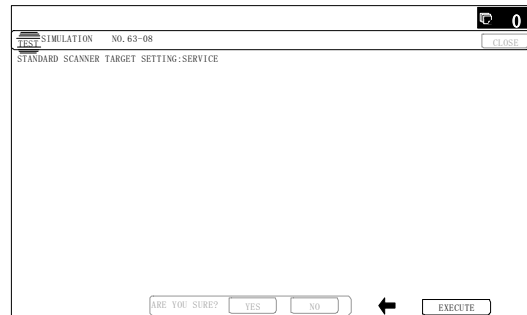
The color balance (gamma) of the color patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(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.

- 3) Press [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.

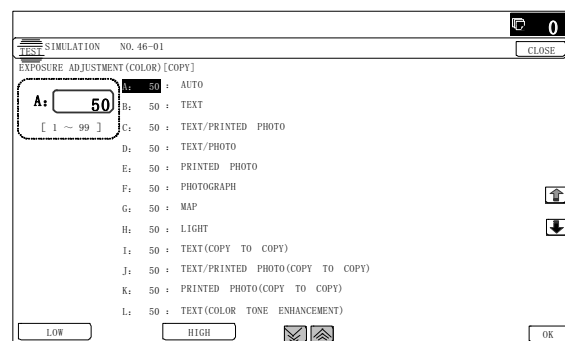
## 20-D Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust)

This adjustment is needed in the following situations:

- \* 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.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

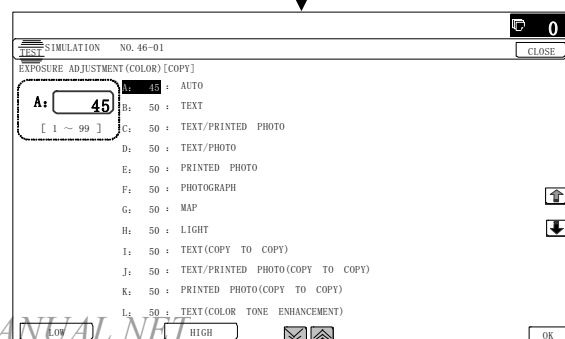
The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

- 1) Enter the SIM 46-1 mode.



10-key

OK



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

Display/Item	Content	Setting range	Default
A AUTO	Auto	LOW 1 - 99 HIGH 1 - 99	50
B TEXT	Text	LOW 1 - 99 HIGH 1 - 99	50
C TEXT/PRINTED PHOTO	Text/Printed Photo	LOW 1 - 99 HIGH 1 - 99	50
D TEXT/PHOTO	Text/Photograph	LOW 1 - 99 HIGH 1 - 99	50
E PRINTED PHOTO	Printed Photo	LOW 1 - 99 HIGH 1 - 99	50
F PHOTOGRAPH	Photograph	LOW 1 - 99 HIGH 1 - 99	50
G MAP	Map	LOW 1 - 99 HIGH 1 - 99	50
H LIGHT	Light document	LOW 1 - 99 HIGH 1 - 99	50
I TEXT (COPY TO COPY)	Text (Copy document)	LOW 1 - 99 HIGH 1 - 99	50
J TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW 1 - 99 HIGH 1 - 99	50
K PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW 1 - 99 HIGH 1 - 99	50
L TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
M TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
N TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
O PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
P PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
Q MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	LOW 1 - 99 HIGH 1 - 99	50
R SINGLE COLOR	Single color	LOW 1 - 99 HIGH 1 - 99	50
S SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW 1 - 99 HIGH 1 - 99	50
T TWO COLOR	Two-color (Red/Black) copy	LOW 1 - 99 HIGH 1 - 99	50
U TWO COLOR (COPY TO COPY)	Two-color (Red/Black) copy (Copy document)	LOW 1 - 99 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) Press [CLOSE] key in this simulation mode to jump to the normal copy mode. Make a copy and check the adjustment result. Switch the simulation mode and the normal copy mode alternately, and adjust and check the adjustment result. Repeat switching the adjustment mode (SIM 46-1) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

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

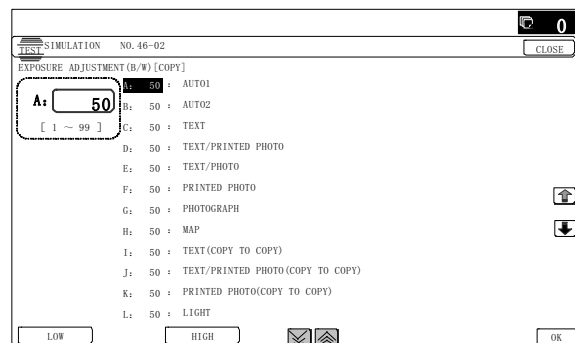
## 20-E Copy density adjustment (Each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust)

This adjustment is needed in the following situations:

- \* When there is necessity to change copy density of the low density and high density part at each copy mode 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.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

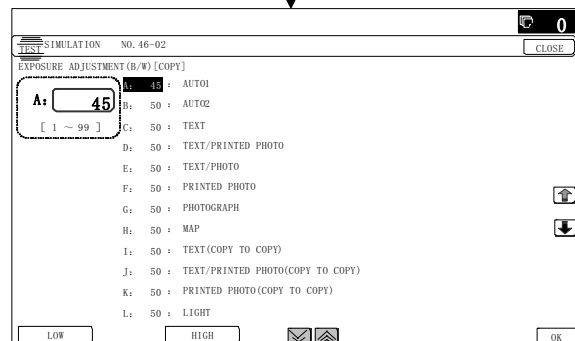
The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

- 1) Enter the SIM 46-2 mode.



10-key

OK



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

Display/Item	Content		Setting range	Default
A	AUTO1	Auto 1	LOW 1 - 99	50
		HIGH	1 - 99	50
B	AUTO2	Auto 2	LOW 1 - 99	50
		HIGH	1 - 99	50
C	TEXT	Text	LOW 1 - 99	50
		HIGH	1 - 99	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW 1 - 99	50
		HIGH	1 - 99	50
E	TEXT/PHOTO	Text/Photograph	LOW 1 - 99	50
		HIGH	1 - 99	50
F	PRINTED PHOTO	Printed Photo	LOW 1 - 99	50
		HIGH	1 - 99	50
G	PHOTOGRAPH	Photograph	LOW 1 - 99	50
		HIGH	1 - 99	50
H	MAP	Map	LOW 1 - 99	50
		HIGH	1 - 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW 1 - 99	50
		HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW 1 - 99	50
		HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW 1 - 99	50
		HIGH	1 - 99	50
L	LIGHT	Light document	LOW 1 - 99	50
		HIGH	1 - 99	50

- 3) Enter the adjustment value with 10-key and press [OK] key.
- When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.
- When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.
- 4) Press [CLOSE] key in this simulation mode to jump to the normal copy mode. Make a copy and check the adjustment result. Switch the simulation mode and the normal copy mode alternately, and adjust and check the adjustment result. Repeat switching the adjustment mode (SIM 46-1) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.
- To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

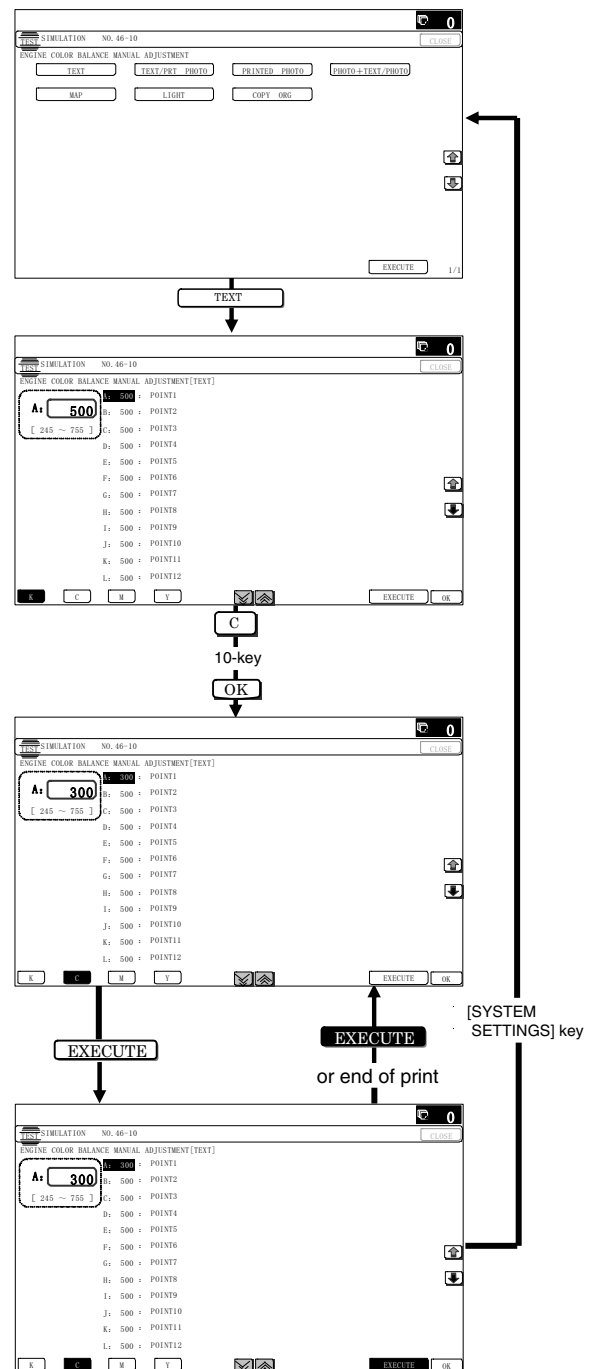
## 20-F Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required)

This adjustment is needed in the following situations:

- \* When there is necessity to change the color balance and gamma by each the copy mode individually.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

This is to adjust the color balance at each density level in each color copy mode. Normally individual adjustments are not required. This adjustment is executed when there is a 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	Point 1	245 - 755
B	POINT2	Point 2	245 - 755
C	POINT3	Point 3	245 - 755
D	POINT4	Point 4	245 - 755
E	POINT5	Point 5	245 - 755
F	POINT6	Point 6	245 - 755
G	POINT7	Point 7	245 - 755
H	POINT8	Point 8	245 - 755
I	POINT9	Point 9	245 - 755
J	POINT10	Point 10	245 - 755

Item/Display		Density level (Point)	Adjustment value range	Default
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

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

## 20-G Monochrome copy density/gamma adjustment (Each monochrome copy mode) (Normally not required)

This adjustment is needed in the following situations:

- \* When there is necessity to change the gamma in monochrome mode.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

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

- 1) Enter the SIM 46-16 mode.

The image shows two screenshots of the 'SIMULATION NO. 46-16' screen. The top screenshot shows the 'ENGINE GRAY BALANCE MANUAL ADJUSTMENT[ALL(B/W)]:PG' screen with 'A: 500' and a range of '[ 373 ~ 627 ]'. The bottom screenshot shows the same screen after adjustment, with 'A: 450'. Arrows indicate the '10-key EXECUTE' and 'EXECUTE or end of print' actions.

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

Item/Display		Density level (Point)	Adjustment value range	Default
A	POINT1	Point 1	373 - 627	500
B	POINT2	Point 2	373 - 627	500
C	POINT3	Point 3	373 - 627	500
D	POINT4	Point 4	373 - 627	500
E	POINT5	Point 5	373 - 627	500
F	POINT6	Point 6	373 - 627	500
G	POINT7	Point 7	373 - 627	500
H	POINT8	Point 8	373 - 627	500
I	POINT9	Point 9	373 - 627	500
J	POINT10	Point 10	373 - 627	500
K	POINT11	Point 11	373 - 627	500
L	POINT12	Point 12	373 - 627	500
M	POINT13	Point 13	373 - 627	500
N	POINT14	Point 14	373 - 627	500
O	POINT15	Point 15	373 - 627	500
P	POINT16	Point 16	373 - 627	500
Q	POINT17	Point 17	373 - 627	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 practically to make a copy and check it.

## 20-H Condition setting of document density reading operation (exposure) in the monochrome auto copy mode (Normally not required)

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 adjustment is required in the following cases.

- \* When a copy with correct density is not obtained in monochrome auto mode.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 1) Enter the SIM 46-19 mode.

The image shows the 'SIMULATION NO. 46-19' screen titled 'EXPOSURE MODE SETUP(B/W-AE)'. It contains several settings: AE\_MODE (MODE1, MODE2), AE\_STOP\_COPY (REALTIME, STOP), AE\_STOP\_FAX (OFF, ON), AE\_STOP\_SCAN (REALTIME, STOP), AE\_FILTER (SOFT, NORMAL), and AE\_WIDTH (FULL, PART). The current settings are: AE\_MODE: MODE1, AE\_STOP\_COPY: REALTIME, AE\_STOP\_FAX: OFF, AE\_STOP\_SCAN: REALTIME, AE\_FILTER: SOFT, and AE\_WIDTH: FULL.

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

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

NOTE: MODE1:

High gamma (Improves the image contrast)

MODE2:

Normal gamma

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:

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

AE WIDTH FULL:

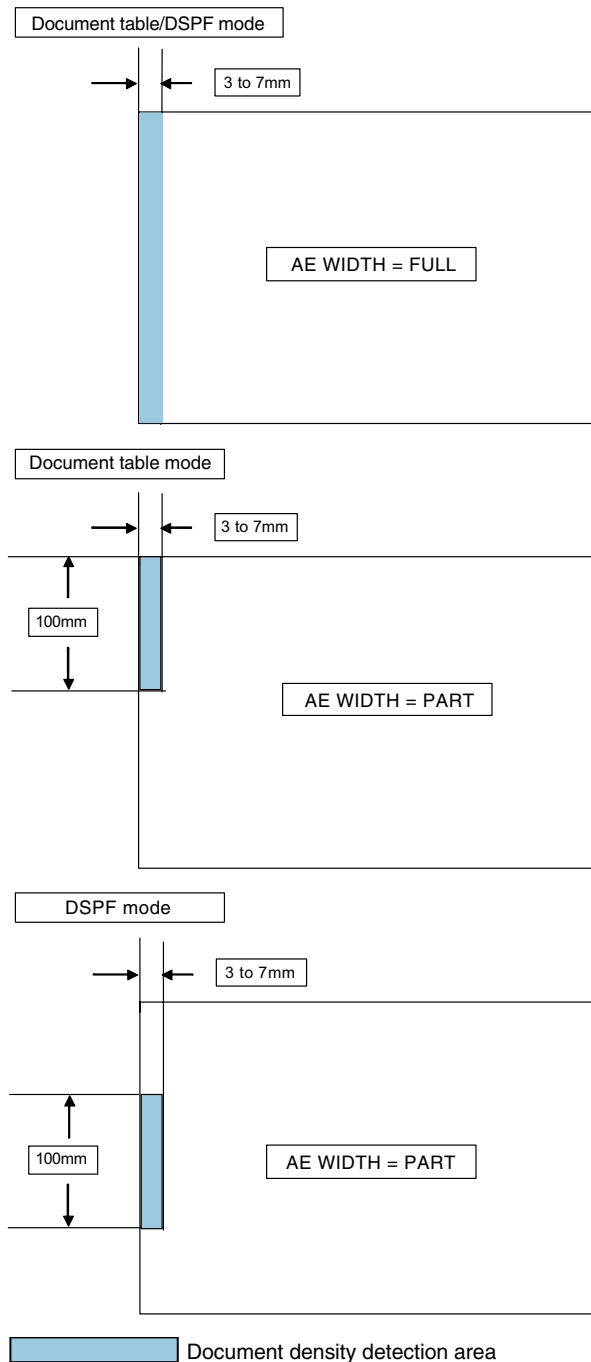
Document density reading area in monochrome auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

AE WIDTH PART:

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

Operation in monochrome auto copy mode:

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



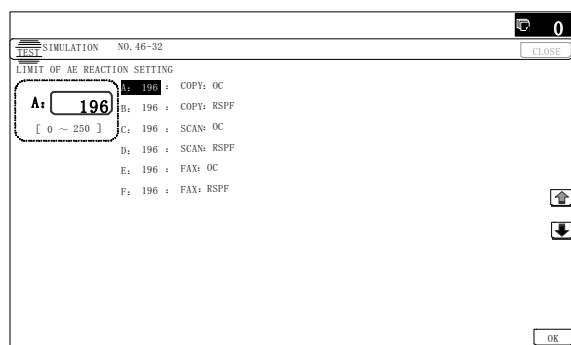
## 20-I Document background density reproducibility adjustment in the monochrome auto copy mode (Normally unnecessary to adjust)

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

This adjustment is required in the following cases.

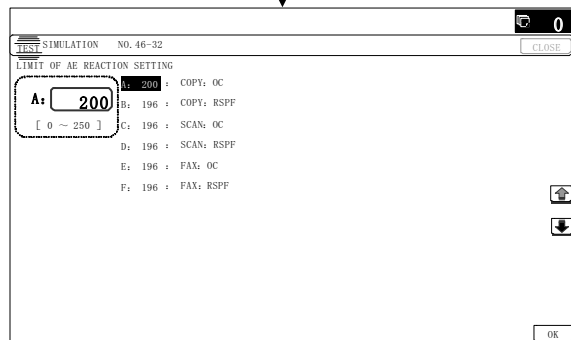
- \* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When there is request from the user.

- 1) Enter the SIM 46-32 mode.



10-key

OK



- 2) Select the adjusting mode "COPY: OC", "COPY: RSPF" 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.

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

## 20-J Copy density adjustment for low density section (Each copy mode) (Normally unnecessary to adjust)

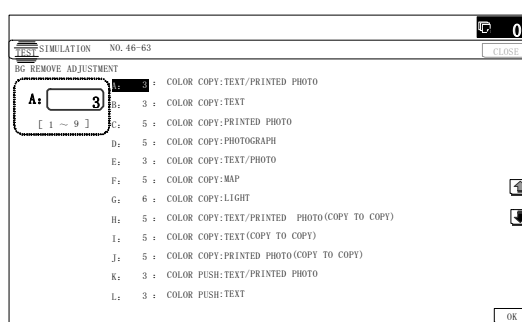
Use to adjust image density low density area in copy mode.

When there is a desire to no reproducing the document background or reproducing the low density image, adjust this.

This adjustment is required in the following cases.

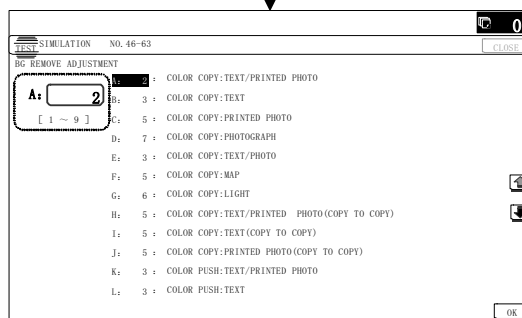
- \* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When there is request from the user.

- 1) Enter the SIM 46-63 mode.



10-key

OK



- 2) Select the 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
B	COLOR COPY : TEXT	Text (color copy)	1 - 9
C	COLOR COPY : PRINTED PHOTO	Printed photo (color copy)	1 - 9
D	COLOR COPY : PHOTOGRAPH	Photograph (color copy)	1 - 9
E	COLOR COPY : TEXT/PHOTO	Text/Photograph (color copy)	1 - 9
F	COLOR COPY : MAP	map (color copy)	1 - 9
G	COLOR COPY : LIGHT	Light document (color copy)	1 - 9
H	COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Text print (color copy)	1 - 9
I	COLOR COPY : TEXT (COPY TO COPY)	Copy document, Text (color copy)	1 - 9
J	COLOR COPY : PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (color copy)	1 - 9

Display/Item		Content	Set value	Default
K	COLOR PUSH:TEXT/ PRINTED PHOTO	Text print (color PUSH)	1 - 9	3
L	COLOR PUSH:TEXT	Text (color PUSH)	1 - 9	3
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	3
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.  
If a satisfactory result is not obtained, adjust by ADJ20D and ADJ20E.

## 20-K Color copy text, line image edge gamma, density adjustment / Text · Map mode gamma, density adjustment

### (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.

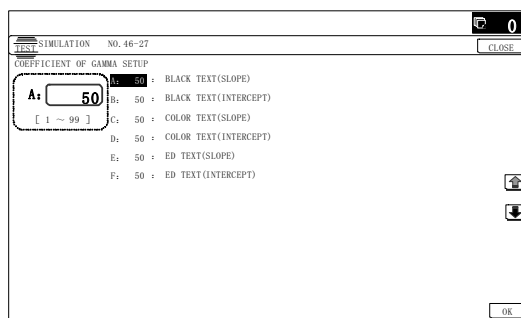
With this adjustment, the density and the thickness of fine text and lines can be varied.

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

This adjustment is required in the following cases.

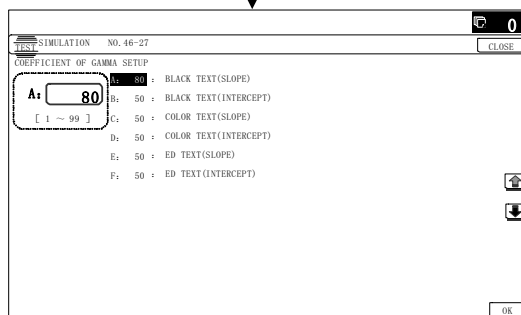
- \* When the reproducibility of text and line copy image is to be changed.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 1) Enter the SIM 46-27 mode.



10-key

[OK]



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

Display/Item (Copy mode)		Content	Adjustment range	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 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 item A and C are changed, the gamma at 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 adjustment item B and D are increased, the image density at the line edge section is increased, and vice versa.

- 4) Press [OK] key.  
5) Press [Close] key to exit the simulation.  
6) Make a copy in monochrome 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.



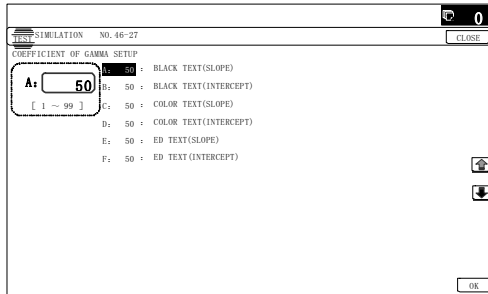
### (Adjustment 2)

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.

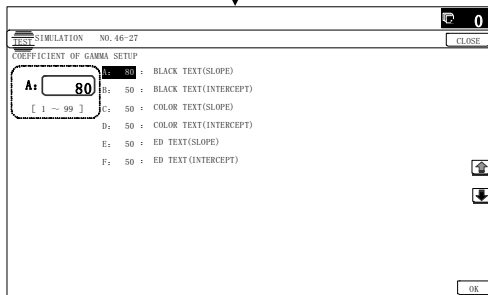
- \* To change the contrast and the density of the Text/Map copy mode images.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-27 mode.



10-key

OK



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

Display/Item (Copy mode)		Content	Adjustment range	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 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 adjustment item F is increased, the image density is increased, and vice versa.

4) Press [OK] key.

5) Press [CLOSE] key to cancel the simulation mode.

6) Make a copy in the 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.

## 20-L Color document reproducibility adjustment in the monochrome copy mode (Normally unnecessary to adjust)

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.

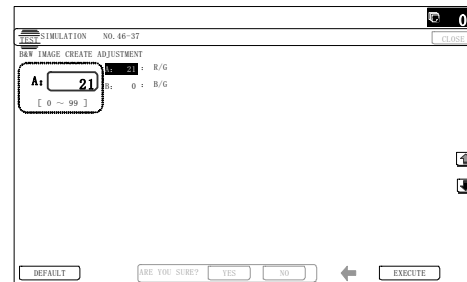
- \* When there is desire to change reproducibility of yellow/red image in case of making a color copy of the color document in monochrome copy mode.

- \* U2 trouble has occurred.

- \* When the MFP PWB is replaced.

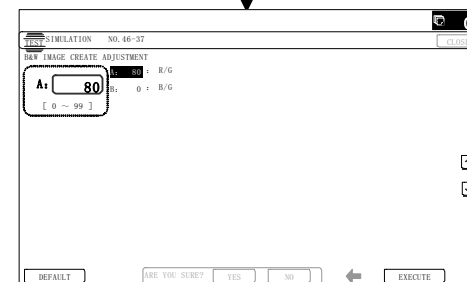
- \* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-37 mode.



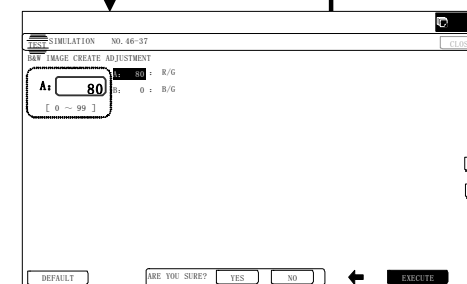
10-key

OK

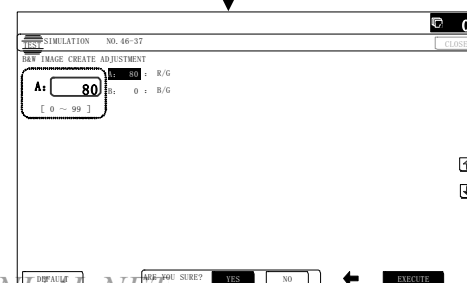


EXECUTE

NO



YES



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

Display/Item (Copy mode)		Content	Adjustment range	Default
A	R/G	Gray making setting (R/G)	0 - 99	21
B	B/G	Gray making setting (B/G)	0 - 99	0

- 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.

## 20-M Black ingredient amount adjustment in color copy mode (Normally unnecessary to adjust)

Use to adjust the black ingredient 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.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 1) Enter the SIM 46-38 mode.

(-)LUT2

- 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		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT	(-) LUT2	Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PRINTED PHOTO	(-) LUT2	Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PHOTO	(-) LUT2	Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT PHOTO	(-) LUT2	Text/ Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	MAP	(-) LUT2	Map (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	CP ORG/ TEXT PRT	(-) LUT2	Copy document/ Text printed (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ TEXT	(-) LUT2	Copy document/ Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ PHOTO	(-) LUT2	Copy document/ Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	LIGHT ORIGINAL	(-) LUT2	Light document (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

Display/Item (Copy mode)		Select button	Content	Default
AUTO	AUTO0	(-) LUT2	Auto mode judgment 0	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO1	(-) LUT2	Auto mode judgment 1	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO2	(-) LUT2	Auto mode judgment 2	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO3	(-) LUT2	Auto mode judgment 3	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO4	(-) LUT2	Auto mode judgment 4	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO5	(-) LUT2	Auto mode judgment 5	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO6	(-) LUT2	Auto mode judgment 6	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

- 4) Press the black ingredient 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.

## 20-N Sharpness adjustment in the color auto copy mode (Normally unnecessary to adjust)

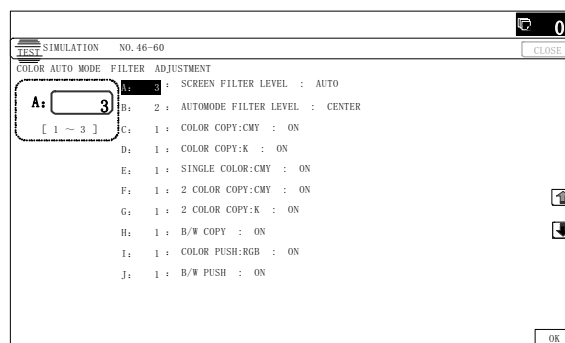
Use for sharpness adjustment of the high density image in color auto copy mode.

This adjustment changes smoothness (asperity) in the image shade part.

This adjustment is required in the following cases.

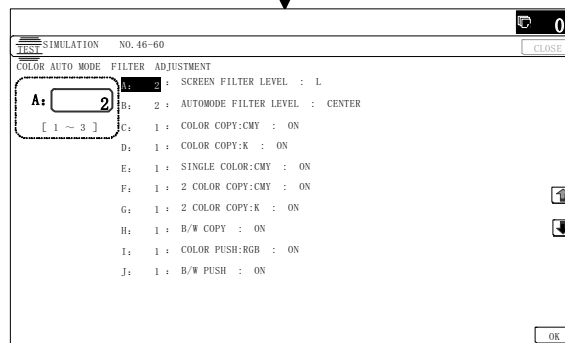
- \* When changing the sharpness of copy image in auto copy mode. (obtain crispy image)(decreases moire)
- \* When there is desire to improving smoothness in the image shade part (for decrease of asperity)
- \* To make the black background and the dark area darker.
- \* To reproduce the gradation change in the dark area.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 1) Enter the SIM 46-60 mode.



10-key

OK



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

Display/Item			Content		Setting range	Default	NOTE
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Apply to auto copy mode only
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode	SOFT	1	2 (CENTER)	
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	COLOR COPY:CMY	OFF	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1 (ON)	Available for the high density image except text and line image
	ON	ON		1			
D	COLOR COPY:K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1 (ON)	
	ON	ON		1			
E	SINGLE COLOR:CMY	OFF	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
F	2 COLOR COPY:CMY	OFF	Soft filter applying setting to C, M, Y image in 2-color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
G	2 COLOR COPY:K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
H	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	
		ON		ON	1		
I	COLOR PUSH:RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
J	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1(ON)	
		ON		ON	1		

3) Input numeric value corresponding to sharpness level (filter process mode).

• Adjustment item A:

When selecting AUTO, filter is selected according to dot pattern state automatically and adjusts sharpness.

Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.

• Adjustment item B:

Select HIGH to obtain clear images. Select SOFT to reduce moire.

• Adjustment item C - J:

When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)

4) Press [OK] key.

5) Make a copy and check the copy image.

If a satisfactory result is not obtained, return to the SIM 46-60 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

## 20-0 Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust)

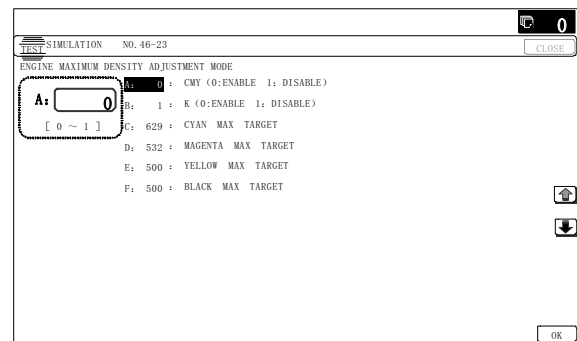
If a tone gap occurs on part of high density in color mode, or if there is necessity to increase the density of the part of high density, change the setting.

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.
- \* The CCD unit has been replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

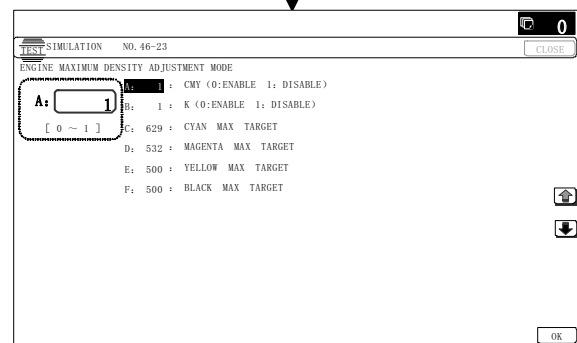
### a. Adjustment procedure

1) Enter the SIM 46-23 mode.



10-key

OK



- 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)

## 20-P Copy color balance adjustment (Single color copy mode) (Normally not required)

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.

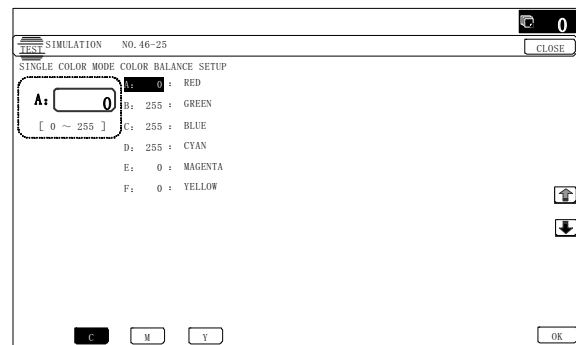
This adjustment is not required normally, but executed when there is a request from the user.

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

- \* The CCD unit has been replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

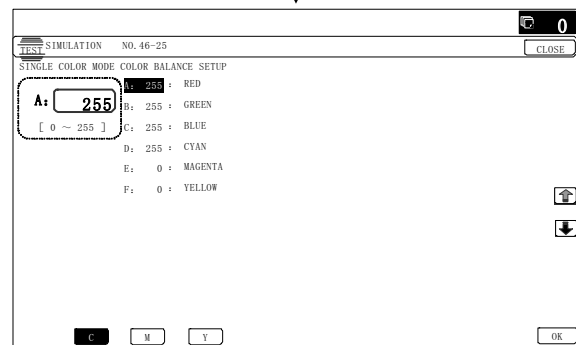
## a. Adjustment procedure

- 1) Enter the SIM 46-25 mode.



10-key

OK



- 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	200	0
D	YELLOW	0 - 255	0	0	255
E	MAGENTA	0 - 255	0	255	0
F	CYAN	0 - 255	255	0	0

- 5) Press [OK] key.  
6) Press [Close] key to exit the simulation.  
7) 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.

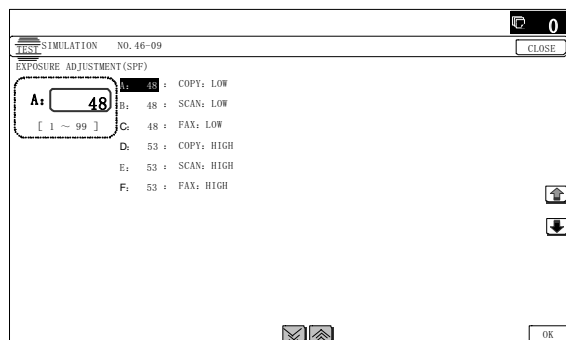
## 20-Q Copy density adjustment in the RSPF mode (Normally unnecessary to adjust)

This setting is normally not required. When, however, there are case of following, change 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 MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

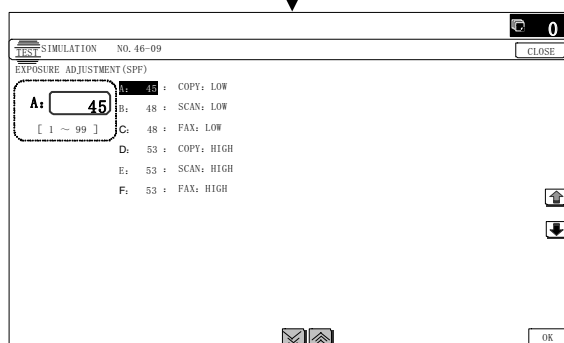
### a. Adjustment procedure

- 1) Enter the SIM 46-9 mode.



10-key

OK



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

When adjusting density on low density part, select "A (COPY LOW)". When adjusting density on high density part, select "D (COPY HIGH)".

Item/Display		Content	Setting range	De- fault
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	PSPF 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 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) Press [Close] key to exit the simulation.
- 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.

## 20-R DSPF mode copy density adjustment (Normally not necessary to adjust)

It is normally not necessary to perform this adjustment.

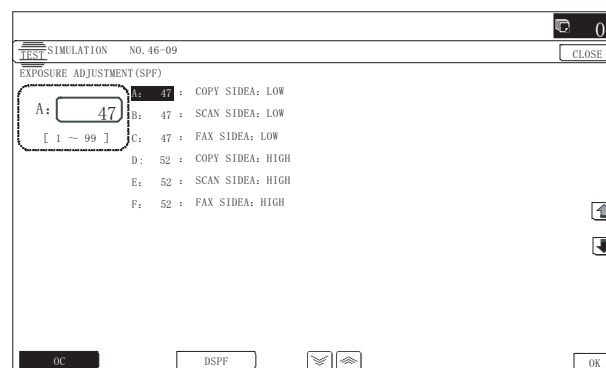
In the following cases, however, this adjustment must be performed.

- \* When the copy density differs in the DSPF mode and in the document table mode.
- \* When the copy density differs on the front surface and on the back surface in the DSPF mode.
- \* When the copy density in the DSPF mode is too low or too high.
- \* When the DSPF unit is replaced.
- \* When the DSPF CCD unit is replaced.
- \* When U2 trouble occurs.

### a. Adjustment procedures

(Front surface copy density adjustment)

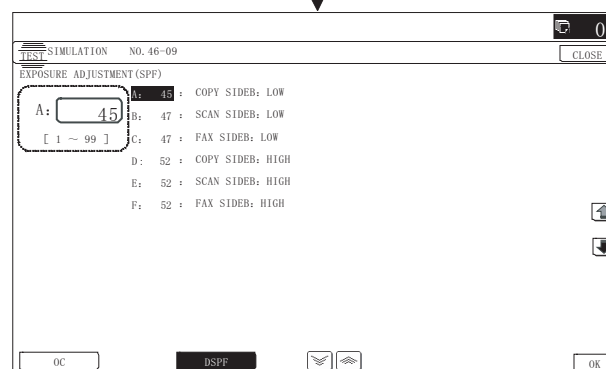
- 1) Enter the SIM46-9 mode.



DSPF

10-key

OK



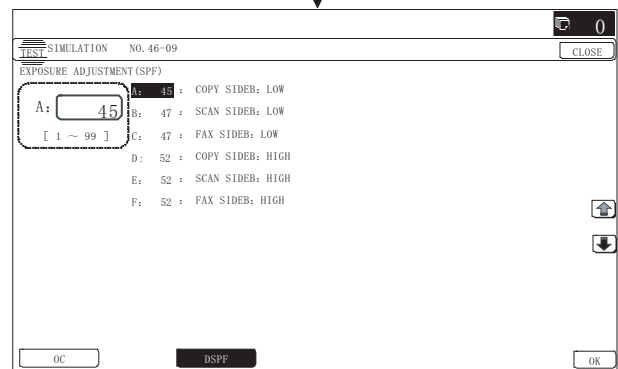
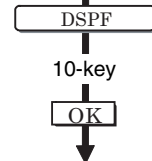
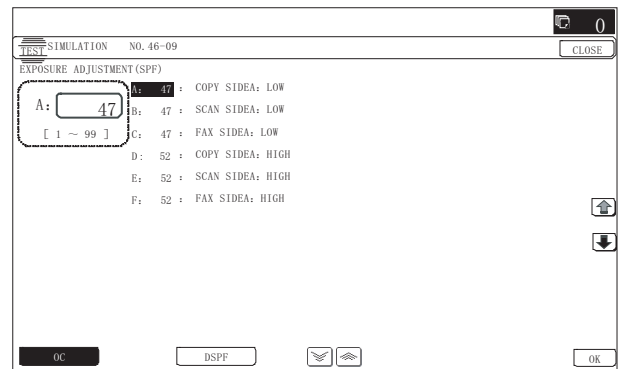
Item	Button	Display	Content	Setting range	Default value
A	OC	COPY SIDEA: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	47
B		SCAN SIDEA: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	47
C		FAX SIDEA: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 -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

- Press OC key to select the front surface copy density adjustment mode.
- Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY SIDE A LOW." To adjust the density in the high density area, select "COPY SIDE A HIGH."
- Enter an adjustment value with 10-key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
- Press [OK] key.
- Press [CLOSE] key to exit the simulation mode.
- Make a copy and check the copy density.

Repeat the above procedures until a satisfactory result is obtained.

### (Back surface copy density adjustment)

- Enter the SIM46-9 mode.



Item	Button	Display	Content	Setting range	Default value
A	OC	COPY SIDEA: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	42
B		SCAN SIDEA: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	42
C		FAX SIDEA: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	42
D		COPY SIDEA: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	53
E		SCAN SIDEA: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	53
F		FAX SIDEA: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	53

Item	Button	Display	Content	Setting range	Default value
A	DSPF	COPY SIDEB: LOW	DSPF copy mode exposure adjustment (Low density side)	1 - 99	45
B		SCAN SIDEB: LOW	DSPF scanner mode exposure adjustment (Low density side)	1 - 99	45
C		FAX SIDEB: LOW	DSPF FAX mode exposure adjustment (Low density side)	1 - 99	45
D		COPY SIDEB: HIGH	DSPF copy mode exposure adjustment (High density side)	1 - 99	50
E		SCAN SIDEB: HIGH	DSPF scanner mode exposure adjustment (High density side)	1 - 99	50
F		FAX SIDEB: HIGH	DSPF FAX mode exposure adjustment (High density side)	1 - 99	50
G		BALANCE SIDEB: R	DSPF color balance R	1 - 99	50
H		BALANCE SIDEB: G	DSPF color balance G	1 - 99	50
I		BALANCE SIDEB: B	DSPF color balance B	1 - 99	50

- Press DSPF key to select the back surface copy density adjustment mode.
  - Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY SIDE B LOW." To adjust the density in the high density area, select "COPY SIDE B HIGH."
  - Enter an adjustment value with 10-key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
  - Press [OK] key.
  - Press [CLOSE] key to exit the simulation mode.
  - Make a copy, and check the copy density.
- Repeat the above procedures until a satisfactory result is obtained.

## 20-S Auto color balance adjustment by the user (Copy color balance auto adjustment ENABLE setting and adjustment)

### a. General

In the user program mode, the user can execute the auto color calibration (auto adjustment of the copy color balance and density). This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

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

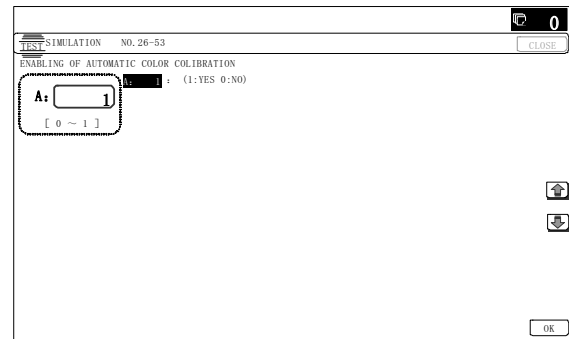
When set to enable, operation procedures must be fully explained to the user.

This adjustment is required in the following cases.

- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When the PCU PWB is replaced.
- \* When the EEPROM of the PCU PWB is replaced.

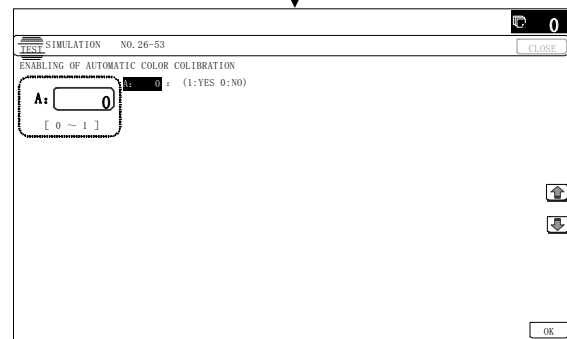
### b. Setting procedure

- Enter the SIM 26-53 mode.



10-key

OK



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

When set to DISABLE, the menu of the user auto color calibration (automatic adjustment of copy color balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto color balance adjustment))

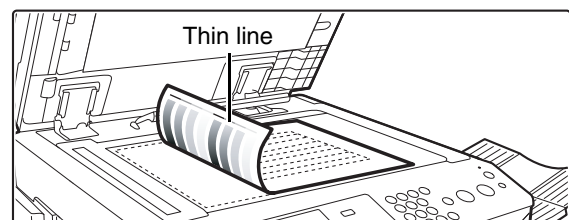
#### Remark:

This adjustment is based on the service target color balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

- Enter the system setting mode.
- Enter the copy setting mode.
- Press the auto color calibration key.
- Press [EXECUTE] key.
- Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image so that the light density area is on the left side.

At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).



- Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.



## 20-T Copy color balance adjustment (Automatic adjustment for each dither)

### a. General

This adjustment is to adjust the color balance and the density in the monochrome mode, the heavy paper mode, the black text, the color text edge, the line image edge, the text mode, and the map mode.

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

### b. Adjustment procedures

- 1) Enter the SIM46-54 mode.
- 2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.) The color patch image (adjustment pattern) is printed.
- 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 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
B/W	Adjustment item to improve the density and gradation in the monochrome mode
Color Ed	Adjustment item to improve the color balance in the text mode and the map mode.

\*1: When performing adjustments in the heavy paper mode, load paper in the manual paper feed tray.

- 7) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)  
The color patch image (adjustment pattern) is printed out.  
In the monochrome mode, only the monochrome pattern is printed.
- 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).  
To complete the adjustment and enable the adjustment result, press [OK] key.
  - 10) Make a copy, and check the copy image quality.
- NOTE: Use SIM46-52 to reset the adjustment values to the default values.

## ADJ 21 Printer color balance/density adjustment

### (1) Note before execution of the printer color balance/density 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. Refer to the page of the ADJ 20 print color balance/density adjustment.
- \* After the copy color balance/density adjustment.

### (2) Printer color balance/density check

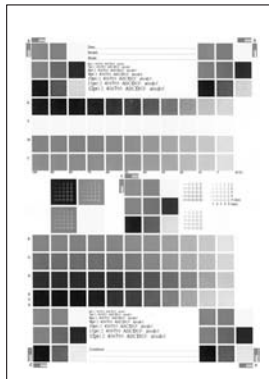
(Note)

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.

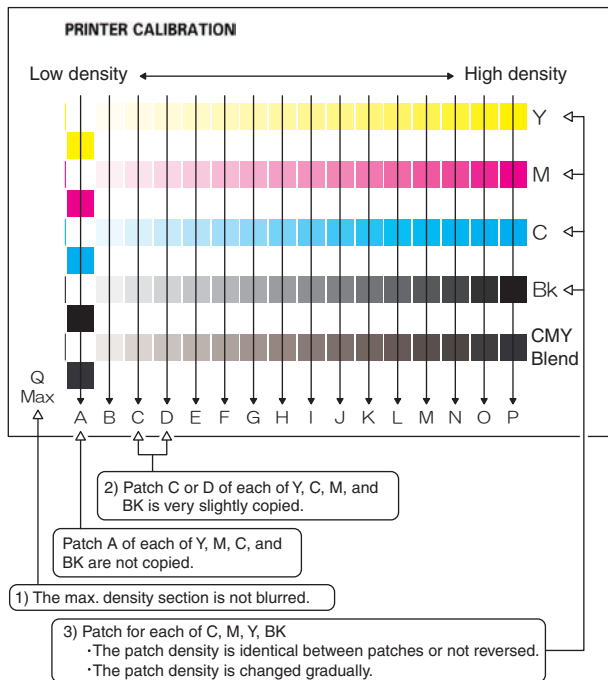
Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.



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.)

## 21-A Printer color balance adjustment (Auto adjustment)

### a. General

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.

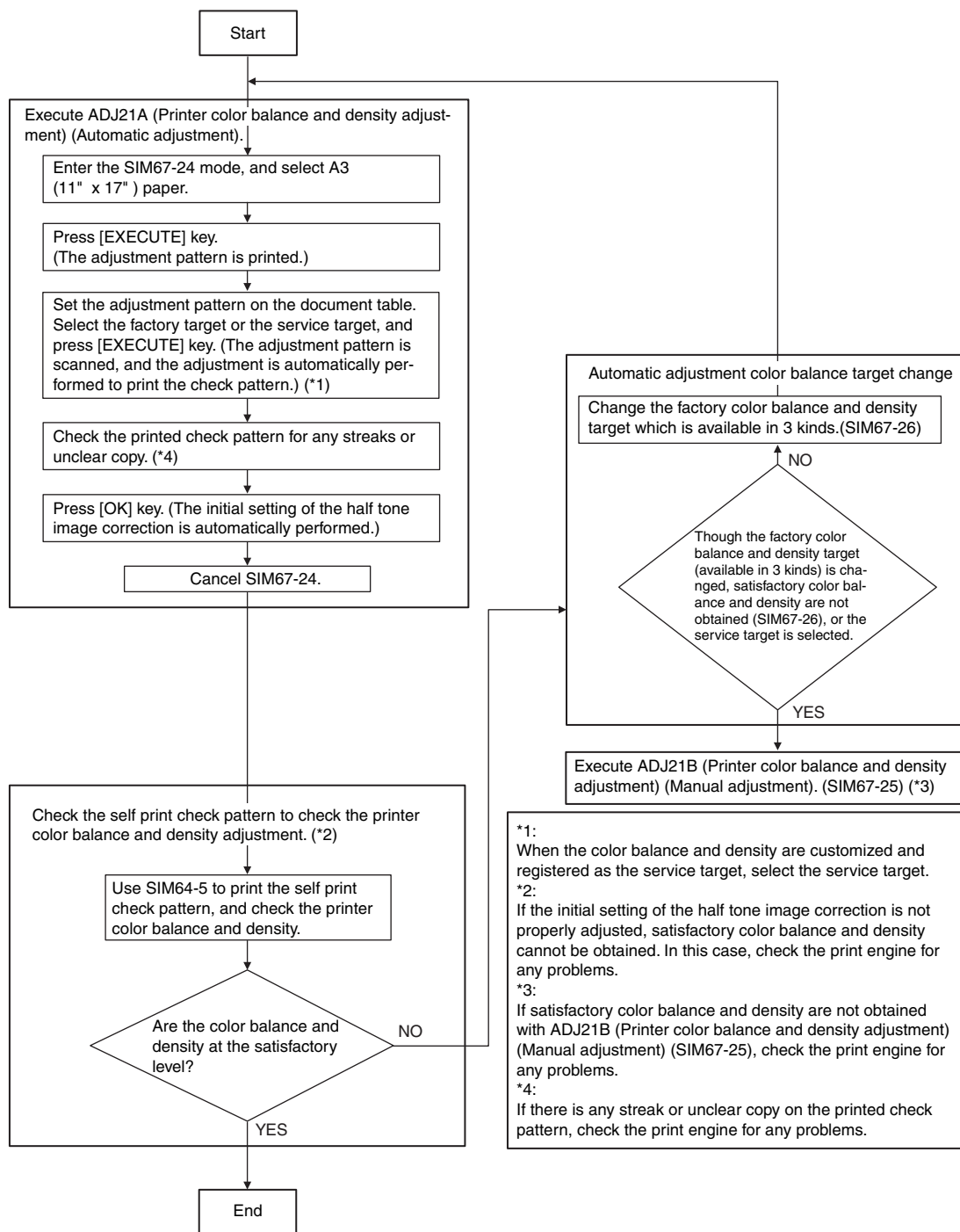
### b. Note for execution of the color balance adjustment (Auto adjustment)

- 1) The copy color balance adjustment must have been completed properly.
- 2) Be sure to use the specified paper for color.

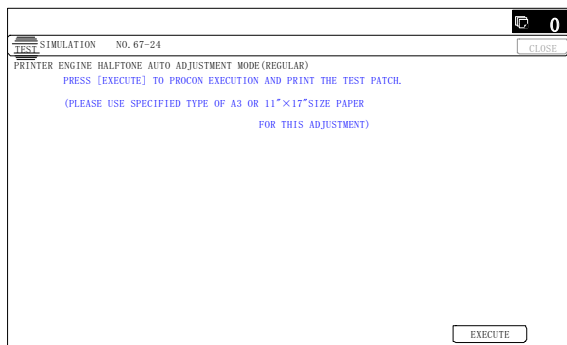
### c. Adjustment procedure

(Auto color balance adjustment by the serviceman)

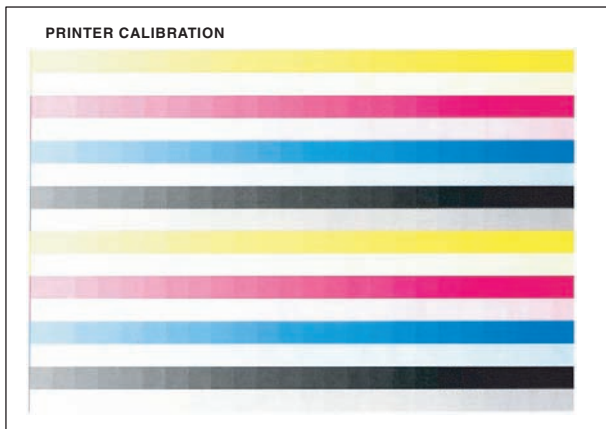
Printer color balance and density adjustment (Automatic adjustment) procedure flowchart (SIM67-24)



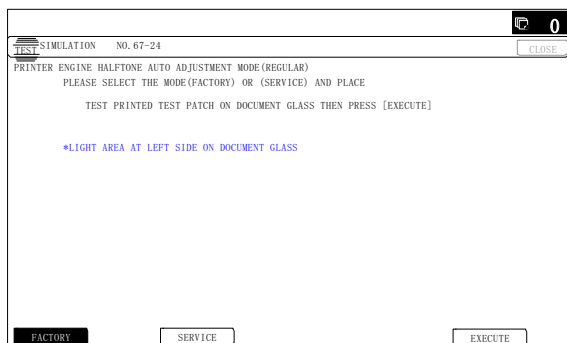
- 1) Enter the SIM 67-24 mode.



- 2) Press [EXECUTE] key. (A3 or 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) Press [FACTORY] key on the operation panel, 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.

Remark:

(Descriptions on [FACTORY] key and [SERVICE] key in the color balance auto adjustment menu.)

There are two kinds of the gamma targets for the color balance auto adjustment; Factory and Service.

[FACTORY] key and [SERVICE] key are used to select one of the above two.

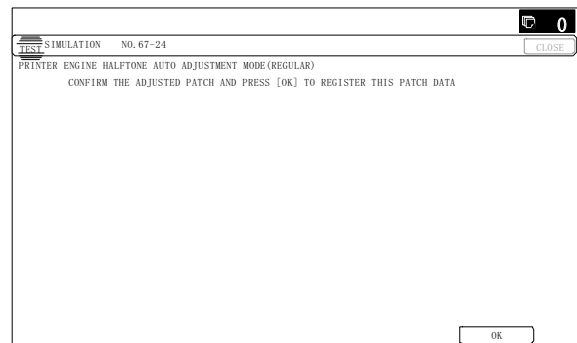
Factory target color balance: Standard color balance (It can be selected from the three kinds of fixed color balances with SIM 67-27.)

Service target color balance: The color balance can be customized according to the user's request. (Variable) When shipping, the service target gamma data and the factory target gamma data are the same.

Both are set to the standard color balance when shipping.

For the service target, the customized color balance gamma can be registered with SIM 67-28.

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

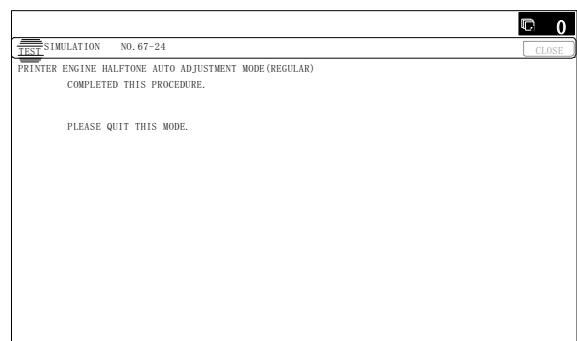


Remark:

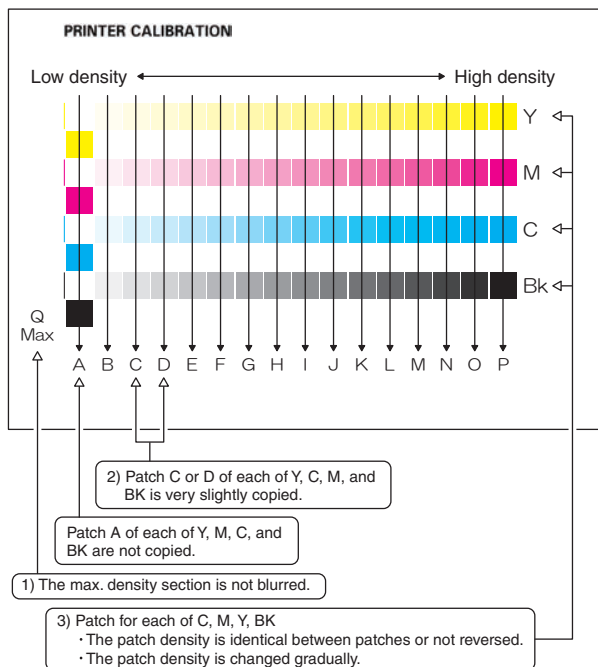
After pressing [OK] key, the initial setting of the half tone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed. This operation takes several minutes.

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

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



- 6) Check the color balance and density.  
There are two methods to check the color balance and density.  
(Method 1)  
Check to insure that the printed color balance check patch image is within the following specifications.



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

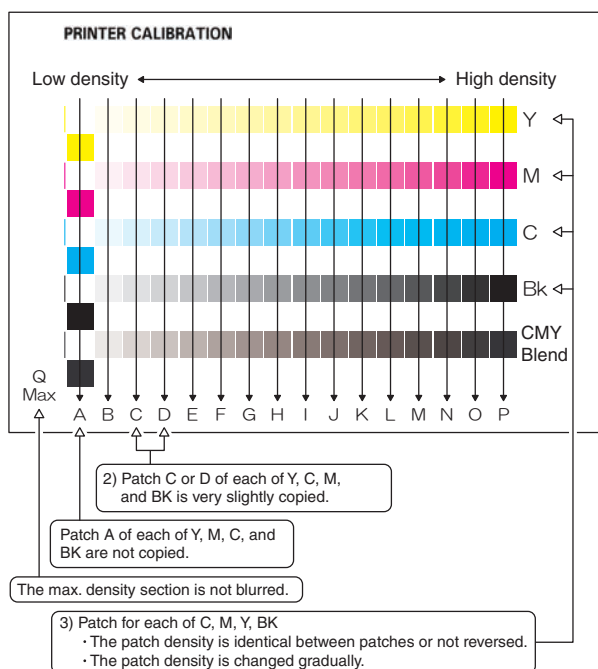
The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

(Method 2)

By printing the color balance adjustment sheet with SIM 67-25 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



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.)

(Method 3)

Use SIM64-5 to print the print test pattern, and check the color balance and density.

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

Use SIM64-5 to print the print test pattern, and check the color balance and density. (Refer to the item of the printer color balance and density check.)

When the factory target is selected in the procedure 4) and the auto adjustment is executed but a satisfactory result is not obtained on the color balance and the density, use SIM 67-26 to change the factory color balance target and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 20C).

When the service target is selected in the procedure 4) and the auto adjustment is executed but a satisfactory result is not obtained, execute the manual color balance adjustment (ADJ 21C).

Cancel SIM 67-25.

If a satisfactory result on the print color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 21B).

## 21-B Printer color balance adjustment (Manual adjustment)

This adjustment is needed in the following situations:

- \* When the copy color balance/density adjustment is required. Refer to the page of the ADJ print color balance/density adjustment.
- \* After the copy color balance/density adjustment.

### a. General

The color balance adjustment (Manual adjustment) is used to adjust the printer density (17 pts for each color) 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.

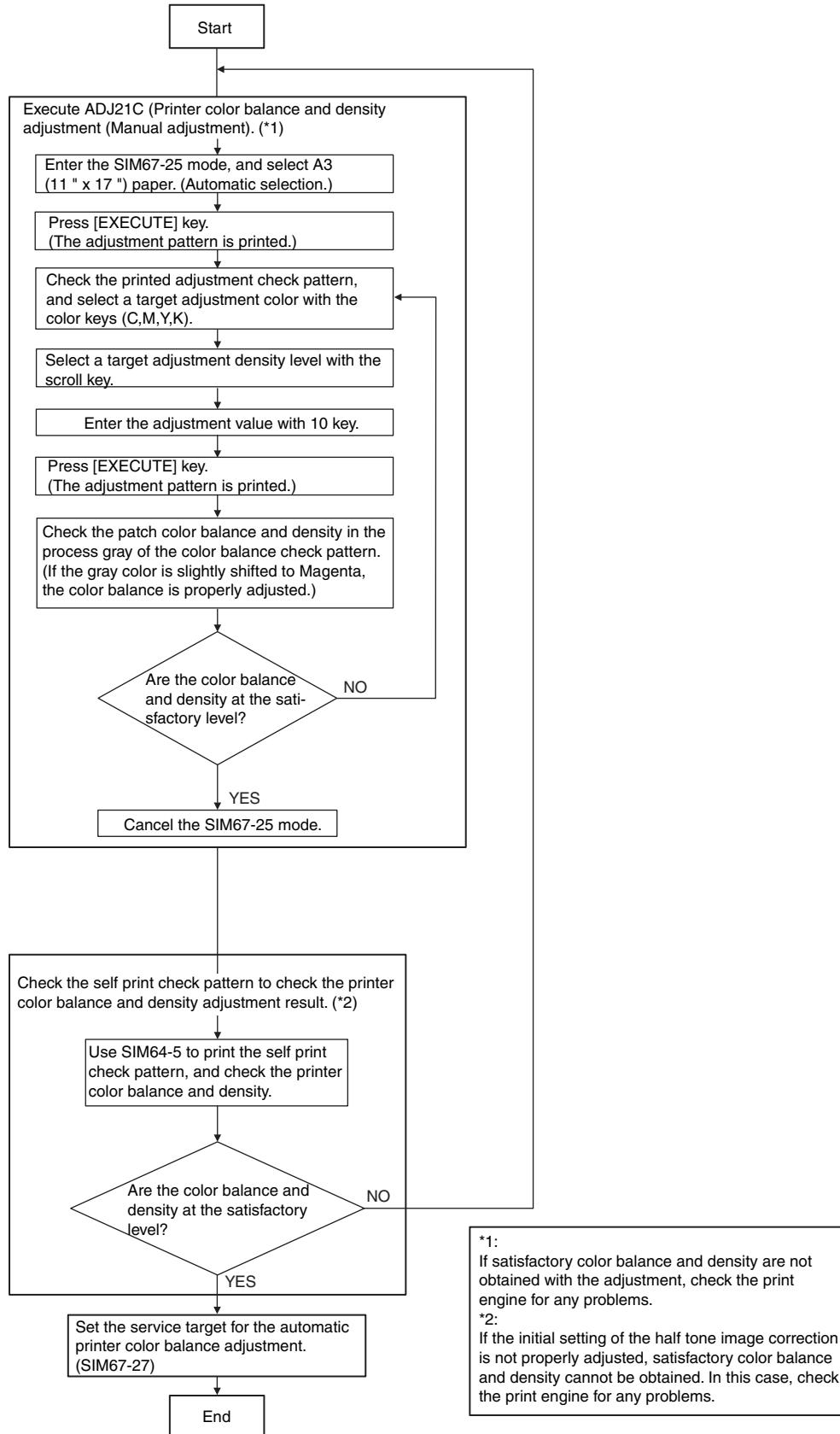
If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

### b. Note for the color balance adjustment (Manual adjustment)

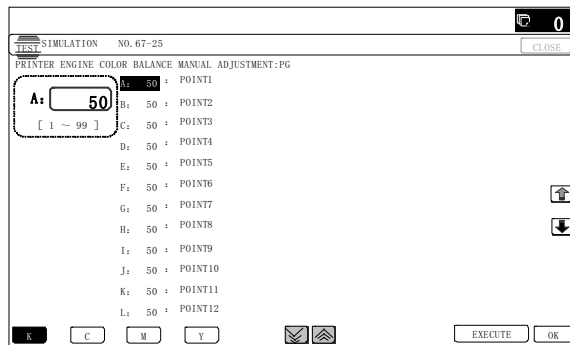
- 1) After execution of the copy color balance/density adjustment.
- 2) When setting the color patch image adjustment pattern on the document table, place 5 sheets of white paper on the color patch image adjustment pattern.
- 3) Be sure to use the specified paper for color.

### c. Adjustment procedure

Printer color balance and density adjustment (Manual adjustment) procedure flowchart (SIM67-25)

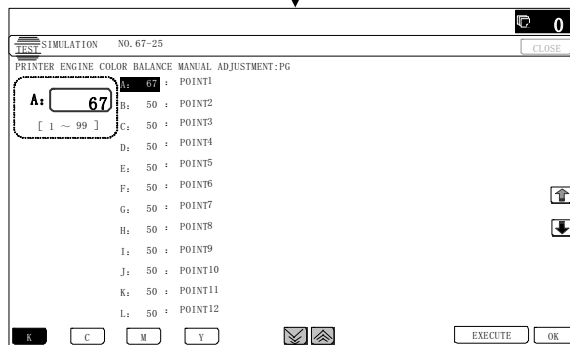


- 1) Enter the SIM 67-25 mode.



10-key

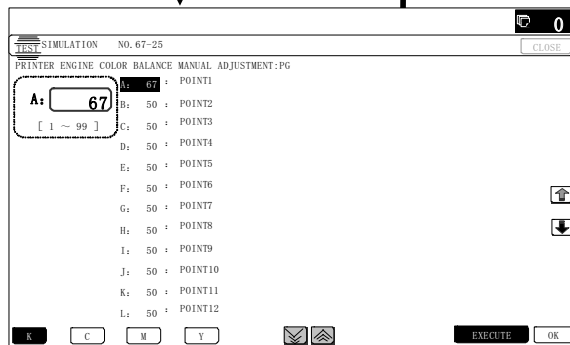
OK



EXECUTE

EXECUTE

or end of print

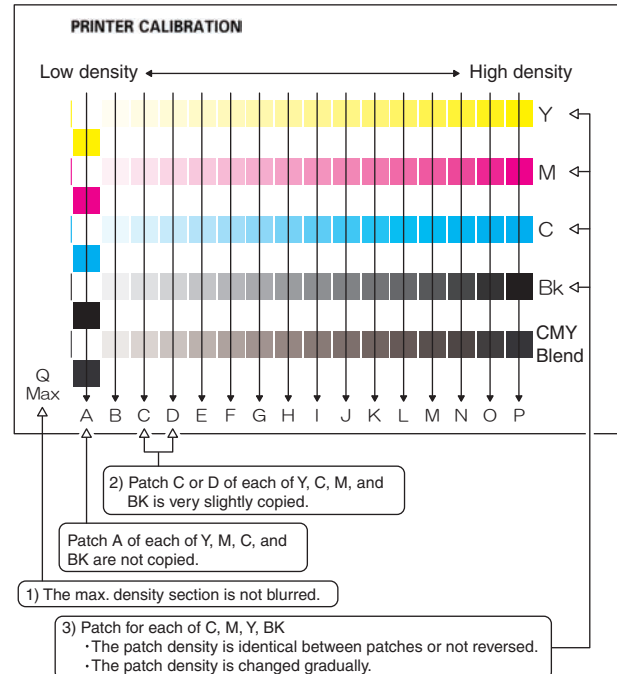


- 2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

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. 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 0 - 255 (1 - 99). When SIM 67-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 50.

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

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

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

Then, adjust each patch density individually. This is an efficient way of adjustment.

Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

- 6) Cancel SIM 67-25.



- 7) Use SIM 64-5 to print the print test pattern and check the print color balance and the density.

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

- 8) 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.

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

**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.

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

## (Gamma setting of auto color balance adjustment service color balance target)

### 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.

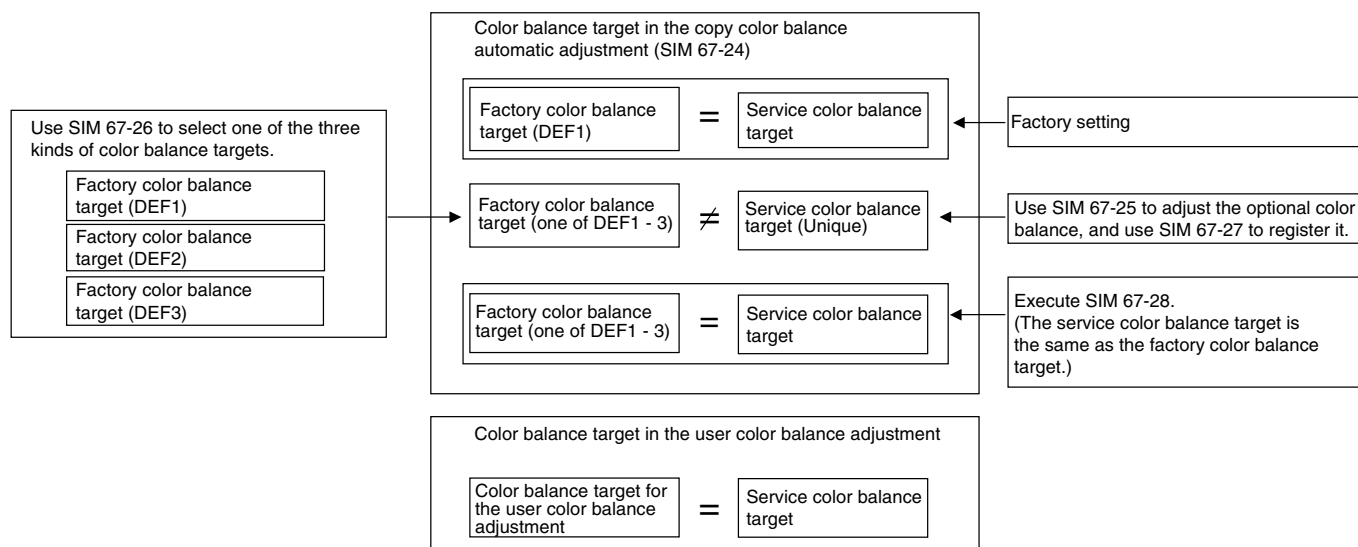
This adjustment is required in the following cases.

- \* When the copy color balance/density adjustment (manual adjustment) is executed with SIM 67-25.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When the user requests for customizing the color balance.
- \* When the service color balance target gamma is judged as improper.
- Color balance target for the printer color balance adjustment

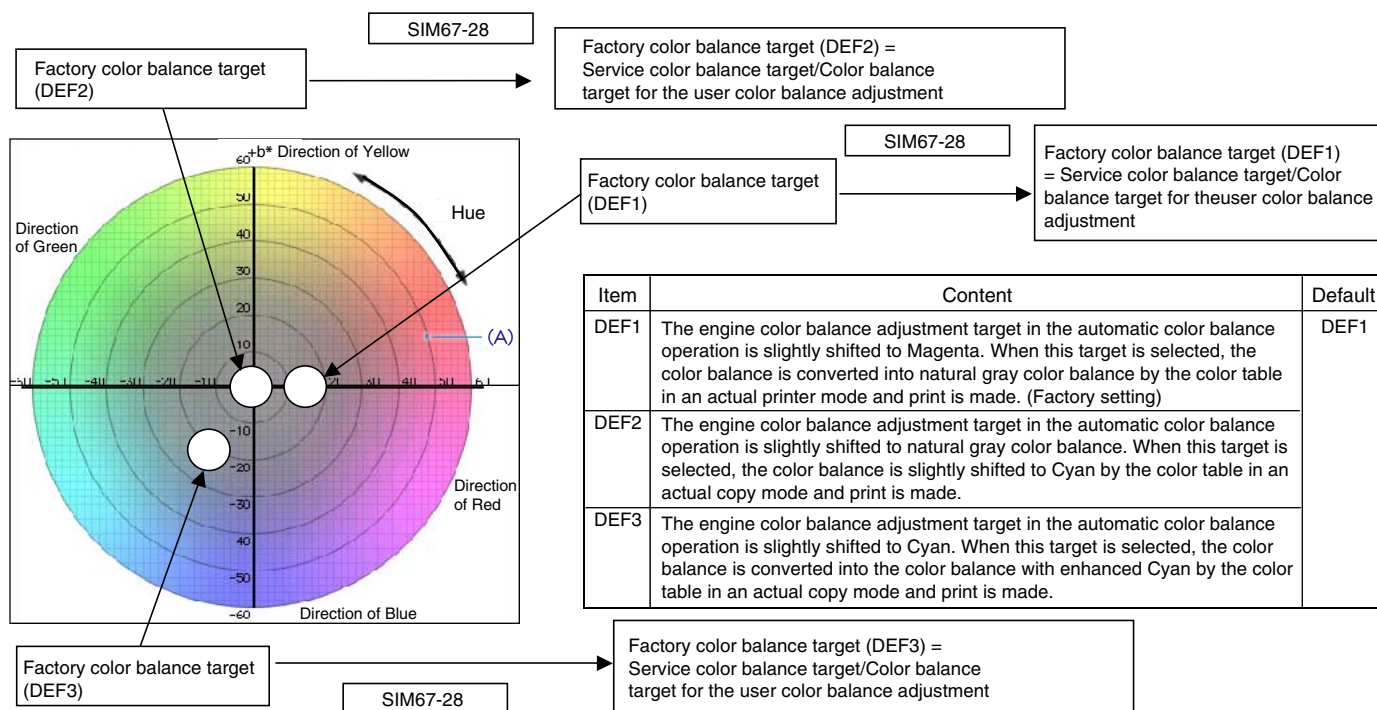
Type		Descriptions
A	Factory color balance (gamma) target	There are three kinds of the color balance targets, and each of them is specified according to the machine design. Use SIM 67-26 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which 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 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 (DEF1))
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 (SIM 67-24)



- Factory target in the printer color balance adjustment (SIM 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)



- Service color balance target in the copy color balance adjustment (SIM 67-28).  
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 copy color balance adjustment (SIM 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.

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

It is recommendable to keep the printed adjustment pattern 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 valance adjustment (Auto) with selecting the service color balance target in SIM 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.

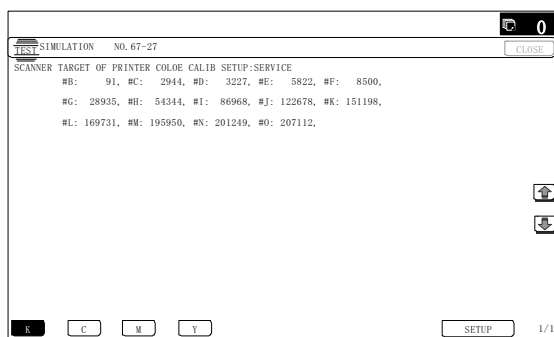
## b. Setting procedure

(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 two sheets of the color patch image (adjustment pattern).

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.



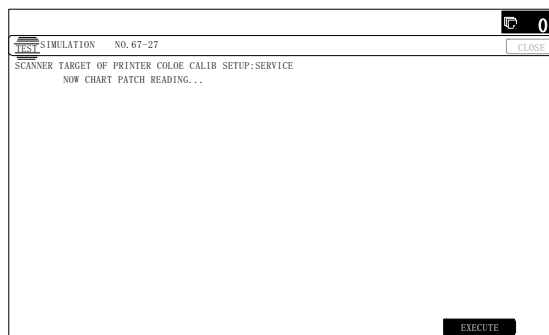
- 3) Press [SETUP] key.
- 4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the printer color balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 21C) on the document table.

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).

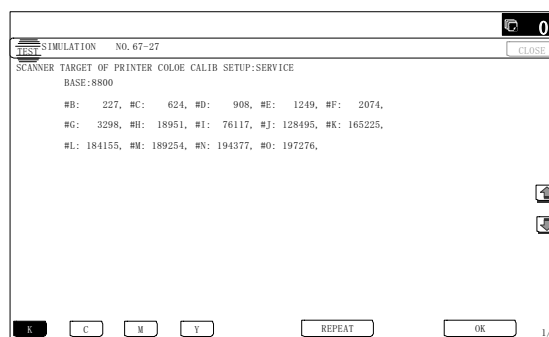
This procedure must not be executed when the copy color balance (manual) was adjusted with SIM 67-25 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 67-27.

- 5) Press [EXECUTE] key.



The color patch image (adjustment pattern) is read.

- 6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



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 - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

In case of an abnormality, repair the problem and try again.

- 7) Press [OK] key.

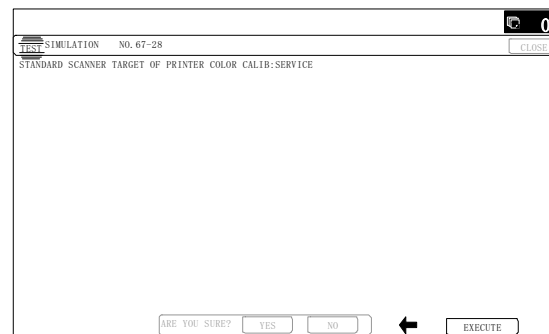
The color balance (gamma) of the color patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(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.
- 3) Press [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.

## 21-C Printer density adjustment (low density part density adjustment) (Normally unnecessary to adjust)

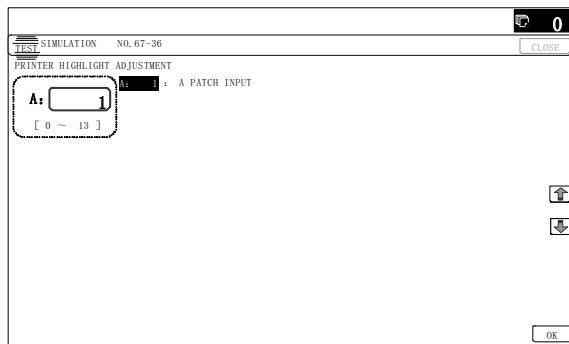
This procedure is to adjust image density of low density area in printer mode.

Adjust to reproduction setting of the low density image.

This adjustment is required in the following cases.

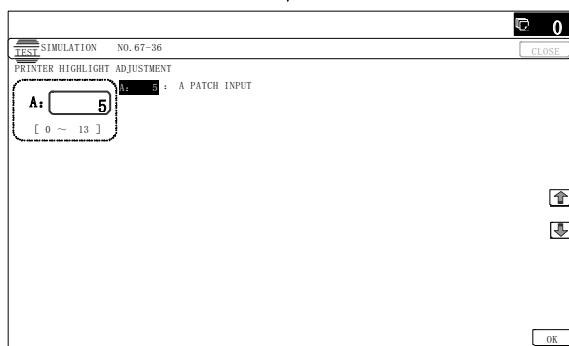
- \* When reproduction of low density image is required.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When there is request from the user.

- 1) Enter the SIM 67-36 mode.



10-key

OK



- 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.

## 21-D Printer high density part density correction setting (high density part tone gap countermeasure) (Normally unnecessary to the setting change)

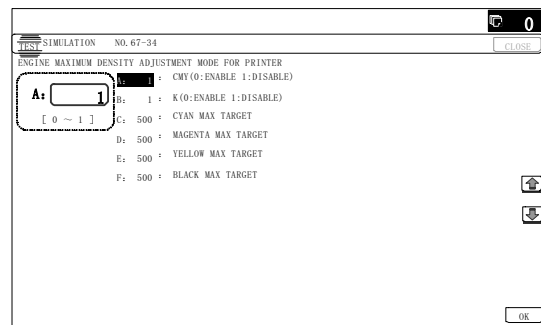
This procedure is to adjust image density of low density area in printer mode.

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.
- \* When there is necessity to increase the density of the part of high density.
- \* The CCD unit has been replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

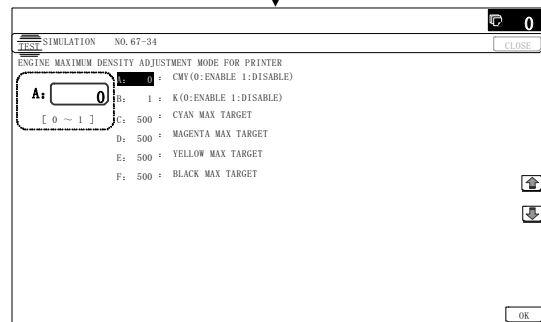
### a. Adjustment procedure

- 1) Enter the SIM 67-34 mode.



10-key

OK



- 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
		1	CMY engine maximum density correction mode Disable
B	K (0: ENABLE 1: DISABLE)	0	K engine maximum density correction mode Enable
		1	K engine maximum density correction mode Disable
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction	0 - 999
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction	0 - 999
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction	0 - 999
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction	0 - 999

- \* If a tone gap occurs on part of high density, set 0 to item A and B. The density of high density part decreases. However, the tone gap is better.

- \* In case of more increase of the density on high density part, set 1 to item A and B.

The tone gap may occur in high density part.

(NOTE) If the setting values of item C, D, E and F are changed, density of the high density part is changed.

When these values are changed, be sure to perform the printer color balance and density adjustment. (Automatic adjustment)

## 21-E Auto color balance adjustment by the user (Printer color balance auto adjustment ENABLE setting and adjustment)

### a. General

In the user program mode, the user can execute the auto color calibration (auto adjustment of the copy color balance and density).

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

**CAUTION:** This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy color balance and density and the user's operational ability are judged enough to execute the adjustment.

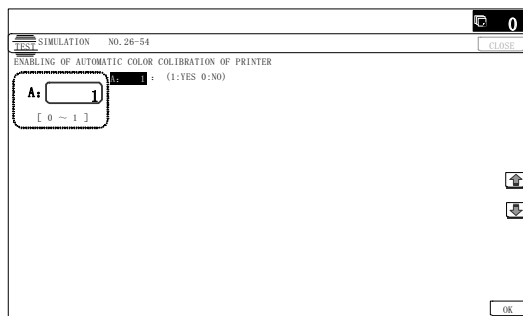
When set to enable, operation procedures must be fully explained to the user.

This adjustment is required in the following cases.

- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

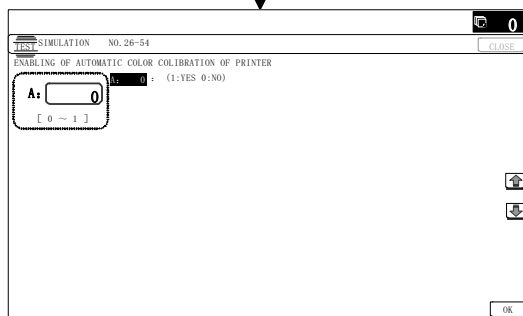
### b. Setting procedure

- 1) Enter the SIM 26-54 mode.



10-key

OK

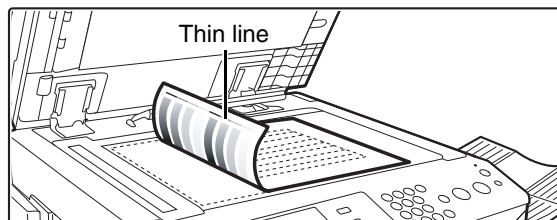


- 2) Select ENABLE or DISABLE with 10-key.  
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
  - 3) Press [OK] key.
- When set to DISABLE, the menu of the user auto color calibration (automatic adjustment of printer color balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto color balance adjustment))

**Remark:** This adjustment is based on the service target color balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

- 1) Enter the system setting mode.
- 2) Enter the printer setting mode.
- 3) Press the auto color calibration key.
- 4) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.  
Set the patch image so that the light density area is on the left side.  
At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).



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

## 21-F Copy/Printer color balance and density adjustment (Automatic adjustment)

This adjustment is needed in the following situations:

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

### a. General

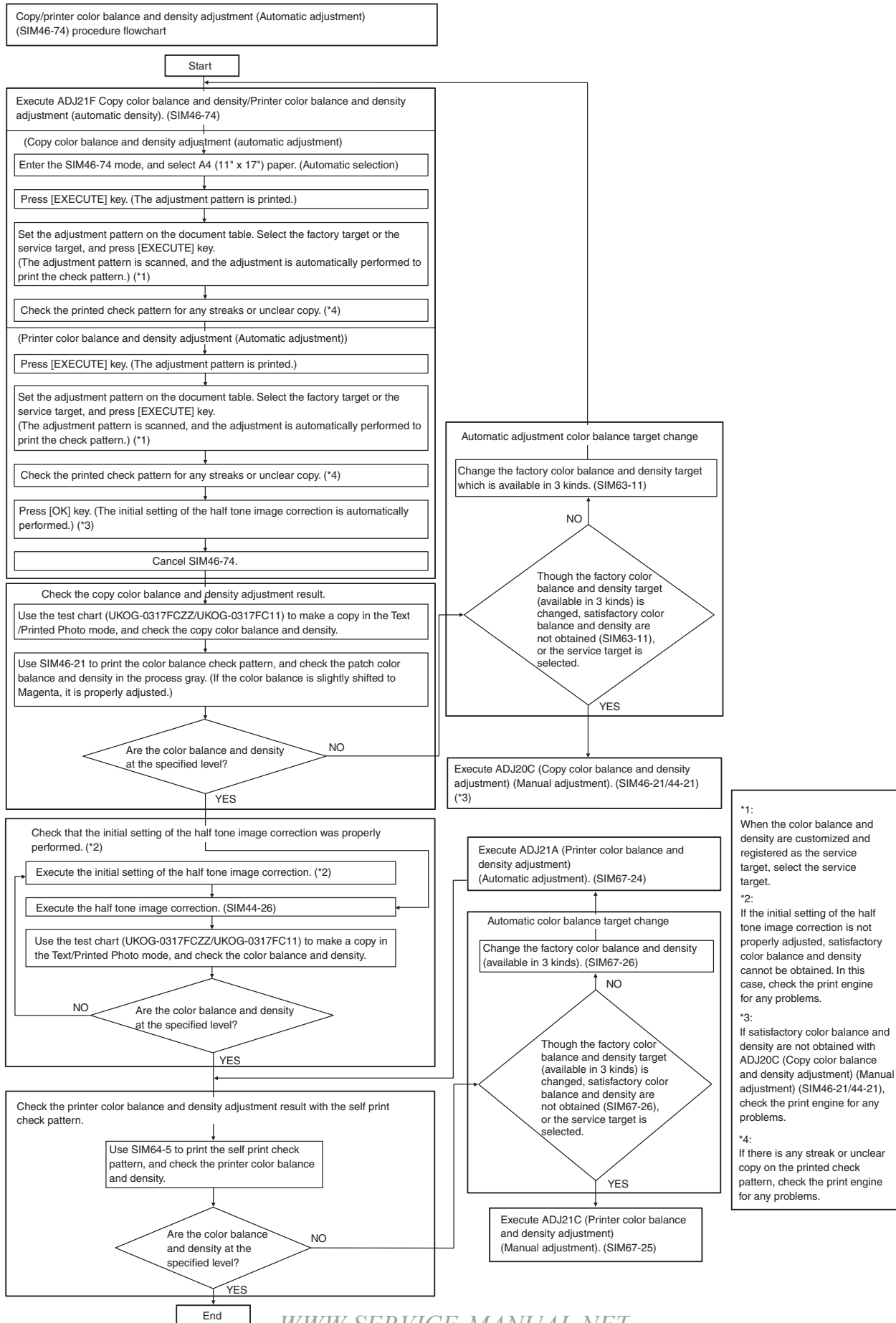
SIM46-74 is used to perform the automatic copy color balance and density adjustment (SIM46-24) and the automatic printer color balance and density adjustment (SIM67-24) continuously.

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.

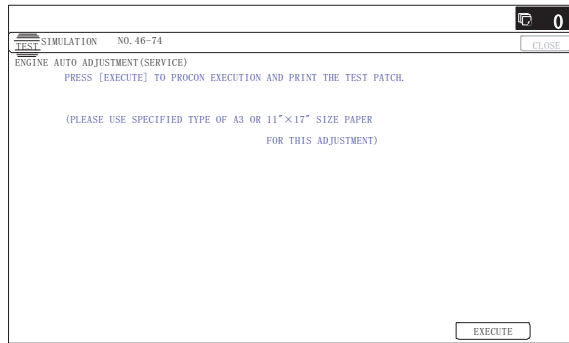
This mode is also advisable to effectively perform both of the automatic copy color balance and density adjustment (SIM46-24) and the automatic printer color balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer color balance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

## b. Adjustment procedures

### (Auto color balance adjustment by the serviceman)

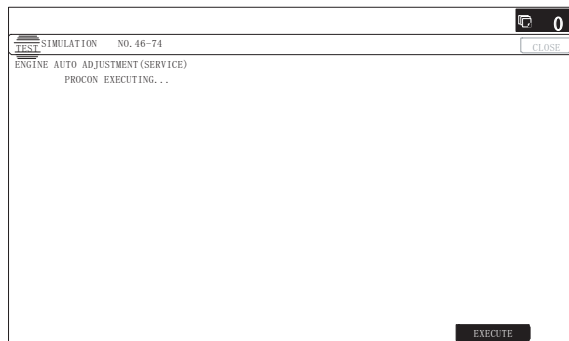


- 1) Enter the SIM46-74 mode.



- 2) Press [EXECUTE] key.

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



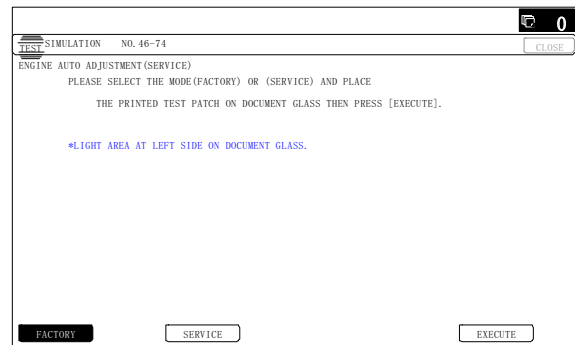
- 3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

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).



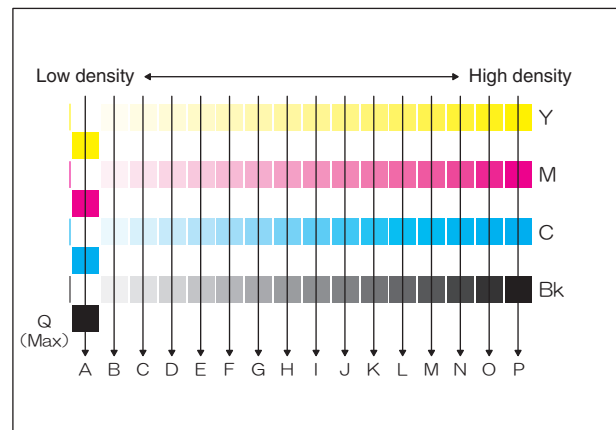
- 4) Press [FACTORY] key on the operation panel, and press [EXECUTE] key.

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.



Remark:

(Descriptions on the factory service key button in the color balance automatic adjustment menu)

There are two kinds of the gamma targets for the color balance automatic adjustment: the factory target and the service target. FACTORY key and SERVICE key are used to select one of the above two.

Factory target color balance: Standard color balance

(The color balance can be selected from the three kinds of fixed ones with SIM63-11.)

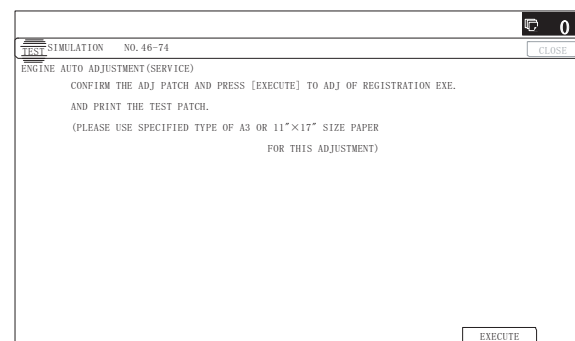
Service target color balance: The color balance can be customized according to the user's request. (Variable)

When shipping from the factory, the service target gamma data and the factory target gamma data are the same.

Both are set to the standard color balance when shipping from the factory. For the service target, a customized color balance gamma can be registered with SIM63-7.

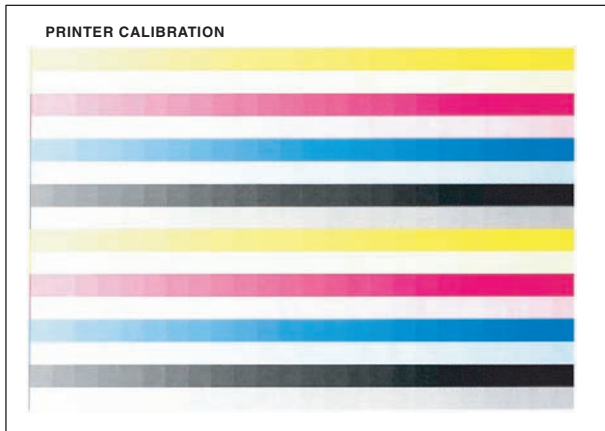
- 5) Press [EXECUTE] key.

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



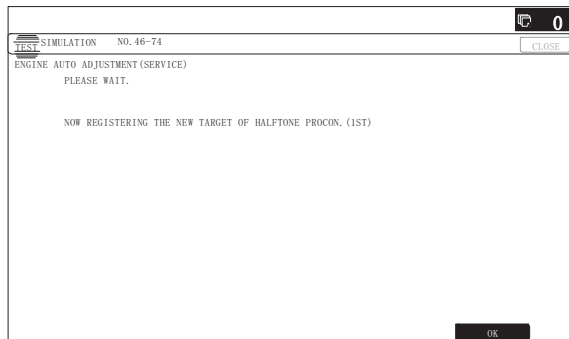
- 6) Set the color patch image (adjustment pattern) printed in the procedure 5) on the document table.

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).



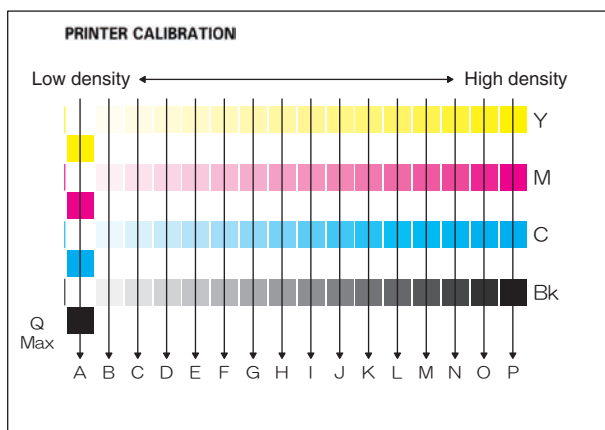
- 7) Press [FACTORY] key on the operation panel, and press [EXECUTE] key.

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.



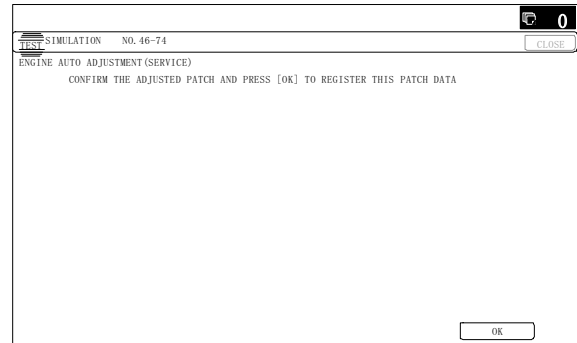
The printer color balance adjustment (step 1) is automatically performed and the color balance check patch image is printed out.

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

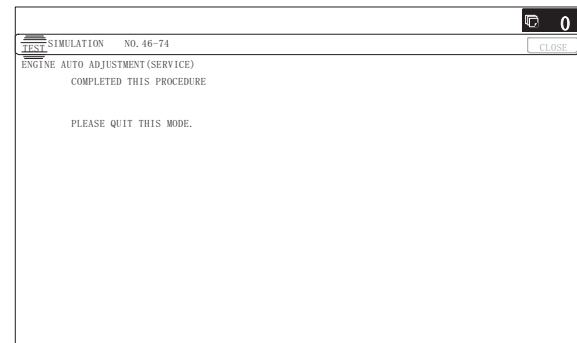


- 8) The initial setting menu of the half tone image correction is displayed. Press [OK] key.

The initial setting of the half tone image correction is performed.



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



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

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

- 10) Check the copy color balance and density.

There are two methods to check the color balance and density. (Method 1)

Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed Photo mode (Manual) to 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).

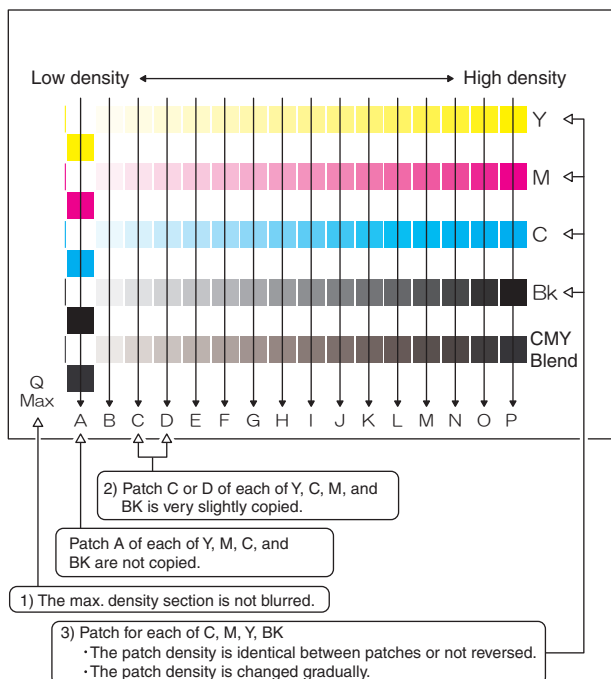
If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 20C).

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 (ADJ 20C).

(Method 2)

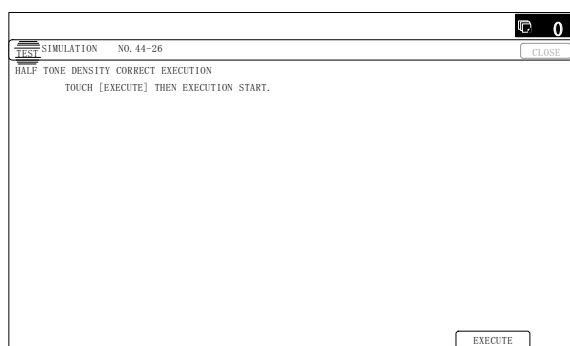
By printing the color balance adjustment sheet with SIM 46-21 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.





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 table in an actual copy mode. (When the color balance target is DEF 1.)

- 11) Use SIM 44-26 to perform the half tone image correction. (Compulsory execution)
  - Enter the SIM 44-26 mode and press [EXECUTE] key.
  - [EXECUTE] key is highlighted and the operation is started.



- It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.
  - After completion of the operation, the simulation is canceled.
- 12) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed 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.
  - 13) Execute the initial setting of the half tone image correction. (SIM 44-21)
  - 14) Execute the half tone image correction. (Forcible execution) (SIM44-26)
  - 15) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance/density check.)

Though the procedures 13) - 15) are performed, the copy color balance and density are not in the specified range, 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.

If the automatic adjustment cannot obtain satisfactory results of the copy color balance and density, use SIM 46-21 (ADJ 20C) (Manual adjustment).

- 16) Check the printer color balance and density.

There are two methods to check the color balance and density.

(Method 1)

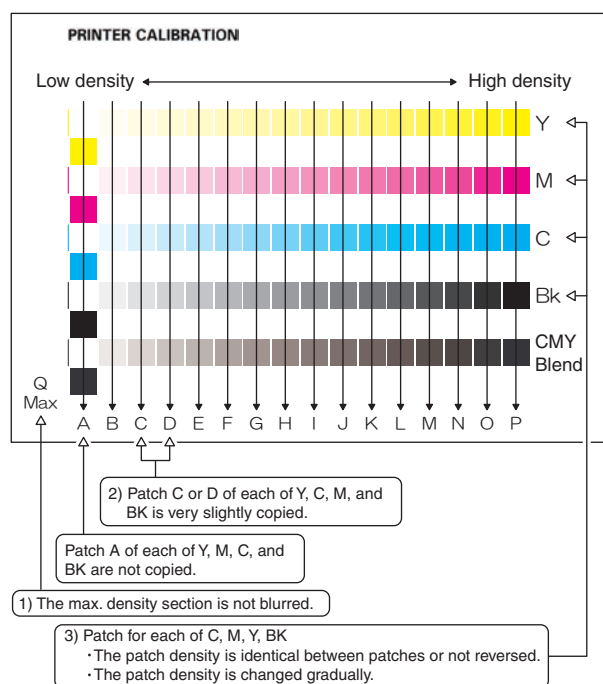
Use SIM 64-5 to print the print test pattern and check the print color balance and the density.

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

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

(Method 2)

Use SIM67-25 to print the color balance adjustment sheet and compare the black patch color balance of each process (CMY) with the black patch. This procedure allows checking the color balance adjustment result correctly.



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 table in an actual printer mode. (When the color balance target is DEF 1.)

If a satisfactory result on the print color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 21B).

## 21-G Printer color balance adjustment (Automatic adjustment for each dither)

### a. General

This adjustment is used to adjust the color balance and the density in the monochrome mode, the heavy paper mode, 1200dpi, 600dpi, and 1bit mode.

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

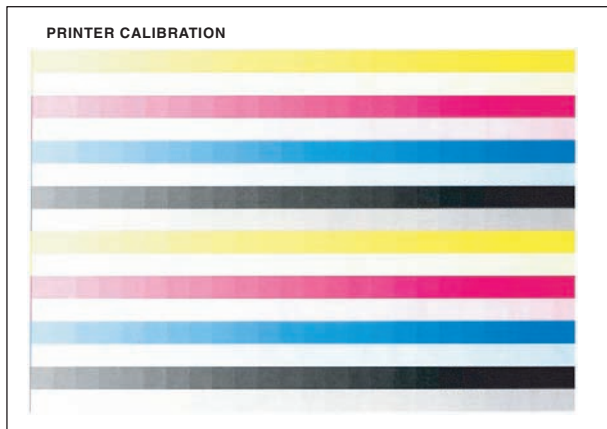


## b. Adjustment procedures

- 1) Enter the SIM67-54 mode.
- 2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

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).



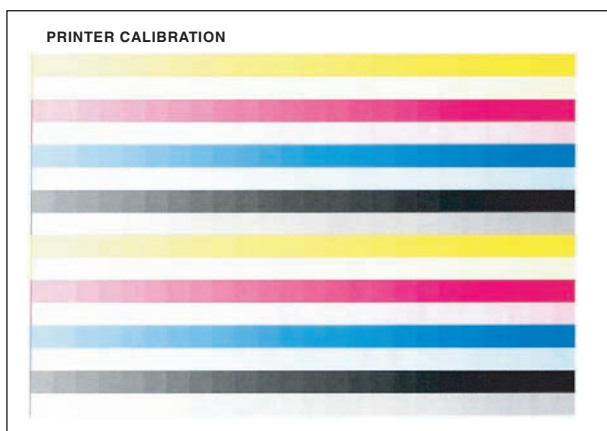
- 4) Press [EXECUTE] key.  
The color balance adjustment is automatically performed.  
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.  
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
1200dpi 1bit	Adjustment item to improve the color balance in 1200dpi mode (When 1200dpi mode is frequently used)
600dpi 1bit	Adjustment item to improve the color balance in 600dpi, 1bit mode.
B/W	Adjustment item to improve the density and gradation in the monochrome mode

- 7) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

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 color balance check patch image is printed out.

- 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.

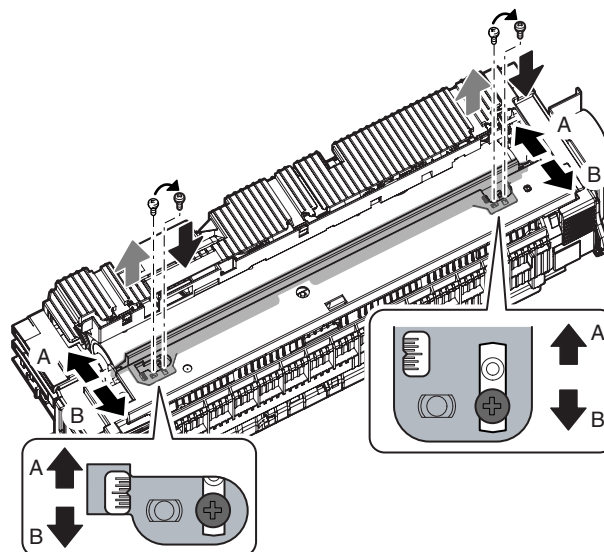
NOTE: Use SIM67-52 to reset the adjustment values to the default values.

## ADJ 22 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) Remove the fusing paper guide fixing screws which are on two position in the front/rear frame direction.
- 2) Insert the removed screws of the fusing paper guide into the screw hole in the paper guide long hole section.  
Loosely tighten the screws so that the paper guide can be moved in the directions of A and B.
- 3) 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 the center of the marking scale. Change the position according to the situation.

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

Normally, the hole on the fusing paper guide standard fixing position is used to fix the fusing paper guide.

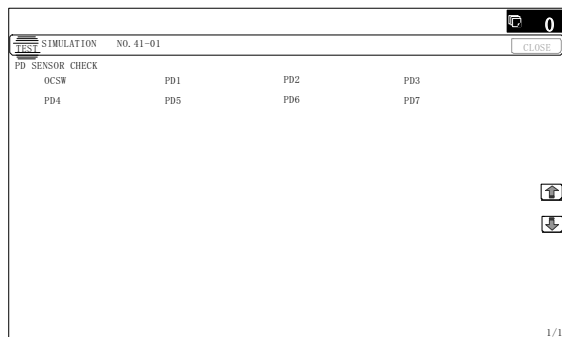
## ADJ 23 Document size sensor adjustment

This adjustment is needed in the following situations:

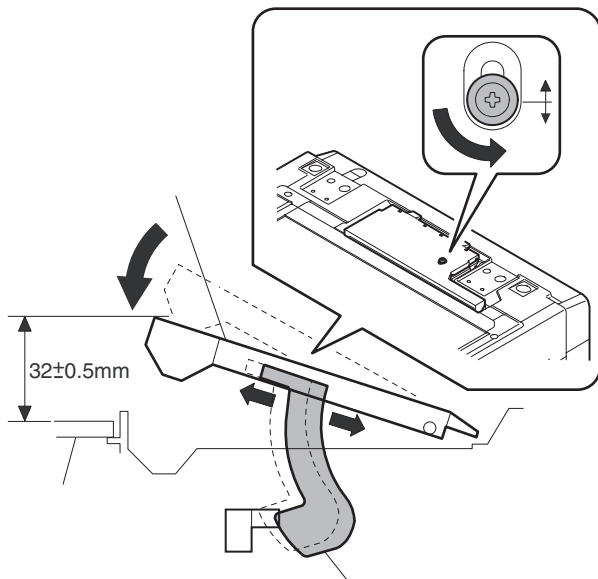
- \* When the original size sensor section has been disassembled.
- \* When the original size sensor section has been replaced.
- \* When U2 trouble has occurred.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

### 23-A Document size sensor detection point adjustment

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

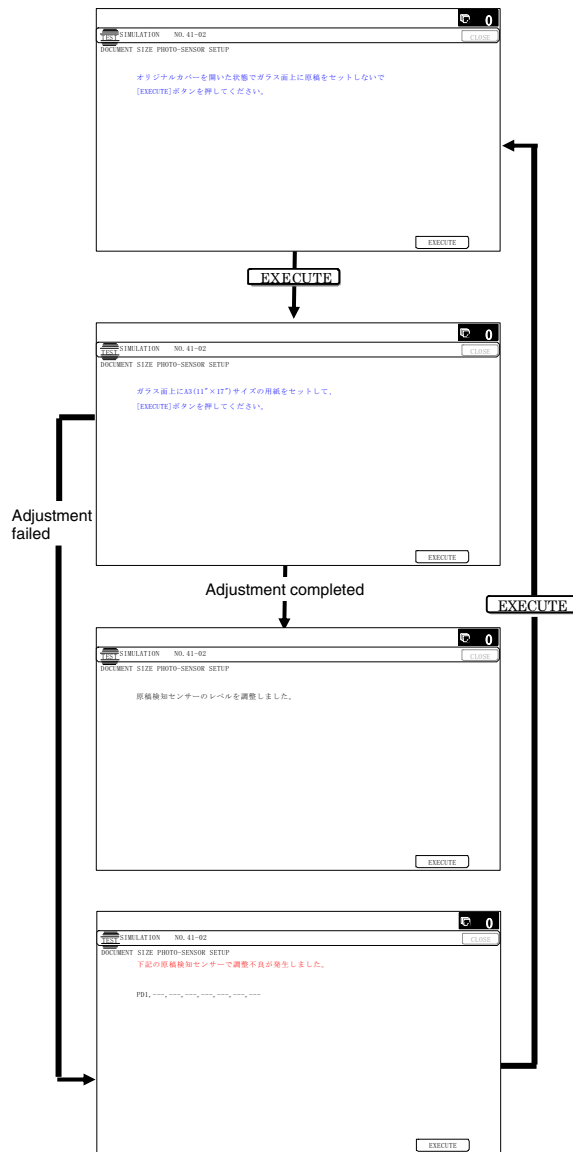


Loosen the original cover switch actuator adjustment screw and slide the actuator position so that the display OCSW is returned to the normal display when the height of the arm unit top from the table glass is  $32 \pm 0.5\text{mm}$  by slowly tilting the document detection arm unit in the arrow direction and adjust. (If the ON timing of the original cover switch is shifted, the document detection function may malfunction.)



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

- 1) Enter the SIM41-2 mode.



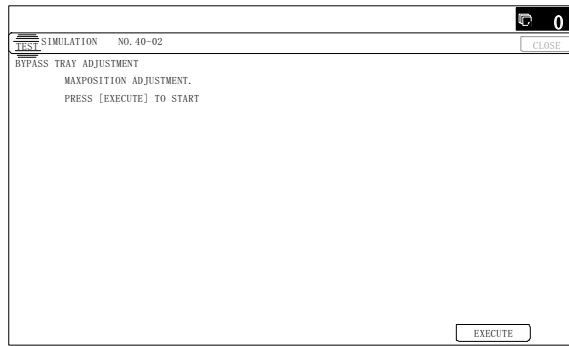
- 2) Execute the sensor adjustment without document.  
With the document cover open, without placing a document on the table glass, press [EXECUTE] key.
- 3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.  
If the adjustment is completed normally, "DOCUMENT PHOTO SENSOR LEVEL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

## ADJ 24 Manual paper feed tray paper size (width) sensor adjustment

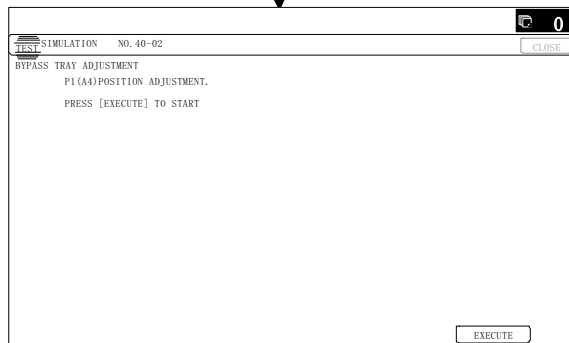
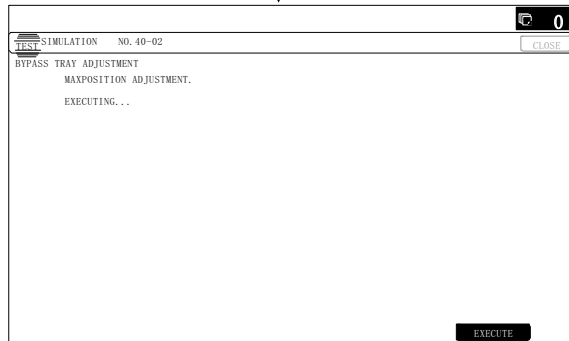
This adjustment is needed in the following situations:

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

- 1) Go through the modes specified in Simulation 40-2.

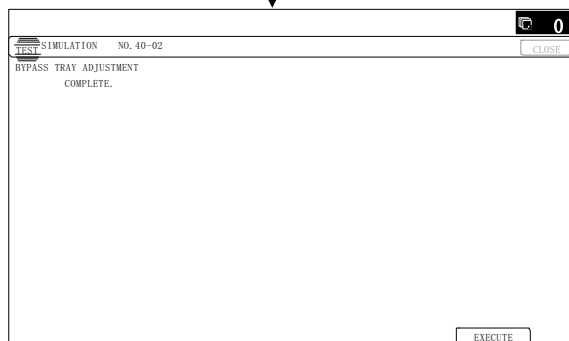


EXECUTE

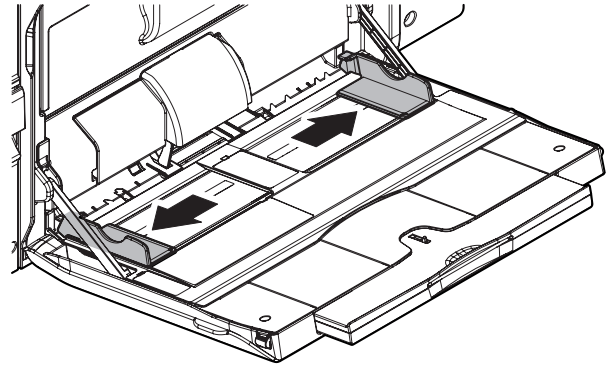


EXECUTE

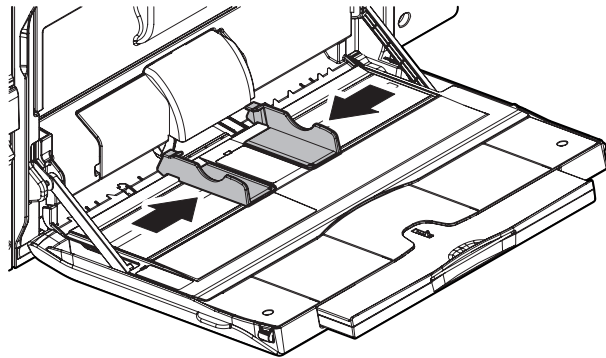
Repeat the above procedure to adjust the A4R width MIN POSITION.



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



- 3) Press [EXECUTE] key.  
[EXECUTE] key is highlighted. Then it returns to the normal display.  
The maximum width position detection level of the manual paper feed guide is recognized.
- 4) Set the manual paper feed guide to the 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.

## ADJ 25 RSPF/DSPF tray paper size (width) sensor adjustment

### 25-A RSPF tray paper size (width) sensor adjustment

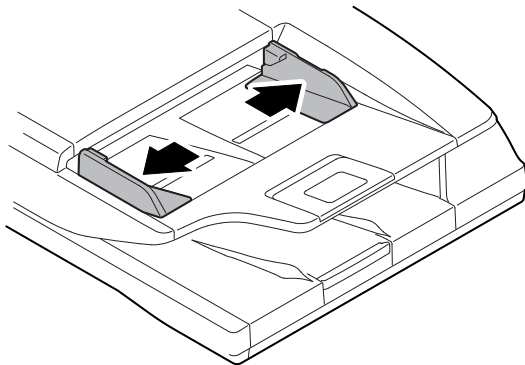
### 25-B DSPF tray paper size (width) sensor adjustment

This adjustment is needed in the following situations:

- \* The RSPF/DSPF paper feed tray section has been disassembled.
  - \* The RSPF/DSPF 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 simulation 53-6 mode.

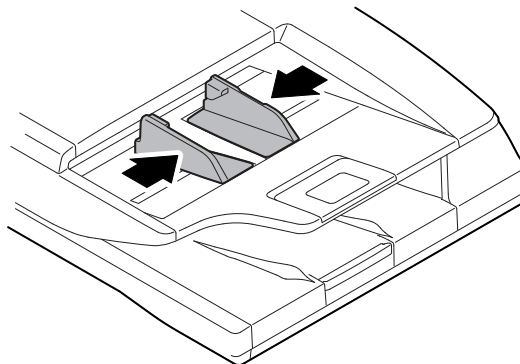


- 2) Open the RSPF/DSPF paper feed guide to the maximum width position.



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

- 8) Open the RSPF/DSPF paper feed guide to the minimum width position.



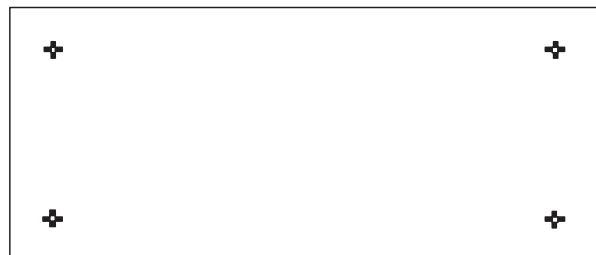
- 9) Press [EXECUTE] key.  
The minimum width detection level is recognized.  
\* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

## ADJ 26 Touch panel coordinate setting

This adjustment is needed in the following situations:

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

- 1) Enter the SIM 65-1 mode.



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

## ADJ 27 Image loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28

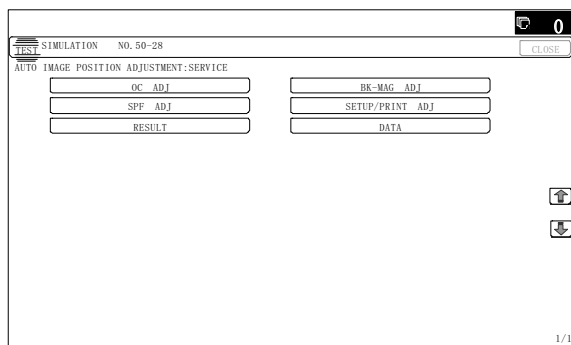
The following adjustment items can be executed automatically with SIM50-28.

- \* ADJ 8 Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
- \* ADJ 9 Image off-center adjustment (Print engine section)
- \* ADJ 14/15 Scan image magnification ratio adjustment
- \* ADJ 16 Scan image off-center adjustment
- \* ADJ 17 Print area (void area) adjustment (Print engine section)
- \* ADJ 18 Copy image position, image loss adjustment (Menu in SIM50-28 mode)

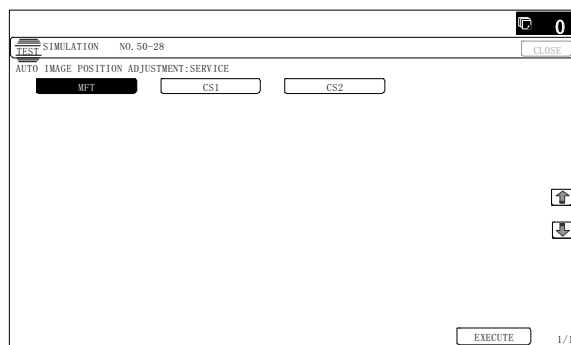
Display/Item	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (RSPF mode)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

### 27-A Print image main scanning direction image magnification ratio automatic adjustment

- 1) Enter the SIM50-28 mode.

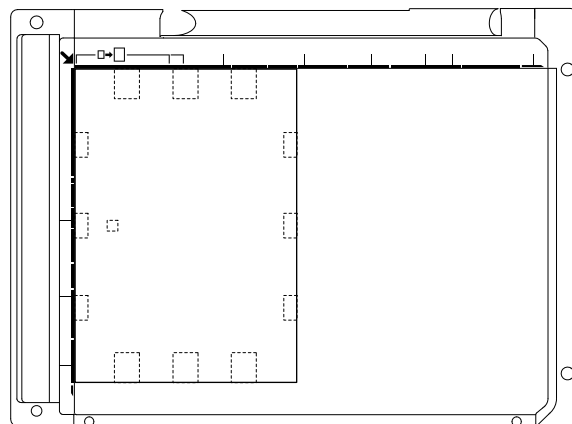


- 2) Select [BK-MAG ADJ] with the key button.
- 3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)



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

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



- 6) Press [EXECUTE] key.

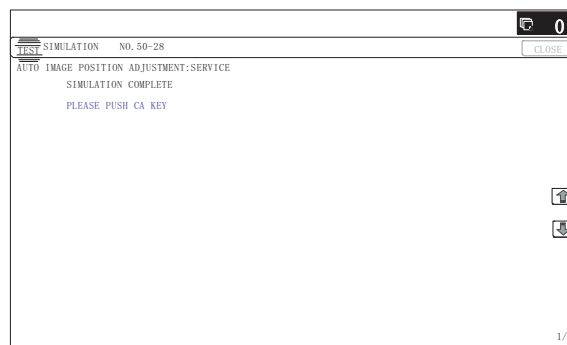


The following item is automatically adjustment.

- \* Print image main scanning direction image magnification ratio

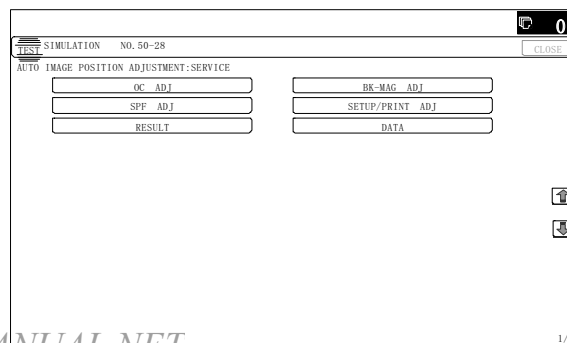
- 7) Press [OK] key.

The adjustment result becomes valid.

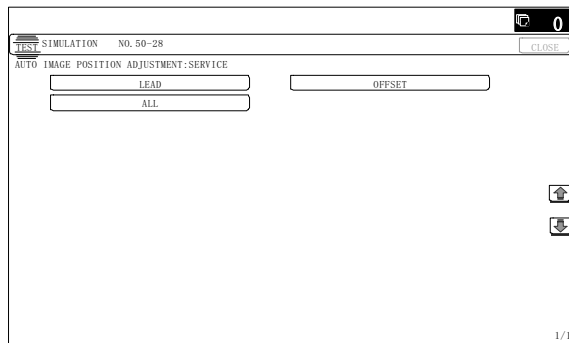


### 27-B Image off-center automatic adjustment

- 1) Enter the SIM50-28 mode.



- 2) Select [SETUP/PRINT] ADJ with the key button.
- 3) Select [ALL] with the key button.



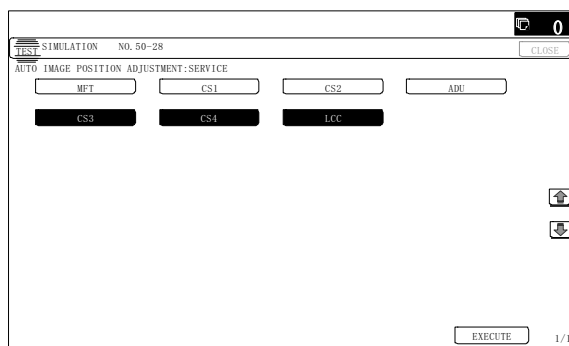
(Note)

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

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

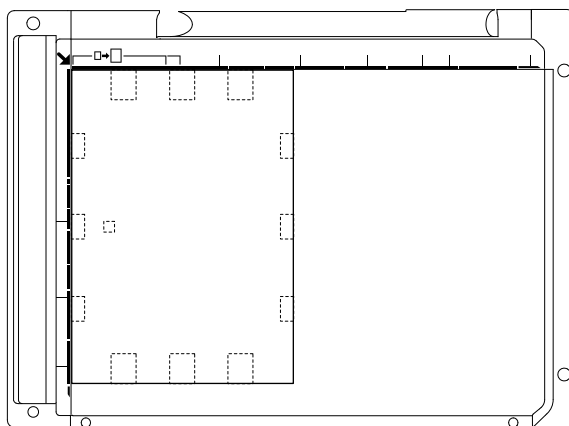
When [ALL] is selected, both of the above two items are executed simultaneously.

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



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

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



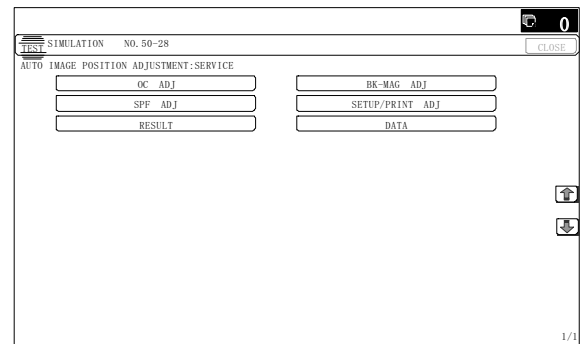
- 7) Press [EXECUTE] key.  
The following item is automatically adjustment.
- \* Print image lead edge image position adjustment
- \* Print image off-center adjustment
- 8) Press [OK] key.

The adjustment result becomes valid.

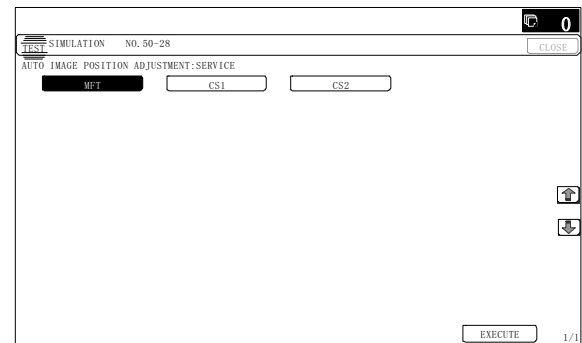
Perform procedures 4) to 7) for each paper feed tray.

## 27-C Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

- 1) Enter the SIM50-28 mode.

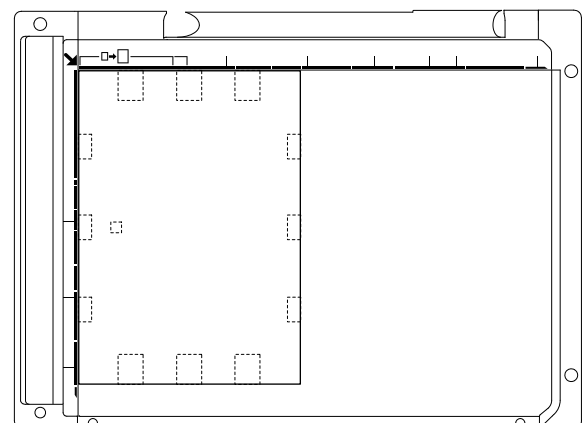


- 2) Select [OC ADJ] with the key button.
- 3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)

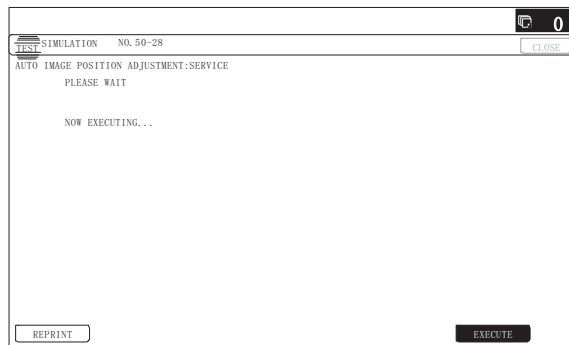


- 4) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 5) Set the adjustment pattern on the document table. (Any direction)

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



6) Press [EXECUTE] key.

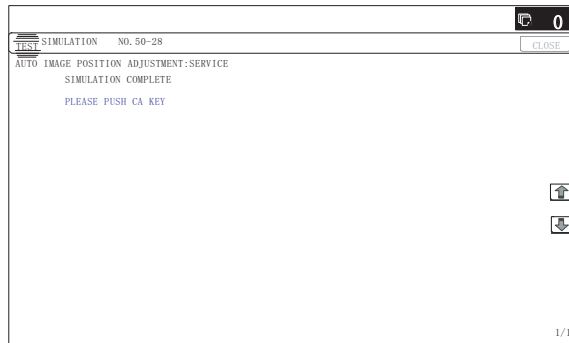


The following item is automatically adjustment.

- \* Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

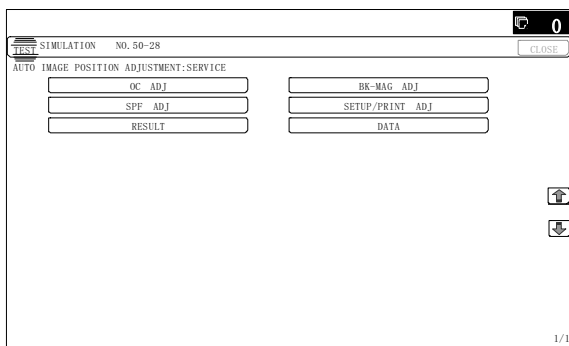
7) Press [OK] key.

The adjustment result becomes valid.

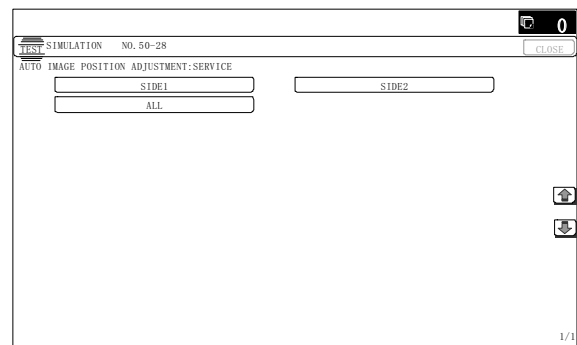


## 27-D RSPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment

1) Enter the SIM50-28 mode.



2) Press the [SPF ADJ] button.



3) Proceed to one of the three screens for selecting the cassette used to print SPF adjustment patterns by selecting the corresponding button:

SIDE1: RSPF adjustment for the front side

SIDE2: RSPF adjustment for the back side

ALL: RSPF adjustment for both the front and back sides

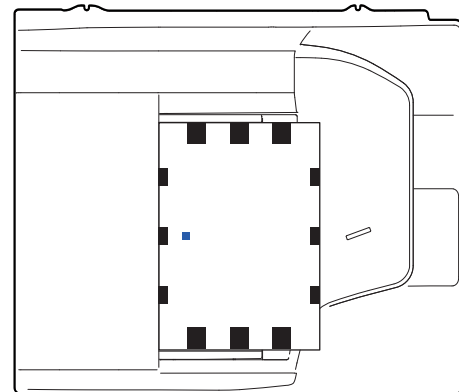
4) Select one of the cassettes that can be used to print SPF adjustment patterns. (Multiple selection is not allowed.)

5) Press the [EXECUTE] button, and the machine starts self-print of SPF adjustment patterns.

- \* The screen shows a message indicating that the machine is self-printing SPF adjustment patterns.

When self-print finishes, the next screen appears where you can start SPF adjustments.

6) RSPF adjustment patterns are loaded into the RSPF.



- \* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print SPF adjustment patterns again.

7) Press the [EXECUTE] button, and the machine starts reading SPF adjustment patterns (for the front side).

- \* The screen shows a message indicating that the machine is reading and calculating SPF adjustment patterns (for the front side).

The machine starts calculating the adjustment amount (for the front side) after it has read the patterns for the front side.

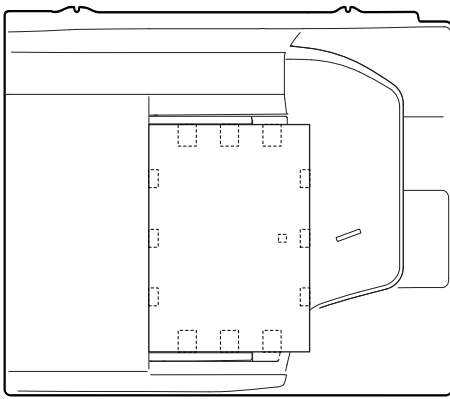
After the machine has finished calculating the adjustment amount for the front side, the next screen appears where you can have the machine start reading SPF adjustment patterns (for the back side).

### <Adjustment Item List>

- RSPF original leading edge adjustment (front side)
- RSPF original off-center adjustment (front side)
- RSPF original sub-scan magnification adjustment (front side)



- 8) SPF adjustment patterns are loaded into the RSPF.



\* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print SPF adjustment patterns again.

- 9) Press the [EXECUTE] button, and the machine starts loading SPF adjustment patterns (for the back side).

\* The screen shows a message indicating that the machine is reading SPF adjustment patterns (for the back side).

The machine starts calculating the adjustment amount (for the back side) after it has read the patterns for the back side.

After the machine has finished calculating the adjustment amount for the back side, the next screen appears where you can view the results of the adjustments.

#### <Adjustment Item List>

- SPF original leading edge adjustment (back side)
- SPF original off-center adjustment (back side)
- SPF original sub-scan magnification adjustment (back side)

- 10) The adjustment result screen appears.

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

\* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print SPF adjustment patterns (for the front and back sides) again.

\* To have the machine start re-reading the SPF adjustment patterns (front and back sides), press the [RESCAN] button.

\* To return to the top menu without saving the adjustment values into EEPROM and RAM, press the [RETRY] button.

\* To display the data used for adjustment, press the [DATA] button.

- 11) To save the adjustment values into EEPROM and RAM and return to the top menu, press the [OK] button.

\* To return to the result screen, press the [BACK] button.

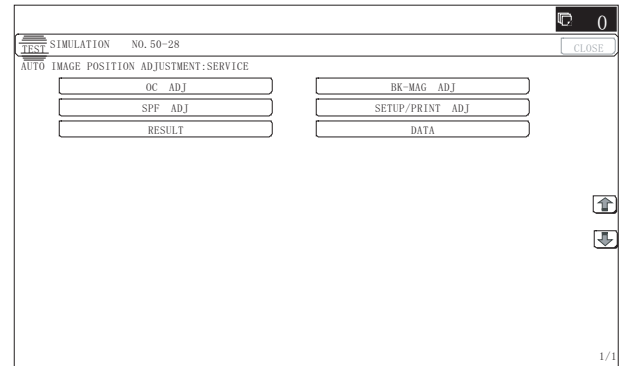
## 27-E DSPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio auto adjustment

This adjustment is required in the following cases:

- \* The scan control PWB has been replaced.
- \* The EEPROM on the scan control PWB has been replaced.
- \* The scanner (reading) section has been disassembled.
- \* The scanner (reading) unit has been replaced.
- \* When a U2 trouble occurs.
- \* The PF section has been disassembled.
- \* The DSPF unit has been replaced.

This adjustment is used to adjust the DSPF (front/back) document lead edge, off-center, sub operation magnification ratio.

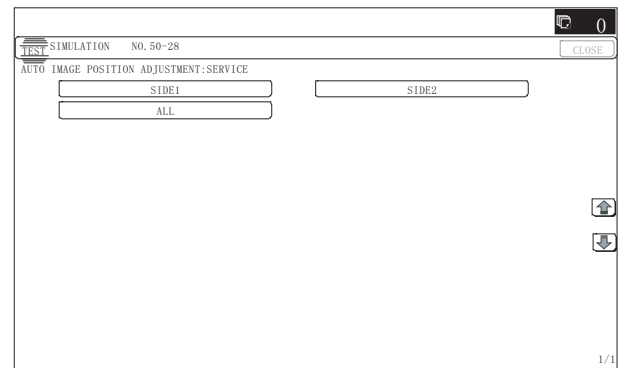
- 1) Enter the simulation mode 50-28 to select [SPF ADJ].



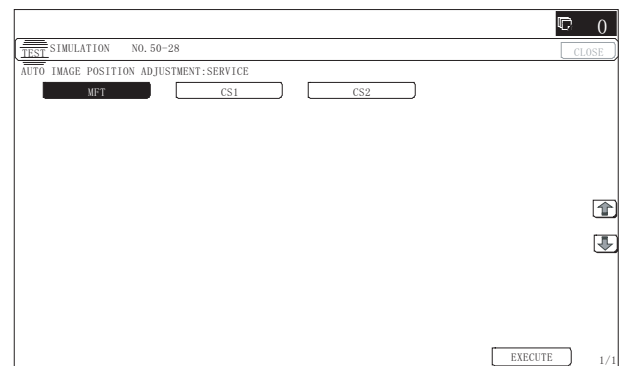
- 2) Select an adjustment item (front, back, both).

#### <List of adjustment items>

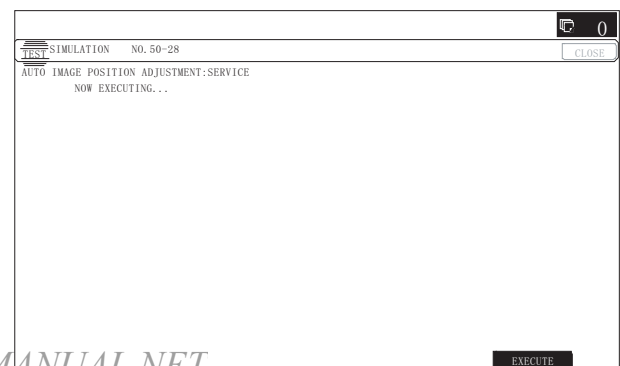
Menu display item	Content
SIDE1	DSPF adjustment front surface
SIDE2	DSPF adjustment back surface
ALL	DSPF adjustment front/back surface



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

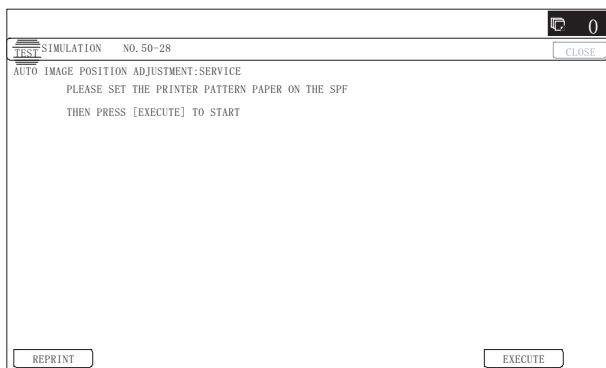


- 4) Self-print of the SPF adjustment pattern is performed.

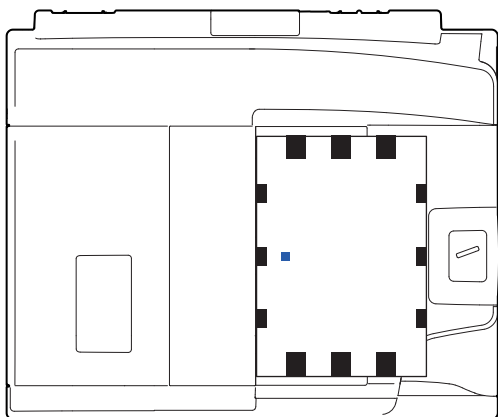




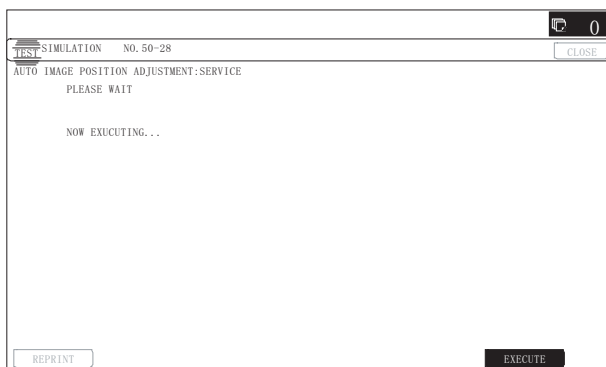
- 5) After completion of printing, the DSPF adjustment start screen is displayed.



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



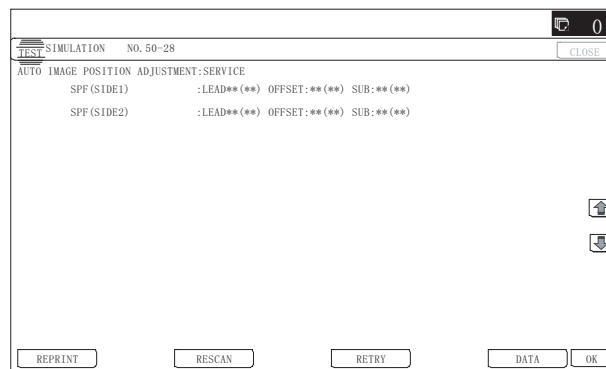
- 7) Press [EXECUTE] key, and scanning of the SPF adjustment pattern selected in step 2) is started.



- 8) When [ALL] is selected, load the SPF adjustment pattern on the DSPF again, and perform the adjustment of the back surface in the similar procedures.

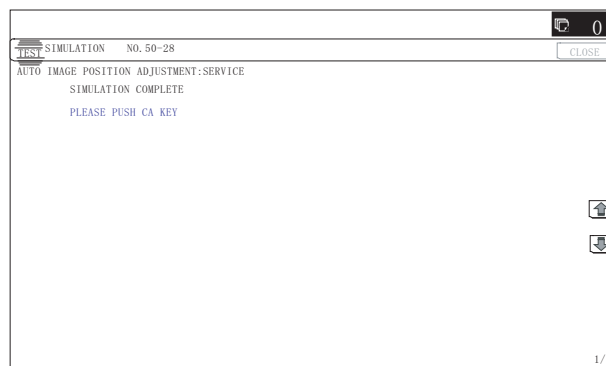
- 9) The adjustment result screen is displayed.

The value of this time is displayed, and the value of the last time is displayed in the parenthesis ( ).



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

- 10) When [OK] button is pressed, the adjustment value is saved in EEPROM and RAM and the display is shifted to the end screen.



## [6] SIMULATION

### 1. General (Including basic operations)

The simulation mode has the following functions, to display the machine operating status, identify the trouble position and causes in an earlier stage, and make various setups and adjustments speedily for improving the serviceability of the machine.

- 1) Various adjustments
- 2) Setting of the specifications and functions
- 3) Canceling troubles
- 4) Operation check
- 5) Counters check, setting, clear
- 6) Machine operating conditions (operation hysteresis), data check, clear.
- 7) Various (adjustments, setting, operation, counters, etc.) data transport.

The operating procedures and displays depend on the design of the operation panel of the machine.

#### A. Basic operation

##### (1) Starting the simulation

\* Entering the simulation mode

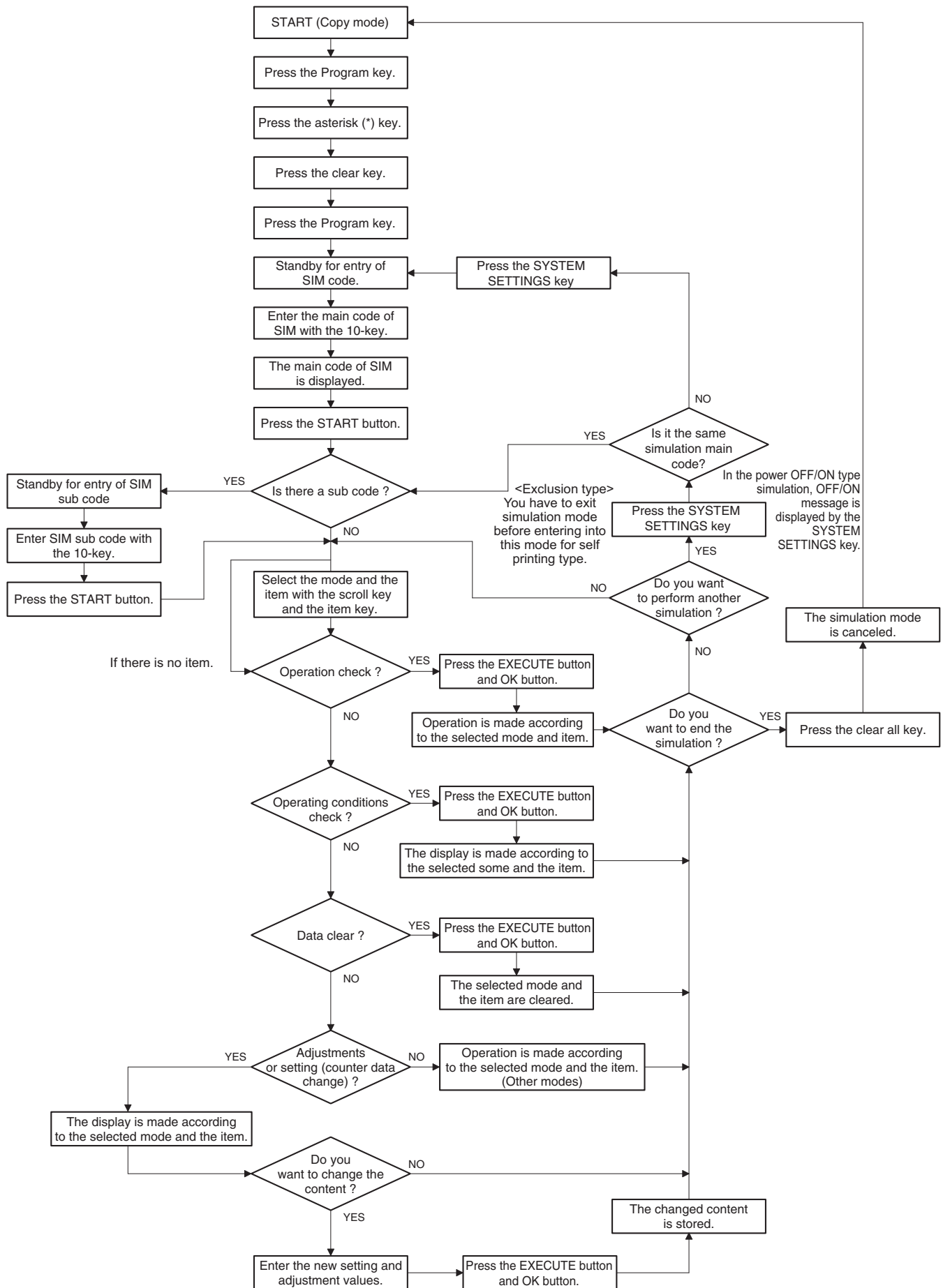
- 1) Copy mode key ON → Program key ON → Asterisk (\*) key ON → CLEAR key ON → Asterisk (\*) key ON → Ready for input of a main code of simulation
- 2) Entering a main code with the 10-key → START key ON.  
Or select a main code with the SIM key on the touch panel.
- 3) Entering a sub code with the 10-key → START key ON.
- 4) Select an item with the scroll key and the item key.
- 5) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.

\* Canceling the simulation mode to return to the normal mode

- 1) Press [CA] key.

##### (Note for the simulation mode)

Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode. If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.



## 2. List of simulation codes

Main	Sub	Functions	Section
1	1	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
	2	Used to check the sensors in the scanner (reading) section and the related circuits.	Scanner (reading)
	5	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
2	1	Used to check the operations of the auto document feed unit and the control circuit.	RSPF/DSPF
	2	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.	RSPF/DSPF
	3	Used to check the operations of the loads in the auto document feed unit and the control circuit.	RSPF/DSPF
3	2	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.	Finisher
	3	Used to check the operation of the load in the finisher and the control circuit.	Finisher
	10	Used to adjust the finisher.	Finisher
4	2	Used to check the operations of the sensors and detectors in the desk/large capacity tray, and the control circuit of those.	Desk/Large capacity tray (LCC)
	3	Used to check the operations of the loads in the desk/large capacity tray (LCC), and the control circuit of those.	Desk/Large capacity tray (LCC)
	5	Used to check the operations of the paper feed desk paper transport clutch (DTRC) and the LCC paper transport clutch (LTRC).	Paper feed desk/ Large capacity tray (LCC)
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation panel
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing
	3	Used to check the operation of the scanner lamp and the control circuit.	Scanner (reading)
	4	Used to check the operation of the discharge lamp and the control circuit.	Process
6	1	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.	Paper transport/Paper exit section
	2	Used to check the operations of each fan motor and its control circuit.	Others
	3	Used to check the operations of the primary transport unit and the control circuit.	Process (Transport)
	6	Used to check the operation of the fusing separation.	Fusing
7	1	Used to set the operating conditions of aging.	Others
	6	Used to set the operating intermittent aging cycle.	
	8	Used to display the warm-up time.	
	9	Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color).	
	12	The document reading number of sheets setting (for aging operation)	RSPF/DSPF
8	1	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.	Process (Developing)
	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.	Process (Charging)
	6	Used to check and adjust the operation of the transport voltage and the control circuit.	Process (Transport)
9	2	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.	Duplex
	3	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.	Duplex
10	1	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.	Process (Developing)
13	-	Used to cancel the self-diag "U1" trouble.	
14	-	Used to cancel excluding the self-diag U1/U2/LCC/PF troubles.	
15	-	Used to cancel the self-diag "U6-09" (large capacity paper feed tray) trouble.	LCC
16	-	Used to cancel the self-diag "U2" trouble.	MFP PWB / PCU PWB / SCU PWB
17	-	Used to cancel the self-diag "PF" trouble.	
21	1	Used to set the maintenance cycle.	
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	
	2	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.)	
	3	Used to check misfeed positions and the misfeed count of each position. * Presumption of the faulty point by this data is possible.	
	4	Used to check the trouble (self diag) history.	
	5	Used to check the ROM version of each unit (section).	Firmware
	6	Used to output the setting/adjustment data (simulation, FAX soft switch, counter), the firmware version, and the counter list.	
	8	Used to check the number of operations (counter value) of the finisher, the RSPF, and the scan (reading) unit.	
	9	Used to check the number of use (print quantity) of each paper feed section.	Paper feed, ADU, LCC
	10	Used to check the system configuration (option, internal hardware).	
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)	FAX
	12	Used to check the RSPF/DSPF 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.)	RSPF/DSPF
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).	Process
	19	Used to check the values of the counters related to the scan - image send.	
90		Used to output the various set data lists.	

Main	Sub	Functions	Section
23	2	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.)	
	80	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.	Paper feed, Paper transport
24	1	Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)	
	2	Used to clear the number of use (the number of prints) of each paper feed section.	
	3	Used to clear the finisher, RSPF, and the scan (reading) unit counter.	
	4	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)	
	5	Used to clear the developer counter. (After replacement of developer, clear the counter.)	
	6	Used to clear the copy counter.	
	7	Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)	
	9	Used clear the printer mode print counter and the self print mode print counter.	
	10	Used to clear the FAX counter. (Only when FAX is installed)	
	15	Used to clear the counters related to the scan mode and the image send.	
	30	Used to initialize the administrator password.	
25	1	Used to check the operations of the developing section.	Process (Developing section)
	2	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)	Image process (Photoconductor/Developing/Transfer/Cleaning)
26	1	Used to set the paper exit tray (MX-TRX1).	Paper exit
	2	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.)	Paper feed
	3	Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.)	Auditor
	5	Used to set the count mode of the total counter and the maintenance counter. (A3/11x17 size)	
	6	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.	
	10	Used to set the trial mode of the network scanner.	
	18	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)	
	30	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)	
	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.	
	38	Used to set Continue/Stop of print when the maintenance life is reached.	
	41	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.	
	49	Used to set the print speed of postcards mode.	
	50	Used to set functions.	
	52	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.	
	53	User auto color calibration (color balance adjustment) Inhibit/Allow setting (copy mode)	
	54	User auto color calibration (color balance adjustment) Inhibit/Allow setting (printer mode)	
	65	Used to set the finisher alarm mode.	
	69	Used to set the operating conditions for toner near end.	
	73	Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment	
	74	Used to set the OSA trial mode.	
	78	Used to set the password of the remote operation panel.	
27	1	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)	
	2	Used to set the sender's registration number and the HOST server telephone number. (FSS function)	
	4	Used to set the initial call and toner order auto send. (FSS function)	
	5	Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function)	Communication (RIC/MODEM)
	6	Used to set of the manual service call. (FSS function)	
	7	Used to set of the enable, alert callout. (FSS function)	
	9	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)	
	10	Used to clear the trouble prediction history information. (FSS function)	
	11	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)	
	12	Used to check the high-density, half-tone process control and the automatic registration adjustment error history. (FSS Function)	
	13	Used to check the history of paper transport time between sensors. (FSS function)	
	14	Used to set the FSS function connection test mode.	
30	1	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.	
	2	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.	
33	1	Used to check the operations of the card reader sensor and the control circuit.	
	2	Used to delete the ID (IDM) information of Felica card.	Data clear
40	2	Manual paper feed tray paper width sensor adjustment.	Paper feed
	7	Used to set the adjustment value of the manual paper feed tray paper width sensor.	Paper feed

Main	Sub	Functions	Section
41	1	Used to check the operations of the document size sensor and the control circuit.	
	2	Used to adjust the document size sensor detection level.	
	3	Used to check the operations of the document size sensor and the control circuit.	
43	1	Used to set the fusing temperature in each mode.	
	4	Used to set the fusing temperature 2 in each mode. (Continued from SIM 43-1.)	
	20	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	21	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	22	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	23	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	24	Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.	
	31	Used to check the operation of the fusing web cleaning motor.	Fusing
	32	Used to set various items related to the forcible operation of web cleaning when job end.	Fusing
44	1	Used to set each correction operation function in the image forming (process) section.	Image process (Photoconductor/ Developing/Transfer/Cleaning)
	2	Used to adjust the sensitivity of the image density sensor (registration sensor).	Process
	4	Used to set the conditions of the high density process control operation.	Process
	6	Used to execute the high density process control forcibly.	Process
	9	Used to display the result data of the high density process control operation.	Image process (Photoconductor/ Developing/Transfer/Cleaning)
	12	Used to display the operation data of the high density process control and the image density sensor (registration sensor).	Image process (Photoconductor/Developing)
	13	Used to perform the color image sensor (image registration sensor F) calibration.	
	14	Used to display the output level of the temperature and humidity sensor.	Process (OPC drum, development)/ Fusing/LSU
	16	Used to display the toner density control data.	Developing system
	21	Used to set the half tone process control target.	Process
	22	Used to display the toner patch density level in the half tone process control operation.	Process
	24	Used to display the correction target and the correction level in the half tone process control operation.	Process
	25	Used to set the calculating conditions of the correction value for the half tone process control.	Process
	26	Used to execute the half tone process control compulsory.	Process
	27	Used to clear the correction data of the half tone process control.	Process
	28	Used to set the process control execution conditions.	Process
	29	Used to set the operating conditions of the process control during a job.	Process
	31	Used to adjust the OPC drum phase. (Manual adjustment)	Process
	37	Used to set the development bias correction level in the continuous printing operation.	
	43	Used to display the identification information of the developing unit.	Developing system
	61	Used to adjust the color image density sensor. (The adjustment is made according to the input of SIM44-13 to set the target value of the color sensor gain adjustment.)	
46	1	Used to adjust the copy density in the copy mode.	
	2	Used to adjust the copy density in the copy mode.	
	4	Used to adjust the density in the image send mode.	
	5	Used to adjust the density in the image send mode.	
	8	Used to adjust the image send mode color balance RGB.	
	9	Used to adjust the scan image density.	
	10	Used to adjust the copy color balance and the gamma (for each color copy mode).	
	16	Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode).	
	19	Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents.	
	21	Copy color balance adjustment (Manual adjustment)	
	23	Used to set the density correction of copy high density section (High density tone gap supported).	
	24	Copy color balance adjustment (Auto adjustment)	
	25	Used to adjust the copy color balance. (Single color copy mode)	
	26	Used to reset the single color mode color balance set value to the default.	
	27	Used to adjust the gamma/density of copy images, texts, and line image edges.	
	30	Used to adjust the resolution in the sub scanning direction in the copy mode.	
	32	Used to adjust the document background density reproducibility in the monochrome auto copy mode.	
	36	Used to adjust the colors in the 2-color copy mode.	
	37	Used to adjust the color document reproducibility in the monochrome copy mode.	
	38	Used to adjust the black component amount in the color copy mode.	
	39	Used to adjust the sharpness of FAX send images.	
	40	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	

Main	Sub	Functions	Section
46	41	Used to adjust the FAX send image density. (Normal)	
	42	Used to adjust the FAX send image density. (Fine)	
	43	Used to adjust the FAX send image density. (Super Fine)	
	44	Used to adjust the FAX send image density. (Ultra fine)	
	45	Used to adjust the FAX send image density. (600dpi).	
	47	Used to set the compression rate of copy and scan images (JPEG).	
	51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.	
	52	Used to set the gamma default for the copy mode heavy paper and the image process mode. (The set values of SIM46-51 are set to the default values.)	
	54	Used to perform the engine half tone automatic density adjustment (dither).	
	60	Used to adjust the sharpness in the color auto copy mode.	
	61	Used to adjust the area separation recognition level.	
	62	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.	
	63	Used to adjust the density in the copy low density section.	
	74	Copy color balance adjustment (Auto adjustment)/ Printer color balance adjustment (Auto adjustment)	
	90	Used to adjust the high compression PDF ASIC. (Do not change default value in the field)	
48	1	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).	
	5	Used to correction the scan image magnification ratio (in the sub scanning direction).	Scanner section
	6	Used to adjust the rotation speed of each motor.	
49	1	Used to perform the firmware update.	
	3	Used to update the operation manual in the HDD.	
	5	Used to perform the watermark update.	
50	1	Copy image position, image loss adjustment	
	2	Used to adjust the copy image position and the image loss. (This simulation is a simplified version of SIM 50-1).	
	5	Used to adjust the print lead edge image position. (PRINTER MODE)	
	6	Used to adjust the copy image position and the image loss. (RSPF/DSPF mode)	RSPF/DSPF
	7	Used to adjust the copy image position and the image loss (RSPF/DSPF mode). (This simulation is a simplified version of SIM 50-6.)	RSPF/DSPF
	10	Used to adjust the black print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.)	
	12	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)	
	20	Image registration adjustment (Main scanning direction) (Manual adjustment)	
	21	Image registration adjustment (Sub scanning direction) (Manual adjustment)	
	22	Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment)	
	24	Used to display the detail data of SIM 44-2, 50-20, 21 and 22.	
	27	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.	
	28	Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.	
51	1	Used to adjust the ON/OFF timing of the secondary transport voltage.	
	2	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the RSPF/DSPF resist 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.)	
53	6	Used to adjust the detection level of the RSPF/DSPF document width.	
	7	Used to adjust the RSPF/DSPF document size width sensor.	
	8	Used to adjust the document lead edge reference and the RSPF/DSPF mode document scan position.	
55	1	Used to set the specifications of the engine control operations. (SOFT SW)	
	2	Used to set the specifications of the scanner control operation. (SOFT SW)	
	3	Used to set the specifications of the controller operation. (SOFT SW)	
56	1	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)	
	2	Used to backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)	
	3	Used to backup the document filing data to the USB memory.	
	4	Used to backup the JOB log data to the USB memory.	
60	1	Used to check the operations (read/write) of the MFP PWB image memory (SDRAM).	
	2	Used to set the MFP PWB onboard SDRAM.	
61	1	Used to check the LSU polygon motor rotation and laser detection.	LSU
	3	Used to set the laser power	
	4	Used to print the print image skew adjustment pattern. (LSU unit)	

Main	Sub	Functions	Section
62	1	Used to execute the hard disk format (except operation manual area).	
	2	Used to check read/write of the hard disk (partial).	
	3	Used to check read/write of the hard disk (all areas).	
	6	Used to perform the self diagnostics of the hard disk.	
	7	Used to print the hard disk self diagnostics error log.	
	8	Used to format the hard disk. (Excluding the system area and the operation manual area)	
	10	Used to delete the job log data.	
	11	Used to delete the document filing data.	
	12	Used to set Enable/Disable of auto format in a hard disk trouble.	
	13	Used to format the hard disk. (only the operation manual area)	
63	1	Used to display the shading correction result.	Scanner
	2	Used to perform shading.	
	3	Used to perform scanner (CCD) color balance and gamma auto adjustment.	Scanner
	4	Used to display the SIT chart patch density.	
	5	Used to perform the scanner (CCD) color balance and gamma default setting.	
	6	Used to display the scan level and the density level of the copy color balance adjustment patch.	
	7	Used to register the service target of the copy mode auto color balance adjustment.	
	8	Used to set the default of the service target of the copy mode auto color balance adjustment.	
64	11	Used to set the target color balance of the copy mode auto color balance adjustment.	
	1	Test print. (Self print) (Color mode)	
	2	Test print. (Self print) (Monochrome mode)	
	4	Printer test print. (Self print) (256 gradations)	
	5	Printer test print. (Self print) (PCL)	
	6	Printer test print. (Self print) (PS)	
	7	Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-21 is printed.)	
65	1	Used to adjust the touch panel (LCD display section) detection coordinates.	Operation panel section
	2	Used to display the touch panel (LCD display section) detection coordinates.	
	5	Used to check the operation panel key input.	
67	17	Printer reset	Printer
	24	Printer color balance adjustment (Auto adjustment)	Printer
	25	Printer color balance adjustment (Manual adjustment)	Printer
	26	Used to set the target color balance of the printer mode auto color balance adjustment.	Printer
	27	Used to set the service target of the printer mode auto color balance adjustment.	Printer
	28	Used to set the default of the service target of the printer mode auto color balance adjustment.	Printer
	31	Used to clear the printer calibration value.	Printer
	33	Used to change the gamma of the printer screen. (for PCL/PS)	Printer
	34	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)	Printer
	36	Used to adjust the density in the low density section.	Printer
	52	Used to set the default of the gamma of the printer screen. (for PCL/PS)	Printer
	54	Printer color balance adjustment (Automatic adjustment for each dither)	Printer
	70	MFP PWB SRAM data clear	MFP PWB



### 3. Details of simulation

1

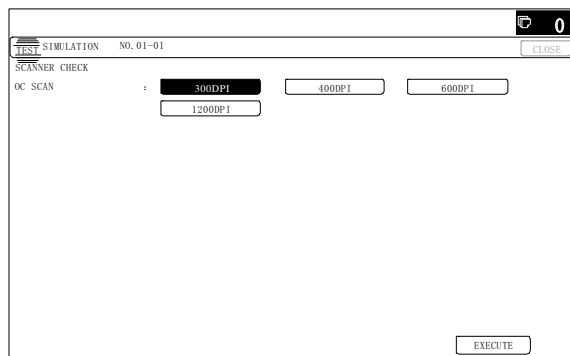
1-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner (reading) unit and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the operation speed with the touch panel key.
  - 2) Press [EXECUTE] key.
- Scanning is once performed at the speed corresponding to the scan resolution (operation speed).

Item/Display	Operation mode	Default value
OC SCAN	300DPI	300DPI (346.0mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0mm/s)
	1200DPI	1200DPI (86.5mm/s)

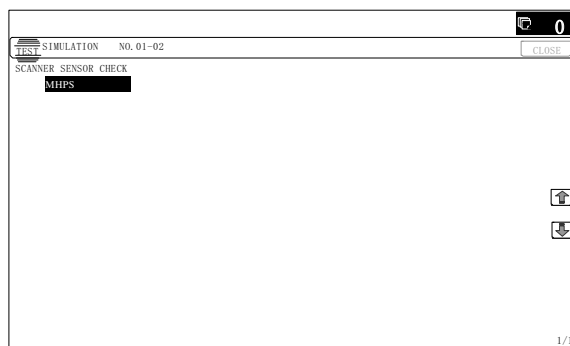


1-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the sensors in the scanner (reading) section and the related circuits.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

The operating status of the sensor is displayed.  
When "MHPS" is highlighted, the scanner unit is in the home position.



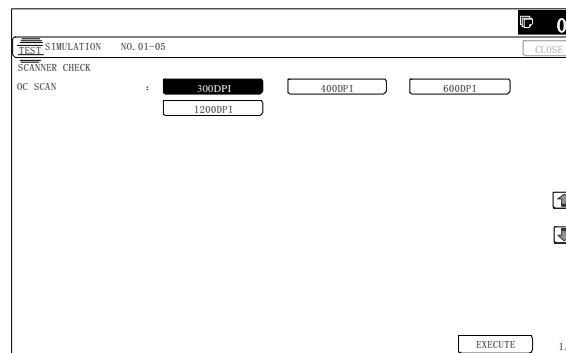
1-5

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner (reading) unit and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the operation speed with the touch panel key.
  - 2) Press [EXECUTE] key.
- Scanning is repeated at the speed corresponding to the scan resolution (operation speed).  
When [EXECUTE] key is pressed, the operation is terminated.

Item/Display	Operation mode	Default value
OC SCAN	300DPI	300DPI (346.0mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0mm/s)
	1200DPI	1200DPI (86.5mm/s)



2

2-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the auto document feed unit and the control circuit.
<b>Section</b>	RSPF/DSPF

#### 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
(SINGLE)	300DPI	300DPI (259.5mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0 mm/s)
(DOUBLE)	300DPI	300DPI (259.5mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0 mm/s)

## [DSPF]

Item/Display	Operation mode	Default value
(SINGLE)	300DPI	300DPI (346.0mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0 mm/s)
(DOUBLE)	300DPI	300DPI (346.0mm/s)
	400DPI	400DPI (259.5mm/s)
	600DPI	600DPI (173.0 mm/s)



## 2-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.
<b>Section</b>	RSPF/DSPF

### 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.

## [RSPF]

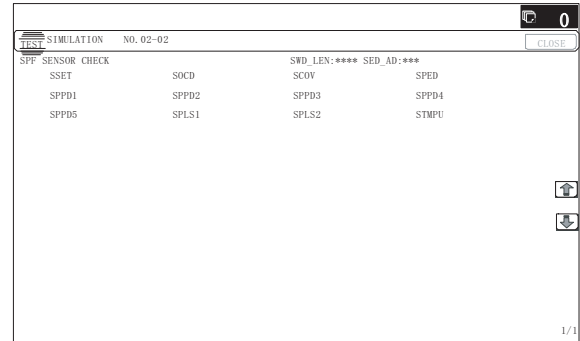
SSET	RSPF installation detection
SOCD	RSPF open/close detector
SCOV	RSPF cover open/close detector
SPED	RSPF document empty detector
SPPD1	RSPF document pass detector 1 (Paper enter detection)
SPPD2	RSPF document pass detector 2 (Resist roller front document transport detection)
SPPD3	RSPF document pass detector 3 (Document scanning front document transport detection)
SPPD4	RSPF document pass detector 4 (Reverse gate front document transport detection)
SPPD5	RSPF document pass detector 5 (Document reverse rear document transport detection)
SPLS1	RSPF document length detector 1 (Short)
SPLS2	RSPF document length detector 2 (Long)
STMPU	SPF stamp unit installation detector
SWD_LEN	RSPF guide plate position
SWD_AD	RSPF document width sensor (volume) output level

## [DSPF]

SSET	DSPF installation detection
SOCD	DSPF open/close detector
SCOV	DSPF cover open/close detector
SLCOV	DSPF lower door open/close detector
SPED1	DSPF document empty detector 1
SPED2	DSPF document empty detector 2
SPPD1	DSPF document pass detection 1 (Paper enter detection)

SPPD2	DSPF document pass detector 2 (Resist roller front document transport detection)
SPPD3	DSPF document pass detector 3 (Document scanning front document transport detection)
SPPD4	DSPF document pass detector 4 (Reverse gate front document transport detection)
SPPD5	DSPF document pass detector 5 (Document reverse rear document transport detection)
SPOD	DSPF paper exit detector
SPRDM	DSPF random feed paper size detection
SPLS1	DSPF document length detector 1 (Short)
SPLS2	DSPF document length detector (Long)
STLD	DSPF document tray lower limit detector
STUD	DSPF document tray upper limit detector
STMPU	DSPF stamp unit installation detector

NOTE: SWD\_LEN and SWD\_AD are not ON/OFF display.



## 2-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the loads in the auto document feed unit and the control circuit.
<b>Section</b>	RSPF/DSPF

### Operation/Procedure

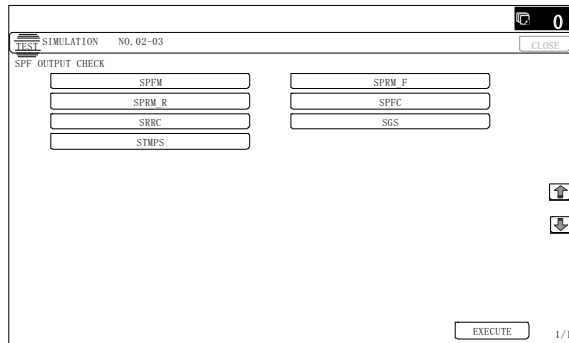
- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

## [RSPF]

SPFM	RSPF transport motor
SPRM_F	RSPF paper feed reverse motor (normal rotation)
SPRM_R	RSPF paper feed reverse motor (reverse rotation)
SPFC	RSPF paper feed clutch
SRRC	SPF resist roller clutch
SGS	RSPF document exit gate solenoid
STMP	Finish stamp solenoid

## [DSPF]

SPUM	DSPF paper feed motor
SPFM	DSPF transport motor
SPOM	DSPF paper exit motor
SLUM	DSPF lift-up motor
SPFFAN	DSPF fan motor
SPFC	DSPF paper feed clutch
SRRC	DSPF resist roller clutch
SRRBC	DSPF resist roller break clutch
STRRC	DSPF No. 1 resist roller clutch
STRRBC	DSPF No. 1 resist roller break clutch
STRC	DSPF transport clutch
STMP	Stamp solenoid



### 3

#### 3-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.
<b>Section</b>	Finisher

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

#### <Inner finisher>

FED	Entry port paper detection (Status detection "1")
FBED	Tray paper detection
FULD	Tray upper limit detection
FMLLD	Tray intermediate lower limit detection
FLLD	Tray lower limit detection
FSLD1	Paper surface detection 1
FSLD2	Paper surface detection 2
FRLD	Roller up/down detection
FBRD	Belt separation detection
FFJHPD	Alignment HP detection front
FRJHPD	Alignment HP detection rear
FJPD	Alignment guide position detection
FSTPD	Staple tray paper detection
FSHPD	Staple drive HP detection
FSTHPD	Staple shift HP detection
FSD	Staple empty detection
FSTD	Staple lead edge position detection
FDSW	Door open detection
FFANLK	Fan motor lock detection
FPRPD	Punch rear position detection (Status detection "1")
FPUC	Punch unit connection detection
FPHPD	Punch HP detection
FPSHPD	Punch side resist HP detection
FPPD1	Punch paper surface detection 1
FPPD2	Punch paper surface detection 2
FPPD3	Punch paper surface detection 3
FPPD4	Punch paper surface detection 4
FPPD5	Punch paper surface detection 5
FPPD6	Punch paper surface detection 6
FPDD	Punch dust detection
FPPEND	Punch paper rear edge detection
FPDES1	Punch destination detection 1
FPDES2	Punch destination detection 2

#### <Saddle stitch finisher>

PDPPD1	Paper pass paper transport detector 1
PDPPD2	Paper pass paper transport detector 2
PDCS	Paper pass cover Open/Close sensor
FPPD1	Paper delivery detector 1
FPAPHS_F	Paper alignment plate home position sensor F
FPAPHS_R	Paper alignment plate home position sensor R
FATPD	Paper alignment tray paper detector
FGHPS	Gripper home position sensor
FDTPD	Delivery tray paper detector
FPLD	Paper surface detector
FPPD2	Paper transport detector 2
FSPHS	Saddle plate home position sensor
FSTPD	Saddle exit tray paper detector
FSMRS	Saddle motor rotation sensor
FTULD	Tray upper limit detector
FTLLD	Tray lower limit detector
FTLMRS	Tray lift motor rotation sensor
FSHS	Staple home position sensor
FSSHPS	Stapler shift home position sensor
FSED	Staple empty detector
FSLS	Staple lead edge sensor
FTPS	Tray position sensor
FCD1	Cover detector 1
FCD2	Cover detector 2
FSSW1	Safety switch 1
FCD	Finisher connection detector
FSSSW1	Staple safety switch
FFL	Fan lock signal
FDRHS	Delivery roller home position sensor
FPPD3	Paper transport detector 3
FSATPD	Saddle paper alignment tray paper detector
FSSSW2	Stapler safety switch 2
FPHHD	Paper hold home position sensor
FSAPHS	Saddle alignment plate home position sensor
FSPGHS	Saddle paper guide home position sensor
FSRHS	Saddle roller home position sensor
FPDD	Delivery detector
FSSHs	Saddle staple home position sensor
FSSSES	Saddle staple sensor
FSSCS	Saddle staple cover sensor
FSSSHS	Finisher saddle stapler shift home position sensor
FPMRS	Punch motor rotation sensor
FPD	Punch unit detection (connector)
FPCHPS	Punch home position sensor
FPDFS	Punch dust sensor
FPHPS	Punch unit home position sensor
FPTS	Punch timing sensor
FPES1	Punch paper edge sensor 1
FPES2	Punch paper edge sensor 2
FPES3	Punch paper edge sensor 3
FPES4	Punch paper edge sensor 4
FPFS	Punch paper position sensor

#### <4K finisher>

FJPID	Interface transport unit entry port detection
FJPOD	Interface transport unit exit port detection
FJPDD	Interface transport unit cover detection
FED	Entry port paper detection
FAED1	Tray 1 area detection 1
FAED2	Tray 1 area detection 2
FAED3	Tray 1 area detection 3
FFJHPD	Alignment plate HP detection front
FRJHPD	Alignment plate HP detection rear
FBED1	Tray 1 paper detection
FBED2	Tray 2 paper detection
FCCD	Tray approach detection
FSLD1	Tray 1 paper surface detection
FPDD1	Discharged paper detection
FSLD2	Tray 2 paper surface detection
FASHPD	Rear edge assist HP detection



FSWHPD	Oscillation guide HP detection
FSWOPD	Oscillation guide open detection
FSTPD	Staple tray paper detection
FSHPD	Staple drive HP detection
FSTHPD	Staple shift HP detection
FSD	Staple empty detection
FSTD	Needle lead edge position detection
FFANLK	Fan motor lock detection
FSJOGD	Stapler alignment interference detection
FSAD	Staple safety SW
FSHTD	Shutter open detection
FCD	Upper door open detection
FFDD	Front cover open detection
F24V	24V output interruption detection
FPSW1	PUSHSW1 detection
FPSW2	PUSHSW2 detection
FPSW3	PUSHSW3 detection
FAED21	Tray 2 area detection 1
FAED22	Tray 2 area detection 2
FAED23	Tray 2 area detection 3
FDSW1	DIPSW1 detection
FDSW2	DIPSW2 detection
FDSW3	DIPSW3 detection
FDSW4	DIPSW4 detection
FDSW5	DIPSW5 detection
FDSW6	DIPSW6 detection
FDSW7	DIPSW7 detection
FDSW8	DIPSW8 detection
FPE	Punch motor lock detection
FPUC	Punch unit connection detection
FPHPD	Punch HP detection
FPSHPD	Punch horizontal resist HP detection
FPFDD	Punch front door open detection
FPDD	Punch dust detection
FPUDSW	Punch upper cover open detection SW

TEST SIMULATION NO. 03-02			
FIN SENSOR CHECK			
PDPD1	PDPD2	PDCS	FPPD1
FPAPHS_F	FPAPHS_R	FATPD	FGHPS
FDTPD	FPLD	FPPD2	FSPHS
FSTPD	FSMRS	FTLLD	FTLLD
FTLMRS	FSHS	FSSHP	FSED
FSLS	FTPS	FCO1	FCO2
FSSW1	FCD	FSSSW1	FFL
FDRHS	FPPD3	FSATPD	FSSSW2
FPBID	FSAPHS	FSPGHS	FSRHS
FPD0	FSSHS	FSSS	FSSCS
FSSHS			

### 3-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the load in the finisher and the control circuit.
<b>Section</b>	Finisher

#### Operation/Procedure

- Select the item to be operation checked with the touch panel key.
- Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

#### <Inner finisher>

FINRPS	Entry port reverse pass solenoid
FSLS	Paper surface detection solenoid
FPDS	Paddle solenoid
FBRs	Belt separation solenoid
FRM	Registration motor
FSWM	Oscillation motor

FAM	Bundle exit paper exit motor
FFJM	Alignment motor front
FRJM	Alignment motor rear
FSM	Staple shift motor
FFSM	Staple motor
FTLM	Tray lift motor
FFANM	Fan motor
FPNM	Punch motor
FPSM	Punch side resist motor

#### <Saddle stitch finisher>

PDPGS	Paper pass paper gate solenoid
PDPTM	Paper pass paper transport motor
PDCF	Paper pass cooling fan
FPTM1	Paper transport motor 1
FDRLM	Finisher paper exit roller lift motor
FGM	Gripper motor
FPAM-F	Paper alignment motor F
FPAM-R	Paper alignment motor R
FSSM	Stapler shift motor
FSM	Staple motor
FPTM2	Paper transport motor 2
FSDM	Saddle motor
FSPTM	Saddle paper transport motor
FSPAM	Saddle paper alignment motor
FSPM	Saddle positioning motor
FSDSM	Saddle staple motor
FPHS1	Paper holding solenoid 1
FPHS2	Paper holding solenoid 2
FTLM	Tray lift motor
FPM	Punch motor
FPSM	Punch shift motor

#### <4K finisher is installed>

FINRPS	Interface paper gate solenoid
FJPM	Interface transport motor
FJFM	Interface transport fan motor
FFM	Entry port transport motor
FAM	Bundle paper exit motor
FFJM	Alignment motor front
FRJM	Alignment motor rear
FSM	Staple shift motor
FTLM1	Tray 1 lift motor
FTLM2	Tray 2 lift motor
FFSM	Staple motor
FSWM	Oscillation motor
FASM	Rear edge assist motor
FINRRS	Inlet port roller separation solenoid
FBRRS	Buffer roller separation solenoid
FFDRRS	Paper exit roller separation solenoid
FBES	Buffer rear edge holding solenoid
FSHC	Shutter open/close clutch
FAORC	Bundle exit lower roller clutch
FPNM	Punch motor
FPSM	Punch horizontal resist motor

TEST SIMULATION NO. 03-03			
FIN LOAD CHECK			
PDPGS	PDPTM	PDCF	FPTM1
FDRLM	FGM	FPAM-F	FPAM-R
FSSM	FSM	FTLM	FPTM2
FSDM	FSPTM	FSPAM	FSPM
FSDSM	FPHS1	FPHS2	

3-10

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the finisher.
<b>Section</b>	Finisher

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

#### <Inner finisher>

Item/Display	Content	Setting range	Default value
A FRONT ADJUST	Alignment position adjustment (front)	2 - 18	10
B REAR ADJUST	Alignment position adjustment (rear)	2 - 18	10
C STAPLE REAR	Staple binding position adjustment (one position at the rear)	68 - 132	100
D STAPLE FRONT	Staple binding position adjustment (one position in front)	68 - 132	100
E STAPLE BOTH	Staple binding position adjustment (center position of two positions binding)	68 - 132	100
F STAPLE PITCH	Staple binding position adjustment (staple pitch of two positions binding)	68 - 132	100
G PUNCH CENTER	Punch center positioning sensor	37 - 63	50
H PUNCH HOLE	Punch hole adjustment (paper transport direction)	42 - 58	50

#### <Saddle stitch finisher>

Item/Display	Content	Setting range	Default value
A SADDLE POSITION	Saddle stitch position adjustment	25 - 75	50
B FOLDING POSITION	Saddle folding position adjustment	25 - 75	50
C FRONT ADJUST	Paper alignment position adjustment (Front)	35 - 65	50
D REAR ADJUST	Paper alignment position adjustment (Rear)	35 - 65	50
E STAPLE REAR	Staple binding position adjustment (one position at the rear)	25 - 75	50
F STAPLE REAR R	Staple binding position adjustment (one position at the rear)	45 - 75	50
G STAPLE FRONT	Staple binding position adjustment (one position in front)	25 - 75	50
H STAPLE FRONT R	Staple binding position adjustment (one position in front)	25 - 55	50
I STAPLE BOTH	Staple binding position adjustment (two positions at the center)	45 - 55	50
J STAPLE PITCH	Staple binding position adjustment (two positions in pitch)	35 - 62	50
K PUNCH CENTER	Punch center adjustment	35 - 65	50
L PUNCH HOLE	Punch hole position adjustment	30 - 60	50
M SADDLE_ADJUST_POS	Saddle alignment position adjustment	35 - 65	50
N GRIPPER_POS	Gripper exit position adjustment	35 - 65	50

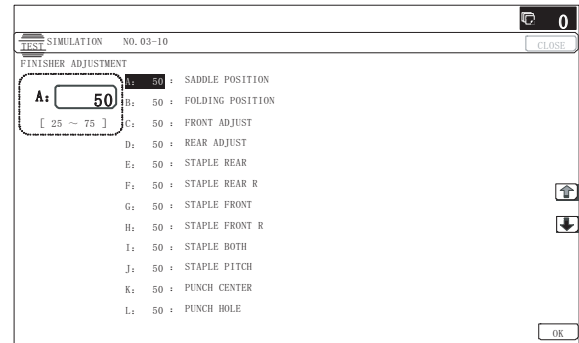
NOTE: "A: SADDLE POSITION (Saddle binding position adjustment)" and "B: FOLDING POSITION (Saddle folding position adjustment)"

The saddle binding position adjustment and the saddle folding position adjustment can be executed in the system setting menu. However, the adjustments in the system setting are based on the adjustment value of this simulation. If, therefore, the adjustment value of this simulation is set to an extreme level, the adjustment range in the system setting may be narrowed. (Adjustment range in the system setting  $\pm 5.0\text{mm}$ )

In general, when the saddle binding position and the saddle folding positions are adjusted to the center by this simulation, the above trouble will not occur.

#### <4K finisher>

Item	Display	Item	Set range	Default value
A	FRONT ADJUST	Alignment position adjustment (front)	0 - 20	10
B	STAPLE REAR	Staple binding position adjustment (one position at the rear)	94 - 106	100
C	STAPLE FRONT	Staple binding position adjustment (one position in front)	94 - 106	100
D	PUNCH CENTER	Punch center adjustment	30 - 70	50
E	PUNCH HOLE	Punch hole position adjustment	46 - 52	50



4

4-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and detectors in the desk/large capacity tray, and the control circuit of those.
<b>Section</b>	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.

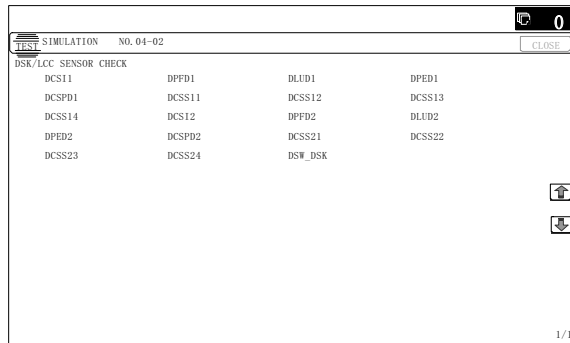
#### <Desk>

DCS11	Desk 1 installation detection
DPFD1	Desk 1 transport detection
DLUD1	Desk 1 upper limit detection
DPED1	Desk 1 paper empty detection
DCSPD1	Desk 1 remaining paper quantity detection
DCSS11	Desk 1 rear edge detection 1
DCSS12	Desk 1 rear edge detection 2
DCSS13	Desk 1 rear edge detection 3

DCSS14	Desk 1 rear edge detection 4
DCSI2	Desk 2 installation detection
DPFD2	Desk 2 transport detection
DLUD2	Desk 2 upper limit detection
DPED2	Desk 2 paper empty detection
DCSPD2	Desk 2 remaining paper quantity detection
DCSS21	Desk 2 rear edge detection 1
DCSS22	Desk 2 rear edge detection 2
DCSS23	Desk 2 rear edge detection 3
DCSS24	Desk 2 rear edge detection 4
DSW_DSK	Desk transport cover open/close detection

#### <A4 LCC>

LPFD	LCC transport sensor
LUD	LCC tray upper limit sensor
LDD	LCC tray lower limit sensor
LPED	LCC tray paper empty sensor
LCD	LCC tray insertion detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder sensor
L24VM	LCC24V power monitor
LLSW	LCC upper limit SW
LTOD	LCC main unit connection detection



4-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the loads in the desk/large capacity tray (LCC), and the control circuit of those.
<b>Section</b>	Desk/Large capacity tray (LCC)

#### Operation/Procedure

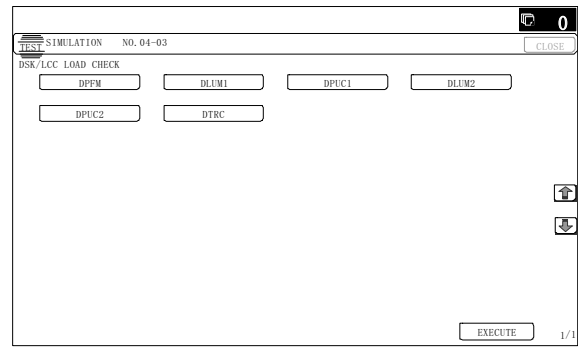
- 1) Select the load item that is required to operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

#### <Desk>

DPFM	Desk main motor
DLUM1	Desk 1 lift-up motor
DPUC1	Desk 1 paper feed clutch
DLUM2	Desk 2 lift-up motor
DPUC2	Desk 2 paper feed clutch
DTRC	Desk transport clutch

#### <A4 LCC>

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch



4-5

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the paper feed desk paper transport clutch (DTRC) and the LCC paper transport clutch (LTRC).
<b>Section</b>	Paper feed desk/Large capacity tray (LCC)

#### Operation/Procedure

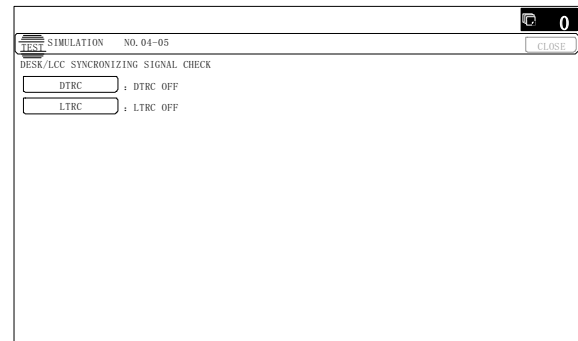
[Check the ON operation]

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.

5

5-1

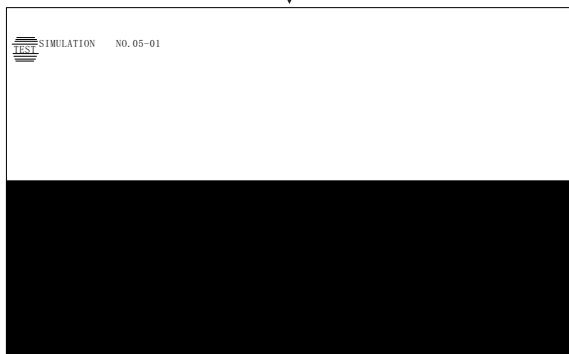
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the display, LCD in the operation panel, and control circuit.
<b>Section</b>	Operation panel

#### Operation/Procedure

The LCD is changed as shown below.

The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.

The LCD display contrast change and the LED lighting status are checked.



<b>5-2</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the heater lamp and the control circuit.
<b>Section</b>	Fusing

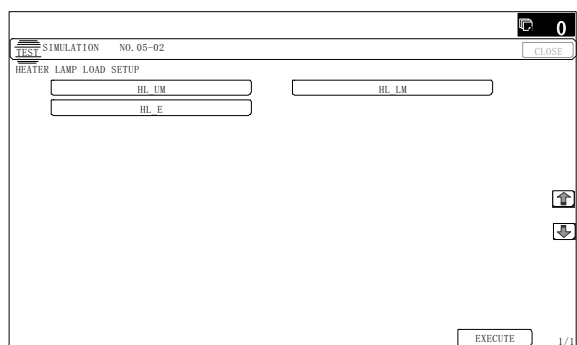
#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected heater lamp operates ON/OFF.  
When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:

Remove the rear cabinet, open the PWB holder, and the heater lamp lighting status can be checked from the clearance between the frames.

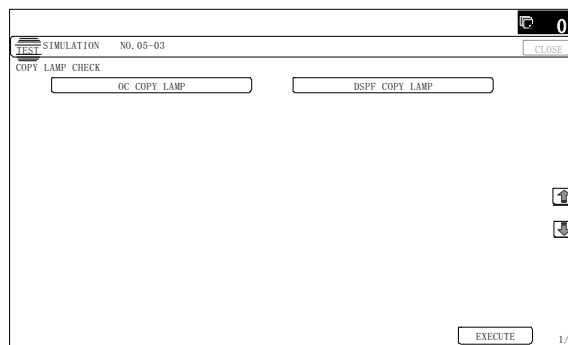
HL_UM	Heater lamp upper main (For warm-up)
HL_LM	Heater lamp lower main
HL_E	Heater lamp external



<b>5-3</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the scanner lamp and the control circuit.
<b>Section</b>	Scanner (reading)

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The scanner lamp lights up for 10 sec.  
When [EXECUTE] key is pressed, the operation is terminated.



<b>5-4</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the discharge lamp and the control circuit.
<b>Section</b>	Process

#### 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



## 6-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.
<b>Section</b>	Paper transport/Paper exit section

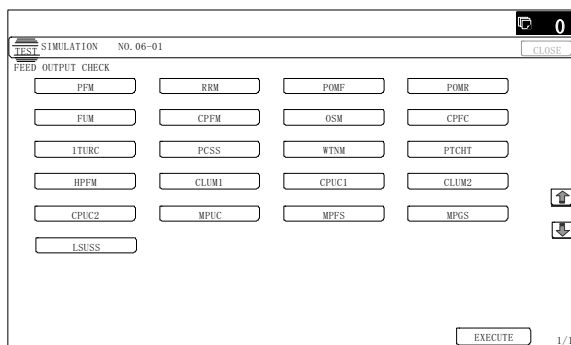
**Operation/Procedure**

- 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.

Section	Item/Display	Content
Transport/ process	PFM	Transport motor
	RRM	Registration motor
	POMF	Paper exit motor (normal rotation)
	POMR	Paper exit motor (reverse rotation)
	FUM	Fusing motor
	CPFM	Tray paper feed motor
	OSM	Shifter motor
	CPFC	Tray vertical transport clutch
	1TURC	Primary transport separation clutch
	PCSS	Process control shutter solenoid
	WTNM	Waste toner drive motor
	PTCHT	PTC heater
	HPFM	Horizontal transport motor
	CLUM1	Tray 1 lift-up motor
	CPUC1	Tray 1 paper feed clutch
Paper feed	CLUM2	Tray 2 lift-up motor
	CPUC2	Tray 2 paper feed clutch
	MPUC	Manual paper feed clutch
	MPFS	Manual feed take-up solenoid
	MPGS	Manual paper feed gate solenoid
LSU	LSUSS	LSU shutter solenoid



## 6-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of each fan motor and its control circuit.
<b>Section</b>	Others

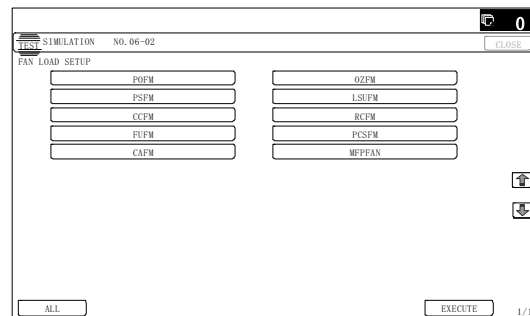
**Operation/Procedure**

- 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.

Item/Display	Content
POFM	Paper exit cooling fan motor (POFM_U, POFM_F and POFM_R are simultaneously ON.)
OZFM	Ozone fan motor
PSFM	Power cooling fan motor
LSUFM	LSU cooling fan motor
CCFM	Process cooling fan motor
RCFM	Rear cooling fan motor
FUFM	Fusing fan motor
PCSFM	Toner cooling fan motor
CAFM	Cartridge fan motor
MFPFAN	Controller fan motor



## 6-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the primary transport unit and the control circuit.
<b>Section</b>	Process (Transport)

**Operation/Procedure**

- 1) Press [TC1] or [TC1\_R] key to highlight it.
- 2) Press [EXECUTE] key, and the load operation set in the above procedure 1) is started.  
(Separation operation of BLACK → COLOR → FREE or BLACK → FREE is repeated.)

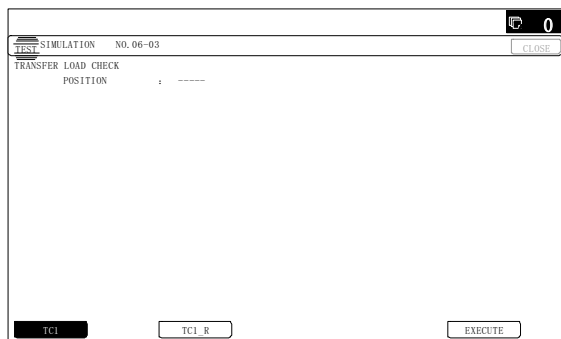
**[TC1]**

BLACK	Monochrome mode position	Monochrome mode position → Color mode position → Non-transport position → (Monochrome mode position) The operation is repeated.
COLOR	Color mode position	
FREE	Non-transport position	

**[TC1\_R]**

BLACK	Monochrome mode position	Monochrome mode position → Non-transport position → (Monochrome mode position) The operation is repeated.
FREE	Non-transport position	





6-6

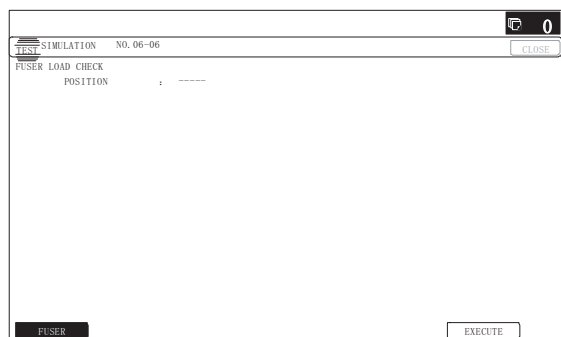
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of the fusing separation.
<b>Section</b>	Fusing

#### 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	



7

7-1

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of aging.
<b>Section</b>	Others

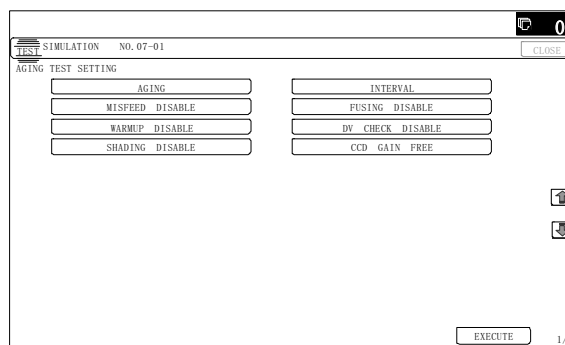
#### Operation/Procedure

- 1) Select the target to be set with the touch panel key.
- 2) Press [EXECUTE] key.

The machine is rebooted in the aging mode.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

AGING	Aging operation setup
INTERVAL	Intermittent setup
MISFEED DISABLE	JAM detection enable/disable setup
FUSING DISABLE	Fusing operation enable/disable setup
WARMUP DISABLE	Warm-up skip setup
DV CHECK DISABLE	DV unit detection enable/disable setup
SHADING DISABLE	Shading disable setup
CCD GAIN FREE	No setting of the CCD gain adjustment



7-6

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating intermittent aging cycle.
<b>Section</b>	

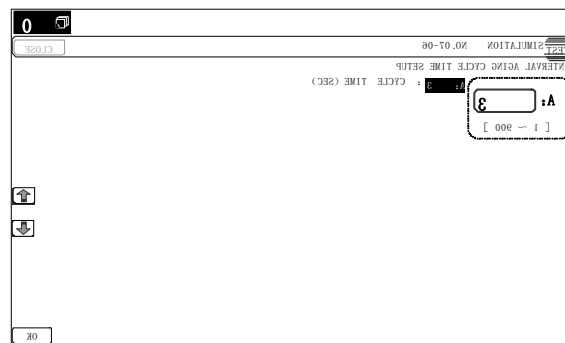
#### Operation/Procedure

- 1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
- 2) Press [OK] key.

The time entered in procedure 1) is set.

\* The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.



7-8

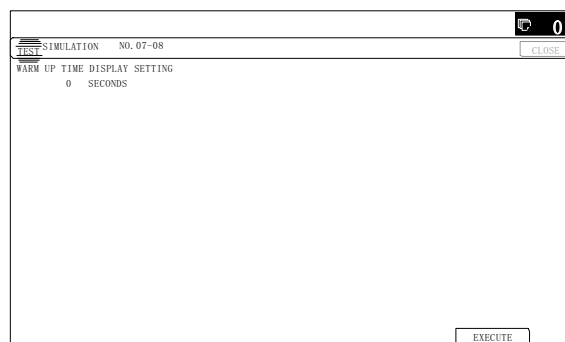
<b>Purpose</b>	Operation display
<b>Function (Purpose)</b>	Used to display the warm-up time.
<b>Section</b>	

#### Operation/Procedure

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

\* Interruption of counting by pressing [EXECUTE] key is inhibited.



7-9

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color).

**Section****Operation/Procedure**

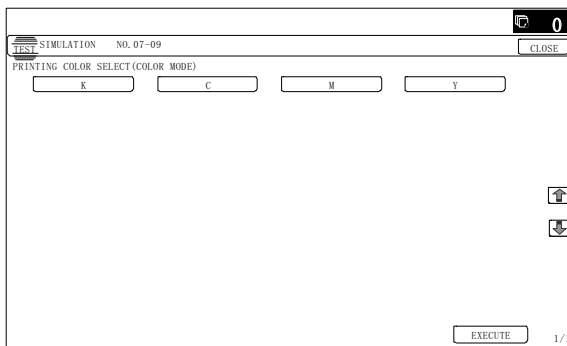
- 1) Select the copy color with the touch panel key.  
(Two or more colors can be selected.)  
The key of the selected color is highlighted.

- 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

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	The document reading number of sheets setting (for aging operation)

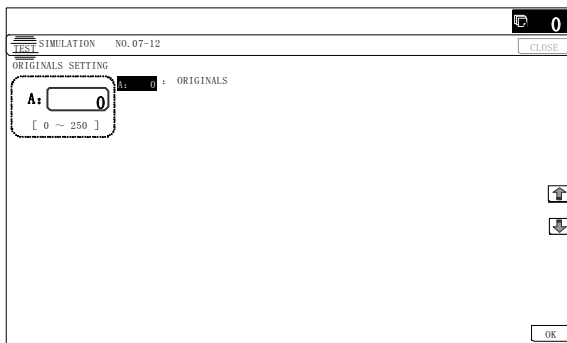
**Section**

RSPF/DSPF

**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

<b>Purpose</b>	Operation test/check/adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.

**Section**

Process (Developing)

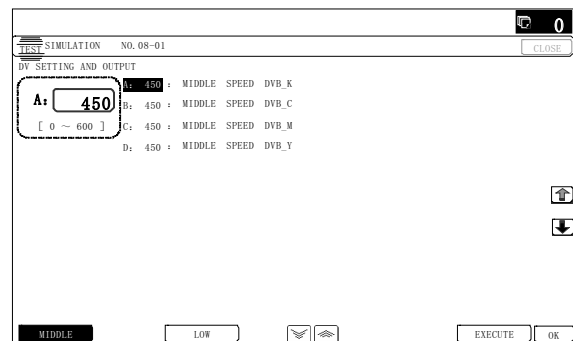
**Operation/Procedure**

- 1) Select a speed with [MIDDLE] and [LOW] keys on the touch panel.
- 2) Select a target item to be adjusted with [↑] [↓] buttons.
- 3) Enter the setting value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)  
\* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 4) Press [EXECUTE] key.

The set value is saved and the voltage entered with step 3) is output for 30 sec.

When [EXECUTE] key is pressed, the output is terminated.

Key		Item/Display	Content	Setting range
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0-600
	B	MIDDLE SPEED DVB_C	C developing bias set value at middle speed	0-600
	C	MIDDLE SPEED DVB_M	M developing bias set value at middle speed	0-600
	D	MIDDLE SPEED DVB_Y	Y developing bias set value at middle speed	0-600
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0-600
	B	LOW SPEED DVB_C	C developing bias set value at low speed	0-600
	C	LOW SPEED DVB_M	M developing bias set value at low speed	0-600
	D	LOW SPEED DVB_Y	Y developing bias set value at low speed	0-600



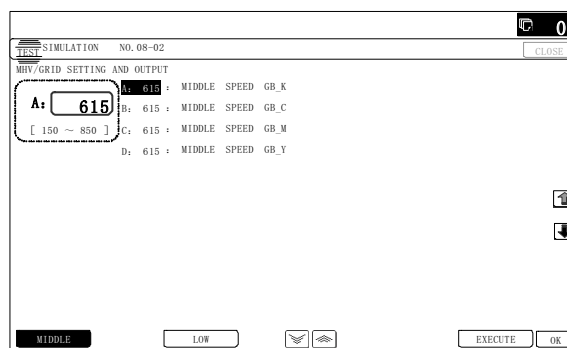
8-2

<b>Purpose</b>	Operation test/check/adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.
<b>Section</b>	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 [↑] [↓] 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  $\Delta$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
  - 4) Press [EXECUTE] key.
- The set value is saved and the voltage entered with step 3) is output for 30 sec.
- When [EXECUTE] key is pressed, the output is terminated.

Key	Item/Display	Content	Adjustment range
MIDDLE	A MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	150 - 850
	B MIDDLE SPEED GB_C	C charging/grid bias set value at middle speed	150 - 850
	C MIDDLE SPEED GB_M	M charging/grid bias set value at middle speed	150 - 850
	D MIDDLE SPEED GB_Y	Y charging/grid bias set value at middle speed	150 - 850
LOW	A LOW SPEED GB_K	K charging/grid bias set value at low speed	150 - 850
	B LOW SPEED GB_C	C charging/grid bias set value at low speed	150 - 850
	C LOW SPEED GB_M	M charging/grid bias set value at low speed	150 - 850
	D LOW SPEED GB_Y	Y charging/grid bias set value at low speed	150 - 850



8-6

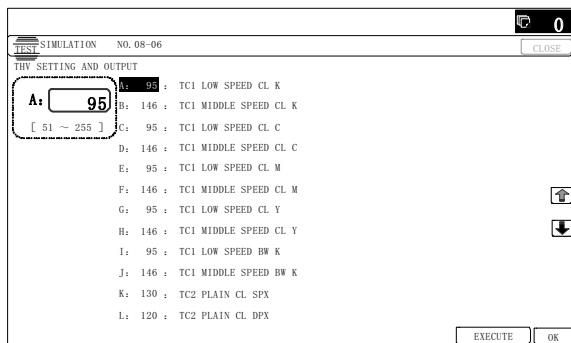
<b>Purpose</b>	Operation test/check/adjustment
<b>Function (Purpose)</b>	Used to check and adjust the operation of the transport voltage and the control circuit.
<b>Section</b>	Process (Transport)

**Operation/Procedure**

- 1) Select a target item to be adjusted with [↑] [↓] buttons.
  - 2) Enter the set value with 10-key.  
Enter the default value specified on the following list.
  - 3) Press [EXECUTE] key.
- The set value is saved and the voltage corresponding to the set value is output for 30 sec.
- When [EXECUTE] key is pressed, the output is terminated.

Item/Display		Content				Setting range	Default value		Actual output setting range	Default value of actual output value
							41-sheet machine	50-sheet machine		
A	TC1 LOW SPEED CL K	Primary transport bias reference value	Color	K	In low speed	51 - 255	95		2μA - 30μA	8μA
B	TC1 MIDDLE SPEED CL K				In middle speed		146	182		15μA
C	TC1 LOW SPEED CL C			C	In low speed		95			8μA
D	TC1 MIDDLE SPEED CL C				In middle speed		146			15μA
E	TC1 LOW SPEED CL M			M	In low speed		95			8μA
F	TC1 MIDDLE SPEED CL M				In middle speed		146			15μA
G	TC1 LOW SPEED CL Y			Y	In low speed		95			8μA
H	TC1 MIDDLE SPEED CL Y				In middle speed		146			15μA
I	TC1 LOW SPEED BW K		Black/White	K	In low speed		95			8μA
J	TC1 MIDDLE SPEED BW K				In middle speed		146	182		15μA

Item/Display		Content				Setting range	Default value		Actual output setting range	Default value of actual output value		
							41-sheet machine	50-sheet machine				
▲	K	TC2 PLAIN CL SPX	Secondary transport bias reference value	Color	Standard paper	Front surface	51 - 255	130	151	2μA - 100μA	40μA	
	L	TC2 PLAIN CL DPX				Back surface		120			35μA	
	M	TC2 PLAIN BW SPX		Black/ White		Front surface		109	130		30μA	
	N	TC2 PLAIN BW DPX			Back surface	99		109	25μA			
	O	TC2 HEAVY CL SPX			Color	Heavy paper		Front surface	88		20μA	
	P	TC2 HEAVY CL DPX		Back surface				78			15μA	
	Q	TC2 HEAVY BW SPX		Front surface				78			15μA	
	R	TC2 HEAVY BW DPX		Black/ White	Back surface	68		10μA				
	S	TC2 HEAVY2 CL		Color	Heavy paper 2			88			20μA	
	T	TC2 HEAVY2 BW		Black/ White				78			15μA	
	U	TC2 GLOSSY CL		Color	Gloss paper			88			20μA	
	V	TC2 GLOSSY BW		Black/ White				78			15μA	
	▲	W		TC2 OHP CL	Color	OHP		72	88		12μA	
		X		TC2 OHP BW	Black/ White			72	78		12μA	
		Y		TC2 ENVELOPE CL	Color	Envelope		78			15μA	
		Z		TC2 ENVELOPE BW	Black/ White			78			15μA	
		AA		TC2 CLEANING	Cleaning process				63		8μA	
AB		TC2 CLEAN LOW SPD	Secondary transport cleaning bias reference value	In low speed print				0	0V - --1500V	0V		
AC		TC2 CLEAN MIDDLE SPD		In middle speed print				0		0V		
AD	TC2 CLEAN CLEANING	Cleaning				85	-500V					
AE	VPTC LOW SPEED CL	PTC applied voltage control (AC constant voltage setting)	Color	Low speed		0 - 255	100		0 - (1.94) - 4.01KV	2.47KV		
AF	VPTC MIDDLE SPEED CL			Middle speed			100			2.47KV		
AG	VPTC LOW SPEED BK		Black/ White	Low speed			100			2.47KV		
AH	VPTC MIDDLE SPEED BK			Middle speed			100			2.47KV		
AI	FPTC LOW SPEED CL	PTC applied voltage control (frequency setting value)	Color	Low speed		1 - 255	192		0.5KHz - 1.5KHz	0.5KHz		
AJ	FPTC MIDDLE SPEED CL			Middle speed			192			0.5KHz		
AK	FPTC LOW SPEED BK		Black/ White	Low speed			192			0.5KHz		
AL	FPTC MIDDLE SPEED BK			Middle speed			136			0.7KHz		
AM	DCPTC LOW SPEED CL	PTC applied voltage control (DC constant voltage setting value)	Color	Low speed		0 - 255	93		0 - (0.68) - 2.14KV	-1.0KV		
AN	DCPTC MIDDLE SPEED CL			Middle speed			149			-1.4KV		
AO	DCPTC LOW SPEED BK		Black/ White	Low speed			149			-1.4KV		
AP	DCPTC MIDDLE SPEED BK			Middle speed			149			-1.4KV		
AQ	PTC_HT	PTC heater operating environment setting	0: OFF 1-6: Environment conditions (TC environment table 6 steps)				0 - 6	1	Always ON			
AR	HT_DUTY	Setting of the supply power in PTC heater constant operation (Duty ratio setting)	0: OFF 10: Lighting-up fully (10 steps)				0 - 10	5	0% - 100%	50%		



9-2

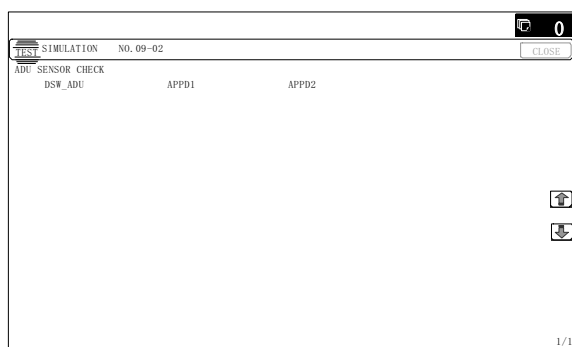
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.
<b>Section</b>	Duplex

**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.

DSW_ADU	ADU transport open/close detection
APPD1	ADU transport detection 1
APPD2	ADU transport detection 2



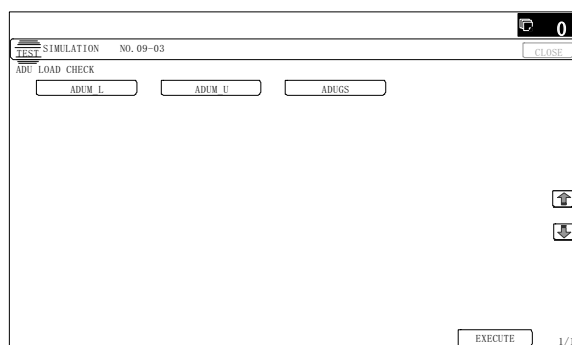
9-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.
<b>Section</b>	Duplex

**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.

ADUM_L	ADU motor lower
ADUM_U	ADU motor upper
ADUGS	ADU gate solenoid



10-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.
<b>Section</b>	Process (Developing)

**Operation/Procedure**

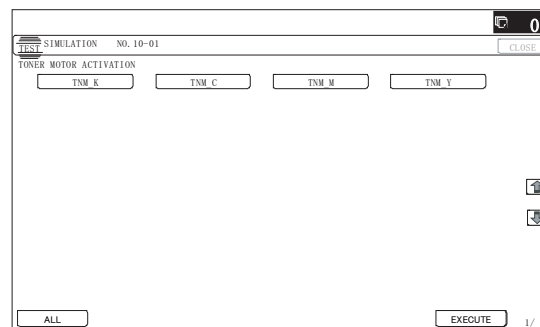
- 1) Select a target of the operation check with the touch panel key.  
When [ALL] key is pressed, all the items are selected.
- 2) Press [EXECUTE] key.  
The selected load operation is performed for 10 sec.  
When [EXECUTE] key is pressed, the operation is terminated.

NOTE: 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

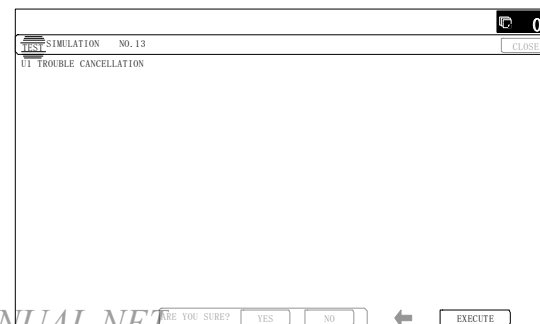


13--

<b>Purpose</b>	Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "U1" trouble.
<b>Section</b>	

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.



## 14

14--

<b>Purpose</b>	Clear/Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel excluding the self-diag U1/U2/LCC/PF troubles.

### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.



## 15

15--

<b>Purpose</b>	Clear/Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "U6-09" (large capacity paper feed tray) trouble.

### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.



## 16

16--

<b>Purpose</b>	Clear/Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "U2" trouble.
<b>Section</b>	MFP PWB / PCU PWB / SCU PWB

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.



## 17

17--

<b>Purpose</b>	Clear/Cancel (Trouble etc.)
<b>Function (Purpose)</b>	Used to cancel the self-diag "PF" trouble.
<b>Section</b>	

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.



## 21

21-1

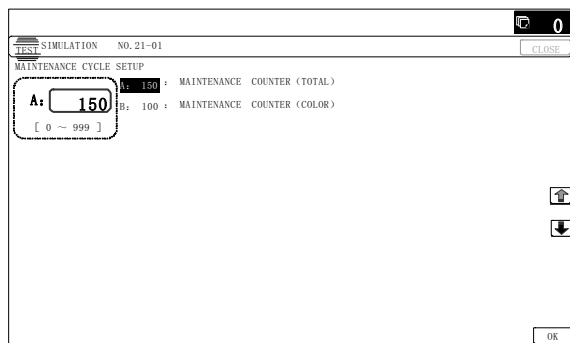
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the maintenance cycle.
<b>Section</b>	

#### Operation/Procedure

\* 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 [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

	Item/Display	Content	Setting range	Default value
A	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (Total)	0 : Default 1 - 300: 1K - 300K 999 : Free	150K
B	MAINTENANCE COUNTER (COLOR)	Maintenance counter (Color)	0 : Default 1 - 300: 1K - 300K 999 : Free	100K



## 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

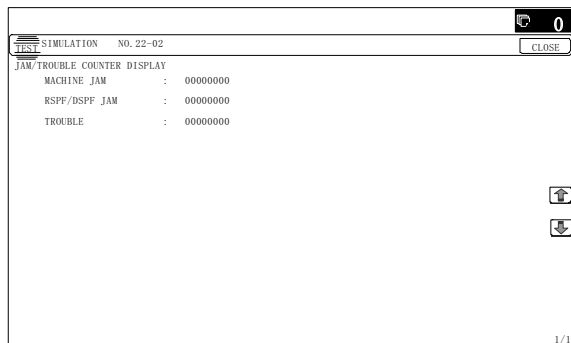
### Operation/Procedure

Change the display page with [↑] [↓] key on the touch panel.

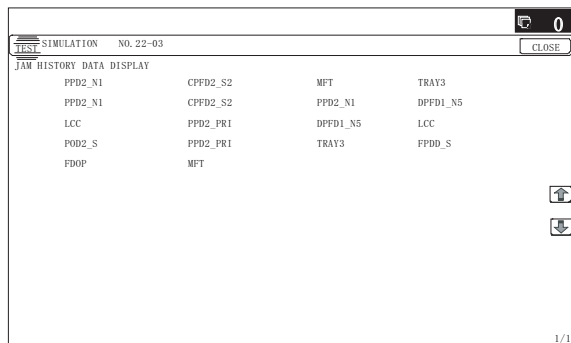
TOTAL OUT (BW)	Total output quantity of black and white	All prints including jams
TOTAL OUT (COL)	Total output quantity of color	All prints including jams
TOTAL (BW)	Total use quantity of black and white	Effective paper (including self print, excluding jams)
TOTAL (COL)	Total use quantity of full color	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 (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 (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)
DOC FIL (BW)	Black and white document filing print counter	Billing target (excluding self print)
DOC FIL (COL)	Color document filing print counter	Billing target (excluding self print)
DOC FIL (2COL)	2-color document filing print counter	Billing target (excluding self print)
DOC FIL (SGL_COL)	Single color document filing print counter	Billing target (excluding self print)

OTHER (BW)	Black and white other counter	Self print quantity
OTHER (COL)	Color other counter	Self print quantity
MAINTENANCE ALL	Maintenance counter (Total)	
MAINTENANCE COL	Maintenance counter (Color)	
TC1 BELT	Primary transport unit print counter	
TC1 BELT RANGE	Primary transport unit accumulated traveling distance (cm)	
TC1 BELT DAY	Use day of primary transport unit (Day)	
TC2 BELT	Secondary transport unit print counter	
TC2 BELT RANGE	Secondary transport unit accumulated traveling distance (cm)	
TC2 BELT DAY	Use day of secondary transport unit (Day)	
FUSER UNIT (U)	Fusing unit print counter (Heat roller upper)	
FUSER UNIT (L&E)	Fusing unit print counter (Heat roller lower and external)	
FUSER ACUM DAY (U)	Use day of fusing unit (Heat roller upper)	
FUSER ACUM DAY (L&E)	Use day of fusing unit (Heat roller lower and external)	
FUSER WEB SEND	Fusing web cleaning send counter	
FUSER WEB UNIT	Fusing web print counter	
FUSER WEB DAY	Use day of fusing web unit	
DRUM LIFE (K)	Accumulated number of drum rotations K (%)	
DRUM LIFE (C)	Accumulated number of drum rotations C (%)	
DRUM LIFE (M)	Accumulated number of drum rotations M (%)	
DRUM LIFE (Y)	Accumulated number of drum rotations Y (%)	
DEVE LIFE (K)	Accumulated number of developer rotations K (%)	
DEVE LIFE (C)	Accumulated number of developer rotations C (%)	
DEVE LIFE (M)	Accumulated number of developer rotations M (%)	
DEVE LIFE (Y)	Accumulated number of developer rotations Y (%)	
PTC	PTC counter	

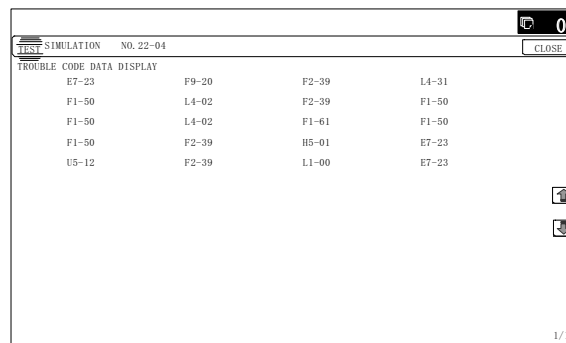
<b>22-2</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check the total number of misfeed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)
<b>Section</b>	
<b>Operation/Procedure</b>	The paper jam, trouble counter value is displayed.



<b>22-3</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check misfeed positions and the misfeed count of each position. * Presumption of the faulty point by this data is possible.
<b>Section</b>	
<b>Operation/Procedure</b>	The paper jam and misfeed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.) *For the list of the jam codes, Refer to "2. Paper jam codes" in [12] OTHERS.

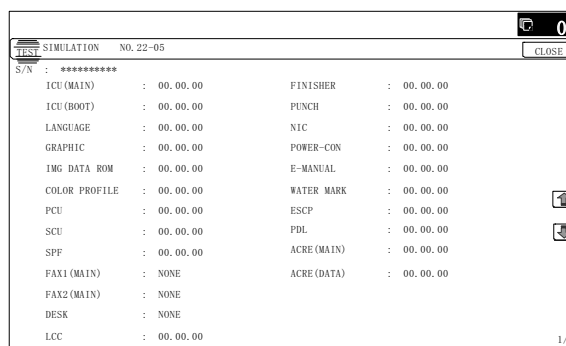


<b>22-4</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check the trouble (self diag) history.
<b>Section</b>	
<b>Operation/Procedure</b>	The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.) * For the list of the trouble codes: Refer to "2. Trouble code list" in tht "[8] SELF DIAG AND TROUBLE CODE".



<b>22-5</b>	
<b>Purpose</b>	Others
<b>Function (Purpose)</b>	Used to check the ROM version of each unit (section).
<b>Section</b>	Firmware
<b>Operation/Procedure</b>	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.

S/N	Serial No.
ICU (MAIN)	ICU (Main section)
ICU (BOOT)	ICU (Boot section)
LANGUAGE	Language support data version
GRAPHIC	Graphic data for LCD
IMG DATA ROM	MFP ASIC Flash ROM data
COLOR PROFILE	Color profile
PCU	PCU
SCU	SCU
SPF	SPF
FAX1 (MAIN)	FAX 1-Line (Main section)
FAX2 (MAIN)	FAX 2-Line (Main section) (Japan only)
DESK	Desk unit
LCC	Side LCC
FINISHER	Finisher
PUNCH	Punch unit
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
ESCP	ESCP font ROM
PDL	PDL font ROM
ACRE (MAIN)	ACRE (Main section)
ACRE (DATA)	ACRE (Data section)
WATER MARK	Watermark (HDD storage)





<b>22-6</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to output the setting/adjustment data (simulation, FAX soft switch, counter), the firmware version, and the counter list.

#### Section

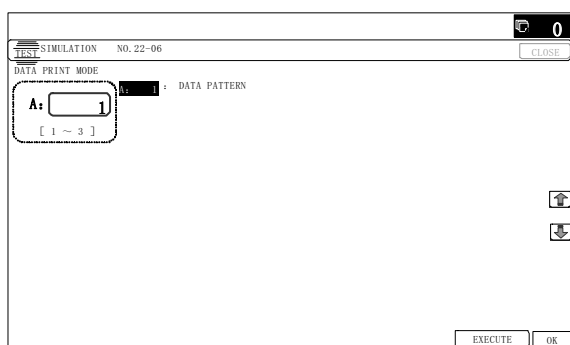
#### Operation/Procedure

\* 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.

Item/Display		Print list mode	Print content
A	DATA PATTERN	1	Firmware version, counter data, etc.
		2	SIM50-24 data
		3	Data related to the process control

- 2) Press [EXECUTE] key to start printing the list selected in step 1).



<b>22-8</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check the number of operations (counter value) of the finisher, the RSPF, and the scan (reading) unit.

#### Section

#### Operation/Procedure

The counter values of the finisher, the RSPF, and the scanner related counters are displayed.

SPF	Document feed quantity
SCAN	Number of times of scan
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Cover open/close counter
HP_ON	Number of scanner HP detection
OC LAMP TIME	Total lighting time of the lamp in OC section (* hour * minutes)
DSPF LAMP TIME	Total lighting time of the lamp in DSPF section (* hour * minutes)

SIMULATION NO. 22-08		0
ORG./STAPLE COUNTER DISPLAY		
SPF	:	00000000
SCAN	:	00000000
STAPLER	:	00000000
PUNCHER	:	00000000
STAMP	:	00000000
SADDLE STAPLER	:	00000000
SADDLE V FOLD	:	00000000
COVER	:	00000000
HP_ON	:	00000000
OC LAMP TIME	:	00000:00
DSPF LAMP TIME	:	00000:00

#### 22-9

<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check the number of use (print quantity) of each paper feed section.

#### Section Paper feed, ADU, LCC

#### Operation/Procedure

The counter values related to paper feed are displayed.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
MFT ENV	Manual paper feed counter (Envelope)
LCC	Side LCC paper feed counter (A4 LCC)
ADU	ADU paper feed counter (Paper reverse section)

SIMULATION NO. 22-09		0
PAPER FEED COUNTER DISPLAY		
TRAY1	:	00000000
TRAY2	:	00000000
TRAY3	:	00000000
TRAY4	:	00000000
MFT TOTAL	:	00000000
MFT HEAVY	:	00000000
MFT OHP	:	00000000
MFT ENV	:	00000000
LCC	:	00000000
ADU	:	00000000

#### 22-10

<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	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.)

MACHINE	MX-4100N	Main unit
	MX-5000N	
	MX-4101N	
	MX-5001N	
SPF	MX-RPX2 STANDARD	Automatic document feeder
STAMP	AR-SU1	Finish stamp
DESK	MX-DEX8	Desk unit
	MX-DEX9	



DRUM DAY K	Number of day that used drum (Day) K
DRUM DAY C	Number of day that used drum (Day) C
DRUM DAY M	Number of day that used drum (Day) M
DRUM DAY Y	Number of day that used drum (Day) Y
DEVE CTRG K	Developer cartridge print counter (K)
DEVE CTRG C	Developer cartridge print counter (C)
DEVE CTRG M	Developer cartridge print counter (M)
DEVE CTRG Y	Developer cartridge print counter (Y)
DEVE RANGE K	Developer cartridge accumulated traveling distance (cm) (K)
DEVE RANGE C	Developer cartridge accumulated traveling distance (cm) (C)
DEVE RANGE M	Developer cartridge accumulated traveling distance (cm) (M)
DEVE RANGE Y	Developer cartridge accumulated traveling distance (cm) (Y)
DEVE TURN K	Developer cartridge accumulated rotation time (K)
DEVE TURN C	Developer cartridge accumulated rotation time (C)
DEVE TURN M	Developer cartridge accumulated rotation time (M)
DEVE TURN Y	Developer cartridge accumulated rotation time (Y)
DEVE DAY K	Number of day that used developer (Day) K
DEVE DAY C	Number of day that used developer (Day) C
DEVE DAY M	Number of day that used developer (Day) M
DEVE DAY Y	Number of day that used developer (Day) Y
TONER MOTOR K	Toner motor print counter (K)
TONER MOTOR C	Toner motor print counter (C)
TONER MOTOR M	Toner motor print counter (M)
TONER MOTOR Y	Toner motor print counter (Y)
TONER TURN K	Toner motor accumulated rotation time (sec) (K)
TONER TURN C	Toner motor accumulated rotation time (sec) (C)
TONER TURN M	Toner motor accumulated rotation time (sec) (M)
TONER TURN Y	Toner motor accumulated rotation time (sec) (Y)

PROCESS CARTRIDGE DISPLAY	
DRUM CTRG K	: 00000000
DRUM CTRG C	: 00000000
DRUM CTRG M	: 00000000
DRUM CTRG Y	: 00000000
DRUM RANGE K	: 00000000
DRUM RANGE C	: 00000000
DRUM RANGE M	: 00000000
DRUM RANGE Y	: 00000000
DRUM TURN K	: 00000000
DRUM TURN C	: 00000000
DRUM TURN M	: 00000000
DRUM TURN Y	: 00000000
DEVE CTRG K	: 00000000
DEVE CTRG C	: 00000000
DEVE CTRG M	: 00000000
DEVE CTRG Y	: 00000000
DEVE RANGE K	: 00000000
DEVE RANGE C	: 00000000
DEVE RANGE M	: 00000000
DEVE RANGE Y	: 00000000

22-19

<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to check the values of the counters related to the scan - image send.
<b>Section</b>	

#### Operation/Procedure

Used to display the counter value related to the network scanner  
Change the display with [↑] [↓] key.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (Color scan job)
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 OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send

MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)

NETWORK SCANNER COUNTER DISPLAY	
NET SCN ORG_B/W	: 00000000
NET SCN ORG_CL	: 00000000
NET SCN ORG_2CL	: 00000000
NET SCN ORG_SGL	: 00000000
INTERNET FAX OUTPUT	: 00000000
INTERNET FAX SEND OUTPUT	: 00000000
INTERNET FAX RECEIVE	: 00000000
INTERNET FAX SEND	: 00000000
MAIL COUNTER	: 00000000
FTP COUNTER	: 00000000
SMB SEND	: 00000000
USB CNT	: 00000000
TRIAL MODE_B&C	: 00000000

22-90

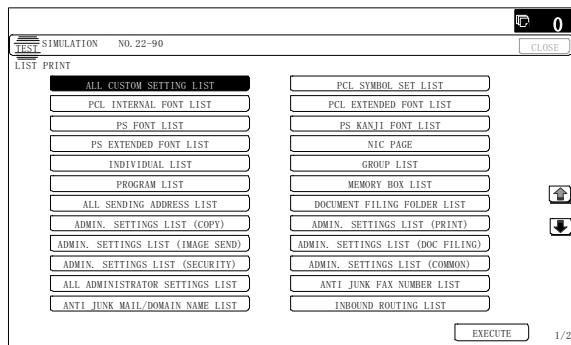
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to output the various set data lists.
<b>Section</b>	

#### Operation/Procedure

- 1) Change the display with [↑] [↓] key.
- 2) Select the print target with the keys on the touch panel.
- 3) Press [EXECUTE] key to start self print of the list.

All setting list	ALL CUSTOM SETTING LIST
Printer test page	PCL SYMBOL SET LIST
	PCL INTERNAL FONT LIST
	PCL EXTENDED FONT LIST
	PS FONT LIST
	PS KANJI FONT LIST
	PS EXTENDED FONT LIST
	NIC PAGE
Address registration list (*)	INDIVIDUAL LIST
	GROUP LIST
	PROGRAM LIST
	MEMORY BOX LIST
	ALL SENDING ADDRESS LIST
Document filing list	DOCUMENT FILING FOLDER LIST
System setting list	ADMIN. SETTINGS LIST (COPY)
	ADMIN. SETTINGS LIST (PRINT)
	ADMIN. SETTINGS LIST (IMAGE SEND)
	ADMIN. SETTINGS LIST (DOC FILING)
	ADMIN. SETTINGS LIST (SECURITY)
	ADMIN. SETTINGS LIST (COMMON)
	ALL ADMINISTRATOR SETTINGS LIST
Receive rejection number table	ANTI JUNK FAX NUMBER LIST
Receive rejection/allow address domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
To Email Transfer table list	INBOUND ROUTING LIST
To administrator Transfer list	DOCUMENT ADMIN LIST
Web setting list	WEB SETTING LIST
Meta data set list	METADATA SET LIST

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

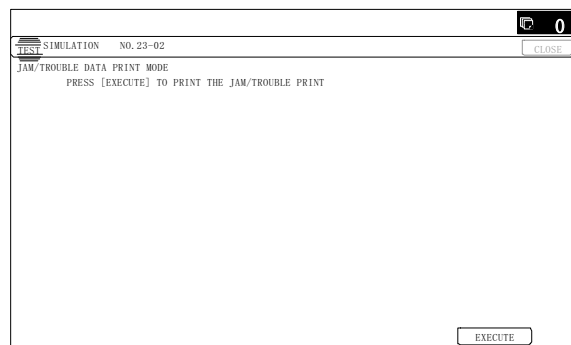


23

23-2

<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	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.)

<b>Section</b>	
<b>Operation/Procedure</b>	Press [EXECUTE] key to execute print. The trouble history of paper jams and misfeed is printed.



23-80

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.
<b>Section</b>	Paper feed, Paper transport

**Operation/Procedure**

When [EXECUTE] key is pressed, the timing list of paper feed and paper transport is outputted.

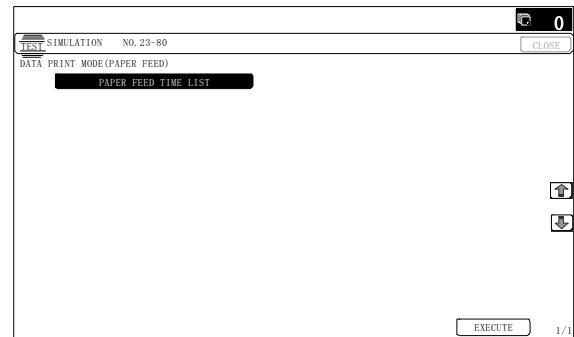
Used to print the operations timing list of the sensors and detectors in the paper feed and transport section.

The timing list of paper feed and paper transport operations of the latest job (copy or print) on the final paper is printed.

Since the paper feed and paper transport routes differ depending on the used paper feed tray and the print operation mode, the sensor and the detectors and the operation timing also differ.

SECTION	Operation content (Trigger name - Detection operation or load operation name)
STANDARD	Reference value (ms)
CURRENT (*1)	Operation timing (ms) of the latest job on the final paper
PREVIOUS (*1)	Operation timing (ms) of the second latest job on the final paper
MAXIMUM (*1)	Max. operation timing (ms) of all the jobs
MINIMUM (*1)	Min. operation timing (ms) of all the jobs

\*1: The value without unit on the left side of each item on the list has no relation to the operation timing. It is not used in the market.



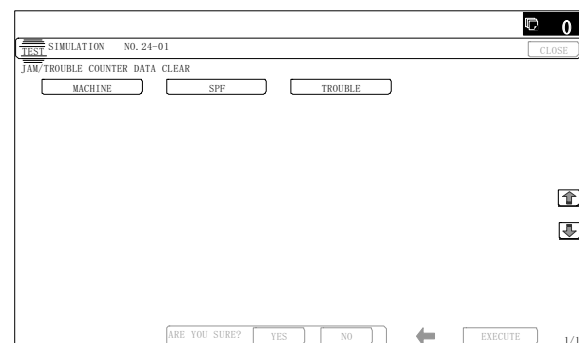
24

24-1

<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)

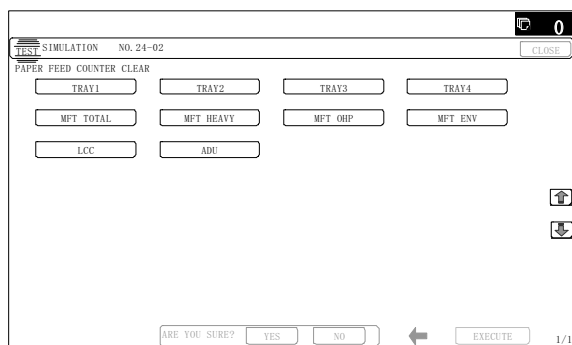
<b>Section</b>	
<b>Operation/Procedure</b>	<ol style="list-style-type: none"> <li>1) Select the item to be cleared with the touch panel key.</li> <li>2) Press [EXECUTE] key.</li> <li>3) Press [YES] key.</li> </ol> <p>The target counter is cleared.</p>

MACHINE	Machine JAM counter
SPF	RSPF/DSPF JAM counter
TROUBLE	Trouble counter



<b>24-2</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the number of use (the number of prints) of each paper feed section.
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Select the item to be cleared with the touch panel key. 2) Press [EXECUTE] key. 3) Press [YES] key. The target counter is cleared.	

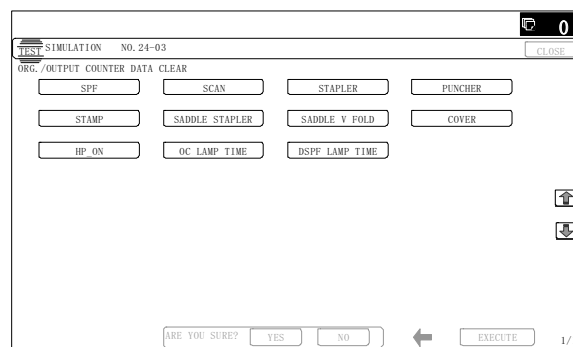
TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
MFT ENV	Manual paper feed counter (Envelope)
LCC	Side LCC paper feed counter (A4 LCC)
ADU	ADU paper feed counter



<b>24-3</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the finisher, RSPF, and the scan (reading) unit counter.
<b>Section</b>	
<b>Operation/Procedure</b>	
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.	

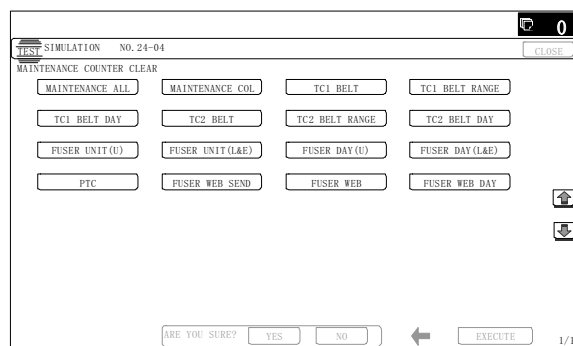
SPF	RSPF/DSPF document feed counter
SCAN	Scan counter
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
SADDLE V FOLD	Saddle finisher V fold counter
COVER	Cover open/close counter
HP_ON	HP detection count
OC LAMP TIME	OC section lamp total lighting time
DSPF LAMP TIME (*)	DSPF section lamp total lighting time

(\*) Displayed only when the DSPF is installed.



<b>24-4</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)
<b>Section</b>	
<b>Operation/Procedure</b>	
1) Select the item to be cleared with the touch panel key. 2) Press [EXECUTE] key. 3) Press [YES] key. The target counter is cleared.	

MAINTENANCE ALL	Maintenance counter (Total)
MAINTENANCE COL	Maintenance counter (Color)
TC1 BELT	Primary transport unit print counter
TC1 BELT RANGE	Primary transport unit accumulated traveling distance (cm)
TC1 BELT DAY	Use day of primary transport unit (Day)
TC2 BELT	Secondary transport unit print counter
TC2 BELT RANGE	Secondary transport unit accumulated traveling distance (cm)
TC2 BELT DAY	Use day of secondary transport unit (Day)
FUSER UNIT (U)	Fusing unit print counter (Heat roller upper)
FUSER UNIT (L&E)	Fusing unit print counter (Heat roller lower and external)
FUSER DAY (U)	Fusing unit use day (Heat roller upper)
FUSER DAY (L&E)	Fusing unit use day (Heat roller lower and external)
PTC	PTC counter
FUSER WEB SEND	Fusing web send counter
FUSER WEB	Fusing web print counter
FUSER WEB DAY	Fusing web unit use day



<b>24-5</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	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.

K	Developer cartridge print counter (K)
	Developer cartridge accumulated traveling distance (cm) (K)
	Number of day that used developer (Day) K
C	Developer cartridge print counter (C)
	Developer cartridge accumulated traveling distance (cm) (C)
	Number of day that used developer (Day) C
M	Developer cartridge print counter (M)
	Developer cartridge accumulated traveling distance (cm) (M)
	Number of day that used developer (Day) M
Y	Developer cartridge print counter (Y)
	Developer cartridge accumulated traveling distance (cm) (Y)
	Number of day that used developer (Day) Y



<b>24-6</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the copy counter.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

COPY BW	Copy counter (B/W)
COPY COL	Copy counter (COLOR)
SINGLE COLOR	Single color
2COLOR	2-color



<b>24-7</b>	
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<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the OPC drum counter. (After replacement of the OPC drum, 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.

K	Drum cartridge print counter (K)
	Drum cartridge accumulated traveling distance (cm) (K)
	Number of day that used drum (Day) K
C	Drum cartridge print counter (C)
	Drum cartridge accumulated traveling distance (cm) (C)
	Number of day that used drum (Day) C
M	Drum cartridge print counter (M)
	Drum cartridge accumulated traveling distance (cm) (M)
	Number of day that used drum (Day) M
Y	Drum cartridge print counter (Y)
	Drum cartridge accumulated traveling distance (cm) (Y)
	Number of day that used drum (Day) Y



<b>24-9</b>	
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<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used clear the printer mode print counter and the self print mode print 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.

PRINT BW	Print counter (B/W)
PRINT COL	Print counter (COLOR)
PRINT (2COL)	Print counter (2-colors)
PRINT (3COL)	Print counter (3-colors)
PRINT (SGL_COL)	Print counter (Single color)
OTHER BW	Other counter (B/W)
OTHER COL	Other counter (COLOR)



24-10

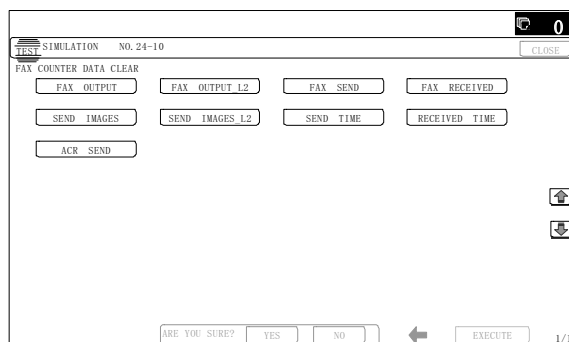
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the FAX counter. (Only when FAX is installed)
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

FAX OUTPUT	FAX Print quantity counter (for line 1)
FAX OUTPUT_L2	FAX Print quantity counter (for line 2) (Japan only)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND IMAGES_L2	FAX send quantity counter (for line 2) (Japan only)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix adding communications



24-15

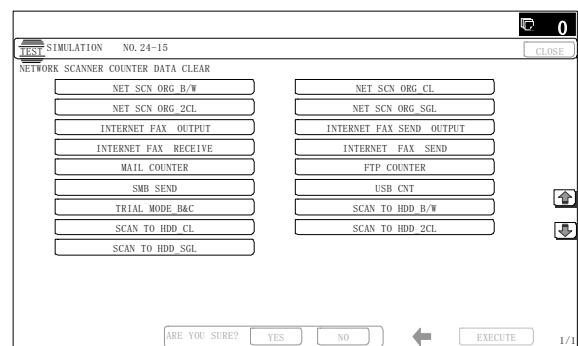
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the counters related to the scan mode and the image send.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the item to be cleared with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

The target counter is cleared.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR scan job)
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 OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)



24-30

<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to initialize the administrator pass- word.
<b>Section</b>	

#### Operation/Procedure

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

The administrator password is initialized.

If the administrator password of system setting and Web page is forgotten, execute this simulation to set the password to "admin" (default).



24-31

<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to initialize the service mode password.
<b>Section</b>	

#### Operation/Procedure

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

The service mode password is initialized.

If the password of Web page is forgotten, execute this simulation to set the password to "service" (default).



25

25-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the developing section.
<b>Section</b>	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.

TCD_K	Toner density sensor K
TCD_C	Toner density sensor C
TCD_M	Toner density sensor M
TCD_Y	Toner density sensor Y
TCV_K	Toner density sensor control voltage level K
TCV_C	Toner density sensor control voltage level C
TCV_M	Toner density sensor control voltage level M
TCV_Y	Toner density sensor control voltage level Y

NOTE: 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 overtoner and a trouble.



25-2

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)
<b>Section</b>	Image process (Photoconductor/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 3 minutes, and the toner density sensor makes sampling of the toner density. The detected level is displayed.

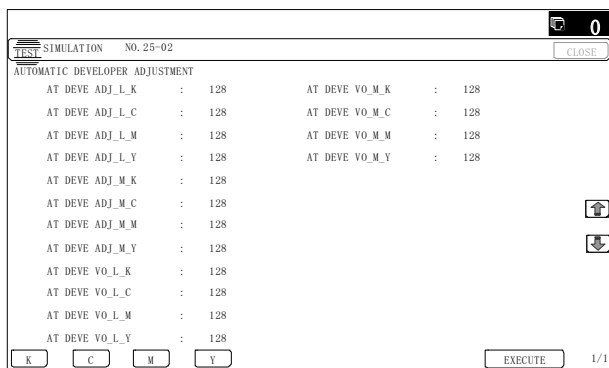
After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation except when new developer is supplied. If it is executed in other cases, undertoner or overtone may occur, causing a trouble.

Toner density control adjustment value in the low speed process mode	AT DEVE ADJ_L_K
	AT DEVE ADJ_L_C
	AT DEVE ADJ_L_M
	AT DEVE ADJ_L_Y
Toner density control adjustment value in the medium speed process mode	AT DEVE ADJ_M_K
	AT DEVE ADJ_M_C
	AT DEVE ADJ_M_M
	AT DEVE ADJ_M_Y
Toner density sensor control voltage level in the low speed process mode	AT DEVE VO_L_K
	AT DEVE VO_L_C
	AT DEVE VO_L_M
	AT DEVE VO_L_Y
Toner density sensor control voltage level in the medium speed process mode	AT DEVE VO_M_K
	AT DEVE VO_M_C
	AT DEVE VO_M_M
	AT DEVE VO_M_Y





26

26-1

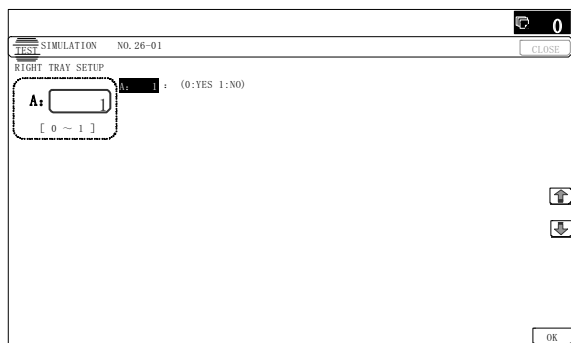
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the paper exit tray (MX-TRX1).
<b>Section</b>	Paper exit

#### 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 paper exit tray unit (MX-TRX1).

Item/Display			Content
A	0	YES	Paper exit tray : YES
	1	NO	Paper exit tray : NO



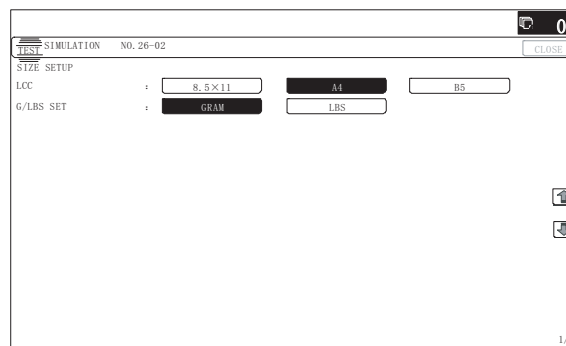
26-2

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	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.)
<b>Section</b>	Paper feed

#### Operation/Procedure

Select a paper size to be changed with the touch panel.

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



26-3

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.)
<b>Section</b>	Auditor

#### Operation/Procedure

Select an item to be set with the touch panel.

Item/Display		Content	Default value
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation.	P10
	EC1	EC1 mode operation	
OUTSIDE AUDITOR	NONE	No external connection vendor is used.	NONE
	P VENDOR1	Coin vendor mode (Only the copy mode can be controlled.)	
	P VENDOR2	Vendor mode communicating with the parallel I/F (for DocuLyzer) (Japan only)	
	VENDOR-EX (*1)	Vendor I/F for EQUITRAC	
	VENDOR-EX (MULTI) (*1)	VENDOR-EX + Multi job cueing Enable mode	
	P OTHER	NOT USED	
	S_VENDOR	Serial vendor mode	
DOC ADJ	ON	Support for the auditor in document filing print	OFF
	OFF	No support for the auditor in document filing print	
PF ADJ	ON	Continuous printing is performed in the duplex print mode. If the remaining money expires during continuous printing, the sheets in the machine are discharged without being printed on the back surfaces.	OFF
	OFF	Continuous printing is not performed in the duplex print mode. (The remaining amount is checked for printing every surface in all the printing process.) If the remaining money expires during printing, the sheet is discharged without printing on the back surface.	
VENDOR MODE (*2)	MODE1	Vendor mode 1	MODE 3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	

Item/Display		Content	Default value
COUNTUP TIMING	FUSER_IN	When the paper lead edge passes the fusing rear sensor.	EXIT_OUT
	FUSER_OUT	When the paper rear edge passes the fusing rear sensor.	
	EXIT_OUT	When the paper rear edge passes the paper exit sensor in the main unit, the right tray, and the after process unit.	

(\*1) Displayed only when EQUITRAC.

**(\*2) 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.

**26-5**

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	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 [↑] [↓] 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)	1 (Japan) 2 (Except Japan)
B	TOTAL (COL)	Total counter (Color)	

Item/Display		Content	Default value
C	MAINT (B/W)	Maintenance counter (B/W)	2
D	MAINT (COL)	Maintenance counter (Color)	
E	DEV (B/W)	Developer counter (B/W)	
F	DEV (COL)	Developer counter (Color)	

**26-6**

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	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.

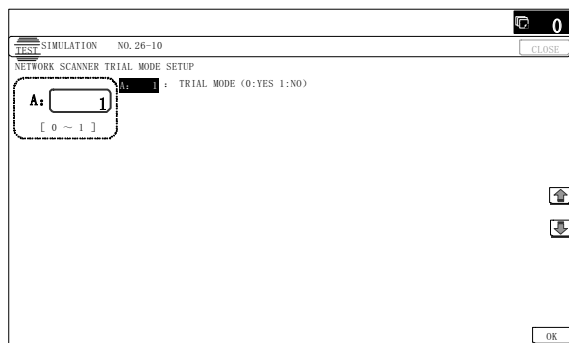
U.S.A.	United States of America
CANADA	Canada
INCH	Inch series, other destinations
JAPAN	Japan
AB_B	AB series (B5 detection), other destinations
EUROPE	Europe
U.K.	United Kingdom
AUS.	Australia
AB_A	AB series (A5 detection), other destinations
CHINA	China

<b>26-10</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the trial mode of the network scanner.
<b>Section</b>	

#### 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)

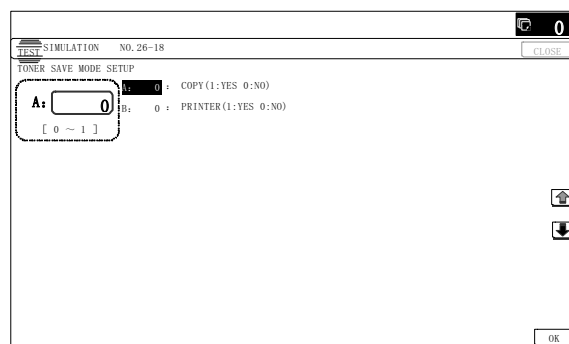


<b>26-18</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

Item	Display	Content	Default value
A	COPY	0 Copy toner save mode is inhibited.	0
		1 Copy toner save mode is allowed	
B	PRINTER	0 Printer toner save mode is inhibited.	0
		1 Printer toner save mode is allowed.	



<b>26-30</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)
<b>Section</b>	

#### Operation/Procedure

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

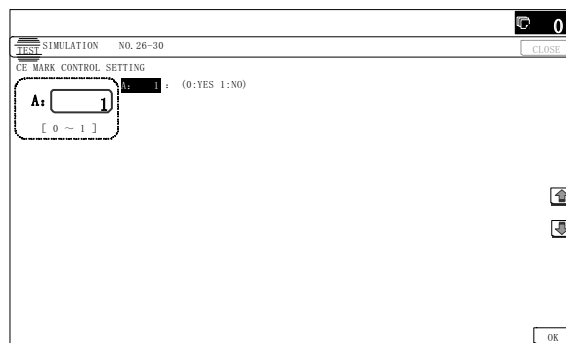
0	Control allowed
1	Control inhibited

- 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.

U.S.A	1 (CE not supported)	EUROPE	0 (CE supported)
CANADA	1 (CE not supported)	U.K.	0 (CE supported)
INCH	1 (CE not supported)	AUS.	0 (CE supported)
JAPAN	1 (CE not supported)	AB_A	0 (CE supported)
AB_B	1 (CE not supported)	CHINA	0 (CE supported)



<b>26-35</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the 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.
<b>Section</b>	

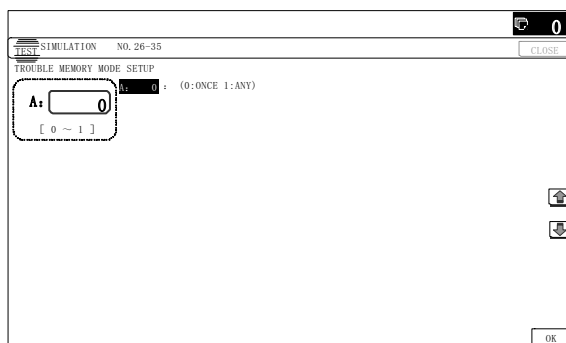
#### Operation/Procedure

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

0	Only once display.
1	Any time display.

- 2) Press [OK] key.

The set value in step 1) is saved.



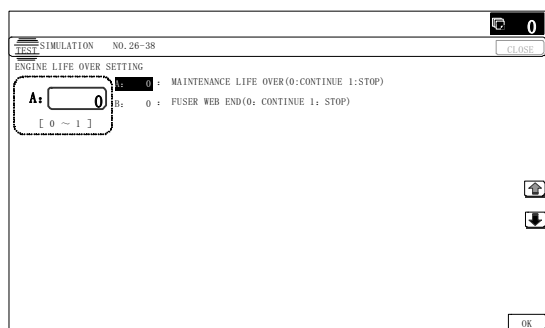
<b>26-38</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Continue/Stop of print when the maintenance life is reached.

#### 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 Print continue	0
	1 Print stop	
B FUSER WEB END (0: CONTINUE 1: STOP)	0 Continue/Stop setting of print when the fusing web is end (Print Continue)	0
	1 Continue/Stop setting of print when the fusing web is end (Print Stop)	



<b>26-41</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.

#### Section

#### Operation/Procedure

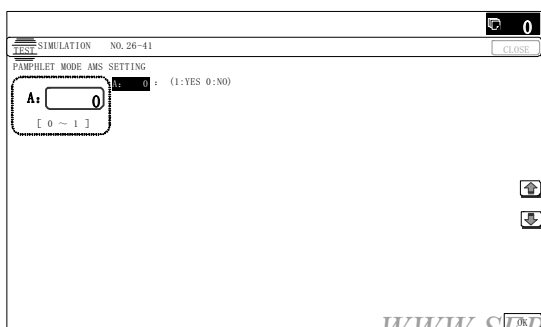
- 1) Enter the set value with 10-key.

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)	EUROPE	1 (Enable)
CANADA	0 (Disable)	U.K.	1 (Enable)
INCH	0 (Disable)	AUS.	0 (Disable)
JAPAN	0 (Disable)	AB_A	0 (Disable)
AB_B	0 (Disable)	CHINA	0 (Disable)

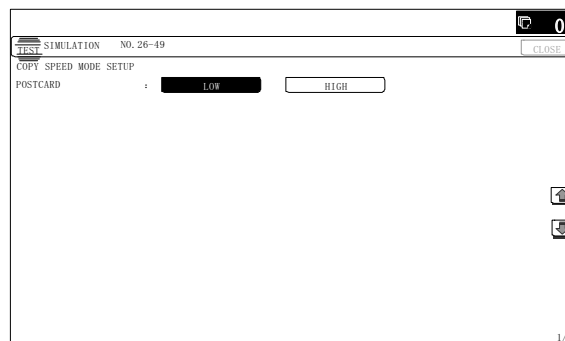


<b>26-49</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the print speed of postcards mode.

#### Section

#### Operation/Procedure

Select the copy speed mode with the touch panel. (Default: LOW)



<b>26-50</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set functions.

#### Section

#### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display	Content	Default value
A BW REVERSE	0 BW reverse copy Disable	Refer to *1
	1 BW reverse copy Enable	
B COLOR MODE	2-color/Single color copy mode Enable/Disable setting	Refer to *1/*2
C FINISHER FUNCTION	0 Finisher special paper The number of paper exit is limited.	0 Refer to *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.	Refer to *1
	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	

(\*1) Default values for each destination of item A/B/D

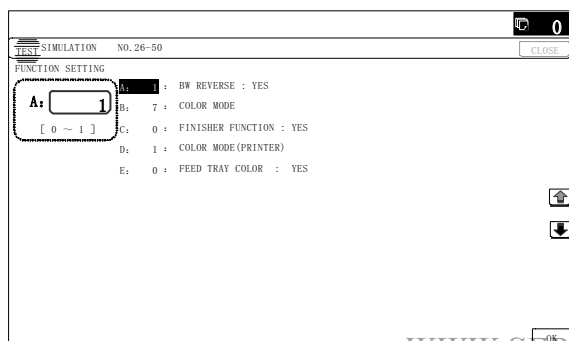
Destination	Item A	Item B	Item D
U S A	1	0	2
CANADA	1	0	2
INCH	1	0	2
JAPAN	1	7	2
AB_B	1	0	2
EUROPE	1	0	2
U K	0	0	2
AUS	1	0	2
AB_A	1	0	2
CHINA	1	0	2

(\*2) Item B: COLOR MODE set value (OFF: Displayed/ON: Not displayed)

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

(\*3)

	Target paper	Target paper setting	
		0	1
1K 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 less than 30 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1".	The operation is stopped when the paper exit tray is full or when 500 sheets (94mm 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 less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "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 less than 10 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1".	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 less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1".	



<b>26-52</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

#### Section

#### Operation/Procedure

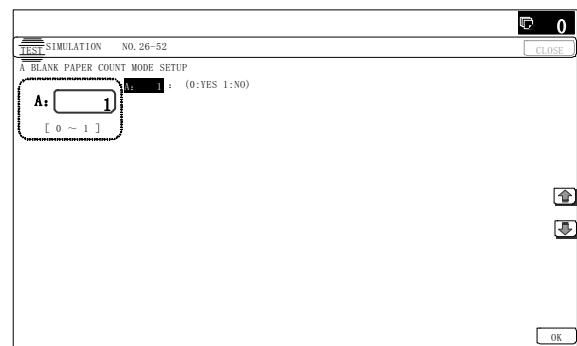
- 1) Enter the set value with 10-key.

0	Count up
1	No count up

- 2) Press [OK] key.

The set value in step 1) is saved.

Destination	Default
U.S.A	0 (Counted)
CANADA	0 (Counted)
INCH	0 (Counted)
JAPAN	1 (Not counted)
AB_B	0 (Counted)
EUROPE	0 (Counted)
U.K.	0 (Counted)
AUS.	1 (Not counted)
AB_A	0 (Counted)
CHINA	0 (Counted)



<b>26-53</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	User auto color calibration (color balance adjustment) Inhibit/Allow setting (copy mode)

#### Section

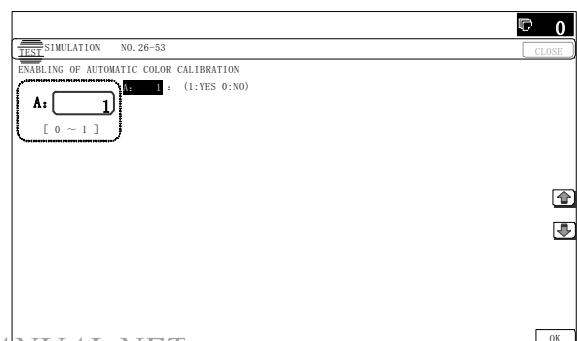
#### Operation/Procedure

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

0	Inhibit
1	Allow (Default)

- 2) Press [OK] key.

The set value in step 1) is saved.



<b>26-54</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	User auto color calibration (color balance adjustment) Inhibit/Allow setting (printer mode)

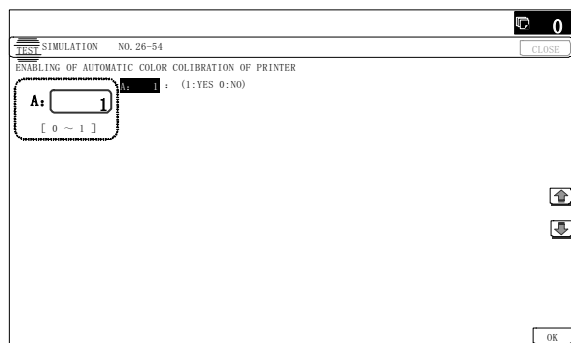
#### Section

#### Operation/Procedure

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

0	Inhibit
1	Allow (Default)

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



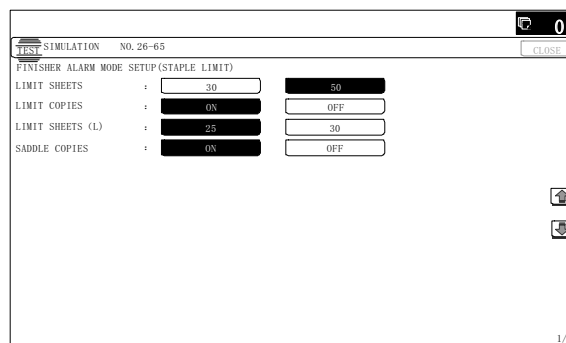
<b>26-65</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the finisher alarm mode.
<b>Section</b>	

#### Operation/Procedure

Use the touch key to set.

Item	Set value	Content	Setting range	Default value
LIMIT SHEETS	30	Number of sheets of stapling: Max. 30	30 or 50	50
	50	Number of sheets of stapling: Max. 50		
LIMIT COPIES	ON	Number of sets of stapling: Max. 50 sets	ON or OFF	ON
	OFF	Number of sets of stapling: Not Limited		
LIMIT SHEETS(L)	25	Number of sheets of stapling: Max. 25	25 or 30	25
	30	Number of sheets of stapling: Max. 30		
SADDLE COPIES	ON	Number of sets loaded in the saddle staple: Limited (*1)	ON or OFF	ON
	OFF	Number of sets loaded in the saddle staple: Not Limited		

\*1: 1-5 sheets (20 sets) / 6-10 sheets (15 sets) / 10-15 sheets (10 sets)



<b>26-69</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions for toner near end.

#### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Item/Display		Content		Setting range	Default value
A	TONER PREPARATION (0 : YES 1 : NO)	0	The toner preparation message is displayed.	0 - 1	
		1	The toner preparation message is not displayed.		
B	TONER NEAR END (0 : YES 1 : NO)	0	The toner near end message is displayed.	0 - 1	
		1	The toner near end message is not displayed.		
C	TONER END	1	Operation Enable in TONER END	1 - 3	2
		2	Operation STOP in TONER END		
		3	Operation STOP in TONER END		
D	TONER END COUNT	Setting of the number of copy/print/FAX outputs Enable after TONER NEAR END.		1 - 5	1
E	TONER E-MAIL ALERT	0	Condition for Low status send of E-mail alert	0 - 1	1
			When the toner preparation message is displayed (in near toner end)		
		1	Condition for Low status send of E-mail alert		
			When near toner end		

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

Destination	Set value	
	Toner preparation message	Toner near end message
U.S.A	0 (Displayed)	0 (Displayed)
CANADA	0 (Displayed)	0 (Displayed)
INCH	0 (Displayed)	0 (Displayed)
JAPAN	0 (Displayed)	1 (Not Displayed)
AB_B	0 (Displayed)	0 (Displayed)
EUROPE	0 (Displayed)	0 (Displayed)
U.K.	0 (Displayed)	0 (Displayed)
AUS.	0 (Displayed)	0 (Displayed)
AB_A	0 (Displayed)	0 (Displayed)
CHINA	0 (Displayed)	0 (Displayed)

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display when the toner remaining quantity reaches 25%.

B: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

C: Enable/Disable setting of the machine operation when the toner end status is reached.

For except Japan, performs operation of set value "3" regardless of the setting value.

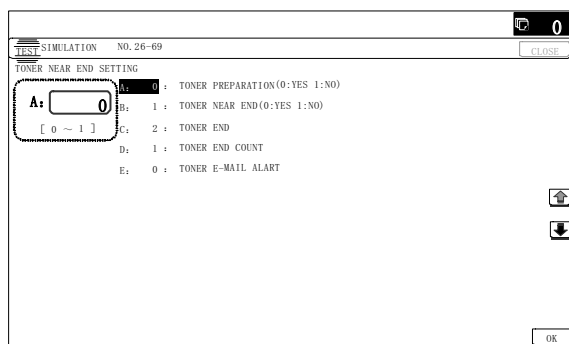
D: Setting of the allowable quantity of copy/print/FAX after displaying the message when item B is set to "0" (the message is displayed at toner near end). (Range: 0 - 200 sheets)

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.)

Set values of Item D and the number of output print allowed

- 1: Print Disable after toner near end
- 2: 25 sheets print Enable after toner near end
- 3: 50 sheets print Enable after toner near end
- 4: 100 sheets print Enable after toner near end
- 5: 200 sheets print Enable after toner near end

NOTE: When item B is set to "0" and item D to a desired number, printing can be made after toner near end. However, insufficient density, thin spots, or improper color balance may be resulted depending on the using conditions. When item D is set to "1" printing is disabled after toner near end. this case, toner end display is made in the toner near end status, and copy/print/FAX outputs are disabled.



<b>26-73</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment

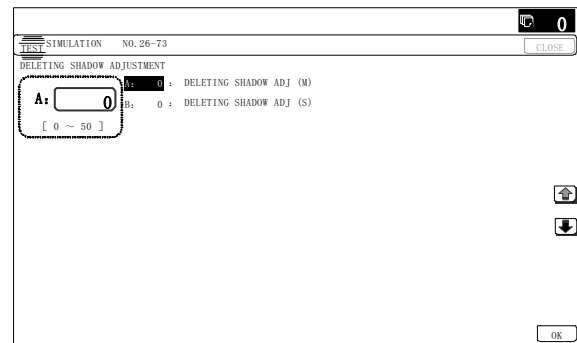
## Section

### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

When the adjustment value is increased, the image loss (shade delete quantity) is increased.

Item/Display		Content	Setting range	Default value
A	DELETING SHADOW ADJ (M)	Rear frame side image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)
	DELETING SHADOW ADJ (S)	Lead edge image loss quantity (shade delete quantity) adjustment		

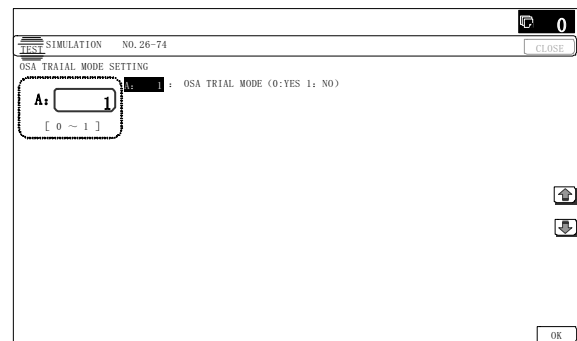


<b>26-74</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the OSA trial mode.
<b>Section</b>	

### Operation/Procedure

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

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



<b>26-78</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the password of the remote operation panel.

#### 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.

## 27

<b>27-1</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)

#### Section

#### Operation/Procedure

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

0	Not detection
1	Detection

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

<b>27-2</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the sender's registration number and the HOST server telephone number. (FSS function)

#### 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.

<b>27-4</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the initial call and toner order auto send. (FSS function)

#### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.



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	TONER ORDER TIMING (K)	100% - 75%	Toner order auto send timing setting (K)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
G	TONER ORDER TIMING (C)	100% - 75%	Toner order auto send timing setting (C)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
H	TONER ORDER TIMING (M)	100% - 75%	Toner order auto send timing setting (M)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
I	TONER ORDER TIMING (Y)	100% - 75%	Toner order auto send timing setting (Y)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		

<b>27-5</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function)
<b>Section</b>	Communication (RIC/MODEM)

#### Operation/Procedure

- 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.
- Press [SET] key.

<b>27-6</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set of the manual service call. (FSS function)

### Section

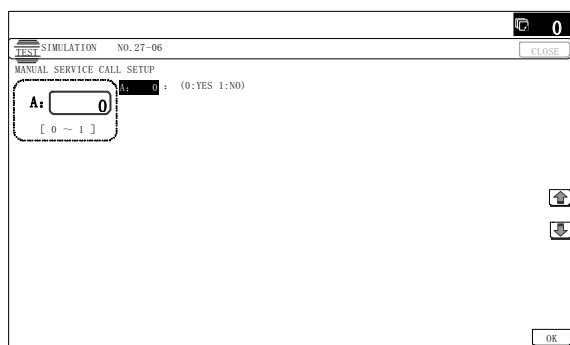
#### Operation/Procedure

- 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.



<b>27-7</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set of the enable, alert callout. (FSS function)

### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

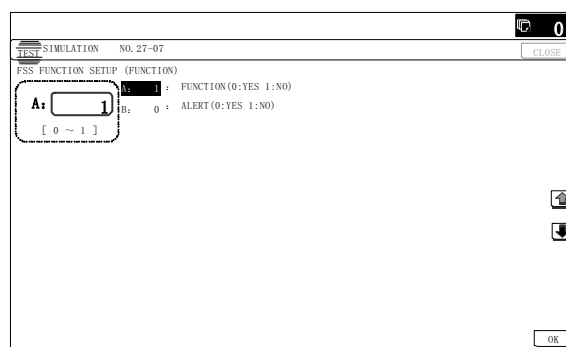
The set value in step 2) is saved.

A	FSS FUNCTION	0	FSS function enable
		1	FSS function disable (*1) (Default)
B	ALERT	0	Alert call enable (*2) (Default)
		1	Alert call disable

\*1 The FSS function setting can be changed only from Disable to Enable. (Cannot be changed from Enable to Disable.)

\*2 Alert send timing

No alert cause	Initial state / Trouble / Continuous JAM alert
Maintenance	When the maintenance timing is reached.
Service call	When pressing Service call.
Toner send request	When the toner order automatic send setting is reached.
Toner collection request	Revision of the toner installation date (only for a new product)
Alert resend	



<b>27-9</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)

### Section

#### Operation/Procedure

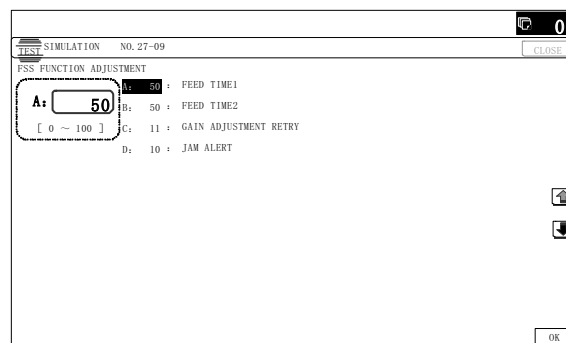
- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

A	FEED TIME 1	0 - 100	Threshold value of the paper transport time between sensors (Main unit) (50: Default)
B	FEED TIME 2	0 - 100	Threshold value of the paper transport time between sensors (RSPF) (50: Default)
C	GAIN ADJUSTMENT RETRY	0 - 20	Threshold value of the gain adjustment retry number (11: Default)
D	JAM ALERT	1 - 100	Alert judgment threshold value for occurrence of continuous jams Alert judgment threshold value for occurrence of continuous jams (Setting of the number of times of continuous jams as the alert for continuous jams) (Default: 10 times)

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

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



<b>27-10</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the trouble prediction history information. (FSS function)

#### Section

#### Operation/Procedure

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

The history information of trouble prediction is cleared.

Target history	Serial communication retry number history
	High density process control error history
	Half tone process control error history
	Automatic registration adjustment error history
	Scanner gain adjustment retry history
	DSPF gain adjustment retry history (DSPF model only)
	Paper transport time between sensors



<b>27-11</b>	
<b>Purpose</b>	Others
<b>Function (Purpose)</b>	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)

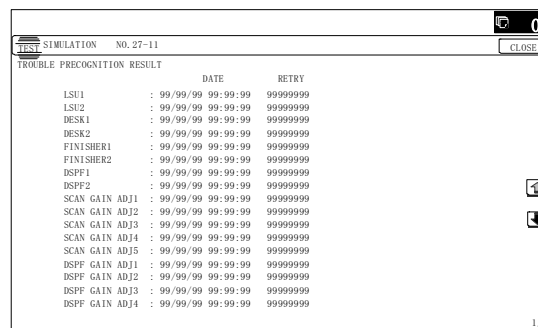
#### Section

#### Operation/Procedure

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

Display Item			Content
Item name	Occurrence date (Display)	Retry number	
LSU1	99/99/99 99:99:99	8 digits	Serial communication retry number history display * For DSPF1/DSPF2, only the DSPF model is displayed.
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	
DSPF1	99/99/99 99:99:99	8 digits	
DSPF2	99/99/99 99:99:99	8 digits	
FINISHER1	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
FINISHER2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 99:99:99	8 digits	

Display Item			Content
Item name	Occurrence date (Display)	Retry number	
SCAN GAIN ADJ5	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history (Only the DSPF model is displayed.)
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ2	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ3	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ4	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ5	99/99/99 99:99:99	8 digits	



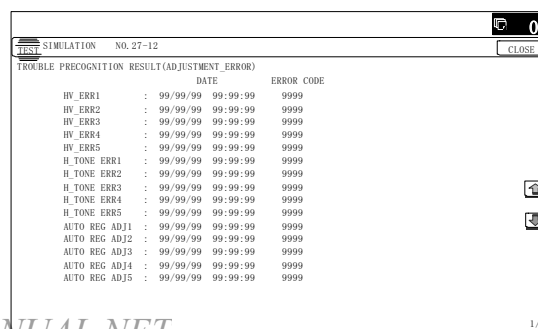
<b>27-12</b>	
<b>Purpose</b>	Others
<b>Function (Purpose)</b>	Used to check the high-density, half-tone process control and the automatic registration adjustment error history. (FSS Function)

#### Section

#### Operation/Procedure

The high density, the half tone, and the automatic registration adjustment error history are displayed.

HV_ERR1	High density error history 1
HV_ERR2	High density error history 2
HV_ERR3	High density error history 3
HV_ERR4	High density error history 4
HV_ERR5	High density error history 5
H_TONE_ERR1	Half tone error history 1
H_TONE_ERR2	Half tone error history 2
H_TONE_ERR3	Half tone error history 3
H_TONE_ERR4	Half tone error history 4
H_TONE_ERR5	Half tone error history 5
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 [↑] [↓] key.

	Item/Display	Content	Occurrence date	Code between sensors	Passing time	Reference passing time
Main unit	FEED TIME1	History of paper transport time between sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2	History of paper transport time between sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3	History of paper transport time between sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4	History of paper transport time between sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5	History of paper transport time between sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6	History of paper transport time between sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7	History of paper transport time between sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8	History of paper transport time between sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9	History of paper transport time between sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10	History of paper transport time between sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
RSPF /DSPF	FEED TIME1(SPF)	History of paper transport time between SPF sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2(SPF)	History of paper transport time between SPF sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3(SPF)	History of paper transport time between SPF sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4(SPF)	History of paper transport time between SPF sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5(SPF)	History of paper transport time between SPF sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6(SPF)	History of paper transport time between SPF sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7(SPF)	History of paper transport time between SPF sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8(SPF)	History of paper transport time between SPF sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9(SPF)	History of paper transport time between SPF sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10(SPF)	History of paper transport time between SPF sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)

TEST SIMULATION NO. 27-13

TROUBLE PRECOGNITION RESULT (FEED TIME)

	DATE	SENSOR CODE	PASS TIME	STANDARD TIME
FEED TIME1	:99/99/99	99:99:99	99999	99999
FEED TIME2	:99/99/99	99:99:99	99999	99999
FEED TIME3	:99/99/99	99:99:99	99999	99999
FEED TIME4	:99/99/99	99:99:99	99999	99999
FEED TIME5	:99/99/99	99:99:99	99999	99999
FEED TIME6	:99/99/99	99:99:99	99999	99999
FEED TIME7	:99/99/99	99:99:99	99999	99999
FEED TIME8	:99/99/99	99:99:99	99999	99999
FEED TIME9	:99/99/99	99:99:99	99999	99999
FEED TIME10	:99/99/99	99:99:99	99999	99999
FEED TIME1 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME2 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME3 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME4 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME5 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME6 (SPF)	:99/99/99	99:99:99	99999	99999
FEED TIME7 (SPF)	:99/99/99	99:99:99	99999	99999

1/2

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.

TEST SIMULATION NO. 27-14

FSS TEST MODE SETUP

A:  : CONNECTION TEST MODE (1: ON 0: OFF)

[ 0 ~ 1 ]

OK

## 30

30-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.

### Section

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

PPD1	Resist pre-detection
PPD2	Resist detection
POD1	Fusing rear detection
POD2	Main unit paper exit detection
POD3	Right tray paper exit detection
TFD2	Paper exit full detection
TFD3	Main unit right tray paper exit full detection
HPOS	Shifter home detection
DSW_R	Right door open/close detection
DSW_C	Tray 1 transport cover open/close detection
DSW_F	Front cover open/close detection
DHPD_K	K phase detection
DHPD_C (50-sheet machine only)	C phase detection
DHPD_M (50-sheet machine only)	M phase detection
DHPD_Y (50-sheet machine only)	Y phase detection
DHPD_CL (41-sheet machine only)	CL phase detection
1TNFD	Waste toner full detection
HLPCD	Fusing roller pressure release detection
1TUD_CL	Primary transport belt separation CL detection
1TUD_K	Primary transport belt separation BK detection

SIMULATION NO. 30-01			
MAIN UNIT SENSOR CHECK			
PPD1	PPD2	POD1	POD2
POD3	TFD2	TFD3	HPOS
DSW_R	DSW_C	DSW_F	DHPD_K
DHPD_CL	1TNFD	HLPCD	1TUD_CL
1TUD_K			

30-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.

### Section

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

CPFD1	Tray 1 transport detection
CLUD1	Tray 1 upper limit detection
CPED1	Tray 1 paper empty detection
CSPD1	Tray 1 paper remaining quantity detection
CSS11	Tray 1 rear edge detection 1
CSS12	Tray 1 rear edge detection 2
CSS13	Tray 1 rear edge detection 3
CSS14	Tray 1 rear edge detection 4
CPFD2	Tray 2 transport detection
CLUD2	Tray 2 upper limit detection
CPED2	Tray 2 paper YES/NO detection
CSPD2	Tray 2 paper remaining quantity detection
CSS21	Tray 2 rear edge detection 1
CSS22	Tray 2 rear edge detection 2
CSS23	Tray 2 rear edge detection 3
CSS24	Tray 2 rear edge detection 4
MPFD	Manual feed paper entry detection
MPLD	Manual feed paper length detection
MTOP1	Manual feed tray retraction detection
MTOP2	Manual feed tray extension detection
MPED	Manual feed paper empty detection

SIMULATION NO. 30-02			
TRAY SENSOR CHECK (MAIN)			
CPFD1	CLUD1	CPED1	CSPD1
CSS11	CSS12	CSS13	CSS14
CPFD2	CLUD2	CPED2	CSPD2
CSS21	CSS22	CSS23	CSS24
MPFD	MPLD	MTOP1	MTOP2
MPED			

## 33

33-1

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the card reader sensor and the control circuit.

### Section

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

CARD	Card Yes/No detection
DATA	Card number signal detection
CLOCK	Reference clock signal detection

SIMULATION NO. 33-01		
CARD READER SENSOR CHECK		
CARD	DATA	CLOCK

<b>33-2</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the ID (IDM) information of Felica card.

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
- The ID (IDM) information of Felica card in the HDD is deleted.



## 40

<b>40-2</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Manual paper feed tray paper width sensor adjustment.

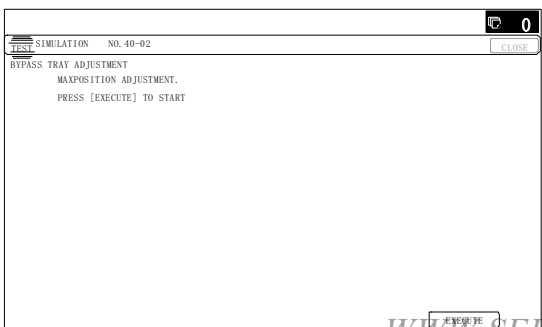
#### Section

#### 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



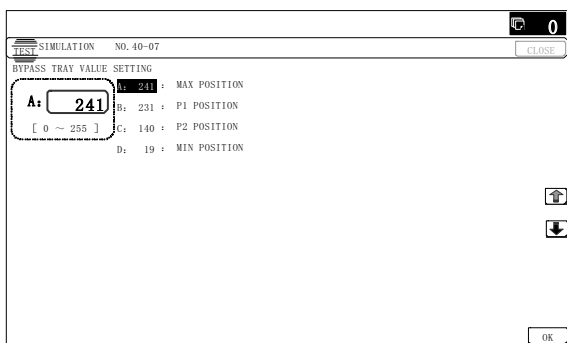
<b>40-7</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the adjustment value of the manual paper feed tray paper width sensor.

#### Section

#### Operation/Procedure

- 1) Select a target item to be adjusted with [↑] [↓] buttons.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value in step 2) is saved.

Item/Display	Content	Default value
A	MAX POSITION	Manual feed max. width
B	P1(A4) POSITION	Manual feed P1 position width (A4)
C	P2(A4R) POSITION	Manual feed P2 position width (A4R)
D	MIN POSITION	Manual feed min. width



## 41

<b>41-1</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the document size sensor and the control circuit.

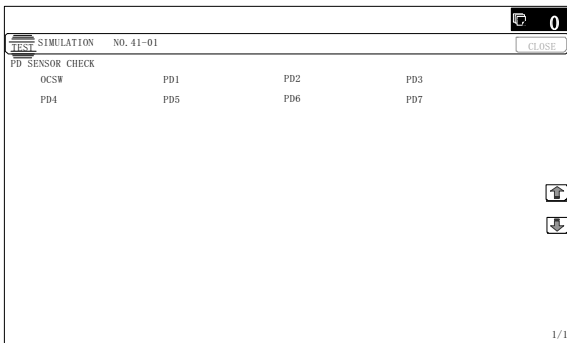
#### Section

#### 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



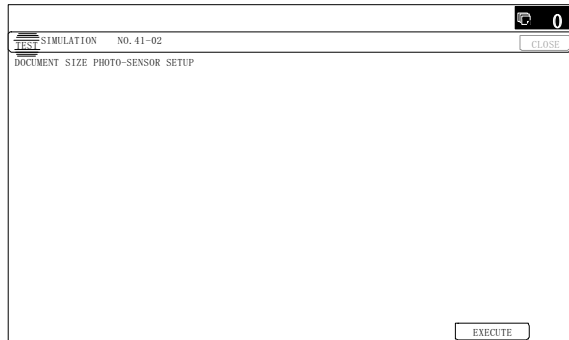
#### 41-2

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	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.  
When the above operation is normally completed, it is displayed.



#### 41-3

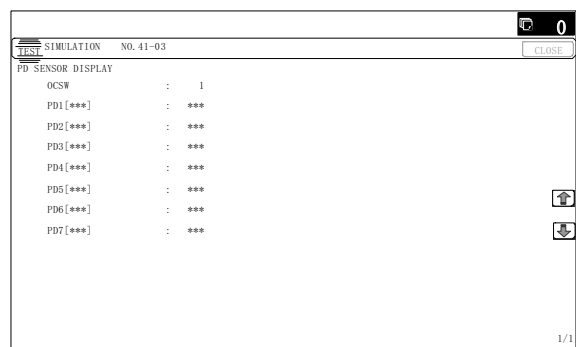
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the document size sensor and the control circuit.

#### 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

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the fusing temperature in each mode.

#### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

#### ⚠ [41-sheet machine]

Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
A	HL_UM READY	Ready standby TH_UM set value	70 - 230	170	180	175	180	175	180	○
B	HL_LM READY	Ready standby TH_LM set value	30 - 200	100	115	110	115	110	115	○
C	HL_E READY	Ready standby TH_E set value	70 - 230	170	185	175	185	185	185	○
D	HL_UM PLAIN PAPER BW	Black-White plain paper TH_UM set value	70 - 230	175	180	175	180	180	185	○
E	HL_LM PLAIN PAPER BW	Black-White plain paper TH_LM set value	30 - 200	105	130	120	130	130	130	○
F	HL_E PLAIN PAPER BW	Black-White plain paper TH_E set value	70 - 230	225	225	225	225	225	225	○
G	HL_UM PLAIN PAPER CL	Color plain paper TH_UM set value	70 - 230	175	180	175	180	180	185	○
H	HL_LM PLAIN PAPER CL	Color plain paper TH_LM set value	30 - 200	110	130	120	130	130	130	○
I	HL_E PLAIN PAPER CL	Color plain paper TH_E set value	70 - 230	225	225	225	225	225	225	○
J	WARMUP FUMON HL_E T	Fusing motor pre-rotation start TH_E set value	30 - 200	150	150	150	150	150	150	○
K	WARMUP FUMOFF HL_LM T	Fusing motor pre-rotation end TH_LM set value	30 - 200	30	30	30	30	30	30	○
L	WARM UP END TIME	Warm-up complete time	30 - 255	115	180	115	180	115	180	○

Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
M	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 - 230	185	185	185	185	185	185	—
N	HL_LM HEAVY PAPER	Heavy paper TH_LM set value	30 - 200	140	140	140	140	140	140	—
O	HL_E HEAVY PAPER	Heavy paper TH_E set value	70 - 230	220	220	220	220	220	220	—
P	HL_UM OHP PAPER	OHP-TH_UM set value	70 - 230	180	180	180	180	180	180	—
Q	HL_LM OHP PAPER	OHP-TH_LM set value	30 - 200	140	140	140	140	140	140	—
R	HL_E OHP PAPER	OHP-TH_E set value	70 - 230	220	220	220	220	220	220	—
S	HL_UM ENV PAPER	Envelope TH_UM set value	70 - 230	190	190	190	190	190	190	—
T	HL_LM ENV PAPER	Envelope TH_LM set value	30 - 200	140	140	140	140	140	140	—
U	HL_E ENV PAPER	Envelope TH_E set value	70 - 230	220	220	220	220	220	220	—
V	HL_UM GLOSS PAPER	Glossy paper TH_UM set value	70 - 230	185	185	185	185	185	185	—
W	HL_LM GLOSS PAPER	Glossy paper TH_LM set value	30 - 200	140	140	140	140	140	140	—
X	HL_E GLOSS PAPER	Glossy paper TH_E set value	70 - 230	220	220	220	220	220	220	—
Y	HL_UM E-STAR	Preheating TH_UM set value	30 - 200	150	150	160	160	160	160	○
Z	HL_E E-STAR	Preheating TH_E set value	30 - 200	150	150	160	160	160	160	○
AA	PRE-JOB	Resetting from preheating TH_UM, TH_E set value	30 - 200	170	170	175	175	175	175	○
AB	HL_LM E-STAR	Preheating TH_LM set value	30 - 200	100	100	100	100	100	100	○
AC	HL_UM HEAVY2 PAPER	Heavy paper 2 TH_UM set value	0 - 255	200	200	200	200	200	200	—
AD	HL_LM HEAVY2 PAPER	Heavy paper 2 TH_LM set value	0 - 255	140	140	140	140	140	140	—
AE	HL_E HEAVY2 PAPER	Heavy paper 2 TH_E set value	0 - 255	220	220	220	220	220	220	—
AF	HL_UM WARMUP_120L	TH_UM set value when WarmUp at 120°C or below	70 - 230	175	185	180	185	180	185	○
AG	HL_LM WARMUP_120L	TH_LM set value when WarmUp at 120°C or below	30 - 200	120	130	125	130	125	130	○
AH	HL_E WARMUP_120L	TH_E set value when WarmUp at 120°C or below	70 - 230	220	225	225	225	225	225	○
AI	LO_WARMUP_TIME	AF-AH applying time (Timer from completion of Ready)	0 - 255	25	25	25	25	25	25	—
AJ	HL_UM WARMUP_120H	TH_UM set value when WarmUp at 120°C or above	70 - 230	170	185	180	185	180	185	○
AK	HL_LM WARMUP_120H	TH_LM set value when WarmUp at 120°C or above	30 - 200	120	130	125	130	125	130	○
AL	HL_E WARMUP_120H	TH_E set value when WarmUp at 120°C or above	70 - 230	220	225	225	225	225	225	○
AM	HI_WARMUP_TIME	AJ-AL applying time (Timer from completion of Ready)	0 - 255	5	5	5	5	5	5	—
AN	HI_WU_FM_ON_TMP	FM prior rotation start TH_E when WarmUp at alpha °C or above	30 - 200	130	130	130	130	130	130	○
AO	HI_WU_END_TIME	WarmUp completion time when WarmUp at alpha °C or above	0 - 255	45	45	45	45	45	45	○
AP	HI_WU_JOB_SET_TMP	Job enable TH_UM temperature when WarmUp at alpha °C or above	70 - 230	165	180	175	180	180	180	○
AQ	HI_WARMUP_BORDER	Threshold value alpha to which SIM43-1-AN - AP is applied	1 - 119	70	70	70	70	70	70	—
AR	LO_WU_JOB_SET_TMP	Job enable TH_UM temperature when WarmUp at alpha °C or below	70 - 230	175	185	175	185	180	185	○
AS	ROT_TIME_AFTER_JOB	After rotating time when a job is completed	0 - 255	15	15	15	15	15	15	—

**[50-sheet machine]**

Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
A	HL_UM READY	Ready standby TH_UM set value	70 - 230	180	190	185	190	185	190	○
B	HL_LM READY	Ready standby TH_LM set value	30 - 200	100	115	110	115	110	115	○
C	HL_E READY	Ready standby TH_E set value	70 - 230	185	195	185	195	195	200	○
D	HL_UM PLAIN PAPER BW	Black-White plain paper TH_UM set value	70 - 230	190	195	190	195	190	195	○
E	HL_LM PLAIN PAPER BW	Black-White plain paper TH_LM set value	30 - 200	115	140	130	140	150	150	○
F	HL_E PLAIN PAPER BW	Black-White plain paper TH_E set value	70 - 230	225	225	225	225	225	225	○
G	HL_UM PLAIN PAPER CL	Color plain paper TH_UM set value	70 - 230	190	195	190	195	190	195	○
H	HL_LM PLAIN PAPER CL	Color plain paper TH_LM set value	30 - 200	120	140	130	140	150	150	○
I	HL_E PLAIN PAPER CL	Color plain paper TH_E set value	70 - 230	225	225	225	225	225	225	○
J	WARMUP FUMON HL_E T	Fusing motor pre-rotation start TH_E set value	30 - 200	150	150	150	150	150	150	○
K	WARMUP FUMOFF HL_LM T	Fusing motor pre-rotation end TH_LM set value	30 - 200	30	30	30	30	30	30	○
L	WARM UP END TIME	Warm-up complete time	30 - 255	135	180	135	180	135	180	○
M	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 - 230	185	185	185	185	185	185	—
N	HL_LM HEAVY PAPER	Heavy paper TH_LM set value	30 - 200	140	140	140	140	140	140	—
O	HL_E HEAVY PAPER	Heavy paper TH_E set value	70 - 230	220	220	220	220	220	220	—



Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
P	HL_UM OHP PAPER	OHP-TH_UM set value	70 - 230	180	180	180	180	180	180	—
Q	HL_LM OHP PAPER	OHP-TH_LM set value	30 - 200	140	140	140	140	140	140	—
R	HL_E OHP PAPER	OHP-TH_E set value	70 - 230	220	220	220	220	220	220	—
S	HL_UM ENV PAPER	Envelope TH_UM set value	70 - 230	190	190	190	190	190	190	—
T	HL_LM ENV PAPER	Envelope TH_LM set value	30 - 200	140	140	140	140	140	140	—
U	HL_E ENV PAPER	Envelope TH_E set value	70 - 230	220	220	220	220	220	220	—
V	HL_UM GLOSS PAPER	Glossy paper TH_UM set value	70 - 230	185	185	185	185	185	185	—
W	HL_LM GLOSS PAPER	Glossy paper TH_LM set value	30 - 200	140	140	140	140	140	140	—
X	HL_E GLOSS PAPER	Glossy paper TH_E set value	70 - 230	220	220	220	220	220	220	—
Y	HL_UM E-STAR	Preheating TH_UM set value	30 - 200	155	155	155	155	165	165	○
Z	HL_E E-STAR	Preheating TH_E set value	30 - 200	155	155	155	155	165	165	○
AA	PRE-JOB	Resetting from preheating TH_UM, TH_E set value	30 - 200	175	175	180	180	180	180	○
AB	HL_LM E-STAR	Preheating TH_LM set value	30 - 200	100	100	100	100	100	100	○
AC	HL_UM HEAVY2 PAPER	Heavy paper 2 TH_UM set value	0 - 255	200	200	200	200	200	200	—
AD	HL_LM HEAVY2 PAPER	Heavy paper 2 TH_LM set value	0 - 255	140	140	140	140	140	140	—
AE	HL_E HEAVY2 PAPER	Heavy paper 2 TH_E set value	0 - 255	220	220	220	220	220	220	—
AF	HL_UM WARMUP_120L	TH_UM set value when WarmUp at 120°C or below	70 - 230	185	200	190	200	190	200	○
AG	HL_LM WARMUP_120L	TH_LM set value when WarmUp at 120°C or below	30 - 200	120	135	130	135	130	135	○
AH	HL_E WARMUP_120L	TH_E set value when WarmUp at 120°C or below	70 - 230	190	210	200	210	205	210	○
AI	LO_WARMUP_TIME	AF-AH applying time (Timer from completion of Ready)	0 - 255	25	25	25	25	25	25	—
AJ	HL_UM WARMUP_120H	TH_UM set value when WarmUp at 120°C or above	70 - 230	185	195	190	195	190	195	○
AK	HL_LM WARMUP_120H	TH_LM set value when WarmUp at 120°C or above	30 - 200	120	135	130	135	130	135	○
AL	HL_E WARMUP_120H	TH_E set value when WarmUp at 120°C or above	70 - 230	220	225	225	225	225	225	○
AM	HI_WARMUP_TIME	AJ-AL applying time (Timer from completion of Ready)	0 - 255	5	5	5	5	5	5	—
AN	HI_WU_FM_ON_TMP	FM prior rotation start TH_E when WarmUp at alpha °C or above	30 - 200	130	130	130	130	130	130	○
AO	HI_WU_END_TIME	WarmUp completion time when WarmUp at alpha °C or above	0 - 255	45	45	45	45	45	45	○
AP	HI_WU_JOB_SET_TMP	Job enable TH_UM temperature when WarmUp at alpha °C or above	70 - 230	170	185	180	185	180	185	○
AQ	HI_WARMUP_BORDER	Threshold value alpha to which SIM43-1-AN - AP is applied	1 - 119	70	70	70	70	70	70	—
AR	LO_WU_JOB_SET_TMP	Job enable TH_UM temperature when WarmUp at alpha °C or below	70 - 230	185	200	190	200	190	200	○
AS	ROT_TIME_AFTER_JOB	After rotating time when a job is completed	0 - 255	15	15	15	15	15	15	○

#### <Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

#### <List of destination groups>

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

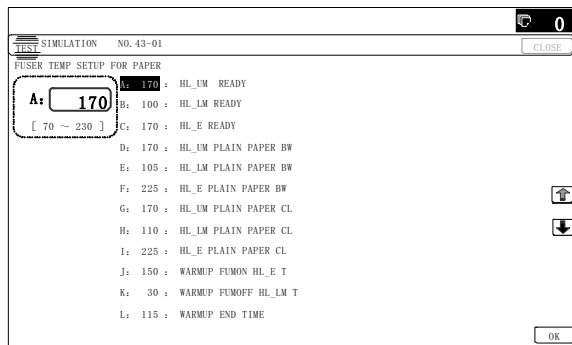
SW-A Setting value when plain paper is selected in the system setting/device setting/fusing control setting.

SW-B Set value when heavy paper is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on plain paper or heavy paper which is selected in the system setting/device setting/fusing control setting.

(Example) When plain paper is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



#### 43-4

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the fusing temperature 2 in each mode. (Continued from SIM 43-1.)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value in step 2) is saved.

#### ▲ [41-sheet machine]

Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
A	HL_UM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_UM set value	70 - 230	170	175	170	175	175	180	○
B	HL_LM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_LM set value	30 - 200	100	100	100	100	100	100	○
C	HL_E PLAIN PAPER BW DUP	Black-White plain paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	○
D	PLAIN PAPER BW DUP APP CNT	Black-White plain paper duplex applying number of sheets	0 - 60	40	40	40	40	40	40	○
E	HL_UM PLAIN PAPER CL DUP	Color plain paper duplex TH_UM set value	70 - 230	170	175	170	175	175	180	○
F	HL_LM PLAIN PAPER CL DUP	Color plain paper duplex TH_LM set value	30 - 200	100	100	100	100	100	100	○
G	HL_E PLAIN PAPER CL DUP	Color plain paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	○
H	PLAIN PAPER CL DUP APP CNT	Color plain paper duplex applying number of sheets	0 - 60	40	40	40	40	40	40	○
I	HL_UM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_UM set value	70 - 230	185	185	185	185	185	185	—
J	HL_LM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_LM set value	30 - 200	120	120	120	120	120	120	—
K	HL_E HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	—
L	HEAVY PAPER BW DUP APP CNT	Black-White heavy paper duplex applying number of sheets	0 - 60	1	1	1	1	1	1	—
M	HL_UM HEAVY PAPER CL DUP	Color heavy paper duplex TH_UM set value	70 - 230	185	185	185	185	185	185	—
N	HL_LM HEAVY PAPER CL DUP	Color heavy paper duplex TH_LM set value	30 - 200	120	120	120	120	120	120	—
O	HL_E HEAVY PAPER CL DUP	Color heavy paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	—
P	HEAVY PAPER CL DUP APP CNT	Color heavy paper duplex applying number of sheets	0 - 60	1	1	1	1	1	1	—

[50-sheet machine]

Item/Display		Content	Setting range	Default value						Destination linkage (NOTE)
				Group 1		Group 2		Group 3		
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B	
A	HL_UM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_UM set value	70 - 230	185	190	185	190	185	190	○
B	HL_LM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_LM set value	30 - 200	100	100	100	100	100	100	○
C	HL_E PLAIN PAPER BW DUP	Black-White plain paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	○
D	PLAIN PAPER BW DUP APP CNT	Black-White plain paper duplex applying number of sheets	0 - 60	40	40	40	40	40	40	○
E	HL_UM PLAIN PAPER CL DUP	Color plain paper duplex TH_UM set value	70 - 230	185	190	185	190	185	190	○
F	HL_LM PLAIN PAPER CL DUP	Color plain paper duplex TH_LM set value	30 - 200	100	100	100	100	100	100	○
G	HL_E PLAIN PAPER CL DUP	Color plain paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	○
H	PLAIN PAPER CL DUP APP CNT	Color plain paper duplex applying number of sheets	0 - 60	40	40	40	40	40	40	○
I	HL_UM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_UM set value	70 - 230	185	185	185	185	185	185	—
J	HL_LM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_LM set value	30 - 200	120	120	120	120	120	120	—
K	HL_E HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	—
L	HEAVY PAPER BW DUP APP CNT	Black-White heavy paper duplex applying number of sheets	0 - 60	1	1	1	1	1	1	—
M	HL_UM HEAVY PAPER CL DUP	Color heavy paper duplex TH_UM set value	70 - 230	185	185	185	185	185	185	—
N	HL_LM HEAVY PAPER CL DUP	Color heavy paper duplex TH_LM set value	30 - 200	120	120	120	120	120	120	—
O	HL_E HEAVY PAPER CL DUP	Color heavy paper duplex TH_E set value	70 - 230	220	220	220	220	220	220	—
P	HEAVY PAPER CL DUP APP CNT	Color heavy paper duplex applying number of sheets	0 - 60	1	1	1	1	1	1	—

<Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

<List of destination groups>

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

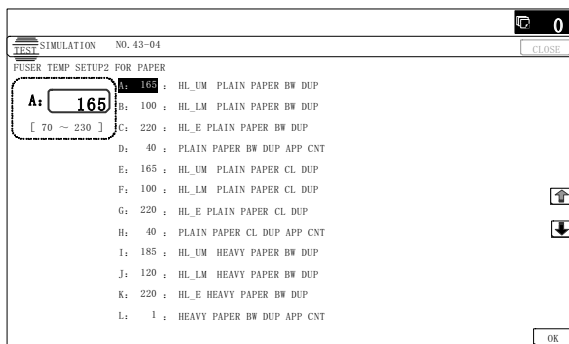
SW-A Setting value when plain paper is selected in the system setting/device setting/fusing control setting.

SW-B Set value when heavy paper is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on plain paper or heavy paper which is selected in the system setting/device setting/fusing control setting.

(Example) When plain paper is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



43-20

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

#### ▲ [41-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM READY LL	Correction value for TH_UM set value in Ready standby under LL environment	1 - 99	55	55	55	○
B	HL_LM READY LL	Correction value for TH_LM set value in Ready standby under LL environment	1 - 99	55	55	55	○
C	HL_E READY LL	Correction value for TH_E set value in Ready standby under LL environment	1 - 99	55	55	55	○
D	HL_UM PLAIN BW LL	Correction value for Black-White plain paper TH_UM set value under LL environment	1 - 99	55	55	55	○
E	HL_LM PLAIN BW LL	Correction value for Black-White plain paper TH_LM set value under LL environment	1 - 99	55	55	55	○
F	HL_E PLAIN BW LL	Correction value for Black-White plain paper TH_E set value under LL environment	1 - 99	50	50	50	○
G	HL_UM PLAIN CL LL	Correction value for Color plain paper TH_UM set value under LL environment	1 - 99	55	55	55	○
H	HL_LM PLAIN CL LL	Correction value for Color plain paper TH_LM set value under LL environment	1 - 99	55	55	55	○
I	HL_E PLAIN CL LL	Correction value for Color plain paper TH_E set value under LL environment	1 - 99	50	50	50	○
J	WARMUP FUMON HL_E T LL	Correction value for fusing motor pre-rotation start TH_E set value under LL environment	1 - 99	45	45	45	—
K	WARMUP FUMOFF T LL	Fusing motor prior rotation completion time under LL environment	1 - 99	50	50	50	—
L	WARMUP END TIME LL	Correction value for warm-up complete time under LL environment	1 - 99	80	80	80	—
M	HL_UM HEAVY LL	Correction value for heavy paper TH_UM set value under LL environment	1 - 99	55	55	55	—
N	HL_LM HEAVY LL	Correction value for heavy paper TH_LM set value under LL environment	1 - 99	55	55	55	—
O	HL_E HEAVY LL	Correction value for heavy paper TH_E set value under LL environment	1 - 99	50	50	50	—
P	HL_UM OHP LL	Correction value for OHP TH_UM set value under LL environment	1 - 99	55	55	55	—
Q	HL_LM OHP LL	Correction value for OHP TH_LM set value under LL environment	1 - 99	55	55	55	—
R	HL_E OHP LL	Correction value for OHP TH_E set value under LL environment	1 - 99	50	50	50	—
S	HL_UM ENVELOPE LL	Correction value for envelope TH_UM set value under LL environment	1 - 99	55	55	55	—
T	HL_LM ENVELOPE LL	Correction value for envelope TH_LM set value under LL environment	1 - 99	55	55	55	—
U	HL_E ENVELOPE LL	Correction value for envelope TH_E set value under LL environment	1 - 99	50	50	50	—
V	HL_UM GLOSS LL	Correction value for glossy paper TH_UM set value under LL environment	1 - 99	55	55	55	—
W	HL_LM GLOSS LL	Correction value for glossy paper TH_LM set value under LL environment	1 - 99	55	55	55	—
X	HL_E GLOSS LL	Correction value for glossy paper TH_E set value under LL environment	1 - 99	50	50	50	—
Y	HL_UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	55	55	55	—
Z	HL_E E-STAR LL	Correction value for preheating TH_E set value under LL environment	1 - 99	55	55	55	—
AA	PRE-JOB LL	Correction value for resetting from preheating TH_UM+TH_E set value under LL environment	1 - 99	55	55	55	—

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
AB	HL_LM E-STAR LL	Correction value for preheating TH_LM set value under LL environment	1 - 99	55	55	55	—
AC	HL_UM HEAVY2 CL LL	Correction value for heavy paper 2 TH_UM set value under LL environment	1 - 99	55	55	55	—
AD	HL_LM HEAVY2 CL LL	Correction value for heavy paper 2 TH_LM set value under LL environment	1 - 99	55	55	55	—
AE	HL_E HEAVY2 CL LL	Correction value for heavy paper 2 TH_E set value under LL environment	1 - 99	50	50	50	—
AF	HL_UM WARMUP_120L LL	Correction value for TH_UM set value in WarmUp at 120°C or below under LL environment	1 - 99	55	55	55	—
AG	HL_LM WARMUP_120L LL	Correction value for TH_LM set value in WarmUp at 120°C or below under LL environment	1 - 99	55	55	55	—
AH	HL_E WARMUP_120L LL	Correction value for TH_E set value in WarmUp at 120°C or below under LL environment	1 - 99	50	50	50	—
AI	LO_WARMUP_TIME_LL	Correction value for AF-AH applying time (timer from Ready complete) under LL environment	1 - 99	50	50	50	—
AJ	HL_UM WARMUP_120H LL	Correction value for TH_UM set value in WarmUp at 120°C or above under LL environment	1 - 99	55	55	55	—
AK	HL_LM WARMUP_120H LL	Correction value for TH_LM set value in WarmUp at 120°C or above under LL environment	1 - 99	55	55	55	—
AL	HL_E WARMUP_120H LL	Correction value for TH_E set value in WarmUp at 120°C or above under LL environment	1 - 99	50	50	50	—
AM	HI_WU_TIME_LL	Correction value for AJ-AL applying time (timer from Ready complete) under LL environment	1 - 99	50	50	50	—
AN	HI_WU_FM_ON_TMP_LL	Correction value for FM prior rotation start TH_UM in WarmUp at alpha °C or above under LL environment	1 - 99	45	45	45	—
AO	HI_WU_END_TIME_LL	Correction value for WarmUp completion time in WarmUp at alpha °C or above under LL environment	1 - 99	50	50	50	—
AP	HI_WU_JOB_SET_TMP_LL	Correction value for Job Enable TH_UM temperature in at alpha °C or above under LL environment	1 - 99	55	55	55	—
AQ	HI_WARMUP_BORDER_LL	Correction value for the threshold value alpha applying SIM43-1-AN - AP under LL environment	1 - 99	50	50	50	—
AR	LO_WU_JOB_SET_TMP_LL	Correction value for Job Enable TH_UM temperature in at alpha °C or below under LL environment	1 - 99	55	55	55	—
AS	ROT_TIME_AFTER_JOB_LL	Correction value for the after rotation time when completing a job under LL environment	1 - 99	50	50	50	—

\* Item L: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

\* Item D, F: When B5 size, correction of "-5" is made for item D and item F.

\* Item G, I: When B5 size, correction of "-5" is made for item G and item I.

#### [50-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM READY LL	Correction value for TH_UM set value in Ready standby under LL environment	1 - 99	55	55	55	○
B	HL_LM READY LL	Correction value for TH_LM set value in Ready standby under LL environment	1 - 99	55	55	55	○
C	HL_E READY LL	Correction value for TH_E set value in Ready standby under LL environment	1 - 99	55	55	55	○
D	HL_UM PLAIN BW LL	Correction value for Black-White plain paper TH_UM set value under LL environment	1 - 99	55	55	55	○
E	HL_LM PLAIN BW LL	Correction value for Black-White plain paper TH_LM set value under LL environment	1 - 99	55	55	55	○
F	HL_E PLAIN BW LL	Correction value for Black-White plain paper TH_E set value under LL environment	1 - 99	50	50	50	○
G	HL_UM PLAIN CL LL	Correction value for Color plain paper TH_UM set value under LL environment	1 - 99	55	55	55	○
H	HL_LM PLAIN CL LL	Correction value for Color plain paper TH_LM set value under LL environment	1 - 99	55	55	55	○
I	HL_E PLAIN CL LL	Correction value for Color plain paper TH_E set value under LL environment	1 - 99	50	50	50	○
J	WARMUP FUMON HL_E T LL	Correction value for fusing motor pre-rotation start TH_E set value under LL environment	1 - 99	45	45	45	—
K	WARMUP FUMOFF T LL	Fusing motor prior rotation completion time under LL environment	1 - 99	50	50	50	—
L	WARMUP END TIME LL	Correction value for warm-up complete time under LL environment	1 - 99	80	80	80	—



Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
M	HL_UM HEAVY LL	Correction value for heavy paper TH_UM set value under LL environment	1 - 99	55	55	55	—
N	HL_LM HEAVY LL	Correction value for heavy paper TH_LM set value under LL environment	1 - 99	55	55	55	—
O	HL_E HEAVY LL	Correction value for heavy paper TH_E set value under LL environment	1 - 99	50	50	50	—
P	HL_UM OHP LL	Correction value for OHP TH_UM set value under LL environment	1 - 99	55	55	55	—
Q	HL_LM OHP LL	Correction value for OHP TH_LM set value under LL environment	1 - 99	55	55	55	—
R	HL_E OHP LL	Correction value for OHP TH_E set value under LL environment	1 - 99	50	50	50	—
S	HL_UM ENVELOPE LL	Correction value for envelope TH_UM set value under LL environment	1 - 99	55	55	55	—
T	HL_LM ENVELOPE LL	Correction value for envelope TH_LM set value under LL environment	1 - 99	55	55	55	—
U	HL_E ENVELOPE LL	Correction value for envelope TH_E set value under LL environment	1 - 99	50	50	50	—
V	HL_UM GLOSS LL	Correction value for glossy paper TH_UM set value under LL environment	1 - 99	55	55	55	—
W	HL_LM GLOSS LL	Correction value for glossy paper TH_LM set value under LL environment	1 - 99	55	55	55	—
X	HL_E GLOSS LL	Correction value for glossy paper TH_E set value under LL environment	1 - 99	50	50	50	—
Y	HL_UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	55	55	55	—
Z	HL_E E-STAR LL	Correction value for preheating TH_E set value under LL environment	1 - 99	55	55	55	—
AA	PRE-JOB LL	Correction value for resetting from preheating TH_UM+TH_E set value under LL environment	1 - 99	55	55	55	—
AB	HL_LM E-STAR LL	Correction value for preheating TH_LM set value under LL environment	1 - 99	55	55	55	—
AC	HL_UM HEAVY2 CL LL	Correction value for heavy paper 2 TH_UM set value under LL environment	1 - 99	55	55	55	—
AD	HL_LM HEAVY2 CL LL	Correction value for heavy paper 2 TH_LM set value under LL environment	1 - 99	55	55	55	—
AE	HL E HEAVY2 CL LL	Correction value for heavy paper 2 TH_E set value under LL environment	1 - 99	50	50	50	—
AF	HL_UM WARMUP_120L LL	Correction value for TH_UM set value in WarmUp at 120°C or below under LL environment	1 - 99	55	55	55	—
AG	HL_LM WARMUP_120L LL	Correction value for TH_LM set value in WarmUp at 120°C or below under LL environment	1 - 99	55	55	55	—
AH	HL_E WARMUP_120L LL	Correction value for TH_E set value in WarmUp at 120°C or below under LL environment	1 - 99	50	50	50	—
AI	LO_WARMUP_TIME_LL	Correction value for AF-AH applying time (timer from Ready complete) under LL environment	1 - 99	50	50	50	—
AJ	HL_UM WARMUP_120H LL	Correction value for TH_UM set value in WarmUp at 120°C or above under LL environment	1 - 99	55	55	55	—
AK	HL_LM WARMUP_120H LL	Correction value for TH_LM set value in WarmUp at 120°C or above under LL environment	1 - 99	55	55	55	—
AL	HL_E WARMUP_120H LL	Correction value for TH_E set value in WarmUp at 120°C or above under LL environment	1 - 99	50	50	50	—
AM	HI_WU_TIME_LL	Correction value for AJ-AL applying time (timer from Ready complete) under LL environment	1 - 99	50	50	50	—
AN	HI_WU_FM_ON_TMP_LL	Correction value for FM prior rotation start TH_UM in WarmUp at alpha °C or above under LL environment	1 - 99	45	45	45	—
AO	HI_WU_END_TIME_LL	Correction value for WarmUp completion time in WarmUp at alpha °C or above under LL environment	1 - 99	50	50	50	—
AP	HI_WU_JOB_SET_TMP_LL	Correction value for Job Enable TH_UM temperature in at alpha °C or above under LL environment	1 - 99	55	55	55	—
AQ	HI_WARMUP_BORDER_LL	Correction value for the threshold value alpha applying SIM43-1-AN - AP under LL environment	1 - 99	50	50	50	—
AR	LO_WU_JOB_SET_TMP_LL	Correction value for Job Enable TH_UM temperature in at alpha °C or below under LL environment	1 - 99	55	55	55	—
AS	ROT_TIME_AFTER_JOB_LL	Correction value for the after rotation time when completing a job under LL environment	1 - 99	50	50	50	—

\* Item L: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

\* Item D, F: When B5 size, correction of "-5" is made for item D and item F.

\* Item G, I: When B5 size, correction of "-5" is made for item G and item I.

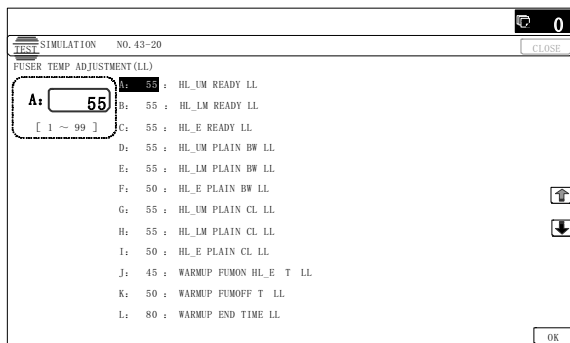
# <Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

# <List of destination groups>

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



43-21

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.

## Section

## Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

## ▲ [41-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM READY HH	Correction value for TH_UM set value in Ready standby under HH environment	1 - 99	50	50	50	○
B	HL_LM READY HH	Correction value for TH_LM set value in Ready standby under HH environment	1 - 99	50	50	50	○
C	HL_E READY HH	Correction value for TH_E set value in Ready standby under HH environment	1 - 99	50	50	50	○
D	HL_UM PLAIN BW HH	Correction value for Black-White plain paper TH_UM set value under HH environment	1 - 99	50	50	50	○
E	HL_LM PLAIN BW HH	Correction value for Black-White plain paper TH_LM set value under HH environment	1 - 99	50	50	50	○
F	HL_E PLAIN BW HH	Correction value for Black-White plain paper TH_E set value under HH environment	1 - 99	50	50	50	○
G	HL_UM PLAIN CL HH	Correction value for Color plain paper TH_UM set value under HH environment	1 - 99	50	50	50	○
H	HL_LM PLAIN CL HH	Correction value for Color plain paper TH_LM set value under HH environment	1 - 99	50	50	50	○
I	HL_E PLAIN CL HH	Correction value for Color plain paper TH_E set value under HH environment	1 - 99	50	50	50	○
J	WARMUP FUMON HL_E T HH	Correction value for fusing motor pre-rotation start TH_E set value under HH environment	1 - 99	50	50	50	—
K	WARMUP FUMOFF T HH	Fusing motor prior rotation completion time under HH environment	1 - 99	50	50	50	—
L	WARMUP END TIME HH	Correction value for warm-up complete time under HH environment	1 - 99	50	50	50	—
M	HL_UM HEAVY HH	Correction value for heavy paper TH_UM set value under HH environment	1 - 99	50	50	50	—

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
N	HL_LM HEAVY HH	Correction value for heavy paper TH_LM set value under HH environment	1 - 99	50	50	50	–
O	HL_E HEAVY HH	Correction value for heavy paper TH_E set value under HH environment	1 - 99	50	50	50	–
P	HL_UM OHP HH	Correction value for OHP TH_UM set value under HH environment	1 - 99	50	50	50	–
Q	HL_LM OHP HH	Correction value for OHP TH_LM set value under HH environment	1 - 99	50	50	50	–
R	HL_E OHP HH	Correction value for OHP TH_E set value under HH environment	1 - 99	50	50	50	–
S	HL_UM ENVELOPE HH	Correction value for envelope TH_UM set value under HH environment	1 - 99	50	50	50	–
T	HL_LM ENVELOPE HH	Correction value for envelope TH_LM set value under HH environment	1 - 99	50	50	50	–
U	HL_E ENVELOPE HH	Correction value for envelope TH_E set value under HH environment	1 - 99	50	50	50	–
V	HL_UM GLOSS HH	Correction value for glossy paper TH_UM set value under HH environment	1 - 99	50	50	50	–
W	HL_LM GLOSS HH	Correction value for glossy paper TH_LM set value under HH environment	1 - 99	50	50	50	–
X	HL_E GLOSS HH	Correction value for glossy paper TH_E set value under HH environment	1 - 99	50	50	50	–
Y	HL_UM E-STAR HH	Correction value for preheating TH_UM set value under HH environment	1 - 99	50	50	50	–
Z	HL_E E-STAR HH	Correction value for preheating TH_E set value under HH environment	1 - 99	50	50	50	–
AA	PRE-JOB HH	Correction value for resetting from preheating TH_UM+TH_E set value under HH environment	1 - 99	50	50	50	–
AB	HL_LM E-STAR HH	Correction value for preheating TH_LM set value under HH environment	1 - 99	50	50	50	–
AC	HL_UM HEAVY2 CL HH	Correction value for heavy paper 2 TH_UM set value under HH environment	1 - 99	50	50	50	–
AD	HL LM HEAVY2 CL HH	Correction value for heavy paper 2 TH_LM set value under HH environment	1 - 99	50	50	50	–
AE	HL E HEAVY2 CL HH	Correction value for heavy paper 2 TH_E set value under HH environment	1 - 99	50	50	50	–
AF	HL_UM WARMUP_120L HH	Correction value for TH_UM set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	–
AG	HL_LM WARMUP_120L HH	Correction value for TH_LM set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	–
AH	HL_E WARMUP_120L HH	Correction value for TH_E set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	–
AI	LO_WARMUP_TIME_HH	Correction value for AF-AH applying time (timer from Ready complete) under HH environment	1 - 99	50	50	50	–
AJ	HL_UM WARMUP_120H HH	Correction value for TH_UM set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	–
AK	HL_LM WARMUP_120H HH	Correction value for TH_LM set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	–
AL	HL_E WARMUP_120H HH	Correction value for TH_E set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	–
AM	HI_WU_TIME_HH	Correction value for AJ-AL applying time (timer from Ready complete) under HH environment	1 - 99	50	50	50	–
AN	HI_WU_FM_ON_TMP_HH	Correction value for FM prior rotation start TH_E in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	–
AO	HI_WU_END_TIME_HH	Correction value for WarmUp completion time in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	–
AP	HI_WU_JOB_SET_TMP_HH	Correction value for Job Enable TH_UM temperature in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	–
AQ	HI_WARMUP_BORDER_HH	Correction value for the threshold value alpha applying SIM43-1-AN - AP under HH environment	1 - 99	50	50	50	–
AR	LO_WU_JOB_SET_TMP_HH	Correction value for Job Enable TH_UM temperature in WarmUp at alpha °C or below under HH environment	1 - 99	50	50	50	–
AS	ROT_TIME_AFTER_JOB_HH	Correction value for the after rotation time when completing a job under HH environment	1 - 99	50	50	50	–

\* Item L: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change



[50-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM READY HH	Correction value for TH_UM set value in Ready standby under HH environment	1 - 99	50	50	50	○
B	HL_LM READY HH	Correction value for TH_LM set value in Ready standby under HH environment	1 - 99	50	50	50	○
C	HL_E READY HH	Correction value for TH_E set value in Ready standby under HH environment	1 - 99	50	50	50	○
D	HL_UM PLAIN BW HH	Correction value for Black-White plain paper TH_UM set value under HH environment	1 - 99	50	50	50	○
E	HL_LM PLAIN BW HH	Correction value for Black-White plain paper TH_LM set value under HH environment	1 - 99	50	50	50	○
F	HL_E PLAIN BW HH	Correction value for Black-White plain paper TH_E set value under HH environment	1 - 99	50	50	50	○
G	HL_UM PLAIN CL HH	Correction value for Color plain paper TH_UM set value under HH environment	1 - 99	50	50	50	○
H	HL_LM PLAIN CL HH	Correction value for Color plain paper TH_LM set value under HH environment	1 - 99	50	50	50	○
I	HL_E PLAIN CL HH	Correction value for Color plain paper TH_E set value under HH environment	1 - 99	50	50	50	○
J	WARMUP FUMON HL_E T HH	Correction value for fusing motor pre-rotation start TH_E set value under HH environment	1 - 99	50	50	50	—
K	WARMUP FUMOFF T HH	Fusing motor prior rotation completion time under HH environment	1 - 99	50	50	50	—
L	WARMUP END TIME HH	Correction value for warm-up complete time under HH environment	1 - 99	50	50	50	—
M	HL_UM HEAVY HH	Correction value for heavy paper TH_UM set value under HH environment	1 - 99	50	50	50	—
N	HL_LM HEAVY HH	Correction value for heavy paper TH_LM set value under HH environment	1 - 99	50	50	50	—
O	HL_E HEAVY HH	Correction value for heavy paper TH_E set value under HH environment	1 - 99	50	50	50	—
P	HL_UM OHP HH	Correction value for OHP TH_UM set value under HH environment	1 - 99	50	50	50	—
Q	HL_LM OHP HH	Correction value for OHP TH_LM set value under HH environment	1 - 99	50	50	50	—
R	HL_E OHP HH	Correction value for OHP TH_E set value under HH environment	1 - 99	50	50	50	—
S	HL_UM ENVELOPE HH	Correction value for envelope TH_UM set value under HH environment	1 - 99	50	50	50	—
T	HL_LM ENVELOPE HH	Correction value for envelope TH_LM set value under HH environment	1 - 99	50	50	50	—
U	HL_E ENVELOPE HH	Correction value for envelope TH_E set value under HH environment	1 - 99	50	50	50	—
V	HL_UM GLOSS HH	Correction value for glossy paper TH_UM set value under HH environment	1 - 99	50	50	50	—
W	HL_LM GLOSS HH	Correction value for glossy paper TH_LM set value under HH environment	1 - 99	50	50	50	—
X	HL_E GLOSS HH	Correction value for glossy paper TH_E set value under HH environment	1 - 99	50	50	50	—
Y	HL_UM E-STAR HH	Correction value for preheating TH_UM set value under HH environment	1 - 99	50	50	50	—
Z	HL_E E-STAR HH	Correction value for preheating TH_E set value under HH environment	1 - 99	50	50	50	—
AA	PRE-JOB HH	Correction value for resetting from preheating TH_UM+TH_E set value under HH environment	1 - 99	50	50	50	—
AB	HL_LM E-STAR HH	Correction value for preheating TH_LM set value under HH environment	1 - 99	50	50	50	—
AC	HL UM HEAVY2 CL HH	Correction value for heavy paper 2 TH_UM set value under HH environment	1 - 99	50	50	50	—
AD	HL LM HEAVY2 CL HH	Correction value for heavy paper 2 TH_LM set value under HH environment	1 - 99	50	50	50	—
AE	HL E HEAVY2 CL HH	Correction value for heavy paper 2 TH_E set value under HH environment	1 - 99	50	50	50	—
AF	HL_UM WARMUP_120L HH	Correction value for TH_UM set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	—
AG	HL_LM WARMUP_120L HH	Correction value for TH_LM set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	—
AH	HL_E WARMUP_120L HH	Correction value for TH_E set value in WarmUp at 120°C or below under HH environment	1 - 99	50	50	50	—
AI	LO_WARMUP_TIME_HH	Correction value for AF-AH applying time (timer from Ready complete) under HH environment	1 - 99	50	50	50	—

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
AJ	HL_UM WARMUP_120H HH	Correction value for TH_UM set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	—
AK	HL_LM WARMUP_120H HH	Correction value for TH_LM set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	—
AL	HL_E WARMUP_120H HH	Correction value for TH_E set value in WarmUp at 120°C or above under HH environment	1 - 99	50	50	50	—
AM	HI_WU_TIME_HH	Correction value for AJ-AL applying time (timer from Ready complete) under HH environment	1 - 99	50	50	50	—
AN	HI_WU_FM_ON_TMP_HH	Correction value for FM prior rotation start TH_E in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	—
AO	HI_WU_END_TIME_HH	Correction value for WarmUp completion time in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	—
AP	HI_WU_JOB_SET_TMP_HH	Correction value for Job Enable TH_UM temperature in WarmUp at alpha °C or above under HH environment	1 - 99	50	50	50	—
AQ	HI_WARMUP_BORDER_HH	Correction value for the threshold value alpha applying SIM43-1-AN - AP under HH environment	1 - 99	50	50	50	—
AR	LO_WU_JOB_SET_TMP_HH	Correction value for Job Enable TH_UM temperature in WarmUp at alpha °C or below under HH environment	1 - 99	50	50	50	—
AS	ROT_TIME_AFTER_JOB_HH	Correction value for the after rotation time when completing a job under HH environment	1 - 99	50	50	50	—

\* Item L: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

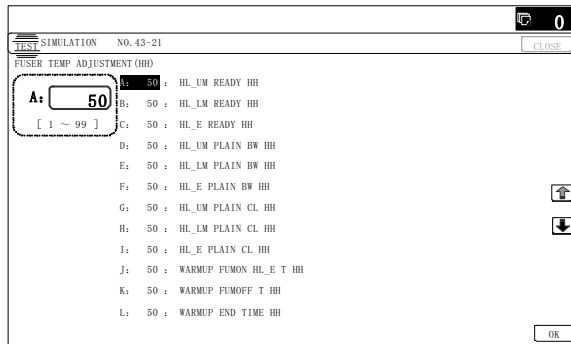
#### <Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

#### <List of destination groups>

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



43-22

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.

#### Section

##### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

▲ [41-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM PLAIN BW DUP LL	Correction value for upper TH_UM Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
B	HL_LM PLAIN BW DUP LL	Correction value for lower TH_LM Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
C	HL_E PLAIN BW DUP LL	Correction value for upper TH_E Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
D	PLAIN BW DUP APP CNT LL	Correction value for applying number of sheets in Black-White plain paper duplex under LL environment	1 - 99	50	50	50	○
E	HL_UM PLAIN CL DUP LL	Correction value for upper TH_UM Color plain paper duplex under LL environment	1 - 99	55	55	55	○
F	HL_LM PLAIN CL DUP LL	Correction value for lower TH_LM Color plain paper duplex under LL environment	1 - 99	55	55	55	○
G	HL_E PLAIN CL DUP LL	Correction value for upper TH_E Color plain paper duplex under LL environment	1 - 99	50	50	50	○
H	PLAIN CL DUP APP CNT LL	Correction value for applying number of sheets in Color plain paper duplex under LL environment	1 - 99	50	50	50	○
I	HL_UM HEAVY BW DUP LL	Correction value for upper TH_UM set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
J	HL_LM HEAVY BW DUP LL	Correction value for lower TH_LM set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
K	HL_E HEAVY BW DUP LL	Correction value for upper TH_E set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
L	HEAVY BW DUP APP CNT LL	Correction value for applying number of sheets in Black-White heavy paper duplex under LL environment	1 - 99	50	50	50	—
M	HL_UM HEAVY CL DUP LL	Correction value for upper TH_UM set value in Color heavy paper duplex under LL environment	1 - 99	55	55	55	—
N	HL_LM HEAVY CL DUP LL	Correction value for lower TH_LM set value in Color heavy paper duplex under LL environment	1 - 99	55	55	55	—
O	HL_E HEAVY CL DUP LL	Correction value for upper TH_E set value in Color heavy paper duplex under LL environment	1 - 99	50	50	50	—
P	HEAVY CL DUP APP CNT LL	Correction value for applying number of sheets in Color heavy paper duplex under LL environment	1 - 99	50	50	50	—

\* Items D, H: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

▲ [50-sheet machine]

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM PLAIN BW DUP LL	Correction value for upper TH_UM Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
B	HL_LM PLAIN BW DUP LL	Correction value for lower TH_LM Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
C	HL_E PLAIN BW DUP LL	Correction value for upper TH_E Black-White plain paper duplex under LL environment	1 - 99	55	55	55	○
D	PLAIN BW DUP APP CNT LL	Correction value for applying number of sheets in Black-White plain paper duplex under LL environment	1 - 99	50	50	50	○
E	HL_UM PLAIN CL DUP LL	Correction value for upper TH_UM Color plain paper duplex under LL environment	1 - 99	55	55	55	○
F	HL_LM PLAIN CL DUP LL	Correction value for lower TH_LM Color plain paper duplex under LL environment	1 - 99	55	55	55	○
G	HL_E PLAIN CL DUP LL	Correction value for upper TH_E Color plain paper duplex under LL environment	1 - 99	50	50	50	○
H	PLAIN CL DUP APP CNT LL	Correction value for applying number of sheets in Color plain paper duplex under LL environment	1 - 99	50	50	50	○
I	HL_UM HEAVY BW DUP LL	Correction value for upper TH_UM set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
J	HL_LM HEAVY BW DUP LL	Correction value for lower TH_LM set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
K	HL_E HEAVY BW DUP LL	Correction value for upper TH_E set value in Black-White heavy paper duplex under LL environment	1 - 99	55	55	55	—
L	HEAVY BW DUP APP CNT LL	Correction value for applying number of sheets in Black-White heavy paper duplex under LL environment	1 - 99	50	50	50	—
M	HL_UM HEAVY CL DUP LL	Correction value for upper TH_UM set value in Color heavy paper duplex under LL environment	1 - 99	55	55	55	—
N	HL_LM HEAVY CL DUP LL	Correction value for lower TH_LM set value in Color heavy paper duplex under LL environment	1 - 99	55	55	55	—
O	HL_E HEAVY CL DUP LL	Correction value for upper TH_E set value in Color heavy paper duplex under LL environment	1 - 99	50	50	50	—

Item/Display	Content	Setting range	Default value			Destination linkage (NOTE)
			Group 1	Group 2	Group 3	
P	HEAVY CL DUP APP CNT LL	1 - 99	50	50	50	—

\* Items D, H: 1 Count = 1s Change  
Correction value for the other items: 1 count for 1°C change

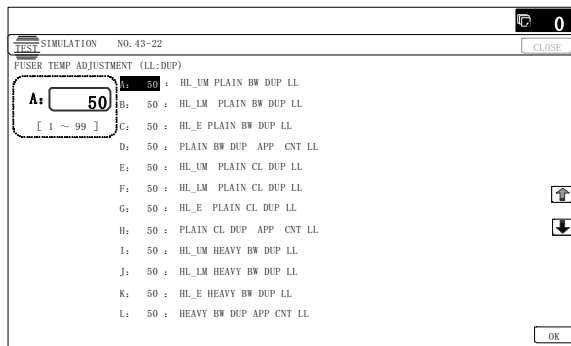
#### <Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

#### <List of destination groups>

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



43-23

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.

#### Section

#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] 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, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

#### ▲ [41-sheet machine]

Item/Display	Content	Setting range	Default value			Destination linkage (NOTE)
			Group 1	Group 2	Group 3	
A	HL_UM PLAIN BW DUP HH	1 - 99	50	50	50	○
B	HL_LM PLAIN BW DUP HH	1 - 99	50	50	50	○
C	HL_E PLAIN BW DUP HH	1 - 99	50	50	50	○
D	PLAIN BW DUP APP CNT HH	1 - 99	50	50	50	○
E	HL_UM PLAIN CL DUP HH	1 - 99	50	50	50	○
F	HL_LM PLAIN CL DUP HH	1 - 99	50	50	50	○
G	HL_E PLAIN CL DUP HH	1 - 99	50	50	50	○
H	PLAIN CL DUP APP CNT HH	1 - 99	50	50	50	○

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
I	HL_UM HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_UM set value under HH environment	1 - 99	50	50	50	—
J	HL_LM HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_LM set value under HH environment	1 - 99	50	50	50	—
K	HL_E HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_E set value under HH environment	1 - 99	50	50	50	—
L	HEAVY BW DUP APP CNT HH	Correction value for applying number of sheets in Black-White heavy paper duplex under HH environment	1 - 99	50	50	50	—
M	HL_UM HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_UM set value under HH environment	1 - 99	50	50	50	—
N	HL_LM HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_LM set value under HH environment	1 - 99	50	50	50	—
O	HL_E HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_E set value under HH environment	1 - 99	50	50	50	—
P	HEAVY CL DUP APP CNT HH	Correction value for applying number of sheets in Color heavy paper duplex under HH environment	1 - 99	50	50	50	—

\* Items D, H: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

**[50-sheet machine]**

Item/Display		Content	Setting range	Default value			Destination linkage (NOTE)
				Group 1	Group 2	Group 3	
A	HL_UM PLAIN BW DUP HH	Correction value for TH_UM Black-White plain paper duplex mode under HH environment	1 - 99	50	50	50	○
B	HL_LM PLAIN BW DUP HH	Correction value for TH_LM Black-White plain paper duplex mode under HH environment	1 - 99	50	50	50	○
C	HL_E PLAIN BW DUP HH	Correction value for TH_E Black-White plain paper duplex mode under HH environment	1 - 99	50	50	50	○
D	PLAIN BW DUP APP CNT HH	Correction value for applying number of sheets in Black-White plain paper duplex under HH environment	1 - 99	50	50	50	○
E	HL_UM PLAIN CL DUP HH	Correction value for TH_UM Color plain paper duplex mode under HH environment	1 - 99	50	50	50	○
F	HL_LM PLAIN CL DUP HH	Correction value for TH_LM Color plain paper duplex mode under HH environment	1 - 99	50	50	50	○
G	HL_E PLAIN CL DUP HH	Correction value for TH_E Color plain paper duplex mode under HH environment	1 - 99	50	50	50	○
H	PLAIN CL DUP APP CNT HH	Correction value for applying number of sheets in Color plain paper duplex under HH environment	1 - 99	50	50	50	○
I	HL_UM HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_UM set value under HH environment	1 - 99	50	50	50	—
J	HL_LM HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_LM set value under HH environment	1 - 99	50	50	50	—
K	HL_E HEAVY BW DUP HH	Correction value for Black-White heavy paper duplex mode TH_E set value under HH environment	1 - 99	50	50	50	—
L	HEAVY BW DUP APP CNT HH	Correction value for applying number of sheets in Black-White heavy paper duplex under HH environment	1 - 99	50	50	50	—
M	HL_UM HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_UM set value under HH environment	1 - 99	50	50	50	—
N	HL_LM HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_LM set value under HH environment	1 - 99	50	50	50	—
O	HL_E HEAVY CL DUP HH	Correction value for Color heavy paper duplex mode TH_E set value under HH environment	1 - 99	50	50	50	—
P	HEAVY CL DUP APP CNT HH	Correction value for applying number of sheets in Color heavy paper duplex under HH environment	1 - 99	50	50	50	—

\* Items D, H: 1 Count = 1s Change

Correction value for the other items: 1 count for 1°C change

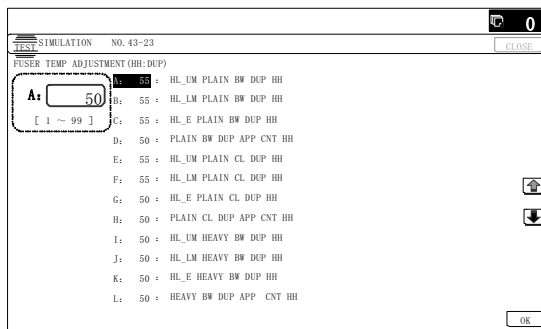
**<Code descriptions>**

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external

**<List of destination groups>**

Group 1	Japan	China	AB_B	
Group 2	U.S.A.	Canada	Inch	
Group 3	Europe	U.K.	AUS	AB_A

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.



43-24

**Purpose**

Adjustment/Setup

**Function (Purpose)**

Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.

**Section**

**Operation/Procedure**

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

	Item/Display	Content	Setting range	Default value	
				41-sheet machine	50-sheet machine
A	NN_120_FUS_DUP_HL_UM&HL_E	Fusing temperature correction value NN environment power rising at less than 120°C common to item HL_UM and item HL_E	1 - 99	50	50
B	NN_120_FUS_DUP_HL_LM	Fusing temperature correction value NN environment power rising at less than 120°C item HL_LM	1 - 99	50	50
C	LL_120_FUS_DUP_HL_UM&HL_E	Fusing temperature correction value LL environment power rising at less than 120°C common to item HL_UM and item HL_E	1 - 99	50	50
D	LL_120_FUS_DUP_HL_LM	Fusing temperature correction value LL environment power rising at less than 120°C item HL_LM	1 - 99	50	50
E	HH_120_FUS_DUP_HL_UM&HL_E	Fusing temperature correction value HH environment power rising at less than 120°C common to item HL_UM and item HL_E	1 - 99	50	50
F	HH_120_FUS_DUP_HL_LM	Fusing temperature correction value HH environment power rising at less than 120°C item HL_LM	1 - 99	50	50
G	NN_120_FUS_DUP_CNT	Fusing duplex paper exit count under NN environment	1 - 60	5	5
H	LL_120_FUS_DUP_CNT	Fusing duplex paper exit count under LL environment	1 - 60	10	10
I	HH_120_FUS_DUP_CNT	Fusing duplex paper exit count under HH environment	1 - 60	5	5
J	COOL_DOWN_HEAVY	Cool down time heavy paper	1 - 60	15	15
K	COOL_DOWN_OHP	Cool down time OHP	1 - 60	30	30
L	COOL_DOWN_DEVELOP	Cool down time envelope	1 - 60	40	40
M	FUS MOTOR	Fusing web motor operating interval	1 - 20	6	6
N	NN_120_WUP_COMP_TH_E	Correction value for SIM43-4-C, G at 120°C or below in N/N WarmUp	1 - 99	50	50
O	LL_120_WUP_COMP_TH_E	Correction value for SIM43-22-C, G at 120°C or below in L/L WarmUp	1 - 99	50	50
P	HH_120_WUP_COMP_TH_E	Correction value for SIM43-23-C, G at 120°C or below in H/H WarmUp	1 - 99	50	50
Q	HL UM THIN PAPER BW	Thin paper BW-TH_UM	70 - 230	165	165
R	HL LM THIN PAPER BW	Thin paper BW-TH_LM	30 - 200	120	120
S	HL E THIN PAPER BW	Thin paper BW-TH_E	70 - 230	195	195
T	HL UM THIN PAPER CL	Thin paper COL-TH_UM	70 - 230	165	165
U	HL LM THIN PAPER CL	Thin paper COL-TH_LM	30 - 200	120	120
V	HL E THIN PAPER CL	Thin paper COL-TH_E	70 - 230	195	195
W	HL UM THIN PAPER READY	Thin paper Ready-TH_UM	70 - 230	170	170
X	HL UM REC PAPER BW	Recycled paper BW-TH_UM	70 - 230	185	185
Y	HL LM REC PAPER BW	Recycled paper BW-TH_LM	30 - 200	125	125
Z	HL E REC PAPER BW	Recycled paper BW-TH_E	70 - 230	220	220
AA	HL UM REC PAPER CL	Recycled paper COL-TH_UM	70 - 230	185	185
AB	HL LM REC PAPER CL	Recycled paper COL-TH_LM	30 - 200	130	130
AC	HL E REC PAPER CL	Recycled paper COL-TH_E	70 - 230	220	220
AD	HL UM REC PAPER READY	Recycled paper Ready-TH_UM	70 - 230	180	180

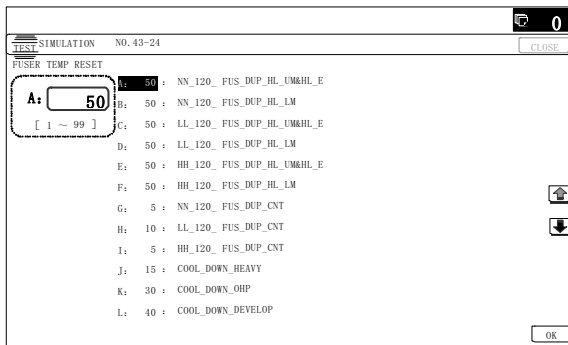
\* Each temperature correction value: 1 count for 1°C change in temperature control

\* Each paper exit count: 1 count = 1 sheet change

\* Each cool down time: 1 count = 1sec change

# <Code descriptions>

TH_UM	Fusing upper thermister main center	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermister main	HL_LM	Heater lamp lower main
TH_E	Fusing thermister external	HL_E	Heater lamp external



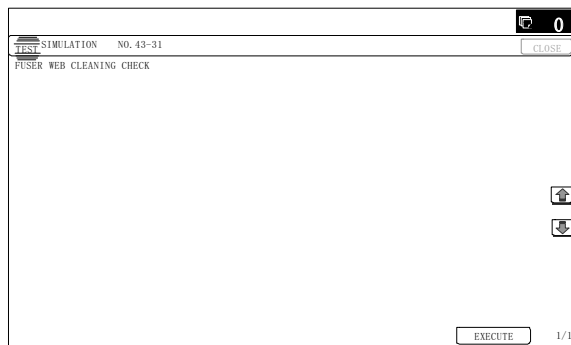
<b>43-31</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to check the operation of the fusing web cleaning motor.
<b>Section</b>	Fusing

## Operation/Procedure

- 1) Press [EXECUTE] key.  
Perform the fusing web cleaning motor drive.
- 2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

Fusing web unit installation detection state	Operation	Remark
Fusing web unit installed	Not operate	* During this operation, the fusing web cleaning feed counter is not counted up.
Fusing web unit not installed	10sec continuous rotation	

\* The fusing web unit is used by installing to the fusing unit. For checking the fusing web cleaning motor rotation, remove the whole fusing unit and check with the door open.

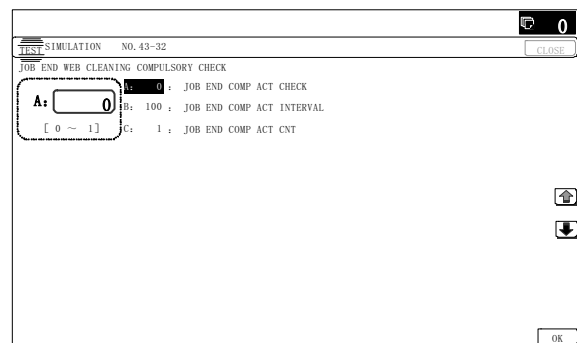


<b>43-32</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set various items related to the forcible operation of web cleaning when job end.
<b>Section</b>	Fusing

## Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2 is saved.

Item	Display	Item	Setting range	Default value
A	JOB END COMP ACT CHECK	Enable	0 - 1	1
		Disable	1	
B	JOB END COMP ACT INTERVAL	The fusing web motor is forcibly operated when job end.	1 - 200	100
		Print quantity interval		
C	JOB END COMP ACT CNT	Number of forcible operations of the fusing web motor when job end	1 - 5	1



44-1

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set each correction operation function in the image forming (process) section.
<b>Section</b>	Image process (Photoconductor/Developing/Transfer/Cleaning)

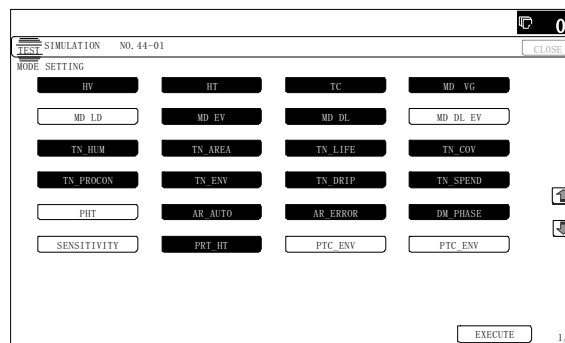
**Operation/Procedure**

- 1) Select an item to be set with the touch panel.  
(The selected item is highlighted.)
- 2) Press [EXECUTE] key. (The set value is saved.)

NOTE: Set the items to the default values unless a change is specially required.

Item/Display	Content	Setting range	Default value	NOTE
HV	Normal operation high density process control Enable/Disable setting	Normal (Disable : 1 : NO) Reverse (Enable : 0 : YES)	Enable	
HT	Normal operation half tone process control Enable/Disable setting		Enable	
TC	Transfer output correction Enable/Disable setting		Enable	
MD VG	Membrane decrease grid voltage correction Enable/Disable setting		Enable	
MD LD	Membrane laser power voltage correction Enable/Disable setting		Disable	
MD EV	Membrane decrease environment grid voltage correction Enable/Disable setting		Enable	
MD DL	Membrane decrease discharge light quantity correction Enable/Disable setting		Enable	
MD DL EV	Membrane decrease environment discharge light quantity correction Enable/Disable setting		Disable	
TN_HUM	Toner density humidity correction Enable/Disable setting		Enable	
TN_AREA	Toner density area correction Enable/Disable setting		Enable	
TN_LIFE	Toner density life correction Enable/Disable setting		Enable	
TN_COV	Toner density print ratio correction Enable/Disable setting		Enable	
TN_PROCON	Toner density process control correction Enable/Disable setting		Enable	
TN_ENV	Toner density environment correction Enable/Disable setting		Enable	
TN_DRIP	Toner density correction unconditional supply Enable/Disable setting		Enable	
TN_SPEND	Toner forcible consumption mode Enable/Disable setting		Disable	

Item/Display	Content	Setting range	Default value	NOTE
PHT	1pixel half tone process control correction Enable/Disable setting	Normal (Disable : 1 : NO) Reverse (Enable : 0 : YES)	Disable	
AR_AUTO	Auto registration adjustment Enable/Disable setting		Enable	
AR_ERROR	Auto registration adjustment execution error check Enable/Disable setting		Enable	
DM_PHASE	Drum phase fitting Enable/Disable setting		Enable	
SENSITIVITY	Toner density correction Enable/Disable setting		Disable	
PRT_HT	Half tone process control printer correction feedback Enable/Disable setting		Enable	
PTC_ENV	PTC environment correction Enable/Disable setting		Enable	Enable: Correction ON
PTC_LIFE	PTC life correction Enable/Disable setting		Enable	Enable: Correction ON



44-2

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the sensitivity of the image density sensor (registration sensor).
<b>Section</b>	Process

**Operation/Procedure**

When [EXECUTE] key is pressed, the adjustment is executed automatically.

After completion of the adjustment, the adjustment result is displayed.

If the adjustment is not executed normally, "ERROR" is displayed.

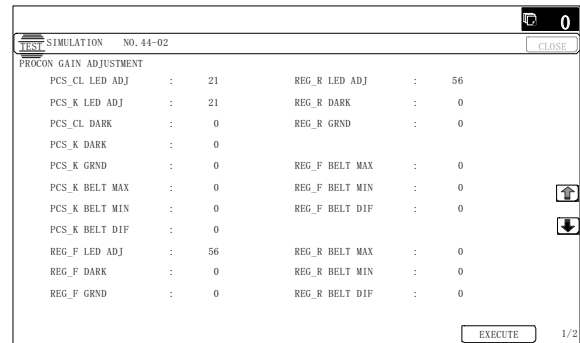
Item/Display	Content	Setting range	Default value
A PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21
B PCS_K LED ADJ	Black sensor light emitting quantity adjustment value	1 - 255	21
C PCS_CL DARK	Dark voltage of color	0 - 255	0
D PCS_K DARK	Dark voltage of black	0 - 255	0
E PCS_K GRND	Belt substrate when the item B adjustment is completed.	0 - 255	0
F PCS_K BELT MAX	Belt substrate input max. value	0 - 255	0



Item/Display		Content	Setting range	Default value
G	PCS_K BELT MIN	Belt substrate input min. value	0 - 255	0
H	PCS_K BELT DIF	Belt substrate input difference (Item E - Item F)	0 - 255	0
I	REG_F LED ADJ	Registration sensor light emitting quantity adjustment value F	1 - 255	56
J	REG_F DARK	Registration sensor dark voltage F	0 - 255	0
K	REG_F GRND	Belt substrate when the item I adjustment is completed.	0 - 255	0
L	REG_R LED ADJ	Registration sensor light emitting quantity adjustment value R	1 - 255	56
M	REG_R DARK	Registration sensor dark voltage R	0 - 255	0
N	REG_R GRND	Belt substrate when the item J adjustment is completed.	0 - 256	0
O	REG_F BELT MAX	Belt substrate input max. value (F side)	0 - 255	0
P	REG_F BELT MIN	Belt substrate input min. value (F side)	0 - 255	0
Q	REG_F BELT DIF	Belt substrate input difference (Item O - Item P)	0 - 255	0
R	REG_R BELT MAX	Belt substrate input max. value (R side)	0 - 255	0
S	REG_R BELT MIN	Belt substrate input min. value (R side)	0 - 255	0
T	REG_R BELT DIF	Belt substrate input difference (Item R - Item S)	0 - 255	0
U	REG_F PATCH (K)	Patch light receiving potential F(K)	0 - 255	0
V	REG_F PATCH (C)	Patch light receiving potential F(C)	0 - 255	0
W	REG_F PATCH (M)	Patch light receiving potential F(M)	0 - 255	0
X	REG_F PATCH (Y)	Patch light receiving potential F(Y)	0 - 255	0
Y	REG_R PATCH (K)	Patch light receiving potential R(K)	0 - 255	0
Z	REG_R PATCH (C)	Patch light receiving potential R(C)	0 - 255	0
AA	REG_R PATCH (M)	Patch light receiving potential R(M)	0 - 255	0
AB	REG_R PATCH (Y)	Patch light receiving potential R(Y)	0 - 255	0

Error name	Error content
Black sensor adjustment abnormality	PCS_K LED ADJ error The target is not reached by 3 times of retry.
Color sensor adjustment abnormality	PCS_CL LED ADJ error The target is not reached by 3 times of retry.
Substrate scan abnormality	PCS_K GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration sensor F adjustment abnormality	REG_F LED ADJ error The target is not reached by 3 times of retry.
Registration sensor R adjustment abnormality	REG_R LED ADJ error The target is not reached by 3 times of retry.

Error name	Error content
Registration substrate F scan abnormality	REG_F GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration substrate R scan abnormality	REG_R GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range



#### 44-4

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the conditions of the high density process control operation.
<b>Section</b>	Process

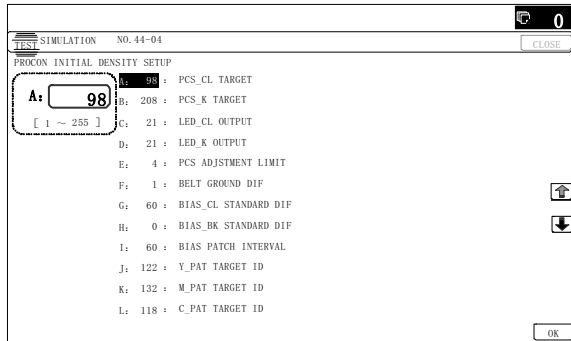
#### Operation/Procedure

- 1) Select an item to be set with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

Item/Display		Content	Setting range	Default value
A	PCS_CL TARGET	Color sensor target set value	1 - 255	98
B	PCS_K TARGET	Black sensor target set value	1 - 255	208
C	LED_CL OUTPUT	Color sensor light emitting quantity set value	1 - 255	21
D	LED_K OUTPUT	Black sensor light emitting quantity set value	1 - 255	21
E	PCS ADJUSTMENT LIMIT	Sensor adjustment target limit value	1 - 255	4
F	BELT GROUND DIF	Effective difference between the belt 1 circuit substrate upper and lower limit values	1 - 255	1
G	BIAS_CL STANDARD DIF	Bias (for color) reference calculation difference	0 - 255	60
H	BIAS_BK STANDARD DIF	Bias (for black) reference calculation difference	0 - 255	0
I	BIAS PATCH INTERVAL	Patch bias output interval	1 - 255	60
J	Y_PAT TARGET ID	Patch density standard value (yellow)	1 - 255	122
K	M_PAT TARGET ID	Patch density standard value (magenta)	1 - 255	132
L	C_PAT TARGET ID	Patch density standard value (cyan)	1 - 255	118

Item/Display		Content	Setting range	Default value
M	K_PAT TARGET ID	Patch density standard value (black)	1 - 255	5
N	HV BK_GROUND LIMIT	Patch position substrate light receiving effective range value	1 - 255	60



44-6

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to execute the high density process control forcibly.
<b>Section</b>	Process

#### Operation/Procedure

Press [EXECUTE] key.

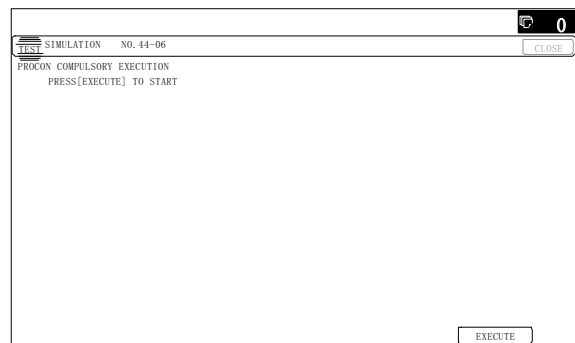
In case of a normal completion, the result is saved.

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 sensor adjustment abnormality
BK_SEN_ADJ_ERR	Black 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



44-9

<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the result data of the high density process control operation.
<b>Section</b>	Image process (Photoconductor/Developing/Transfer/Cleaning)

#### Operation/Procedure

Select a target display mode with [CPY/PRN],[OTHER] keys.

Mode	Item/Display (*: Correction value)		Content	Display range	Default value
CPY/PRN	P (PROCON)	BLACK : GB *****/** DV *****/**	High density process control GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 630 DV: 430
		CYAN : GB *****/** DV *****/**			
		MAGENTA : GB *****/** DV *****/**			
		YELLOW : GB *****/** DV *****/**			
	N(M) (NORMAL (MIDDLE))	BLACK : GB *****/** DV *****/**	High density normal (Medium speed display) GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 630 DV: 430
		CYAN : GB *****/** DV *****/**			
		MAGENTA : GB *****/** DV *****/**			
		YELLOW : GB *****/** DV *****/**			
	N(L) (NORMAL (LOW))	BLACK : GB *****/** DV *****/**	High density normal (Low speed display) GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 600 DV: 400
		CYAN : GB *****/** DV *****/**			
		MAGENTA : GB *****/** DV *****/**			
		YELLOW : GB *****/** DV *****/**			



<b>44-12</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the operation data of the high density process control and the image density sensor (registration sensor).
<b>Section</b>	Image process (Photoconductor/Developing)

#### Operation/Procedure

Select a display mode with [TARGET] [PATCH] keys.

Mode	Item/Display	Content	Display range	Default value
TARGET (1 page)	CARB DATA	Calibration plate detection level	0 - 255	108
	SEAL ADJ DATA	Jig patch seal detection level when executing SIM 44-13	1 - 255	108
	ADK_SL (K)	Development characteristics gradient coefficient (High density process control operation)	-9.99 - 9.99	0
	ADK_INT(K)	Development characteristics intercept level (High density process control operation 0V)	-999.9 - 999.9	0
	TARGET (K)	High density process control target density level (K)	0.00 - 255.00	0
	TARGET (C/M/Y)	High density process control target density level (C/M/Y)	0.00 - 255.00	0
PATCH 1-5 (Page 1-2)	n-1	High density process control nth time patch density level 1 (n=1-5)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=1-5)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=1-5)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=1-5) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=1-5) • BK only	0 - 255	0
PATCH 6-10 (Page 1-2)	n-1	Patch data nth time patch 1 (n=6-10)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=6-10)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=6-10)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=6-10) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=6-10) • BK only	0 - 255	0

SIMULATION NO. 44-12		CLOSE	
PATCH/TARGET DATA DISPLAY			
CARB DATA	:	108	
SEAL ADJ DATA	:	108	
ADK_SL (K)	:	0.00	
ADK_INT (K)	:	0.0	
TARGET (K)	:	0.00	
TARGET (C)	:	0.00	
TARGET (M)	:	0.00	
TARGET (Y)	:	0.00	
TARGET		PATCH1-5	PATCH6-10

<b>44-13</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to perform the color image sensor (image registration sensor F) calibration.
<b>Section</b>	

#### Operation/Procedure

- 1) Attach the calibration jig.
- 2) Press [EXECUTE] key.  
Calibration is performed, and the data are displayed.

	Item/Display	Content	Setting range	Default value
A	PCS_CL CARB OUT	Calibration plate sensor value	1 - 255	108
B	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21

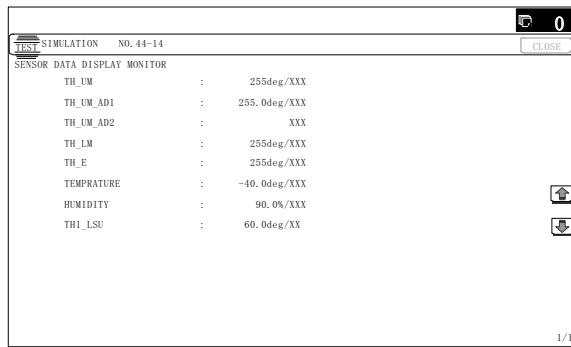
SIMULATION NO. 44-13		CLOSE	
PATCH SEAL ADJUSTMENT			
PCS_CL CARB OUT	:	108	
PCS_CL LED ADJ	:	21	
		EXECUTE	1/1

<b>44-14</b>	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the output level of the temperature and humidity sensor.
<b>Section</b>	Process (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	Display range
TH_UM	Fusing upper thermister main detection temperature (°C) Difference AD input value (AD value)	Temperature: 0 - 255°C(±1°C) AD value: 0-1023
TH_UM_AD1	Fusing upper thermister main compensation temperature (°C) AD value (AD value)	Temperature: 0.0-255.0°C (±0.2°C) AD value: 0-1023
TH_UM_AD2	Fusing upper thermister main detection sensor AD value (AD value)	AD value:0-1023
TH_LM	Fusing lower thermister main A/D value (temperature °C)	Temperature: 0 - 255°C(±1°C) AD value: 0-1023
TH_E	Fusing external thermistor A/D value (temperature °C)	Temperature: 0 - 255°C(±1°C) AD value: 0-1023
TEMPRATURE	Temperature thermister	Temperature: -40.0 - 60.0°C (±0.1°C) AD value: 0-1023
HUMIDITY	Humidity sensor	Humidity: 5.0-90.0% (±0.1%), AD value: 0-1023
TH1_LSU	LSU thermister 1 A/D value (temperature °C)	Temperature: 5.0-60.0°C (±0.1°C) AD value: 0-255



44-16

<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the toner density control data.
<b>Section</b>	Developing system

#### Operation/Procedure

- 1) Select a target color with [K] [C] [M] [Y] key.  
The toner density control data are displayed.

Item/Display	Content	Setting range	Default value
TONER DEN_LT (M)	The current toner density sensor output value (final value) at the medium speed	1 - 255	129
TONER DEN_ST (M)	The current toner density reference value display (including all the correction values) at the medium speed		128
TONER DEN_LT (L)	The current toner density sensor output value (final value) at the low speed		129
TONER DEN_ST (L)	The current toner density reference value display (including all the correction values) at the low speed		128

Item/Display	Content		Setting range	Default value
AUTO DEVE (M)	Auto development adjustment value (At the medium speed)	Sensor output value after completion of SIM25-02 (at the medium speed)	1 - 255	128
ALL (M)	All the correction reference values (At the medium speed)	Correction reference value which calculated all the correction values for the auto development adjustment value (at the medium speed)		
AUTO DEVE (L)	Auto development adjustment value (At the low speed)	Sensor output value after completion of SIM25-02 (at the low speed)		
ALL (L)	All the correction reference values (At the low speed)	Correction reference value which calculated all the correction values for the auto development adjustment value (at the low speed)		

Item/Display	Content		Setting range	Default value
AREA	Area correction value	Correction value for the environment area	-127 - 127	0
HUD	Humidity correction value	Correction value for change in humidity		
PRINT RATE	Print ratio correction value	Correction value for document print ratio		
PROCON	Process control correction value	Correction value for high density process control result		
LIFE	Life correction value	Correction value for the developer life		
SENSITIVITY	Sensitivity correction value	Correction for the toner density sensitivity	1 - 999	500
AUTO DEVE VO (M)	Auto development adjustment control voltage (at the medium speed)	Sensor control voltage value after completion of SIM25-02 (at the medium speed)	1 - 255	128
ALL VO (M)	All the correction reference control voltages (at the medium speed)	Control voltage reference value which calculated all the correction values for the auto development adjustment value (at the medium speed)		
AUTO DEVE VO (L)	Auto development adjustment control voltage (at the low speed)	Sensor control voltage value after completion of SIM25-02 (at the low speed)		
ALL VO (L)	All the correction reference control voltages (at the low speed)	Control voltage reference value which calculated all the correction values for the auto development adjustment value (at the low speed)		
AREA VO	Area correction control voltage	Control voltage correction value for the environment area	-127 - 127	0
HUD VO	Humidity correction control voltage	Control voltage correction value for change in humidity		
PRINT RATE VO	Print ratio correction control voltage	Control voltage correction value for the document print ratio		
PROCON VO	Process control correction control voltage	Control voltage correction value for the high density process control result		
LIFE VO	Life correction value control voltage	Control voltage correction value for the developer life		
SENSITIVITY VO	Sensitivity correction control voltage	Control voltage correction value for the toner density sensor	1 - 999	500

Item/Display	Content		Setting range	Default value
ENV VO	Environment correction control voltage	Control voltage correction value for the high humidity environment	-127 - 127	0

Item/Display	Content		Setting range	Default value
AUTO DEVE AREA	Area in the auto development adjustment	Humidity area display in the automatic developer adjustment	1 - 14	8
AREA	Current area	Current humidity area display		

TEST SIMULATION NO. 44-16		0
TONER CONTROL DATA DISPLAY		CLOSE
TONER DEN_LT(M) : 129		
TONER DEN_ST(M) : 128		
TONER DEN_LT(L) : 129		
TONER DEN_ST(L) : 128		
K C M Y		NEXT 1/1

44-21	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the half tone process control target.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
Press [EXECUTE] key.	
The half tone process control target is set and the operation data are displayed.	

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

TEST SIMULATION NO. 44-21		0
HALF TONE PROCON STANDARD VALUE REGISTER		CLOSE
TOUCH [EXECUTE] THEN EXECUTION START.		
		EXECUTE

44-22	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the toner patch density level in the half tone process control operation.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Select the display mode with [1ST STEP],[2ND STEP] key.	
The toner patch density level made in the half tone process control operation is displayed.	

Item/Display	Content
ID_n	Patch data display (n=1-16)
BASE1	Belt substrate data (START)
BASE5	Belt substrate data (LAST)

TEST SIMULATION NO. 44-22		0
HALF TONE CORRECT RESULT		CLOSE
	PTK PTC PTM PTY	
BASE1 : 255	- - -	ID11 : 255 255 255 255
ID 1 : 255 255 255 255		ID12 : 255 255 255 255
ID 2 : 255 255 255 255		ID13 : 255 255 255 255
ID 3 : 255 255 255 255		ID14 : 255 255 255 255
ID 4 : 255 255 255 255		ID15 : 255 255 255 255
ID 5 : 255 255 255 255		ID16 : 255 255 255 255
ID 6 : 255 255 255 255	BASE5 : 255	- - -
ID 7 : 255 255 255 255		
ID 8 : 255 255 255 255		
ID 9 : 255 255 255 255		
ID10 : 255 255 255 255		
		1/1

44-24	
<b>Purpose</b>	Operation data display
<b>Function (Purpose)</b>	Used to display the correction target and the correction level in the half tone process control operation.
<b>Section</b>	Process
<b>Operation/Procedure</b>	
1) Select the display category with [NEXT] key.	
2) Select a target adjustment color with [K] [C] [M] [Y] key.	

Category	Item/Display	Content
Coefficient	[EX-LOW]	Coefficient of the approximation formula of the minimum density
	[LOW]	Coefficient of the approximation formula of the low density
	[CONNECT]	Coefficient of the approximation formula of when connecting the low density and the medium density
	[MID]	Coefficient of the approximation formula of the medium density
	[HIGH]	Coefficient of the approximation formula of the high density
	[CONNECT POINT]	Each density section connection output ratio
Reference value	[SENSOR_TARGET]	Half tone process control reference value
Correction value	[S_VALUE]	Half tone process control correction value

Category	Item/Display	Content
For printer	[PRINTER_S_VALUE]	Printer half tone process control correction value
	[PRINTER_BASE_DITHER_VALUE]	Printer half tone process control reference dither value
	[PRINTER_AUTO_HT_VALUE]	Printer auto density adjustment correction value
Previous correction value	[BEFORE S_VALUE]	Previous half tone process control value

<b>44-25</b>	
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the calculating conditions of the correction value for the half tone process control.
<b>Section</b>	Process

#### Operation/Procedure

- 1) Select a target adjustment color with [K] [C] [M] [Y] key.
- 2) Select a target adjustment density level with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

Item/Display		Content	Setting range	Default value	
				K	CMY
A	LOW FIELD LOWER LIMIT	Low density approximate expression data lower limit value	0 - 255	98	2
B	LOW FIELD UPPER LIMIT	Low density approximate expression data upper limit value	0 - 255	60	40
C	MID FIELD LOWER LIMIT	Medium density approximate expression data lower limit value	0 - 255	90	15
D	MID FIELD UPPER LIMIT	Medium density approximate expression data upper limit value	0 - 255	6	144
E	HIGHLIGHT POINT	Reference point of the highlight correction amount	1 - 8	7	7

<b>44-26</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to execute the half tone process control compulsory.
<b>Section</b>	Process

#### Operation/Procedure

Press [EXECUTE] key.

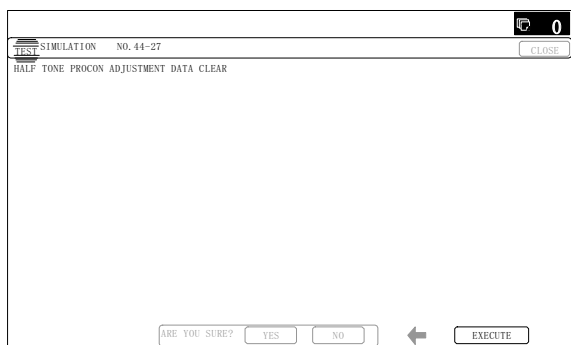
The half tone process control is performed and the operation data are displayed.

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

<b>44-27</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the correction data of the half tone process control.
<b>Section</b>	Process

#### Operation/Procedure

- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
- The correction data of the half tone process control are cleared.



44-28

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the process control execution conditions.
<b>Section</b>	Process

#### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

NOTE: Set the items to the default values unless a change is specially required.

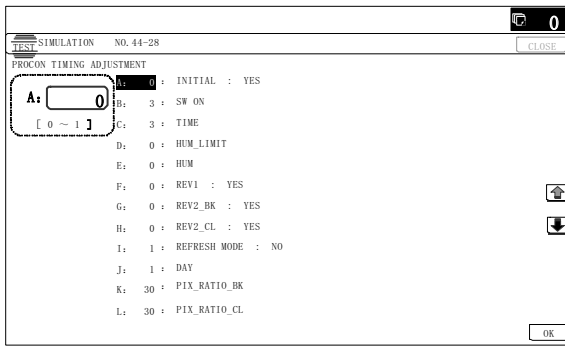
Mode	Item/Display			Content		Setting range		Default value
Process control Enable/Disable setting	A	INITIAL	YES	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0 - 1	0	0
			NO		Disable		1	
	B	SW ON	When supplying the power (when clearing shut-off.)	Color process control Enable	0 - 3	0	3	
				Process control Disable		1		
				BK process control Enable		2		
				Pixel count judgment (Judgement is based on the setting value of item K, L.)		3		
	C	TIME	After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)	Color process control Enable	0 - 3	0	3	
				Process control Disable		1		
				BK process control Enable		2		
				Pixel count judgment (Judgement is based on the setting value of item K, L.)		3		
	D	HUM_LIMIT	HUM judgment is made when turning ON the power and after passing TIME.	Color process control Enable	0 - 2	0	0	
				Process control Disable		1		
				BK process control Enable		2		
	E	HUM	The temperature and humidity in side the machine are monitored only during a job for every 2hours (set by item N). When the changes in the temperature and the humidity are greater than the specified level (the set value of item O) in comparison with the previous process control.	Color process control Enable	0 - 2	0	0	
				Process control Disable		1		
				BK process control Enable		2		



Mode	Item/Display			Content		Setting range		Default value
Process control Enable/Disable setting	F	REV1	YES	The accumulated traveling distance of BK or M position OPC unit reaches the specified level after turning the power.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	G	REV2_BK	YES	The accumulated traveling distance of BK position OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	H	REV2_CL	YES	The accumulated traveling distance of M position OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	I	REFRESH MODE(*1)	YES	Select of YES/NO of the manual process control key with key operation	Key operation display	0 - 1	0	1
			NO		Key operation NO display		1	
Process control conditions setting	J	DAY		When the next warm-up if there is no color job after a color job after passing the specified days from execution of the previous color process control	Disable of the specified days judgment	0 - 999	0	1
					1 - 999 days passing		1 - 999	
	K	PIX_RATIO_BK		Magnification ratio setting (%) of the BK toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999		10
	L	PIX_RATIO_CL		Magnification ratio setting (%) of the color (CMY) toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999		10
	M	INTERVAL TIME		Passing time setting of "TIME"(h: hour)		1-255 (1-255: 1-255h passed)		12
	N	HUM HOUR		Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)		1 - 24		2
	O	HUM_DIF		Area difference specified value when compared with the execution of the previous process control of "HUM"		1 - 9		2
	P	BK_RATIO		Magnification ratio setting (%) of the specified value of the BK position OPC drum traveling distance of "REV2_BK"		1-999 (Entry of 20 corresponds to 100,000mm.)		15
	Q	M_RATIO		Magnification ratio setting (%) of the M position OPC drum traveling distance of "REV2_CL"		1-999 (Entry of 20 corresponds to 100,000mm.)		15
	R	COLOR BORDER		Magnification ratio setting (%) of the M position OPC drum traveling distance when executing the BK process control	BK process control is executed without judgment of ratio of the M OPC drum traveling distance.	0 - 999	0	20
					1 - 999(%)		1 - 999	
	S	BK ONLY		Disable/Enable setting and setting of the number of repetition of the BK process control when monochrome print is continued.	Enable 5 time	0 - 6	0	5
					Disable 1-5 times		1 - 5	
					Inhibit		6	
	T	HT_DIF		Bias change difference value used for judgment of HT process control		1 - 255		40
Registration adjustment setting	U	RG_ON_SYNC	CL	Select of synchronous/asynchronous of the power ON process control		0 - 2	0	0
			ALL				1	
			CL/BK				2	
	V	RG_TEMP_TIMER		Execution timing setting after turning ON the power		0 - 240 (MINUTE)		60
Secondary transfer cleaning setting	W	RG_PERM_TIMER		Span setting from execution Disable to Enable		0 - 15 (HOUR)		1
	X	RG_HOUR_TIMER		Span setting of timer execution		0-15 (Above)+(HOUR)		5
	Y	2TRAN_CLEAN_TIME1		Secondary transfer cleaning process time judgment threshold value 1		1 - 999		200
	Z	2TRAN_CLEAN_TIME2		Secondary transfer cleaning process time judgment threshold value 2		1 - 999		300
	AA	2TRAN_CLEAN_TIME3		Secondary transfer cleaning process time judgment threshold value 3		1 - 999		500

\*1: When REFRESH MODE setting is enabled (0), the menu of the user process control execution button is displayed on the user system setting menu.

When the color balance or the density change is not within the allowable range, the user can perform the process control manually and forcibly. However, toner is consumed greater than as usual. This point must be explained to the user clearly.



44-29

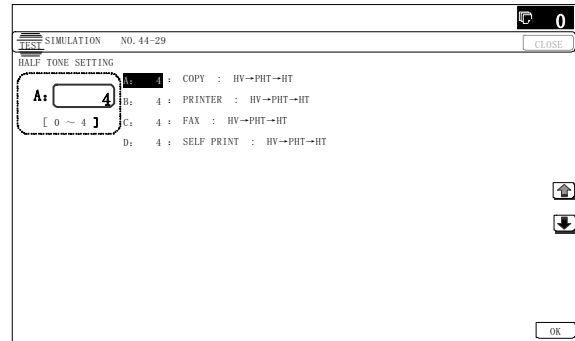
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions of the process control during a job.
<b>Section</b>	Process

#### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

Item/Display	Content	Setting range	Default value
A	COPY	During copy job	0 - 4
B	PRINTER	During print job	0
C	FAX	During FAX print job	1
D	SELF PRINT	During self print	2
			3
			4

HV: High density process control  
 HT: Half tone process control  
 PHT: Not operate



44-31

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the OPC drum phase. (Manual adjustment)
<b>Section</b>	Process

#### Operation/Procedure

NOTE: For the OPC drum phase adjustment, do not use this simulation, but use SIM50-22 (auto adjustment).

- 1) Select item A with [↑] [↓] key.
- 2) Enter the value corresponding to the adjustment pattern with 10 key.
- 3) Press [EXCUTE] 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 [↑] [↓] key.
- 6) Enter the adjustment pattern sheet number selected in procedure 4).
- 7) Press [EXECUTE] key.
- 8) The adjusted adjustment pattern is printed.

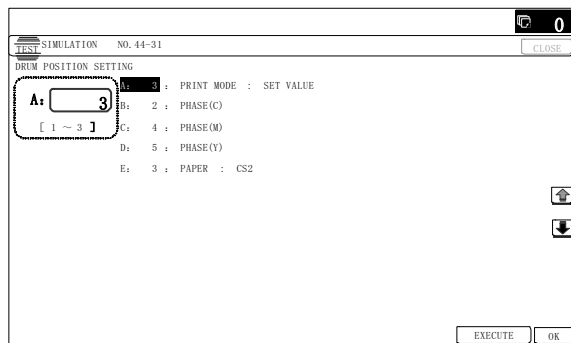
#### ⚠ [41-sheet machine]

Item/Display	Content	Setting range	Default value
A	PRINT MODE	45deg	3 (SET VALUE)
		90deg	
		SET VALUE	
A	Print mode	45 degrees	1
		90 degrees	
		SET VALUE	
B	COLOR	Phase adjustment value BK→CL	1

Item/Display			Content		Setting range		Default value
C	PAPER	MFT	Tray selection	Manual paper feed	1	1 - 6	3 (CS2)
		CS1		Main unit 1 stage	2		
		CS2		Main unit 2 stage	3		
		CS3		Option paper feed desk 1 stage	4		
		CS4		Option paper feed desk 2 stage	5		
		LCC		LCC	6		

**[50-sheet machine]**

Item/Display			Content			Setting range		Default value
A	PRINT MODE	45deg	Print mode	45 degrees	Deflection check pattern print for every 45 degrees (8-sheet print) (1)0° (2)45° (3)90°(4)135° (5)180° (6)225° (7)270° (8)315° * The number in ( ) is printed on the output pattern.	1	1 - 3	3 (SET VALUE)
		90deg		90 degrees	Deflection check pattern print for every 90 degrees (4-sheet print) (1)0° (2)90° (3)180° (4)270° * The number in ( ) is printed on the output pattern.	2		
		SET VALUE		SET VALUE	Deflection check pattern print at the set value (1-sheet print)	3		
B	PHASE(C)		C tandem phase setting The phase of C is changed by 45° each time in the range of 0 - 315°.	Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)		1 - 8		2
C	PHASE(M)		M tandem phase setting The phase of M is changed by 45° each time in the range of 0 - 315°.	Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)		1 - 8		4
D	PHASE(Y)		Y tandem phase setting The phase of Y is changed by 45° each time in the range of 0 - 315°.	Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)		1 - 8		5
E	PAPER	MFT	Tray selection	Manual paper feed	1	1 - 6	3 (CS2)	
		CS1		Main unit 1 stage	2			
		CS2		Main unit 2 stage	3			
		CS3		Option paper feed desk 1 stage	4			
		CS4		Option paper feed desk 2 stage	5			
		LCC		LCC	6			



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 [↑] [↓] buttons.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

**NOTE:**

When the print density is varied in the continuous printing operation, this simulation is used.

			Item/Display		Default value		Variable range
			Black	CMY	Black	CMY	
Current DV Bias voltage	Low speed mode	less than 300[v]	A	A	0	0	0-5 (*1)
		300[v] or more, less than 450[v]	B	B	0	0	
		450[v] or more	C	C	0	0	
	Middle speed mode	less than 300[v]	D	D	0	0	
		300[v] or more, less than 450[v]	E	E	0	0	
		450[v] or more	F	F	0	0	
	High speed mode	less than 300[v]	G	-	0	-	
		300[v] or more, less than 450[v]	H	-	0	-	
		450[v] or more	I	-	0	-	
Time (T) from termination of continuous outputs to start of the next output operation	Low speed mode	Less than 10 [sec] & after process control JOB	J	G	4	4	1-12
		10 [sec] or more, less than 60 [sec]	K	H	3	3	
		60 [sec] or more, less than 240 [sec]	L	I	1	1	
		240 [sec] or more	M	J	1	1	
	Middle speed mode	Less than 10 [sec] & after process control JOB	N	K	4	4	
		10 [sec] or more, less than 60 [sec]	O	L	3	3	
		60 [sec] or more, less than 240 [sec]	P	M	1	1	
		240 [sec] or more	Q	N	1	1	
	High speed mode	Less than 10 [sec] & after process control JOB	R	-	4	4	
		10 [sec] or more, less than 60 [sec]	S	-	3	3	
		60 [sec] or more, less than 240 [sec]	T	-	1	1	
		240 [sec] or more	U	-	1	1	

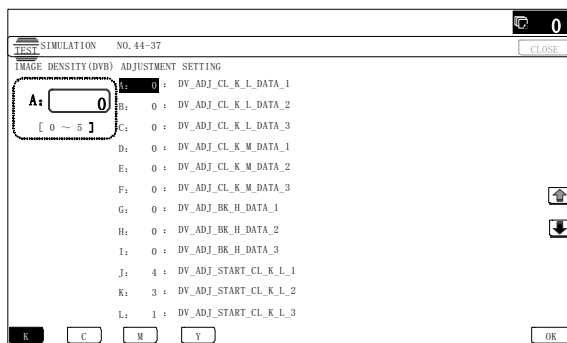
<Use example>

(\*1)

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

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

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



#### 44-43

**Purpose** Data display

**Function (Purpose)** Used to display the identification information of the developing unit.

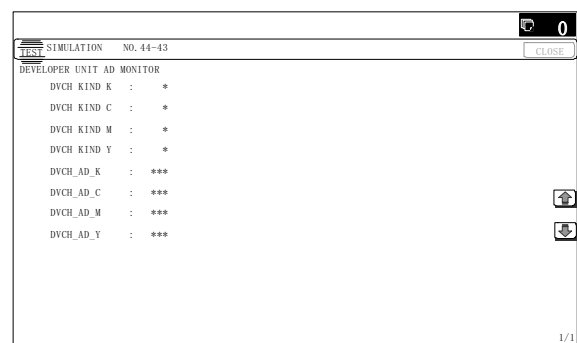
**Section** Developing system

#### Operation/Procedure

The identification number and the identification signal level of the developing unit are displayed.

Item/Display		Content	Display range
A	DVCH KIND K	K color development unit identification number	1 - 9
B	DVCH KIND C	C color development unit identification number	1 - 9
C	DVCH KIND M	M color development unit identification number	1 - 9
D	DVCH KIND Y	Y color development unit identification number	1 - 9
E	DVCH_AD_K	K color developing unit identification number AD value	0 - 255
F	DVCH_AD_C	C color developing unit identification number AD value	0 - 255
G	DVCH_AD_M	M color developing unit identification number AD value	0 - 255

Item/Display		Content	Display range
H	DVCH_AD_Y	Y color developing unit identification number AD value	0 - 255



44-61

**Purpose**

Adjustment

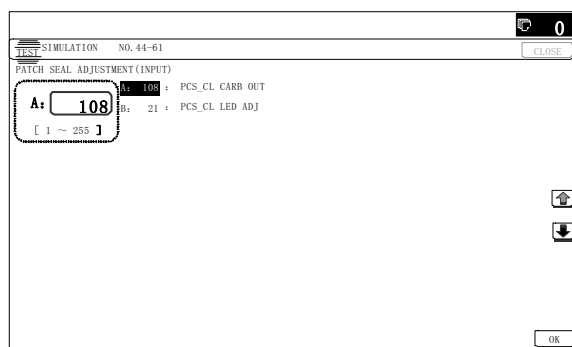
**Function (Purpose)**

Used to adjust the color image density sensor. (The adjustment is made according to the input of SIM44-13 to set the target value of the color sensor gain adjustment.)

**Section****Operation/Procedure**

- 1) Select an adjustment target item with [↑] [↓] key.
- 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	PCS_CL CARB OUT	Calibration plate sensor value	1 - 255	108
B	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21



46

46-1

**Purpose**

Adjustment (Color copy mode)

**Function (Purpose)**

Used to adjust the copy density in the copy mode.

**Section****Operation/Procedure**

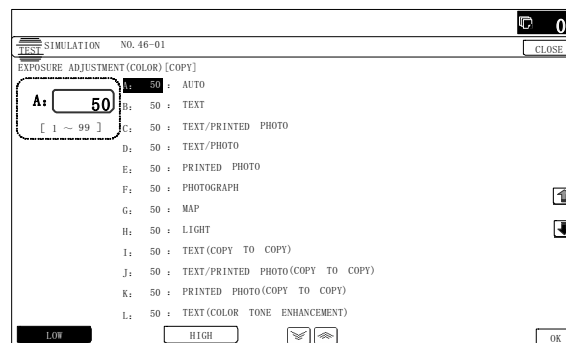
- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value.

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

Item/Display	Content	Setting range	Default value
A	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

Item/Display	Content	Setting range	Default value
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	SINGLE COLOR	Single color	LOW 1 - 99 50 HIGH 1 - 99 50
S	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW 1 - 99 50 HIGH 1 - 99 50
T	TWO COLOR	2-color (red/black) copy	LOW 1 - 99 50 HIGH 1 - 99 50
U	TWO COLOR (COPY TO COPY)	2-color (red/black) copy (copy document)	LOW 1 - 99 50 HIGH 1 - 99 50



46-2

<b>Purpose</b>	Adjustment (Monochrome copy mode)
<b>Function (Purpose)</b>	Used to adjust the copy density in the copy mode.

### Section

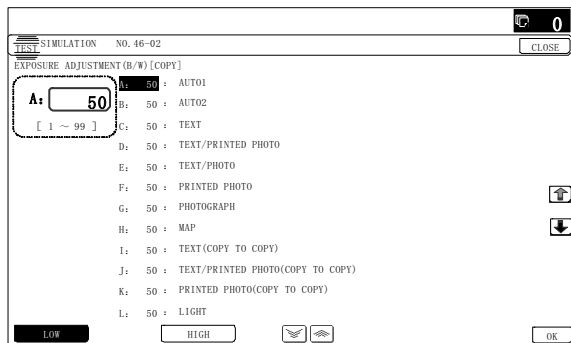
#### Operation/Procedure

- 1) Select an adjustment target item with [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value.

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

Item/Display	Content	Setting range	Default value
A	AUTO1	Auto 1	
		LOW 1 - 99	50
B	AUTO2	Auto 2	
		HIGH 1 - 99	50
C	TEXT	Text	
		LOW 1 - 99	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	
		HIGH 1 - 99	50
E	TEXT/PHOTO	Text/Photograph	
		LOW 1 - 99	50
F	PRINTED PHOTO	Printed Photo	
		HIGH 1 - 99	50
G	PHOTOGRAPH	Photograph	
		LOW 1 - 99	50
H	MAP	Map	
		HIGH 1 - 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	
		LOW 1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	
		HIGH 1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	
		LOW 1 - 99	50
L	LIGHT	Light document	
		HIGH 1 - 99	50



46-4

<b>Purpose</b>	Adjustment (Color scanner mode)
<b>Function (Purpose)</b>	Used to adjust the density in the image send mode.

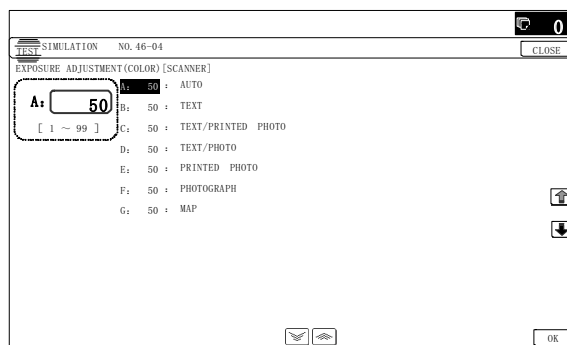
### Section

#### Operation/Procedure

- 1) Select an adjustment target item with [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

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

Item/Display	Content	Setting range	Default value
A	AUTO	Auto	1 - 99
B	TEXT	Text	1 - 99
C	TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99
D	TEXT/PHOTO	Text/Photograph	1 - 99
E	PRINTED PHOTO	Printed Photo	1 - 99
F	PHOTOGRAPH	Photograph	1 - 99
G	MAP	Map	1 - 99



46-5

<b>Purpose</b>	Adjustment (Monochrome scanner mode)
<b>Function (Purpose)</b>	Used to adjust the density in the image send mode.

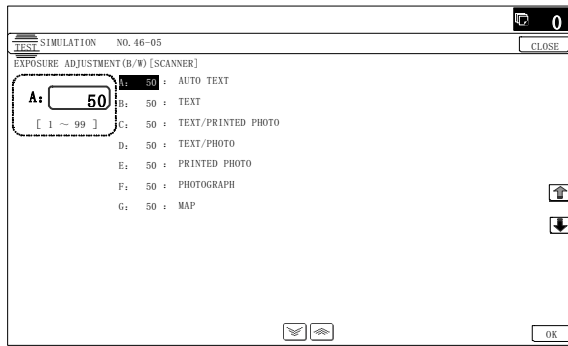
### Section

#### Operation/Procedure

- 1) Select an adjustment target item with [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

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

Item/Display	Content	Setting range	Default value
A	AUTO TEXT	Automatic/Text	1 - 99
B	TEXT	Text	1 - 99
C	TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99
D	TEXT/PHOTO	Text/Photograph	1 - 99
E	PRINTED PHOTO	Printed Photo	1 - 99
F	PHOTOGRAPH	Photograph	1 - 99
G	MAP	Map	1 - 99



46-8

<b>Purpose</b>	Adjustment (Color scanner mode)
<b>Function (Purpose)</b>	Used to adjust the image send mode color balance RGB.
<b>Section</b>	

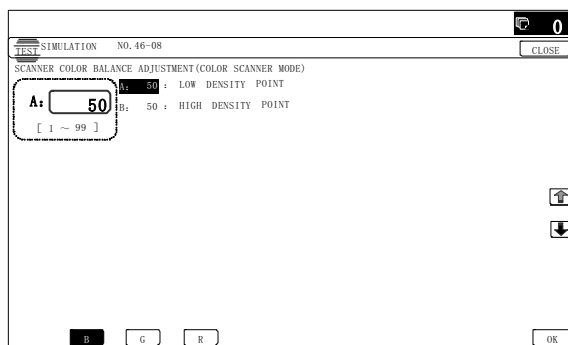
#### Operation/Procedure

- 1) Select an adjustment target with [R] [G] [B] keys on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

The color balance can be adjusted separately for the low density area and the high density area.

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

Item/Display		Content	Default value
A	LOW DENSITY POINT	Low density correction amount	50
B	HIGH DENSITY POINT	High density correction amount	50



46-9

<b>Purpose</b>	Adjustment (RSPF/DSPF mode)
<b>Function (Purpose)</b>	Used to adjust the scan image density.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target mode with [OC] and [DSPF] (or [RSPF]) keys on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
  - \* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 4) Press [OK] key. (The set value is saved.)

This adjustment result affects the image send mode, the copy mode, and the fax mode.

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

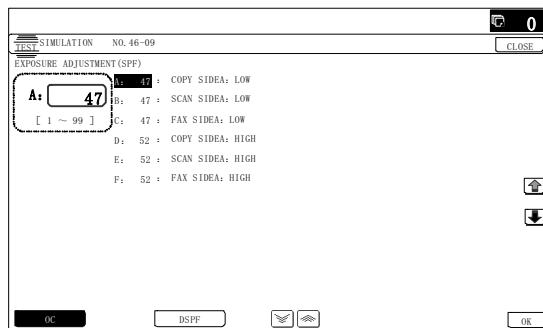
#### [RSPF]

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

#### [DSPF]

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

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



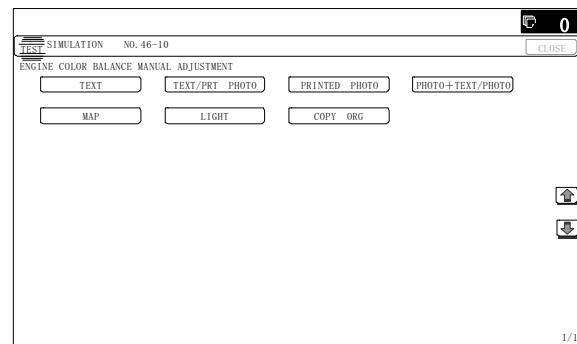
<b>46-10</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy color balance and the gamma (for each color copy mode).

<b>Section</b>	
<b>Operation/Procedure</b>	

- 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 with [↑] [↓] key on the touch panel.
  - 4) Enter the set value with 10-key.
    - \* When the  $\Delta$   $\nabla$  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	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500



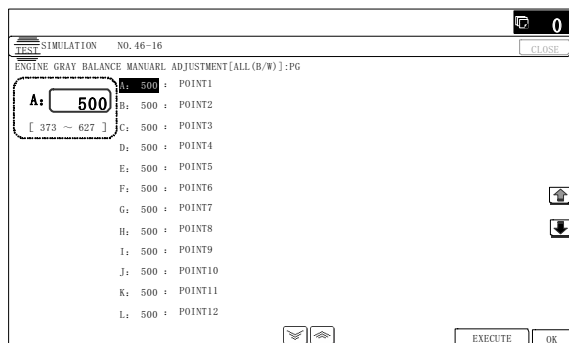
<b>46-16</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode).

<b>Section</b>	
<b>Operation/Procedure</b>	

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
  - 2) Enter the set value with 10-key.
    - \* When the  $\Delta$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
  - 3) Press [OK] key. (The set value is saved.)
- When the adjustment value is increased, the image density is increased, and vice versa.

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	373 - 627	500
B	POINT2	Point 2	373 - 627	500
C	POINT3	Point 3	373 - 627	500
D	POINT4	Point 4	373 - 627	500
E	POINT5	Point 5	373 - 627	500
F	POINT6	Point 6	373 - 627	500
G	POINT7	Point 7	373 - 627	500
H	POINT8	Point 8	373 - 627	500
I	POINT9	Point 9	373 - 627	500
J	POINT10	Point 10	373 - 627	500
K	POINT11	Point 11	373 - 627	500
L	POINT12	Point 12	373 - 627	500
M	POINT13	Point 13	373 - 627	500
N	POINT14	Point 14	373 - 627	500
O	POINT15	Point 15	373 - 627	500
P	POINT16	Point 16	373 - 627	500
Q	POINT17	Point 17	373 - 627	500





46-19

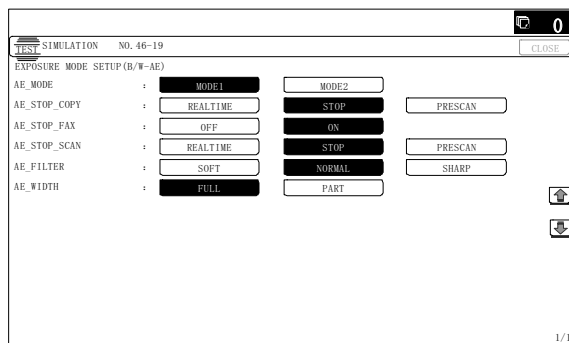
<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents.
<b>Section</b>	

#### 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	MODE1
AE_STOP_COPY	Auto B/W exposure Stop (for copy)	REALTIME/ STOP/ PRESCAN	STOP
AE_STOP_FAX	Auto B/W exposure Stop (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto B/W exposure Stop (for scanner)	REALTIME/ STOP/ PRESCAN	STOP
AE_FILTER	Auto exposure filter setting	SOFT, NORMAL, SHARP	NORMAL
AE_WIDTH	AE exposure width	FULL/PART	FULL



NOTE:

MODE 1	High gamma (high contrast images)
MODE 2	Normal gamma
STOP	The image density in 3 - 7mm area at the lead edge is scanned, and the output image density is determined according to the scanned density. (The output image density is even for all the surface.)
REALTIME	The densities of the document width are scanned sequentially, and the output image density is determined according to the density in each area of document. (The output image density may not be even for all the surface.)

PRESCAN	The densities of the all surface of document are scanned sequentially, and the output image density is determined according to the average of the scanned densities. (The output image density is even for all the surface.)
AE WIDTH FULL	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x the document width. This is not related to the prescan mode.
AE WIDTH PART	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x 100mm width. This is not related to the PRESCAN mode.

46-21

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy color balance adjustment (Manual adjustment)
<b>Section</b>	

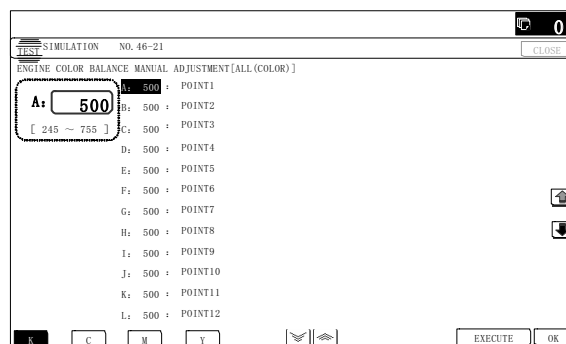
#### Operation/Procedure

- 1) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
  - \* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 4) Press [OK] key. (The set value is saved.)

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	245 - 755
B	POINT2	Point 2	245 - 755
C	POINT3	Point 3	245 - 755
D	POINT4	Point 4	245 - 755
E	POINT5	Point 5	245 - 755
F	POINT6	Point 6	245 - 755
G	POINT7	Point 7	245 - 755
H	POINT8	Point 8	245 - 755
I	POINT9	Point 9	245 - 755
J	POINT10	Point 10	245 - 755
K	POINT11	Point 11	245 - 755
L	POINT12	Point 12	245 - 755
M	POINT13	Point 13	245 - 755
N	POINT14	Point 14	245 - 755
O	POINT15	Point 15	245 - 755
P	POINT16	Point 16	245 - 755
Q	POINT17	Point 17	245 - 755



<b>46-23</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	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
		1	CMY engine highest density correction mode : Disable
B	K (0 : ENABLE 1 : DISABLE)	0	K engine highest density correction mode : Enable
		1	K engine highest density correction mode : Disable
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction	0 - 999
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction	0 - 999
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction	0 - 999
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction	0 - 999

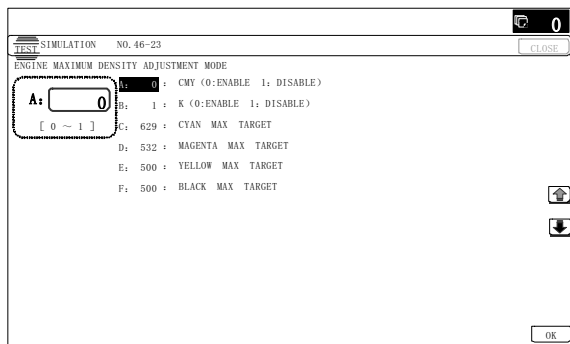
\* When tone gap is generated in the high density area, set items A and B to "0".

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.

NOTE: 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.

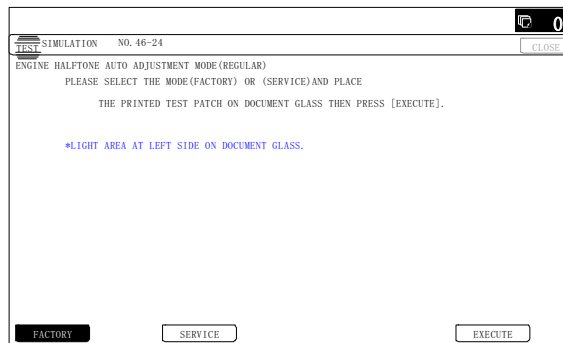
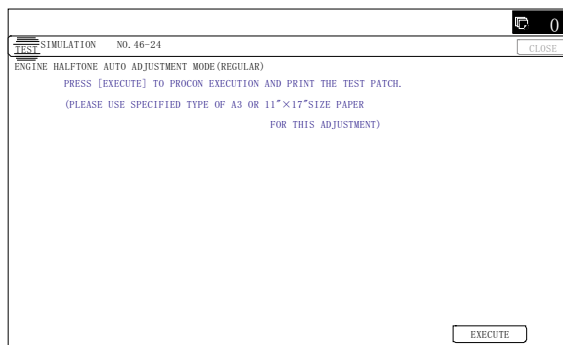


<b>46-24</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy color balance adjustment (Auto adjustment)

#### 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 half tone correction target registration is processed.



<b>46-25</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy color balance. (Single color copy mode)

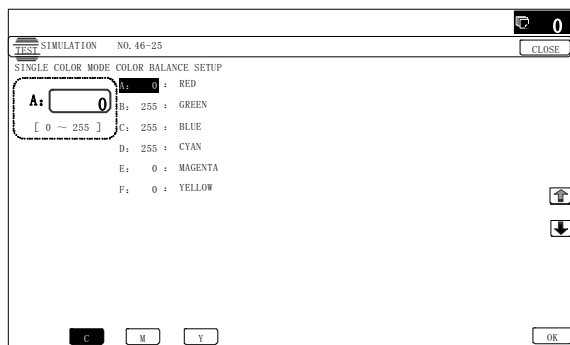
#### Section

#### Operation/Procedure

- 1) Select an adjustment target color with [C][M][Y] keys on the touch panel.
- 2) Select an adjustment target item with [↑] [↓] 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	200	0
D	CYAN	0 - 255	255	0	0
E	MAGENTA	0 - 255	0	255	0
F	YELLOW	0 - 255	0	0	255



46-26

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	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

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the gamma/density of copy images, texts, and line image edges.

#### Section

#### Operation/Procedure

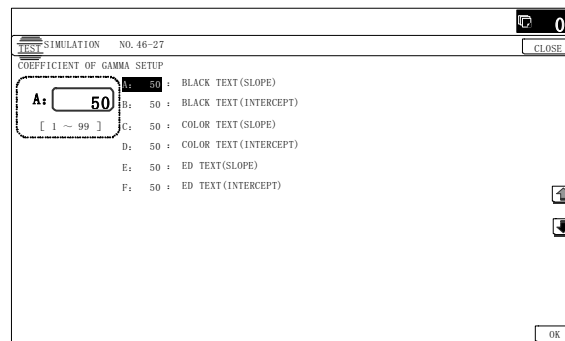
- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Item/Display (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 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, C, and E are changed, the gamma of text 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 character and line edge is decreased.

When the adjustment values of items B, D, and F are increased, the image density of text and line edge section is decreased, and vice versa.



46-30

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the resolution in the sub scanning direction in the copy mode.

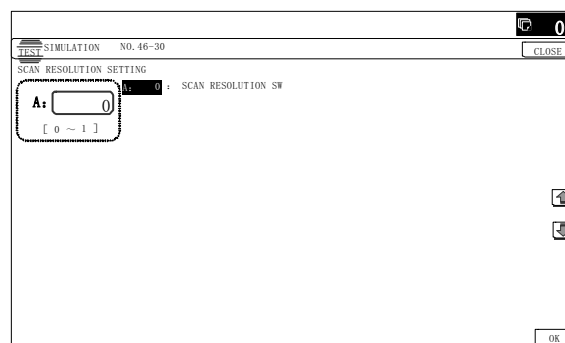
#### Section

#### 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 Mode2: 1	0

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	1200
	RSPF	600	600	1200
	DSPF	600	600	1200
Mode2	OC	300	600	1200
	RSPF	400	600	1200
	OC	300	600	1200



46-32

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	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 [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

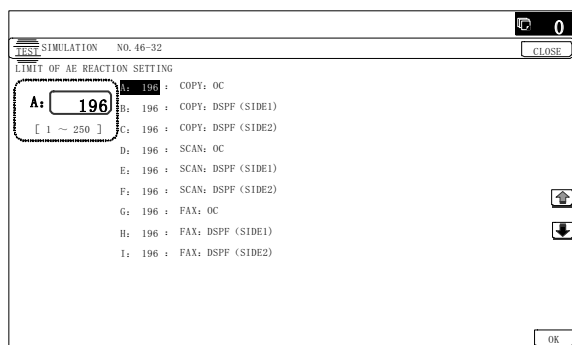
When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

**[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

**[DSPF]**

Item	Display	Content	Setting range	Default value
A	COPY: OC	Copy mode (for OC)	1 - 250	196
B	COPY: DSPF (SIDE1)	Copy mode (for DSPF)	1 - 250	196
C	COPY: DSPF (SIDE2)	Copy mode (for DSPF)	1 - 250	196
D	SCAN: OC	Scanner mode (for OC)	1 - 250	196
E	SCAN: DSPF (SIDE1)	Scanner mode (for DSPF)	1 - 250	196
F	SCAN: DSPF (SIDE2)	Scanner mode (for DSPF)	1 - 250	196
G	FAX: OC	FAX mode (for OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (for DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX mode (for DSPF back surface)	1 - 250	196



46-36

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the colors in the 2-color copy mode.

**Section****Operation/Procedure**

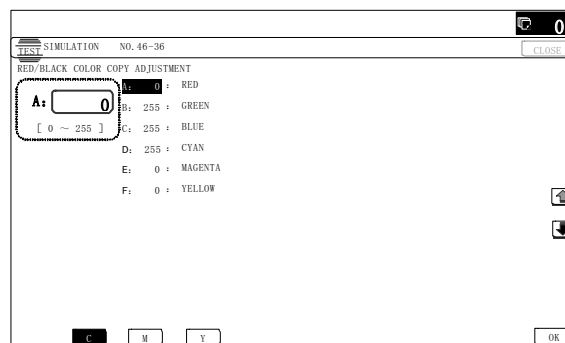
- 1) Select a target adjustment item with [ $\uparrow$ ] [ $\downarrow$ ] key on the touch panel.

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		
			C	M	Y
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	200	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



46-37

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the color document reproducibility in the monochrome copy mode.

**Section****Operation/Procedure**

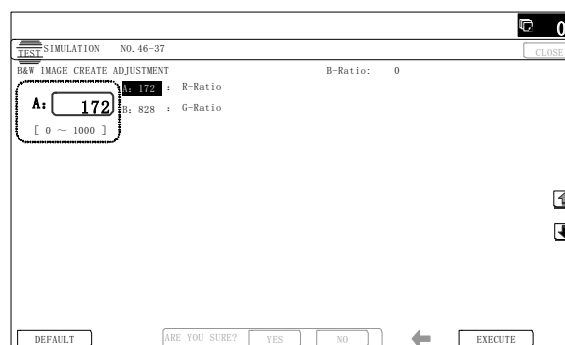
- 1) Select a target item with [ $\uparrow$ ] [ $\downarrow$ ] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) Press [YES] key.

This simulation is used to adjust the reproducibility of red and yellow images when copy a color document of red and yellow images in the monochrome mode.

Item/Display	Content	Setting range	Default value
A R-Ratio	Gray making setting (R)	0 - 1000	172
B G-Ratio	Gray making setting (G)	0 - 1000	828

\* B-Ratio: The value of gray making setting (B) is obtained from the formula below.

$$1000\text{-R-Ratio} - \text{G-Ratio}$$



<b>46-38</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the black component amount in the color copy mode.
<b>Section</b>	

#### Operation/Procedure

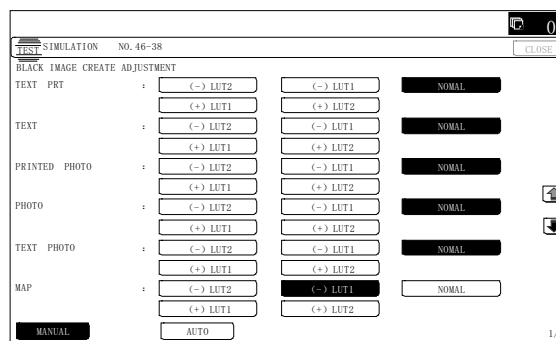
- 1) Select the AUTO MODE or the MANUAL MODE with the mode key.
- 2) Select the mode to be adjusted with the scroll key.
- 3) Press the black component amount select key.

This adjusts black ingredient 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		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT	(-) LUT2	Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PRINTED PHOTO	(-) LUT2	Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PHOTO	(-) LUT2	Photographic paper (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT PHOTO	(-) LUT2	Text/ Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	MAP	(-) LUT2	Map (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	CP ORG/ TEXT PRT	(-) LUT2	Copy document/ Text printed (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ TEXT	(-) LUT2	Copy document/ Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ PHOTO	(-) LUT2	Copy document/ Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	LIGHT ORIGINAL	(-) LUT2	Light document (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

Item/Display (Copy mode)		Select button	Content	Default value
AUTO	AUTO0	(-) LUT2	Auto mode judgment 0	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO1	(-) LUT2	Auto mode judgment 1	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO2	(-) LUT2	Auto mode judgment 2	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
AUTO	AUTO3	(-) LUT2	Auto mode judgment 3	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO4	(-) LUT2	Auto mode judgment 4	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO5	(-) LUT2	Auto mode judgment 5	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO6	(-) LUT2	Auto mode judgment 6	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		



<b>46-39</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the sharpness of FAX send images.
<b>Section</b>	

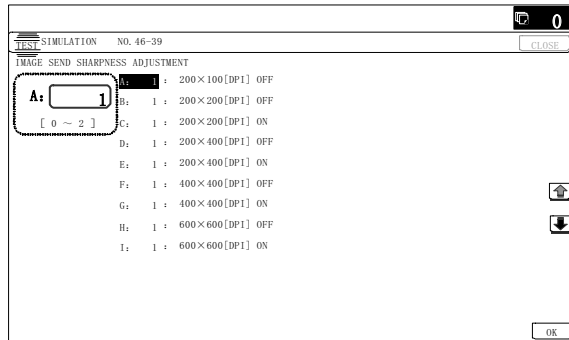
#### Operation/Procedure

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

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]	200 x 100 [DPI]	0 - 2	1
	OFF	half tone OFF		
B	200 x 200 [DPI]	200 x 200 [DPI]	0 - 2	1
	OFF	half tone OFF		

Item/Display		Content	Setting range	Default value
C	200 x 200 [DPI] ON	200 x 200 [DPI] half tone ON	0 - 2	1
D	200 x 400 [DPI] OFF	200 x 400 [DPI] half tone OFF	0 - 2	1
E	200 x 400 [DPI] ON	200 x 400 [DPI] half tone ON	0 - 2	1
F	400 x 400 [DPI] OFF	400 x 400[DPI] half tone OFF	0 - 2	1
G	400 x 400 [DPI] ON	400 x 400[DPI] half tone ON	0 - 2	1
H	600 x 600 [DPI] OFF	600 x 600[DPI] half tone OFF	0 - 2	1
I	600 x 600 [DPI] ON	600 x 600[DPI] half tone ON	0 - 2	1



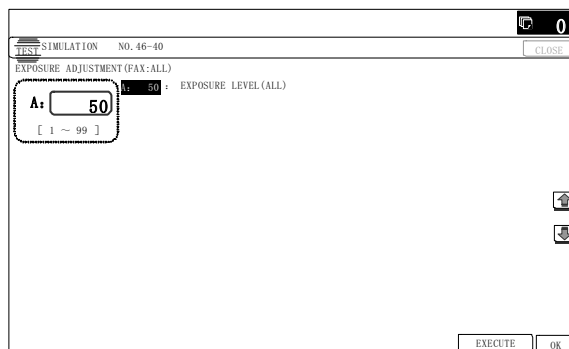
<b>46-40</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Collective adjustment of all the modes)

#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	EXPOSURE LEVEL(ALL)	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	1 - 99	50



<b>46-41</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Normal)

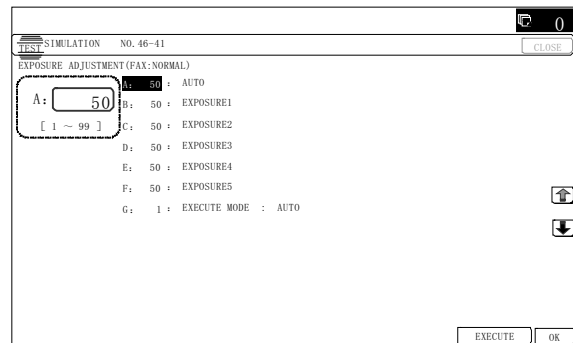
#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	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 EXP1 EXP2 EXP3 EXP4 EXP5	Print mode Auto Exposure 1 Exposure 2 Exposure 3 Exposure 4 Exposure 5	1 - 6 1 2 3 4 5 6 1 (AUTO)

To check the adjustment density level of items A - F, set the document and set the setting value of item G according to items A - F, and press [EXECUTE] key.



<b>46-42</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Fine)

#### Section

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Fine/Automatic	1 - 99	50
B	EXPOSURE1	Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Fine/Automatic/ Half tone	1 - 99	50

Item/Display		Content		Setting range	Default value
H	EXPOSURE1 H_TONE	Fine/Exposure 1/ Half tone		1 - 99	50
I	EXPOSURE2 H_TONE	Fine/Exposure 2/ Half tone		1 - 99	50
J	EXPOSURE3 H_TONE	Fine/Exposure 3/ Half tone		1 - 99	50
K	EXPOSURE4 H_TONE	Fine/Exposure 4/ Half tone		1 - 99	50
L	EXPOSURE5 H_TONE	Fine/Exposure 5/ Half tone		1 - 99	50
M	EXECUTE MODE	AUTO	Print mode	Fine/Auto	1 (AUTO)
		EXP1		Fine/Exposure 1	
		EXP2		Fine/Exposure 2	
		EXP3		Fine/Exposure 3	
		EXP4		Fine/Exposure 4	
		EXP5		Fine/Exposure 5	
		AUTO H_TONE		Fine/Automatic/ halftone	
		EXP1 H_TONE		Fine/Exposure 1 /Half tone	
		EXP2 H_TONE		Fine/Exposure 2 /Half tone	
		EXP3 H_TONE		Fine/Exposure 3 /Half tone	
		EXP4 H_TONE		Fine/Exposure 4 /Half tone	
		EXP5 H_TONE		Fine/Exposure 5 /Half tone	

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

46-43

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Super Fine)
<b>Section</b>	
<b>Operation/Procedure</b>	

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content		Setting range	Default value
A	AUTO	Super Fine/Auto		1 - 99	50
B	EXPOSURE1	Super Fine/Exposure 1		1 - 99	50
C	EXPOSURE2	Super Fine/Exposure 2		1 - 99	50
D	EXPOSURE3	Super Fine/Exposure 3		1 - 99	50
E	EXPOSURE4	Super Fine/Exposure 4		1 - 99	50
F	EXPOSURE5	Super Fine/Exposure 5		1 - 99	50
G	AUTO H_TONE	Super Fine /Auto/ Half tone		1 - 99	50
H	EXPOSURE1 H_TONE	Super Fine/Exposure 1 /Half tone		1 - 99	50
I	EXPOSURE2 H_TONE	Super Fine/Exposure 2 /Half tone		1 - 99	50
J	EXPOSURE3 H_TONE	Super Fine/Exposure 3 /Half tone		1 - 99	50
K	EXPOSURE4 H_TONE	Super Fine/Exposure 4 /Half tone		1 - 99	50
L	EXPOSURE5 H_TONE	Super Fine/Exposure 5 /Half tone		1 - 99	50
M	EXECUTE MODE	AUTO	Print mode	Super Fine /Auto	1 (AUTO)
		EXP1		Super Fine /Exposure 1	
		EXP2		Super Fine /Exposure 2	
		EXP3		Super Fine /Exposure 3	
		EXP4		Super Fine /Exposure 4	
		EXP5		Super Fine /Exposure 5	
		AUTO H_TONE		Super Fine /Auto /Half tone	
		EXP1 H_TONE		Super Fine /Exposure 1 /Half tone	
		EXP2 H_TONE		Super Fine /Exposure 2 /Half tone	
		EXP3 H_TONE		Super Fine /Exposure 3 /Half tone	
		EXP4 H_TONE		Super Fine /Exposure 4 /Half tone	
		EXP5 H_TONE		Super Fine /Exposure 5 /Half tone	

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

46-44

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (Ultra fine)

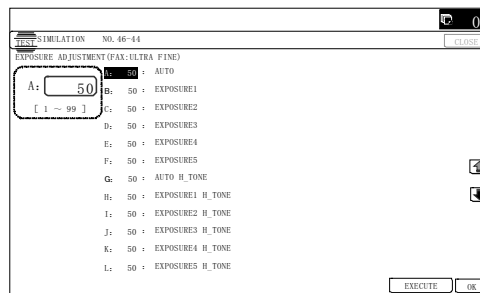
**Section****Operation/Procedure**

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

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

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.



46-45

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the FAX send image density. (600dpi).

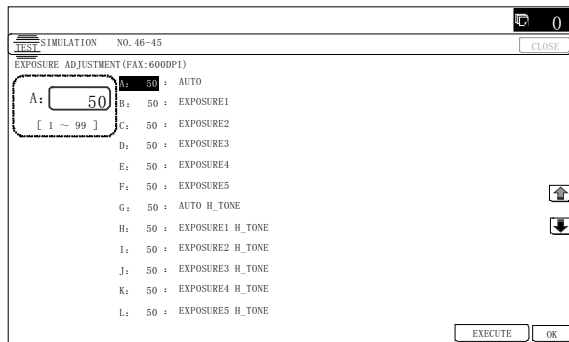
**Section****Operation/Procedure**

- 1) Set the original on the original table.
  - 2) Enter the set value with 10-key.
  - 3) Press [EXECUTE] key, or [OK] key
- When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

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



To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.



46-47

#### Purpose

Adjustment/Setup

#### Function (Purpose)

Used to set the compression rate of copy and scan images (JPEG).

#### Section

#### Operation/Procedure

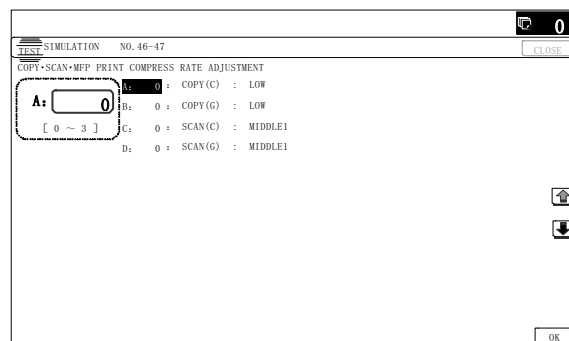
- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value is saved.

Operation mode	Item/Display		Content	Setting range	Default value
COPY (COLOR) (COPY (COLOR mode))	A	COPY (C)	LOW	Low compression (Color)	0 (LOW)
			MIDDLE	Medium compression (Color)	1
			HIGH	High compression (Color)	2
			LOWER	Super low compression (Color)	3
COPY (GRAY) (COPY (Monochrome half-tone mode))	B	COPY (G)	LOW	Low compression (Gray)	0 (LOW)
			MIDDLE	Medium compression (Gray)	1
			HIGH	High compression (Gray)	2
			LOWER	Super low compression (Gray)	3

Operation mode	Item/Display		Content	Setting range	Default value
PUSH SCAN (COLOR) (Scanner (Color mode))	C	SCAN (C) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0 (MIDDLE1)
			MIDDLE 2	Medium compression mode 2 Medium compression	1
			MIDDLE 3	Medium compression mode 3 High compression	2
PUSH SCAN (GRAY) (Scanner (Monochrome half-tone mode))	D	SCAN (G) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0 (MIDDLE1)
			MIDDLE 2	Medium compression mode 2 Medium compression	1
			MIDDLE 3	Medium compression mode 3 High compression	2

\*1: Setting of compression rate for images when the image compression rate is set to "Medium" in the user mode.

NOTE: When the compression rate is increased, the HDD capacity in the document filing mode is decreased. On the other hand, however, the image quality of some documents may be remarkably reduced.



<b>46-51</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.

### Section

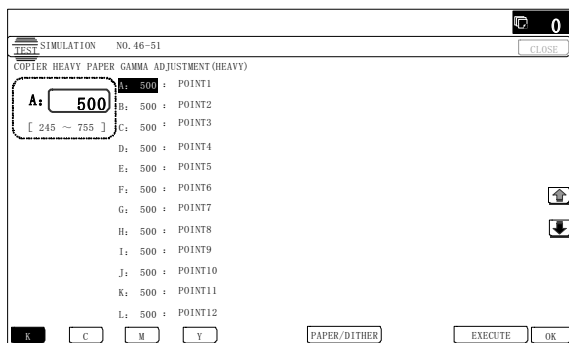
#### Operation/Procedure

- 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 [↑] [↓] 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 out-putted.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

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

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



<b>46-52</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the gamma default for the copy mode heavy paper and the image process mode. (The set values of SIM46-51 are set to the default values.)

### Section

#### Operation/Procedure

- 1) Select an item to be set to the default with the touch panel key.  
To reset the adjustment values of all the items, select [ALL].
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) Press [EXECUTE] key.



<b>46-54</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform the engine half tone automatic density adjustment (dither).

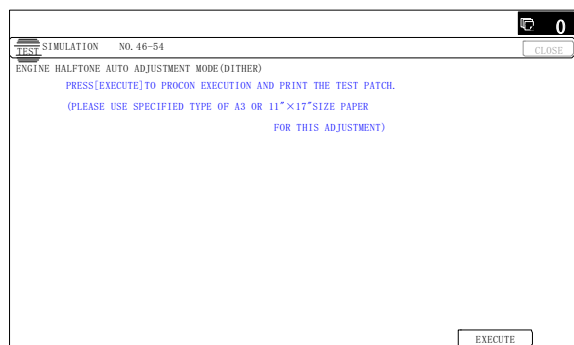
### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The high density process control is started to make 32 patch self print. (A3 paper in the paper feed tray is used.)
- 2) Place the 32 patch self print on the document table, and press [EXECUTE] key.  
Scanning the 32 patch self print is started.  
After scanning the 32 patch self print, the 16 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/gamma for heavy paper
BLACK EDGE	Black edge
COLOR EDGE	Color edge
COLOR ED	Color error diffusion
B/W	Monochrome error diffusion

- 5) Press [EXECUTE] key.  
The 32 patch self print is printed.
- 6) Place the 32 patch self print on the document table, and press [EXECUTE] key.  
Scanning the 32 patch self print is started.  
After scanning the patch, the screen automatically shifts to the dither selection menu.



46-60

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the sharpness in the color auto copy mode.

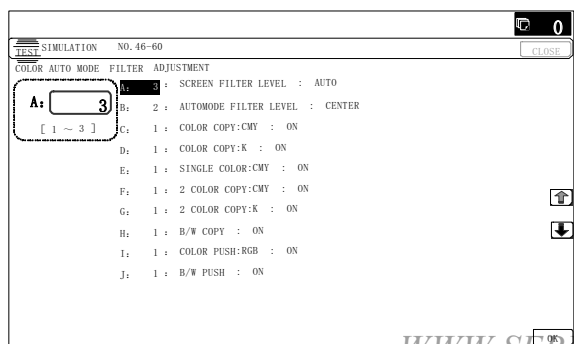
### Section

### Operation/Procedure

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Input numeric value corresponding to sharpness level (filter process mode).
- 3) Press [OK] key.

This is used to adjust the sharpness in the color auto copy mode and the smoothness (roughness) in the dark area.

Item/Display			Content		Setting range	Default value	Remarks
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Applied to the auto copy mode only.
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode	SOFT	1	2 (CENTER)	Applied to the auto copy mode only.
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	COLOR COPY : CMY	OFF	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1 (ON)	When it is set to ON, the soft filter is applied and the smoothness in the dark image area is improved. (Roughness is reduced.)
	ON	ON		1			
D	COLOR COPY : K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1 (ON)	
	ON	ON		1			
E	SINGLE COLOR : CMY	OFF	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1 (ON)	
	ON	ON		1			
F	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	ON		1			
G	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	ON		1			
H	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	
		ON		ON	1		
I	COLOR PUSH : RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
J	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1 (ON)	
		ON		ON	1		



<b>46-61</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the area separation recognition level.
<b>Section</b>	

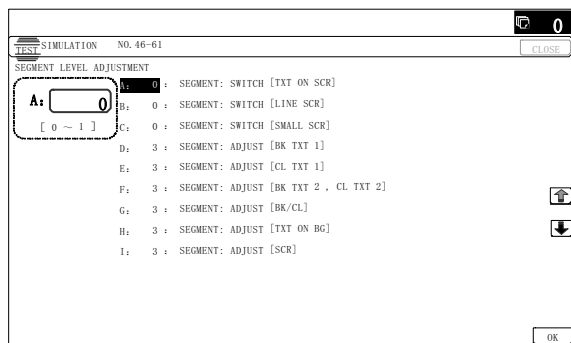
#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

NOTE: 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	SEGMENT: SWITCH [TXT ON SCR]	Detection ON/OFF: Text on dot	0 - 1	0
B	SEGMENT: SWITCH [LINE SCR]	etection ON/OFF: line screen	0 - 1	0
C	SEGMENT: SWITCH [SMALL SCR]	Detection ON/OFF: Dot in a small area	0 - 1	0
D	SEGMENT: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 5	3
E	SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 5	3
F	SEGMENT: ADJUST [BK TXT 2 , CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 5	3
G	SEGMENT: ADJUST [BK/CL]	Detection level adjustment: Chroma/Achroma judgment	1 - 5	3
H	SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 5	3
I	SEGMENT: ADJUST [SCR]	Detection level adjustment: Dot	1 - 5	3



<b>46-62</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.
<b>Section</b>	

#### Operation/Procedure

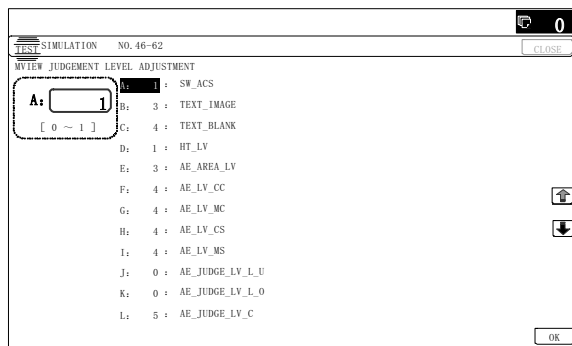
- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

NOTE: 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 adjustment		0 - 1		1
B	TEXT_IMAGE		SIM display item: Text/Image judgment priority level select		0 - 6		3
C	TEXT_BLANK		SIM display item: Text/Blank judgment priority level select		0 - 6		4
D	HT_LV		Dot area judgment threshold value adjustment		0 - 6		1
E	AE_AREA_LV		SIM display item: Color AE judgment target area adjustment value		0 - 6		3
F	AE_LV_CC		AE background detection division result adjustment: For color copy		0 - 8		4
G	AE_LV_MC		AE background detection division result adjustment: For monochrome copy		0 - 8		4
H	AE_LV_CS		AE background detection division result adjustment: For color scan		0 - 8		4
I	AE_LV_MS		AE background detection division result adjustment: For monochrome scan		0 - 8		4
J	AE_JUDGE_LV_L_U		Color AE background density threshold value adjustment value (lower limit)		0 - 4		0
K	AE_JUDGE_LV_L_O		Color AE background density threshold value adjustment value (upper limit)		0 - 10		0
L	AE_JUDGE_LV_C		Color AE background detection level adjustment (chroma)		0 - 10		5
M	AE_ONOFF_CC	ON	AE mode ON/ OFF switch : For color copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
N	AE_ONOFF_MC	ON	AE mode ON/ OFF switch : For mono-chrome copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
O	AE_ONOFF_CS	ON	AE mode ON/ OFF switch : For color scan	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
P	AE_ONOFF_MS	ON	AE mode ON/ OFF switch : For mono-chrome copy	ON	0 - 1	0	0 (ON)
		OFF		OFF		1	
Q	BLANK_JUDGE_LV_L		Blank judgment level adjustment (value)		0 - 10		0
R	BLANK_JUDGE_LV_C		Blank judgment level adjustment (chroma)		0 - 10		0

Item/Display	Content	Setting range	Default value
S	MODE0_UNDER	Mode 0 photography mode select threshold value	0 - 6
T	MODE1_UNDER	Mode 1 photography mode select threshold value	0 - 6
U	MODE5_UNDER	Mode 5 photography mode select threshold value	0 - 6
V	MODE6_UNDER	Mode 6 photography mode select threshold value	0 - 6



#### 46-63

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the density in the copy low density section.

#### Section

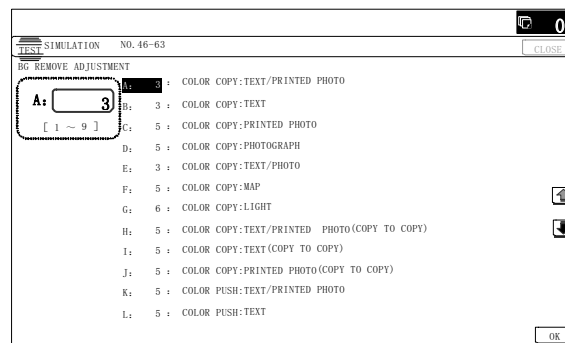
#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

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
B	COLOR COPY : TEXT	Text (color copy)	1 - 9
C	COLOR COPY : PRINTED PHOTO	Printed photo (color copy)	1 - 9
D	COLOR COPY : PHOTOGRAPH	Photograph (color copy)	1 - 9
E	COLOR COPY : TEXT/PHOTO	Text/Photograph (color copy)	1 - 9
F	COLOR COPY : MAP	Map (color copy)	1 - 9
G	COLOR COPY : LIGHT	Light document (color density)	1 - 9
H	COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Character print (color copy)	1 - 9
I	COLOR COPY : TEXT (COPY TO COPY)	Copy document, Character (color copy)	1 - 9
J	COLOR COPY : PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (color copy)	1 - 9

Item/Display	Content	Setting range	Default value
K	COLOR PUSH : TEXT/PRINTED PHOTO	Text print (color PUSH)	1 - 9
L	COLOR PUSH : TEXT	Text (color PUSH)	1 - 9
M	COLOR PUSH : PRINTED PHOTO	Printed photo (color PUSH)	1 - 9
N	COLOR PUSH : PHOTOGRAPH	Photograph (color PUSH)	1 - 9
O	COLOR PUSH : TEXT/PHOTO	Text/Photograph (color PUSH)	1 - 9
P	COLOR PUSH : MAP	Map (color PUSH)	1 - 9



#### 46-74

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment)

#### Section

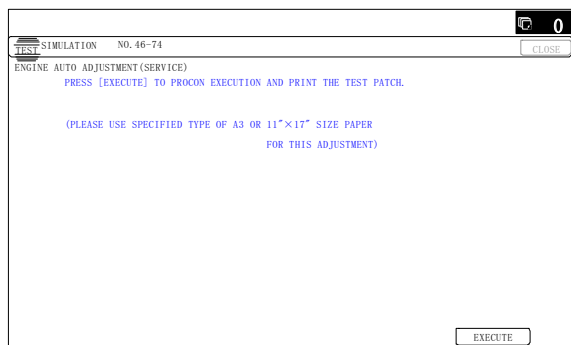
#### Operation/Procedure

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) Plate 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) Plate 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 half tone correction target is registered.

NOTE: The adjustment result becomes effective only when the adjustment operations in the both modes are completed all the way. For example, when the copy color balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.



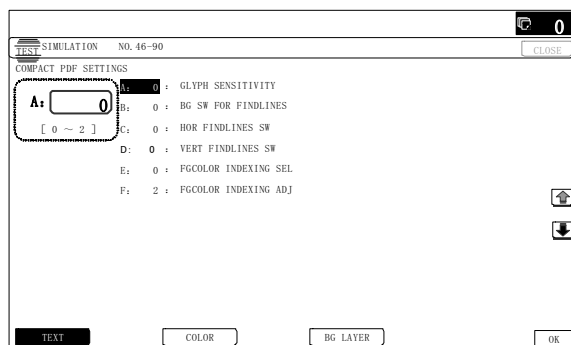
46-90

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the high compression PDF ASIC. (Do not change default value in the field)
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment mode with [TEXT], [COLOR] and [BG LAYER] keys.
  - 2) Select a target adjustment item with [↑] [↓] key.
  - 3) Enter the set value with 10-key.
  - 4) Press [OK] key.
- The set value is saved.

Item	Button	Display	Content	Setting range	Default value
A	TEXT	GLYPH SENSITIVITY	Text handling selection	0 - 2	0
B		BG SW FOR FINDLINES	Line handling selection	0 - 1	0
C		HOR FINDLINES SW	Line detection SW (H)	0 - 2	0
D		VERT FINDLINES SW	Line detection SW (V)	0 - 2	0
E		FGCOLOR INDEXING SEL	Text color number adjustment SW	0 - 3	0
F		FGCOLOR INDEXING ADJ	Text color adjustment	0 - 4	2
A	COLOR	LUMINANCE ADJUSTMENT	Luminance adjustment	0 - 4	2
B		CHROMA INTENT	Chroma selection	0 - 2	1
A	BG LAYER	BG LAYER INTENT 1	Speed priority setting	0 - 2	1
B		BG LAYER INTENT 2	Image quality priority setting	0 - 2	1



48

48-1

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value is saved.

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

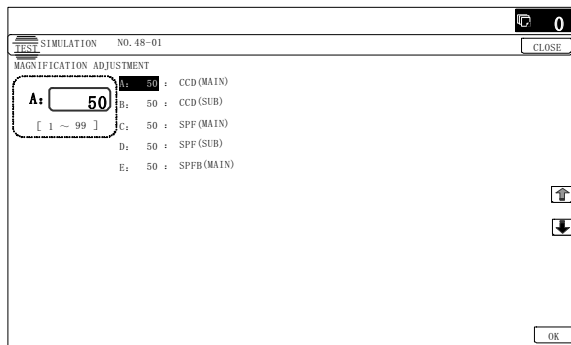
A change of "1" in the adjustment value of item A, C, or E corresponds to a change of about 0.02% in the copy magnification ratio. A change of "1" in the adjustment value of item B, D, or F corresponds to a change of about 0.1% in the copy magnification ratio.

#### [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 (Main scan)	1 - 99	50
D SPF (SUB)	RSPF document front surface magnification ratio (Sub scan)	1 - 99	50
E SPFB (MAIN)	RSPF document back surface magnification ratio (Main scan)	1 - 99	50
F SPFB (SUB)	RSPF document back surface magnification ratio (Sub scan)	1 - 99	50

#### [DSPF]

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 DSPF(MAIN)	DSPF document front surface magnification ratio (Main scan)	1 - 99	50
D DSPF(SUB)	DSPF document front surface magnification ratio (Sub scan)	1 - 99	50
E DSPFB(MAIN)	DSPF document back surface magnification ratio (Main scan)	1 - 99	50



48-5

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to correction the scan image magnification ratio (in the sub scanning direction).
<b>Section</b>	Scanner section

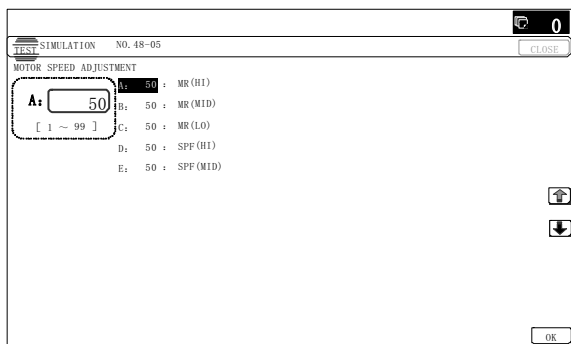
#### Operation/Procedure

- 1) Select a target adjustment item with [↑] [↓] key on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value is saved.

When the image magnification ratio in the sub scanning direction is adjusted with SIM48-1, and a different magnification ratio is specified, and the image magnification ratio is not satisfactory, perform this adjustment.

When there is an error in the image magnification ratio in reduction, change the adjustment value in the high speed mode. When there is an error in the image magnification ratio in enlargement, change the adjustment value in the low speed mode.

Item/Display	Content	Setting range	Default value
A MR (HI)	Scanner motor (High speed)	1 - 99	50
B MR(MID)	Scanner motor (Reference speed)	1 - 99	50
C MR(LO)	Scanner motor (Low speed)	1 - 99	50
D SPF(HI)	Document feed (SPF) motor (High speed)	1 - 99	50
E SPF(MID)	Document feed (SPF) motor (Reference speed)	1 - 99	50



48-6

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the rotation speed of each motor.
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target mode with [COLOR] [MONO] [HEAVY] keys on the touch panel.
- 2) Select a target adjustment item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

The set value is saved.

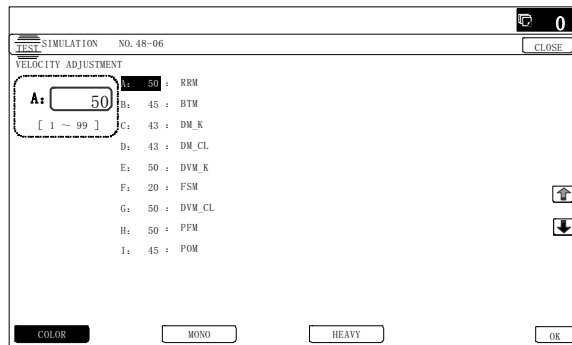
When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

Mode Select	Item/Display	Content	Setting range	Default value	
				41-sheet machine	50-sheet machine
COLOR	A RRM	Resist motor correction value	1 - 99	50	49
	B BTM	Belt motor correction value	1 - 99	45	45
	C DM_K	Drum K motor correction value	1 - 99	43	43
	D DM_CL	Drum CL motor correction value	1 - 99	43	43
	E DVM_K	Developing K motor correction value	1 - 99	50	50
	F FSM	Fusing motor correction value	1 - 99	20	14
	G DVM_CL	Developing CL motor correction value	1 - 99	50	50
	H PFM	Paper transport motor correction value	1 - 99	50	50
	I POM	Paper exit motor correction value	1 - 99	45	45
MONO	A RRM	Resist motor correction value	1 - 99	50	49
	B BTM	Belt motor correction value	1 - 99	45	45
	C DM_K	Drum K motor correction value	1 - 99	43	43
	D DVM_K	Developing K motor correction value	1 - 99	50	50
	E FSM	Fusing motor correction value	1 - 99	20	14

Mode Select	Item/Display		Content	Setting range	Default value	
					41-sheet machine	50-sheet machine
1 HEAVY	A	RRM	Resist motor correction value	1 - 99	47	47
	B	BTM	Belt motor correction value	1 - 99	45	45
	C	DM_K	Drum K motor correction value	1 - 99	43	43
	D	DM_CL	Drum CL motor correction value	1 - 99	43	43
	E	DVM_K	Developing K motor correction value	1 - 99	50	50
	F	FSM	Fusing motor correction value	1 - 99	23	23
	G	DVM_CL	Developing CL motor correction value	1 - 99	50	50
	H	FUSER SETTING	Fusing speed select timing	1 - 99	50	50
	I	RRM START	RRM speed increasing start timing	0 - 255	0	0
	J	RRM END	RRM speed increasing end timing	0 - 255	38	38

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, a jam, paper wrinkle, or image quality trouble may occur.



## 49

### 49-1

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to perform the firmware update.
<b>Section</b>	

#### Operation/Procedure

- 1) Save the firmware to the USB memory.
- 2) Insert the USB memory into the main unit. (Use USB I/F of the operation panel section.)

- 3) Select a target firmware file for update with the touch panel.
- 4) Select a target firmware.  
Press [ALL] key to select all the Firmware collectively.
- 5) Press [EXECUTE] key.
- 6) Press [YES] key.

The selected firmware is updated.

When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

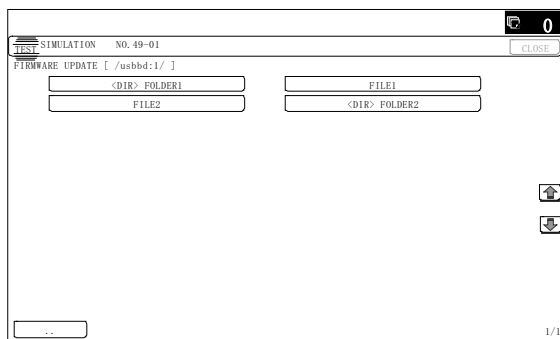
Item/Display	Content
CONFIG	Configuration data
ICU (MAIN)	ICU Main section former half
ICU (BOOTM)	ICU Boot section main
ICU (BOOTCN)	ICU Boot section CN
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCU (BOOT)	PCU Boot section
PCU (MAIN)	PCU Main section
DESK (BOOT)	Desk unit BOOT section
DESK (MAIN)	Desk unit MAIN section
A4LCC (BOOT)	Side LCC (A4) Boot section
A4LCC (MAIN)	Side LCC (A4) main section
FIN (BOOT)	Inner finisher BOOT section
FIN (MAIN)	Inner finisher MAIN section
1KFIN (BOOT)	1K finisher Boot section
1KFIN (MAIN)	1K finisher Main section
4KFIN(BOOT)	4K finisher Boot section
4KFIN(MAIN)	4K finisher Main section
1KPUNCH (BOOT)	Punch unit Boot section for 1K finisher
1KPUNCH (MAIN)	Punch unit Main section for 1K finisher
4KPUNCH (BOOT)	Punch unit Boot section for 4K finisher
4KPUNCH (MAIN)	Punch unit Main section for 4K finisher
SCU (BOOT)	SCU Boot section
SCU (MAIN)	SCU Main section
DSPF (BOOT)	DSPF Boot section
DSPF (MAIN)	DSPF Main section
FAX (BOOT)	FAX1 Boot section
FAX(MAIN)	FAX1 Main section
FAX OPTION(BOOT)	FAX2 Boot section (Japan only)
FAX OPTION(MAIN)	FAX2 Main section (Japan only)
ESCP_FONT	ESC/P font
PDL_FONT	PDL font
ANIMATION	Animation data
IMAGE_DATA	MFP ASIC data
COLOR PROFILE	Color profile
WEB HELP	WEB help
UNICODE	UNICODE table
ACRE (BOOT)	ACRE Boot section
ACREM (MAIN)	ACRE Main section
ACRE_DATA	ACRE table

List of error displays in case of abnormal end

Item/Display	Content
CONF	Configuration data
ICUM	ICU Main section former half
ICUBM	ICU Boot section main
ICUCN	ICU Boot section CN
LANG	Language support data program (General term)
GRAPH	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCUB	PCU Boot section
PCUM	PCU Main section
DESKB	Desk unit BOOT section
DESKM	Desk unit MAIN section
LCC4B	Side LCC (A4) Boot section
LCC4M	Side LCC (A4) main section
FINB	Inner finisher BOOT section



Item/Display	Content
FINM	Inner finisher MAIN section
FIN1B	1K finisher Boot section
FIN1M	1K finisher Main section
FIN4B	4K finisher Boot section
FIN4M	4K finisher Main section
1PUNB	Punch unit Boot section for 1K finisher
1PUNM	Punch unit Main section for 1K finisher
4PUNB	Punch unit Boot section for 4K finisher
4PUNM	Punch unit Main section for 4K finisher
SCUB	SCU Boot section
SCUM	SCU Main section
DSPFB	DSPF Boot section
DSPFM	DSPF Main section
FAXB	FAX1 Boot section
FAXM	FAX1 Main section
FXOPB	FAX2 Boot section (Japan only)
FXOPM	FAX2 Main section (Japan only)
ESCP	ESC/P font
PDL	PDL font
ANIME	Animation data
IMGDT	Image ASIC data
CORP	Color profile
WEBHP	WEB help
UNICD	UNICODE table
ACREB	ACRE Boot section
ACREM	ACRE Main section
ACRED	ACRE table

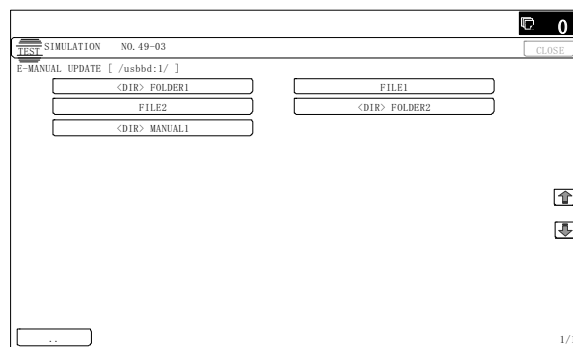


49-3

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to update the operation manual in the HDD.
<b>Section</b>	

#### Operation/Procedure

- 1) Insert the USB memory into the main unit.  
\* When the USB is not inserted, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
- 2) Press the folder button of the operation manual data. (The display is shifted to the operation manual update menu.)  
The current version and the update version are displayed.
- 3) Press [EXECUTE] key.  
[EXECUTE] key is highlighted, and [YES] [NO] keys becomes active from gray out.
- 4) When [YES] key is pressed, the selected operation manual is updated.  
When update is completed normally, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.



(Folder select display 1)

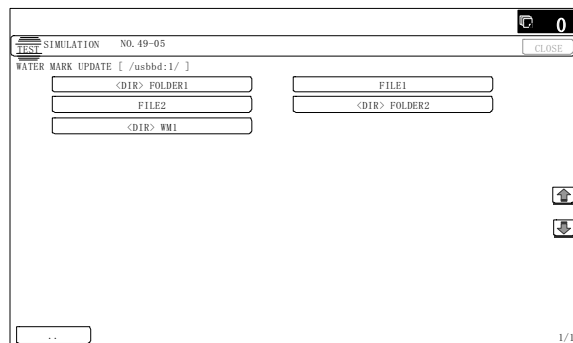
49-5

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to perform the watermark update.
<b>Section</b>	

#### Operation/Procedure

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

The selected watermark is updated.



50

50-1

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Copy image position, image loss adjustment
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.  
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	RRC-A	Document lead edge reference position (OC)	0 - 99	50
B		RRCB-CS12	Resist motor ON	1 - 99	50
C		RRCB-CS34	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	30
H		SIDE	Side image loss area adjustment	0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment	1 - 99	30
J		DENB	Rear edge void area adjustment	1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	20
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

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (0.1mm/step)

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

B - F. (RRC-B) Timing of paper (resist roller ON) for the image position on the transfer belt is adjusted. (0.1mm/step)

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

G. (LEAD) The lead edge image loss amount is adjusted. (0.1mm/step)

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

H. (SIDE) The side image loss amount is adjusted.

- \* When the value is increased, the image loss is increased. (0.1mm/step)

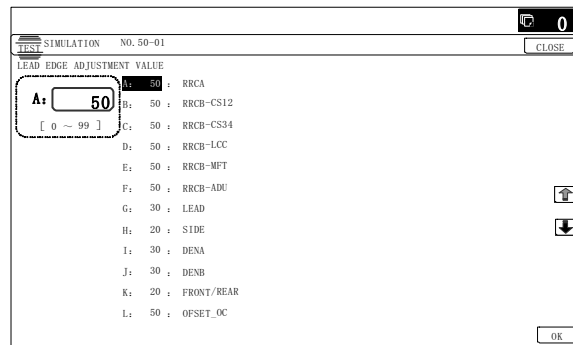
I. (DEN-A) The paper lead edge void amount is adjusted. (0.1mm/step)

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

J. (DEN-B) The paper rear edge void amount is adjusted. (0.1mm/step)

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

K. (FRONT/REAR) The void amount on the right and left edges of paper is adjusted. (0.1mm/step)



## 50-2

### Purpose

Adjustment

### Function (Purpose)

Used to adjust the copy image position and the image loss. (This simulation is a simplified version of SIM 50-1).

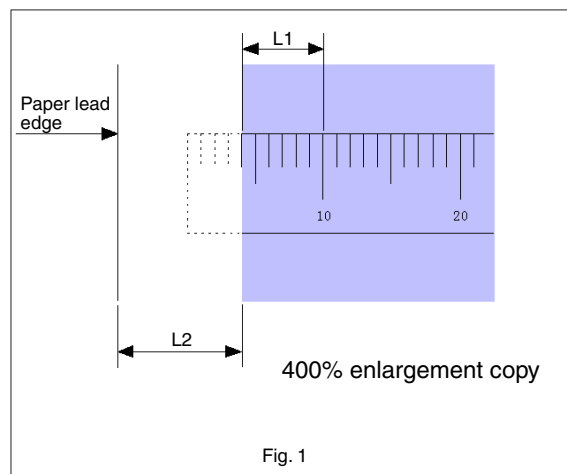
### Section

#### Operation/Procedure

- 1) Set item A (L1) and item B (L2) to 0.
- 2) Place a rule on the left edge of the document table, and make a copy at a magnification ratio of 400%.
- 3) Measure the length of L1 and L2 on the copied image in the unit of 0.1mm (referring to the figure below). Enter the adjustment values of L1 x 10 and L2 x 10. Be sure to enter the both adjustment values of L1 and L2.

L1: Distance from the lead edge of the copied image to 10mm scale.

L2: Distance from the paper lead edge to the copy image lead edge.



- 4) Press [EXECUTE] key. (The set value is saved.)
- 5) Make a copy at the magnification ratio of 100%, and adjust the rear edge void.

Item/Display			Description	Setting range	Default value
A	Actual measurement value	L1	Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment)	0 - 999	-
B		L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)	0 - 999	0

Item/Display			Description	Setting range	Default value
C	Image loss area setting value	LEAD	Lead edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	0 - 99	30
D		SIDE	Side edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	0 - 99	20
E	Void area adjustment	DENA	Lead edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	30
F		DENB	Rear edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	30
G		FRONT/REAR	FRONT/REAR void amount adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	20

Same as the adjusted items of SIM50-01 except for A and B.

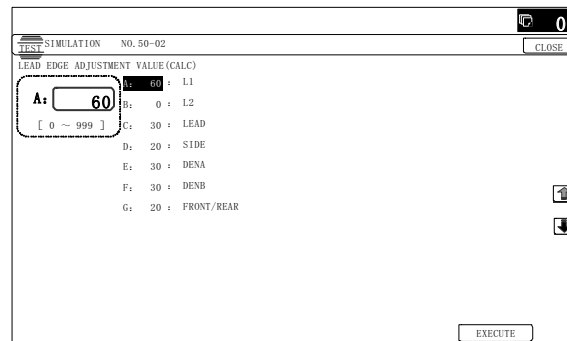
The values adjusted with A and B are reflected to the document lead edge reference position (RRC-A) of SIM50-01 and all the paper lead edge positions (RRCB-\*\*).

All adjustment items: 1 step = 0.1mm change

<b>50-5</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the print lead edge image position. (PRINTER MODE)
<b>Section</b>	

#### Operation/Procedure

- 1) Select a target adjustment item (DEN-C) with [↑] [↓] key on the touch panel.
  - 2) Enter the adjustment value using the 10-key.
  - 3) Press [EXECUTE] key.
- 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: 3.0±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.

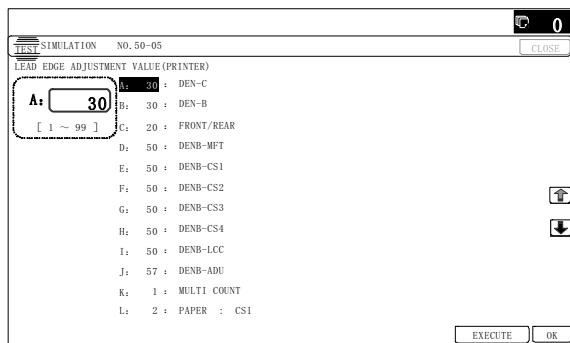
When the set value is changed by 1, the distance is changed by about 0.1mm.

Item/Display		Content	Setting range	Default value	NOTE
A	DEN-C	Used to adjust the print lead edge image position. (PRINTER MODE)	1 - 99	30	Adjustment value too align the print lead edge for the printer. When the adjustment value of this item is decreased by 1, the printer print start position in the paper transport direction is shifted to the lead edge by 0.1mm.
B	DEN-B	Rear edge void area adjustment	1 - 99	30	Void amount generated at the paper rear edge. When the adjustment value of item B (DEN-B) is decreased by 1, the print area adjustment value in the sub scanning direction for the paper transport direction is decreased by 0.1mm.
C	FRONT/REAR	FRONT/REAR void area adjustment	1 - 99	20	Adjustment of the void amount generated on the left and right edges of paper. When the adjustment value is increased, the void amount is increased.
D	DENB-MFT	Manual feed rear edge void area adjustment correction value	1 - 99	50	Fine adjustment value of each paper feed source for the adjustment value of DEN-B
E	DENB-CS1	Tray 1 rear edge void area adjustment correction value	1 - 99	50	
F	DENB-CS2	Tray 2 rear edge void area adjustment correction value	1 - 99	50	

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

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

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



<b>50-6</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy image position and the image loss. (RSPF/DSPF mode)
<b>Section</b>	RSPF/DSPF

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

#### [DSPF]

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

Item/Display		Content	Setting range	Default value
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	0 - 99	20
D		FRONT_REAR (SIDE1)	0 - 99	20
E		TRAIL_EDGE (SIDE1)	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	0 - 99	30
G		FRONT_REAR (SIDE2)	0 - 99	20
H		TRAIL_EDGE (SIDE2)	0 - 99	20
I	OFFSET_SPF1	DSPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2	DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1	DSPF document front surface magnification ratio (Sub scan)	1 - 99	50

#### [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)	0 - 99	20

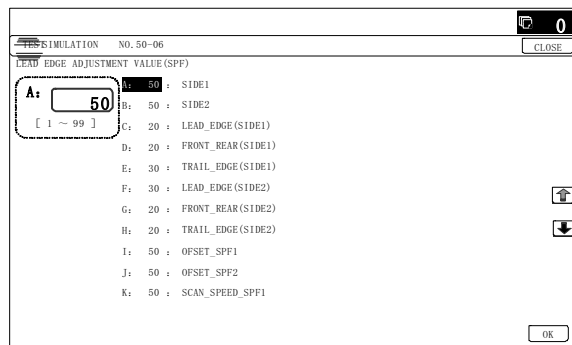
Item/Display			Content	Setting range	Default value
D	Image loss amount setting SIDE1	FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	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	30
I	OFFSET_SPF1		SPF front surface document off-center adjustment	1 - 99	50
J	OFFSET_SPF2		SPF 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

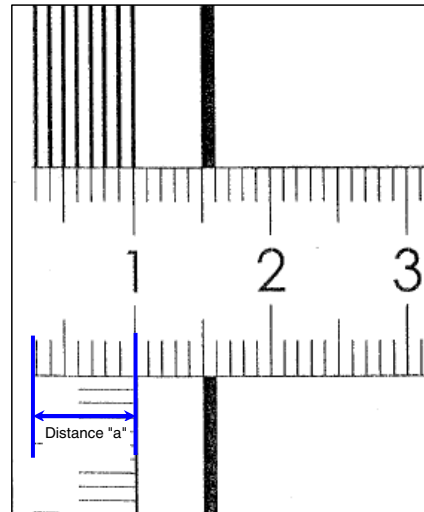


<b>50-7</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the copy image position and the image loss (RSPF/DSPF mode). (This simulation is a simplified version of SIM 50-6.)
<b>Section</b>	RSPF/DSPF

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Set item A (L4) and item B (L5) to 0.
- 3) Set the magnification ratio to 200%, and make a copy in the RSPF duplex mode.
- 4) Measure the size of the printed image. Enter the actual measurement value of distance a (RSPF) to L4 and L5 in the unit of 0.1mm.  
(Adjustment value "1" for 0.1mm)

L4: Distance a (RSPF front surface: 200%) (unit: 0.1mm)  
L5: Distance a (RSPF back surface: 200%) (unit: 0.1mm)



- 5) Press [EXECUTE] key. (The set value is saved.)

#### [DSPF]

Item/Display		Content	Setting range	Default value
A	L4	Distance (SPF 200%, 0.1mm unit) from the front surface image lead edge to the scale of 10mm.	0 - 999	-
B	L5	Distance (SPF 200%, 0.1mm unit) from the back surface image lead edge to the scale of 10mm.	0 - 999	-
C	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D	FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E	TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G	FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H	TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20

#### [RSPF]

Item/Display		Content	Setting range	Default value
A	L4	Distance (SPF 200%, 0.1mm unit) from the front surface image lead edge to the scale of 10mm.	0 - 999	-
B	L5	Distance (SPF 200%, 0.1mm unit) from the back surface image lead edge to the scale of 10mm.	0 - 999	-
C	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D	FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E	TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	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	30

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

All adjustment items: 1 step = 0.1mm change  
Items C - H are linked with items C - H of SIM50-06.

**SIMULATION NO. 50-07**  
LEAD EDGE ADJUSTMENT (SPF CALC)  
CLOSE

A: 0 [ 0 ~ 999 ]

B: 0 : L4  
C: 20 : LEAD\_EDGE (SIDE1)  
D: 20 : FRONT\_REAR (SIDE1)  
E: 30 : TRAIL\_EDGE (SIDE1)  
F: 30 : LEAD\_EDGE (SIDE2)  
G: 20 : FRONT\_REAR (SIDE2)  
H: 20 : TRAIL\_EDGE (SIDE2)

EXECUTE

50-10

**Purpose**

Adjustment

**Function (Purpose)**

Used to adjust the black print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.)

**Section**

**Operation/Procedure**

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Content		Setting range		Default value	NOTE
A	BK-MAG		Main scan print magnification ratio BK		60 - 140		100	Adjustment Item List
B	MAIN-MFT		Print off center adjustment value (Manual paper feed)		1 - 99		50	
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99		50	
D	MAIN-CS2		Print off center adjustment value (Tray 2)		1 - 99		50	
E	MAIN-CS3		Print off center adjustment value (Tray 3)		1 - 99		50	
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99		50	
G	MAIN-LCC		Print off center adjustment value (Large capacity tray)		1 - 99		50	
H	MAIN-ADU		Print off center adjustment value (Duplex) (NOTE) If the adjustment items A - G are not properly adjusted, this adjustment cannot be executed properly.		1 - 99		50	Adjustment Item List
I	SUB-MFT		Resist motor ON timing adjustment	Manual paper feed	1 - 99		50	
J	SUB-CS12			Standard cassette	1 - 99		50	
K	SUB-CS34			DESK	1 - 99		50	
L	SUB-LCC			LCC	1 - 99		50	
M	SUB-ADU			ADU	1 - 99		50	
N	MULTI COUNT		Number of print		1 - 999		1	Adjustment pattern print conditions setting
O	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2 (CS1)	
		CS1		Tray 1		2		
		CS2		Tray 2		3		
		CS3		Tray 3		4		
		CS4		Tray 4		5		
		LCC		LCC		6		
P	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)	
		NO		No		1		

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

Item B - H: When the adjustment value is increased, it is shifted to the front frame side. When the adjustment value is decreased, it is shifted to the rear frame side.

All adjustment items: 1 step = 0.1mm change

**SIMULATION NO. 50-10**  
PAPER CENTER OFFSET SETUP  
CLOSE

A: 100 [ 60 ~ 140 ]

B: 50 : BK-MAG  
C: 50 : MAIN-MFT  
D: 50 : MAIN-CS1  
E: 50 : MAIN-CS2  
F: 50 : MAIN-CS3  
G: 50 : MAIN-CS4  
H: 50 : MAIN-LCC  
I: 50 : MAIN-ADU  
J: 50 : SUB-MFT  
K: 50 : SUB-CS12  
L: 50 : SUB-CS34  
M: 50 : SUB-LCC

EXECUTE OK

50-12	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)

#### Section

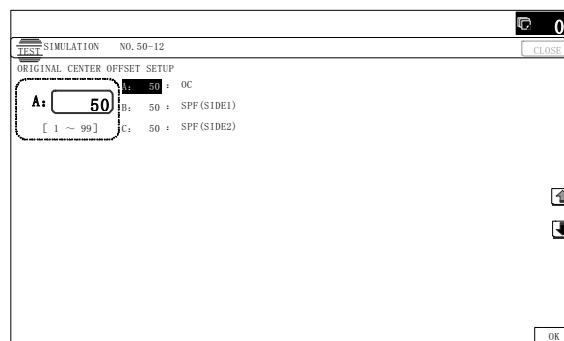
#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

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

1step = 0.1mm

Item/Display		Content	Setting range	Default value
A	OC	Document table image off-center adjustment	1 - 99	50
B	SPF(SIDE1)	SPF front surface image off-center adjustment	1 - 99	50
C	SPF(SIDE2)	SPF back surface image off-center adjustment	1 - 99	50



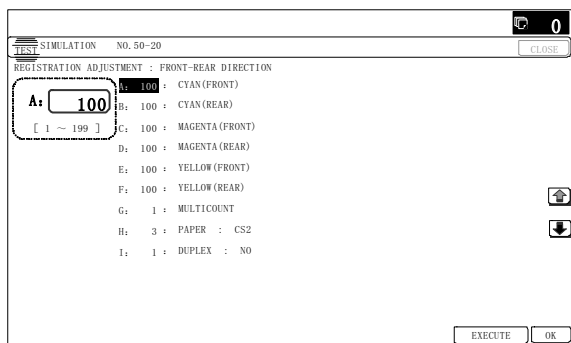
50-20	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Image registration adjustment (Main scanning direction) (Manual adjustment)

#### Section

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Content	Setting range		Default value	NOTE
A	CYAN (FRONT)		Image registration adjustment value (Main scanning direction) (Cyan) (F side)	1 - 199		100	Adjustment Item List
B	CYAN (REAR)		Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1 - 199		100	
C	MAGENTA (FRONT)		Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1 - 199		100	
D	MAGENTA (REAR)		Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1 - 199		100	
E	YELLOW (FRONT)		Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1 - 199		100	
F	YELLOW (REAR)		Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1 - 199		100	
G	MULTICOUNT		Number of print	1 - 999		1	Adjustment pattern print conditions setting
H	PAPER	MFT	Tray selection	1	Manual paper feed	3	
		CS1		2	Tray 1		
		CS2		3	Tray 2		
		CS3		4	Tray 3		
		CS4		5	Tray 4		
		LCC		6	LCC		
		I		DUPLEX	YES		
NO	1		Not select				



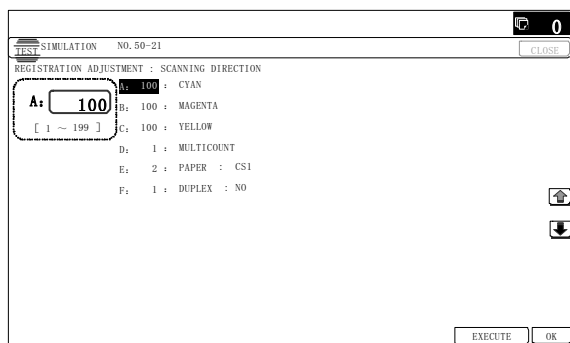
50-21

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Image registration adjustment (Sub scanning direction) (Manual adjustment)
<b>Section</b>	

#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Content	Setting range		Default value	NOTE	
A	CYAN		Image registration adjustment value (Sub scanning direction) (Cyan)	1 - 199		100	Adjustment Item List	
B	MAGENTA		Image registration adjustment value (Sub scanning direction) (Magenta)	1 - 199		100		
C	YELLOW		Image registration adjustment value (Sub scanning direction) (Yellow)	1 - 199		100		
D	MULTICOUNT		Number of print				1	Adjustment pattern print conditions setting
E	PAPER	MFT	Tray selection	1	Manual paper feed	2		
		CS1		2	Tray 1			
		CS2		3	Tray 2			
		CS3		4	Tray 3			
		CS4		5	Tray 4			
		LCC		6	LCC			
F	DUPLEX	YES	Duplex print selection	0	Yes	1		
		NO		1	No			





50-22

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment)

**Section**

**Operation/Procedure**

- 1) Select a target adjustment item with [REGIST] or [DRUM POS] or [ALL] key.

ALL	The image resist adjustment (in the main scanning direction and the sub scanning direction) and the OPC drum phase adjustment are automatically performed.
REGIST	The image resist adjustment (in the main scanning direction and the sub scanning direction) is automatically performed.
DRUM POS	The OPC drum phase adjustment (automatic adjustment) is automatically performed.

- 2) Press [EXECUTE] key.

The adjustment is automatically performed, and the adjustment data are displayed.

NOTE: The contents of the following list are mainly used by the technical division, and are not necessary for the market.

Item/Display				Content	Display	Default value	NOTE
ALL Image registration adjustment/ OPC drum phase adjustment	REGIST (Auto image registration adjustment)	MAIN F	C	Image registration adjustment value (Main scanning direction) (Position of writing by cyan laser is F side)	1.0 - 199.0	100	
			M	Image registration adjustment value (Main scanning direction) (Position of writing by magenta laser is F side)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Main scanning direction) (Position of writing by yellow laser is F side)	1.0 - 199.0	100	
		MAIN R	C	Image registration adjustment value (Main scanning direction) (Position of writing by cyan laser is R side)	1.0 - 199.0	100	
			M	Image registration adjustment value (Main scanning direction) (Position of writing by magenta laser is R side)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Main scanning direction) (Position of writing by yellow laser is R side)	1.0 - 199.0	100	
		SUB	C	Image registration adjustment value (Sub scanning direction) (Cyan drum to black drum)	1.0 - 199.0	100	
			M	Image registration adjustment value (Sub scanning direction) (Magenta drum to cyan drum)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Sub scanning direction) (Yellow drum to magenta drum)	1.0 - 199.0	100	
		SKEW	C	Calculated result of print skew amount (Cyan)	-99.9 - 99.9	-	If the value is plus, R is displayed to left side of numerical value. If the value is minus, L is displayed to left side of numerical value. When the value is -4 - +4, "(OK)" is place at the back of the value. For the other cases, "(NG)" is displayed. *1
			M	Calculated result of print skew amount (magenta)	-99.9 - 99.9	-	
			Y	Calculated result of print skew amount (yellow)	-99.9 - 99.9	-	
	DRUM POS (Auto OPC drum phase adjustment)	PHASE	Phase adjustment value BK → CL	Angle step 0°(1) → 45°(2) → 90°(3) → 135°(4) → 180°(5) → 225°(6) → 270°(7) → 315°(8)	1 - 8	2	Same item as SIM44-31.
			Phase adjustment value C			2	Same item as SIM44-31. (50-sheet machine)
			Phase adjustment value M			4	
			Phase adjustment value Y			5	

\*1: The color image skew adjustment is performed according to this display value.

When "R" is displayed in front of the value, turn and click the skew adjustment screw (LSU) clockwise by the value.

When "L" is displayed in front of the value, turn and click the skew adjustment screw (LSU) counterclockwise by the value.

At that time, the values under the decimal point are rounded.

<Error displays in case of abnormal end >

	Error code	Error display	Error content	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	TONNER EMPTY 01	Toner Empty	BK or ALL Color toner EMPTY detection
	2	BEFORE BEHAVIOR 02	Other condition	Other condition
	4	SENSOR CALIBRATION 04	Calibration error	The target is not reached by 3 times of retry of F or R
	5	TIME OVER 05	Time error	No data are obtained for 90sec from data acquisition
	7	PROCESS CONTROL 07	Process control error	Process control error detection
Sub scanning adjustment error	10	SUB BLACK FRONT 10	Number of line error sub scanning color (Black) F	The pitch data number are not the specified value.
	11	SUB BLACK FRONT 11	Pitch error sub scanning color (Black) F	The pitch data are not within the allowable range.
	15	SUB BLACK REAR 15	Number of line error sub scanning color (Black) R	The pitch data are not within the specified range.
	16	SUB BLACK REAR 16	Pitch error sub scanning color (Black) R	The pitch data are not within the allowable range.
	20	SUB CYAN FRONT 20	Number of line error sub scanning color (Cyan) F	The pitch data number are not the specified value.
	21	SUB CYAN FRONT 21	Pitch error sub scanning color (Cyan) F	The pitch data are not within the allowable range.
	22	SUB CYAN FRONT 22	Adjustment value number error sub scanning color (Cyan) F	The calculation result value is not within the allowable range.
	23	SUB CYAN FRONT 23	Result value error sub scanning color (Cyan) F	The variation in the calculation result value is above the allowable range.
	25	SUB CYAN REAR 25	Number of lines error sub scanning color (Cyan) R	The pitch data number are not the specified value.
	26	SUB CYAN REAR 26	Pitch error sub scanning color (Cyan) R	The pitch data are not within the allowable range.

	Error code	Error display	Error content	Description
Sub scanning adjustment error	27	SUB CYAN REAR 27	Adjustment value number error sub scanning color (Cyan) R	The calculation result value is not within the allowable range.
	28	SUB CYAN REAR 28	Result value error sub scanning color (Cyan) R	The variation in the calculation result value is above the allowable range.
	30	SUB MAGENTA FRONT 30	Number of lines error sub scanning color (Magenta) F	The pitch data number are not the specified value.
	31	SUB MAGENTA FRONT 31	Pitch error sub scanning color (Magenta) F	The pitch data are not within the allowable range.
	32	SUB MAGENTA FRONT 32	Adjustment value number error sub scanning color (Magenta) F	The calculation result value is not within the allowable range.
	33	SUB MAGENTA FRONT 33	Result value error sub scanning color (Magenta) F	The variation in the calculation result value is above the allowable range.
	35	SUB MAGENTA REAR 35	Number of lines error sub scanning color (Magenta) R	The pitch data number are not the specified value.
	36	SUB MAGENTA REAR 36	Pitch error sub scanning color (Magenta) R	The pitch data are not within the allowable range.
	37	SUB MAGENTA REAR 37	Adjustment value number error sub scanning color (Magenta) R	The calculation result value is not within the allowable range.
	38	SUB MAGENTA REAR 38	Result value error sub scanning color (Magenta) R	The variation in the calculation result value is above the allowable range.
	40	SUB YELLOW FRONT 40	Number of lines error sub scanning color (Yellow) F	The pitch data number are not the specified value.
	41	SUB YELLOW FRONT 41	Pitch error sub scanning color (Yellow) F	The pitch data are not within the allowable range.
	42	SUB YELLOW FRONT 42	Adjustment value number error sub scanning color (Yellow) F	The calculation result value is not within the allowable range.
	43	SUB YELLOW FRONT 43	Result value error sub scanning color (Yellow) F	The variation in the calculation result value is above the allowable range.
	45	SUB YELLOW REAR 45	Number of lines error sub scanning color (Yellow) R	The pitch data number are not the specified value.
	46	SUB YELLOW REAR 46	Pitch error sub scanning color (Yellow) R	The pitch data are not within the allowable range.
	47	SUB YELLOW REAR 47	Adjustment value number error sub scanning color (Yellow) R	The calculation result value is not within the allowable range.
	48	SUB YELLOW REAR 48	Result value error sub scanning color (Yellow) R	The variation in the calculation result value is above the allowable range.

	Error code	Error display	Error content	Description
Main scanning adjustment error	50	MAIN BLACK FRONT 50	Number of lines error main scanning color (Black) F	The pitch data number are not the specified value.
	51	MAIN BLACK FRONT 51	Pitch error main scanning color (Black) F	The pitch data are not within the allowable range.
	55	MAIN BLACK REAR 55	Number of lines error main scanning color (Black) R	The pitch data are not within the specified range.
	56	MAIN BLACK REAR 56	Pitch error main scanning color (Black) R	The pitch data are not within the allowable range.
	60	MAIN CYAN FRONT 60	Number of lines error main scanning color (Cyan) F	The pitch data number are not the specified value.
	61	MAIN CYAN FRONT 61	Pitch error main scanning color (Cyan) F	The pitch data are not within the allowable range.
	62	MAIN CYAN FRONT 62	Adjustment value number error main scanning color (Cyan) F	The calculation result value is not within the allowable range.
	63	MAIN CYAN FRONT 63	Result value error main scanning color (Cyan) F	The variation in the calculation result value is above the allowable range.
	65	MAIN CYAN REAR 65	Number of lines error main scanning color (Cyan) R	The pitch data number are not the specified value.
	66	MAIN CYAN REAR 66	Pitch error main scanning color (Cyan) R	The pitch data are not within the allowable range.
	67	MAIN CYAN REAR 67	Adjustment value error main scanning color (Cyan) R	The calculation result value is not within the allowable range.
	68	MAIN CYAN REAR 68	Result value error main scanning color (Cyan) R	The variation in the calculation result value is above the allowable range.
	70	MAIN MAGENTA FRONT 70	Number of lines error main scanning color (Magenta) F	The pitch data number are not the specified value.
	71	MAIN MAGENTA FRONT 71	Pitch error main scanning color (Magenta) F	The pitch data are not within the allowable range.
	72	MAIN MAGENTA FRONT 72	Adjustment value number error main scanning color (Magenta) F	The calculation result value is not within the allowable range.
	73	MAIN MAGENTA FRONT 73	Result value error main scanning color (Magenta) F	The variation in the calculation result value is above the allowable range.
	75	MAIN MAGENTA REAR 75	Number of lines error main scanning color (Magenta) R	The pitch data number are not the specified value.
	76	MAIN MAGENTA REAR 76	Pitch error main scanning color (Magenta) R	The pitch data are not within the allowable range.

	Error code	Error display	Error content	Description
Main scanning adjustment error	77	MAIN MAGENTA REAR 77	Adjustment value error main scanning color (Magenta) R	The calculation result value is not within the allowable range.
	78	MAIN MAGENTA REAR 78	Result value error main scanning color (Magenta) R	The variation in the calculation result value is above the allowable range.
	80	MAIN YELLOW FRONT 80	Number of lines error main scanning color (Yellow) F	The pitch data number are not the specified value.
	81	MAIN YELLOW FRONT 81	Pitch error main scanning color (Yellow) F	The pitch data are not within the allowable range.
	82	MAIN YELLOW FRONT 82	Adjustment value error main scanning color (Yellow) F	The calculation result value is not within the allowable range.
	83	MAIN YELLOW FRONT 83	Result value error main scanning color (Yellow) F	The variation in the calculation result value is above the allowable range.
	85	MAIN YELLOW REAR 85	Number of lines error main scanning color (Yellow) R	The pitch data number are not the specified value.
	86	MAIN YELLOW REAR 86	Pitch error main scanning color (Yellow) R	The pitch data are not within the allowable range.
	87	MAIN YELLOW REAR 87	Adjustment value error main scanning color (Yellow) R	The calculation result value is not within the allowable range.
	88	MAIN YELLOW REAR 88	Result value error main scanning color (Yellow) R	The variation in the calculation result value is above the allowable range.
	Others	99	OTHER 99	Other errors
	99	OTHER 99	Other errors	Other errors

SIMULATION NO. 50-22

CLOSE

AUTO ADJUSTMENT OF REGISTRATION&DRUM POSITION

	MAIN F	MAIN R	SUB	SKEW
C	105.0 ( 0.2)	110.0 (-0.1)	103.0 ( 0.4)	L 4.5 (NG)
M	100.0 ( 0.0)	99.0 (-0.2)	99.0 ( 0.2)	L 4.5 (NG)
Y	98.0 ( 0.3)	98.0 ( 0.1)	105.0 ( 0.0)	L 4.5 (NG)

PHASE

C 4 (3)

M 5 (2)

Y 7 (1)

REGIST

DRUM POS

ALL

EXECUTE

1/1

50-24

**Purpose** (This simulation is normally not used in the market.)

**Function (Purpose)** Used to display the detail data of SIM 44-2, 50-20, 21 and 22.

**Section**

**Operation/Procedure**

NOTE: This simulation is mainly used by the technical division, and is not necessary for the market.

Item classification	Display	Item content	Setting range	Related SIM
Registration adjustment status check	REG_EXE_CNT	Number of executions of the registration adjustment (Auto execution)	0 - 99999999	50-22
	REG_SUC_CNT	Number of success of the registration adjustment (Auto execution)	0 - 99999999	50-22
	REG_CNT	Registration adjustment registration counter	0 - 99999999	-
	REG_M_F (VALUE)	Calculated correction amount in the main scan direction F in the auto registration adjustment	1.0 - 199.0 (±0.1 unit)	50-22
	REG_M_R (VALUE)	Calculated correction amount in the main scan direction R in the auto registration adjustment	1.0 - 199.0 (±0.1 unit)	50-22
	REG_SUB (VALUE)	Calculated correction amount in the sub scan direction in the automatic registration adjustment	1.0 - 199.0 (±0.1 unit)	50-22
	REG_M_F (DIF)	Registration value correction amount from the previous time, main scan F	-199.0 - 199.0 (±0.1 unit)	50-20, 22
	REG_M_R (DIF)	Registration value correction amount from the previous time, main scan R	-199.0 - 199.0 (±0.1 unit)	50-20, 22
	REG_SUB (DIF)	Registration value correction amount from the previous time, sub scan	-199.0 - 199.0 (±0.1 unit)	50-21, 22

Item classification	Display	Item content	Setting range	Related SIM
Phase adjustment status check	PHASE_ADJ (C) (50-sheet machine)	Phase adjustment (1: This time value, 2: Previous time value)	1 - 8	50-22
	PHASE_ADJ (M) (50-sheet machine)	Phase adjustment (1: This time value, 2: Previous time value)	1 - 8	50-22
	PHASE_ADJ (Y) (50-sheet machine)	Phase adjustment (1: This time value, 2: Previous time value)	1 - 8	50-22
	PHASE_ADJ (41-sheet machine)	Phase adjustment (1: This time value, 2: Previous time value)	1 - 8	50-22
	PHASE_STATE	Phase state (1: This time value, 2: Previous time value)	1 - 8	50-22
	PHASE_LEVEL	Phase deflection level (before weighting)	0-99.9 (±0.1 unit)	50-22
Sensor calibration status check	PHASE_WEIGHT	Phase deflection level (after weighting) (1: This time value, 2: Previous time value)	0-99.9 (±0.1 unit)	50-22
	REG_LED (F)	Registration sensor current light emitting value F	1 - 255	44-02, 70-11, 50-22
	REG_LED (R)	Registration sensor current light emitting value R	1 - 255	44-02, 70-11, 50-22
	REG_V (F)	Registration sensor current light receiving value F	0 - 255	44-02, 70-11, 50-22
	REG_V (R)	Registration sensor current light receiving value R	0 - 255	44-02, 70-11, 50-22
	REG_DARK (F)	Registration sensor dark potential F	0 - 255	44-02, 70-11, 50-22
Sampling status check (1)	REG_DARK (R)	Registration sensor dark potential R	0 - 255	44-02, 70-11, 50-22
	START_SUB (F)_U	Sampling start value Sub scan F (Rising)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_SUB (F)_D	Sampling start value Sub scan F (Falling)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_SUB (R)_U	Sampling start value Sub scan R (Rising)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_SUB (R)_D	Sampling start value Sub scan R (Falling)	-300.00 - 300.00 (±0.01 unit)	50-22

Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (1)	START_MAIN (F)_U	Sampling start value Main scan F (Rising)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_MAIN (F)_D	Sampling start value Main scan F (Falling)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_MAIN (R)_U	Sampling start value Main scan R (Rising)	-300.00 - 300.00 (±0.01 unit)	50-22
	START_MAIN (R)_D	Sampling start value Main scan R (Falling)	-300.00 - 300.00 (±0.01 unit)	50-22
	STD_PITCH_SUB (F)_U	Sampling reference pitch Sub scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_SUB (F)_D	Sampling reference pitch Sub scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_SUB (R)_U	Sampling reference pitch Sub scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_SUB (R)_D	Sampling reference pitch Sub scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_MAIN (F)_U	Sampling reference pitch Main scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_MAIN (F)_D	Sampling reference pitch Main scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_MAIN (R)_U	Sampling reference pitch Main scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
	STD_PITCH_MAIN (R)_D	Sampling reference pitch Main scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_SUB (F)_U	Sampling reference pitch all-color average value Sub scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_SUB (F)_D	Sampling reference pitch all-color average value Sub scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_SUB (R)_U	Sampling reference pitch all-color average value Sub scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_MAIN (F)_U	Sampling reference pitch all-color average value Main scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22

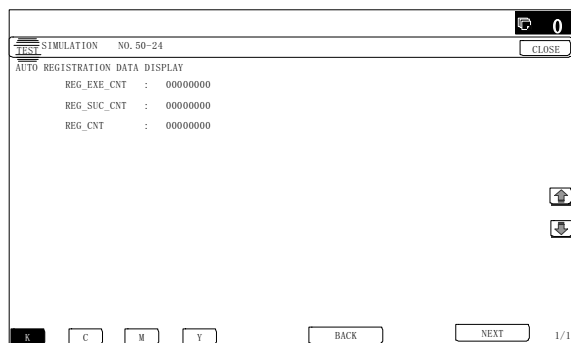
Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (1)	TOTAL_PITCH_MAIN (F)_D	Sampling reference pitch all-color average value Main scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_MAIN (R)_U	Sampling reference pitch all-color average value Main scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
	TOTAL_PITCH_MAIN (R)_D	Sampling reference pitch all-color average value Main scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22
	LINEAR_SUB_F_U	Sampling linearity Sub scan F (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_SUB_F_D	Sampling linearity Sub scan F (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_SUB_R_U	Sampling linearity Sub scan R (Rising)	-100.00-100.00 (±0.01unit)	50-22
Sampling status check (2)	LINEAR_SUB_R_D	Sampling linearity Sub scan R (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_MAIN_F_U	Sampling linearity Main scan F (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_MAIN_F_D	Sampling linearity Main scan F (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_MAIN_R_U	Sampling linearity Main scan R (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_MAIN_R_D	Sampling linearity Main scan R (Falling)	-100.00-100.00 (±0.01unit)	50-22
	PITCH_SUB_F_U	Sampling pitch calculation value Sub scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_SUB_F_D	Sampling pitch calculation value Sub scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_SUB_R_U	Sampling pitch calculation value Sub scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
Sampling status check (3)	PITCH_SUB_R_D	Sampling pitch calculation value Sub scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_MAIN_F_U	Sampling pitch calculation value Main scan F (Rising)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_MAIN_F_D	Sampling pitch calculation value Main scan F (Falling)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_MAIN_R_U	Sampling pitch calculation value Main scan R (Rising)	-50.00-50.00 (±0.01unit)	50-22
	PITCH_MAIN_R_D	Sampling pitch calculation value Main scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22

Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (3)	PITCH_MAIN_R_D	Sampling pitch calculation value Main scan R (Falling)	-50.00-50.00 (±0.01unit)	50-22
Sampling status check (4)	ADJ_LINEAR	Sampling linearity after correction	-100.00 - 100.00 (±0.01unit)	50-22
Sampling status check (5)	LINEAR_AVE_S_F_U	Sampling linearity average value Sub scan F (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_S_F_D	Sampling linearity average value Sub scan F (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_S_R_U	Sampling linearity average value Sub scan R (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_S_R_D	Sampling linearity average value Sub scan R (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_M_F_U	Sampling linearity average value Main scan F (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_M_F_D	Sampling linearity average value Main scan F (Falling)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_M_R_U	Sampling linearity average value Main scan R (Rising)	-100.00-100.00 (±0.01unit)	50-22
	LINEAR_AVE_M_R_D	Sampling linearity average value Main scan R (Falling)	-100.00-100.00 (±0.01unit)	50-22
Sampling status check (6)	NOISE_LINE_S_F_U	Sampling noise removal line number Sub scan F (Rising)	1-17(±1unit)	50-22
	NOISE_LINE_S_F_D	Sampling noise removal line number Sub scan F (Falling)	1-17(±1unit)	50-22
	NOISE_LINE_S_R_U	Sampling noise removal line number Sub scan R (Rising)	1-17(±1unit)	50-22
	NOISE_LINE_S_R_D	Sampling noise removal line number Sub scan R (Falling)	1-17(±1unit)	50-22
	NOISE_LINE_M_F_U	Sampling noise removal line number Main scan F (Rising)	1-17(±1unit)	50-22
	NOISE_LINE_M_F_D	Sampling noise removal line number Main scan F (Falling)	1-17(±1unit)	50-22

Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (6)	NOISE_LINE_M_R_U	Sampling noise removal line number Main scan R (Rising)	1-17(±1unit)	50-22
	NOISE_LINE_M_R_D	Sampling noise removal line number Main scan R (Falling)	1-17(±1unit)	50-22
Sampling status check (7)	VALID_LINE_MAX_S_F_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Sub scanning F (Rising)	1-17(±1unit)	50-22
	VALID_LINE_MAX_S_F_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Sub scanning F (Falling)	1-17(±1unit)	50-22
	VALID_LINE_MAX_S_R_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Sub scanning R (Rising)	1-17(±1unit)	50-22
	VALID_LINE_MAX_S_R_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Sub scanning R (Falling)	1-17(±1unit)	50-22
	VALID_LINE_MAX_M_F_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Main scanning F (Rising)	1-16(±1unit)	50-22
	VALID_LINE_MAX_M_F_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Main scanning F (Falling)	1-16(±1unit)	50-22

Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (7)	VALID_LINE_MAX_M_R_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Main scanning R (Rising)	1-16(±1unit)	50-22
	VALID_LINE_MAX_M_R_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MAX Main scanning R (Falling)	1-16(±1unit)	50-22
	VALID_LINE_MIN_S_F_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Sub scanning F (Rising)	1-17(±1unit)	50-22
	VALID_LINE_MIN_S_F_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Sub scanning F (Falling)	1-17(±1unit)	50-22
	VALID_LINE_MIN_S_R_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Sub scanning R (Rising)	1-17(±1unit)	50-22
	VALID_LINE_MIN_S_R_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Sub scanning R (Falling)	1-17(±1unit)	50-22
	VALID_LINE_MIN_M_F_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Main scanning F (Rising)	1-16(±1unit)	50-22

Item classification	Display	Item content	Setting range	Related SIM
Sampling status check (7)	VALID_LINE_MIN_M_F_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Main scanning F (Falling)	1-16(±1unit)	50-22
	VALID_LINE_MIN_M_R_U	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Main scanning R (Rising)	1-16(±1unit)	50-22
	VALID_LINE_MIN_M_R_D	Adjacent data linearity difference in the effective line after removing the sampling noise Line No. at MIN Main scanning R (Falling)	1-16(±1unit)	50-22
Temperature correction value check	TEMP_ADJ_M1	Temperature correction value in the previous print Main scan writing	-99.9-99.9 (±0.1unit)	-
	TEMP_ADJ_M2	Temperature correction value in the previous print Main scan magnification ratio	-99.9-99.9 (±0.1unit)	-
	TEMP_ADJ_SUB	Temperature correction value in the previous print Sub scan	-99.9-99.9 (±0.1unit)	-
Temperature check	TEMP_BACK_TH1	Temperature in the previous print (Thermister 1)	5.0-60.0 (±0.1°C)	-
	TEMP_BACK_TH2	Temperature in the previous print (Thermister 2)	5.0-60.0 (±0.1°C)	-
	TEMP_TH1_F_HISTORY	Reference temperature (Thermister 1) F	5.0-60.0 (±0.1°C)	50-20, 21, 22
	TEMP_TH1_R_HISTORY	Reference temperature (Thermister 1) R	5.0-60.0 (±0.1°C)	50-20, 21, 22
	TEMP_TH2_F_HISTORY	Reference temperature (Thermister 2) F	5.0-60.0 (±0.1°C)	50-20, 21, 22
	TEMP_TH2_R_HISTORY	Reference temperature (Thermister 2) R	5.0-60.0 (±0.1°C)	50-20, 21, 22
	ERROR HISTORY	Error record status check	-	50-22



50-27

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.

#### Section

#### Operation/Procedure

- 1) Select a target adjustment mode with [FAX] or [SCANNER] key.
- 2) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

#### [DSPF]

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)

Item/Display				Content	Setting range	Default value
FAX send	G	Image loss amount setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss amount setting	0 - 100	30 (3mm)
	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	20 (2mm)
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)



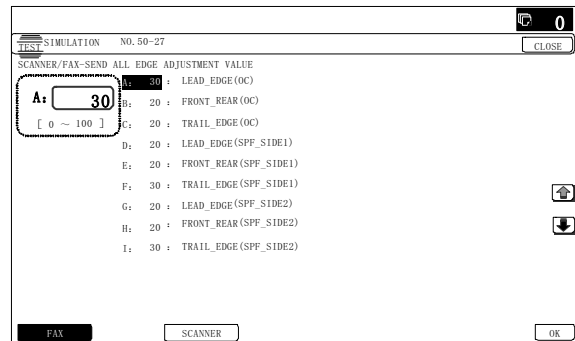
[RSPF]

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)

Item/Display			Content	Setting range	Default value
When image send mode (Except for FAX and copy)	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)

A-I: When the adjustment value is increased, the image loss is increased.

1step = 0.1mm



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**

The following adjustment items can be executed automatically with SIM50-28.

- \* ADJ 8 Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
- \* ADJ 9 Image off-center adjustment (Print engine section)
- \* ADJ 14/15 Scan image magnification ratio adjustment
- \* ADJ 16 scan image off-center adjustment
- \* ADJ 17 Print area (void area) adjustment (Print engine section)
- \* ADJ 18 Copy image position, image loss adjustment

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

(1) Image loss off-center sub scan direction image magnification ratio adjustment (Document table mode)

- 1) Select [OC ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

(2) Main scan direction image magnification ration adjustment

- 1) Select [BK-MAG ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

(3) Image loss off-center sub scan direction image magnification ratio adjustment (RSPF mode)

- 1) Select [SPF ADJ] on the touch panel.
- 2) Select the adjustment mode; SIDE 1(Front surface) or SIDE 2(Back surface) or ALL(Both modes).
- 3) Select the paper tray to be used for the adjustment pattern print.
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the RSPF.
- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.

When ALL is selected in the procedure 2), perform procedures 5) and 6) for both of the front surface and the back surface.

- 7) Press [OK] key.

(4) Print lead edge adjustment image off-center (Each paper feed tray, duplex mode) adjustment

- 1) Select [SETUP/PRINT ADJ] on the touch panel.
- 2) Select the adjustment mode; LEAD (print lead edge adjustment) or OFF SET (image off-center) or ALL (both modes).
- 3) Select the paper feed tray for the adjustment pattern print. (Two or more trays can be selected.)
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the document table.
- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.

When two or more paper feed trays are selected in the procedure 3), perform procedures 5) and 6) for the adjustment pattern printed with each paper.

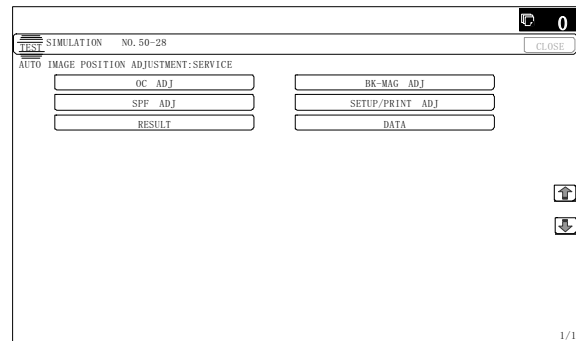
- 7) Press [OK] key.

RESCAN: The adjustment pattern is scanned.

REPRINT: The adjustment pattern is printed again.

RETRY: Shifts to the top menu.

- \* When an error occurs in the secondary transfer cleaning (cleaning is not completed when the final screen is displayed), the error display is not made, but "FAILED IN THE CLEANING OF THE SECONDARY TRANSFER UNIT" is displayed.



## 51

### 51-1

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the ON/OFF timing of the secondary transport voltage.

### Section

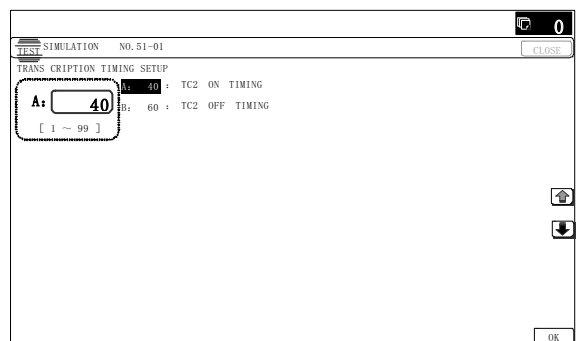
#### Operation/Procedure

- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is 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
B	TC2 OFF TIMING	Secondary transfer voltage OFF timing setting



51-2	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the RSPF/DSPF resist 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 DSPF model)  
Select a target adjustment mode with [REG1] or [REG2] or [ENGINE] keys.  
(When RSPF model)  
Select a target adjustment mode with [SIDE1] or [SIDE2] or [ENGINE] keys.
- 2) Select a target item to be adjusted with [↑] [↓] buttons.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

#### [DSPF]

Display/Item			Content		Setting range	Default value	
						41-sheet machine	50-sheet machine
A	REGI1	NORMAL_PLAIN_HIGH	DSPF deflection amount adjustment value 1 (Normal/Plain paper/HIGH)	-	1 - 99	50	
B		NORMAL_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Plain paper/LOW)	-	1 - 99	50	
C		NORMAL_THIN_HIGH	DSPF deflection amount adjustment value 1 (Normal/Thin paper/HIGH)	-	1 - 99	50	
D		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 1 (Normal/Thin paper/LOW)	-	1 - 99	50	
E		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Plain paper/HIGH)	-	1 - 99	50	
F		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 1 (Random/Plain paper/LOW)	-	1 - 99	50	
G		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 1 (Random/Thin paper/HIGH)	-	1 - 99	50	
H		RANDOM_THIN_LOW	DSPF deflection amount adjustment value 1 (Random/Thin paper/LOW)	-	1 - 99	50	
A	REGI2	NORMAL_PLAIN_HIGH	DSPF deflection amount adjustment value 2 (Normal/Plain paper/HIGH)	-	1 - 99	50	
B		NORMAL_PLAIN_LOW	DSPF deflection amount adjustment value 2 (Normal/Plain paper/LOW)	-	1 - 99	50	
C		NORMAL_THIN_HIGH	DSPF deflection amount adjustment value 2 (Normal/Thin paper/HIGH)	-	1 - 99	50	
D		NORMAL_THIN_LOW	DSPF deflection amount adjustment value 2 (Normal/Thin paper/LOW)	-	1 - 99	50	
E		RANDOM_PLAIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Plain paper/HIGH)	-	1 - 99	50	
F		RANDOM_PLAIN_LOW	DSPF deflection amount adjustment value 2 (Random/Plain paper/LOW)	-	1 - 99	50	
G		RANDOM_THIN_HIGH	DSPF deflection amount adjustment value 2 (Random/Thin paper/HIGH)	-	1 - 99	50	
H		RANDOM_THIN_LOW	DSPF deflection amount adjustment value 2 (Random/Thin paper/LOW)	-	1 - 99	50	



Display/Item			Content		Setting range	Default value	
						41-sheet machine	50-sheet machine
A	ENGINE	TRAY1(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
B		TRAY1(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
C		TRAY1 HEAVY PAPER(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
D		TRAY1 HEAVY PAPER(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
E		TRAY2(S)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
F		TRAY2(L)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
G		TRAY2 HEAVY PAPER(S)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
H		TRAY2 HEAVY PAPER(L)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
I		MANUAL PLAIN PAPER(S)	Manual feed tray/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
J		MANUAL PLAIN PAPER(L)	Manual feed tray/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
K		MANUAL HEAVY PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
L		MANUAL HEAVY PAPER(L)	Manual feed tray/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
M		MANUAL OHP	Manual feed tray/deflection adjustment value (OHP)	-	1 - 99	40	50
N		MANUAL ENV	Manual feed tray/deflection adjustment value (Envelope)	-	1 - 99	40	50
O		ADU PLAIN PAPER(S)	ADU/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
P		ADU PLAIN PAPER(L)	ADU/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
Q		ADU HEAVY PAPER(S)	ADU/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
R		ADU HEAVY PAPER(L)	ADU/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
S		DESK(S)	DESK/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
T		DESK(L)	DESK/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
U		DESK HEAVY PAPER(S)	DESK/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
V		DESK HEAVY PAPER(L)	DESK/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
W	A4LCC	A4LCC/deflection adjustment value	-	1 - 99	40	60	

[RSPF]

Display/Item			Content		Setting range	Default value	
						41-sheet machine	50-sheet machine
A	SIDE1	NORMAL_PLAIN_HIGH	RSPF front surface document deflection amount adjustment value (Normal/Plain paper/HIGH)	-	1 - 99	50	
B		NORMAL_PLAIN_LOW	RSPF front surface document deflection amount adjustment value (Normal/Plain paper/LOW)	-	1 - 99	50	
C		NORMAL_THIN_HIGH	RSPF front surface document deflection amount adjustment value (Normal/Thin paper/HIGH)	-	1 - 99	50	
D		NORMAL_THIN_LOW	RSPF front surface document deflection amount adjustment value (Normal/Thin paper/LOW)	-	1 - 99	50	
E		RANDOM_PLAIN_LOW	RSPF front surface document deflection amount adjustment value (Random/Plain paper/LOW)	-	1 - 99	50	
F		RANDOM_THIN_LOW	RSPF front surface document deflection amount adjustment value (Random/Thin paper/LOW)	-	1 - 99	50	
A	SIDE2	NORMAL_PLAIN_HIGH_1	RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/HIGH)	-	1 - 99	50	
B		NORMAL_PLAIN_LOW_1	RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/LOW)	-	1 - 99	50	
C		NORMAL_PLAIN_HIGH_2	RSPF back surface document deflection amount adjustment value 2 (Normal/Plain paper/HIGH)	-	1 - 99	50	
D		NORMAL_PLAIN_LOW_2	RSPF back surface document deflection amount adjustment value 2 (Normal/Plain paper/LOW)	-	1 - 99	50	

1

Display/Item			Content	Setting range	Default value		
					41-sheet machine	50-sheet machine	
A	ENGINE	TRAY1(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
B		TRAY1(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
C		TRAY1 HEAVY PAPER(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
D		TRAY1 HEAVY PAPER(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
E		TRAY2(S)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
F		TRAY2(L)	Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
G		TRAY2 HEAVY PAPER(S)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
H		TRAY2 HEAVY PAPER(L)	Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
I		MANUAL PLAIN PAPER(S)	Manual feed tray/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
J		MANUAL PLAIN PAPER(L)	Manual feed tray/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
K		MANUAL HEAVY PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
L		MANUAL HEAVY PAPER(L)	Manual feed tray/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
M		MANUAL OHP	Manual feed tray/deflection adjustment value (OHP)	-	1 - 99	40	50
N		MANUAL ENV	Manual feed tray/deflection adjustment value (Envelope)	-	1 - 99	40	50
O		ADU PLAIN PAPER(S)	ADU/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
P		ADU PLAIN PAPER(L)	ADU/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
Q		ADU HEAVY PAPER(S)	ADU/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50
R		ADU HEAVY PAPER(L)	ADU/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50
S		DESK(S)	DESK/deflection adjustment value (Plain paper/Small size)	LT size (216mm) or less	1 - 99	40	60
T		DESK(L)	DESK/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	40	60
U	DESK HEAVY PAPER(S)	DESK/deflection adjustment value (Heavy paper/Small size)	LT size (216mm) or less	1 - 99	40	50	
V	DESK HEAVY PAPER(L)	DESK/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	40	50	
W	A4LCC	A4LCC/deflection adjustment value	-	1 - 99	40	60	

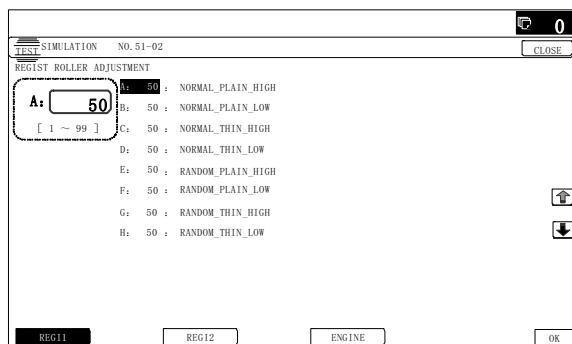
<Small size, Large size>

Small size: The paper length in the transport direction is shorter than the LT size (216mm).

Large size: The paper length in the transport direction is longer than the LT size (216mm).

When the adjustment value is increased, the warp amount is increased. When the adjustment value is decreased, the warp amount is decreased.

(When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.)



## 53

53-6

Purpose

Adjustment

Function (Purpose)

Used to adjust the detection level of the RSPF/DSPF document width.

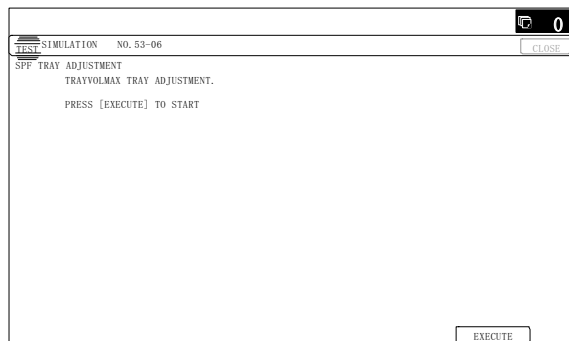
Section

### Operation/Procedure

- 1) Open the RSPF paper feed guide to the maximum width.
- 2) Press [EXECUTE] key.  
The maximum width detection level is recognized.
- 3) Open the RSPF (or DSPF) paper feed guide to the A4R width.
- 4) Press [EXECUTE] key.  
The A4R width detection level is recognized.
- 5) Open the RSPF (or DSPF) paper feed guide to the A5R width.
- 6) Press [EXECUTE] key.  
The A5R width detection level is recognized.
- 7) Open the RSPF (or DSPF) paper feed guide to the minimum width.
- 8) Press [EXECUTE] key.  
The minimum width detection level is recognized.

When the above operation is nor 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



<b>53-7</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the RSPF/DSPF document size width sensor.
<b>Section</b>	

#### Operation/Procedure

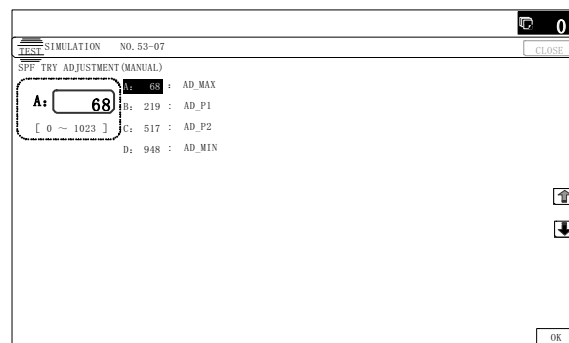
- 1) Select an adjustment target item with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

#### [RSPF]

	Item/Display		Setting range	Default value
A	AD_MAX	Max. width position	0 - 1023	72
B	AD_P1	A4R width position	0 - 1023	499
C	AD_P2	A5R width position	0 - 1023	805
D	AD_MIN	Min. width position	0 - 1023	955

#### [DSPF]

	Item/Display		Setting range	Default value
A	AD_MAX	Max. width position	0 - 1023	66
B	AD_P1	A4R width position	0 - 1023	438
C	AD_P2	A5R width position	0 - 1023	699
D	AD_MIN	Min. width position	0 - 1023	893



<b>53-8</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the document lead edge reference and the RSPF/DSPF mode document scan position.
<b>Section</b>	

#### 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 [EXCUTE] key. (The adjustment is performed and the adjustment value is saved.)

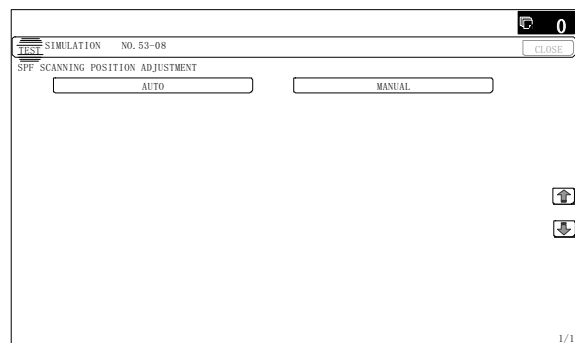
Item/Display	Content	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measurement distance	0-255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

<MANUAL: RSPF/DSPF mode document scan position adjustment>

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

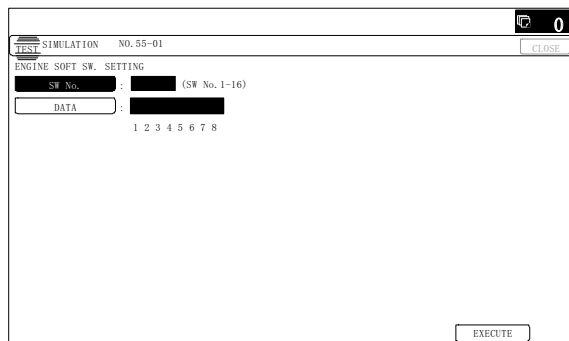
Item/Display	Content	Setting range	Default value
A ADJUST VALUE	RSPF/DSPF mode document scan position adjustment (Scanner stop position adjustment)	1 - 99	10

- When the adjustment value is increased, the scanner stop position in the RSPF/DSPF mode is shifted to the right.
- When the adjustment value is changed by 1, the position is shifted by 0.1mm.

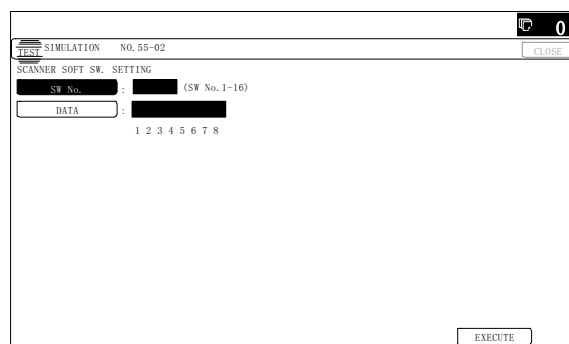


## 55

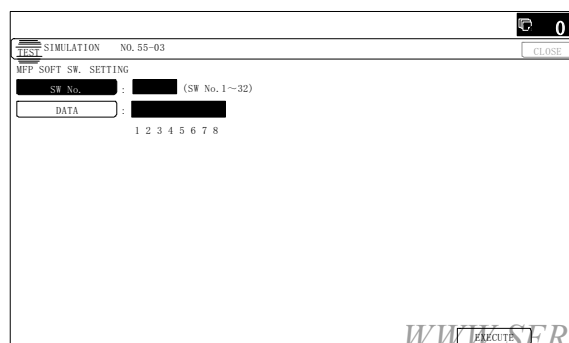
<b>55-1</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the engine control operations. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	



<b>55-2</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the scanner control operation. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	



<b>55-3</b>	
<b>Purpose</b>	(Do not use this function unless specially required.)
<b>Function (Purpose)</b>	Used to set the specifications of the control operation. (SOFT SW)
<b>Section</b>	
<b>Operation/Procedure</b>	



## 56

<b>56-1</b>	
<b>Purpose</b>	Backup
<b>Function (Purpose)</b>	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)
<b>Section</b>	

### 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.

ALL → HDD	All the memory contents are transferred to the HDD.
HDD → ALL	The HDD contents are transferred to all the memories.
EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM
SRAM → HDD	Data transfer from SRAM to HDD. (Including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents in the memory for FAX are also transferred to HDD.
HDD → SRAM	Transfer from HDD to SRAM (including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents of the FAX memory are also transferred to HDD.



<b>56-2</b>	
<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the data in the EEPROM, SRAM, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)
<b>Section</b>	

### Operation/Procedure

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

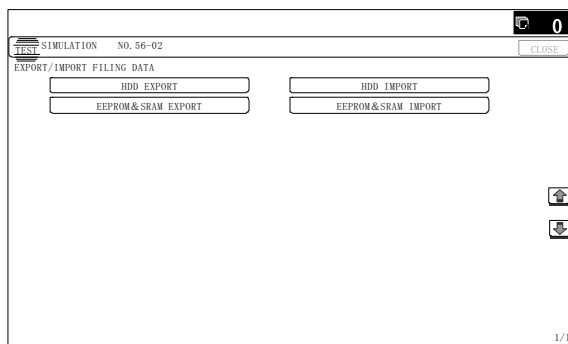
(Machine with the DSK installed)

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

PWB Type	Content	NOTE
Controller	Machine serial No.	
	Product key information	
	Various counter	Copy counter/FAX send counter etc.
	Trouble history	
PCU	Machine serial No.	
	Various counter	Maintenance counter
	Machine adjustment execute history	
	Trouble history	
SCU	Various counter	Maintenance counter
	Trouble history	

(HDD)

Classification	Content	NOTE
Japanese FEP	User dictionary	
Job end list	Job end list display data (The image send series include the preserved job list.)	
Log	Job log	Read from WEB is enable.
New N/A	<ul style="list-style-type: none"> <li>Print history information</li> <li>JAM history information</li> <li>Trouble history information</li> <li>Same position continuous jam count value</li> <li>Charging information</li> <li>Life information</li> </ul>	
Operation manual	E-manual	



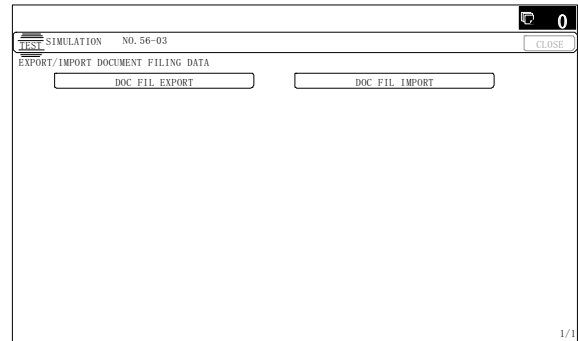
56-3

<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the document filing data to the USB memory.

**Section**

#### Operation/Procedure

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



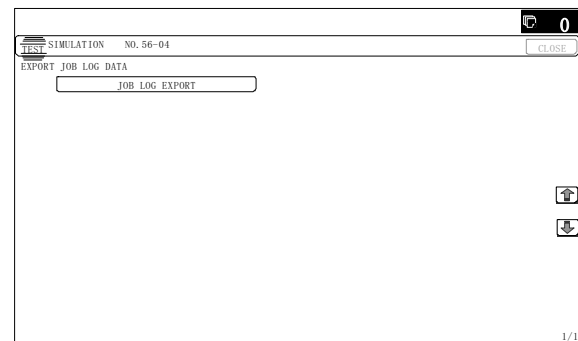
56-4

<b>Purpose</b>	Data backup
<b>Function (Purpose)</b>	Used to backup the JOB log data to the USB memory.

**Section**

#### Operation/Procedure

- 1) Insert the USB memory into the main unit.
- 2) Press [JOB LOG EXPORT] key.
- 3) Press [EXECUTE] key, and press [YES] key.  
 Data transfer selected in the procedure 2) is performed.  
 When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.





60-1

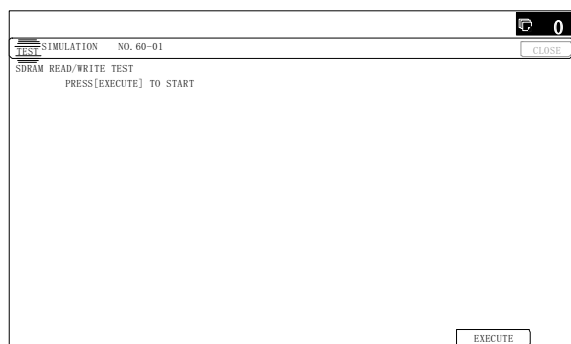
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations (read/write) of the MFP PWB image memory (SDRAM).

**Section****Operation/Procedure**

- 1) Press [EXECUTE] key.  
Start the test.

Result display	Description
OK	Success
NG	Fail
NONE	Not installed (Including DIMM trouble)
INVALID	Execution disable

SLOT	Description	
SLOT1	System memory (expansion)	DIMM1
SLOT2	System memory (standard)	DIMM2
SLOT3	Local memory (MFP expansion)	DIMM4
SLOT4	Local memory (MFP standard)	DIMM3
SLOT5	Local memory (Codec standard)	DIMM5
SLOT6	Local memory (ACREA standard)	-



60-2

<b>Purpose</b>	(This simulation is normally not used in the market.)
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<b>Function (Purpose)</b>	Used to set the MFP PWB onboard SDRAM.
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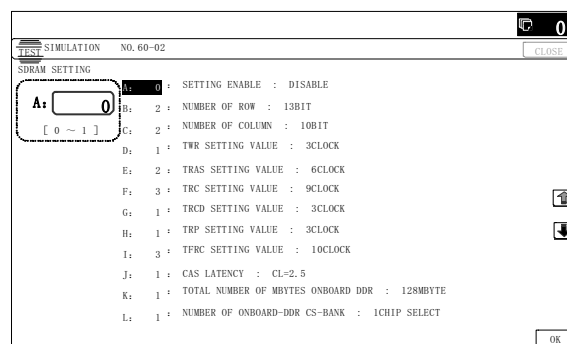
**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: Set to the default value.

Item/Display	Content	Setting range	Default value
A	SETTING ENABLE	DISABLE	0
		ENABLE	1
B	NUMBER OF ROW	11BIT	0
		12BIT	1
		13BIT	2

Item/Display	Content	Setting range	Default value
C	NUMBER OF COLUMN	8BIT	0
		9BIT	1
		10BIT	2
		11BIT	3
		12BIT	4
D	TWR SETTING VALUE	2CLOCK	0
		3CLOCK	1
		4CLOCK	2
		5CLOCK	3
E	TRAS SETTING VALUE	4CLOCK	0
		5CLOCK	1
		6CLOCK	2
		7CLOCK	3
F	TRC SETTING VALUE	6CLOCK	0
		7CLOCK	1
		8CLOCK	2
		9CLOCK	3
		10CLOCK	4
G	TRCD SETTING VALUE	2CLOCK	0
		3CLOCK	1
		4CLOCK	2
		5CLOCK	3
H	TRP SETTING VALUE	2CLOCK	0
		3CLOCK	1
		4CLOCK	2
		5CLOCK	3
I	TFRC SETTING VALUE	7CLOCK	0
		8CLOCK	1
		-	-
		20CLOCK	3
J	CAS LATENCY	CL=2	0
		CL=2.5	1
		CL=3	2
K	TOTAL NUMBER OF MBYTES ON BOARD DDR	NONE	0
		128M BYTE	1
		256M BYTE	2
L	NUMBER OF ON BOARD- DDR CS-BANK	NONE	0
		1CHIP SELECT	1
		2CHIP SELECT	2



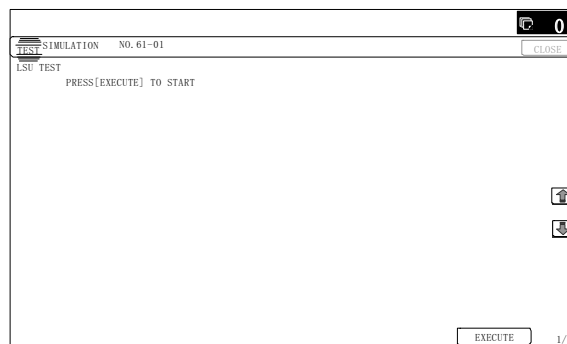
# 61

61-1	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the LSU polygon motor rotation and laser detection.
<b>Section</b>	LSU

## Operation/Procedure

- 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	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the laser power
<b>Section</b>	

## Operation/Procedure

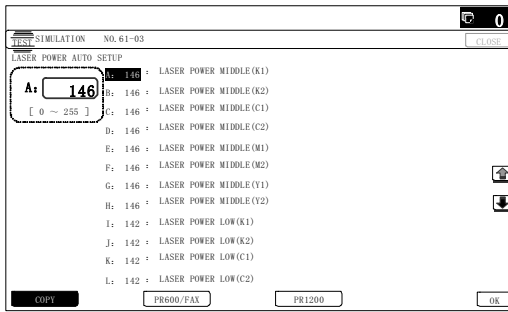
- Select a target mode for adjustment with [COPY] , [PR600/ FAX] and [PR1200] on the touch panel.
- Select an adjustment target item with [↑] [↓] key on the touch panel.
- Enter the adjustment value using the 10-key.
- Press [OK] key. (The set value is saved.)

When the laser power and the DUTY adjustment value are increased, the print density is increased and the line width of line images are increased.

Mode	Item/Display		Content	Setting range	De-fault value		Destination linkage
					41-sheet machine	50-sheet machine	
COPY	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/K1)	0 - 255	146	165	×
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/K2)	0 - 255	146	165	×
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/C1)	0 - 255	146	165	×
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/C2)	0 - 255	146	165	×
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/M1)	0 - 255	146	165	×
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/M2)	0 - 255	146	165	×
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/Y1)	0 - 255	146	165	×
	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/Y2)	0 - 255	146	165	×
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/K1)	0 - 255	142	142	×
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/K2)	0 - 255	142	142	×
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/C1)	0 - 255	142	142	×
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/C2)	0 - 255	142	142	×
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/M1)	0 - 255	142	142	×
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/M2)	0 - 255	142	142	×
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/Y1)	0 - 255	142	142	×
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/Y2)	0 - 255	142	142	×
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	146	165	×
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	146	165	×
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	142	142	×
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	142	142	×
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	0	○
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	0	○
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	0	○
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	0	○
	Y	LASER DUTY LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	0	○
	Z	LASER DUTY LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	0	○
	AA	LASER DUTY LOW(M)	Laser DUTY select low speed (M)	0 - 255	0	0	○
	AB	LASER DUTY LOW(Y)	Laser DUTY select low speed (Y)	0 - 255	0	0	○
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	0	○
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	0	○



Mode	Item/Display		Content	Setting range	De-fault value		Destination linkage
					41-sheet machine	50-sheet machine	
PR600/ FAX	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/K1)	0 - 255	133	165	X
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/K2)	0 - 255	133	165	X
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/C1)	0 - 255	146	165	X
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/C2)	0 - 255	146	165	X
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/M1)	0 - 255	146	165	X
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/M2)	0 - 255	146	165	X
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/Y1)	0 - 255	146	165	X
	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/Y2)	0 - 255	146	165	X
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/K1)	0 - 255	142	142	X
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/K2)	0 - 255	142	142	X
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/C1)	0 - 255	142	142	X
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/C2)	0 - 255	142	142	X
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/M1)	0 - 255	142	142	X
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/M2)	0 - 255	142	142	X
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/Y1)	0 - 255	142	142	X
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/Y2)	0 - 255	142	142	X
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	133	165	X
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	133	165	X
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	142	142	X
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	142	142	X
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	0	O
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	0	O
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	0	O
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	0	O
	Y	LASER DUTY LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	0	O
	Z	LASER DUTY LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	0	O
	AA	LASER DUTY LOW (M)	Laser DUTY select low speed (M)	0 - 255	0	0	O
	AB	LASER DUTY LOW (Y)	Laser DUTY select low speed (Y)	0 - 255	0	0	O
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	0	O
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	0	O
PR1200	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/K1)	0 - 255	133	165	X
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/K2)	0 - 255	133	165	X
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/C1)	0 - 255	146	165	X
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/C2)	0 - 255	146	165	X
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/M1)	0 - 255	146	165	X
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/M2)	0 - 255	146	165	X
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/Y1)	0 - 255	146	165	X
	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/Y2)	0 - 255	146	165	X
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/K1)	0 - 255	142	142	X
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/K2)	0 - 255	142	142	X
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/C1)	0 - 255	142	142	X
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/C2)	0 - 255	142	142	X
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/M1)	0 - 255	142	142	X
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/M2)	0 - 255	142	142	X
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/Y1)	0 - 255	142	142	X
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/Y2)	0 - 255	142	142	X
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	133	165	X
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	133	165	X
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	142	142	X
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	142	142	X
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	0	X
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	0	X
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	0	X
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	0	X
	Y	LASER DUTY LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	0	X
	Z	LASER DUTY LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	0	X
	AA	LASER DUTY LOW (M)	Laser DUTY select low speed (M)	0 - 255	0	0	X
	AB	LASER DUTY LOW (Y)	Laser DUTY select low speed (Y)	0 - 255	0	0	X
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	0	X
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	0	X



61-4

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to print the print image skew adjustment pattern. (LSU unit)

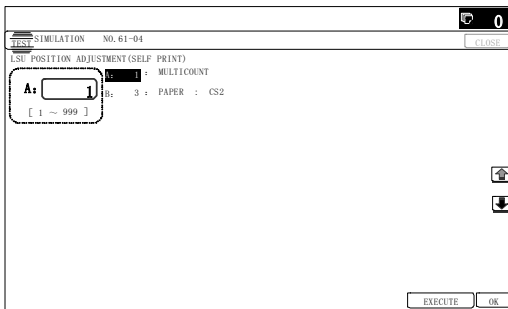
#### Section

#### Operation/Procedure

- 1) Select a target item with [↑] [↓] key on the touch panel.
- 2) Enter the print conditions setting value with 10 key.
- 3) Press [EXECUTE] key.

The print image skew adjustment pattern is printed.

Item/Display		Content			Default value
A	MULTICOUNT	Print quantity (1-999)			1
B	PAPER	MFT	Tray selection	1	3 (CS2)
				2	
				3	
				4	
				5	
				6	
				LCC	



62

62-1

<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to execute the hard disk format (except operation manual area).

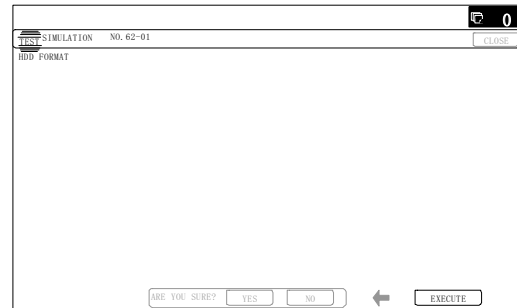
#### Section

#### Operation/Procedure

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

Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.



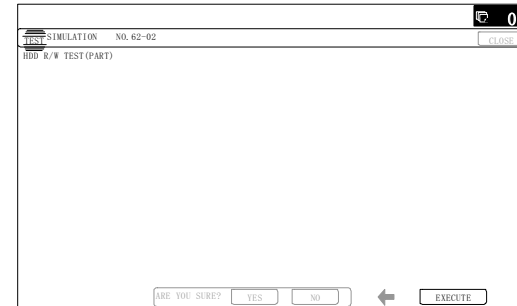
62-2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check read/write of the hard disk (partial).

#### Section

#### Operation/Procedure

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



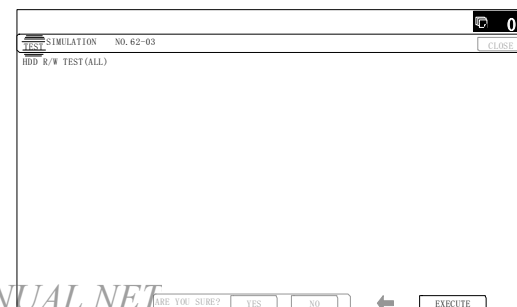
62-3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check read/write of the hard disk (all areas).

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
- Read/write operations are performed.



<b>62-6</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to perform the self diagnostics of the hard disk.
<b>Section</b>	

#### Operation/Procedure

- 1) Select the self diag area.
- 2) Press [EXECUTE] key.

The self diag operation is performed.

NOTE:

E7-03 error occurs. If there may be a trouble in the HDD, use this simulation to check the HDD.

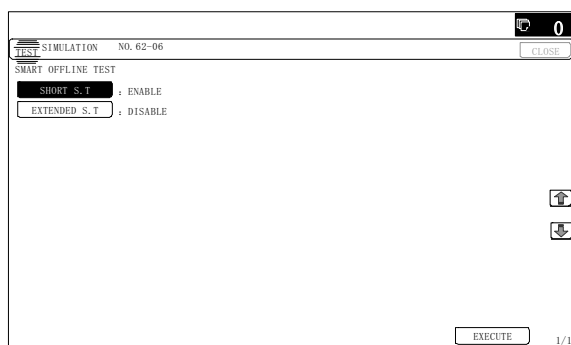
SHORT S.T	Partial area diag
EXTENDED S.T	All area diag

When the operation is completed, [EXECUTE] key returns to the normal display.

Normal completion → "OK(RESULT:0)" is displayed.

Abnormal end → "NG(RESULT: Other than 0)" is displayed.

\* If the simulation cannot be executed or terminated abnormally for some reason, "ERROR" is displayed on the corresponding section.



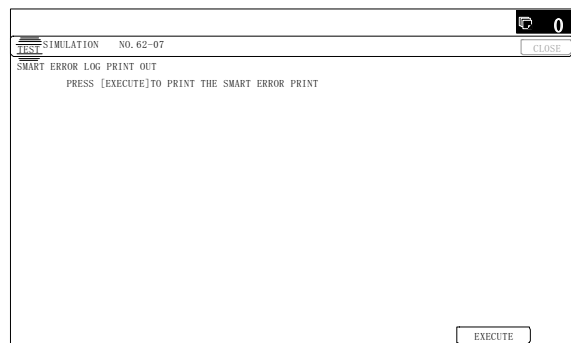
<b>62-7</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to print the hard disk self diagnostics error log.
<b>Section</b>	

#### Operation/Procedure

- 1) Press [EXECUTE] key.

ERROR LOG SECTOR of the SMART function is executed, and the result is printed.

When the operation is completed, [EXECUTE] key returns to the normal display.



<b>62-8</b>	
<b>Purpose</b>	
<b>Function (Purpose)</b>	Used to format the hard disk. (Excluding the system area and the operation manual area)
<b>Section</b>	

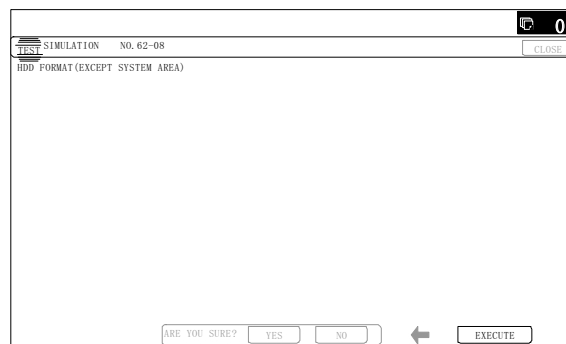
#### Operation/Procedure

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

Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

\* When the HDD formatting (except for the system area) is not completed normally, "HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.



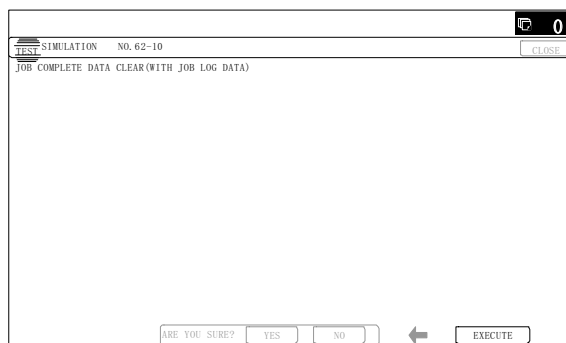
<b>62-10</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the job log data.
<b>Section</b>	

#### Operation/Procedure

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

Used to delete the job log data.

When the operation is completed, [EXECUTE] key returns to the normal display.



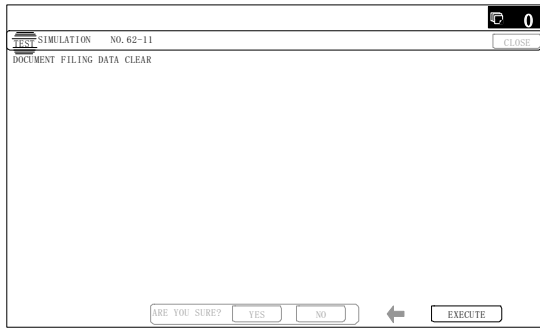
<b>62-11</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to delete the document filing data.
<b>Section</b>	

#### 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

<b>Purpose</b>	Setting
<b>Function (Purpose)</b>	Used to set Enable/Disable of auto format in a hard disk trouble.

**Section**

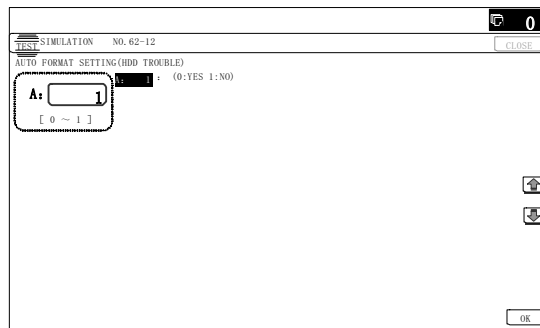
#### Operation/Procedure

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

The set value is saved.

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

A	0	Enable
	1	Disable (Default)



62-13

<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to format the hard disk. (only the operation manual area)

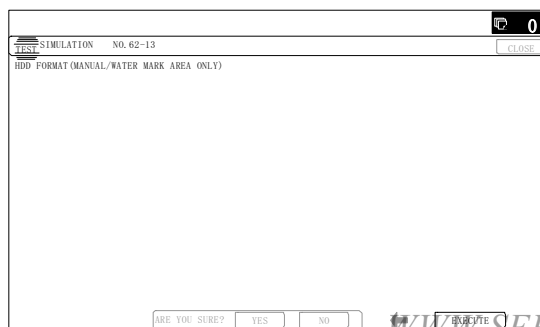
**Section**

#### Operation/Procedure

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

The operation manual data are deleted.

When the operation is completed, [EXECUTE] key returns to the normal display.



63

63-1

<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the shading correction result.

<b>Section</b>	Scanner
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#### Operation/Procedure

- 1) Select a target color to display with [R] [G] [B] on the touch panel.

#### [DSPF]

Item/Display	Content	NOTE	
GAIN ODD	Gain adjustment value (odd number)		
GAIN EVEN	Gain adjustment value (Even number)		
OFFSET ODD	Offset value (odd number)		
OFFSET EVEN	Offset value (even number)		
SMP AVE ODD	Reference plate sampling average value (ODD)		
SMP AVE EVEN	Reference plate sampling average value (EVEN)		
TARGET VALUE	Target value		
BLACK LEVEL	Black output level		
ERROR CODE	Error code (0, 1 - 14) (for debug)	0	No error
		1	STAGE1: Loop number over
		2	STAGE2: The target value is under the specified value.
		3	STAGE3: The gain set value is negative.
		4	END is not asserted. (Gain adjustment)
		5	(reserve)
		6	STAGE2: Underflow
		7	Black shading error
		8	Other error
		9	END is not asserted. (White shading)
		10	END is not asserted. (Black shading)
		11	END is not asserted. (Light quantity correction)
		12	END is not asserted. (Scan)
		13	Register check error. (When booting/Gain)
		14	Register check error. (Before light quantity correction)
DSPF FACE WHITE LEVEL 1ST	First scan DSPF white reference level		
DSPF FACE WHITE LEVEL 2ND	Second scan DSPF front surface white reference level		

# [RSPF]

Item/ Display	Content	NOTE	
GAIN ODD	Gain adjustment value (odd number)		
GAIN EVEN	Gain adjustment value (Even number)		
OFFSET ODD	Offset value (odd number)		
OFFSET EVEN	Offset value (even number)		
SMP AVE ODD	Reference plate sampling average value (ODD)		
SMP AVE EVEN	Reference plate sampling average value (EVEN)		
TARGET VALUE	Target value		
BLACK LEVEL	Black output level		
ERROR CODE	Error code (0, 1-14) (for debug)	0	No error
		1	Loop number over
		2	The target value is under the specified value.
		3	The gain set value is negative.
		4	END is not asserted. (Gain adjustment)
		5	(reserve)
		6	Underflow
		7	Black shading error
		8	Other error
		9	END is not asserted. (White shading)
		10	END is not asserted. (Black shading)
		11	END is not asserted. (Light quantity correction)
		12	END is not asserted. (Scan)
		13	Register check error. (When booting/ Before gain)
14	Register check error. (Before light quantity correction)		
RSPF WHITE LEVEL 1ST	First scan RSPF white reference level		
RSPF WHITE LEVEL 2ND	Second scan RSPF white reference level		

SHADING DATA DISPLAY	
GAIN ODD	: 147
GAIN EVEN	: 143
OFFSET ODD	: 0
OFFSET EVEN	: 0
SMP AVE ODD	: 0
SMP AVE EVEN	: 0
TARGET VALUE	: 0
BLACK LEVEL	: 0
ERROR CODE	: 0
DSPF FACE WHITE LEVEL 1ST	: 0
DSPF FACE WHITE LEVEL 2ND	: 0

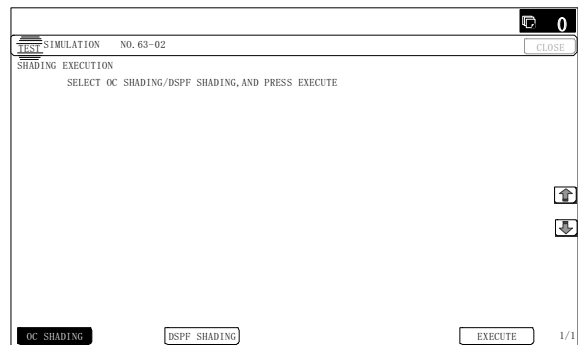
## 63-2

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform shading.
<b>Section</b>	

### Operation/Procedure

- (When DSPF model)  
Select [OC SHADING] key or [DSPF SHADING] key, and press [EXECUTE] key.
- (When RSPF model)  
Press [EXECUTE] key.  
Used to perform shading.

When the operation is completed, [EXECUTE] key returns to the normal display.



## 63-3

<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to perform scanner (CCD) color balance and gamma auto adjustment.
<b>Section</b>	Scanner

### Operation/Procedure

- Place the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) on the reference position of the left rear frame side of the document table.
- Select [OC] key or [DSPF] key. ([DSPF] key can be selected only when the DSPF is installed.)
- Press [EXECUTE] key.  
The scanner (CCD) color balance automatic adjustment is performed.

When the operation is completed, [EXECUTE] key returns to the normal display.

After completion of the operation, press [RESULT] key, and the adjustment data are displayed. At that time, the target color of data display can be selected with [R] [G] [B] key.

SCANNER COLOR BALANCE AUTO ADJUSTMENT	
OC # 1:197, # 2:185, # 3:165, # 4:148, # 5:117, # 6:110, # 7: 88, # 8: 75, # 9: 55, #10: 45, #11: 38, #12: 29, #13: 27, #14: 21, #15: 18, #16: 15, #17: 10, #18: 8, #19: 5, #20: 4, #22: 2, #24: 2	
CM 2:180, CM 6:141, CM12: 89	RM 2:166, RM 6: 43, RM12: 4
MM 2:180, MM 6:141, MM12: 89	GM 2:166, GM 6: 43, GM12: 4
YW 2:180, YW 6:141, YW12: 89	BW 2:166, BW 6: 43, BW12: 4

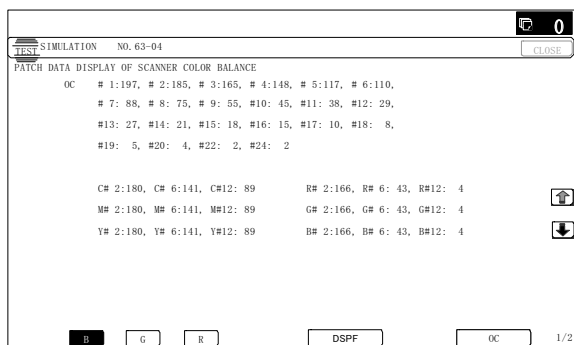
<b>63-4</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the SIT chart patch density.
<b>Section</b>	

#### Operation/Procedure

- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left rear frame side of the document table.
- 2) Select [OC] key or [DSPF] key. ([DSPF] key can be selected only when the DSPF is installed.)
- 3) Press [EXECUTE] key.  
The patch of the SIT chart is scanned.  
When the operation is completed, [EXECUTE] key returns to the normal display.
- 4) Select a data display mode.

THROUGH GAMMA	SIT chart scan data
COPY GAMMA	Copy mode gamma process data of the SIT chart scan data
SCANNER GAMMA	Image send mode gamma process data of the SIT chart scan data

Select an target display color with [R] [G] [B] keys.



<b>63-5</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to perform the scanner (CCD) color balance and gamma default setting.
<b>Section</b>	

#### Operation/Procedure

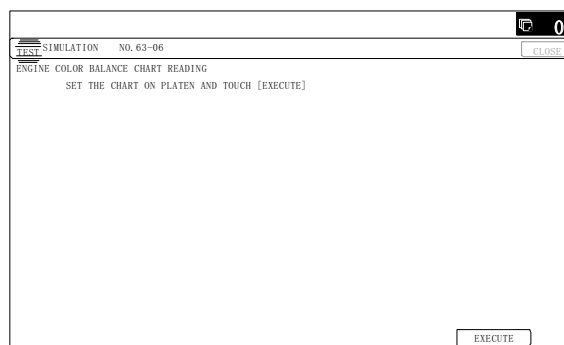
- 1) Select [SIDE A(OC)] key or [SIDE B(DSPF)] key. ([SIDE B(DSPF)] key can be selected only when the DSPF is installed.)
- 2) Press [EXECUTE] key, and press [OK] key
- 3) The scanner (CCD) color balance and gamma are set to the default.



<b>63-6</b>	
<b>Purpose</b>	Adjustment/Setting/Operation data check
<b>Function (Purpose)</b>	Used to display the scan level and the density level of the copy color balance adjustment patch.
<b>Section</b>	

#### Operation/Procedure

- 1) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
- 2) Press [EXECUTE] key.  
The patch image of the adjustment pattern sheet is scanned.  
Select a target color with [C] [M] [Y] [K] key.



<b>63-7</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to register the service target of the copy mode auto color balance adjustment.
<b>Section</b>	

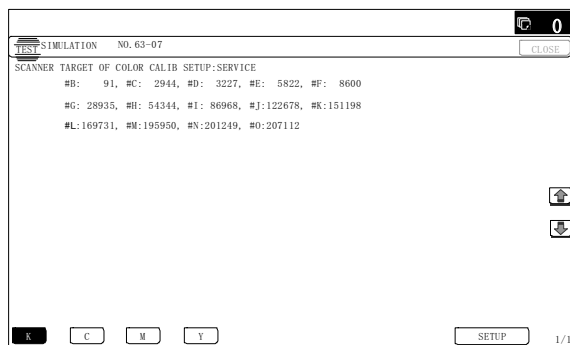
#### Operation/Procedure

- 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.

NOTE: 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
BASE	Background sampling value





63-8

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the default of the service target of the copy mode auto color balance adjustment.

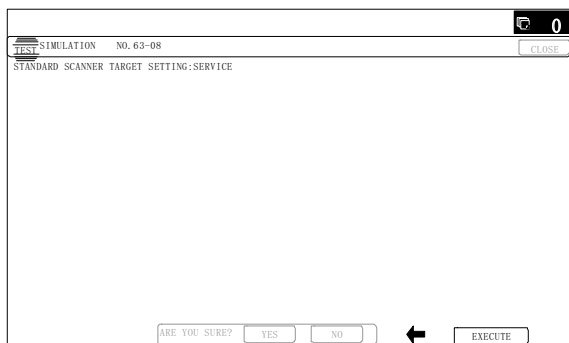
#### Section

#### 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

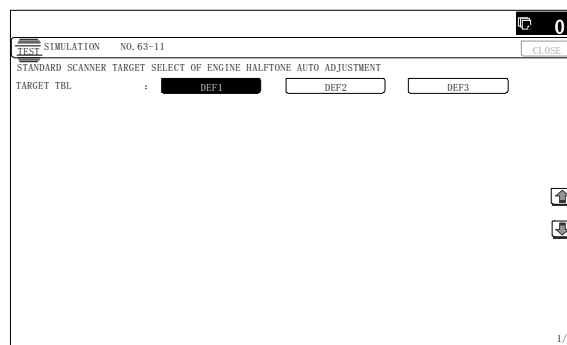
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the target color balance of the copy mode auto color balance adjustment.

#### Section

#### Operation/Procedure

- 1) Select the target color balance with the touch panel.

Item/Display		Content	Default value
Target color balance	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

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Test print. (Self print) (Color mode)
<b>Section</b>	

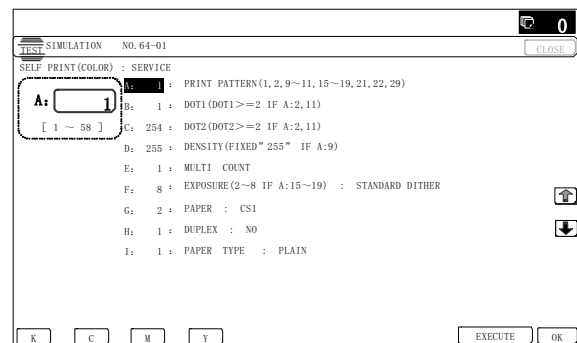
#### Operation/Procedure

- 1) Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10 key.  
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 - 11,15 - 19,21,22,29)		Specification of the print pattern (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 15 - 19, 21, 22, 29)		1
B	DOT1 (DOT1>=2 IF A:2,11)		Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2,11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A:2,11)		Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2,11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)		Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT		Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 15 - 19)	THROUGH	Exposure mode specification	No process (through)	1-8 (Pattern 15-19: 2-8 except above:1-8)	1	8 (STANDARD DITHER)
		CHAR/PIC		Text/Printed Photo		2	
		CHAR/PRPIC		Text/ Photograph		3	
		CHAR		Text		4	
		PRINT PIC		Printed Photo		5	
		PRINT PAPER		Photograph		6	
		MAP		Map		7	
		STANDARD DITHER		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
		H	DUPLEX	YES		Duplex print selection	
NO				No		1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 4	1	1 (PLAIN)

<Print pattern of Item A>

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	
2	Dot print		-
9	Each color 10% area (A4/A4E) density print		Each interval is 41.86mm (989dot).
10	8-color belt print		
11	4-color dot print (sub scan)		
15	16 gradations + M by N (center gradations only): Sub scan)	MFP ASIC	<ul style="list-style-type: none"> <li>When all colors are selected, print is made in CMY.</li> <li>16 gradations print</li> </ul>
16	16 gradations + M by N (center gradations only): Main scan)		<ul style="list-style-type: none"> <li>The gradation is changed for every 256 dots.</li> </ul>
17	All background (half tone)	Half tone (MFP ASIC rear process)	When all colors are selected, print is made in CMY.
18	256 gradations pattern (Other dither)		<ul style="list-style-type: none"> <li>When all colors are selected, print is made in CMY.</li> </ul>
19	256 gradations pattern (For text dither)		<ul style="list-style-type: none"> <li>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)</li> <li>Print is made from 255 gradations, and 0-254 gradations are printed.</li> </ul>
20	-	-	-
21	4-point dot print (main scan)	LSU-ASIC	
22	Slant line		
29	Dot print 1200dpi		



<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Test print. (Self print) (Monochrome mode)
<b>Section</b>	

**Operation/Procedure**

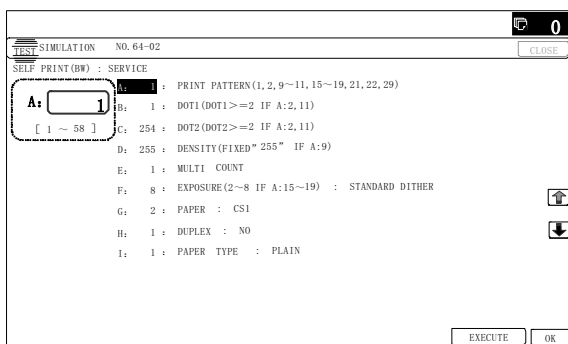
- Set the print conditions.  
Select an item to be print condition with [ $\uparrow$ ] [ $\downarrow$ ] keys.  
Set the print conditions with 10 key.
- Press [EXECUTE] key.  
The test print (self print) is performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN (1,2,9 - 11,15 - 19,21,22,29)	Print pattern specification (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 15 - 19, 21, 22, 29)		1
B	DOT1 (DOT1>=2 IF A:2,11)	Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2,11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A:2,11)	Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2,11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)	Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT	Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 15 - 19)	THROUGH	Exposure mode specification	No process (through)	1	8 (STANDARD DITHER)
		CHAR/PIC		Text/Printed Photo	2	
		CHAR/PRPIC		Text/ Photograph	3	
		CHAR		Text	4	
		PRINT PIC		Printed Photo	5	
		PRINT PAPER		Photograph	6	
		MAP		Map	7	
		STANDARD DITHER		Dither without correction	8	
G	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	
H	DUPLEX	YES	Duplex print selection	Yes	0	1 (NO)
		NO		No	1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1	1 (PLAIN)
		HEAVY		Heavy paper	2	
		OHP		OHP	3	
		ENVELOPE		Envelope	4	

&lt;Print pattern of Item A&gt;

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	-
2	Dot print		
9	Each color 10% area (A4/A4R) density print		
10	8-color belt print		
11	4-color dot print (sub scan)	MFP ASIC	Print of each color is made for every 1/4 of the sub scanning paper size.  • When all colors are selected, print is made in CMY. • 16 gradations print • The gradation is changed for every 256 dots.
15	16 gradations + M by N (center gradations only): Sub scan)		
16	16 gradations + M by N (center gradations only): Main scan)		

Pattern No.	Content	Pattern generating section	NOTE
17	All background (half tone)	Half tone (MFP ASIC after process)	-
18	256 gradations pattern (Other dither)		-
19	256 gradations pattern (For text dither)		-
20	-	-	-
21	4-point dot print (main scan)	LSU-ASIC	
22	Slant line		
29	Dot print 1200dpi		



64-4	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (256 gradations)

### Section

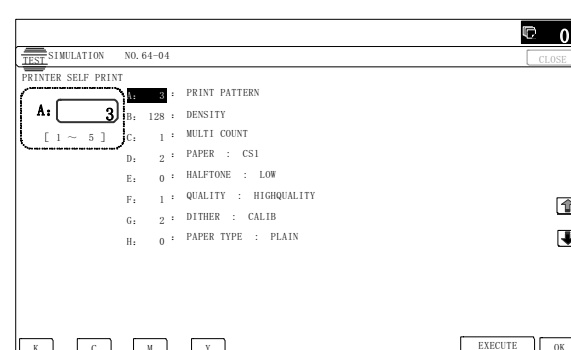
#### Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10 key.  
Select a target print color with [K] [C] [M] [Y] key.
- Press [EXECUTE] key.
- The test print (self print) is performed.

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 5		3
B	DENSITY		Used to specify the print gradation.		1 - 255		128
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
E	HALFTONE	LOW	Halftone	Low line number	0 - 1	0	0 (LOW)
		HIGH		High line number		1	
F	QUALITY	STANDARD	Image quality setting	Standard	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality		1	
		FINE		Ultra fine text		2	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2 (CALIB)
		CALIB		Calibration		2	
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0
		HEAVY		Heavy paper		1	

<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	Half tone pattern (COLOR)
5	Half tone pattern (B/W)



64-5	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (PCL)
<b>Section</b>	

#### Operation/Procedure

- Set the print conditions.  
 Select an item to be print condition with [↑] [↓] keys.  
 Set the print conditions with 10 key.  
 Select a target print color with [K] [C] [M] [Y] key.
- Press [EXECUTE] key.  
 The test print (self print) is performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN	Specification of the print pattern (* For details, refer to the description below.)		1 - 3		3
B	DITHER	STRAIGHT	Specification of dither correction	1 - 2	1	2
		CALIB	Calibration		2	
C	MULTI COUNT	Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	1 - 6	1	2 (CS1)
		CS1			2	
		CS2			3	
		CS3			4	
		CS4			5	
		LCC			6	
E	HALFTONE	LOW(IMAGE)	Halftone	0 - 1	0	0 (LOW)
		HIGH(TEXT)			1	
F	QUALITY	STANDARD	Image quality setting	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY			1	
		FINE			2	
G	INTENT	PERCEPTUAL	Rendering indent	0 - 2	0	0 (PERCEPTUAL)
		COLORIMETRIC			1	
		SATURATION			2	
H	OUTPUT PROFILE	SHARP	Output profile	0 - 1	0	0 (SHARP)
		STANDARD			1	
I	RGB SOURCE PROFILE	SRGB	RGB source profile	0 - 4	0	1 (Gamma1.6)
		GAMMA1.6			1	
		GAMMA1.8			2	
		GAMMA2.0			3	
		TONER SAVE			4	
J	GRAY COMPENSATION	K	Gray compensation	0 - 1	0	0 (K)
		KCMY			1	
K	TONER SAVE MODE	ON	Toner save mode	0 - 1	0	1 (OFF)
		OFF			1	
L	PAPER TYPE	PLAIN	Paper type	0 - 1	0	0 (PLAIN)
		HEAVY			1	

<Print pattern of Item A>

Pattern No.	Content
1	COLOR
2	B/W
3	Continuous COLOR,B/W

64-6	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Printer test print. (Self print) (PS)
<b>Section</b>	

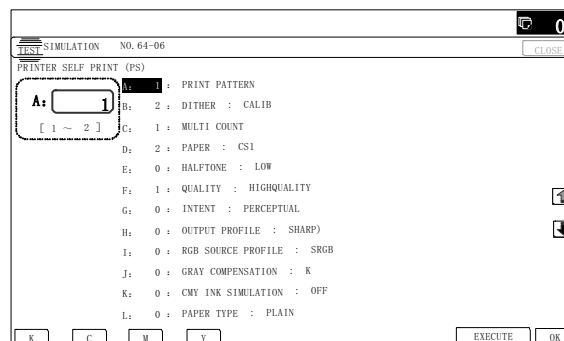
#### Operation/Procedure

- Set the print conditions.  
 Select an item to be print condition with [↑] [↓] keys.  
 Set the print conditions with 10 key.  
 Select a print color with [K] [C] [M] [Y] key.
- Press [EXECUTE] key.  
 The test print (self print) is performed.

Item/Display		Content		Setting range		Default value
A	PRINT PATTERN	Specification of the print pattern (* For details, refer to the description below.)		1 - 2		1
B	DITHER	STRAIGHT	Specification of dither correction	1 - 2	1	2
		CALIB	Calibration		2	
C	MULTI COUNT	Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	1 - 6	1	2 (CS1)
		CS1			2	
		CS2			3	
		CS3			4	
		CS4			5	
		LCC			6	
E	HALFTONE	LOW(IMAGE)	Halftone	0 - 1	0	0 (LOW)
		HIGH(TEXT)			1	
F	QUALITY	STANDARD	Image quality setting	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY			1	
		FINE			2	
G	INTENT	PERCEPTUAL	Rendering indent	0 - 2	0	0 (PERCEPTUAL)
		COLORIMETRIC			1	
		SATURATION			2	
H	OUTPUT PROFILE	SHARP	Output profile	0 - 1	0	0 (SHARP)
		STANDARD			1	
I	RGB SOURCE PROFILE	SRGB	RGB source profile	0 - 5	0	1 (GAMMA1.6)
		GAMMA1.6			1	
		GAMMA1.8			2	
		GAMMA2.0			3	
		TONER SAVE			4	
J	GRAY COMPENSATION	K	Gray compensation	0 - 1	0	0 (K)
		KCMY			1	
K	CMY INK SIMULATION	OFF	Ink simulation	0 - 3	0	0 (OFF)
		SWOP			1	
		EURO			2	
		JAPAN COLOR			3	
L	PAPER TYPE	PLAIN	Paper type	0 - 1	0	0 (PLAIN)
		HEAVY			1	

<Print pattern of Item A>

Pattern No.	Content
1	COLOR
2	B/W



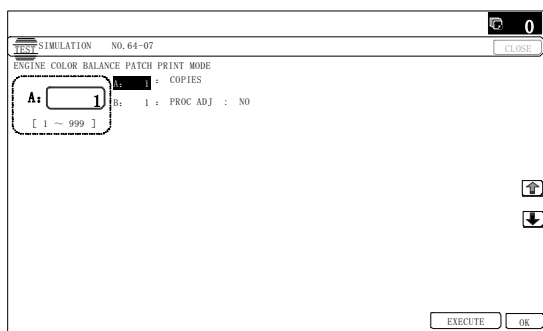
<b>64-7</b>	
<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to print the adjustment pattern of the test print .(Self print). (The adjustment pattern of SIM46-21 is printed.)

#### Section

#### Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with [↑] [↓] keys.  
Set the print conditions with 10 key.
- Press [EXECUTE] key.  
The adjustment pattern of SIM46-21 is printed.

Item/Display	Content	Setting range	Default value	Writing
A COPIES	Number of print	1 - 999	1	No
B PROC ADJ	YES 0	0 - 1	1	Yes
	NO 1			
	The half tone process control correction value is reflected.			
	The half tone process control correction value is not reflected.			



## 65

<b>65-1</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Used to adjust the touch panel (LCD display section) detection coordinates.

#### 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.



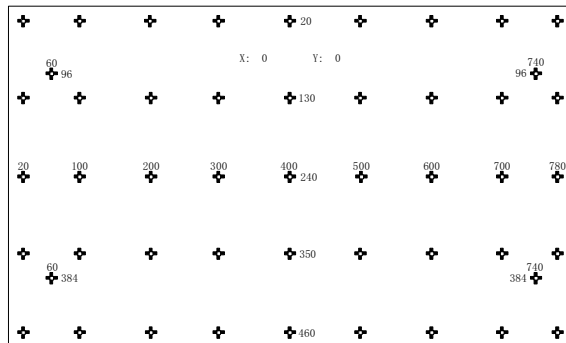
<b>65-2</b>	
<b>Purpose</b>	Operation check/test
<b>Function (Purpose)</b>	Used to display the touch panel (LCD display section) detection coordinates.

#### 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.



<b>65-5</b>	
<b>Purpose</b>	Operation check/test
<b>Function (Purpose)</b>	Used to check the operation panel key input.

#### Section

#### Operation/Procedure

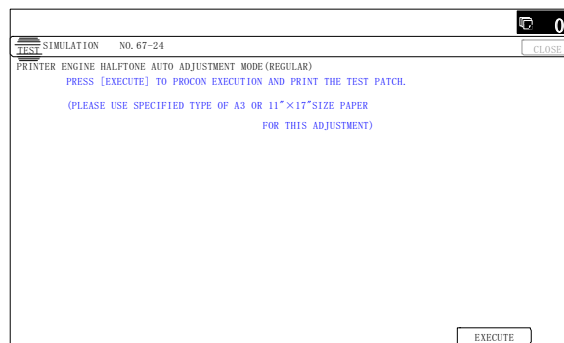
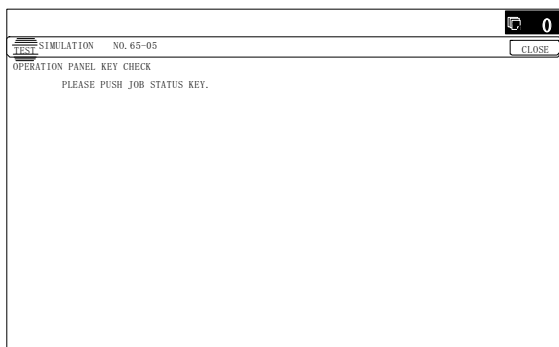
Press the keys sequentially according to the guidance displayed on the screen.

If the key entry is effective, the guidance for pressing the next key is displayed. When all the key entries are completed, "COMPLETE" is displayed.

#### <Check target key>

8.5 Inch LCD model
JOB STATUS
SYSTEM SETTINGS
HOME
1
2
3
4
5
6
7
8
9
AUDIT CLEAR
0
PROGRAM
CLEAR
STOP
CLEAR ALL/RESET
START (COLOR)
START (MONO)

8.1 Inch LCD model
DOCUMENT FILING
IMAGE SEND
COPY
JOB STATUS
FUNCTION
SYSTEM SETTINGS
1
2
3
4
5
6
7
8
9
AUDIT CLEAR
0
PROGRAM
CLEAR
STOP
CLEAR ALL/RESET
START (COLOR)
START (MONO)



**67**

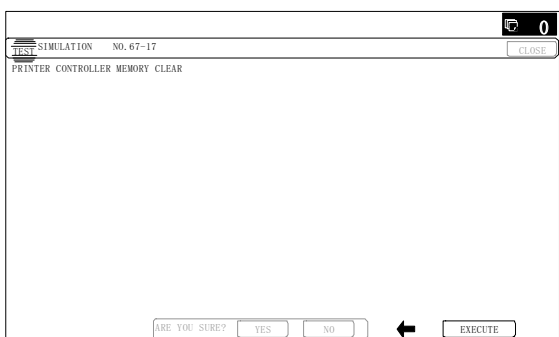
**67-17**

<b>Purpose</b>	
<b>Function (Purpose)</b>	Printer reset
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The set data related to the printer are initialized. (Including the NIC setting.)

When the operation is completed, [EXECUTE] key returns to the normal display.

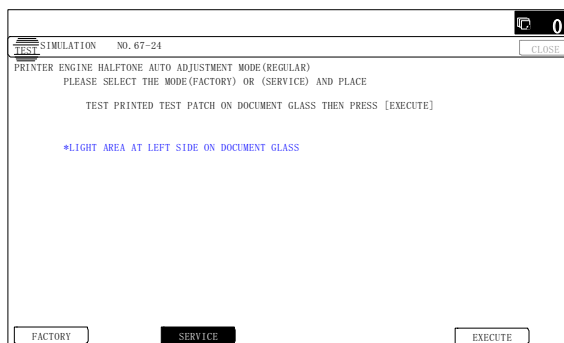


**67-24**

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Printer color balance adjustment (Auto adjustment)
<b>Section</b>	Printer

#### 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 printer color balance auto adjustment is performed, and the adjustment result is printed.
- 4) Press [OK] key.  
The half tone correction target registration is processed.



**67-25**

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Printer color balance adjustment (Manual adjustment)
<b>Section</b>	Printer

#### Operation/Procedure

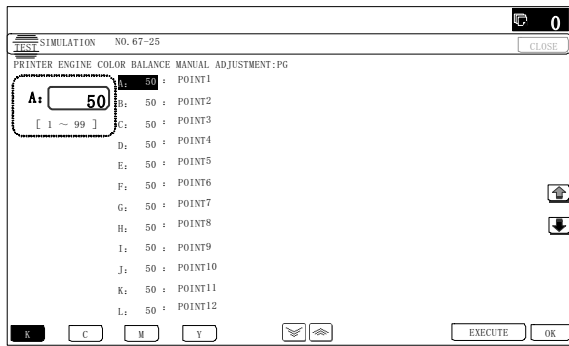
- 1) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
- 2) Select a target adjustment density level with [↑] [↓] key on the touch panel.
- 3) Enter the set value with 10-key.  
\* When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 4) Press [OK] key. (The set value is saved.)

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 - 99	50
B	POINT2	1 - 99	50
C	POINT3	1 - 99	50
D	POINT4	1 - 99	50
E	POINT5	1 - 99	50
F	POINT6	1 - 99	50
G	POINT7	1 - 99	50
H	POINT8	1 - 99	50
I	POINT9	1 - 99	50
J	POINT10	1 - 99	50
K	POINT11	1 - 99	50
L	POINT12	1 - 99	50
M	POINT13	1 - 99	50
N	POINT14	1 - 99	50
O	POINT15	1 - 99	50
P	POINT16	1 - 99	50
Q	POINT17	1 - 99	50





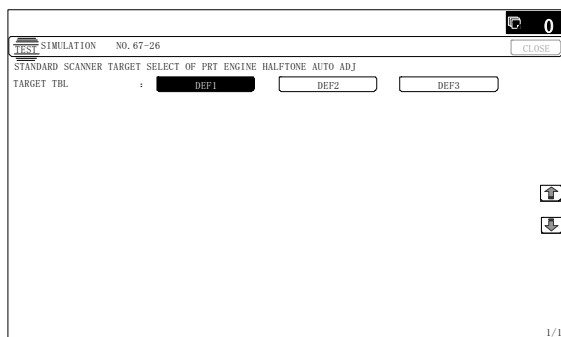
67-26

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the target color balance of the printer mode auto color balance adjustment.
<b>Section</b>	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 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.	



67-27

<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the service target of the printer mode auto color balance adjustment.
<b>Section</b>	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.

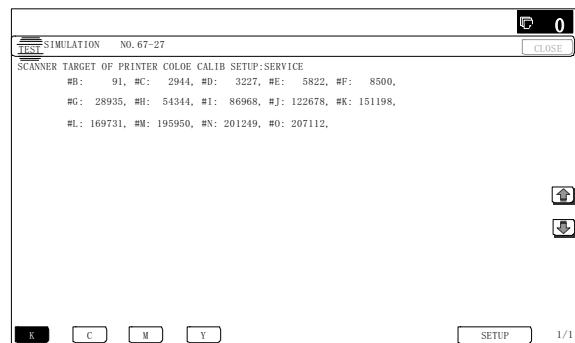
The service target of the printer mode auto color balance adjustment is set according to the scanned adjustment pattern sheet patch images.

The registered color balance and the density are displayed.

Select a target color with [C] [M] [Y] [K] key.

NOTE: 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
BASE	Background sampling value



<b>67-28</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the default of the service target of the printer mode auto color balance adjustment.
<b>Section</b>	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.



<b>67-31</b>	
<b>Purpose</b>	Data clear
<b>Function (Purpose)</b>	Used to clear the printer calibration value.
<b>Section</b>	Printer

#### Operation/Procedure

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

The printer calibration data (Half tone correction data) are cleared.

(The printer color balance correction is canceled.)



<b>67-33</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to change the gamma of the printer screen. (for PCL/PS)
<b>Section</b>	Printer

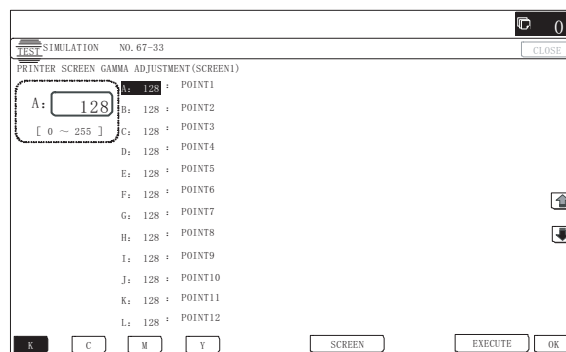
#### Operation/Procedure

- 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 [↑] [↓] 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
SCREEN1	600dpi 1bit Photo
SCREEN2	600dpi 1 bit Graphics
SCREEN3	600dpi 4 bit Photo
SCREEN4	600dpi 4 bit Graphics
SCREEN5	1200dpi 1 bit Photo
SCREEN6	1200dpi 1 bit Graphics
SCREEN7	B/W 600dpi 1 bit
SCREEN8	B/W 600dpi 4 bit
SCREEN9	B/W 1200dpi 1 bit
SCREEN10	Toner Save B/W
HEAVY PAPER	Printer paper kind manual gamma correction (Heavy paper)



<b>67-34</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)
<b>Section</b>	Printer

#### Operation/Procedure

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

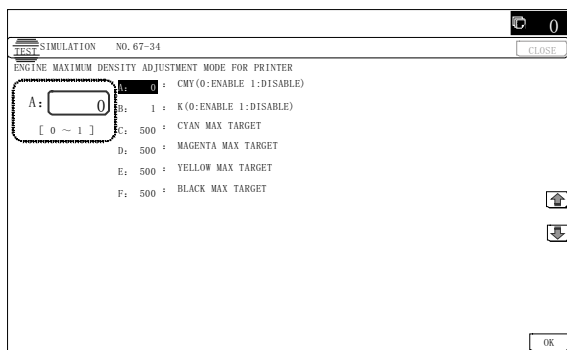
0	Enable
1	Disable

- 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 CMY engine highest density correction mode : Disable	
B	K (0: ENABLE 1: DISABLE)	0 K engine highest density correction mode : Enable	1
		1 K engine highest density correction mode : Disable	
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction	500
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction	500
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction	500

- 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.

NOTE: 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.



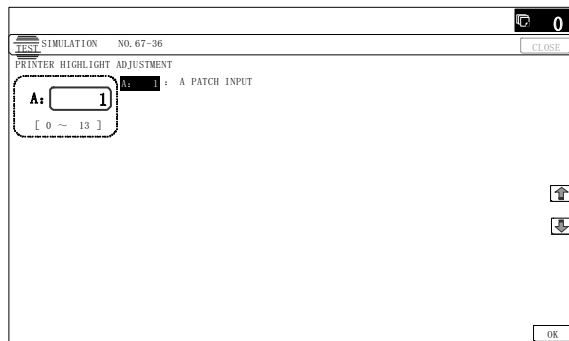
<b>67-36</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to adjust the density in the low density section.
<b>Section</b>	Printer

#### Operation/Procedure

- 1) Enter the adjustment value using the 10-key.
- 2) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.



<b>67-52</b>	
<b>Purpose</b>	Adjustment/Setup
<b>Function (Purpose)</b>	Used to set the default of the gamma of the printer screen. (for PCL/PS)
<b>Section</b>	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, it is reset to the default.

Item/Display	Content
Screen	HEAVYPAPER
	1200DPI_1BIT
	600DPI_1BIT
	B/W
	SCREEN7(B/W 600dpi 1bit)
	SCREEN8(B/W 600dpi 4bit)
	SCREEN9(B/W 1200dpi 1bit)
	SCREEN10(Toner Save B/W)



<b>67-54</b>	
<b>Purpose</b>	Adjustment
<b>Function (Purpose)</b>	Printer color balance adjustment (Automatic adjustment for each dither)
<b>Section</b>	Printer

#### Operation/Procedure

This simulation is used to adjust the color balance, the density, and the gradation in the monochrome mode, the heavy paper mode, the 1200dpi mode, and the 600dpi 1bit mode.

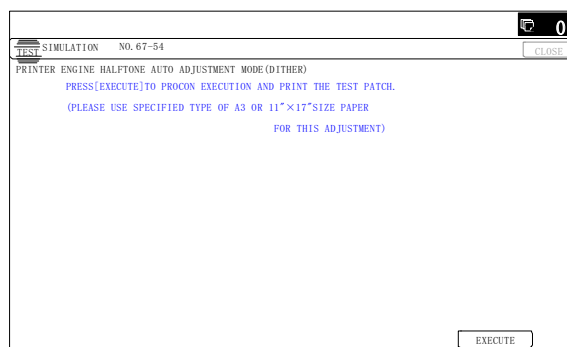
This simulation is used to improve image quality in these modes and images.

- 1) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)  
The color patch image (adjustment pattern) is printed out.
- 2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
- 3) Press [EXECUTE] key.  
The color balance adjustment is automatically performed.  
The adjustment pattern is printed out. Check it for any abnormality.
- 4) Press [OK] key.  
The list of the adjustment items (for each dither) is displayed.
- 5) Select an adjustment item (for each dither).

Select item (Mode)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
1200dpi 1bit	Adjustment item to improve the color balance in 1200dpi mode (When 1200dpi mode is frequently used)
600dpi 1bit	Adjustment item to improve the color balance in 600dpi, 1bit mode.
B/W	Adjustment item to improve the density and gradation in the monochrome mode

- 6) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)  
The color patch image (adjustment pattern) is printed out.
- 7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
- 8) Press [EXECUTE] key.  
The color balance adjustment is automatically performed, and the color balance check patch image is printed out.
- 9) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.  
To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.  
After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
- 10) Make a print, and check the print image quality.

NOTE: Use SIM67-52 to reset the adjustment values to the default values.

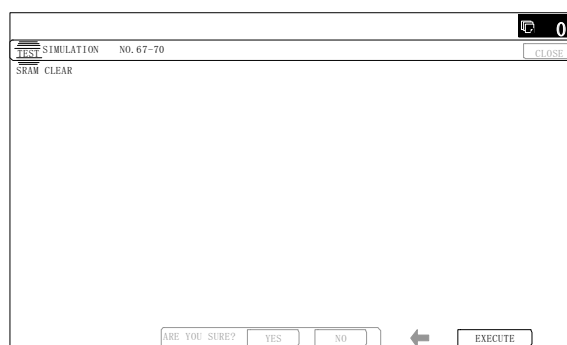


<b>67-70</b>	
<b>Purpose</b>	
<b>Function (Purpose)</b>	MFP PWB SRAM data clear
<b>Section</b>	MFP PWB

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
MFP PWB SRAM data is cleared.  
When the operation is completed, [EXECUTE] key returns to the normal display.

NOTE: When the MFP PWB is replaced, execute this simulation.



## [7] SELF DIAG AND TROUBLE CODE

### 1. Self diag

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

#### A. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

#### B. Self diag message 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	-

### C. Self diag operation

#### (1) Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

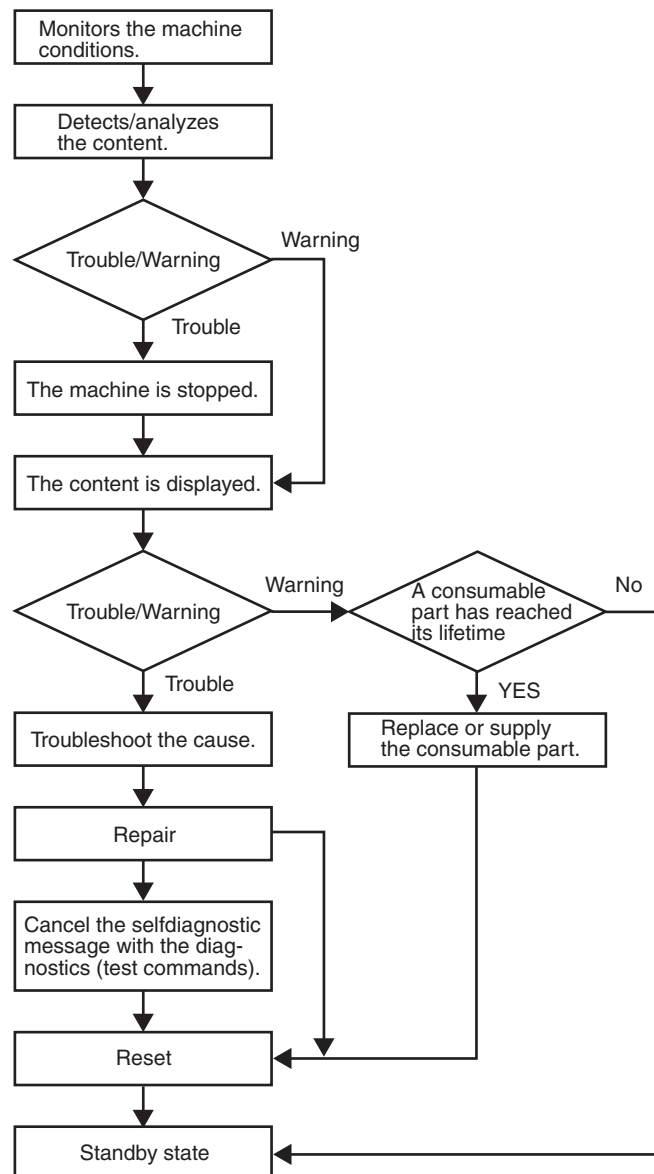
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD and lamp.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



## D. Breakdown sequence

### (1) Breakdown mode processing

#### a. Breakdown mode list

There are following cases of the breakdown mode.

Kind of trouble	Judgment block	Trouble code	Operatable mode								
			Copy scan (including interruption)	Scan push	Scan pull	ScanTo HDD	FAX Send	FAX print	Print	List print	FAST Notification to host
FAX board trouble	MFP	F6	○	○	○	○	×	×	○	○	×
HDD trouble		E7 (03, 04)	×	×	×	×	×	×	×	×	×
HDD-ASIC self test trouble											
SCU communication trouble		E7 (80) A0 (02)	×	×	×	×	×	○	○	○	○
PCU communication trouble		E7 (90) A0 (01)	×	×	×	×	×	×	×	×	○
Power controler trouble		L8 (01, 20)	×	×	×	×	×	×	×	×	○
Backup battery voltage fall		U1 (01)	×	×	×	×	×	×	×	×	○
Controller fan motor trouble		L4 (30)	×	×	×	×	×	×	×	×	×
Connection trouble (MFP detection)		E7 (60, 61, 65) A0 (10 - 12, 20)	×	×	×	×	×	×	×	×	×
Serial number discrepancy		U2 (30)	×	×	×	×	×	×	×	×	×
Vendor machine error		U7 (50, 51)	×	×	×	×	×	×	×	×	○
Memory error (included not installed the expansion RAM)		U2 (00, 05, 10, 11, 22, 23, 24)	×	×	×	×	×	×	×	×	○
HDD registration data sum error		U2 (50)	×	×	×	×	×	×	×	×	○
Image memory trouble, decode error		E7 (01, 05, 06, 08, 09, 42, 46, 48, 49)	×	×	×	×	×	×	×	×	○
Special function error		U2-60	○	○	○	○	○	○	○	○	○
Personal counter installation trouble		PC (--)	×	×	×	×	×	×	×	×	○
Laser trouble	PCU	E7 (20, 28, 29), L6 (10)	×	×	×	×	×	×	×	×	○
Connection trouble (PCU detection)		E7 (50) A0 (21) F1 (50)	×	×	×	×	×	×	×	×	×
PCU section troubles (motor, fusing, etc.)		C1 (10, 14), C4 (excluding 10), F2 (22, 40, 64, 70, 74), H2, H3, H4, H5, H7, L4 (excluding 30), L8 (01, 02), U2 (90, 91),	×	×	×	×	×	×	×	×	○
Paper feed tray 1 trouble		F3 (12)	△ 3	○	○	○	○	△ 3 *10	△ 3	△ 3	○
Paper feed tray 2 trouble		F3 (22)	△ 3	○	○	○	○	△ 3 *10	△ 3	△ 3	○
Paper feed tray 3 trouble		U6 (01)	△ 3	○	○	○	○	△ 3 *10	△ 3	△ 3	○
Paper feed tray 4 trouble		U6 (02)	△ 3	○	○	○	○	△ 3 *10	△ 3	△ 3	○
Paper feed tray 5 trouble		U6 (09, 20, 21, 22, 51)	△ 3	○	○	○	○	△ 3 *10	△ 3	△ 3	○
Paper feed tray other troubles		U6 (00, 10, 50)	△ 11	○	○	○	○	△ 11 *10	△ 11	△ 11	○
Staple trouble		F1 (08, 10)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4 *10	△ 4	△ 4	○
Saddle stitch section trouble		F1 (21,31,41,43,45,47)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4 *10	△ 4	△ 4	○
After-process trouble		F1 (00,03,11,15,19,20,32, 33,34,36,37,38,39)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4 *10	△ 4	△ 4	○
Other troubles		EE (EL, EU)	○	○	○	○	○	○	○	○	○

Kind of trouble	Judgment block	Trouble code	Operatable mode								
			Copy scan (including interruption)	Scan push	Scan pull	ScanTo HDD	FAX Send	FAX print	Print	List print	FAST Notification to host
General PCU color system trouble	PCU	E7 (21 - 23), F2 (23 - 25, 41 - 43, 65 - 67, 71 - 73, 75 - 77)	×	×	×	×	○	○	×	○	○
Process control trouble (PCU detection)		F2 (22, 23, 24, 25, 39, 58)	○	○	○	○	○	○	○	○	○
PCU section error		C4 (10)	○	○	○	○	○	○	○	○	○
Connection trouble (SCU detection)	SCU	A0 (22)	×	×	×	×	×	×	×	×	×
SCU color system troubles (SCU detection)		UC (02)	△ 9	△ 9	△ 9	△ 9	△ 9	○	○	○	○
Anti copy system		UC (20)	×	×	×	×	×	○	○	○	○
EEPROM faction		U2 (80, 81)	×	×	×	×	×	○	○	○	○
Scanner section troubles (mirror motor, lens, copy lamp)		L1,L3	×	×	×	×	×	○	○	○	○
CCD troubles (shading, etc.)		E7 (10, 11, 14)	×	×	×	×	×	○	○	○	○
RSPF/DF trouble		U5	△ 6	△ 6	△ 6	△ 6	△ 6	○	○	○	○
General troubles in the SPF back surface scanning section		E6 (10, 11, 14)	○	○	○	○	○	○	○	○	○

○ : Operation enabled, × : Operation disabled

△ 3 : When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△ 4 : When detected during other than a job, the operation is enabled in a section other than the trouble paper exit section.

△ 6 : When detected during other than a job, the operation is enabled in the OC mode.

△ 9 : When detected during other than a job, the operation is enabled in the black and white mode.

\* 10 : Since communication is enabled, reception can be transferred.

△ 11 : When detected during other than a job, the operation is enabled in other than the DESK.

\* 11 : When the color mode is inhibited in "Color mode inhibit" setting of the system setting, the operation is performed in the monochrome mode.

\* 12 : Trouble display is message of 2 lines. (Example: Ready to copy. F2 trouble)

\* 16 : Print is enabled. Displays "Call for service. CODE: \*\*-\*\*\*".

\* Trouble mode process

• Machine operation enabled under some conditions.

A dialog is displayed when a trouble occurs. For the mode where operations are enabled, [OK] button is added to the message. When operations are disabled, [OK] button is not displayed, and the message is displayed until the trouble is cancelled.

\* For △3, 6 perform the following procedures.

- When a trouble is detected during a job, the machine operation is terminated. (Trouble display/without [OK] key)
- When trouble is detected other than during the JOB operating, the trouble display is not made and the JOB that relates to the trouble part cannot be selected.

• Troubles which disable the machine operations

The trouble display is always made.

\* Writing to the trouble memory

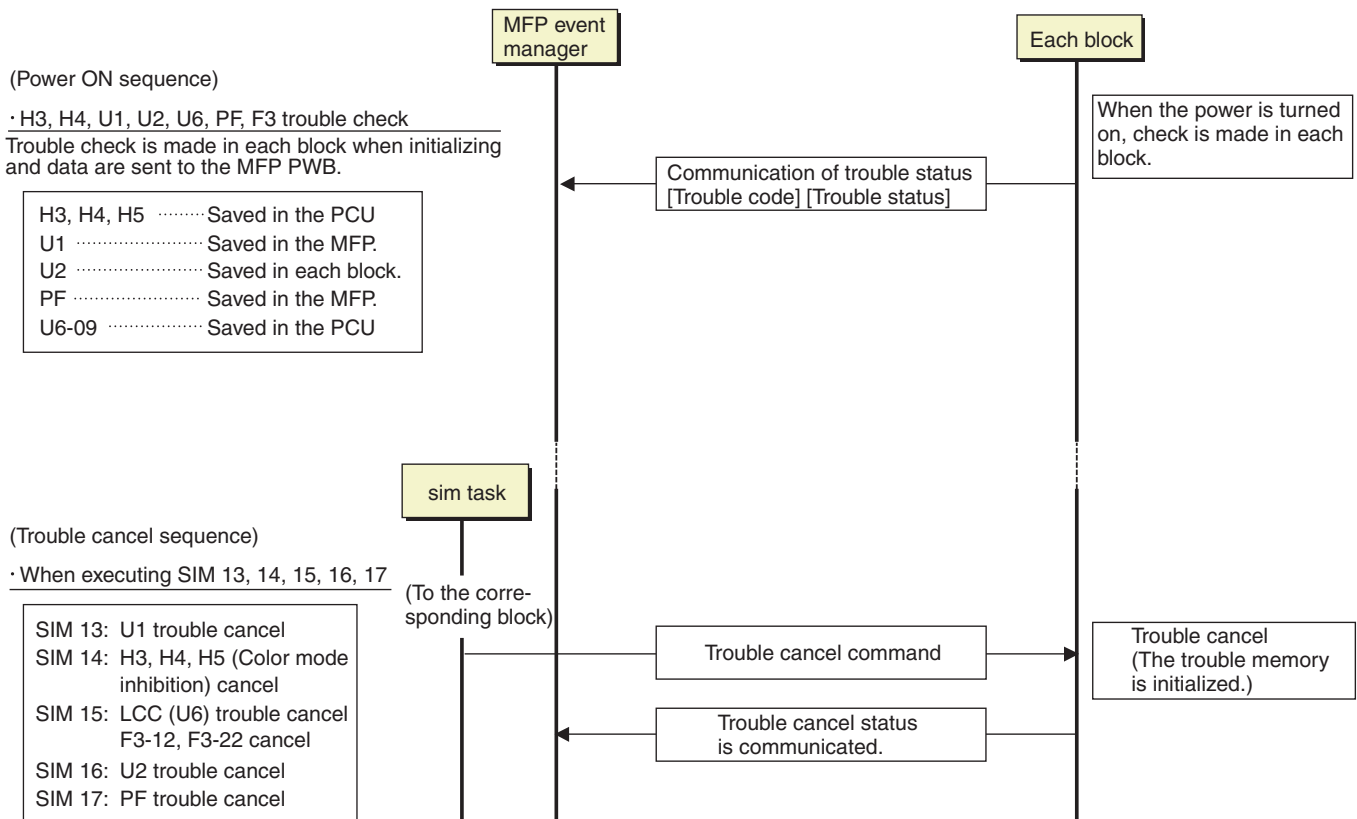
Writing of a same trouble to the trouble memory can be selected with SIM 26-35.

(Sim.26-35)

0: ONCE; If same as the previous one, it is not saved. (Default)

1: ANY; Though same as the previous one, it is saved.

## (2) Power ON trouble detection sequence.



## 2. Trouble code list

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
C1	10	Main charger trouble (BK)	PCU			○		
	14	Main charger trouble (Color)	PCU			○		
C4	00	PTC trouble	PCU			○		
	02	PTC heater open trouble	PCU			○		
	03	PTC heater short trouble	PCU			○		
	10	PTC no control	PCU			○		
E6	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
E7	01	MFP image data error	MFP			○		
	03	HDD trouble	MFP			○		
	04	HDD-ASIC error	MFP			○		
	05	Standard/Extension memory R/W error (MFP PWB)	MFP			○		
	06	Image data decode error	MFP			○		
	08	MFP memory compatibility error (MFP PWB)	MFP			○		
	09	Wrong memory size (Std./Ext. memory) (MFP PWB)	MFP			○		
	10	Shading error (Black level)	SCU			○		
	11	Shading error (White level)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection error (K)	PCU			○		
	21	LSU laser detection error (C)	PCU			○		
	22	LSU laser detection error (M)	PCU			○		
	23	LSU laser detection error (Y)	PCU			○		
	28	LSU-PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			○		
	42	Data error (ACRE ASIC)	MFP			○		
	46	Decode error (ACRE ASIC)	MFP			○		
	48	Memory error (ACRE ASIC)	MFP			○		
	49	Water Mark data error	MFP			○		
	50	Engine connection trouble	PCU			○		
	55	PWB information sum error (Engine detection)	PCU			○		
	60	Combination error between the MFP PWB and other PWB, firmware	MFP			○		



Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
E7	61	Combination error between the MFP PWB and the PCU PWB	MFP			○		
	65	MFP EEPROM sum check error	MFP			○		
	80	MFP-SCU PWB communication error	MFP			○		
	90	MFP-PCU PWB communication error	MFP			○		
EE	EC	Automatic toner density adjustment error (Sampling level 76 - 117/ 139 - 178)	PCU			○		
	EL	Automatic toner density adjustment error (Overtoner)	PCU			○		
	EU	Automatic toner density adjustment error (Undertoner)	PCU			○		
F1	00	Finisher - PCU PWB communication error	PCU		○			
	03	Finisher paper exit roller lifting operation trouble	PCU		○			
	08	Stapler shift trouble	PCU		○			
	10	Staple operation trouble	PCU		○			
	11	Finisher grip operation trouble	PCU		○			
	15	Finisher paper exit tray lift operation trouble	PCU		○			
	19	Finisher alignment operation trouble F	PCU		○			
	20	Finisher alignment operation trouble R	PCU		○			
	21	Finisher fan trouble	PCU		○			
	22	Finisher assist motor trouble	PCU		○			
	23	Finisher shutter trouble	PCU		○			
	31	Saddle paper folding trouble	PCU		○			
	32	Finisher - Punch unit communication error	PCU		○			
	33	Punch unit shift operation trouble	PCU		○			
	34	Punch operation trouble	PCU		○			
	36	Punch paper edge detection error	PCU		○			
	37	Finisher data backup RAM error	PCU		○			
	38	Punch data backup RAM error	PCU		○			
	39	Punch paper dust sensor error	PCU		○			
	41	Saddle paper positioning operation trouble	PCU		○			
	43	Saddle alignment operation trouble	PCU		○			
	45	Saddle staple trouble	PCU		○			
	47	Saddle paper transport motor trouble	PCU		○			
	50	Main unit - Finisher combination error	PCU		○			
F2	22	Discharge lamp trouble (K)	PCU					○
	23	Discharge lamp trouble (C)	PCU					○
	24	Discharge lamp trouble (M)	PCU					○
	25	Discharge lamp trouble (Y)	PCU					○
	39	Process thermister trouble	PCU					○
	40	Toner density sensor trouble (BLACK)	PCU					○
	41	Toner density sensor trouble (CYAN)	PCU					○
	42	Toner density sensor trouble (MAGENTA)	PCU					○
	43	Toner density sensor trouble (YELLOW)	PCU					○
	45	Color image density sensor trouble	PCU					○
	49	LSU thermister trouble	PCU					○
	50	K drum phase sensor trouble	PCU					○
	51	CL drum phase sensor trouble (41-sheet machine) CL drum phase sensor trouble (CYAN) (50-sheet machine)	PCU					○
	52	CL drum phase sensor trouble (MAGENTA) (50-sheet machine)	PCU					○
	53	CL drum phase sensor trouble (YELLOW) (50-sheet machine)	PCU					○
	58	Process humidity sensor trouble	PCU					○
	64	Toner supply operation trouble (BK)	PCU					○
	65	Toner supply operation trouble (C)	PCU					○
	66	Toner supply operation trouble (M)	PCU					○
	67	Toner supply operation trouble (Y)	PCU					○
	70	Improper toner cartridge detection (BLACK)	PCU					○
	71	Improper toner cartridge detection (CYAN)	PCU					○
	72	Improper toner cartridge detection (MAGENTA)	PCU					○
	73	Improper toner cartridge detection (YELLOW)	PCU					○
	74	Black CRUM error	PCU					○
	75	Cyan CRUM error	PCU					○
	76	Magenta CRUM error	PCU					○
	77	Yellow CRUM error	PCU					○
	78	Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality)	PCU					○
F3	12	Paper feed tray 1 lift operation trouble	PCU	○				
	22	Paper feed tray 2 lift operation trouble	PCU	○				
H2	00	Thermister open trouble (TH_UM_AD2)	PCU	○				
	01	Thermister open trouble (TH_LM)	PCU	○				
	02	Thermister open trouble (TH_US)	PCU	○				
	03	Compensation thermister open trouble (TH_UM_AD1)	PCU	○				
	04	External heating thermistor open (TH_EX1)	PCU	○				

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
H2	05	External heating thermistor open (TH_EX2)	PCU	○				
H3	00	Fusing section high temperature trouble (TH_UM)	PCU	○				
	01	Fusing section high temperature trouble (TH_LM)	PCU	○				
	02	Fusing section high temperature trouble (TH_US)	PCU	○				
	04	Fusing section high temperature trouble (TH_EX1)	PCU	○				
	05	Fusing section high temperature trouble (TH_EX2)	PCU	○				
H4	00	Fusing section low temperature trouble (TH_UM_AD2)	PCU	○				
	01	Fusing section low temperature trouble (TH_LM)	PCU	○				
	02	Fusing section low temperature trouble (TH_US)	PCU	○				
	04	Fusing section low temperature trouble (TH_EX)	PCU	○				
	30	Thermister input circuit trouble (TH_UM)	PCU	○				
H5	01	5 times continuous POD1 not-reach jam	PCU	○				
H7	10	Recovery error from low fuser temp. (TH_UM_AD2)	PCU	○				
	11	Recovery error from low fuser temp. (TH_LM)	PCU	○				
	12	Recovery error from low fuser temp. (TH_US)	PCU	○				
	14	Recovery error from low fuser temp. (TH_EX)	PCU	○				
L1	00	Scanner feed trouble	SCU	○				
L3	00	Scanner return trouble	SCU	○				
L4	02	Paper feed motor trouble	PCU			○		
	03	Fusing motor trouble	PCU			○		
	04	Developing motor trouble (BLACK)	PCU			○		
	05	Developing motor trouble (COLOR)	PCU			○		
	06	Transfer unit lift trouble	PCU			○		
	11	Shift motor trouble	PCU			○		
	16	Fusing pressure release trouble	PCU			○		
	30	MFP fan motor trouble	MFP			○		
	31	Paper exit cooling fan trouble	PCU			○		
	32	Power source cooling fan trouble	PCU			○		
	34	LSU cooling fan trouble	PCU			○		
	35	Fusing cooling fan trouble	PCU			○		
	45	Toner cooling fan trouble (Toner cooling fan 1, 2)	PCU			○		
	50	Process fan trouble	PCU			○		
	56	Rear cooling fan trouble	PCU			○		
	57	Toner cooling fan trouble (Toner cooling fan 3)	PCU			○		
	58	Ozone exhaust fan trouble	PCU			○		
L6	10	Polygon motor trouble	PCU			○		
L8	01	Full wave signal detection error	PCU			○		
	02	Full wave signal error	PCU			○		
	20	Communication error of MFP/Mother board	MFP			○		
PC	-	Personal counter not detected	MFP	○				
U1	01	Battery trouble	MFP			○		
U2	00	MFP EEPROM read/write error	MFP			○		
	05	HDD/MFP PWB SRAM contents inconsistency	MFP			○		
	10	SRAM user authentication index checksum error	MFP			○		
	11	MFP PWB EEPROM counter check sum error	MFP			○		
	22	MFP PWB SRAM memory check sum error	MFP			○		
	23	MFP PWB SRAM memory individual data check sum error	MFP			○		
	24	MFP PWB SRAM memory user authentication counter check sum error	MFP			○		
	30	MFP PWB and PCU PWB manufacturing No. data inconsistency	MFP			○		
	50	HDD user authentication data check sum error	MFP			○		
	60	Water Mark check error	MFP					
	80	SCU PWB EEPROM read/write error	SCU			○		
	81	SCU PWB EEPROM check sum error	SCU			○		
	90	PCU PWB EEPROM read/write error	PCU			○		
	91	PCU PWB EEPROM check sum error	PCU			○		
U5	00	Document feed unit communication error	SCU			○		
	16	Document feed unit fan trouble	SCU			○		
	30	Document feed unit tray lift up trouble	SCU			○		
	31	Document feed unit tray lift down trouble	SCU			○		
	40	Document feed unit installation trouble	SCU			○		
U6	00	Communication error of PCU/Desk paper feed unit	PCU			○		
	01	Desk paper feeding tray 1 lift trouble	PCU		○			
	02	Desk paper feeding tray 2 lift trouble	PCU		○			
	09	LCC lift trouble	PCU		○			
	10	Desk paper feed unit paper transport motor trouble	PCU		○			
	20	PCU PWB - LCC communication error	PCU		○			
	21	LCC paper transport motor trouble	PCU		○			
	22	LCC 24V power trouble	PCU		○			

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
U6	50	Mismatched Desk unit	PCU		○			
	51	LCC - Main unit combination trouble	PCU		○			
U7	50	MFP PWB - Vendor machine communication error	MFP			○		
	51	Vendor machine error	MFP			○		
UC	02	CPT - ASIC error	SCU			○		
	20	DOCC ASIC error	SCU			○		
A0	01	PCU PWB ROM error	MFP			○		
	02	SCU PWB ROM error	MFP			○		
	04	ACU ROM error	MFP			○		
	10	MFP PWB ROM error	MFP			○		
	11	Firmware version inconsistency (MFP - PCU)	MFP			○		
	12	Firmware version inconsistency (MFP - SCU)	MFP			○		
	20	Conflict firmware and EEPROM data version (MFP)	MFP			○		
	21	Conflict firmware and EEPROM data version (PCU)	PCU			○		
	22	Conflict firmware and EEPROM data version(SCU)	SCU			○		

### 3. Details of trouble code

#### C1-10 Main charger trouble (BK)

Trouble content	
Detail	PCU
Cause	The main charger unit (BK) is not installed properly. There is an abnormality in the main charger unit. Disconnection of the high voltage PWB connector. Breakage of the high voltage harness. MC/DV PWB trouble. PCU PWB trouble
Check & Remedy	Check the output of the main charger with SIM8-2. Check disconnection of the main charger./Replace. Check disconnection of the high voltage PWB connector. /Replace. Replace the MC/DV PWB. Replace the PCU PWB.

#### C1-14 Main charger trouble (Color)

Trouble content	
Detail	PCU
Cause	The main charger unit (CMY) is not installed properly. There is an abnormality in the main charger. Disconnection of the high voltage PWB connector. Breakage of the high voltage harness. MC/DV PWB trouble. PCU PWB trouble
Check & Remedy	Check the output of the main charger with SIM8-2. Check disconnection of the main charger./Replace. Check disconnection of the high voltage PWB connector. /Replace. Replace the MC/DV PWB. Replace the PCU PWB.

#### C4-00 PTC trouble

Trouble content	
Detail	PCU
Cause	The PTC unit is not properly installed. PTC unit trouble. Secondary transfer PWB trouble. PCU PWB trouble. Connector, harness connection trouble.
Check & Remedy	Replace the PTC unit. Replace the secondary transfer PWB. Replace the PCU PWB. Check connection of the connector and the harness. NOTE: When the PTC unit is broken down and repair cannot be made because of no replacement part: To use the machine continuously, make the setting to ignore the PTC trouble, and the machine can be operated tentatively. Set the engine soft SW8-3 in SIM55-1 to "1". This setting disables the PTC output, the heater control, and the error detection. After completion of repair, set the engine soft SW8-3 in SIM55-1 to "0".

#### C4-02 PTC heater open trouble

Trouble content	
Detail	PCU
Cause	The PTU unit is not installed, or the eater line conduction trouble. PCU PWB trouble. Connector, harness connection trouble.
Check & Remedy	Replace the PTC unit. Replace the PCU PWB. Check connection of the connector and the harness. NOTE: When the PTC unit is broken down and repair cannot be made because of no replacement part: To use the machine continuously, make the setting to ignore the PTC trouble, and the machine can be operated tentatively. Set the engine soft SW8-3 in SIM55-1 to "1". This setting disables the PTC output, the heater control, and the error detection. After completion of repair, set the engine soft SW8-3 in SIM55-1 to "0".

**C4-03 PTC heater short trouble**

Trouble content	
Detail	PCU
Cause	PTC unit trouble. PCU PWB trouble. Connector, harness connection trouble.
Check & Remedy	Replace the PTC unit. Replace the PCU PWB. Check connection of the connector and the harness. NOTE: When the PTC unit is broken down and repair cannot be made because of no replacement part: To use the machine continuously, make the setting to ignore the PTC trouble, and the machine can be operated tentatively. Set the engine soft SW8-3 in SIM55-1 to "1". This setting disables the PTC output, the heater control, and the error detection. After completion of repair, set the engine soft SW8-3 in SIM55-1 to "0".

**C4-10 PTC no control**

Trouble content	
Detail	PCU
Cause	The engine soft SW8-3 in SIM55-1 is set to "1". The PTC control is not executed. (The PTC does not operate.) When the engine soft SW8-3 in SIM55-1 is set to "1", the PTC output, the heater control, and the error detection are disabled. When this setting is made in case of a PTC unit trouble, the PTC function is disabled regardless of the PTC trouble and printing operation can be performed.
Check & Remedy	Set the engine soft SW8-3 in SIM55-1 to "0". (The mode returns to the normal PTC control mode.)

**E6-10 Shading error (Black correction)**

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. CCD unit trouble. DSPF PWB trouble.
Check and remedy	Check the installing state of the harness to the CCD unit. Check the CCD unit. Check the DSPF PWB.

**E6-11 Shading error (White correction)**

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. Copy lamp lighting trouble. Dirt on the mirror, the lens, or the reference white plate. CCD unit trouble. DSPF PWB trouble. Shading SIM not executed / Shading ROM abnormality.
Check and remedy	Check the installing state of the harness the CCD unit. Check the installing state of the harness to the copy lamp unit. Clean the mirror, the lens, or the reference white plate. Check the CCD unit. Check the DSPF PWB.

**E6-14 CCD-ASIC error**

Trouble content	
Detail	SCU
Cause	DSPF PWB trouble.
Check and remedy	Check the DSPF PWB.

**E7-01 MFP image data error**

Trouble content	
Detail	MFP
Cause	Image data transfer error in the MFP PWB. MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFP PWB. Replace the MFP PWB.

**E7-03 HDD trouble**

Trouble content	
Detail	MFP
Cause	Connector, harness connection trouble in the MFP PWB and HDD. HDD (error file management area) data abnormality (FAT breakage). MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFP PWB and HDD. Use SIM62-2,3 to check read/write operations of the HDD. Replace the HDD. Replace the MFP PWB.

**E7-04 HDD-ASIC error**

Trouble content	
Detail	MFP
Cause	HDD-ASIC trouble. An error occurs in the HDD-ASIC self test when booting.
Check & Remedy	Replace the MFP PWB.

**E7-05 Standard/Extension memory R/W error (MFP PWB)**

Trouble content	Memory access is disabled.
Detail	MFP
Cause	Improper insertion of the memory. Garbled memory data. The memory capacity is not the specified level.
Check & Remedy	Check insertion of the memory. Use SIM60-1 to check the read/write operations of the memory. Replace the expansion memory. Replace the MFP PWB.

**E7-06 Image data decode error**

Trouble content	
Detail	MFP
Cause	Compressed image data abnormality. HDD connection trouble when HDD is installed. Image data compression/transfer data garble. MFP PWB trouble.
Check & Remedy	If the job at an occurrence of an error is a FAX job, check the FAX PWB. Check connection of the MFPC PWB and the HDD. Replace the MFPC PWB.

**E7-08 MFP memory compatibility error (MFP PWB)**

Trouble content	
Detail	MFP
Cause	A DIMM of different specifications is installed to the MFP memory slot. DIMM trouble.
Check & Remedy	Check the installed DIMM. Replace the DIMM.

**E7-09 Wrong memory size (Std./Ext. memory) (MFP PWB)**

Trouble content	
Detail	MFP
Cause	A DIMM which is not 512MB is inserted into the default slot. DIMM trouble. Insufficient memory size.
Check & Remedy	Replace the DIMM.

**E7-10 Shading error (Black correction)**

Trouble content	
Detail	SCU
Cause	Abnormality in the CCD black scan level when the scanner lamp is turned OFF. Improper installation of the harness to the CCD unit. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check the CCD unit. Check the SCU PWB.

**E7-11 Shading error (White correction)**

Trouble content	
Detail	SCU
Cause	Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON. Improper installation of the harness to the CCD unit. Dirt on the mirror, lens, and the reference white plate. Scanner lamp lighting trouble. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check connection of the harness to the scanner lamp unit. Clean the mirror, the lens, and the reference white plate. Check the CCD unit. Check the SCU PWB.

**E7-14 CCD-ASIC error**

Trouble content	
Detail	SCU
Cause	SCU PWB trouble.
Check & Remedy	Check the SCU PWB. Replace the SCU PWB.

**E7-20 LSU laser detection error (K)**

Trouble content	
Detail	PCU
Cause	Optical axis shift. Reduced laser power, lighting error, laser diode trouble. BD PWB trouble. Harness and connector trouble between the LD/BD PWB and the LSU cnt PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-21 LSU laser detection error (C)**

Trouble content	
Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector trouble between the LD PWB and the LSU cnt PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-22 LSU laser detection error (M)**

Trouble content	
Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector trouble between the LD PWB and the LSU cnt PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-23 LSU laser detection error (Y)**

Trouble content	
Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector trouble between the LD PWB and the LSU cnt PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

**E7-28 LSU-PCU connection error**

Trouble content	
Detail	PCU
Cause	Communication error between the CPU in the PCU PWB and the control ASIC. Improper connection of the communication connector between the PCU PWB and the LSU cnt PWB (interface PWB). Harness trouble between the PCU PWB and the LSU cnt PWB (interface PWB) PCU PWB or LSU cnt PWB (interface PWB) trouble
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU cnt PWB (interface PWB). Replace the LSU cnt PWB. Replace the PCU PWB.

**E7-29 LSU ASIC frequency error**

Trouble content	
Detail	PCU
Cause	Oscillation abnormality of the external oscillator and the internal oscillating circuit used in the LSU ASIC. LSU ASIC abnormality on the LSU ASIC PWB.
Check & Remedy	Replace the LSU cnt PWB.

**E7-42 Data error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	Image transfer trouble.
Detail	Check the connection state of the ACRE ASIC PWB connector. Replace the ACRE ASIC PWB.

**E7-46 Decode error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	Compression data abnormality. Garbled data are produced in image compression/transmission. ACRE ASIC PWB trouble.
Check & Remedy	Check the installation state of the PWB. Check connection of the ACRE ASIC PWB. Replace the ACRE ASIC PWB.

**E7-48 Memory error (ACRE ASIC)**

Trouble content	
Detail	MFP
Cause	DIMM trouble, memory slot trouble. DIMM insertion trouble, different DIMM inserted.
Check & Remedy	DIMM trouble. Replace the PWB.

**E7-49 Water Mark data error**

Trouble content	
Detail	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data. Replace the HDD.

**E7-50 Engine connection trouble**

Trouble content	
Detail	PCU
Cause	A PWB, or firmware, or LSU which is not supported by the machine specifications is detected in the PCU PWB. PCU PWB trouble. LSU trouble.
Check & Remedy	Check the kind and the version of the firmware. Check the LSU, and replace it if necessary. Check the PCU PWB, and replace it if necessary.

**E7-55 PWB information sum error (Engine detection)**

Trouble content	PCU EEPROM PWB information sum error
Detail	PCU
Cause	PCU EEPROM sum check error. PCU EEPROM trouble. PCU EEPROM contact trouble. Malfunction due to noises
Check & Remedy	Replace the PCU PWB. Replace the PCU EEPROM.

**E7-60 Combination error between the MFP PWB and other PWB, firmware**

Trouble content	
Detail	MFP
Cause	A PWB or firmware which is not supported by the machine specifications is detected in the MFP PWB. MFP PWB trouble. The PWB/firmware which is not supported by the machine specifications is connected.
Check & Remedy	Check the kind and the version of the firmware. Check the MFP PWB, and replace it if necessary.

**E7-61 Combination error between the MFP PWB and the PCU PWB**

Trouble content	
Detail	MFP
Cause	Combination error between the MFP PWB and the PCU PWB. MFP PWB trouble. PCU PWB trouble.
Check & Remedy	Check the combination between the MFP PWB and the PCU PWB. Replace the MFP PWB. Replace the PCU PWB.

**E7-65 MFP EEPROM sum check error**

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM device breakdown. Contact trouble of the MFP EEPROM device. Malfunction due to noises.
Check & Remedy	Replace the MFP PWB. Replace the MFP PWB EEPROM.

**E7-80 MFP-SCU PWB communication error**

Trouble content	
Detail	MFP
Cause	SCU PWB connector connection trouble. SCU PWB - MFP PWB connection trouble. SCU PWB mother board connection trouble. SCU PWB trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection of the SCU PWB, the MFP PWB, and the mother board. Check the ground. Replace the SCU PWB. Replace the MFP PWB. Replace the mother board.

**E7-90 MFP - PCU PWB communication error**

Trouble content	
Detail	MFP
Cause	PCU PWB connector connection trouble. PCU PWB - MFP PWB connection trouble. PCU PWB motherboard connection trouble. PCU PWB trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection of the PCU PWB, the MFP PWB, and the mother board. Check the ground. Replace the PCU PWB. Replace the MFP PWB. Replace the mother board.

**EE-EC Automatic toner density adjustment error (Sampling level 76 - 117/ 139 - 178)**

Trouble content	The sampling level in the automatic toner density adjustment is outside of $128 \pm 10$ .
Detail	PCU
Cause	Toner density sensor trouble. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

**EE-EL Automatic toner density adjustment error (Overtoner)**

Trouble content	The sampling level in the automatic toner density adjustment is 76 or less or the control voltage is 208 or above.
Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

**EE-EU Automatic toner density adjustment error (Undertoner)**

Trouble content	The sampling level in the automatic toner density adjustment is 178 or above or the control voltage is 51 or less.
Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

**F1-00 Finisher - PCU PWB communication error**

Trouble content	
Detail	PCU
Cause	Connection trouble of the connector and the harness between the finisher and the PCU PWB. Finisher control PWB trouble. PCU PWB trouble. Strong external noises.
Check & Remedy	Check the connector and the harness between the finisher and the PCU PWB. Replace the finisher control PWB. Replace the PCU PWB.

**F1-03 Finisher paper exit roller lifting operation trouble**

Trouble content	
Detail	PCU
Cause	Finisher paper exit roller lift motor trouble. Harness and connector connection trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit roller lift motor. Replace the paper exit roller lift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

**F1-08 Stapler shift trouble**

Trouble content	
Detail	PCU
Cause	Stapler shift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the stapler shift motor. Replace the stapler shift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

**F1-10 Staple operation trouble**

Trouble content	
Detail	PCU
Cause	Staple motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. Replace the staple motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.

**F1-11 Finisher grip operation trouble**

Trouble content	
Detail	PCU
Cause	Grip motor trouble. Finisher control PWB trouble. Grip arm trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the grip motor. Replace the grip motor. Replace the finisher control PWB. Replace the grip arm. Replace the home position sensor.

**F1-15 Finisher paper exit tray lift operation trouble**

Trouble content	Lift motor trouble.
Detail	PCU
Cause	Paper exit tray lift motor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit tray lift motor. Replace the finisher control PWB. Replace the paper exit tray lift motor.

**F1-19 Finisher alignment operation trouble F**

Trouble content	
Detail	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Overcurrent to the motor. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor F. Replace the finisher control PWB. Replace the paper alignment motor F.

**F1-20 Finisher alignment operation trouble R**

Trouble content	
Detail	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Overcurrent to the motor. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper alignment motor R. Replace the finisher control PWB. Replace the paper alignment motor R.

**F1-21 Finisher fan trouble**

Trouble content	
Detail	PCU
Cause	Finisher fan motor trouble. Finisher control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the fan motor. Check connection between the finisher control PWB and the fan. Replace the fan. Replace the finisher control PWB.

**F1-22 Finisher assist motor trouble**

Trouble content	
Detail	PCU
Cause	Motor harness short/open trouble. Control PWB trouble. Connection harness/connector connection trouble
Check & Remedy	Check the operation of the rear edge assist motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB.

**F1-23 Finisher shutter trouble**

Trouble content	
Detail	PCU
Cause	Motor lock trouble. Control PWB trouble, home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the rear edge assist motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB.

**F1-31 Saddle paper folding trouble**

Trouble content	
Detail	PCU
Cause	Motor lock trouble. Control PWB trouble, home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the saddle motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB. Replace the sensor.



**F1-32 Finisher - Punch unit communication error**

Trouble content	
Detail	PCU
Cause	Connector/harness connection trouble or disconnection between the finisher and the punch unit. Finisher control PWB trouble. PCU PWB trouble. Malfunction due to noises. The punch unit is in the adjustment mode.
Check & Remedy	Check the connector and the harness between the finisher and the punch unit. Replace the finisher control PWB. Replace the PCU PWB. Cancel the adjustment mode of the punch unit.

**F1-33 Punch unit shift operation trouble**

Trouble content	
Detail	PCU
Cause	Punch shift motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the punch shifting. Replace the punch shift motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

**F1-34 Punch operation trouble**

Trouble content	
Detail	PCU
Cause	Punch motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Check the punch operation. Replace the punch motor. Replace the finisher control PWB. Replace the home position sensor. Check connection of the connectors and the harness.

**F1-36 Punch paper edge detection error**

Trouble content	
Detail	PCU
Cause	Punch paper edge sensor trouble. Harness disconnection. Finisher control PWB trouble. Punch control PWB trouble.
Check & Remedy	Use SIM3-2 to check the operation of the sensor. Replace the punch paper edge sensor. Replace the finisher control PWB. Replace the punch control PWB.

**F1-37 Finisher data backup RAM error**

Trouble content	
Detail	PCU
Cause	Finisher control PWB trouble. Malfunction due to noises
Check & Remedy	Replace the finisher control PWB. Readjust the finisher. (Use SIM3-10, Finisher control PWB DIP SW adjustment.)

**F1-38 Punch data backup RAM error**

Trouble content	
Detail	PCU
Cause	Punch control PWB trouble. Malfunction due to noises
Check & Remedy	Replace the punch control PWB. Set the punch unit specifications, and adjust the sensor. (Punch unit control PWB DIP SW adjustment.)

**F1-39 Punch paper dust sensor error**

Trouble content	
Detail	PCU
Cause	Punch dust sensor trouble. Harness and connector connection trouble. Finisher control PWB trouble. Punch unit control PWB trouble.
Check & Remedy	Use SIM3-2 to check the operation of the sensor. Check connection of the connectors and the harness. Replace the punch dust sensor. Replace the finisher control PWB. Replace the punch unit control PWB.

**F1-41 Saddle paper positioning operation trouble**

Trouble content	
Detail	PCU
Cause	Abnormality in the folding positioning guide motor in the saddle section.
Cause	Saddle paper positioning guide drive motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper positioning motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

**F1-43 Saddle alignment operation trouble**

Trouble content	
Detail	PCU
Cause	Saddle alignment motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the Saddle alignment motor (FSPAM). Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

**F1-45 Saddle staple trouble**

Trouble content	Abnormality of the staple unit drive motor in the saddle section.
Detail	PCU
Cause	Saddle staple motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle staple motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

**F1-47 Saddle paper transport motor trouble**

Trouble content	Abnormality in the drive roller oscillation motor in the finisher saddle transport section.
Detail	PCU
Cause	Saddle paper transport motor trouble. Finisher control PWB trouble. Harness and connector connection trouble. Fuse blown (24V line).
Check & Remedy	Use SIM3-3 to check the operation of the saddle paper transport motor. Check connection from the control PWB to the motor. Replace the control PWB. Replace the sensor.

**F1-50 Main unit - Finisher combination error**

Trouble content	
Detail	PCU
Cause	The finisher which is not supported by the main unit model is installed. Finisher control PWB trouble.
Check & Remedy	Install a proper finisher. Replace the finisher control PWB.

**F2-22 Discharge lamp trouble (K)**

Trouble content	A trouble is detected when the discharge lamp open sensor is open for 1 sec after turning ON the discharge lamp.
Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (K) and the PCU PWB. Discharge lamp PWB (K) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (K). Check the harness and the connector. Replace the PCU PWB.

**F2-23 Discharge lamp trouble (C)**

Trouble content	A trouble is detected when the discharge lamp open sensor is open for 1 sec after turning ON the discharge lamp.
Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (C) and the PCU PWB. Discharge lamp PWB (C) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (C). Check the harness and the connector. Replace the PCU PWB.

**F2-24 Discharge lamp trouble (M)**

Trouble content	A trouble is detected when the discharge lamp open sensor is open for 1 sec after turning ON the discharge lamp.
Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (M) and the PCU PWB. Discharge lamp PWB (M) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (M). Check the harness and the connector. Replace the PCU PWB.

**F2-25 Discharge lamp trouble (Y)**

Trouble content	A trouble is detected when the discharge lamp open sensor is open for 1 sec after turning ON the discharge lamp.
Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (Y) and the PCU PWB. Discharge lamp PWB (Y) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (Y). Check the harness and the connector. Replace the PCU PWB.

**F2-39 Process thermistor trouble**

Trouble content	
Detail	PCU
Cause	Process thermistor trouble. Process thermistor harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the process thermistor. Check connection of the harness and the connector. Replace the PCU PWB.

**F2-40 Toner density sensor trouble (BLACK)**

Trouble content	
Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Check connection of the connector and the harness. Replace the developing unit. Replace the PCU PWB.

## F2-41 Toner density sensor trouble (CYAN)

Trouble content	
Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Check connection of the connector and the harness. Replace the developing unit. Replace the PCU PWB.

## F2-42 Toner density sensor trouble (MAGENTA)

Trouble content	
Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Check connection of the connector and the harness. Replace the developing unit. Replace the PCU PWB.

## F2-43 Toner density sensor trouble (YELLOW)

Trouble content	
Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above). Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Check connection of the connector and the harness. Replace the developing unit. Replace the PCU PWB.

## F2-45 Color image density sensor trouble

Trouble content	
Detail	PCU
Cause	Color image density sensor sensitivity adjustment trouble. Color image density sensor trouble. Harness and connector connection trouble. Image density sensor dirt. Calibration plate dirt. Calibration plate solenoid trouble. PCU PWB trouble.
Check & Remedy	Replace the color image density sensor. Check connection of the connectors and the harness. Clean the image density sensor. Replace the calibration plate. Replace the calibration plate solenoid. Replace the PCU PWB. Use SIM44-2 to adjust the process control sensor sensitivity.

## F2-49 LSU thermistor trouble

Trouble content	
Detail	PCU
Cause	The LSU detection temperature is outside of -28°C - 78°C. LSU thermistor trouble. Harness and connector connection trouble. PCU PWB trouble LSU control PWB trouble.
Check & Remedy	Replace the LSU thermistor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the LSU control PWB. Replace the LSU.

## F2-50 K drum phase sensor trouble

Trouble content	
Detail	PCU
Cause	Drum phase sensor trouble. Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_K". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.

## ▲ F2-51 CL drum phase sensor trouble (41-sheet machine) CL drum phase sensor trouble (CYAN) (50-sheet machine)

Trouble content	
Detail	PCU
Cause	Drum phase sensor trouble. Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_CL". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.

## F2-52 CL drum phase sensor trouble (MAGENTA) (50-sheet machine)

Trouble content	
Detail	PCU
Cause	Drum phase sensor trouble. Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_CL". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.

### F2-53 CL drum phase sensor trouble (YELLOW) (50-sheet machine)

Trouble content	
Detail	PCU
Cause	Drum phase sensor trouble. Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_CL". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.

### F2-58 Process humidity sensor trouble

Trouble content	
Detail	PCU
Cause	Process humidity sensor trouble. Harness and connector connection trouble. PCU PWB trouble.
Check & Remedy	Replace the process humidity sensor. Check connection of the connectors and the harness. Replace the PCU PWB.

### F2-64 Toner supply operation trouble (BK)

Trouble content	
Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

### F2-65 Toner supply operation trouble (C)

Trouble content	
Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

### F2-66 Toner supply operation trouble (M)

Trouble content	
Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

### F2-67 Toner supply operation trouble (Y)

Trouble content	
Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

### F2-70 Improper toner cartridge detection (BLACK)

Trouble content	
Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

### F2-71 Improper toner cartridge detection (CYAN)

Trouble content	
Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

## **F2-72 Improper toner cartridge detection (MAGENTA)**

Trouble content	
Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

## **F2-73 Improper toner cartridge detection (YELLOW)**

Trouble content	
Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

## **F2-74 Black CRUM error**

Trouble content	
Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.

## **F2-75 Cyan CRUM error**

Trouble content	
Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.

## **F2-76 Magenta CRUM error**

Trouble content	
Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.

## **F2-77 Yellow CRUM error**

Trouble content	
Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.

## **F2-78 Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality)**

Trouble content	
Detail	PCU
Cause	Image density (registration) sensor trouble (Sensor sensitivity adjustment trouble). PCU PWB trouble. Connection trouble of the connector and the harness. Image density (registration) sensor dirt. Transfer belt dirt, scratch.
Check & Remedy	Replace the image density (registration) sensor. Replace the PCU PWB. Check connection of the connector and the harness. Clean the image density (registration) sensor. Clean or replace the transfer belt.

## **F3-12 Paper feed tray 1 lift operation trouble**

Trouble content	
Detail	PCU
Cause	LUD1 is not turned ON within the specified time. CLUD1 sensor trouble Paper feed tray 1 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check connection of the harness and the connector of LUD1. Replace the lift-up unit. Replace the PCU PWB.

## **F3-22 Paper feed tray 2 lift operation trouble**

Trouble content	
Detail	PCU
Cause	LUD2 does not turn ON within the specified time. CLUD2 sensor trouble. Paper feed tray 2 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check the harness and the connector of LUD2. Replace the lift-up unit. Replace the PCU PWB.

## H2-00 Thermistor open trouble (TH\_UM\_AD2)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

## H2-01 Thermistor open trouble (TH\_LM)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

## H2-02 Thermistor open trouble (TH\_US)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

## H2-03 Compensation thermistor open trouble (TH\_UM\_AD1)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

## H2-04 External heating thermistor open (TH\_EX1)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Fusing section connector connection trouble. Power unit trouble.
Check & Remedy	Check the connector and the harness between the thermistor and the PCU PWB. Replace the thermistor. Replace the power unit.

## H2-05 External heating thermistor open (TH\_EX2)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

## H3-00 Fusing section high temperature trouble (TH\_UM)

Trouble content	
Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the power unit.

## H3-01 Fusing section high temperature trouble (TH\_LM)

Trouble content	
Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble.Harness and connector connection trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the power unit.

## H3-02 Fusing section high temperature trouble (TH\_US)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Fusing section connector connection trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the PCU PWB. Check connection of the thermistor and the harness. Replace the power unit.

### H3-04 Fusing section high temperature trouble (TH\_EX1)

Trouble content	
Detail	PCU
Cause	Non-contact thermistor trouble. PCU PWB trouble. Fusing section connector connection trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the PCU PWB. Check connection of the thermistor and the harness. Replace the power unit.

### H3-05 Fusing section high temperature trouble (TH\_EX2)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

### H4-00 Fusing section low temperature trouble (TH\_UM\_AD2)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

### H4-01 Fusing section low temperature trouble (TH\_LM)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

### H4-02 Fusing section low temperature trouble (TH\_US)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

### H4-04 Fusing section low temperature trouble (TH\_EX)

Trouble content	
Detail	PCU
Cause	Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the power unit. Replace the interlock switch.

#### H4-30 Thermistor input circuit trouble (TH\_UM)

Trouble content	
Detail	PCU
Cause	The values of TH_UM_AD1 and TH_UM_AD2 do not exceed the specified value (50 counts in AD value) within the specified time from turning ON the HL_UM. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

#### H5-01 5 times continuous POD1 not-reach jam

Trouble content	
Detail	PCU
Cause	A fusing jam is not canceled completely. (A jam paper remains.) POD1 sensor trouble. Fusing unit installation trouble. Connector, harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the POD1 sensor. Check the installing position of the fusing unit. Replace the fusing unit. Check connection of the connector and the harness. Replace the PCU PWB. Use SIM14 to cancel the trouble.

#### H7-10 Recovery error from low fuser temp. (TH\_UM\_AD2)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.

#### H7-11 Recovery error from low fuser temp. (TH\_LM)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.

#### H7-12 Recovery error from low fuser temp. (TH\_US)

Trouble content	
Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.



## H7-14 Recovery error from low fuser temp. (TH\_EX)

Trouble content	
Detail	PCU
Cause	The specified temperature is not reached within the specified time from job stop due to a fall in the fusing temperature. Thermistor trouble. Thermostat trouble. Heater lamp trouble. PCU PWB trouble. Power unit trouble. Interlock switch trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the thermistor. Replace the thermostat. Replace the heater lamp. Replace the PCU PWB. Replace the power unit. Replace the interlock switch. Check connection of the connector and the harness. Use SIM5-2 to check the flashing operation of the heater lamp.

## L1-00 Scanner feed trouble

Trouble content	
Detail	SCU
Cause	Scanner feed is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.

## L3-00 Scanner return trouble

Trouble content	
Detail	SCU
Cause	Scanner return is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.

## L4-02 Paper feed motor trouble

Trouble content	
Detail	PCU
Cause	The lock signal is not detected within 1 sec when turning ON the paper feed motor when warming up, canceling a jam. Paper feed motor trouble. Harness and connector connection trouble. 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 connectors and the harness. Replace the PCU PWB.

## L4-03 Fusing motor trouble

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the fusing motor. Fusing motor trouble. Connection trouble of the connector and the harness. PCU PWB trouble.
Check & Remedy	Use SIM6-1 to check the operation of the fusing motor. Replace the Fusing motor. Check connection of the connectors and the harness. Replace the PCU PWB.

## L4-04 Developing motor trouble (BLACK)

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the developing motor. Developing motor trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the developing motor. Replace the developing motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing motor. Replace the developing unit.

## L4-05 Developing motor trouble (COLOR)

Trouble content	
Detail	PCU
Cause	The motor lock signal is detected during rotation of the developing motor. Developing motor trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the developing motor. Replace the developing motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing motor. Replace the developing unit.

**L4-06 Transfer unit lift trouble**

Trouble content	When separating the primary transfer belt unit, change in the separation position sensor characteristics is not detected within the specified time.
Detail	PCU
Cause	Transfer unit position sensor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Transfer unit separation clutch operation trouble. Primary transfer belt unit is not installed.
Check & Remedy	Use SIM6-3 to check the separating operation of the transfer unit. Install the primary transfer belt unit. Replace the transfer unit position sensor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the transfer unit separation clutch.

**L4-11 Shift motor trouble**

Trouble content	
Detail	PCU
Cause	No change in the shifter home position sensor signal is detected in the operation of the shifter initializing. Shift motor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Shifter home position sensor trouble.
Check & Remedy	Use SIM6-1 to check the shift operation. Use SIM30-1 to check the operation of the shifter home position sensor. Replace the shift motor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the shifter home position sensor.

**L4-16 Fusing pressure release trouble**

Trouble content	
Detail	PCU
Cause	No change in the fusing pressure release sensor signal is detected within the specified time after turning ON the fusing pressure release motor. Fusing pressure release sensor trouble. Fusing pressure release motor trouble. Fusing pressure release level F, R 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 fusing pressure release lever F, R. Replace the PCU PWB. Check connection of the connector and the harness.

**L4-30 MFP fan motor trouble**

Trouble content	
Detail	MFP
Cause	Fan motor trouble. MFP PWB trouble.Harness and connector connection trouble. PCU PWB trouble
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the fan motor. Replace the MFP PWB. Check connection of the connector and the harness. Replace the PCU PWB.

**L4-31 Paper exit cooling fan trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the paper exit cooling fan operation. Paper exit cooling fan trouble. PCU PWB trouble Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the rotating operation of the fan. Replace the paper exit cooling fan. Replace the PCU PWB.

**L4-32 Power source cooling fan trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the power cooling fan operation. Power cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the rotating operation of the fan. Replace the power cooling fan. Replace the PCU PWB. Check/replace the connector or the harness.

**L4-34 LSU cooling fan trouble**

Trouble content	
Detail	PCU
Cause	When the LSU cooling fan is operated, the fan operation signal is not detected within the specified time. LSU 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 LSU cooling fan. Replace the PCU PWB. Replace the LSUcnt PWB. Check connection of the connector and the harness.

**L4-35 Fusing cooling fan trouble**

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing cooling fan operation. Fusing cooling fan trouble. PCU PWB trouble Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the rotating operation of the fan. Replace the fusing cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

#### L4-45 Toner cooling fan trouble (Toner cooling fan 1, 2)

Trouble content	
Detail	PCU
Cause	When the toner cooling fan is operated, the fan operation signal is not detected within the specified time. Toner cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	After turning ON the power, check to confirm that the fan is rotating. Replace the toner cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

#### L4-50 Process fan trouble

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process fan operation. 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.

#### L4-56 Rear cooling fan trouble

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the rear cooling fan operation. Rear cooling 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 rear cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

#### L4-57 Toner cooling fan trouble (Toner cooling fan 3)

Trouble content	
Detail	PCU
Cause	When the toner cooling fan is operated, the fan operation signal is not detected within the specified time. Toner cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	After turning ON the power, check to confirm that the fan is rotating. Replace the toner cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

#### L4-58 Ozone exhaust fan trouble

Trouble content	
Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the ozone exhaust fan operation. Ozone exhaust 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 ozone exhaust fan. Replace the PCU PWB. Check connection of the connector and the harness.

#### L6-10 Polygon motor trouble

Trouble content	
Detail	PCU
Cause	The motor does not reach the specified rpm in 7 sec after starting rotation of the polygon motor. Polygon motor trouble. LSU control PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM61-1 to check the operation of the polygon motor. Check connection of the connector and the harness. Replace the polygon motor. Replace the LSU. Replace the LSU control PWB.

#### L8-01 Full wave signal detection error

Trouble content	
Detail	PCU
Cause	No full wave signal is detected. PCU PWB trouble Power unit trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness.

#### L8-02 Full wave signal error

Trouble content	
Detail	PCU
Cause	An abnormality in the full wave signal frequency is detected. (The frequency is detected as 65Hz or above, or 45Hz or less.)PCU PWB trouble. Power unit trouble. Connection trouble of the connector and the harness. Power frequency, waveform abnormality.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness. Check the power waveform.

## L8-20 Communication error of MFP/ Mother board

Trouble content	
Detail	MFP
Cause	Mother board PWB - MFPC PWB connection trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection between the mother board and the MFPC PWB. Check the ground of the main unit. Replace the MFPC PWB. Replace the mother board.

## PC-- Personal counter not detected

Trouble content	
Detail	MFP
Cause	The personal counter is not installed. The personal counter is not detected.
Check & Remedy	Check connection of the connectors and the harness. Replace the SCU PWB.

## U1-01 Battery trouble

Trouble content	Backup SRAM battery voltage fall.
Detail	MFP
Case 1	Cause
	1) Battery life 2) Battery circuit abnormality
	Check & Remedy
	Check to confirm that the battery voltage is about 2.0V or above.

## U2-00 MFP EEPROM read/write error

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Replace the MFP PWB EEPROM. Replace the MFP PWB. Check the power environment.

## U2-05 HDD/MFP PWB SRAM contents inconsistency

Trouble content	
Detail	MFP
Cause	The HDD or the MFP PWB which differs from that before turning OFF the power is installed. HDD trouble. MFP PWB trouble.
Check & Remedy	Use SIM16 to cancel the error. If there is backup data (export data by device cloning), import it.

## U2-10 SRAM user authentication index checksum error

Trouble content	
Detail	MFP
Cause	SRAM user index information (user authentication basic data) check sum error. MFP PWB SRAM trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Transfer the user index information data in the HDD to the SRAM. Replace the MFP PWB.

## U2-11 MFP PWB EEPROM counter check sum error

Trouble content	
Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Replace the MFP PWB.

## U2-22 MFP PWB SRAM memory check sum error

Trouble content	
Detail	MFP
Cause	The identifier which controls the communication management table stored in the SRAM and the FAX soft switch is not detected correctly. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Since the data of the communication management table and the FAX soft switch stored in the SRAM are initialized when an error occurs, register the deleted data again individually. Use SIM16 to cancel the error. Replace the MFP PWB.

## U2-23 MFP PWB SRAM memory individual data check sum error

Trouble content	MFP PWB SRAM memory individual data check sum error.
Detail	MFP
Cause	The check sum value for individual data of the communication table and the sender registration does not match. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Turn OFF/ON the power to initialize the data related to the content of check sum error. Since the registered contents are deleted, register the deleted contents again. Use SIM16 to cancel the error. Replace the MFP PWB.

## U2-24 MFP PWB SRAM memory user authentication counter check sum error

Trouble content	
Detail	MFP
Cause	MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error.

## U2-30 MFP PWB and PCU PWB manufacturing No. data inconsistency

Trouble content	
Detail	MFP
Cause	Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFP PWB. When replacing the PCU PWB or the MFP PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB. MFP PWB trouble. PCU PWB trouble
Check & Remedy	Check that the EEPROM is properly set. Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB. Replace the MFP PWB. Replace the PCU PWB.

## U2-50 HDD user authentication data check sum error

Trouble content	
Detail	MFP
Cause	HDD trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Initialize the data (one-touch, group, program, etc.) related to the check sum error by turning OFF/ON the power. Since the registered contents are deleted, register the deleted contents again. Use SIM16 to cancel the error. Replace the HDD. Replace the MFP PWB.

## U2-60 Water Mark check error

Trouble content	
Detail	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data.

## U2-80 SCU PWB EEPROM read/write error

Trouble content	
Detail	SCU
Cause	SCU PWB EEPROM trouble. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

## U2-81 SCU PWB EEPROM check sum error

Trouble content	
Detail	SCU
Cause	SCU PWB EEPROM trouble. Installation of non-initialized EEPROM. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

## U2-90 PCU PWB EEPROM read/write error

Trouble content	
Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

## U2-91 PCU PWB EEPROM check sum error

Trouble content	
Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.

## U5-00 Document feed unit communication error

Trouble content	
Detail	SCU
Cause	Connector, harness connection trouble. SCU PWB trouble. DSPF PWB trouble.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector and the harness. Replace the SCU PWB. Replace the DSPF PWB.

**U5-16 Document feed unit fan trouble**

Trouble content	
Detail	SCU
Cause	When the fan is operated, the fan operation signal is not detected within the specified time. Fan motor trouble. Connector, harness connection trouble. DSPF PWB trouble.
Check & Remedy	Use SIM2-3 to check that the fan is rotating. Replace the fan motor. Check connection of the connector and the harness. Replace the DSPF PWB.

**U5-30 Document feed unit tray lift up trouble**

Trouble content	
Detail	SCU
Cause	When STUD is not turned ON 5 times continuously within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and the harness. Replace the DSPF PWB.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

**U5-31 Document feed unit tray lift down trouble**

Trouble content	
Detail	SCU
Cause	STLD does not turn OFF within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and the harness. Replace the DSPF PWB.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

**U5-40 Document feed unit installation trouble**

Trouble content	
Detail	SCU
Cause	When two or more document feed units are detected. Connection trouble of the connector and the harness. Document feeder trouble.
Check & Remedy	Check connection of the connector and the harness.

**U6-00 Communication error of PCU/ Desk paper feed unit**

Trouble content	
Detail	PCU
Cause	Error when testing the communication line after turning ON the power or canceling the simulation. Connector, harness connection trouble. Desk control PWB trouble. PCU PWB trouble Strong external noises.
Check & Remedy	Turn OFF/ON the power to cancel. Check the connector and the harness in the communication line. Replace the desk control PWB. Replace the PCU PWB.

**U6-01 Desk paper feed tray 1 lift trouble**

Trouble content	
Detail	PCU
Cause	DLUD1 does not turn ON within the specified time when lift-up operation. DLUD1 sensor trouble. Desk control PWB trouble. Lift unit trouble. Connection trouble of the connector and the harness. PCU PWB trouble
Check & Remedy	Replace the DLUD1 sensor. Replace the desk control PWB. Replace the lift unit. Check connection of the connector and the harness. Replace the PCU PWB.

**U6-02 Desk paper feed tray 2 lift trouble**

Trouble content	
Detail	PCU
Cause	DLUD2 does not turn ON within the specified time when lift-up operation. DLUD2 sensor trouble. Desk control PWB trouble. Lift unit trouble. Connection trouble of the connector and the harness. PCU PWB trouble
Check & Remedy	Replace the DLUD2 sensor. Replace the desk control PWB. Replace the lift unit. Check connection of the connector and the harness. Replace the PCU PWB.

**U6-09 LCC lift trouble**

Trouble content	
Detail	PCU
Cause	No change in the lift motor rotation sensor signal is detected within the specified time after outputting the lift motor ON signal. The lift motor rotation sensor signal varies though the lift motor is stopped. Lift motor rotation sensor trouble. LCC control PWB trouble Lift mechanism trouble. Lift motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor. Replace the lift motor rotation sensor. Replace the LCC control PWB. Replace the lift mechanism. Replace the lift motor. Check connection of the connector and the harness. Use SIM15 to cancel the trouble.

**U6-10 Desk paper feed unit paper transport motor trouble**

Trouble content	
Detail	PCU
Cause	Desk paper feed motor trouble (motor lock, motor rpm abnormality, overcurrent to the motor). Desk control PWB trouble. Connection trouble of the connector and the harness.
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. Check connection of the connector and the harness.

**U6-20 PCU PWB - LCC communication error**

Trouble content	
Detail	PCU
Cause	Error when testing the communication line after turning ON the power or canceling the simulation. LCC control PWB trouble. PCU PWB trouble. Connector, harness connection trouble. Strong external noises. Improper combination between the main unit and the LCC.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Replace the LCC control PWB. Replace the PCU PWB.

**U6-21 LCC paper transport motor trouble**

Trouble content	
Detail	PCU
Cause	No change in the paper transport motor rotation sensor signal is detected within the specified time after outputting the paper transport motor ON signal. The paper transport motor rotation sensor signal varies though the paper transport motor is stopped. Paper transport motor rotation sensor trouble. LCC control PWB trouble. Mechanism trouble. Paper transport motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM4-3 to check the operation of the paper transport motor. Replace the paper transport motor. Replace the LCC control PWB. Replace the mechanism. Replace the paper transport motor. Check connection of the connector and the harness.

**U6-22 LCC 24V power trouble**

Trouble content	
Detail	PCU
Cause	The DC24V power is not supplied from the main unit to the LCC. Connector, harness connection trouble. LCC control PWB trouble. Power source unit trouble.
Check & Remedy	Check the connector and the harness in the power line. Replace the power unit. Replace the LCC control PWB.

**U6-50 Mismatched Desk unit**

Trouble content	
Detail	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 content	
Detail	PCU
Cause	Improper combination between the main unit and the LCC. LCC control PWB trouble.
Check & Remedy	Install a LCC which is proper for the main unit mode. Replace the LCC control PWB.

### U7-50 MFP PWB - Vendor machine communication error

Trouble content	Communication error between the MFP and the serial vendor.
Detail	MFP
Cause	Improper setting of the vendor machine specifications (SIM126-3). Vendor machine trouble. MFP PWB trouble. Connector, harness connection trouble. Strong external noises.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Change the specifications of the vendor machine (SIM126-3). Replace the LCC control PWB. Replace the MFP PWB.

### U7-51 Vendor machine error

Trouble content	
Detail	MFP (Notification of a trouble from the serial vendor)
Cause	Serial vendor machine trouble. Connector, harness connection trouble.
Check & Remedy	Err.XX" is displayed on the operation panel of the vendor. (XX is the detail code.) Repair the vendor machine referring to the detail code. Check the connector and the harness in the communication line.

### UC-02 CPT - ASIC error

Trouble content	
Detail	SCU
Cause	SCU PWB trouble (CPT-ASIC trouble)
Check & Remedy	Replace the SCU PWB.

### UC-20 DOCC ASIC error

Trouble content	
Detail	SCU
Cause	SCU PWB trouble.
Check & Remedy	Replace the SCU PWB.

### A0-01 PCU PWB ROM error

Trouble content	
Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. ROM trouble.

### A0-02 SCU PWB ROM error

Trouble content	
Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. ROM trouble.

### A0-04 ACU ROM error

Trouble content	
Detail	MFP
Cause	The firmware update is failed because of turning OFF the power during the firmware update operation, etc.
Check & Remedy	Use SIM49-1 to execute update of the firmware.

### A0-10 MFP PWB ROM error

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the image ROM (color correction ROM).
Check & Remedy	Upgrade the firmware versions of the MFP and the image ROM (color correction ROM).

### A0-11 Firmware version inconsistency (MFP - PCU)

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the PCU.
Check & Remedy	Check the combination between the MFP and the PCU.

### A0-12 Firmware version inconsistency (MFP - SCU)

Trouble content	
Detail	MFP
Cause	Firmware combination error between the MFP and the SCU.
Check & Remedy	Check the combination between the MFP and the SCU.

### A0-20 Conflict firmware and EEPROM data version (MFP)

Trouble content	
Detail	MFP
Cause	Inconsistency between the MFP firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.



**A0-21 Conflict firmware and EEPROM data version (PCU)**

Trouble content	
Detail	PCU
Cause	Inconsistency between the PCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

**A0-22 Conflict firmware and EEPROM data version (SCU)**

Trouble content	
Detail	SCU
Cause	Inconsistency between the SCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

## [8] MAINTENANCE

### 1. Maintenance list

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Color items

Section	Part name		When calling	100 k	200 k	300 k	400 k	500 k	600 k	700 k	800 k	900 k	1000 k	1100 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Photoconductor section	Drum	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Cleaner blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
	MC unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
	Side seal F/R	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
	Toner reception seal		-	×	×	×	×	×	×	×	×	×	×	×	
	MC cleaner roller		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-68)
Developing section	Developer (Y)	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer (M)		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer (C)		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	DV blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-22)
	DV side seal F/R		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26, [23]-15)
	Toner filter		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
	Bias pin/Connector	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
Toner supply section	Toner cartridges	Supply	User replacement for every toner empty.												

Monochrome items

Section	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Photoconductor section	Drum	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Cleaner blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
	MC unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
	Side seal F/R	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
	Toner reception seal		-	×	×	×	×	×	×	×	×	×	×	×	
	MC cleaner roller		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-68)
	Waste toner box		×	×	×	×	×	×	×	×	×	×	×	×	
Developing section	Developer	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	DV blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-22)
	DV side seal F/R		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26, [23]-15)
	Toner filter		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
	Bias pin/Connector	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
Toner supply section	Toner cartridges	Supply	User replacement for every toner empty.												

Fusing section (Fusing unit/Upper heat roller and related parts)

Part name			When calling	200k	400k	600k	800k	1000k	1200k	1400k	1600k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Upper heat roller	Replace the whole upper heat roller unit.	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [31]-45)
Upper heat roller gear			×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [31]-42)
Upper heat roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [31]-44)
Upper heat roller heat-insulation bush			×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [31]-43)

# Fusing section (Others)

Part name			When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Lower heat roller	Replace the whole lower heat roller unit.	Mechanical parts	×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-15)
Lower heat roller bearing			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-14)
Upper separation pawl/pawl spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-14, [31]-15)
Non-contact thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-37)
Upper thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-48)
Lower thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-20)
Lower separation pawl/pawl spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-56, [32]-57)
External heating roller			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-18)
External belt			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-17)
External heating roller bearing			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-13)
External heating collar			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-15)
External heating spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-5)
External thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-12)
Upper Web roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-19)
Pressure roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-21)
Web roller bearings			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-15)
Pressure roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-10)
Winding regulation gear			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Web unit			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Lower CL roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Lower CL roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
CL pressure spring			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Fusing paper exit roller			×	○	○	○	○	○	○	○	○	○	○	○	
Gears			☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
Paper guides			○	○	○	○	○	○	○	○	○	○	○	○	

## Sections other than the fusing section

Section	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
LSU section	Dust-proof glass	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	
	Cleaning base		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-35)
Transfer section	Intermediate transfer belt	Mechanical parts	-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [26]-1)
	Primary transfer cleaner blade		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [25]-18)
	Primary transfer roller		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [27]-9, [28]-42)
	Primary transfer belt drive gear		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [27]-13)
	Primary transfer belt drive roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Primary transfer belt follower roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Primary transfer belt tension roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Belt CL brush		-	×	○	×	○	×	○	×	○	×	○	×	
	PTC opposed roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Secondary transfer belt		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [30]-21)
	Secondary transfer roller		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [30]-6)
	Secondary transfer idle gear		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [29]-6)
	Secondary transfer belt drive roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Secondary transfer belt follower roller		-	×	○	×	○	×	○	×	○	×	○	×	
	Secondary transfer idle shaft		-	×	○	×	○	×	○	×	○	×	○	×	

Section	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Transfer section	Secondary transfer backup blade	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
	PTC unit		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [20]-502)
	Pro-reg sensor		-	○	○	○	○	○	○	○	○	○	○	○	
	Transfer cleaner seal F/R		-	×	×	×	×	×	×	×	×	×	×	×	
	Primary transfer toner reception seal		-	×	×	×	×	×	×	×	×	×	×	×	
Filters	Ozone filter	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-40)
	Left cabinet filter		×	○	○	○	○	○	○	○	○	○	○	○	
Paper feed section	Pickup roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
	Paper feed roller		×	○	○	○	○	○	○	○	○	○	○	○	
	Separation roller		×	○	○	○	○	○	○	○	○	○	○	○	
	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
Transport, Reverse, Paper exit section	PS follower roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	
	Transport rollers		×	○	○	○	○	○	○	○	○	○	○	○	
	Transport paper guides		○	○	○	○	○	○	○	○	○	○	○	○	
	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	
	Gears		×	×	×	×	×	×	×	×	×	×	×	×	
	Paper dust removing unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [25]-58)
Drive section	Gears (Grease)	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
	Shaft earth sections (Conduction grease)		-	×	×	×	×	×	×	×	×	×	×	×	
	Belts		-	×	×	×	×	×	×	×	×	×	×	×	
	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	
Scanner section	Mirror/Lens/Reflector/CCD	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	
	Table glass/SPF glass		○	○	○	○	○	○	○	○	○	○	○	○	
	Scanner lamp		○	○	○	○	○	○	○	○	○	○	○	○	
	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Drive belt/drive wire		×	×	×	×	×	×	×	×	×	×	×	×	
RSPF section	Paper feed roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
	Pickup roller		○	○	○	○	○	○	○	○	○	○	○	○	
	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	
	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	
	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	
	Gears		×	×	×	×	×	×	×	×	×	×	×	×	
	Belts		×	×	×	×	×	×	×	×	×	×	×	×	
DSPF section	Paper feed roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
	Pickup roller		○	○	○	○	○	○	○	○	○	○	○	○	
	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	
	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	
	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	
	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
	No. 1 scanning plate		○	○	○	○	○	○	○	○	○	○	○	○	
	No. 2 scanning section, scanning glass		○	○	○	○	○	○	○	○	○	○	○	○	
	No. 2 scanning section, white reference glass		○	○	○	○	○	○	○	○	○	○	○	○	
	Mirror		○	○	○	○	○	○	○	○	○	○	○	○	
	Lens/CCD		○	○	○	○	○	○	○	○	○	○	○	○	
	Copy lamp/Reflector		○	○	○	○	○	○	○	○	○	○	○	○	
	OC mat		○	○	○	○	○	○	○	○	○	○	○	○	
	Gears (Grease)		×	×	×	×	×	×	×	×	×	×	×	×	
	Belts		-	×	×	×	×	×	×	×	×	×	×	×	

## 2. Details

### A. Photoconductor section

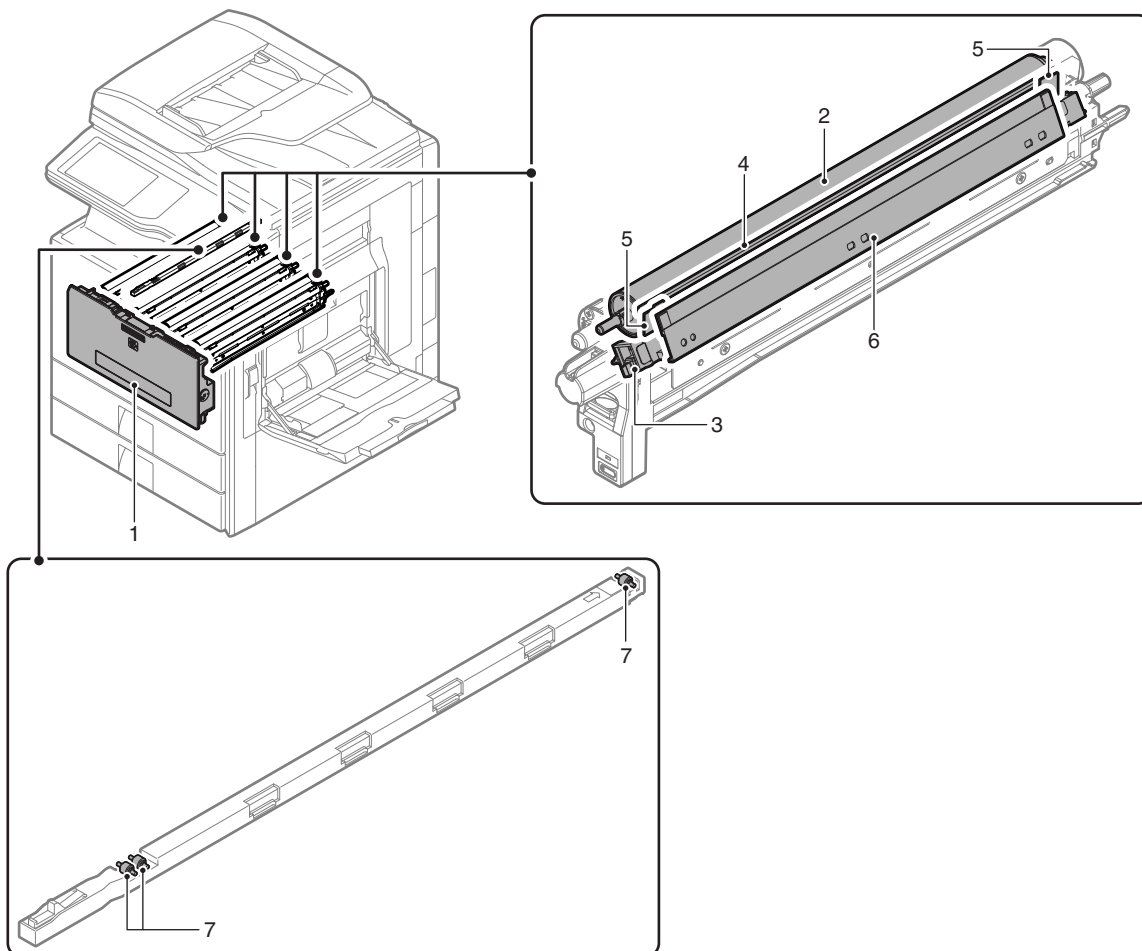
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Color items

No.	Part name		When calling	100 k	200 k	300 k	400 k	500 k	600 k	700 k	800 k	900 k	1000 k	1100 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
2	Drum	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
3	MC unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
4	Toner reception seal	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
5	Side seal F/R		-	×	×	×	×	×	×	×	×	×	×	×	
6	Cleaner blade	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
7	MC cleaner roller	Mechanical parts	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-68)

Monochrome items

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Waste toner box	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	
2	Drum	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
3	MC unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
4	Toner reception seal	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
5	Side seal F/R		-	×	×	×	×	×	×	×	×	×	×	×	
6	Cleaner blade	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
7	MC cleaner roller	Mechanical parts	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-68)



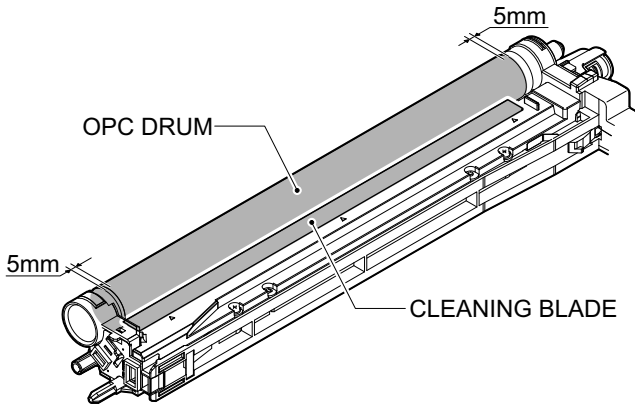
**(Note for servicing the OPC drums)**

**1. Prevention of oily dirt attachment**

**[Note]**

- Be careful not to attach fingerprints or oily dirt on the OPC drum surface. (Keep the unit away from oils and dust.)
- When replacing the OPC drum, cover the OPC drum with the protection sheet and hold the protection sheet.

If it is required to hold the OPC drum directly, use enough care not to touch the cleaning blade area, 5mm inside from both edges of the OPC 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 OPC drum surface erroneously, perform the following countermeasures.

- 1) Use dry cloth to clean and remove the dirt.
- 2) Apply stearic acid powder to prevent blade flip.

**[Check method]**

Check to confirm that the OPC 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]**

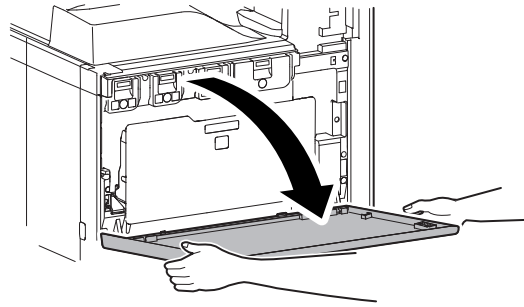
- Avoid servicing in a place where there is strong light.
- Do not expose the unit to light for a long time.
- Cover the OPC drum with light-blocking material. (When using paper, use about 10 sheets of paper to block light.)

**[Countermeasures]**

If the OPC drum is erroneously exposed to light too much (prior exposure), perform the following countermeasures.

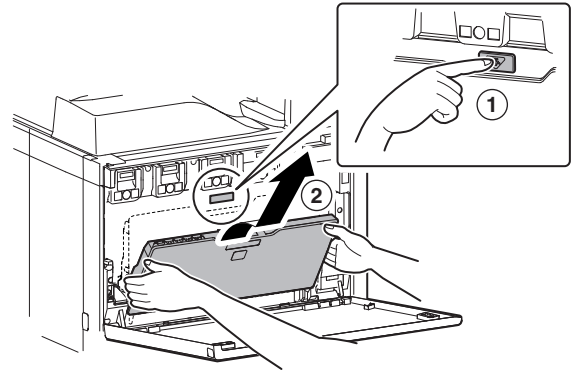
- 1) Print half tone images on the whole surface of A4 (11" x 8.5") paper, and check to confirm that there is no irregular density area in the previously exposed section.
- 2) Damages due to prior exposure may be recovered by keeping the OPC drum for several hours. If, however, image are not recovered, replace the OPC drum.

- 1) Open the front cover.

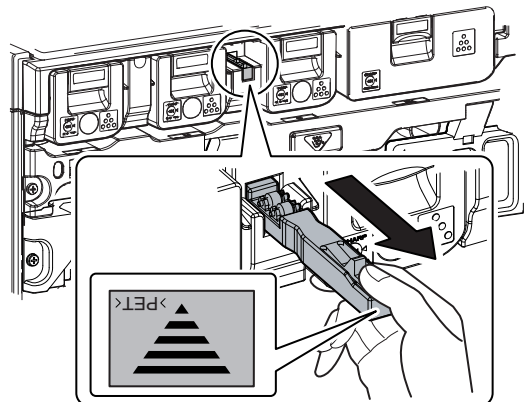


- 2) Remove the waste toner box.

Maintenance: Check at every 150K. (Replace as necessary.)

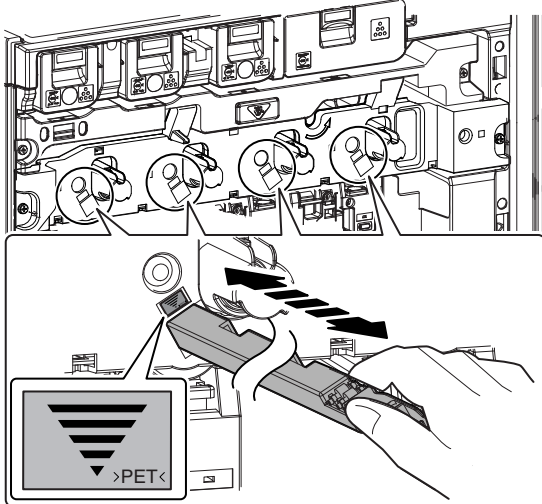


- 3) Remove the MC cleaner rod.



- 4) Insert the MC cleaner rod into the insertion port where the cleaning guide label is attached, and clean the MC unit.

Maintenance: Clean at every call.

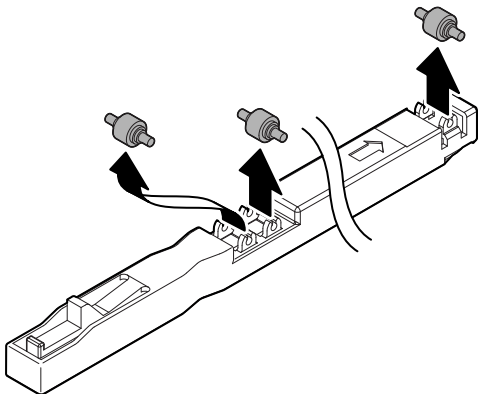


\* Slide the rod back and forth 3 times to cleaning the MC unit.  
If there is no improvement, clean again.

If a satisfactory result is not obtained by cleaning again,  
replace the MC cleaner rollers with spare ones.

- 5) Remove the MC cleaner roller from the MC cleaner rod.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).

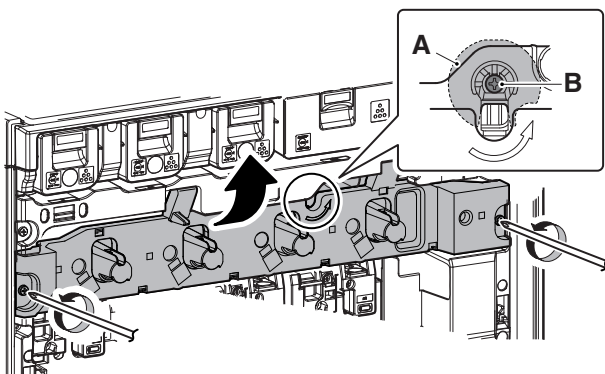


\* Be careful to prevent against dirt of the MC cleaner roller.  
(Prevent adhesion of the oils or the toner etc.)

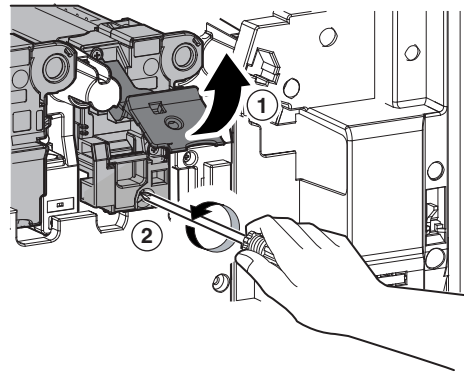
- 6) Check that the lock is released as shown in (A).

Loosen the blue screw, and open the drum positioning unit.

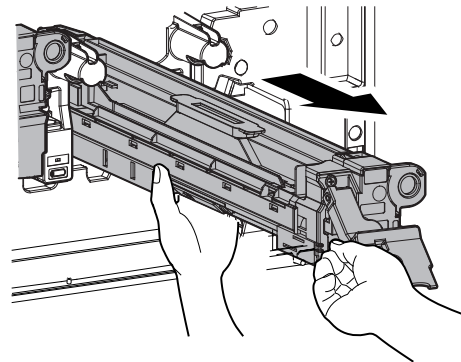
\* When the lock is not released, use a screwdriver to turn the screw (B) counterclockwise so that it is fit as (A).



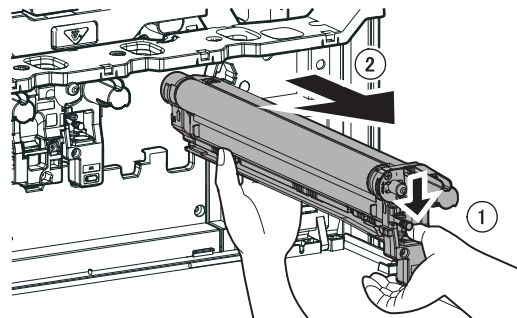
- 7) Open the DV lock lever, and release the fixing screw.  
(1 position for each color)



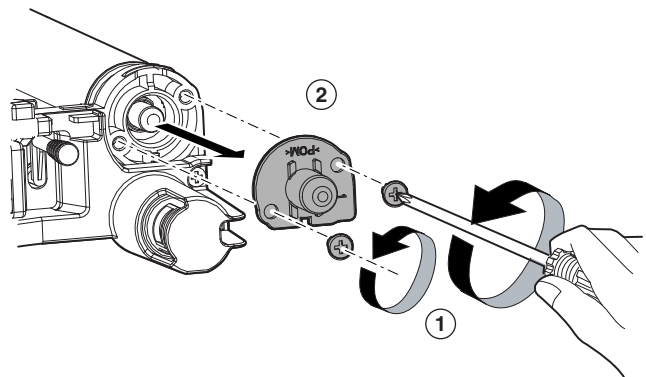
- 8) Pinch the knob and remove the development unit.



- 9) Hold the lock lever, and pull out each color drum unit slowly,  
and support the lower section of the unit with hand to remove.

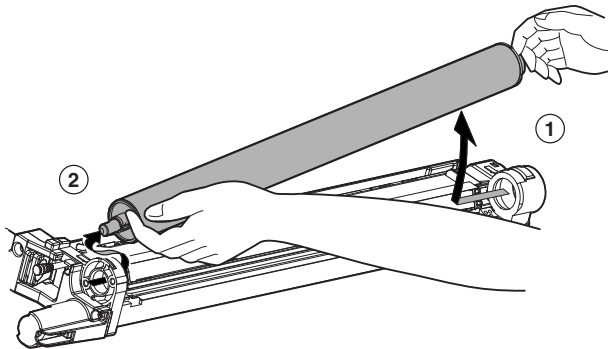


- 10) Remove the screws and remove the fixing shaft.

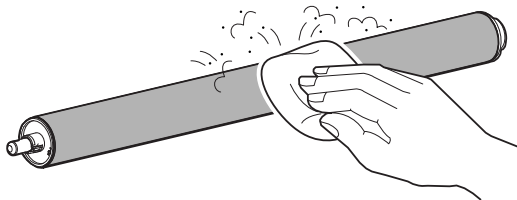


- 11) Slide the OPC drum to the front side, and lift the drum rear side, and remove the OPC drum from the hole in the front section.

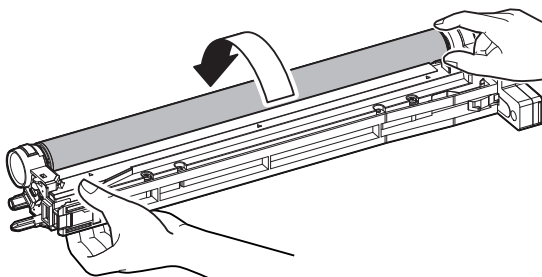
Maintenance: Replace at every 100K (color) or every 150K (monochrome).



\* When replacing, apply stearic acid powder to the OPC drum.

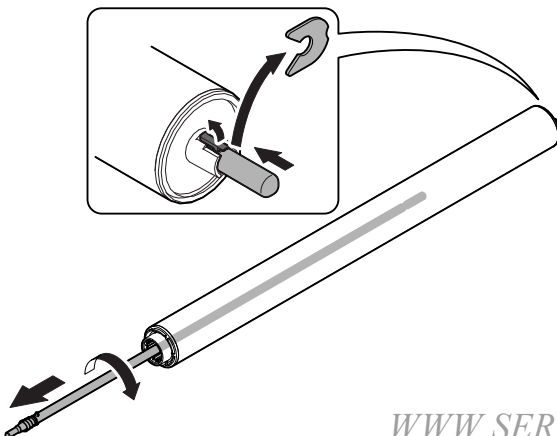


- \* Don't touch the OPC drum surface. (excluding the area of within 5mm from the both ends)
- \* Even if it wrapped with black paper, don't apply hard pressure.
- \* Apply the stearic acid powder to the whole surface of the OPC drum.
- \* Hold both ends, rotate twice by hand in the direction shown in the figure. (For seating the drum cleaning blade.)

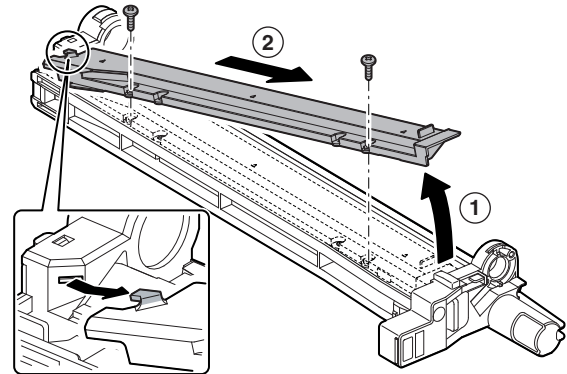


- 12) Remove the C-ring, carefully lift the hook, and push the drum shaft. Pull the drum shaft which extends to the opposite side until it is caught, and rotate and remove the OPC drum.

\* When installing the drum shaft to a new drum, leave the drum protection paper wrapped on the drum..



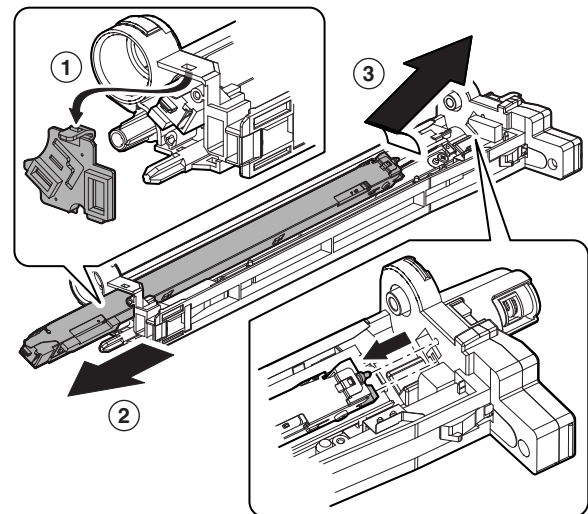
- 13) Remove the screw, and remove the cover.



- 14) Release the pawl, and remove the cover. Remove the MC unit.

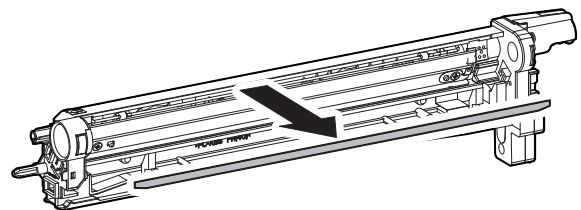
Maintenance: Replace at every 100K (color) or every 150K (monochrome).

NOTE: Attach the cover so that it does not float on the opposite side of the pawl.

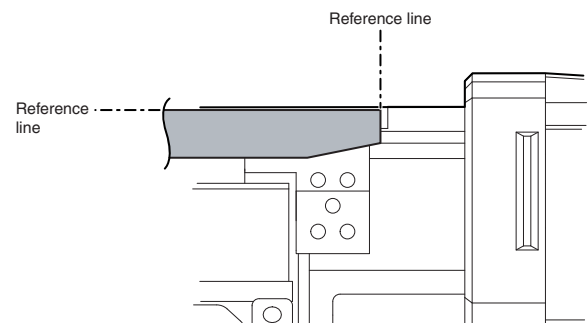


- 15) Remove the toner receiving seal.

Maintenance: Check at every 100K (color) or every 150K (monochrome). (Replace as necessary.)



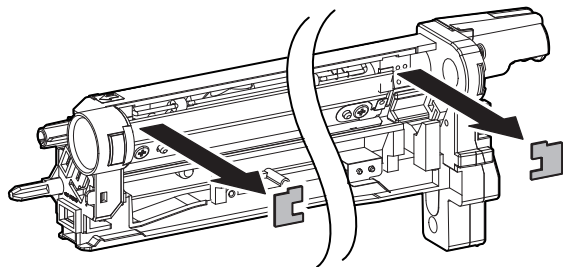
\* When attaching, use alcohol to remove oil from the attached surface, and fit as indicated below.



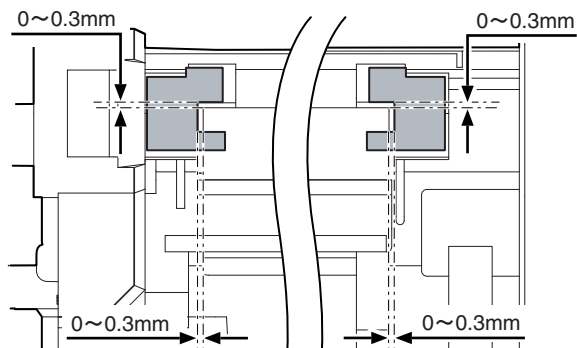


16) Remove the side seal F/R.

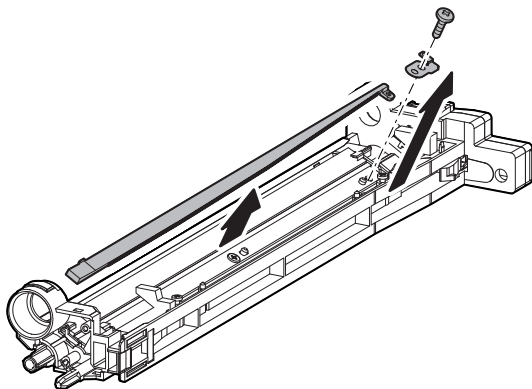
Maintenance: Check at every 100K (color) or every 150K (monochrome). (Replace as necessary.)



\* When attaching, use alcohol to remove oil from the attached surface, and fit as indicated below.

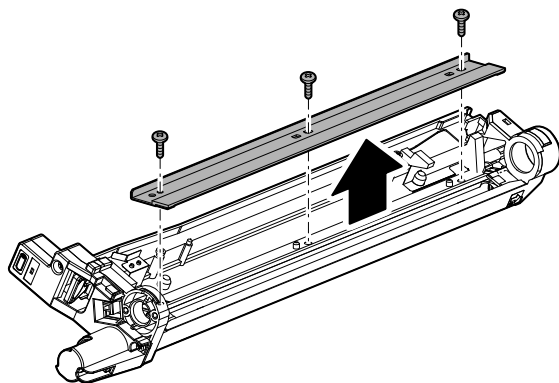


17) Remove the screw, and remove the DC holding plate and the DCH lens.



18) Remove the screws, and remove the cleaner blade.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).



## B. Developing section

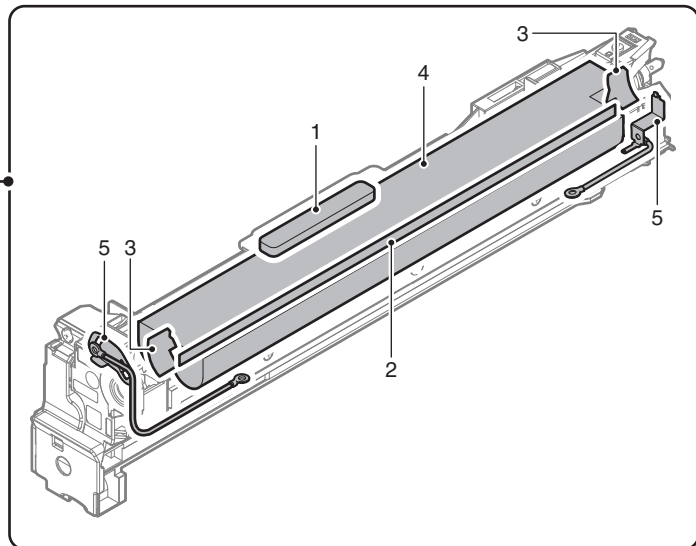
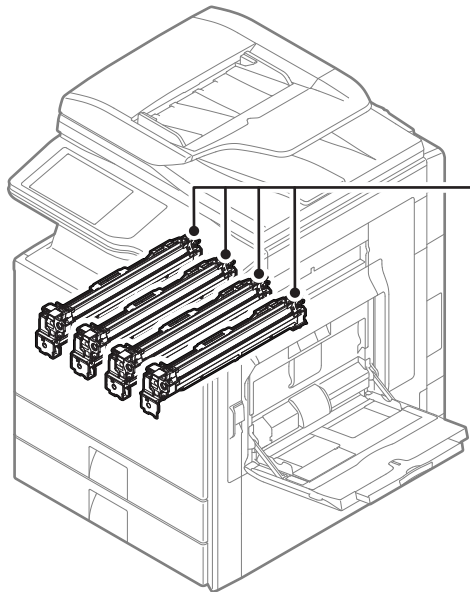
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Color items

No.	Part name		When calling	100 k	200 k	300 k	400 k	500 k	600 k	700 k	800 k	900 k	1000 k	1100 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Toner filter	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
2	DV blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-22)
3	DV side seal F/R		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26, [23]-15)
4	Developer (Y)		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer (M)	Mechanical parts	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer (C)		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
5	Bias pin/Connector		-	×	×	×	×	×	×	×	×	×	×	×	

Monochrome items

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Toner filter	Supply	-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
2	DV blade		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-22)
3	DV side seal F/R		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26, [23]-15)
4	Developer		-	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
5	Bias pin/Connector	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	

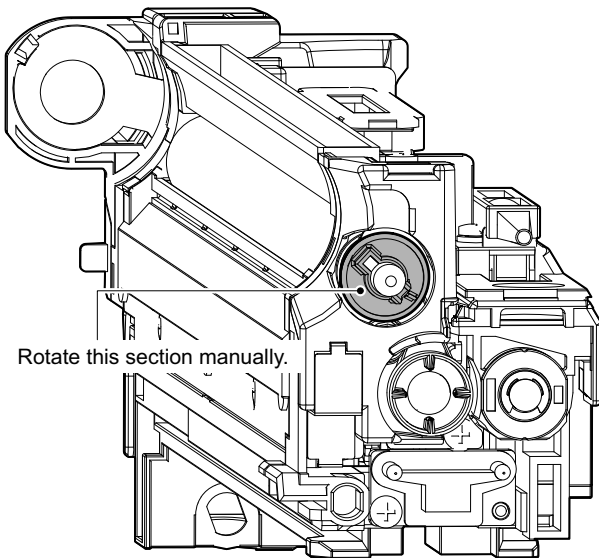


(Note for servicing the DV roller)

### 1. Prevent roller contamination

[Note]

- Be careful not to attach fingerprints or oily dirt on the DV roller surface.
- When rotating the DV roller manually, hold the drive gear section to rotate it.



[Countermeasures]

If a fingerprint is attached to the DV roller surface erroneously, perform the following countermeasures.

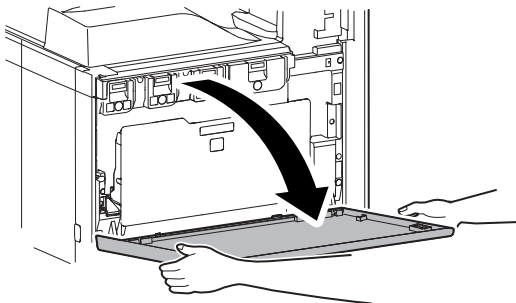
- 1) Remove developer material from the developer unit and the developer mag roller.
- 2) Remove oily dirt on the DV roller with alcohol.
- 3) When alcohol dries completely, supply developer and perform SIM 25-02.

[Check method]

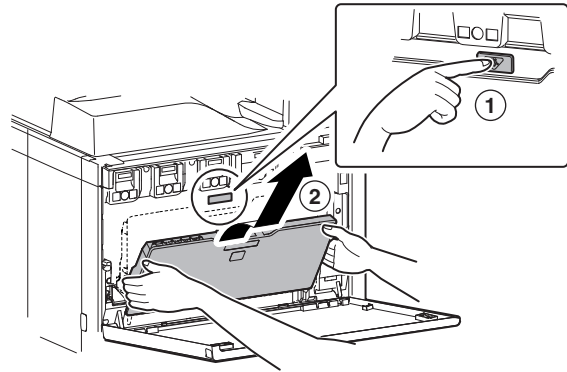
Check to confirm that the DV roller is free from fingerprints or oily dirt and that cleaning is completely executed or not by the following method.

- 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.

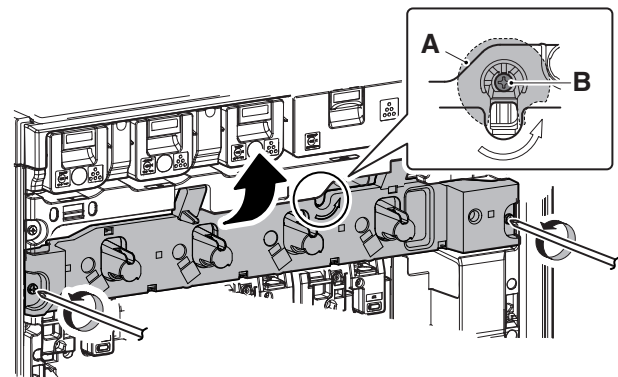
- 1) Remove the front cabinet.



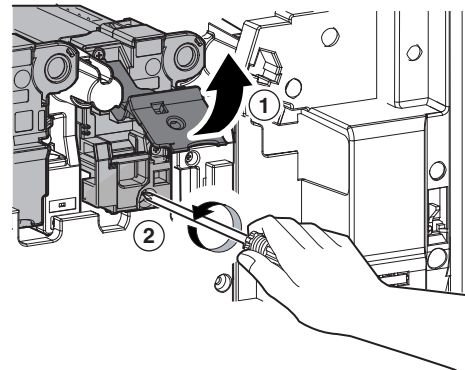
- 2) Remove the waste toner box.



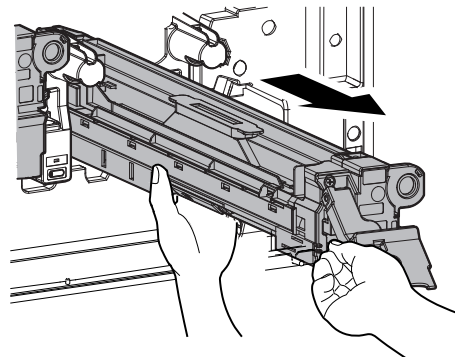
- 3) Check that the lock is released as shown in (A).  
Loosen the blue screw, and open the drum positioning unit.  
\* When the lock is not released, use a screwdriver to turn the screw (B) counterclockwise so that it is fit as (A).



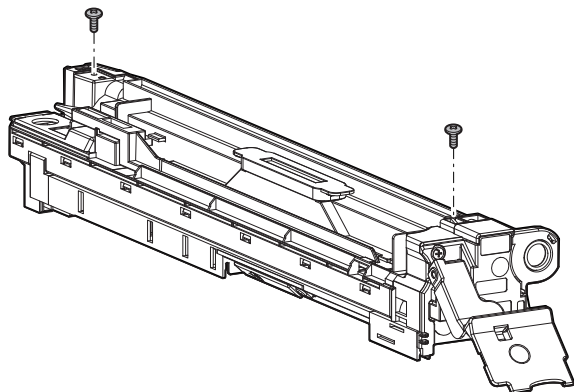
- 4) Open the DV lock lever, and release the fixing screw.  
(1 position for each color)



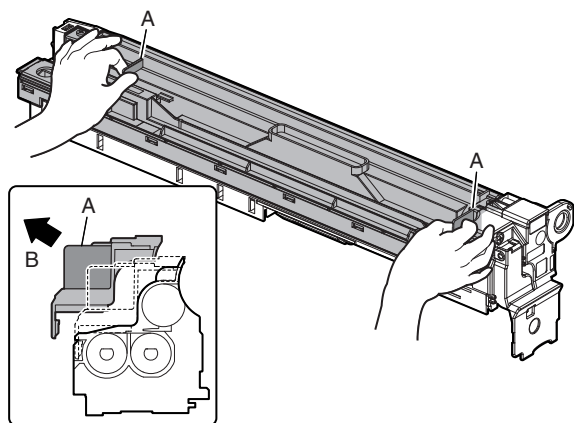
- 5) Pinch the knob and remove the development unit.



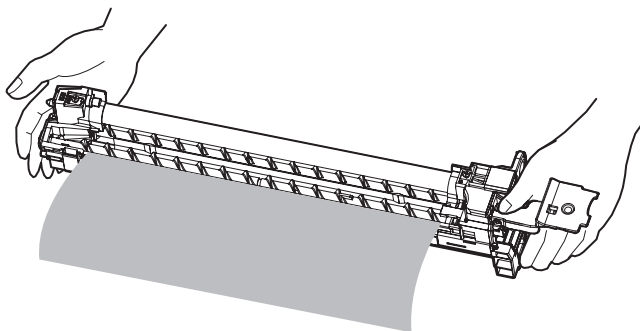
- 6) Remove the screws.



- 7) Hold the sections (A), and remove the DV cover in the arrow direction (B).



- 8) Remove developer material.

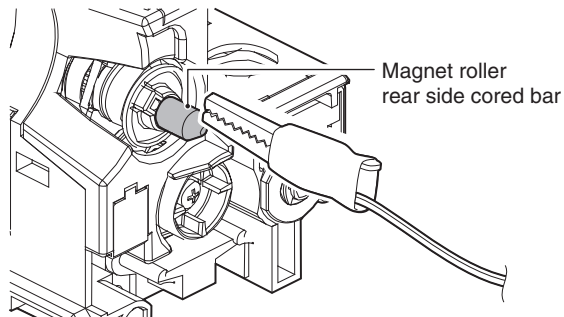


NOTE: Note for cleaning the developing unit If the developing unit is cleaned with a cleaner or an air blower with much developer in the developing unit, static electricity may be accumulated in the unit.

\* Metal part is brought into contact with the magnet roller surface when transporting developer or removing foreign material from the magnet roller, developer may adhere to the magnet roller surface. Be careful to avoid this when handling the magnet roller.

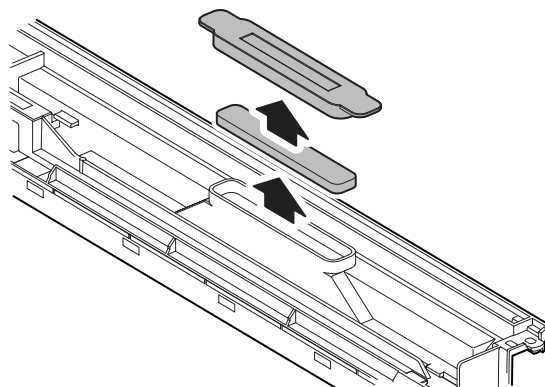
\* Remove developer in the development unit as well as developer attached to the magnet roller as far as possible.

NOTE: Before cleaning with a vacuum, remove ground the magnet roller rear side cored bar as shown in the figure below and clean the unit with a vacuum.



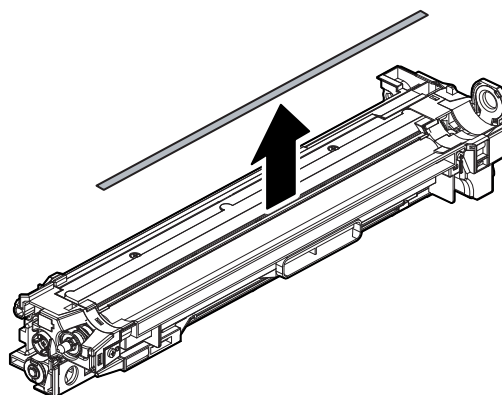
- 9) Remove the cover and the toner filter.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).

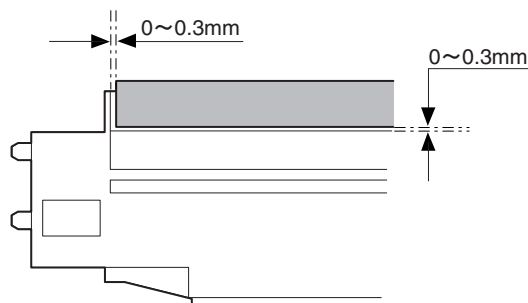


- 10) Remove the DV blade.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).

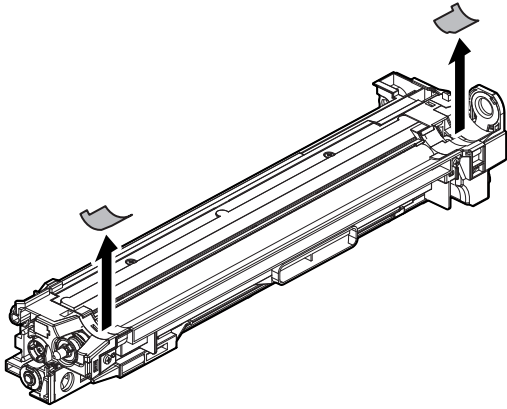


\* When attaching, use alcohol to remove oil from the attached surface, and fit with the reference.

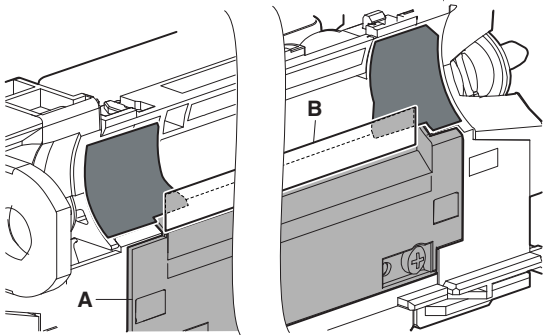
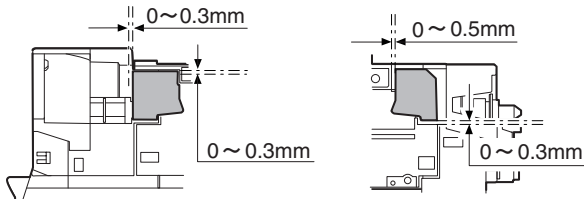


11) Remove the DV side seal F/R.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).

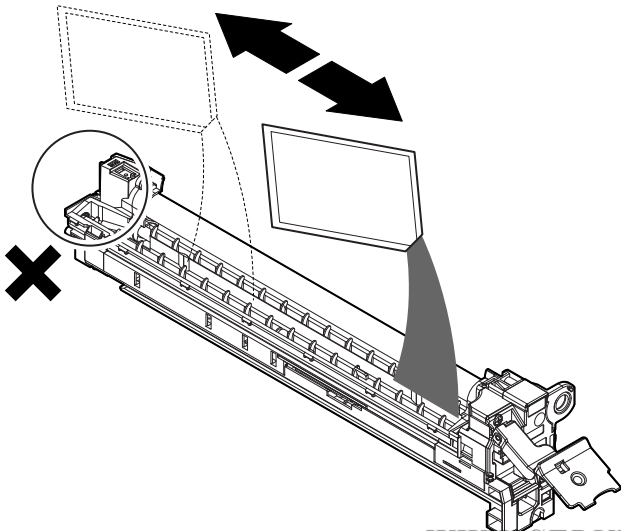


\* When attaching, use alcohol to remove oil from the attached surface, and fit with the reference so that the DV side seals F and R are inserted between the DV cover R (A) and the DV blade (B).



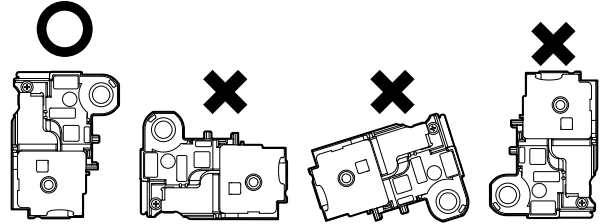
12) Insert the new developer.

Maintenance: Replace at every 100K (color) or every 150K (monochrome).



NOTE: When replacing developer, use extreme care not to drop developer on the drive section (marked with O).

NOTE: After supplying developer, do not tilt the development unit.



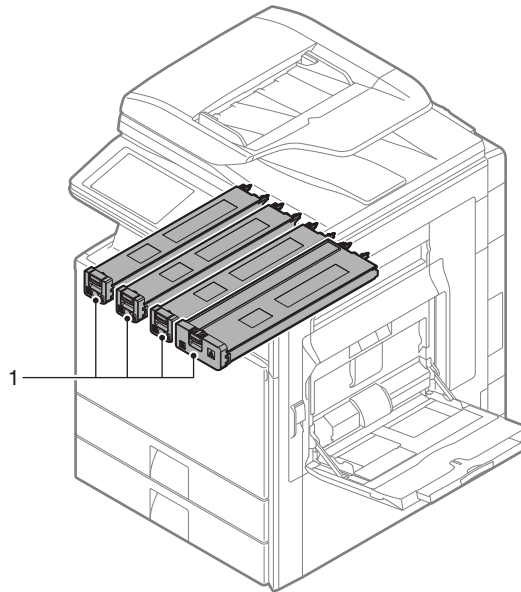
## C. Toner supply section

### Color items

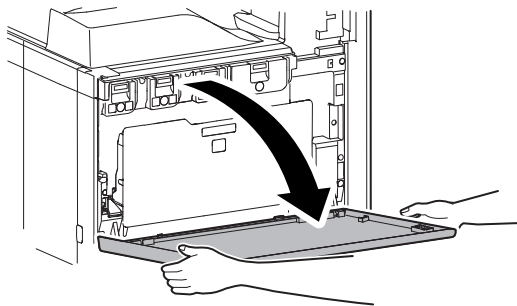
No.	Part name		When calling	100 k	200 k	300 k	400 k	500 k	600 k	700 k	800 k	900 k	1000 k	1100 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Toner cartridges	Supply	User replacement for every toner empty.												

### Monochrome items

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Toner cartridges	Supply	User replacement for every toner empty.												

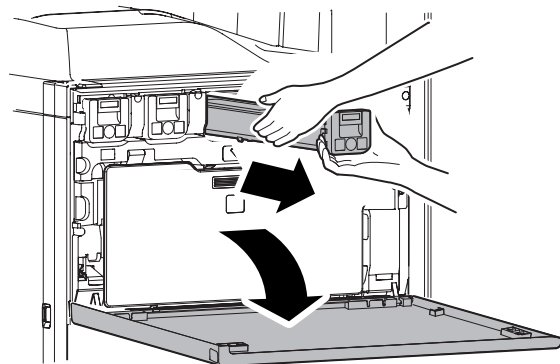


1) Open the front cover.



2) Lift the lock lever, and pull the toner cartridge out slowly and horizontally.

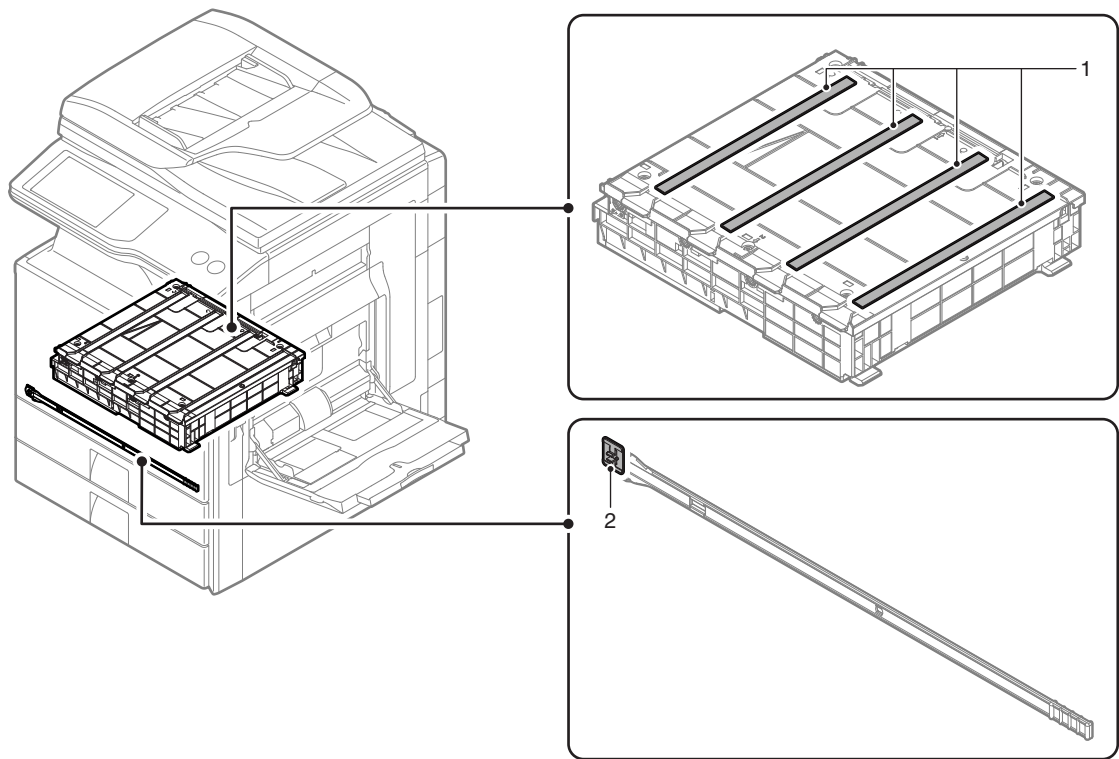
Maintenance: Replacement is made by the user at every toner empty condition.



**D. LSU section**

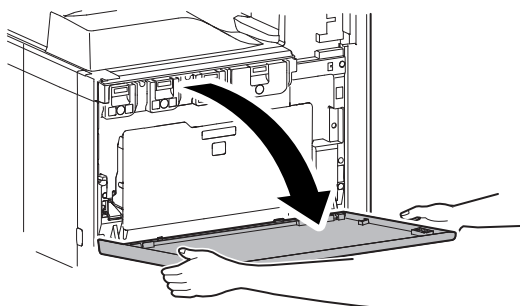
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Dust-proof glass	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	
2	Cleaning base		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-35)

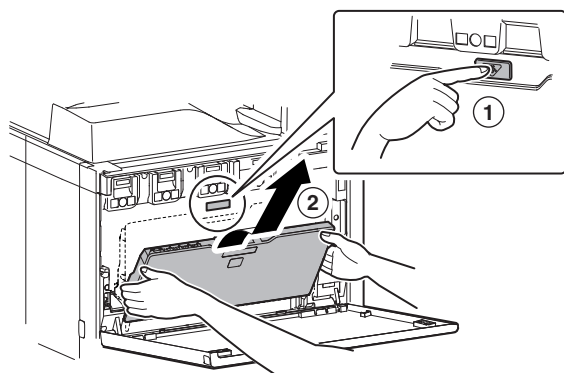




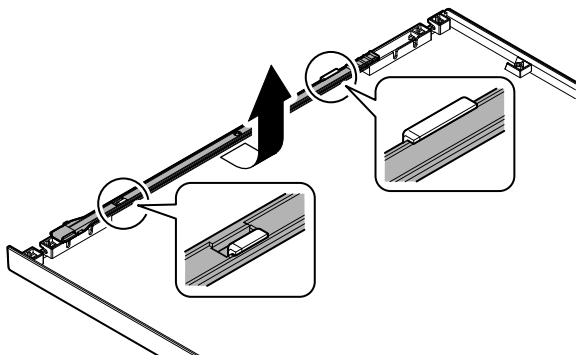
- 1) Open the front cover.



- 2) Remove the waste toner box.

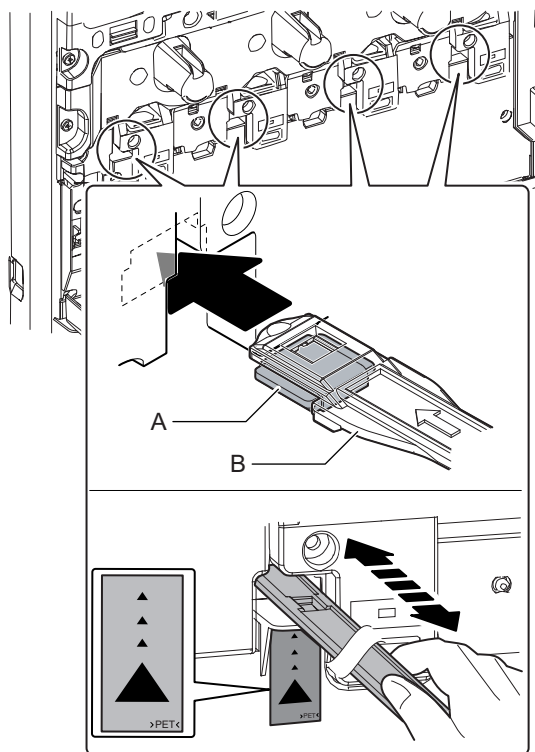


- 3) Remove the LSU cleaning rod from the front cover.



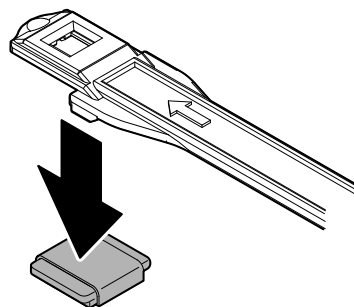
- 4) Insert the LSU cleaning rod into the insertion port to which the cleaning guide label is attached so that the cleaning base (A) is under the cleaning rod (B). Move the cleaning rod back and forth 2 or 3 times to clean the dust proof glass.

Maintenance: Clean at every 150K.



- 5) Remove the cleaning base from the LSU cleaning rod.

Maintenance: Replace at every 150K.

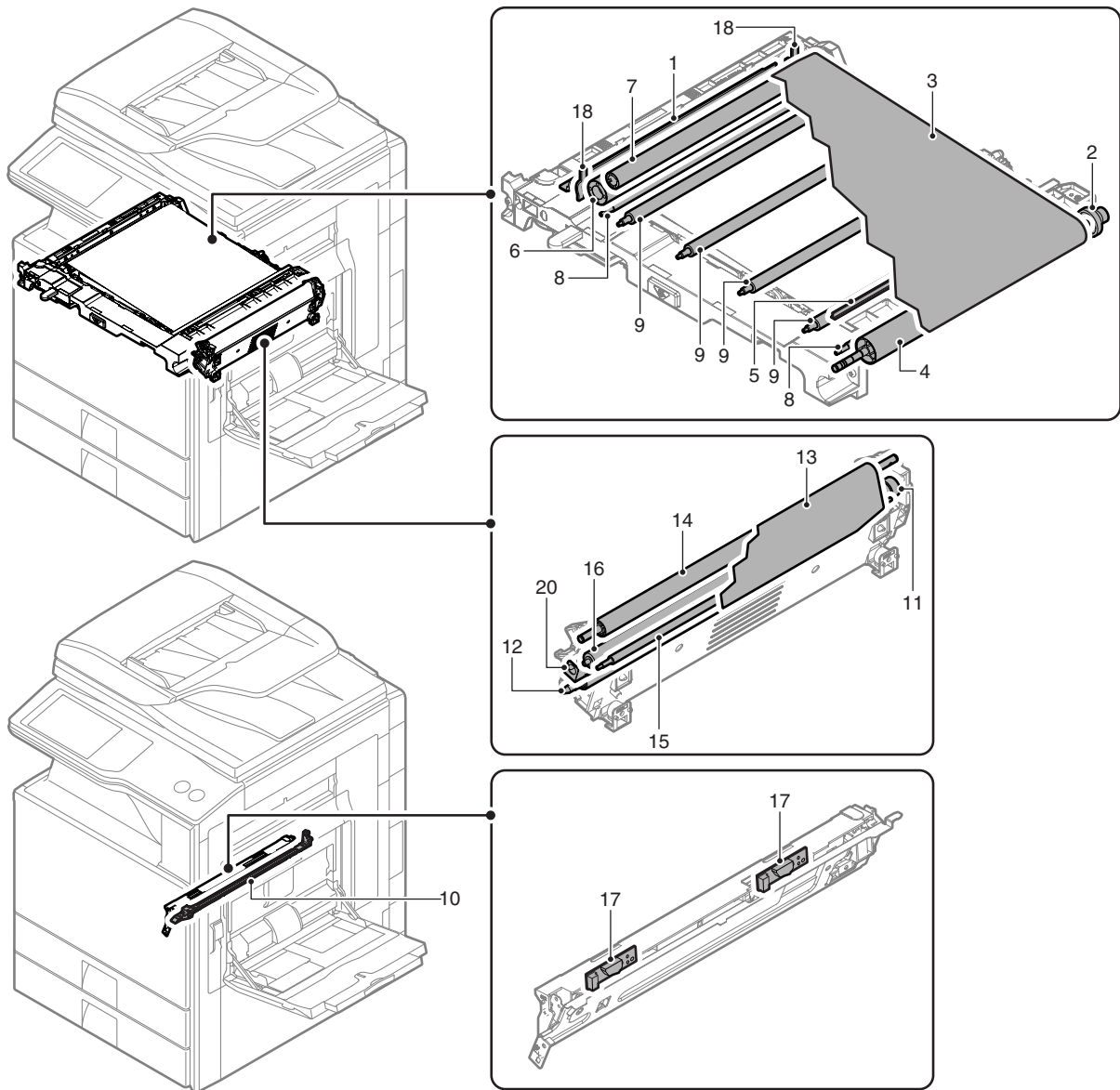




## E. Transfer section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Primary transfer cleaner blade	Mechanical parts	-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [25]-18)
2	Primary transfer belt drive gear		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [27]-13)
3	Intermediate transfer belt		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [26]-1)
4	Primary transfer belt drive roller		-	×	○	×	○	×	○	×	○	×	○	×	
5	Belt CL brush		-	×	○	×	○	×	○	×	○	×	○	×	
6	Primary transfer belt follower roller		-	×	○	×	○	×	○	×	○	×	○	×	
7	Primary transfer belt tension roller		-	×	○	×	○	×	○	×	○	×	○	×	
8	PTC opposed roller		-	×	○	×	○	×	○	×	○	×	○	×	
9	Primary transfer roller		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [27]-9, [28]-42)
10	PTC unit		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [20]-502)
11	Secondary transfer idle gear		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [29]-6)
12	Secondary transfer belt follower roller		-	×	○	×	○	×	○	×	○	×	○	×	
13	Secondary transfer belt		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [30]-21)
14	Secondary transfer belt drive roller		-	×	○	×	○	×	○	×	○	×	○	×	
15	Secondary transfer idle shaft		-	×	○	×	○	×	○	×	○	×	○	×	
16	Secondary transfer roller		-	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [30]-6)
17	Pro-reg sensor		-	○	○	○	○	○	○	○	○	○	○	○	
18	Transfer cleaner seal F/R		-	×	×	×	×	×	×	×	×	×	×	×	
19	Primary transfer toner reception seal		-	×	×	×	×	×	×	×	×	×	×	×	
20	Secondary transfer backup blade		-	×	×	×	×	×	×	×	×	×	×	×	

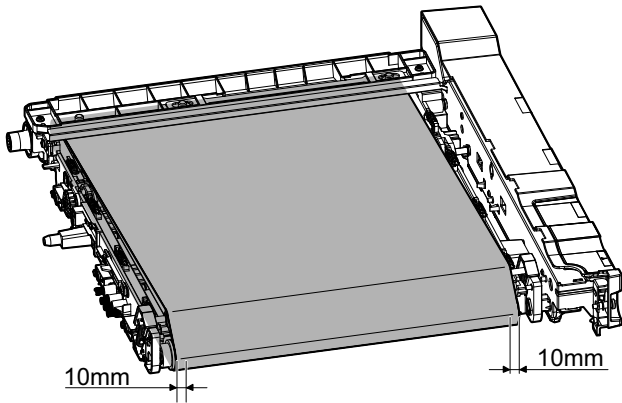


**(Note for servicing the transfer unit)**

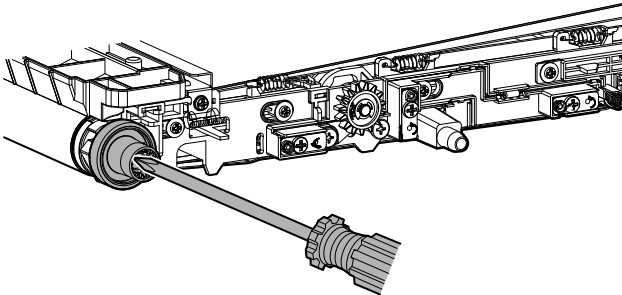
**1. Prevention of oily dirt attachment**

**[Note]**

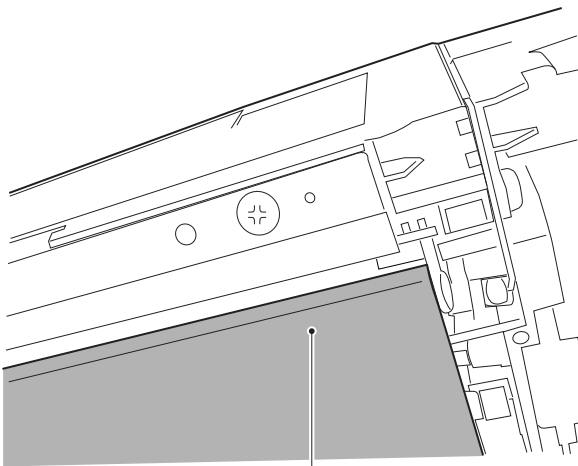
- Be careful not to attach fingerprints or oily dirt on the transfer belt surface. (Keep the transfer unit away from oil and dust.)
- When replacing the transfer belt, hold the edge section (within 10mm from the edge) of the transfer belt.



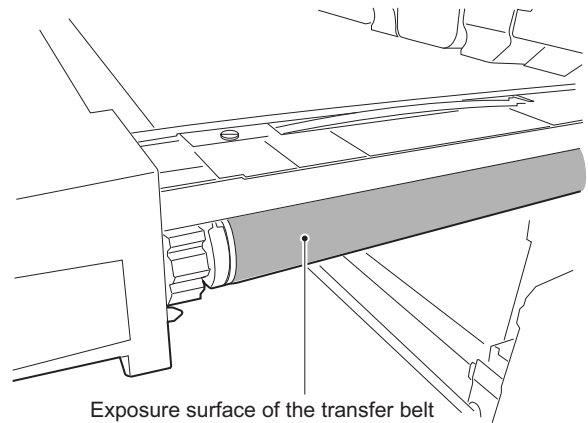
- When rotating the transfer belt manually, use a screwdriver to turn the drive gear section as shown below.



- When installing the transfer unit, hold the handle to insert the unit into the machine. When placing the transfer unit on the guide rail of the machine and inserting the unit to the machine, the exposure surface on both sides of the transfer belt may be touched erroneously. Use enough care not to touch the exposure surface. Also when the right door is opened, the exposure surface may be touched. Use enough care in this case, too.



Exposure surface of the transfer belt



Exposure surface of the transfer belt

**[Countermeasures]**

If oily dirt is erroneously attached to the transfer belt surface, perform the following countermeasures.

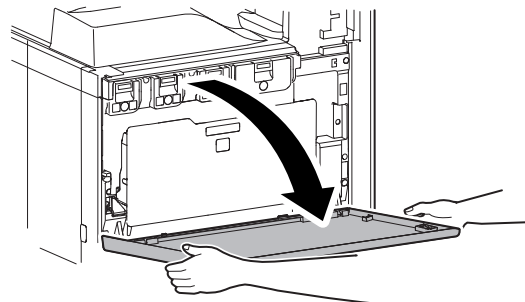
- 1) Use alcohol to remove oily dirt from the transfer belt.
- 2) Wipe alcohol trail completely away from the transfer belt surface. (If alcohol residue remains on the transfer belt, its image may be printed on copy paper.)
- 3) Apply Kynar powder to the cleaning blade to prevent reverse rotation of the cleaning blade.

**[Check method]**

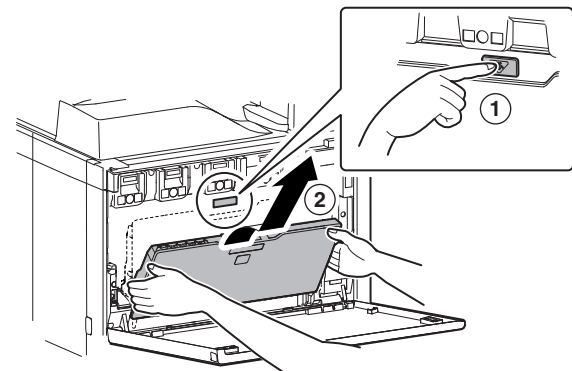
Check to confirm that the transfer belt is free from fingerprints or oily dirt and that alcohol residue are completely removed or not by the following method.

- Make three continuous multi prints of half tone images on all the surface of A3 (11" x 17") paper, and check the printed paper for any alcohol residue images.

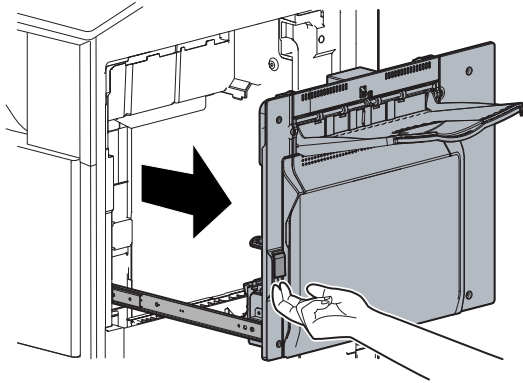
- 1) Open the front cover.



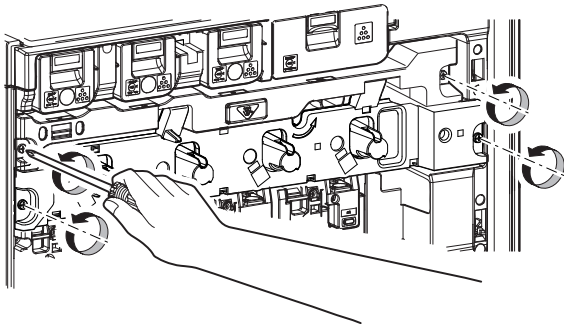
- 2) Remove the waste toner box.



- 3) Open the right door.

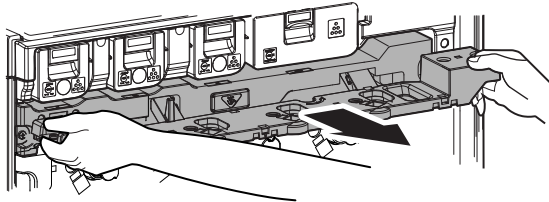
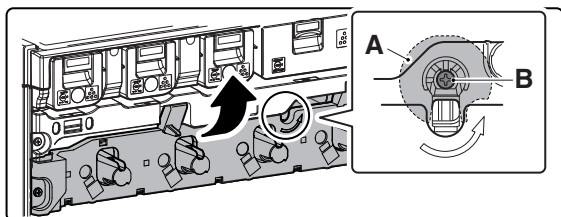


- 4) Loosen the blue screw.

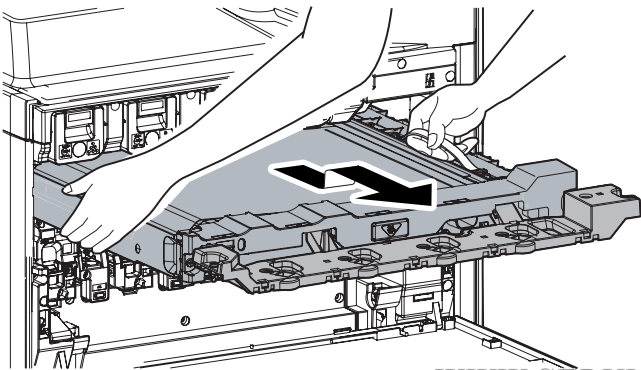


- 5) Turn the blue screw (A) counterclockwise. Making sure that the lock is released (B), open and then pull out the drum positioning unit.

NOTE: Failure to complete this step may damage the intermediate transfer belt.



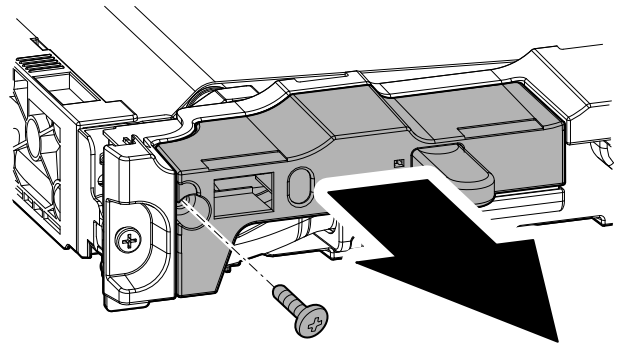
- 6) Hold the specified position, and remove the primary transfer unit.



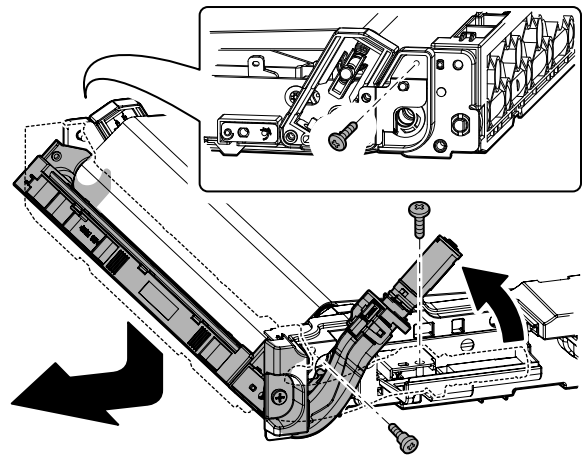
NOTE: After maintenance, when the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. (Power OFF-ON)

This procedure initializes the transfer roller to return it to the home position.

- 7) Remove the screws, and remove the maintenance cover.

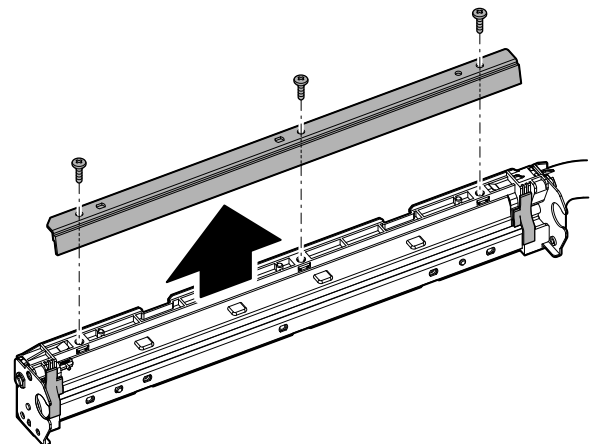


- 8) Remove the screw, and tilt the cleaner unit and remove it.



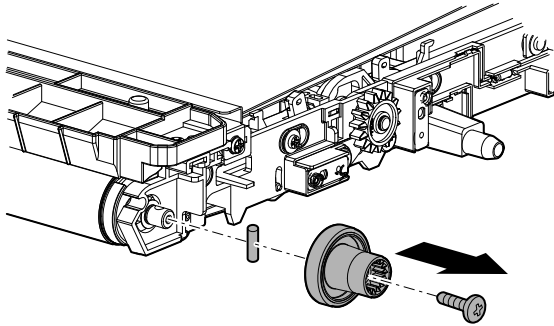
- 9) Remove the screws, and remove the primary transfer cleaner blade.

Maintenance: Replace at every 300K.

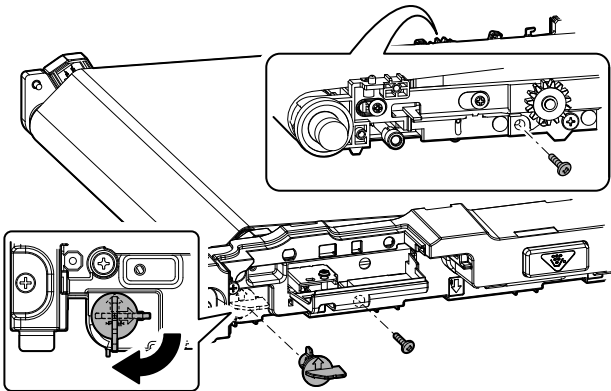


- 10) Remove the screws, and remove the primary transfer belt drive gear.

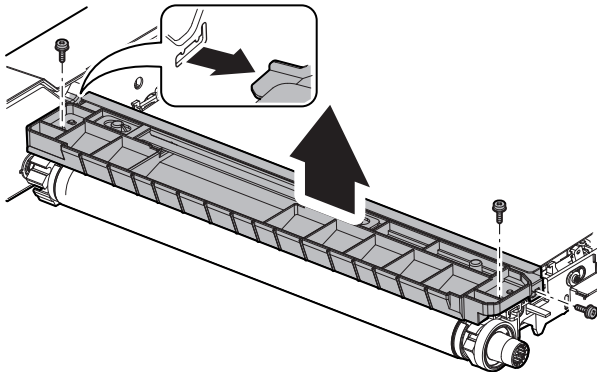
Maintenance: Replace at every 300K.



- 11) Remove the parts.

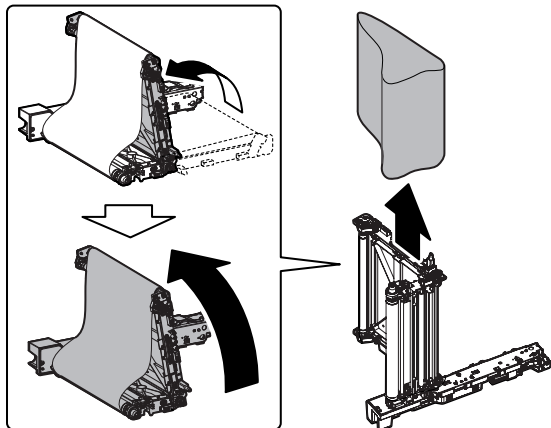


- 12) Remove the screws, and remove the paper guide.



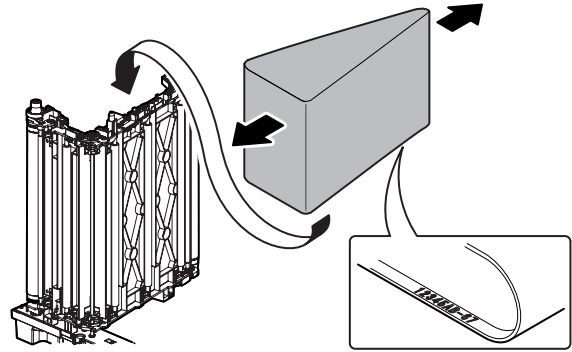
- 13) Fold the transfer frame and lift the rear side of the unit 90 degrees. Remove the intermediate transfer belt.

Maintenance: Replace at every 300K.



[Installing method]

Form the intermediate transfer belt into triangle. Slide the intermediate transfer belt over the transfer frame.

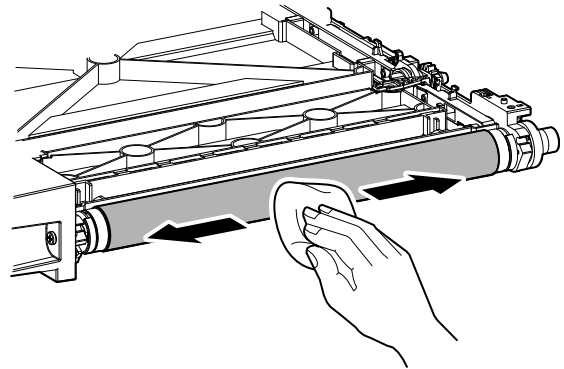


NOTE: When installing, be careful not to bring the intermediate transfer belt into contact with the transfer unit frame and the gears. Use care not to touch the intermediate transfer belt surface with bare hands.

When installing, position the belt so that the lot number specified on the back surface of the bead is on the front side.

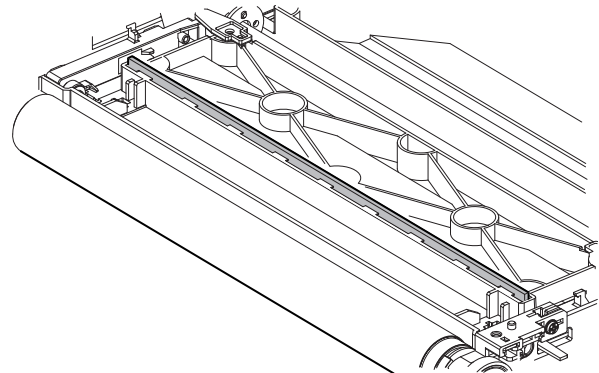
- 14) Clean the primary transfer belt drive roller.

Maintenance: Clean at every 300K.



- 15) Clean the belt CL brush.

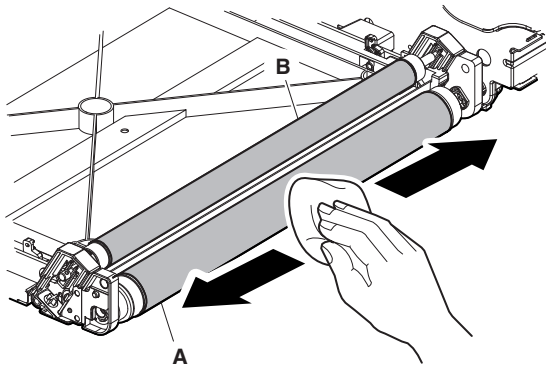
Maintenance: Clean at every 300K.





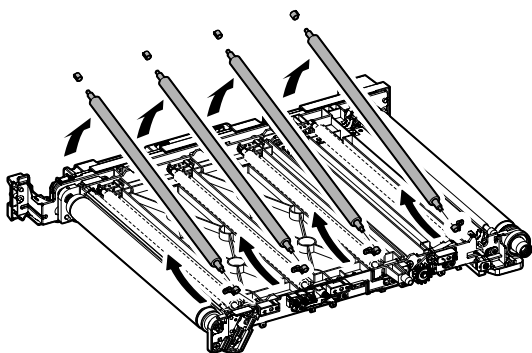
- 16) Clean the primary transfer belt follower roller (A) and the primary transfer belt tension roller (B).

Maintenance: Clean at every 300K.



- 17) Disengage the engagement on the front side, and remove the primary transfer roller.

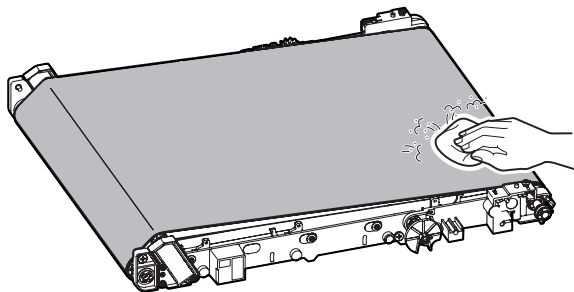
Maintenance: Replace at every 300K.



- 18) After replacing the intermediate transfer belt, apply Kynar.

NOTE: Do not touch the intermediate transfer belt with bare hands. Be careful not to scratch or fold it.

- a) Place the primary transfer unit on a flat surface with the top surface upward, and apply Kynar (UKOG-0123FCZZ) to all the top surface of the belt.



NOTE:

When placing the primary transfer unit on a flat surface, use a flat table and be careful not to scratch the belt and not to attach a foreign material.

NOTE:

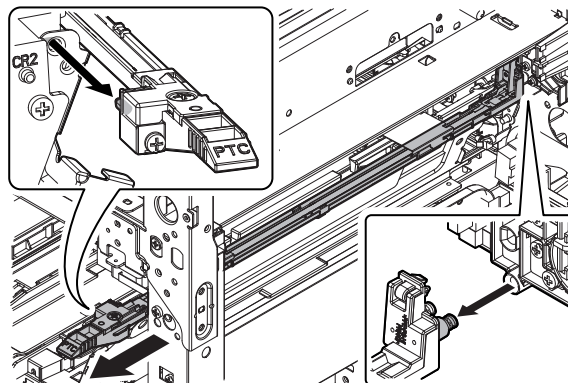
When installing the cleaner unit, rotate the intermediate transfer belt so that the section where Kynar was applied comes to the blade edge section, and install it.

- b) After inserting into the machine, make three sheets of background copy on A3 paper.

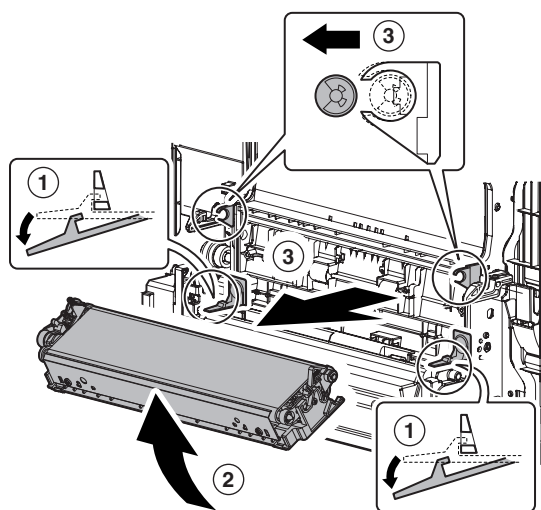
- 19) Remove the PTC unit.

Maintenance: Replace at every 300K.

\* After replacing the PTC unit, use SIM24-4 to reset the PTC counter.

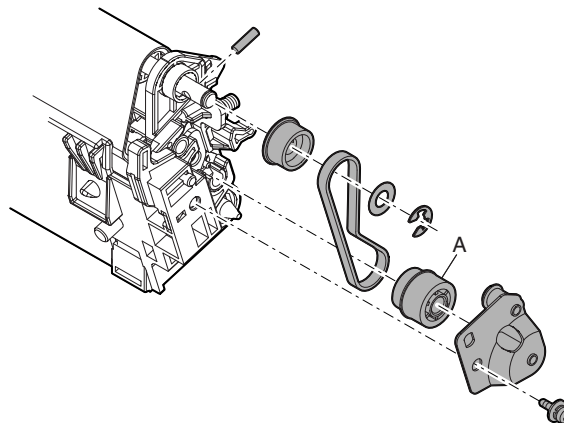


- 20) Release the pawl, and remove the secondary transfer unit.

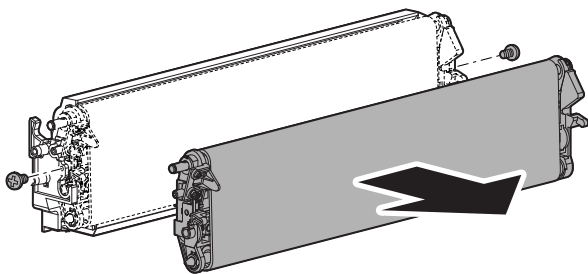


- 21) Remove parts as outlined below.

Maintenance: Replace at every 300K.

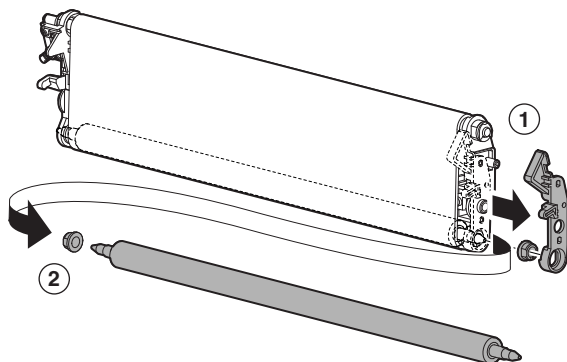


22) Remove the secondary belt transfer frame.



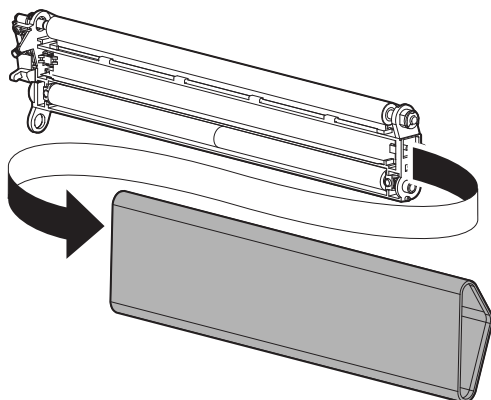
23) Remove parts as outlined below.

Maintenance: Clean at every 300K.



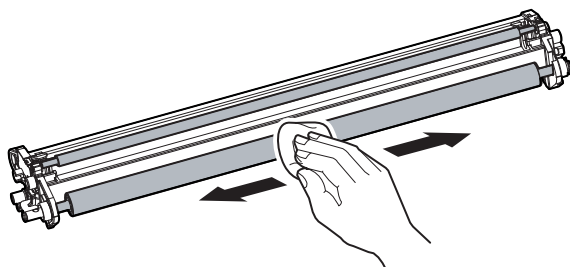
24) Remove the secondary transfer belt.

Maintenance: Replace at every 300K.



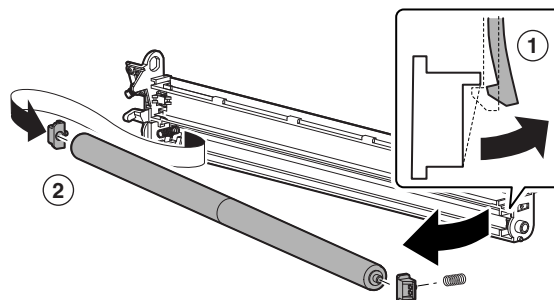
25) Clean the secondary transfer belt drive roller and the secondary transfer idle shaft.

Maintenance: Clean at every 300K.



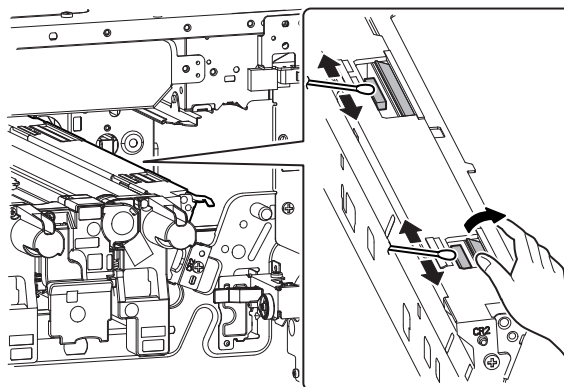
26) Remove the bearing on the front side, and remove the secondary transfer roller.

Maintenance: Replace at every 300K.



27) Push up the shutter, and clean the pro-reg sensor.

Maintenance: Clean at every 150K.



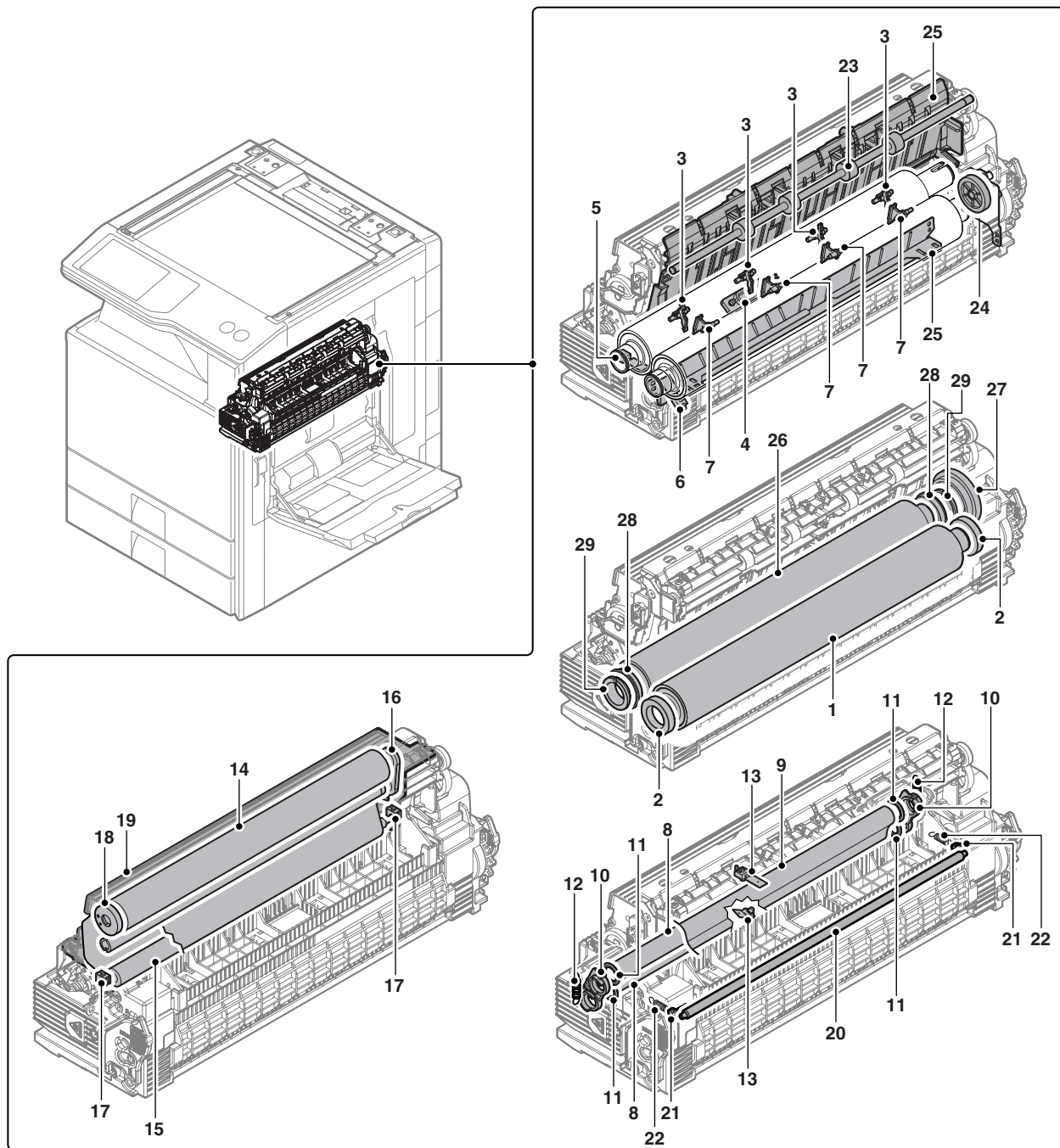
## F. Fuser section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name			When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)	
1	Lower heat roller	Replace the whole lower heat roller unit.	Mechanical parts	×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-15)	
2	Lower heat roller bearing			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-14)	
3	Upper separation pawl/pawl spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-14, [31]-15)	
4	Non-contact thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-37)	
5	Upper thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [31]-48)	
6	Lower thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-20)	
7	Lower separation pawl/pawl spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [32]-56, [32]-57)	
8	External heating roller			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-18)	
9	External belt			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-17)	
10	External heating roller bearing			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-13)	
11	External heating collar			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-15)	
12	External heating spring			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-5)	
13	External thermistor			×	×	▲	×	▲	×	▲	×	▲	×	▲	×	(P/G No.: [33]-12)	
14	Upper Web roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-19)
15	Pressure roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-21)
16	Web roller bearings			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-15)
17	Pressure roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [30]-10)
18	Winding regulation gear			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
19	Web unit			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
20	Lower CL roller			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
21	Lower CL roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
22	CL pressure spring			×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
23	Fusing paper exit roller			×	○	○	○	○	○	○	○	○	○	○	○	○	
24	Gears			☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
25	Paper guides			○	○	○	○	○	○	○	○	○	○	○	○	○	

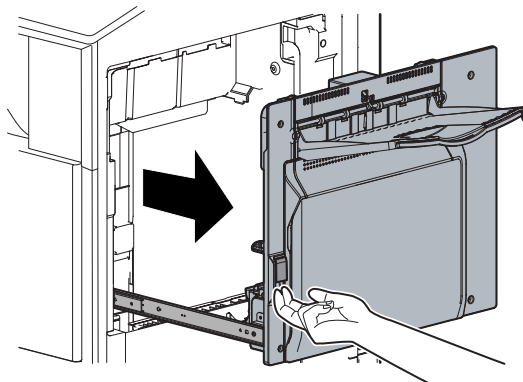
No.	Part name			When calling	200k	400k	600k	800k	1000 k	1200 k	1400 k	1600 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
26	Upper heat roller	Replace the whole upper heat roller unit.	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	
27	Upper heat roller gear			×	▲	▲	▲	▲	▲	▲	▲	▲	
28	Upper heat roller bearing			×	▲	▲	▲	▲	▲	▲	▲	▲	
29	Upper heat roller heat-insulation bush			×	▲	▲	▲	▲	▲	▲	▲	▲	



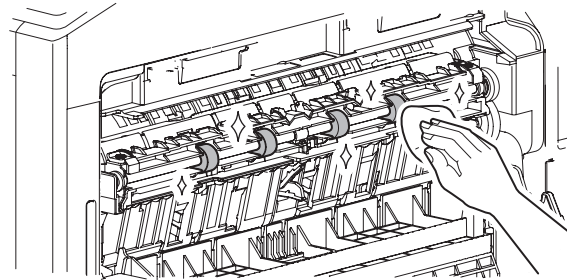


# **(1) Fusing paper exit roller cleaning**

- 1) Pull out the right door unit.

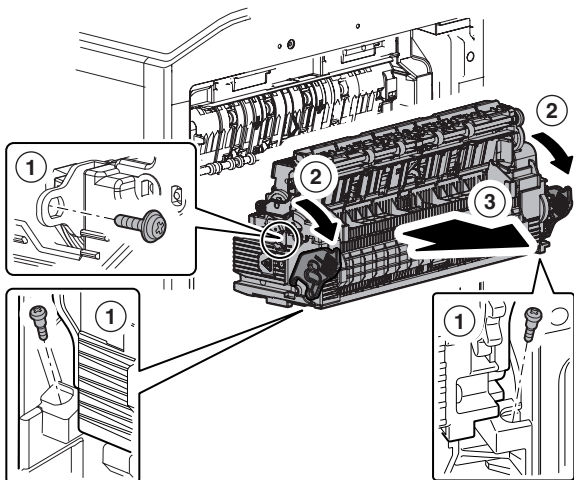


- 2) Clean the fusing paper exit roller.  
Maintenance: Clean at every 150K.



## (2) Web unit removal

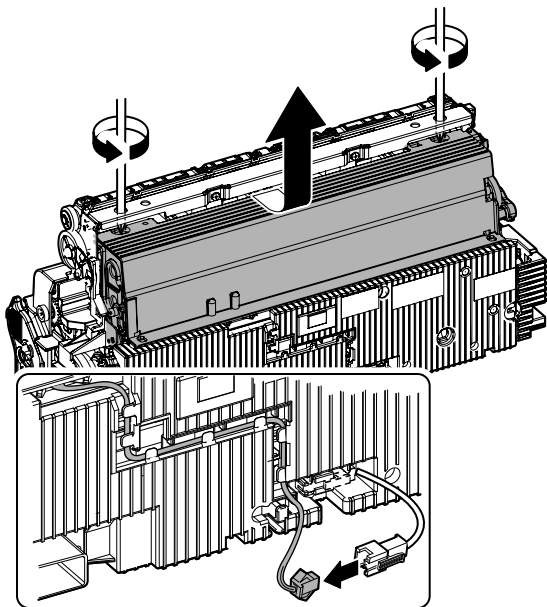
- 1) Remove the screw and the step screw. Release the fusing lever, and remove the fusing unit.



- 2) Disconnect the connector, remove two screws, and remove the web unit.

Maintenance: Replace at every 150K.

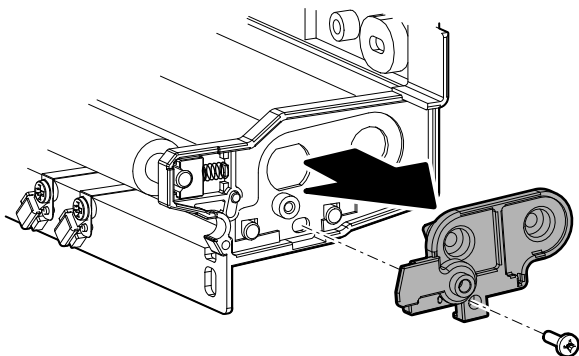
\* When installing, engage the harness with the rib.



## (3) Web roller bearing removal

- 1) Remove the screw, and remove the web roller bearing.

Maintenance: Replace at every 150K.



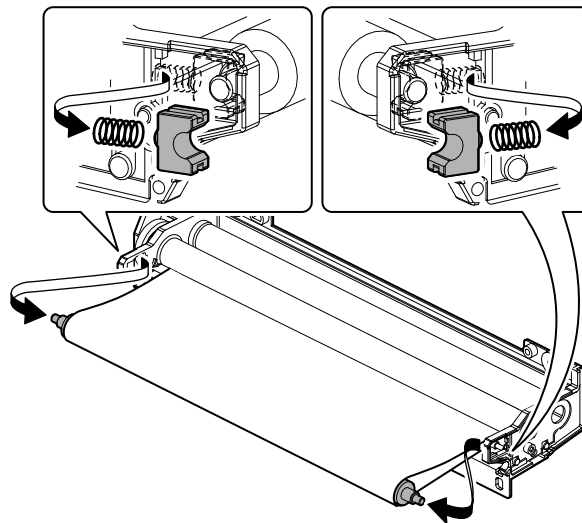
## (4) Pressure roller bearing/pressure roller removal

- 1) Remove the web spring, and remove the pressure roller bearing.

Maintenance: Replace at every 150K.

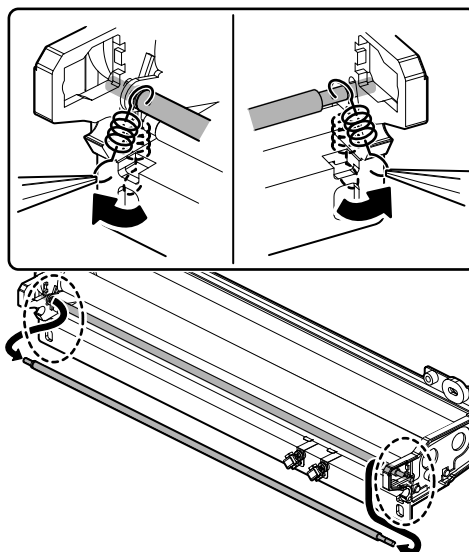
- 2) Remove the pressure roller.

Maintenance: Replace at every 150K.



## (5) Web roller/winding regulation gear removal

- 1) Remove the left and the right springs, and remove the web operation shaft.

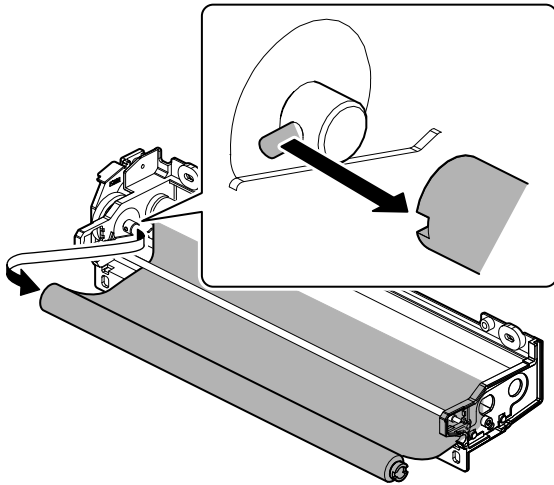


- 2) Remove the web roller (on the winding side).

Maintenance: Replace at every 150K.

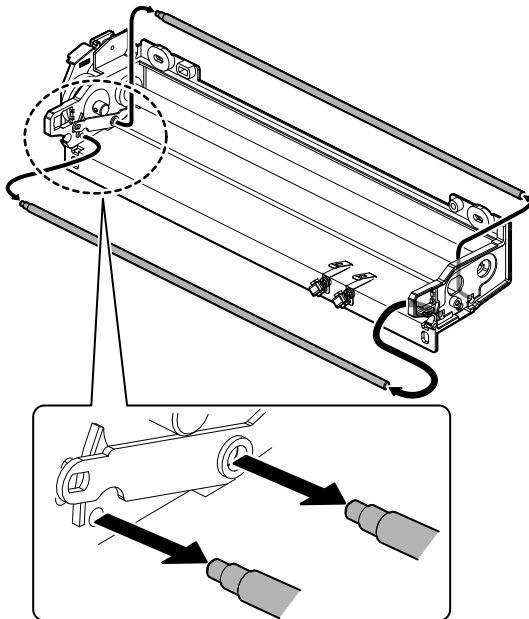
\* When installing, check to confirm that there are one concave section on the front side and two concave sections on the rear side, and be sure to engage them securely.

\* When installing, engage the concave section (one position) on the front side with the spring pin and two concave sections on the rear side with the web roller (on the feed side).



- 3) Remove two web tension shafts.

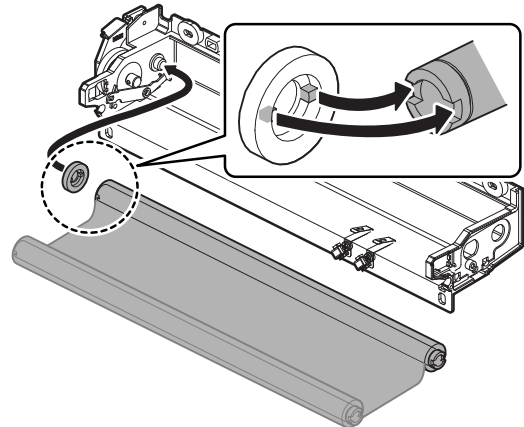
\* When installing, insert the rear side first. Note that the front side (gear side) of the shaft is narrower.



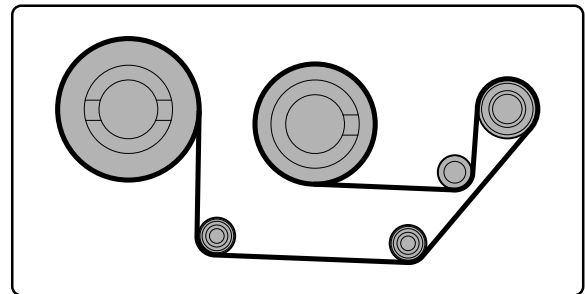
- 4) Remove the web roller (on the feed side) and the winding regulation gear.

Maintenance: Replace at every 150K.

\* When installing, fit the concave section and the convex section of the gear on the front side to engage securely.

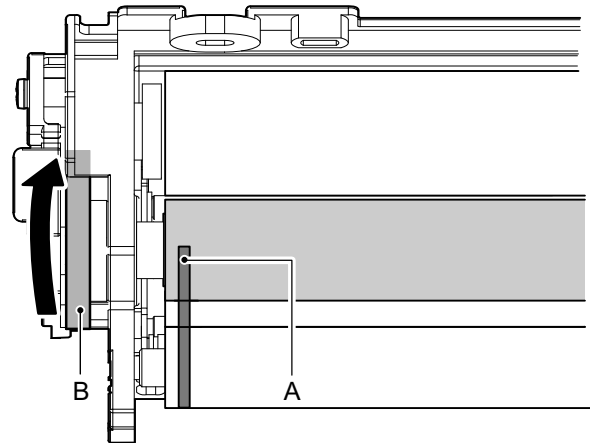


[Route diagram]



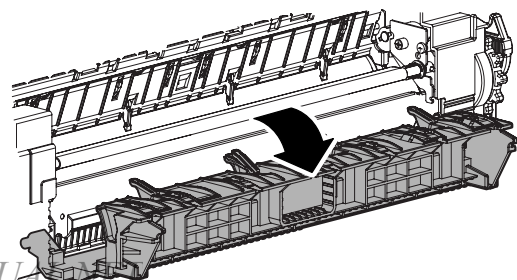
[Note for installation]

Turn the gear (B) in the arrow direction, and set so that the lead edge of the green line (A) of the web roller can be seen.



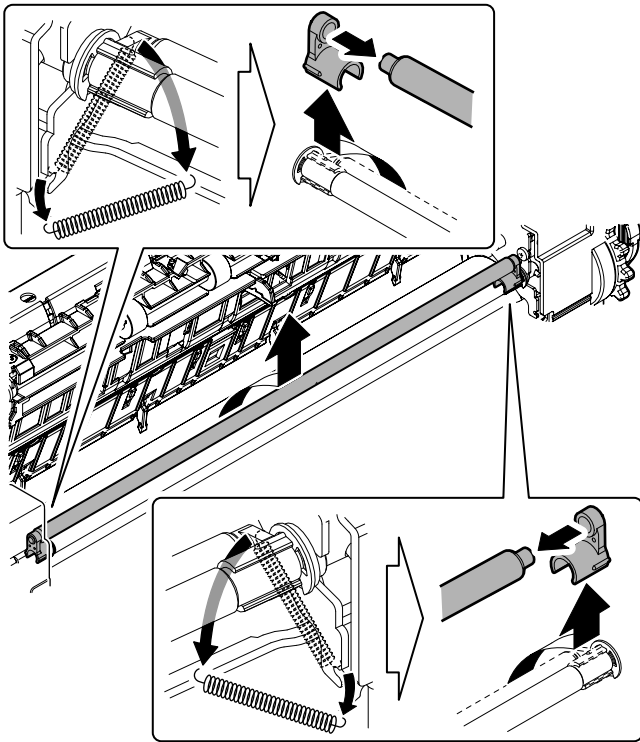
## (6) CL pressure spring/lower CL roller/lower CL roller bearing removal

- 1) Open the paper guide.



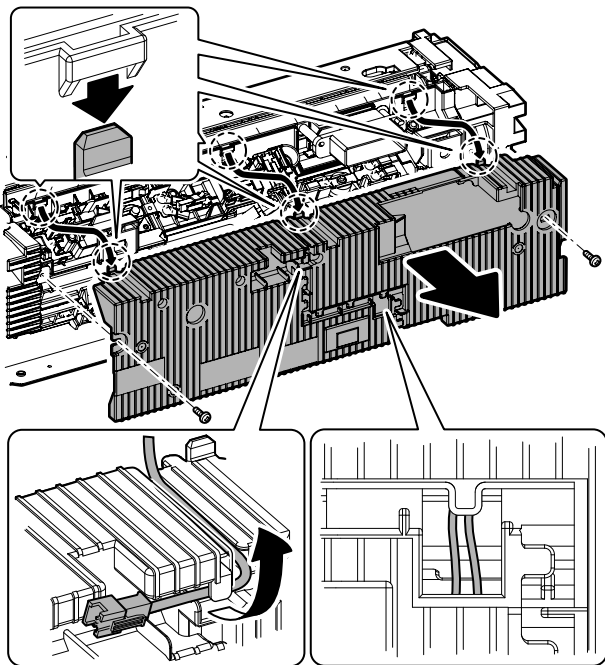
- 2) Remove the CL pressure spring, and remove the lower CL roller and the lower CL lower bearing.

NOTE: When assembling and disassembling, be careful not to scratch the heat roller.



## (7) Thermistor removal

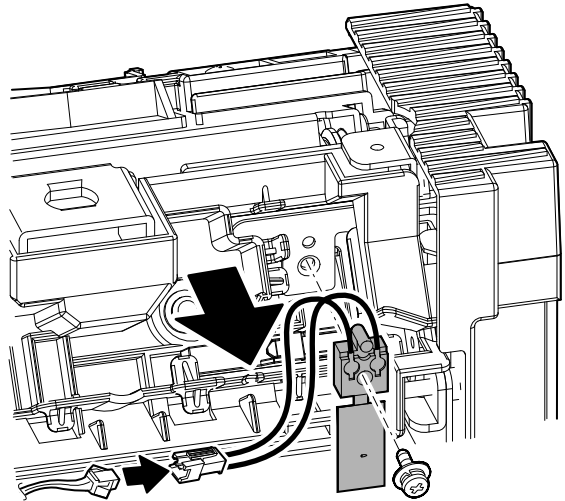
- 1) Remove the screw, and remove the interface harness and remove the fusing upper cover.



\* After installation, check to confirm that the harness of the external thermistor can be seen through the hole in the fusing upper cover.

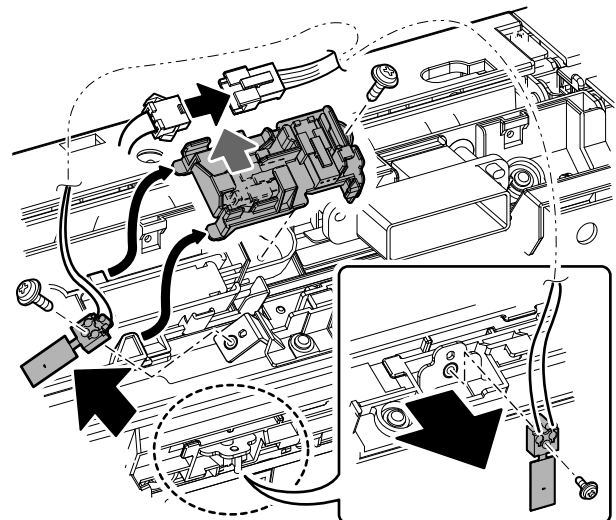
- 2) Remove the screw and disconnect the connector, and remove the upper thermistor.

Maintenance: Replace at every 300K.



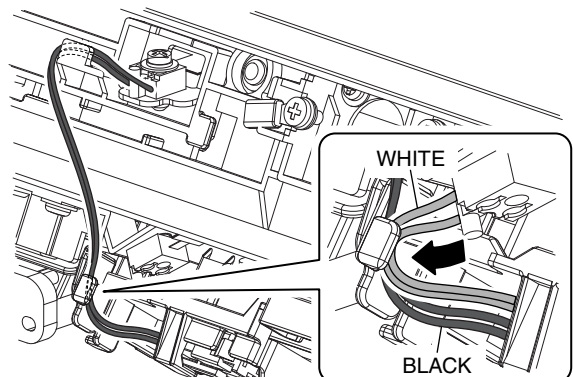
- 3) Remove the screw, and remove the fusing upper harness cover. Remove the screw and disconnect the connector. Remove the external thermistors (2 positions).

Maintenance: Replace at every 300K.



NOTE: Hang the hook on the black harness of the external thermistor, and put the lead wires to the lower side.

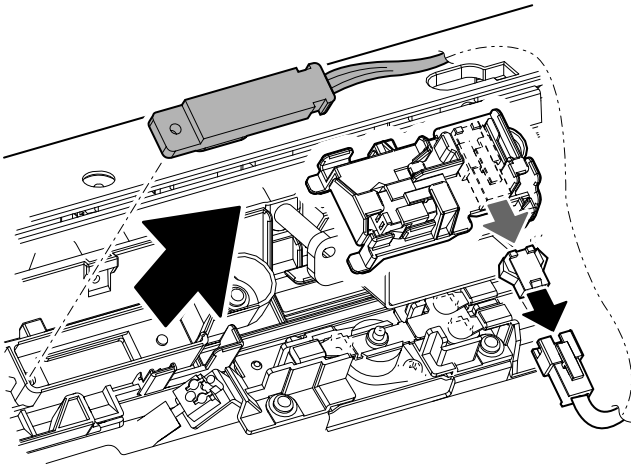
First, insert the black first, and then hang the white harness on it.



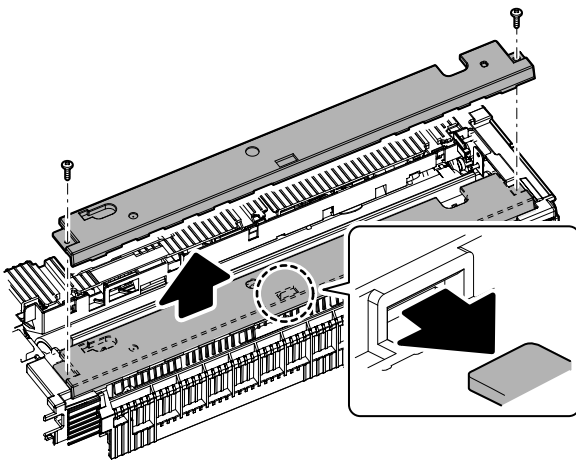


- 4) Remove the screw, disconnect the connector, and remove the non-contact thermistor.

Maintenance: Replace at every 300K.

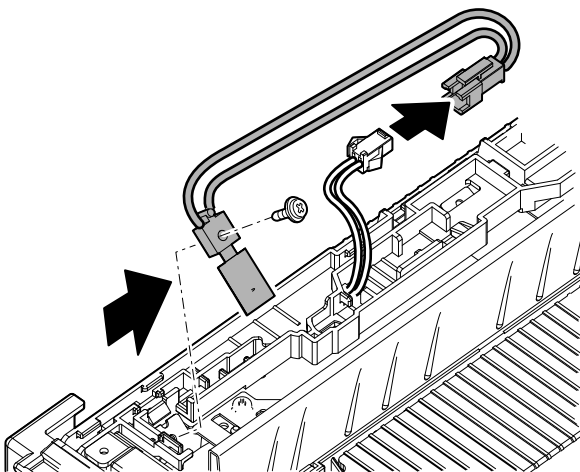


- 5) Remove the screw, and remove the fusing lower cover.



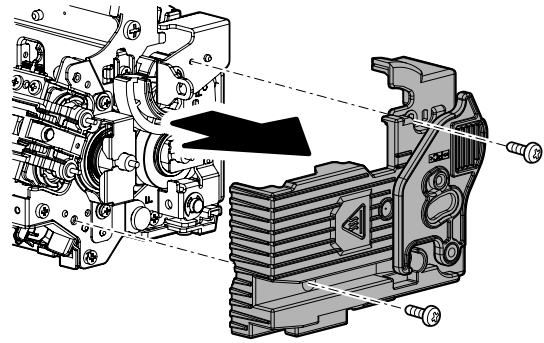
- 6) Remove the screw, disconnect the connector, and remove the lower thermistor.

Maintenance: Replace at every 300K.

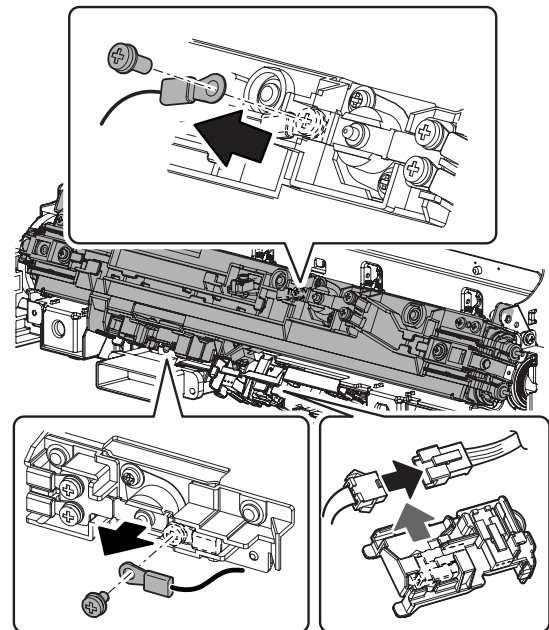


## (8) External heating unit removal

- 1) Remove the screw, and remove the fusing upper cover assembly.

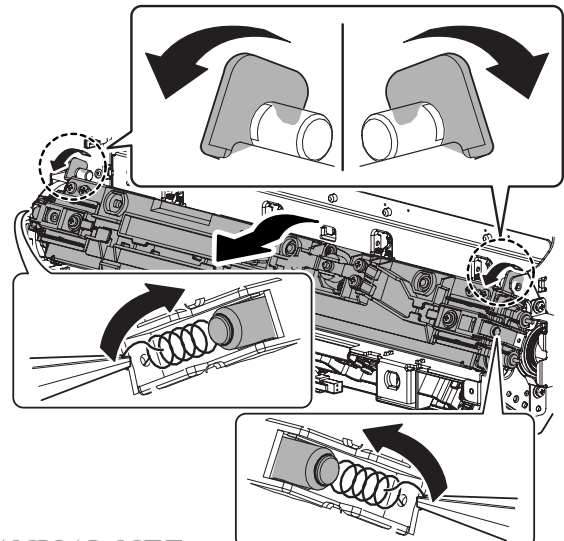


- 2) Remove the screw, and remove the terminal on the primary side of the thermostat (2 positions). Disconnect the connector of the thermistor.

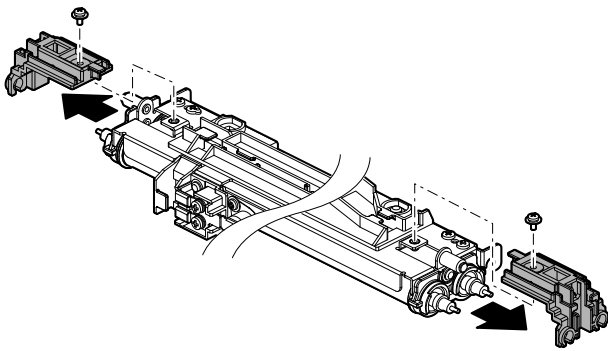


- 3) Remove two external heating springs, and disengage the hook and remove the external heating unit.

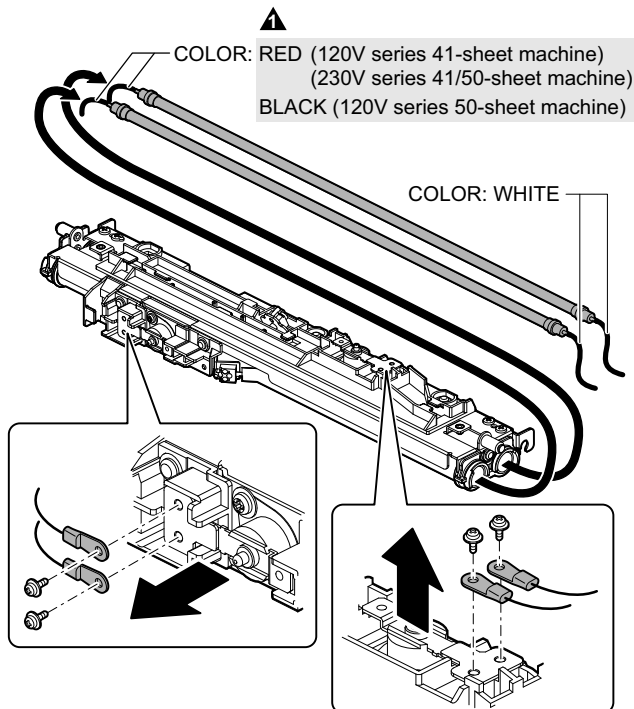
(External heading spring) Maintenance: Replace at every 300K.



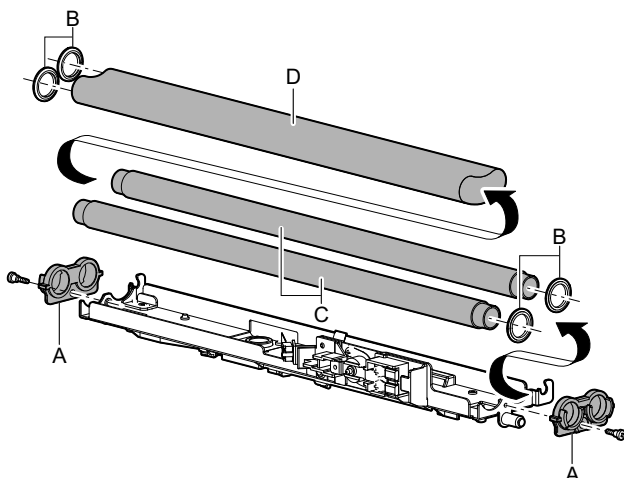
- 4) Remove the screw, and remove the external lamp holder.



- 5) Remove the screw and remove the terminal. Pull out the external heater lamp.

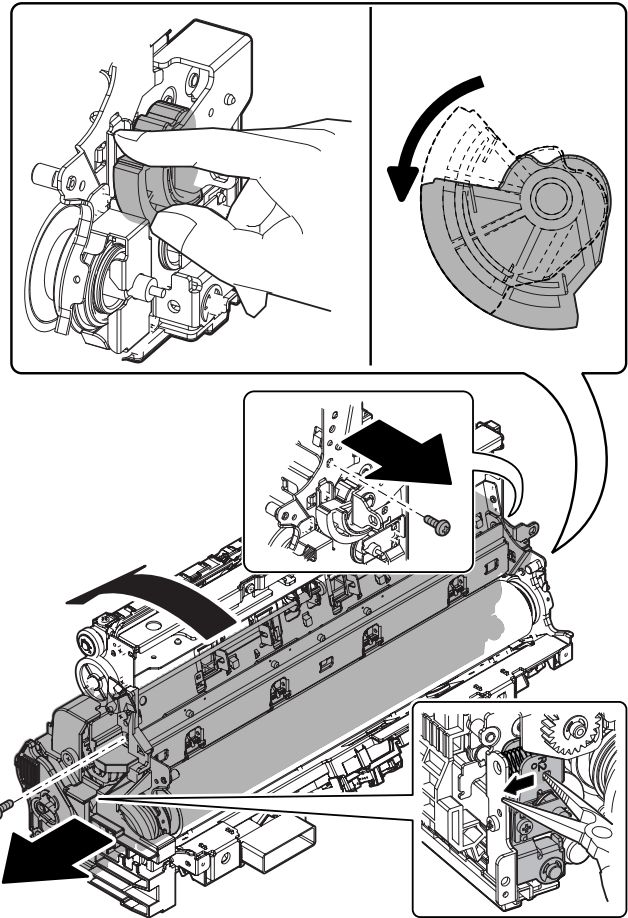


- 6) Remove the step screw, and remove the external heating roller bearing (A). Turn the external heating collar (B) and remove the external heating roller (C) and the external belt (D).  
Maintenance: Replace at every 300K.



## (9) Upper and lower heat roller section

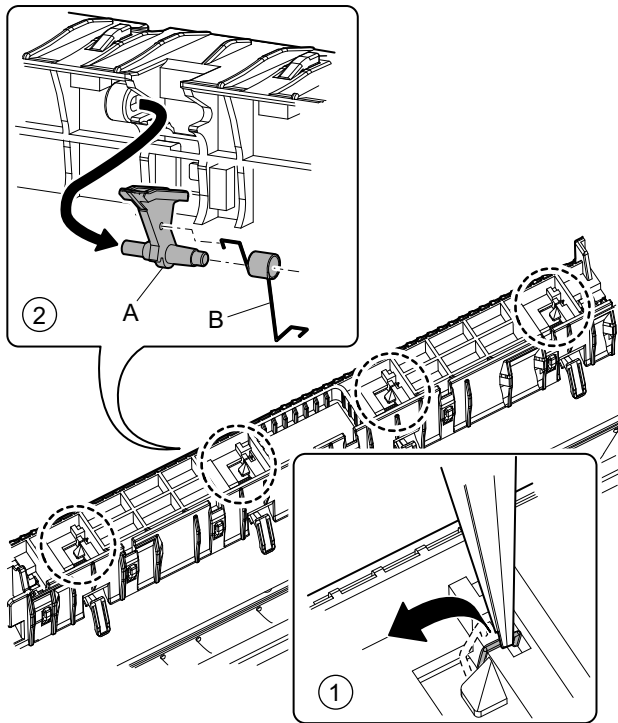
- 1) While pressing the pressure lever on the rear side downward with longnose pliers, push up the pressure release lever to release the pressure of the upper and lower heat rollers.
- 2) Remove two screws, and open the lower heat roller section.



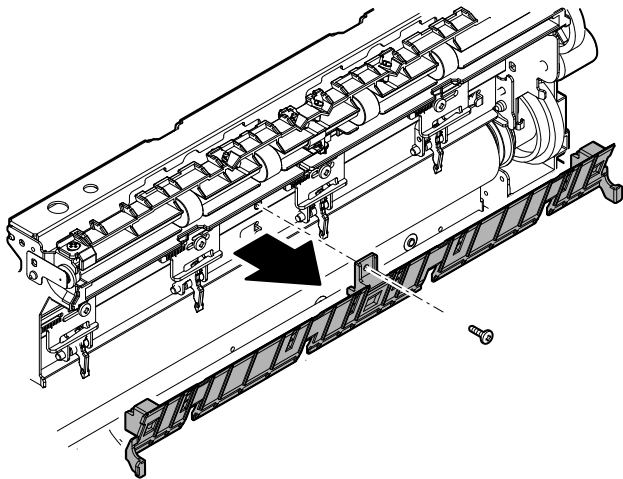
NOTE: Before releasing the pressure, wait for 10 sec from turning OFF the sub power SW.

- 3) Disengage the hook of the lower separation pawl spring (B) from the rib, and remove four lower separation pawls (A) and four lower separation pawls springs (B).

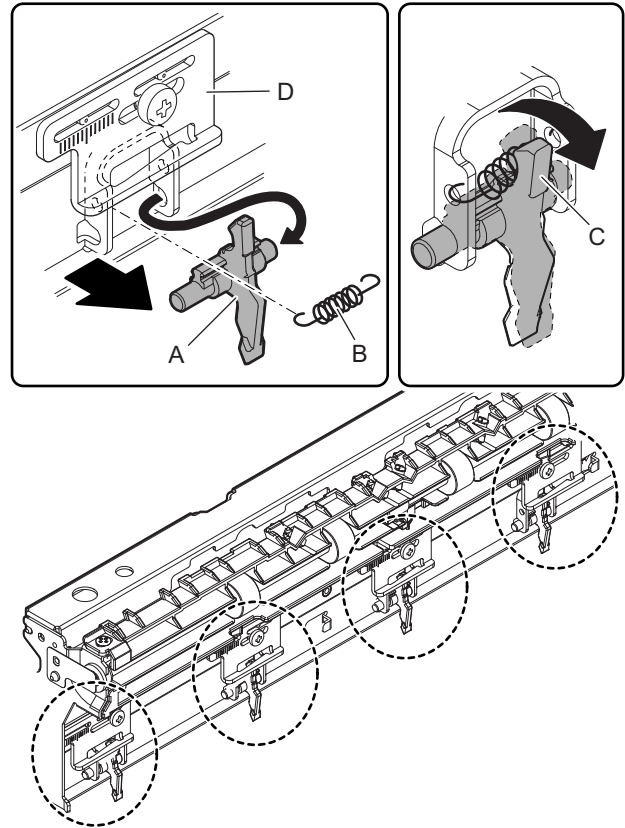
Maintenance: Replace at every 300K.



- 4) Remove the screw, and remove the fusing rear PG.

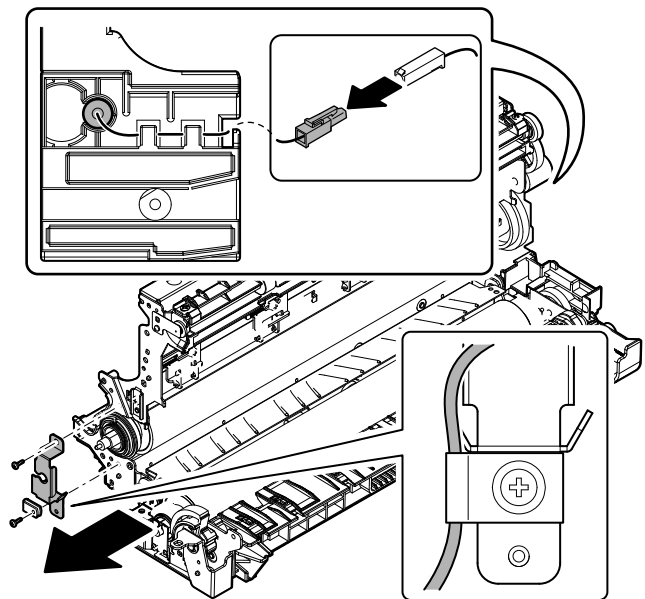


- 5) Lift the lead edge (C) of the upper separation pawl (A) and remove the upper separation spring (B) and the upper separation pawl (A).



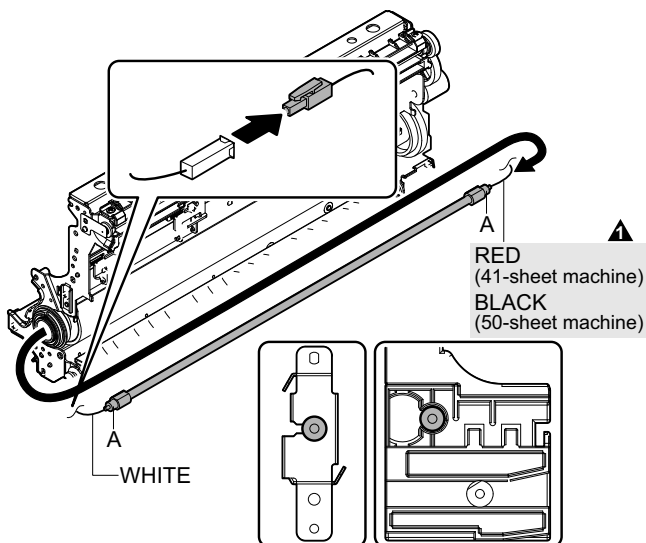
NOTE: The upper separation adjustment plate (D) is factory adjusted. Do Not touch screws and re-adjust the plate.

- 6) Remove the screw, and remove the upper lamp holder F. Disconnect the lamp connector on the rear side, and remove the upper lamp harness from the upper lamp holder R.



NOTE: Put the upper heater lamp harness on the bent section beside the upper lamp holder F and pass through the clamp.

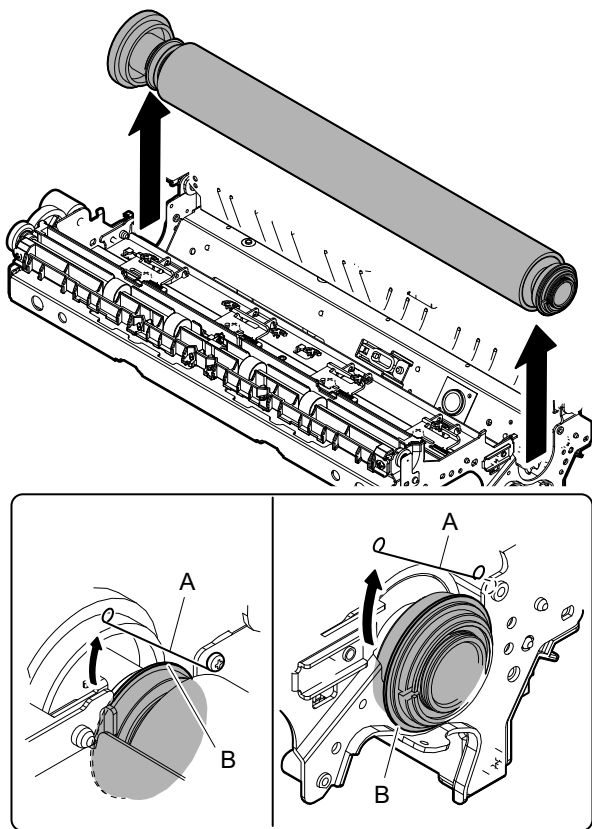
- 7) Disconnect the connector on the front side of the upper heater lamp, and remove the upper heater lamp from the front side.



NOTE: When installing, check to confirm that the harness color on the rear side is red or black.

NOTE: When installing, check to confirm that the section (A) of the lower heater lamp is securely engaged with the lamp holder.

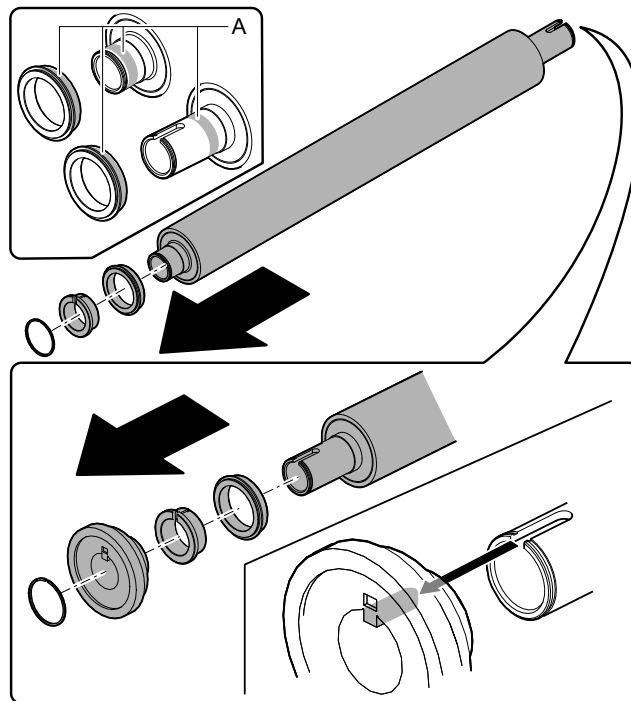
- 8) Remove the fixing spring (A), and remove the upper heat roller assembly.



NOTE: When installing, arrange so that the flange (B) of the bearing is on the outside of the upper stay frame.

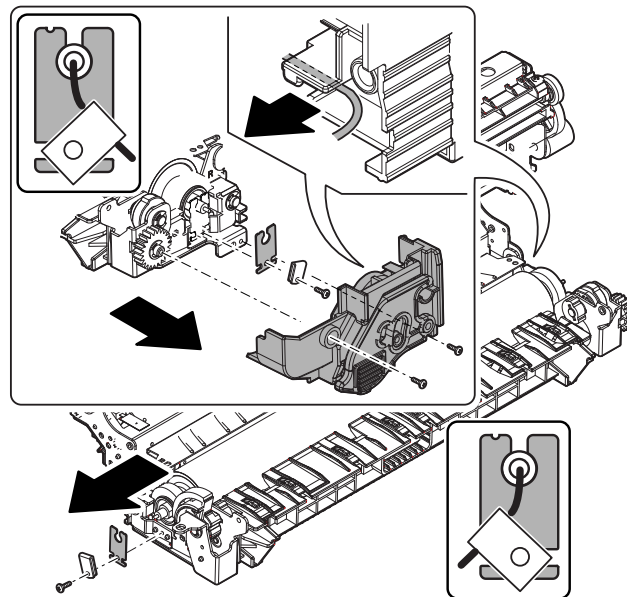
- 9) Remove the C-ring, and remove the upper heat roller heat-insulating bush, the upper heat roller heat-insulating bearing, the upper heat roller gear, and the upper heat roller.

Maintenance: Replace at every 200K.



NOTE: When installing, apply BARRIERTA grease (JFE552) to the sections (A) of the upper heat roller side sleeves.

- 10) Remove the screw, and remove the clamp, the fusing upper cover, and the lower lamp holders F/R.

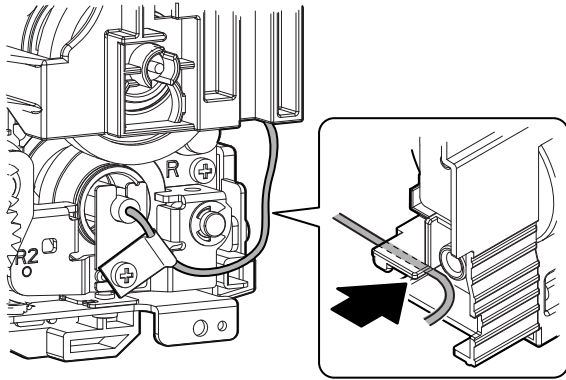


NOTE: Note that the lamp harness is engaged with the fusing upper cover.

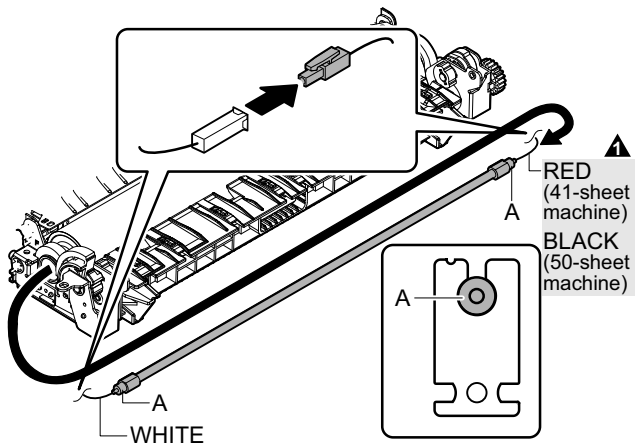
NOTE: Attach the clamp on the front side to the left side apart from the lamp, and the clamp on the rear side to the right side.



NOTE: When installing the fusing upper cover RAS, be careful not to pinch the wires.



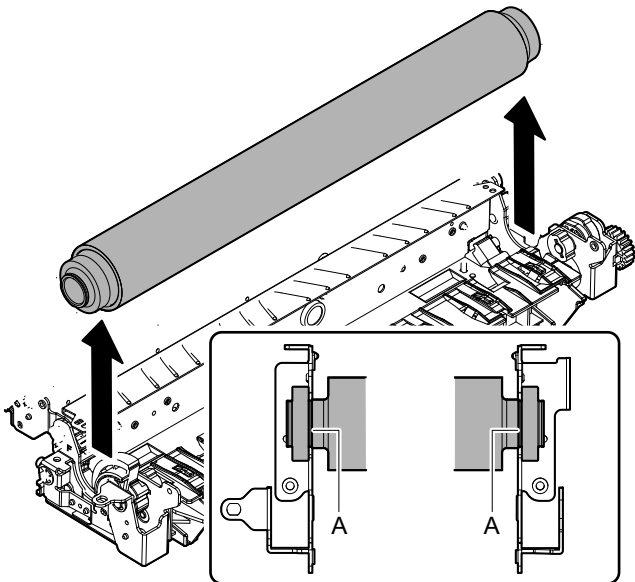
11) Remove the lower heater lamp.



NOTE: When installing, check to confirm that the harness color on the rear side is red or black.

NOTE: When installing, check to confirm that the section (A) of the lower heater lamp is securely engaged with the lamp holder.

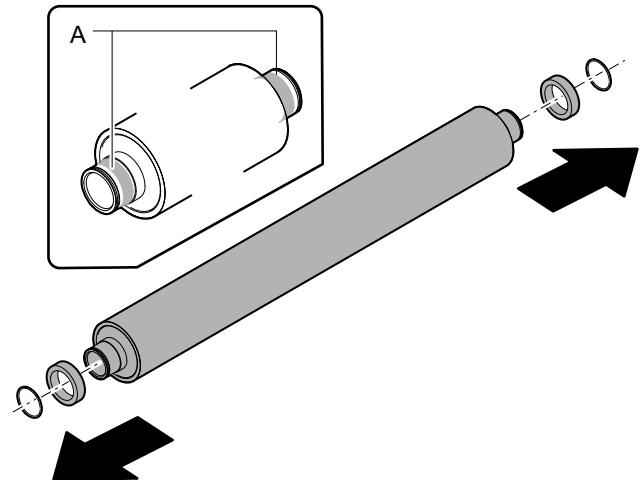
12) Remove the lower heat roller assembly.



NOTE: When installing, check to confirm that the groove section (A) of the lower heat roller is engaged with the frame.

13) Remove the C-ring, and remove the lower heat roller bearing and the lower heat roller.

Maintenance: Replace at every 300K.

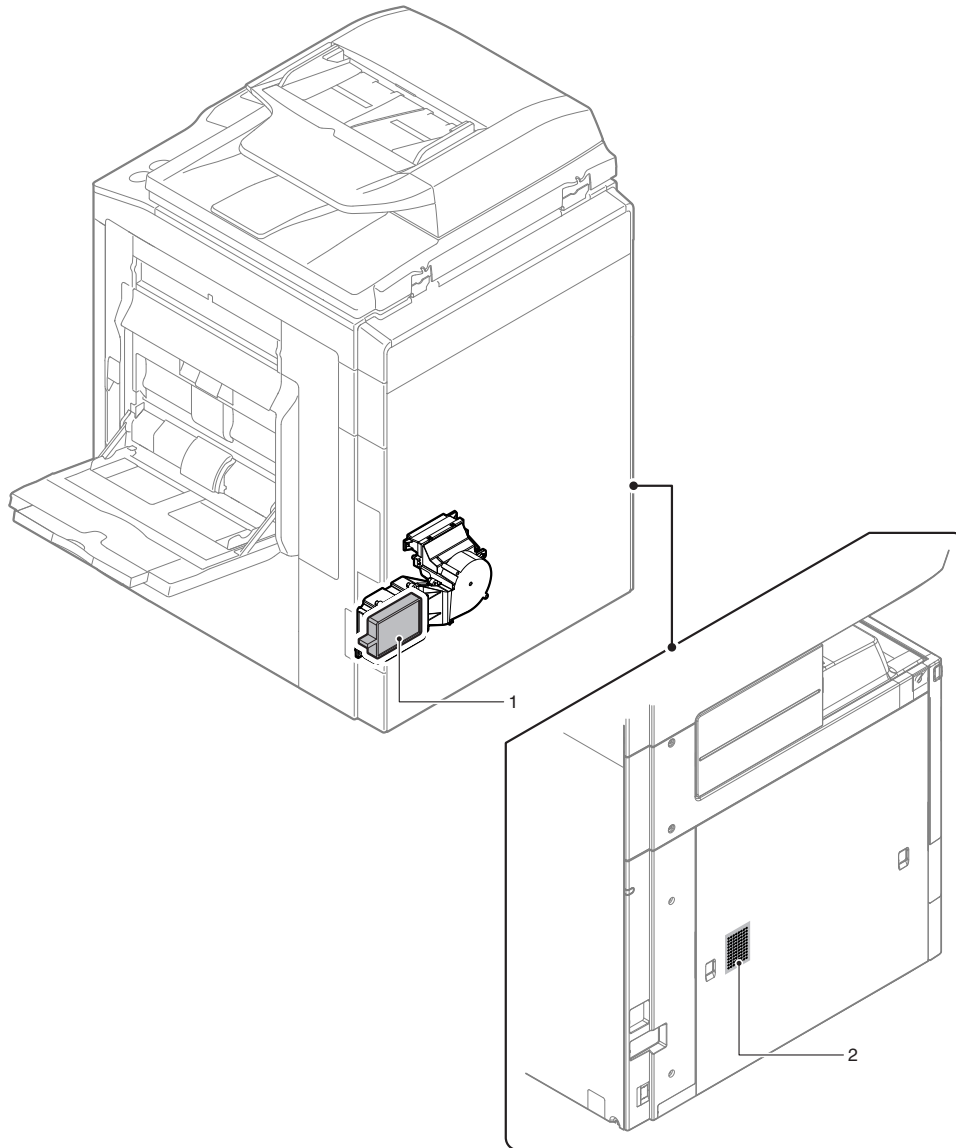


NOTE: Apply BARRIERTA grease (JFE552) to the section (A) of the lower heat roller.

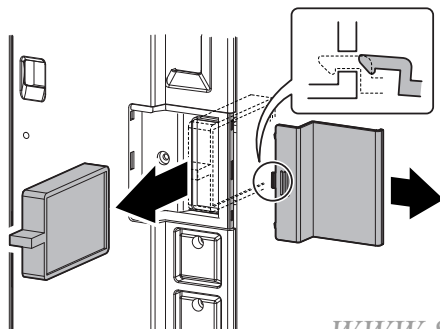
## G. Filter section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Ozone filter	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-40)
2	Left cabinet filter		×	○	○	○	○	○	○	○	○	○	○	○	



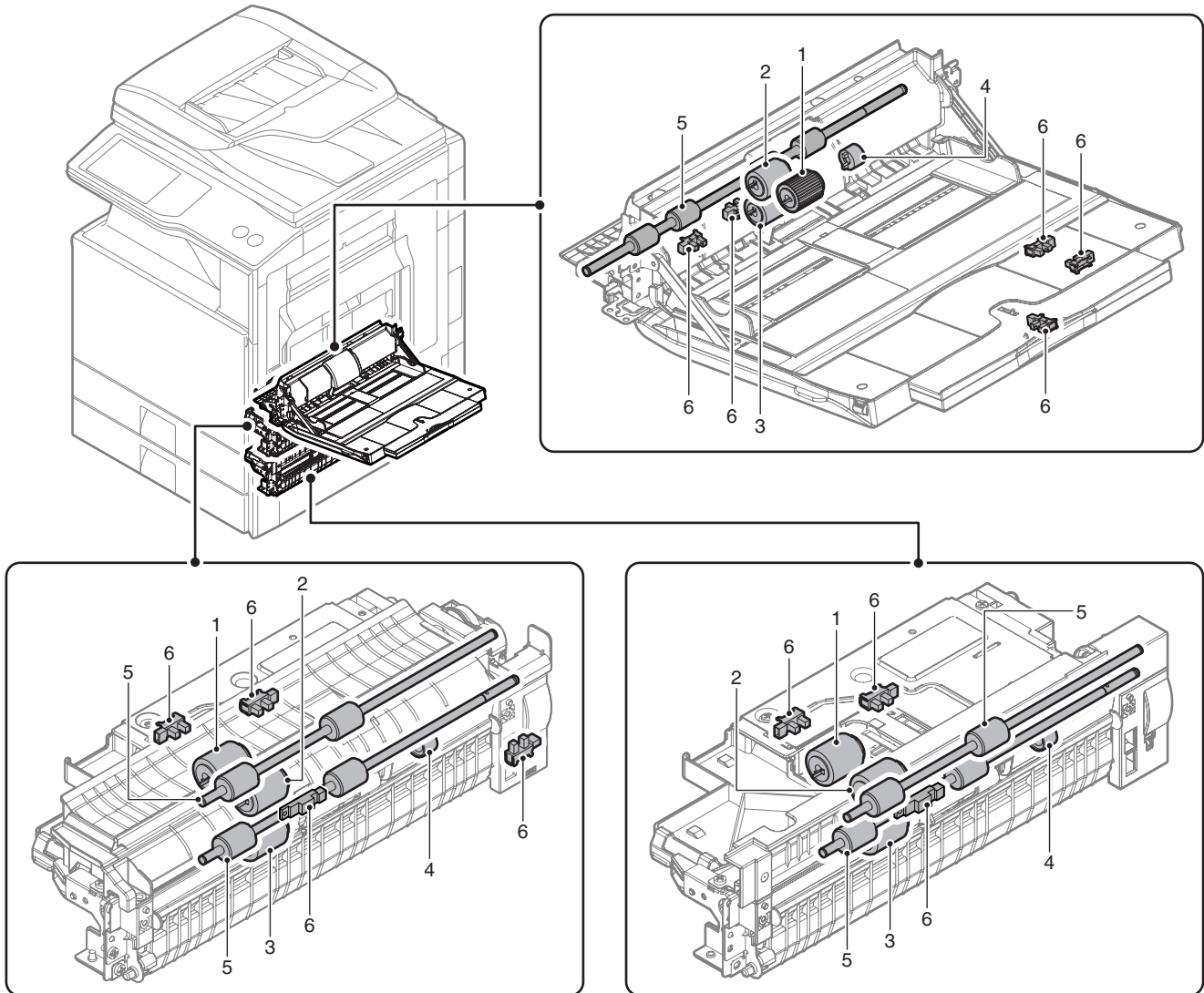
- 1) Remove the ozone filter cover, and remove the ozone filter.  
Maintenance: Replace filter at every 150K.



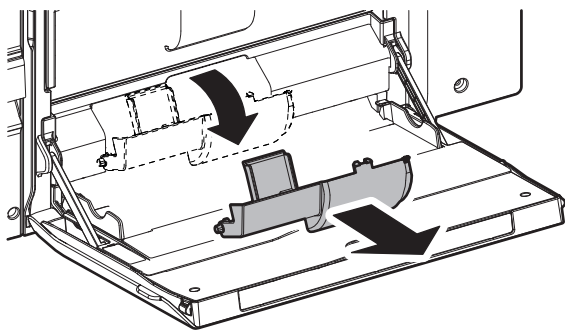
## H. Paper feed section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

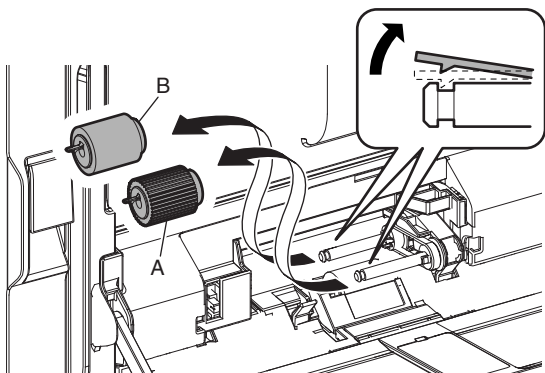
No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Pickup roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
2	Paper feed roller		×	○	○	○	○	○	○	○	○	○	○	○	
3	Separation roller		×	○	○	○	○	○	○	○	○	○	○	○	
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport rollers		×	○	○	○	○	○	○	○	○	○	○	○	
6	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	
7	Transport paper guides		○	○	○	○	○	○	○	○	○	○	○	○	



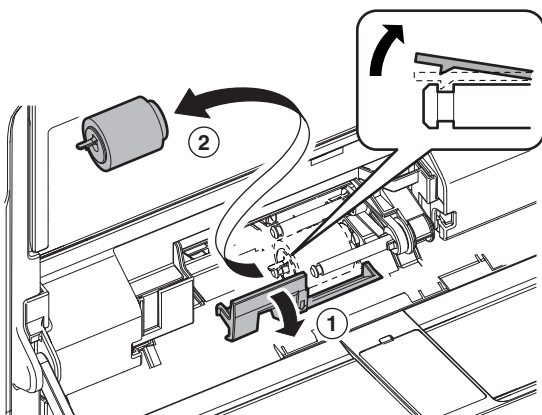
- 1) Remove the pickup cover.



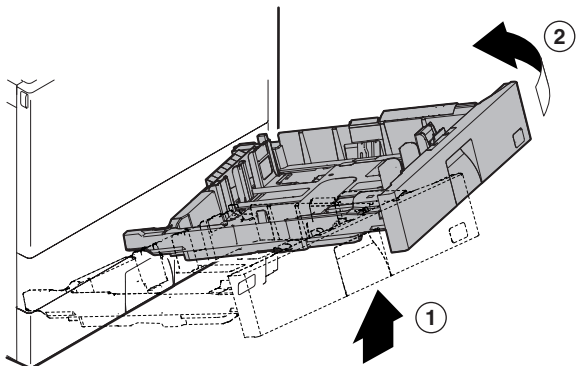
- 2) Remove the paper pickup roller (A) and the paper feed roller (B).  
Maintenance: Clean at every 150K.



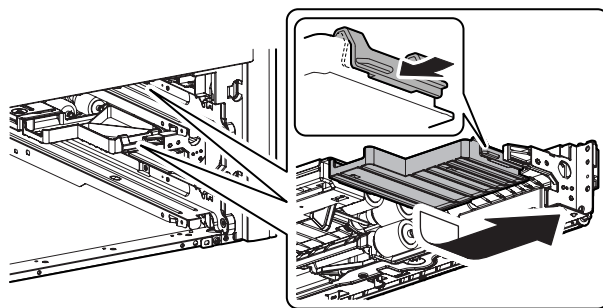
- 3) Open the maintenance cover, remove the separation roller.  
Maintenance: Clean at every 150K.



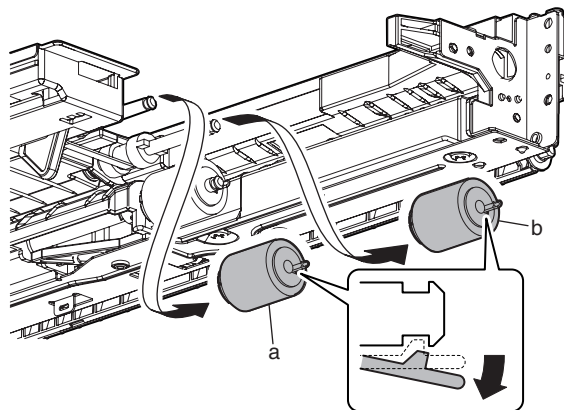
- 4) Remove the tray 1 and 2.



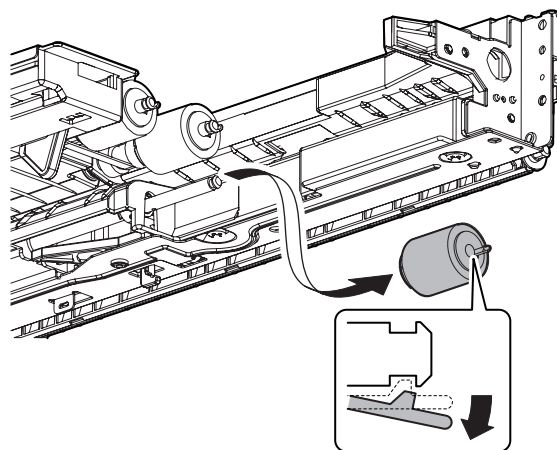
- 5) Remove the paper guide.



- 6) Remove the paper pickup roller (a) and the paper feed roller (b).  
Maintenance: Clean at every 150K.



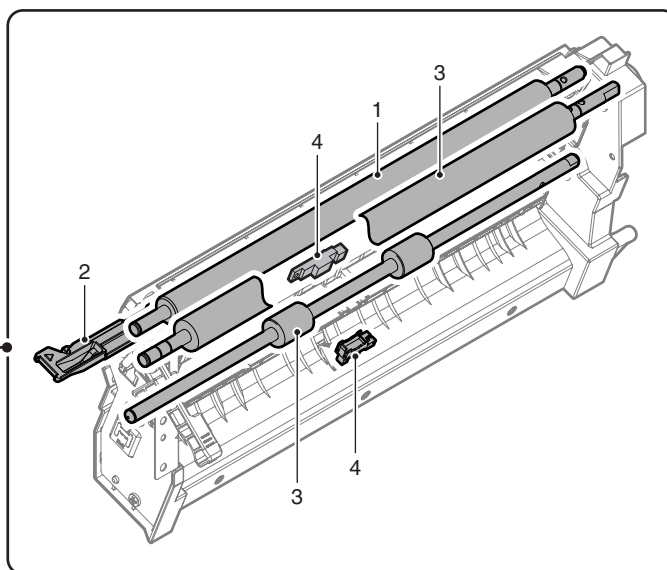
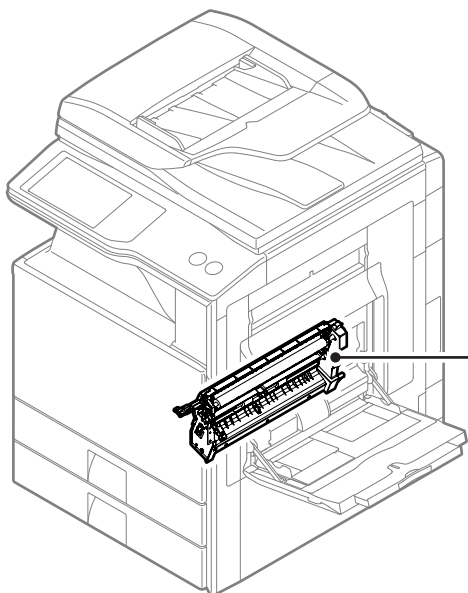
- 7) Remove the separation roller.  
Maintenance: Clean at every 150K.



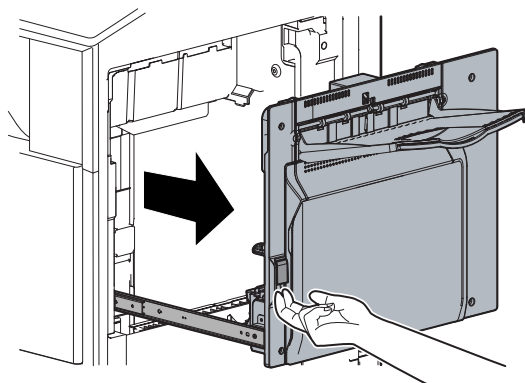
## I. Paper transport section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	PS follower roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [25]-58)
2	Paper dust removing unit		○	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
3	Transport rollers		×	○	○	○	○	○	○	○	○	○	○	○	
4	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport paper guides		○	○	○	○	○	○	○	○	○	○	○	○	

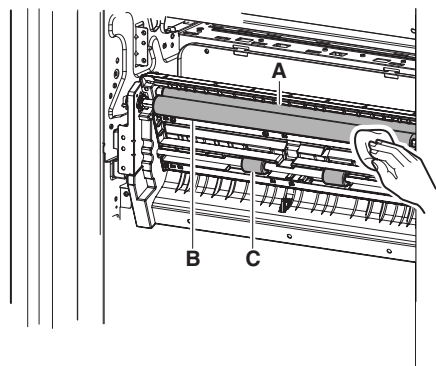


1) Open the right door.



2) Clean the resist roller (Idle) (A), resist roller (Drive) (B) and the transport roller 8 (Drive) (C).

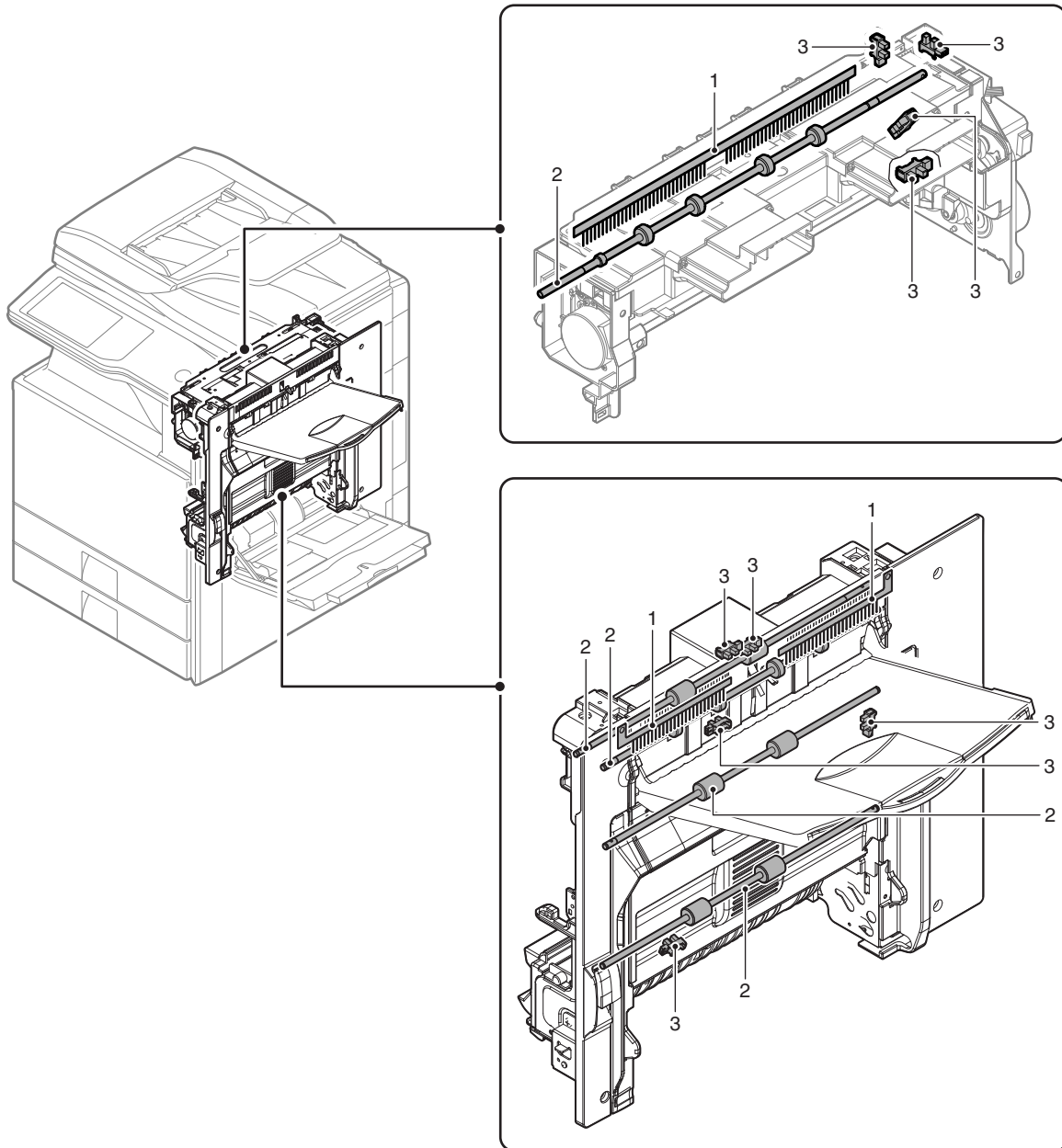
Maintenance: Clean at every 150K.



## J. Duplex/Paper exit section

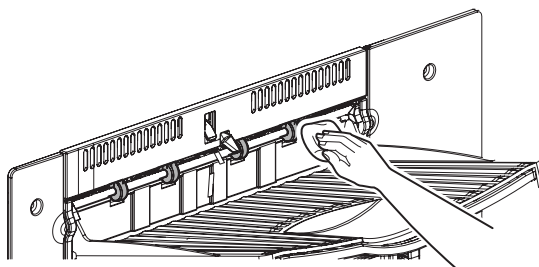
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Discharge brush	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	
2	Transport rollers		×	○	○	○	○	○	○	○	○	○	○	○	
3	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	
4	Gears		×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport paper guides		○	○	○	○	○	○	○	○	○	○	○	○	

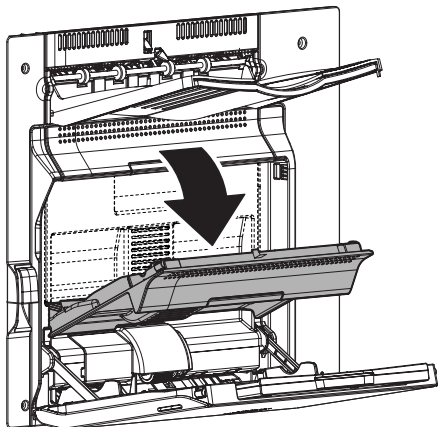




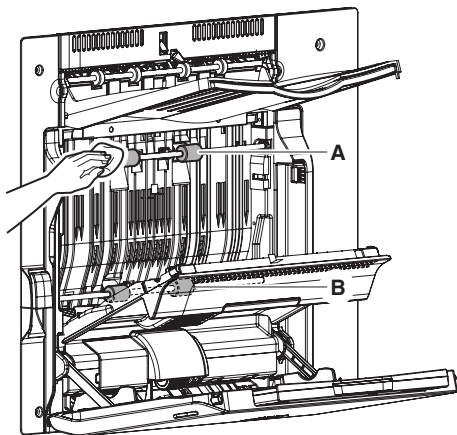
- 1) Clean the paper exit roller 2 (Drive).  
Maintenance: Clean at every 150K.



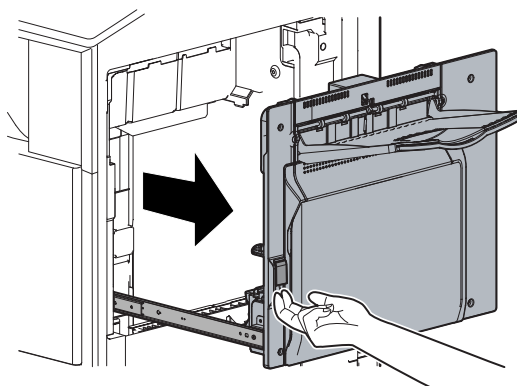
- 2) Open the ADU open/close door.



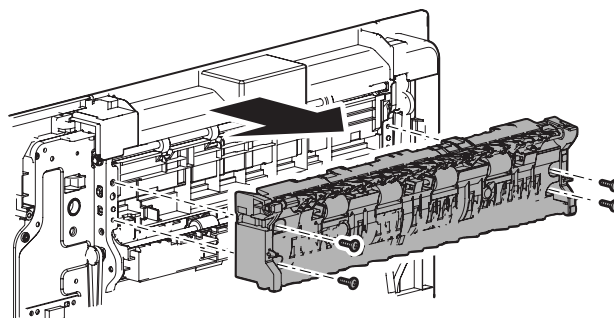
- 3) Clean the transport roller 10 (Drive) (A), and the transport roller 11 (Drive) (B).  
Maintenance: Clean at every 150K.



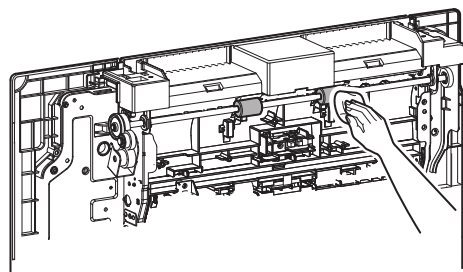
- 4) Open the right door.



- 5) Remove the reverse PG unit.



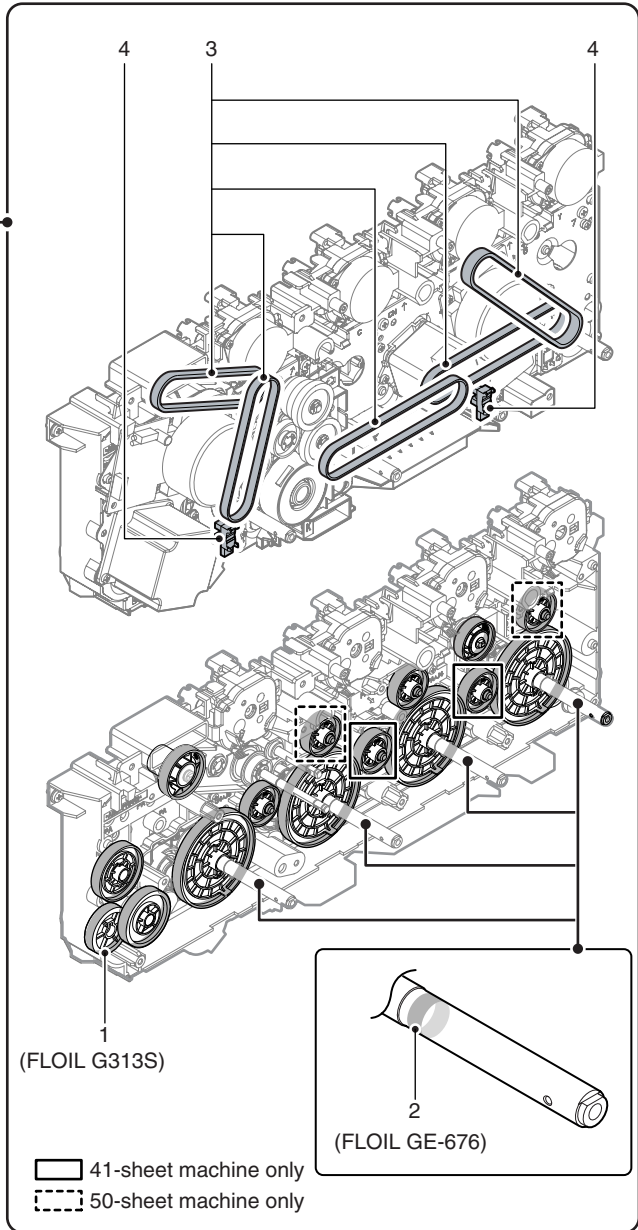
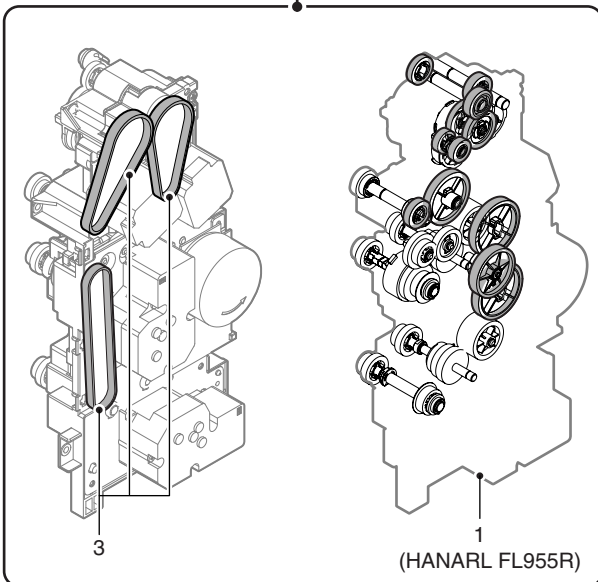
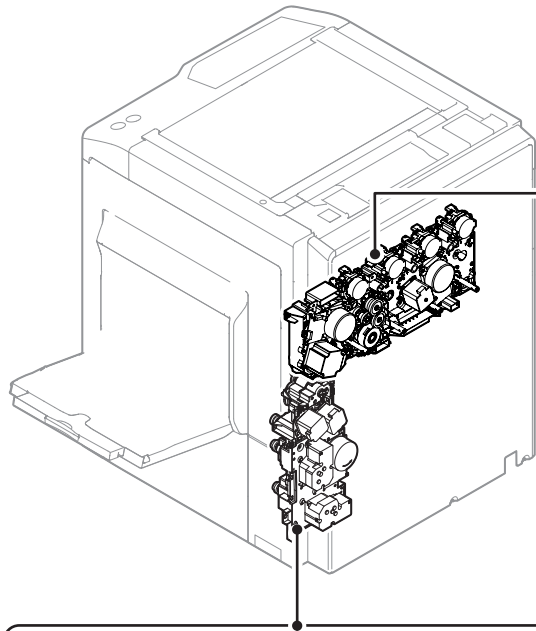
- 6) Clean the transport roller 13 (Drive).  
Maintenance: Clean at every 150K.



## K. Drive section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Gears (Grease)	Mechanical parts	-	×	×	×	×	×	×	×	×	×	×	×	
2	Shaft earth sections (Conduction grease)		-	×	×	×	×	×	×	×	×	×	×	×	
3	Belts		-	×	×	×	×	×	×	×	×	×	×	×	
4	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	

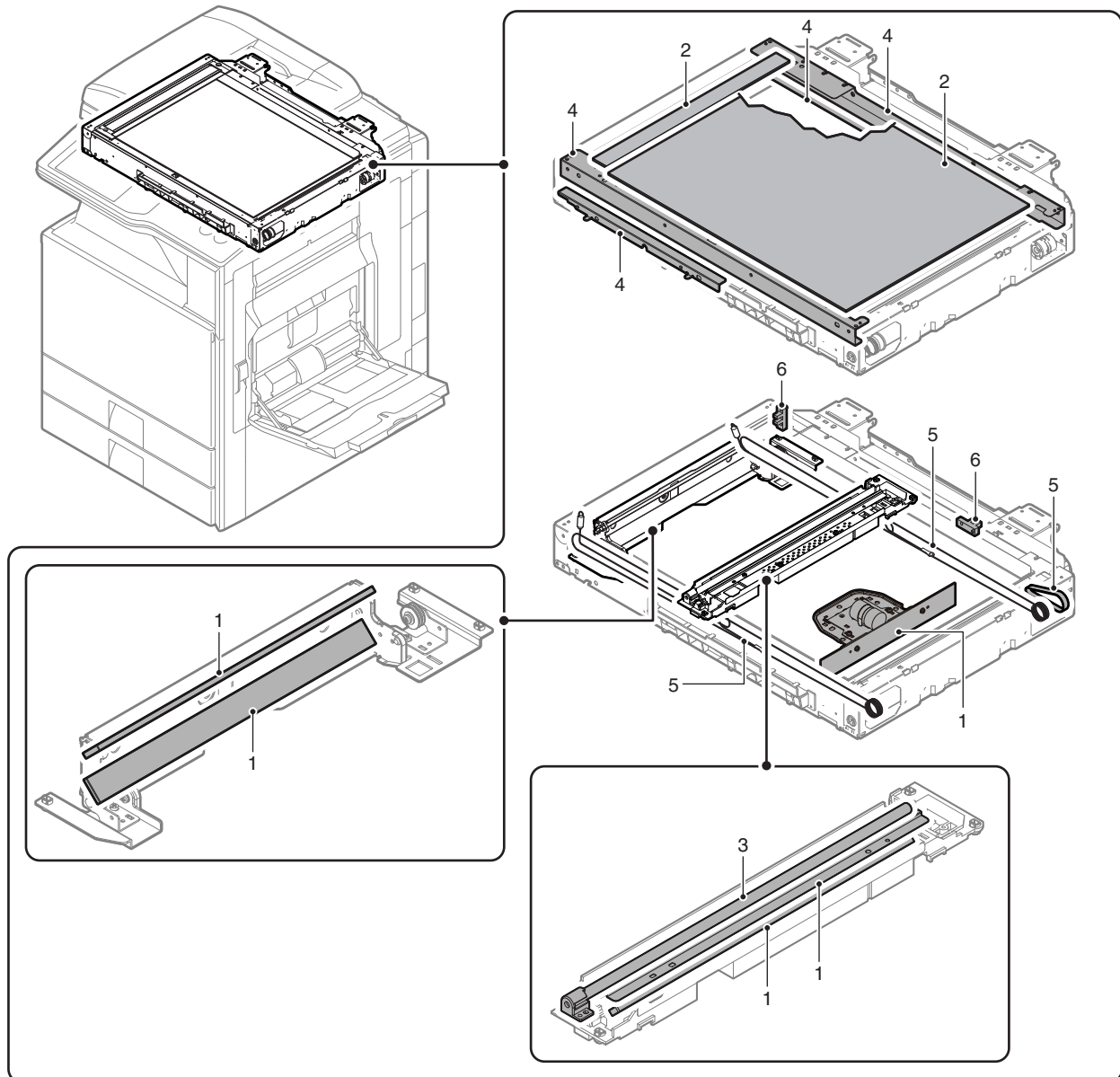




## L. Scanner section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

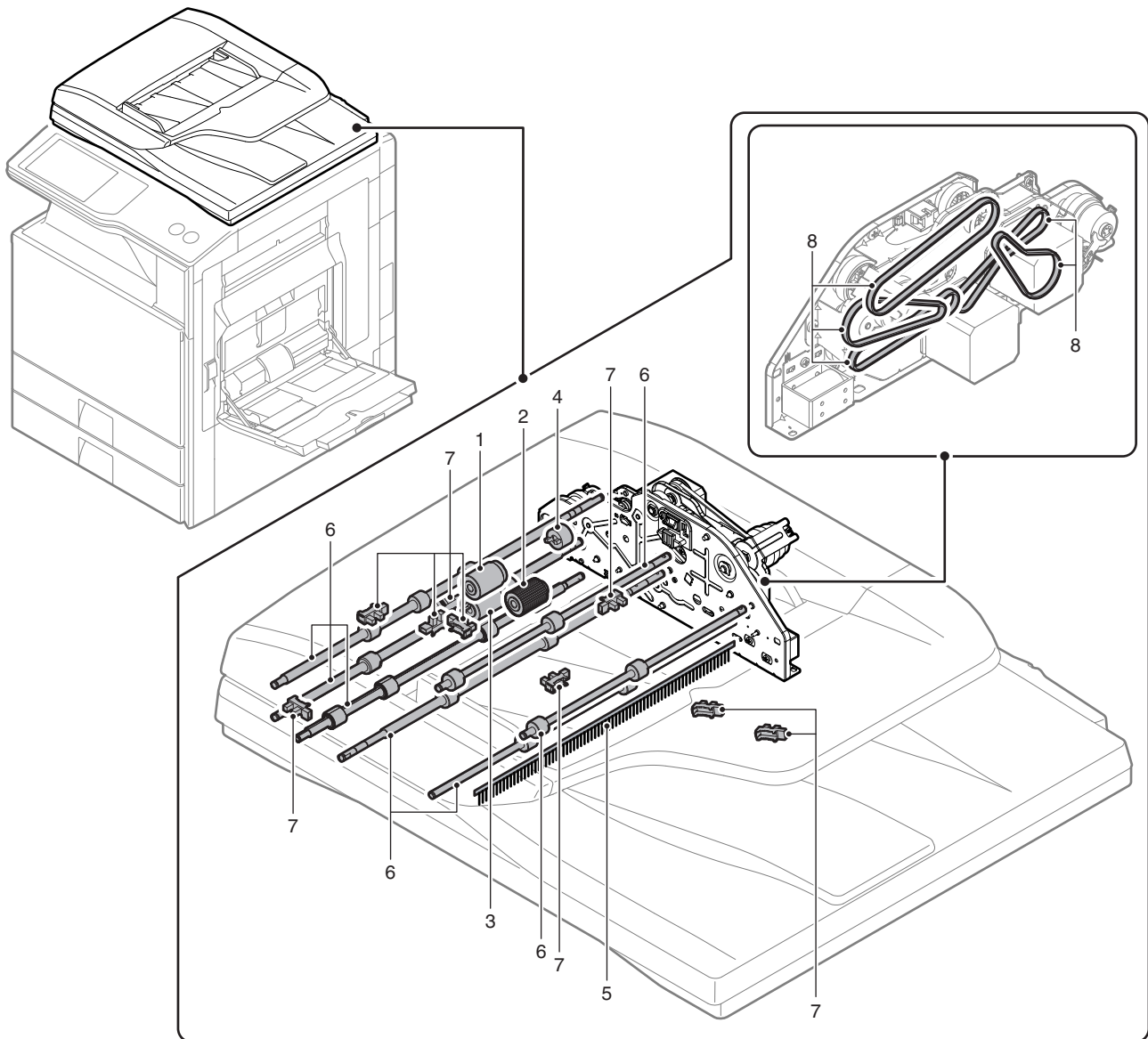
No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Mirror/Lens/Reflector/CCD	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	
2	Table glass/SPF glass		○	○	○	○	○	○	○	○	○	○	○	○	
3	Scanner lamp		○	○	○	○	○	○	○	○	○	○	○	○	
4	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
5	Drive belt/drive wire		×	×	×	×	×	×	×	×	×	×	×	×	
6	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	



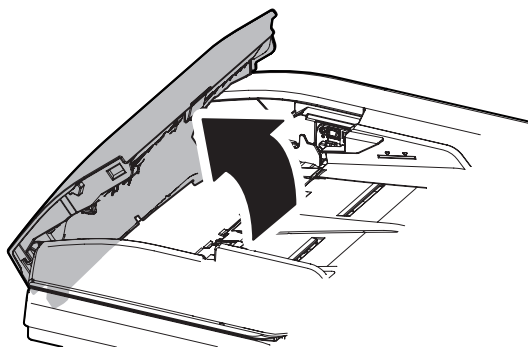
## M. RSPF section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

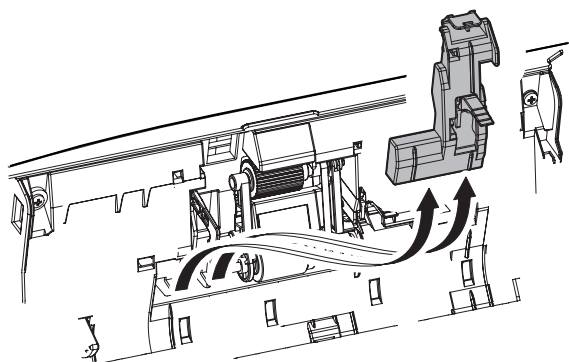
No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Paper feed roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
2	Pickup roller		○	○	○	○	○	○	○	○	○	○	○	○	
3	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
5	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	
6	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	
7	Sensors		×	×	×	×	×	×	×	×	×	×	×	×	
8	Belts		×	×	×	×	×	×	×	×	×	×	×	×	
9	Gears		×	×	×	×	×	×	×	×	×	×	×	×	



- 1) Open the paper feed unit.

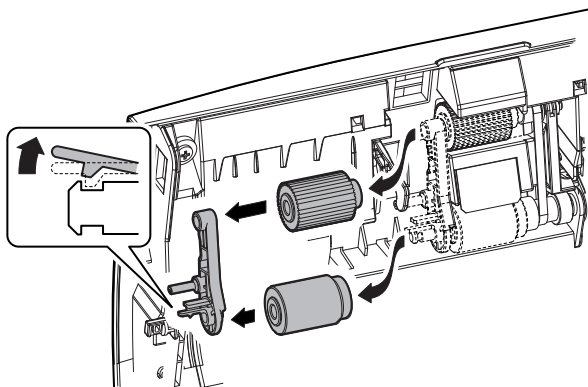


- 2) Remove the paper guide.



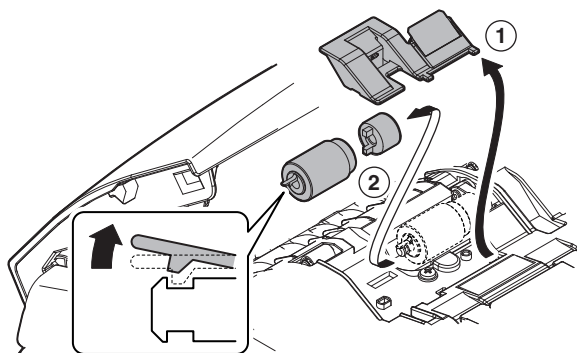
- 3) Remove the holder guide, and remove the paper feed roller and the pickup roller.

Maintenance: Clean at every 150K.



- 4) Remove the cover and remove the separation roller.

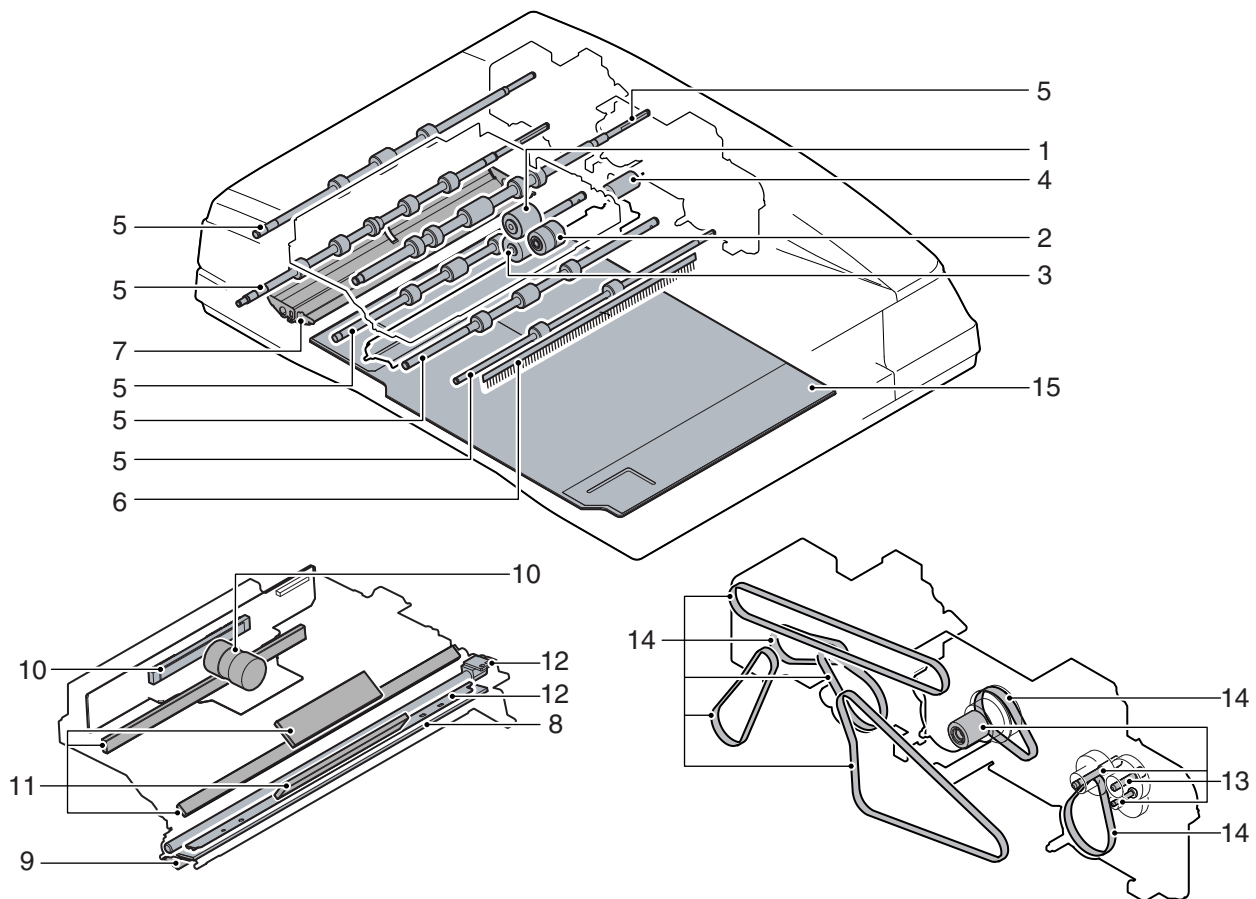
Maintenance: Clean at every 150K.



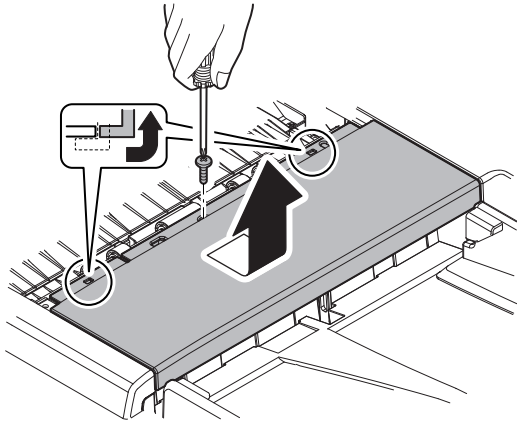
## N. DSPF section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

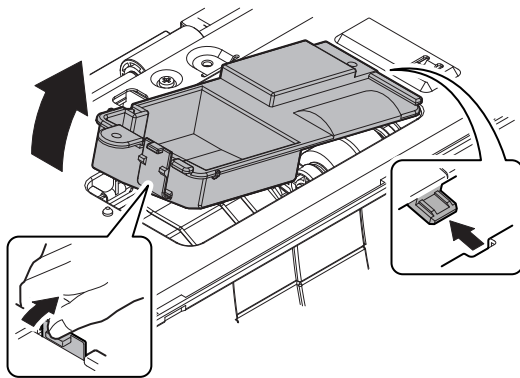
No.	Part name		When calling	150 k	300 k	450 k	600 k	750 k	900 k	1050 k	1200 k	1350 k	1500 k	1650 k	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Paper feed roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	Replace as needed. Reference: About 100k
2	Pickup roller		○	○	○	○	○	○	○	○	○	○	○	○	
3	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	
6	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	
7	No. 1 scanning plate		○	○	○	○	○	○	○	○	○	○	○	○	
8	No. 2 scanning section, scanning glass		○	○	○	○	○	○	○	○	○	○	○	○	
9	No. 2 scanning section, white reference glass		○	○	○	○	○	○	○	○	○	○	○	○	
10	Lens/CCD		○	○	○	○	○	○	○	○	○	○	○	○	
11	Mirror		○	○	○	○	○	○	○	○	○	○	○	○	
12	Copy lamp/Reflector		○	○	○	○	○	○	○	○	○	○	○	○	
13	Gears (Grease)		×	×	×	×	×	×	×	×	×	×	×	×	
14	Belts		-	×	×	×	×	×	×	×	×	×	×	×	
15	OC mat		○	○	○	○	○	○	○	○	○	○	○	○	



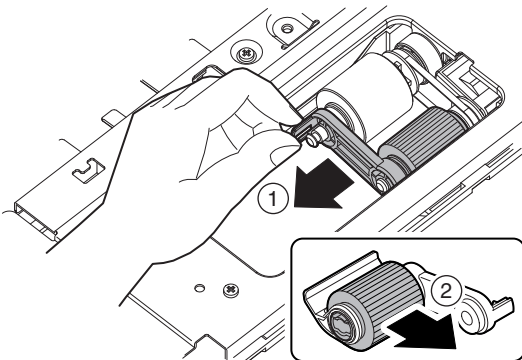
- 1) Open the upper door. Remove the screw. Remove the paper feed cover.



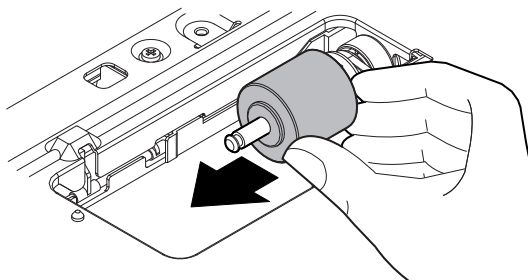
- 2) Remove the pawl, and remove the paper feed PG upper cover.



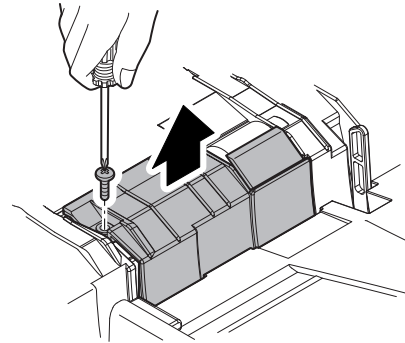
- 3) Remove the pawl. Remove the pickup roller holder. Remove the pickup roller from the pickup roller holder.  
Maintenance: Clean at every 150K.



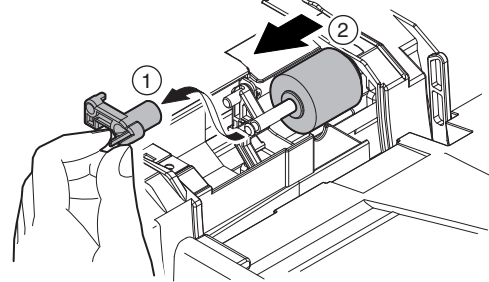
- 4) Remove the paper feed roller.  
Maintenance: Clean at every 150K.



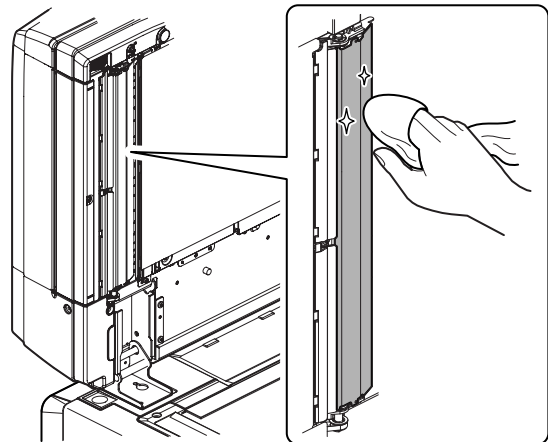
- 5) Remove the screw, and remove the paper feed PG lower cover.



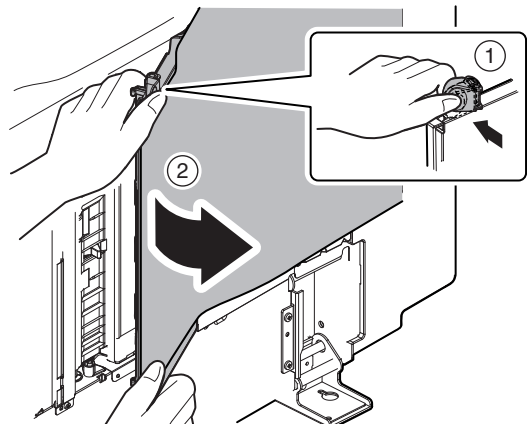
- 6) Disengage the pawl, and remove the reverse pressure release lever. Remove the separation roller.  
Maintenance: Clean at every 150K.



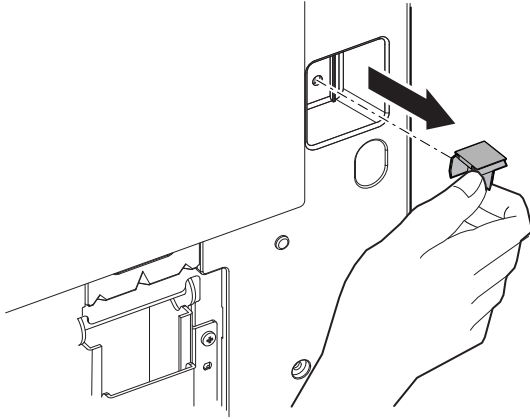
- 7) Open the DSPF unit, and clean the No.1 scanning plate.  
Maintenance: Clean at every 150K.



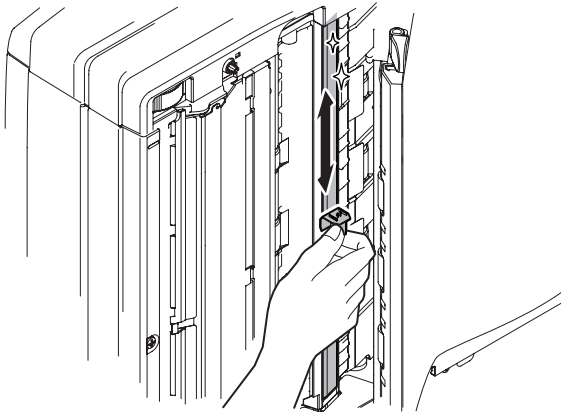
- 8) Open the lower door.



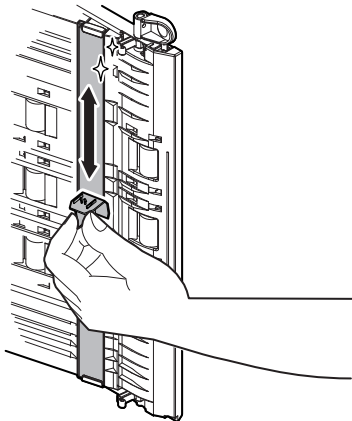
9) Remove the cleaner.



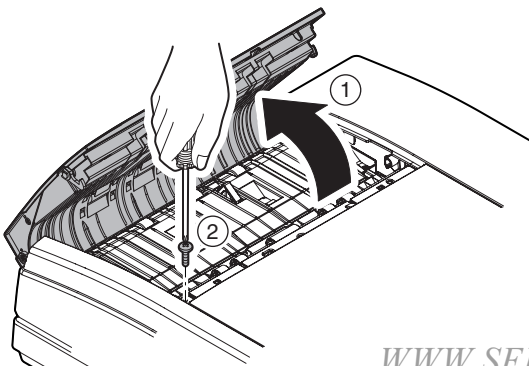
10) Use the cleaner to clean the scanning glass (surface).  
Maintenance: Clean at every 150K.



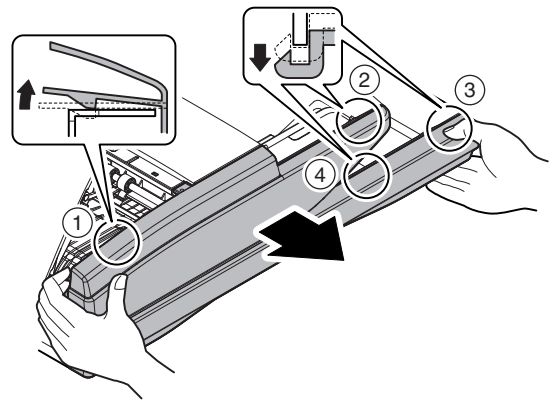
11) Use the cleaner to clean the white reference glass.  
Maintenance: Clean at every 150K.



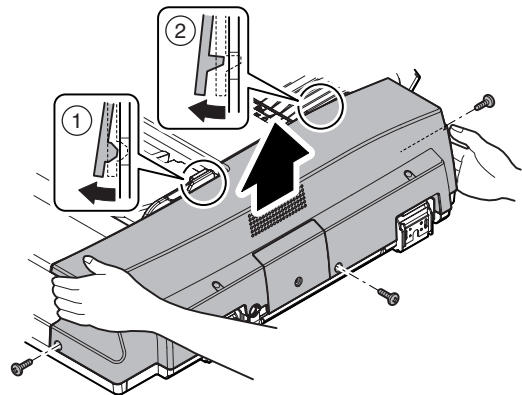
12) Close the DSPF unit. Open the upper door, and remove the screw.



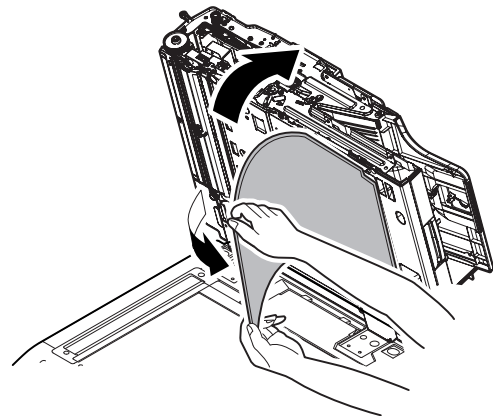
13) Remove the pawl, and remove the front cabinet.



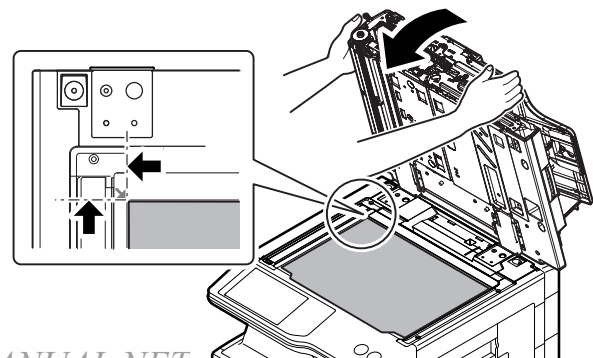
14) Remove the screw. Remove the pawl. Remove the rear cabinet.



15) Open the DSPF unit, and remove the OC mat from the left edge.  
Maintenance: Clean at every 150K.

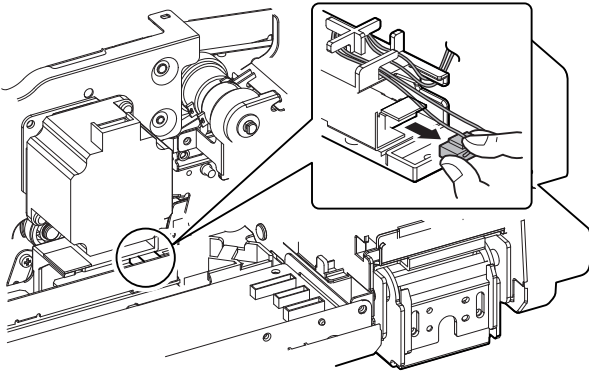


\* When assembling, place the OC mat on the document table to fit with the reference and close the DSPF unit.

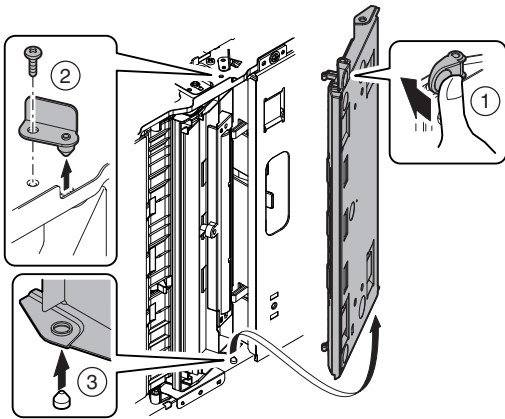




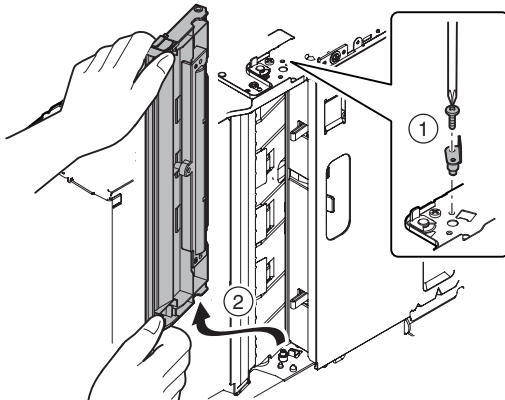
16) Remove the connector from the DSPF CL inverter PWB.



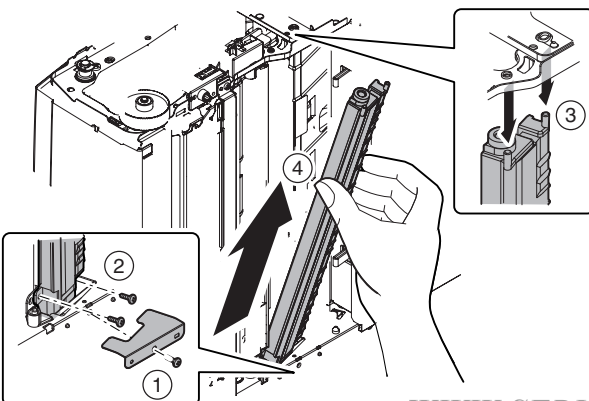
17) Remove the screw, and remove the intersecting point plate. Remove the lower door.



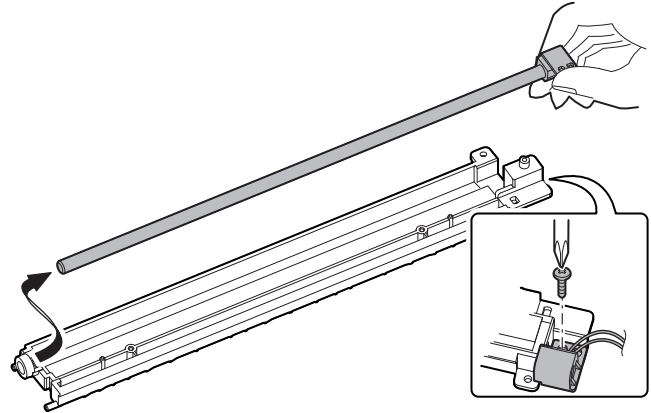
18) Remove the screw, and remove the intersecting point plate. Remove the white reference plate.



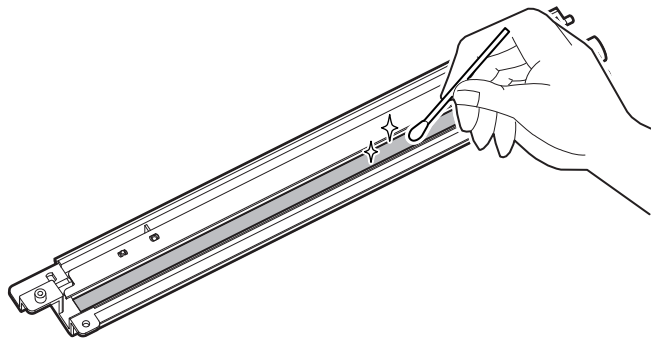
19) Remove the screw, and remove the scanning section cover. Remove the screw, and remove the lamp unit.



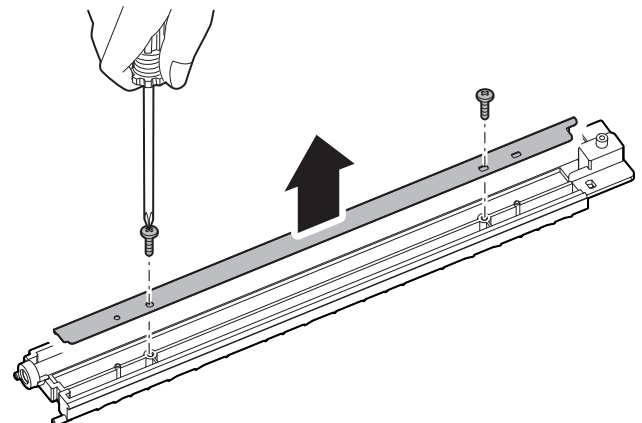
20) Remove the screw, and remove the DSPF copy lamp.



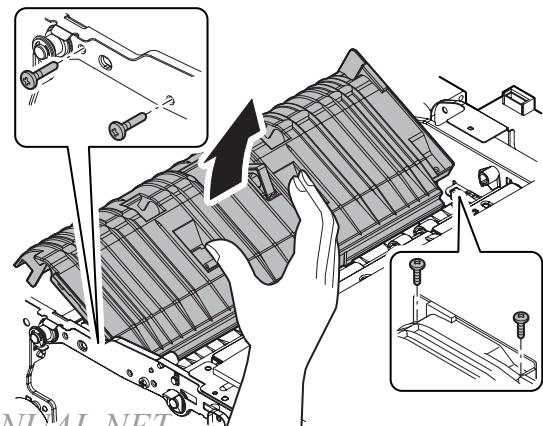
21) Clean the scanning glass (back surface).  
Maintenance: Clean at every 150K.



22) Remove the screw, and remove the reflector.  
Maintenance: Clean at every 150K.

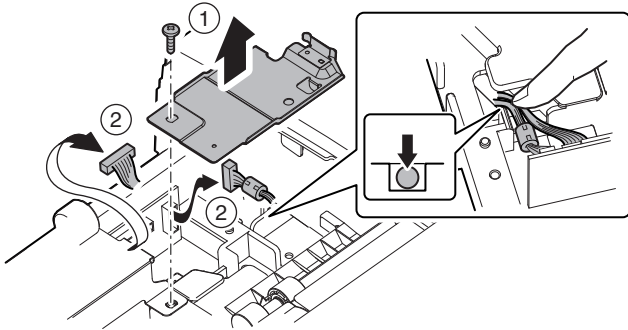


23) Remove the screw, and remove the transport PG upper.

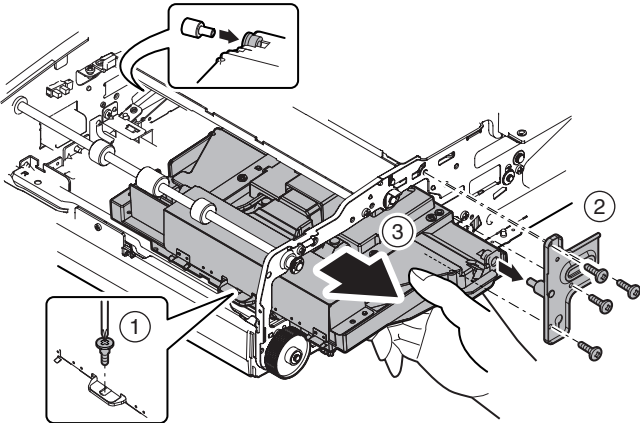


24) Remove the screw, and remove the harness cover. Disconnect the connector.

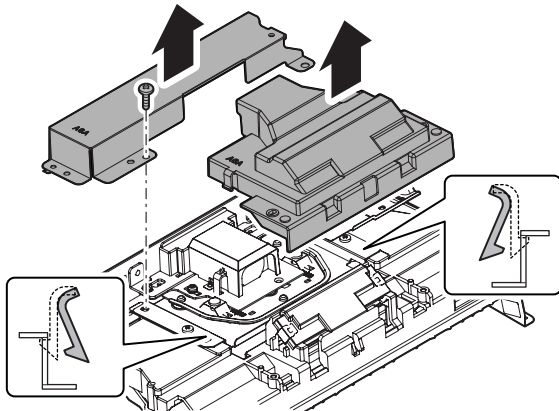
\* When assembling, arrange the harness so that it is placed in the lower position than the rib height.



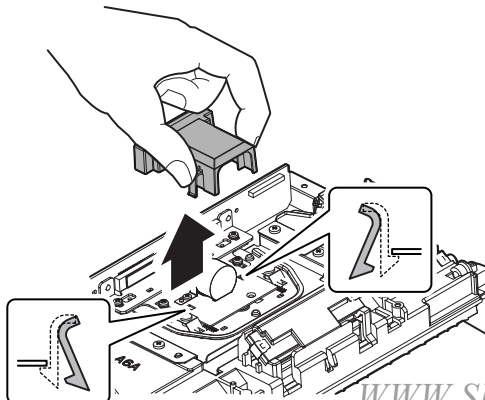
25) Remove the step screw, and remove the screw. Remove the optical fixing plate. Remove the optical unit.



26) Remove the pawl. Remove the dust-proof cover. Remove the screw, and remove the dark box.

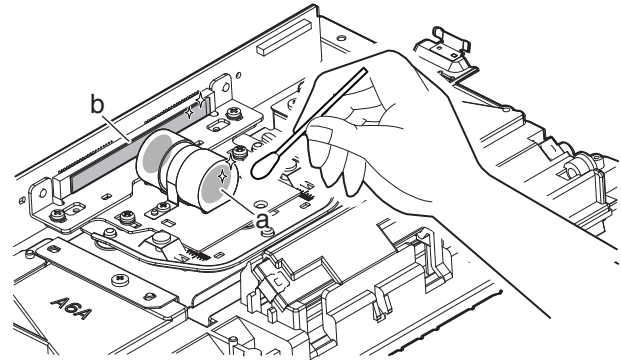


27) Remove the pawl, and remove the lens cover.

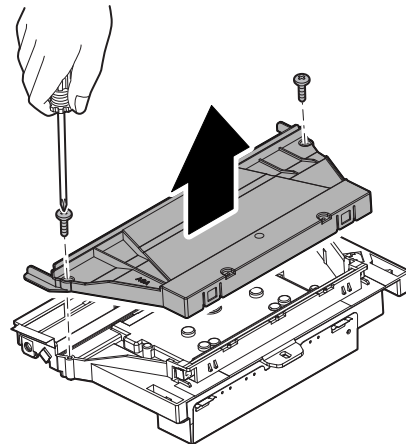


28) Clean the lens (a) and the CCD (b).

Maintenance: Clean at every 150K.

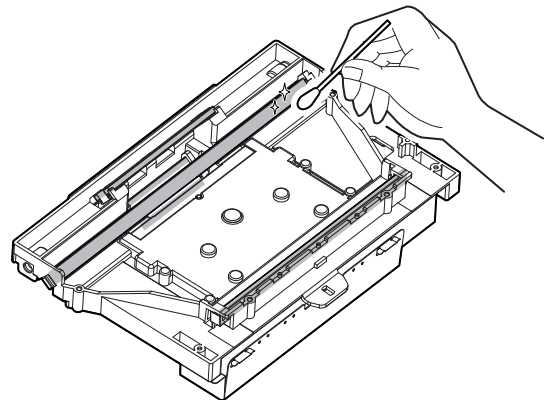


29) Remove the screw, and remove the mirror base cover.



30) Clean the mirror.

Maintenance: Clean at every 150K.





### 3. Maintenance and disassembly

#### A. Maintenance timing display

The message of maintenance execution timing is displayed when each counter reaches the set value. The relationship between the messages and the counters is shown below.

##### (1) (Maintenance timing) (Frameless)

###### a. Maintenance counter

Code	Content	Printjob Enable/Disable
TA	When the maintenance counter (total) reaches 90% of the set value of SIM21-1 (When the setting of SIM26-38 is "print stop"). When the maintenance counter (total) reaches the set value of SIM21-1 (When the setting of SIM26-38 is "print allowing").	Enable
CA	When The maintenance counters (color) reaches 90% of the set value of SIM21-1 (When the setting of SIM26-38 is "print stop"). When The maintenance counters (color) reaches the set value of SIM21-1 (When the setting of SIM26-38 is "print allowing").	Enable
AA	When The maintenance counters (both of total and color) reaches 90% of the set value of SIM21-1 (When the setting of SIM26-38 is "print stop"). When The maintenance counters (both of total and color) reaches the set value of SIM21-1 (When the setting of SIM26-38 is "print allowing").	Enable

- After completion of the maintenance, execute SIM 24-4 (Maintenance counters (total, color) clear).

###### b. Transfer unit system counters

Code	Content	Printjob Enable/Disable
TK1	The primary transfer unit life end reaches 300,000 sheets.	Enable
TK2	The secondary transfer unit life end reaches 300,000 sheets.	Enable

- After completion of the maintenance, execute SIM 24-4 (Primary and secondary transfer unit counters (number of the transfer unit print counter, accumulated traveling distance of the transfer unit, days of use of the transfer unit) clear).

###### c. Fusing unit counter

Code	Content	Printjob Enable/Disable
FK1	The fusing upper heat roller life end reaches 200,000 sheets.	Enable
FK2	The fusing lower/external heat roller life end reaches 300,000 sheets.	Enable
FK3	The fusing web life end reaches 150,000 sheets.	Enable

- After completion of the maintenance, execute SIM 24-4 (Fusing unit counters (number of the fusing unit print counter, days of use of the fusing unit) clear).

###### d. Drum cartridge system counters

Code	Content	Printjob Enable/Disable
DK	The drum cartridge life end (K) reaches 150,000 sheets, or the accumulated number of rotations of the drum (K) reaches 840K.	Enable
DC	The drum cartridge life end (C) reaches 100,000 sheets, or the accumulated number of rotations of the drum (C) reaches 840K.	Enable
DM	The drum cartridge life end (M) reaches 100,000 sheets, or the accumulated number of rotations of the drum (M) reaches 840K.	Enable
DY	The drum cartridge life end (Y) reaches 100,000 sheets, or the accumulated number of rotations of the drum (Y) reaches 840K.	Enable

- After completion of the maintenance, execute SIM 24-7 (Drum counters (number of the drum print counter, accumulated traveling distance of the drum) clear).

###### e. Developer cartridge system counters

Code	Content	Printjob Enable/Disable
VK	The developer life end (K) reaches 150,000 sheets, or the accumulated number of rotations of the developer (K) reaches 840K.	Enable
VC	The developer life end (C) reaches 100,000 sheets, or the accumulated number of rotations of the developer (C) reaches 840K.	Enable
VM	The developer life end (M) reaches 100,000 sheets, or the accumulated number of rotations of the developer (M) reaches 840K.	Enable
VY	The developer life end (Y) reaches 100,000 sheets, or the accumulated number of rotations of the developer (Y) reaches 840K.	Enable

- After completion of the maintenance, execute SIM 24-5 (Developer counters (number of the developer print counter, accumulated traveling distance of the developer) clear).

##### (2) [Maintenance timing] (Framed)

###### a. Maintenance counter

Code	Content	Printjob Enable/Disable
TA	The maintenance counters (total) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable
CA	The maintenance counters (color) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable
AA	The maintenance counters (both of total and color) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable

- After completion of the maintenance, execute SIM 24-4 (Maintenance counters (total, color) clear).

##### (3) [Check the waste toner box.] (Framed)

Code	Content	Printjob Enable/Disable
-	Waste toner full	Disable

- After detection of the waste toner full, reset the full detection by opening/close of the front door.

## [9] 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) Firmware update using media
- 2) Firmware update using FTP
- 3) Firmware update using Web page
- 4) Emergency update (incase of an HDD breakdown)

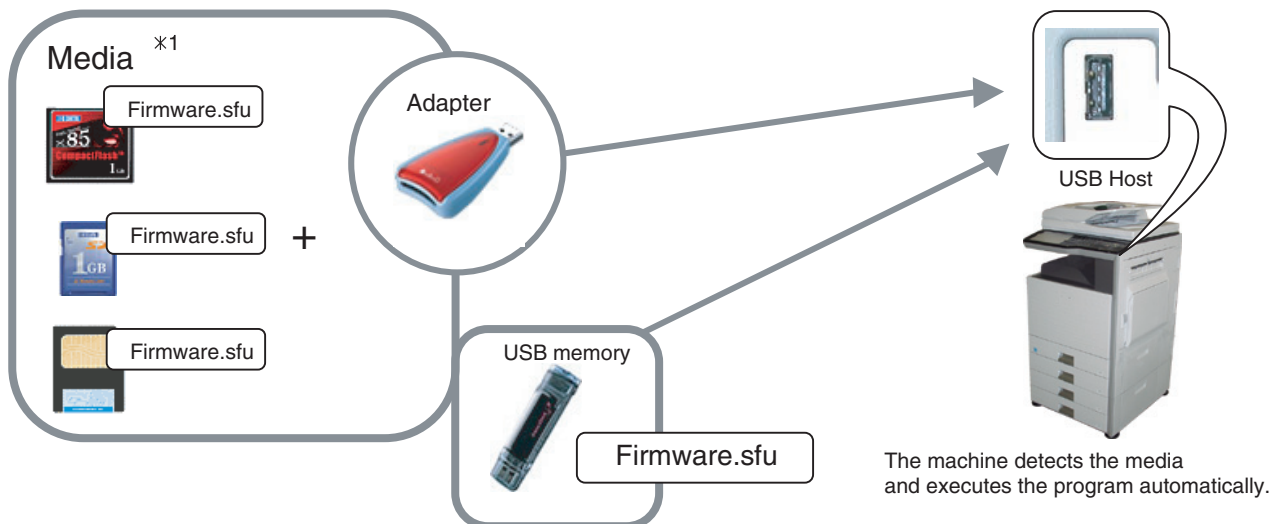
#### \*Firmware types

	Flash ROM1	CONTENTS
MAIN BODY	ALL	The following All the contents
	ICU (PROG1)	ANIME
		BOOT MAIN
		CONFIG
		ESCP FONT
		UNI CODE
		XIO FONT
		PROFILE
	ICU (PROG2)	SPDL
		LANG
		GRPH
		WEB HELP
		MAIN
	IMG-ASIC	IMG DATA ROM
	SCU	SCU (MAIN)
	PCU	PCU (MAIN)
OPTION	FAX1	FAX1 (MAIN)
	1K FINISHER	FINISHER_1K (MAIN)
	INNER FINISHER	FINISHER_INNER (MAIN)
	LCC A4	LCC_A4 (MAIN)
	DESK	DESK (MAIN)
	PUNCH	PUNCH (MAIN)
	4K FINISHER	4KFIN (MAIN)
	4K PUNCH	4KPUNCH (MAIN)
	ACRE	ACRE (MAIN)
		ACRE_DATA

### 2. Update procedure

#### A. Firmware update using media

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.



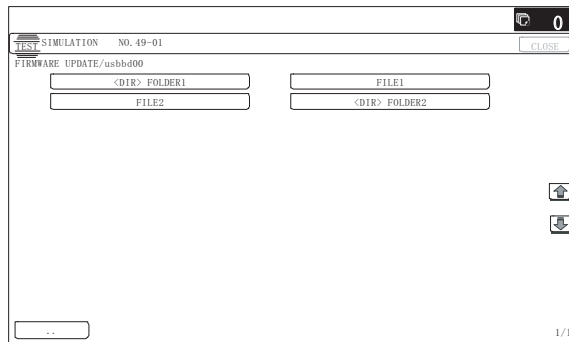
\*1:

- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have a minimum of 60MB of storage capacity.
- The USB memory equipped with the security (secure) function cannot be used.

# (1) Firmware update procedure from the USB memory

The firmware update executes by SIM49-01.

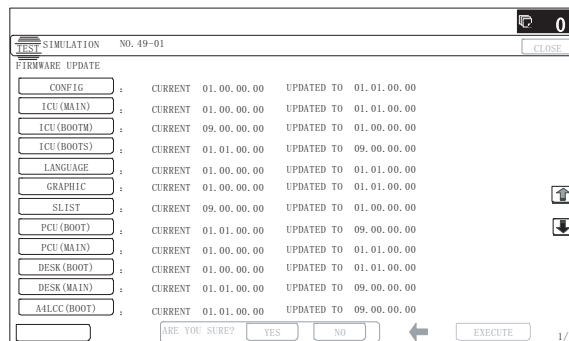
- 1) Insert the media or USB memory which stores the firmware into the main unit.
- 2) Enter the SIM49-01. Press the key of the file to be updated. The screen transfers to the update screen.



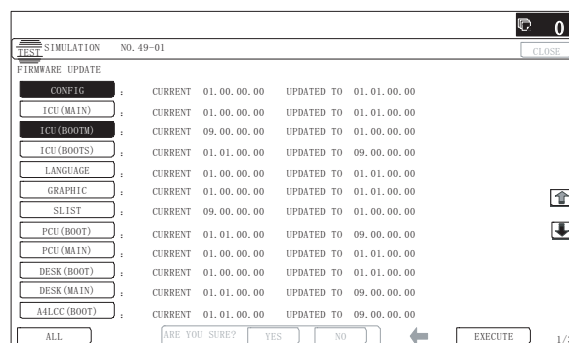
\* The number of key changes according to the number of the sfu file in the media or USB memory inserted.

\* If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A STORAGE FIRMWARE STORED ON [OK]" is displayed on the screen. Insert the media or USB memory and push the [OK] key to open the file. If the media have not been inserted and [OK] key is pushed, the next screen does not appear and the screen waits the entry. Conversely, if the media or USB memory is pulled out on the file list screen, the error is detected by the [FILE] key pressing, and the first screen appears.

- 3) Current version number and the version number to be updated will be shown for each firmware respectively.



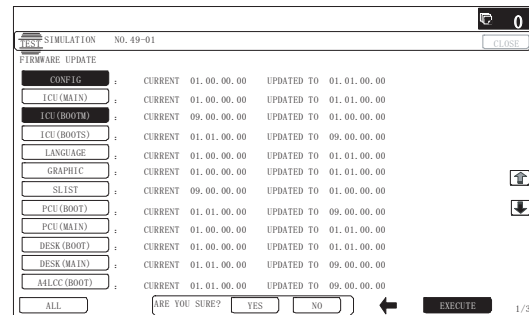
- 4) Select the key of the firmware to be updated. The key will be highlighted. (In this screen, [CONFIG] and [ICU(BOOTM)] are selected.) At the same time, [EXECUTE] key appears. If firmware's key is not selected, [EXECUTE] is gray out and cannot be pressed.



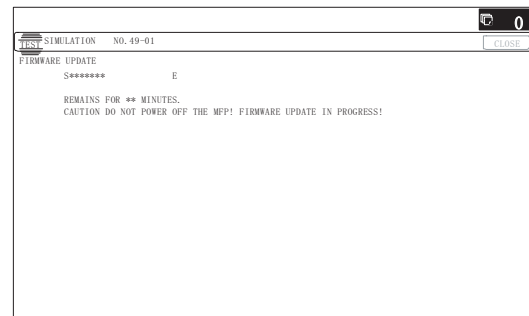
\* Press the selected key again to release the selection.

\* Press [ALL] key to select all items.

- 5) Press [EXECUTE] key. "ARE YOU SURE? [YES] [NO]" becomes clear. Press [YES] to start the update of selected firmware.

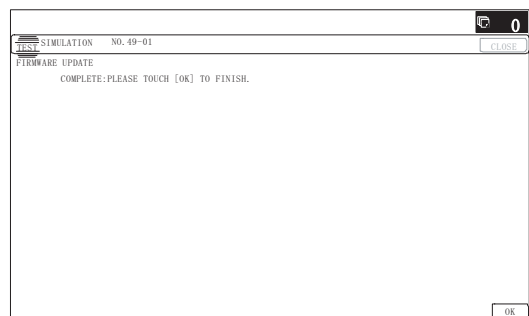


The progress is displayed on right side of "FIRMWARE UPDATE" title by 20 steps.



At this time, only the progress gauge is displayed on the screen, and the version and the firmware selection key are not displayed.

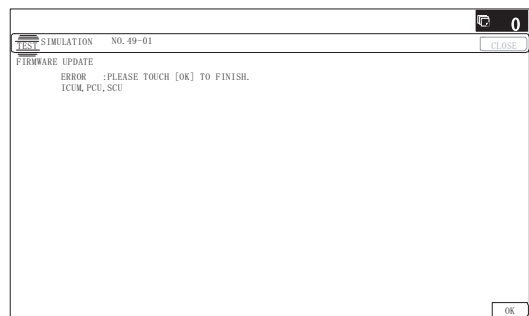
- 6) If the update is normal completion, following screen is displayed.



Exit the simulation mode and turn off the power.

Go to Simulation 22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.

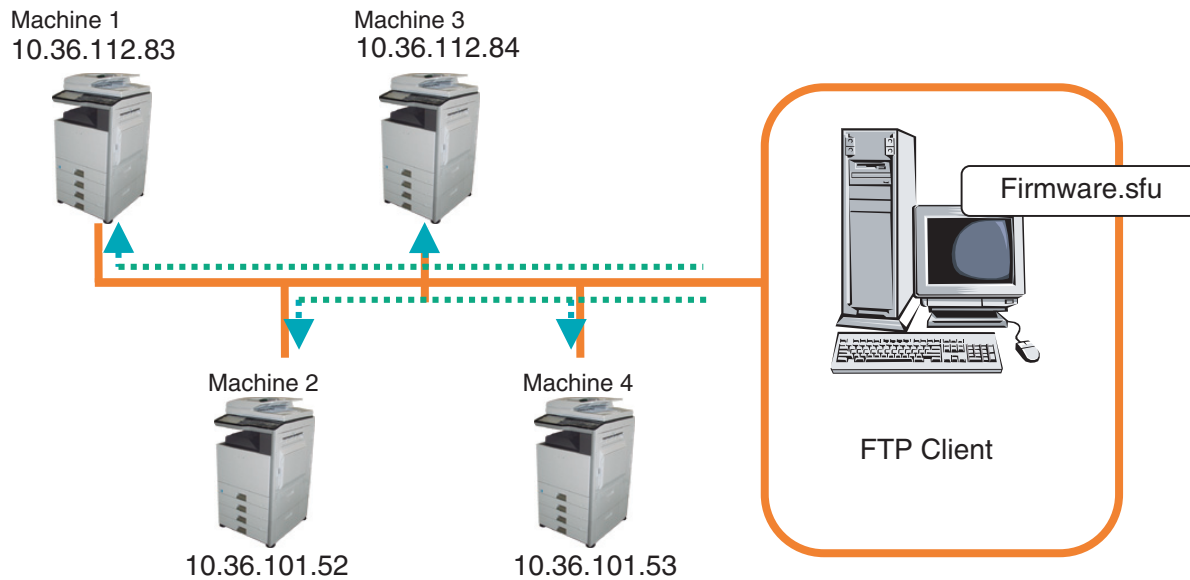


\* When the power supply is turned off due to a black out etc. while updating or when the update terminated abnormally, a part of the main program stored in HDD may be damaged and may not booted normally.

In this case, the emergency update described later must be executed.

## B. Firmware update using FTP

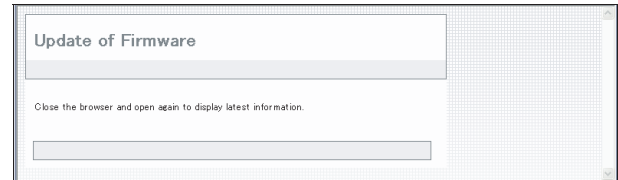
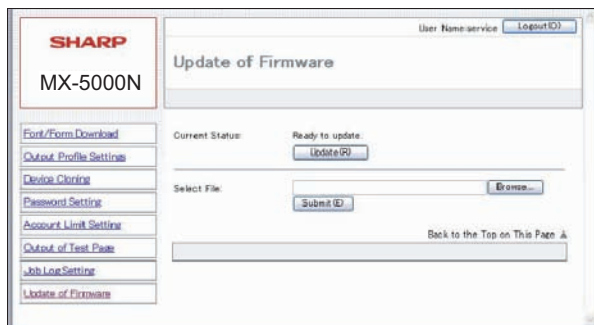
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



## C. Firmware update using the Web page

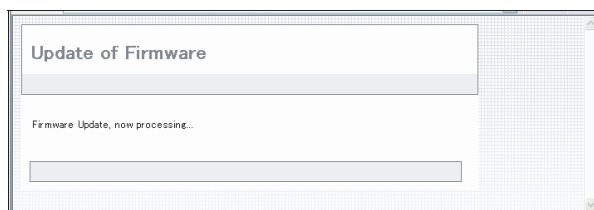
An Web browser (service technician's Web page) is used to update the firmware.

- 1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
- 2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.
- 3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.
- 4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



"Close the browser and open again to display latest information." will be displayed.

- 5) Check the firmware version of machine again.



## D. Emergency update (incase of an HDD breakdown)

The HDD of this machine stores the main program along with the sophisticated variations.

When, therefore, the HDD breaks down, or when the HDD must be replaced with another HDD, or when the main program is damaged by turning OFF the power during the firmware updating, the firmware (main program) must be rewritten into the HDD by the following procedures. It is called the emergency update.

### [Conditions where the emergency update is required]

The emergency update is required in the following cases:

- 1) "Main Program Error" is displayed on the panel.  
It means that the data are destroyed and that replacement of the HDD is not required. The problem can be settled by execution of the emergency update only.
- 2) "HDD Trouble (E7-03)" is displayed on the panel.  
It means a HDD breakdown. The HDD must be replaced with a new one, and the emergency update must be executed.
- \* When U2-05 (HDD/EEPROM/SRAM abnormality) or U2-50 (HDD data abnormality related to IMS) occurs, execute SIM16 only, and there is no need to execute the emergency update.

### [Environment necessary for the emergency update]

- 1) The MFP with the HDD where the firmware is rewritten
- 2) The USB memory which stores the firmware for the emergency upgrade.  
File name: emupdate\_J2.sfu  
\* The firmware must be stored in the root folder of the USB memory.

### [Emergency update procedures]

- 1) Insert the USB memory which stores the firmware for the emergency update into the USB port.
- 2) Turn on the main power.  
The firmware for the emergency update in the USB memory is automatically recognized to start reading the USB memory. It takes about 1 minute, and the booting animation is displayed during this period.
- 3) Check to confirm that "EmergencyUpdateMode" is displayed on the panel.  
After that, the process is automatically executed.

EmergencyUpdateMode

- 4) Check the procedure.  
When the process is going on normally, the following message is displayed.

EmergencyUpdateMode  
Updating ....10%

- 5) Check the update result.  
When writing the program both to the HDD and to the Flash ROM is normally completed, the following message is displayed.

EmergencyUpdateMode  
Update Succeeded

If writing to either of the HDD or the Flash ROM is failed, the following message is displayed.

EmergencyUpdateMode  
Update Failed

In this case, if "Update Failed" is displayed, it may the HDD has been broken down probably. Replace the HDD with a new one, and execute the emergency update again.

- 6) Turn OFF the main power.
- 7) Remove the USB memory from the USB port.
- 8) Turn ON the main power.
- 9) Check the system operates normally.
- 10) When the HDD is replaced, use SIM49-5 to upload the watermark data.
- 11) Select the folder for updating, and press [EXECUTE] and [YES] keys in this order to start the updating procedures.

### [Note]

- It takes about 6 minutes for the emergency update.
- Never turn OFF the main power until the emergency update is completed.
- When the emergency update is completed, be sure to remove the USB memory for the emergency update. The machine does not boot normally with the USB memory inserted.

### A. System block diagram

[illegible]

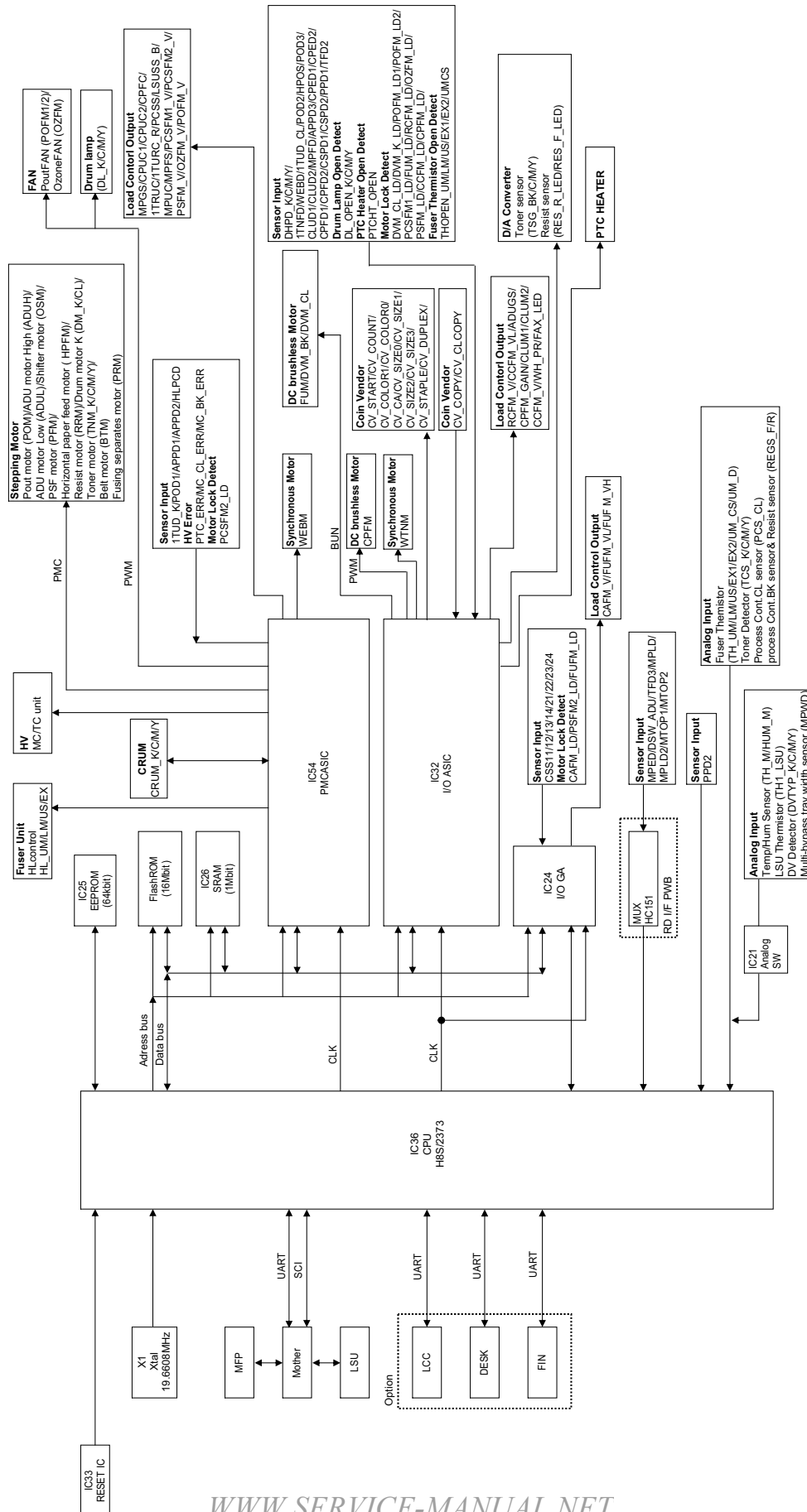


[illegible]



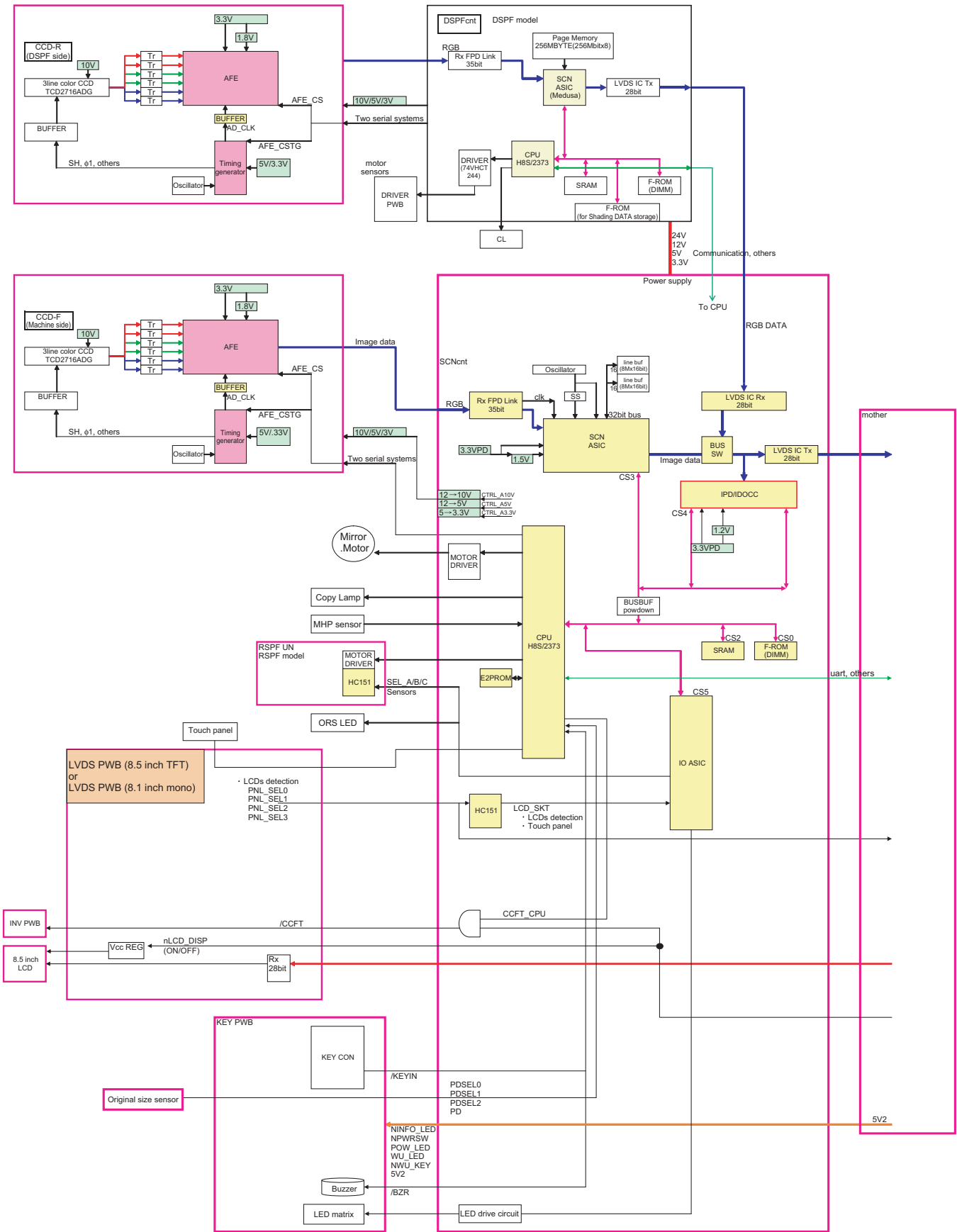
## C. PCU PWB

### (1) MX-4101N/4100N

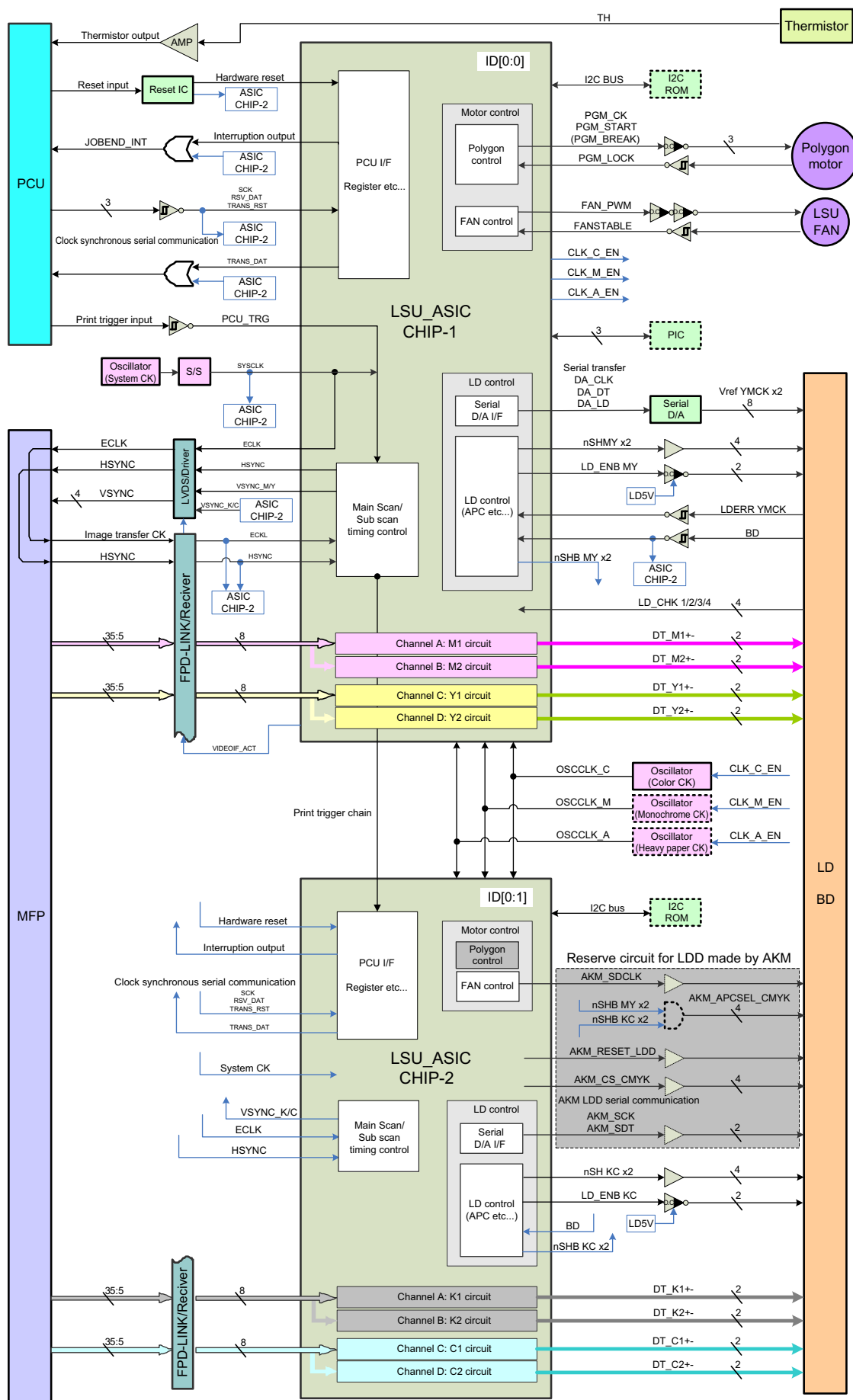




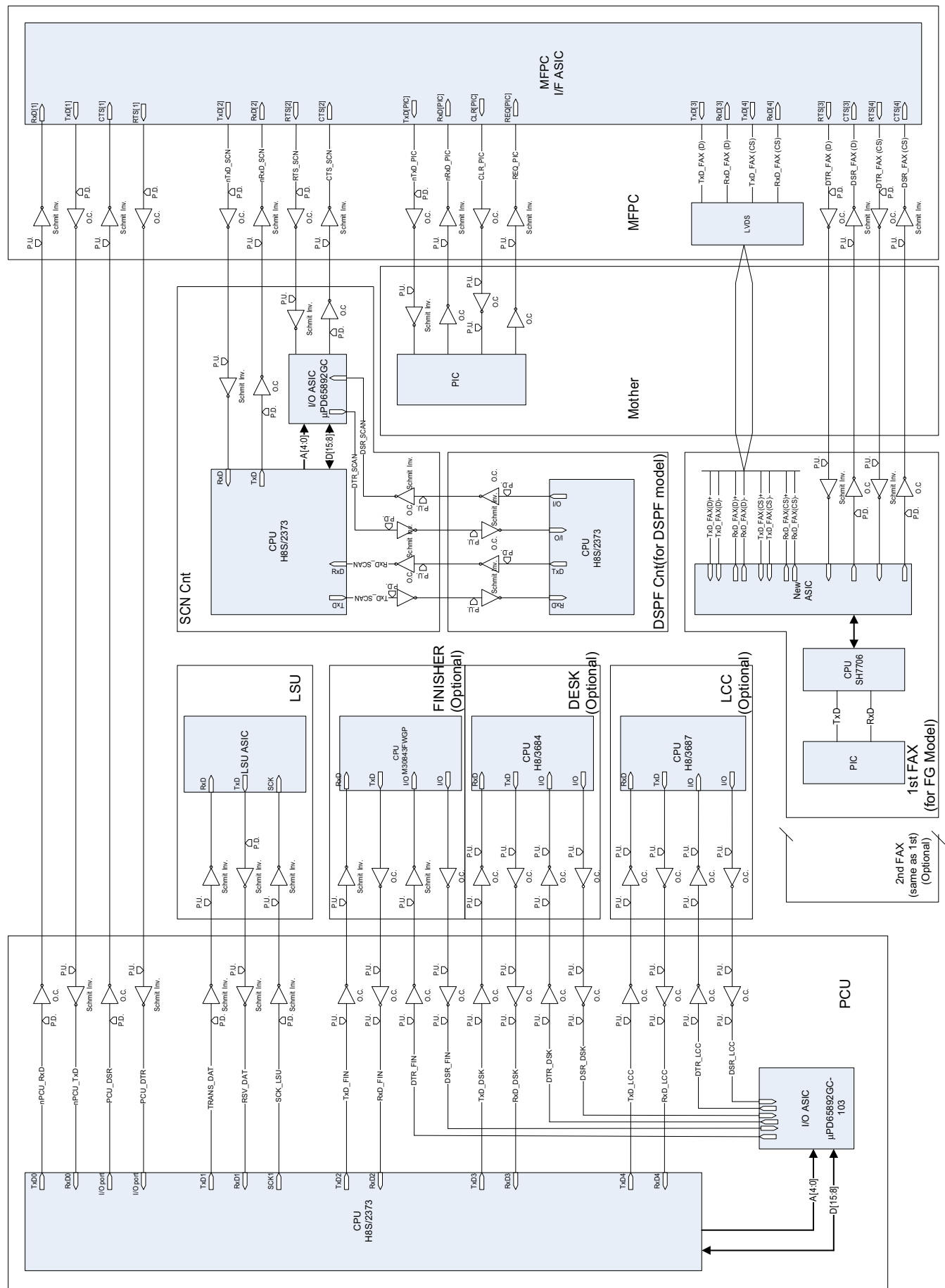
#### D. Scanner control PWB



## E. LSU PWB



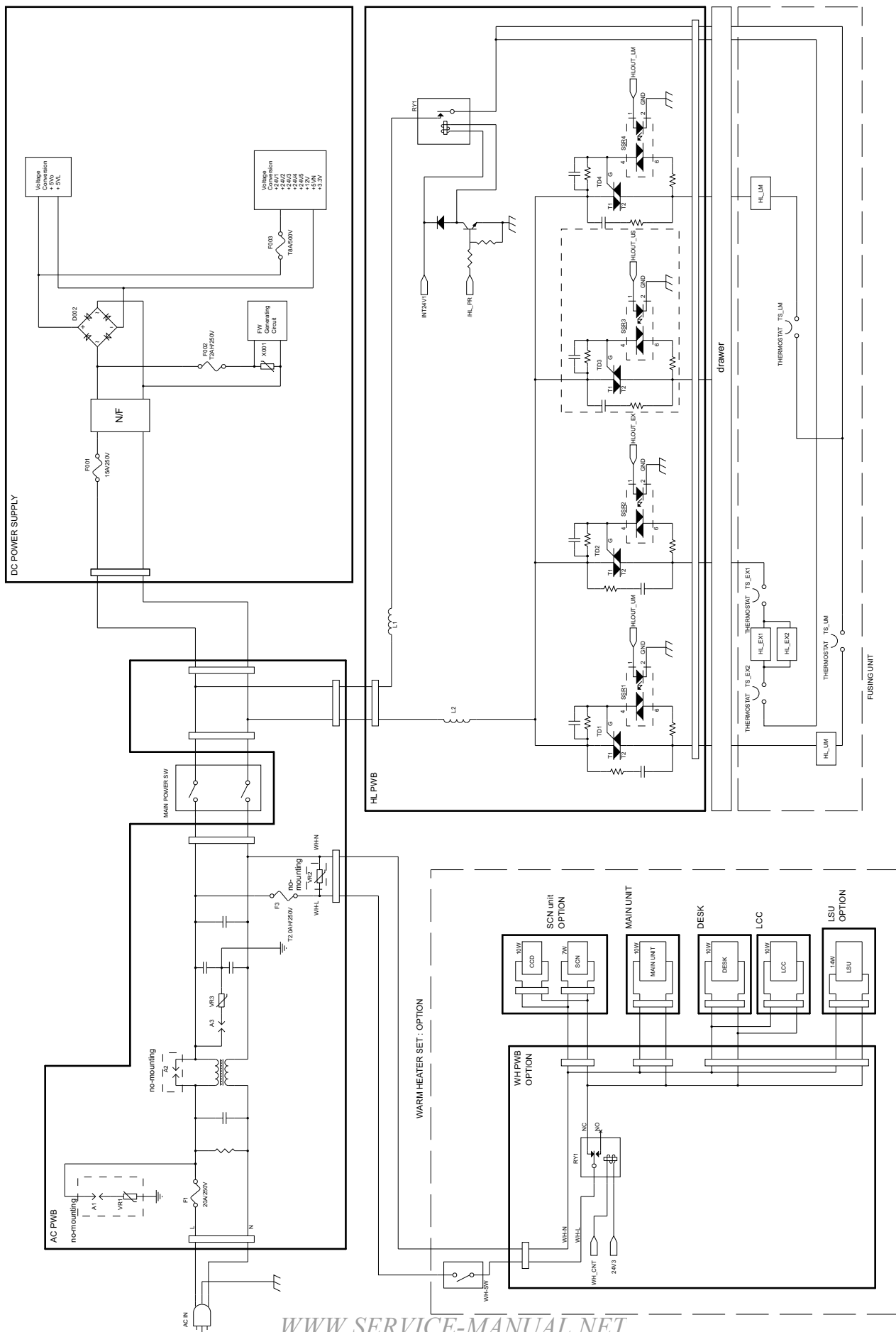
## F. Serial communication



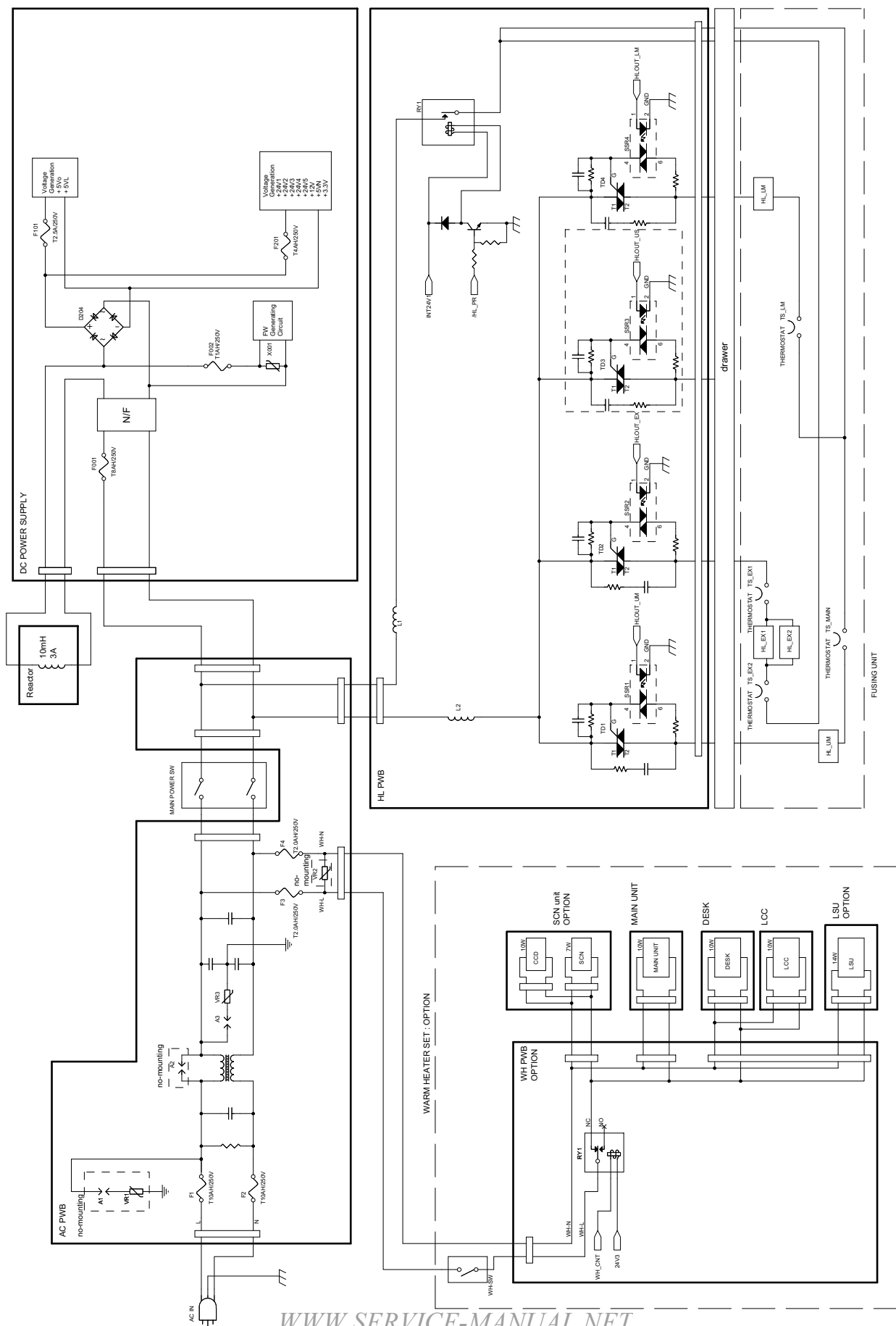
**(1) MX-4101N/4100N (120V)**



(2) MX-5001N/5000N (120V)

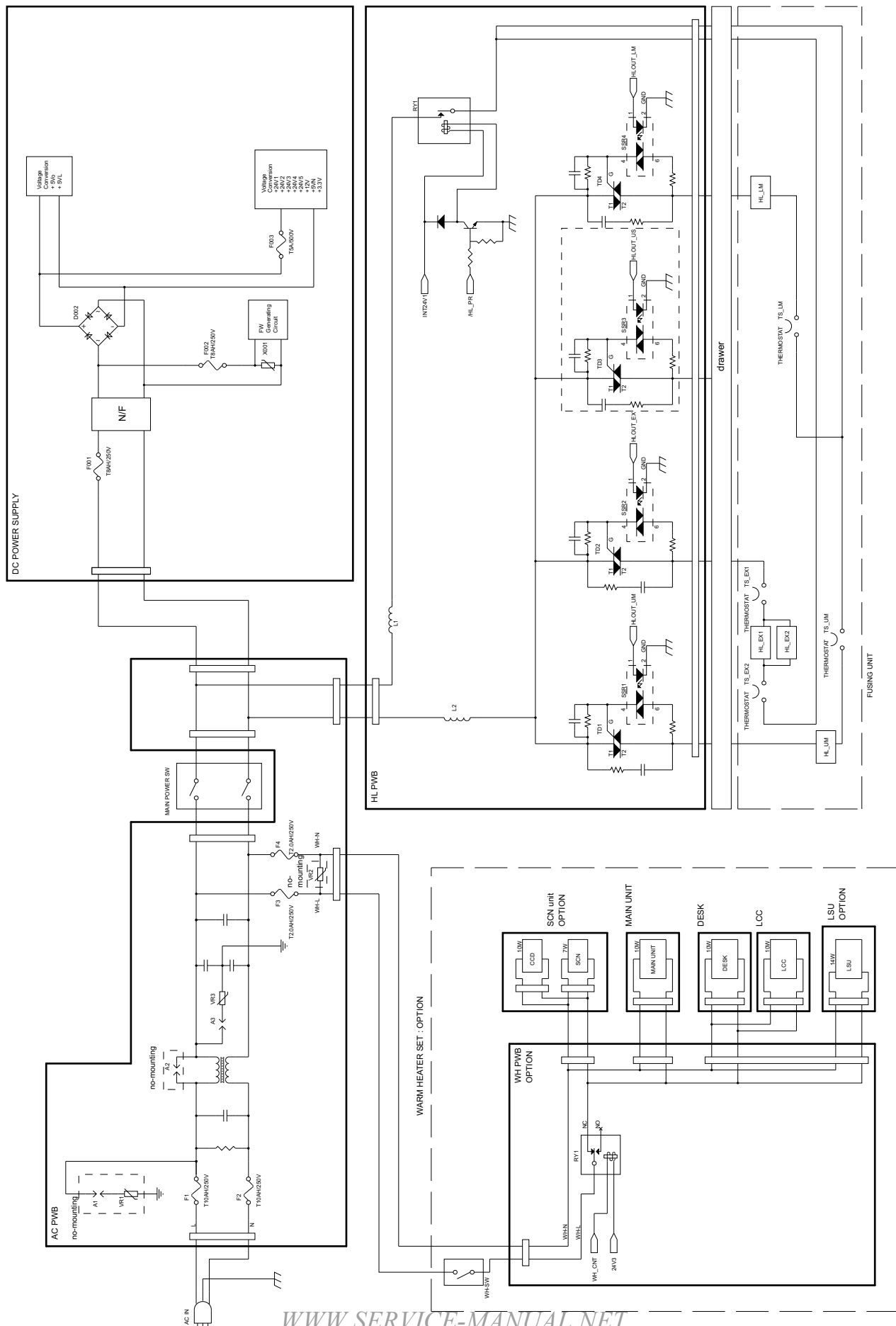


**(1) MX-4101N/4100N (200V)**

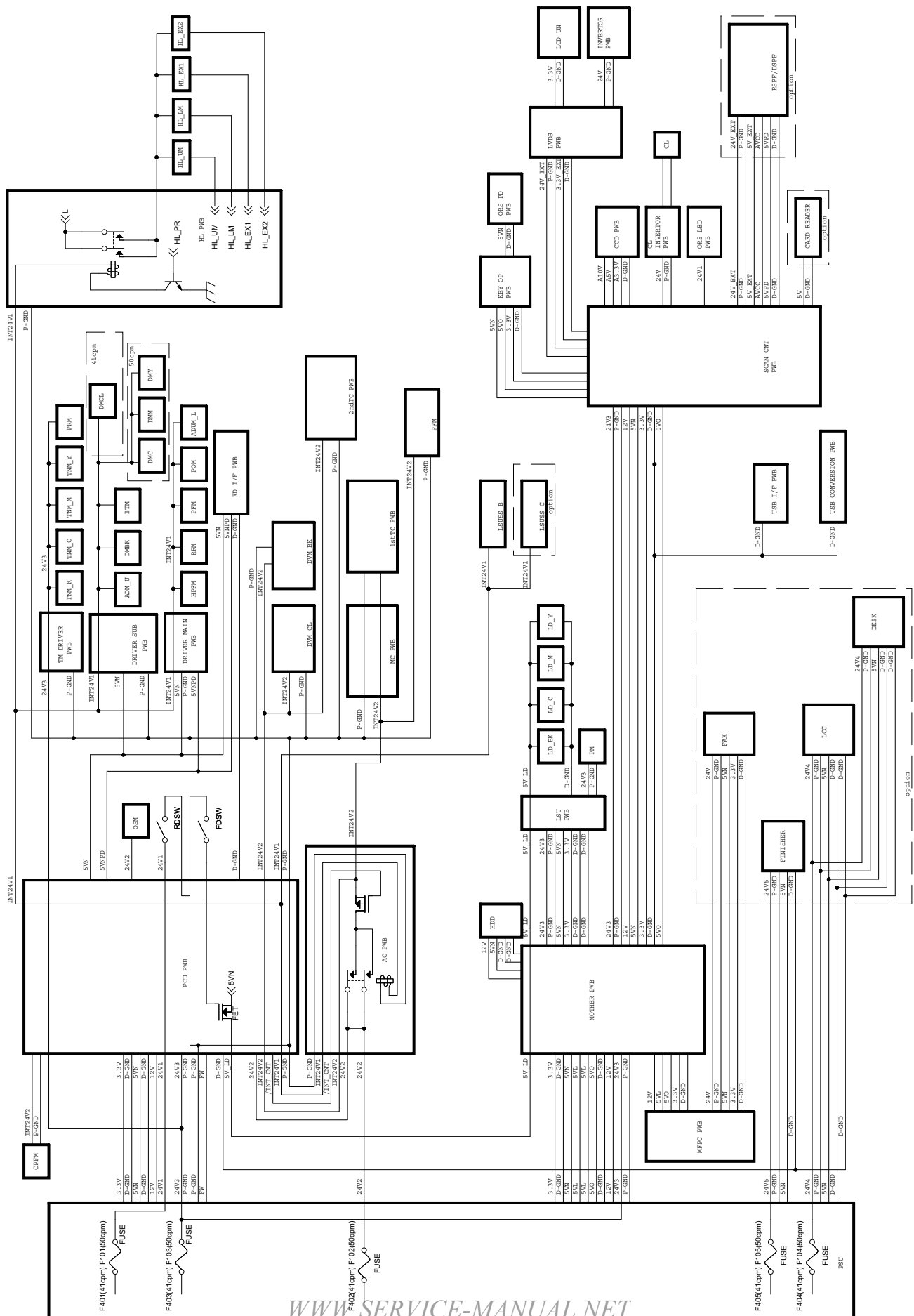




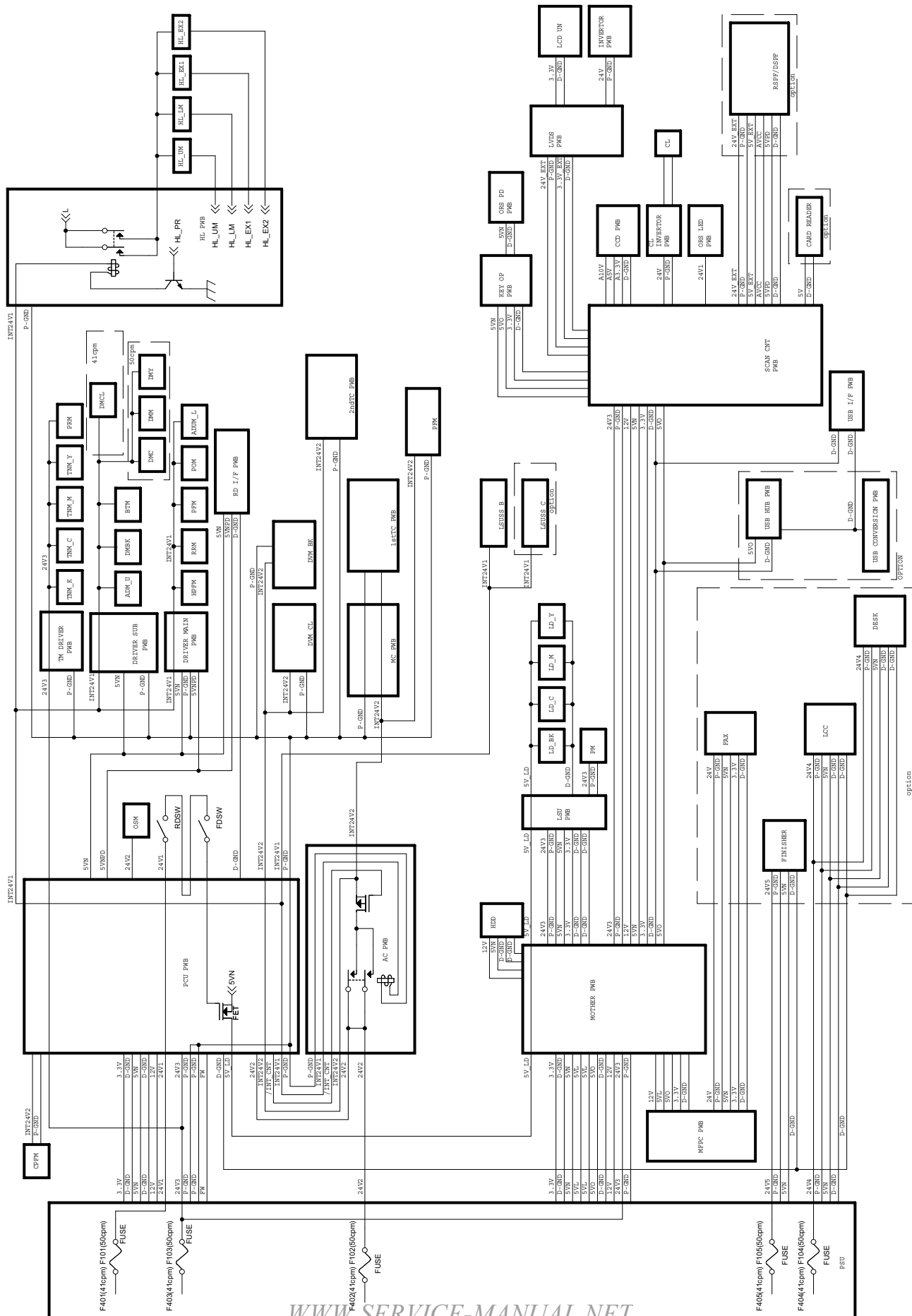
(2) MX-5001N/5000N (200V)



# I. DC power line diagram (120V)



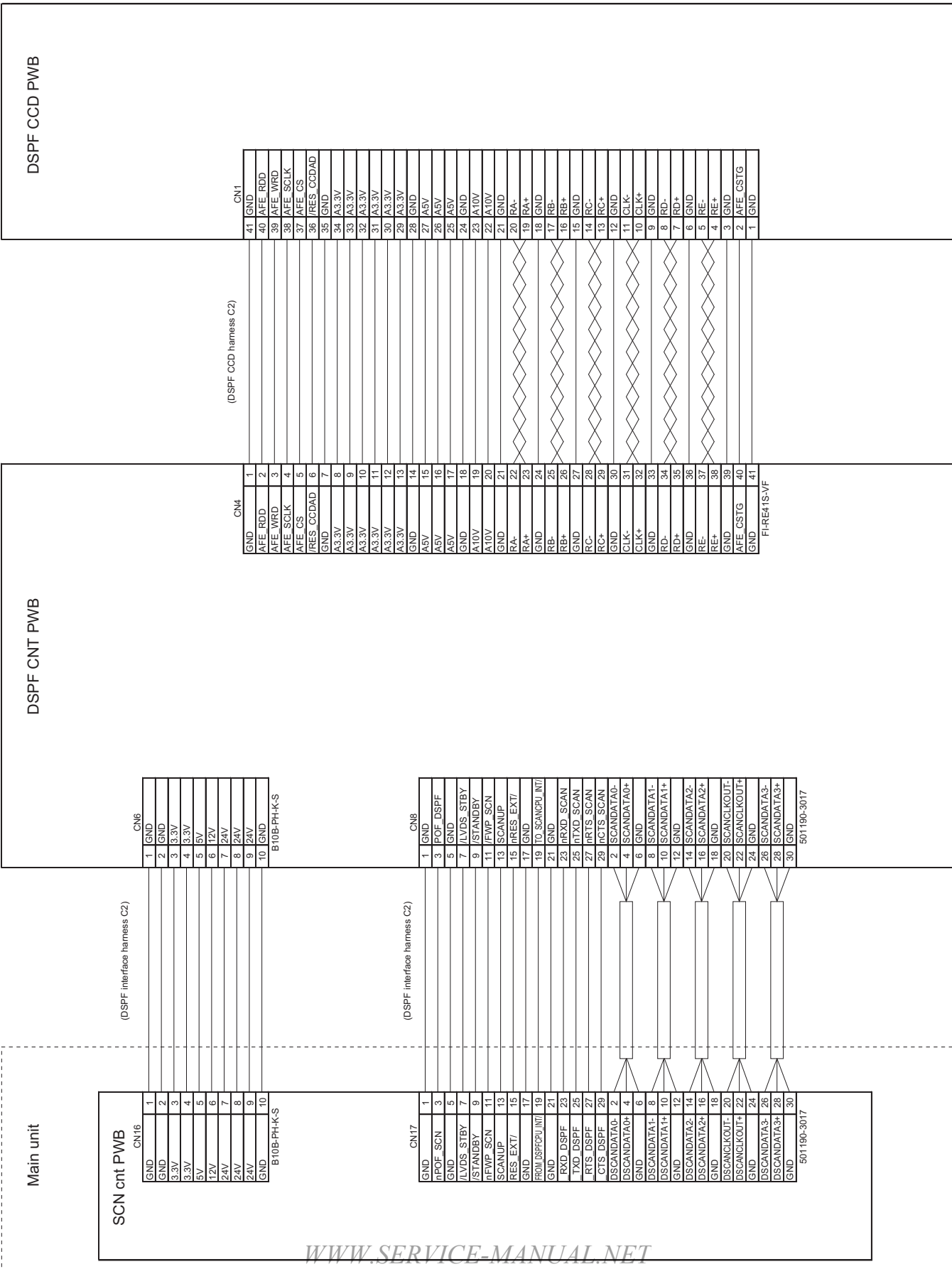
## J. DC power line diagram (230V)



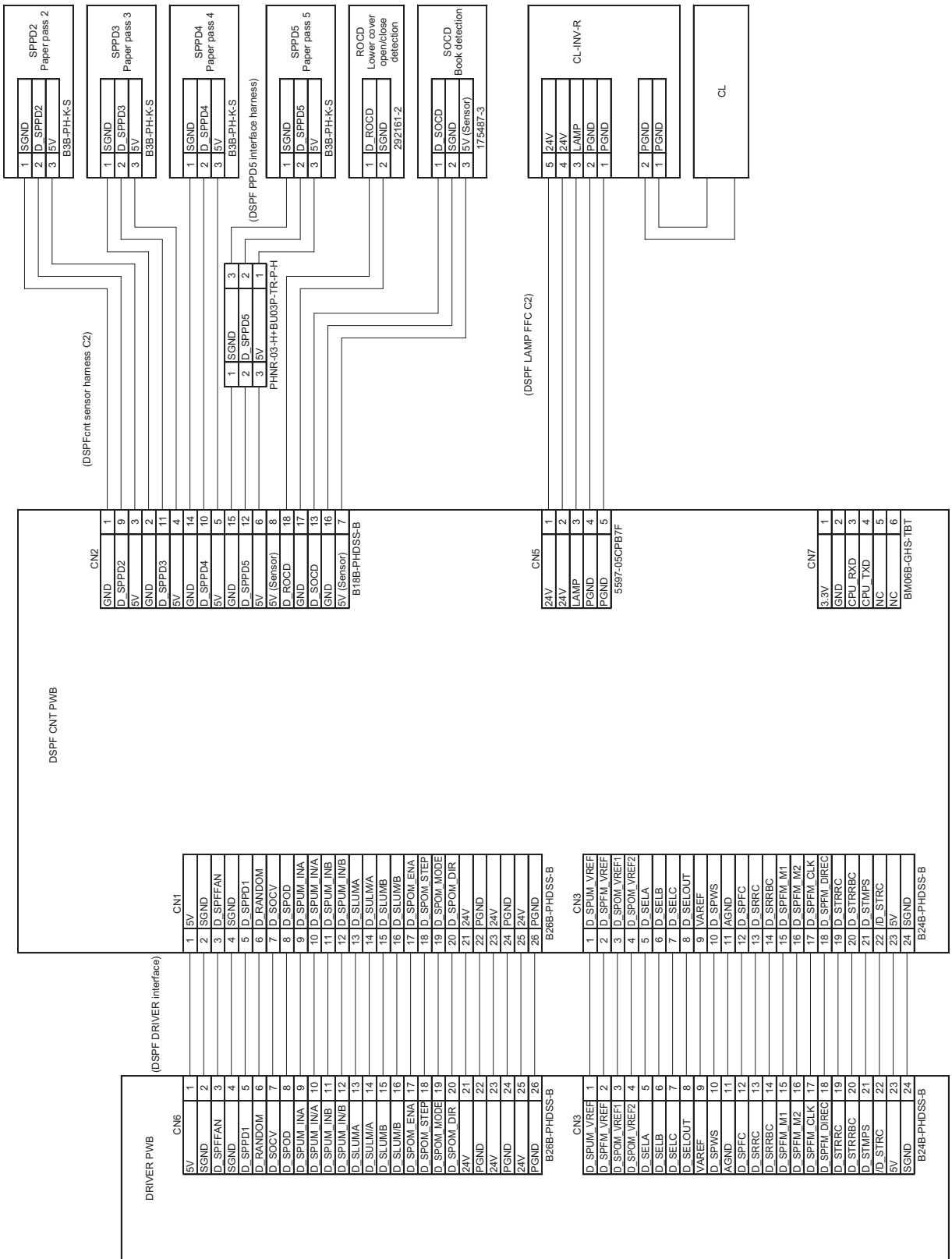
## 2. Actual wiring chart

### A. DSPF

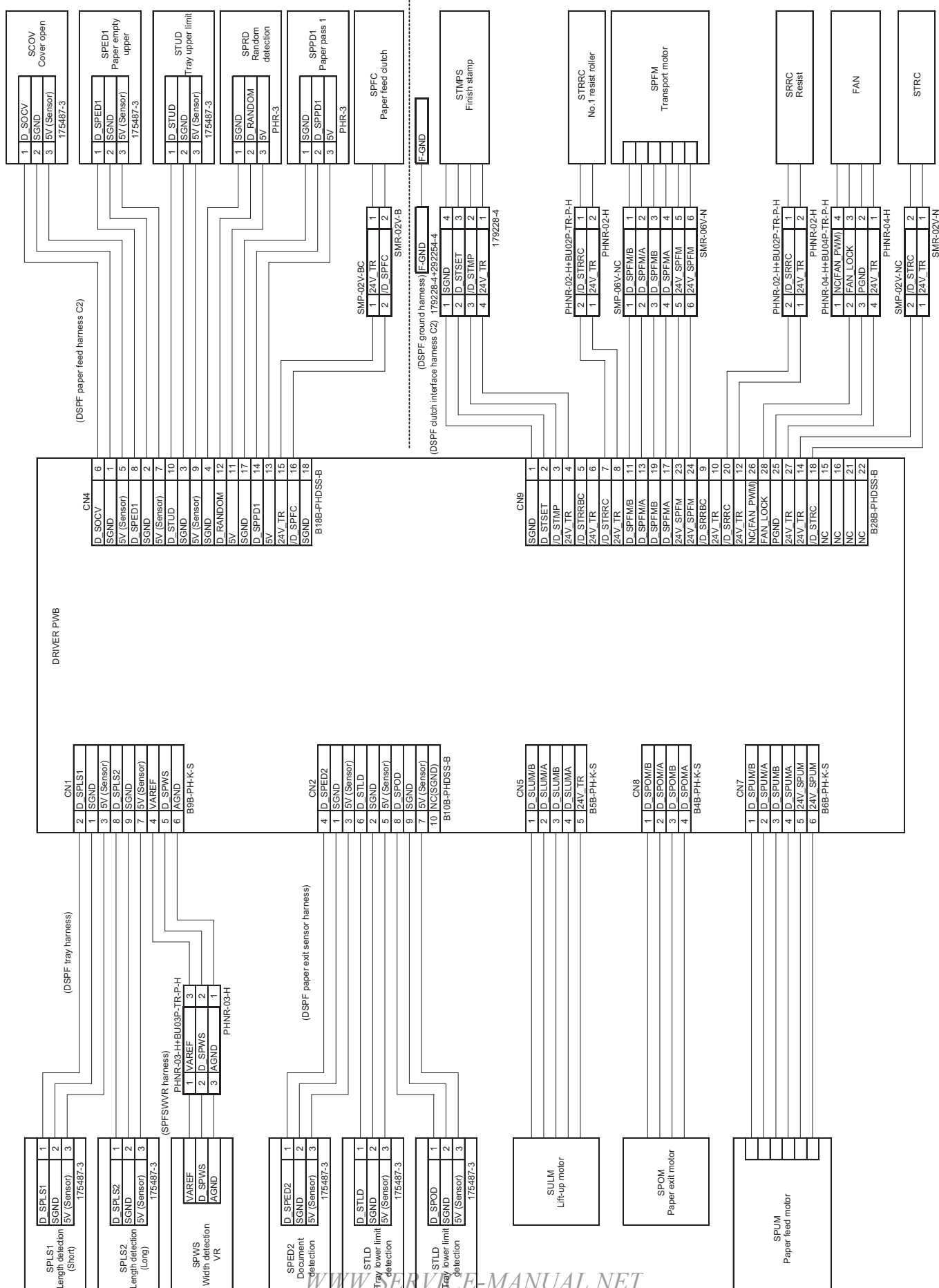
#### (1) DSPF CNT PWB section 1/2



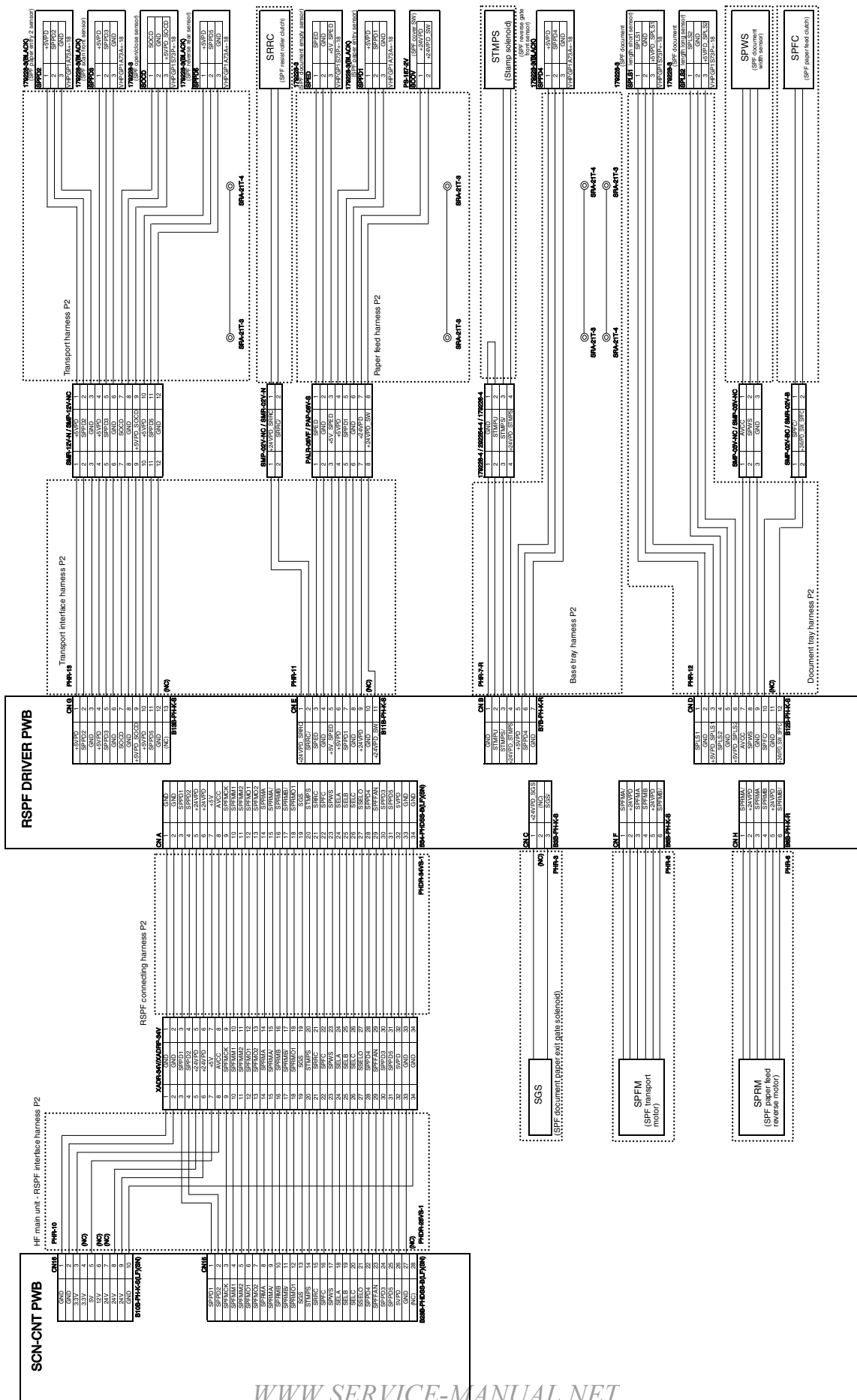
## (2) DSPF CNT PWB section 2/2



### (3) DRIVER PWB



### B. RSPF

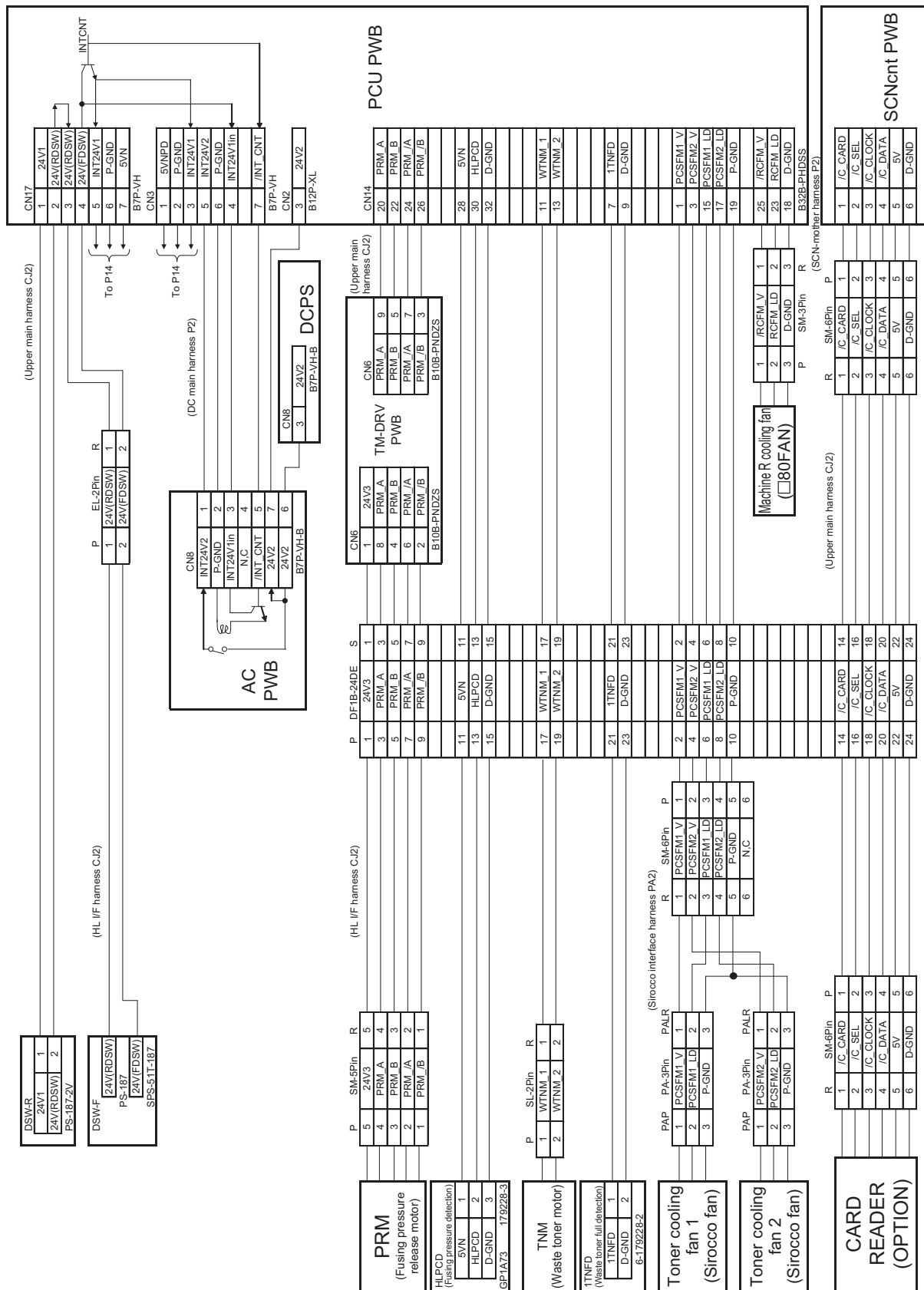


**(1) Power supply section (P1)**



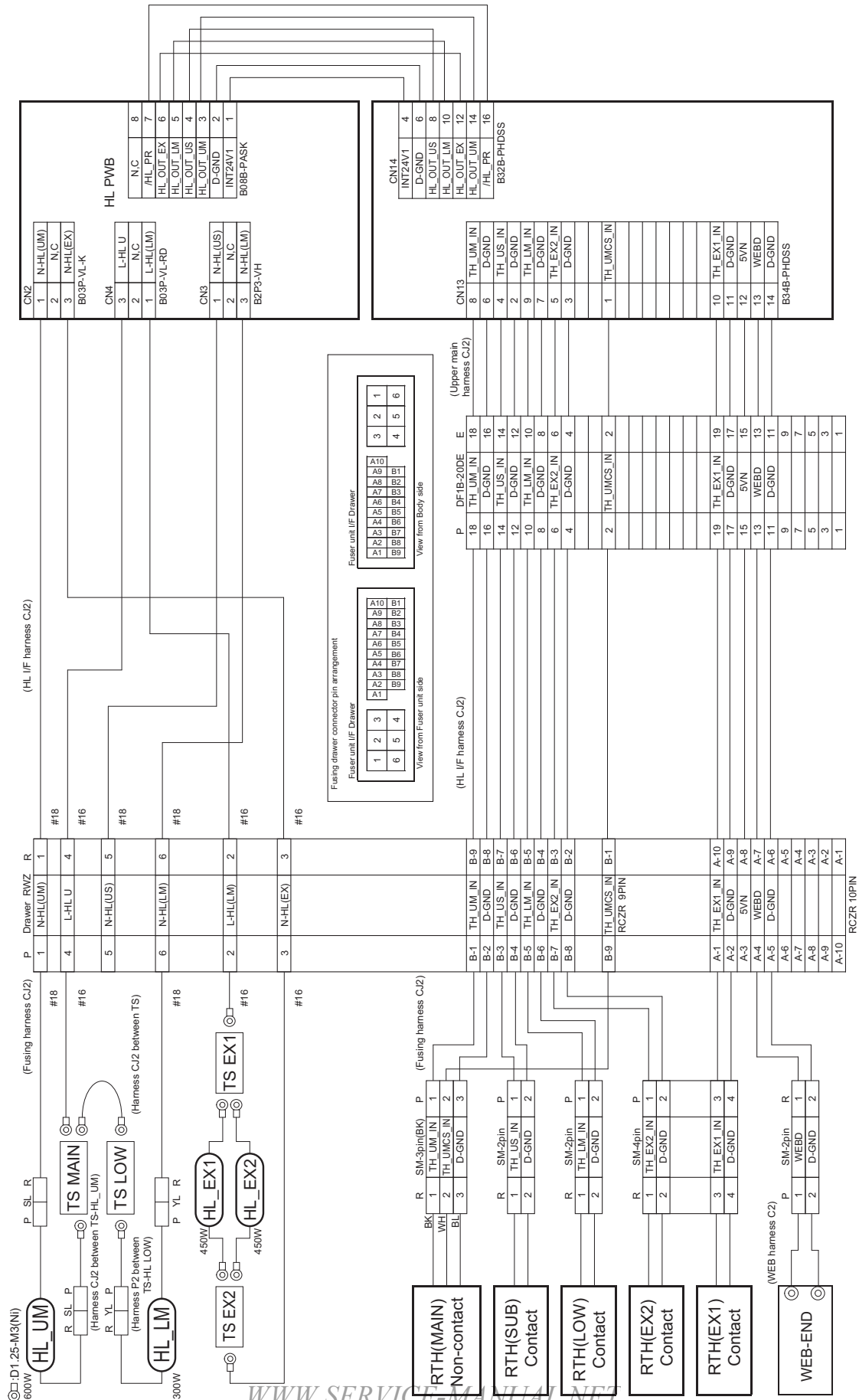


## (2) Front section (P2)

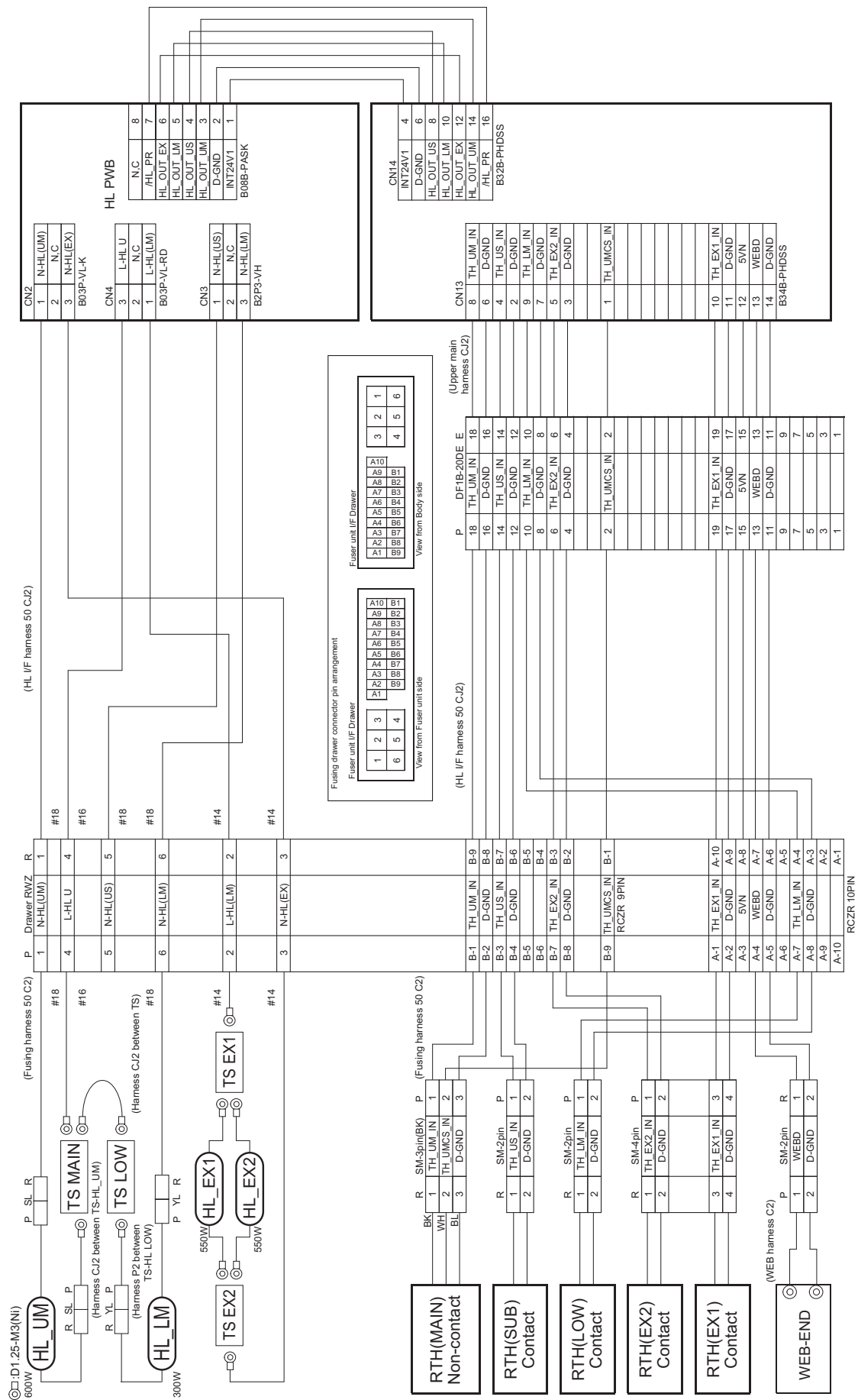


### (3) Fusing unit section (P3)

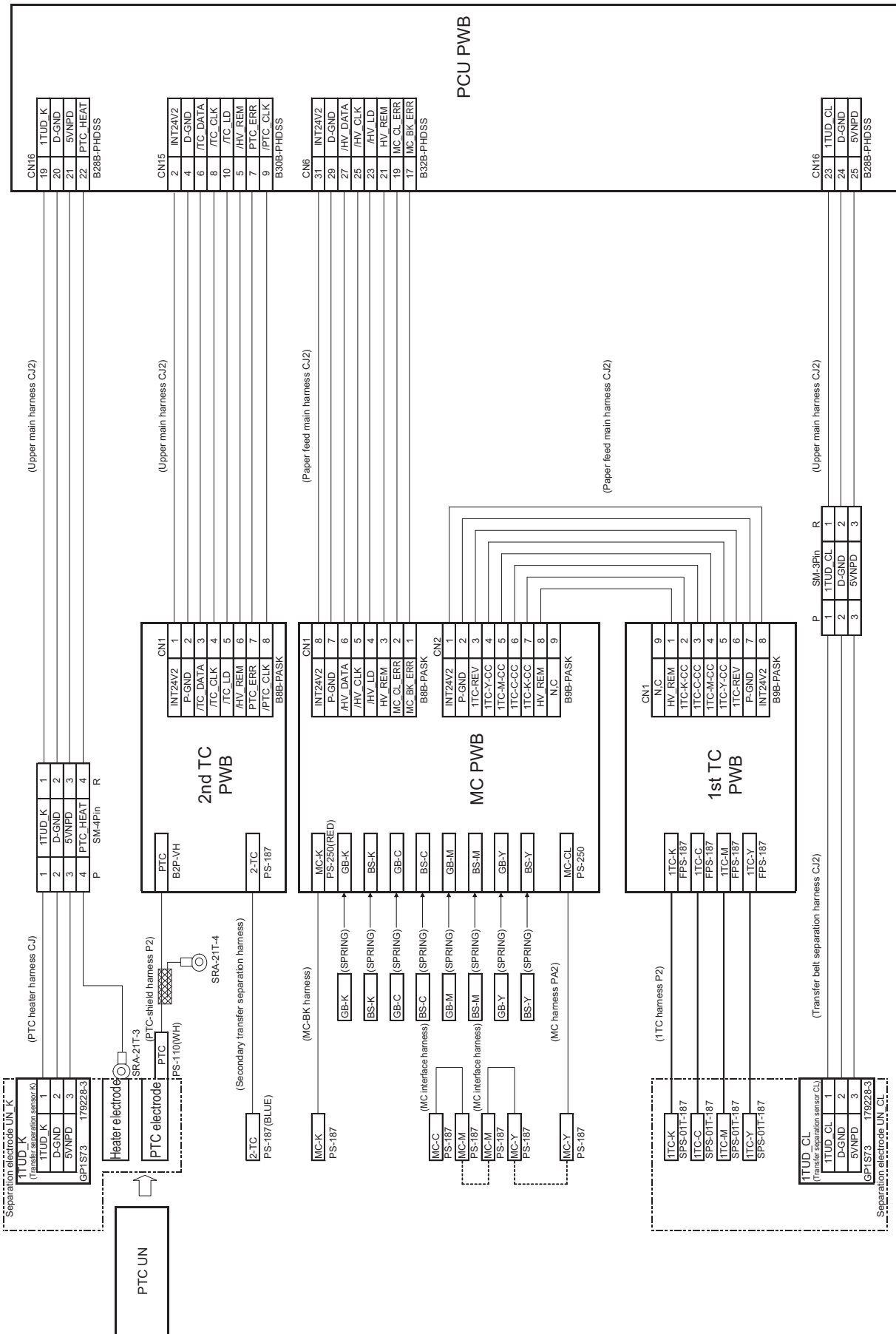
#### a. Fusing unit section (MX-4101N/4100N) (MX-5001N/5000N (for 200V))



b. Fusing unit section (MX-5001N/5000N (for 100V/120V))



#### (4) HVT section (P4)



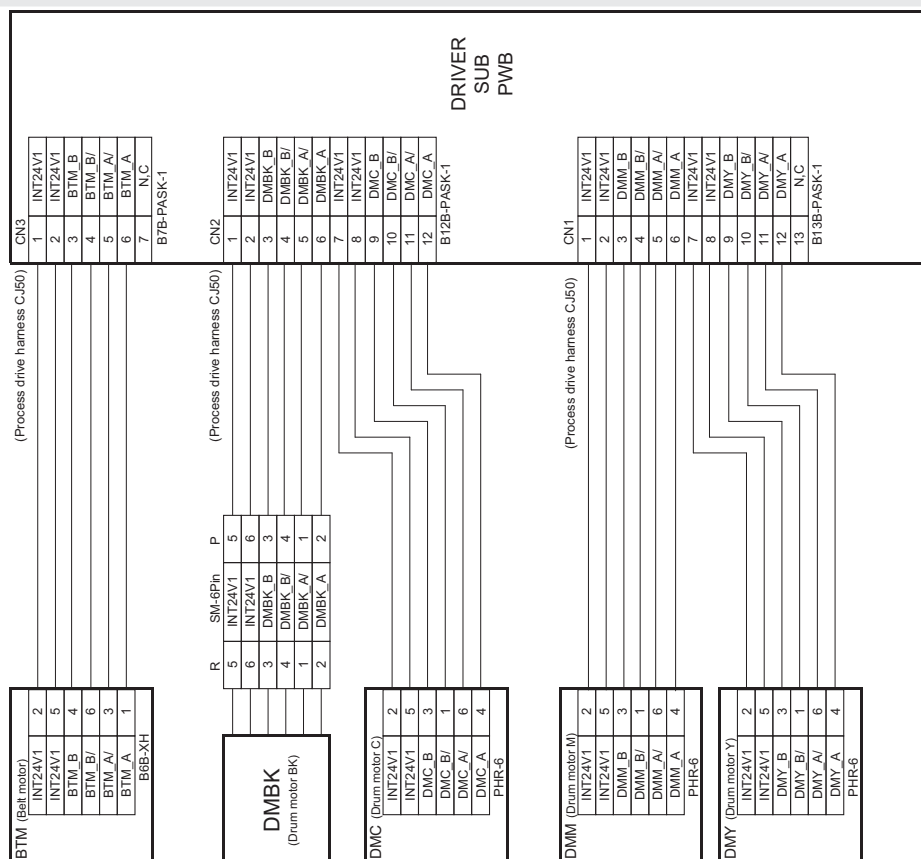
WWW.SERVICE-MANUALS.NET



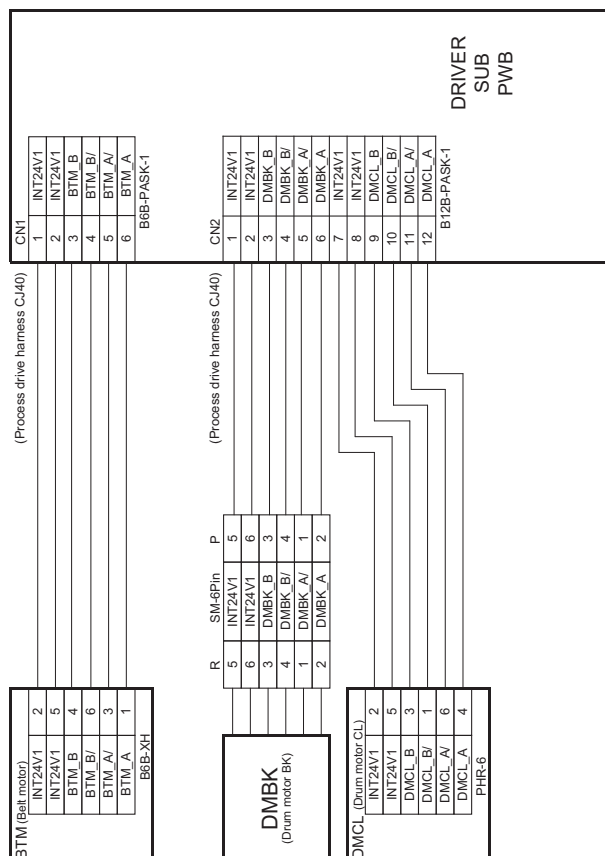
(6) Process drive unit section 2/2 (P6)

1

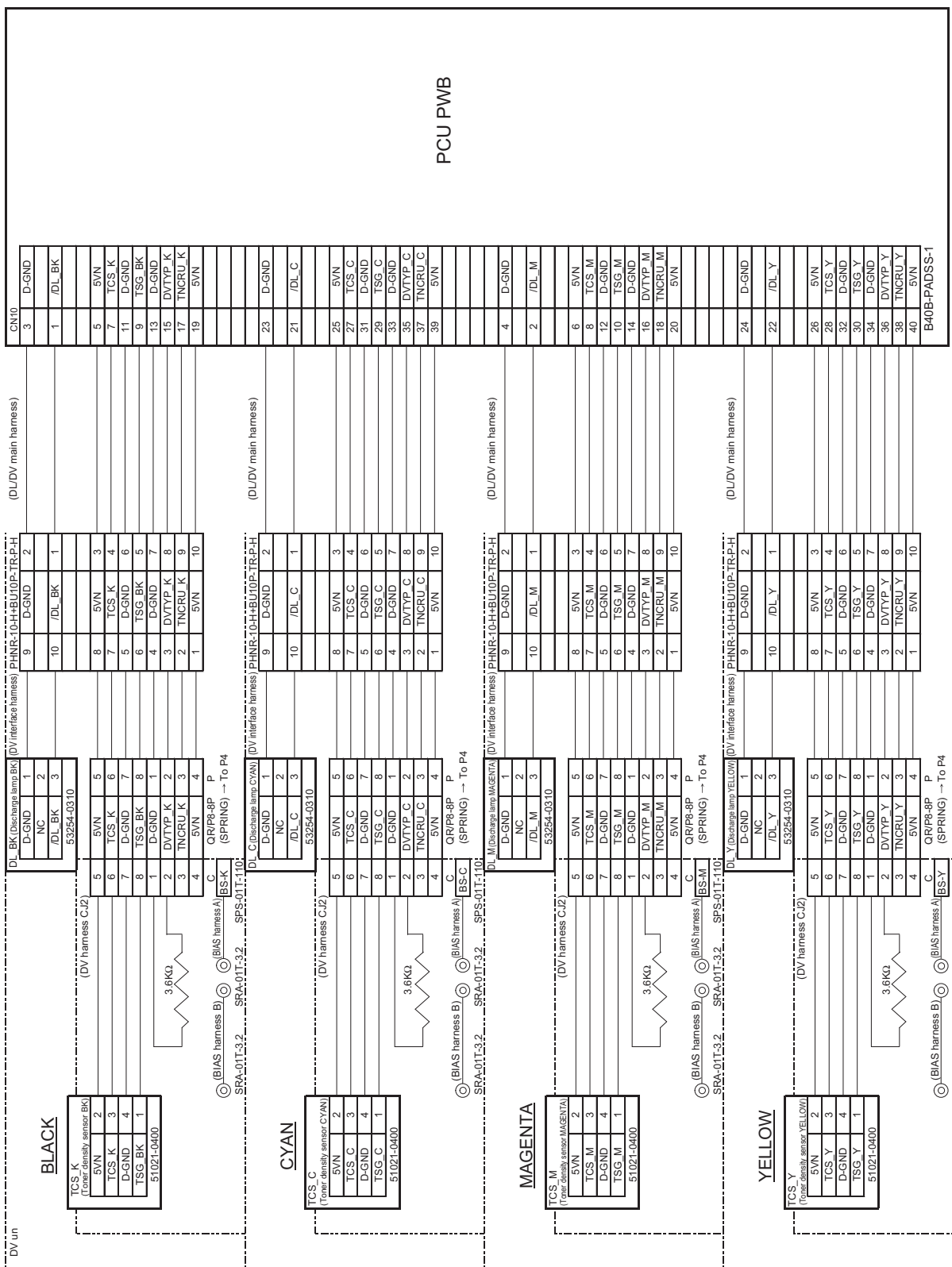
50CPM



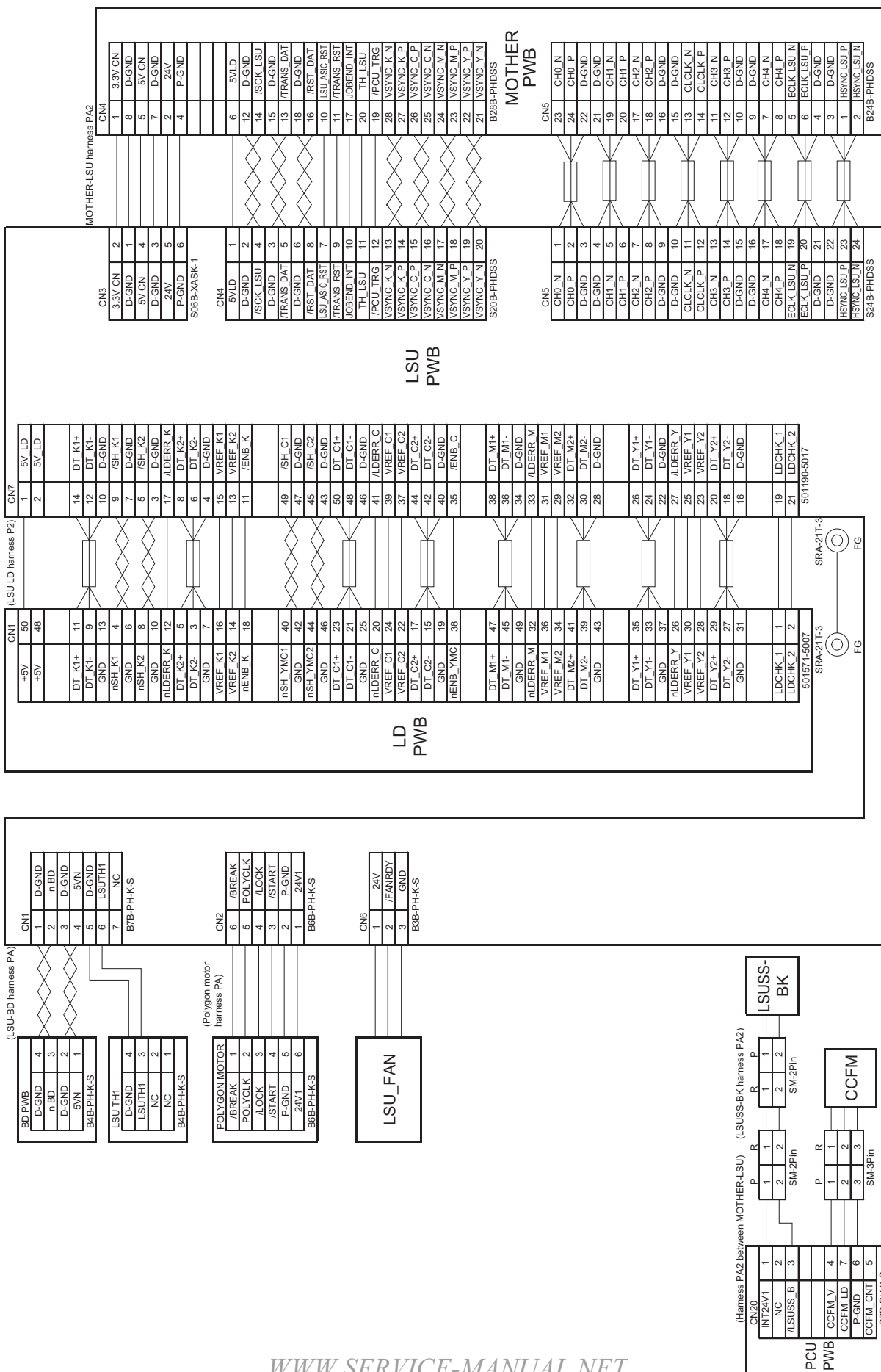
41CPM



(7) DL and DV section (P7)

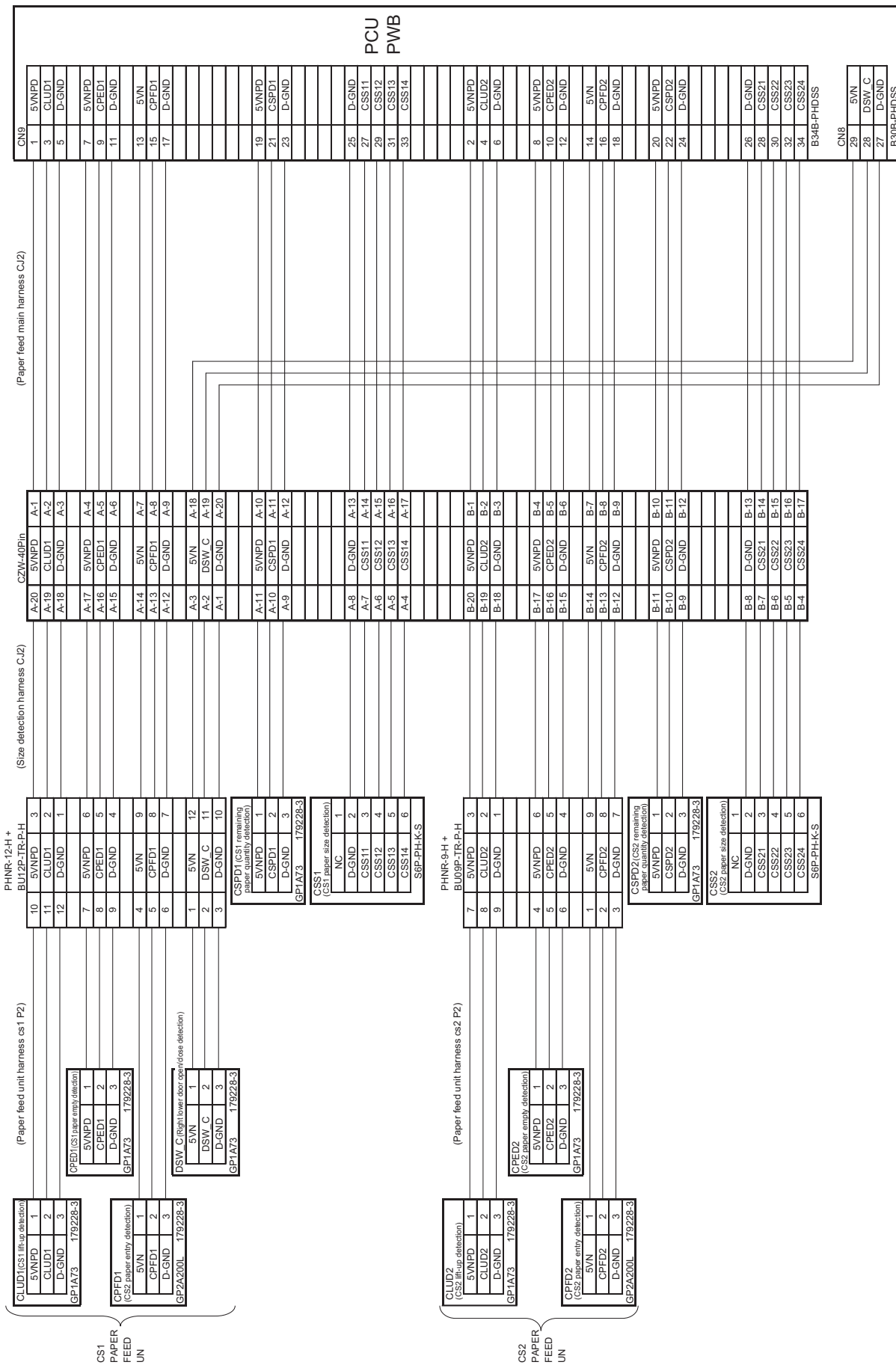


**(8) LSU section (P8)**

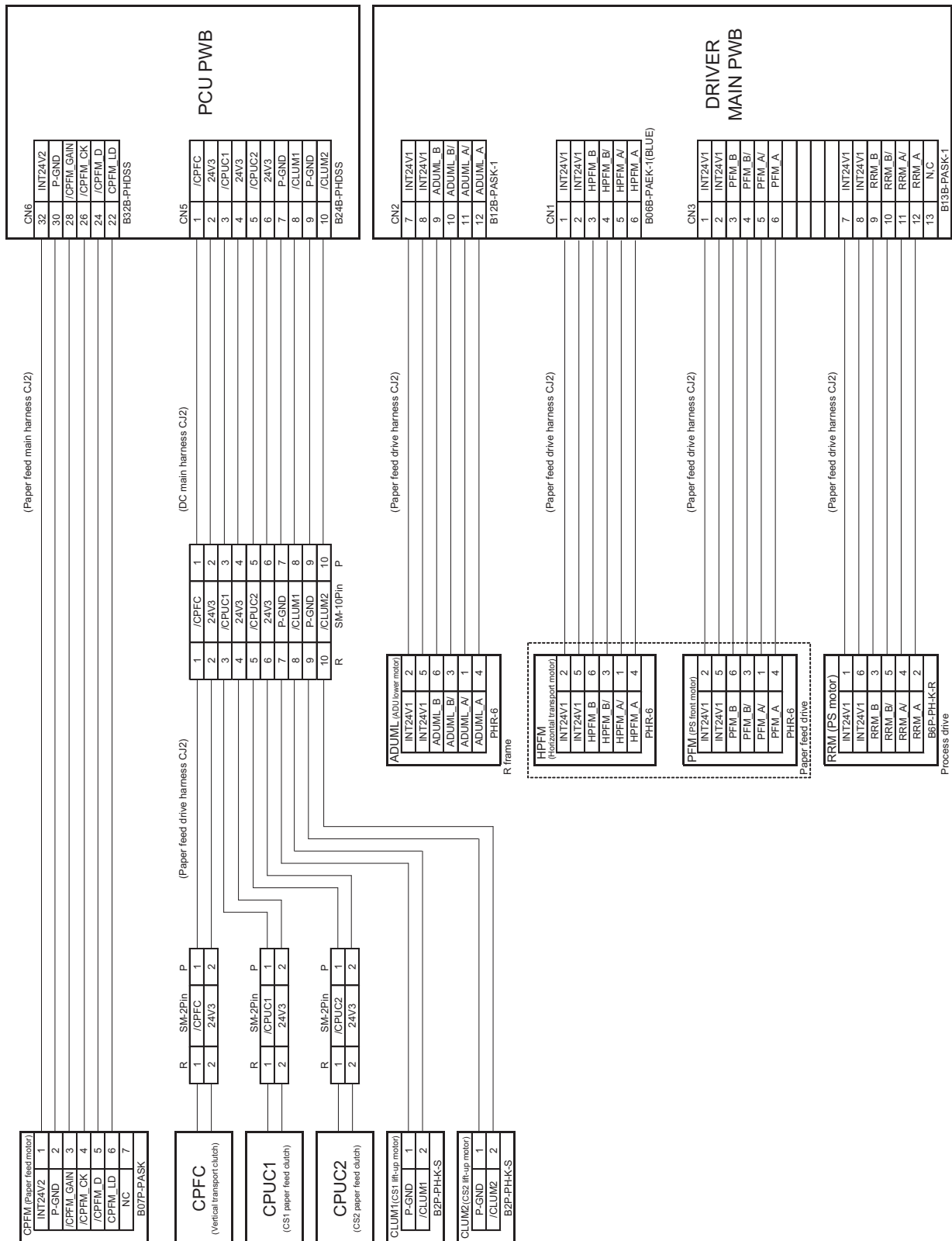




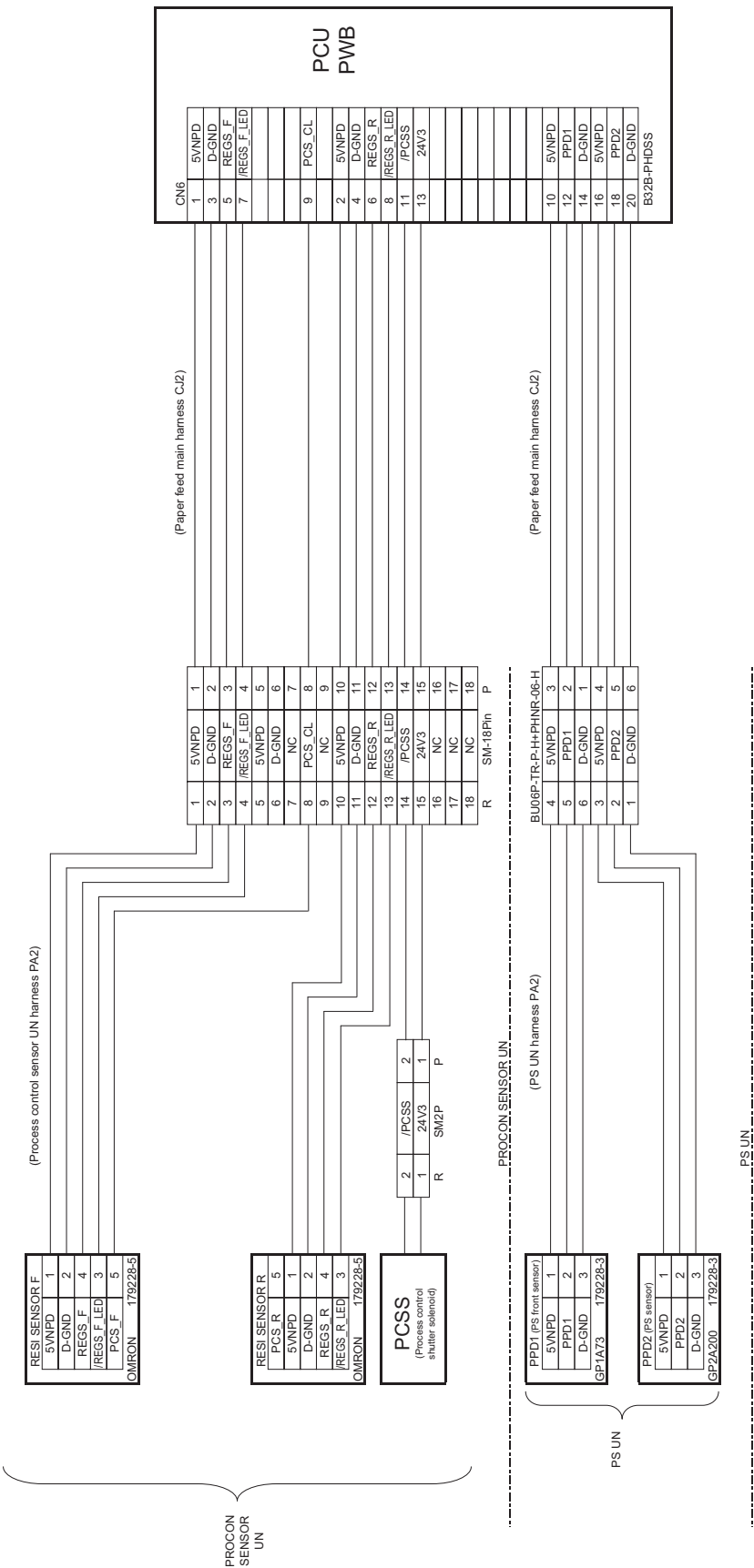
(9) Paper feed unit section (P9)



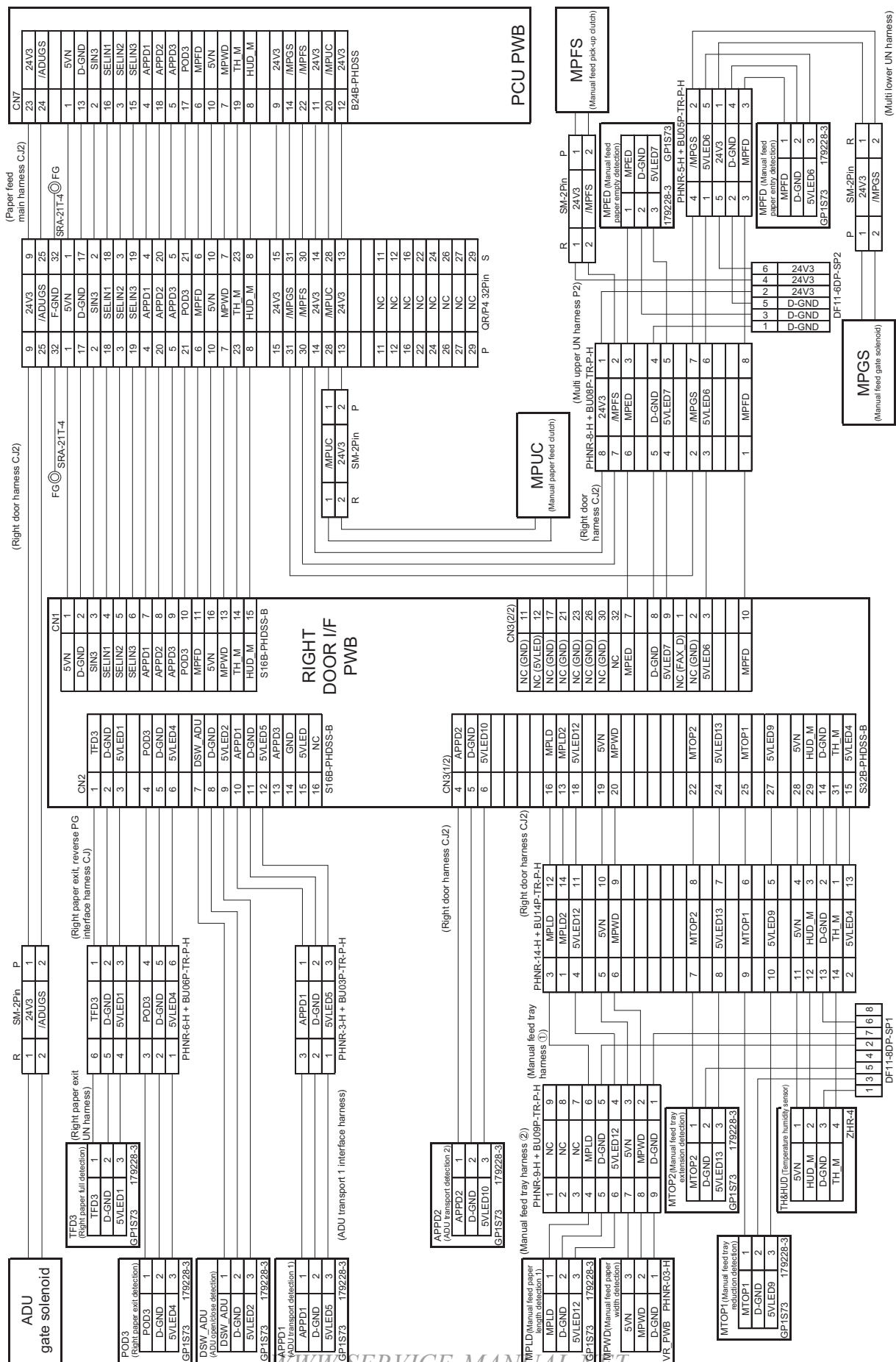
# (10) Paper feed drive unit section (P10)



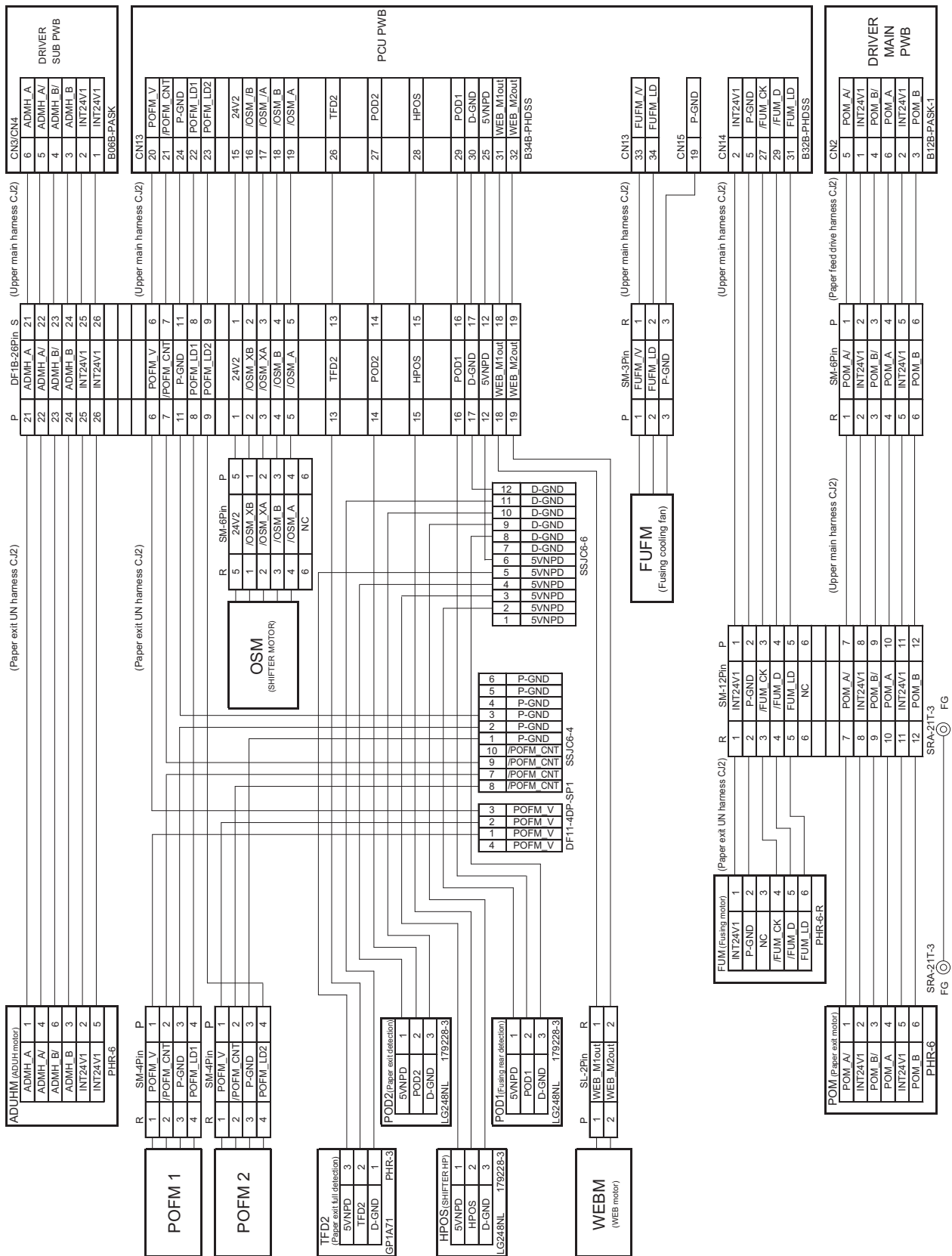
(11) PS unit and Process control unit section (P11)



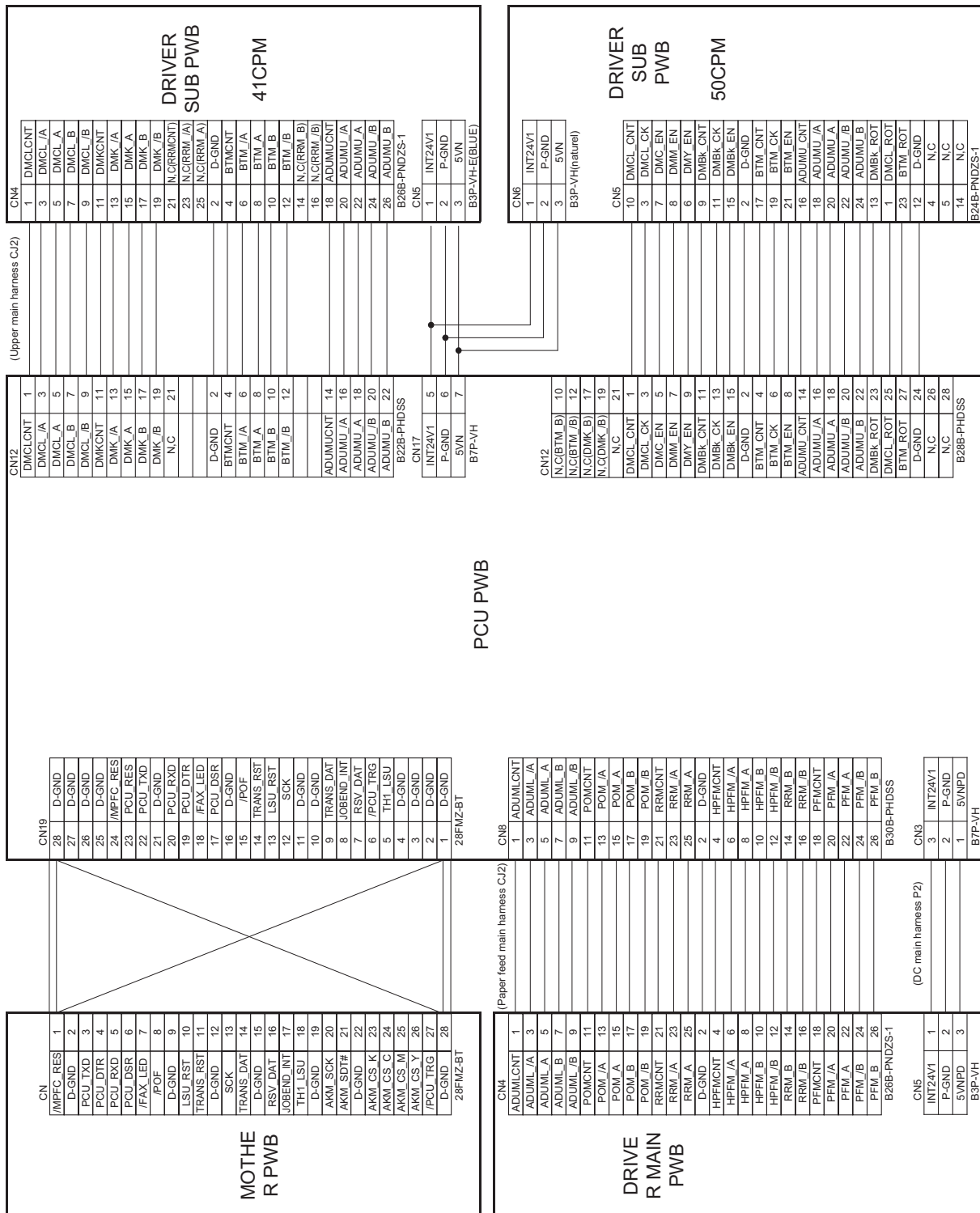
**(12) Right door unit section (P12)**



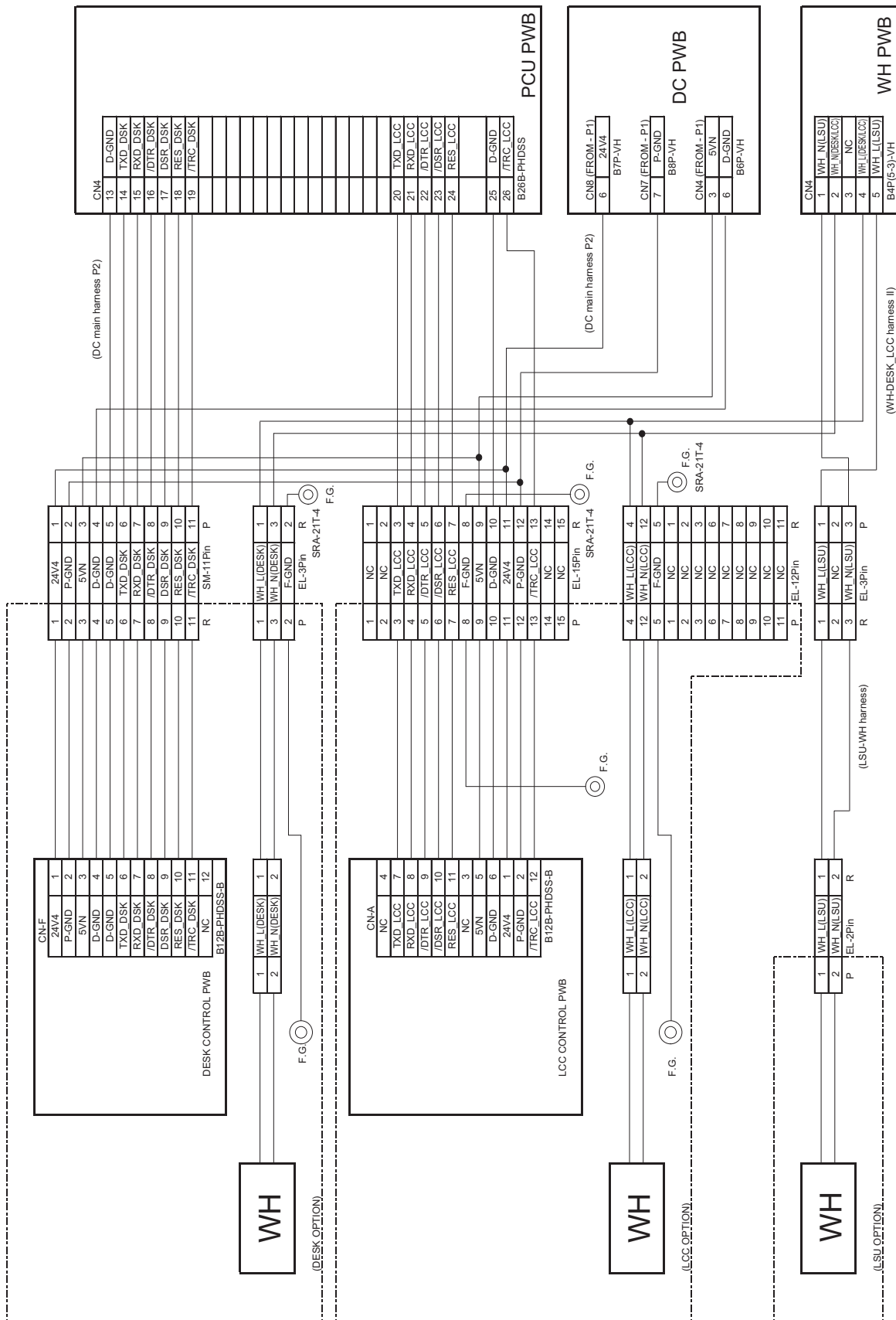
**(13) Paper exit unit section (P13)**



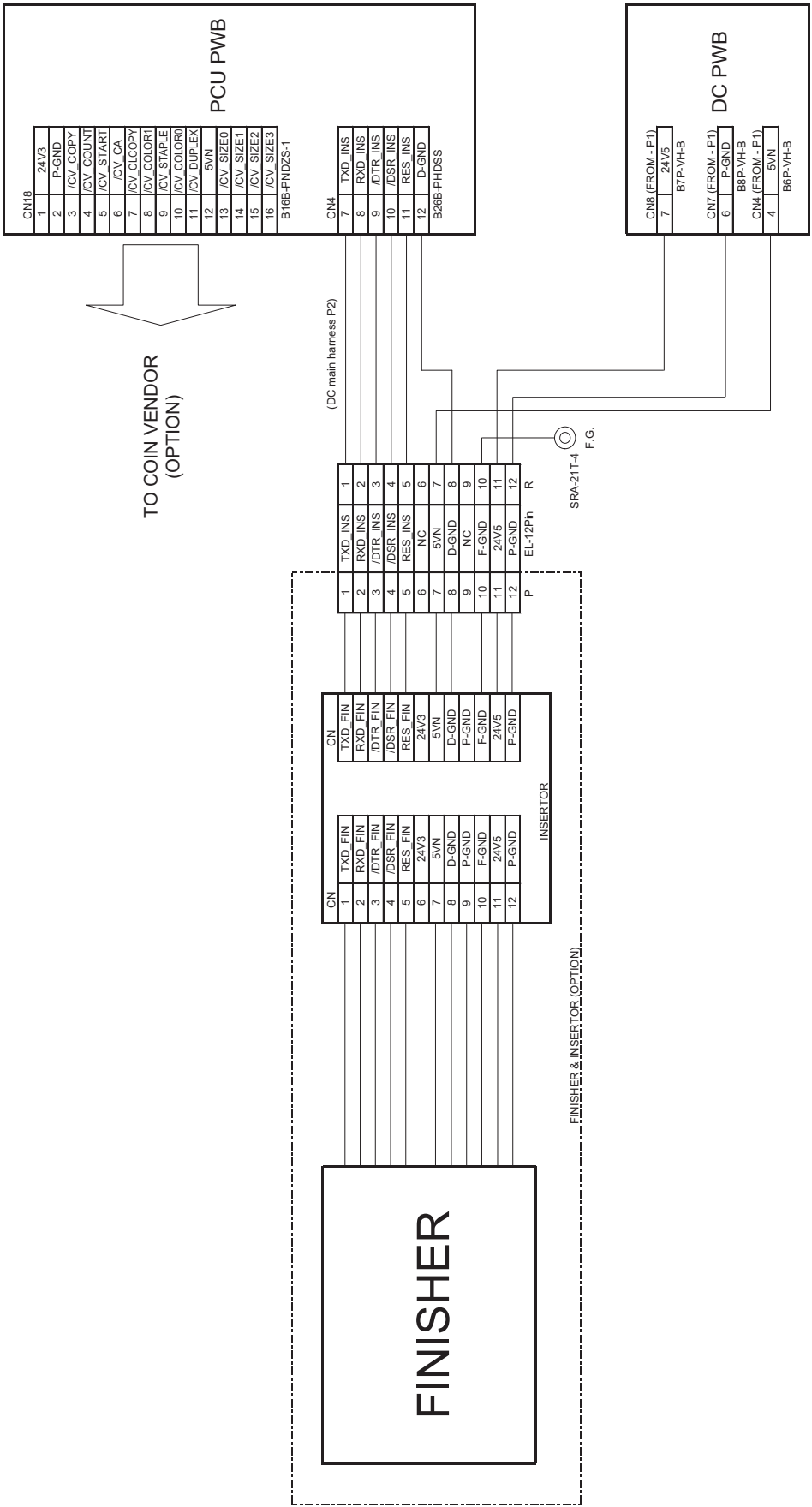
**(14) PCU PWB - Other PWB (P14)**



(15) DESK and LCC (P15)

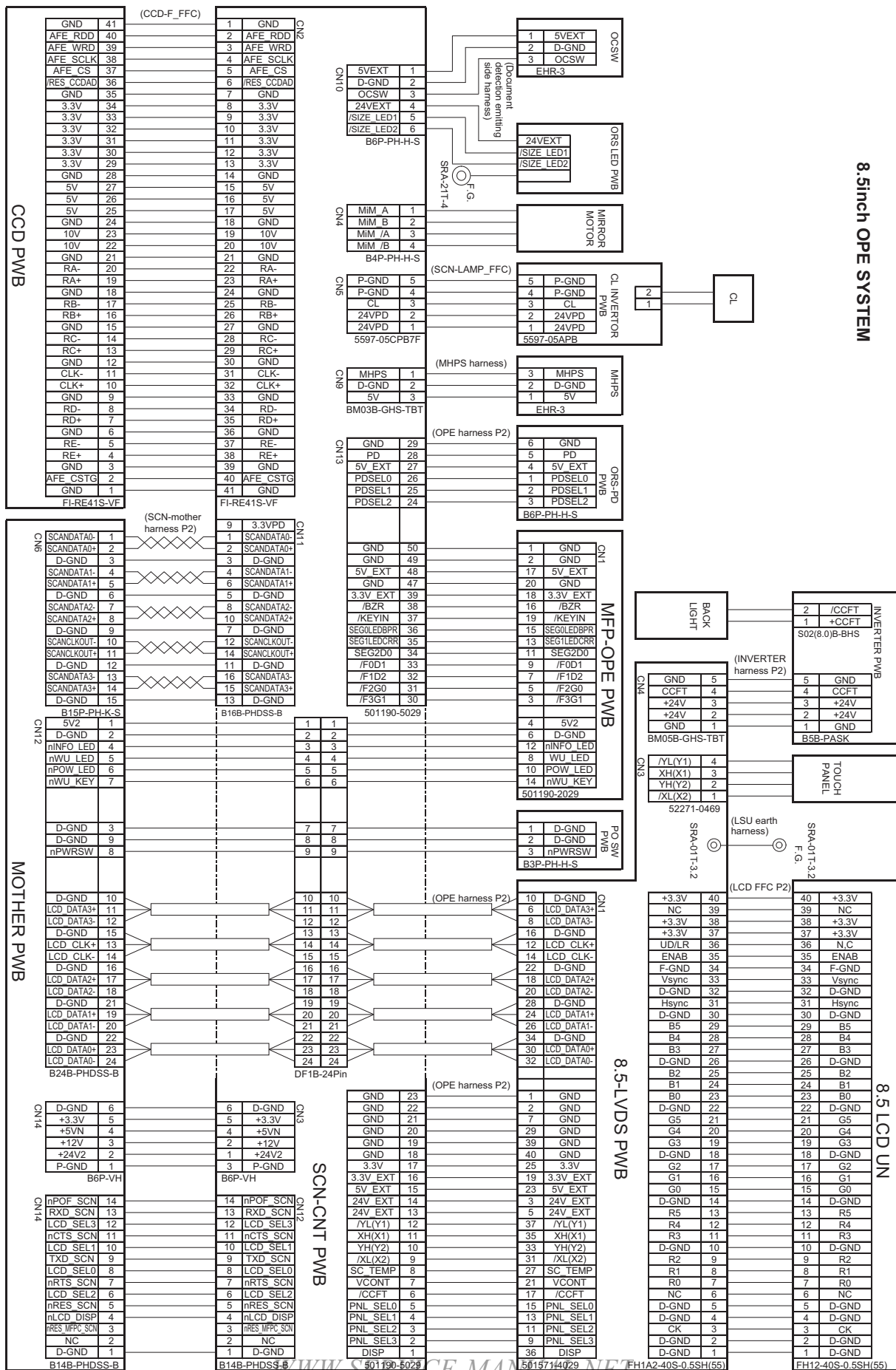


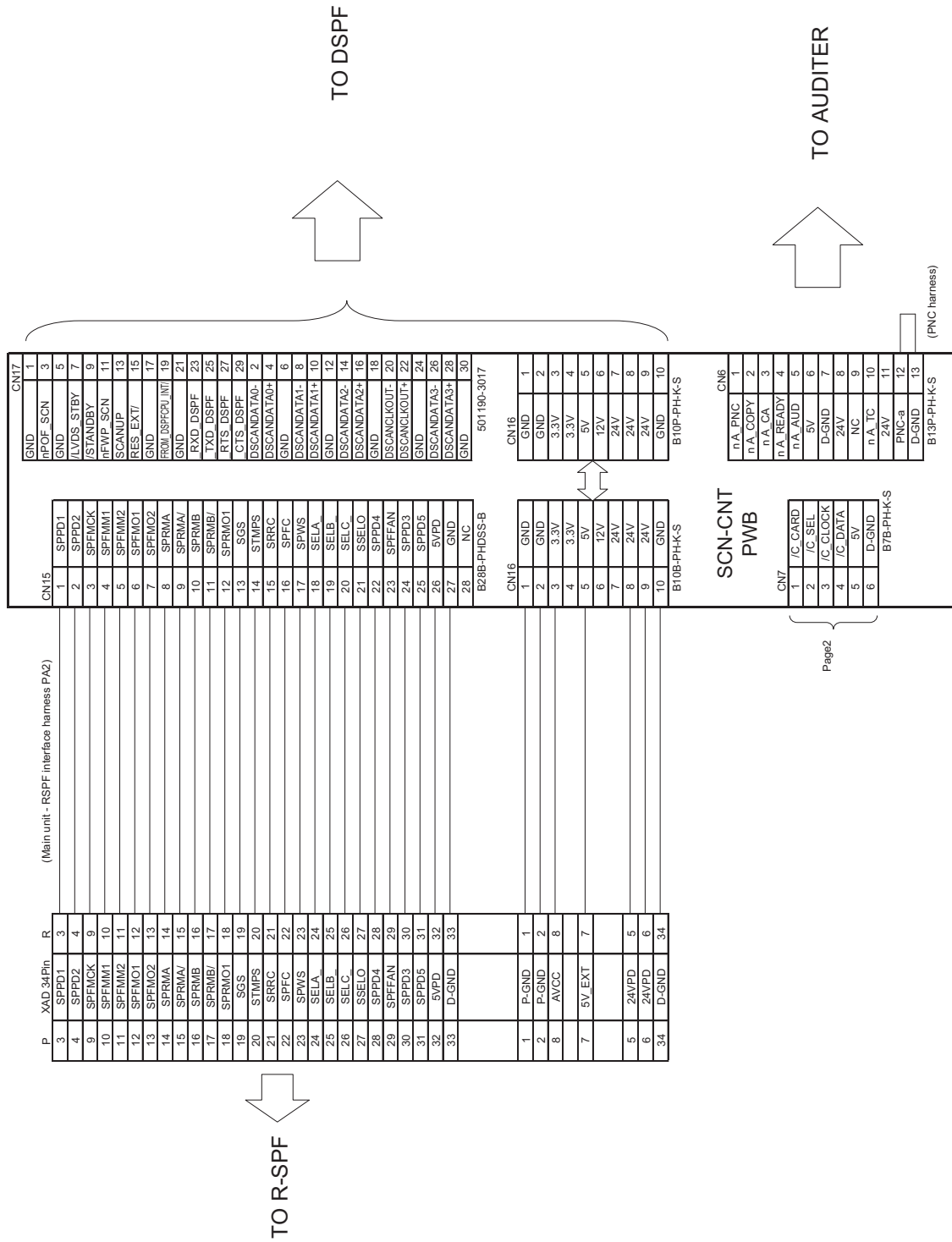
(16) Finisher and Coin vender (P16)



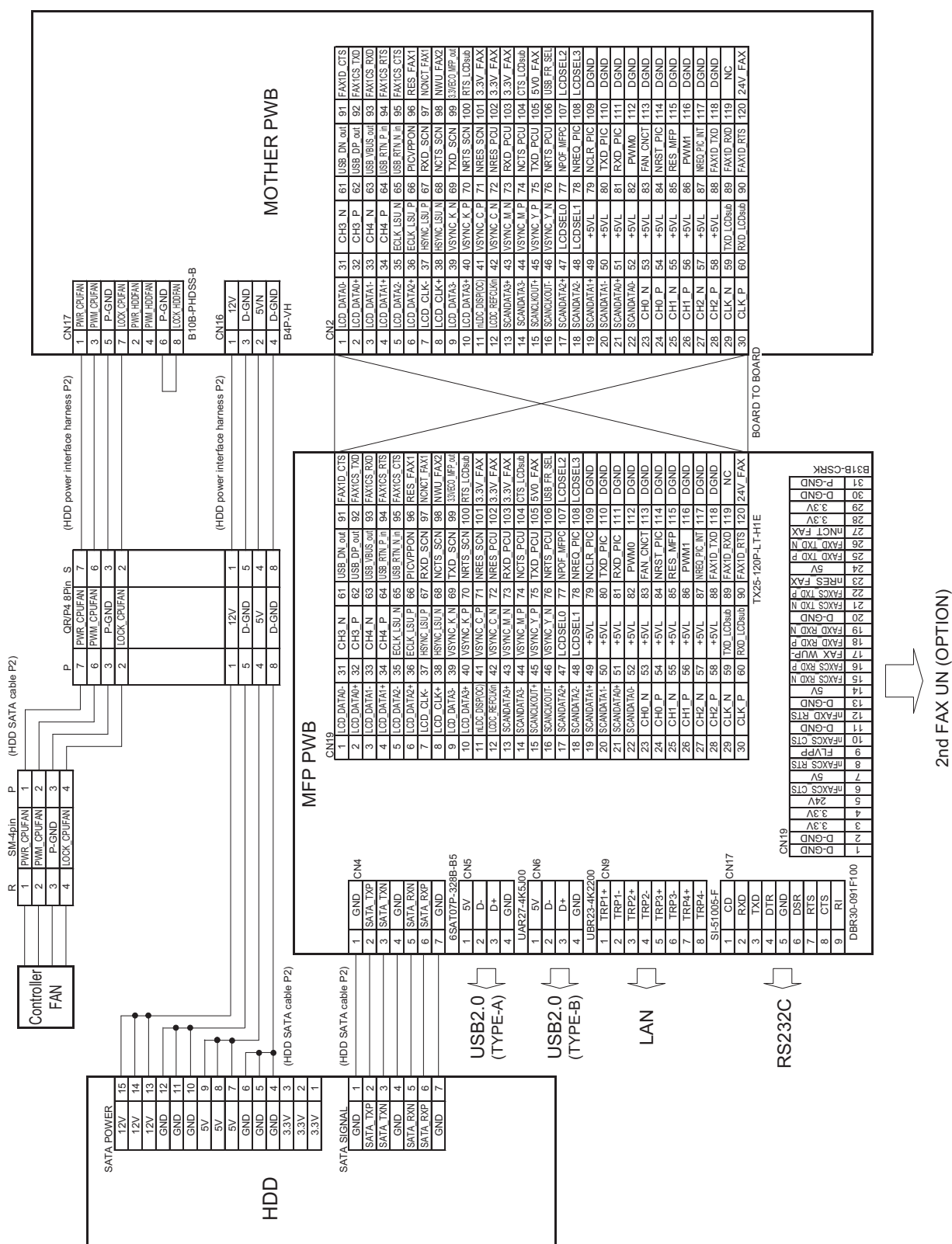


**(17) Scanner section 1/2 (P17)**









2nd FAX UN (OPTION)



### 3. Signal list

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
1TNFD	Waste toner full detection switch [Mechanical switch]	Detects waste toner full.	Empty	Full	CN14	7	PCU	
1TUD_CL	Transfer belt separation CL detection	Detects the transfer belt separation CL.	Separated	Contact	CN16	23	PCU	
1TUD_K	Transfer belt separation BK detection	Detects the transfer belt separation BK.	Separated	Contact	CN16	19	PCU	
1TURC	Primary transfer separation clutch [Electromagnetic clutch]	Controls the primary transfer separation mode.	Separated	Contact	CN11	16	PCU	
1TURC_R	Primary transfer separation reverse clutch [Electromagnetic clutch]	Controls the primary transfer separation mode.	Separated	Contact	CN11	30	PCU	
ADUGS	ADU gate solenoid [Electromagnetic solenoid]	Controls the ADU gate.	ON	OFF	CN7	24	PCU	
ADUM_L	ADU motor lower [Stepping motor]	Drives the right door section.	–	–	CN8	3,5,7,9	PCU	Drives with the 4-phase signal.
ADUM_L_C	ADU motor lower current select	Selects the ADU motor lower current.	Large current	Small current	CN8	1	PCU	
ADUM_U_C	ADM upper motor current select	Selects the ADM upper motor current.	Large current	Small current	CN12	14	PCU	
APPD1	ADU transport path detection 1 [Transmission type]	Detects paper pass in the ADU upper stream section.	Pass	–	CN7	4	PCU	
APPD2	ADU transport path detection 2 [Transmission type]	Detects paper pass in the ADU medium stream section.	Pass	–	CN7	18	PCU	
BTM_CNT	Belt motor current select	Selects the belt motor current.	Large current	Small current	CN12	4	PCU	
CAFM_LD	Cartridge fan lock detection	Detects the cartridge lock.	–	Lock detection	CN16	27	PCU	
CAFM_V#	Cartridge fan	Cools the cartridge.	OFF	ON	CN16	26	PCU	
CCFM_LD	Process suction fan motor lock detection	Detects the process suction fan motor lock.	–	Lock detection	CN20	7	PCU	
CCFM_V	Process suction fan motor	Cools the process.	Stop	Drive	CN20	4	PCU	
CCFT	LCD backlight [CCFT cool cathode ray tube]	LCD backlight	ON	OFF	CN13	6	SCU	
CL	Scanner lamp	Radiates lights to the document for the CCD to scan the document images.	ON	OFF	CN5	3	SCU	
CLUD1	Tray 1 upper limit detection (Lift HP detection) [Transmission type]	Detects the tray 1 upper limit.	–	Upper limit	CN9	3	PCU	
CLUD2	Tray 2 upper limit detection (Lift HP detection) [Transmission type]	Detects the tray 2 upper limit.	–	Upper limit	CN9	4	PCU	
CLUM1	Paper tray lift-up motor (Paper feed tray 1) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN5	8	PCU	
CLUM2	Paper tray lift-up motor (Paper feed tray 2) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN5	10	PCU	
CPED1	Tray 1 paper empty detection [Transmission type]	Detects paper empty in the tray 1.	YES	NO	CN9	9	PCU	
CPED2	Tray 2 paper empty detection [Transmission type]	Detects paper empty in the tray 2.	YES	NO	CN9	10	PCU	
CPFC	Tray vertical transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the paper feed tray section.	ON	OFF	CN5	1	PCU	
CPFD1	Tray 1 transport detection (Paper entry detection) [Transmission type]	Detects paper pass in the tray 1.	Pass	–	CN9	15	PCU	
CPFD2	Tray 2 transport detection (Paper entry detection) [Transmission type]	Detects paper pass in the tray 2.	Pass	–	CN9	16	PCU	
CPFM_D	Paper feed motor [Brushless motor]	Drives the paper feed section.	Drive	Stop	CN6	24	PCU	
CPFM_LD	Paper feed motor lock detection	Detects the paper feed motor lock.	–	Lock detection	CN6	22	PCU	
CPUC1	Paper feed clutch (Paper feed tray 1) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray section.	ON	OFF	CN5	3	PCU	
CPUC2	Paper feed clutch (Paper feed tray 2) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray section.	ON	OFF	CN5	5	PCU	
CSPD1	Tray 1 remaining paper quantity detection	Detects the remaining paper quantity in the tray 1.	Remaining quantity	–	CN9	21	PCU	Detects during lifting up.
CSPD2	Tray 2 remaining paper quantity detection	Detects the remaining paper quantity in the tray 2.	Remaining quantity	–	CN9	22	PCU	Detects during lifting up.
CSS11	Tray 1 paper size detection 1	Tray 1 paper size detection 1	YES	NO	CN9	27	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
CSS12	Tray 1 paper size detection 2	Tray 1 paper size detection 2	YES	NO	CN9	29	PCU	
CSS13	Tray 1 paper size detection 3	Tray 1 paper size detection 3	YES	NO	CN9	31	PCU	
CSS14	Tray 1 paper size detection 4	Tray 1 paper size detection 4	YES	NO	CN9	33	PCU	
CSS21	Tray 2 paper size detection 1	Tray 2 paper size detection 1	YES	NO	CN9	28	PCU	
CSS22	Tray 2 paper size detection 2	Tray 2 paper size detection 2	YES	NO	CN9	30	PCU	
CSS23	Tray 2 paper size detection 3	Tray 2 paper size detection 3	YES	NO	CN9	32	PCU	
CSS24	Tray 2 paper size detection 4	Tray 2 paper size detection 4	YES	NO	CN9	34	PCU	
DHPD_C	C phase detection	Detects the C phase.	–	Reference	CN11	20	PCU	
DHPD_K	BK phase detection	Detects the BL phase.	–	Reference	CN11	17	PCU	
DHPD_M	M phase detection	Detects the M phase.	–	Reference	CN11	23	PCU	
DHPD_Y	Y phase detection	Detects the Y phase.	–	Reference	CN11	26	PCU	
DL_BK	Discharge lamp BK [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN10	1	PCU	
DL_C	Discharge lamp C [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN10	21	PCU	
DL_M	Discharge lamp M [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN10	2	PCU	
DL_Y	Discharge lamp Y [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN10	22	PCU	
DM_CL_CNT	Drum motor (CL) current select	Selects the drum motor (CL) current.	Large current	Small current	CN12	1	PCU	
DM_K_CNT	Drum motor (K) current select	Selects the drum motor (K) current.	Large current	Small current	CN12	11	PCU	
DSW_ADU	ADU transport open/close detection [Transmission type]	Detects open/close of the ADU cover.	Open	Close	CN2	7	RD I/F	
DSW_C	Tray 1, 2 transport cover open/close detection	Detects open/close of the tray 1, 2 transport cover.	Open	Close	CN8	28	PCU	
DSW_F	Front door open/close switch [Micro switch]	Detects open/close of the front door, and fusing, motor, LSU laser power line.	Open	Close	CN17	4	PCU	
DSW_R	Right door open/close switch [Micro switch]	Detects open/close of the right door unit, and fusing, motor, LSU laser power line.	Open	Close	CN17	2,3	PCU	
DVM_CL_D	Development drive motor (CL) [Brushless motor]	Drives the development section, the color OPC drum, and the transfer section.	Drive	Stop	CN11	12	PCU	
DVM_CL_LD	Development drive motor (CL) lock detection	Detects the development drive motor (CL) lock.	–	Lock detection	CN11	14	PCU	
DVM_K_D	Development drive motor (K) [Brushless motor]	Drives the development section, the black OPC drum, and the transfer section.	Drive	Stop	CN11	11	PCU	
DVM_K_LD	Development drive motor (K) lock detection	Detects the development drive motor (K) lock.	–	Lock detection	CN11	13	PCU	
FUFM_LD	Fusing fan motor lock detection	Detects the fusing fan motor lock.	–	Lock detection	CN13	34	PCU	
FUFM_V	Fusing fan motor	Cools motor related to the fusing section and paper exit section.	OFF	ON	CN13	33	PCU	
FUM_D	Fusing motor [Brushless motor]	Drives the fusing unit.	Drive	Stop	CN14	29	PCU	
FUM_LD	Fusing motor lock detection	Detects the fusing motor lock.	–	Lock detection	CN14	31	PCU	
HLOUT_EX	Heater lamp external	Turns ON/OFF the heater lamp external.	OFF	ON	CN14	12	PCU	
HLOUT_LM	Heater lamp lower main	Turns ON/OFF the heater lamp lower main.	OFF	ON	CN14	10	PCU	
HLOUT_UM	Heater lamp upper main	Turns ON/OFF the heater lamp upper main.	OFF	ON	CN14	14	PCU	
HLOUT_US	Heater lamp upper sub	Turns ON/OFF the heater lamp upper sub.	OFF	ON	CN14	8	PCU	
HLPCD	Fusing pressure detection sensor [Transmission sensor]	Detects a change in the fusing pressure.	Pressure release	Pressure applying	CN14	30	PCU	
HPFM	Horizontal transport motor [Stepping motor]	Transports paper from the paper feed section to the transport motor drive system. Transports paper from the right door section to the transport motor drive system.	–	–	CN8	6,8,10,12	PCU	Drives with the 4-phase signal.
HPFM_CNT	Horizontal transport motor	Selects the horizontal transport motor current.	Large current	Small current	CN8	4	PCU	
HPOS	Shifter home position detection	Detects the shifter home position.	–	Home position	CN13	28	PCU	
HUD_M	Humidity detection	Detects the humidity.	–	–	CN7	8	PCU	Analog detection

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
LSUSS_B	LSU shutter solenoid	Controls open/close of the LSU shutter.	Open	Close	CN20	3	PCU	
MC_BK_ERR	High voltage BK error detection	Detects an abnormal output of high voltage BK.	Error detection	–	CN6	17	PCU	Judged when a high voltage is outputted.
MC_CL_ERR	High voltage CL error detection	Detects an abnormal output of high voltage CL.	Error detection	–	CN6	19	PCU	
MHPS	Scanner home position sensor [Transmission type]	Detects the scanner home position.	–	Home position	CN9	1	SCU	
MIM	Scanner motor [Stepping motor]	Scanner (reading) section	–	–	CN4	1,2,3,4	SCU	
MPED	Manual feed paper empty detection [Transmission type]	Detects paper empty in the manual paper feed tray.	YES	NO	CN3	7	RD I/F	Manual paper feed unit
MPFD	Manual feed paper entry detection [Transmission type]	Detects paper entry in the manual paper feed tray.	Pass	–	CN7	6	PCU	
MPFS	Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid]	Controls the paper pickup solenoid (manual paper feed) [Electromagnetic solenoid]	Pickup	–	CN7	22	PCU	
MPGS	Manual feed gate solenoid [Electromagnetic solenoid]	Controls open/close of the manual paper feed gate solenoid.	ON	OFF	CN7	14	PCU	
MPLD	Manual feed paper length detector	Detects the paper length in the manual paper feed tray.	Detection	–	CN3	16	RD I/F	Manual paper feed unit
MPUC	Manual paper feed clutch [Electromagnetic clutch]	Controls ON/OFF of the paper feed roller in the manual paper feed section.	ON	OFF	CN7	20	PCU	
MPWD	Manual paper feed tray paper width detector [Volume resistance]	Detects the paper width in the manual paper feed tray.	–	–	CN7	7	PCU	Analog detection
MTOP1	Manual paper feed tray pull-out position detection 1	Detects the pull-out position of the manual paper feed tray. (Retraction position)	–	Storing position	CN3	25	RD I/F	Manual paper feed unit
MTOP2	Manual paper feed tray pull-out position detection 2	Detects the pull-out position of the manual paper feed tray. (Pull-out position)	–	Pull-out position	CN3	22	RD I/F	Manual paper feed unit
OCSW	Original cover SW [Transmission type]	Detects open/close of the document cover (document size detection trigger).	Close	Open	CN10	3	SCU	
OSM	Shift motor [Stepping motor]	Offsets the paper.	–	–	CN13	16,17,18,19	PCU	Drives with the 4-phase signal.
OZFM_CNT	OZFM speed control	Controls the OZFM speed.	–	–	CN5	14	PCU	Pulse (Duty) drive
OZFM_LD	Ozone fan motor lock detection	Detects the ozone fan motor lock.	–	Lock detection	CN5	18	PCU	
OZFM_V	Ozone fan motor	Discharges the ozone.	Stop	Drive	CN5	12	PCU	
PCS_CL	Process control sensor [Reflection type]	Detects the toner patch density.	–	–	CN6	9	PCU	Analog detection
PCSFM1_LD	Toner cooling fan 1 lock detection	Detects the toner cooling fan 1 lock.	–	Lock detection	CN14	15	PCU	
PCSFM1_V#	Toner cooling fan 1	Cools the toner bottle.	OFF	ON	CN14	1	PCU	
PCSFM2_LD	Toner cooling fan 2 lock detection	Detects the toner cooling fan 2 lock.	–	Lock detection	CN14	17	PCU	
PCSFM2_V#	Toner cooling fan 2	Cools the toner bottle.	OFF	ON	CN14	3	PCU	
PCSS	Process control shutter solenoid [Electromagnetic solenoid]	Controls ON/OFF of the process control and the registration sensor shutter.	Open	Close	CN6	11	PCU	
PFM	Transport motor [Stepping motor]	Transports the registration roller and the horizontal transport motor drive system.	–	–	CN8	20,22,24,26	PCU	Drives with the 4-phase signal.
PFM_CNT	Transport motor current select	Selects the transport motor current.	Large current	Small current	CN8	18	PCU	
POD1	Fusing rear detection [Transmission type]	Detects the paper exit from fusing.	–	Pass	CN13	29	PCU	
POD2	Paper exit detection [Transmission type]	Detects the discharged paper.	Pass	–	CN13	27	PCU	
POD3	Right tray paper exit detection	Detects paper exit to the right tray.	Pass	–	CN7	17	PCU	
POFM_CNT	Paper exit cooling fan motor speed control	Controls the speed of the paper exit cooling fan motor.	–	–	CN13	21	PCU	Pulse (Duty) drive
POFM_LD1	POFM lock detection	Detects the POFM lock.	–	Lock detection	CN13	22	PCU	



Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
POFM_LD2	POFM lock detection	Detects the POFM lock.	–	Lock detection	CN13	23	PCU	
POFM_V	Paper exit cooling fan motor	Cools the fusing unit.	Stop	Drive	CN13	20	PCU	
POM	Paper exit drive motor [Stepping motor]	Drives the paper exit roller.	–	–	CN8	13,15,17,19	PCU	Drives with the 4-phase signal.
POM_CNT	Paper exit drive motor current select	Selects the paper exit drive motor current.	Large current	Small current	CN8	11	PCU	
PPD1	Registration front detection [Transmission type]	Detects paper in front of the registration roller.	Pass	–	CN6	12	PCU	
PPD2	Registration detection	Detects paper at the rear of the registration roller.	Pass	–	CN6	18	PCU	
PRM	Fusing pressure release motor [Stepping motor]	Changes the fusing pressure.	–	–	CN14	20,22,24,26	PCU	Drives with the 4-phase signal.
PSFM_LD	Power cooling fan motor 1 lock detection	Detects the power cooling fan motor 1 lock.	–	Lock detection	CN5	13	PCU	
PSFM_V	Power cooling fan motor 1	Cools the power unit.	Stop	Drive	CN5	11	PCU	
PSFM_V2	Power cooling fan motor 2	Cools the power unit.	Stop	Drive	CN5	21	PCU	
PSFM2_LD	Power cooling fan motor 2 lock detection	Detects the power cooling fan motor 2 lock.	–	Lock detection	CN5	22	PCU	
PTC_ERR	PTC high voltage error detection	Detects the output abnormality of the PTC high voltage.	Error detection	–	CN15	7	PCU	
PTC_HEAT	PTC heater	Turns ON/OFF of the PTC heater.	OFF	ON	CN16	22	PCU	
PWM	MFP cooling fan	Cools the controller.	OFF	ON (PWM control)	CN19	82	MFPC	
PWRSW	Operation panel power switch [Push switch]	Outputs the ON/OFF control signal of the DC power.	ON	OFF	CN12	8	MOTHER	
RCFM_LD	Machine rear section cooling fan motor lock detection	Detects the cooling fan motor lock in the machine rear section.	–	Lock detection	CN14	23	PCU	
RCFM_V	Machine rear section cooling fan motor	Cools the machine rear section.	Stop	Drive	CN14	25	PCU	
REGS_F	Registrations sensor (Front) [Reflection type]	Detects registration shift.	–	–	CN6	5	PCU	Analog detection
REGS_F_LED	Registration sensor LED (Front) [LED]	Registration sensor LED light emitting.	–	–	CN6	7	PCU	Analog output
REGS_R	Registration sensor (Rear) [Reflection type]	Detects registration shift.	–	–	CN6	6	PCU	Analog detection
REGS_R_LED	Registrations sensor LED (Rear) [LED]	Registration sensor LED light emitting	–	–	CN6	8	PCU	Analog output
RRM	Registration motor [Stepping motor]	Drives and turns ON the registration roller.	–	–	CN8	14,16,23,25	PCU	Drives with the 4-phase signal.
RRM_CNT	Registration motor current select	Selects the registration motor current.	Large current	Small current	CN8	21	PCU	
TCS_C	Toner density sensor [Magnetic sensor]	Detects the toner density (C).	–	–	CN10	27	PCU	Analog detection
TCS_K	Toner density sensor [Magnetic sensor]	Detects the toner density (K).	–	–	CN10	7	PCU	Analog detection
TCS_M	Toner density sensor [Magnetic sensor]	Detects the toner density (M).	–	–	CN10	8	PCU	Analog detection
TCS_Y	Toner density sensor [Magnetic sensor]	Detects the toner density (Y).	–	–	CN10	28	PCU	Analog detection
TFD2	Paper exit full detection [Transmission type]	Detects the face-down paper exit tray full.	Full	–	CN13	26	PCU	
TFD3	Right tray paper exit full detection	Detects the paper exit full in the right tray.	Full	–	CN2	1	RD I/F	
TH_EX1_IN	External thermistor 1	External thermistor 1	–	–	CN13	10	PCU	Analog detection
TH_EX2_IN	External thermistor 2	External thermistor 2	–	–	CN13	5	PCU	Analog detection
TH_LM_IN	Lower main thermistor	Detects the temperature.	–	–	CN13	9	PCU	Analog detection
TH_M	Temperature detection	Detects the temperature.	–	–	CN7	19	PCU	Analog detection
TH_UM_IN	Upper main thermistor	Detects the temperature.	–	–	CN13	8	PCU	Analog detection
TH_UMCS_IN	Upper main thermistor	Detects the temperature.	–	–	CN13	1	PCU	Analog detection
TH_US_IN	Upper sub thermistor	Detects the temperature.	–	–	CN13	4	PCU	Analog detection
TH1_LSU	LSU unit thermistor	Detects the temperature.	–	–	CN19	5	PCU	Analog detection
TNM_C	Toner motor C [Stepping motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN15	24,26,28,30	PCU	Drives with the 4-phase signal.

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
TNM_K	Toner motor K [Stepping motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN15	21,23, 25,27	PCU	Drives with the 4-phase signal.
TNM_M	Toner motor M [Stepping motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN15	14,16, 18,20	PCU	Drives with the 4-phase signal.
TNM_Y	Toner motor Y [Stepping motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN15	11,13, 15,17	PCU	Drives with the 4-phase signal.
WEBD	Web end detection	Detects the web end.	End	–	CN13	13	PCU	
WEBM	Web motor (Synchronous motor)	Drives the fusing web cleaning paper.	–	–	CN13	31,32	PCU	Drives with the 2-phase signal.
WH_PR	Dehumidifying heater control	Turns ON/OFF the dehumidifying heater.	OFF	ON	CN5	19	PCU	
WTNM	Waste toner drive motor [Synchronous motor]	Stirs waste toner.	–	–	CN14	11,13	PCU	Drives with the 2-phase signal.

# [11] OTHERS

## 1. System settings

### A. Login method

#### (1) When User Authentication is not Enabled

- 1) Press the [SYSTEM SETTINGS] key.
- 2) Touch the [Admin Password] key.
- 3) Touch the [Password] text box and enter the administrator password.
- 4) Touch the [OK] key.
- 5) Displays the system setting key on the touch panel.

\* To logout, touch the [Logout] key in the top right corner of the screen.

Also touch the [Exit] key to quit the system settings.

(If Auto Clear activates, logout will automatically take place.)

#### (2) When User Authentication is Enabled

##### a. When user authentication is by login name and password (and e-mail address)

- 1) Touch the login name key.
- 2) Touch the [Admin Login] key.
- 3) Touch the [Password] key.  
Enter the administrator password in the administrator password entry screen.
- 4) Touch the [OK] key.

##### b. Login by user number

- 1) Touch the [Admin Login] key.
- 2) Touch the [Password] key.  
Enter the administrator password in the administrator password entry screen.
- 3) Touch the [OK] key.

\* To logout, press the [LOGOUT] ([\*]) key. (Except when entering a fax number.)

(If Auto Clear activates, logout will automatically take place.)

### B. System setting list

#### (1) System setting (general) list

Item	Factory default setting
■ Total Count	
● Job Count	-
● Device Count	-
■ Default Settings	
● Clock	
▶ Clock Adjust	
◆ Specify Time Zone	-
◆ Date & Time Settings	-
◆ Synchronize with Internet Time Server	Disable
▶ Daylight Saving Time Setting	Disable
▶ Date Format	[MM/DD/YYYY], [I], [Last], [12-Hour]
● Keyboard Select	English (US)
■ List Print (User)	
● All Custom Setting List	-
● Printer Test Page	-
● Sending Address List	-
● Document Filing Folder List	-
■ Paper Tray Settings	
● Tray Settings	
▶ Tray 1	Plain, 8-1/2" x 11"
▶ Tray 2	Plain, 8-1/2" x 11"
▶ Tray 3*1	Plain, Auto-Inch
▶ Tray 4*2	
▶ Tray 5*3	Plain, 8-1/2" x 11"

Item	Factory default setting
▶ Bypass	Plain, Auto-Inch
◆ Select Similar Sizes for Auto Detection	8-1/2" x 14"
● Paper Type Registration	-
● Auto Tray Switching	Enabled
● Custom Size Registration	Custom 1: X=17", Y=11" Custom 2: X=17", Y=11" Custom 3: X=17", Y=11"
■ Address Control	
● Address Book	-
● Custom Index	User 1
● Program	-
■ Fax Data Receive/Forward	
● I-Fax Settings*4	
▶ Reception Start	-
▶ Manual Reception Key in Initial Screen	Enabled
▶ Forward Received Data	-
■ Printer Condition Settings	
● Printer Default Settings	
▶ Copies	1
▶ Orientation	Portrait
▶ Default Paper Size	8-1/2" x 11"
▶ Default Output Tray	Varies depending on the machine configuration
▶ Default Paper Type	Plain Paper
▶ Initial Resolution Setting	600dpi (High Quality)
▶ Disable Blank Page Print	Disabled
▶ Line Thickness	5
▶ 2-Sided Print	1-Sided
▶ Color Mode	Auto
▶ N-Up Print	1-Up
▶ Fit To Page	Enabled
▶ Output	Varies depending on the machine configuration
◆ Print per Unit	Enabled
▶ Quick File	Disabled
● PCL Settings	
▶ PCL Symbol Set Setting	PC-8
▶ PCL Font Setting	Internal Font, 0: Courier
▶ PCL Line Feed Code	0.CR=CR; LF=LF; FF=FF
▶ Wide A4	Disabled
● PostScript Setting*5	
▶ Print PS Errors	Disabled
▶ Binary Processing	Disabled
■ Document Filing Control	
■ USB-Device Check	-
■ User Control*6	
● Modify User Information	-

\*1: When a stand/1 x 500 sheet paper drawer / stand/2 x 500 sheet paper drawer is installed.

\*2: When a stand/2 x 500 sheet paper drawer is installed.

\*3: When a large capacity tray is installed.

\*4: When the Internet fax expansion kit is installed.

\*5: When the PS3 expansion kit is installed.

\*6: When user authentication is enabled and the logged-in user does not have the authority to configure the system settings (administrator) (excluding factory default users).

## (2) System setting (administrator) list

Item	Factory default setting
<b>■ User Control</b>	
● User Authentication Setting	
▶ User Authentication	Disabled
▶ Authentication Method Setting	Authenticate a User by Login Name and Password
▶ Device Account Mode Setting	Disabled
● Other Settings	
▶ Actions when the Limit of Pages for Output Jobs	Job is Completed even when the Limit of Pages is Reached
▶ The Number of User Name Displayed Setting on Operation Panel	12
▶ A Warning when Login Fails	Disabled
▶ Disabling of Printing by Invalid User	Disabled
▶ Automatically print stored jobs after login	Disabled
▶ Default Network Authentication Server Setting	-
▶ Count Setting after Login	-
▶ User Information Print	-
● User List	
● Page Limit Group List	-
● Authority Group List	-
● Favorite Operation Group List*1	-
▶ Favorite Operation Group Registration*1	-
▶ Home Screen List*1	-
● User Count	
■ Energy Save	
● Toner Save Mode	
▶ Print	Disabled
▶ Copy	Disabled
● Auto Power Shut-Off	
● Auto Power Shut-Off Timer	45 min.
● Preheat Mode Setting	15 min.
<b>■ Operation Settings</b>	
● Other Settings	
▶ Keys Touch Sound	Middle
◆ Key Touch Sound at Initial Point	Disabled
▶ Auto Clear Setting	60 sec.
◆ Cancel Auto Clear Timer	Disabled
▶ Message Time Setting	6 sec.
▶ MFP Display Language Setting	American English
▶ Disabling of Job Priority Operation	Disabled
▶ Disabling of Bypass Printing	Disabled
▶ Key Operation Setting	0.0 sec.
◆ Disable Auto Key Repeat	Disabled
▶ Disabling of Clock Adjustment	Disabled
▶ Disabling of Covers/Inserts Mode	Disabled
▶ Initial Original Count Setting	All disabled
● MFP Display Pattern Setting	Pattern 1
● Customize Key Setting*2	
▶ Copy	
◆ Customize 1	File
◆ Customize 2	Quick File
◆ Customize 3	-
▶ Scan	
◆ Customize 1	Address Review
◆ Customize 2	File
◆ Customize 3	Quick File
▶ Internet Fax*3	
◆ (Same as Scan)	
▶ Fax*4	
◆ (Same as Scan)	
▶ USB Memory Scan	
◆ Customize 1	-
◆ Customize 2	-
◆ Customize 3	-
▶ Data Entry*5	

Item	Factory default setting
◆ (Same as Scan)	
● Home Screen Settings*2	
● Preview Setting	
▶ Default Preview Display	
◆ Image Send	Reception Date: Twice Memory Box: Twice
◆ Doc. Filing	Twice
▶ Received Date Image Check Setting	Disabled
▶ Default List/Thumbnail Display	List
● Remote Operation Settings	
▶ Remote Software Operation	
◆ Operational Authority	Prohibited
◆ View Password Entry Screen	Display in Both PC and MFP
▶ Operation from Specified PC	
◆ Operational Authority	Prohibited
◆ Hostname or IP Address of PC	-
◆ View Password Entry Screen	Display in Both PC and MFP
▶ Operation by User who Has Password	
◆ Operational Authority	Prohibited
◆ View Password Entry Screen	Display in Both PC and MFP
<b>■ Device Control</b>	
● Other Settings	
▶ Original Feeding Mode	All Disabled
▶ Saddle Stitch Position Adjust*6	0.0 mm
▶ Auto Paper Selection Setting	Plain Paper
▶ Tandem Connection Setting	
◆ IP Address of Slave Machine	0.0.0.0
◆ Port Number	50001
◆ Disabling of Master Machine Mode	Disabled
◆ Disabling of Slave Machine Mode	Disabled
▶ Detect Standard in Auto Color Mode	3
▶ Registration Adjustment	
▶ Optimization of a Hard Disk	-
▶ Clear All Job Log Data	-
● Original Size Detector Setting	
▶ Original Detection Size Combination	Inch-1
▶ Cancel Detection at Document Glass	Disabled
● Disabling of Devices	
▶ Disabling of Document Feeder	Disabled
▶ Disabling of Duplex	Disabled
▶ Disabling of Large Capacity Cassette*7	Disabled
▶ Disabling of Optional Paper Drawer*8	Disabled
▶ Disabling of Tray Setting	Disabled
▶ Disabling of Finisher*9	Disabled
▶ Disabling of Offset	Disabled
▶ Disabling of Stapler*9	Disabled
▶ Disabling of Punch*10	Disabled
▶ Disabling of Color Mode*11	Disabled
● Fusing Control Settings	16 - 24 lbs. (60 - 90g/m2)
<b>■ Copy Function Settings</b>	
● Initial Status Settings	
▶ Color Mode	Full Color
▶ Paper Tray	Varies depending on the machine configuration
▶ Exposure Type	Auto
▶ Copy Ratio	100%
▶ 2-Sided Copy	1-Side to 1-Side
▶ Output	-
● Other Settings	
▶ Copy Exposure Adjustment	
◆ Color	5
◆ Black & White	5
▶ Rotation Copy Setting	Enabled
▶ Add or Change Extra Preset Ratios	-

Item	Factory default setting
▶ Setting a Maximum Number of Copies	999
▶ Initial Margin Shift Setting	
◆ Side 1	1/2"
◆ Side 2	1/2"
▶ Erase Width Adjustment	
◆ Edge Clearance Width	1/2"
◆ Center Clearance Width	1/2"
▶ Card Shot Settings	
◆ Original Size	X: 3-3/8", Y: 2-1/8"
◆ Fit to Page	Disabled
▶ Automatic Saddle Stitch*6	Enabled
▶ Initial Tab Copy Setting	1/2"
▶ Disabling Deletion of Job Programs	Disabled
▶ Disabling of Bypass-Tray in Duplex Copy	Disabled
▶ Disabling of Auto Paper Selection	Disabled
▶ Auto Selection Setting of Tray that is Supplied the Paper	Disabled
▶ B/W 600dpi x 600dpi Scanning Mode for Document Feeder	Disabled
▶ B/W Quick Scan from Document Glass	Enabled
● Color Adjustments	
▶ Initial Color Balance Setting	Factory default state
▶ Auto Color Calibration	-
■ Network Settings	
● IPv4 Settings	DHCP
● IPv6 Settings	Disabled
● Enable TCP/IP	Enabled
● Enable NetWare	Enabled
● Enable EtherTalk	Enabled
● Enable NetBEUI	Enabled
● Reset the NIC	-
● Ping Command	-
■ Printer Settings	
● Default Settings	
▶ Prohibit Notice Page Printing	Enabled
▶ Prohibit Test Page Printing	Disabled
▶ A4/Letter Size Auto Change	Disabled
▶ Print Density Level	
◆ Color	3
◆ Black & White	3
▶ CMYK Exposure Adjustment	0
▶ Bypass Tray Settings	
◆ Enable Detected Paper Size in Bypass Tray	Disabled
◆ Enable Selected Paper Type in Bypass Tray	Enabled
◆ Exclude Bypass-Tray from Auto Paper Select	Disabled
▶ Job Spool Queuing	Enabled
● Interface Settings	
▶ Hexadecimal Dump Mode	Disabled
▶ I/O Timeout	60 sec.
▶ Enable USB Port	Enabled
▶ USB Port Emulation Switching	Auto
▶ Enable Network Port	Enabled
▶ Network Port Emulation Switching	Auto
▶ Port Switching Method	Switch at End of Job
● Auto Color Calibration	-
■ Image Send Settings	
● Operation Settings	
▶ Other Settings	
◆ Default Display Settings	Scan (fax when fax is installed)
· Hold settings for a while after scanning has been completed	Disabled
· Switch Automatically to Copy Mode Screen	Enabled
◆ Address Book Default Selection	Tab Switch: ABC, Address Type: All

Item	Factory default setting
◆ Initial Resolution Setting	
· Scan	Apply the Resolution Set when Stored: Disabled 200 X 200 dpi
· Internet Fax*3	Apply the Resolution Set when Stored: Disabled 200 X 100 dpi
· Fax*4	Apply the Resolution Set when Stored: Disabled Standard
◆ Default Exposure Settings	Auto
· Original Image Type	Text
· Moire Reduction	Disabled
◆ Must Input Next Address Key at Broadcast Setting	Disabled
◆ Scan Complete Sound Setting	Middle
◆ The Number of File Name/Subject/Body Keys Displayed Setting	12
◆ The Number of Direct Address Keys Displayed Setting	10
◆ Disable Switching of Display Order	Disabled
◆ Hold Setting for Received Data Print	Disabled
◆ Default Verification Stamp	Disabled
◆ Erase Width Adjustment	
· Edge Clearance Width	1/2"
· Center Clearance Width	1/2"
▶ Settings to Disable Registration	
◆ Disable Registering Destination from Operation Panel	All disabled
◆ Disable Registering Destination on Web Page*12	All disabled
◆ Disable Registration of Program	All disabled
◆ Disable Registration of Memory Box	All disabled
◆ Disable Destination Registration Using Global Address Search*12	All disabled
◆ Disable Registration Using Network Scanner Tool*12	Disabled
▶ Settings to Disable Transmission	
◆ Disable [Resend] on Image Send Mode	Disabled
◆ Disable Selection From Address Book	All disabled
◆ Disable Direct Entry	All disabled
◆ Disable PC-I-Fax Transmission*3	Disabled
◆ Disable PC-Fax Transmission*4	Disabled
▶ Own Name and Destination Set	
◆ Sender Data Registration	
· Sender Name	-
· Sender Fax Number	-
· I-Fax Own Address	-
◆ Registration of Own Name Select	-
● Scan Settings	
▶ Other Settings	
◆ Default Sender Set	-
◆ Default Color Mode Settings	
· Black & White	Mono 2
· Color Mode	Auto, Grayscale
· Disable Change of B/W Setting in Auto Mode	Disabled
◆ Initial File Format Setting	
· File Type	PDF
· Black & White	MMR (G4)
· Color/Grayscale	Medium
· Specified Pages per File	Disabled
· Number of Pages	Disabled
◆ Compression Mode at Broadcasting	
· Black & White	MH (G3)
· Color/Grayscale	Medium

Item	Factory default setting
◆ Maximum Size of E-mail Attachments (E-mail)	Unlimited
◆ Maximum Size of Data Attachments (FTP/Desktop/Network Folder)	Unlimited
◆ Bcc Setting	
· Enable Bcc	Disabled
· Display Bcc Address on the Job Status Screen	Disabled
◆ Disable Scan Function	
· USB Memory Scan	Disabled
· PC Scan	Disabled
◆ Pre-Setting Mail Signature	Disabled
► Default Address Setting	Disabled
● I-Fax Settings*3	
► I-Fax Default Settings	
◆ Auto Wake Up Print	Enabled
◆ Compression Setting	MH (G3)
◆ Speaker Volume Setting	-
· Receive Signal	Middle
· Communication Error Signal	Middle
◆ Original Print on Transaction Report	Print Out Error Report Only
◆ Transaction Report Print Select Setting	
· Single Sending	Print Out Error Report Only
· Broadcasting	Print Out All Report
· Receiving	No Printed Report
◆ Activity Report Print Select Setting	
· Auto Print at Memory Full	Disabled
· Print Daily at Designated Time	Disabled
◆ Body Text Print Select Setting	Disabled
◆ Pre-Setting Mail Signature	Disabled
► I-Fax Send Settings	
◆ I-Fax Reception Report On/Off Setting	Disabled
◆ I-Fax Reception Report Request Timeout Setting	1 hour
◆ Number of Resend Times at Reception Error	2
◆ Maximum Size of E-mail Attachments	Unlimited
◆ Rotation Sending Setting	All Enabled
◆ Printing Page Number at Receiver	Enabled
◆ Recall in Case of Line Busy	Times: 2, Interval 3 min.
◆ Recall in Case of Communication Error	Times: 2, Interval 3 min.
► I-Fax Receive Settings	
◆ Auto Receive Reduce Setting	Enabled
◆ Duplex Reception Setting	Disabled
◆ Set Address for Data Forwarding	-
· Direct SMTP	Disabled
· Add Hostname or IP Address Too	Disabled
· Hostname or IP Address	-
◆ Receiving Date & Time Print	Disabled
◆ A3 RX Reduce	Disabled
◆ POP3 Communication Timeout Setting	60 sec.
◆ Reception Check Interval Setting	5 min.
◆ I-Fax Output Setting	Varies depending on the machine configuration
► Allow/Reject Mail or Domain Setting	All Invalid
■ Document Filing Settings	
● Other Settings	
► Default Mode Settings	Sharing Mode
► Sort Method Setting	Date
► Administrator Authority Setting	
◆ Delete File	Disabled
◆ Delete Folder	Disabled
◆ Change Password	Disabled
► Delete All Quick Files	
◆ Delete	-

Item	Factory default setting
◆ Delete quick files at power up (protected files excluded)	Enabled
► Default Color Mode Settings	
◆ Color	Auto
◆ Black & White	Mono 2
► Default Exposure Settings	Auto
◆ Original Image Type	Text
◆ Moire Reduction	Disabled
► Initial Resolution Settings	600 x 600 dpi
► Color Data Compression Ratio Setting	Medium
► Scan Complete Sound Setting	Middle
► Default Output Tray *13	Varies depending on the machine configuration
► Disable Stamp for Reprinting	Disabled
► Batch Print Settings	
◆ Selection of [All Users] is not allowed.	Enabled
◆ Selection of [User Unknown] is not allowed.	Enabled
► Erase Width Adjustment	
◆ Edge Clearance Width	1/2"
◆ Center Clearance Width	1/2"
► Card Shot Settings	
◆ Original Size	X: 3-3/8", Y: 2-1/8"
◆ Fit to Page	Disabled
● Document Output Options	
► Print	
◆ Copy	Enabled
◆ Print	Enabled
◆ Scan Send	Disabled
◆ Internet Fax Send (Incl. PC-I-Fax)*3	Disabled
◆ Fax Send (Incl. PC-Fax)*4	Disabled
◆ Scan to HDD	Enabled
► Scan Send	
◆ Copy	Disabled
◆ Scan Send	Enabled
◆ Internet Fax Send (Incl. PC-I-Fax)*3	Disabled
◆ Fax Send (Incl. PC-Fax)*4	Disabled
◆ Scan to HDD	Enabled
► Internet Fax Send*3	
◆ Copy	Disabled
◆ Scan Send	Disabled
◆ Internet Fax Send (Incl. PC-I-Fax)	Enabled
◆ Fax Send (Incl. PC-Fax)	Disabled
◆ Scan to HDD	Disabled
► Fax Send*4	
◆ Copy	Disabled
◆ Scan Send	Disabled
◆ Internet Fax Send (Incl. PC-I-Fax)*3	Disabled
◆ Fax Send (Incl. PC-Fax)*4	Enabled
◆ Scan to HDD	Disabled
■ List Print (Administrator)	
● Administrator Settings List	-
● Image Sending Activity Report	-
● Data Receive/Forward List	-
● Web Settings List*12	-
● Metadata Set List*5	-
■ Security Settings	
● SSL Settings	
► Server Port	
◆ HTTPS	Disabled
◆ IPP-SSL	Disabled
◆ Redirect HTTP to HTTPS in Device Web Page Access	Disabled
► Client Port	
◆ HTTPS	Enabled
◆ FTPS	Enabled
◆ SMTP-SSL	Enabled
◆ POP3-SSL	Enabled
◆ LDAP-SSL	Enabled

Item	Factory default setting
◆ Level of Encryption	Low
● IPsec Settings	Disabled
● IEEE802.1X Setting	Disabled
■ Enable/Disable Settings	
● Printer Condition Settings	
▶ Disable Blank Page Print	Disabled
● User Control	
▶ Disabling of Printing by Invalid User	Disabled
● Operation Settings	
▶ Cancel Auto Clear Timer	Disabled
▶ Disabling of Job Priority Operation	Disabled
▶ Disabling of Bypass Printing	Disabled
▶ Disable Auto Key Repeat	Disabled
▶ Disabling of Clock Adjustment	Disabled
▶ Disabling of Covers/Inserts Mode	Disabled
● Device Control	
▶ Disabling of Document Feeder	Disabled
▶ Disabling of Duplex	Disabled
▶ Disabling of Large Capacity Cassette*7	Disabled
▶ Disabling of Optional Paper Drawer*8	Disabled
▶ Disabling of Tray Setting	Disabled
▶ Disabling of Finisher*9	Disabled
▶ Disabling of Offset	Disabled
▶ Disabling of Stapler*9	Disabled
▶ Disabling of Punch*10	Disabled
▶ Disabling of Color Mode*11	Disabled
▶ Disabling of Master Machine Mode	Disabled
▶ Disabling of Slave Machine Mode	Disabled
● Copy Function Settings	
▶ Disabling Deletion of Job Programs	Disabled
▶ Disabling of Bypass-Tray in Duplex Copy	Disabled
▶ Disabling of Auto Paper Selection	Disabled
● Printer Settings	
▶ Prohibit Notice Page Printing	Enabled
▶ Prohibit Test Page Printing	Disabled
▶ Exclude Bypass-Tray from Auto Paper Select	Disabled
● Image Send Settings	
▶ Other Disabling	
◆ Disable Switching of Display Order	Disabled
◆ Disable Scan Function	
· PC Scan	Disabled
· USB Memory Scan	Disabled
▶ Settings to Disable Registration	
◆ Disable Registering Destination from Operation Panel	All disabled
◆ Disable Registering Destination on Web Page*12	All disabled
◆ Disable Registration of Program	All disabled
◆ Disable Registration of Memory Box	All disabled
◆ Disable Destination Registration Using Global Address Search*12	All disabled
◆ Disable Registration Using Network Scanner Tools*12	Disabled
▶ Settings to Disable Transmission	
◆ Disable [Resend] on Image Send Mode	Disabled
◆ Disable Selection from Address Book	All disabled
◆ Disable Direct Entry	All disabled
◆ Disable PC-I-Fax Transmission*3	Disabled
◆ Disable PC-Fax Transmission*4	Disabled
● Document Filing Settings	
▶ Disable Stamp for Reprinting	Disabled
▶ Batch Print Settings	
◆ Selection of [All Users] is not allowed.	Enabled
◆ Selection of [User Unknown] is not allowed.	Enabled
■ Change Administrator Password	See "TO THE ADMINISTRATOR OF THE MACHINE" in the Safety Guide.
■ Product Key*4	

Item	Factory default setting
● Serial Number	-
● PS3 Expansion Kit	-
● Internet Fax Expansion Kit	-
● E-mail Alert and Status	-
● Application Integration Module	-
● Application Communication Module	-
● External Account Module	-
● XPS Expansion Kit	-
■ Data Backup	
● Storage Backup	-
● Device Cloning	-
■ Initialize and/or Store Settings	
● Restore Factory Defaults	-
● Store Current Configuration	-
● Restore Configuration	-
■ Sharp OSA Settings	
● External Account Setting*15	
▶ External Account Control	Disabled
▶ Enable Authentication by External Server	Disabled
● USB Device Settings*16	
▶ External Keyboard	Internal driver
◆ Level of Encryption	None
▶ USB Memory	Internal driver
◆ Level of Encryption	None

\*1: This cannot be set on the machine. Set this in "User Control" in the Web pages

\*2: This cannot be set on the machine. Set this in the system settings in the Web pages.

\*3: When the Internet fax expansion kit is installed.

\*4: When the facsimile expansion kit is installed.

\*5: When the application integration module is installed.

\*6: When a saddle stitch finisher is installed.

\*7: When a large capacity tray is installed.

\*8: When a stand/1 x 500 sheet paper drawer / stand/2 x 500 sheet paper drawer is installed.

\*9: When a saddle stitch finisher or finisher is installed.

\*10: When a punch module is installed.

\*11: When a color-related problem has occurred.

\*12: When network connection is enabled.

\*13: When the exit tray unit is installed.

\*14: It may not be possible to use some settings, depending on the peripheral devices installed.

\*15: When the external account module is installed.

\*16: When the external account module or application communication module is installed.

## 2. Paper JAM code

### A. PCU JAM cause

Code	Code content
NO_JAM_CAUSE	No jam. Also used to cancel a jam.
NO_MATCH	Parameter no matching
STOP_JAM	Emergency stop request JAM (Controller request)
TRAY1	Cassette 1 paper feed JAM (CPFD1 not-reached JAM)
CPFD1_S1	CPFD1 remaining JAM (Cassette 1 feed paper)
CPFD1_N2	CPFD1 not-reached JAM (Cassette 2 feed paper)
CPFD1_N3	CPFD1 not-reached JAM (Desk 1 feed paper)
CPFD1_N4	CPFD1 not-reached JAM (Desk 2 feed paper)
CPFD1_S2	CPFD1 remaining JAM (Cassette 2 feed paper)
CPFD1_S3	CPFD1 remaining JAM (Desk 1 feed paper)
CPFD1_S4	CPFD1 remaining JAM (Desk 2 feed paper)
TRAY2	Cassette 2 paper feed JAM (CPFD2 not-reached JAM)
CPFD2_N3	CPFD2 not-reached JAM (Desk 1 feed paper)
CPFD2_N4	CPFD2 Not-reached JAM (Desk 2 feed paper)

Code	Code content
CPFD2_S2	CPFD2 remaining JAM (Cassette 2 feed paper)
CPFD2_S3	CPFD2 remaining JAM (Desk 1 feed paper)
CPFD2_S4	CPFD2 remaining JAM (Desk 2 feed paper)
PPD1_N1	PPD1 not-reached JAM (Cassette 1 feed paper)
PPD1_N2	PPD1 not-reached JAM (Cassette 2 feed paper)
PPD1_N3	PPD1 not-reached JAM (Desk 1 feed paper)
PPD1_N4	PPD1 not-reached JAM (Desk 2 feed paper)
PPD1_NM	PPD1 not-reached JAM (Manual feed tray feed paper)
PPD1_NL	PPD1 not-reached JAM (Side LCC feed paper)
PPD1_NA	PPD1 not-reached JAM (ADU refeed paper)
PPD1_S1	PPD1 remaining JAM (Cassette 1 feed paper)
PPD1_S2	PPD1 remaining JAM (Cassette 2 feed paper)
PPD1_S3	PPD1 remaining JAM (Desk 1 feed paper)
PPD1_S4	PPD1 remaining JAM (Desk 2 feed paper)
PPD1_SM	PPD1 remaining JAM (Manual feed tray feed paper)
PPD1_SL	PPD1 remaining JAM (Side LCC feed paper)
PPD1_SA	PPD1 remaining JAM (ADU refeed paper)
PPD2_N1	PPD2 not-reached JAM (Cassette 1 feed paper)
PPD2_N2	PPD2 not-reached JAM (Cassette 2 feed paper)
PPD2_N3	PPD2 not-reached JAM (Desk 1 feed paper)
PPD2_N4	PPD2 not-reached JAM (Desk 2 feed paper)
PPD2_NM	PPD2 not-reached JAM (Manual feed tray feed paper)
PPD2_NL	PPD2 not-reached JAM (Side LCC feed paper)
PPD2_NA	PPD2 not-reached JAM (ADU refeed paper)
PPD2_S1	PPD2 remaining JAM (Cassette 1 feed paper)
PPD2_S2	PPD2 remaining JAM (Cassette 2 feed paper)
PPD2_S3	PPD2 remaining JAM (Desk 1 feed paper)
PPD2_S4	PPD2 remaining JAM (Desk 2 feed paper)
PPD2_SM	PPD2 remaining JAM (Manual feed tray feed paper)
PPD2_SL	PPD2 remaining JAM (Side LCC feed paper)
PPD2_SA	PPD2 remaining JAM (ADU refeed paper)
PPD2_PRI	PPD2 JAM (Image preparation wait timeout)
PPD2_DRUM	PPD2 JAM (Drum lock detection)
POD1_N	POD1 not-reached JAM
POD1_S	POD1 remaining JAM
POD1_FUS	POD1 JAM (Detection of twining to fusing)
POD2_N	POD2 not-reached JAM
POD2_S	POD2 remaining JAM
POD3_N	POD3 not-reached JAM
POD3_S	POD3 remaining JAM
APPD1_N	APPD1 not-reached JAM
APPD1_S	APPD1 remaining JAM
APPD2_N	APPD2 not-reached JAM
APPD2_S	APPD2 remaining JAM
TRAY3	Cassette 3 (Desk 1) paper feed JAM
DPFD1_N4	DPFD1 not-reached JAM (Desk 2 feed paper)
DPFD1_S3	DPFD1 remaining JAM (Desk 1 feed paper)
DPFD1_S4	DPFD1 remaining JAM (Desk 2 feed paper)
DPFD2_S4	DPFD2 remaining JAM (Desk 2 feed paper)
TRAY4	Cassette 4 (Desk 2) paper feed JAM
MFT	Manual feed tray paper feed JAM (MPFD not-reached)
MPFD_S	MPFD remaining JAM (Manual feed tray feed paper)
LCC	Side LCC paper feed JAM (LPFD1 not-reached)
LPFD_SL	LPFD remaining JAM (Side LCC feed paper)
SIZE_ILG	Size illegal JAM
MTR_ILG	Motor driver trouble JAM
PDPPD1_N	Paper pass inlet port not-reached JAM
PDPPD1_S	Paper pass inlet port remaining JAM
PDPPD2_N	Paper pass outlet port not-reached JAM
PDPPD2_S	Paper pass outlet port remaining JAM
FPPD1_N	Finisher inlet port sensor not-reached JAM
FPPD1_S	Finisher inlet port sensor remaining JAM
FPPD2_N	Saddle section not-reached JAM
FPPD2_S	Saddle section remaining JAM
FPDD_S	Bundle exit remaining JAM
FSTPLJ	Staple JAM
FPNCHJ	Punch JAM
FDOP	Finisher door open JAM

Code	Code content
FIN_TIME	Finisher paper fast delivery JAM
FIN_PAOF	Paper spec data reception overflow
FPATPD_S	Saddle transport remaining JAM
FPPD3_N	Saddle paper exit not-reached JAM
FPPD3_S	Saddle paper exit remaining JAM
CPFD2_DESK	CPFD2 JAM (Desk communication abnormality detection)
PPD1_LCC	PPD1 JAM (LCC communication abnormality detection)
PPD2_FIN	PPD2 JAM (Finisher communication abnormality detection)
FSSMJ	Stapler shift motor JAM
FPMJ	Paper exit motor JAM
FSDMJ	Saddle motor JAM
FGMJ	Gripper motor JAM
FSPTMJ	Saddle paper transport motor JAM

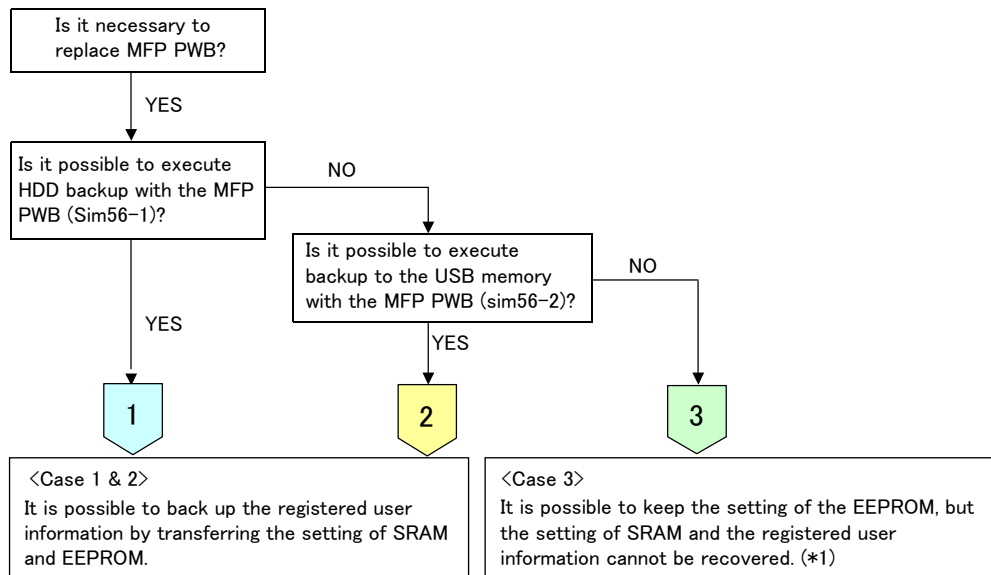
## B. SCU JAM cause

Code	Code content
NO_JAM_CAUSE	No JAM. Also used for JAM canceling.
NO_MATCH	Parameter no matching
STOP_JAM	Emergency stop request JAM (Controller request)
SPPD1_N	SPPD1 not-reached JAM
SPPD1_S	SPPD1 remaining JAM
SPPD2_N	SPPD2 not-reached JAM
SPPD2_S	SPPD2 remaining JAM
SPPD3_N	SPPD3 not-reached JAM
SPPD3_S	SPPD3 remaining JAM
SPPD4_N	SPPD4 not-reached JAM
SPPD4_S	SPPD4 remaining JAM
SPPD5_N	SPPD5 not-reached JAM
SPPD5_S	SPPD5 remaining JAM
SPRDMD_S	SPRDMD remaining JAM
SPSD_SCN	Exposure start notification timer end
SPPD2_NR	SPPD2 reverse not-reached JAM
SPPD2_SR	SPPD2 reverse remaining JAM
ICU_REQ	ICU factor stop JAM
P_SHORT	Short size JAM



### 3. MFP substrate replacement procedure (work flow)

(Note) Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (\*1)



(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.  
The registered user information will be deleted.

1. Execute Sim56-01 (data transmission) before replacing the MFP PWB, execute "ALL→HDD," and transfer the SRAM data and the EEPROM data to HDD.
  2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.  
Note: Ground your body with grounding band during the work.
  3. Execute "HDD→ALL" by Sim56-01 (data transmission) to return the data of SRAM and EEPROM in the HDD to the new MFP PWB.
- \* Please be aware that if "ALL→HDD" is not executed by Sim56-01 (data transmission), blank data will be exported to the EEPROM when "HDD→ALL" is executed.

(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.  
The registered user information will be deleted.

1. Execute "EEPROM&SRAM EXPORT" by Sim56-02 (memory HDD data backup) before replacing the MFP PWB to transfer the data of SRAM and EEPROM to USB memory.
2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.  
Note: Ground your body with grounding band during the work.
3. Execute "EEPROM&SRAM IMPORT" by Sim56-02 (memory HDD data backup) to return the data of SRAM and EEPROM in the USB memory to the new MFP PWB.

1. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.  
Note: Ground your body with grounding band during the work.
2. Turn on the power, execute Sim16 to clear U2-05 trouble.
3. Set as follows after restarting the main unit.
  - (1) Use SIM67-70 to clear the contents of the MFP PWB SDRAM.
  - (2) Set the appropriate country code by Sim66-02 (clear the software switches related to FAX).

(Note) Make sure to execute even if the fax option is not installed on the machine.

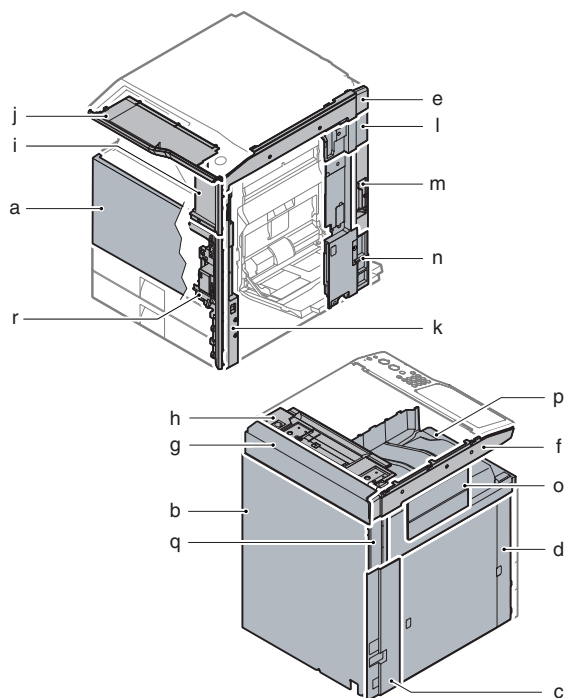
  - (3) Select "Printer environment setting" at System setting, select "Printer initial setting," open "Standard paper feed paper size" screen, and set A4 size if you use an AB-type machine and letter size if you use an inch-type machine.

(\*1) If you have backed up the data by storage backup (WEB) or device cloning (WEB for service) during normal use before the failure of MFP PWB, it is possible to return to the state when the data was backed up even if Sim16 is executed.

## [12] EXTERNAL VIEW

### 1. Disassembly and assembly

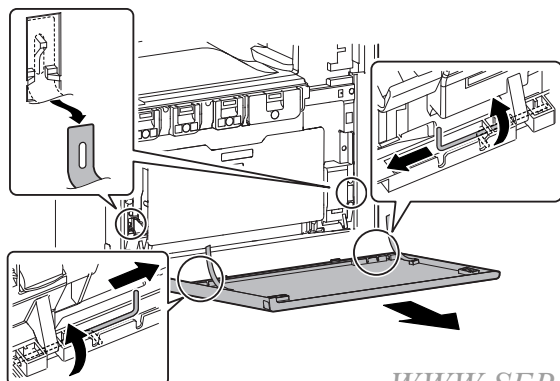
#### A. Cabinet



Parts	
a	Front cabinet
b	Rear cabinet
c	Left cabinet rear lower
d	Left cabinet
e	Upper cabinet right
f	Upper cabinet left
g	Upper cabinet rear cover
h	Upper cabinet rear
i	Front cabinet upper
j	Operation panel base plate
k	Right cabinet front
l	Right connection cabinet
m	Right cabinet rear cover
n	Right cabinet rear
o	Paper exit cover
p	Paper exit tray cabinet
q	Left cabinet rear
r	Frame cover

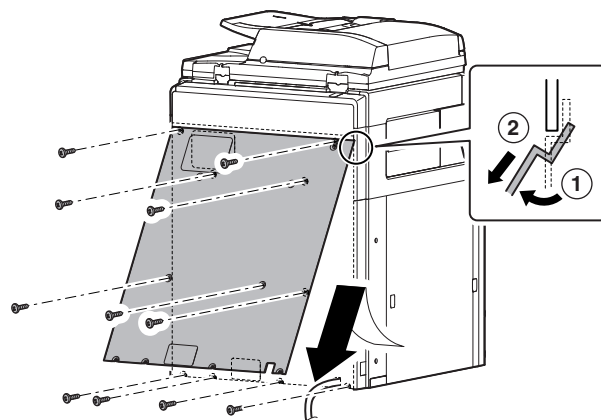
#### (1) Front cabinet

- 1) Remove the front cabinet band. Remove the front cabinet hinge. Remove the front cabinet.



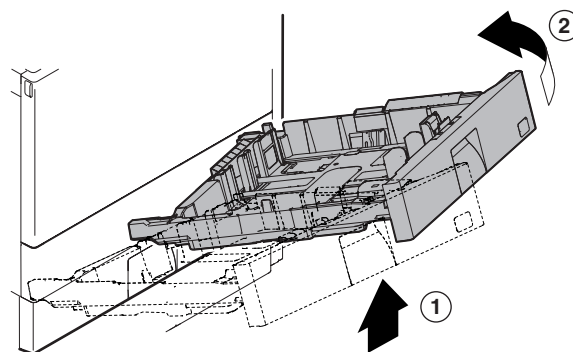
#### (2) Rear cabinet

- 1) Remove the screw, and remove the rear cabinet.

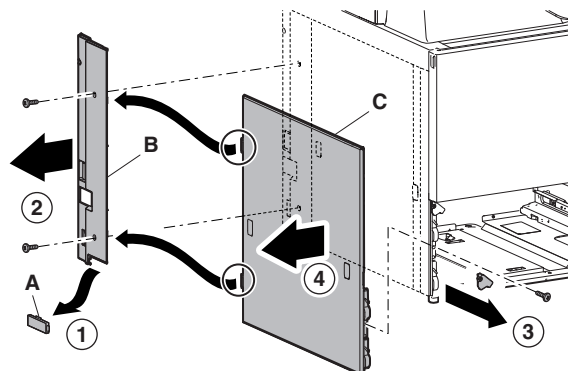


#### (3) Left cabinet rear lower/Left cabinet

- 1) Remove the tray 1 and 2.

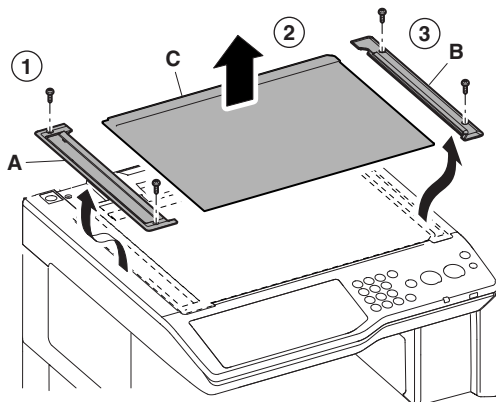


- 2) Remove the desk connection lid (A). Remove the screw, and remove the left cabinet rear lower (B) and the left cabinet (C).

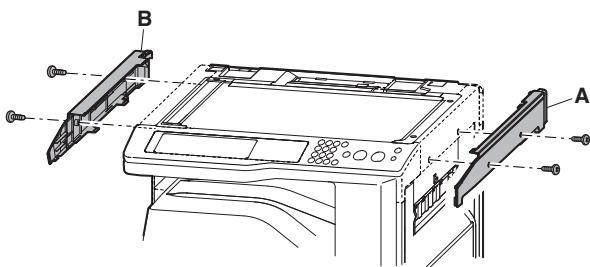


#### (4) Upper cabinet right/Upper cabinet left

- 1) Remove the SPF glass (A). Remove the glass holder (B) and the table glass (C).

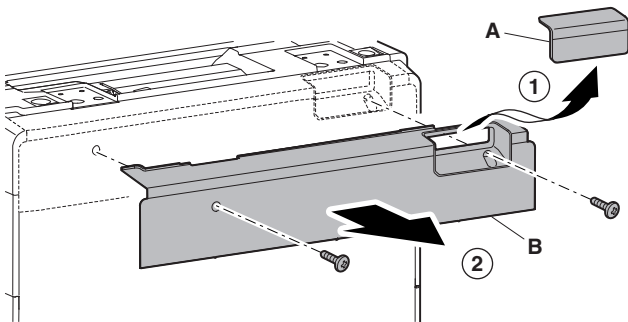


- 2) Remove the screw, and remove the upper cabinet right (A) and the upper cabinet left (B).

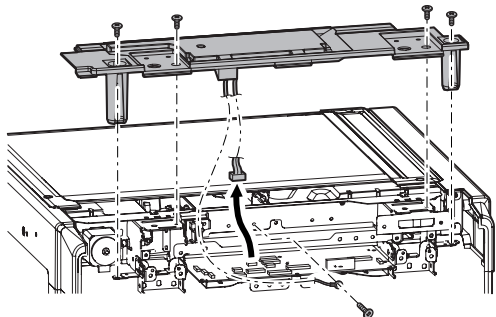


#### (5) Upper cabinet rear cover/Upper cabinet rear

- 1) Remove the upper cabinet rear cover lid (A). Remove the screw, and remove the upper cabinet rear cover (B).

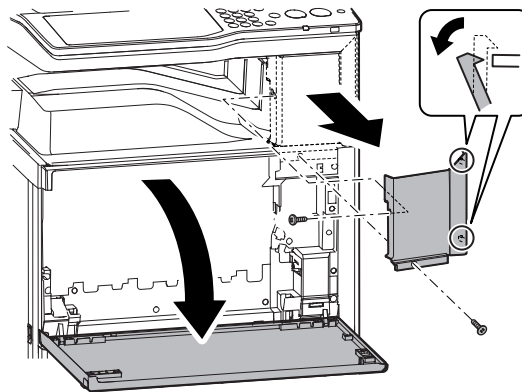


- 2) Disconnect the connector. Remove the screw, and remove the earth wire. Remove the screw, and remove the upper cabinet rear.

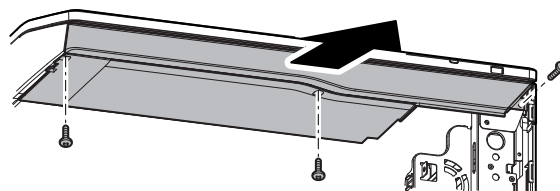


#### (6) Front cabinet upper/Operation panel base plate

- 1) Open the front cabinet. Remove the screws, and remove the front cabinet upper.

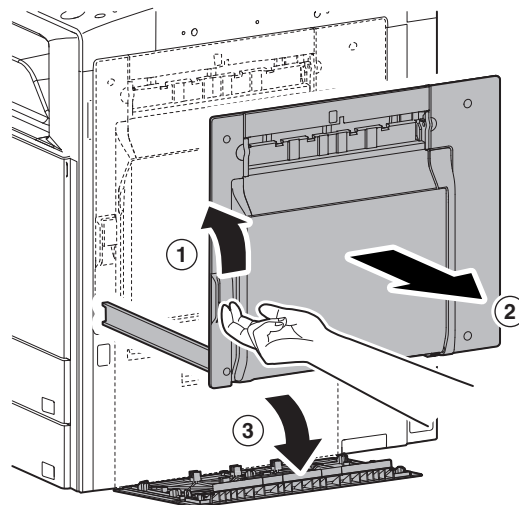


- 2) Remove the screw, and remove the operation panel base plate.

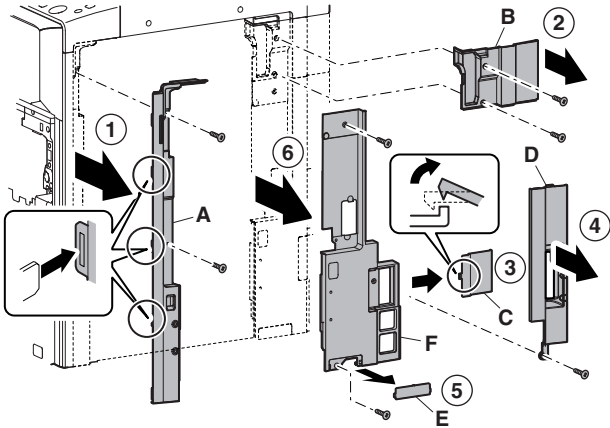


#### (7) Right cabinet front/Right connection cabinet/Right cabinet rear cover/Right cabinet rear

- 1) Remove the front cabinet upper.
- 2) Open the right door and the right cabinet lower.

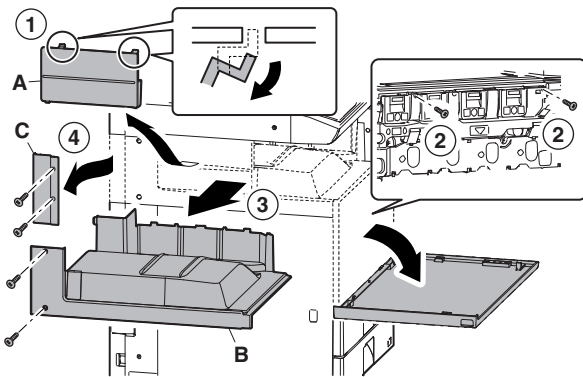


- 3) Remove the screw, and remove the right cabinet front (A). Remove the screw, and remove the right connection cabinet (B). Remove the ozone filter cover (C). Remove the screw, and remove the right cabinet rear cover (D). Remove the desk connection lid (E). Remove the screw, and remove the right cabinet rear (F).



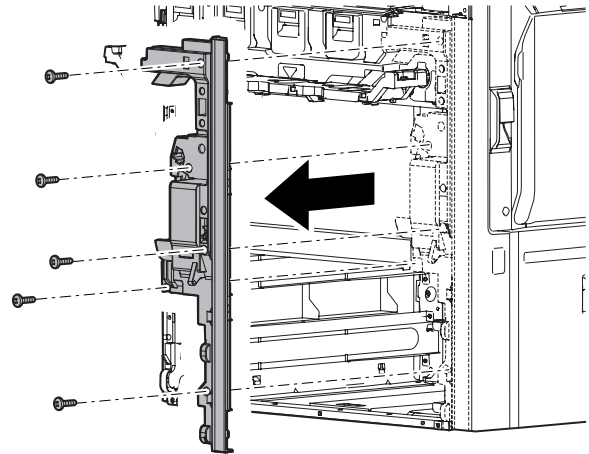
#### (8) Paper exit cover/Paper exit tray cabinet/Left cabinet rear

- 1) Remove the paper exit cover (A). Open the front cabinet, and remove the screw. Remove the screw, and remove the paper exit tray cabinet (B). Remove the screw, and remove the left cabinet rear (C).



#### (9) Frame cover

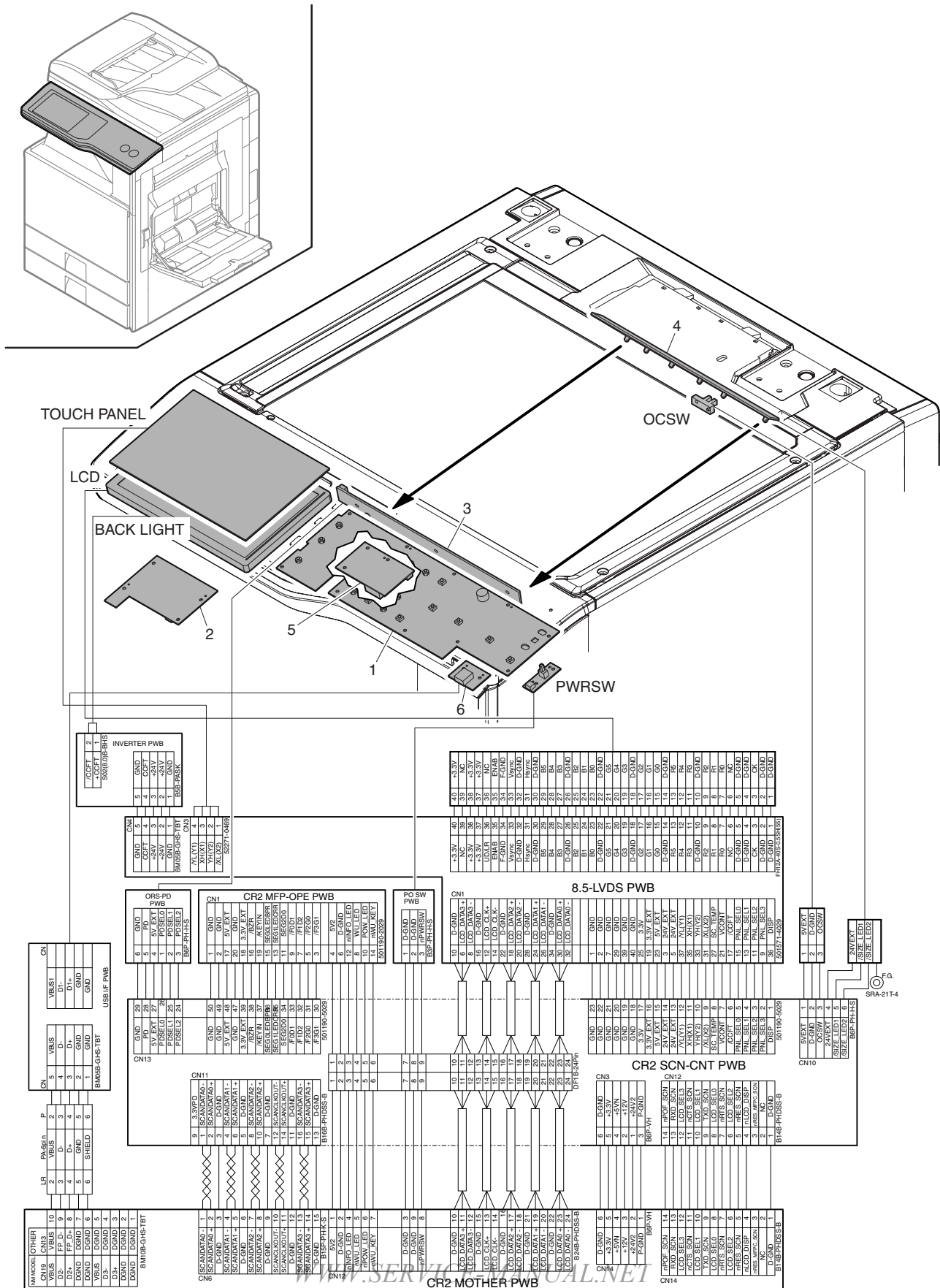
- 1) Remove the waste toner box, and open the drum positioning unit.
- 2) Remove the front cabinet.
- 3) Remove the front cabinet upper.
- 4) Remove the screw, and remove the frame cover.



# [B] OPERATION PANEL

## 1. Electrical and mechanical relation diagram

### A. 8.5 inch operation panel



Signal	Name	Function/Operation
OCSW	Original cover SW	Document size detection timing switch
PWRSW	Operaton panel power supply switch	Outputs the ON/OFF control signal of the DC power source.

No.	Name	Function/Operation
1	MFP OPE-P PWB	Detects the pressed key on the operation panel.
2	LVDS PWB	Converts the display signal and outputs to the LCD.
3	Document detection light receiving PWB	Receives light from the document detection light emitting PWB to detect the document size.
4	Document detection light emitting PWB	Emits light for detection of the document size.
5	LCD INV PWB	Emits the document size detection LED lights.
6	USB connector PWB	For USB connecting

## 2. Operational descriptions

### A. Outline

The operation panel is composed of the MFP OPE PWB, the LCD INV PWB, the LVDS PWB, the USB CN PWB, the LCD unit, and the operation key, and is used to operation the machine, to set and to display the status.

They are connected with the document detection light receiving PWB for detection of the document size. They receive light from the document detection light emitting PWB attached to the rear frame side, detecting the document size.

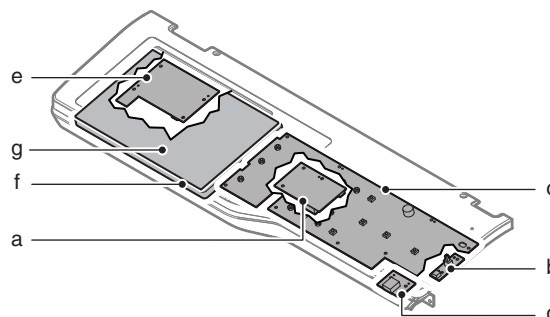
The power switch of the operation panel outputs the ON/OFF control signal of the DC power.

The USB connector can be connected with the USB memory, the USB keyboard, the IC card writer, the IC card reader, and the USB hub, sending the electronic data to the mother PWB.

The MX-4100N and the MX-4101N are provided with the keyboard (standard for North America, option for other than North America) under the operation panel unit, allowing text input.

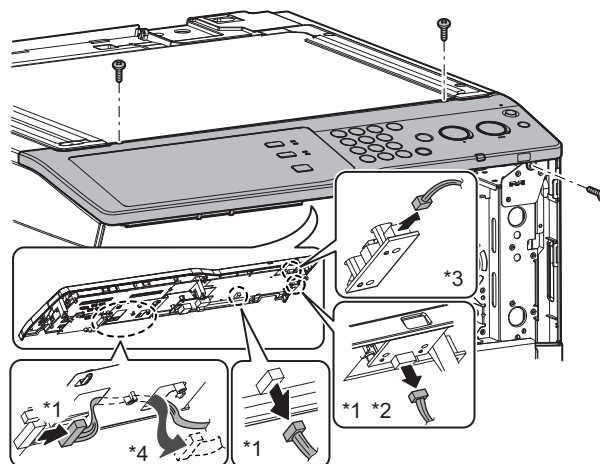
## 3. Disassembly and assembly

### A. 8.5 inch operation panel unit



Parts	
a	LCD INV PWB
b	POWER SW PWB
c	MFP OPE-P PWB
d	USB connector PWB
e	LVDS PWB
f	LCD module
g	Touch panel

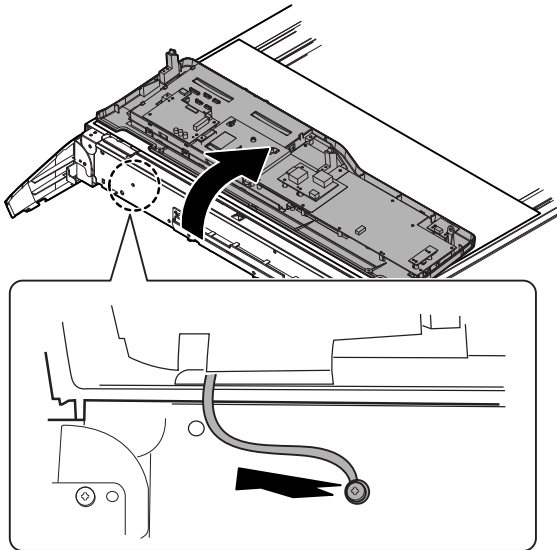
- 1) Remove the operation panel base plate.
- 2) Remove the screw, and disconnect four connectors.



- \*1: Since the lead wire is provided with the lock, do not pull the lead wire.  
Hold the connector and pull it out.
- \*2: Note that the lock is on the back surface.
- \*3: When disconnecting the connector, pull the lead wire slowly.
- \*4: Disconnect the connector from the Mylar.

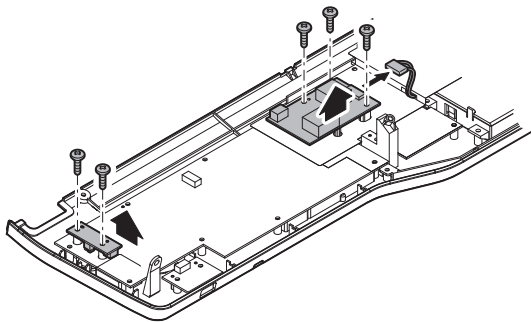


- 3) Remove the screw, remove the earth harness from the machine, and turn the operation panel back.

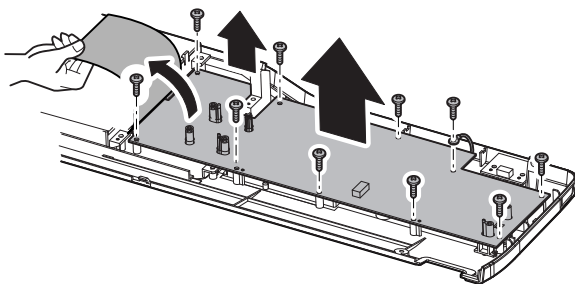


### (1) LCD INV PWB/POWER SW PWB/MFP OPE-P PWB

- 1) Remove the operation panel unit.
- 2) Disconnect the connector and remove the screw. Remove the LCD INV PWB and the POWER SW PWB.

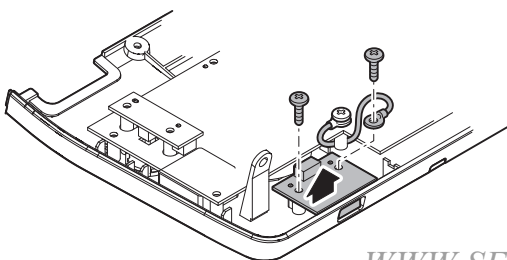


- 3) Remove the screw and the earth wire. Peel off the Mylar, and remove the earth sheet and the MFP OPE-P PWB.



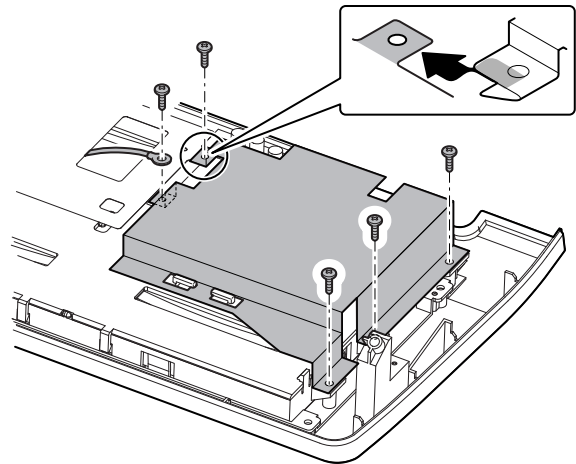
### (2) USB connector PWB

- 1) Remove the operation panel unit.
- 2) Remove the screw and the earth wire, and remove the USB connector PWB.



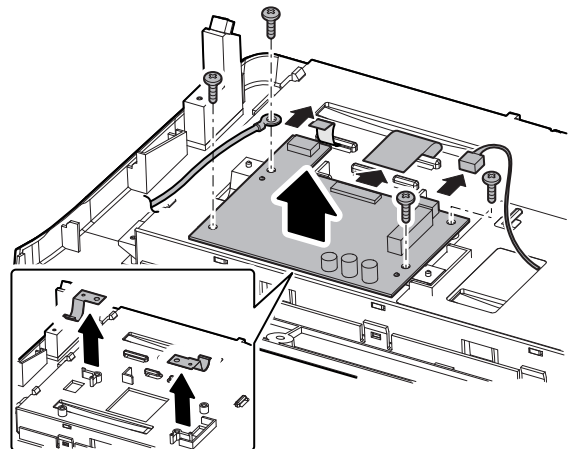
### (3) LVDS PWB

- 1) Remove the operation panel unit.
- 2) Remove the screw and the earth wire, and remove the LVDS shield sheet.



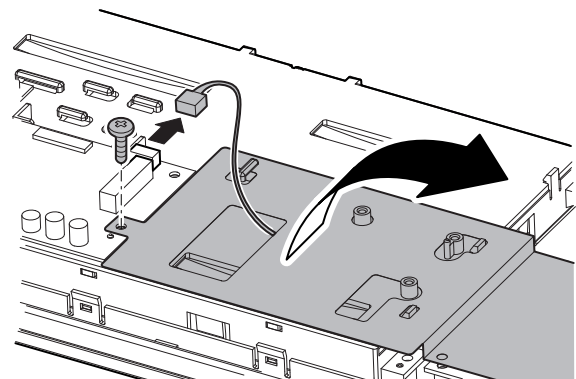
- 3) Disconnect the connector and remove the screw and the earth wire. Remove the LVDS PWB.

\* When the LVDS PWB is removed, the earth plate for the LCD is also removed. Be careful not to lose it.

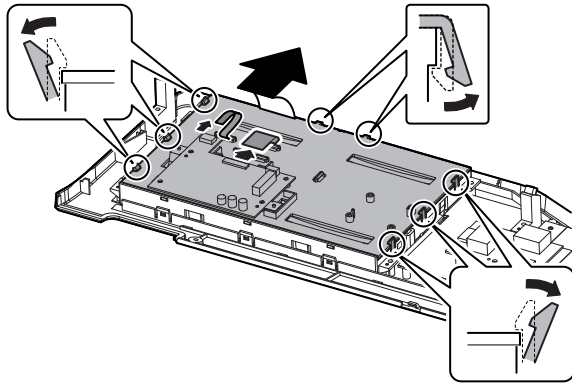


### (4) LCD module

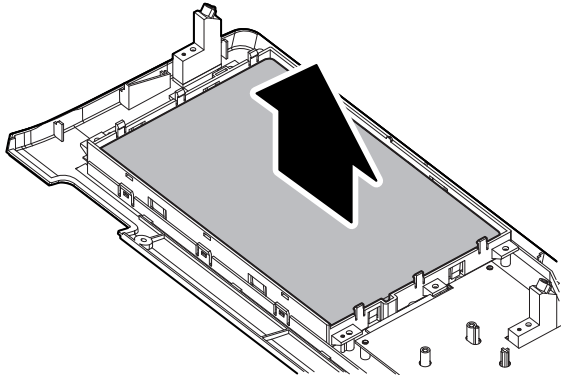
- 1) Remove the operation panel unit.
- 2) Remove the LVDS shield sheet.
- 3) Disconnect the connector and remove the screw. Remove the Mylar.



- 4) Disconnect the connector, and remove the LCD holder.

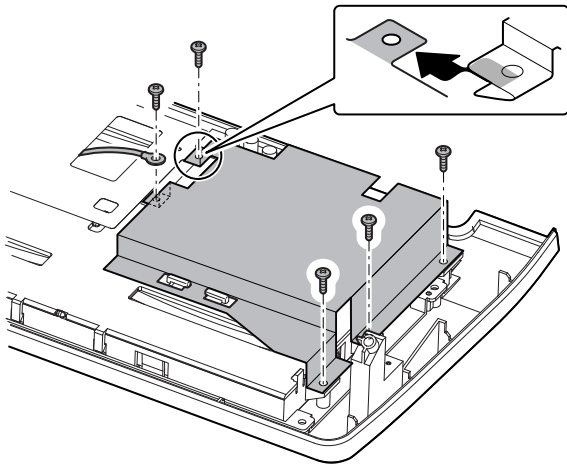


- 5) Remove the LCD module.

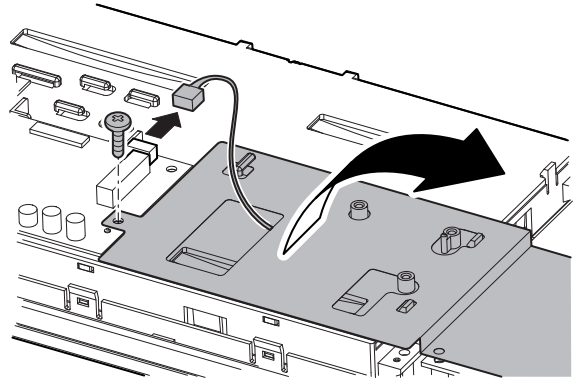


#### (5) Touch panel

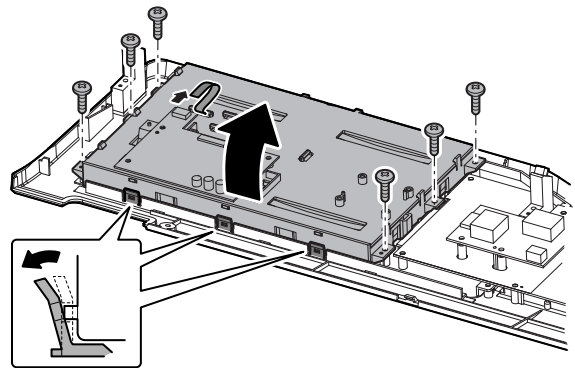
- 1) Remove the operation panel unit.  
2) Remove the screw and the earth wire, and remove the LVDS shield sheet.



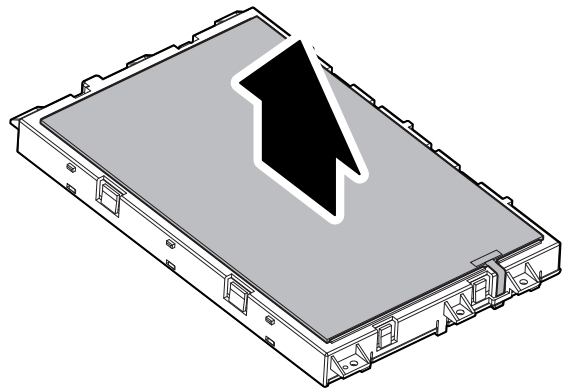
- 3) Disconnect the connector and remove the screw. Remove the Mylar.



- 4) Disconnect the connector and remove the screw, and remove the LCD unit.

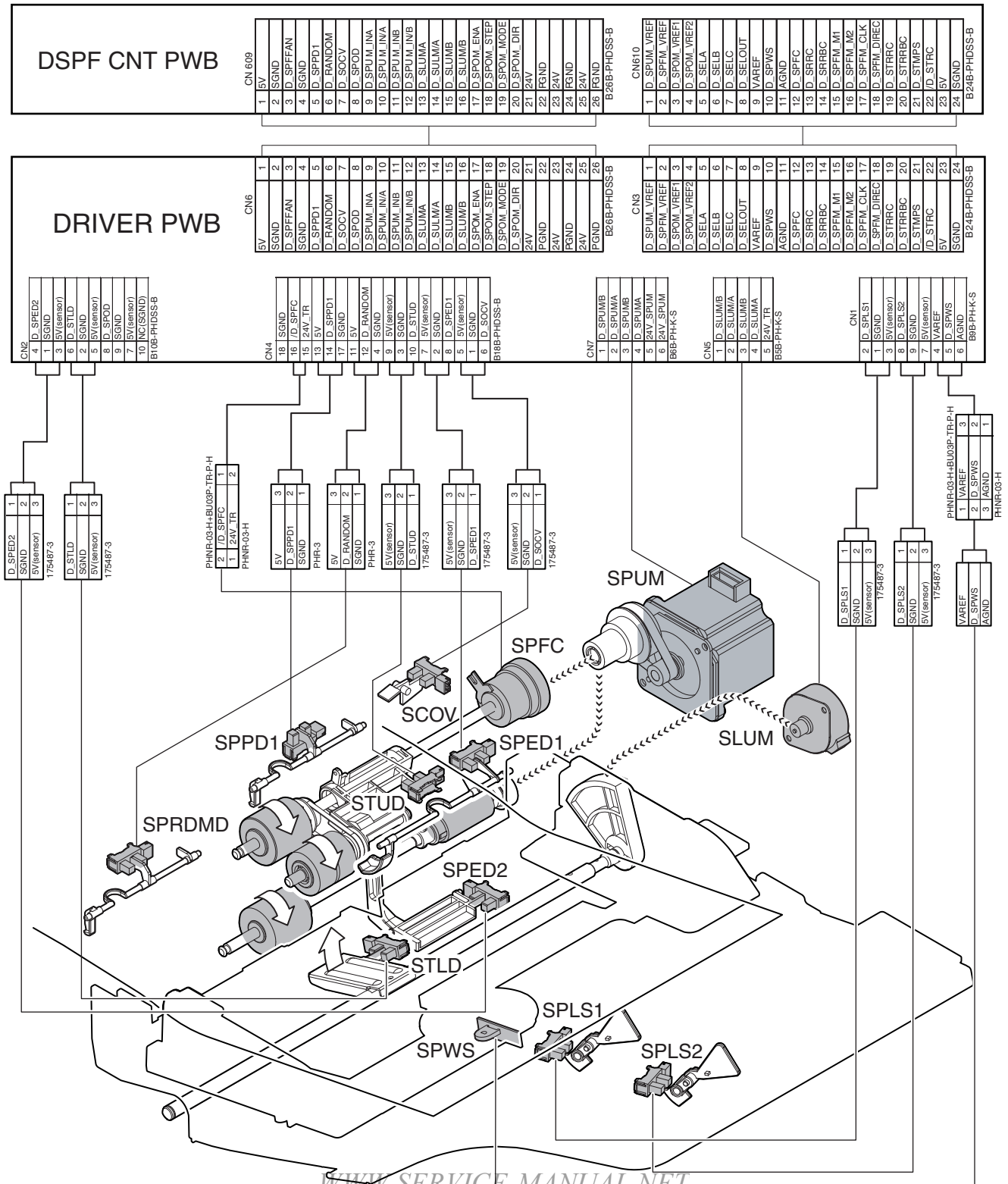
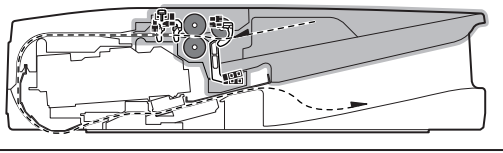


- 5) Remove the touch panel.



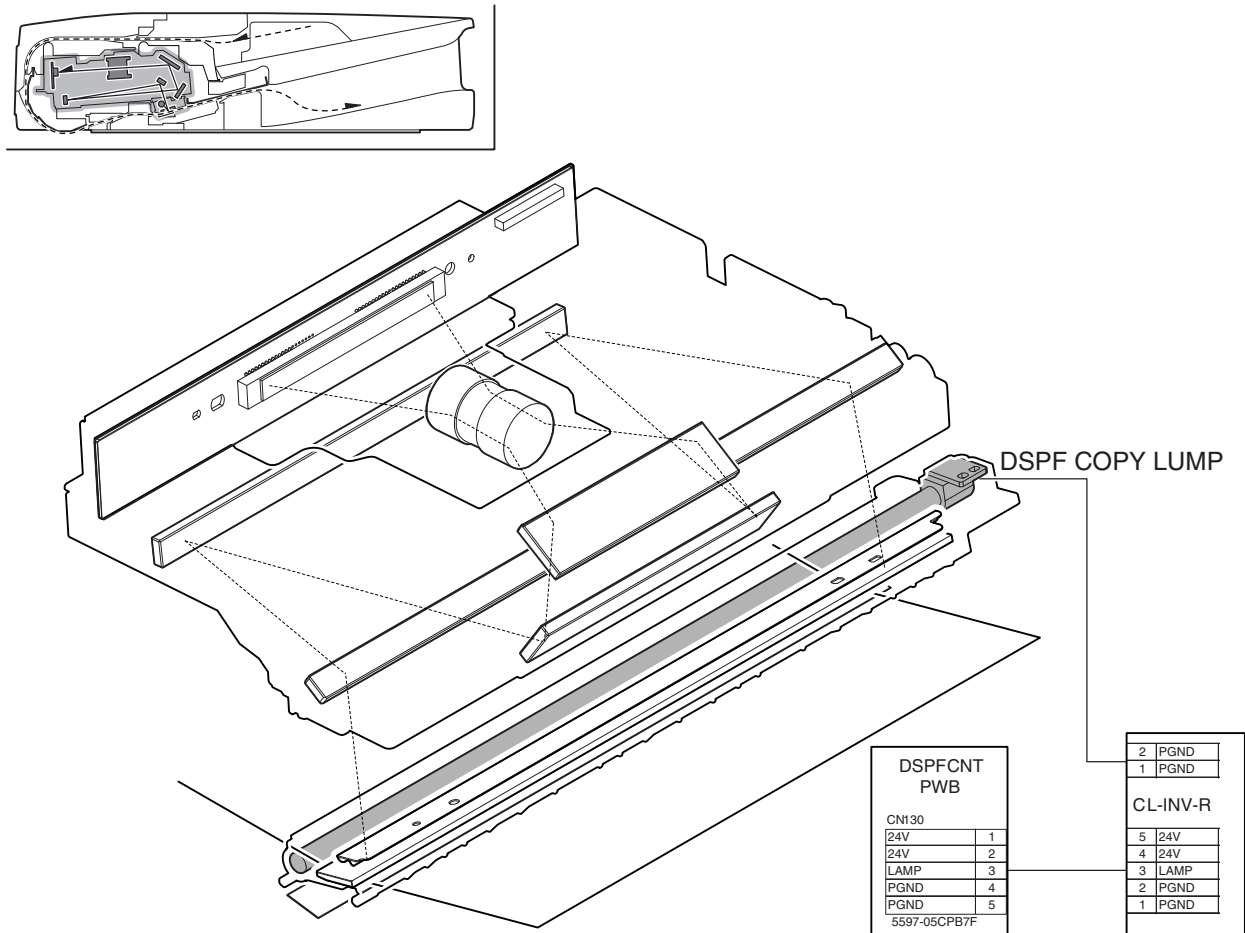


### A. Paper feed section

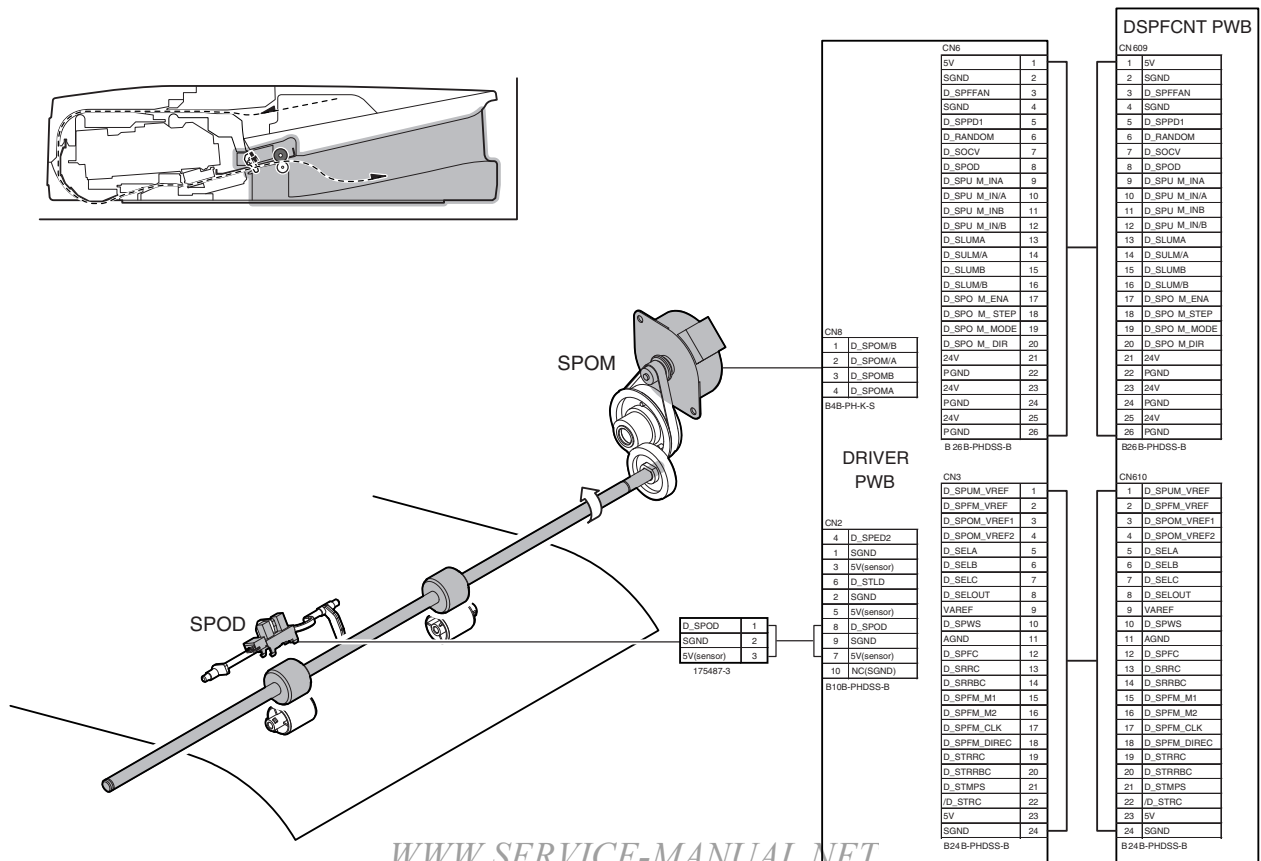




## D. Optical section



## E. Paper exit section



## 2. Operational descriptions

### A. Document size detection

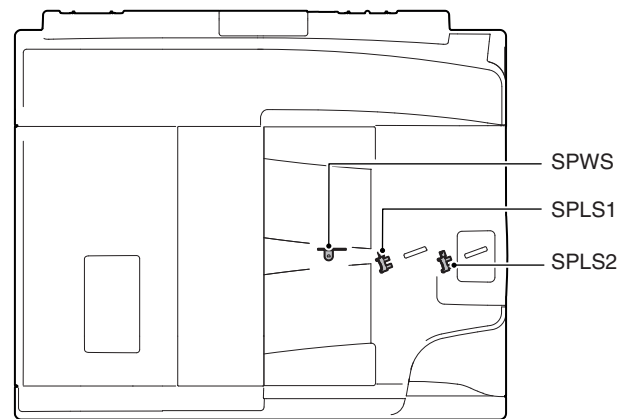
Size detection on the document tray

The document size is detected by the DSPF document width sensor (SPWS), and the document length is detected by the DSPF document length sensors (SPLS1, SPLS2). The document size is judged from the document width and the document length as shown in the table below.

When, however, documents of different sizes are mixed and set on the document tray, the largest size is detected.

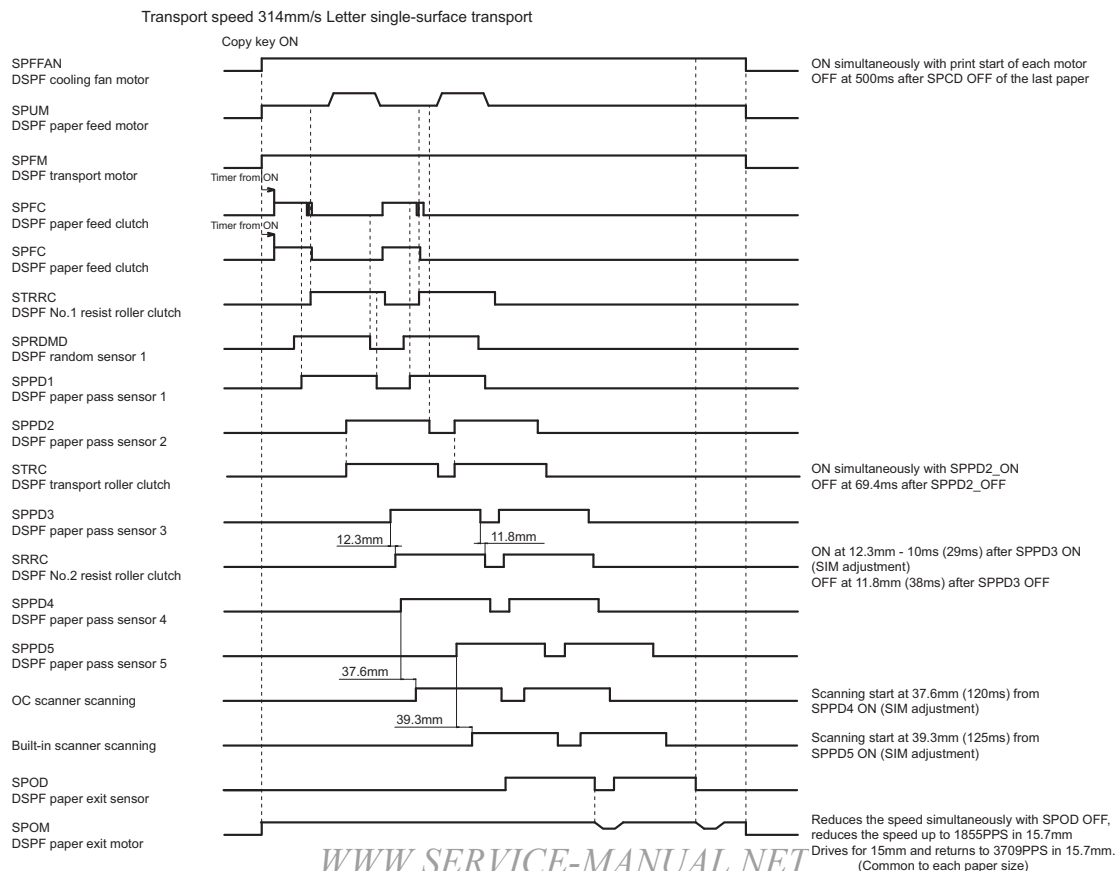
	Document size	Document length sensor	
		SPLS1	SPLS2
AB series	A5	OFF	OFF
	B5	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	B5R	ON	OFF
	A4R	ON	OFF
	8.5" x 13"	ON	ON
	B4	ON	ON
	A3	ON	ON
Inch series	11" x 17"	ON	ON
	8.5" x 5.5"	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	11" x 8.5"R	ON	OFF
	8.5" x 13"	ON	ON
	8.5" x 14"	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON

DSPF unit



### B. Timing chart

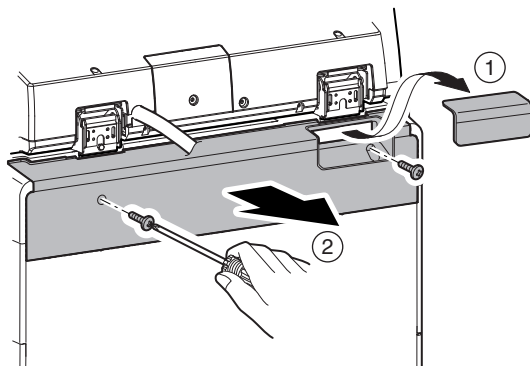
To increase the document replacement speed, pre-feed of the second and the later documents is performed for documents of A4/Letter or smaller sizes. Therefore, a clutch is provided for each transport roller to perform individual control.



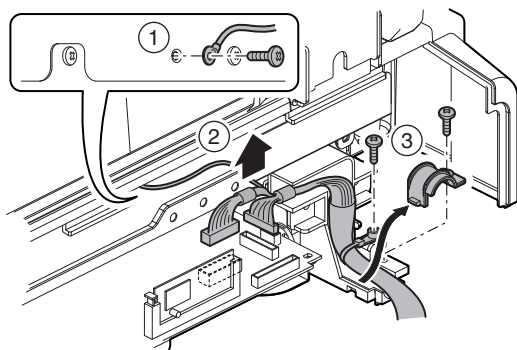
### 3. Disassembly and assembly

#### A. DSPF unit

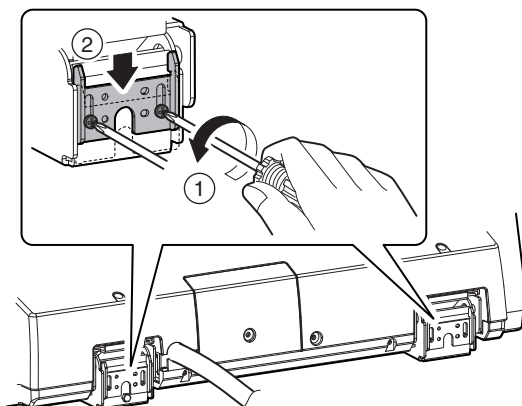
- 1) Remove the upper cabinet rear cover lid. Remove the screw, and remove the upper cabinet rear cover.



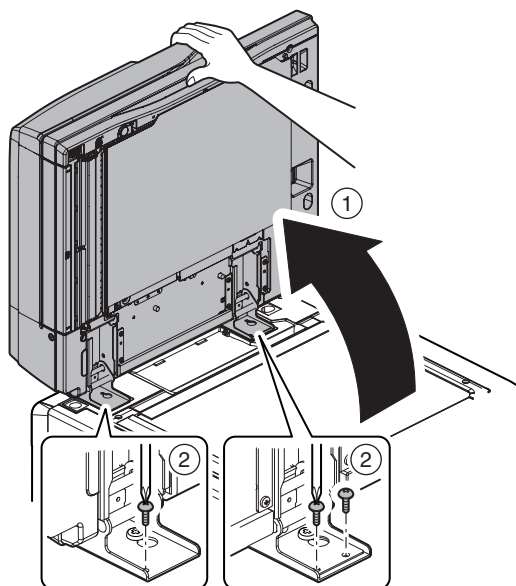
- 2) Remove the screw, and remove the earth line. Disconnect the connector, and remove the snap band. Remove the screw, and remove the locking band and the interface harness cover.



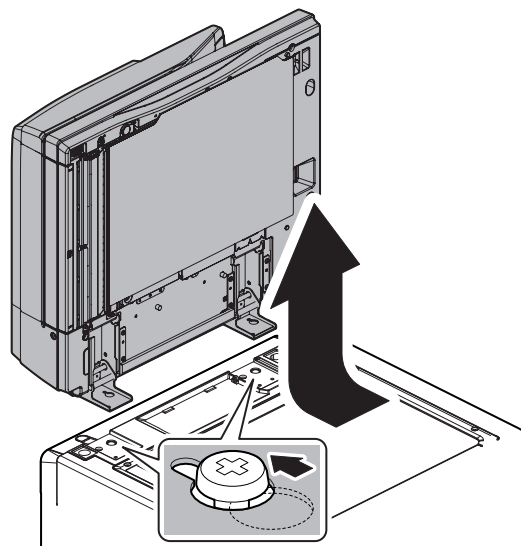
- 3) Loosen the screw, and lower the angle adjustment plate.



- 4) Open the DSPF unit to put it straight up, and remove the screw.

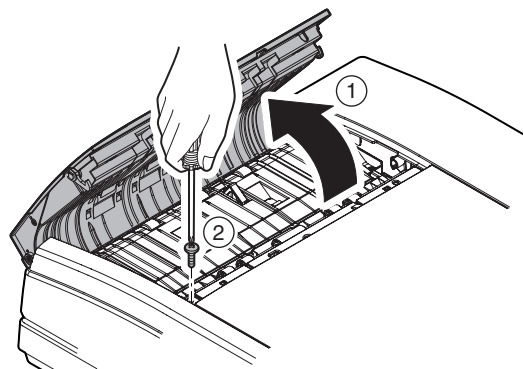


- 5) Slide the DSPF unit to the rear side, and fit the step screw with the key hole of the hinge, and lift it up to remove.

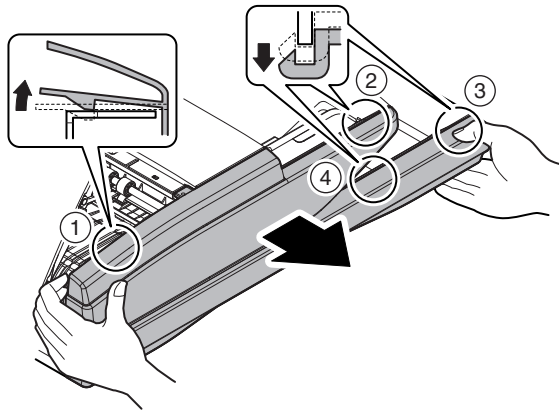


#### (1) Front cabinet

- 1) Open the upper door, and remove the screw.

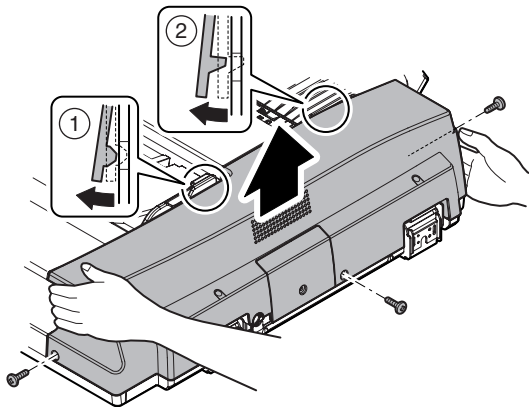


- 2) Remove the pawl, and remove the front cabinet.



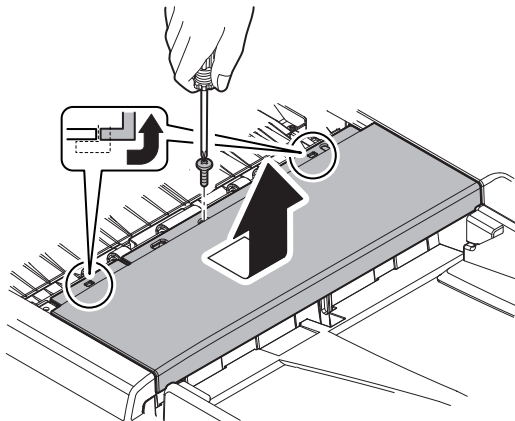
## (2) Rear cabinet

- 1) Open the upper door. Remove the screw. Remove the pawl. Remove the rear cabinet.



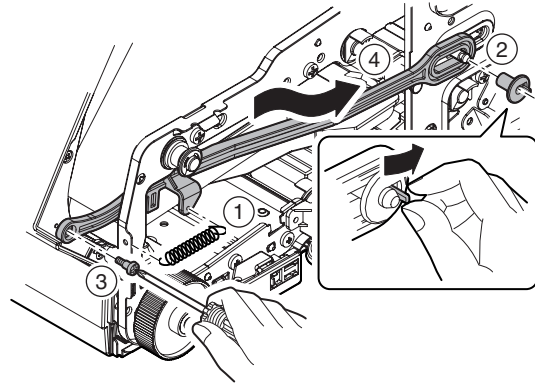
## (3) Paper feed cover

- 1) Open the upper door. Remove the screw. Remove the paper feed cover.

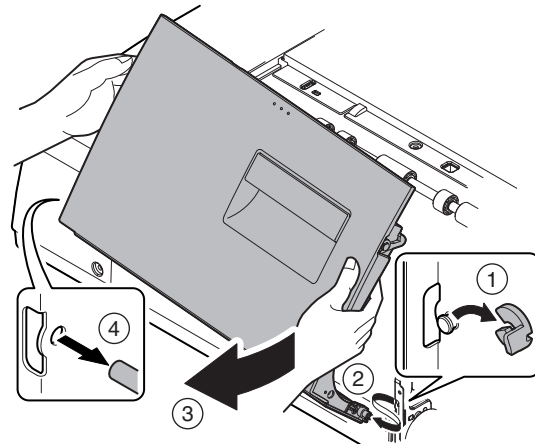


## (4) Upper door

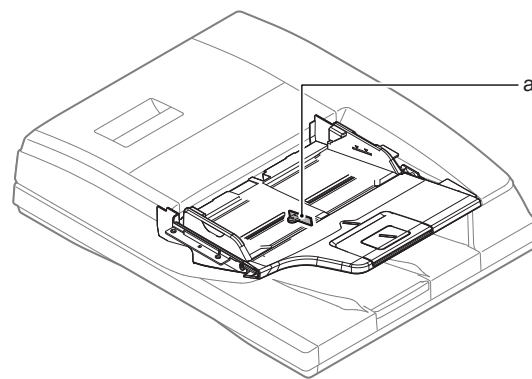
- 1) Remove the front cabinet. (Refer to "1. Exterior section - A. DSPF unit - (1) Front cabinet.")
- 2) Remove the spring. Remove the pawl. Remove the pressure release axis holder. Remove the screw. Remove the pressure release link lever.



- 3) Remove the resin E-ring, and remove the upper door.



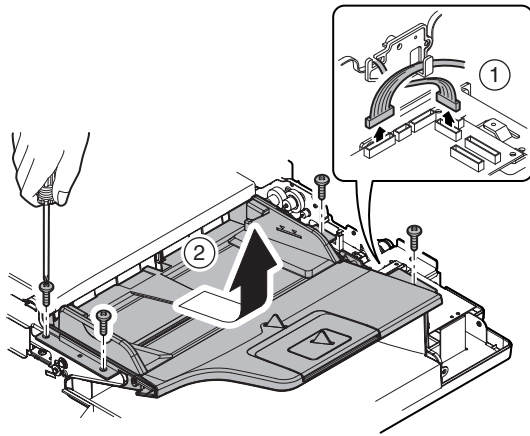
## B. Paper feed tray unit



Parts	
a	DSPF document width sensor

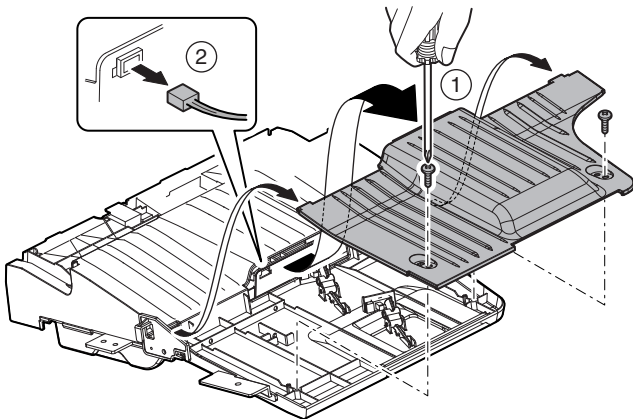


- 1) Remove the front cabinet.
- 2) Remove the rear cabinet.
- 3) Disconnect the connector. Remove the screw, and remove the paper feed tray unit.

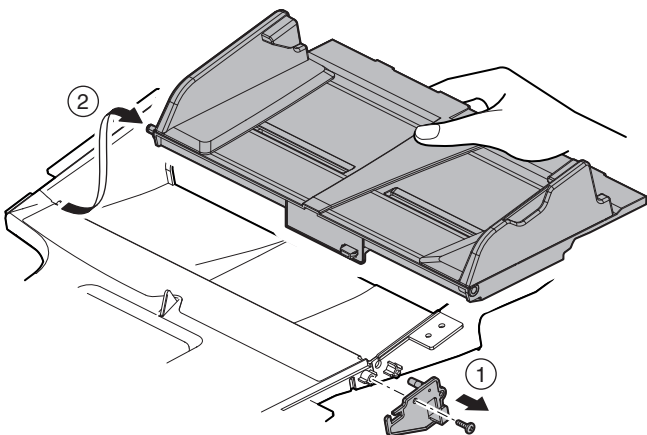


#### (1) DSPF document width sensor

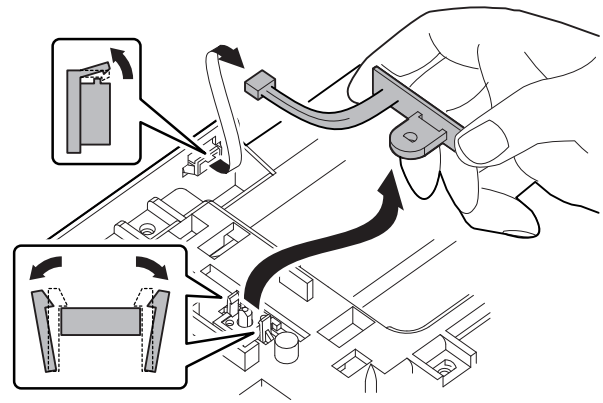
- 1) Remove the front cabinet.
- 2) Remove the rear cabinet.
- 3) Remove the paper feed tray unit.
- 4) Remove the screw, and remove the paper feed tray lower. Disconnect the connector.



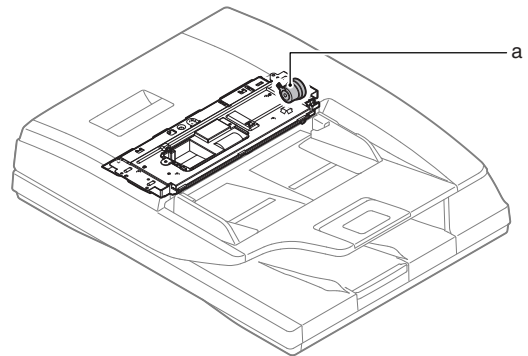
- 5) Remove the screw, and remove the rotation tray shaft. Remove the paper feed rotation tray.



- 6) Disconnect the connector. Remove the pawl, and remove the DSPF document width sensor.

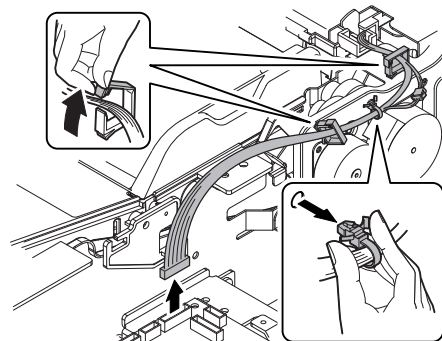


#### C. Paper feed unit

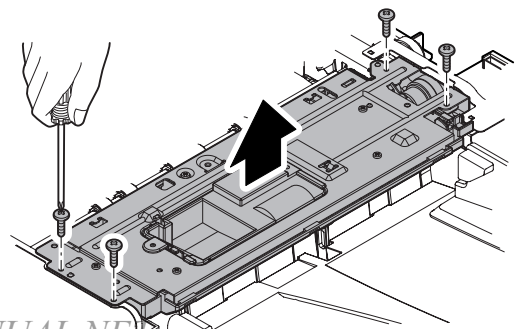


Parts	
a	DSPF paper feed clutch

- 1) Remove the front cabinet.
- 2) Remove the rear cabinet.
- 3) Remove the paper feed cover.
- 4) Disconnect the connector. Open the wire saddle. Remove the snap band.

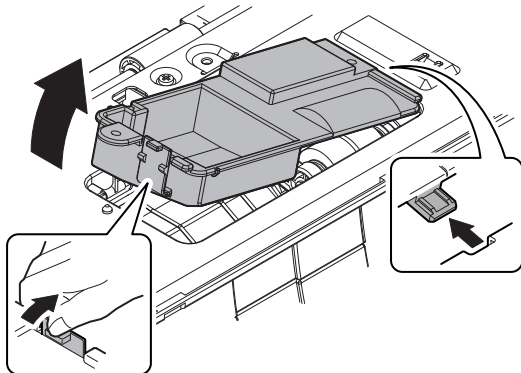


- 5) Remove the screw, and remove the paper feed unit.

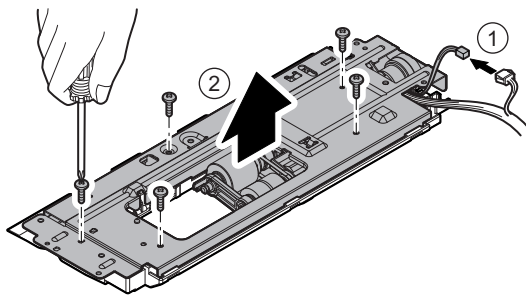


### (1) DSPF paper feed clutch

- 1) Remove the front cabinet.
- 2) Remove the rear cabinet.
- 3) Remove the paper feed cover.
- 4) Remove the paper feed unit.
- 5) Remove the pawl, and remove the paper feed PG upper cover.

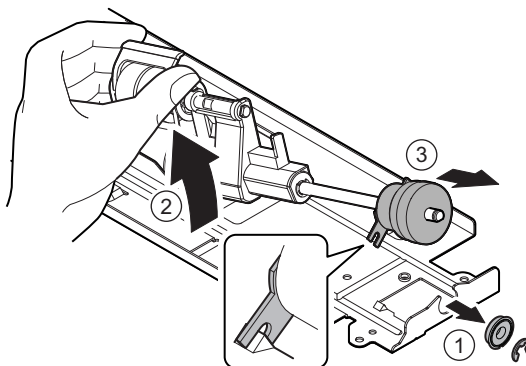


- 6) Disconnect the connector. Remove the screw, and remove the paper feed PG upper supporting plate.

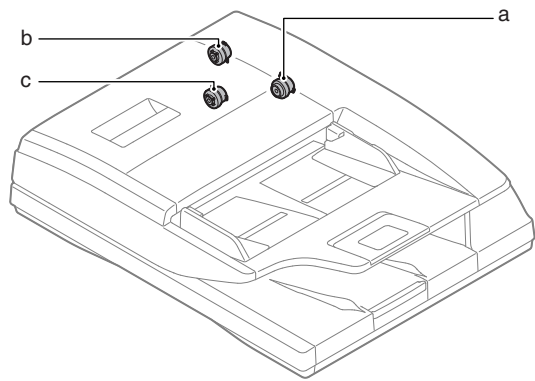


- 7) Remove the E-ring and the bearing. Lift the paper feed roller shaft diagonally, and remove the DSPF paper feed clutch.

\* When assembling, check to insure that the clutch rotation stopper is engaged with the plate.



### D. Transport section

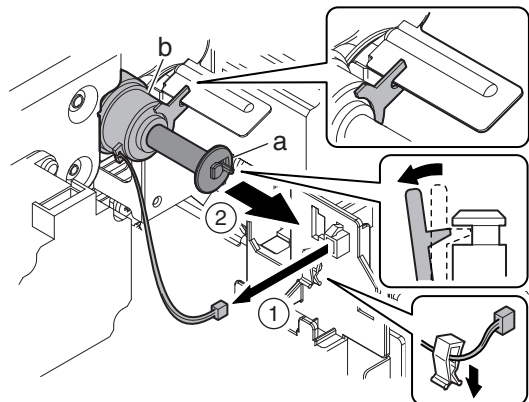


Parts	
a	DSPF No.1 resist roller clutch
b	DSPF transport roller clutch
c	DSPF No.2 resist roller clutch

#### (1) DSPF No.1 resist roller clutch

- 1) Remove the rear cabinet.
- 2) Disconnect the connector. Remove the clutch stopper (a), and remove the DSPF No.1 resist roller clutch (b).

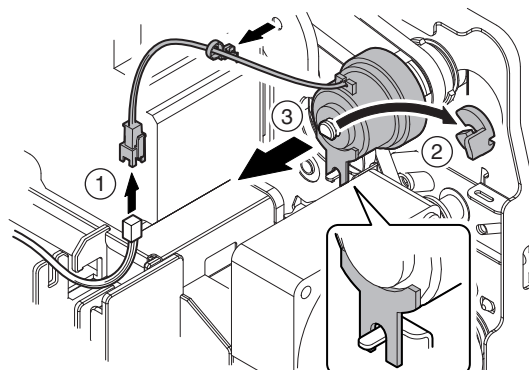
\* When assembling, check to insure that the clutch rotation stopper is engaged with the plate.



#### (2) DSPF transport roller clutch

- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and remove the snap band. Remove the resin E-ring, and remove the DSPF transport roller clutch.

\* When assembling, check to insure that the clutch rotation stopper is engaged with the plate.

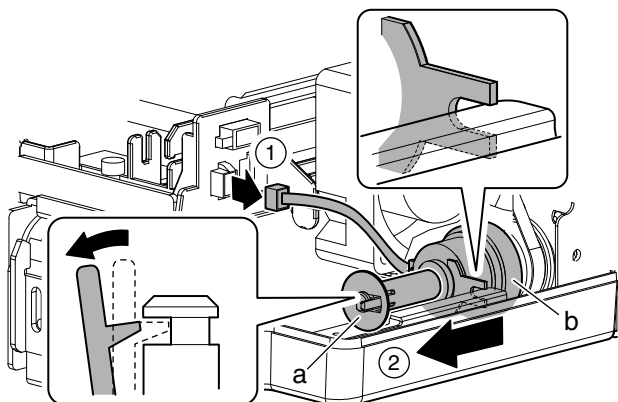




### (3) DSPF No.2 resist roller clutch

- 1) Remove the rear cabinet.
- 2) Disconnect the connector. Remove the clutch stopper (a), and remove the DSPF No.2 resist roller clutch (b).

\* When assembling, check to insure that the clutch rotation stopper is engaged with the plate.

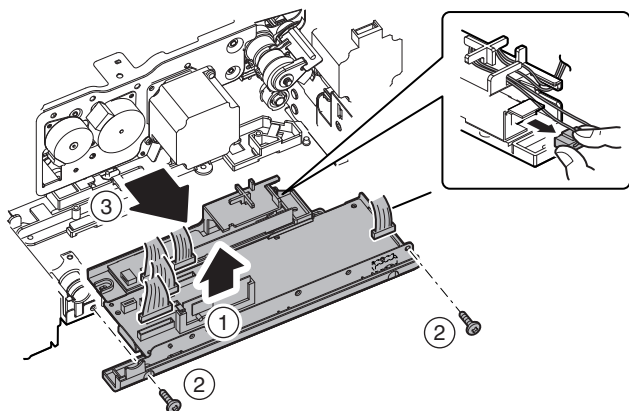


### E. Optical section

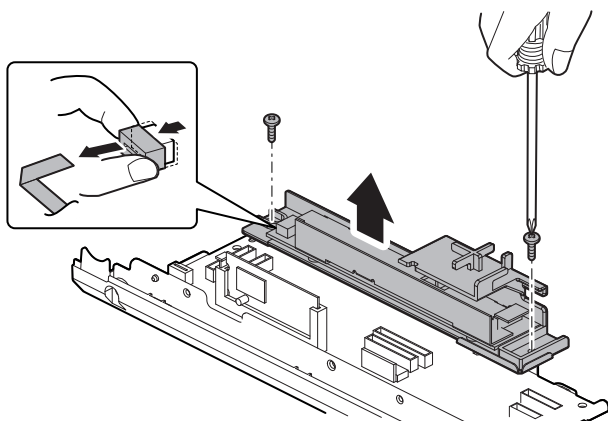
Parts	
a	DSPF CL inverter PWB

#### (1) DSPF CL inverter PWB

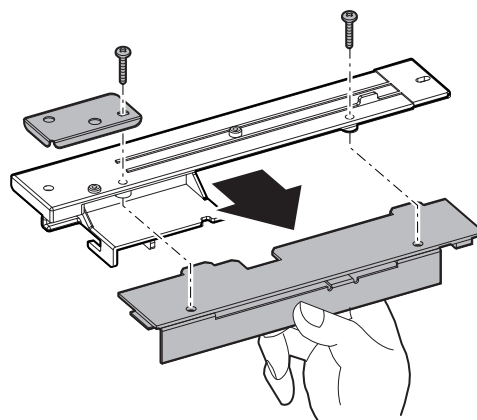
- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and remove the control PWB unit.



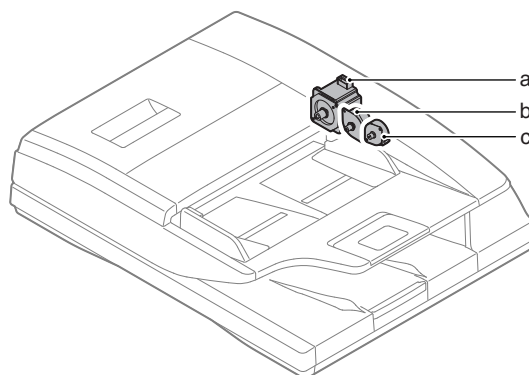
- 3) Disconnect the connector, and remove the screw. Remove the inverter PWB guide.



- 4) Remove the screw, and remove the DSPF CL inverter PWB.

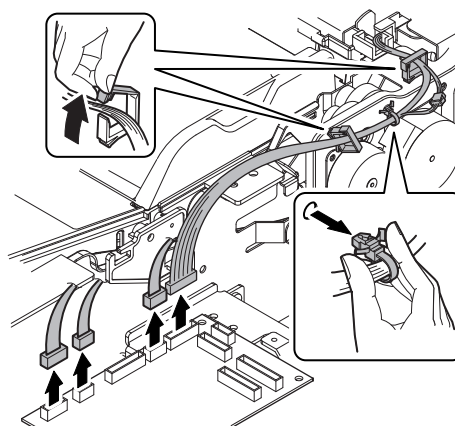


### F. Drive unit

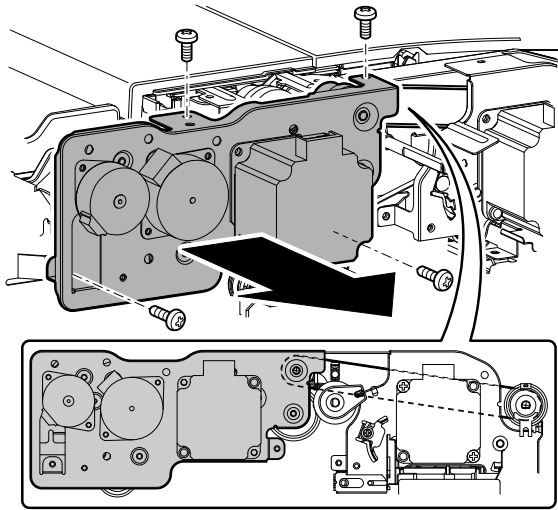


Parts	
a	DSPF paper feed motor
b	DSPF paper exit motor
c	DSPF lift-up motor

- 1) Remove the rear cabinet.
- 2) Remove the DSPF No.1 resist roller clutch.
- 3) Disconnect the connector, and open the edge saddle. Remove the snap band.

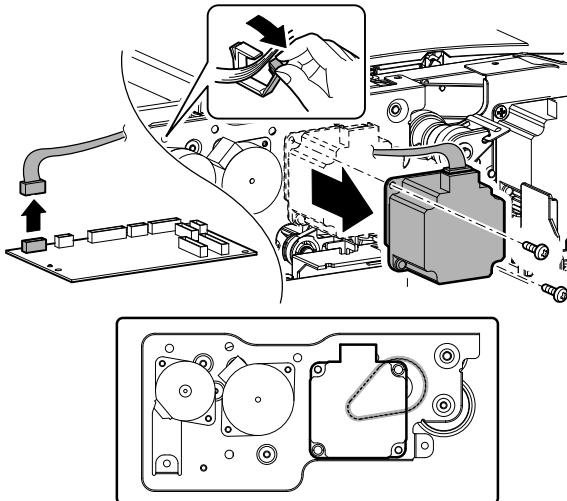


- 4) Remove the screw, and remove the drive unit.



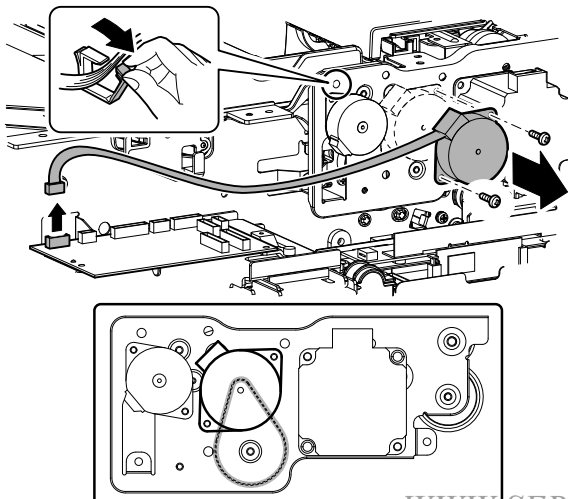
### (1) DSPF paper feed motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and open the edge saddle. Remove the screw, and remove the DSPF paper feed motor.



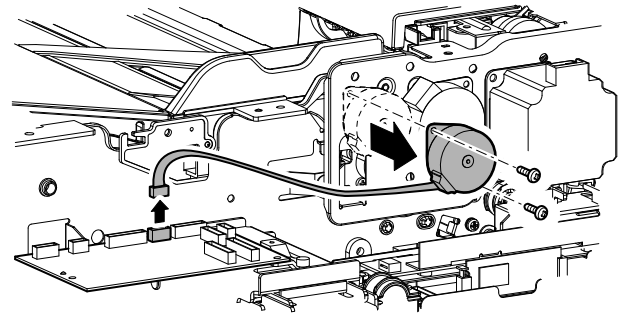
### (2) DSPF paper exit motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and open the edge saddle. Remove the screw, and remove the DSPF paper exit motor.

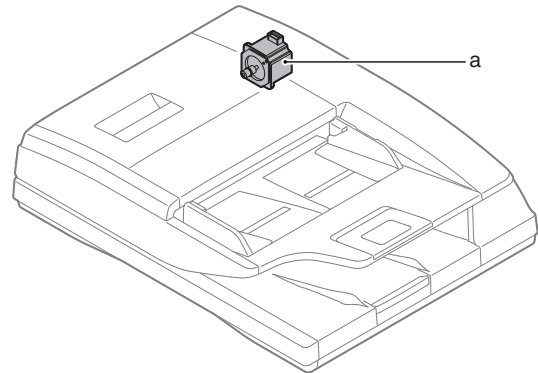


### (3) DSPF lift-up motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector, and open the edge saddle. Remove the screw, and remove the DSPF lift-up motor.

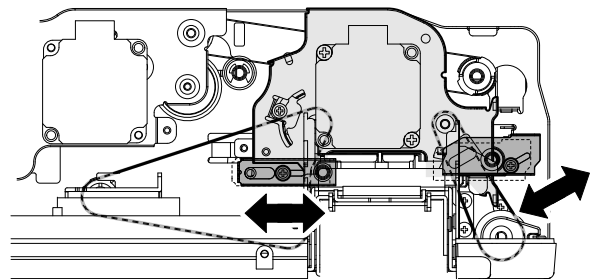


## G. Drive transport unit

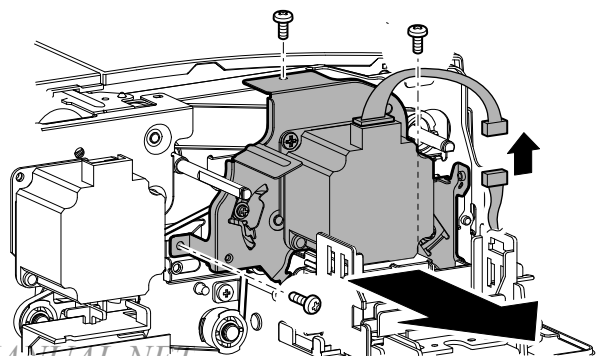


Parts	
a	DSPF transport motor

- 1) Remove the rear cabinet.
- 2) Remove the DSPF No.1 resist roller clutch.
- 3) Remove the DSPF transport roller clutch.
- 4) Remove the DSPF cooling fan motor.
- 5) Loosen the screw, and loosen the belt tension. Tighten the screw.

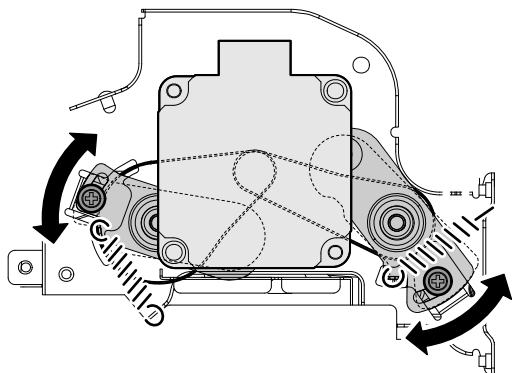


- 6) Remove the screw, and remove the drive transport unit.

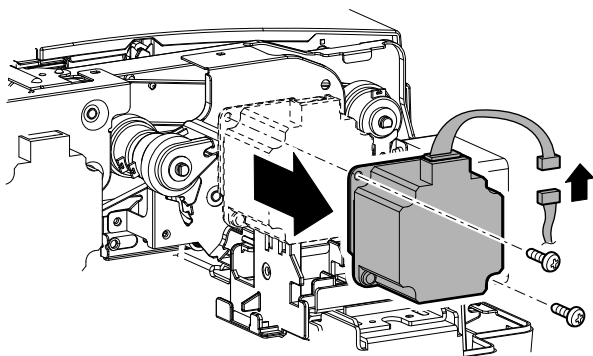


### (1) DSPF transport motor

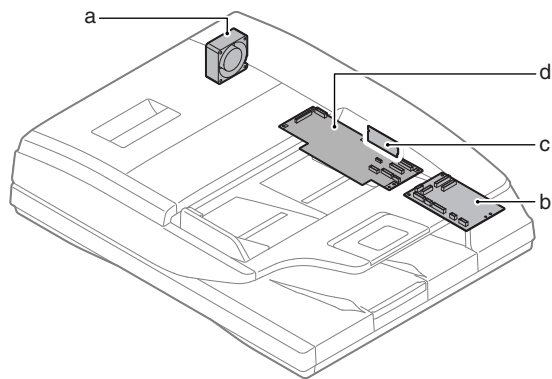
- 1) Remove the rear cabinet. (Refer to "1. Exterior section - A. DSPF unit - (2) Rear cabinet.")
- 2) Loosen the screw, and loosen the belt tension. Tighten the screw.



- 3) Disconnect the connector, and remove the screw. Remove the DSPF transport motor.



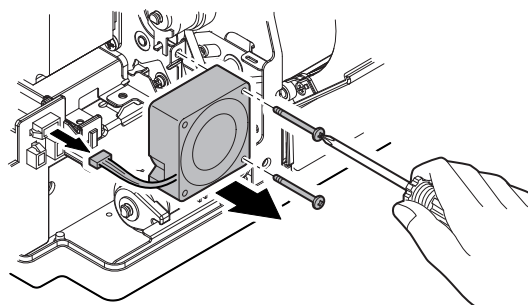
### H. Others



Parts	
a	DSPF cooling fan motor
b	DSPF driver PWB
c	DSPF flash PWB
d	DSPF control PWB

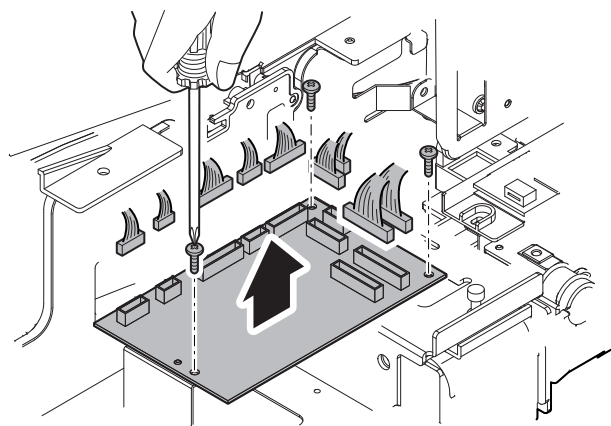
### (1) DSPF cooling fan motor

- 1) Remove the rear cabinet. (Refer to "1. Exterior section - A. DSPF unit - (2) Rear cabinet.")
- 2) Disconnect the connector, and remove the DSPF cooling fan motor.



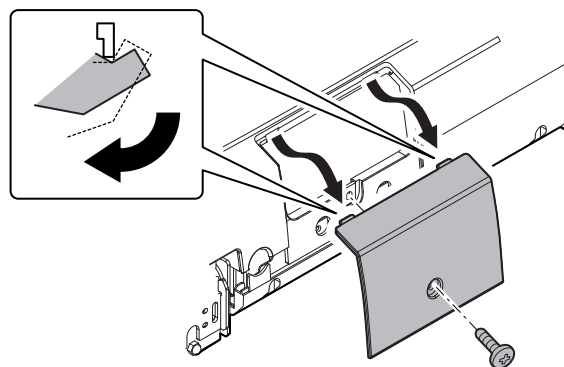
### (2) DSPF driver PWB

- 1) Remove the rear cabinet.
- 2) Disconnect the connector. Remove the screw, and remove the DSPF driver PWB.

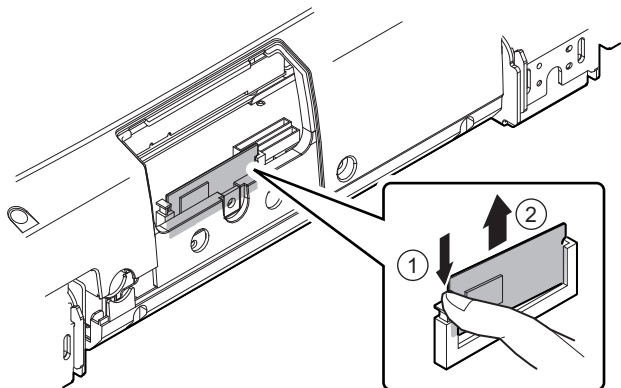


### (3) DSPF flash PWB

- 1) Remove the screw, and remove the ROM cover.

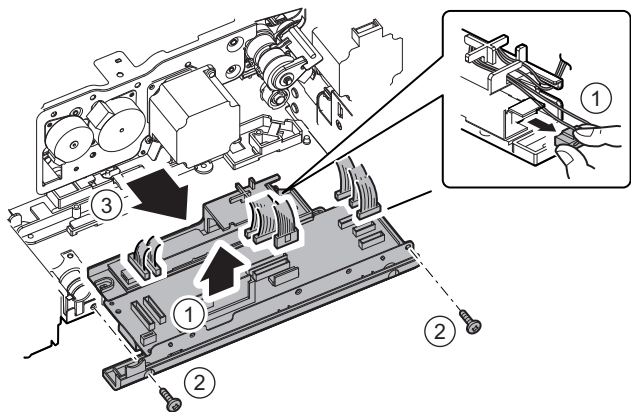


- 2) Release the lock, and remove the DSPF flash PWB.

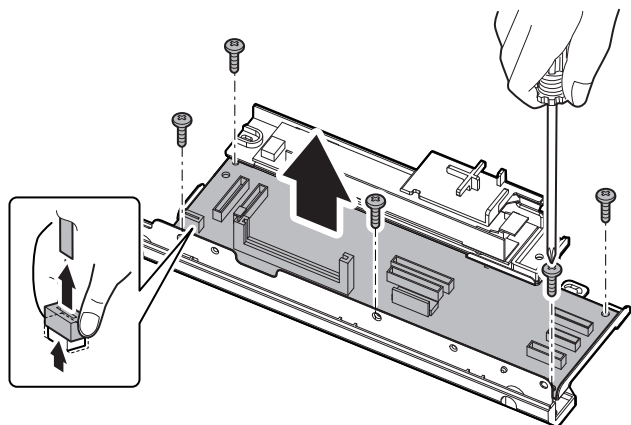


#### (4) DSPF control PWB

- 1) Remove the rear cabinet.
- 2) Remove the DSPF flash PWB.
- 3) Disconnect the connector, and remove the screw. Remove the control PWB unit.



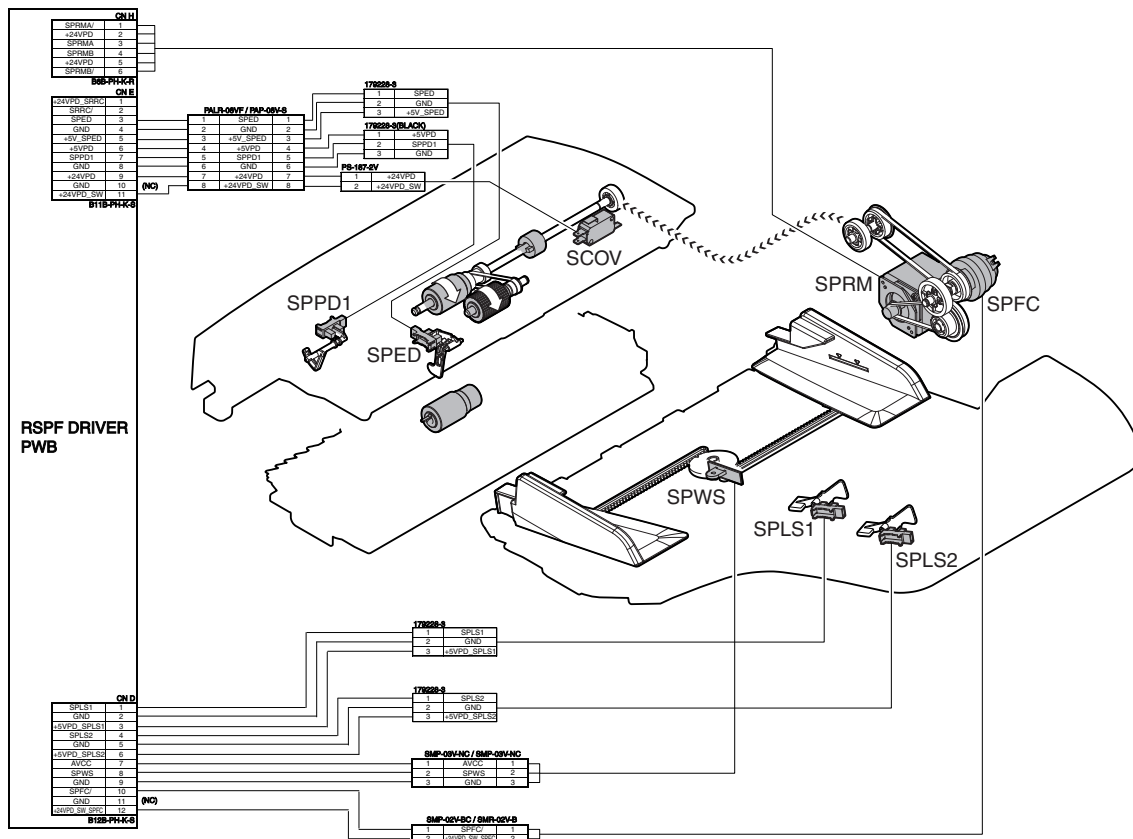
- 4) Disconnect the connector, and remove the screw. Remove the DSPF control PWB.



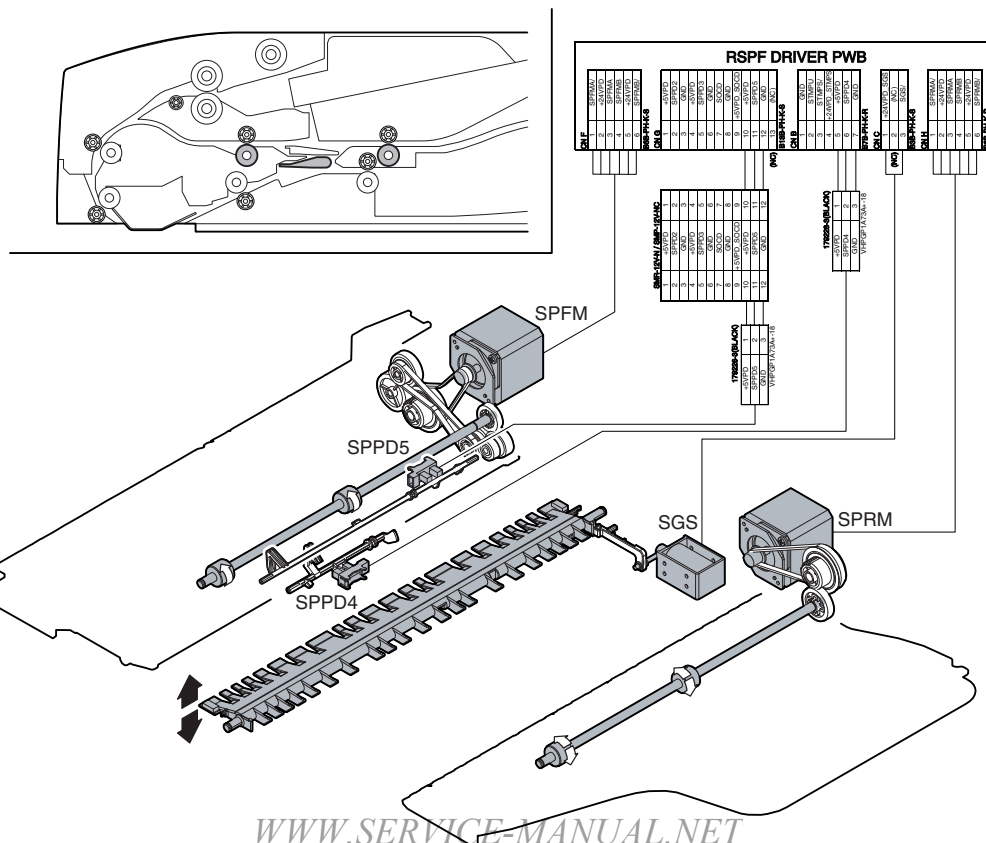
## [D] RSPF SECTION

### 1. Electrical and mechanical relation diagram

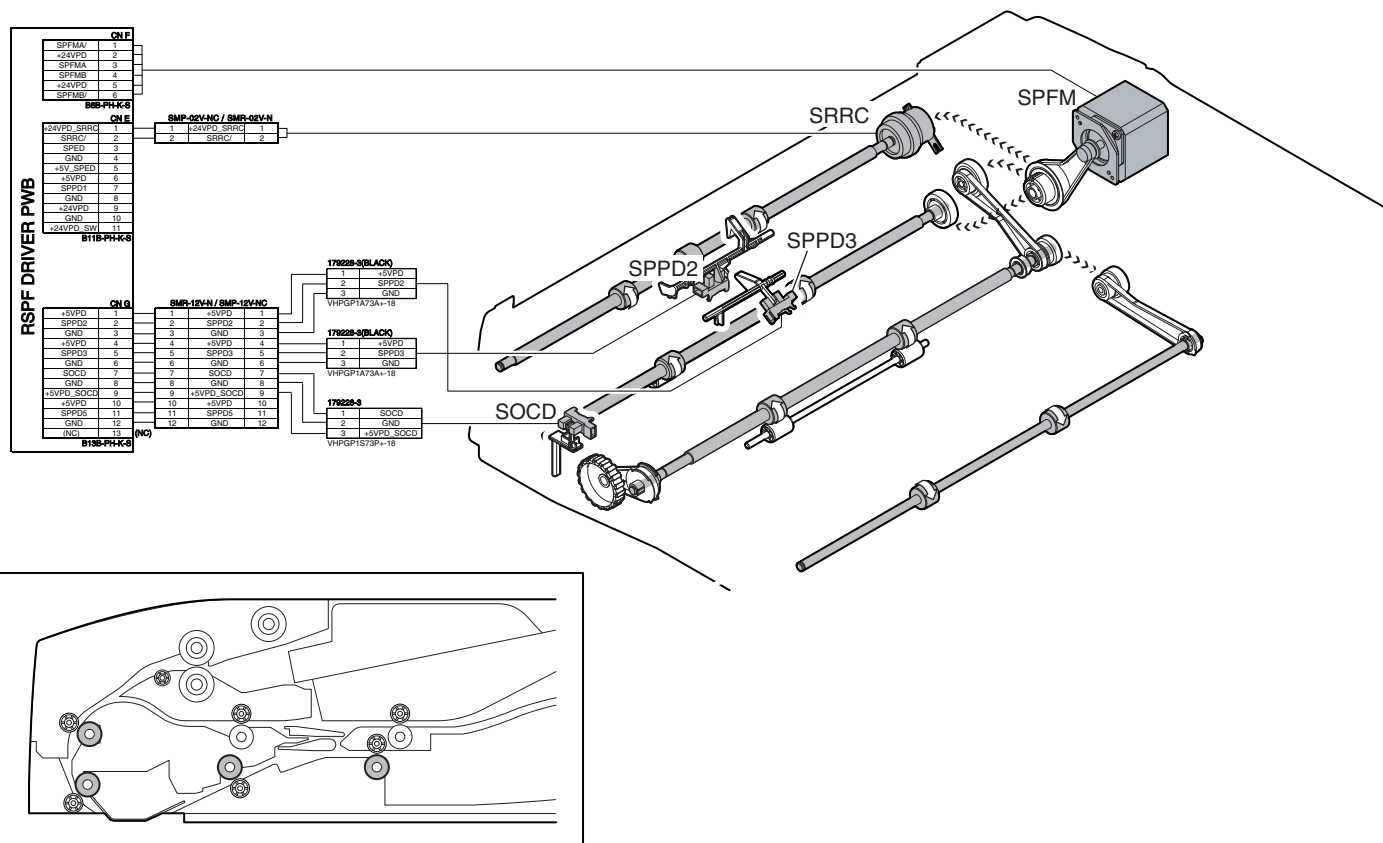
#### A. Paper feed section



#### B. Reversing section



C. Transport section



2. Operational descriptions

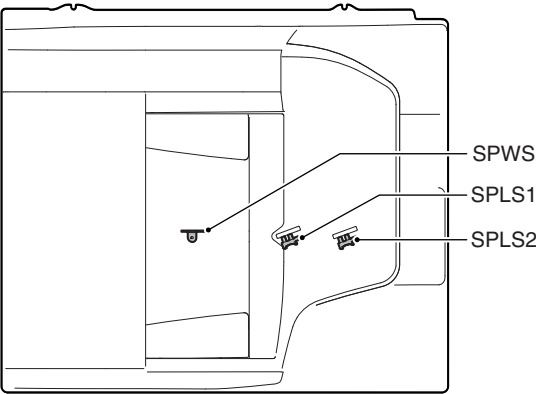
A. Document size detection

(1) Document size detection

Size detection on the document tray

The document width is detected with the SPF document width sensor (SPWS), and the document length is detected with the SPF 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
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

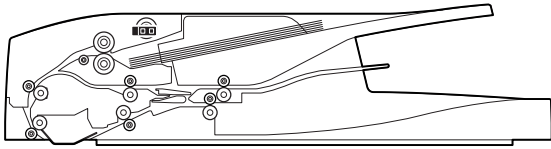




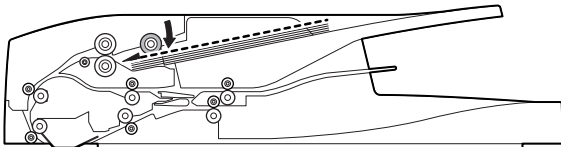
## B. Paper feed transport operation

### (1) Single-side scan

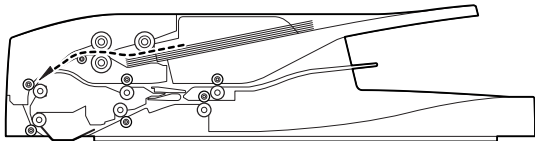
- 1) Document set (Document empty sensor ON)



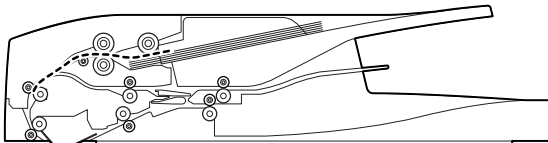
- 2) Preliminary paper feed start (First sheet)  
Pickup roller falling



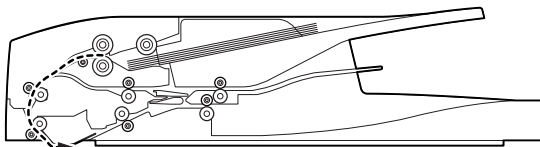
- 3) Preliminary paper feed completion/Paper feed start (First sheet)



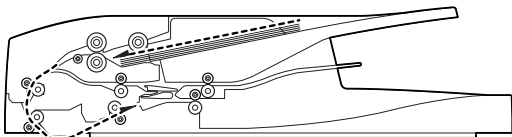
- 4) Resist operation (First sheet)



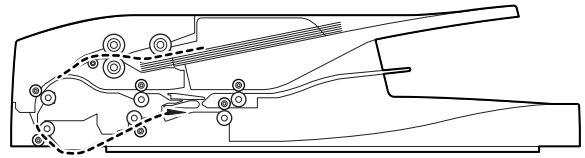
- 5) Scan start (First sheet)



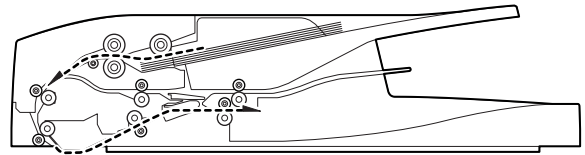
- 6) Preliminary paper feed start (Second sheet)



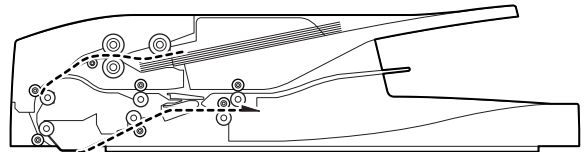
- 7) Preliminary paper feed completion (Second sheet)



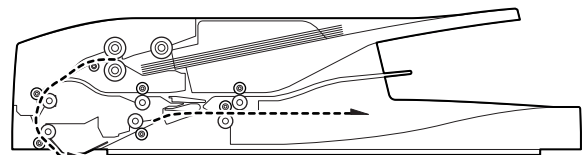
- 8) Paper feed start (Second sheet)



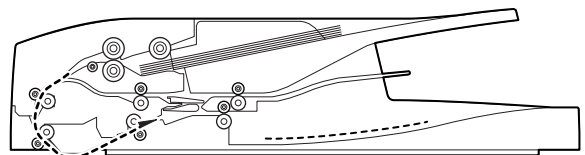
- 9) Scan completion (First sheet)/Resist operation (Second sheet)



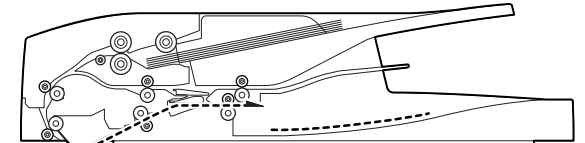
- 10) Scan start (Second sheet)



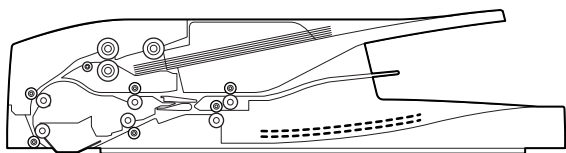
- 11) Paper exit completion (First sheet)



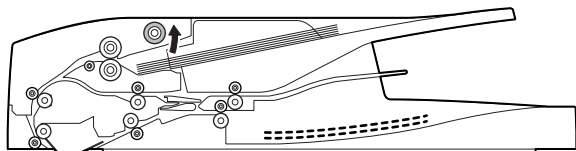
- 12) Scan completion (Second sheet)



13) Paper exit completion (Second sheet)

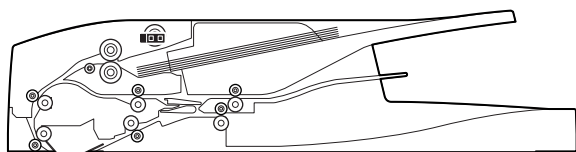


14) Pickup roller rising

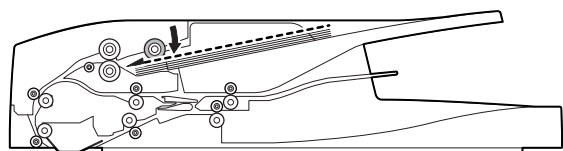


## (2) Duplex scan

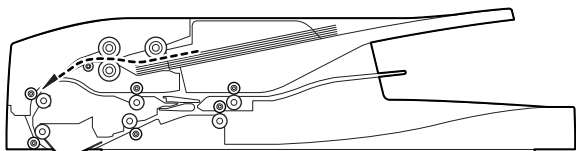
1) Document set (Document empty sensor ON)



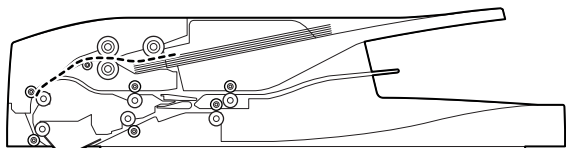
2) Preliminary paper feed start (First sheet)  
Pickup roller falling



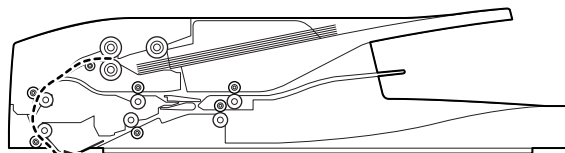
3) Preliminary paper feed completion/Paper feed start (First sheet)



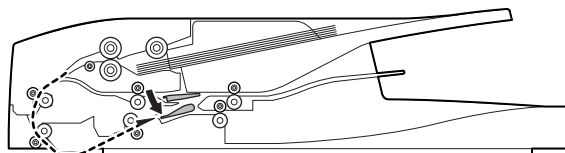
4) Resist operation (First sheet front surface)



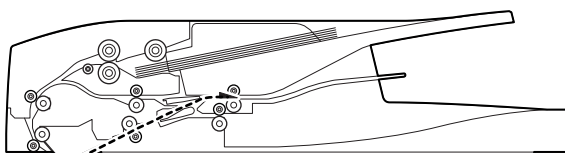
5) Scan start (First sheet front surface)



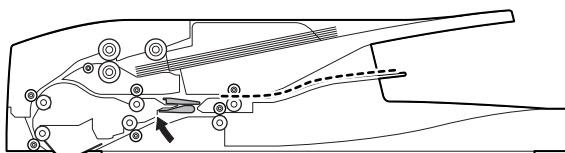
6) Gate falling (First sheet front surface)



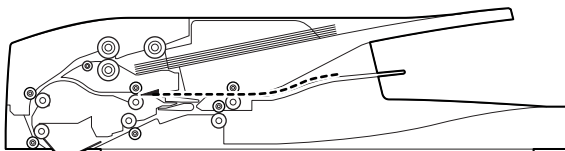
7) Scan completion (First sheet front surface)



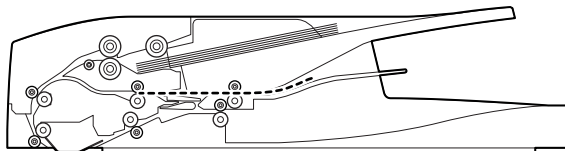
8) Reverse stop  
Gate rising



9) Reverse start

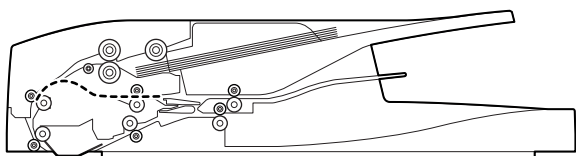


10) Reverse after resist operation

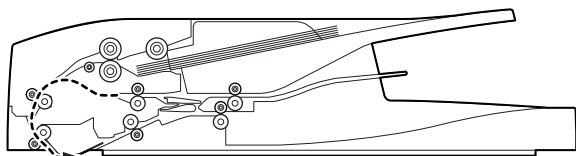




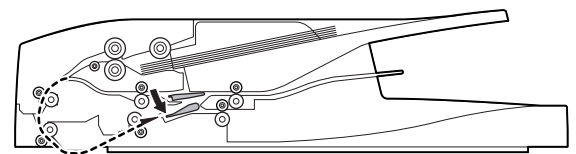
11) Resist operation (First sheet back surface)



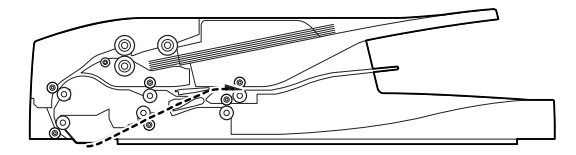
12) Scan start (First sheet back surface)



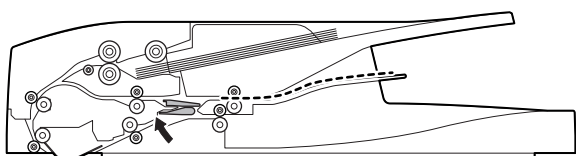
13) Gate falling (First sheet back surface)



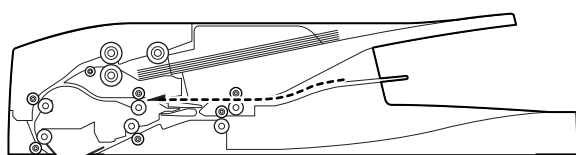
14) Scan completion (First sheet back surface)



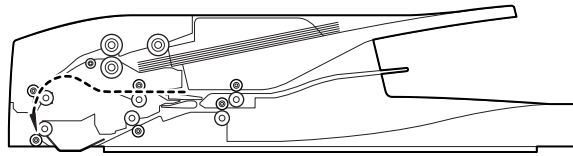
15) Reverse stop gate rising



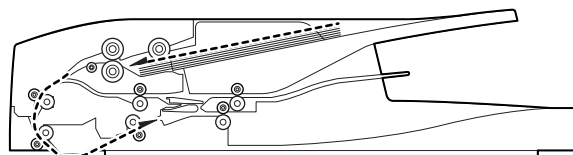
16) Reverse start



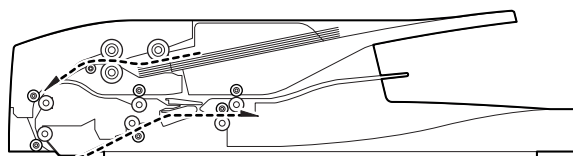
17) Document transport continuation



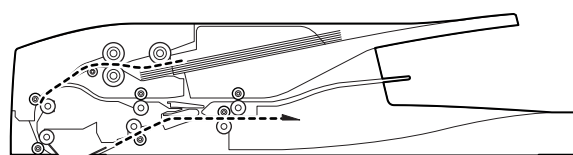
18) Preliminary paper feed start (Second sheet)



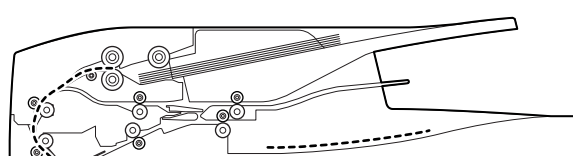
19) Preliminary paper feed completion/Paper feed start (Second sheet)



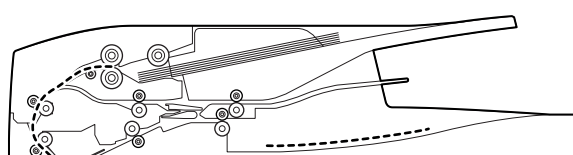
20) Resist operation (Second sheet front surface)



21) Paper exit completion (First sheet)



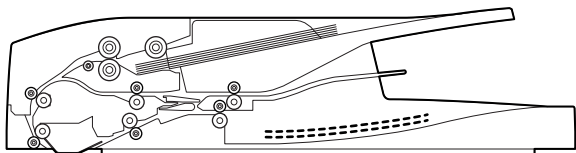
22) Scan start (Second sheet front surface)



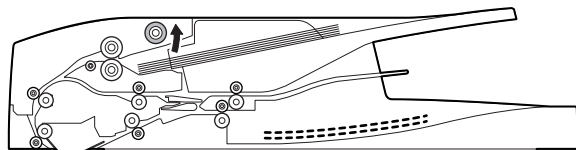
23) Same operations as "5) Scan start (First sheet front surface)" and later.



24) Paper exit completion (Second sheet)

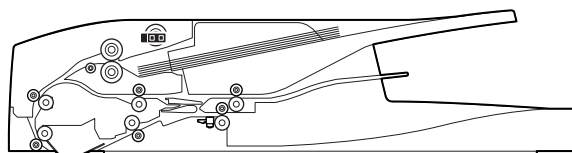


25) Pickup roller rising

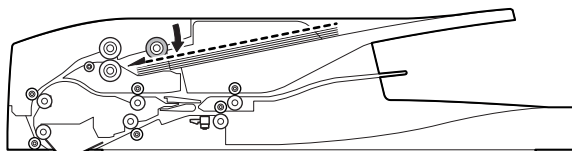


### (3) Stamping operation

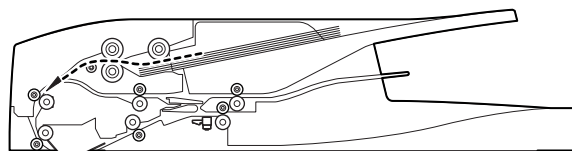
1) Document set (Document empty sensor ON)



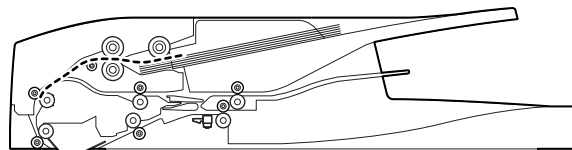
2) Preliminary paper feed start (First sheet)  
Pickup roller falling



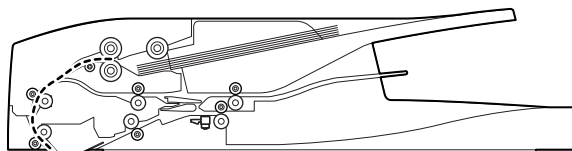
3) Preliminary paper feed completion/Paper feed start (First sheet)



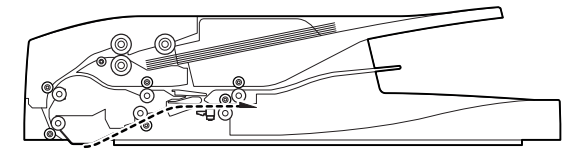
4) Resist operation (First sheet)



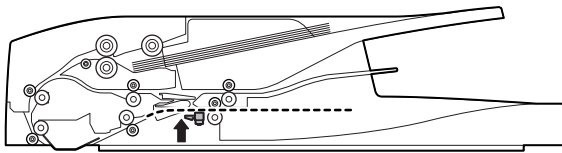
5) Scan start (First sheet)



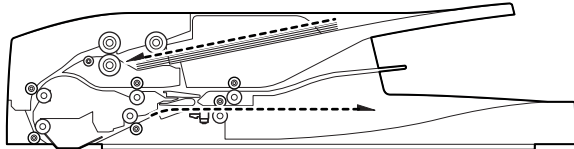
6) Scan completion (First sheet)



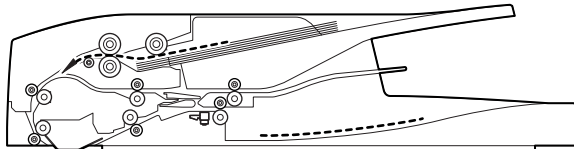
7) Stop at the stamping position/Stamping operation (First sheet)



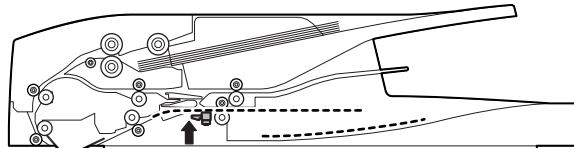
8) Paper exit start (First sheet)/Preliminary paper feed start (Second sheet)



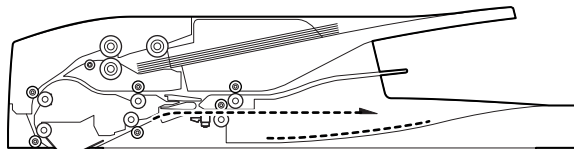
9) Paper exit completion (First sheet)



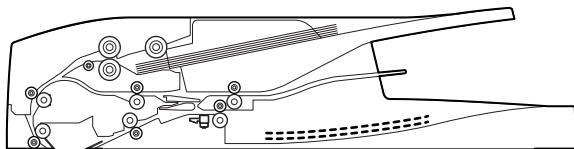
10) Stop at the stamping position/Stamping operation (Second sheet)



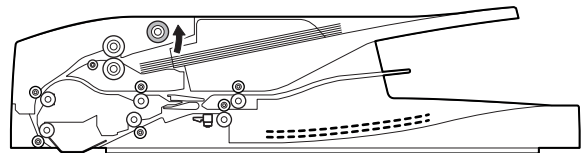
11) Paper exit start (Second sheet)



12) Paper exit completion (Second sheet)



13) Pickup roller rising



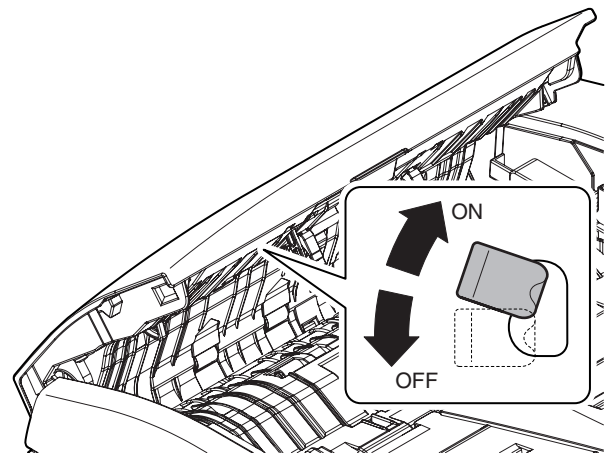
### C. RSPF mixed document select switch

This machine is provided with the random paper feed function which allows feeding documents of different sizes.

The random paper feed can be used only for single surface document of the following combinations.

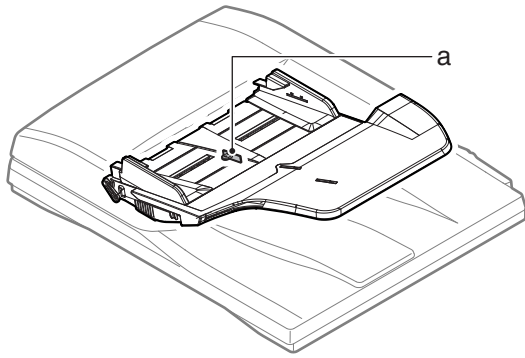
Destination	Combinations for random paper feed
AB series	A3 and B4
	B4 and A4R
	A4 and B5
	B5 and A5
Inch width	8.5" and 11" width

To enable the mixed document mode, set the mixed document select switch to ON. To disable it, turn it OFF.



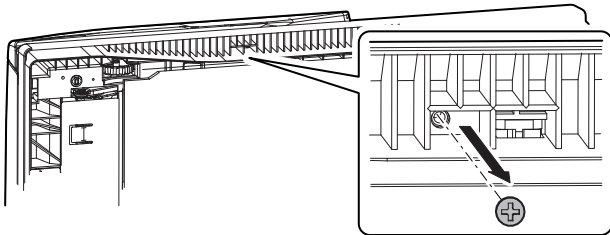
### 3. Disassembly and assembly

#### A. Document tray unit

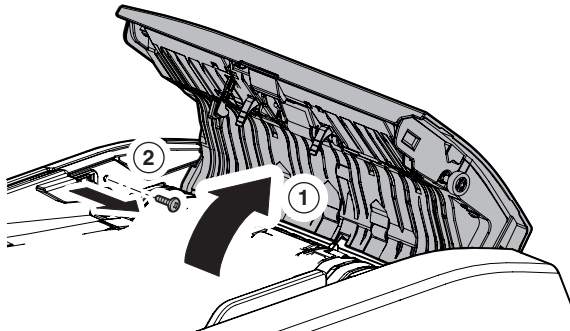


Parts	
a	SPF document with sensor

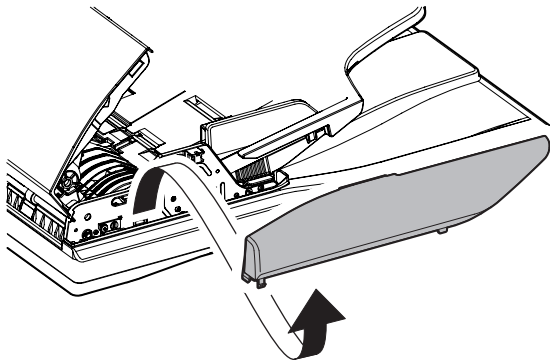
- 1) Remove screw from the bottom of the RSPF unit.



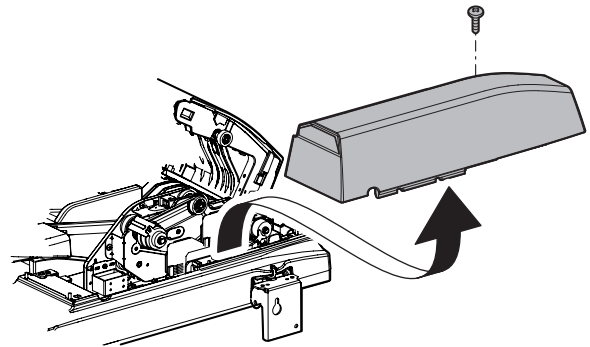
- 2) Open the paper feed unit, and remove the screw.



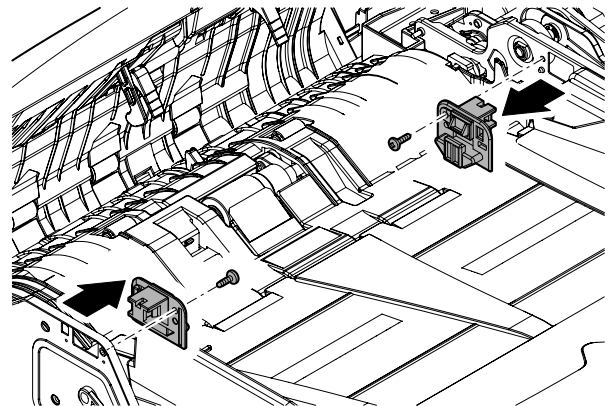
- 3) Remove the front cabinet.



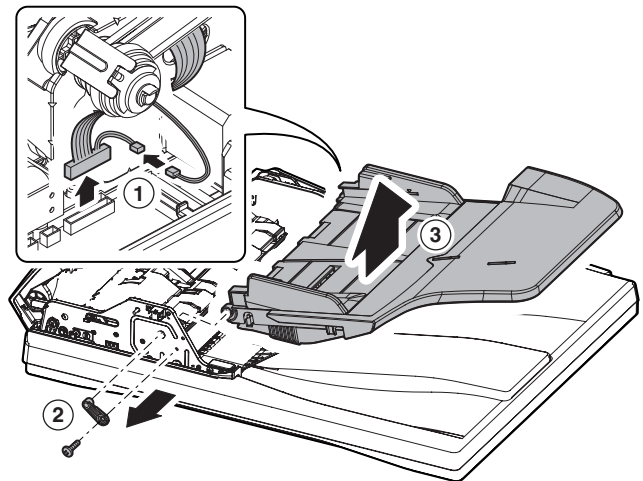
- 4) Remove the rear cabinet.



- 5) Remove the stopper.

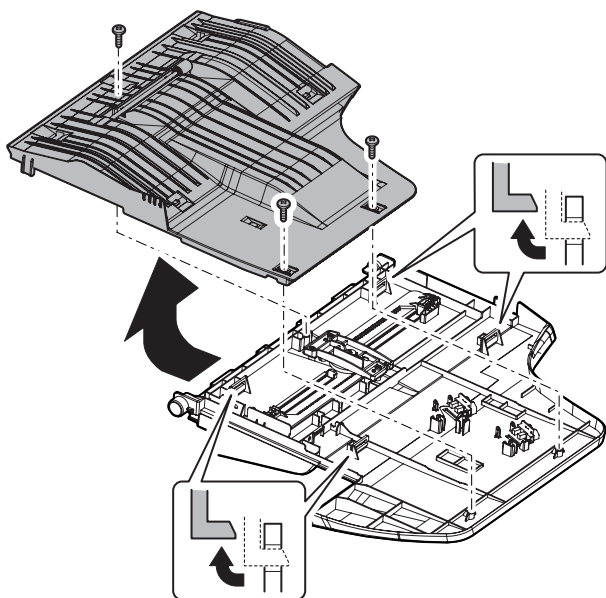


- 6) Disconnect the connector. Remove the paper feed PG holder, and remove the document tray unit.

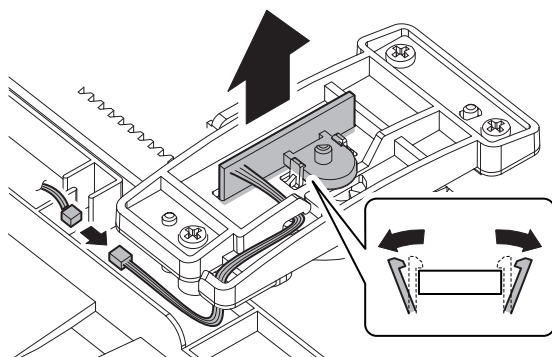


### (1) SPF document with sensor

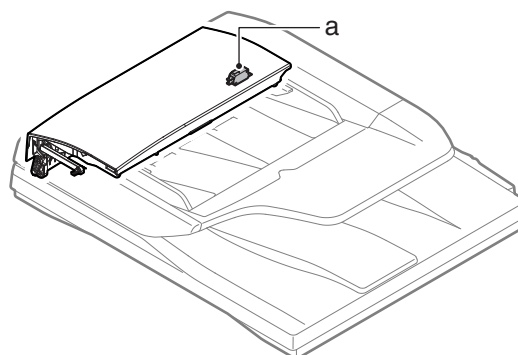
- 1) Remove the document tray unit.
- 2) Remove the document tray lower.



- 3) Remove the SPF document width sensor.

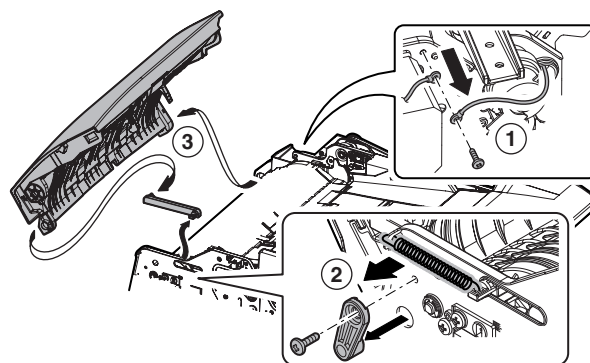


### B. Paper feed unit



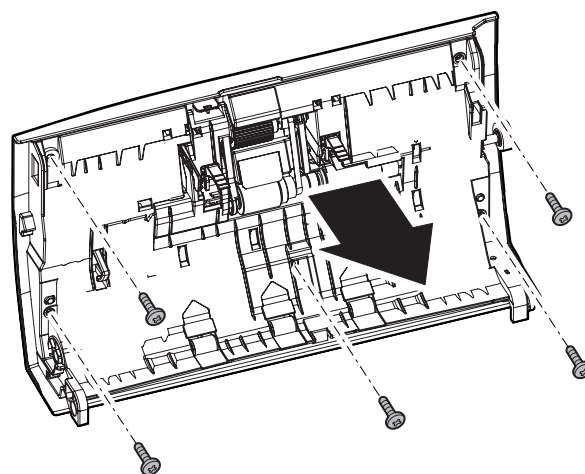
Parts	
a	SPF cover SW

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the earth wire. Remove the spring and the paper feed PG holder, and remove the paper feed unit and the upper PG link arm.

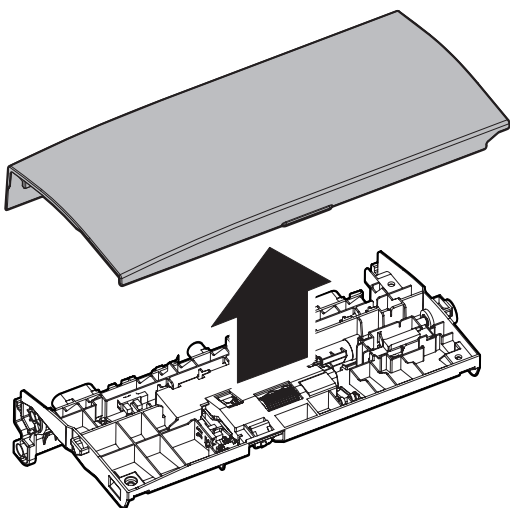


### (1) SPF cover SW

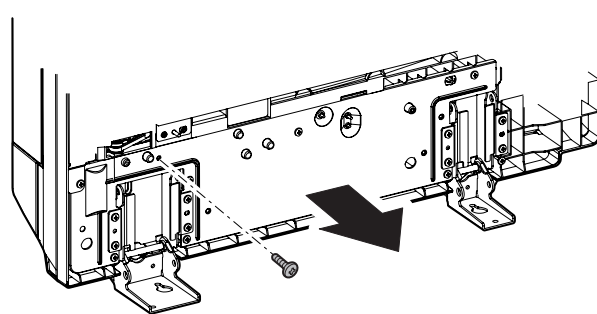
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the paper feed unit.
- 4) Remove the screws.



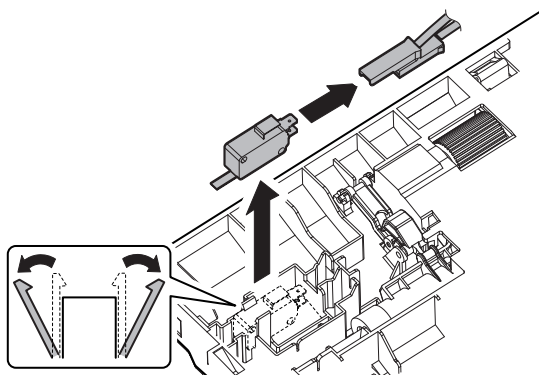
5) Remove the upper cover.



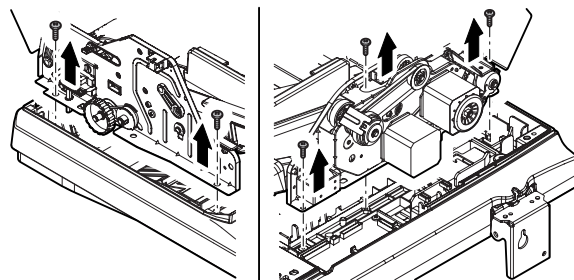
3) Remove screw from the bottom of the RSPF unit.



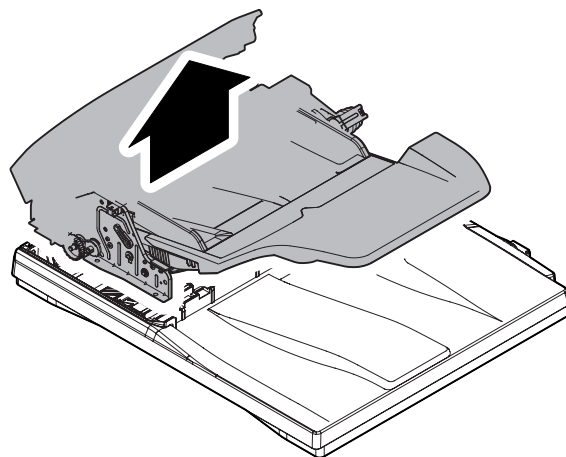
6) Remove the SPF cover SW.



4) Remove the screws.

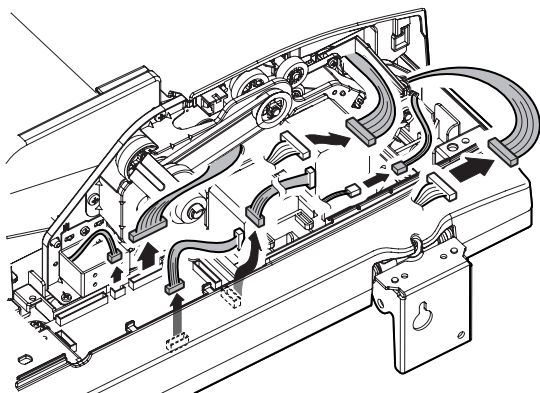


5) Remove the transport unit.



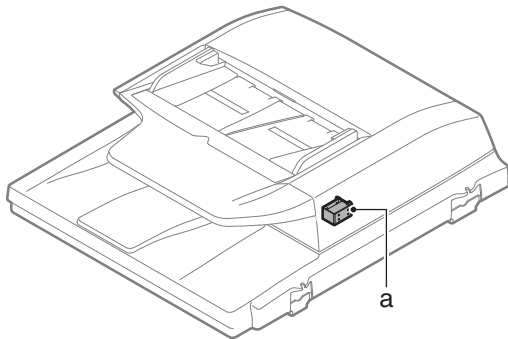
### C. Transport unit

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the connector.





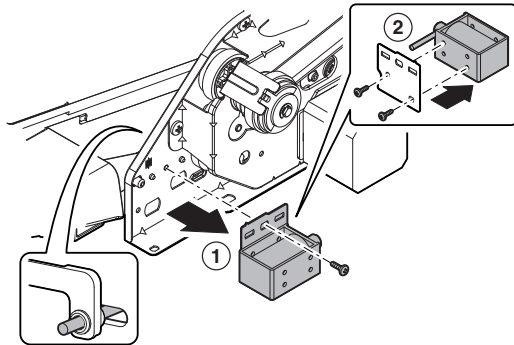
## D. Reversing section



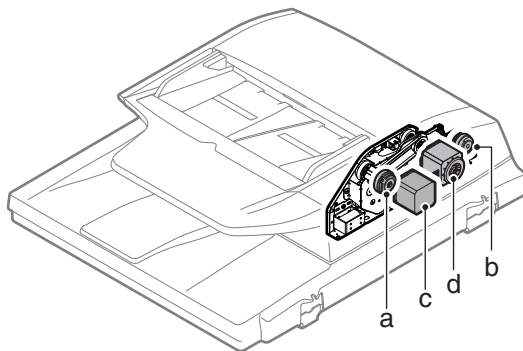
Parts	
a	Document paper exit gate solenoid

### (1) Document paper exit gate solenoid

- 1) Remove the front cabinet and the rear cabinet.
  - 2) Remove the transport unit.
  - 3) Remove the solenoid adjustment plate. Remove the SPF document paper exit gate solenoid.
- \* When installing, insert the pin of the SPF document paper exit gate solenoid into the gate.

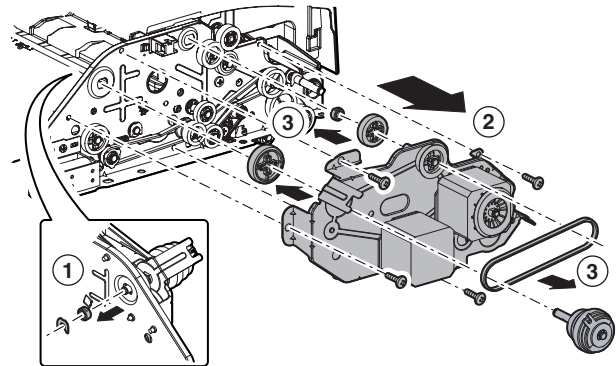


## E. Drive unit



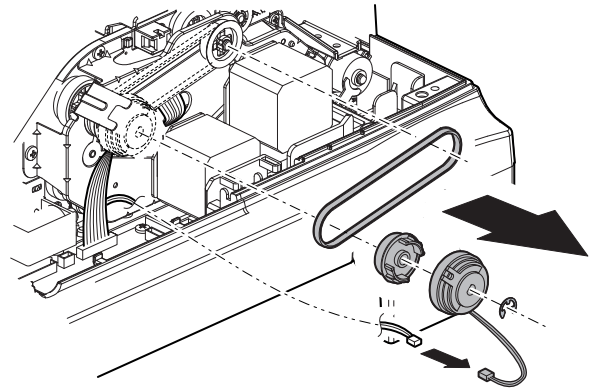
Parts	
a	SPF paper feed clutch
b	SPF resist roller clutch
c	SPF paper feed reverse motor
d	SPF transport motor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the document tray unit.
- 4) Remove the resin E-ring and the bearing. Remove the drive unit, and remove each part.



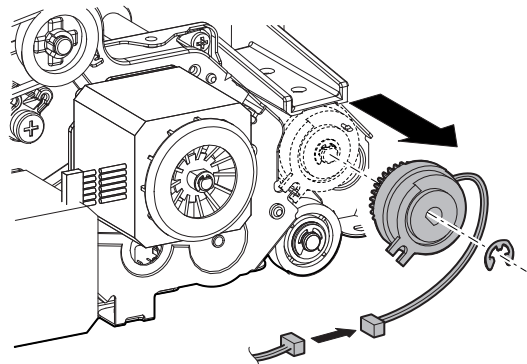
### (1) SPF paper feed clutch

- 1) Remove the rear cabinet.
- 2) Remove the E-ring, and remove the SPF paper feed clutch.



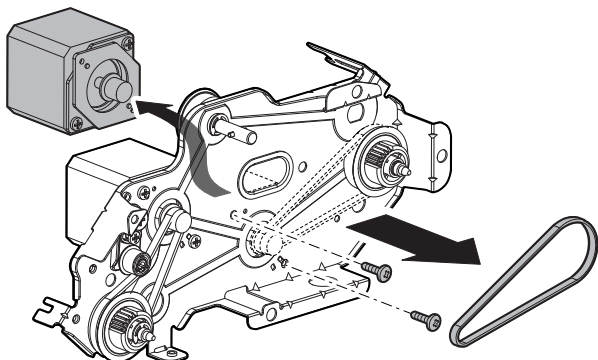
### (2) SPF resist roller clutch

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the E-ring, and remove the SPF resist roller clutch.



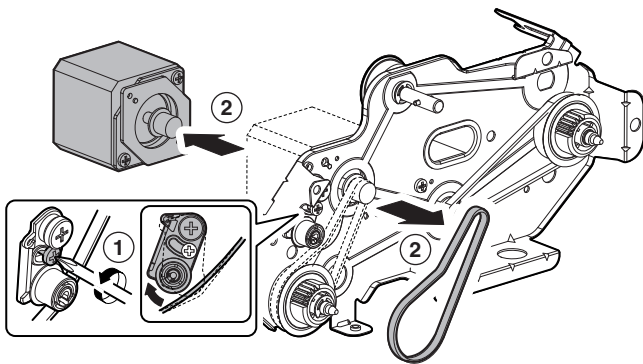
### (3) SPF paper feed reverse motor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the document tray unit.
- 4) Remove the drive unit.
- 5) Remove the SPF paper feed reverse motor.

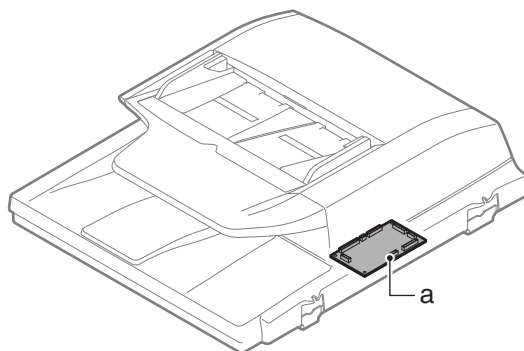


### (4) SPF transport motor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the transport unit.
- 3) Remove the document tray unit.
- 4) Remove the drive unit.
- 5) Loosen the screw of the tension holder to reduce the tension of the belt. Remove the SPF transport motor.



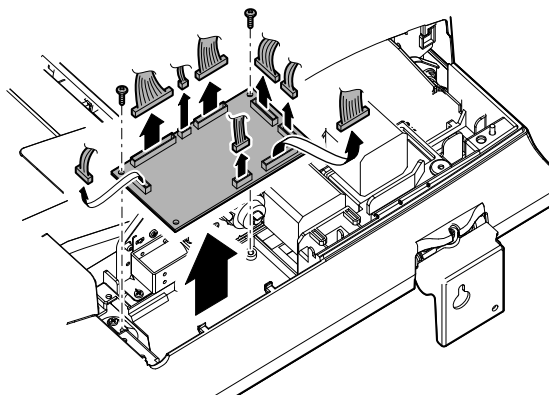
## F. Base tray section



Parts	
a	RSPF drive PWB

### (1) RSPF drive PWB

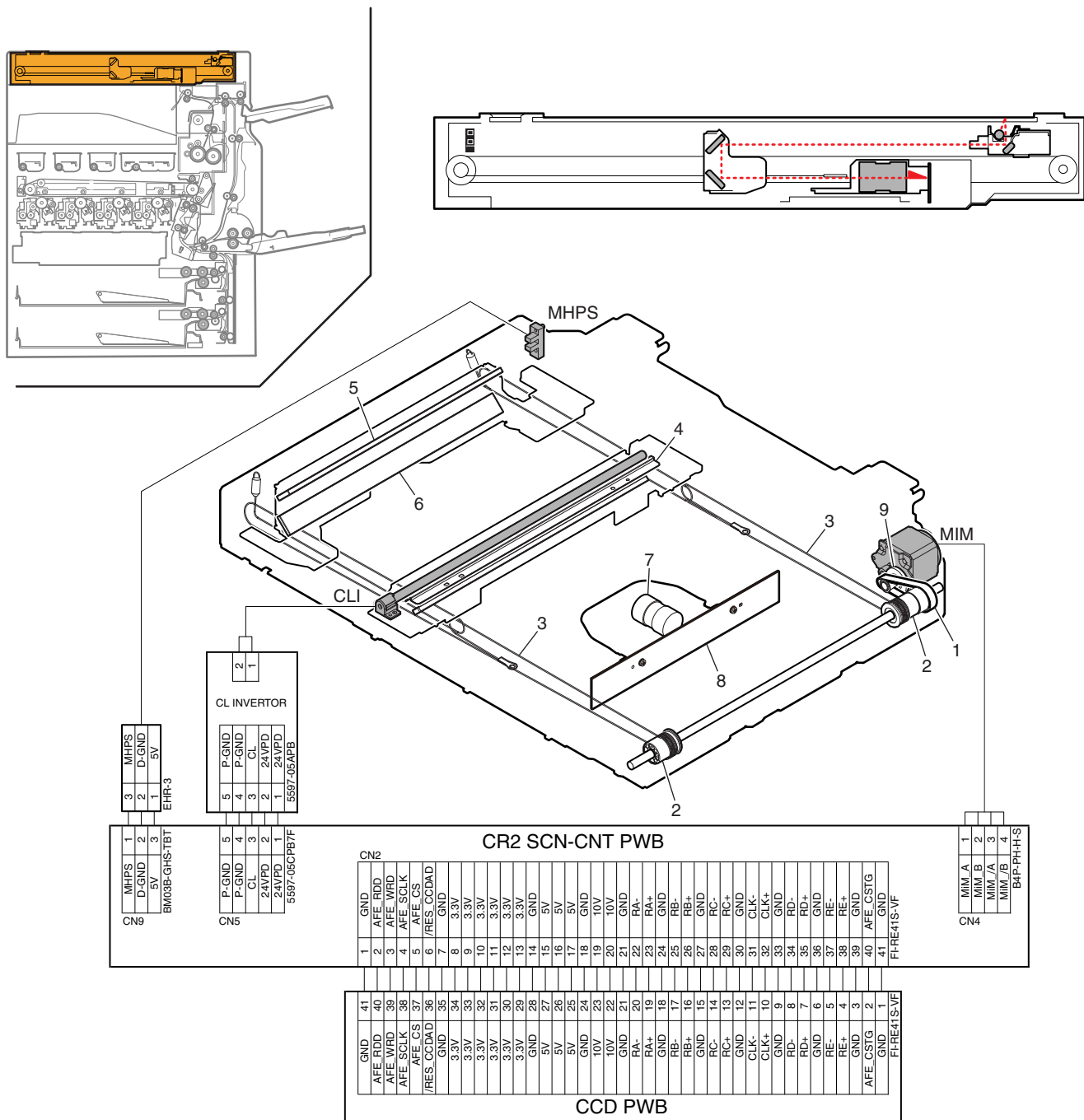
- 1) Remove the rear cabinet.
- 2) Remove the RSPF drive PWB.





# [E] SCANNER SECTION

## 1. Electrical and mechanical relation diagram



## 2. Operational descriptions

### A. Outline

This section performs the following functions.

- 1) Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).
- 2) The image signals (analog) are converted into 10bit digital signals by the A/D converter.
- 3) The image signals (digital) are sent to the image process section (scanner control PWB).

### B. Detail description

#### (1) Optical section drive

The optical section drive power is transmitted from the scanner motor (MIM) to the drive pulley and the wire through the belt, to drive the copy lamp unit and the mirror base which are attached by the drive wires.

The scanner motor (MIM) is controlled by the drive signal sent from the scanner control PWB.

#### (2) Scanner lamp drive

The scanner lamp (CLI) is driven by the scanner lamp drive voltage generated in the CL inverter PWB according to the control signal sent from the scanner control PWB.

#### (3) Image scan/color separation

Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).

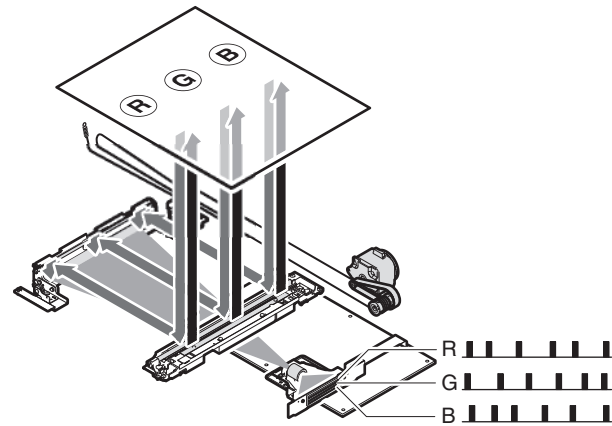
The color components of document images are extracted to R, G, and B separately by the three kinds of CCD elements (R,G,B).

The red CCD extracts the red component of document images, the green CCD green the components, and the blue CCD the blue components. This operation is called the color separation.

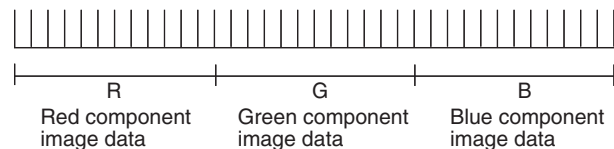
The CCD unit looks like one unit, but it includes three kinds of CCD elements, R, G, and B.

The document scan in the main scanning direction is performed by the CCD element. The document scan in the sub scanning direction is performed by shifting the scanner unit with the scanner motor. Document images are optically reduced by the lens and reflected to the CCD.

The scan resolution is 600 dpi.

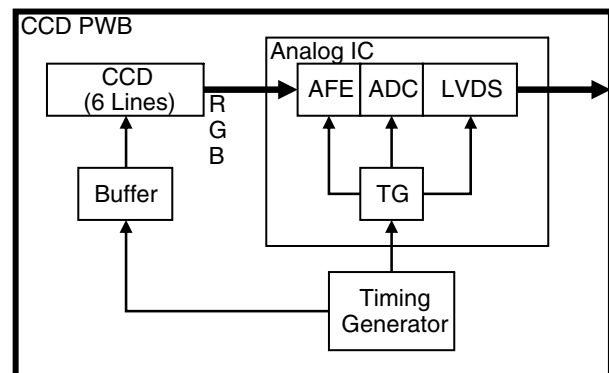


(Image data for 1 line)



#### (4) Image signal A/D conversion

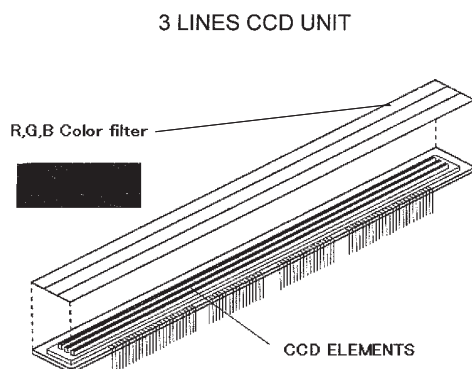
- 1) The image signal (analog) for each of R, G, and B is converted into 10bit digital signal by the A/D converter. Each color pixel has 10bit information.
- 2) The 10bit digital image signals of R, G, B are sent to the image process section.



#### (5) Zooming operation

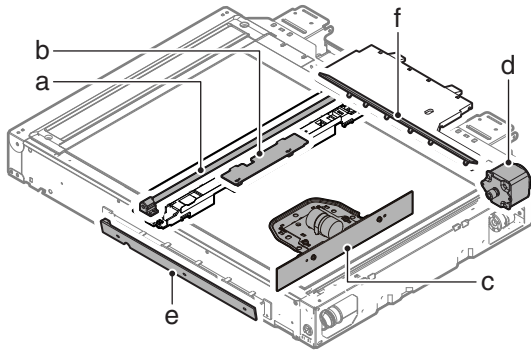
Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction.

Zooming in the main scanning direction is not performed optically, but performed with the image process technology (by the software).



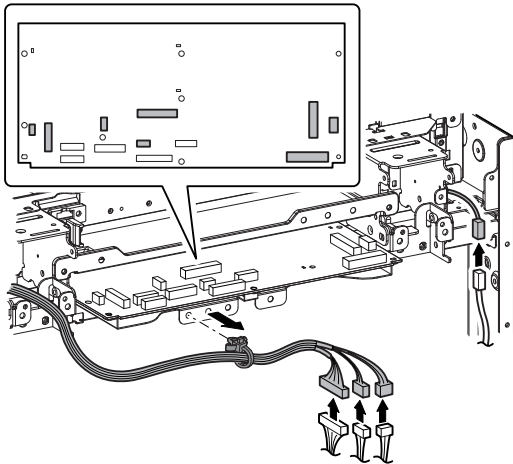
### 3. Disassembly and assembly

#### A. Scanner unit

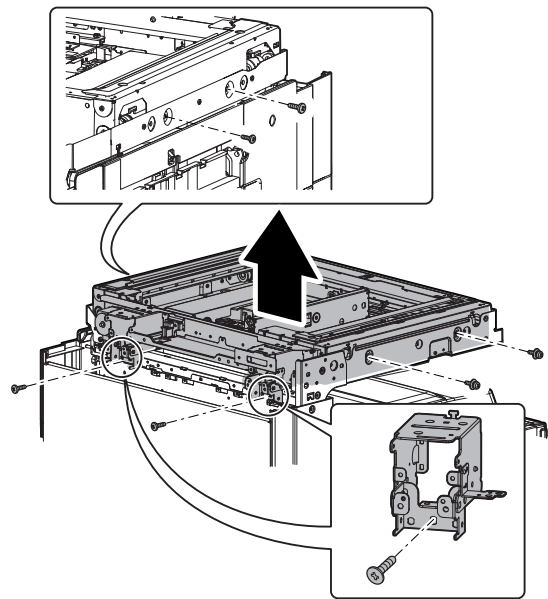


Parts	
a	Scanner lamp
b	CL inverter PWB
c	CCD unit
d	Scanner motor
e	Document detection light receiving PWB
f	Document detection light emitting PWB

- 1) Remove the upper cabinet rear cover and the upper cabinet rear.
- 2) Remove the table glass and the SPF glass.
- 3) Remove the upper cabinet right and the upper cabinet left..
- 4) Disconnect the connector, and remove the snap band.

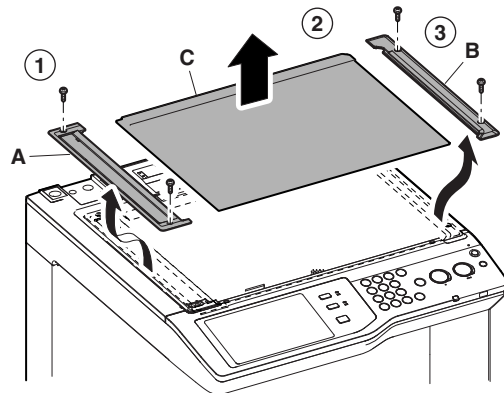


- 5) Remove the screw, and remove the scanner unit.

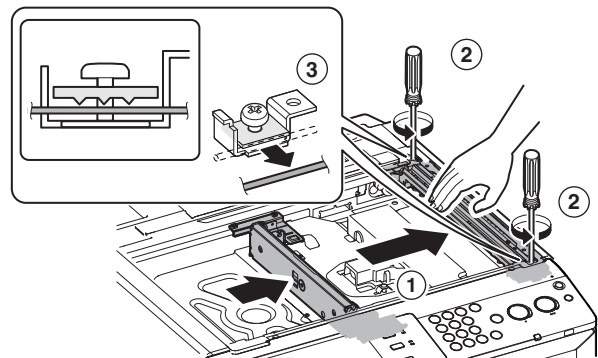


#### (1) Scanner lamp/CL inverter PWB

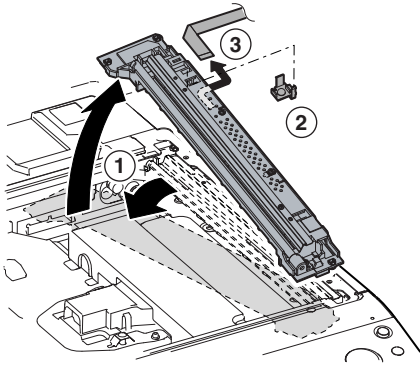
- 1) Remove the SPF glass (A). Remove the glass holder (B) and the table glass (C).



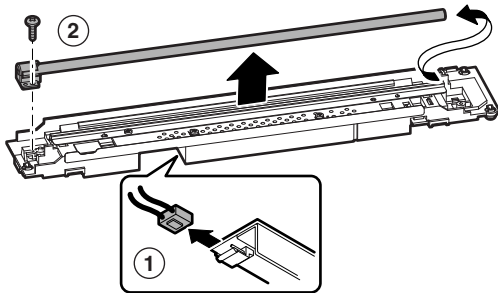
- 2) Shift the lamp unit to the right end. Loosen the screw, and remove the wire.



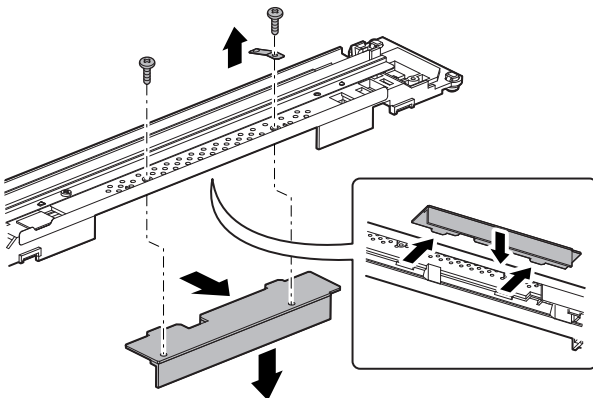
- 3) While rotating the lamp unit, lift it. Remove the harness holder and the flat cable, and remove the lamp unit.



- 4) Disconnect the connector, and remove the lamp.

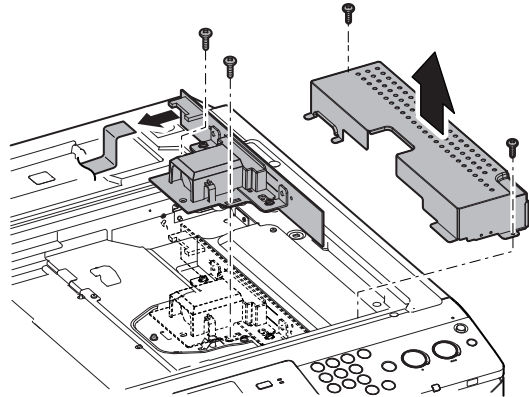


- 5) Remove the CL inverter PWB.



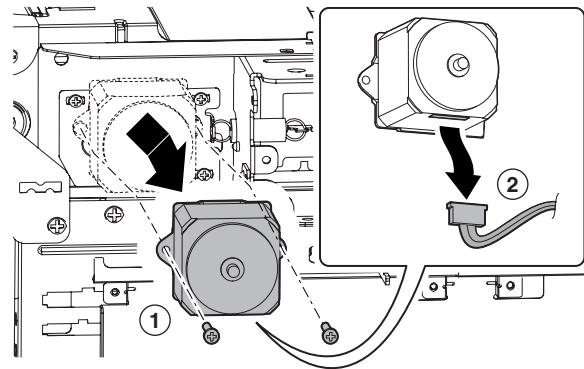
## (2) CCD unit

- 1) Remove the dark box cover. Disconnect the connector, and remove the CCD unit.



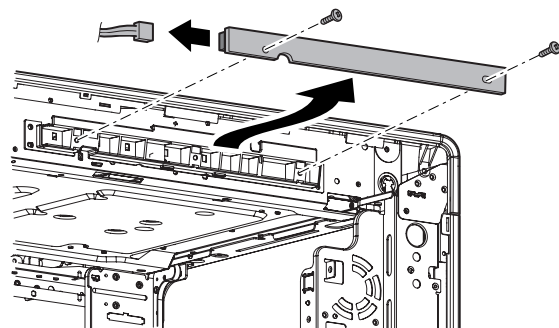
## (3) Scanner motor

- 1) Remove the upper cabinet rear cover and the upper cabinet rear.
- 2) Disconnect the connector and remove the scanner motor.



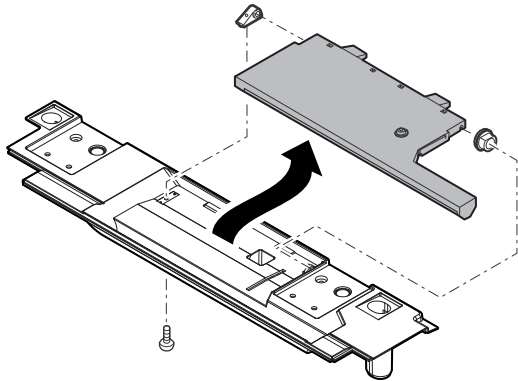
## (4) Document detection light receiving PWB

- 1) Remove the operation base plate.
- 2) Disconnect the connector, and remove the document detection light receiving PWB.

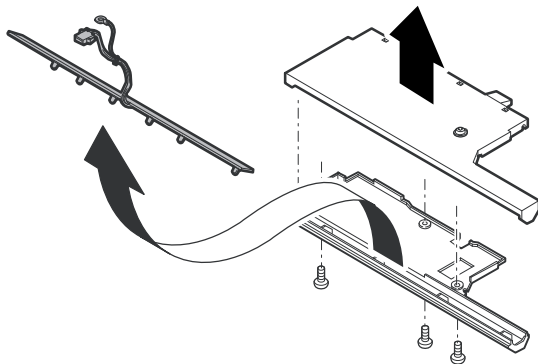


**(5) Document detection light emitting PWB**

- 1) Remove the upper cabinet rear.
- 2) Remove the screw, and remove the light emitting unit.



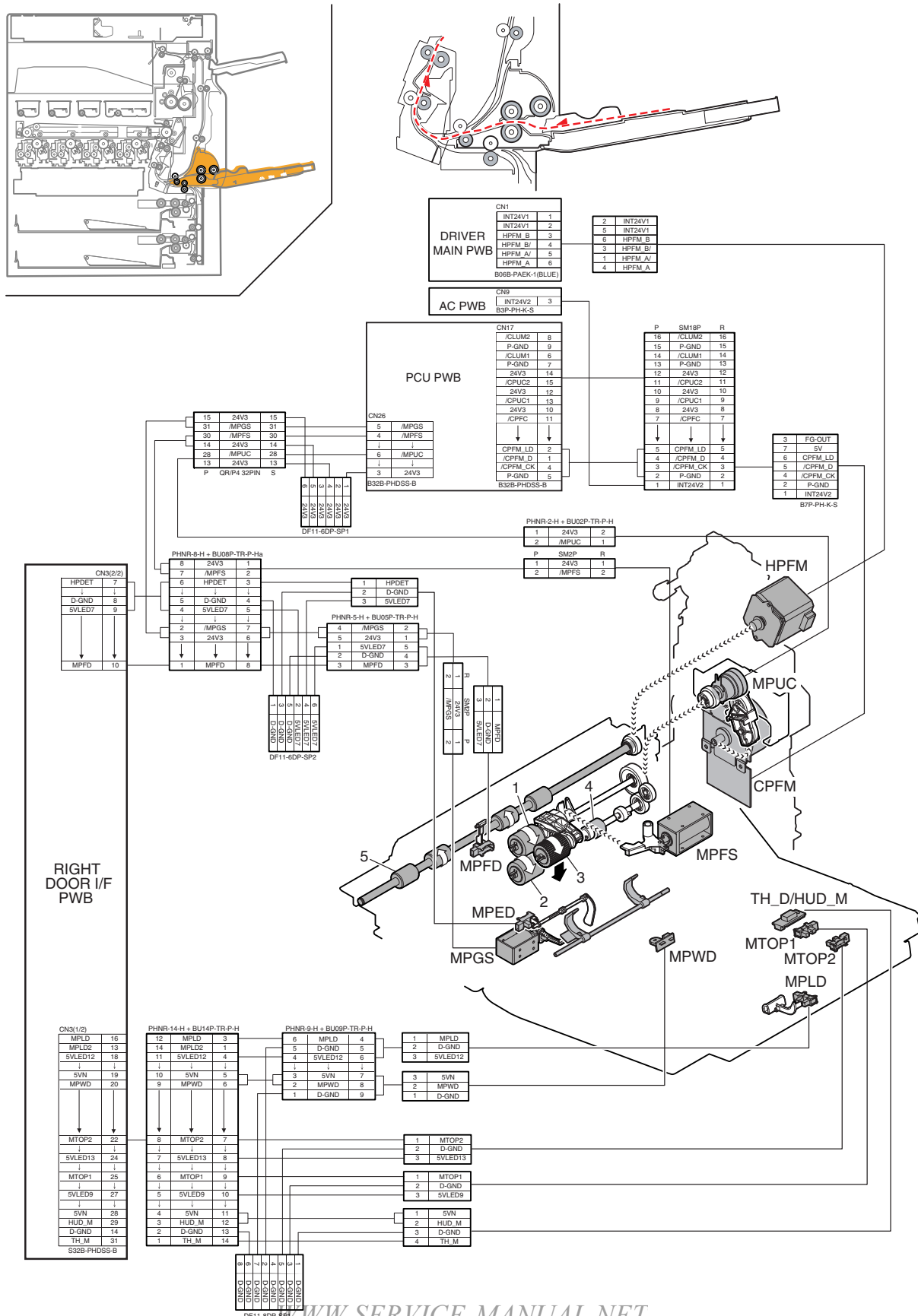
- 3) Remove the document detection light emitting PWB.



# [F] PAPER FEED SECTION

## 1. Electrical and mechanical relation diagram

### A. Manual paper feed section

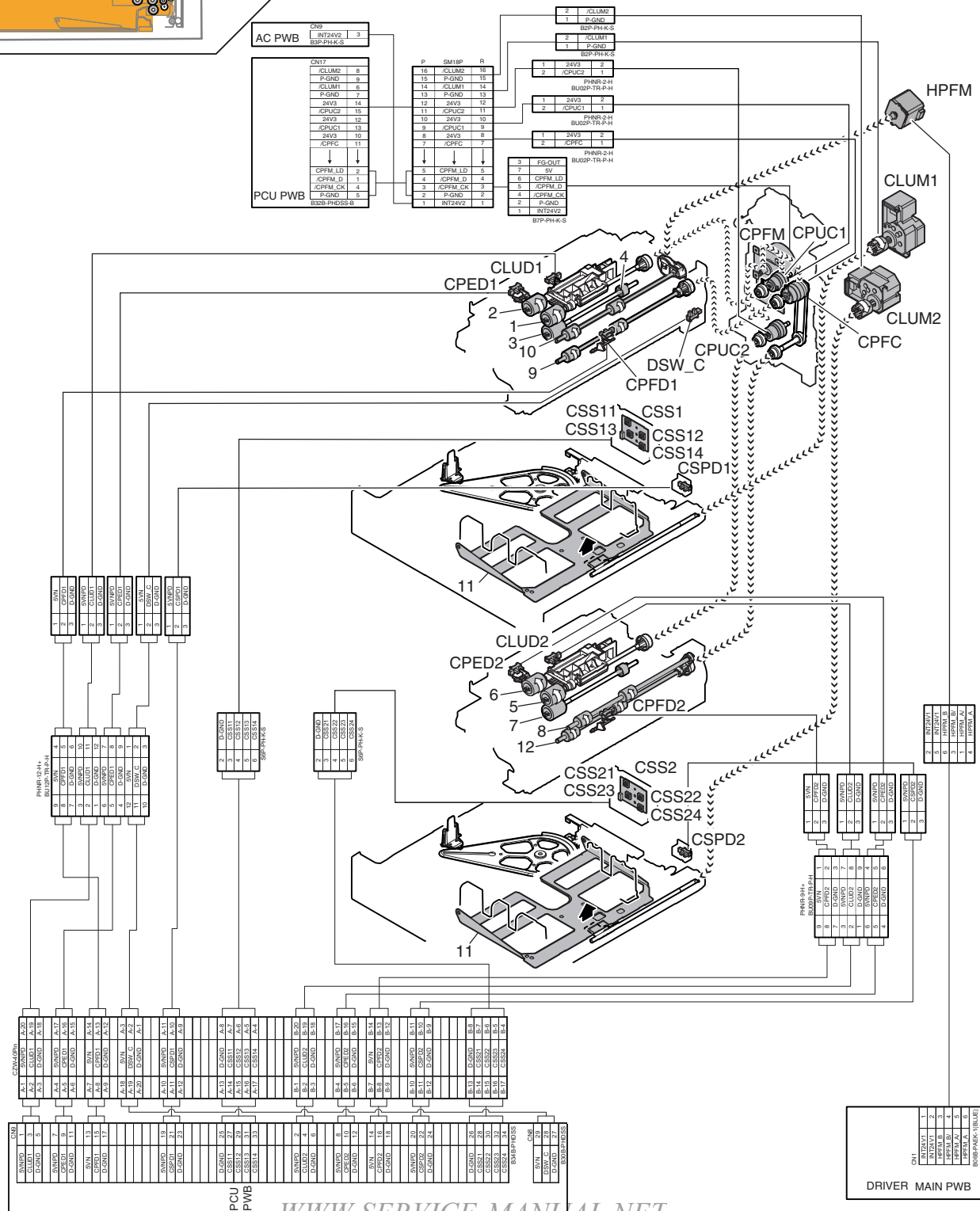
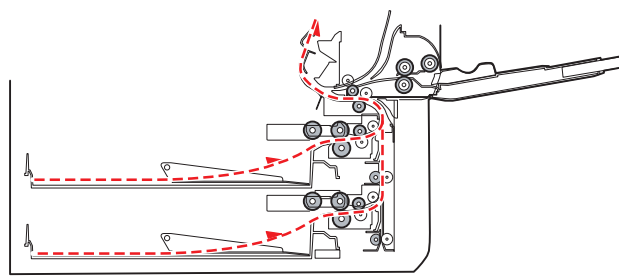


Signal name	Name	Function/Operation
CPFM	Paper feed motor	Drives the paper feed section.
MPED	Manual feed paper empty detection	Manual feed paper empty detection
MPFD	Manual feed paper entry detection	Manual feed paper entry detection
MPDS	Paper pickup solenoid	Paper pickup solenoid (Manual paper feed)
MPGS	Manual paper feed gate solenoid	Controls open/close of the manual paper feed gate solenoid.
MPLD	Manual paper feed length detector	Detects the manual paper feed tray paper length.
MPUC	Manual paper feed clutch	Controls ON/OFF of the paper feed roller in the manual paper feed section.
MPWD	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.
MTOP1	Manual paper feed tray pull-out position detector 1	Manual paper feed tray paper pull-out position detection (Storing position)
MTOP2	Manual paper feed tray pull-out position detector 2	Manual paper feed tray paper pull-out position detection (Pulling out position)
HPFM	Horizontal transport motor	Transports paper from the paper feed section to the transport motor drive system. Transports paper from the right door section to the transport motor drive system.
TH_M/HUD_M	Temperature/humidity detection	Detects temperature and humidity.

No.	Name	Function/Operation
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
2	Separation roller (Manual paper feed tray)	Separates paper to prevent double feed.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper transport section.
4	Torque limiter	A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed.
5	Transport roller 12 (Drive)	Transports paper from the transport roller 11 to the transport roller 8. / Transports paper from the manual paper feed tray to the transport roller 8.



This diagram shows the AC PWB assembly in an exploded view. The main assembly is shown in white, with the AC PWB highlighted in orange. The AC PWB is a rectangular board with various components, including a large integrated circuit (IC) and several smaller components. The assembly is shown with various screws and fasteners, and a label 'AC PWB' is present in the bottom right corner.





Signal name	Name	Function/Operation
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Tray 1 upper limit detection
CLUD2	Tray 2 upper limit detection (Lift HP detection)	Tray 2 upper limit detection
CLUM1	Paper feed tray lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray.
CLUM2	Paper feed tray lift-up motor (Paper feed tray 2)	Drives the lift plate of the paper feed tray.
CPED 1	Tray 1 paper empty detection	Tray 1 paper empty detection
CPED 2	Tray 2 paper empty detection	Tray 2 paper empty detection
CPFC	Tray vertical transport clutch	Controls ON/OFF of the paper transport roller in the paper feed tray section.
CPFD1	Tray 1 transport detection (Paper entry detection)	Detects tray 1 paper pass.
CPFD2	Tray 2 transport detection (Paper entry detection)	Detects tray 2 paper pass.
CPFM	Paper feed motor	Drives the paper feed section.
CPUC1	Paper feed clutch (Paper feed tray 1)	Controls ON/OFF of the roller in the paper feed tray section.
CPUC2	Paper feed clutch (Paper feed tray 2)	Controls ON/OFF of the roller in the paper feed tray section.
CSPD1	Tray 1 paper remaining quantity detection	Tray 1 paper remaining quantity detection
CSPD2	Tray 2 paper remaining quantity detection	Tray 2 paper remaining quantity detection
CSS1	Tray 1 installation detection	Tray 1 installation defection
CSS2	Tray 2 installation detection	Tray 2 installation defection
CSS11	Tray 1 rear edge detection 1	Insertion of the tray is detected by detecting either of tray 1 rear edge detection 1 – 4. The paper size of tray 1 is detected.
CSS12	Tray 1 rear edge detection 2	
CSS13	Tray 1 rear edge detection 3	
CSS14	Tray 1 rear edge detection 4	
CSS21	Tray 2 rear edge detection 1	Insertion of the tray is detected by detecting either of tray 2 rear edge detection 1 – 4. The paper size of tray 2 is detected.
CSS22	Tray 2 rear edge detection 2	
CSS23	Tray 2 rear edge detection 3	
CSS24	Tray 2 rear edge detection 4	
DSW_C	Tray 1, 2 transport cover open/close detection	Tray 1, 2 transport cover open/close detection
HPFM	Horizontal transport motor	Transports paper from the paper feed section to the transport motor drive system. Transports paper from the right door section to the transport motor drive system.

No.	Name	Function/Operation
1	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.
2	Paper pickup roller (No. 1 paper feed tray)	Sends paper to the paper transport section.
3	Separation roller (No. 1 paper feed tray)	Separates paper to prevent Double Feed.
4	Torque limiter	Always provides a certain level of resistance to the rotation of the separation roller, preventing against double feed.
5	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.
6	Paper pickup roller (No. 2 paper feed tray)	Sends paper to the paper transport section.
7	Separation roller (No. 2 paper feed tray)	Separates paper to prevent Double Feed.
8	Transport roller 4 (Drive)	Transports paper from the transport roller 1 and the paper feed roller (No. 2 paper feed tray) to the transport roller 7.
9	Transport roller 5 (drive)	Transports paper from the paper feed tray 1 to the transport roller 7.
10	Transport roller 7 (drive)	Transport paper from the paper feed tray 1, 2 and 3, 4 to the transport roller 8.
11	Rotating plate	Lifts up the paper, and always keeps constant the paper feed position.
12	Transport roller 14 (drive)	Transports paper from the paper feed tray 2 to the transport roller 4.

## 2. Operational descriptions

### A. Bypass

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 resist roller by the manual transport roller.

### B. Tray paper feed

#### (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.

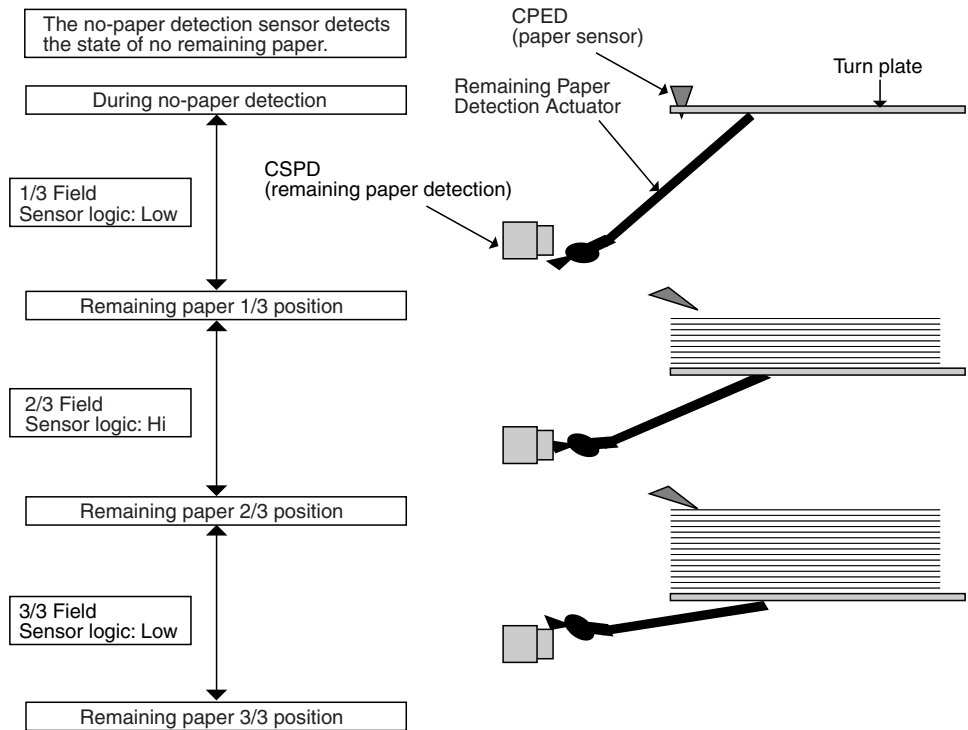
#### (3) Paper remaining detection

- 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

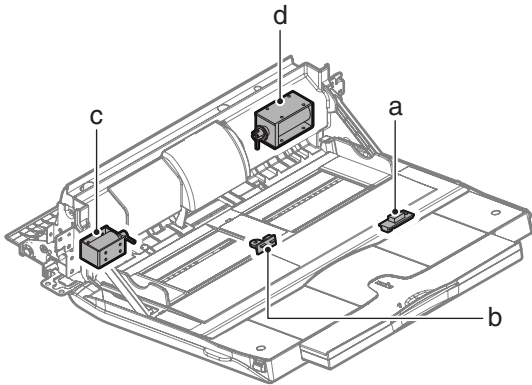
- The paper remaining quantity is judged from the number of rotations of the remaining quantity sensor from starting the lift-up operation of the paper feed tray to turning ON the upper limit sensor.

(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



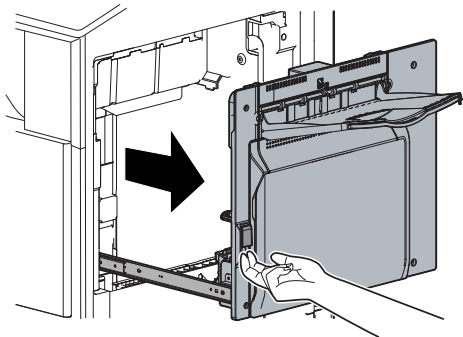
### 3. Disassembly and assembly

#### A. Manual paper feed unit

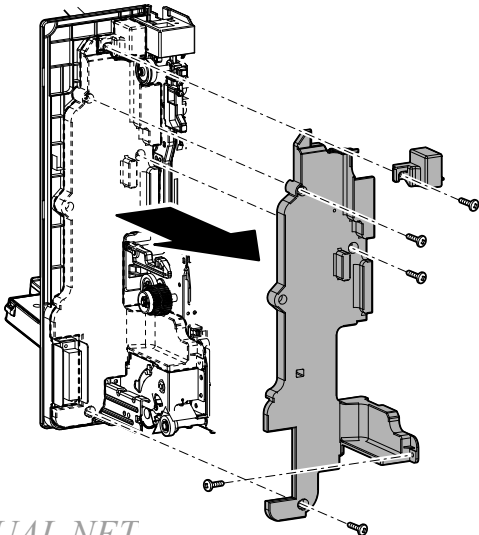


Parts	
a	Temperature humidity sensor
b	Manual paper feed tray paper width detector
c	Manual paper feed gate solenoid
d	Paper pickup solenoid

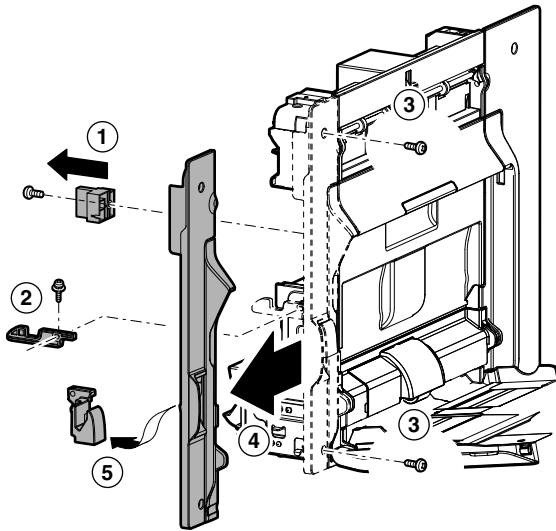
1) Open the right door.



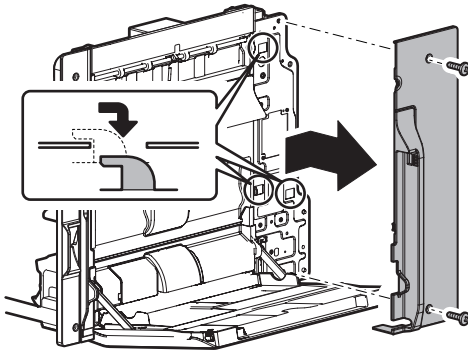
2) Remove the screw, and remove the connector cover. Remove the screw and remove the ADU inner cover.



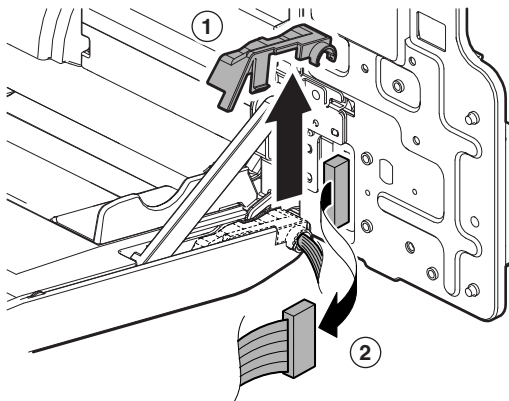
- 3) Remove the lock block. Disengage the right door lock pawl. Remove the ADU cabinet F, and the right door release lever.



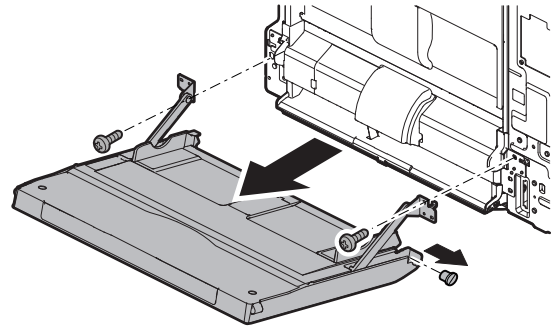
- 4) Remove the ADU cabinet R.



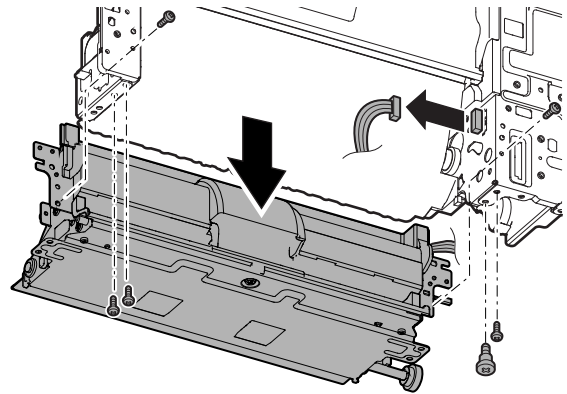
- 5) Remove the MF harness cover, and disconnect the connector.



- 6) Remove the MF tray installing shaft, and remove the manual feed tray unit.

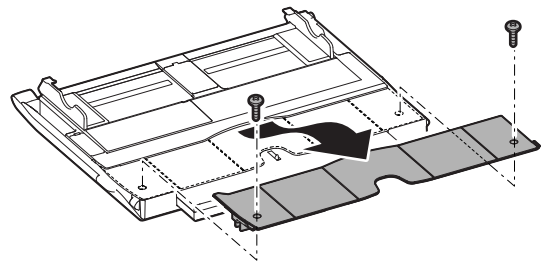


- 7) Disconnect the connector, and remove the manual paper feed unit.

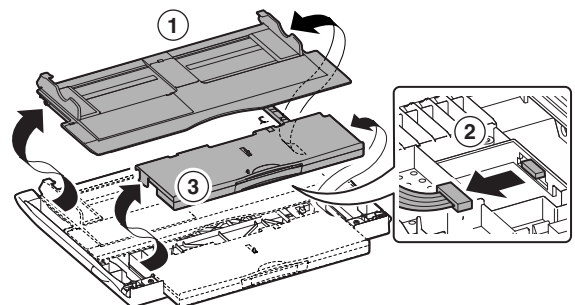


**(1) Temperature and humidity sensor/Manual paper feed tray paper width detector**

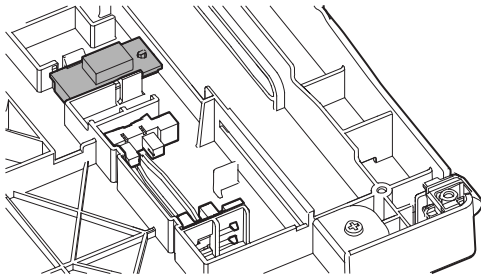
- 1) Remove the manual paper feed tray unit.
- 2) Remove the MF tray upper inside cover.



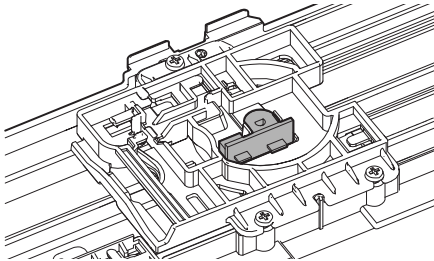
- 3) Disengage the pawl, lift the MF tray upper and MF tray 2, and disconnect the connector.



- 4) Remove the temperature and humidity sensor.

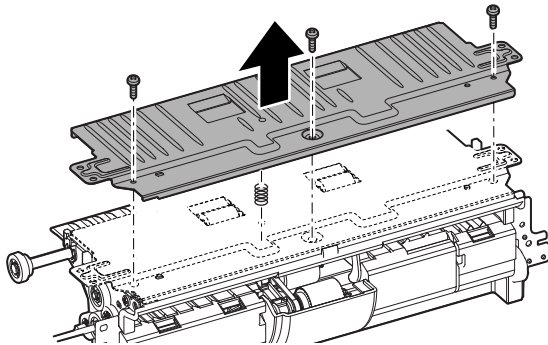


- 5) Remove the manual paper feed tray paper width detector.

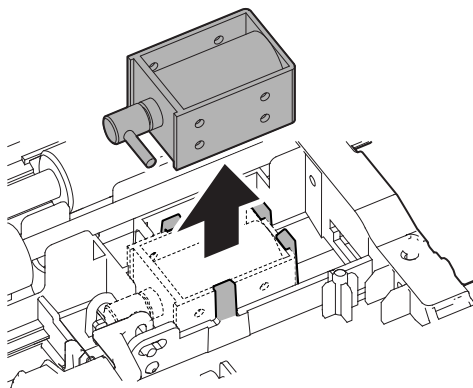


## (2) Manual paper feed gate solenoid

- 1) Remove the manual paper feed unit.
- 2) Remove the MF base guide supporting plate and the spring.

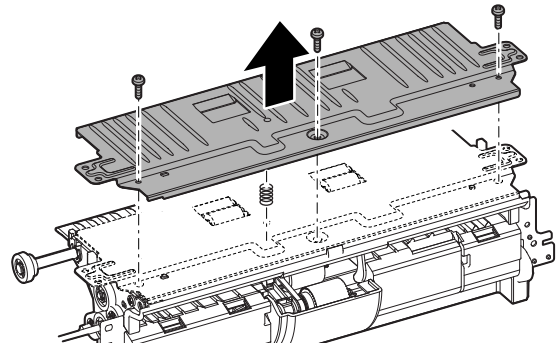


- 3) Disconnect the connector, and disengage the pawl, and remove the manual paper feed gate solenoid.

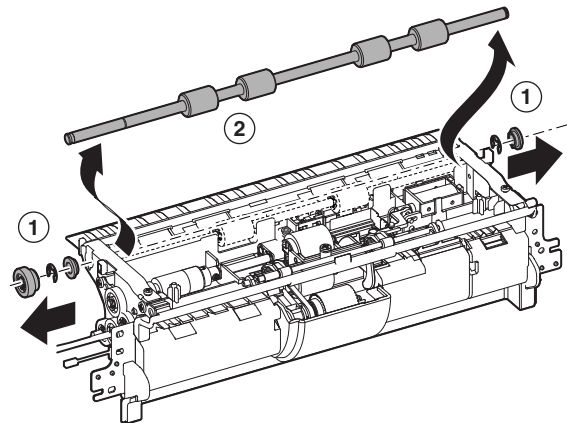


## (3) Paper pickup solenoid

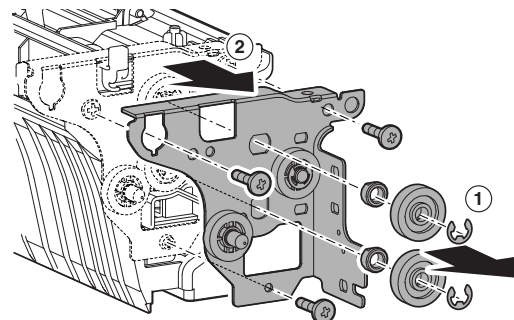
- 1) Remove the manual paper feed unit.
- 2) Remove the MF base guide supporting plate and the spring.



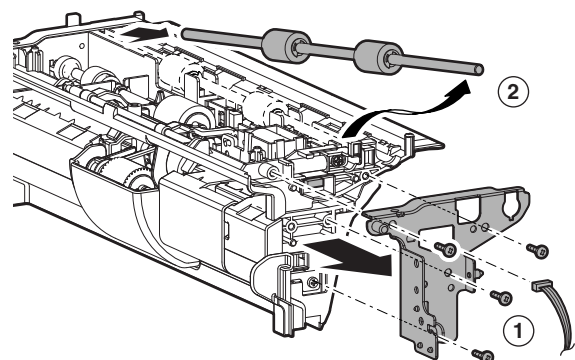
- 3) Remove each part, and remove the transport roller 12 (drive).



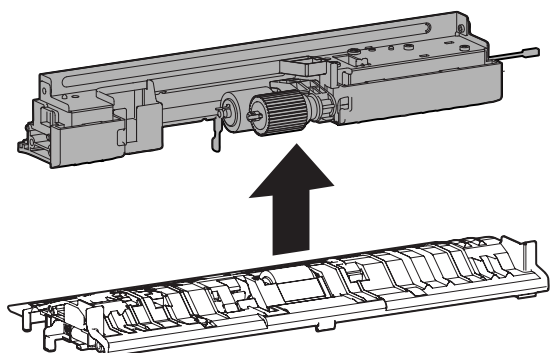
- 4) Remove each part, and remove the MF drive plate.



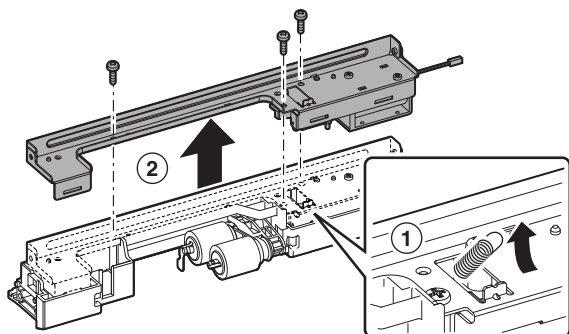
- 5) Disconnect the connector, and remove the MF front plate.



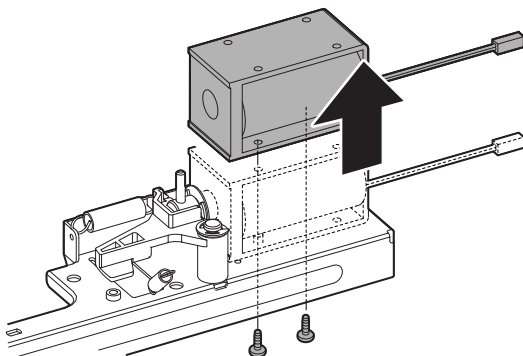
6) Remove the MF upper base paper guide unit.



7) Remove the MF upper guide supporting plate.

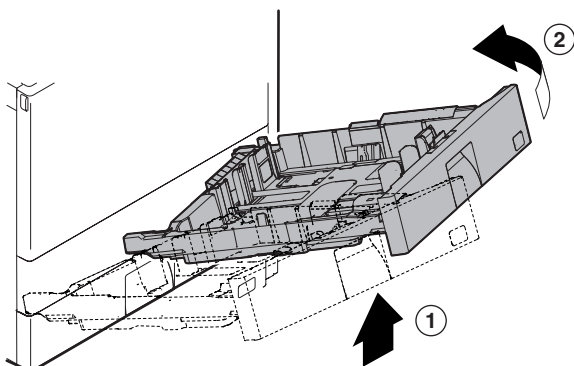


8) Remove the paper pickup solenoid.

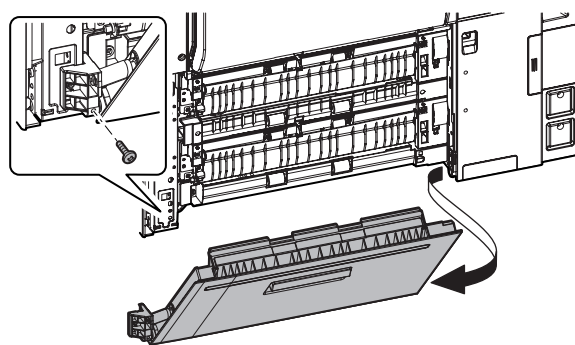


## B. Tray paper feed unit

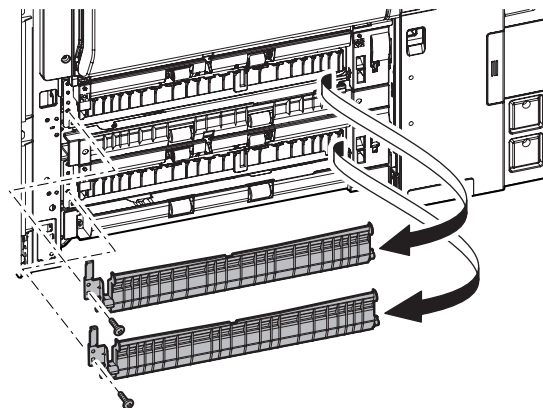
- 1) Remove the right cabinet front.
- 2) Remove the tray 1 and 2.



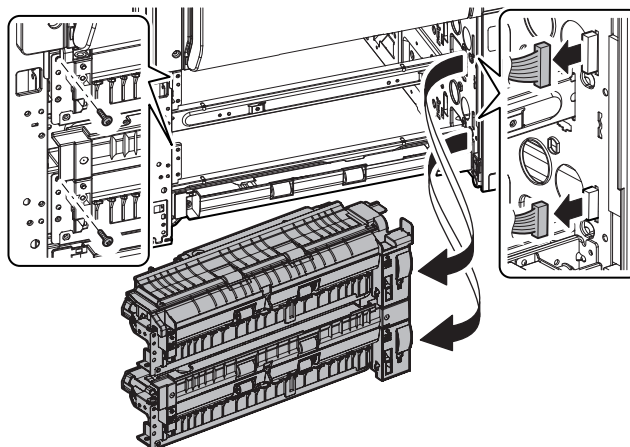
3) Remove the right lower door unit.



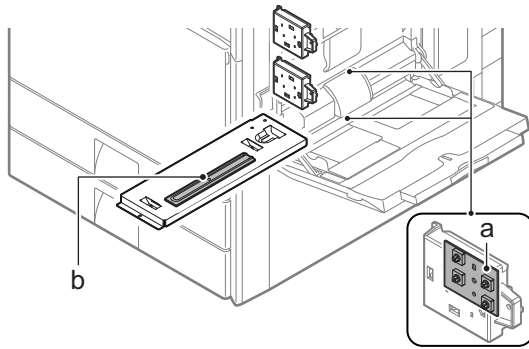
4) Remove the paper feed movable PG lower.



5) Remove the tray paper feed unit 1, 2.



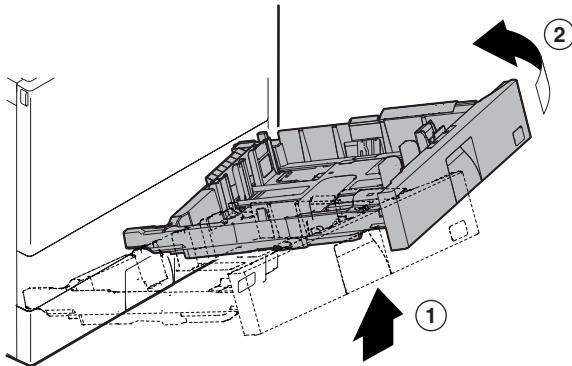
## C. Others



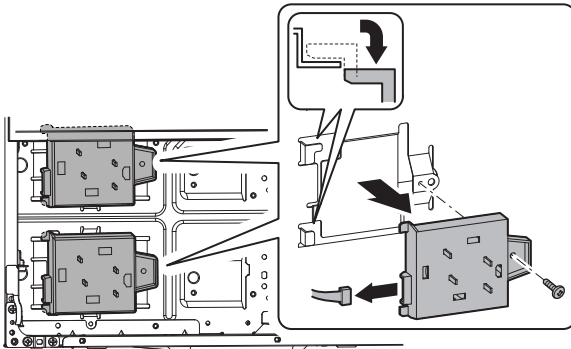
Parts	
a	Tray 1, 2 installation detection

### (1) Tray 1, 2 installation detection

- 1) Remove the tray 1 and 2.

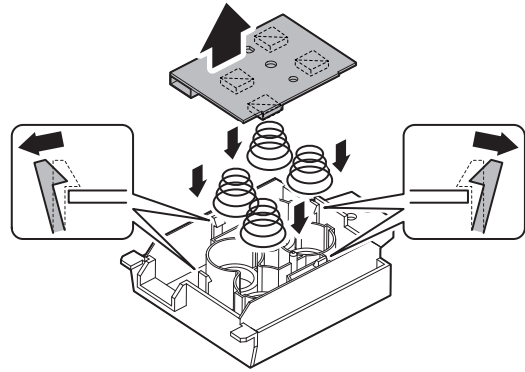


- 2) Disconnect the connector and remove the screw. Remove the tray 1, 2 installation detection unit.



- 3) Disengage the pawl, and remove the tray 1, 2 installation detection.

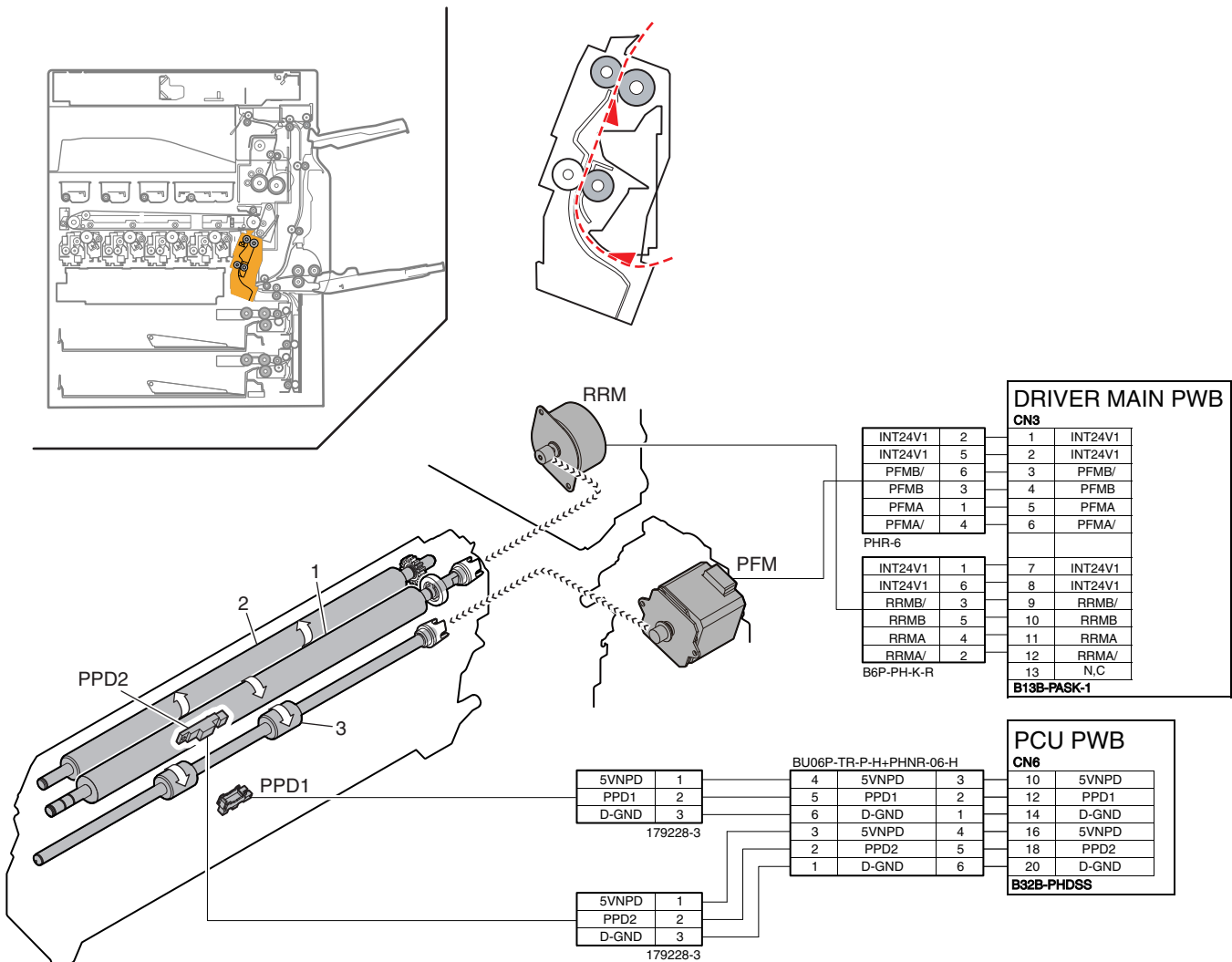
Remove the spring from the tray 1, 2 installation detection.





## [G] PAPER TRANSPORT SECTION

### 1. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
PFM	Transport motor	Drives transport between the resist roller and the paper feed section, transport between the resist roller and the right door section.
PPD1	Resist pre-detection	Detects the paper in front of resist roller.
PPD1	Resist detection	Detects the paper in rear of resist roller.
RRM	Resist motor	Drives the resist roller and controls ON/OFF.

No.	Name	Function/Operation
1	Resist roller (drive)	Transports paper to the transfer section. / Controls the transport timing of paper, and adjusts the relative relations between images and paper.
2	Resist roller (idle)	Applies a pressure to paper and the resist roller to give paper the transport power of the transport roller.
3	Transport roller 8 (drive)	Transports the paper to resist roller.

## 2. Operational descriptions

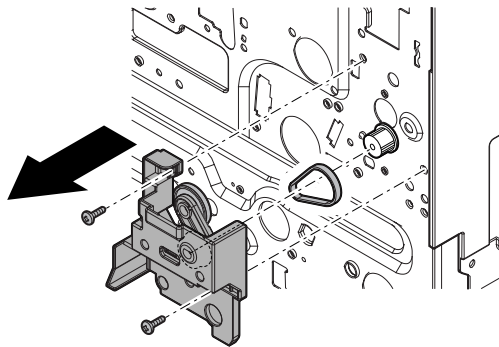
Transport paper from each paper feed section to the resist roller with two or more transport rollers. The paper transport clutch controls ON/OFF of each transport roller. The resist roller controls the relative positions of the transported paper and transfer images.

The resist roller controls the relative positions of the transported paper and transfer images. The resist roller is driven by the transport motor. The relative positions of the paper and the transfer images are determined by the ON timing of the transport motor.

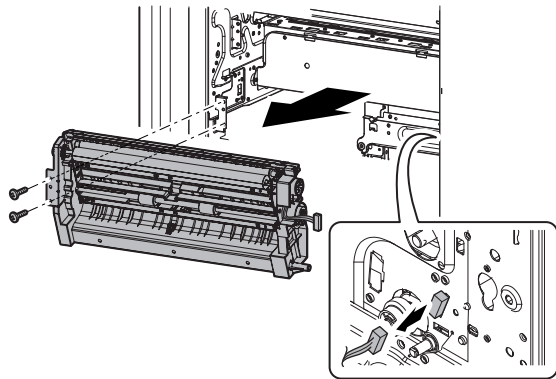
## 3. Disassembly and assembly

### A. Resist roller unit

- 1) Remove the developing unit (K).
- 2) Remove the drum unit (K).
- 3) Remove the primary transfer unit.
- 4) Remove the tray paper feed unit 1.
- 5) Remove the rear cabinet.
- 6) Remove the ADU connection drive.

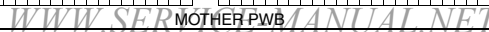


- 7) Disconnect the connector and remove the screw, and remove the resist roller unit.





## 1. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
CCFM	Process air inlet fan motor	Cools charger section of the process.
PGM	Polygon motor	Reflects the laser beams at constant-speed rotating.
LSU_FAN	LSU cooling fan motor	Cools the section LSU.
LSUSS	LSU shutter solenoid	Opens/closes the LSU shutter.

No.	Name	Function/Operation
1	LD PWB	Controls flashing of laser beams and the output values.
2	Cylindrical lens	Converges laser beams to focus.
3	f $\theta$ lens 1	Laser beams are refracted so that the laser scanning speed at the both ends of the OPC drum is the same as that at the center.
4	f $\theta$ lens 1	
5	Reflection mirror	Assures the optical path for laser.
6	Cylindrical lens	Collects the laser beams, and focuses it on the OPC drum.
7	Collective lens for BD	Converges laser beams to the BD PWB.
8	BD PWB	Detects the timing for starting laser scanning.
9	LSU PWB	Laser beams are controlled and the polygon motor control signal is generated according to the PCU PWB control signal and image data.
10	LSU thermistor	Measures the temperature in LSU.

## 2. Operational descriptions

(Scanning system)

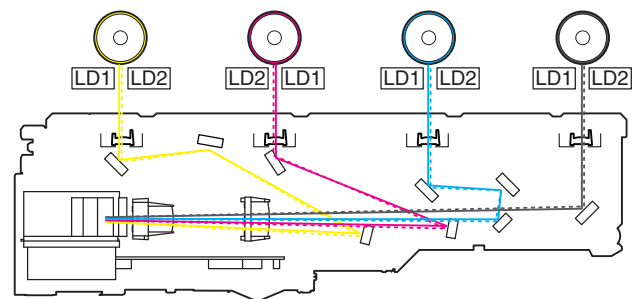
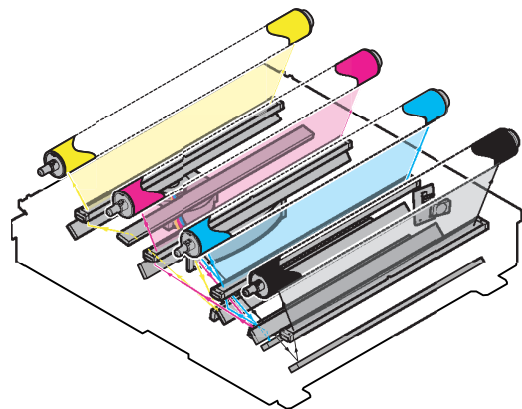
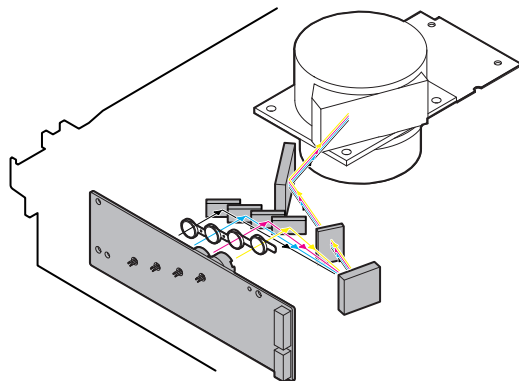
### A. Outline

Image data sent from the image process circuit through the PCU are converted into laser beams which are radiated to the surface of the OPC drum.

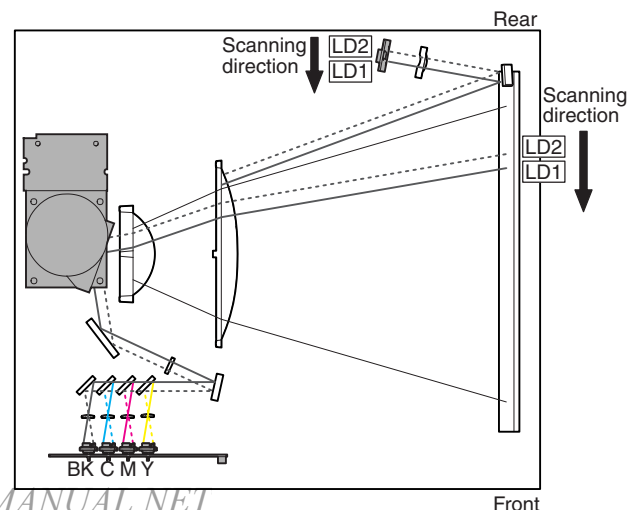
In this model, 2-laser system is employed where 2-laser diodes for each color are radiated. The LSU unit is composed of the optical element from laser to the polygon mirror, the primary system including the mirror which assures light path, and the main scanning system.

### B. Composition

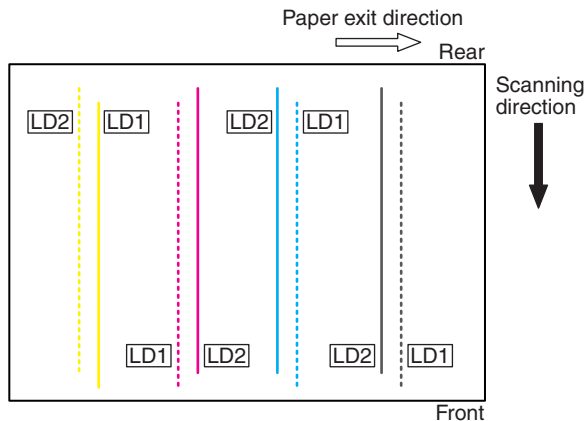
(Primary system)



Main scanning direction



(Writing position on paper)



(On the polygon motor)

Model	Number of mirror surface	Rotating speed	Bearing	Remarks
MX-4100/4101	7 surfaces	44544rpm	AIR	

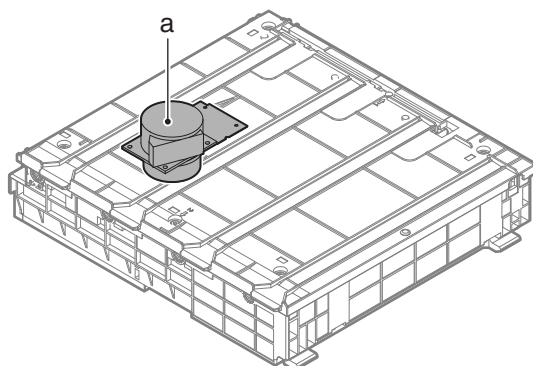
### C. Outline of LSU specifications

Effective scan width : 307mm  
 Resolution: 1200dpi  
 Beam diameter: Main scan = 50 to 65μm, Sub scan = 60 to 75μm  
 Laser power: Max. 0.255mW  
 LD wavelength: 770 to 795nm

## 3. Disassembly and assembly

Do not disassemble the LSU unit. If it is unavoidable to disassemble and repair the LSU unit, strictly observe the following procedures described below and never perform the other procedures. If this precaution is violated, the safety is not assured.

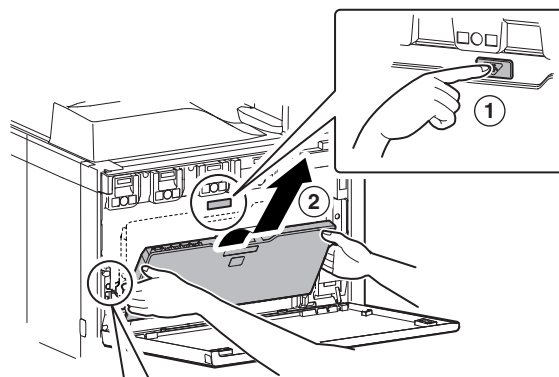
### A. LSU



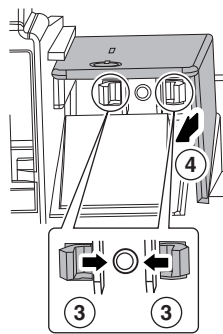
Parts	
a	Polygon motor

- 1) Remove the left cabinet rear lower and the left cabinet. [Refer to "Left cabinet lower, left cabinet" in "External view."]
- 2) Open the front cabinet, and remove the waste toner box.

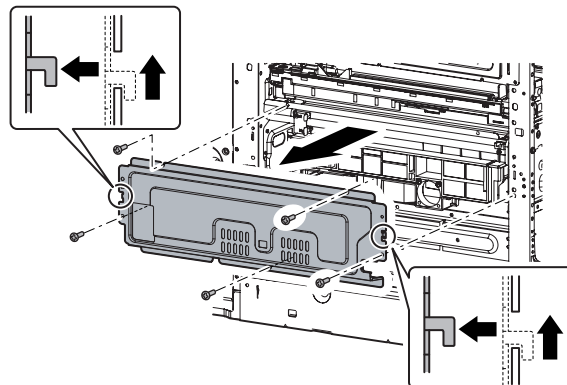
(For U.S.A. 50-sheet machine only)  
 Remove the power switch cover.



For U.S.A. 50-sheet machine only

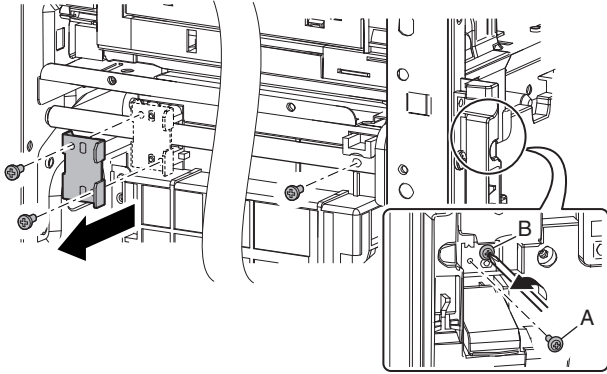


- 3) Remove the LSU left plate PA.

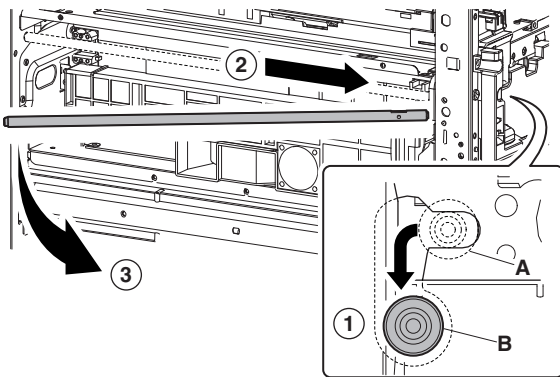


- 4) Remove the LSU slant adjustment plate screw (A), and loosen the screw (B).

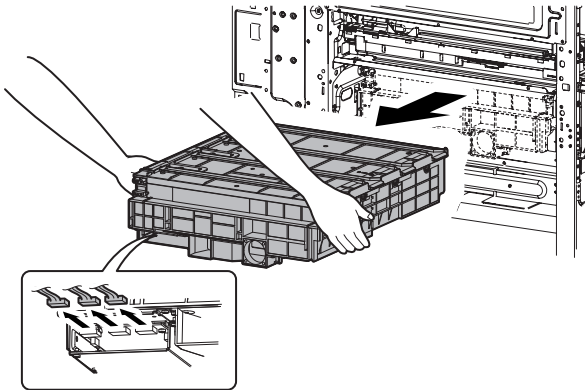
Remove the LSU shaft fixing plate. Remove the screw.



- 5) Shift the front side of the LSU shaft from (A) to (B), and remove the LSU shaft.

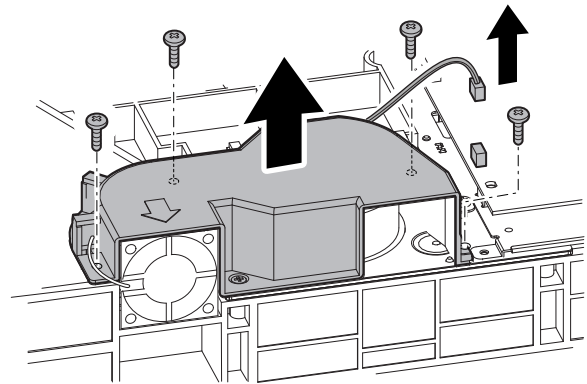


- 6) Disconnect the connector, and remove the LSU.



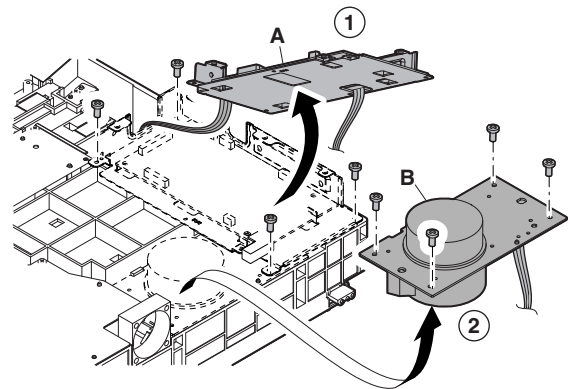
## (1) Polygon motor

- 1) Remove the LSU.
- 2) Remove the screws, and the LSU CNT PWB cover R.
- 3) Remove the connector and the screws, then remove the fan cover.



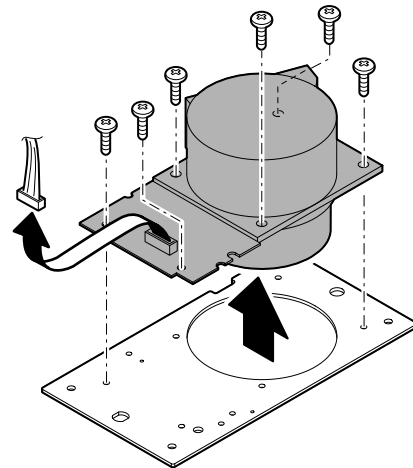
- 4) Remove the screws, then lift up the LSU CNT PWB cover F (A).

Remove the screws, and lift up the polygon motor unit (B).

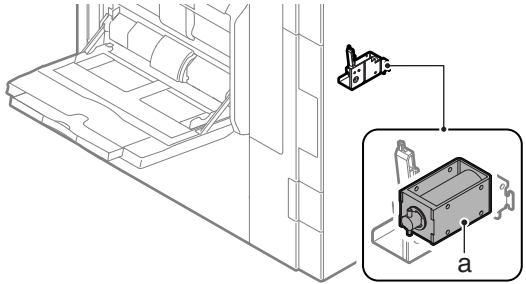


- 5) Remove the connector and the screws, then remove the polygon motor.

\* When installing, do not touch the moving section of the polygon mirror and the mirror surface.



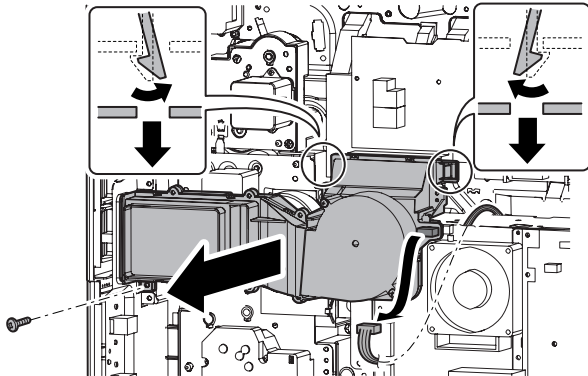
## B. Others



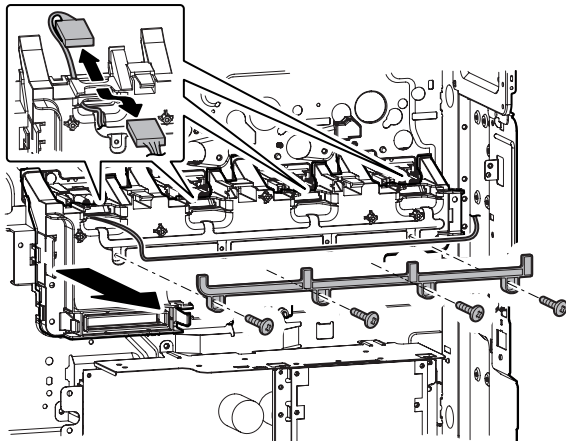
Parts	
a	LSU shutter solenoid 1

### (1) LSU shutter solenoid 1

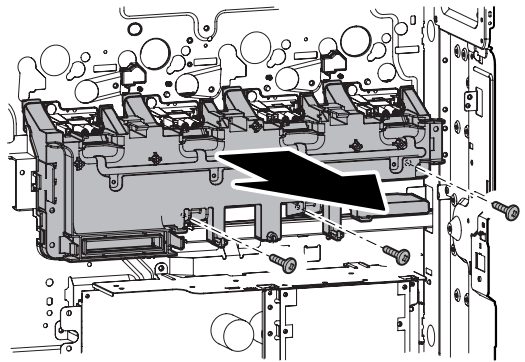
- 1) Remove the rear cabinet.
- 2) Remove the MC PWB.
- 3) Remove the screw and disconnect the connector, and remove the filter box unit.



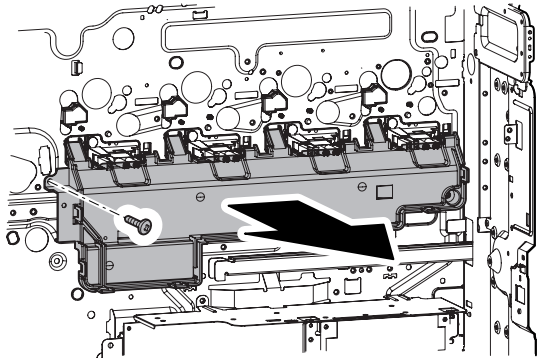
- 4) Remove the screw and remove the duct harness cover. Disconnect the connector.



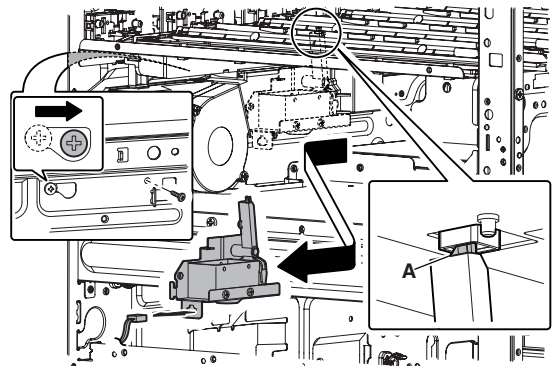
- 5) Remove the screw, and remove the ozone air inlet duct A.



- 6) Remove the screw, and remove the ozone air inlet duct B.

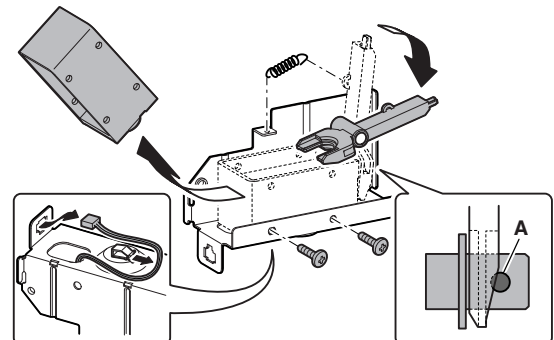


- 7) Remove the LSU.
- 8) Disconnect the connector and remove the screw, and remove the LSU shutter solenoid unit.



\* When installing, insert the projected section (A) of the solenoid arm into the hole in the lever link arm.

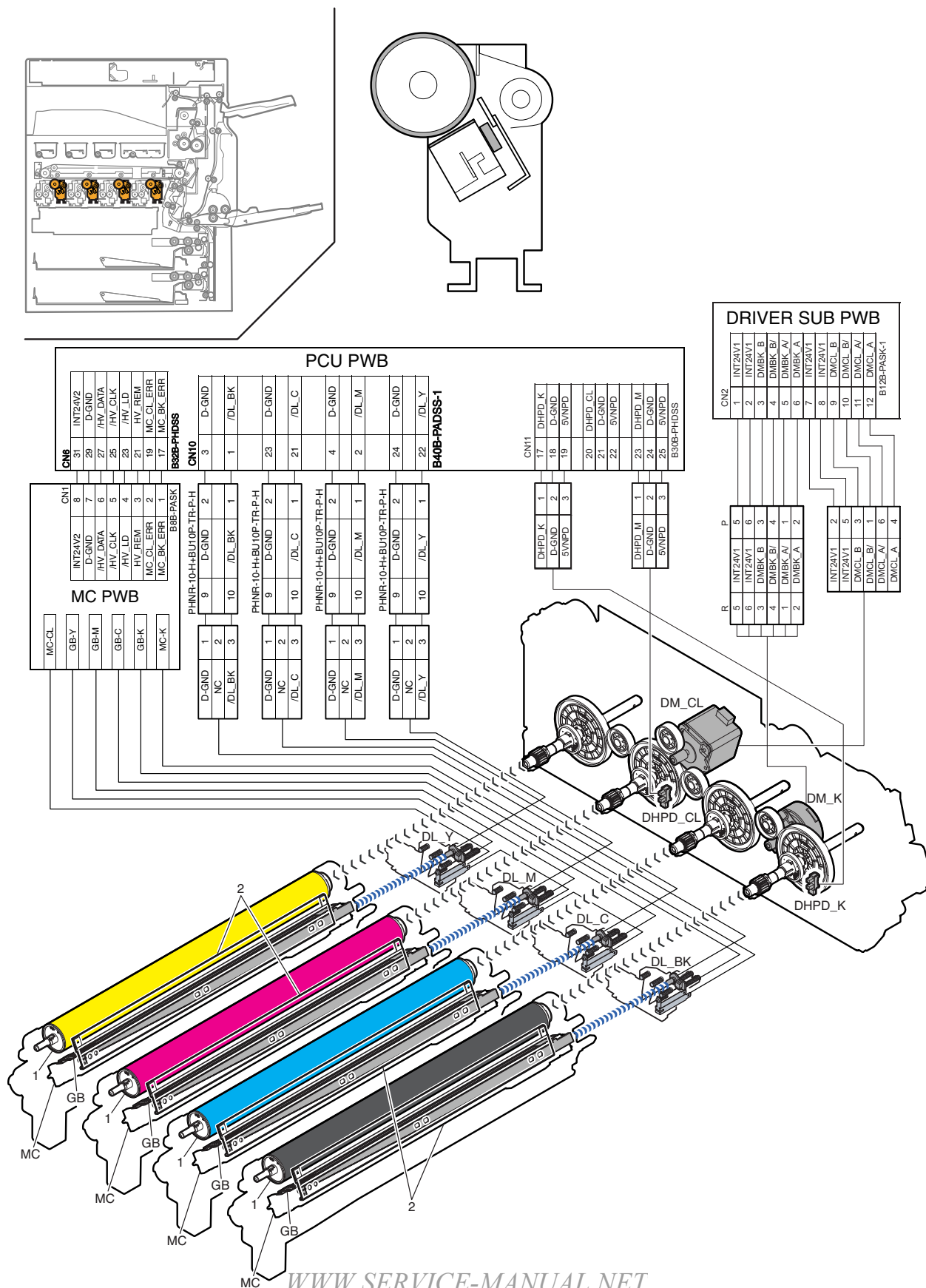
- 9) Remove the screw and the spring, and remove the LSU shutter solenoid.



\* When installing, engage the solenoid pin (A) with the shutter lever arm.



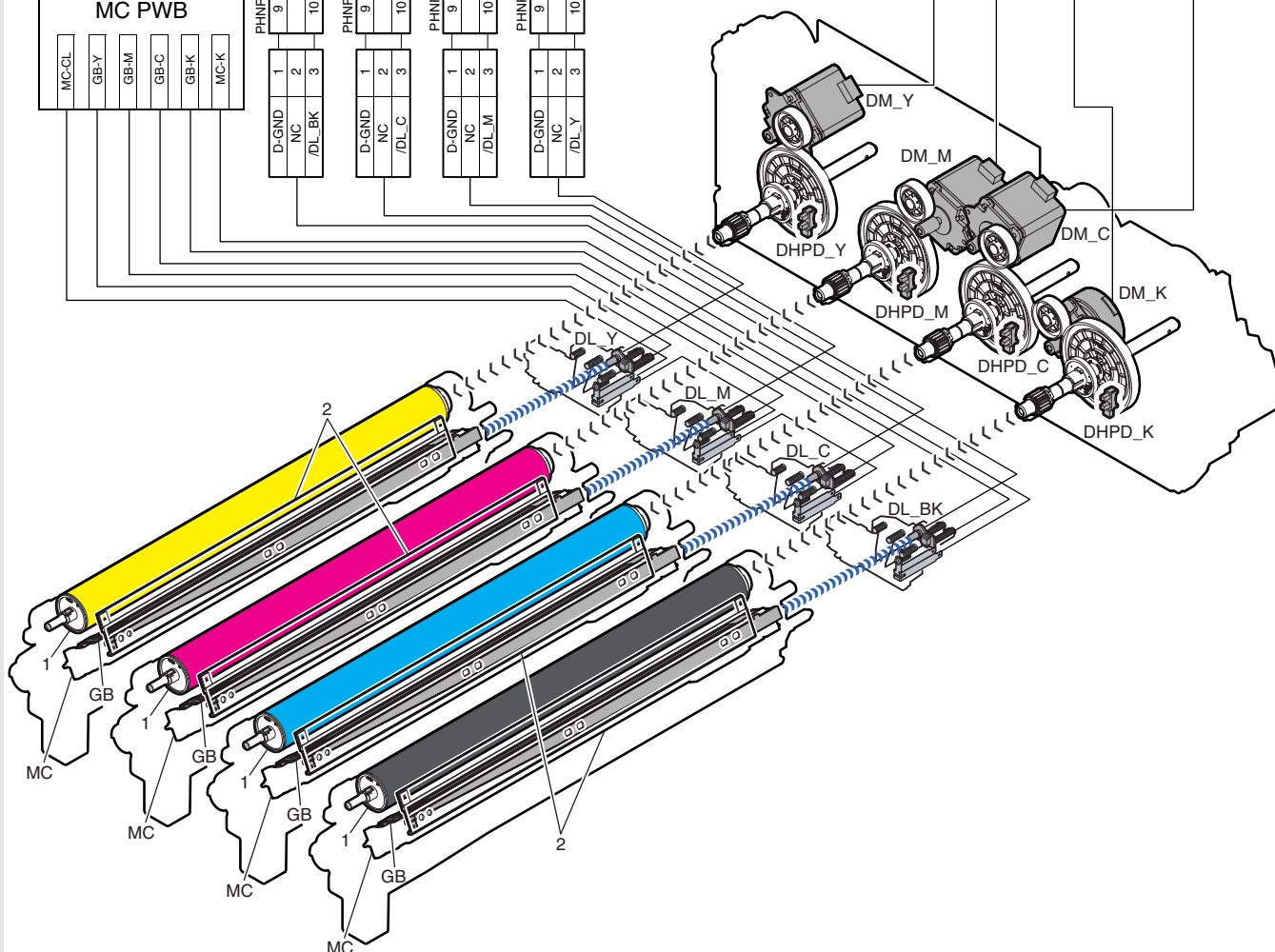
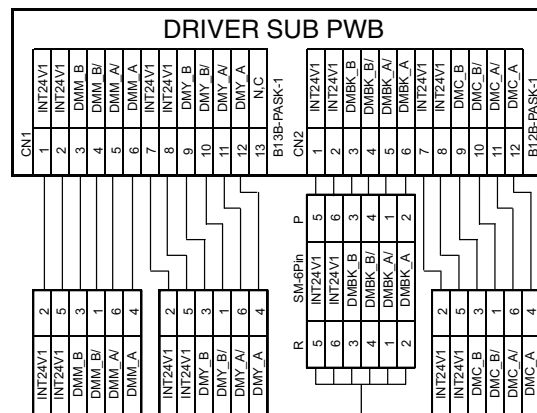
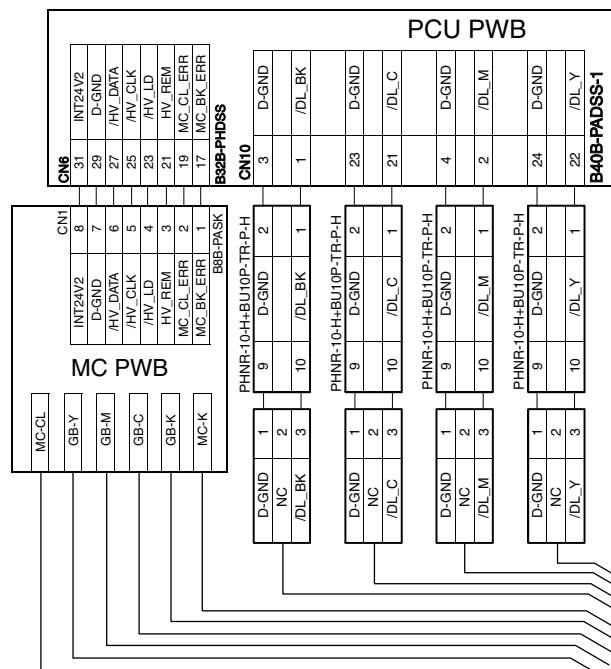
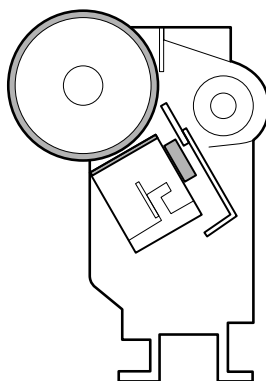
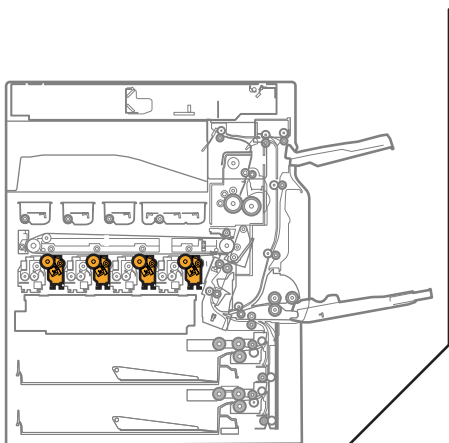
**1 A. 41-sheet machine**



Signal name	Name	Function/Operation
DHPD_CL	CL phase detection	Detects the CL phase.
DHPD_K	BK phase detection	Detects the BK phase.
DM_K	BK drum motor	Drives the BK drum.
DM_M	CL drum motor	Drives the CL drum.
DL	Discharge lamp (Y,M,C,BK)	Light is radiated to the discharge lamp to discharge the OPC drum surface.
MC	Main charger (Y,M,C,K)	The OPC drum surface is charged negatively.
GB	Grid (Y,M,C,K)	The OPC drum surface potential is controlled.

No.	Name	Function/Operation
1	OPC drum (Y,M,C,K)	Latent electrostatic images are formed.
2	Cleaning blade	Cleans and remove residual toner from the OPC drum surface.

## B. 50-sheet machine





Signal name	Name	Function/Operation
DM_C	C drum motor	Drives the C drum.
DM_K	BK drum motor	Drives the BK drum.
DM_M	M drum motor	Drives the M drum.
DM_Y	Y drum motor	Drives the Y drum.
DHPD_C	C phase detection	Detects the C phase.
DHPD_K	BK phase detection	Detects the BK phase.
DHPD_M	M phase detection	Detects the M phase.
DHPD_Y	Y phase detection	Detects the Y phase.
DL	Discharge lamp (Y,M,C,BK)	Light is radiated to the discharge lamp to discharge the OPC drum surface.
MC	Main charger (Y,M,C,K)	The OPC drum surface is charged negatively.
GB	Grid (Y,M,C,K)	The OPC drum surface potential is controlled.

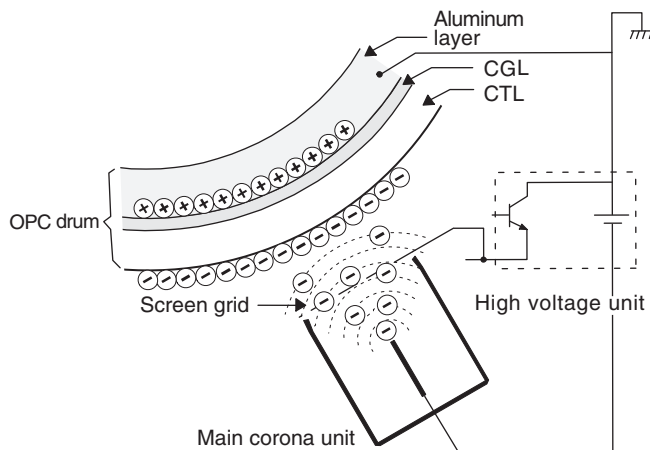
  

No.	Name	Function/Operation
1	OPC drum (Y,M,C,K)	Latent electrostatic images are formed.
2	Cleaning blade	Cleans and remove residual toner from the OPC drum surface.

## 2. Operational descriptions

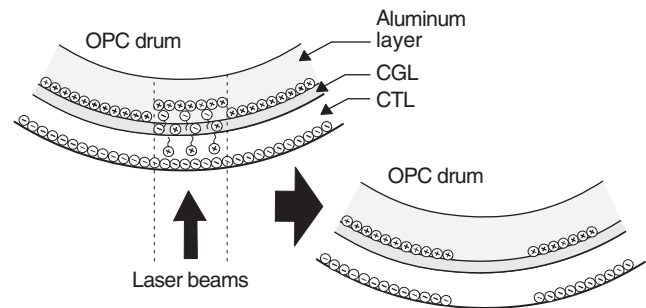
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.

- 1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

- 2) Laser lights are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.



When laser lights are radiated to the OPC drum CGL, negative and positive charges are generated.

Positive charges generated on the CGL are attracted by the negative charges on the OPC drum surface. On the other hand, negative charges are attracted by the positive charges in the aluminum layer of the OPC drum.

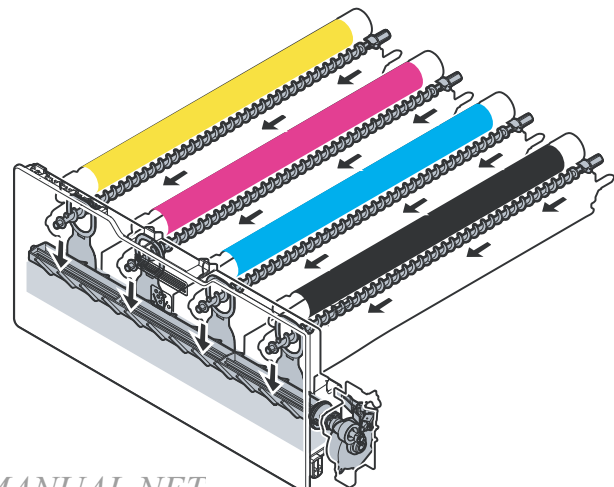
Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where laser lights are not radiated.

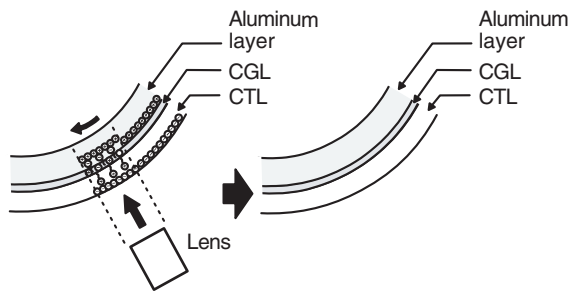
As a result, latent electrostatic images are formed on the OPC drum surface.

- 3) After transfer operation, remaining toner is removed by the cleaning blade.

Toner removed from the OPC drum surface is transported to the waste toner section by the waste toner transport screw.



- 4) The whole surface of the OPC drum is discharged.

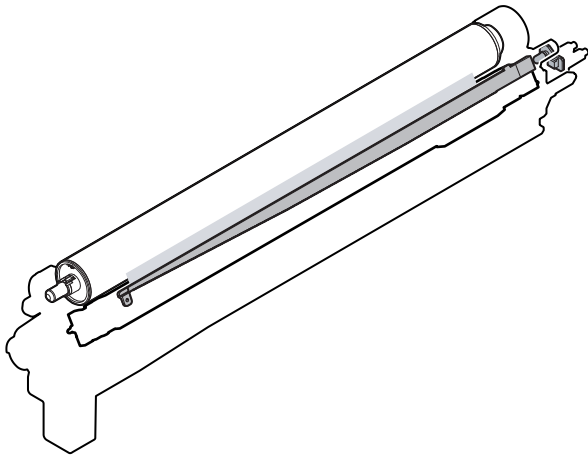


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

Positive charges generated on the CGL are attracted by the negative charges on the OPC drum surface. On the other hand, negative charges are attracted by the positive charges in the aluminum layer of the OPC drum.

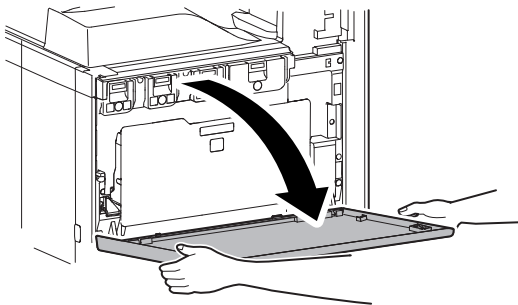
Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



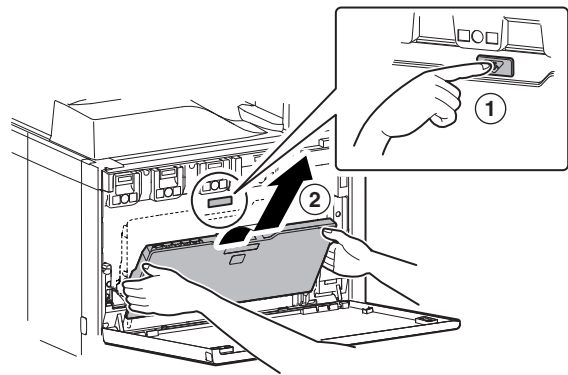
### 3. Disassembly and assembly

#### A. Drum unit

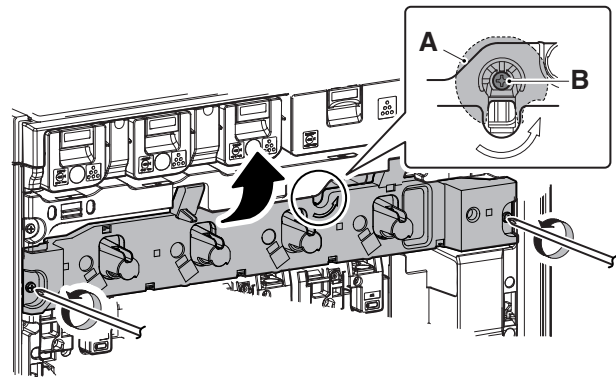
- 1) Open the front cover.



- 2) Remove the waste toner box unit.



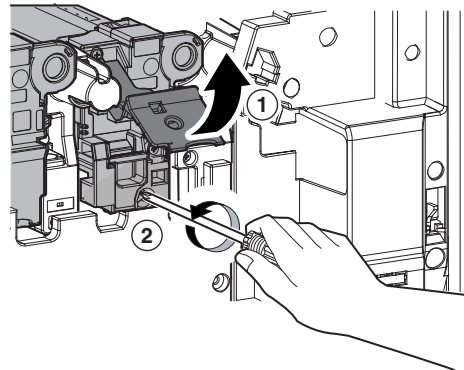
- 3) Loosen the blue screw. Check to confirm that the lock is released, and open the drum positioning unit.



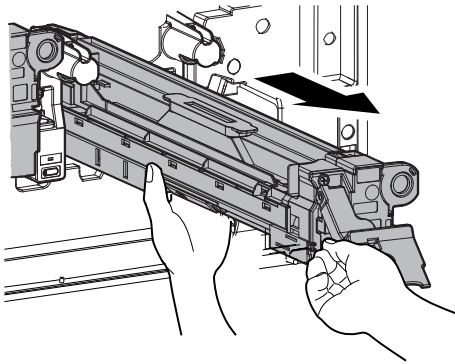
#### (CAUTION)

When the transfer belt tension of the primary transfer unit is manually released, turn the power OFF/ON after completion of the operation. This procedure initializes the transfer roller to return it to the home position.

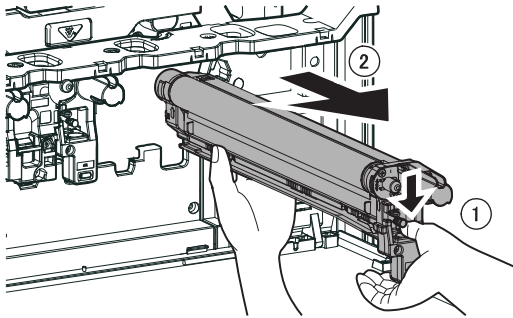
- 4) Open the DV lock lever, and release the fixing screw. (1 position for each color)



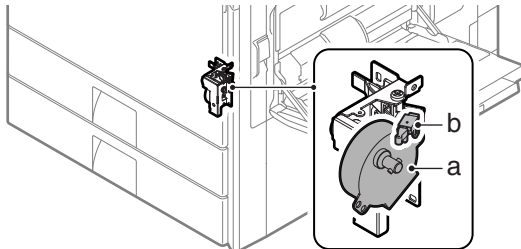
- 5) Pinch the knob and remove the development unit.



- 6) Hold the lock lever and pull out each drum unit slowly. Hold the lower section of the unit and remove it with both hands.



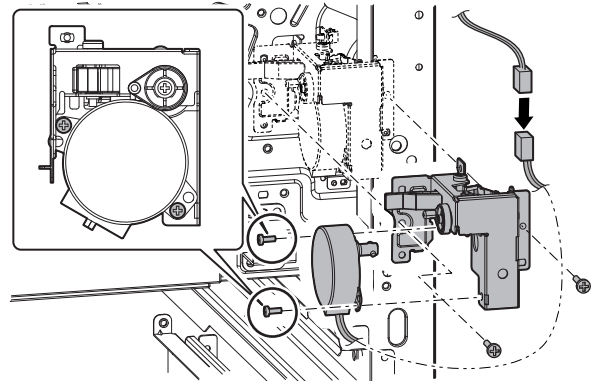
## B. Others



	Parts
a	Waste toner drive motor
b	Waste toner full detection switch

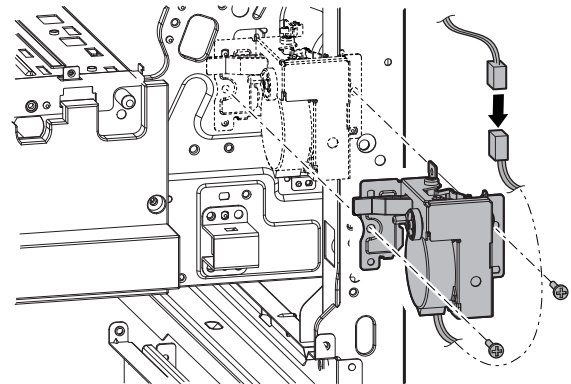
### (1) Waste toner drive motor

- 1) Remove the frame cover.
- 2) Disconnect the connector and remove the screw, and remove the waste toner drive unit.  
Remove the screw, and remove the waste toner drive motor from the waste toner drive unit.

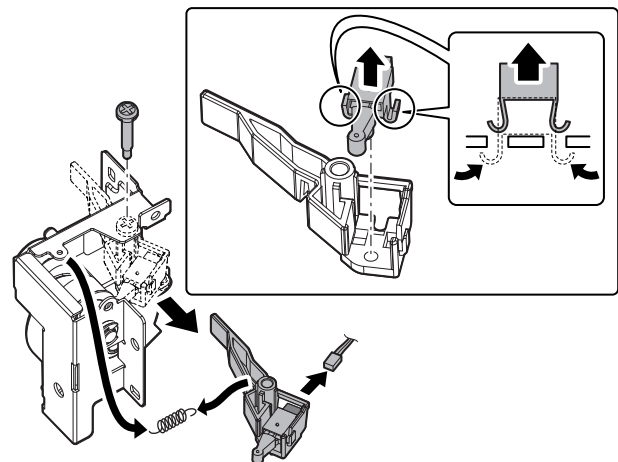


### (2) Waste toner full detection switch

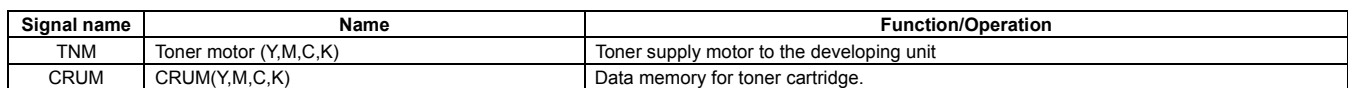
- 1) Remove the frame cover.
- 2) Disconnect the connector and remove the screw, and remove the waste toner drive unit.



- 3) Remove the screw and the spring, and remove the waste toner box installation lever.  
Disconnect the connector and disengage the pawl. Remove the waste toner full detection switch.

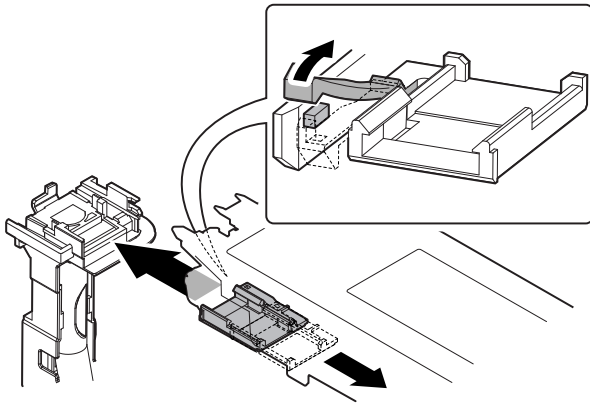


## 1. Electrical and mechanical relation diagram

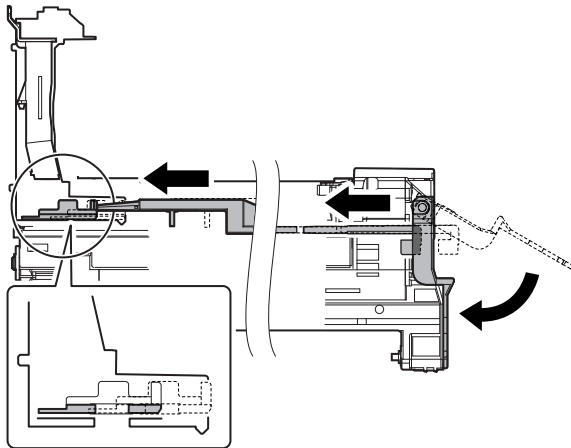
MX-5001N TONER SUPPLY SECTION J - 1

## 2. Operational descriptions

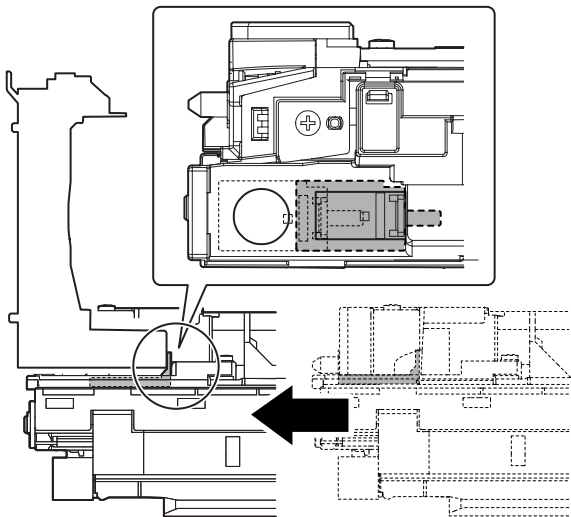
When the toner cartridge is inserted into the machine, the lock pawl is released and the supply shutter is opened.



The transport shutter is opened and closed by the shaft linked with the developing lever.



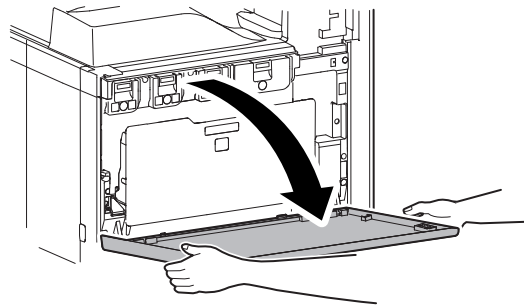
The toner supply section of the developing unit is opened and closed when the open/close level on the unit pushes the block.



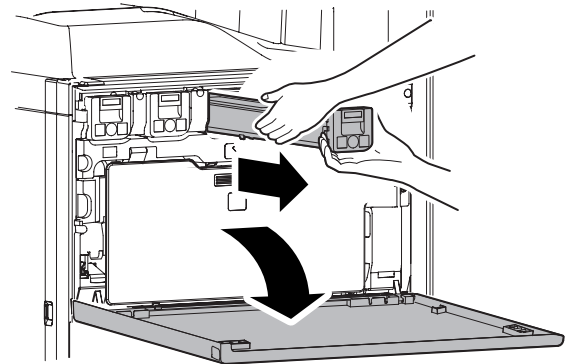
## 3. Disassembly and assembly

### A. Toner cartridges

- 1) Open the front cover.



- 2) Lift the lock lever, and pull it out slowly and horizontally.





## 1. Electrical and mechanical relation diagram

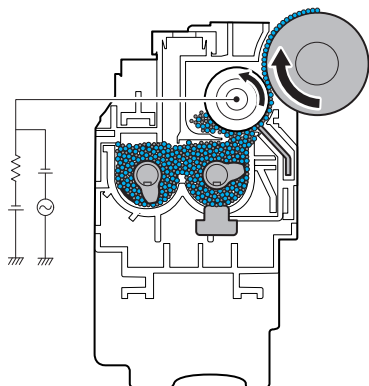


Signal name	Name	Function/Operation
DVM_CL	Developing drive motor (Color)	Color developing unit/Color drum drive
DVM_K	Developing drive motor (Black)	Black developing unit/Black drum drive
BS	Developing bias (Y,M,C,K)	Developer bias
TCS	Toner density sensor (Y,M,C,K)	Controls the toner density in the developing unit.

No.	Name	Function/Operation
1	Developer roller	Latent electrostatic images on the OPC drum are changed to visible images.
2	Mixing roller	Mixing of developer
3	Toner filter (Y,M,C,K)	Prevents dispersing of toner

## 2. Operational descriptions

This converts the electrostatic latent images on the OPC drum generated by the laser (writing) unit into visible images with toner.



Toner and carrier in the developing unit are stirred and transported by the mixing roller.

By mixing and transporting, toner and carrier are negatively charged due to mechanical friction.

The developing bias voltage (AC component and negative DC component) is applied to the developing roller.

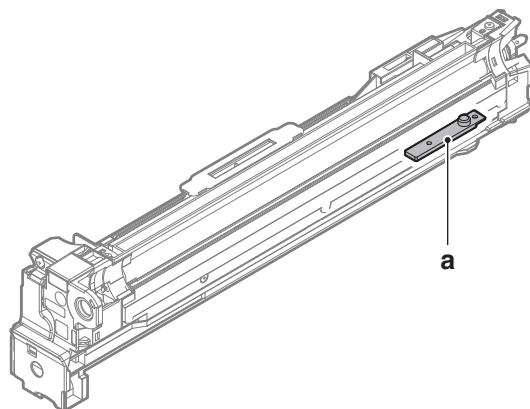
Negatively charged toner is attracted to the exposed section on the OPC drum where the negative potential falls due to the developing bias.

If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

## 3. Disassembly and assembly

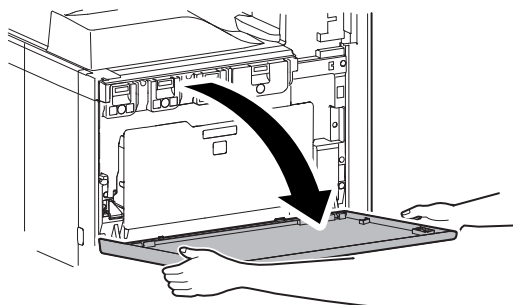
Be careful not to attach fingerprints or oily dirt on the DV roller surface.

### A. Development unit

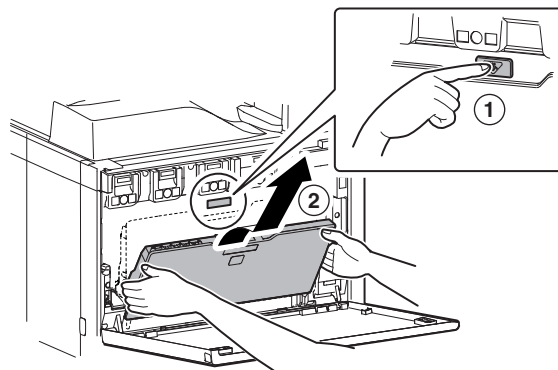


Parts	
a	Density sensor

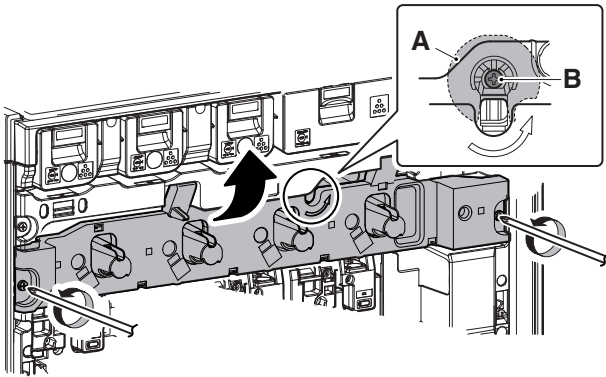
- 1) Open the front cover.



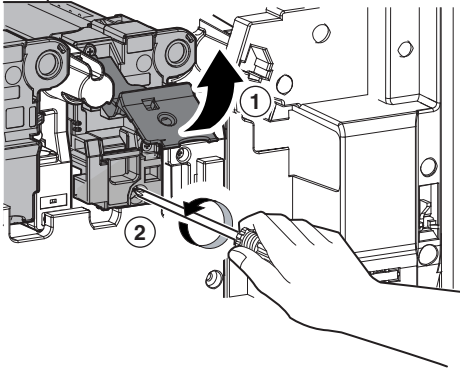
- 2) Remove the waste toner box.



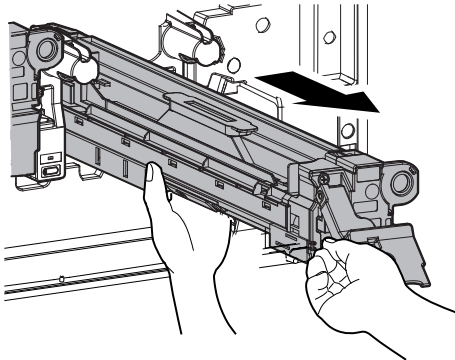
- 3) Check that the lock is released as shown in (A).  
Loosen the blue screw, and open the drum positioning unit.  
\* When the lock is not released, use a screwdriver to turn the screw (B) counterclockwise so that it is fit as (A).



- 4) Open the DV lock lever, and release the fixing screw.  
(1 position for each color)

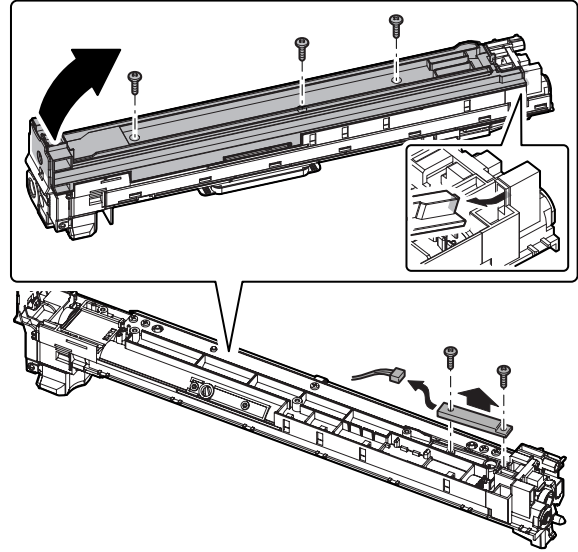


- 5) Pinch the knob and remove the development unit.



#### (1) Density sensor

- 1) Remove the developing unit.
- 2) Remove the screw, and remove the DV guide.  
Remove the screw, and disconnect the connector.  
Remove the density sensor.

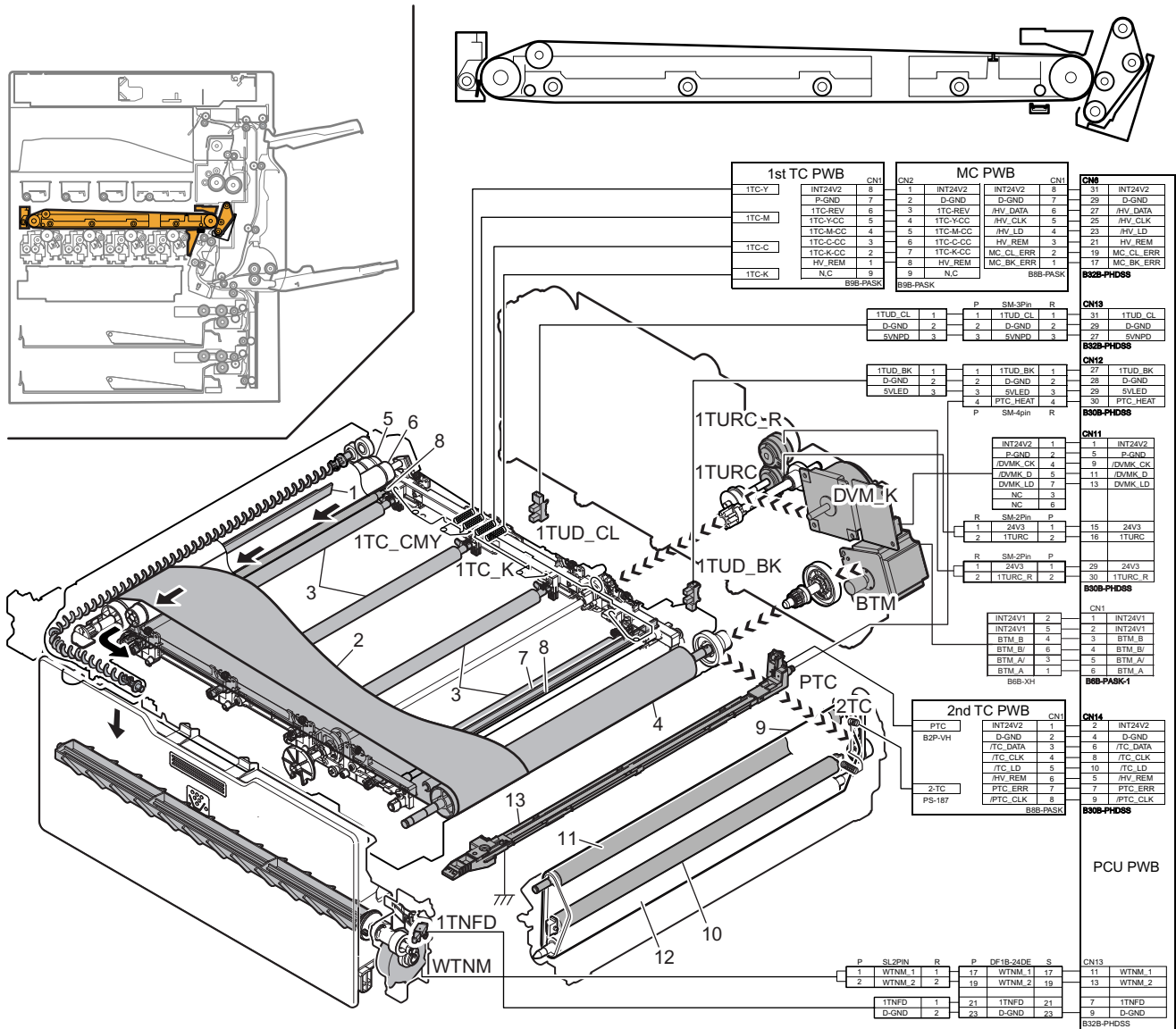




# [L] TRANSFER SECTION

## 1. Electrical and mechanical relation diagram

### A. Transfer section

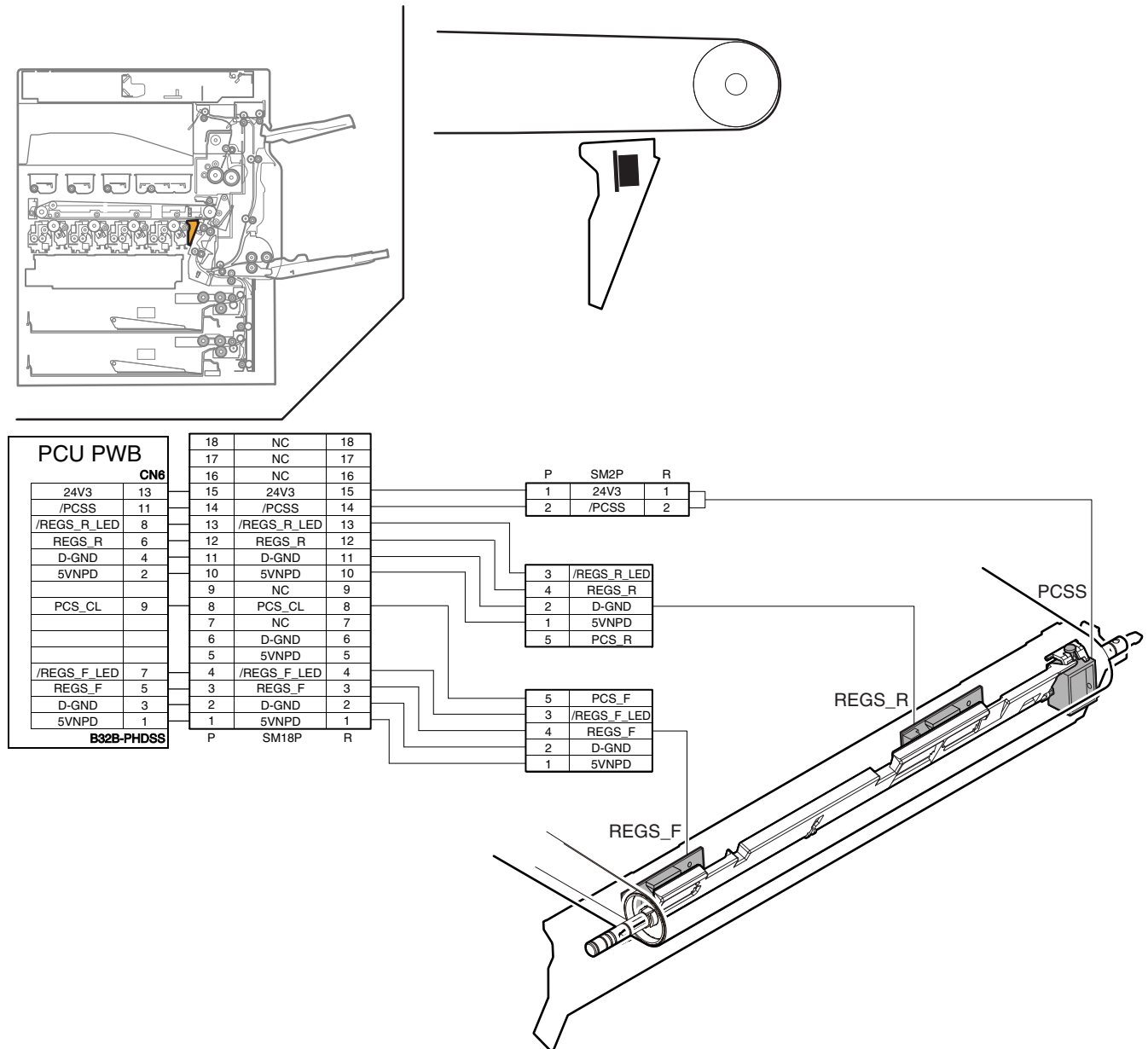


Signal name	Name	Function/Operation
1TC_CMY	Primary transfer output (CMY)	Color transfer high voltage
1TC_K	Primary transfer output (K)	B/W transfer high voltage
1TNFD	Waste toner full detection switch	Waste toner full detection
1TUD_BK	Transfer belt separation BK detection	B/W transfer folder position detection
1TUD_CL	Transfer belt separation CL detection	Color transfer roller position detection
1TURC	Primary transfer separation clutch	Transfer roller separation control
1TURC_R	Primary transfer separation reverse clutch	Controls the primary transfer separation mode.
2TC	Secondary belt transfer output	Secondary transfer high voltage
BTM	Transfer belt motor	Drives the transfer belt.
DVM_K	Developing drive motor (K)	Transfer unit drive (Commonly used with the B/W developing drive roller)
WTNM	Waste toner drive motor	Transports waste toner.
PTC	PTC output	PTC high voltage

No.	Name	Function/Operation
1	Primary transfer cleaner blade	Clean and remove residual toner from the intermediate transfer belt.
2	Intermediate transfer belt	Toner on the drum is transferred to form toner images on the belt.
3	Primary transfer roller	Transfers toner images on the OPC drum to the intermediate transfer belt.
4	Primary transfer belt drive roller	Drives the transfer belt.
5	Primary transfer belt follower roller	Transfer belt follower

No.	Name	Function/Operation
6	Primary transfer belt tension roller	Apply a tension to the transfer belt.
7	Belt CL brush	Transfer belt back surface cleaning.
8	PTC opposing roller	Roller to flow a PTC current.
9	Secondary transfer belt	Transfers toner images on the intermediate transfer belt to paper.
10	Secondary transfer roller	Transfers toner images on the intermediate transfer belt to paper.
11	Secondary transfer belt drive roller	Drives the transfer belt.
12	Secondary transfer belt follower roller	Transfer belt follower.
13	PTC unit	Reduces the positive charges on the primary transfer belt.

## B. Pro-reg sensor section



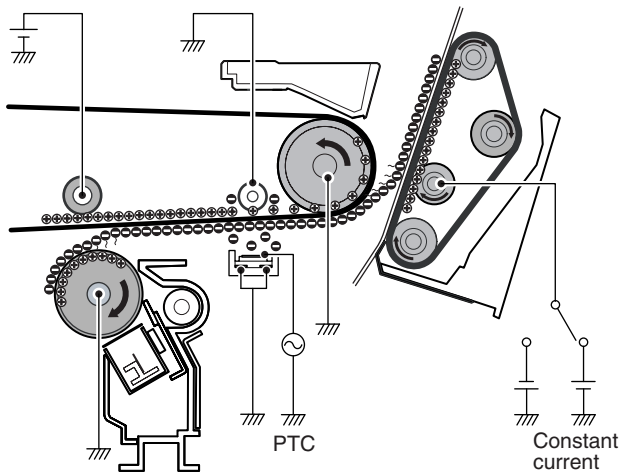
Signal name	Name	Function/Operation
PCSS	Color image density sensor PWB reflection plate shutter solenoid	Opens/closes the shutter of the process control and the resist sensor.
REGS_F	Color image density sensor/ Image registration sensor F	Detection of resist shift on the machine front (F) side, and detection of the color toner patch density.
REGS_R	Black image density sensor/ Image registration sensor R	Detection of resist shift on the machine rear (R) side, and detection of the black toner patch density.

## 2. Operational descriptions

### A. Transfer

#### (1) Transfer operation

##### a. Transfer operation



Toner images on the OPC drum are transferred to the primary transfer belt by applying the positive high voltage to the primary transfer roller.

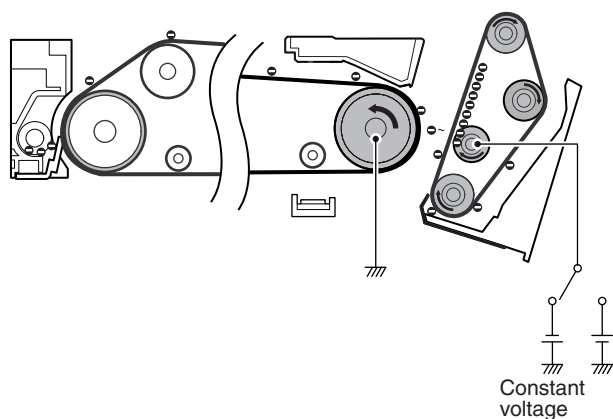
Negative charge is generated by the PTC unit, and this weakens positive charges on the transfer belt, reducing the attractive force between the primary transfer belt and toner.

By this operation, the transfer efficiency in the secondary transfer is improved.

Next, the positive high voltage is applied to the secondary transfer belt, and toner images on the primary transfer belt are transferred to paper. In the monochrome mode and the color mode, the black (K) transfer voltage is selected.

##### b. Cleaning operation

In the cleaning operation, the polarity of the applying voltage of the secondary transfer belt is made negative, and unnecessary toner is transferred to the primary transfer belt, and it is cleaned by the primary transfer belt cleaning blade, and transported to the waste toner section.

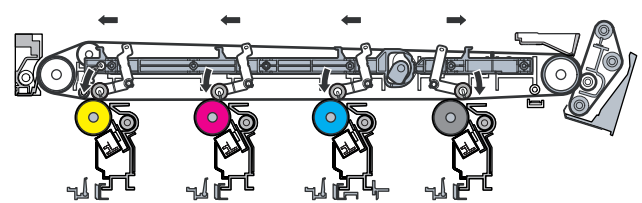


#### (2) Primary (intermediate) transfer roller separation mechanism and contents

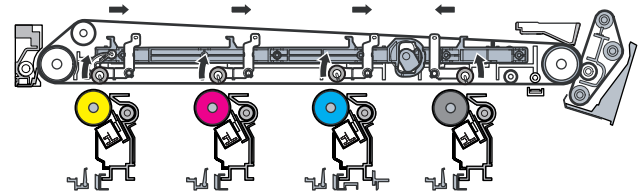
The primary transfer roller operates pressing all the rollers, separates all the rollers, or presses only black depending on the operation mode.

When the roller separation clutch (1TURC) turns ON, the transfer cam rotates to shift the primary transfer link and the primary transfer arm linked with the cam in the arrow direction, performing separating operation of the roller.

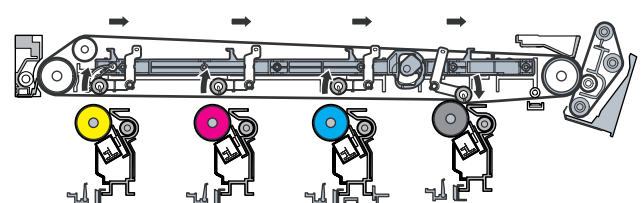
All pressing



All separating



Pressing only black



It also performs all pressing, all separating, or pressing only black with the roller separation sensors (1TUD\_CL, 1TUD\_BK) and the separation detection arm.

	1TUD_CL	1TUD_BK
All pressing	ON	OFF
All separating	OFF	ON
Pressing only black	OFF	OFF

The primary transfer drive and the secondary transfer drive are commonly used with the black developing motor.

## B. Image density detection and resist detection

Image density detection and image resist detection are performed by the sensors arranged on the front frame side and the rear frame side.

### (1) Function and operation of the color image density sensor/image resist 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 resist adjustment is performed, the image resist shift on the front frame side is detected.

The shutter plate is provided on the sensor. The shutter plate is closed before operation of the process control. The sensor sensitivity adjustment is performed by using the shutter plate as the reference reflection plate.

The operation of the shutter plate is controlled by the process control shutter solenoid (PCSS).

### (2) Function and operation of the black image density sensor/image resist sensor R (REGS R) provided on the rear frame side

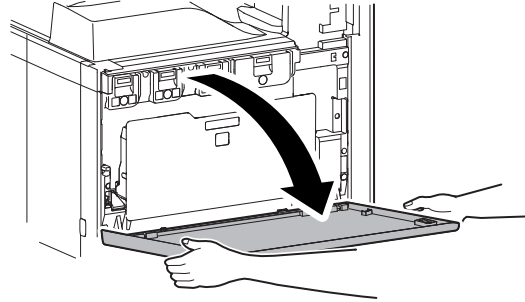
When the process control is performed with one sensor, the black toner patch density is detected.

When the image resist adjustment is performed, the image resist shift on the rear frame side is detected.

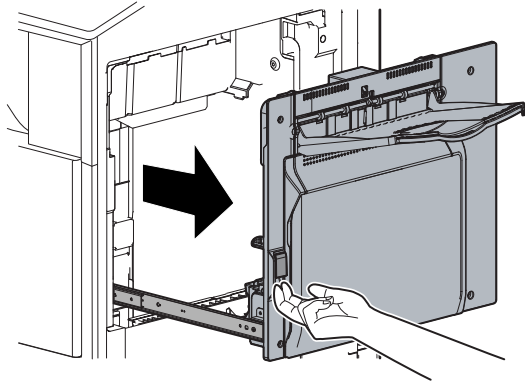
## 3. Disassembly and assembly

### A. Primary transfer unit

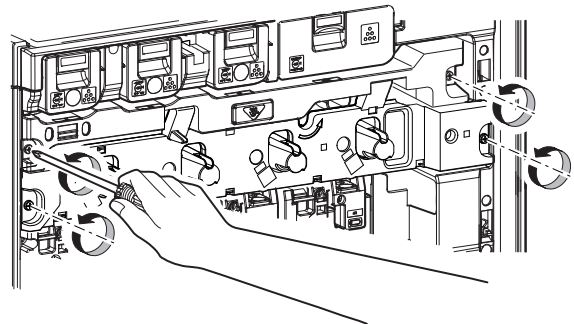
- 1) Open the front cover.



- 2) Open the right door.

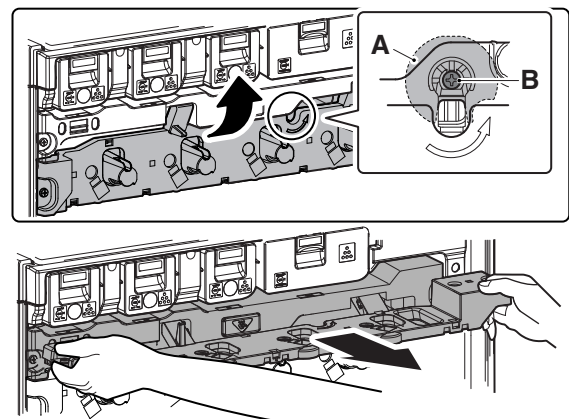


- 3) Loosen the blue screw.

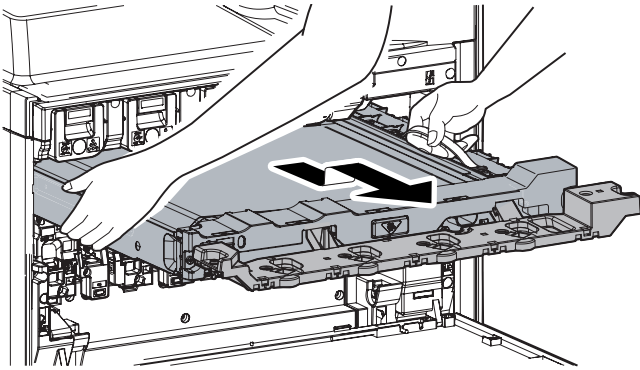


- 4) Turn the blue screw (A) counterclockwise. Making sure that the lock is released (B), open and then pull out the drum positioning unit.

\* Failure to complete this step may damage the intermediate transfer belt.



- 5) Hold the specified position, and remove the primary transfer unit.

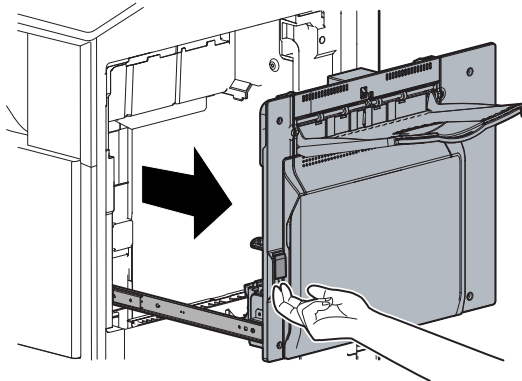


**(NOTE)**

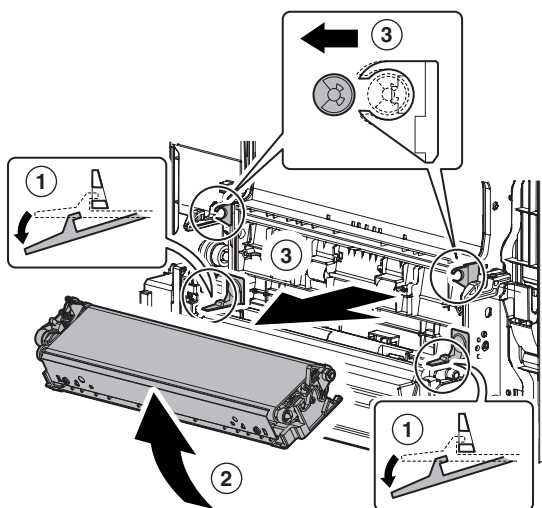
When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. (Power OFF-ON)  
This procedure initializes the transfer roller to return it to the home position.

## B. Secondary transfer unit

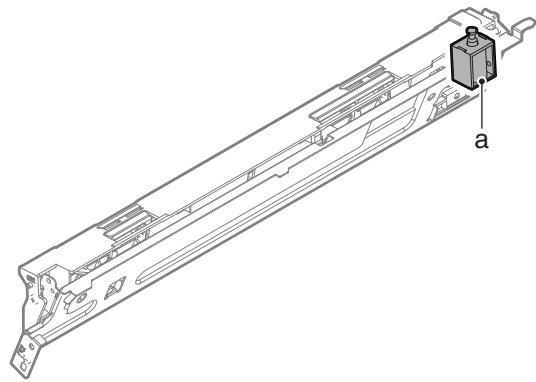
- 1) Open the right door.



- 2) Release the pawl, and remove the secondary transfer unit.

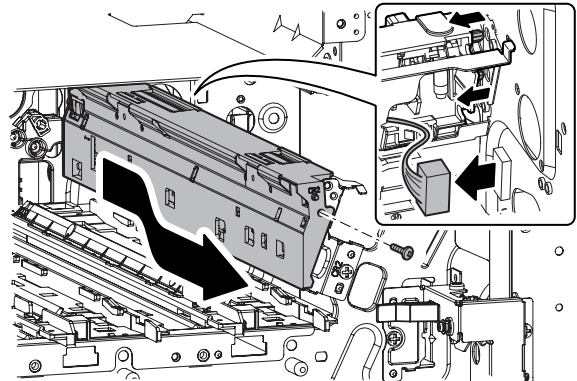


## C. Pro-reg sensor unit



Parts	
a	Process control shutter solenoid

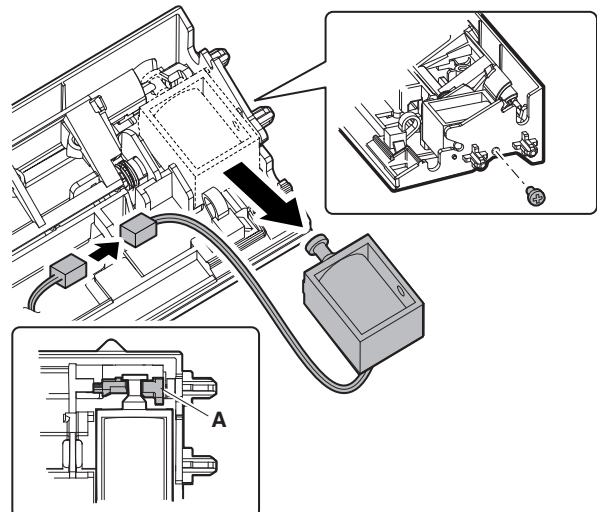
- 1) Remove the developing unit (K).
- 2) Remove the drum unit (K).
- 3) Remove the resist roller unit.
- 4) Disconnect the connector. Remove the screw, and remove the pro-reg sensor unit.



### (1) Process control shutter solenoid

- 1) Remove the pro-reg sensor unit.
- 2) Remove the screw. Disconnect the connector, and remove the process control shutter solenoid.

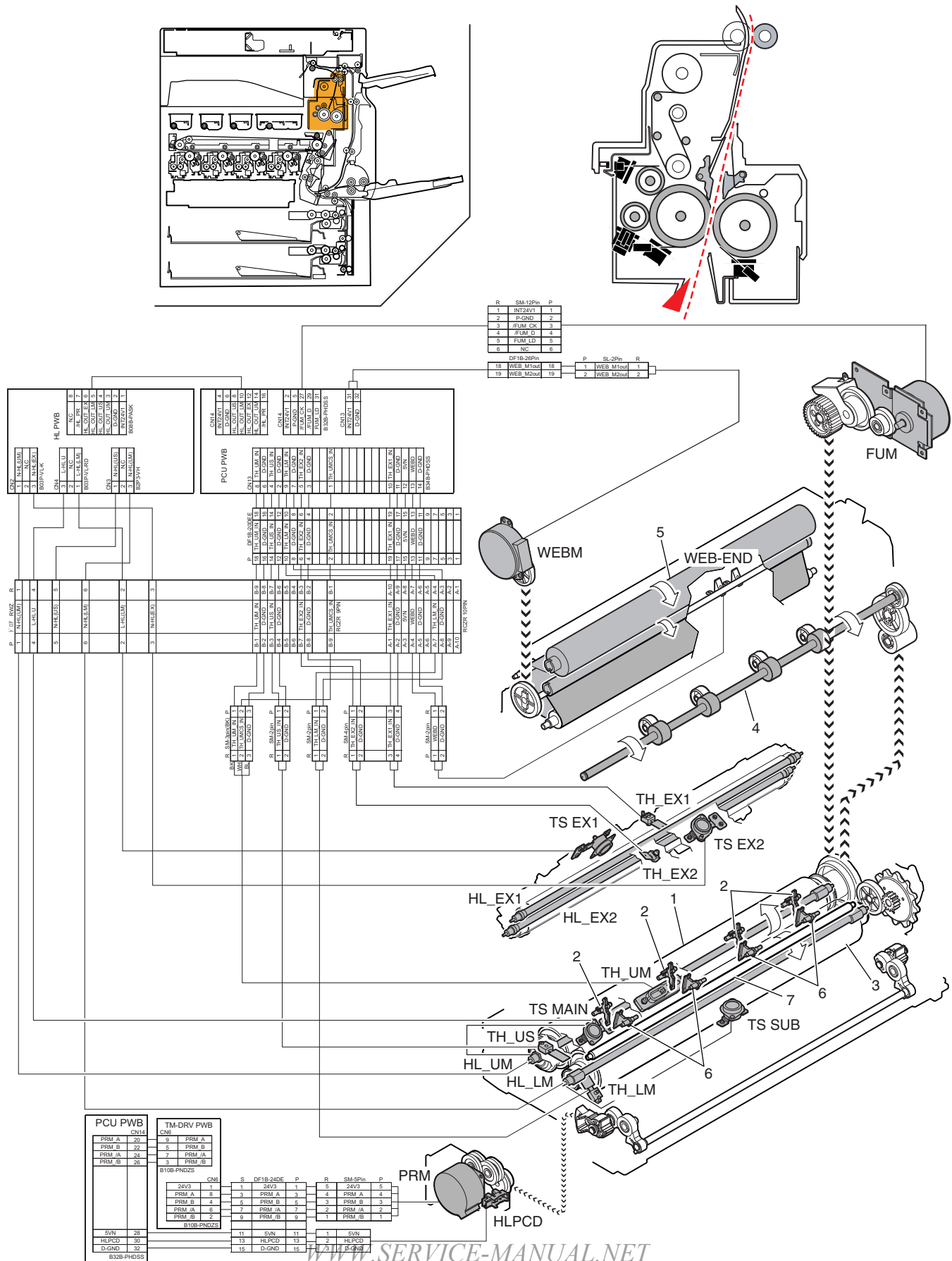
\* When installing, engage the process control shutter solenoid with the groove section of the shutter mounting plate (A).





# [M] FUSER SECTION

## 1. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
FUM	Fusing motor	Drives the fusing unit.
HL_LM	Heater lamp lower main	Heats the fusing roller (pressing).
HL_UM	Heater lamp upper main	Heats the fusing roller (heating).
HL_EX1	Heater lamp external 1	Heats the fusing roller (heating). (External)
HL_EX2	Heater lamp external 2	Heats the fusing roller (heating). (External)
HLPCD	Fusing pressure release sensor	Detects pressure release of the fusing roller.
TS MAIN	Thermostat (1)	Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]
TS EX1	Thermostat (2)	Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)] (External)
TS EX2	Thermostat (3)	When the temperature rises abnormally, conduction to the heater lamp is cut off. [For the fusing roller (heating)] (External)
TS SUB	Thermostat (4)	When the temperature rises abnormally, conduction to the heater lamp is cut off. [For the fusing roller (pressing)] (External)
PRM	Fusing pressure release motor	Adjusts the fusing roller pressure.
TH_UM	Fusing temperature sensor (1)	Detects the surface temperature of the fusing roller (heating). (Center section)
TH_US	Fusing temperature sensor (2)	Detects the surface temperature of the fusing roller (heating). (Edge section)
TH_LM	Fusing temperature sensor (3)	Detects the surface temperature of the fusing roller (pressing).
TH_EX1	Fusing temperature sensor (4)	Detects the surface temperature of the heat roller (external).
TH_EX2	Fusing temperature sensor (5)	Detects the surface temperature of the heat roller (external).
WEB-END	Web roller end detection	Detects presence of cleaning paper.
WEBM	Fusing web cleaning motor	Drives the fusing web cleaning paper.

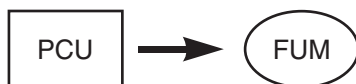
No.	Name	Function/Operation
1	Fusing roller (Heating)	Applies heat and pressure to toner on paper to fuse it on paper.
2	Upper separation pawl	Mechanically separates paper which was not naturally separated from the fusing roller (heating).
3	Fusing roller (Pressing)	Applies heat and pressure to toner on paper to fuse it on paper.
4	Transport roller 9 (Drive)	Transports paper from the fusing roller to the paper exit roller 1.
5	Web roller	Cleans the upper heat roller.
6	Lower separation pawl	Mechanically separates paper which was not naturally separated from the fusing roller (pressing).
7	Fusing cleaning roller	Cleans the fusing roller (pressing).

## 2. Operational descriptions

### A. Fusing unit drive

For driving the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

Driving by the drive motor (DC brushless motor) is performed according to the control signal sent from the PCU.



### B. Heater lamp drive

The surface temperature of the heat roller detected by the thermostat is sent to the PCU. When the temperature is lower than the specified level, the heater lamp ON signal is sent from the PCU to the heater lamp drive circuit on the HL PWB.

The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, the power supply (AC line) to the heater lamp is cut off.

### C. Fusing operation

Color toner (Y,M,C,K) on paper is subject to heat and pressure to be fused on paper.

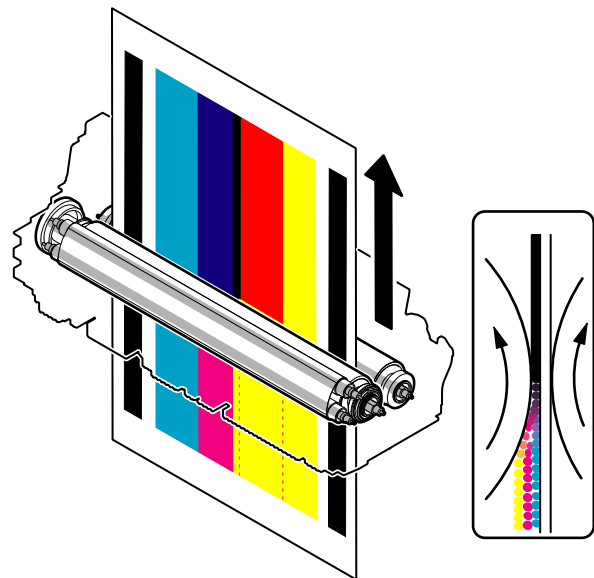
At that time, color toner of Y, M, C, and K are mixed to reproduce colors approximate to the document image colors.

The heater lamps are provided in the lower and the upper heat roller to heat paper from the upper and the lower sides.

This is because paper must be heated both from the upper side and from the lower side together in order to melt and fuse toner in the four layers on the paper.

The upper and the lower heat rollers of silicon rubber are employed.

This is because of the following reasons.



- 1) To increase the nip quantity. To increase the heating capacity for paper.
- 2) By pressing the flexible roller, multi-layer toner can be fused without deformation.
- 3) An even pressure can be applied to rough surface of toner layers (multi-layer structure).

## D. Automatic pressure release system

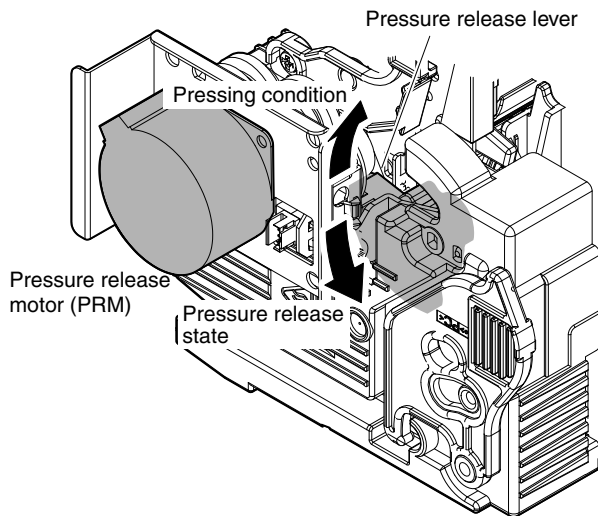
The upper and the lower heat rollers are normally pressed together. When, however, one of the following conditions is satisfied, pressure is released.

- When the machine shifts to the pre-heating mode.
- When the machine shifts to the auto power shut off mode.
- When the power switch of the operation panel is turned OFF.
- When the machine has been left in the ready state for 20 minutes.
- When the envelope mode is used.

### (1) Pressure release operation

The pressure release motor (PRM) rotates to drive the pressure release lever of the fusing unit to the pressure release state via the reduction gears (6 pcs.).

When 3600ms passes from operating the pressure release detection level and driving the pressure release sensor (HLPCD) to the transmission state (L level), the pressure release motor stops to complete the pressure release operation.



### (2) Pressing operation

When an end use performs any operation or when the machine receives a job signal, the pressure release motor rotates reversely to drive the pressure release lever to the pressing state.

When 200ms passes from when the pressure release sensor (HLPCD) is in the interruption state (H level), the pressure motor stops to complete the pressing operation.

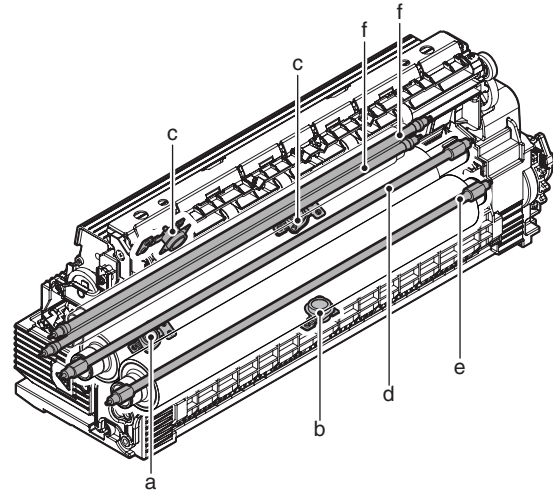
**NOTE:** When turning OFF the main power switch of the machine, be sure to turn OFF the power switch of the operation panel and wait for 10 sec from turning OFF the LCD, and then turn OFF the main power switch.

If the main power switch is turned OFF with the LCD displayed, the power is turned off without completion of the pressure release operation. This will deform the upper and the lower heat rollers.

When, in addition, the fusing roller is installed again after removing it, be sure to install it under the pressure release state.

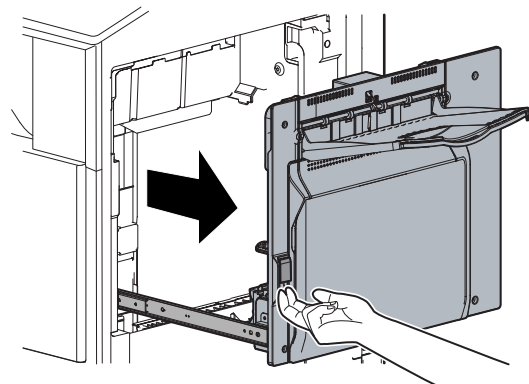
## 3. Disassembly and assembly

### A. Fusing unit

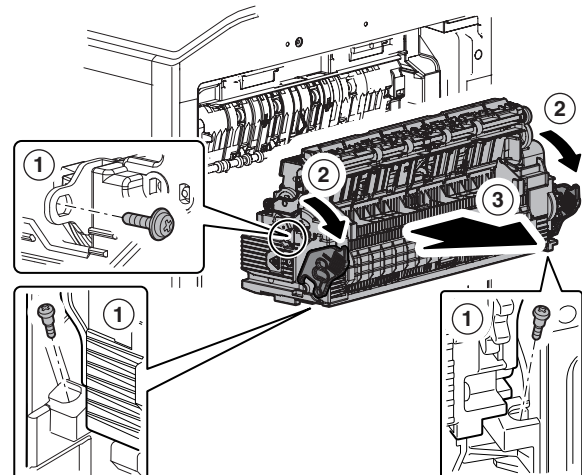


Parts	
a	Upper thermostat
b	Lower thermostat
c	External thermostat
d	Upper heater lamp
e	Lower heater lamp
f	External heater lamp

- 1) Open the right door.



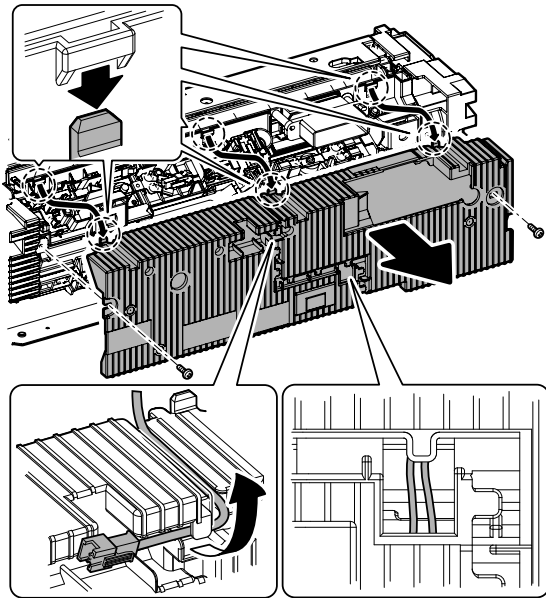
- 2) Remove the blue screw and the step screw. Release the lock lever and remove the fusing unit.





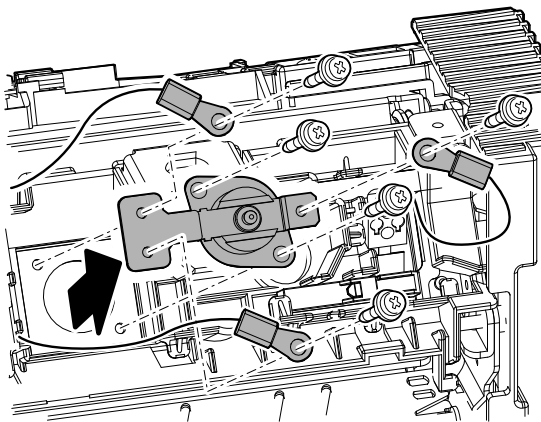
### (1) Upper thermostat

- 1) Remove the fusing unit.
- 2) Remove the screw. Pull out the interface harness and remove the fusing upper cover.



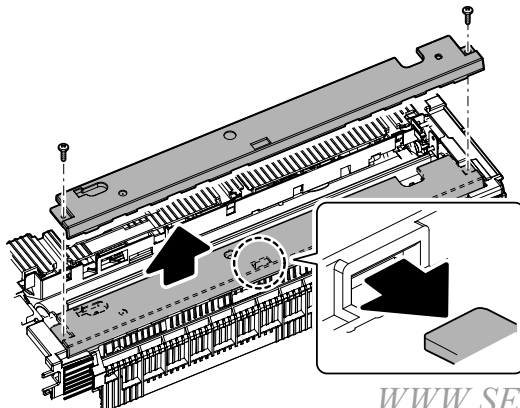
\* After installation, check to confirm that the harness of the external thermister can be seen through the hole in the fusing upper cover.

- 3) Remove the screw, and remove the terminal. Remove the upper thermostat.
- \* Install so that the caulked section of the terminal faces up.



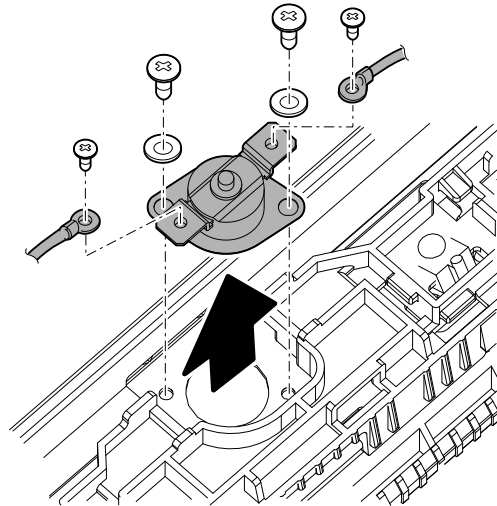
### (2) Lower thermostat

- 1) Remove the fusing unit.
- 2) Remove the screw, and remove the fusing lower cover.



- 3) Remove the screw, and remove the terminal. Remove the lower thermostat.

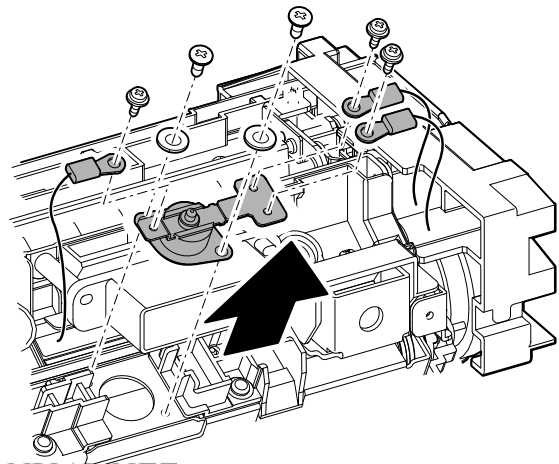
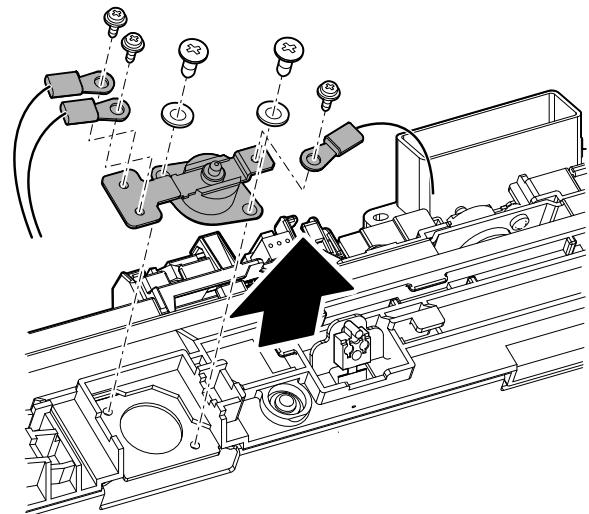
\* Install so that the caulked section of the terminal faces down.



### (3) External thermostat

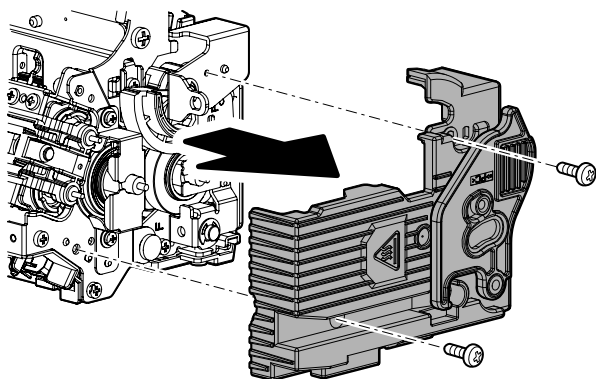
- 1) Remove the fusing unit.
- 2) Remove the fusing upper cover.
- 3) Remove the screw, and remove the terminal. Remove the external thermostat.

\* Install so that the caulked section of the terminal faces up.

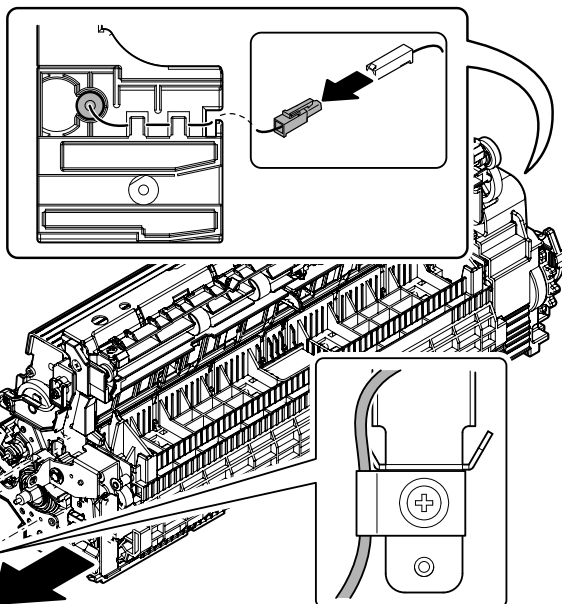


#### (4) Upper heater lamp

- 1) Remove the fusing unit.
- 2) Remove the fusing upper cover.
- 3) Remove the fusing upper cover FAS.

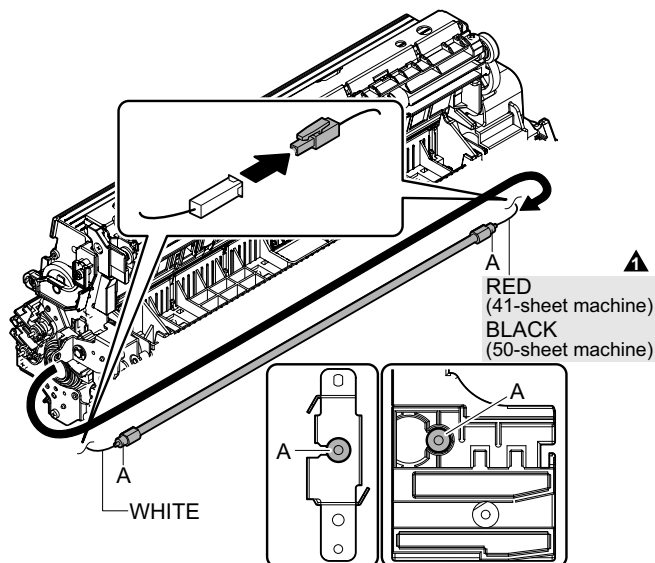


- 4) Remove the screw, and remove the upper lamp holder F. Disconnect the lamp connector on the rear side, and remove the upper lamp harness from the upper lamp holder R.



NOTE: Put the upper heater lamp harness on the bent section beside the upper lamp holder F and pass through the clamp.

- 5) Disconnect the connector on the front side of the upper heater lamp, and remove the upper heater lamp from the front side.

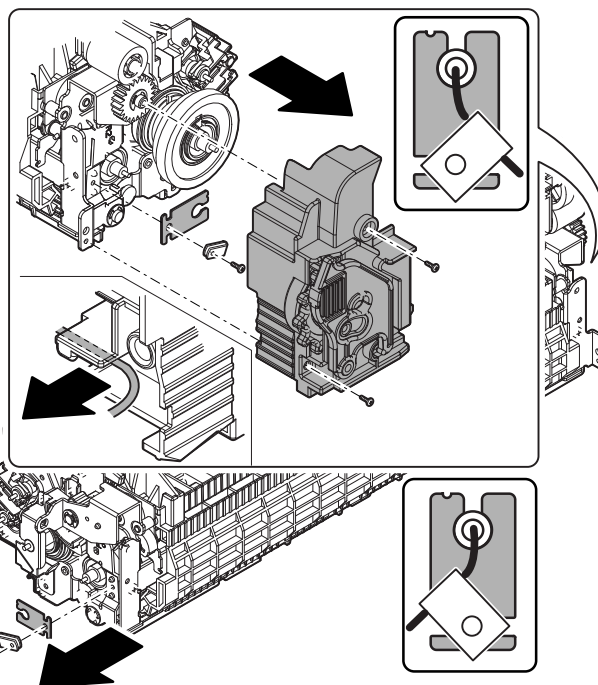


NOTE: When installing, check to confirm that the harness color on the rear side is red or black.

NOTE: When installing, check to confirm that the section (A) of the lower heater lamp is securely engaged with the lamp holder.

#### (5) Lower heater lamp

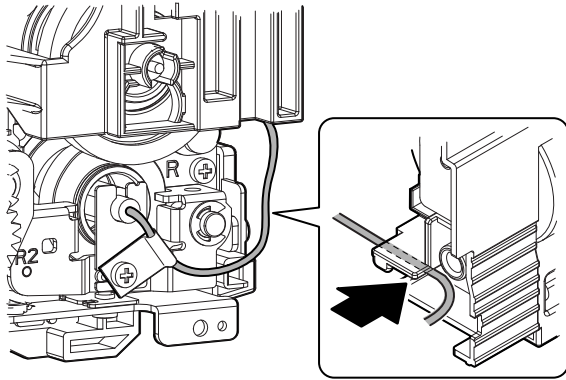
- 1) Remove the fusing unit.
- 2) Remove the fusing upper cover.
- 3) Remove the fusing lower cover.
- 4) Remove the screw, and remove the clamp, the fusing upper cover RAS, and the lower lamp holder F/R.



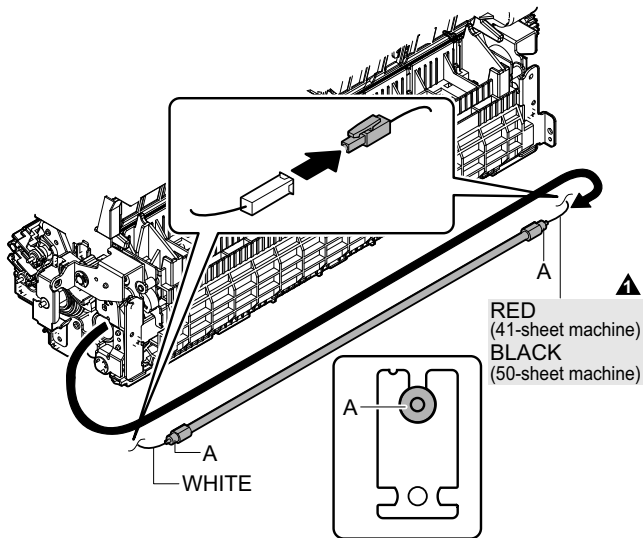
NOTE: The lamp harness is engaged with the fusing upper cover RAS. Remove the lamp harness.

NOTE: Attach the clamp on the front side to the left side apart from the lamp, and the clamp on the rear side to the right side.

NOTE: When installing the fusing upper cover RAS, be careful not to pinch the wires.



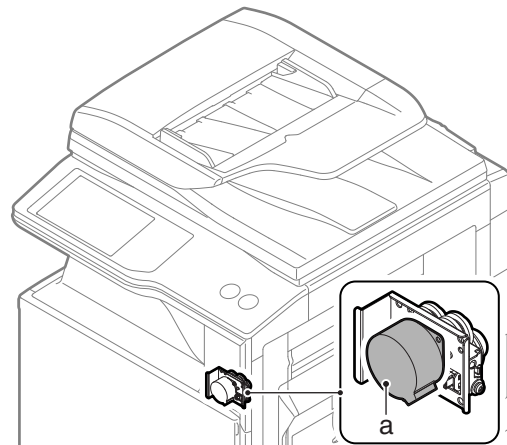
- 5) Disconnect the connectors F/R, and remove the lower heater lamp.



NOTE: When installing, check to confirm that the harness color on the rear side is red or black.

NOTE: When installing, check to confirm that the section (A) of the lower heater lamp is securely engaged with the lamp holder.

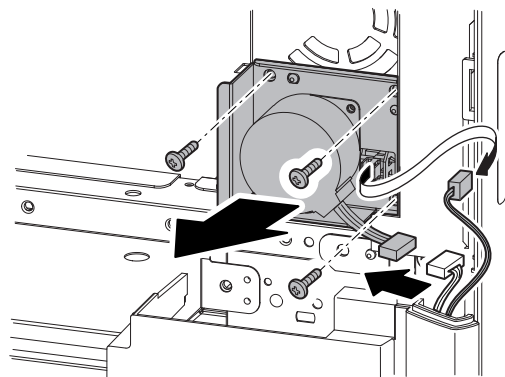
## B. Others



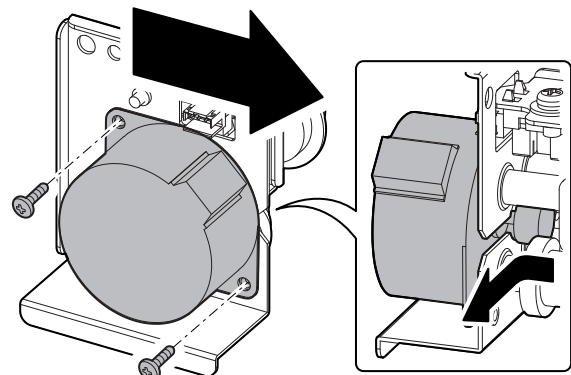
Parts	
a	Fusing pressure release motor

### (1) Fusing pressure release motor

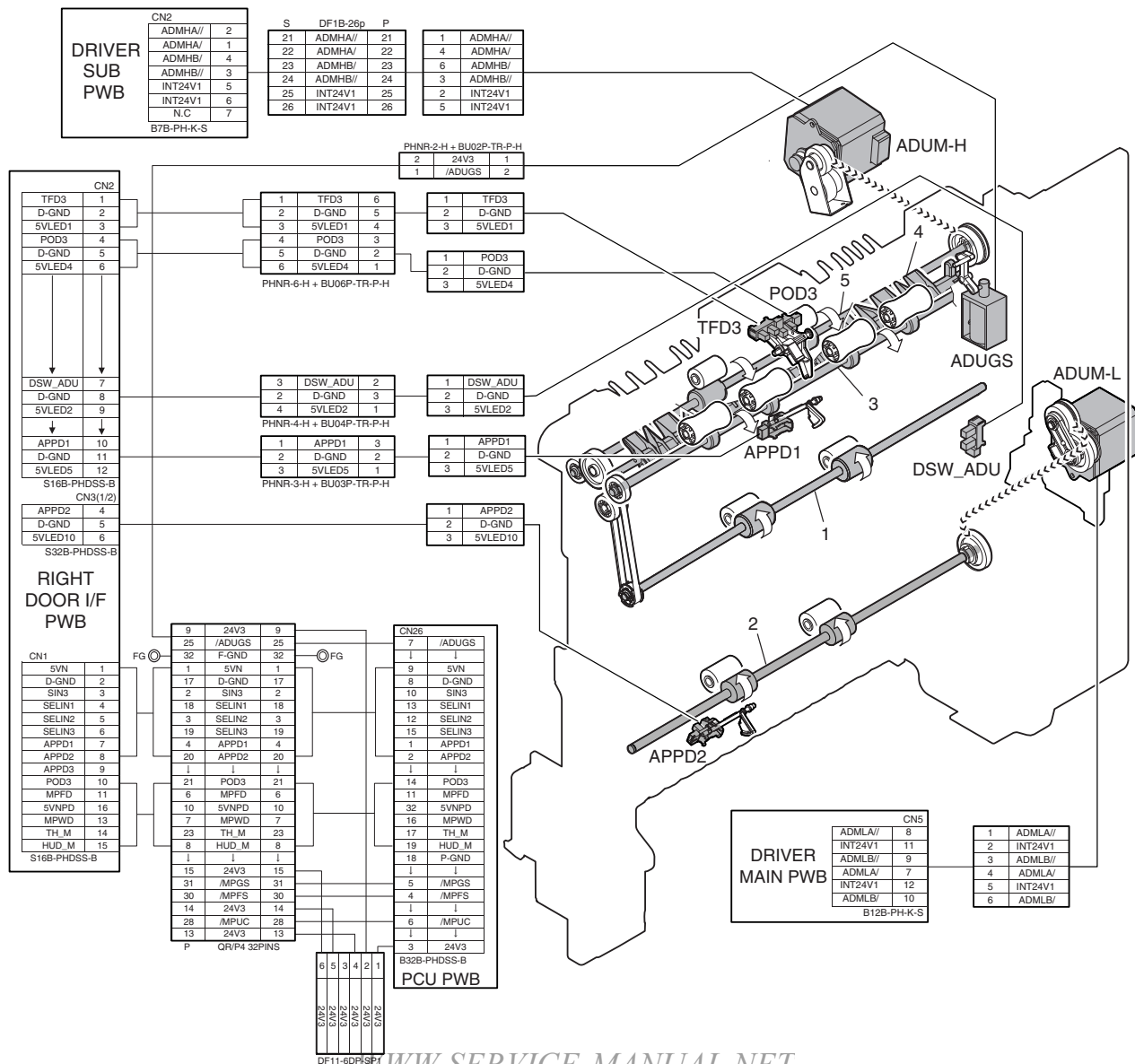
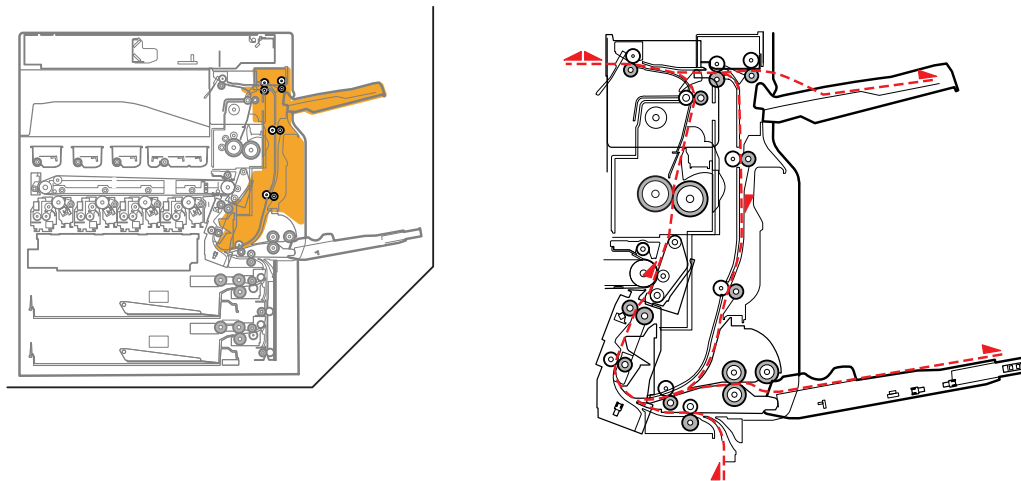
- 1) Remove the front cabinet upper.
- 2) Disconnect the connector and remove the screw, and remove the fusing pressure release motor unit.



- 3) Remove the screw, and remove the fusing pressure release motor.



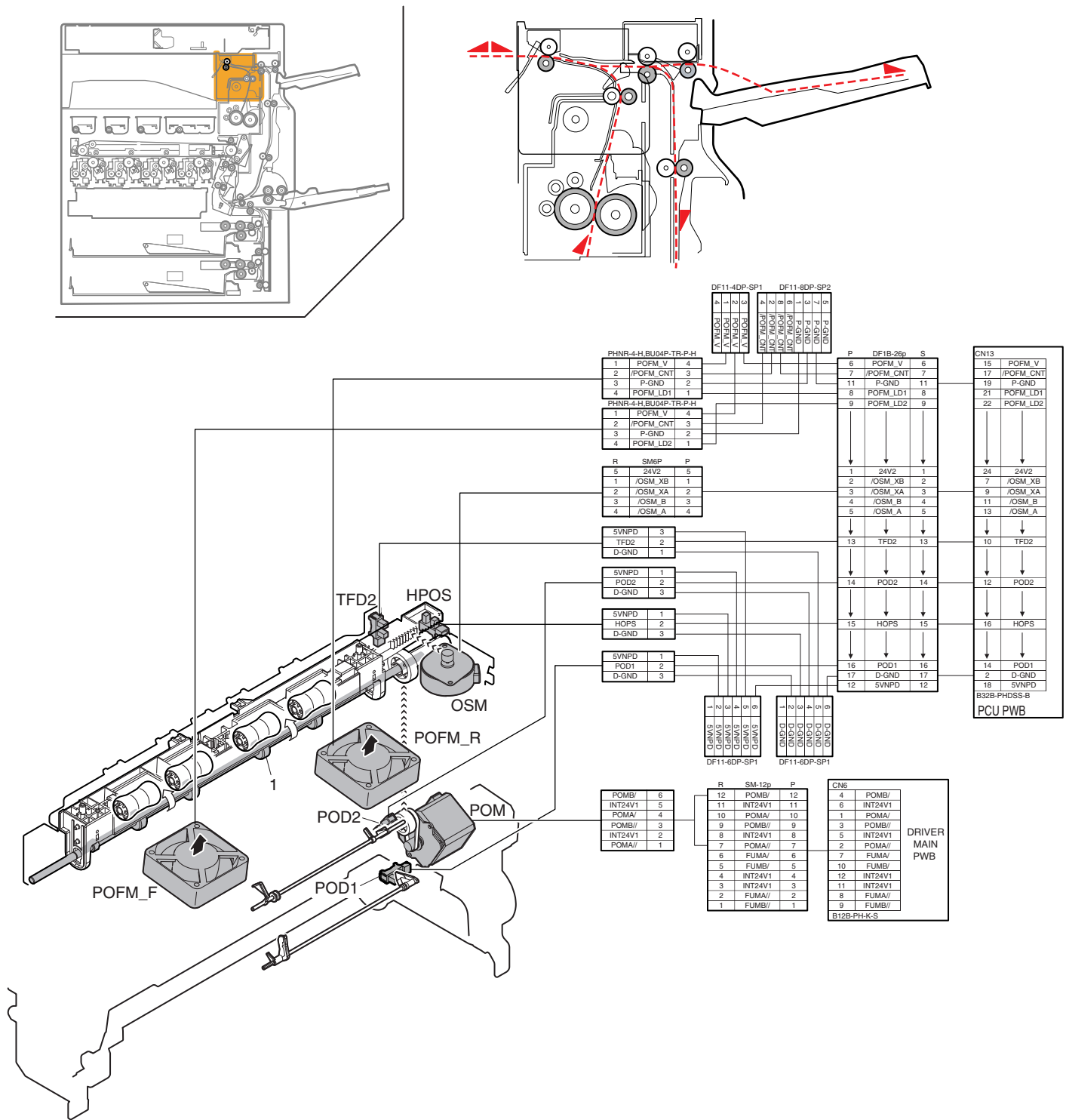
### A. Duplex section



Signal name	Name	Function/Operation
ADUGS	ADU gate solenoid	Controls the ADU gate.
ADUM-H	ADU motor upper	Drive the transport roller 13.
ADUM-L	ADU motor lower	Drives the right door section.
APPD1	ADU transport path detection 1	Detects paper pass in the upstream of the duplex (ADU).
APPD2	ADU transport path detection 2	Detects paper pass in the midstream of the duplex (ADU).
DSW_ADU	ADU transport open/close detection	Duplex (ADU) cover open/close detection
POD3	Right tray paper exit detection	Detects the paper exit into the right tray.
TFD3	Detects the right tray paper exit full.	Detects the right tray paper exit full.

No.	Name	Function/Operation
1	Transport roller 10 (Drive)	Transports the paper transported from the transport roller 13 to the transport roller 11.
2	Transport roller 11 (Drive)	Transports the paper transported from the transport roller 10 to the transport roller 12.
3	Paper exit roller 2 (Drive)	Used to discharge paper.
4	Right paper exit gate	Selects the paper path to transport paper to the duplex (ADU) section or to discharge paper to the right tray.
5	Transport roller 13 (Drive)	Transports paper from the paper exit roller 1 to the paper exit roller 2. Transports paper to the duplex (ADU) section.

## B. Paper exit section



Signal name	Name	Function/Operation
HPOS	Shifter home position detection	Detects the shifter home position.
OSM	Shifter motor	Performs offset of paper.
POD1	Fusing rear detection	Detects paper exit from fusing after detection fusing.
POD2	Paper exit detection	Detects the exit paper.
POFM_F	Paper exit cooling fan motor (F side)	Cools the fusing unit.
POFM_R	Paper exit cooling fan motor (R side)	Cools the fusing unit.
POM	Paper exit drive motor	Drives the paper exit roller.
TFD2	Paper exit full detection	Detects face-down paper exit tray full.

No.	Name	Function/Operation
1	Paper exit roller 1 (Drive)	Discharges paper. / Transports paper to the right paper exit tray. / Transport paper to the duplex (ADU) section.



## 2. Operational descriptions

### A. Duplex

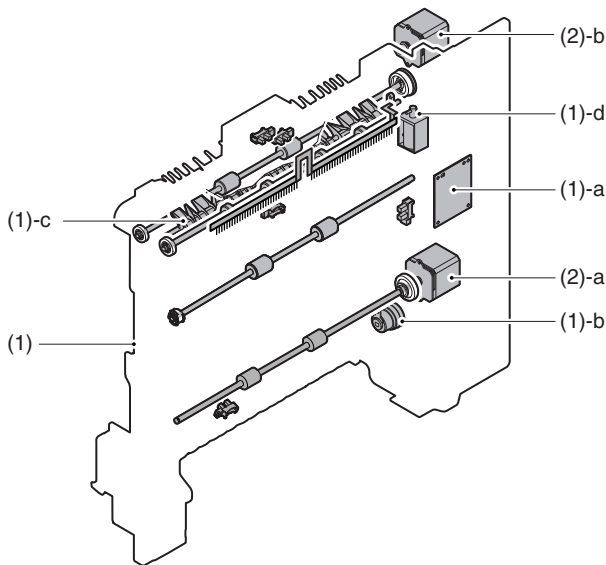
- Paper transported from the fusing section is sent from the transport roller 13 (which is driven by the paper exit drive motor) to the paper exit roller 1.
- At that time, paper is passed under the ADU reverse gate guide.
- When the specified time passes from detection of the paper lead edge by POD1, the paper exit drive motor rotates normally, and rotates reversely after the specified time.
- By the reverse rotation of the paper exit drive motor, paper is sent to the reverse section. At that time, paper passes on the upper side of the Ado gate which lowers by its own weight.
- The transport rollers 10 and 11 are driven by the ADU motor lower to transport paper to the duplex paper feed position.
- Paper is stopped at the duplex paper feed position, and then transported to the machine again.

### B. Paper exit

- Paper transported from the fusing section is sent from the transport roller 13 (which is driven by the paper exit drive motor) to the paper exit roller 1, and discharged to the inner tray.
- When paper is discharged to the right tray, paper is sent to the paper exit roller 1. The paper exit drive motor rotates reversely. Paper is passed through the right paper exit gate, and discharged to the right tray.

## 3. Disassembly and assembly

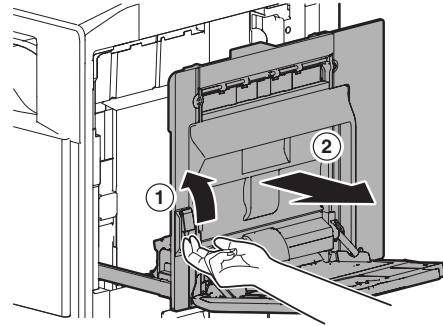
### A. Duplex unit



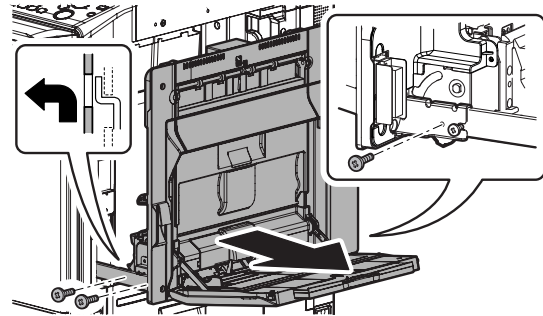
Unit		Parts	
(1)	Right door unit	a	RD I/F PWB
		b	Manual paper feed clutch
		c	Right paper exit gate
		d	ADU gate solenoid
(2)	Others	a	ADU motor lower
		b	ADU motor upper

### (1) Right door unit

- Open the right door.

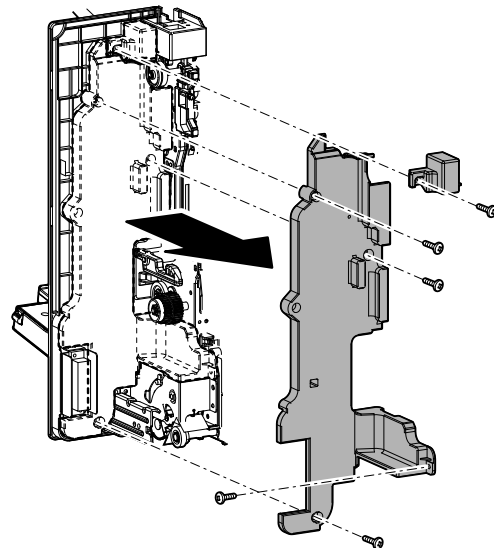


- Remove the right door unit.

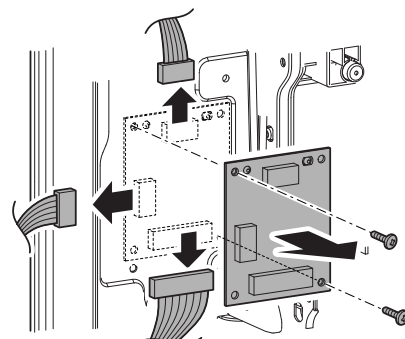


### a. RD I/F PWB

- Open the right door.
- Remove the connector cover. Remove the ADU inner cover.

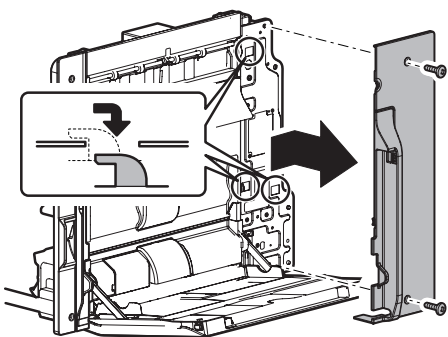


- Disconnect the connector, and remove the RD I/F PWB.

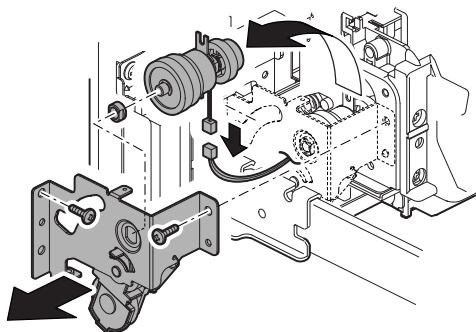


#### b. Manual paper feed clutch

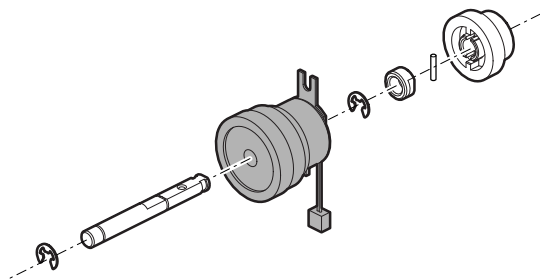
- 1) Remove the right door.
- 2) Remove the connector cover and the ADU inner cover.
- 3) Remove the ADU cabinet R.



- 4) Remove the MF drive connection plate. Disconnect the connector. Remove the manual paper feed clutch unit.

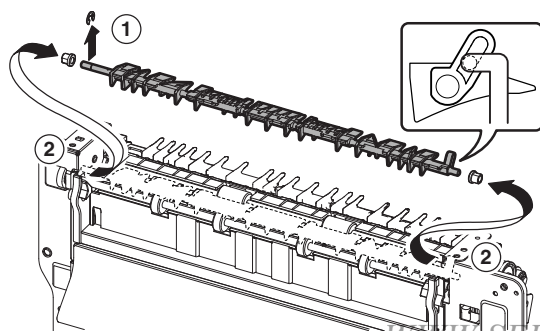


- 5) Remove the manual paper feed clutch.



#### c. Right paper exit gate

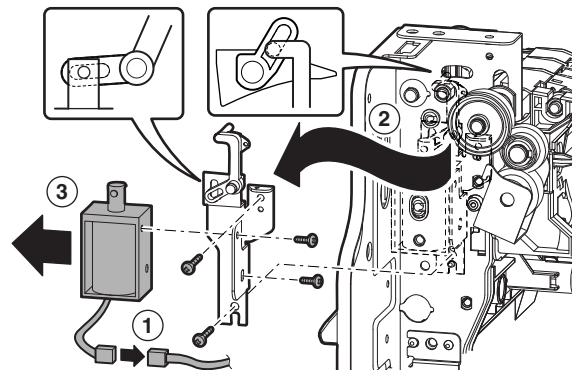
- 1) Open the right door.
- 2) Remove the connector cover ADU inner cover.
- 3) Remove the ADU cabinet R.
- 4) Remove the ADU cabinet F.
- 5) Remove the lock block, and disengage the right door lock pawl. Remove the right door release lever.
- 6) Remove the E-ring, and the ADU gate.



#### d. ADU gate solenoid

- 1) Open the right door.
- 2) Remove the connector cover ADU inner cover.
- 3) Disconnect the connector, and remove the ADU gate solenoid unit.

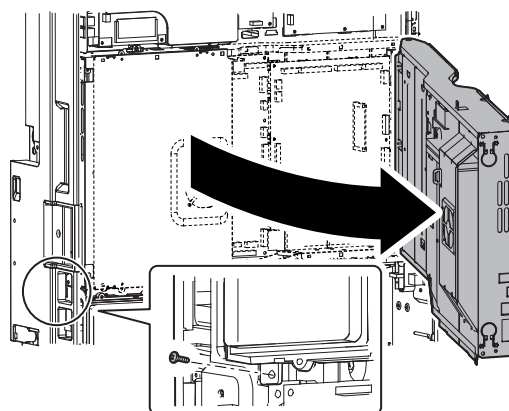
Remove the ADU gate solenoid.



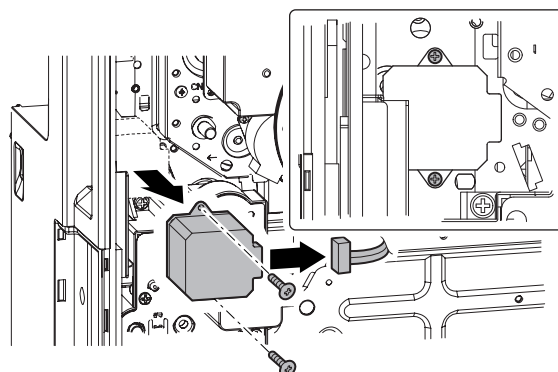
#### (2) Others

##### a. ADU motor lower

- 1) Remove the rear cabinet.
- 2) Open the control box.

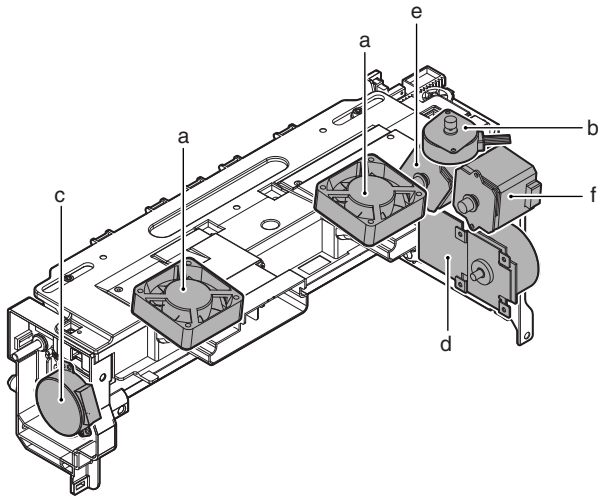


- 3) Disconnect the connector, and remove the ADU motor lower.





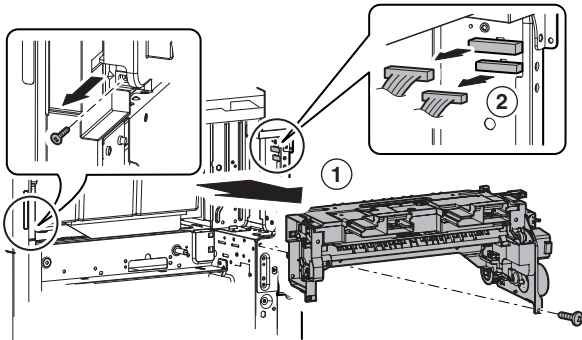
## B. Paper exit unit



Unit	Parts	
(1) Paper exit unit	a	Paper exit cooling fan motor
	b	Shifter motor
	c	Fusing web cleaning motor
	d	Fusing drive motor
	e	Paper exit drive motor
	f	ADU motor upper

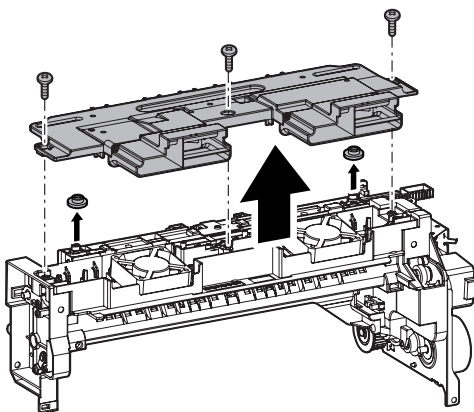
### (1) Paper exit unit

- 1) Remove the screw, the upper cabinet right, and the right connecting cabinet.
- 2) Remove the fusing unit.
- 3) Remove the screw, and remove the paper exit unit, and disconnect the connector.



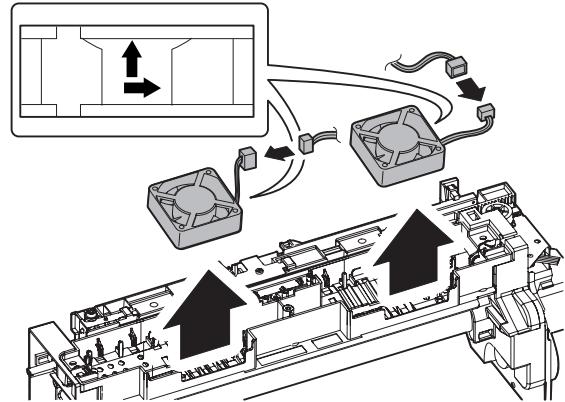
### a. Paper exit cooling fan motor

- 1) Remove the paper exit unit.
- 2) Remove the exhaust fan duct.



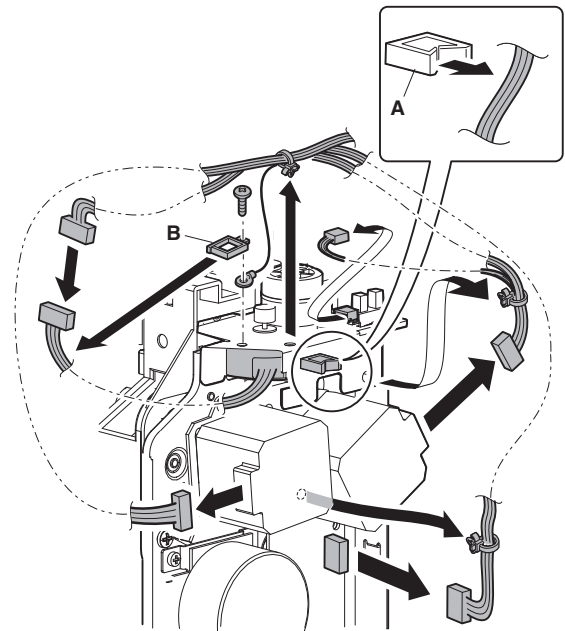
- 3) Disconnect the connector, and remove the paper exit cooling fan motor.

\* When installing, be sure to note the fan direction.

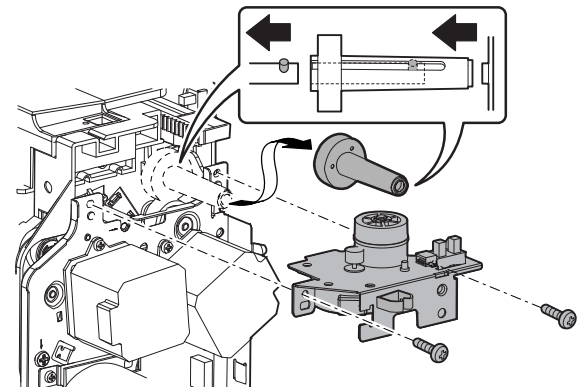


### b. Shifter motor

- 1) Remove the paper exit unit.
- 2) Remove the harness from the saddle (A) and the saddle (B). Remove the screw, and remove the earth terminal. Disconnect the connectors and remove the snap band.



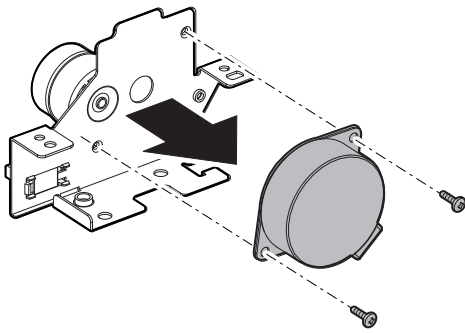
- 3) Remove the shifter motor unit. Remove the gear.



\* When installing, place the paper exit roller SP pin in the gear slit.

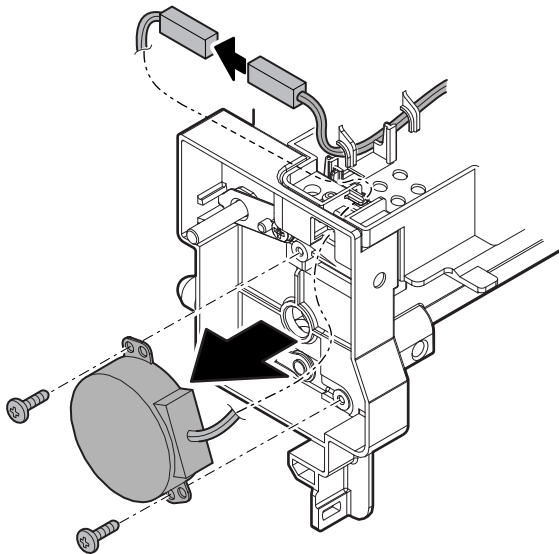
Engage the bar ring of the shifter motor unit with the gear.

- 4) Remove the screws, and remove the shifter motor.



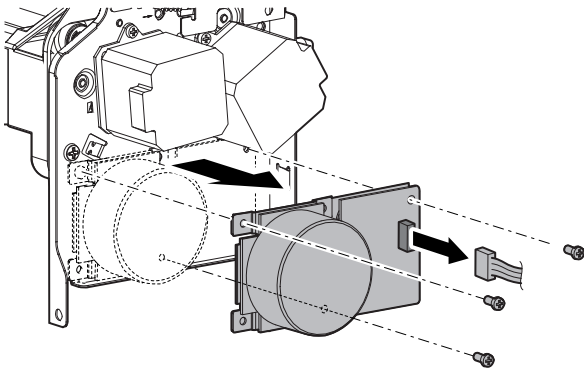
**c. Fusing web cleaning motor**

- 1) Remove the paper exit unit.
- 2) Remove the exhaust fan duct.
- 3) Disconnect the connector, and remove the screws, and then remove the fusing web cleaning motor.



**d. Fusing drive motor**

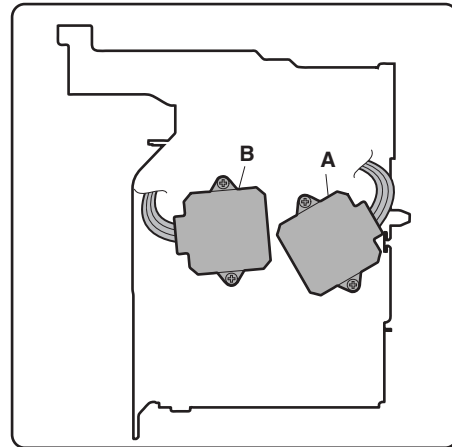
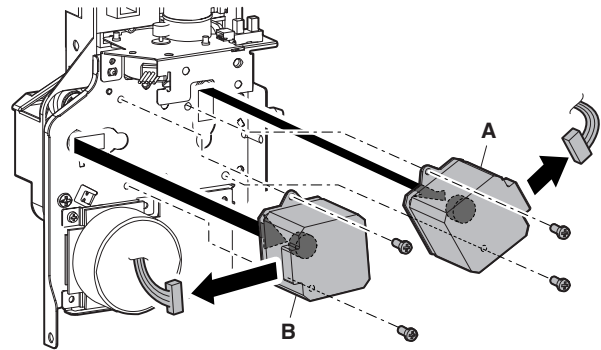
- 1) Remove the paper exit unit.
- 2) Disconnect the connector, and remove the screws, and then remove the fusing drive motor.



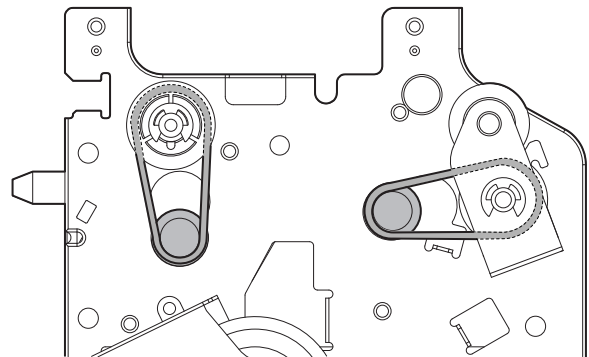
**e. Paper exit drive motor**

**f. ADU motor upper**

- 1) Remove the paper exit unit.
- 2) Disconnect the connector, and remove the screws, and remove the paper exit drive motor (A), and the ADU motor upper (B).



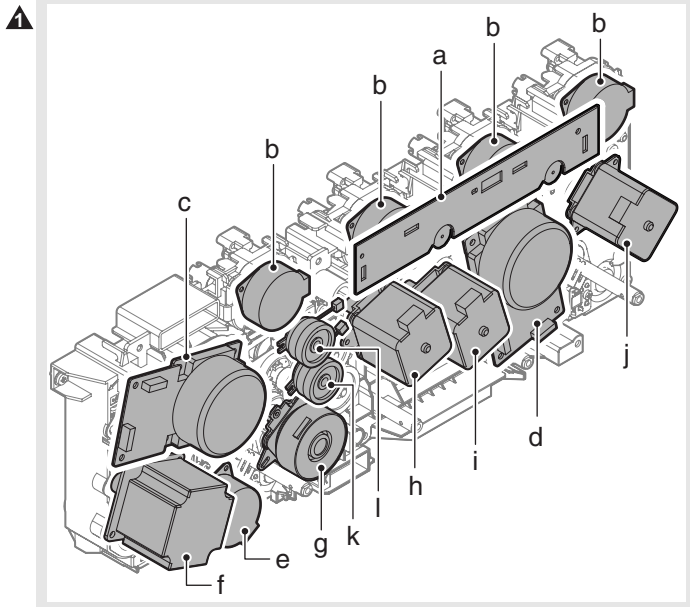
- \* Be careful to install the motors in the proper direction.
- \* When installing, attach the belt as shown below.



# [O] DRIVE SECTION

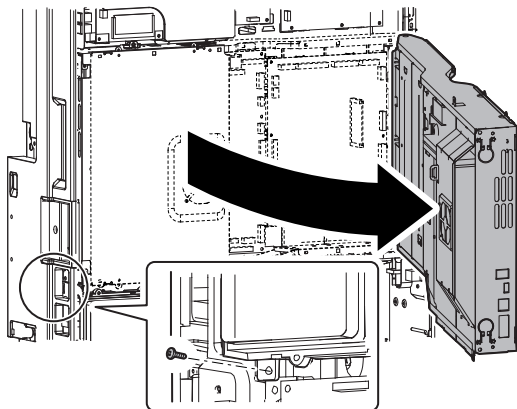
## 1. Disassembly and assembly

### A. Main drive unit



Parts	
a	TM drive PWB
b	Toner motor
c	Developing drive motor (K)
d	Developing drive motor (CL)
e	Resist motor
f	Transfer belt motor
g	BK drum motor
h	C drum motor (50-sheet machine)
i	CL drum motor (40-sheet machine) / M drum motor (50-sheet machine)
j	Y drum motor (50-sheet machine)
k	Primary transfer separation clutch
l	Primary transfer separation reverse rotation clutch

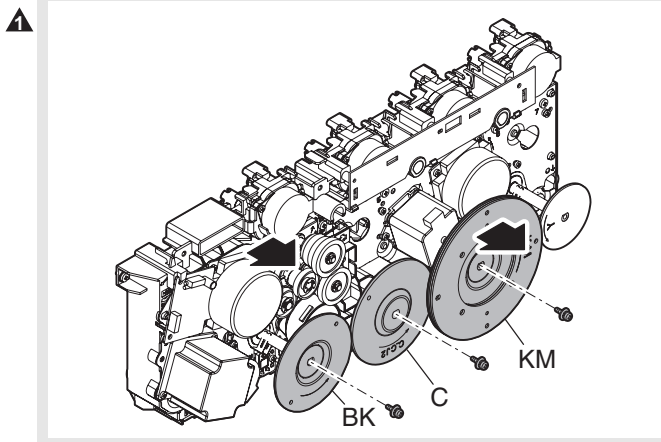
- 1) Remove the rear cabinet.
- 2) Remove the screw, and open the control box.



- 3) Remove the flywheel. (BK: 50-sheet machine only)

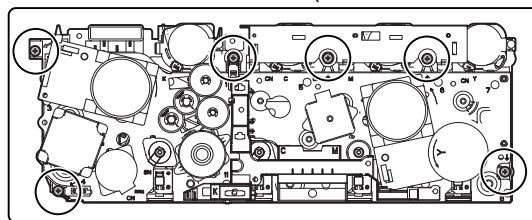
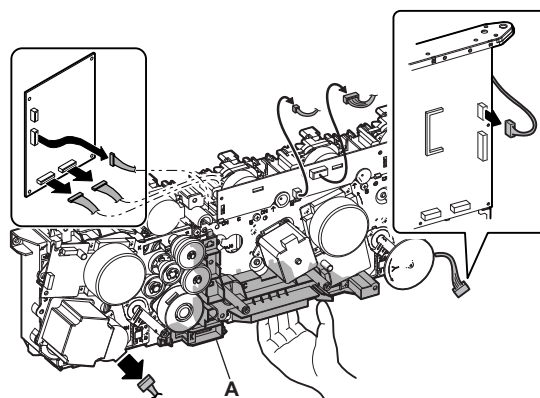
\* Installing sequence: (1)C (2) KM  
(Engraved mark for each color)

\* After installing, check to confirm that it is not in contact with the harness.



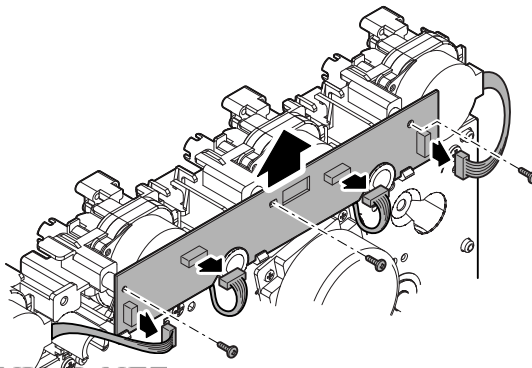
- 4) Disconnect the connector and remove the screw, and remove the main drive unit.

\* Hold section A and remove.

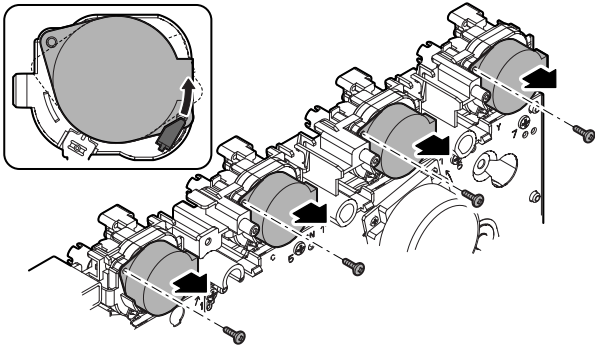


### (1) TM drive PWB/Toner motor

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw, and remove the TM drive PWB.

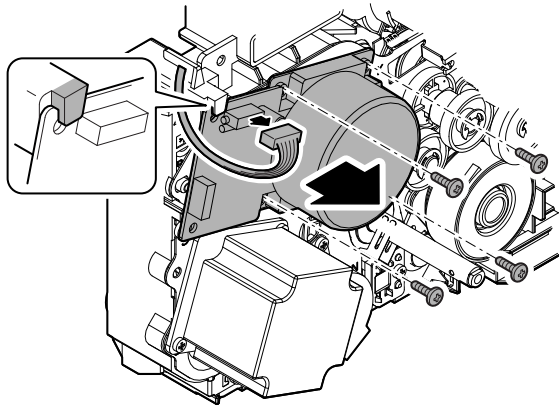


- 4) Disconnect the connector and remove the screw, and remove the toner motor.



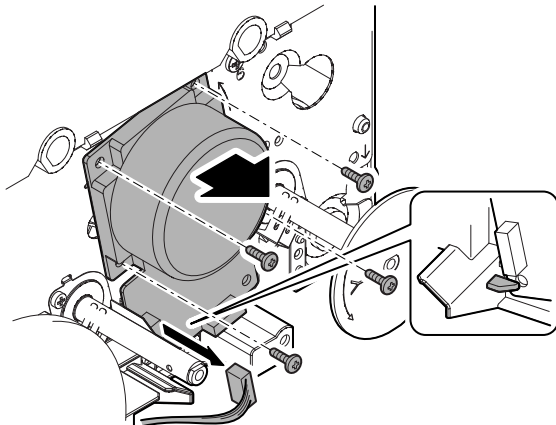
## (2) Developing drive motor (K)

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the developing drive motor (K)



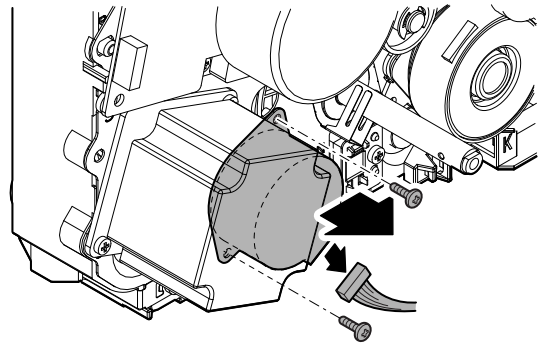
## (3) Developing drive motor (CL)

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the developing drive motor (CL).



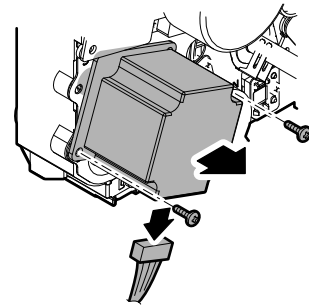
## (4) Resist motor

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the resist motor.



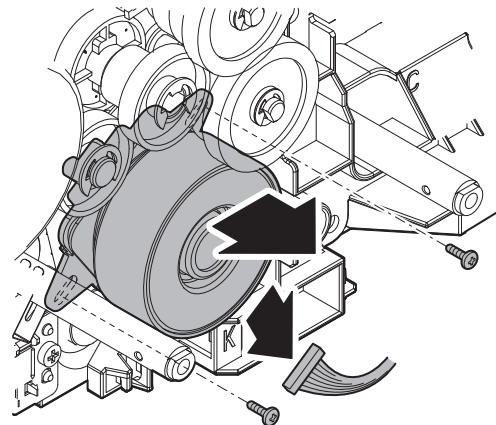
## (5) Transfer belt motor

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the transfer belt motor.



## (6) BK drum motor

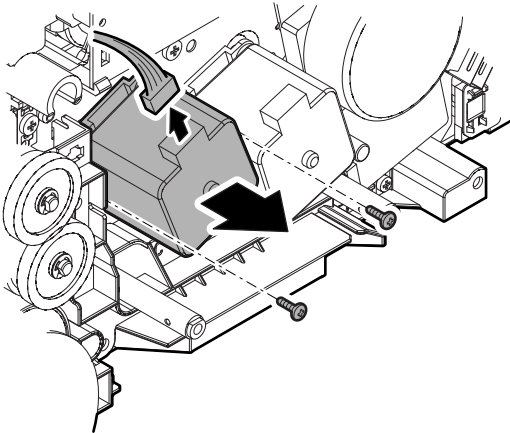
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the BK drum motor.





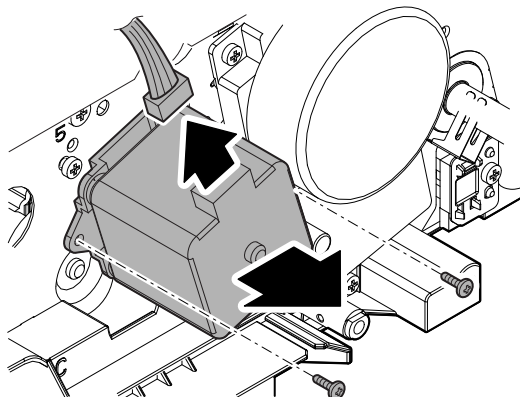
### (7) C drum motor (50-sheet machine)

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the C drum motor.



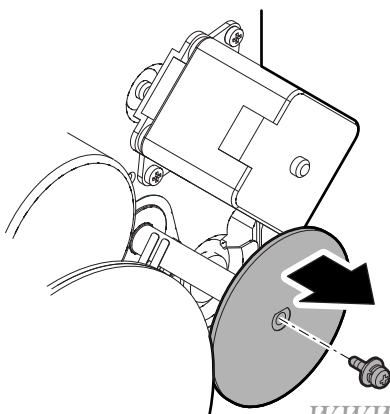
### (8) CL drum motor (40-sheet machine) / M drum motor (50-sheet machine)

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Disconnect the connector and remove the screw, and remove the CL drum motor/M drum motor.

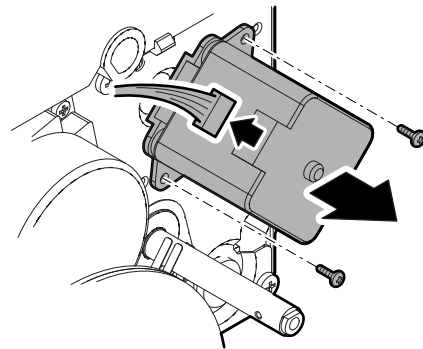


### (9) Y drum motor (50-sheet machine)

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.

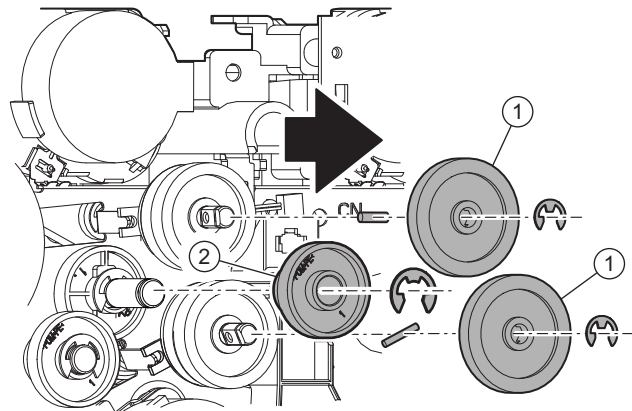


- 4) Disconnect the connector and remove the screw, and remove the Y drum motor.



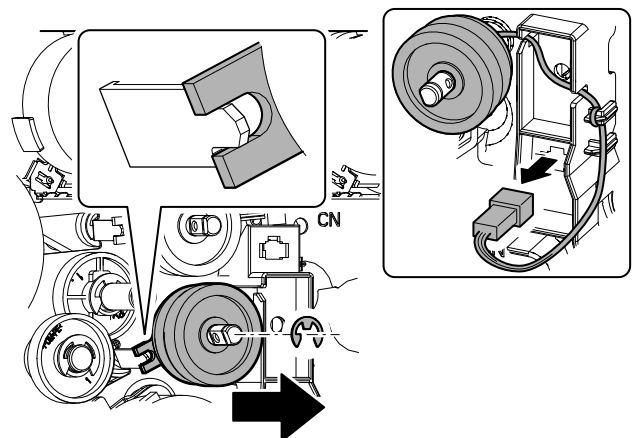
### (10) Primary transfer separation clutch

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Remove the E-ring, and remove the gear.



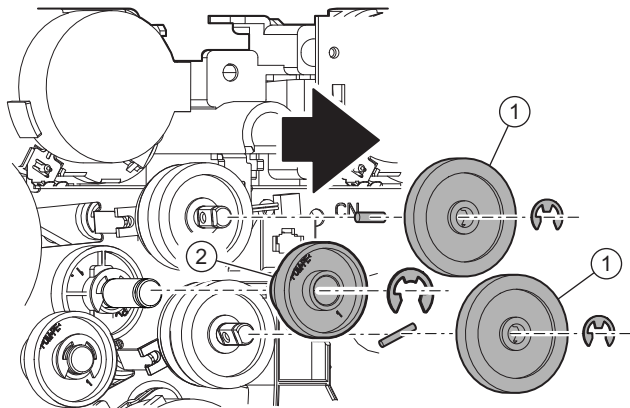
- 5) Remove the E-ring, and remove the gear. Disconnect the connector, and remove the E-ring, and remove the primary transfer separation clutch.

\* When installing, engage the projected section for stopping the clutch rotation with the frame projection.



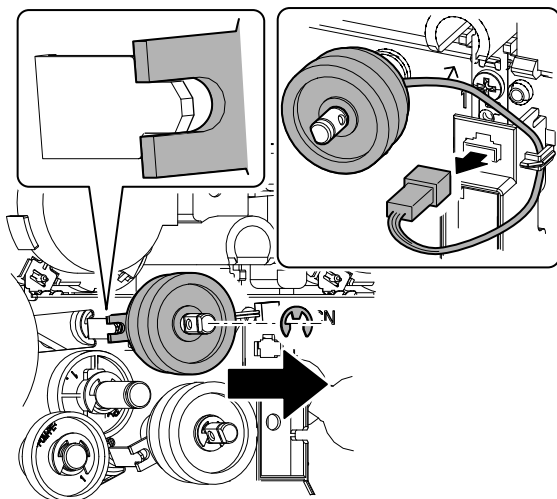
## (11) Primary transfer separation reverse rotation clutch

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the flywheel.
- 4) Remove the E-ring, and remove the gear.

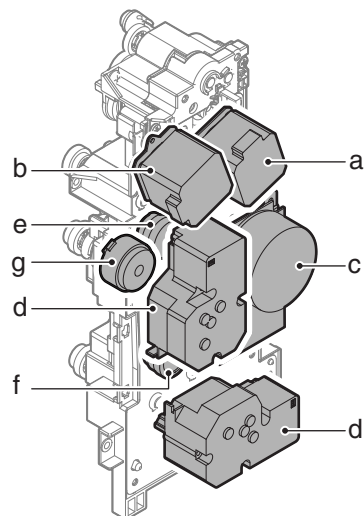


- 5) Remove the E-ring, and remove the gear. Disconnect the connector, and remove the E-ring, and remove the primary transfer separation reverse rotation clutch.

\* When installing, engage the projected section for stopping the clutch rotation with the frame projection.

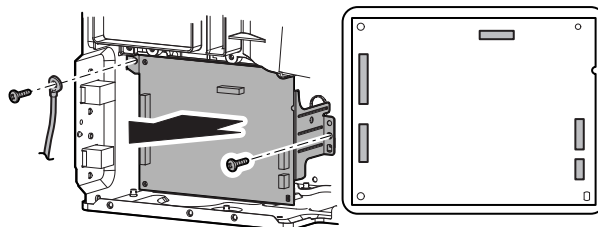


## B. Paper feed drive unit

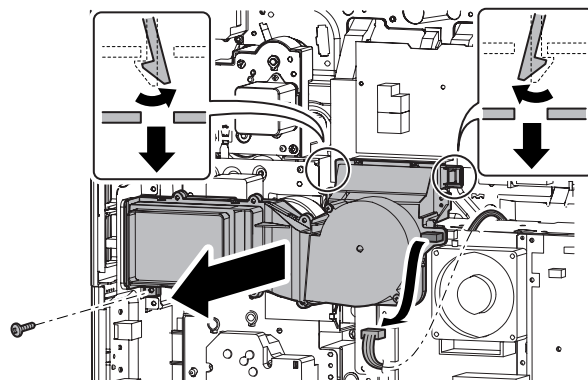


Parts	
a	Transport motor
b	Horizontal transport motor
c	Paper feed motor
d	Paper tray lift-up motor
e	Paper feed clutch (Paper feed tray 1)
f	Paper feed clutch (Paper feed tray 2)
g	Tray vertical transport clutch

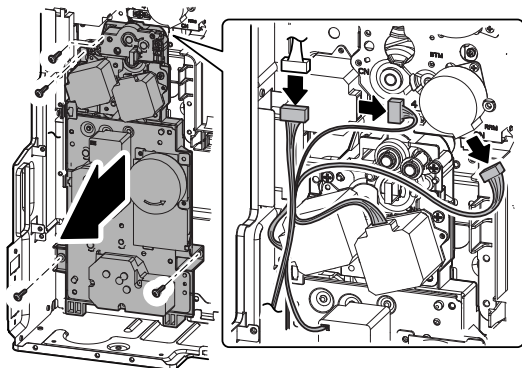
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw and the each terminal. Remove the driver main PWB unit.



- 4) Disconnect the connector and remove the screw. Disengage the pawl, and remove the filter box unit.

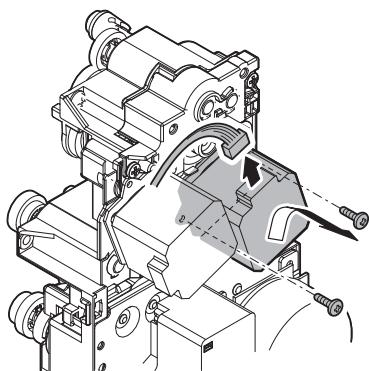


- 5) Disconnect the connector, and remove the paper feed drive unit.



### (1) Transport motor

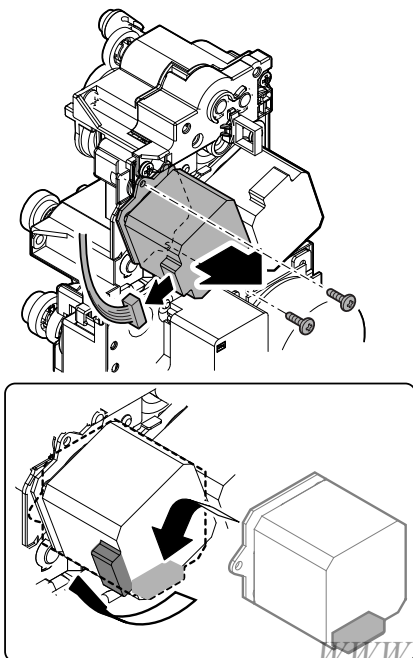
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw, and remove the transport motor.



### (2) Horizontal transport motor

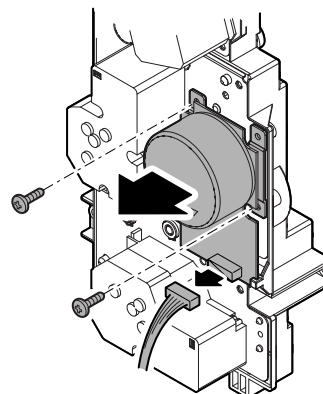
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw, and remove the horizontal transport motor.

\* When installing, insert the connector downward, and rotate the motor.



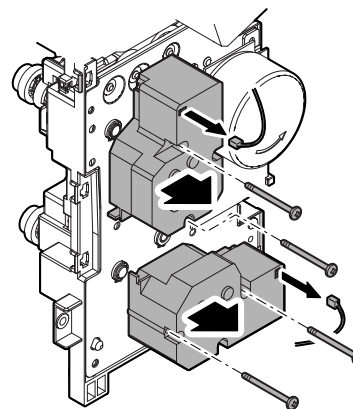
### (3) Paper feed motor

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the driver main PWB unit.
- 4) Remove the filter box unit.
- 5) Disconnect the connector and remove the screw, and remove the paper feed motor.

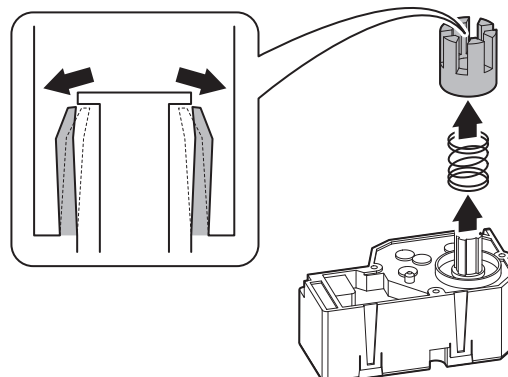


### (4) Paper tray lift-up motor

- 1) Remove the rear cabinet. (Refer to "Rear cabinet" in "External view.")
- 2) Open the control box.
- 3) Remove the driver main PWB unit.
- 4) Remove the filter box unit.
- 5) Disconnect the connector and remove the screw, and remove the paper tray lift-up motor unit.

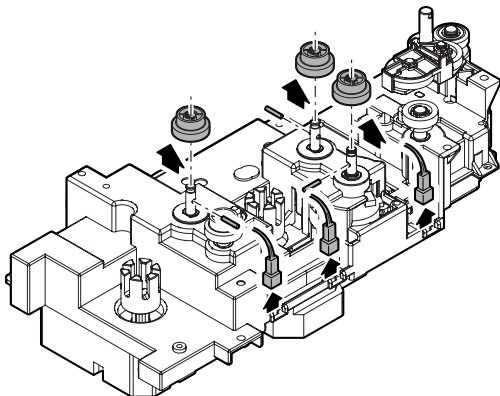


- 6) Disengage the pawl, and remove the lift-up coupling.

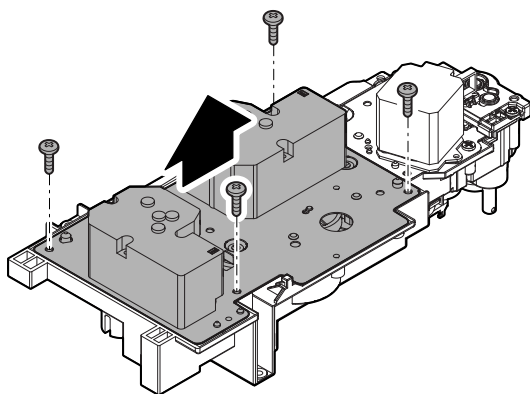


**(5) Paper feed clutch (Paper feed tray 1/  
Paper feed tray 2)/Tray vertical transport clutch**

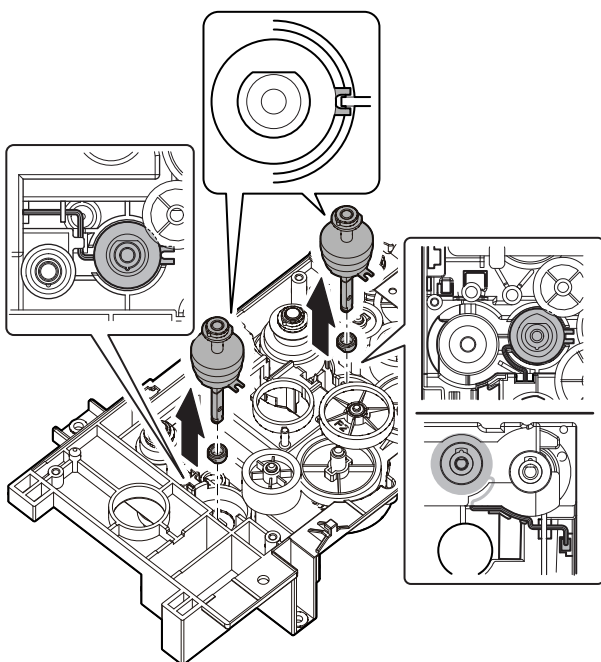
- 1) Remove the paper tray lift-up motor unit.
- 2) Remove the paper feed motor.
- 3) Remove the paper feed drive unit.
- 4) Remove the gear and disconnect the connector.



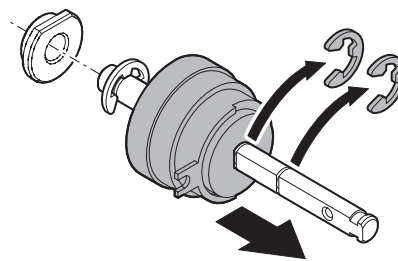
- 5) Remove the screw, and remove the drive frame upper unit.



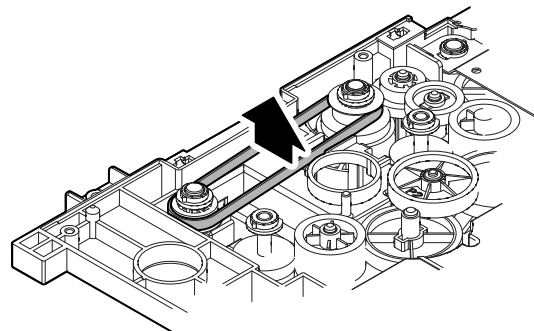
- 6) Remove the paper feed clutch unit.  
\* When installing, be careful of wiring process.



- 7) Remove the E-ring, and remove the paper feed clutch.

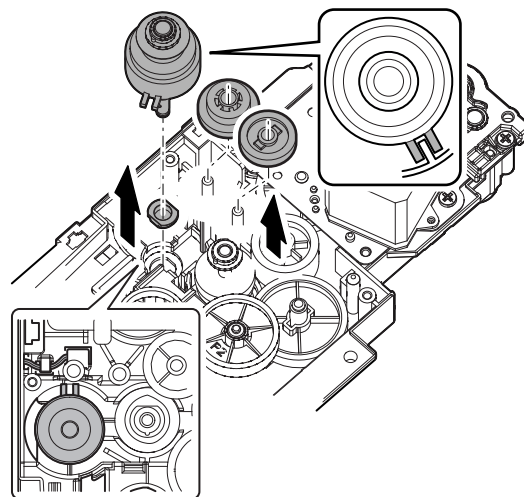


- 8) Remove the belt.

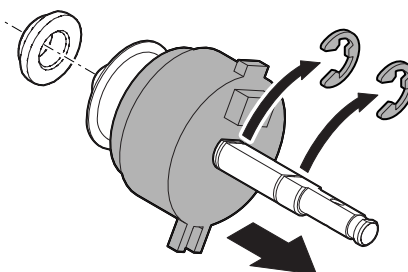


- 9) Remove the gear, and remove the tray vertical transport clutch unit.

\* When installing, be careful of wiring process.



- 10) Remove the E-ring, and remove the tray vertical transport clutch.





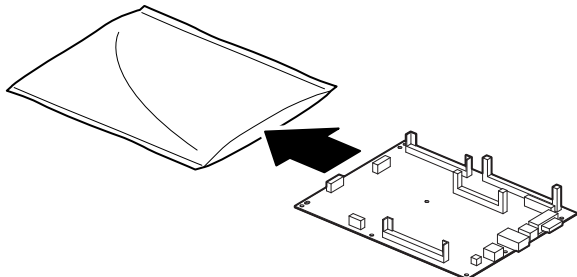
## [P] PWB SECTION

### 1. Disassembly and assembly

#### (Countermeasures against static electricity)

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

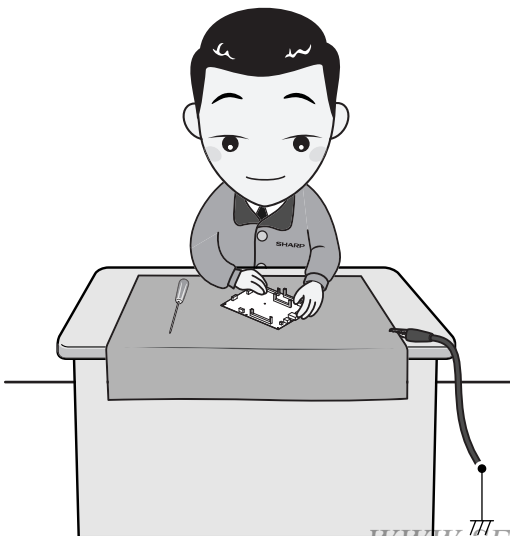
- 1) When in transit or storing, put the parts in an anti-static bag or an anti-static case and do not touch them with bare hands.



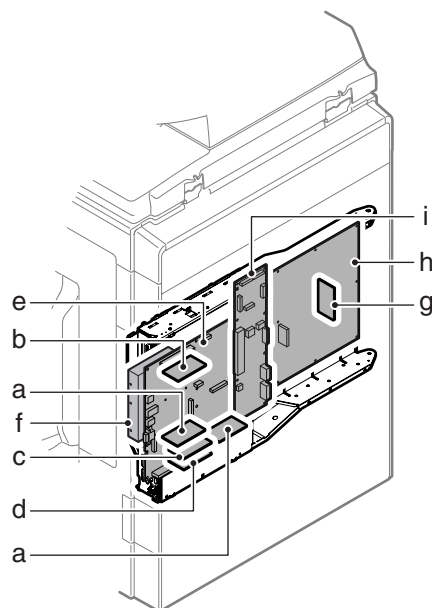
- 2) When and after removing the parts from an anti-static bag (case), use an earth band as shown below:
  - Put an earth band to your arm, and connect it to the machine.



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



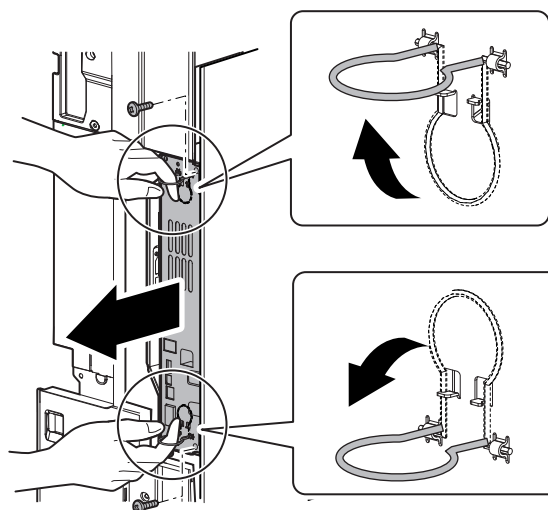
### A. Control box



Parts	
a	DIMM memory PWB (512MB)
b	DIMM memory PWB (1GB)
c	PROG1 ROM PWB
d	PROG2 ROM PWB
e	MFP cnt PWB
f	HDD
g	PCU Flash ROM PWB
h	PCU PWB
i	Mother PWB

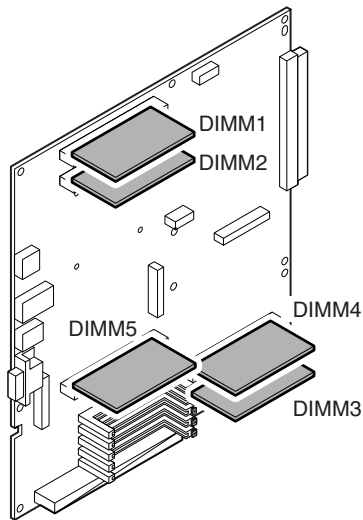
#### (1) DIMM memory PWB (512MB/1GB)/PROG1 ROM PWB/PROG 2 ROM PWB/MFP cnt PWB

- 1) Remove the right cabinet rear cover.
- 2) Remove the screw, and pull out the MFP cnt PWB.



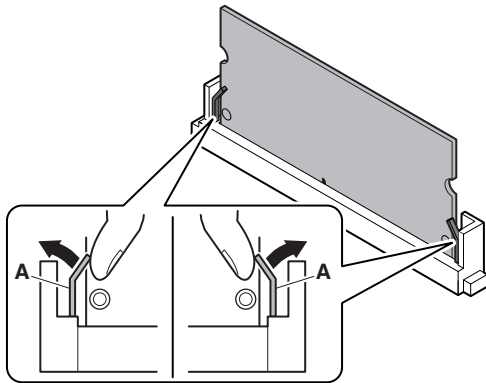
\* When placing the HDD on the upper side, do not apply an excessive force to the DIMM memory. So remove it or put a spacer.

\* Inserting position an inserting procedure when the DIMM memory is removed

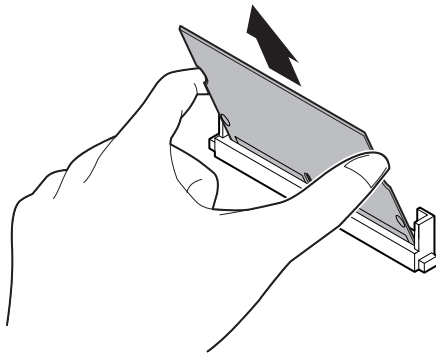


DIMM1: Option  
 DIMM2: 1GB  
 DIMM3: 512MB  
 DIMM4: Reserved (No option)  
 DIMM5: 512MB

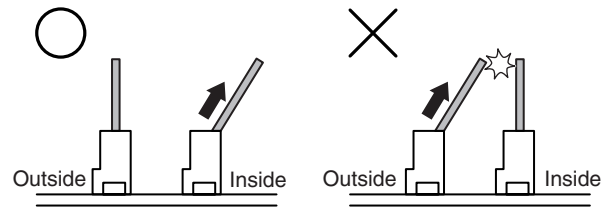
- 3) Push Stopper (A) with your finger to release the lock holding the memory PWB.



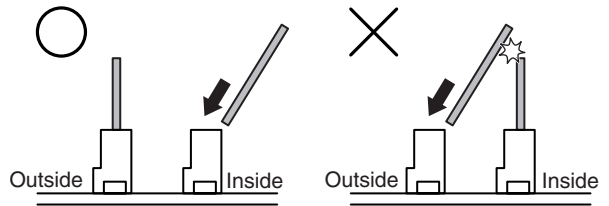
- 4) When the lock is released, the memory PWB tilts. Pull it out.  
 \* Be sure to release the lock before pulling it out.  
 \* Do not touch the IC on the memory PWB.



\* Note for removing procedure of the memory PWB  
 Remove the PWB inside the tilt of the memory PWB first. (Removing the IC outside the tilt will result in poor efficiency of work.)

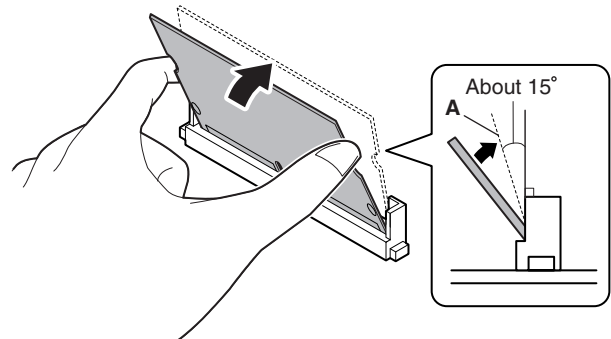


\* Note for installing procedure of the memory PWB  
 Install the PWB outside the tilt of the memory PWB first. (Installing the IC inside the tilt will result in poor efficiency of work.)



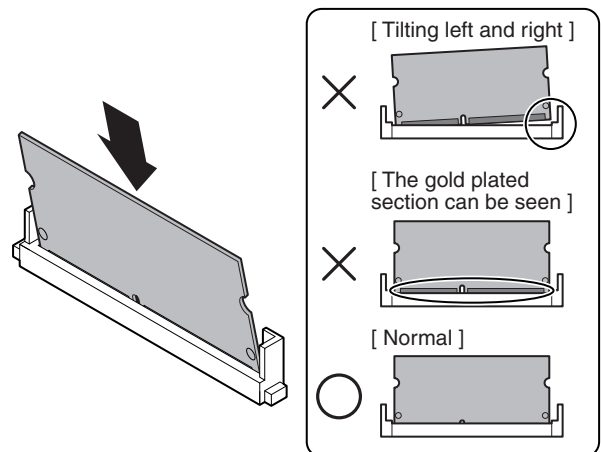
- a) Tilt the memory PWB and fit with the connector port. Put the memory PWB up to the line (A) in the figure.

\* When inserting, be sure to hold the both ends and be sure not to touch the IC on the PWB.



- b) Push the memory PWB which is kept tilted fully to the bottom.

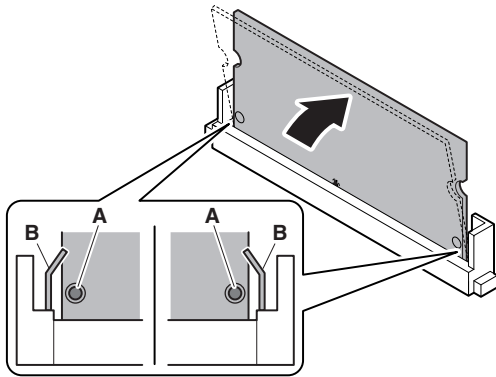
\* Be careful not to tilt left and right.  
 \* The gold plated section must be completely seated inside slot.



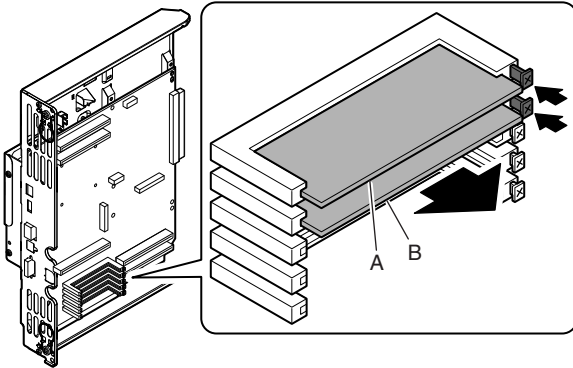
- c) Raise the memory PWB until the connector stopper clicks.

\* Check to confirm that the lock pin (A) is in the center of the lock hole.

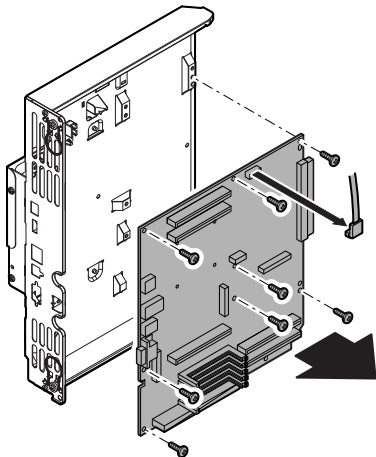
\* The stopper (B) must penetrate inside the PWB.



- 5) Release the lock, and remove the PROG1 ROM PWB (A) and the PROG2 ROM PWB (B).

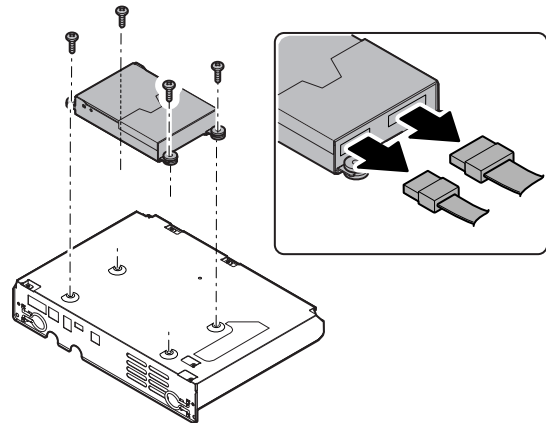


- 6) Disconnect the connector and remove the screw, and remove the MFP cnt PWB.



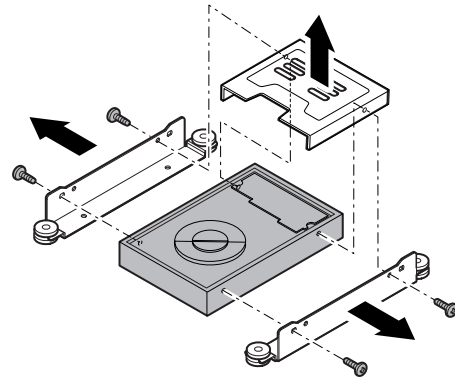
## (2) HDD

- 1) Remove the right cabinet rear cover.
- 2) Remove the screw, and pull out the MFP cnt PWB.
- 3) Disconnect the connector and remove the screw, and remove the HDD unit.



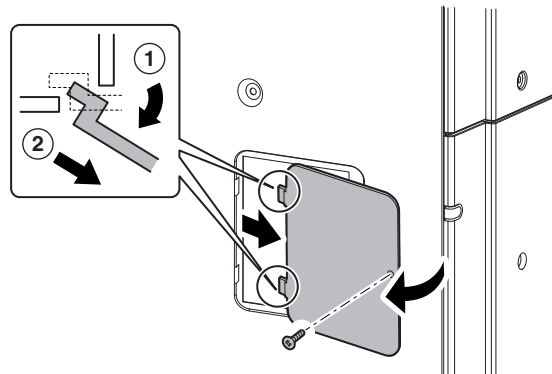
- 4) Remove the screw, and remove the angle from the HDD.

\* The HDD is very fragile. Handle the HDD carefully so as not to damage the unit due to any external shock.

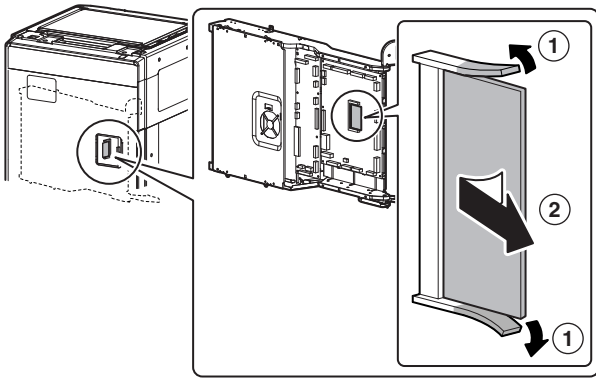


## (3) PCU Flash ROM PWB

- 1) Remove the screw, and remove the rear cabinet lid.

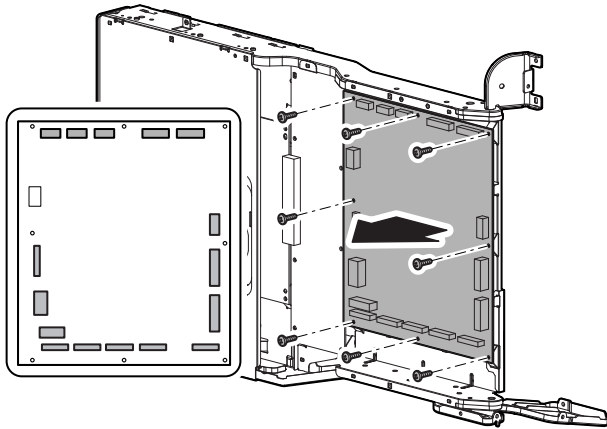


- 2) Remove the PCU Flash ROM PWB.



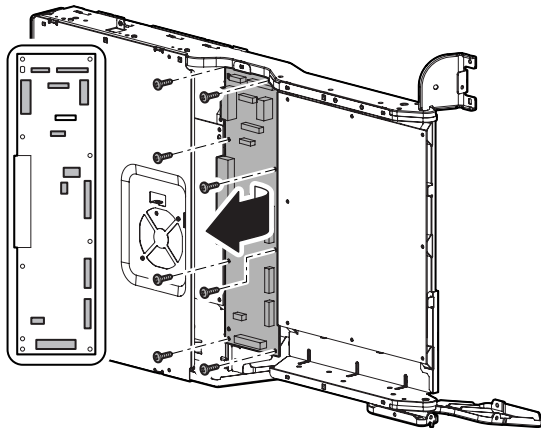
#### (4) PCU PWB

- 1) Remove the rear cabinet.
- 2) Remove the PCU Flash ROM PWB.
- 3) Disconnect the connector and remove the screw, and remove the PCU PWB.

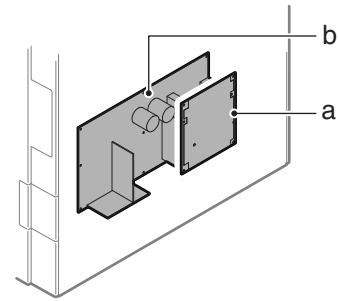


#### (5) Mother PWB

- 1) Remove the rear cabinet.
- 2) Disconnect the connector and remove the screw, and remove the mother PWB.



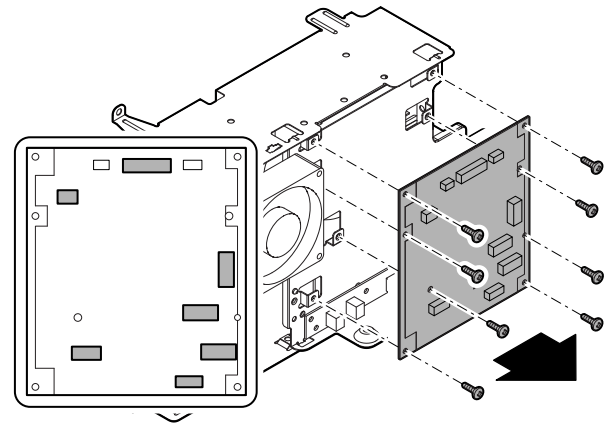
## B. Power unit



Parts	
a	AC power PWB
b	DC power PWB

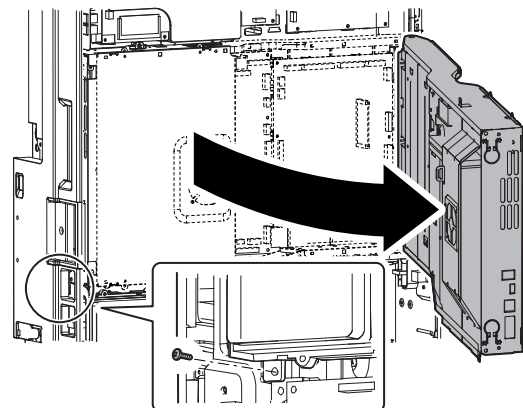
#### (1) AC power PWB

- 1) Remove the rear cabinet.
- 2) Remove the screw, the reactor and disconnect the connector, and remove the AC power PWB.

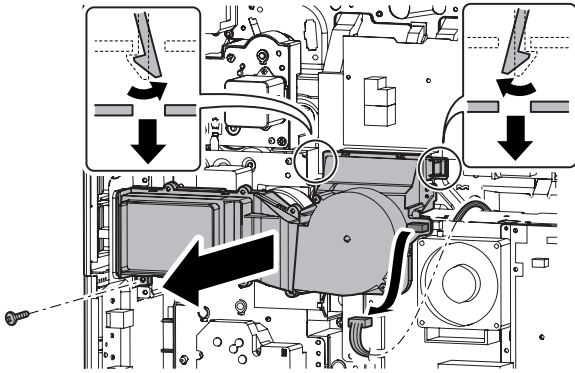


#### (2) DC power PWB

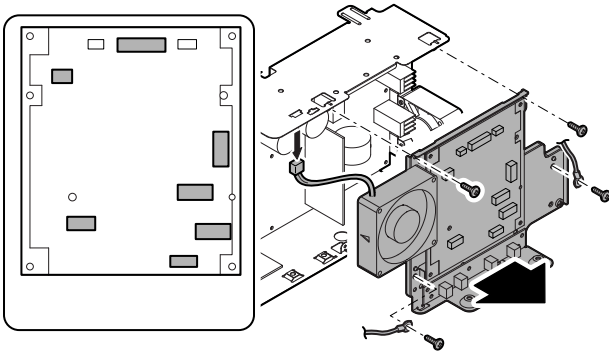
- 1) Remove the rear cabinet.
- 2) Open the control box.



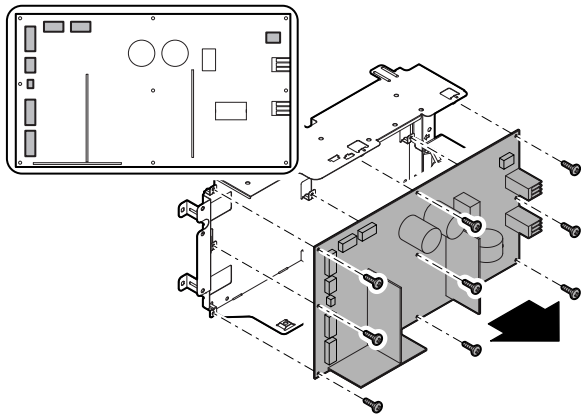
- 3) Remove the screw and disconnect the connector, and remove the filter box unit.



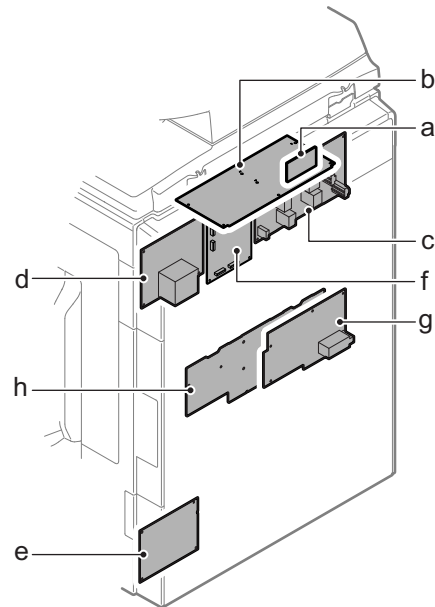
- 4) Remove the screw, the reactor and the AC cord unit and disconnect the connector, and remove the AC power PWB unit.



- 5) Remove the screw and disconnect the connector, and remove the DC power PWB.



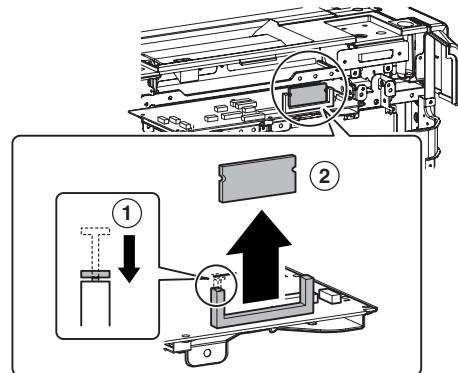
## C. Others



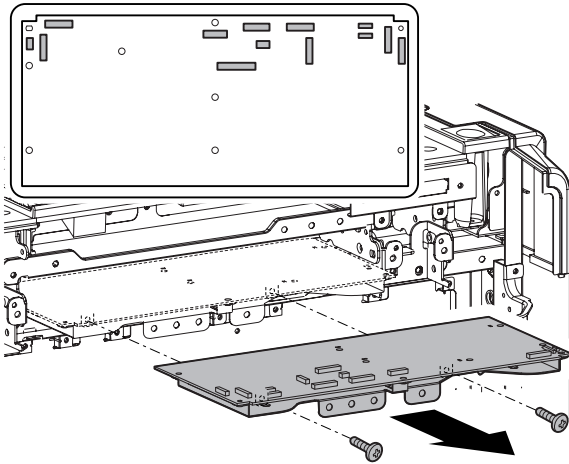
Parts	
a	SCN Flash ROM PWB
b	Scanner control PWB
c	HL PWB
d	Secondary transfer PWB
e	Driver main PWB
f	Driver sub PWB
g	Primary transfer PWB
h	MC PWB

### (1) SCN Flash ROM PWB/Scanner control PWB

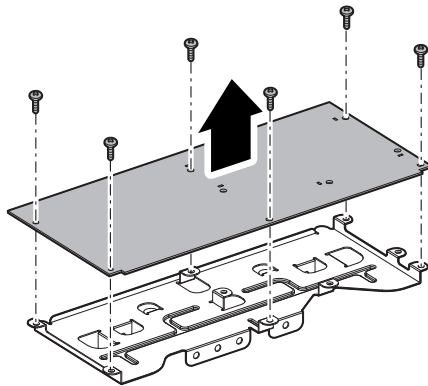
- 1) Remove the upper cabinet rear cover.
- 2) Release the lock, and remove the SCN Flash ROM PWB.



- 3) Remove the screw, and pull out the scanner control PWB unit. Disconnect the connector.

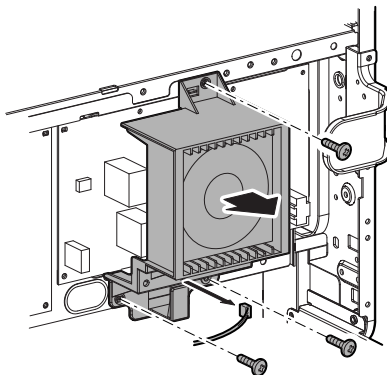


- 4) Remove the screw, and remove the scanner control PWB.

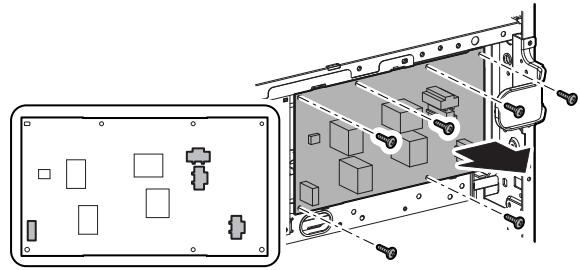


## (2) HL PWB

- 1) Remove the upper cabinet rear cover and the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw, and remove the duct.

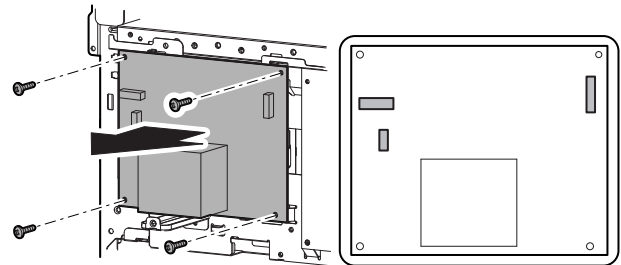


- 4) Remove the screw and disconnect the connector, and remove the HL PWB.



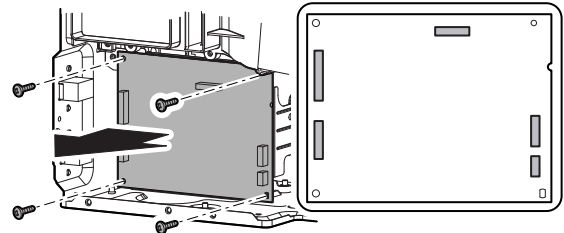
## (3) Secondary transfer PWB

- 1) Remove the upper cabinet rear cover and the rear cover.
- 2) Open the control box.
- 3) Remove the screw and disconnect the connector, and remove the secondary transfer PWB.



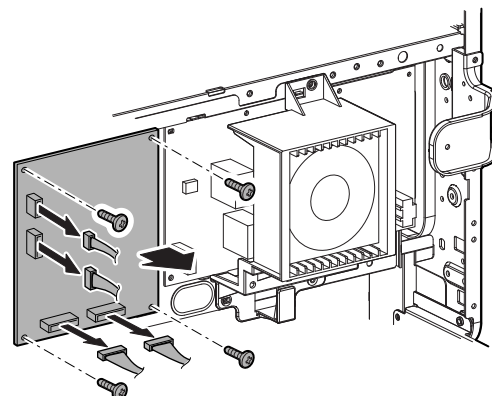
## (4) Driver main PWB

- 1) Remove the rear cabinet.
- 2) Remove the screw and disconnect the connector, and remove the driver main PWB.



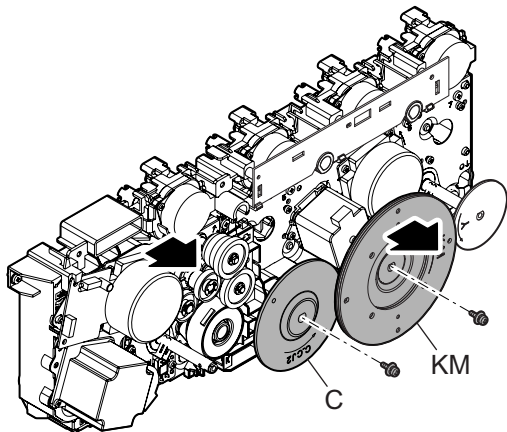
## (5) Driver sub PWB

- 1) Remove the upper cabinet rear cover and the rear cabinet.
- 2) Open the control box.
- 3) Disconnect the connector and remove the screw, and remove the driver sub PWB.

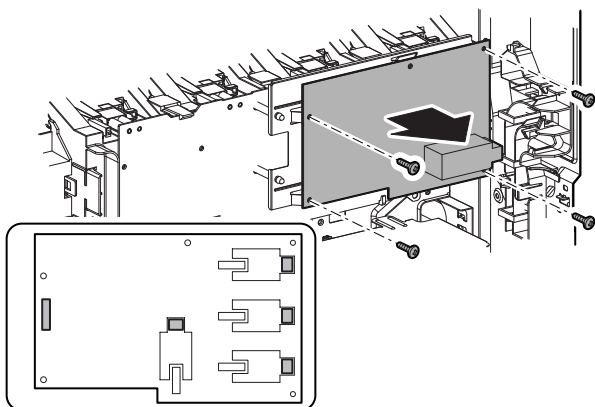


## (6) Primary transfer PWB

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the screw, and remove the flywheel.
  - \* Installing sequence: (1)C (2) KM  
(Engraved mark for each color)
  - \* After installing, check to confirm that it is not in contact with the harness.

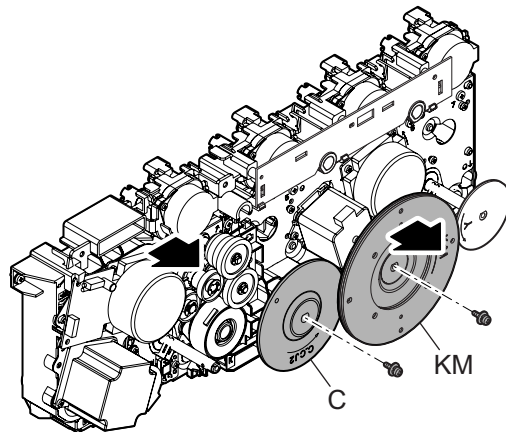


- 4) Remove the screw and disconnect the connector, and remove the primary transfer PWB.

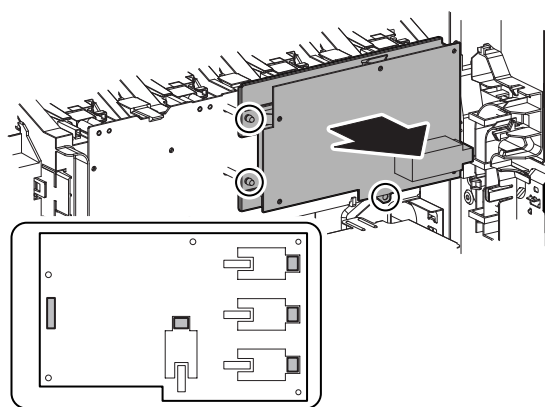


## (7) MC PWB

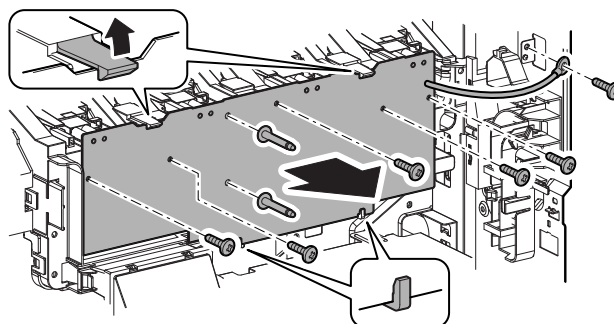
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the screw, and remove the flywheel.
  - \* Installing sequence: (1)C (2) KM  
(Engraved mark for each color)
  - \* After installing, check to confirm that it is not in contact with the harness.



- 4) Disconnect the connector, remove the supporter, and remove the primary transfer PWB unit.



- 5) Remove the screw and disconnect the connector, and remove the MC PWB and the supporter.

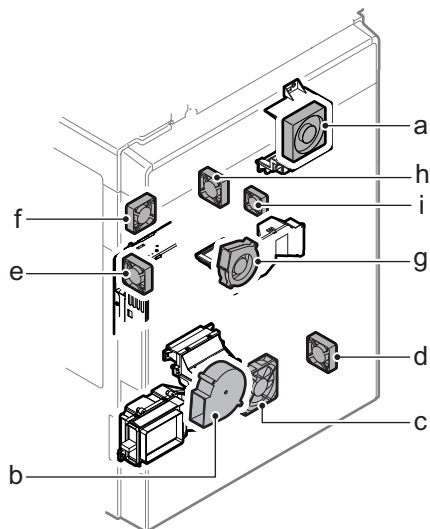




## [Q] FAN SECTION

### 1. Disassembly and assembly

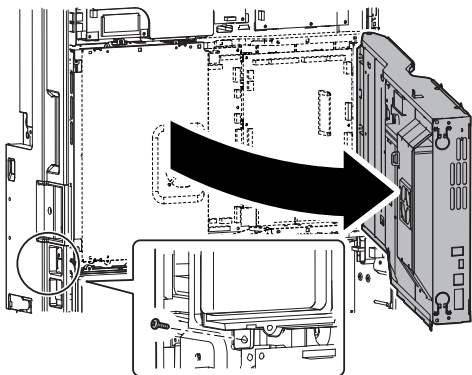
#### A. Fan motor



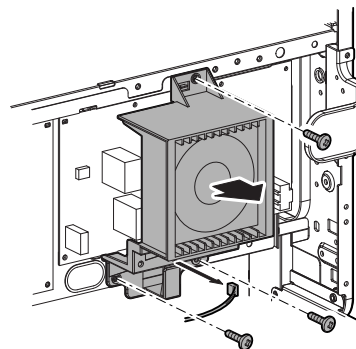
Parts	
a	Rear cooling fan motor
b	Ozone fan motor
c	Power cooling fan motor
d	Power cooling fan motor2
e	Controller cooling fan motor
f	Fusing fan motor
g	Process air inlet fan motor
h	LSU cooling fan motor
i	Cartridge cooling fan motor

#### (1) Rear cooling fan motor

- 1) Remove the rear cabinet.
- 2) Open the control box.

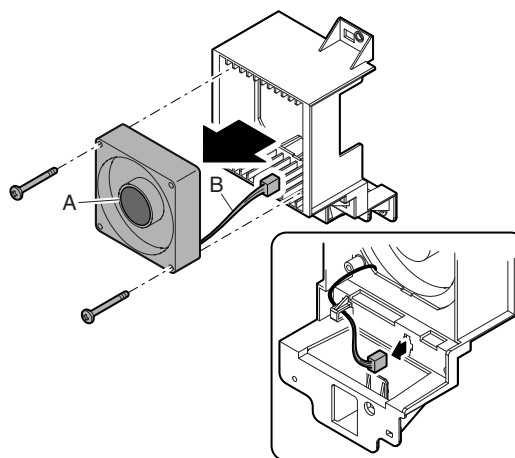


- 3) Disconnect the connector and remove the screw, and remove the duct.



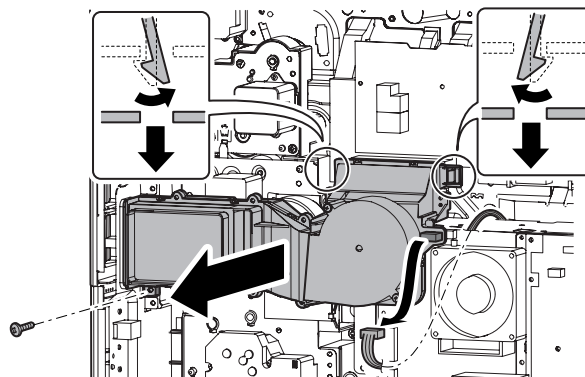
- 4) Disconnect the connector and remove the screw, and remove the rear cooling fan motor.

\* When installing, put the fan label (A) facing outside, and be careful of the pulling direction of the harness (B).



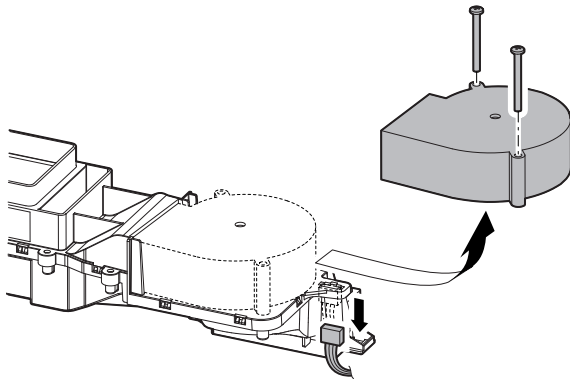
#### (2) Ozone fan motor

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the filter box unit.





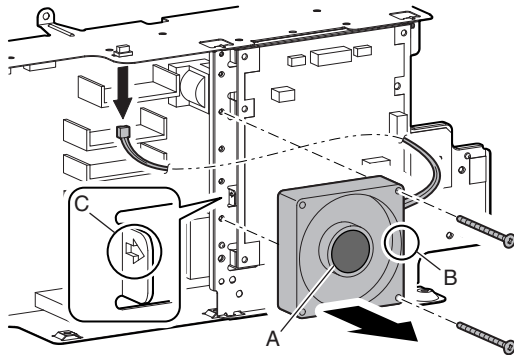
- 4) Disconnect the connector and remove the screw, and remove the ozone fan motor from the filter box unit.



### (3) Power cooling fan motor

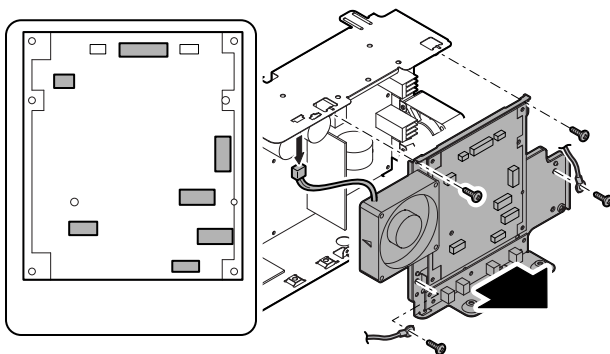
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the filter box unit.
- 4) Disconnect the connector and remove the screw, and remove the power cooling fan.

\* When installing, put the fan label (A) facing outside, and arrange the engraved mark (B) in the blowing direction with the arrow direction (C) of the metal plate.

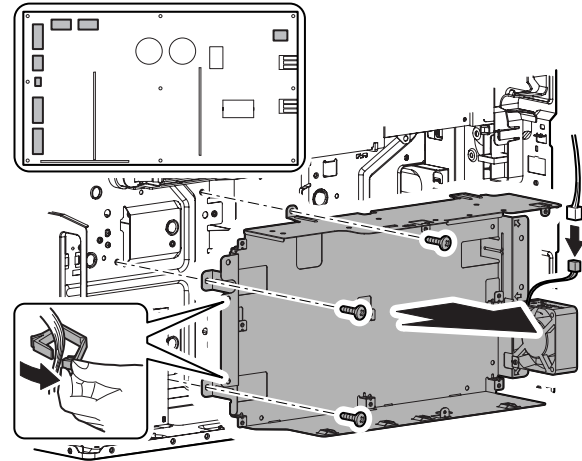


### (4) Power cooling fan motor2

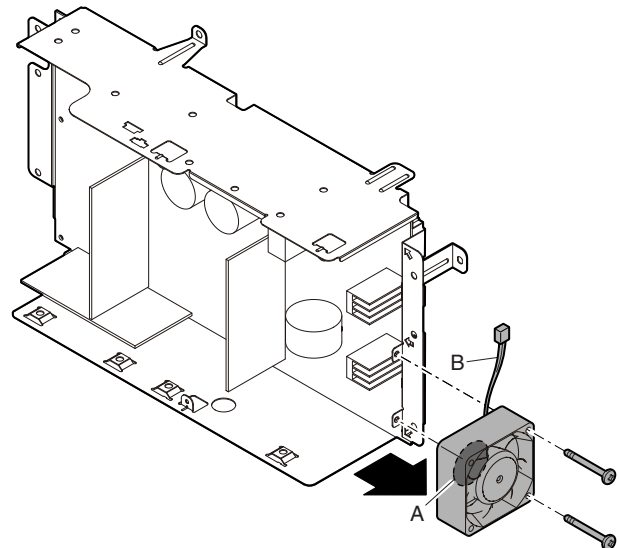
- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Remove the filter box unit.
- 4) Remove the screw, the reactor and disconnect the connector, and remove the AC power PWB unit.



- 5) Disconnect the connector. Open the wire saddle, and remove the harness. Remove the screw, and remove the DC power unit.

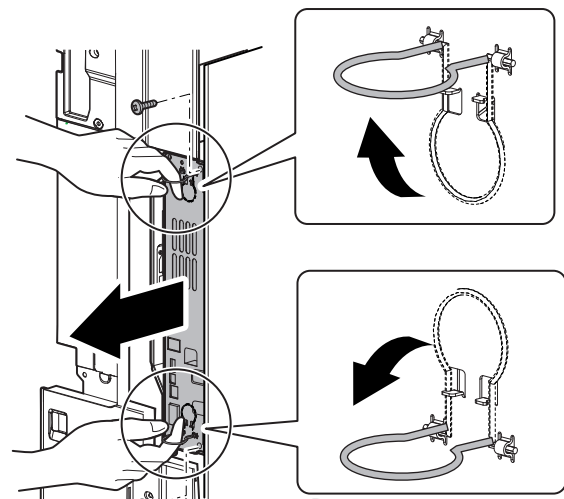


- 6) Remove the screw, and remove the power cooling fan motor.  
\* When installing, put the fan label (A) facing inside, and the harness (B) facing upward.



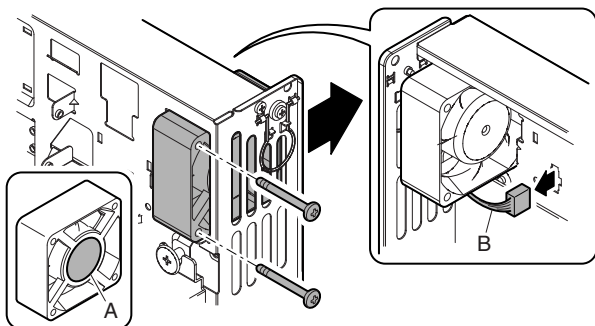
### (5) Controller cooling fan motor

- 1) Remove the right cabinet rear cover.
- 2) Remove the screw, and pull out the MFP cnt PWB.



- 3) Disconnect the connector and remove the screw, and remove the controller cooling fan motor.

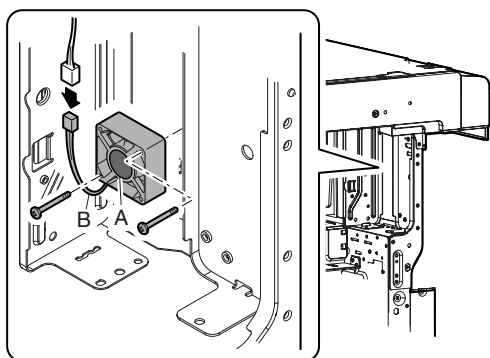
\* When installing, put the fan label (A) facing outside, and the harness (B) facing downward.



#### (6) Fusing fan motor

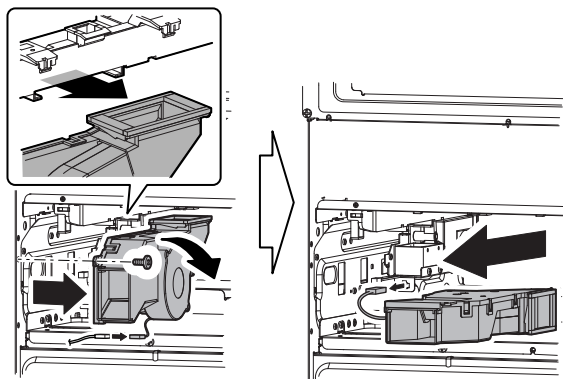
- 1) Remove the paper exit unit.
- 2) Remove the screw and disconnect the connector, and remove the fusing fan motor.

\* When installing, put the fan label (A) facing inside, and the harness (B) facing downward.

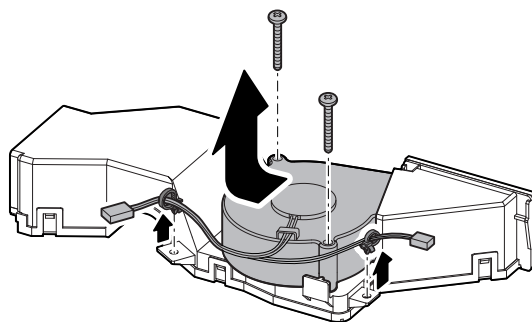


#### (7) Process air inlet fan motor

- 1) Remove the LSU.
- 2) Remove the screw. Remove the duct. At the unit on its side and disconnect the connector.

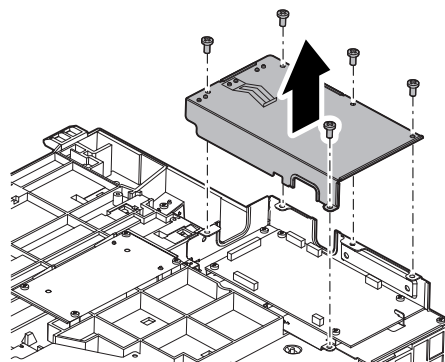


- 3) Remove the screw and the snap band, and remove the process air inlet fan motor.

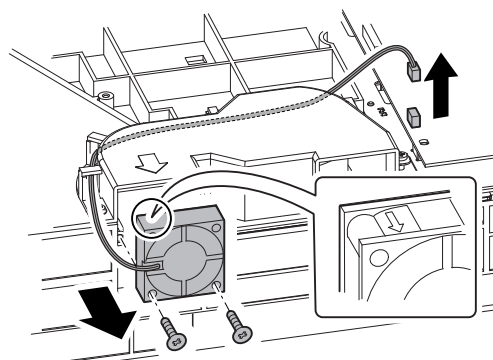


#### (8) LSU cooling fan motor

- 1) Remove the LSU.
- 2) Remove the screw, and remove the LSU CNT PWB cover R.

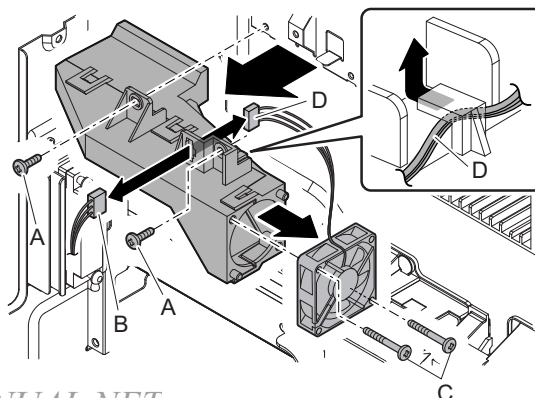


- 3) Disconnect the connector and remove the screw, and remove the LSU cooling fan motor.



#### (9) Cartridge cooling fan motor

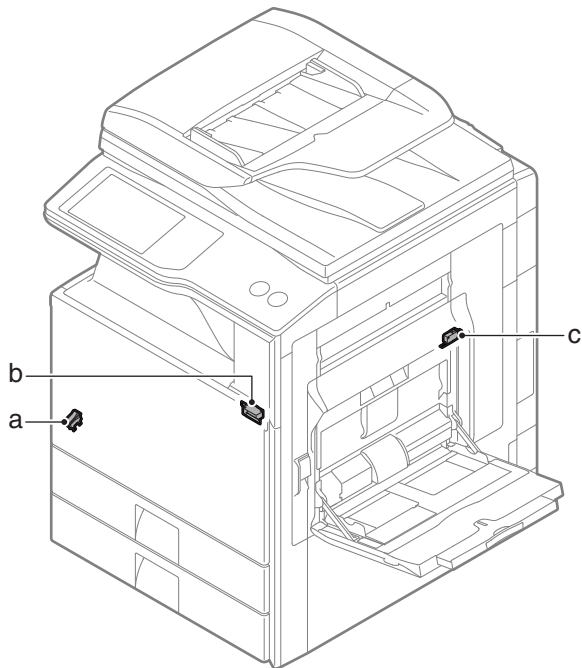
- 1) Remove the screw (A) and disconnect the connector (B). Remove the drive rear exhaust duct unit.
- 2) Remove the screw (C) and disconnect the connector and the harness. Remove the cartridge cooling fan motor.



# [R] SENSOR/SWITCH SECTION

## 1. Disassembly and assembly

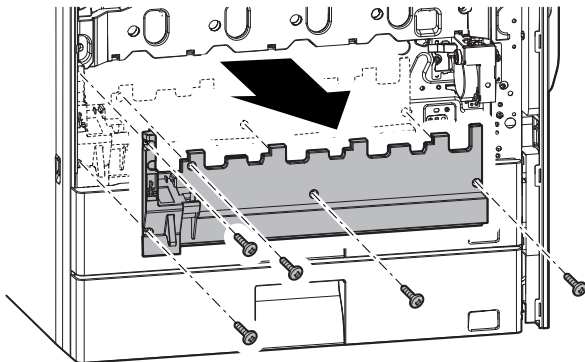
### A. Sensor/Switch



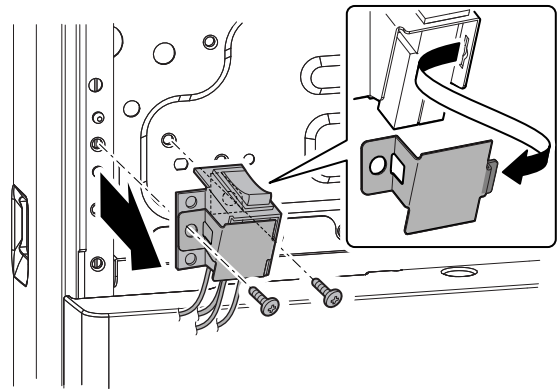
Parts	
a	Main switch
b	Front door open/close switch
c	Right door open/close switch

#### (1) Main switch

- 1) Remove the front cabinet.
- 2) Remove the screw, and remove the frame cover.

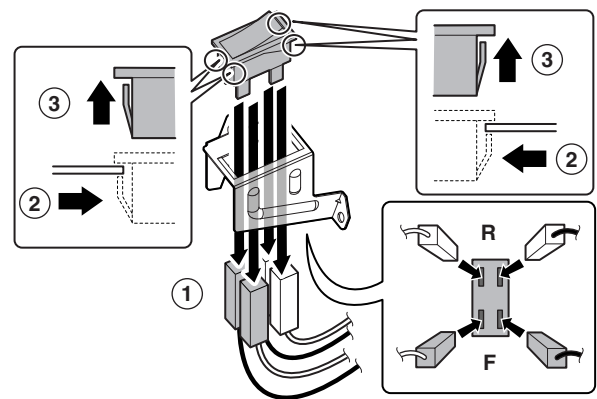


- 3) Remove the screw, and remove the main switch unit.



- 4) Disconnect the connector, disengage the pawl, and remove the main switch.

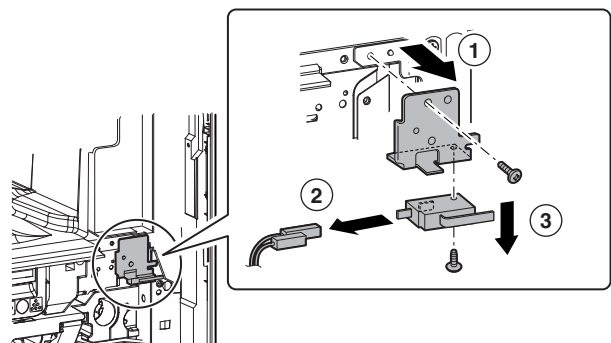
\* When installing, be careful of connection of the connector.



#### (2) Front door open/close switch

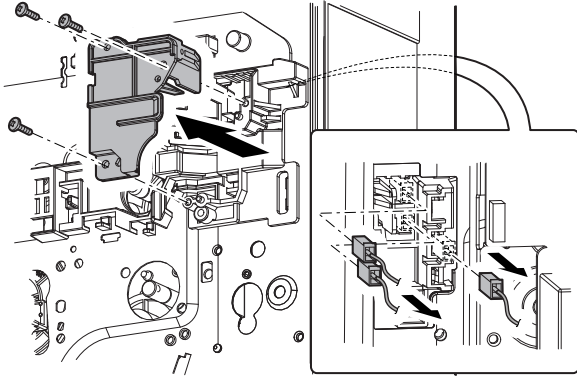
- 1) Remove the frame cover.
- 2) Remove the screw, and remove the front door open/close switch unit.

Disconnect the connector and remove the screw, and remove the front door open/close switch.

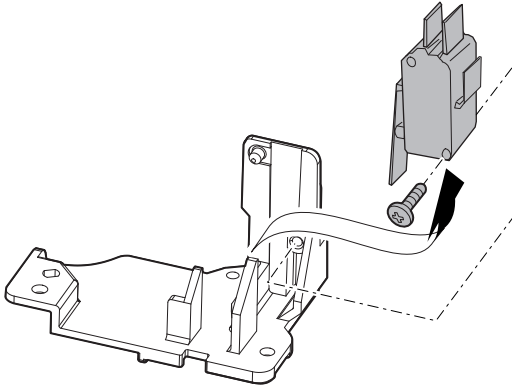


### (3) Right door open/close switch

- 1) Remove the rear cabinet.
- 2) Open the control box.
- 3) Open the right door.
- 4) Remove the resist roller unit.
- 5) Disconnect the connector and remove the screw, and remove the right door open/close switch cover unit.



- 6) Remove the right door open/close switch.



# Memo

This image shows a full page of primary-ruled paper. It features multiple sets of horizontal dashed lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There are no margins, text, or other markings present.

# Memo

This image shows a full page of primary-ruled paper. It features multiple sets of horizontal dashed lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There are no margins, text, or other markings present.

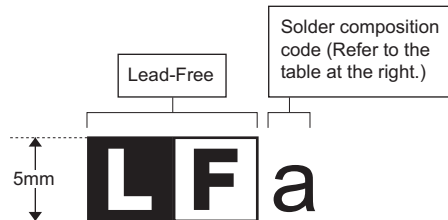
# Memo

[illegible]

# 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 recommendable.

## (2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.



#### CAUTION FOR BATTERY REPLACEMENT

(Danish)

ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri

af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandoren.

(English)

Caution !

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type

recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

(Finnish)

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan

tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden

mukaisesti.

(French)

ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect

de la batterie. Remplacer uniquement avec une batterie du

même type ou d'un type équivalent recommandé par

le constructeur.

Mettre au rebut les batteries usagées conformément aux

instructions du fabricant.

(Swedish)

VARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent

typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens

instruktion.

(German)

Achtung

Explosionsgefahr bei Verwendung inkorrektter Batterien.

Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder

vom Hersteller empfohlene Batterien verwendet werden.

Entsorgung der gebrauchten Batterien nur nach den vom

Hersteller angegebenen Anweisungen.

#### CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

THIS PRODUCT CONTAINS A LITHIUM PRIMARY  
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY  
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE  
BATTERY FROM THE PRODUCT AND CONTACT YOUR  
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION  
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE  
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANESE)  
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA  
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE  
AGENCE ENVIRONNEMENTALE LOCALE POUR DES  
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET  
DE TRAITEMENT.

# SHARP

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